



Final

Construction Completion Report

Non-Time-Critical Removal Action for Soil

Main Base Firing Range Complex Pistol Range and Rifle Range

Goddard Space Flight Center
Wallops Flight Facility
Wallops Island, Virginia

March 2017

FINAL

CONSTRUCTION COMPLETION REPORT

NON-TIME-CRITICAL REMOVAL ACTION FOR SOIL

**MAIN BASE FIRING RANGE COMPLEX
PISTOL RANGE AND RIFLE RANGE**

**NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
GODDARD SPACE FLIGHT CENTER
WALLOPS FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA**

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**National Aeronautics and Space Administration
Goddard Space Flight Center
Wallops Flight Facility
Code 250.W
Building F-160
Wallops Island, Virginia 23337**

Submitted by:

**Tetra Tech, Inc.
5700 Lake Wright Drive, Suite 309
Norfolk, Virginia 23502**

**Contract No. NNG14WA44C
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PREPARED UNDER THE DIRECTION OF:



**ROBERT SOK II
PROJECT MANAGER
TETRA TECH, INC.
NORFOLK, VIRGINIA**

APPROVED FOR SUBMITTAL BY:



**GARTH GLENN
PROGRAM MANAGER
TETRA TECH, INC.
NORFOLK, VIRGINIA**

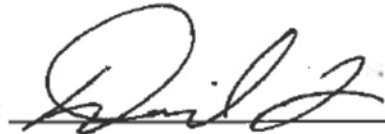
CERTIFICATION

The enclosed document was prepared, and is being submitted, in accordance with the requirements of the Administrative Agreement On Consent between the United States Environmental Protection Agency and the National Aeronautics and Space Administration [U.S. EPA Docket Number RCRA-03-2004-0201TH].

I certify that the information contained in or accompanying this document is true, accurate, and complete.

I certify under penalty of law that this document and all attachments were prepared in accordance with procedures designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, or the immediate supervisor of such person(s), the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fines and imprisonment for knowing violations.

Signature: _____



Name: _____

Mr. David Liu

Title: _____

NASA Project Coordinator

**CONCURRENCE
FOR
NO FURTHER ACTION DECISION**

**MAIN BASE FIRING RANGE COMPLEX
PISTOL RANGE, RIFLE RANGE, AND AIRCRAFT GUN TESTING RANGE
NASA WALLOPS FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA**

This report provides a summary of a Non-Time Critical Removal Action (NTCRA) conducted for soil at the former Main Base Firing Range (MBFR) Complex Pistol, Rifle, and Aircraft Gun Testing Ranges located at the National Aeronautics and Space Administration (NASA) Goddard Space Flight Center's (GSFC) Wallops Flight Facility (WFF) in Accomack County, Virginia.

The NTCRA was conducted in accordance with the Removal Action Work Plan (RAWP) approved by the NASA Remedial Project Management (RPM) Team, whose members include representatives from NASA, United States Environmental Protection Agency (EPA), and Virginia Department of Environmental Quality (VDEQ). The objective of the selected NTCRA alternative—Excavation and Offsite Disposal, which was developed in the Engineering Evaluation and Cost Analysis (EE/CA) (Tetra Tech, 2015a), was to mitigate potential human health risk and ecological risk associated with exposure to metals and energetics in soils at these two former ranges. The NTCRA decision is documented in the *Action Memorandum* (NASA, 2016). The NTCRA was performed under Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) as practicable (Title 40 of the Code of Federal Regulations [CFR], Section 300, Part 415 [40 CFR 300.415]).

The removal action cleanup goals for metals (copper, lead, and zinc) and nitroglycerin were established to be protective for human health and ecological acute and chronic exposure to site contaminants. Cleanup goals for maximum concentrations of metals (copper 280 mg/kg, lead 480 mg/kg, and zinc 480 mg/kg) were set at the lower of either 4 times the EPA Ecological Soil Screening Levels (SSL) or the EPA Human Health Regional Residential Screening Level (RSLs). Maximum nitroglycerine cleanup goals were established as 6.2 mg/kg, the EPA residential SSL. Cleanup goals were developed based on the June 2015 update to the EPA RSLs. To address site-wide residual risks, site average concentrations for metals were set at 2 times the Ecological SSL (copper 1400 mg/kg, lead 240 mg/kg, and zinc 240 mg/kg). Soils with concentrations above the maximum cleanup level were excavated and disposed of offsite. The residual average concentrations were calculated for each metal and based on confirmatory samples, each metal was below their respective residual average cleanup goal.

The RPM Team has attained consensus that the former Pistol Range, Rifle Range, and Aircraft Gun Testing Range sites require No Further Action (NFA) under CERCLA and notes the post-removal action site conditions allow for unlimited use and unrestricted exposure at each site. In accordance with the Administrative Agreement on Consent (AAOC) for the NASA WFF, these sites are identified in the Site Management Plan (SMP) as part of the "MBFR" Area of Concern. In the event that contamination posing an unacceptable risk to human health or the environment is discovered after execution of this Concurrence Statement, the Project Team agrees that additional investigation to characterize this contamination will be undertaken. Further, it is agreed that remediation of the contamination would be undertaken as appropriate to mitigate any unacceptable risk.

CONCURRENCE
FOR
NO FURTHER ACTION DECISION

MAIN BASE FIRING RANGE COMPLEX
PISTOL RANGE, RIFLE RANGE, AND AIRCRAFT GUN TESTING RANGE
NASA WALLOPS FLIGHT FACILITY
WALLOPS ISLAND, VIRGINIA

 3/21/17

Mr. David Liu Date
NASA WFF
Remedial Project Manager

 SH 3/21/17

Mr. Steve Hirsh Date
EPA Region 3
Remedial Project Manager

 3-21-17

Mr. Paul Herman Date
VDEQ
Remedial Project Manager

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ACRONYMS AND ABBREVIATIONS

| | |
|-----------------|--|
| ± | plus or minus |
| < | less than |
| µg | microgram(s) |
| µg/kg | microgram(s) per kilogram |
| AAOC | Administrative Agreement on Consent |
| AGTR | aircraft gun testing range |
| AI | Area of Interest |
| AM | Action Memorandum |
| bgs | below ground surface |
| BTEX | benzene, toluene, ethylbenzene, and xylenes |
| CCR | construction completion report |
| CERCLA | Comprehensive Environmental Response, Compensation, and Liability Act |
| CFR | Code of Federal Regulations (e.g., CFR Title 40, Section 300 [40 CFR 300]) |
| CoC | chain of custody |
| COPC | chemical of potential concern |
| dbh | diameter at breast height [for trees] |
| DoD | Department of Defense |
| DRO | diesel range organic |
| EE/CA | Engineering Evaluation/Cost Analysis |
| E&S | erosion and sediment |
| ELAP | Environmental Laboratory Accreditation Program |
| EPA | U.S. Environmental Protection Agency |
| FOD | foreign object debris |
| ft | feet / foot |
| ft ² | square feet |
| FUDS | Formerly Utilized Defense Site |
| GPS | Global Positioning System |
| GSFC | Goddard Space Flight Center |
| HHRE | human health risk evaluation |
| H&S | health and safety |
| kg | kilogram(s) |
| MBFR | Main Base Firing Range |
| MEC | munitions and explosive of concern |
| mg | milligram(s) |
| mg/kg | milligram(s) per kilogram |
| MS | matrix spike |
| MSD | matrix spike duplicate |
| NACA | National Advisory Committee for Aeronautics |
| NAOTS | Naval Aviation Ordnance Test Station |
| NASA | National Aeronautics and Space Administration |
| NCP | National Oil and Hazardous Substances Pollution Contingency Plan |
| NOAA | National Oceanic and Atmospheric Administration |

ACRONYMS AND ABBREVIATIONS

| | |
|-----------------|--|
| NTCRA | non-time-critical removal action |
| PA | Preliminary Assessment |
| PPE | personal protective equipment |
| ppb | parts per billion |
| ppm | parts per million |
| QA | quality assurance |
| QC | quality control |
| RACR | Remedial/Removal Action Completion Report |
| RAWP | Removal Action Work Plan |
| RCRA | Resource Conservation and Recovery Act |
| RPM | Remedial Project Management |
| RSL | Regional Screening Level |
| SI | Site Investigation |
| SVOC | semi-volatile organic compounds |
| TAL | target analyte list |
| TCRA | time-critical removal action |
| TCLP | Toxicity Characteristic Leaching Procedure |
| T&D | transportation and disposal |
| TOC | total organic carbon |
| TOX | total organic halogens |
| TPH | total petroleum hydrocarbons |
| TRA | Target Removal Area |
| TSCA | Toxic Substances Control Act |
| U.S. | United States |
| USC | U.S. Code |
| USACE | U.S. Army Corps of Engineers |
| USFWS | U.S. Fish and Wildlife Service |
| UXO | unexploded ordnance |
| VAC | Virginia Administrative Code |
| VDEQ | Virginia Department of Environmental Quality |
| VOC | volatile organic compound |
| WFF | Wallops Flight Facility |
| yd ³ | cubic yard |

1.0 INTRODUCTION

This Construction Completion Report has been prepared to document the Non-Time-Critical Removal Action (NTCRA) for contaminated soil at the Main Base Firing Range (MBFR) Complex, the former Pistol and Rifle Ranges (herein referred to as the “sites”) at the National Aeronautics and Space Administration (NASA) Goddard Space Flight Center’s (GSFC) Wallops Flight Facility (WFF) (herein referred to as WFF) located in Accomack County, Virginia (Figures 1-1 and 1-2). This document was prepared by Tetra Tech, Inc. (Tetra Tech) for NASA WFF under Contract No. NNG14WA44C, Task Order 08-26-2015.

The *Action Memorandum* documented NASA’s decision to conduct the NTCRA (NASA, 2016). The removal action was completed in accordance with the *Removal Action Work Plan (RAWP)* (Tetra Tech, 2016). The NTCRA was conducted under authority of and in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended, and the National Oil and Hazardous Substances Pollution Contingency Plan (NCP) as practicable (Title 40 of the Code of Federal Regulations [CFR], Section 300, Part 415 [40 CFR 300.415]).

The NTCRA consisted of the following activities.

- Clearing vegetation within the sampling/excavation grids at the former Pistol Range and former Rifle Range.
- Pre-construction sampling (i.e., confirmatory and waste characterization) at the former Pistol Range and former Rifle Range.
- Excavation of soil above the cleanup goals from the target mound at the former Rifle Range (lead), the Pistol Range target mound (lead), and from the firing point at the former Pistol Range (copper, lead, zinc, and nitroglycerin contamination).
- Post-confirmation sampling at the former Pistol Range target mound.
- Backfilling of excavated areas and site restoration.

1.1 FACILITY DESCRIPTION

WFF is located in Accomack County, Virginia, and consists of three land parcels—the Main Base, Mainland, and Wallops Island. The Main Base is composed of approximately 2,000 acres and is located near the intersection of Virginia Routes 798 and 175 (Figure 1-1). The 100-acre Mainland parcel is located 6 miles to the south of the Main Base on Virginia Route 679, and is connected to the Wallops Island parcel by a causeway constructed in 1960. The 4,600-acre Wallops Island parcel is a 7-mile-long barrier island located immediately east of the Mainland.

NASA and its predecessor, the National Advisory Committee for Aeronautics (NACA), have had a presence at WFF since 1945. In the spring of 1945, NACA leased 1,000 acres from the Wallops Island Association for use as an auxiliary base of the NACA Langley Laboratory and to provide a test range for guided missile flight research. Concurrent with NACA use, in 1946 the Navy and the Naval Aviation Ordnance Test Station (NAOTS) began leasing the northern portion of Wallops Island to test, modify, and develop guided missiles, aircraft weapons, and aviation fire control equipment. NACA initially purchased 84.87 acres of Wallops Island in July 1947, and then purchased the remaining 3,000 acres of Wallops Island through a Declaration of Taking from the Wallops Island Association. NACA then established a use permit with the Navy/NAOTS for the northern portion of the island in 1952.

NACA established a rocket launch site on the southern portion of Wallops Island (Wallops Station) in 1945 under the direction of the Langley Research Center, and launched its first rocket in that year. NACA constructed launch and radar support and experimental facilities in 1946. Access to Wallops Island at that time was by water vessel only. Operations by NACA at WFF were limited to these test facilities until 1959 (Occu-Health, 1999). NASA absorbed Langley Research Center and other NACA field centers and facilities when it was created by the U.S. government in 1958. NASA expanded its presence at WFF with the acquisition of the Main Base and Mainland parcels in 1959. The Wallops Station was named Wallops Flight Center in 1974, and the name was changed to WFF in 1981, when it became part of Goddard Space Flight Center (GSFC), Greenbelt, Maryland (Wallace, 1997).

The Navy operated the Chincoteague Naval Auxiliary Air Station at the Main Base from 1942 until the transfer to NASA in 1959. During that time, the Navy constructed runways, buildings, and other support facilities for naval aviation and aviation ordnance testing and training (Occu-Health, 1999; United States [U.S.] Army Corps of Engineers [USACE], 2000). NASA continues to maintain the runways and occupies many of the structures and buildings that were present at the time of the property transfer from the Navy. In addition, NASA has expanded and constructed additional buildings to support their mission and to provide support to other tenant organizations (NASA constructed the causeway that connects the Mainland to the island in 1960). The Navy used the north end of Wallops Island as a training area and maintained a series of ranges used to develop ordnance and ordnance delivery systems. Few permanent structures were built by the Navy and the north end of the island remains relatively undeveloped.

The mission of WFF has undergone several changes since it was established in 1959, but the main focus has been and continues to be rocket research, the management of suborbital projects, suborbital and orbital tracking, aeronautical research, and space technology research. NASA does not manufacture rockets or rocket fuels/propellants at WFF. Rocket motors are transported to the facility from other facilities.

The MBFR Complex is located at the northern portion of the Main Base, directly north of the intersection of Runway 10-28 and Runway 17-35 (Figure 1-1). The MBFR complex measures approximately 9 acres, encompassing the former Pistol Range, former Rifle Range, former Aircraft Gun Testing Range, and former Skeet Range.

1.2 OBJECTIVE AND SCOPE

As detailed in the Action Memorandum (NASA, 2016) and the RAWP (Tetra Tech, 2016), this NTCRA was being conducted by NASA under CERCLA removal action authority to reduce or eliminate human health risk and ecological risk associated with exposure to COCs in soil at the former Pistol and Rifle Ranges above cleanup levels. The risk-based cleanup goals for the COCs (copper, lead, zinc, and nitroglycerin) shown in Table 1-1 were developed in the EE/CA (Tetra Tech, 2015a). The target contaminant(s) at each site include: copper, lead, zinc, and nitroglycerin at the Pistol Range firing point, lead at the Pistol Range target mound (and surrounding berm), and lead at the Rifle Range target mound.

The scope of the project included the removal and proper disposal of soils above the established cleanup goals from the former Pistol and Rifle Ranges. Approximately 585 cubic yards (yd³) of contaminated soil from the former Pistol Range and 130 yd³ from the former Rifle Range were excavated, loaded onto dump trucks, and transported and disposed of offsite in accordance with state and federal regulations, and receiving facility permit requirements. The final excavation boundaries (horizontal and vertical extents) were primarily determined based on pre-confirmation sample results collected prior to excavation. Post-removal confirmation samples were only required from the Pistol Range target mound to confirm vertical extent of lead in soil above cleanup goals was removed. Contaminated soils from both ranges were determined to

be non-hazardous waste and were disposed in accordance with applicable laws and regulations. Upon completion, the excavations at both former ranges were backfilled with clean fill material and a layer of top soil was placed, graded to match surrounding landscape, and seeded with an approved seed mix. Erosion control matting was used during restoration at the Pistol and Rifle Range target mounds to minimize any potential erosion prior to regrowth of vegetation.

1.3 REPORT ORGANIZATION

This report provides general project implementation information and the approach used in conducting the NTCRA at the former Pistol Range and former Rifle Range. This report consists of five sections. Section 1.0 provides the introduction and scope and objectives of the NTCRA. Section 2.0 provides a summary of the site background and previous investigations. Section 3.0 provides a summary of the sample collection and data evaluation of the pre-construction, confirmation, backfill and top soil, and waste characterization samples. Section 4.0 provides a summary of excavation, site restoration activities, and other relevant construction/field activities. Section 5.0 provides conclusions and recommendations. The References section follows Section 5.0. Tables and figures are provided after the References section.

2.0 SITE DESCRIPTION, BACKGROUND, AND HISTORY

2.1 MBFR COMPLEX

The MBFR Complex is located on a peninsula-like feature adjacent to and south of Little Mosquito Creek. The MBFR Complex measures approximately nine acres, encompassing the former Pistol Range, former Rifle Range, former Aircraft Gun testing Range, and former Skeet Range. The former Skeet Range is being investigated and addressed separately from these other former ranges and not a part of this NTCRA. The southern half and the central portion of the MBFR Complex, generally coinciding with the former Pistol, Rifle and Aircraft Gun Testing Ranges, is relatively flat and covered mostly by grasses and pine trees. The Rifle Range and Pistol Range target mounds are the topographic high spots at the MBFR Complex with maximum elevations at approximately 45 feet (ft) above mean sea level (msl). The perimeter of the area consists of gentle slopes ranging from 1 to 4 percent to the northwest, north, and east with a steeper slope to the west of the ranges. There are no streams within or adjacent to the ranges and drainage throughout the area is by overland sheet flow toward Little Mosquito Creek and the wetlands that border the creek. Little Mosquito Creek is located about 400 ft to the north of the ranges.

Much of the range area consists of regularly mowed upland grassland (Figure 1-2). Although none of the range facilities are operational, large portions are kept mowed as part of maintaining the adjoining airfield and NOAA facilities. Several areas that are no longer mowed have reverted to support old field vegetation comprising of perennial grasses and forbs with scattered low shrubs and saplings. The largest areas of old field vegetation are within the former Pistol and Rifle Ranges and north and east of the fenced NOAA area. Small areas around the former Pistol Range support scrub vegetation consisting primarily of densely spaced loblolly pine saplings. Large areas north, east, and west of the former Pistol and Rifle Ranges support dense scrub dominated by deciduous saplings such as black cherry and deciduous shrubs such as bush honeysuckles. The northern and northeastern portion of the former range area, located on the NOAA leased property, contains the only wetlands present nearby. The non-tidal wetlands are located approximately 400 feet east of the Rifle Range target mound and are considered a mixture of palustrine emergent and palustrine scrub-shrub wetland dominated by dense herbaceous vegetation. Scattered woody saplings and shrubs occur along the dry (upper) edge of the wetland as well as in patches throughout the wetland. Section 2.2 of the SI report presents a detailed habitat assessment of the entire MBFR Complex and surrounding areas (Tetra Tech, 2009).

The former Pistol, Rifle, and Aircraft Gun Testing Ranges are undeveloped and the Facility Master Plan indicates the area will remain undeveloped due to the height and occupancy restrictions in place for the active airport runways, which are important to the facility mission.

2.1.1 Pistol Range

The former Pistol Range is located along the western perimeter of the MBFR Complex and includes the firing line shelter (Building A-27), the backstop or target mound area (structure number A-38) built into / connected to a U-shaped earthen mound and berm. The firing line shelter was a 25-ft by 50-ft canopy-type structure open on all sides, and was utilized by shooters as the main firing point. Underlying the firing line shelter is a concrete slab that is approximately 18 inches thick. The target mound is located approximately 100 ft north-northeast of firing line shelter. The target area mound and concrete backstop structure measures 65-ft-wide by 15-ft-high by 21-ft-deep. It was initially constructed in 1944 as the target area for the Aircraft Gun Testing Range (AGTR) until the area was converted to the Pistol Range sometime between 1948 and 1953. The U-shaped berm begins near the northeast corner of the firing line shelter and extends

toward the target mound. It continues around the north side of target structure and extends back to near the northwest corner of firing line structure. The area between the firing line and the target mound/backstop and entire surface of the earthen mound was overgrown with trees and brush, before it was cleared for this NTCRA. The overall height of the earthen target mound is approximately 8 ft. The former Pistol Range site is bounded by the facility boundary fence on the eastern and southern perimeters, with wooded areas to the west and north. The perimeter gate (Gate #10) is located southeast of the firing line structure, see Figure 2-1.

2.1.2 Rifle Range

The former Rifle Range is located adjacent to and east of the former Pistol Range (Figure 1-2). This 300-yard-range included individual firing points located at 100-yard intervals (i.e., at 100, 200, and 300 yards) and a large earthen target mound. The former Rifle Range is oriented in an approximate north-south direction with the target mound at the extreme northern perimeter of the range. The entire earthen mound backstop was heavily overgrown with trees and brush, before it was cleared prior to excavation. The mound is approximately 50-ft long by 40-ft wide by 25-ft high. The majority of the former Rifle Range consists of an open grass field. A chain-link fence crosses through the range between the 100-yard firing point and the target mound (Figure 1-2).

2.1.3 Former Aircraft Gun Testing Range (AGTR)

The former AGTR was located south-southwest of the former Pistol Range (Figure 1-2). The range was constructed in 1944 as part of the naval aviation training facilities and was later converted to function as the Pistol Range for the Navy and NASA. The former AGTR was used to test and harmonize aircraft-mounted machine guns and available historical records indicated .30, .50, .38, and .45 caliber, along with 20 mm and 30 mm guns were fired at the range. Sometime before 1953, the use of the range was changed from the Aircraft Gun Testing Range to the Pistol Range. Details on the actual years of operation and the date of closure of the AGTR are not known. A small taxiway or spur is still present between Runway 17-35 and the taxiway and it is surmised/assumed that planes parked on the spur and fired into the butt or target mound (A-38). This target mound and the risks associated with lead in soil were addressed in this NTCRA as a part of the former Pistol Range. Soil from within the AGTR firing point area were sampled and analyzed in June 2015 for residual explosives. Based on the sampling results, risk from residual explosives was not a concern and no additional action was required at the AGTR (Tetra Tech, 2015a and 2015b).

2.2 SITE HISTORY

As mentioned above, the former AGTR was constructed in 1944 following completion of the runways (USACE, 2005). At this time the airfield was used as a training facility for naval aviation units. The AGTR, also known as the harmonization range, was used to “harmonize” or aim aircraft guns. The impact area for this range was the earthen mound (Structure A-38) located at the northern perimeter of the range. The range extended approximately 400 yards from the taxiway east of Runway 17-35, where the aircraft were positioned, to fire into Structure A-38. The first 30 mm U.S aircraft machine gun was test fired at this range and available information indicates that 20 mm rounds were also fired at this location (USACE, 2005). No information can be found to indicate the years the range was operational and/or exactly when the range was closed.

The former Skeet Range, originally referred to as the Shotgun Range or High Tower Range, was initially constructed in 1944 with a northeasterly direction of fire. Sometime between 1945 and 1948, the High Tower Range was replaced with a new reconfigured skeet range with an easterly direction of fire. Sighting training towers were also constructed at this time. The former Skeet Range complex included four buildings

constructed on the north side of Runway 10-28 and immediately east of the approach of Runway 17-35. Buildings included the Skeet Range trap house, Skeet Range store house, and two observation towers for the range. The former Skeet Range had a single firing line with the safety fan of 900 ft radius extending from the point of fire and in the direction of fire.

The former Pistol Range was constructed in 1948 (USACE, 2005). The former Pistol Range used the concrete/earthen berm (Structure A-38) for firing impact and Structure A-27 as the firing line. Based on available information, the former Pistol Range was used through 1999.

The former Rifle Range was constructed in 1951 east of and adjacent to the former Pistol Range (USACE, 2005). Structure A-131 was utilized as the Rifle Range support building. The range included 100-, 200-, and 300-yard firing points and a large earthen target mound at the northern perimeter of the range.

The earliest documented information related to NASA's use of the MBFR Complex is a usage procedure published in November 1984: NASA required that all personnel wishing to use the MBFR Complex obtain a Rifle and Pistol Range Pass (Floyd, 1984). Available information indicates that security forces from NASA and tenant organizations (Navy and U.S. Coast Guard) used the ranges. Anecdotal information also indicates that the ranges may have been used for recreational purposes by permission and permit.

NASA Safety personnel conducted a survey of the MBFR Complex in September 1992 (Moore, 1992). Based on this survey, NASA concluded that the range was unsafe for recreational use and it would remain closed to unauthorized personnel. The survey report indicated that the range would continue to be utilized by NASA Security, Navy Security, and other law enforcement agencies for the purpose of qualifying their personnel in handgun use, provided the shooting was under the control and direction of a certified range instructor with at least two trained safety officers observing the firing line at all times.

Additional file information from July 12, 1999, indicates that Navy and U.S. Coast Guard personnel were continuing to use the Pistol Range for qualification purposes (Drawdy, 1999). The MBFR Complex was closed to all personnel on October 29, 1999, and has remained closed (Massey, 1999). NASA has determined that the range will not be reopened.

2.3 PREVIOUS SITE INVESTIGATIONS AND ACTIONS

A Site Investigation (SI) of the MBFR Complex was conducted in October and November 2007. The investigation included the installation of monitoring wells and the collection and analysis of soil and groundwater samples. Ecological and human health risk evaluations were completed for each range separately as part of the SI (Tetra Tech, 2009). No other investigations have been conducted at the MBFR Complex and the following paragraphs summarize the SI sampling activities and conclusions for the former Pistol and Rifle Ranges.

During the 2007 SI, groundwater samples were collected from five monitoring wells and analyzed for Target Analyte List (TAL) metals (total) at the MBFR Complex. Select groundwater samples were also analyzed for polycyclic aromatic hydrocarbons (PAHs), explosives, and perchlorate. Total iron and manganese detections in one sample exceeded the tap water risk-based concentrations (RBCs) and the calculated non-carcinogenic hazard for residential exposure to iron and manganese at these concentrations in groundwater exceeded a Hazard Index (HI) of 1. However, these iron and manganese concentrations were within the range of facility background concentrations (iron at 452 to 50,000 µg/L; manganese at 4.5 to 3,110 µg/L) (Tetra Tech, 2004). All other detected contaminants were below their respective RBC values.

Ten soil samples were also collected during the 2007 SI at the former Pistol Range and analyzed for TAL metals, total organic carbon (TOC), pH, and grain size; seven of those soil samples were also analyzed for explosives. Eighteen soil samples were collected from the former Rifle Range and analyzed for TAL metals, TOC, pH, and grain size. Select samples were also analyzed for explosives. The analytical results from these soil samples were evaluated in the SI and a human health risk evaluation (HHRE) was conducted to identify chemicals of potential concern (COPCs) and determine risks (see Section 4 of the 2009 SI Report; Tetra Tech, 2009). An ecological risk screening was also conducted for terrestrial plants, invertebrates, and small mammals and birds (Tetra Tech, 2009).

The SI activities at the former Pistol and Rifle Ranges adequately characterized the habitat, potential contaminant sources, potential contaminant migration pathways, and potential risks posed to ecological and human health receptors by media. Soil was the primary concern at the former Pistol and Rifle Ranges. The SI Report recommended that no further evaluation of groundwater was necessary and future actions should be taken to address potential human health and ecological risks associated with soils contained within the target mound and firing line at the former Pistol Range and within the target mound at the former Rifle Range.

Further actions at the MBFR Complex as a whole were delayed until responsibility for the site(s) was determined. In 2014, NASA and USACE agreed that NASA would address the former Pistol and Rifle Ranges.

In 2014, the 2009 SI risk screenings were updated to determine if the conclusions from the SI were still valid or had changed. The *Site Summary and Risk Re-evaluation Report* (Tetra Tech, 2015c) determined that there were no significant changes to the results and conclusions of the human health and ecological risk screenings presented for the former ranges in the SI (Tetra Tech, 2009). Therefore, the recommendations from the SI Report were still valid: No further evaluation for groundwater is necessary, but further response actions are needed to address potential human health and ecological risks associated with exposure to soils within the target mound and firing line at the former Pistol Range and within the target mound at the former Rifle Range.

Supplemental sampling was conducted at the former Rifle Range firing points and AGTR in June 2015 to support the EE/CA (Tetra Tech, 2015a and 2015b). Soil samples from both areas were analyzed for residual explosives to fill sampling data gaps identified in these areas. Based on the sampling results, risk from residual explosives was not a concern and no additional action was required at the Rifle Range firing points or at the AGTR firing point (see Appendix A of the EE/CA). The EE/CA (Tetra Tech, 2015a) presented excavation alternatives (2A/2B – Excavation and Offsite Disposal) and a cover alternative (Alternative 3 – Bioengineered Soil Cover and Land Use Controls [LUCs]). The NASA Remedial Project Management (RPM) Team, whose members include representatives from NASA, United States Environmental Protection Agency (EPA), and Virginia Department of Environmental Quality (VDEQ) agreed to implement the Removal Alternative 2A/2B for the NTCRA at the former ranges. The Removal Action cleanup goals were developed and then approved by the RPM Team in the EE/CA. These cleanup goals provided a basis for the pre-confirmatory sampling developed for the NTCRA. Pre-confirmatory sampling for the NTCRA was presented in the RAWP (Tetra Tech, 2016). The Removal Action cleanup goals for the former Pistol and Rifle Ranges are presented in Table 1-1.

3.0 SAMPLE COLLECTION AND DATA EVALUATION

In support of the NTCRA at the former Pistol and Rifle Ranges, pre-construction sampling was conducted and included the collection of pre-confirmation samples (delineation), pre-characterization samples (waste), and samples of backfill and topsoil used for site restoration. This section documents the collection of these pre-construction samples and presents and evaluates the analytical results. All sampling activities conducted during this NTCRA were conducted in accordance with the RAWP (Tetra Tech, 2016).

All samples collected during this project were analyzed by a Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP)-certified and Virginia ELAP-approved laboratory, Katahdin Analytical Services, Inc. of Scarborough, Maine. Quality control and quality assurance (QA/QC) samples associated with the pre-construction samples included duplicates and matrix spike/matrix spike duplicate (MS/MSD) samples. Chain-of-custody (CoC) forms documenting collection of these samples are provided in Appendix A and Appendix B presents the validation reports providing analytical results for the sampling conducting as part of the NTCRA. Field activities for the Pistol and Rifle Ranges are summarized below.

3.1 PRE-CONSTRUCTION SAMPLING

The pre-construction soil sampling at the former Pistol and Rifle Ranges was conducted from June 6 through June 9, and on June 22, 2016. Pre-confirmation samples were collected to further define and finalize the excavation limits and pre-characterization samples were collected to characterize the soils at these former ranges for disposal. The pre-construction sampling for both ranges included confirmation soil samples within the excavation grids, waste characterization samples (Section 3.5), and also the collection of samples from the backfill and topsoil being used for site restoration activities (Section 3.4). A global positioning system (GPS) unit and survey tape were used in the field to establish the pre-construction sampling grids at the former Pistol and Rifle Ranges, see Figures 3-1 and 3-3, respectively. The soil samples were collected manually via hand auger which was decontaminated between each sampling grid. Samples collected from 0 to 1 ft bgs were five-point composites, while samples collected below 1 ft bgs were collected as discrete samples. The deeper soil samples (typically below 1 ft bgs) from each grid were placed on hold and were only analyzed if the concentration of the overlying sample exceeded the maximum clean goal(s). All pre-confirmation soil samples collected at the Pistol and Rifle Range target mounds were analyzed for lead and pre-confirmation soil samples collected at the former firing line of the Pistol Range were analyzed for lead, copper, zinc, and nitroglycerin.

Pistol Range

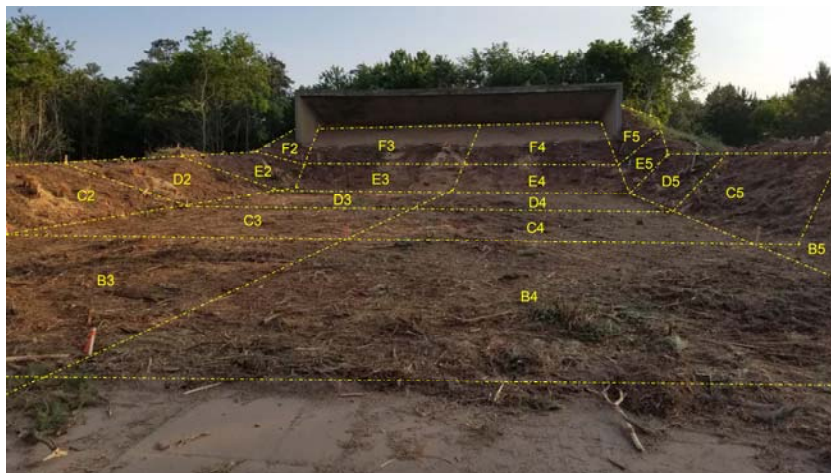
Pre-construction soil samples from the former Pistol Range were collected on June 6, 7, and 8, 2016. Table 3-1 provides a summary of the pre-construction samples collected and the analytical results at the Pistol Range. Figure 3-1 and 3-2 present the sample grid layout (also see photograph below) and pre-confirmation sampling results at the former Pistol Range. Five-point composite samples were collected from the first two depth intervals (0 to 6 inches and 6 to 12 inches) within 37 of the 40 sampling grids. Below 12 inches, discrete samples were collected from the center of the grids, A1 through A6, B1 through B6, E4, F1 through F6, and G1 through G4. Grids F3 and F4 were not sampled from 0 to 24 inches since historical samples showed lead concentrations exceeding the maximum cleanup goal down to 2 foot bgs. Pre-characterization waste samples are discussed in Section 3.5.

The firing line structure had a concrete pad foundation that was over 18 inches thick. The concrete pad spatially comprised the majority of grids A3 and A4, see Figure 3-1. The small portions of grids A3 and A4

which were not covered by concrete were sampled as three-point composite samples (with RPM Team approval of the Field Task Modification-01). No samples were collected underneath the concrete pad.

Pre-confirmation samples collected from grids A1 through A6 and grids B1 through B6 were analyzed for lead, copper, zinc, and nitroglycerin. Pre-confirmation samples collected from grids (C1 through C6, D1 through D6, E1 through E6, F1 through F6, and G1 through G4) were analyzed for lead only.

In total, 115 pre-construction soil samples were collected from the former Pistol Range during this event. CoC forms documenting the collection of these samples are provided in Appendix A.



Sampling grid layout at the Pistol Range

Rifle Range

Pre-construction soil samples from the former Rifle Range were collected on June 8, 9, and 22, 2016. Table 3-2 provides a summary of the samples collected at the former Rifle Range. Figure 3-3 depicts the sample grid layout (also see photograph below) and the sample results at the former Rifle Range. Discrete soil samples were collected from the center of each grid down to predetermined depths, specific to that grid. Based on the initial sampling results, grids C1A, C9, and D9 were added to the sampling plan based on the results from adjacent grids and is discussed below in Section 3.2 and in Section 3.3.3. All pre-construction samples collected from the former Rifle Range were analyzed for lead. In total there were 164 pre-construction soil samples collected from the former Rifle Range. Pre-characterization samples are discussed in Section 3.5. CoC forms documenting the collection of these samples are provided in Appendix A.



Sampling grid layout at the Rifle Range

3.2 ADDITIONAL CONFIRMATION SAMPLING

The analytical results from the pre-confirmation sampling were compiled along with a draft excavation plan and presented to the RPM Team via email on June 24, 2016. As discussed above, the sampling grid at the Rifle Range was expanded (grids C1A, C9, and D9) due to the initial sampling results and additional soil samples were collected to delineate lead at the Rifle Range on June 22, 2016. It was also determined that additional excavation would be required from Pistol Range Grids F3 and F4 to achieve cleanup goals and the RPM Team determined that additional soil confirmatory samples would be required to determine the final excavation depth from grids F3 and F4 at the Pistol Range. The CoC forms documenting the collection of these additional samples are provided in Appendix A.

On July 7, 2016 soil confirmation samples were collected from 60-72 inches from both F3 and F4, grids that comprised the Pistol Range target mound. Based on the analytical results, which is further discussed in Section 3.3, it was determined additional excavation in grid F3 was needed to meet the cleanup requirements. On July 11, 2016 a soil confirmation sample was collected from 84-96 inches in grid F3 after further excavation. Analytical data from the sample collected from 84-96 inch (79.4 mg/kg) was below the cleanup goal.

Analytical results from the additional confirmation sampling at the Pistol Range were submitted to the RPM Team on July 13, 2016. The Team determined the confirmation sampling to be adequate and no additional confirmation sampling was required and excavation at the Pistol Range to be complete.

3.3 CONFIRMATION SAMPLE RESULTS AND DATA EVALUATION

3.3.1 Pistol Range Pre-Confirmation Sample Results

Of the 115 pre-confirmatory soil samples which were collected from the former Pistol Range, only 90 were analyzed. All 90 samples were analyzed for lead, while 23 samples, from grid rows A and B, were also analyzed for copper, zinc, and nitroglycerin. Sample results from the former Pistol Range are presented on Table 3-1 and Figures 3-1 and 3-2.

Concentrations of lead exceeded the maximum cleanup goal of 480 mg/kg in four of the pre-confirmation soil samples. These four samples were from 0-6 inches at E3 (486 mg/kg), from 0-6 inches and 6-12 inches at E4 (507 mg/kg and 557 mg/kg, respectively), and the sample from 0-6 inches at F2 (721 mg/kg).

Concentrations of nitroglycerin exceeded the maximum cleanup goal of 6.2 mg/kg in one pre-confirmatory soil sample location, from 0-6 inches at B3 (32 mg/kg).

Copper and zinc were not detected at concentrations in excess of their maximum cleanup goals. The maximum concentration of copper was 48.5 mg/kg at A2 from 6-12 inches, below the maximum cleanup goal of 280 mg/kg. The maximum concentration of zinc was 243 mg/kg found in the sample at grid A2 from 6-12 inches, below the maximum cleanup goal of 480 mg/kg.

Additional confirmation sampling was conducted at the target mound of the former Pistol Range in grids F3 and F4. The results from the first phase of confirmation sampling determined additional excavation of the target mound was required. Samples results from 60-72 inches bgs at F3 and F4 had lead concentrations of 940 mg/kg and 243 mg/kg, respectively. The sample from F3 had a lead concentration which exceeded the maximum cleanup goal (480 mg/kg) requiring additional excavation and another confirmation sample to be collected. The sample result from 84-96 inches at F3 had a lead concentration of 79.4 mg/kg.

No other confirmation samples were needed since each grid had a bottom sample with concentrations below the maximum cleanup goals.

3.3.2 Pistol Range Data Evaluation

Pre-confirmation soil sample data were utilized to determine the actual depth of excavation required within each grid to meet cleanup goals. Figure 3-4 shows the revised limits of excavation and final excavation depths based on a comparison of the soil data to the maximum cleanup levels. The grids which were excavated based on the analytical results were as follows:

- B3, B4, E3, and F2 excavated to slightly deeper than 6 inches bgs.
- E4 excavated to slightly deeper than 12 inches bgs.
- F3 excavated to 84 inches bgs.
- F4 excavated to 60 inches bgs.

As shown on Figure 3-4, grids A3 and A4 were also excavated to a depth of approximately 6 to 12 inches bgs. These two grids were excavated due to the abundance of small caliber casings observed on the east and west sides of the concrete slab foundation of the former firing line shelter. Spent casings were also observed on the north side of the concrete slab in grids B3 and B4 which were excavated based on analytical results. Analytical results for grids A3 and A4 indicated concentrations of copper, lead, and zinc were below clean up levels. However, based on the visual evidence of spent casings observed in grids A3 and A4, these grids were excavated as a part of this NTCRA.

The analytical results were compared to the cleanup goals established for residual average. The average copper, lead, zinc, and nitroglycerin concentrations were calculated pre- and post-excavation, see Table 3-3 and 3-4. For the post-excavation values, a residual average using concentrations from the deeper sample interval was used in place of the excavated zone and depths within each grid. As shown on the Tables, the post-excavation residual average was calculated using the arithmetic mean and values were below the established residual average goals for copper, lead, and zinc.

3.3.3 Rifle Range Pre-Confirmation Sampling Results

Of the 164 pre-confirmatory soil samples which were collected from the former Rifle Range, only 119 were analyzed. All 119 samples were analyzed for lead. Sample results from the former Rifle Range are presented on Table 3-2 and Figure 3-3.

Concentrations of lead exceeded the maximum cleanup goal of 480 mg/kg in 18 pre-construction soil samples. These 18 samples included the samples from 0-6 inches at B4, B5, B6, C4, C5, C6, D4, D6, and D8; the samples from 6-12 inches at C1, C3, C4, and C8; the samples from 12-24 inches at C3, C4, C5, and C6; and the sample from 24-36 inches at C4. The maximum lead concentration was found in the sample from 0-6 inches at D4 at 14,100 mg/kg.

The sampling grid at the Rifle Range was expanded with grids C1A, C9, and D9 due to the sample results with lead concentrations over the maximum cleanup goal observed in grids C1, C8, and D8. The additional samples were collected on June 22, 2016 from C1A, C9, and D9. The lead concentrations in these three added sampling grids were below the maximum cleanup goal, see Figure 3-3. Therefore no additional confirmation sampling was required at the former Rifle Range and the excavation plan was finalized and approved by the RPM Team.

3.3.4 Rifle Range Data Evaluation

Pre-confirmation soil sample data was utilized to determine the depth of excavation within each grid. Figure 3-5 shows the revised limits of excavation and excavation depths based on a comparison of the sample data to the maximum cleanup levels. Grids C2, D5, and D7 were included as part of the excavation to support efficient excavation of the adjacent grids requiring removal. The grids and depths which were excavated as part of this removal action were as follows:

- B4, B5, B6, D4, D5, D6, D7, and D8 excavated slightly deeper than 6 inches bgs.
- C1, C2, and C8 excavated slightly deeper than 1 ft bgs.
- C3, C5, C6, and C7 excavated to 24 inches bgs.
- C4 excavated to 36 inches bgs.

The soil analytical results were compared to the cleanup goals established for residual average. The average lead concentrations were calculated pre- and post-excavation, see Table 3-5. For the post-excavation values, the concentration from the unexcavated deeper sample interval was used in place of the excavated sample intervals within each grid. As shown on Table 3-5, the post-excavation residual average was calculated using the arithmetic mean and values were below the established residual average goal of 240 mg/kg for lead.

3.4 BACKFILL/TOPSOIL MATERIAL SAMPLING AND RESULTS

On June 7, 2016, samples were collected from the backfill (MBFR-BACKFILL01-060716) and topsoil (MBFR-TOPSOIL01-060716) material located at an offsite borrow pit (Wattsville Pit) owned/operated by Branscome, Inc. located in Atlantic, Virginia. These samples were collected to confirm suitability for backfill use during final site restoration. The samples were analyzed for the following: benzene, toluene, ethylbenzene, and xylene (BTEX); total petroleum hydrocarbon (TPH) – diesel-range organics (TPH DRO), and lead, copper, and zinc.

Analytical results indicated the material was suitable for use in accordance with the clean fill requirements as provided in the RAWP. The backfill and topsoil material met the Virginia requirements for clean fill with total petroleum hydrocarbons (TPH) diesel range organics (DRO) concentration below 50 mg/kg and a total BTEX concentration below 10 mg/kg (9 Virginia Administrative Code [VAC] 20 80 700[D][5]). Concentrations of lead (1.08 and 6.16 mg/kg), copper (1.09 and 16.4 mg/kg), and zinc (3.67 and 24.4 mg/kg) in the backfill and topsoil samples were below their respective cleanup goals of 280 mg/kg (copper), 480 mg/kg (lead), and 480 mg/kg (zinc). These concentrations were also less than WFF background levels and the EPA industrial RSLs. Analytical results for backfill and topsoil samples are provided in Appendix C.

3.5 WASTE CHARACTERIZATION SAMPLING AND RESULTS

Waste pre-characterization samples were collected in-situ prior to excavation at both ranges. Waste characterization sampling was conducted between June 6, and June 9, 2016 during the pre-construction sampling. Composite samples were collected and analyzed for Toxicity Characteristic Leaching Procedure (TCLP) volatile organic compound (VOCs), TCLP semivolatile organic compounds (SVOCs), TCLP metals, total organic halides (TOX), total petroleum hydrocarbons (TPH) diesel range organics (DRO), and total benzene, toluene, ethylbenzene, and xylenes (BTEX).

At the former Pistol Range, the composite waste sample was comprised of samples collected from the center of each grid location throughout each grouping of grid-rows as follows:

- Firing Point – Grid Rows A and B at 0 to 24 inches
 - PR-SOCHAR01-0024
- Target Mound – Grid Rows F through G at both 0 to 24 inches and 24 to 36 inches
 - PR-SOCHAR02-0024
 - PR-SOCHAR02-2436

At the former Rifle Range, two composite samples were obtained from the center of following grid locations: B3, B6, C5, D3, D6, and F7 at both 0 to 24 inches and 24 to 48 inches (RR-SOCHAR01-0024 and RR-SOCHAR01-2436).

Analytical results for waste characterization samples from both ranges determined the soil at the former ranges was non-hazardous. Lead was the primary constituent driving waste characterization for the ranges and TCLP samples showed lead levels below the 5 mg/L threshold for hazardous classification in all five composite samples.

Aqueous waste was generated during this project from decontamination of sampling and construction equipment. A composite sample of the aqueous construction-derived and investigation-derived waste was collected (MBFR-AQCHAR1-072016) and analyzed for PCBs, TCLP VOCs, SVOCs, and metals; TPH DRO; BTEX, and TOX. Analytical results confirmed aqueous waste was non-hazardous.

The CoC forms documenting collection of waste characterization samples are included in Appendix A and analytical results are presented in Appendix C.

4.0 SUMMARY OF CONSTRUCTION ACTIVITIES

The NTCRA construction activities at the former Pistol and Rifle Ranges were performed by Clearfield MMG under the technical oversight of Tetra Tech. Site preparation activities began on May 23, 2016 and the following sections provide details of the construction activities. Photographs of construction activities are provided in Appendix D. Construction activities/production details were documented in daily construction reports (Appendix E).

4.1 PRE-CONSTRUCTION MEETING

On May 23, 2016, a pre-construction meeting occurred with representatives of NASA WFF, Tetra Tech, and Clearfield MMG. The meeting included discussion and communication regarding general approach/procedures for conducting the NTCRA, Health and Safety, site and perimeter gate access, airfield procedures, communication, and security.

4.2 MOBILIZATION AND SITE PREPARATION

On May 23, 2016, Tetra Tech and Clearfield MMG mobilized to NASA WFF. All site personnel attended the pre-construction meeting and also an unexploded ordnance (UXO) awareness training prior to the start of field work. There were no known underground or aboveground utilities within either excavation areas at the former Pistol or Rifle Ranges. NASA confirmed the excavation areas were clear of utilities and issued the dig permit. NASA marked the underground utilities present inside the perimeter fence in and around the staging area and along portions of the truck route.

A health and safety briefing was also conducted on May 23, 2016 prior to commencing work onsite. The briefing included a review of the health and safety plan and specifically addressed site hazards, airfield safety and procedures, site communication, work area designation, hospital route and emergency protocols during the removal action.

Trucking access route preparation, site clearing and other site preparation activities were conducted at the former Pistol and Rifle Ranges. The truck route utilized existing asphalt and concrete roads at NASA WFF, a small strip of Runway 17-35 (for crossing), and dirt/grass sections or areas around the taxiway and near the perimeter fence. For the unpaved portions of the trucking route, Solidground® traction mats were utilized to provide a stable surface for truck traffic. Due to the use of and the proximity of the site to Runway 17-35, rumble strips were used in conjunction with daily sweeping to prevent foreign object debris (FOD) from being tracked onto the runway.

Site clearing commenced on May 23, 2016 and was completed on May 27, 2016. Site clearing activities included the use of a Caterpillar® multi-terrain loader with a mulching attachment that was used to fell trees and grind stumps down close to existing grade. On the berms and target mounds where slopes did not allow equipment access, trees were felled manually with chainsaws. The felled trees were moved with a Caterpillar® multi-terrain loader equipped with a grapple bucket attachment and stockpiled onsite outside the excavation work areas. These stockpiled trees were later chipped and spread around outside the perimeter fence.

The work zones were established and communicated with the work crew. Erosion and sediment (E&S) controls were installed around both range sites, emergency spill management equipment was prepared, the staging areas (i.e., materials handling areas) and decontamination area were also established. Work zones were established and clearly delineated using fencing and signage. The material handling areas

were located adjacent to the excavations to minimize handling and therefore limit the potential for contaminating clean areas. The heavy equipment was inspected prior to initial use and checked daily to ensure the equipment was clean and in proper working order.

Pre-construction sampling commenced on June 6, 2016 and continued through June 22, 2016. The final excavation plans for the NTCRA at the ranges are presented in Figures 3-4 and 3-5. Grade stakes and flagging were used to mark and designate the excavation boundaries and grid corners within each of the excavation areas. Excavation depths and backfill grades were measured and monitored by onsite personnel throughout the project.

E&S controls (silt fencing) were installed around the excavation limits at each site and along the haul route as determined necessary based on existing slopes and potential areas that could be eroded during rain events. The silt fencing was inspected and maintained throughout the project in accordance with the *Virginia Erosion and Sediment Control Handbook, 3rd Ed, 1992*.

A temporary holding area for excavated soil was not required for either range since the excavated soil was loaded directly into trucks. A saddle tank installed on a pickup truck was used to directly re-fuel equipment throughout the project. A spill kit containing absorbent pads/material was located at the staging area. Fifty-five-gallon drums were stored in a temporary containment pad constructed and placed on the asphalt parking area near Building A-131 to containerize drums of decontamination fluids.

Signage and caution tape were maintained throughout the entire project to control access to the staging area and the ranges during excavation. Access to the exclusion zone for each range was controlled by Gate #10 (locked at all times if not working onsite) and signage designating the work area. A visitor log was maintained by Tetra Tech throughout construction activities.

4.3 EXCAVATION AND DISPOSAL

Soil excavation activities at the former Rifle Range commenced on June 29, 2016, and were completed on July 1, 2016. The excavation was conducted with a Caterpillar® 320e excavator. The excavator removed soil to the pre-determined depth(s) (i.e., determined by comparing pre-construction sampling results to the cleanup goals, see Table 1-1) as presented in Figure 3-5. The excavation commenced with the grids at the top of the target mound (D4 through D8) being dug first, followed by the grids in the middle of the target mound (C1 through C8), and finally the grids at the bottom of the target mound (B4 through B6). The excavated soil was temporarily consolidated within the excavation areas and loaded directly into the trucks, manifested, and hauled offsite to the disposal facility. All debris and vegetative material that were in contact with contaminated soil were hauled offsite for disposal with the soil.

Soil excavation activities at the former Pistol Range commenced on July 1, 2016, and were completed on July 12, 2016. The excavation was conducted with a Caterpillar® 320e excavator. The excavator removed soil to the pre-determined depth(s) (i.e., determined by comparing pre-construction sampling results to the cleanup goal, see Table 1-1) as presented in Figure 3-4. The excavation commenced with the excavation of the target mound or backstop area (F and E Series Grids) followed by excavation of the firing line area (Grids A and B). The excavated soils from each area were consolidated in the excavation areas and directly loaded into the trucks, manifested, and hauled offsite to the disposal facility. All debris and vegetative material that were in contact with contaminated soil were hauled offsite with the soils.

Excavation depths and backfill grades in each grid square were measured and monitored by onsite personnel throughout the project.

Analytical results from waste characterization and confirmation samples determined all excavated soils and materials were non-hazardous and suitable for disposal at the Clearfield MMG Suffolk Plant, located in Suffolk, Virginia. Shipping papers (manifests) were completed for each load and the appropriate copies accompanied each load. NASA WFF personnel signed all manifests and transportation of all waste materials was conducted in accordance with applicable federal and state regulations. The excavated soils were disposed of in accordance with state and federal regulations and receiving facility permit requirements, and coordinated with NASA WFF personnel. The following paperwork, documenting the proper disposal of the excavated soil and other materials disposed of from the ranges, is included in Appendix F:

- Manifest summary
- Final, signed non-hazardous shipping manifests
- Weigh tickets

A total of 905 tons (715 CY) of lead impacted soil and contaminated material (RCRA non-hazardous) were removed from the ranges and disposed of appropriately. Forty-eight truckloads were required to transport all the excavated soil and contaminated material to the disposal facility.

After completion of the excavation activities at the ranges, a decontamination pad consisting of polyethylene sheeting was constructed on the concrete pad at the former Pistol Range. The excavator and traction mats that came into contact with contaminated soil were pressure washed with potable water and soap. All wash water was containerized in 55-gallon drums and moved to the asphalt area and containment pad adjacent to Building A-131. NASA personnel transferred the drums from A-131 to Building B-29 for temporary storage until waste characterization could determine proper disposal (see Section 3.4). All non-hazardous construction debris and used personal protective equipment (PPE) (i.e., nitrile gloves, Tyvek® suits) were disposed of as general refuse.

4.4 RESTORATION ACTIVITIES

Clean backfill material and topsoil from the Branscome, Inc's. Wattsville Pit was delivered to the site and stockpiled. As described in Section 3.4, backfill and topsoil material was analyzed and confirmed clean and suitable for use in site restoration. In accordance with the RAWP, the backfill material was placed and graded to stabilize area and reshaped to match surrounding topography. Compaction was achieved by multiple passes of the excavator and/or bulldozer. Once the placement/grading of backfill material was complete, a layer of topsoil was spread across excavated areas. The topsoil layer was installed as an organic base to help vegetation re-establish at the sites. Placement of backfill and topsoil was completed on July 14, 2016 at the former Rifle Range and on July 19, 2016 at the former Pistol Range. Delivery of a total of 720 CY of clean backfill and 195 CY of topsoil was needed for restoration and tracked through delivery tickets (Appendix G). On July 20, 2016, NASA conducted a final inspection of the excavation and backfilled areas and confirmed work was completed in accordance with the RAWP.

Final restoration of the former Pistol and Rifle Ranges was accomplished by spreading tall fescue at 1 lbs. per 200 ft² and 10-10-10 all-purpose fertilizer at approximately 1 lbs. per 100 ft² on all the disturbed areas from construction activities. After the seed and fertilizer was spread, coconut fiber erosion control matting was installed on the slopes of the former target mounds and a layer of straw matting was placed on all disturbed areas of the former Pistol and Rifle Ranges to assist in the establishment of vegetation. Seeding, fertilizing, and erosion control measures were finalized at the former Pistol and Rifle Ranges on July 21, 2016.

The haul routes, both dirt and asphalt, required restoration due to truck traffic. The dirt haul routes required the ruts to be filled in, graded, and seeded. As for the asphalt road, a 300-foot stretch of asphalt was severely cracked and rutted due to its poor original construction (only a few inches thick and built with no compacted subbase material) and the heavy truck traffic. The deteriorated asphalt was pulled up on July 14 and 15, 2016. Approximately 55 CY of asphalt were hauled to an asphalt recycling facility. The stripped road was then dug down to 8 inches below grade after which approximately 6 inches of crush and run was spread and graded. Approximately 135 CY of crush and run was brought in to complete the subbase for the road. On August 8, 2016 Branscome Eastern Shore of Tasley, Virginia mobilized personnel and equipment to the site to bring in additional subbase and complete finish grading the road base. Branscome remobilized on August 12, 2016 and compacted subbase with a roller and prepared both ends of the existing asphalt with a saw cut and tack coating. A Caterpillar® AP500E paver was utilized to pave the 300-foot stretch of replacement road and matching the previous road width. The new asphalt was rolled and allowed time to cool. On August 15 and 16, 2016, Clearfield MMG remobilized a crew and graded and spread 15 CY of topsoil alongside the edges of the road. All disturbed areas including the haul routes were graded, seeded, and fertilized, however, matting and straw was not used due to FOD concerns at the airfield.

4.5 DEMOBILIZATION

A final site closeout inspection was performed by NASA WFF on August 16, 2016, prior to completing demobilization. The final inspection determined the removal action work and restoration at the site was complete and acceptable to NASA. The silt fence will remain in place at the former Pistol and Rifle Ranges to protect the sites from potential erosion until vegetation can be fully established. Removal of the silt fence will occur at a future date.

5.0 CONCLUSION

All work was completed in accordance with the RAWP (Tetra Tech, 2016). The objective of the NTCRA conducted at the former Pistol and Rifle Ranges was to reduce or eliminate potential risks to human health, welfare, and the environment posed by potential exposure to copper, lead, zinc, and nitroglycerin-contaminated soil. This objective was met through the removal and proper offsite disposal of impacted soils from the former ranges.

No further investigation or action is warranted for the former Pistol Range, Rifle Range, and Aircraft Gun Testing Range.

REFERENCES

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TABLES

**TABLE 1-1
REMOVAL ACTION CLEANUP GOALS
MAIN BASE FIRING RANGE COMPLEX PISTOL RANGE AND RIFLE RANGE
NON-TIME CRITICAL REMOVAL ACTION
NASA WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA**

| Removal Action Target Contaminant | Maximum Soil Concentration (mg/kg) | EPA Residential RSL ⁽⁴⁾ (mg/kg) | Ecological SSL (mg/kg) | Cleanup Goals | | | Comment |
|-----------------------------------|------------------------------------|--|------------------------|--------------------------------|---|------------------------------|--------------------|
| | | | | Maximum ⁽¹⁾ (mg/kg) | Residual Average ⁽²⁾ (mg/kg) | Cleanup Basis ⁽³⁾ | |
| Pistol Range (mg/kg) | | | | | | | |
| Copper | 155 | 310 | 70 | 280 | 140 | Eco | Firing Point, only |
| Lead | 3,220 | 400 | 120 | 480 | 240 | Eco and HH | |
| Zinc | 1,010 | 2,300 | 120 | 480 | 240 | Eco | Firing Point, only |
| Nitroglycerin | 5.3 | 6.2 | NA | 6.2 | NA | HH | Firing Point, only |
| Rifle Range (mg/kg) | | | | | | | |
| Lead | 2,900 | 400 | 120 | 480 | 240 | Eco and HH | |

Notes:

mg/kg - milligrams per kilogram

RSL - Regional Screening Level

NA - Not Applicable or Not Available

SSL - Soil Screening Level

1. Cleanup goals for maximum concentrations set at 4 times the Ecological SSL or the Human Health RSL.
2. Cleanup goals for residual average concentrations set at 2 times the Ecological SSL. Site-wide geometric mean(s) will be calculated for comparison.
3. Cleanup goals based on protection of ecological receptors (ECO) or human health receptors (HH).
4. EPA Residential Soil RSLs (June 2015; Target Cancer Risk = 1×10^{-6} and noncancer HI = 1)

**TABLE 3-1
PISTOL RANGE SAMPLE RESULTS
MAIN BASE FIRING RANGE COMPLEX PISTOL RANGE AND RIFLE RANGE
NON-TIME CRITICAL REMOVAL ACTION
NASA WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA
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| Grid Row | Grid Square ID | Sample ID | Sample Depth Interval (inches bgs) | Composite or Discrete | Sample Date | Lead (mg/kg) | Copper (mg/kg) | Zinc (mg/kg) | Nitroglycerin (mg/kg) | |
|----------|----------------|-----------------|------------------------------------|-----------------------|-------------|--------------|----------------|--------------|-----------------------|---------|
| A | A1 | PR-SS-A1-0006 | 0 - 6 | C | 6/6/2016 | 46.2 J | 23.6 J | 131 J | 0.190 J | |
| | | PR-SB-A1-0612 | 6 - 12 | C | 6/6/2016 | 11.6 J | 5.55 J | 51 J | 0.12 UJ | |
| | | PR-SB-A1-1224 | 12 - 24 | D | 6/6/2016 | NA | NA | NA | NA | |
| | A2 | PR-SS-A2-0006 | 0 - 6 | C | 6/6/2016 | 260 J | 48.3 J | 169 J | 2.5 J | |
| | | PR-DUP02-060716 | 6 - 12 | C | 6/6/2016 | 342 J | 45.8 J | 172 J | 0.32 J | |
| | | PR-SB-A2-0612 | 6 - 12 | C | 6/6/2016 | 44.9 J | 48.5 J | 243 J | 0.28 J | |
| | A3 | PR-SB-A2-1224 | 12 - 24 | D | 6/6/2016 | NA | NA | NA | NA | |
| | | PR-SS-A3-0006 | 0 - 6 | C | 6/7/2016 | 22.8 J | 13.6 J | 103 J | 0.13 UJ | |
| | | PR-SB-A3-0612 | 6 - 12 | C | 6/7/2016 | 8.55 J | 5.58 J | 53.1 J | 0.13 UJ | |
| | A4 | PR-SB-A3-1224 | 12 - 24 | D | 6/7/2016 | NA | NA | NA | NA | |
| | | PR-SS-A4-0006 | 0 - 6 | C | 6/7/2016 | 30.8 J | 12.1 J | 166 J | 0.61 J | |
| | | PR-SB-A4-0612 | 6 - 12 | C | 6/7/2016 | 8.08 J | 5.84 J | 30.5 J | 0.12 U | |
| | A5 | PR-SB-A4-1224 | 12 - 24 | D | 6/7/2016 | NA | NA | NA | NA | |
| | | PR-SS-A5-0006 | 0 - 6 | C | 6/6/2016 | 60.4 J | 22 J | 210 J | 0.45 J | |
| | | PR-SB-A5-0612 | 6 - 12 | C | 6/6/2016 | 12.6 J | 6.6 J | 28 J | 0.11 UJ | |
| | A6 | PR-SB-A5-1224 | 12 - 24 | D | 6/6/2016 | NA | NA | NA | NA | |
| | | PR-SS-A6-0006 | 0 - 6 | C | 6/6/2016 | 37 J | 13.6 J | 75.6 J | 0.13 UJ | |
| | | PR-SB-A6-0612 | 6 - 12 | C | 6/6/2016 | 11.5 J | 4.29 J | 33.3 J | 0.14 UJ | |
| | B | B1 | PR-DUP01-060616 | 12 - 24 | D | 6/6/2016 | 10.8 J | 4.2 J | 26 J | 0.12 U |
| | | | PR-SB-A6-1224 | 12 - 24 | D | 6/6/2016 | NA | NA | NA | NA |
| | | | PR-SS-B1-0006 | 0 - 6 | C | 6/6/2016 | 1.76 J | 1.12 J | 4.4 J | 0.12 U |
| | | B2 | PR-SB-B1-0612 | 6 - 12 | C | 6/6/2016 | 1.16 J | 1.21 J | 3.34 J | 0.13 U |
| | | | PR-SB-B1-1224 | 12 - 24 | D | 6/6/2016 | NA | NA | NA | NA |
| | | | PR-SS-B2-0006 | 0 - 6 | C | 6/7/2016 | 7.19 J | 3.63 J | 17.1 J | 0.96 |
| B3 | | PR-SB-B2-0612 | 6 - 12 | C | 6/7/2016 | 30.3 J | 5.57 J | 28.9 J | 1.2 | |
| | | PR-SB-B2-1224 | 12 - 24 | D | 6/7/2016 | NA | NA | NA | NA | |
| | | PR-DUP03-060716 | 12 - 24 | D | 6/7/2016 | NA | NA | NA | NA | |
| B4 | | PR-SS-B3-0006 | 0 - 6 | C | 6/7/2016 | 101 J | 44.8 J | 176 J | 32 J | |
| | | PR-SB-B3-0612 | 6 - 12 | C | 6/7/2016 | 16.1 J | 8.96 J | 64.4 J | 0.18 J | |
| | | PR-SB-B3-1224 | 12 - 24 | D | 6/7/2016 | NA | NA | NA | NA | |
| B5 | | PR-SB-B4-0612 | 6 - 12 | C | 6/7/2016 | 15.1 J | 10.9 J | 98 J | 0.48 J | |
| | | PR-SB-B4-1224 | 12 - 24 | D | 6/7/2016 | NA | NS | NS | NS | |
| | | PR-SS-B5-0006 | 0 - 6 | C | 6/7/2016 | 15.4 J | 8.88 J | 93.2 J | 0.30 J | |
| B6 | | PR-SB-B5-0612 | 6 - 12 | C | 6/7/2016 | 21.5 J | 6.98 J | 37.6 J | 0.27 J | |
| | | PR-DUP04-060716 | 12 - 24 | D | 6/7/2016 | 18.5 J | 5.63 J | 31.9 J | 0.47 J | |
| | | PR-SB-B5-1224 | 12 - 24 | D | 6/7/2016 | NA | NA | NA | NA | |
| C | | C1 | PR-SS-B6-0006 | 0 - 6 | C | 6/7/2016 | 13.8 J | 2.72 J | 10.3 J | 0.12 UJ |
| | | | PR-SB-B6-0612 | 6 - 12 | C | 6/7/2016 | 13.6 J | 2.74 J | 16 J | 0.13 UJ |
| | | | PR-SB-B6-1224 | 12 - 24 | D | 6/7/2016 | NA | NA | NA | NA |
| | | C2 | PR-SS-C1-0006 | 0 - 6 | C | 6/7/2016 | 1.67 | NS | NS | NS |
| | | | PR-SB-C1-0612 | 6 - 12 | C | 6/7/2016 | 1.24 | NS | NS | NS |
| | | | PR-SS-C2-0006 | 0 - 6 | C | 6/7/2016 | 3.07 | NS | NS | NS |
| | C3 | PR-SB-C2-0612 | 6 - 12 | C | 6/7/2016 | 3.57 | NS | NS | NS | |
| | | PR-DUP05-060716 | 12 - 24 | D | 6/7/2016 | 4.15 | NS | NS | NS | |
| | | PR-SS-C3-0006 | 0 - 6 | C | 6/7/2016 | 401 | NS | NS | NS | |
| | C4 | PR-SB-C3-0612 | 6 - 12 | C | 6/7/2016 | 7.75 | NS | NS | NS | |
| | | PR-SS-C4-0006 | 0 - 6 | C | 6/7/2016 | 159 | NS | NS | NS | |
| | | PR-SB-C4-0612 | 6 - 12 | C | 6/7/2016 | 16.3 | NS | NS | NS | |
| | C5 | PR-SS-C5-0006 | 0 - 6 | C | 6/7/2016 | 15.7 | NS | NS | NS | |
| | | PR-SB-C5-0612 | 6 - 12 | C | 6/7/2016 | 6.54 | NS | NS | NS | |
| | | PR-SS-C6-0006 | 0 - 6 | C | 6/7/2016 | 5.17 | NS | NS | NS | |
| | C6 | PR-DUP06-060716 | 12 - 24 | D | 6/7/2016 | 4.08 | NS | NS | NS | |
| | | PR-SB-C6-0612 | 6 - 12 | C | 6/7/2016 | 3.12 | NS | NS | NS | |
| | | PR-SS-D1-0006 | 0 - 6 | C | 6/7/2016 | 85.3 | NS | NS | NS | |
| | D | D1 | PR-SB-D1-0612 | 6 - 12 | C | 6/7/2016 | 23.7 | NS | NS | NS |
| | | | PR-SS-D2-0006 | 0 - 6 | C | 6/7/2016 | 16.4 | NS | NS | NS |
| | | D2 | PR-SB-D2-0612 | 6 - 12 | C | 6/7/2016 | 11.4 | NS | NS | NS |
| | | | PR-SS-D3-0006 | 0 - 6 | C | 6/7/2016 | 128 | NS | NS | NS |
| | | D3 | PR-SB-D3-0612 | 6 - 12 | C | 6/7/2016 | 46.8 | NS | NS | NS |
| | | | PR-SS-D4-0006 | 0 - 6 | C | 6/7/2016 | 99 J | NS | NS | NS |
| D4 | | PR-DUP07-060716 | 12 - 24 | D | 6/7/2016 | 268 J | NS | NS | NS | |
| | | PR-SB-D4-0612 | 6 - 12 | C | 6/7/2016 | 13.8 | NS | NS | NS | |
| D5 | | PR-SS-D5-0006 | 0 - 6 | C | 6/7/2016 | 10.5 | NS | NS | NS | |
| | | PR-SB-D5-0612 | 6 - 12 | C | 6/7/2016 | 8.35 | NS | NS | NS | |
| D6 | | PR-SS-D6-0006 | 0 - 6 | C | 6/7/2016 | 16.3 | NS | NS | NS | |
| | | PR-SB-D6-0612 | 6 - 12 | C | 6/7/2016 | 9.12 | NS | NS | NS | |
| E | E1 | PR-SS-E1-0006 | 0 - 6 | C | 6/7/2016 | 147 | NS | NS | NS | |
| | | PR-SB-E1-0612 | 6 - 12 | C | 6/7/2016 | 76.6 | NS | NS | NS | |
| | E2 | PR-SS-E2-0006 | 0 - 6 | C | 6/7/2016 | 98.7 | NS | NS | NS | |
| | | PR-SB-E2-0612 | 6 - 12 | C | 6/7/2016 | 101 | NS | NS | NS | |
| | E3 | PR-SS-E3-0006 | 0 - 6 | C | 6/7/2016 | 486 | NS | NS | NS | |
| | | PR-SB-E3-0612 | 6 - 12 | C | 6/7/2016 | 91.5 | NS | NS | NS | |
| | E4 | PR-SS-E4-0006 | 0 - 6 | C | 6/7/2016 | 507 | NS | NS | NS | |
| | | PR-SB-E4-0612 | 6 - 12 | C | 6/7/2016 | 557 | NS | NS | NS | |
| | | PR-DUP08-060716 | 12 - 24 | D | 6/7/2016 | 375 | NS | NS | NS | |
| | E5 | PR-SB-E4-1224 | 12 - 24 | D | 6/22/2016 | 30.6 | NS | NS | NS | |
| | | PR-SB-E4-2436 | 24 - 36 | D | 6/22/2016 | NA | NS | NS | NS | |
| | | PR-SS-E5-0006 | 0 - 6 | C | 6/7/2016 | 312 | NS | NS | NS | |
| E6 | PR-SB-E5-0612 | 6 - 12 | C | 6/7/2016 | 169 | NS | NS | NS | | |
| | PR-SS-E6-0006 | 0 - 6 | C | 6/7/2016 | 25.9 | NS | NS | NS | | |
| | | PR-SB-E6-0612 | 6 - 12 | C | 6/7/2016 | 5.1 | NS | NS | NS | |

TABLE 3-1
 PISTOL RANGE SAMPLE RESULTS
 MAIN BASE FIRING RANGE COMPLEX PISTOL RANGE AND RIFLE RANGE
 NON-TIME CRITICAL REMOVAL ACTION
 NASA WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA
 PAGE 2 OF 2

| Grid Row | Grid Square ID | Sample ID | Sample Depth Interval (inches bgs) | Composite or Discrete | Sample Date | Lead (mg/kg) | Copper (mg/kg) | Zinc (mg/kg) | Nitroglycerin (mg/kg) | |
|----------|----------------|-----------------|------------------------------------|-----------------------|-------------|--------------|----------------|--------------|-----------------------|----|
| F | F1 | PR-SS-F1-0006 | 0 - 6 | C | 6/7/2016 | 41.4 | NS | NS | NS | |
| | | PR-SB-F1-0612 | 6 - 12 | C | 6/7/2016 | 10.7 | NS | NS | NS | |
| | | PR-SB-F1-1224 | 12 - 24 | D | 6/7/2016 | 34.9 | NS | NS | NS | |
| | | PR-SB-F1-2436 | 24 - 36 | D | 6/7/2016 | NA | NS | NS | NS | |
| | F2 | PR-SS-F2-0006 | 0 - 6 | C | 6/7/2016 | 721 | NS | NS | NS | |
| | | PR-SB-F2-0612 | 6 - 12 | C | 6/7/2016 | 136 | NS | NS | NS | |
| | | PR-SB-F2-1224 | 12 - 24 | D | 6/7/2016 | 31.3 | NS | NS | NS | |
| | | PR-DUP09-060716 | | | 6/7/2016 | 41.3 | NS | NS | NS | |
| | | PR-SB-F2-2436 | 24 - 36 | D | 6/7/2016 | 33 | NS | NS | NS | |
| | | PR-SB-F2-3648 | 36 - 48 | D | 6/7/2016 | NA | NS | NS | NS | |
| | | PR-SB-F2-4860 | 48 - 60 | D | 6/7/2016 | NA | NS | NS | NS | |
| | F3 | PR-SB-F3-2436 | 24 - 36 | D | 6/7/2016 | 209 | NS | NS | NS | |
| | | PR-SB-F3-3648 | 36 - 48 | D | 6/7/2016 | NA | NS | NS | NS | |
| | | PR-SB-F3-4860 | 48 - 60 | D | 6/7/2016 | 111 | NS | NS | NS | |
| | | PR-SB-F3-6072 | 60 - 72 | D | 7/7/2016 | 939 | NS | NS | NS | |
| | | PR-SB-F3-8496 | 84 - 96 | D | 7/11/2016 | 79.4 | NS | NS | NS | |
| | F4 | PR-SB-F4-2436 | 24 - 36 | D | 6/7/2016 | 277 | NS | NS | NS | |
| | | PR-SB-F4-3648 | 36 - 48 | D | 6/7/2016 | NA | NS | NS | NS | |
| | | PR-SB-F4-4860 | 48 - 60 | D | 6/7/2016 | 359 | NS | NS | NS | |
| | | PR-SB-F4-6072 | 60 - 72 | D | 7/7/2016 | 243 | NS | NS | NS | |
| | F5 | PR-SS-F5-0006 | 0 - 6 | C | 6/8/2016 | 86 | NS | NS | NS | |
| | | PR-SB-F5-0612 | 6 - 12 | C | 6/8/2016 | 22.8 | NS | NS | NS | |
| | | PR-SB-F5-1224 | 12 - 24 | D | 6/8/2016 | 18.5 | NS | NS | NS | |
| | | PR-DUP10-060816 | | | 6/8/2016 | 13.6 | NS | NS | NS | |
| | | PR-SB-F5-2436 | 24 - 36 | D | 6/8/2016 | 26.3 | NS | NS | NS | |
| | | PR-SB-F5-3648 | 36 - 48 | D | 6/8/2016 | NA | NS | NS | NS | |
| | PR-SB-F5-4860 | 48 - 60 | D | 6/8/2016 | NA | NS | NS | NS | | |
| | F6 | PR-SS-F6-0006 | 0 - 6 | C | 6/8/2016 | 33.9 J | NS | NS | NS | |
| | | PR-DUP11-060816 | | | 6/8/2016 | 74.8 J | NS | NS | NS | |
| | | PR-SB-F6-0612 | 6 - 12 | C | 6/8/2016 | 9.84 | NS | NS | NS | |
| | | PR-SB-F6-1224 | 12 - 24 | D | 6/8/2016 | 9.53 | NS | NS | NS | |
| | | PR-SB-F6-2436 | 24 - 36 | D | 6/8/2016 | NA | NS | NS | NS | |
| | G | G1 | PR-SS-G1-0006 | 0 - 6 | C | 6/8/2016 | 30.7 | NS | NS | NS |
| | | | PR-SB-G1-0612 | 6 - 12 | C | 6/8/2016 | 8.38 | NS | NS | NS |
| | | | PR-SB-G1-1224 | 12 - 24 | D | 6/8/2016 | 8.38 | NS | NS | NS |
| | | | PR-SB-G1-2436 | 24 - 36 | D | 6/8/2016 | NA | NS | NS | NS |
| G2 | | PR-SS-G2-0006 | 0 - 6 | C | 6/8/2016 | 22.6 | NS | NS | NS | |
| | | PR-DUP12-060816 | | | 6/8/2016 | 20.8 | NS | NS | NS | |
| | | PR-SB-G2-0612 | 6 - 12 | C | 6/8/2016 | 9.26 | NS | NS | NS | |
| | | PR-SB-G2-1224 | 12 - 24 | D | 6/8/2016 | 10.6 | NS | NS | NS | |
| | | PR-SB-G2-2436 | 24 - 36 | D | 6/8/2016 | NA | NS | NS | NS | |
| G3 | | PR-SS-G3-0006 | 0 - 6 | C | 6/8/2016 | 31.1 | NS | NS | NS | |
| | | PR-SB-G3-0612 | 6 - 12 | C | 6/8/2016 | 29.2 | NS | NS | NS | |
| | | PR-SB-G3-1224 | 12 - 24 | D | 6/8/2016 | 10.2 | NS | NS | NS | |
| | | PR-SB-G3-2436 | 24 - 36 | D | 6/8/2016 | NA | NS | NS | NS | |
| G4 | | PR-SS-G4-0006 | 0 - 6 | C | 6/8/2016 | 60.8 | NS | NS | NS | |
| | | PR-SB-G4-0612 | 6 - 12 | C | 6/8/2016 | 7.99 | NS | NS | NS | |
| | | PR-SB-G4-1224 | 12 - 24 | D | 6/8/2016 | 8.56 | NS | NS | NS | |
| | PR-SB-G4-2436 | 24 - 36 | D | 6/8/2016 | NA | NS | NS | NS | | |

Notes:
 mg/kg - milligrams per kilogram
 NA - Not analyzed
 NS - Not sampled
 J - Estimated value
 U - Non-detect value

Shaded and bolded cells indicate exceedance of the maximum cleanup values.

TABLE 3-2
RIFLE RANGE SAMPLE RESULTS
MAIN BASE FIRING RANGE COMPLEX PISTOL RANGE AND RIFLE RANGE
NON-TIME CRITICAL REMOVAL ACTION
NASA WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA
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| Grid Row | Grid Square ID | Sample ID | Sample Depth Interval (inches bgs) | Sample Date | Lead (mg/kg) | |
|---------------|-----------------|-----------------|------------------------------------|-------------|----------------|--------------|
| A | A1 | RR-SS-A1-0006 | 0 - 6 | 6/8/2016 | 27.1 | |
| | | RR-SB-A1-0612 | 6 - 12 | 6/8/2016 | 12 | |
| | | RR-SB-A1-1224 | 12 - 24 | 6/8/2016 | NA | |
| | A2 | RR-SS-A2-0006 | 0 - 6 | 6/8/2016 | 17.2 | |
| | | RR-SB-A2-0612 | 6 - 12 | 6/8/2016 | 9.88 | |
| | | RR-SB-A2-1224 | 12 - 24 | 6/8/2016 | NA | |
| | A3 | RR-SS-A3-0006 | 0 - 6 | 6/8/2016 | 26.6 | |
| | | RR-DUP01-060816 | | 6/8/2016 | 26.7 | |
| | | RR-SB-A3-0612 | 6 - 12 | 6/8/2016 | 13 | |
| | | RR-SB-A3-1224 | 12 - 24 | 6/8/2016 | NA | |
| | A4 | RR-SS-A4-0006 | 0 - 6 | 6/8/2016 | 100 | |
| | | RR-SB-A4-0612 | 6 - 12 | 6/8/2016 | 9.11 | |
| | | RR-DUP02-060816 | | 6/8/2016 | 7.41 | |
| | | RR-SB-A4-1224 | 12 - 24 | 6/8/2016 | NA | |
| | A5 | RR-SS-A5-0006 | 0 - 6 | 6/8/2016 | 104 | |
| | | RR-SB-A5-0612 | 6 - 12 | 6/8/2016 | 57.9 | |
| | | RR-SB-A5-1224 | 12 - 24 | 6/8/2016 | NA | |
| | A6 | RR-SS-A6-0006 | 0 - 6 | 6/8/2016 | 57.5 J | |
| | | RR-SB-A6-0612 | 6 - 12 | 6/8/2016 | 32.6 | |
| | | RR-SB-A6-1224 | 12 - 24 | 6/8/2016 | NA | |
| | A7 | RR-SS-A7-0006 | 0 - 6 | 6/8/2016 | 183 | |
| | | RR-SB-A7-0612 | 6 - 12 | 6/8/2016 | 45 | |
| | | RR-SB-A7-1224 | 12 - 24 | 6/8/2016 | NA | |
| | A8 | RR-SS-A8-0006 | 0 - 6 | 6/8/2016 | 223 | |
| | | RR-SB-A8-0612 | 6 - 12 | 6/8/2016 | 16.3 | |
| | | RR-SB-A8-1224 | 12 - 24 | 6/8/2016 | NA | |
| | B | B1 | RR-SS-B1-0006 | 0 - 6 | 6/8/2016 | 14.5 |
| | | | RR-SB-B1-0612 | 6 - 12 | 6/8/2016 | 10.9 |
| | | | RR-SB-B1-1224 | 12 - 24 | 6/8/2016 | NA |
| | | | RR-DUP03-060816 | | 6/8/2016 | NA |
| | | B2 | RR-SS-B2-0006 | 0 - 6 | 6/8/2016 | 23.5 |
| | | | RR-SB-B2-0612 | 6 - 12 | 6/8/2016 | 9.22 |
| | | | RR-SB-B2-1224 | 12 - 24 | 6/8/2016 | NA |
| | | | RR-DUP04-060816 | | 6/8/2016 | NA |
| | | B3 | RR-SS-B3-0006 | 0 - 6 | 6/8/2016 | 93.4 |
| | | | RR-SB-B3-0612 | 6 - 12 | 6/8/2016 | 7.9 |
| RR-SB-B3-1224 | | | 12 - 24 | 6/8/2016 | 13.8 | |
| B4 | | RR-SB-B3-2436 | 24 - 36 | 6/8/2016 | NA | |
| | | RR-SS-B4-0006 | 0 - 6 | 6/8/2016 | 685 | |
| | | RR-SB-B4-0612 | 6 - 12 | 6/8/2016 | 60.5 | |
| B5 | | RR-SB-B4-1224 | 12 - 24 | 6/8/2016 | NA | |
| | | RR-SS-B5-0006 | 0 - 6 | 6/8/2016 | 575 | |
| | | RR-SB-B5-0612 | 6 - 12 | 6/8/2016 | 22.1 | |
| B6 | | RR-SB-B5-1224 | 12 - 24 | 6/8/2016 | NA | |
| | | RR-SS-B6-0006 | 0 - 6 | 6/8/2016 | 950 | |
| | | RR-SB-B6-0612 | 6 - 12 | 6/8/2016 | 40.4 | |
| | | RR-SB-B6-1224 | 12 - 24 | 6/8/2016 | 26.2 | |
| B7 | | RR-SB-B6-2436 | 24 - 36 | 6/8/2016 | NA | |
| | | RR-DUP05-060816 | | 6/8/2016 | NA | |
| | | RR-SS-B7-0006 | 0 - 6 | 6/8/2016 | 146 | |
| | | RR-SB-B7-0612 | 6 - 12 | 6/8/2016 | 309 | |
| B8 | | RR-SB-B7-1224 | 12 - 24 | 6/8/2016 | NA | |
| | | RR-SS-B8-0006 | 0 - 6 | 6/8/2016 | 252 | |
| | | RR-SB-B8-0612 | 6 - 12 | 6/8/2016 | 16.4 | |
| C | | C1A | RR-SB-B8-1224 | 12 - 24 | 6/8/2016 | NA |
| | | | RR-SS-C1A-0612 | 6 - 12 | 6/22/2016 | 24.4 |
| | | C1 | RR-SB-C1A-1224 | 12 - 24 | 6/22/2016 | NA |
| | | | RR-SS-C1-0006 | 0 - 6 | 6/8/2016 | 41.6 |
| | | | RR-SB-C1-0612 | 6 - 12 | 6/8/2016 | 2,770 |
| | | | RR-SB-C1-1224 | 12 - 24 | 6/8/2016 | 5.66 U |
| | | RR-DUP06-060816 | 6/8/2016 | | 6.62 U | |
| | | C2 | RR-SS-C2-0006 | 0 - 6 | 6/8/2016 | 107 |
| | RR-SB-C2-0612 | | 6 - 12 | 6/8/2016 | 294 | |
| | RR-SB-C2-1224 | | 12 - 24 | 6/8/2016 | 15.8 | |
| | RR-SB-C2-2436 | | 24 - 36 | 6/8/2016 | NA | |
| | C3 | RR-SS-C3-0006 | 0 - 6 | 6/8/2016 | 119 | |
| | | RR-SB-C3-0612 | 6 - 12 | 6/8/2016 | 1,280 | |
| | | RR-SB-C3-1224 | 12 - 24 | 6/8/2016 | 399 J | |
| | | RR-DUP07-060816 | | 6/8/2016 | 1,230 J | |
| | C4 | RR-SB-C3-2436 | 24 - 36 | 6/8/2016 | 10.6 | |
| | | RR-SS-C4-0006 | 0 - 6 | 6/8/2016 | 4,050 | |
| | | RR-SB-C4-0612 | 6 - 12 | 6/8/2016 | 5,640 | |
| | | RR-SB-C4-1224 | 12 - 24 | 6/8/2016 | 3,840 | |
| | | RR-SB-C4-2436 | 24 - 36 | 6/8/2016 | 744 | |
| | | RR-SB-C4-3648 | 36 - 48 | 6/22/2016 | 28.2 J | |
| | RR-DUP16-062216 | 6/22/2016 | | 214 J | | |
| | C5 | RR-SB-C4-4860 | 48 - 60 | 6/22/2016 | NA | |
| | | RR-SS-C5-0006 | 0 - 6 | 6/8/2016 | 880 | |
| | | RR-SB-C5-0612 | 6 - 12 | 6/8/2016 | 306 J | |
| | | RR-SB-C5-1224 | 12 - 24 | 6/8/2016 | 3,110 | |
| | C6 | RR-SB-C5-2436 | 24 - 36 | 6/8/2016 | 15.8 | |
| | | RR-SS-C6-0006 | 0 - 6 | 6/8/2016 | 2,910 | |
| | | RR-DUP08-060816 | | 6/8/2016 | 3,630 | |
| | | RR-SB-C6-0612 | 6 - 12 | 6/8/2016 | 339 | |
| | C7 | RR-SB-C6-1224 | 12 - 24 | 6/8/2016 | 5,200 | |
| | | RR-SB-C6-2436 | 24 - 36 | 6/8/2016 | 226 | |
| | | RR-SB-C7-2436 | 24 - 36 | 6/8/2016 | 40.6 | |
| | C8 | RR-SS-C8-0006 | 0 - 6 | 6/8/2016 | 237 | |
| | | RR-SB-C8-0612 | 6 - 12 | 6/8/2016 | 4,080 | |
| | | RR-SB-C8-1224 | 12 - 24 | 6/8/2016 | 37.4 | |
| C9 | RR-SS-C9-0612 | 6 - 12 | 6/22/2016 | 110 | | |
| | RR-SB-C9-1224 | 12 - 24 | 6/22/2016 | NA | | |

TABLE 3-2
RIFLE RANGE SAMPLE RESULTS
MAIN BASE FIRING RANGE COMPLEX PISTOL RANGE AND RIFLE RANGE
NON-TIME CRITICAL REMOVAL ACTION
NASA WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA
PAGE 2 OF 2

| Grid Row | Grid Square ID | Sample ID | Sample Depth Interval (inches bgs) | Sample Date | Lead (mg/kg) |
|---------------|-----------------|-----------------|------------------------------------|-------------|----------------|
| D | D1 | RR-SS-D1-0006 | 0 - 6 | 6/8/2016 | 68 |
| | | RR-SB-D1-0612 | 6 - 12 | 6/8/2016 | 11.8 |
| | | RR-DUP09-060816 | | 6/8/2016 | 12.4 |
| | | RR-SB-D1-1224 | 12 - 24 | 6/8/2016 | NA |
| | D2 | RR-SS-D2-0006 | 0 - 6 | 6/8/2016 | 114 |
| | | RR-SB-D2-0612 | 6 - 12 | 6/8/2016 | 6.13 U |
| | | RR-SB-D2-1224 | 12 - 24 | 6/8/2016 | 15.8 |
| | | RR-SB-D2-2436 | 24 - 36 | 6/8/2016 | NA |
| | D3 | RR-SS-D3-0006 | 0 - 6 | 6/8/2016 | 71.8 |
| | | RR-SB-D3-0612 | 6 - 12 | 6/8/2016 | 11.4 |
| | | RR-SB-D3-1224 | 12 - 24 | 6/8/2016 | 3.24 U |
| | | RR-SB-D3-2436 | 24 - 36 | 6/8/2016 | NA |
| | D4 | RR-SS-D4-0006 | 0 - 6 | 6/9/2016 | 14,100 |
| | | RR-SB-D4-0612 | 6 - 12 | 6/9/2016 | 108 |
| | | RR-SB-D4-1224 | 12 - 24 | 6/9/2016 | 17.4 |
| | | RR-SB-D4-2436 | 24 - 36 | 6/8/2016 | NA |
| | D5 | RR-SS-D5-0006 | 0 - 6 | 6/8/2016 | 300 |
| | | RR-SB-D5-0612 | 6 - 12 | 6/8/2016 | 7.19 U |
| | | RR-SB-D5-1224 | 12 - 24 | 6/8/2016 | 5.27 U |
| | | RR-SB-D5-2436 | 24 - 36 | 6/8/2016 | NA |
| | D6 | RR-SS-D6-0006 | 0 - 6 | 6/8/2016 | 920 |
| | | RR-SB-D6-0612 | 6 - 12 | 6/8/2016 | 106 |
| | | RR-SB-D6-1224 | 12 - 24 | 6/8/2016 | 29.1 |
| | | RR-SB-D6-2436 | 24 - 36 | 6/8/2016 | NA |
| | RR-DUP10-060816 | 6/8/2016 | | NA | |
| | D7 | RR-SS-D7-0006 | 0 - 6 | 6/8/2016 | 359 |
| | | RR-SB-D7-0612 | 6 - 12 | 6/8/2016 | 60.6 |
| | | RR-SB-D7-1224 | 12 - 24 | 6/8/2016 | 3.42 |
| | | RR-SB-D7-2436 | 24 - 36 | 6/8/2016 | NA |
| | D8 | RR-SS-D8-0006 | 0 - 6 | 6/8/2016 | 2,180 J |
| | | RR-SB-D8-0612 | 6 - 12 | 6/8/2016 | 22.4 |
| | | RR-DUP11-060816 | | 6/8/2016 | 16.4 |
| | | RR-SB-D8-1224 | 12 - 24 | 6/8/2016 | NA |
| | D9 | RR-SS-D9-0006 | 0 - 6 | 6/22/2016 | 158 |
| | | RR-SB-D9-0612 | 6 - 12 | 6/22/2016 | NA |
| | E | E1 | RR-SS-E1-0006 | 0 - 6 | 6/9/2016 |
| RR-SB-E1-0612 | | | 6 - 12 | 6/9/2016 | 4.72 |
| RR-SB-E1-1224 | | | 12 - 24 | 6/9/2016 | NA |
| E2 | | RR-SS-E2-0006 | 0 - 6 | 6/9/2016 | 67 |
| | | RR-SB-E2-0612 | 6 - 12 | 6/9/2016 | 19 |
| | | RR-SB-E2-1224 | 12 - 24 | 6/9/2016 | NA |
| E3 | | RR-SS-E3-0006 | 0 - 6 | 6/9/2016 | 209 |
| | | RR-SB-E3-0612 | 6 - 12 | 6/9/2016 | 153 |
| | | RR-DUP12-060916 | | 6/9/2016 | 227 |
| E4 | | RR-SB-E3-1224 | 12 - 24 | 6/9/2016 | NA |
| | | RR-SS-E4-0006 | 0 - 6 | 6/9/2016 | 62.4 |
| | | RR-SB-E4-0612 | 6 - 12 | 6/9/2016 | 3.48 |
| E5 | | RR-SB-E4-1224 | 12 - 24 | 6/9/2016 | NA |
| | | RR-SS-E5-0006 | 0 - 6 | 6/9/2016 | 187 |
| | | RR-SB-E5-0612 | 6 - 12 | 6/9/2016 | 5.57 U |
| E6 | | RR-SB-E5-1224 | 12 - 24 | 6/9/2016 | NA |
| | | RR-SS-E6-0006 | 0 - 6 | 6/9/2016 | 151 |
| | | RR-DUP13-060916 | | 6/9/2016 | 184 |
| E7 | | RR-SB-E6-0612 | 6 - 12 | 6/9/2016 | 16.5 |
| | | RR-SB-E6-1224 | 12 - 24 | 6/9/2016 | NA |
| | | RR-SS-E7-0006 | 0 - 6 | 6/9/2016 | 91.3 |
| E8 | | RR-SB-E7-0612 | 6 - 12 | 6/9/2016 | 5.22 |
| | | RR-SB-E7-1224 | 12 - 24 | 6/9/2016 | NA |
| | | RR-SS-E8-0006 | 0 - 6 | 6/9/2016 | 152 |
| E8 | RR-SB-E8-0612 | 6 - 12 | 6/9/2016 | 28 | |
| | RR-SB-E8-1224 | 12 - 24 | 6/9/2016 | NA | |
| | RR-SS-F1-0006 | 0 - 6 | 6/9/2016 | 16.2 | |
| F1 | RR-SB-F1-0612 | 6 - 12 | 6/9/2016 | 6.88 | |
| | RR-SB-F1-1224 | 12 - 24 | 6/9/2016 | NA | |
| | RR-DUP14-060916 | | 6/9/2016 | 2.46 | |
| F2 | RR-SS-F2-0006 | 0 - 6 | 6/9/2016 | 5.39 | |
| | RR-SB-F2-0612 | 6 - 12 | 6/9/2016 | 3.5 | |
| | RR-SB-F2-1224 | 12 - 24 | 6/9/2016 | NA | |
| F3 | RR-SS-F3-0006 | 0 - 6 | 6/9/2016 | 53.5 | |
| | RR-SB-F3-0612 | 6 - 12 | 6/9/2016 | 11.3 | |
| | RR-SB-F3-1224 | 12 - 24 | 6/9/2016 | NA | |
| F4 | RR-SS-F4-0006 | 0 - 6 | 6/9/2016 | 107 | |
| | RR-SB-F4-0612 | 6 - 12 | 6/9/2016 | 2.98 | |
| | RR-SB-F4-1224 | 12 - 24 | 6/9/2016 | NA | |
| F5 | RR-SS-F5-0006 | 0 - 6 | 6/9/2016 | 42.1 | |
| | RR-SB-F5-0612 | 6 - 12 | 6/9/2016 | 3.61 | |
| | RR-DUP15-060916 | | 6/9/2016 | 3.15 | |
| F6 | RR-SB-F5-1224 | 12 - 24 | 6/9/2016 | NA | |
| | RR-SS-F6-0006 | 0 - 6 | 6/9/2016 | 135 | |
| | RR-SB-F6-0612 | 6 - 12 | 6/9/2016 | 13.3 | |
| F7 | RR-SB-F6-1224 | 12 - 24 | 6/9/2016 | NA | |
| | RR-SS-F7-0006 | 0 - 6 | 6/9/2016 | 9.88 | |
| | RR-SB-F7-0612 | 6 - 12 | 6/9/2016 | 9.18 | |
| F8 | RR-SB-F7-1224 | 12 - 24 | 6/9/2016 | 2.18 | |
| | RR-SB-F7-2436 | 24 - 36 | 6/9/2016 | NA | |
| | RR-SS-F8-0006 | 0 - 6 | 6/9/2016 | 4.87 | |
| F8 | RR-SB-F8-0612 | 6 - 12 | 6/9/2016 | 3.67 | |
| | RR-SB-F8-1224 | 12 - 24 | 6/9/2016 | NA | |

Notes:

mg/kg - milligrams per kilogram

NA - Not analyzed

J - Estimated value

U - Non-detect value

Shaded and bolded cells indicate exceedance of the maximum cleanup values.

**TABLE 3-3
PRE- AND POST-EXCAVATION AVERAGE CONCENTRATIONS FOR PISTOL RANGE - TARGET AREA
MAIN BASE FIRING RANGE COMPLEX PISTOL RANGE AND RIFLE RANGE
NON-TIME-CRITICAL REMOVAL ACTION
NASA WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA**

| | | Lead (mg/kg) | | | | | | | | | |
|----------------------------|---|----------------|------------|-------|-------|-------|-------|------------|-------|-----------------|-------------|
| | | Pre-Excavation | | | | | | | | Post-Excavation | |
| Excavation Depth (Inches) | | 0-6 | 6-12 | 12-24 | 24-36 | 36-48 | 48-60 | 60-72 | 84-96 | 0-6 | 6-12 |
| Grid | E1 | 147 | 76.6 | -- | -- | -- | -- | -- | -- | 147 | 76.6 |
| | E2 | 98.7 | 101 | -- | -- | -- | -- | -- | -- | 98.7 | 101 |
| | E3 | 486 | 91.5 | -- | -- | -- | -- | -- | -- | 91.5 | 91.5 |
| | E4 | 507 | 557 | 30.6 | -- | -- | -- | -- | -- | 30.6 | 30.6 |
| | E5 | 312 | 169 | -- | -- | -- | -- | -- | -- | 312 | 169 |
| | E6 | 25.9 | 5.1 | -- | -- | -- | -- | -- | -- | 25.9 | 5.1 |
| | F1 | 41.4 | 10.7 | 34.9 | -- | -- | -- | -- | -- | 41.4 | 10.7 |
| | F2 | 721 | 136 | 41.3 | -- | -- | -- | -- | -- | 136 | 136 |
| | F3 | NS* | NS* | NS* | 209 | NS | 111 | 939 | 79.4 | 79.4 | 79.4 |
| | F4 | NS* | NS* | NS* | 277 | NS | 359 | 243 | -- | 243 | 243 |
| | F5 | 86 | 22.8 | 18.5 | 26.3 | -- | -- | -- | -- | 86 | 22.8 |
| | F6 | 74.8 | 9.84 | 9.53 | -- | -- | -- | -- | -- | 74.8 | 9.84 |
| | AVERAGE (E&F OF TARGET AREA) | | 250 | 118 | 27 | 171 | NA | 235 | 591 | NA | 114 |
| Grid | C1 | 1.67 | 1.24 | -- | -- | -- | -- | -- | -- | 1.67 | 1.24 |
| | C2 | 3.07 | 4.15 | -- | -- | -- | -- | -- | -- | 3.07 | 4.15 |
| | C3 | 401 | 7.75 | -- | -- | -- | -- | -- | -- | 401 | 7.75 |
| | C4 | 159 | 16.3 | -- | -- | -- | -- | -- | -- | 159 | 16.3 |
| | C5 | 15.7 | 6.54 | -- | -- | -- | -- | -- | -- | 15.7 | 6.54 |
| | C6 | 5.17 | 3.12 | -- | -- | -- | -- | -- | -- | 5.17 | 3.12 |
| | D1 | 85.3 | 23.7 | -- | -- | -- | -- | -- | -- | 85.3 | 23.7 |
| | D2 | 16.4 | 11.4 | -- | -- | -- | -- | -- | -- | 16.4 | 11.4 |
| | D3 | 128 | 46.8 | -- | -- | -- | -- | -- | -- | 128 | 46.8 |
| | D4 | 268 | 13.8 | -- | -- | -- | -- | -- | -- | 268 | 13.8 |
| | D5 | 10.5 | 8.35 | -- | -- | -- | -- | -- | -- | 10.5 | 8.35 |
| | D6 | 16.3 | 9.12 | -- | -- | -- | -- | -- | -- | 16.3 | 9.12 |
| | G1 | 30.7 | 8.38 | 8.38 | -- | -- | -- | -- | -- | 30.7 | 8.38 |
| | G2 | 22.6 | 9.26 | 10.6 | -- | -- | -- | -- | -- | 22.6 | 9.26 |
| | G3 | 31.1 | 29.2 | 10.2 | -- | -- | -- | -- | -- | 31.1 | 29.2 |
| G4 | 60.8 | 7.99 | 8.56 | -- | -- | -- | -- | -- | 60.8 | 7.99 | |
| AVERAGE (C,D,E,F,G) | | 144 | 53 | 19 | NA | NA | NA | NA | NA | 94 | 42 |

Notes:

mg/kg - milligrams per kilogram

NA - Not applicable

NS - Not sampled

Grid was excavated and backfilled with clean fill

Shaded and bold cells indicate exceedance of the maximum cleanup value

Lead: maximum 480 mg/kg, residual average 240 mg/kg

*PR-SS-007, PR-SS-008, and PR-SS-010 from 2007 sampling event showed exceedances of lead 1,370 mg/kg, 809 mg/kg, and 3,220 mg/kg respectively

Note: Lead concentrations from the deepest sample within each excavated grid were used to calculate the post-excavation residual averages (arithmetic mean)

**TABLE 3-4
 PRE-EXCAVATION AVERAGE CONCENTRATIONS FOR PISTOL RANGE - FIRING LINE
 MAIN BASE FIRING RANGE COMPLEX PISTOL RANGE AND RIFLE RANGE
 NON-TIME-CRITICAL REMOVAL ACTION
 NASA WALLOPS FLIGHT FACILITY, WALLOPS ISLAND, VIRGINIA**

| | Excavation Depth (Inches) | Lead (mg/kg) | | Copper (mg/kg) | | Zinc (mg/kg) | | Nitroglycerin | |
|------------------------------|---------------------------|--------------|------|----------------|------|--------------|------|---------------|------|
| | | 0-6 | 6-12 | 0-6 | 6-12 | 0-6 | 6-12 | 0-6 | 6-12 |
| Grid | A1 | 46.2 | 11.6 | 23.6 | 5.55 | 131 | 51 | 0.19 | 0.12 |
| | A2 | 342 | 44.9 | 48.3 | 48.5 | 172 | 243 | 2.5 | 0.28 |
| | A3 | 22.8 | 8.55 | 13.6 | 5.58 | 103 | 53.1 | 0.13 | 0.13 |
| | A4 | 30.8 | 8.08 | 12.1 | 5.84 | 166 | 30.5 | 0.61 | 0.4 |
| | A5 | 60.4 | 12.6 | 22 | 6.6 | 210 | 28 | 0.45 J | 0.11 |
| | A6 | 37 | 11.5 | 13.6 | 4.29 | 75.6 | 33.3 | 0.13 | 0.14 |
| | B1 | 1.76 | 1.16 | 1.12 | 1.21 | 4.4 | 3.34 | 0.12 | 0.13 |
| | B2 | 7.19 | 30.3 | 3.63 | 5.57 | 17.1 | 28.9 | 0.96 | 1.2 |
| | B3 | 101 | 16.1 | 44.8 | 8.96 | 176 | 64.4 | 32 | 0.18 |
| | B4 | NS* | 15.1 | NS* | 10.9 | NS* | 98 | NS* | 0.48 |
| | B5 | 15.4 | 21.5 | 8.88 | 6.98 | 93.2 | 37.6 | 0.3 | 0.47 |
| | B6 | 13.8 | 13.6 | 2.72 | 2.74 | 10.3 | 16 | 0.12 | 0.13 |
| Average (Firing Line) | | 62 | 16 | 18 | 9.4 | 105 | 57 | NA | NA |

Notes:

Detection limit for non-detects used in average calculation.

mg/kg - milligrams per kilogram

NA - Not applicable

NS - Not sampled

Grid was excavated and backfilled with clean fill

Shaded and bold cells indicate exceedance of the maximum cleanup values.

Lead: maximum 480 mg/kg, residual average 240 mg/kg

Copper: maximum 280 mg/kg, residual average 140 mg/kg

Zinc: maximum 480 mg/kg, residual average 240 mg/kg

Nitroglycerin: maximum 6.2 mg/kg

*PR-SS-001 and PR-SS-002 from 2007 sampling event showed exceedances of zinc 1,110 mg/kg and 546 mg/kg respectively

TABLE 3-5
PRE- AND POST-EXCAVATION AVERAGE CONCENTRATIONS FOR RIFLE RANGE
MAIN BASE FIRING RANGE COMPLEX PISTOL RANGE AND RIFLE RANGE
NON-TIME-CRITICAL REMOVAL ACTION
NASA Wallops Flight Facility, Wallops Island, Virginia

| Excavation Depth (Inches) | Lead (mg/kg) | | | | | | | | | |
|---------------------------|----------------|-------------|-------------|------------|-------|-----------------|------|-------|-------------|-------|
| | Pre-Excavation | | | | | Post-Excavation | | | | |
| | 0-6 | 6-12 | 12-24 | 24-36 | 36-48 | 0-6 | 6-12 | 12-24 | 24-36 | 36-48 |
| A1 | 27.1 | 12 | -- | -- | -- | 27.1 | 12 | -- | -- | -- |
| A2 | 17.2 | 9.88 | -- | -- | -- | 17.2 | 9.88 | -- | -- | -- |
| A3 | 26.7 | 13 | -- | -- | -- | 26.7 | 13 | -- | -- | -- |
| A4 | 100 | 9.11 | -- | -- | -- | 100 | 9.11 | -- | -- | -- |
| A5 | 104 | 57.9 | -- | -- | -- | 104 | 57.9 | -- | -- | -- |
| A6 | 57.5 | 32.6 | -- | -- | -- | 57.5 | 32.6 | -- | -- | -- |
| A7 | 183 | 45 | -- | -- | -- | 183 | 45 | -- | -- | -- |
| A8 | 223 | 16.3 | -- | -- | -- | 223 | 16.3 | -- | -- | -- |
| B1 | 14.5 | 10.9 | -- | -- | -- | 14.5 | 10.9 | -- | -- | -- |
| B2 | 23.5 | 9.22 | -- | -- | -- | 23.5 | 9.22 | -- | -- | -- |
| B3 | 93.4 | 7.9 | 13.8 | -- | -- | 93.4 | 7.9 | 13.8 | -- | -- |
| B4 | 685 | 60.5 | -- | -- | -- | 60.5 | 60.5 | -- | -- | -- |
| B5 | 575 | 22.1 | -- | -- | -- | 22.1 | 22.1 | -- | -- | -- |
| B6 | 950 | 40.4 | 26.2 | -- | -- | 40.4 | 40.4 | 26.2 | -- | -- |
| B7 | 146 | 309 | -- | -- | -- | 146 | 309 | -- | -- | -- |
| B8 | 252 | 16.4 | -- | -- | -- | 252 | 16.4 | -- | -- | -- |
| C1A | NS | 24.4 | -- | -- | -- | NS | 24.4 | -- | -- | -- |
| C1 | 41.6 | 2770 | 6.62 | -- | -- | 6.62 | 6.62 | 6.62 | -- | -- |
| C2 | 107 | 294 | 15.8 | -- | -- | 15.8 | 15.8 | 15.8 | -- | -- |
| C3 | 119 | 1280 | 1230 | 10.6 | -- | 10.6 | 10.6 | 10.6 | 10.6 | -- |
| C4 | 4050 | 5640 | 3840 | 744 | 28.2 | 28.2 | 28.2 | 28.2 | 28.2 | 28.2 |
| C5 | 880 | 306 | 3110 | 15.8 | -- | 15.8 | 15.8 | 15.8 | 15.8 | -- |
| C6 | 3630 | 339 | 5200 | 226 | -- | 226 | 226 | 226 | 226 | -- |
| C7 | NS* | NS* | NS* | 40.6 | -- | 40.6 | 40.6 | 40.6 | 40.6 | -- |
| C8 | 237 | 4080 | 37.4 | -- | -- | 37.4 | 37.4 | 37.4 | -- | -- |
| C9 | NS | 110 | -- | -- | -- | NS | 110 | -- | -- | -- |
| D1 | 68 | 12.4 | -- | -- | -- | 68 | 11.8 | -- | -- | -- |
| D2 | 114 | 6.13 | 15.8 | -- | -- | 114 | 6.13 | 15.8 | -- | -- |
| D3 | 71.8 | 11.4 | 3.24 | -- | -- | 71.8 | 11.4 | 3.24 | -- | -- |
| D4 | 14100 | 108 | 17.4 | -- | -- | 106 | 106 | 17.6 | -- | -- |
| D5 | 300 | 7.19 | 5.27 | -- | -- | 7.19 | 7.19 | 5.27 | -- | -- |
| D6 | 920 | 106 | 29.1 | -- | -- | 106 | 106 | 29.1 | -- | -- |
| D7 | 359 | 60.6 | 3.4 | -- | -- | 60.6 | 60.6 | 3.42 | -- | -- |
| D8 | 2180 | 22.4 | -- | -- | -- | 21.9 | 21.9 | -- | -- | -- |
| D9 | 158 | -- | -- | -- | -- | 158 | -- | -- | -- | -- |
| AVERAGE (B, C, D) | 963 | 480 | 904 | 207.4 | 28.2 | 72.7 | 44.7 | 31.0 | 64.2 | 28.2 |
| E1 | 20.3 | 4.72 | -- | -- | -- | 20.3 | 4.83 | -- | -- | -- |
| E2 | 67 | 19 | -- | -- | -- | 65.4 | 18.8 | -- | -- | -- |
| E3 | 209 | 227 | -- | -- | -- | 208 | 227 | -- | -- | -- |
| E4 | 62.4 | 3.48 | -- | -- | -- | 61.2 | 3.48 | -- | -- | -- |
| E5 | 187 | 5.57 | -- | -- | -- | 187 | 5.57 | -- | -- | -- |
| E6 | 184 | 16.5 | -- | -- | -- | 184 | 16.5 | -- | -- | -- |
| E7 | 91.3 | 5.22 | -- | -- | -- | 91.3 | 5.22 | -- | -- | -- |
| E8 | 152 | 28 | -- | -- | -- | 152 | 28 | -- | -- | -- |
| F1 | 16.2 | 6.88 | 2.46 | -- | -- | 16.2 | 6.88 | 2.46 | -- | -- |
| F2 | 5.39 | 3.5 | -- | -- | -- | 5.39 | 3.5 | -- | -- | -- |
| F3 | 53.5 | 11.3 | -- | -- | -- | 53.5 | 11.3 | -- | -- | -- |
| F4 | 107 | 2.98 | -- | -- | -- | 107 | 2.98 | -- | -- | -- |
| F5 | 42.1 | 3.15 | -- | -- | -- | 42.1 | 4.03 | -- | -- | -- |
| F6 | 135 | 13.3 | -- | -- | -- | 135 | 13.3 | -- | -- | -- |
| F7 | 9.88 | 9.18 | 2.18 | -- | -- | 9.88 | 9.18 | 2.18 | -- | -- |
| F8 | 4.87 | 3.67 | -- | -- | -- | 4.87 | 3.67 | -- | -- | -- |
| AVERAGE (all) | 670 | 331 | 798 | NA | NA | 76.5 | 37.7 | 27.8 | NA | NA |

Notes:

Detection limit for non-detects used in average calculation.

mg/kg - milligrams per kilogram

NS - Not sampled

Grid was excavated and backfilled with clean fill

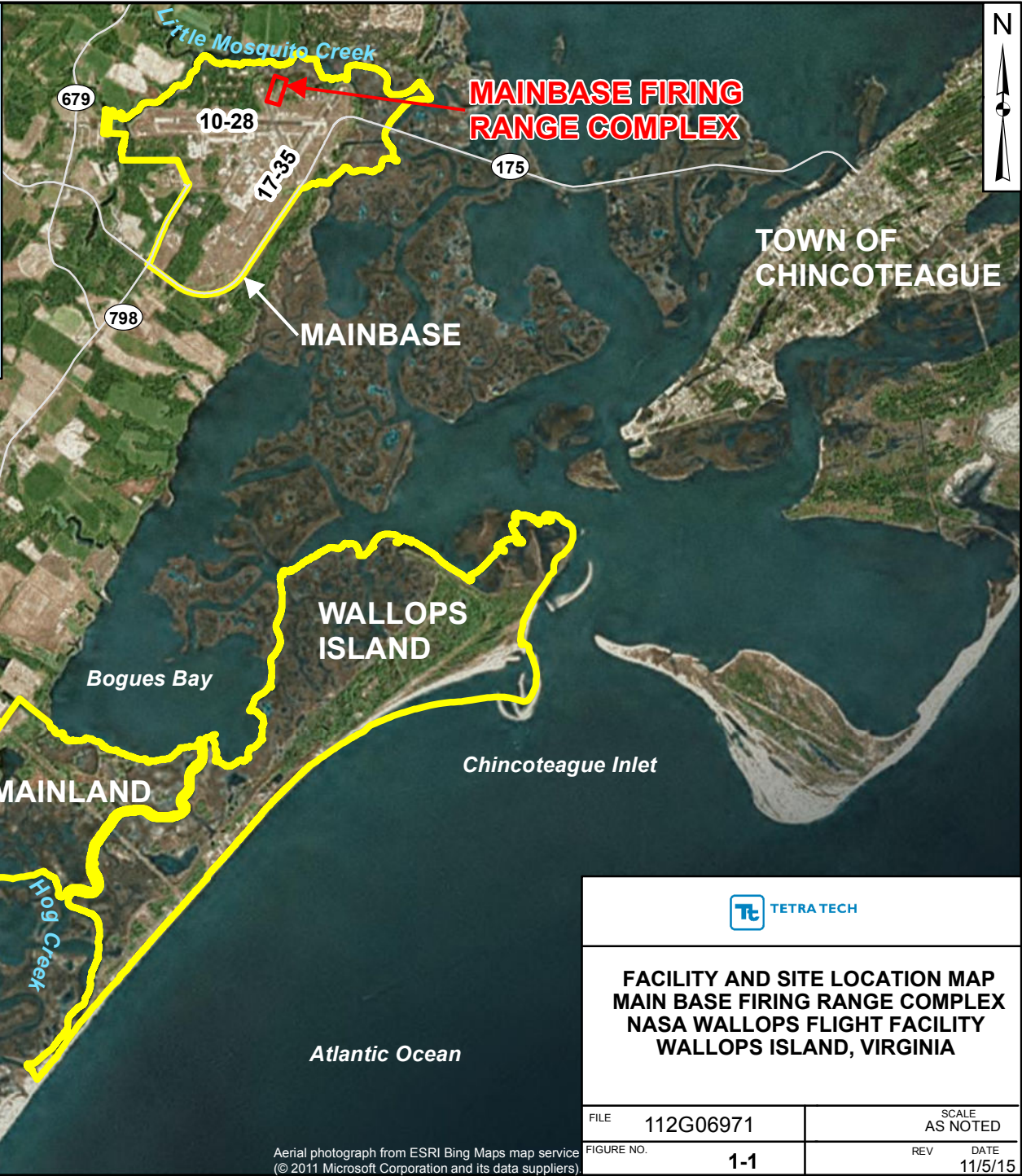
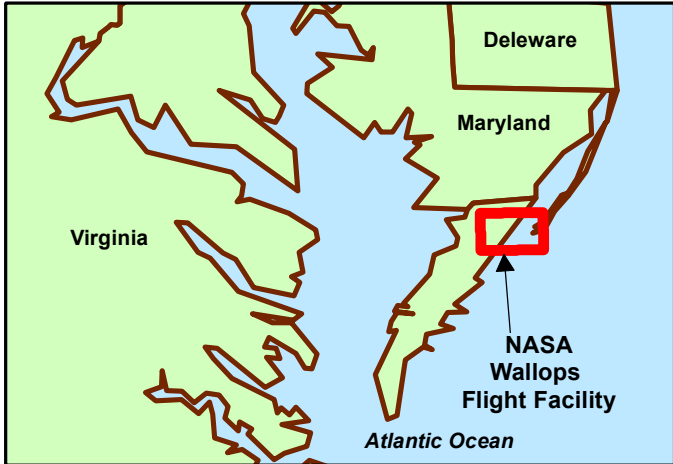
Shaded and bolded cells indicate exceedance of the maximum cleanup value.

Lead: maximum 480 mg/kg, residual average 240 mg/kg

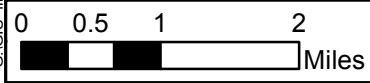
*RR-SS-016 from 2007 sampling event showed an exceedance of lead at 1,400 mg/kg

Note: Lead concentrations from the deepest sample within each excavated grid were used to calculate the post-excavation residual averages (arithmetic mean).

FIGURES

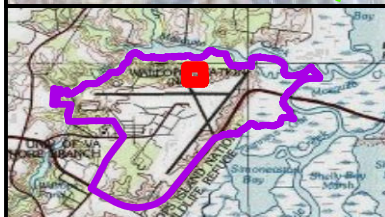
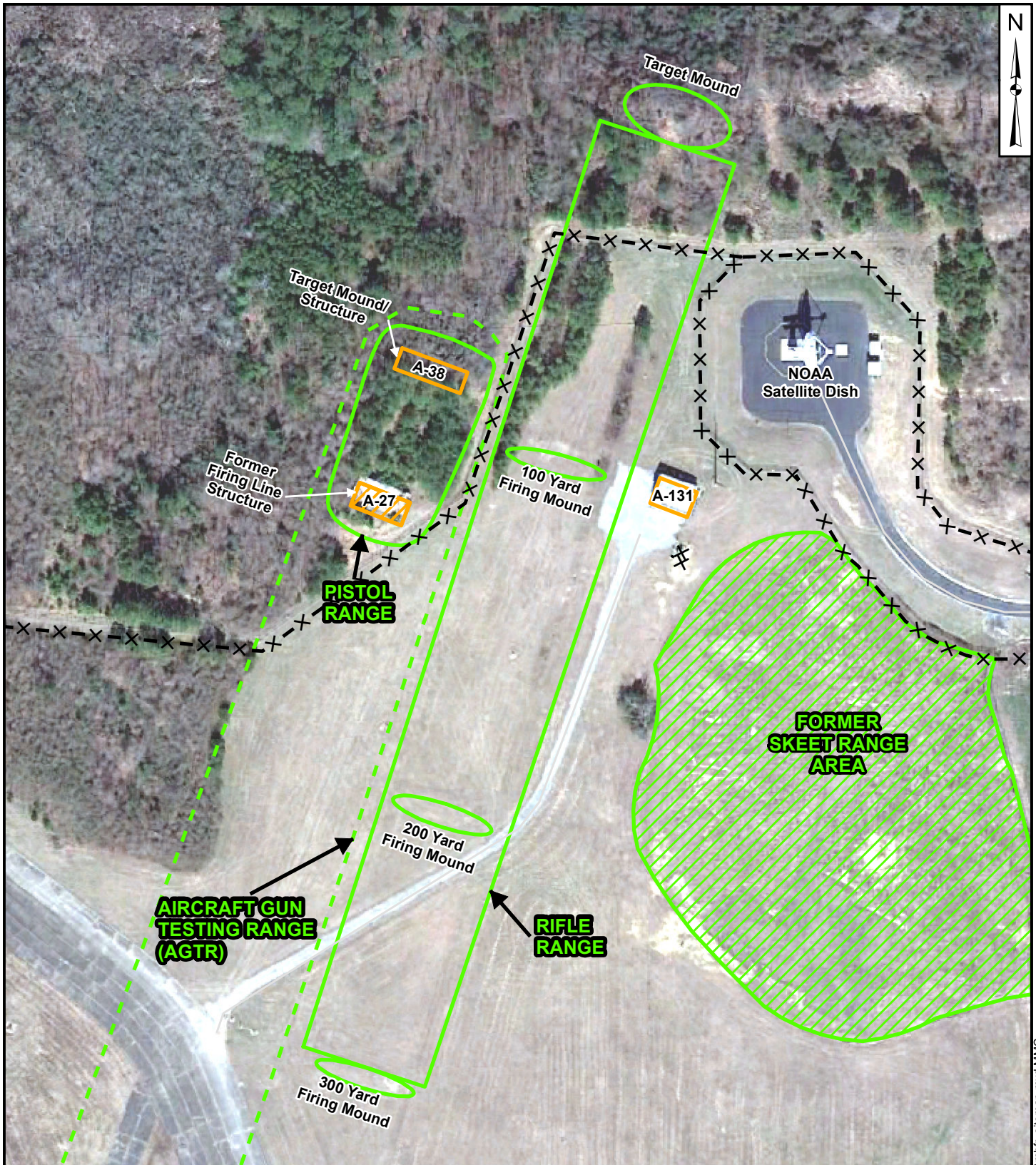


G:\GIS_files\NASA\WIMXD\MBFR\steloormap_8x11.mxd MMC



| | |
|---|-----------|
| | |
| FACILITY AND SITE LOCATION MAP MAIN BASE FIRING RANGE COMPLEX NASA WALLOPS FLIGHT FACILITY WALLOPS ISLAND, VIRGINIA | |
| FILE | 112G06971 |
| SCALE AS NOTED | |
| FIGURE NO. | 1-1 |
| REV | DATE |
| | 11/5/15 |

Aerial photograph from ESRI Bing Maps map service
 (© 2011 Microsoft Corporation and its data suppliers).



Base Map:
Google Earth Pro Image from 3/8/2013

Legend

- NASA Roads
- Site Boundary
- Approximate AGTR Boundary
- Former Structure
- Existing Structure
- Cleared Area
- Installation Area

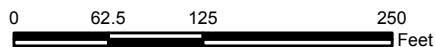


Figure 1-2
Site Layout
Main Base Firing Range Complex
NASA Wallops Flight Facility
Wallops Island, Virginia












Prepared
For:

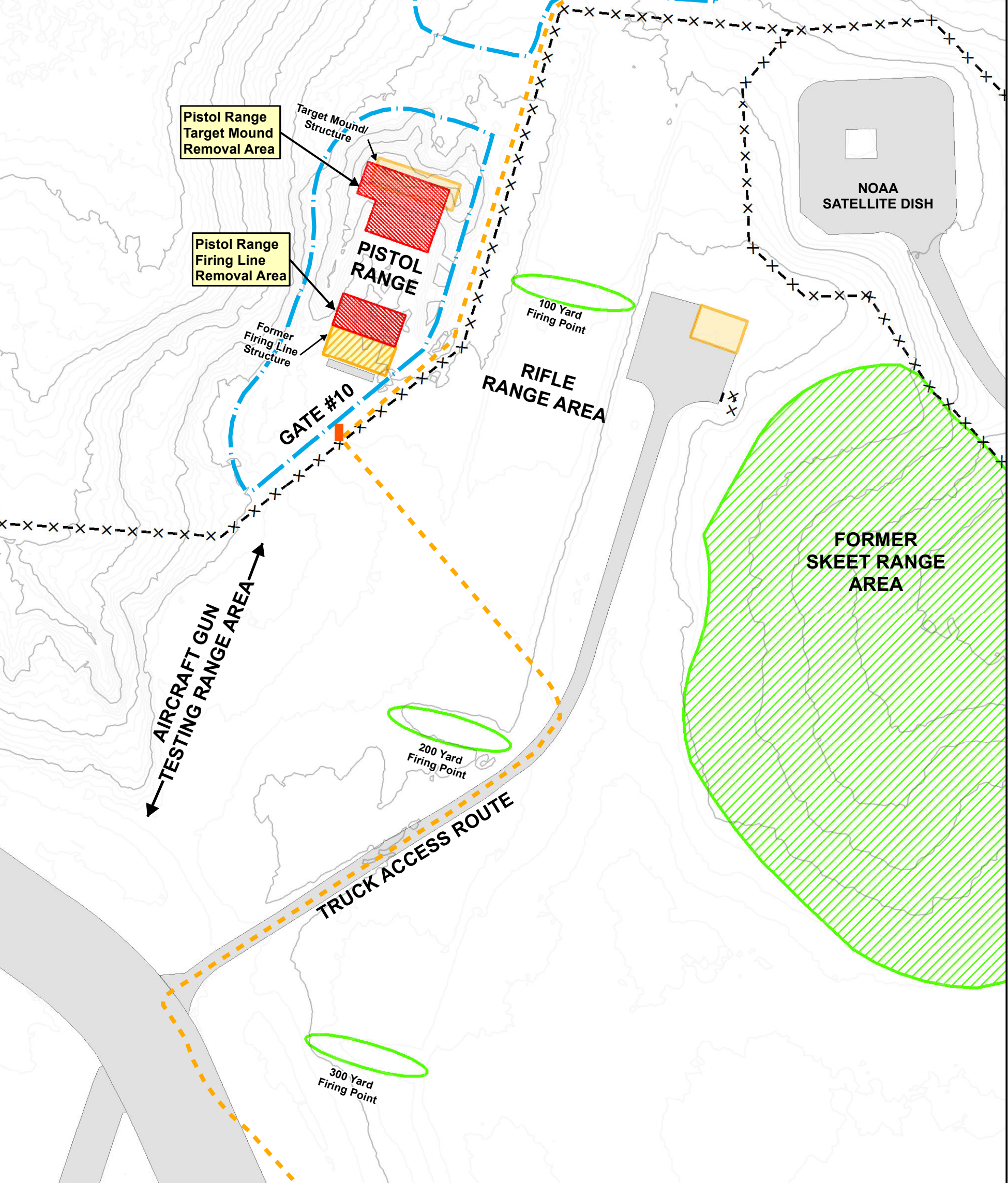


Prepared
By:



Date:
10/10/2016

- Legend**
-  Perimeter Gate # 10
 -  Truck Access Route
 -  Tree Clearing Area (Approximate)
 -  2010 LIDAR Contours (feet msl)
 -  Fence Line
 -  Final Excavation Areas
 -  Cleared Area
 -  Former Structure
 -  Existing Structure
 -  Firing/Target Mounds
 -  Paved Surfaces



Base Map:
ESRI USGS Topographic map service

**Action Areas and Access Routes
Main Base Firing Range Complex
NASA Wallops Flight Facility
Wallops Island, Virginia**

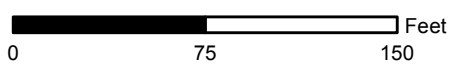



Figure 2-1

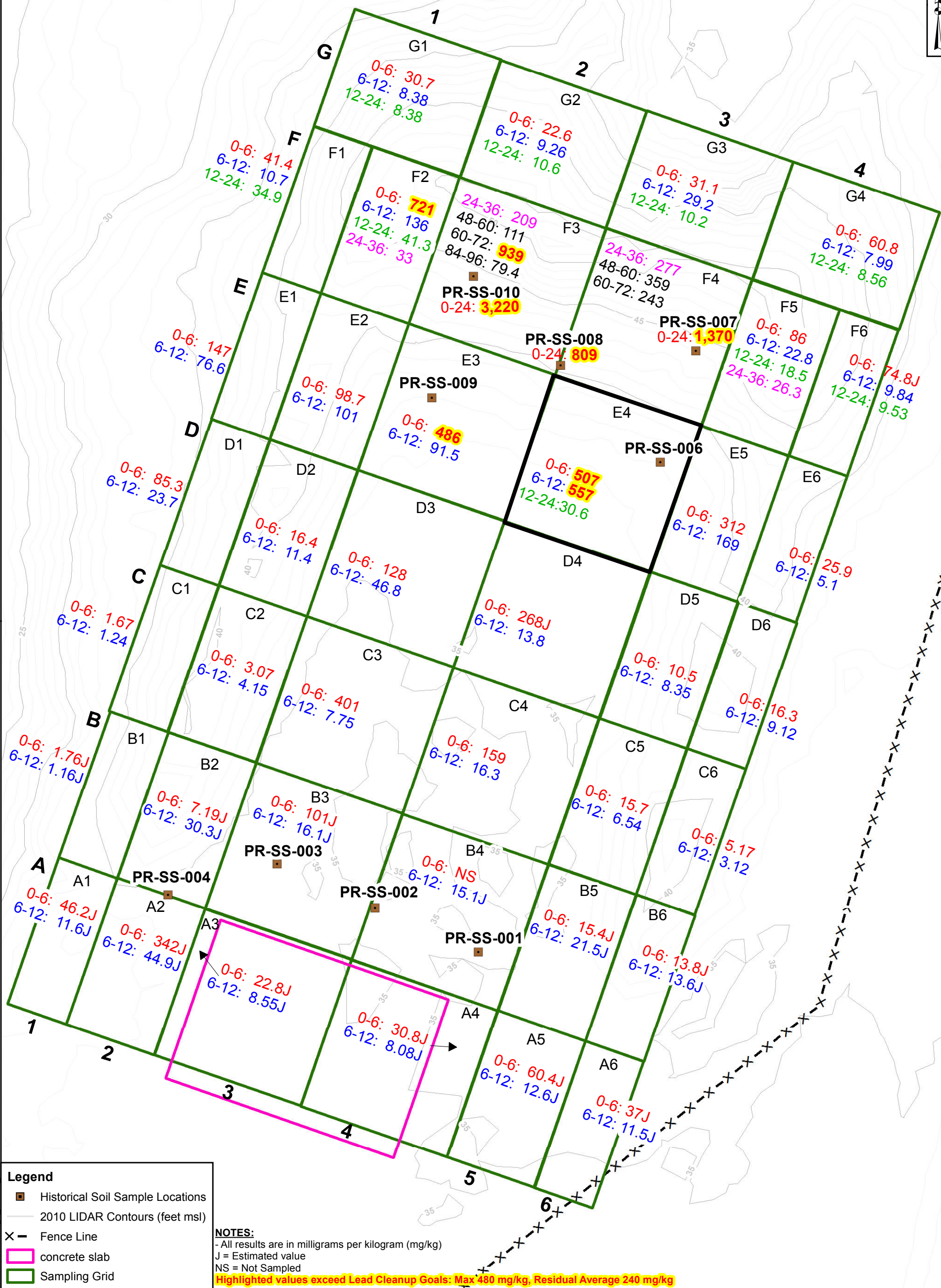
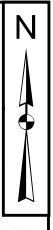
Prepared For: 

Prepared by: 

Date:
10/13/2016

G:\GIS_files\NASA\Wallops\MBFR\mbfr_area\route.mxd

Lead Cleanup Goals: Max 480 mg/kg, Residual Average 240 mg/kg

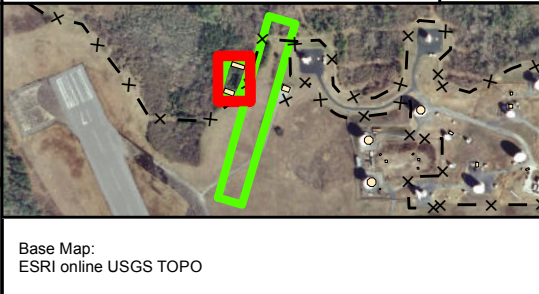


Legend

- Historical Soil Sample Locations
- 2010 LIDAR Contours (feet msl)
- Fence Line
- concrete slab
- Sampling Grid

NOTES:

- All results are in milligrams per kilogram (mg/kg)
- J = Estimated value
- NS = Not Sampled
- Highlighted values exceed Lead Cleanup Goals: Max 480 mg/kg, Residual Average 240 mg/kg**



**Pistol Range
Soil Sample Analytical Results LEAD
NASA Wallops Flight Facility
Wallops Island, Virginia**

Base Map:
ESRI online USGS TOPO

0 20 40 Feet

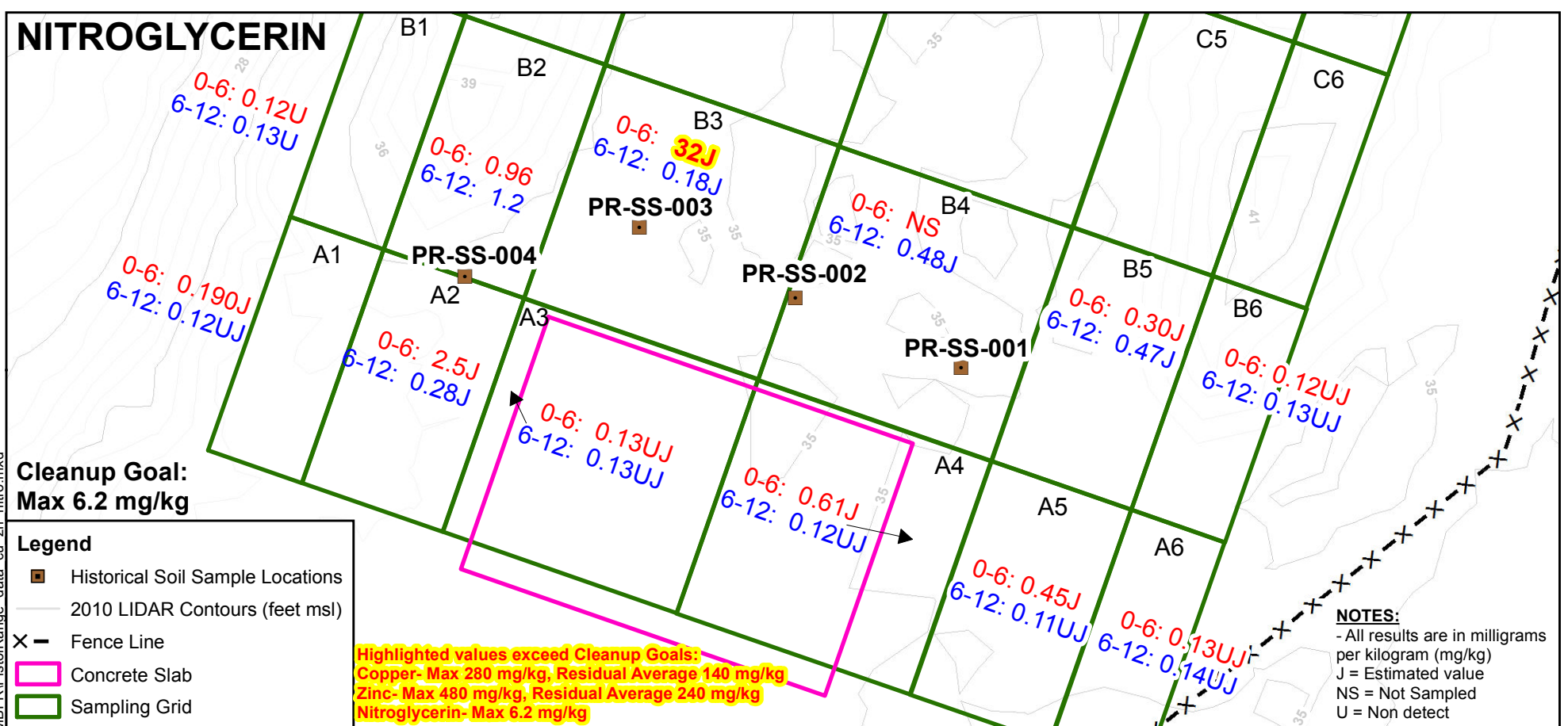
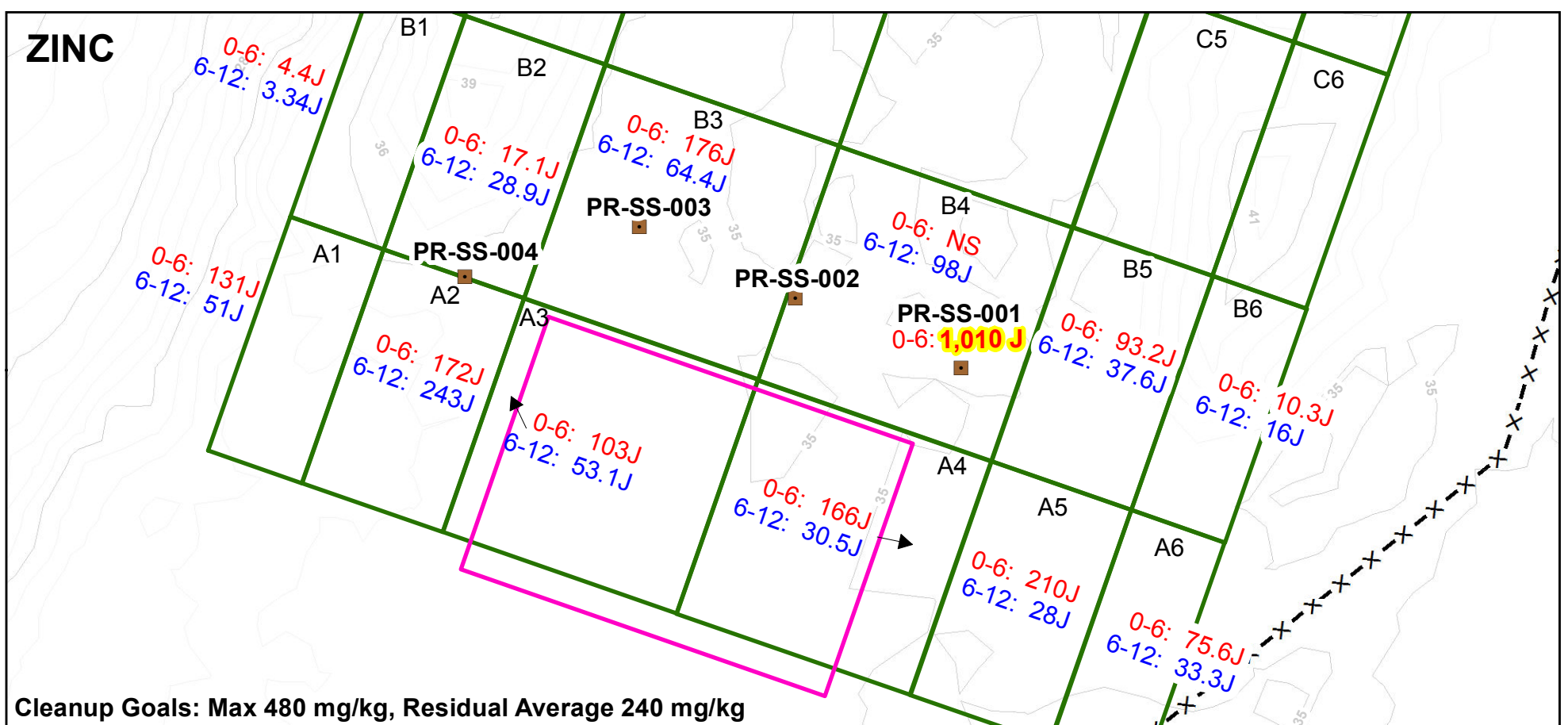
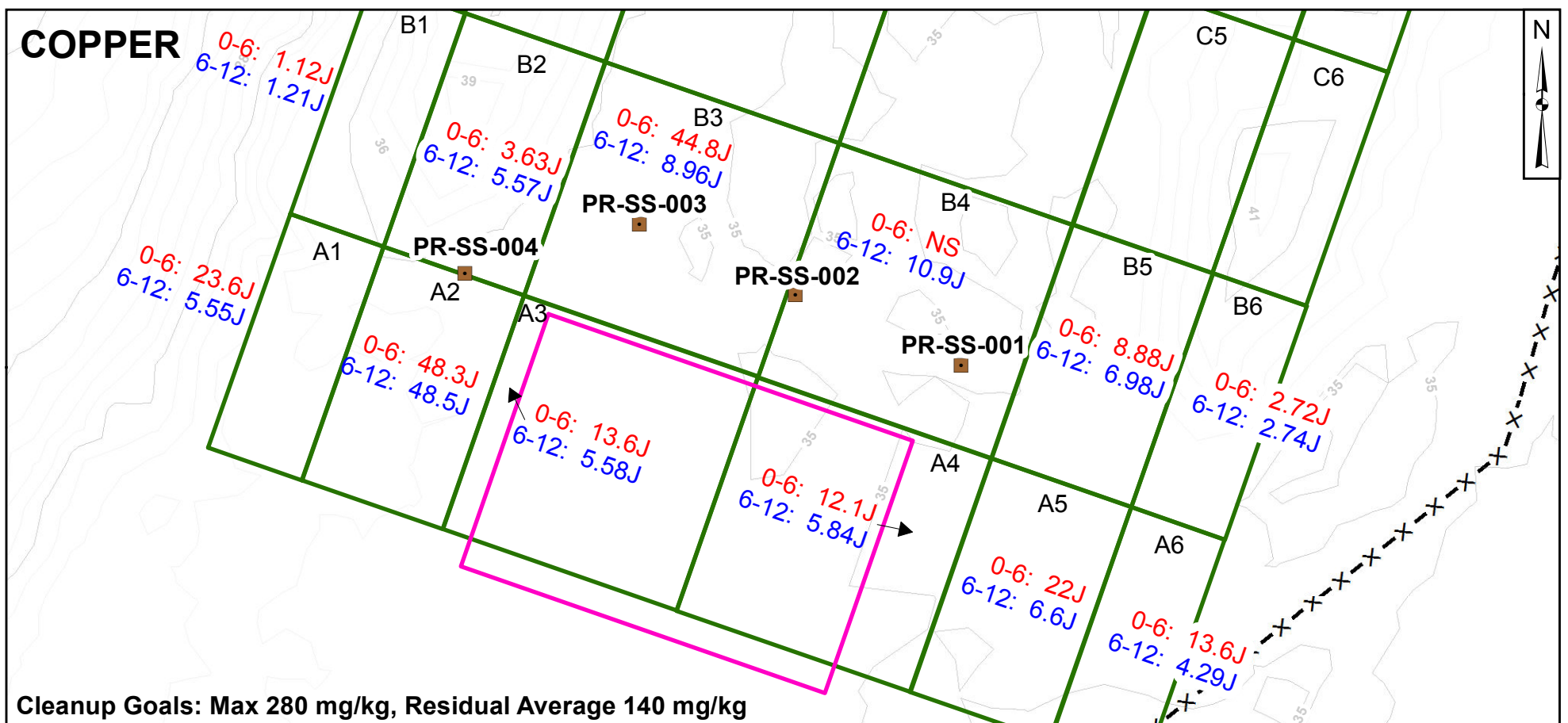
Figure 3-1

Prepared For:

Prepared By: TETRA TECH

Date: 2/6/2017

NOR: G:\GIS_files\NASA_WIMXD\MBFR\PistolRange_results_Lead.mxd



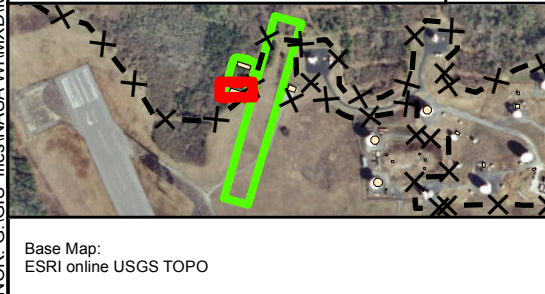
Legend

- Historical Soil Sample Locations
- 2010 LIDAR Contours (feet msl)
- Fence Line
- Concrete Slab
- Sampling Grid

Highlighted values exceed Cleanup Goals:
 Copper- Max 280 mg/kg, Residual Average 140 mg/kg
 Zinc- Max 480 mg/kg, Residual Average 240 mg/kg
 Nitroglycerin- Max 6.2 mg/kg

NOTES:
 - All results are in milligrams per kilogram (mg/kg)
 J = Estimated value
 NS = Not Sampled
 U = Non detect

NOR: G:\GIS_files\NASA_WIMXD\MBFR\PistolRange_data_cu_zn_nitro.mxd



**Pistol Range
 Soil Sample Analytical Results
 Copper, Zinc and Nitroglycerin
 NASA Wallops Flight Facility
 Wallops Island, Virginia**

0 20 40 Feet

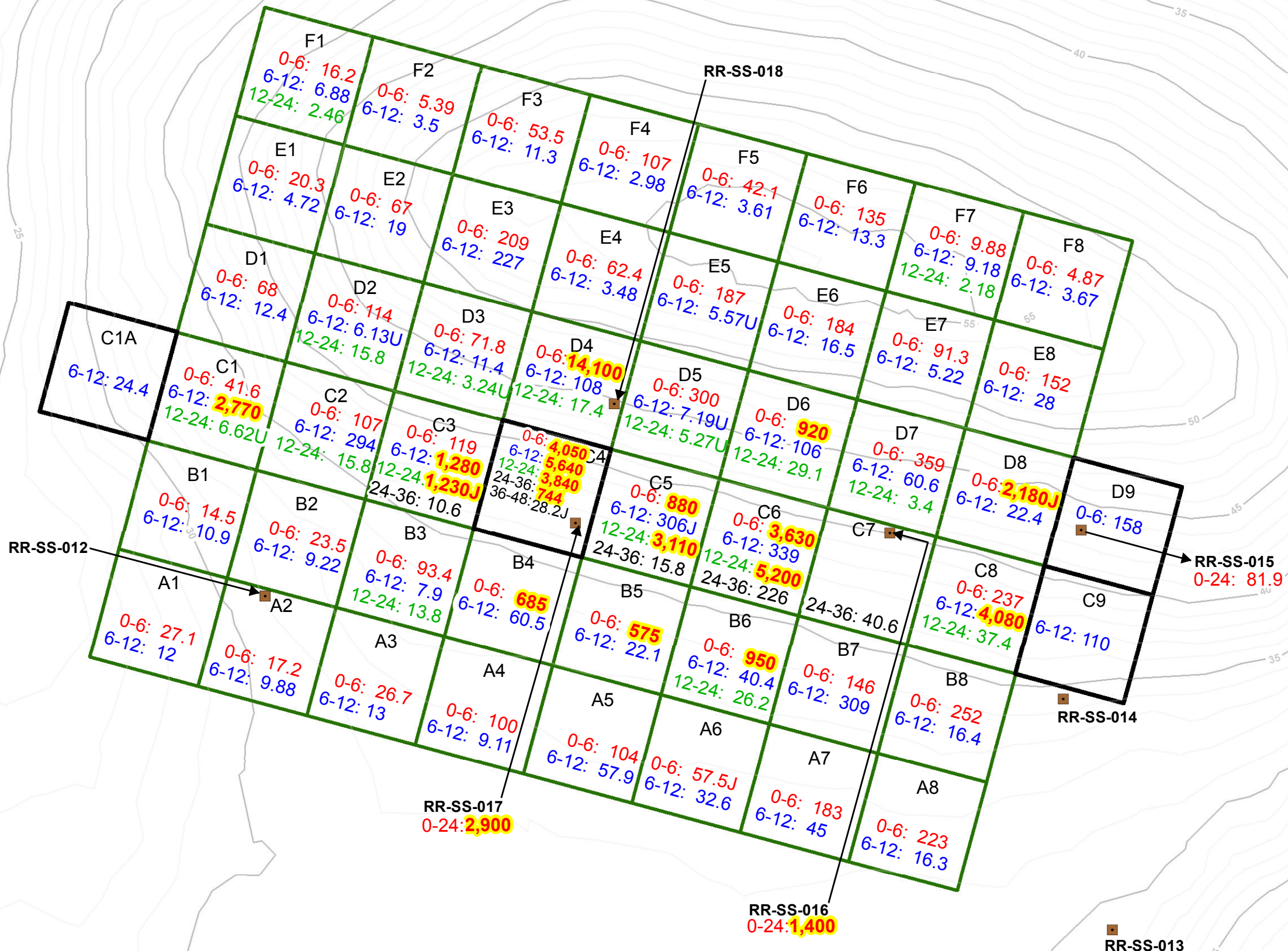
Figure 3-2

Prepared For:

Prepared By:

Date: 2/6/2017

Lead Cleanup Goals: Max 480 mg/kg, Residual Average 240 mg/kg



- Legend**
- Historical Soil Sample Locations
 - 2010 LIDAR Contours (feet msl)
 - Sampling Grid
 - Installation Boundary

NOTES:
 - All results are in milligrams per kilogram (mg/kg)
 J = Estimated value
 U = Non detect
**Highlighted values exceed Lead Cleanup Goals:
 Max 480 mg/kg, Residual Average 240 mg/kg**

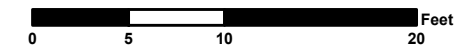
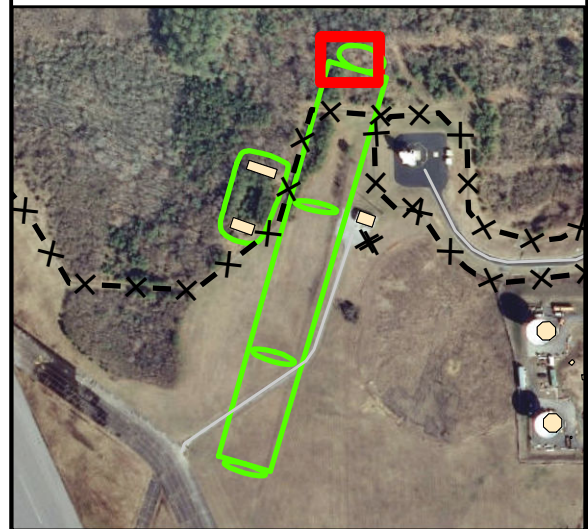


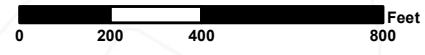
Figure 3-3: Rifle Range Soil Sample Analytical Results NASA Wallops Flight Facility Wallops Island, Virginia



2/6/2017

Aerial Imagery 2013 ESRI map service
 USA Topo Map 2013 ESRI map service

Coordinate System: North American Datum, 1983 VA South, Meters



NOR: G:\GIS_files\NASA\Wallops\BFR\RifleRange_data_landscape.mxd MDC

Grid Excavation Depths

0 - 6 in: F2, E3, B3, B4

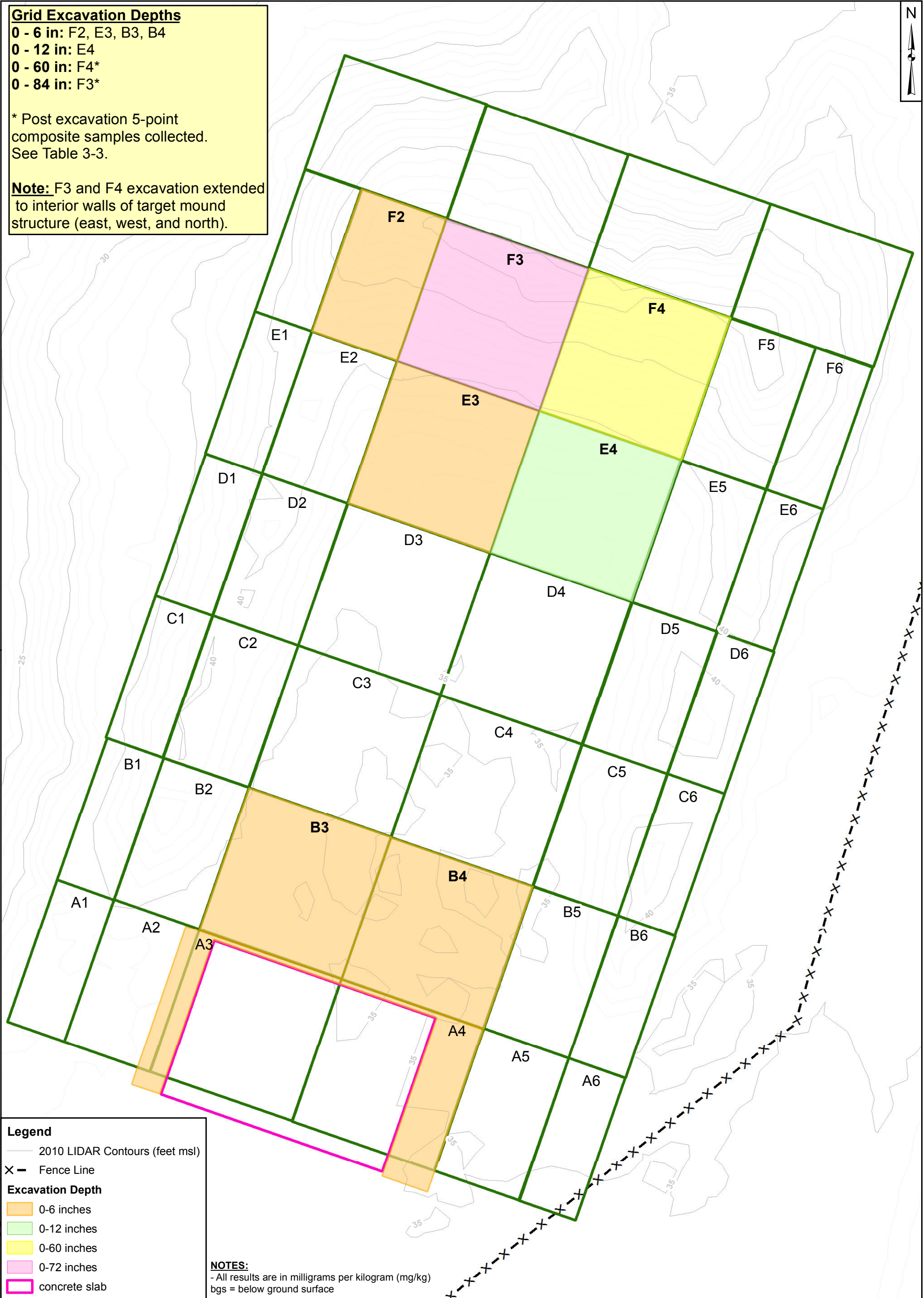
0 - 12 in: E4

0 - 60 in: F4*

0 - 84 in: F3*

* Post excavation 5-point composite samples collected. See Table 3-3.

Note: F3 and F4 excavation extended to interior walls of target mound structure (east, west, and north).



Legend

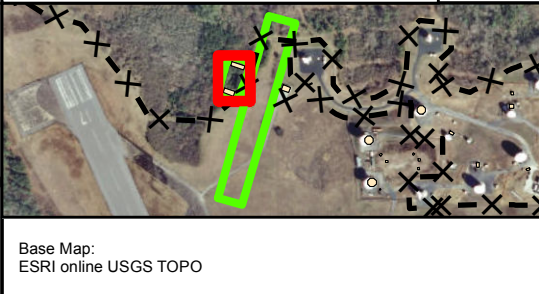
- 2010 LIDAR Contours (feet msl)
- X - Fence Line

Excavation Depth

- Orange box: 0-6 inches
- Green box: 0-12 inches
- Yellow box: 0-60 inches
- Pink box: 0-72 inches
- Pink outline: concrete slab

NOTES:
 - All results are in milligrams per kilogram (mg/kg)
 bgs = below ground surface

NOR: G:\GIS_files\NASA_WIMXD\MBFR\PistolRange_excavationplan.mxd



Base Map:
 ESRI online USGS TOPO

**Pistol Range
 Final Excavation Limits
 NASA Wallops Flight Facility
 Wallops Island, Virginia**

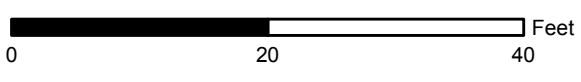
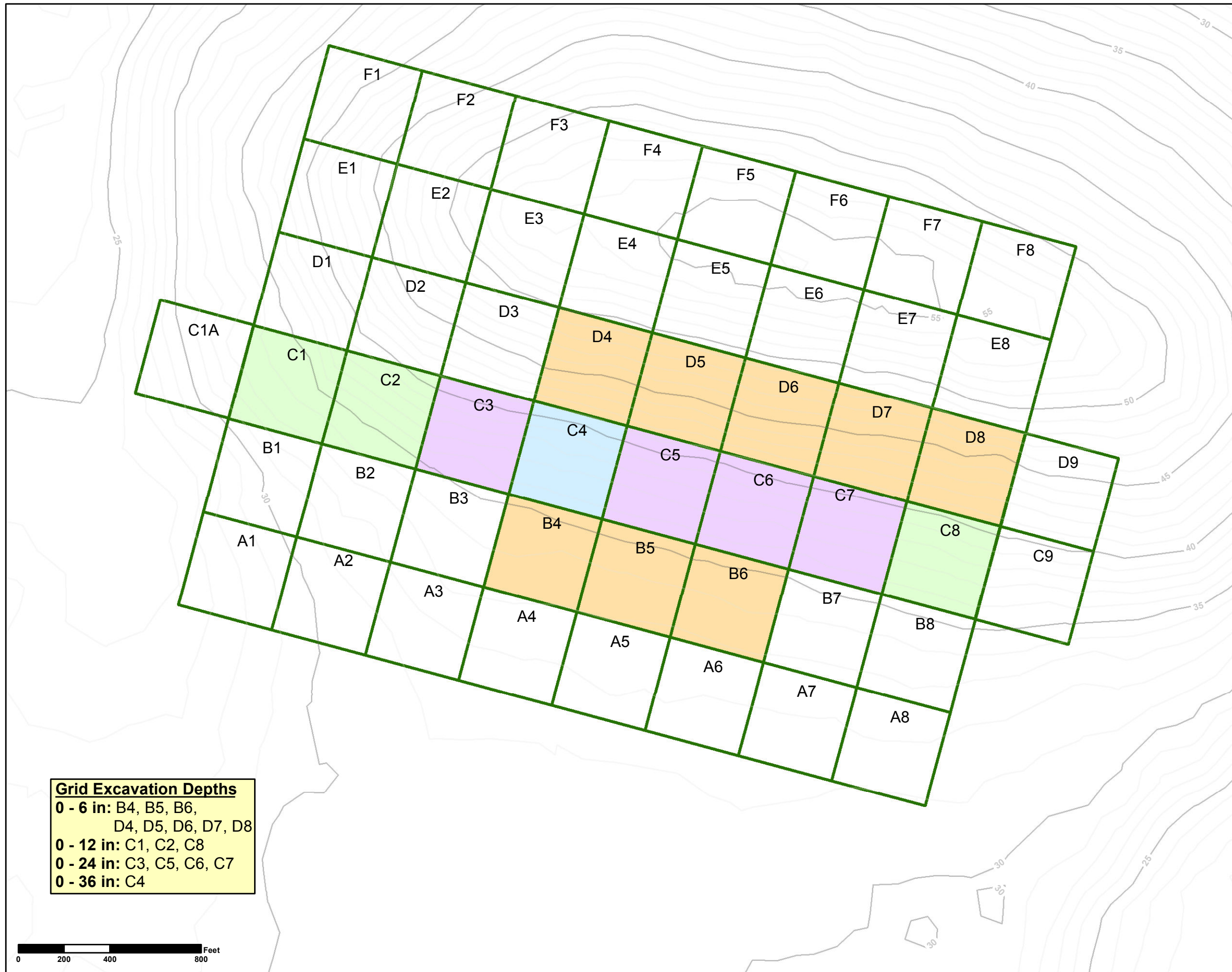


Figure 3-4

Prepared For:

Prepared By:

Date:
 2/6/2017

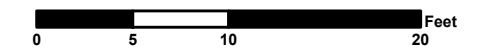
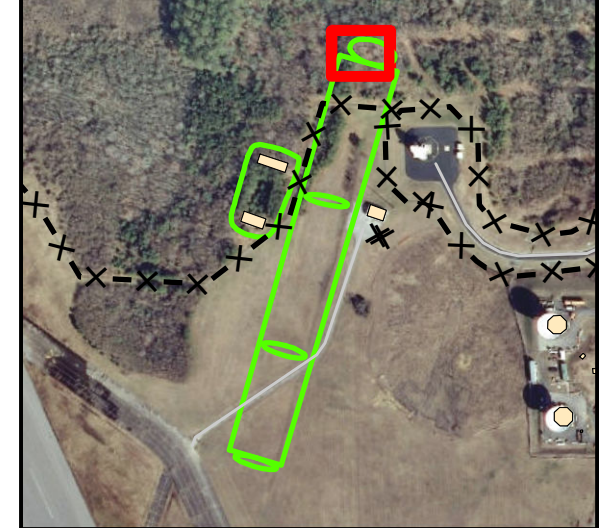


Legend

- 2010 LIDAR Contours (feet msl)
- ▭ Sampling Grid
- Excavation Depth**
- ▭ 0-6 inches
- ▭ 0-12 inches
- ▭ 0-24 inches
- ▭ 0-36 inches
- ▭ Installation Boundary

NOTES:

- All results are in milligrams per kilogram (mg/kg)



**Figure 3-5: Rifle Range
Final Excavation Limits
NASA Wallops Flight Facility
Wallops Island, Virginia**



10/10/2016

Aerial Imagery 2013 ESRI map service
USA Topo Map 2013 ESRI map service

Coordinate System: North American Datum, 1983 VA South, Meters

NOR: G:\GIS_files\NASA\Wallops\WallopsRange_excavation\plan_excavation\plan_excavation.mxd MMC

APPENDICES

APPENDIX A
ANALYTICAL CHAIN-OF-CUSTODY FORMS



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CHAIN of CUSTODY

PLEASE BEAR DOWN AND
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Client: **Tetra Tech** Contact: **Kristi Francisco** Phone #: **(757) 466-4902** Fax #: **()**
 Address: **5700 Lake Wright Dr. St 309** City: **Norfolk, VA** State: **VA** Zip Code: **23502**
 Purchase Order #: _____ Proj. Name / No.: **112607723** Katahdin Quote #: _____

Bill (if different than above) Address _____

Sampler (Print / Sign): **Jacob Birkett** *J. Birkett* Copies To: _____

LAB USE ONLY WORK ORDER #: **SJ4100**
 KATAHDIN PROJECT NUMBER: _____
 REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

| Fit. | Fit. | Fit. | Fit. | Fit. | Fit. | Fit. | Fit. | Fit. | Fit. |
|--------------------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|
| OY ON | OY ON | OY ON | OY ON | OY ON | OY ON | OY ON | OY ON | OY ON | OY ON |
| Lead, Copper, Zinc | Nitroglycerin | | | | | | | | |
| 2 | 2 | | | | | | | | MSMSD |
| PR-SS-AG-0006 | 6-6-16/1555 | SO | 2 | | | | | | |
| PR-SB-AG-0612 | /1556 | | 2 | 1 | 1 | | | | |
| PR-SB-AG-1224 | /1557 | | 2 | 1 | 1 | | | | |
| PR-SS-A5-0006 | /1620 | | 2 | 1 | 1 | | | | |
| PR-SB-A5-0612 | /1621 | | 2 | 1 | 1 | | | | |
| PR-SB-A5-1224 | /1622 | | 2 | 1 | 1 | | | | |
| PR-SS-A1-0006 | /1650 | | 2 | 1 | 1 | | | | |
| PR-SB-A1-0612 | /1651 | | 2 | 1 | 1 | | | | |
| PR-SB-A1-1224 | /1652 | | 2 | 1 | 1 | | | | |
| PR-Dup01-060616 | 6-6-16/1200 | | 2 | 1 | 1 | | | | |
| PR-SS-A2-0006 | 6-7-16/0800 | | 2 | 1 | 1 | | | | |
| PR-SB-A2-0612 | /0801 | | 2 | 1 | 1 | | | | |
| PR-SB-A2-1224 | /0802 | | 2 | 1 | 1 | | | | |
| PR-SS-B1-0006 | /0812 | | 2 | 1 | 1 | | | | |
| PR-SB-B1-0612 | /0813 | | 2 | 1 | 1 | | | | |
| PR-SB-B1-1224 | /0814 | | 2 | 1 | 1 | | | | |

COMMENTS _____

| | | | | | |
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| Relinquished By: (Signature) <i>J. Birkett</i> | Date / Time 6-7-16 1700 | Received By: (Signature) <i>FedEx</i> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |
| Relinquished By: (Signature) | Date / Time 6/3/16 1000 | Received By: (Signature) <i>[Signature]</i> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

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| | | | |
|--------------------------------|------------------|------------------|----------|
| Client | Contact | Phone # | Fax # |
| Address | City | State | Zip Code |
| Purchase Order # | Proj. Name / No. | Katahdin Quote # | |
| Bill (if different than above) | Address | | |

Sampler (Print / Sign) _____ Copies To: _____

| | | | | | | | | | | |
|---|-----------------------------|--|---------------|-------|-------|-------|-------|-------|-------|--|
| LAB USE ONLY | WORK ORDER #: <u>ST4100</u> | ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | |
| KATAHDIN PROJECT NUMBER _____ | | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | |
| REMARKS: _____ | | OY ON | OY ON | OY ON | OY ON | OY ON | OY ON | OY ON | OY ON | |
| SHIPPING INFO: <input type="checkbox"/> FED EX <input type="checkbox"/> UPS <input type="checkbox"/> CLIENT | | Lead, Copper, Zinc | Nitroglycerin | | | | | | | |
| AIRBILL NO: _____ | | | | | | | | | | |
| TEMP °C _____ <input type="checkbox"/> TEMP BLANK <input type="checkbox"/> INTACT <input type="checkbox"/> NOT INTACT | | | | | | | | | | |

| * | Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. |
|---|---|--------------------|--------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|
| | PR-SS-B2-0006 | 6-7-16/0827 | SO | 2 | 1 | 1 | | | | | | |
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| | PR-SB-B2-1224 | /0829 | | 2 | 1 | 1 | | | | | | |
| | PR-SS-B3-0006 | /0850 | | 2 | 1 | 1 | | | | | | |
| | PR-SB-B3-0612 | /0851 | | 2 | 1 | 1 | | | | | | |
| | PR-SB-B3-1224 | /0852 | | 2 | 1 | 1 | | | | | | |
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| | PR-SB-B4-1224 | /0906 | | 2 | 1 | 1 | | | | | | |
| | PR-SS-B5-0006 | /0917 | | 2 | 1 | 1 | | | | | | |
| | PR-SB-B5-0612 | /0918 | | 2 | 1 | 1 | | | | | | |
| | PR-SB-B5- 0612 ¹²²⁴ | /0919 | | 2 | 1 | 1 | | | | | | |
| | PR-SS-B6-0006 | /0938 | | 2 | 1 | 1 | | | | | | |
| | PR-SB-B6-0612 | /0939 | | 2 | 1 | 1 | | | | | | |
| | PR-SB-B6-1224 | /0940 | | 2 | 1 | 1 | | | | | | |
| | PR-SS-A3-0006 | ✓/0954 | ✓ | 2 | 1 | 1 | | | | | | |

COMMENTS _____

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| Relinquished By: (Signature) | Date / Time 6/9/16 1000 | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

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|--------------------------------|------------------|------------------|----------|
| Client | Contact | Phone # | Fax # |
| Address | City | State | Zip Code |
| Purchase Order # | Proj. Name / No. | Katahdin Quote # | |
| Bill (if different than above) | Address | | |

Sampler (Print / Sign) _____ Copies To: _____

LAB USE ONLY WORK ORDER #: 554100/554101
 KATAHDIN PROJECT NUMBER _____

REMARKS: _____

SHIPPING INFO: FED EX UPS CLIENT

AIRBILL NO: _____

TEMP °C _____ TEMP BLANK INTACT NOT INTACT

| * | Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | | | | | | |
|---|--------------------|--------------------|--------|---------------|---|---|---|---|---|---|---|---|---|---|--|--|--|--|--|-------|
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| | | | | | Lead, Copper, Zinc | Nitrolycerin | Lead | | | | | | | | | | | | | |
| | PR-SB-A3-0612 | 6-7-16/0955 | SO | 2 | 1 | 1 | | | | | | | | | | | | | | |
| | PR-SB-A3-1224 | /0956 | | 2 | 1 | 1 | | | | | | | | | | | | | | |
| | PR-SS-A4-0006 | /1012 | | 2 | 1 | 1 | | | | | | | | | | | | | | |
| | PR-SB-A4-0612 | /1013 | | 2 | 1 | 1 | | | | | | | | | | | | | | |
| | PR-SB-A4-1224 | /1014 | | 2 | 1 | 1 | | | | | | | | | | | | | | |
| | PR-Dup02-060716 | /0730 | | 2 | 1 | 1 | | | | | | | | | | | | | | |
| | PR-Dup03-060716 | /0830 | | 2 | 1 | 1 | | | | | | | | | | | | | | |
| | PR-Dup04-060716 | /0900 | | 2 | 1 | 1 | | | | | | | | | | | | | | |
| | PR-SS-C1-0006 | /1030 | | 2 | | | | | | | | | | | | | | | | MSMSD |
| | PR-SB-C1-0612 | /1031 | | 1 | | 0 | | | | | | | | | | | | | | |
| | PR-SS-C2-0006 | /1039 | | 1 | | 0 | | | | | | | | | | | | | | |
| | PR-SB-C2-0612 | /1040 | | 1 | | | | | | | | | | | | | | | | |
| | PR-SS-C3-0006 | /1050 | | 1 | | | | | | | | | | | | | | | | |
| | PR-SB-C3-0612 | /1051 | | 1 | | | | | | | | | | | | | | | | |
| | PR-SS-C4-0006 | /1062 | | 1 | | | | | | | | | | | | | | | | |
| | PR-SB-C4-0612 | /1103 | | 1 | | | | | | | | | | | | | | | | |

COMMENTS _____

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| Relinquished By: (Signature) | Date / Time 6/8/16 1000 | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

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|--------------------------------|------------------|------------------|----------------|
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| Address | | City | State Zip Code |
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See Page 1

LAB USE ONLY WORK ORDER #: ST4101
 KATAHDIN PROJECT NUMBER _____
 REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

| Filt. OY ON | Filt. OY ON | Filt. OY ON | Filt. OY ON | Filt. OY ON | Filt. OY ON | Filt. OY ON | Filt. OY ON | Filt. OY ON | Filt. OY ON | Filt. OY ON |
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Lead

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. |
|----------------------|--------------------|--------|---------------|
| PR-SS-C5-0006 | 6-7-16 / 1208 | 50 | 1 |
| PR-SB-C5-0612 | / 1209 | | 1 |
| PR-SS-C6-0006 | / 1218 | | 1 |
| PR-SB-C6-0612 | / 1219 | | 1 |
| PR-SS-D6-0006 | / 1229 | | 1 |
| PR-SB-D6-0612 | / 1230 | | 1 |
| PR-SS-D5-0006 | / 1237 | | 1 |
| PR-SB-D5-0612 | / 1238 | | 1 |
| PR-SS-D4-0006 | / 1247 | | 1 |
| PR-SB-D4-0612 | / 1248 | | 1 |
| PR-SS-D3-0006 | / 1258 | | 1 |
| PR-SB-D3-0006 | / 1259 | | 1 |
| PR-SS-D2-0006 | / 1309 | | 1 |
| PR-SB-D2-0612 | / 1310 | | 1 |
| PR-SS-D1-0006 | / 1317 | | 1 |
| PR-SB-D1-0612 | ✓ / 1318 | ✓ | 1 |

COMMENTS

| | | | | | |
|--|----------------------------|--|------------------------------|-------------|--------------------------|
| Relinquished By: (Signature) <i>[Signature]</i> | Date / Time 6-7-16 1700 | Received By: (Signature) <u>FedEx</u> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |
| Relinquished By: (Signature) | Date / Time 6/8/16 1000 | Received By: (Signature) <i>[Signature]</i> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

ORIGINAL
0000012



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Page 5 of 7

| | | | |
|---------------------------|------------------|------------------|----------|
| Client | Contact | Phone # | Fax # |
| Address <u>See Page 1</u> | | State | Zip Code |
| Purchase Order # | Proj. Name / No. | Katahdin Quote # | |

Bill (if different than above) Address

Sampler (Print / Sign) Copies To:

LAB USE ONLY WORK ORDER #: ST4102
 KATAHDIN PROJECT NUMBER _____

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

REMARKS: _____

| | | | | | | | | | | | | | | | |
|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. |
| <input type="checkbox"/> Y | <input type="checkbox"/> N | <input type="checkbox"/> Y | <input type="checkbox"/> N | <input type="checkbox"/> Y | <input type="checkbox"/> N | <input type="checkbox"/> Y | <input type="checkbox"/> N | <input type="checkbox"/> Y | <input type="checkbox"/> N | <input type="checkbox"/> Y | <input type="checkbox"/> N | <input type="checkbox"/> Y | <input type="checkbox"/> N | <input type="checkbox"/> Y | <input type="checkbox"/> N |

SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

| * | Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. |
|---|--------------------|--------------------|--------|---------------|
| | PR-SS-E1-0006 | 6-7-16 / 1326 | SO | 1 |
| | PR-SB-E1-0612 | / 1327 | | 1 |
| | PR-SS-E2-0006 | / 1334 | | 1 |
| | PR-SB-E2-0612 | / 1335 | | 1 |
| | PR-SS-E3-0006 | / 1343 | | 1 |
| | PR-SB-E3-0612 | / 1344 | | 1 |
| | PR-SS-E4-0006 | / 1352 | | 1 |
| | PR-SB-E4-0612 | / 1353 | | 1 |
| | PR-SS-E5-0006 | / 1402 | | 1 |
| | PR-SB-E5-0612 | / 1403 | | 1 |
| | PR-SS-E6-0006 | / 1411 | | 1 |
| | PR-SB-E6-0612 | / 1412 | | 1 |
| | PR-Dup05-060716 | / 1035 | | 1 |
| | PR-Dup06-060716 | / 1200 | | 1 |
| | PR-Dup07-060716 | / 1240 | | 1 |
| | PR-Dup08-060716 | / 1300 | | 1 |

Lead

| | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | | | | | | | | | | | | |
|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|

COMMENTS

| | | | | | |
|------------------------------|--------------|--------------------------|------------------------------|-------------|--------------------------|
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |
| <u>[Signature]</u> | 6-7-16 1700 | <u>FedEx</u> | | | |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |
| | 6/8/16 10:00 | <u>[Signature]</u> | | | |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000013



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client: Tetra Tech Contact: Kristi Francisco Phone #: (757) 466-4902 Fax #: ()
 Address: 5700 Lake Wright Dr. St 309 City: Norfolk State: VA Zip Code: 23502
 Purchase Order #: _____ Proj. Name / No.: 112G07723 Katahdin Quote #: _____

Bill (if different than above) Address: _____

Sampler (Print / Sign): Jacob Birkett Copies To: _____

LAB USE ONLY WORK ORDER #: 574227
 KATAHDIN PROJECT NUMBER _____
 REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

| ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | | |
|---|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. |
| O | Y | N | O | Y | N | O | Y | N | O | Y | N |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Lead | | | | | | | | | | | | | | | |
|----------------------|--------------------|--------|---------------|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| PR-SB-F4-2436 | 6-7-16 / 1615 | SO | 1 | 1 | | | | | | | | | | | | | | | |
| PR-SB-F4-3648 | 6-7-16 / 1617 | | 1 | 1 | | | | | | | | | | | | | | | |
| PR-SB-F4-4860 | 6-7-16 / 1619 | | 1 | 1 | | | | | | | | | | | | | | | |
| PR-SS-F5-0006 | 6-8-16 / 0758 | | 1 | 1 | | | | | | | | | | | | | | | |
| PR-SB-F5-0612 | / 0759 | | 1 | 1 | | | | | | | | | | | | | | | |
| PR-SB-F5-1224 | / 0800 | | 1 | 1 | | | | | | | | | | | | | | | |
| PR-SB-F5-2436 | / 0801 | | 1 | 1 | | | | | | | | | | | | | | | |
| PR-SB-F5-3648 | / 0802 | | 1 | 1 | | | | | | | | | | | | | | | |
| PR-SB-F5-4860 | / 0803 | | 1 | 1 | | | | | | | | | | | | | | | |
| PR-SS-F6-0006 | / 0820 | | 1 | 1 | | | | | | | | | | | | | | | |
| PR-SB-F6-0612 | / 0821 | | 1 | 1 | | | | | | | | | | | | | | | |
| PR-SB-F6-1224 | / 0822 | | 1 | 1 | | | | | | | | | | | | | | | |
| PR-SB-F6-2436 | / 0823 | | 1 | 1 | | | | | | | | | | | | | | | |
| PR-SS-G4-0006 | / 0846 | | 1 | 1 | | | | | | | | | | | | | | | |
| PR-SB-G4-0612 | / 0847 | | 1 | 1 | | | | | | | | | | | | | | | |
| PR-SB-G4-1224 | ✓ / 0848 | ✓ | 1 | 1 | | | | | | | | | | | | | | | |

COMMENTS

| | | | | | |
|--|-----------------------------------|--|------------------------------|-------------|--|
| Relinquished By: (Signature) <u>Jacob Birkett</u> | Date / Time <u>6-9-16 1600</u> | Received By: (Signature) <u>FedEx</u> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <u>Jacob Birkett</u> |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <u>6-10-16</u> <u>caiso</u> |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

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600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client: See Page 1 Contact: _____ Phone #: () () Fax #: () ()
 Address: _____ State: _____ Zip Code: _____
 Purchase Order #: _____ Proj. Name / No.: _____ Katahdin Quote #: _____

Bill (if different than above) Address: _____

Sampler (Print / Sign): [Signature] Copies To: _____

LAB USE ONLY WORK ORDER #: 57227
 KATAHDIN PROJECT NUMBER _____
 REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

| ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. |
| O | N | O | N | O | N | O | N | O | N | O | N |
| | | | | | | | | | | | |

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Lead | | | | | | | | | | | | |
|----------------------|--------------------|--------|---------------|------|--|--|--|--|--|--|--|--|--|--|--|------|
| PR-SB-G4-2436 | 6-8-16/0849 | SO | 1 | 1 | | | | | | | | | | | | HOLD |
| PR-SS-G3-0006 | /0912 | | 1 | 1 | | | | | | | | | | | | |
| PR-SB-G3-0612 | /0913 | | 1 | 1 | | | | | | | | | | | | |
| PR-SB-G3-1224 | /0914 | | 1 | 1 | | | | | | | | | | | | |
| PR-SB-G3-2436 | /0915 | | 1 | 1 | | | | | | | | | | | | HOLD |
| PR-SS-G2-0006 | /0935 | | 1 | 1 | | | | | | | | | | | | |
| PR-SB-G2-0612 | /0936 | | 1 | 1 | | | | | | | | | | | | |
| PR-SB-G2-1224 | /0937 | | 1 | 1 | | | | | | | | | | | | |
| PR-SB-G2-2436 | /0938 | | 1 | 1 | | | | | | | | | | | | HOLD |
| PR-SS-G1-0006 | /0955 | | 1 | 1 | | | | | | | | | | | | |
| PR-SB-G1-0612 | /0956 | | 1 | 1 | | | | | | | | | | | | |
| PR-SB-G1-1224 | /0957 | | 1 | 1 | | | | | | | | | | | | |
| PR-SB-G1-2436 | 6-8-16/0958 | | 1 | 1 | | | | | | | | | | | | HOLD |
| PR-DUP09-060716 | 6-7-16 | | 1 | 1 | | | | | | | | | | | | |
| PR-DUP10-060816 | 6-8-16/0736 | | 1 | 1 | | | | | | | | | | | | |
| PR-DUP11-060816 | 6-8-16/0815 | | 1 | 1 | | | | | | | | | | | | |

COMMENTS

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|--|----------------------------|-----------------------------------|------------------------------|-------------|--|
| Relinquished By: (Signature) <u>[Signature]</u> | Date / Time 6-9-16 1600 | Received By: (Signature) FedEx | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <u>[Signature]</u> 6-10-16 09:50 |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client: _____ Contact: _____ Phone #: _____ Fax #: _____
 Address: See Page 1 for details State: _____ Zip Code: _____
 Purchase Order #: _____ Proj. Name / No.: _____ Katahdin Quote #: _____
 Bill (if different than above): _____ Address: _____

Sampler (Print / Sign): _____ Copies To: _____

LAB USE ONLY WORK ORDER #: 5J4227/5J4228
 KATAHDIN PROJECT NUMBER: 4235

REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | | | | | | | | | |
|----------------------|--------------------|--------|---------------|---|----------|------|------|------|------|------|------|------|------|------|------|--|--|--|--|--|--|------|
| | | | | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | | | | | | | |
| PR-Dup 12-060816 | 6-8-16/1000 | SO | 1 | head | | | | | | | | | | | | | | | | | | |
| PR-SOCHAR03-0024 | 6-9-16/0942 | | 3 | | TCLP VEG | | | | | | | | | | | | | | | | | |
| PR-SOCHAR03-2436 | 6-9-16/0945 | | 3 | | FOX | | | | | | | | | | | | | | | | | |
| RR-SS-A1-0006 | 6-8-16/1220 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SB-A1-0612 | /1221 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SB-A1-1224 | /1222 | | 1 | | | | | | | | | | | | | | | | | | | HOLD |
| RR-SS-A2-0006 | /1223 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SB-A2-0612 | /1224 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SB-A2-1224 | /1225 | | 1 | | | | | | | | | | | | | | | | | | | HOLD |
| RR-SS-A3-0006 | /1234 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SB-A3-0612 | /1235 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SB-A3-1224 | /1236 | | 1 | | | | | | | | | | | | | | | | | | | HOLD |
| RR-SS-A4-0006 | /1237 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SB-A4-0612 | /1238 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SB-A4-1224 | /1239 | | 1 | | | | | | | | | | | | | | | | | | | HOLD |
| RR-SS-A5-0006 | ✓ /1247 | ✓ | 1 | | | | | | | | | | | | | | | | | | | |

COMMENTS

| | | | | | |
|--|----------------------------|-----------------------------------|------------------------------|-------------|---|
| Relinquished By: (Signature) <i>[Signature]</i> | Date / Time 6-9-16 1600 | Received By: (Signature) FedEx | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <i>[Signature]</i> 6-10-16 0915 |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

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 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client: See Pagel Contact: _____ Phone #: () () Fax #: () ()
 Address: _____ State: _____ Zip Code: _____
 Purchase Order #: _____ Proj. Name / No.: _____ Katahdin Quote #: _____
 Bill (if different than above): _____ Address: _____

Sampler (Print / Sign): _____ Copies To: _____

LAB USE ONLY WORK ORDER #: 58428
 KATAHDIN PROJECT NUMBER _____

REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

| * | Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | | | | | | | | |
|---|--------------------|--------------------|--------|---------------|---|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|--|--|--|--|--|-------|
| | | | | | Filt. Y | Filt. N | Filt. Y | Filt. N | Filt. Y | Filt. N | Filt. Y | Filt. N | Filt. Y | Filt. N | Filt. Y | Filt. N | | | | | | |
| | RR-SB-A5-0612 | 6-8-16/1248 | SG | 1 | (1) | | | | | | | | | | | | | | | | | |
| | RR-SB-A5-1224 | /1249 | | 1 | 1 | | | | | | | | | | | | | | | | | HOLD |
| | RR-SS-A6-0006 | /1250 | | 2 | (2) | | | | | | | | | | | | | | | | | MSMSD |
| | RR-SB-A6-0612 | /1251 | | 1 | (1) | | | | | | | | | | | | | | | | | |
| | RR-SB-A6-1224 | /1252 | | 1 | 1 | | | | | | | | | | | | | | | | | HOLD |
| | RR-SS-A7-0006 | /1305 | | 1 | (1) | | | | | | | | | | | | | | | | | |
| | RR-SB-A7-0612 | /1306 | | 1 | (1) | | | | | | | | | | | | | | | | | |
| | RR-SB-A7-1224 | /1307 | | 1 | 1 | | | | | | | | | | | | | | | | | HOLD |
| | RR-SS-A8-0006 | /1308 | | 1 | (1) | | | | | | | | | | | | | | | | | |
| | RR-SB-A8-0612 | /1309 | | 2 | (2) | | | | | | | | | | | | | | | | | MSMSD |
| | RR-SB-A8-1224 | /1310 | | 1 | 1 | | | | | | | | | | | | | | | | | HOLD |
| | RR-SS-B1-0006 | /1320 | | 1 | (1) | | | | | | | | | | | | | | | | | |
| | RR-SB-B1-0612 | /1321 | | 1 | (1) | | | | | | | | | | | | | | | | | |
| | RR-SB-B1-1224 | /1322 | | 1 | 1 | | | | | | | | | | | | | | | | | HOLD |
| | RR-SS-B2-0006 | /1323 | | 1 | (1) | | | | | | | | | | | | | | | | | |
| | RR-SB-B2-0612 | ✓ / 1324 | ✓ | 1 | (1) | | | | | | | | | | | | | | | | | |

COMMENTS _____

| | | | | | |
|---|--------------------------------|---------------------------------------|------------------------------------|-------------------|---|
| Relinquished By: (Signature) <u>[Signature]</u> | Date / Time <u>6-9-16 1600</u> | Received By: (Signature) <u>FedEx</u> | Relinquished By: (Signature) _____ | Date / Time _____ | Received By: (Signature) <u>[Signature]</u> |
| Relinquished By: (Signature) _____ | Date / Time _____ | Received By: (Signature) _____ | Relinquished By: (Signature) _____ | Date / Time _____ | Received By: (Signature) <u>[Signature]</u> |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000013



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client: See Page 1 Contact: _____ Phone #: () () Fax #: () ()
 Address: _____ City: _____ State: _____ Zip Code: _____
 Purchase Order #: _____ Proj. Name / No.: _____ Katahdin Quote #: _____
 Bill (if different than above): _____ Address: _____

Sampler (Print / Sign): _____ Copies To: _____

LAB USE ONLY WORK ORDER #: SJ4228/SJ4229
 KATAHDIN PROJECT NUMBER _____
 REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

| Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| OY | ON | OY | ON | OY | ON | OY | ON | OY | ON | OY | ON | OY | ON | OY | ON |
| | | | | | | | | | | | | | | | |

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. |
|----------------------|--------------------|--------|---------------|
| RR-SB-B2-1224 | 6-8-16 1325 | SO | 1 |
| RR-SS-B3-0006 | / 1339 | | 1 |
| RR-SB-B3-0612 | / 1340 | | 1 |
| RR-SB-B3-1224 | / 1341 | | 1 |
| RR-SB-B3-2436 | / 1342 | | 1 |
| RR-SS-B4-0006 | / 1343 | | 1 |
| RR-SB-B4-0612 | / 1344 | | 1 |
| RR-SB-B4-1224 | / 1345 | | 1 |
| RR-Dup01-060816 | / 1200 | | 1 |
| RR-Dup02-060816 | / 1230 | | 1 |
| RR-Dup03-060816 | / 1300 | | 1 |
| RR-Dup04-060816 | / 1315 | | 1 |
| RR-SS-B5-0006 | / 1355 | | 1 |
| RR-SB-B5-0612 | / 1356 | | 1 |
| RR-SB-B5-1224 | / 1357 | | 1 |
| RR-SS-B6-0006 | ✓ / 1359 | ✓ | 1 |

Lead

HOLD

HOLD

HOLD

HOLD

COMMENTS

| | | | | | |
|--|-----------------------------------|--|------------------------------|-------------|--|
| Relinquished By: (Signature) <u>[Signature]</u> | Date / Time <u>6-9-16 1600</u> | Received By: (Signature) <u>FedEx</u> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <u>[Signature]</u> <u>6-10-16 09:50</u> |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000014



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client _____ Contact _____ Phone # _____ Fax # _____
 Address See page 1 City _____ State _____ Zip Code _____
 Purchase Order # _____ Proj. Name / No. _____ Katahdin Quote # _____
 Bill (if different than above) _____ Address _____

Sampler (Print / Sign) _____ Copies To: _____

LAB USE ONLY WORK ORDER #: SJ4229
 KATAHDIN PROJECT NUMBER _____
 REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

ANALYSIS AND CONTAINER TYPE
 PRESERVATIVES

| * | Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Filt. | | | | | | | | | | | | | | | | | |
|---|--------------------|--------------------|--------|---------------|-------|---|---|---|---|---|---|---|---|---|---|---|--|--|--|--|--|------------|
| | | | | | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | | | | | | |
| | RR-SB-B6-0612 | 6-8-16 / 1400 | SG | 1 | Y | N | | | | | | | | | | | | | | | | |
| | RR-SB-B6-1224 | / 1401 | | 1 | Y | N | | | | | | | | | | | | | | | | |
| | RR-SB-B6-2436 | / 1462 | | 1 | | | | | | | | | | | | | | | | | | HOLD |
| | RR-SS-B7-0006 | / 1414 | | 1 | Y | N | | | | | | | | | | | | | | | | |
| | RR-SB-B7-0612 | / 1415 | | 1 | Y | N | | | | | | | | | | | | | | | | |
| | RR-SB-B7-1224 | / 1416 | | 1 | | | | | | | | | | | | | | | | | | HOLD |
| | RR-SS-B8-0006 | / 1417 | | 1 | Y | N | | | | | | | | | | | | | | | | |
| | RR-SB-B8-0612 | / 1418 | | 1 | Y | N | | | | | | | | | | | | | | | | |
| | RR-SB-B8-1224 | / 1419 | | 1 | | | | | | | | | | | | | | | | | | HOLD |
| | RR-SS-C1-0006 | / 1436 | | 1 | Y | N | | | | | | | | | | | | | | | | |
| | RR-SB-C1-0612 | / 1431 | | 1 | Y | N | | | | | | | | | | | | | | | | |
| | RR-SB-C1-1224 | / 1432 | | 1 | | | | | | | | | | | | | | | | | | HOLD |
| | RR-SS-C2-0006 | / 1433 | | 1 | Y | N | | | | | | | | | | | | | | | | |
| | RR-SB-C2-0612 | / 1434 | | 1 | Y | N | | | | | | | | | | | | | | | | |
| | RR-SB-C2-1224 | / 1435 | | 1 | Y | N | | | | | | | | | | | | | | | | |
| | RR-SB-C2-2436 | ✓ / 1436 | ✓ | 2 | 2 | | | | | | | | | | | | | | | | | MSMSD HOLD |

COMMENTS _____

| | | | | | |
|---|--------------------------------|---------------------------------------|------------------------------------|-------------------|--|
| Relinquished By: (Signature) <u>[Signature]</u> | Date / Time <u>6-9-16 1600</u> | Received By: (Signature) <u>FedEx</u> | Relinquished By: (Signature) _____ | Date / Time _____ | Received By: (Signature) <u>[Signature]</u> |
| Relinquished By: (Signature) _____ | Date / Time _____ | Received By: (Signature) _____ | Relinquished By: (Signature) _____ | Date / Time _____ | Received By: (Signature) <u>6-10-16 0430</u> |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

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 Scarborough, ME 04074
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CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Page 7 of 13

| | | | |
|--------------------------------|-----------------|------------------|----------|
| Client | Contact | Phone # | Fax # |
| Address | | State | Zip Code |
| Purchase Order # | Proj. Name /No. | Katahdin Quote # | |
| Bill (if different than above) | Address | | |

See Page 1

Sampler (Print / Sign) _____ Copies To: _____

LAB USE ONLY WORK ORDER #: SJ4229
 KATAHDIN PROJECT NUMBER _____

REMARKS: _____

SHIPPING INFO: FED EX UPS CLIENT

AIRBILL NO: _____

TEMP °C _____ TEMP BLANK INTACT NOT INTACT

ANALYSIS AND CONTAINER TYPE
 PRESERVATIVES

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | PRESERVATIVES | | | | | | | | | | | | | | | |
|----------------------|--------------------|--------|---------------|-------------------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|--------------------------|
| | | | | Filt. Y | Filt. N | Filt. Y | Filt. N | Filt. Y | Filt. N | Filt. Y | Filt. N | Filt. Y | Filt. N | Filt. Y | Filt. N | | | | |
| RR-SS-C3-0066 | 6-8-16 / 1444 | SO | 1 | <input checked="" type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| RR-SB-C3-0612 | / 1445 | | 1 | | | | | | | | | | | | | | | | |
| RR-SB-C3-1224 | / 1446 | | 1 | | | | | | | | | | | | | | | | |
| RR-SB-C3-2436 | / 1447 | | 1 | | | | | | | | | | | | | | | | |
| RR-SS-C4-0006 | / 1448 | | 1 | | | | | | | | | | | | | | | | |
| RR-SB-C4-0612 | / 1449 | | 1 | | | | | | | | | | | | | | | | |
| RR-SB-C4-1224 | / 1450 | | 1 | | | | | | | | | | | | | | | | |
| RR-SB-C4-2436 | / 1451 | | 1 | | | | | | | | | | | | | | | | |
| RR-SS-C5-0606 | / 1456 | | 1 | | | | | | | | | | | | | | | | |
| RR-SB-C5-0612 | / 1457 | | 2 | 2 | | | | | | | | | | | | | | | |
| RR-SB-C5-1224 | / 1458 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-C5-2436 | / 1459 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SS-C6-0006 | / 1500 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-C6-0612 | / 1501 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-C6-1224 | / 1502 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-C6-2436 | ✓ / 1503 | ✓ | 1 | 1 | | | | | | | | | | | | | | | |

Lead

HOLD

HOLD

HOLD

HOLD

COMMENTS

| | | | | | |
|--|--|--|------------------------------|-------------|--|
| Relinquished By: (Signature) <i>[Signature]</i> | Date / Time <u>6-9-16</u> <u>1600</u> | Received By: (Signature) <u>FedEx</u> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <u>[Signature]</u> <u>6-10-16</u> <u>CA, 150</u> |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000016



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 Scarborough, ME 04074
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 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

| | | | |
|------------------|------------------|------------------|----------|
| Client | Contact | Phone # | Fax # |
| Address | | State | Zip Code |
| Purchase Order # | Proj. Name / No. | Katahdin Quote # | |

See Page 1

Bill (if different than above) _____ Address _____

Sampler (Print / Sign) _____ Copies To: _____

LAB USE ONLY WORK ORDER #: SJ4229/SJ230
 KATAHDIN PROJECT NUMBER _____

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

REMARKS: _____

SHIPPING INFO: FED EX UPS CLIENT

AIRBILL NO: _____

TEMP °C _____ TEMP BLANK INTACT NOT INTACT

| | | | | | | | | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|----|
| Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | |
| OY | OY | OY | OY | OY | OY | OY | OY | OY | OY | OY | OY | OY | OY | OY | OY | OY | OY | OY |

| * | Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Lead | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | |
|---|--------------------|--------------------|--------|---------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|--|
| | RR-SB-C7-2436 | 6-8-14 / 1508 | SO | 1 | 1 | | | | | | | | | | | | | |
| | RR-SS-C8-0006 | / 1509 | | 1 | 1 | | | | | | | | | | | | | |
| | RR-SB-C8-0612 | / 1510 | | 1 | 1 | | | | | | | | | | | | | |
| | RR-SB-C8-1224 | / 1511 | | 1 | 1 | | | | | | | | | | | | | |
| | RR-Dup05-060816 | / 1465 | | 1 | 1 | | | | | | | | | | | | | |
| | RR-Dup06-060816 | / 1425 | | 1 | 1 | | | | | | | | | | | | | |
| | RR-Dup07-060816 | / 1440 | | 1 | 1 | | | | | | | | | | | | | |
| | RR-Dup08-060816 | / 1455 | | 1 | 1 | | | | | | | | | | | | | |
| | RR-SS-D1-0006 | / 1520 | | 1 | 1 | | | | | | | | | | | | | |
| | RR-SB-D1-0612 | / 1521 | | 1 | 1 | | | | | | | | | | | | | |
| | RR-SB-D1-1224 | / 1522 | | 1 | 1 | | | | | | | | | | | | | |
| | RR-SS-D2-0006 | / 1523 | | 1 | 1 | | | | | | | | | | | | | |
| | RR-SB-D2-0612 | / 1524 | | 1 | 1 | | | | | | | | | | | | | |
| | RR-SB-D2-1224 | / 1525 | | 1 | 1 | | | | | | | | | | | | | |
| | RR-SB-D2-2436 | / 1526 | | 1 | 1 | | | | | | | | | | | | | |
| | RR-SS-D3-0006 | ✓ / 1527 | ✓ | 1 | 1 | | | | | | | | | | | | | |

COMMENTS _____

| | | | | | |
|--|----------------------------|-----------------------------------|------------------------------|-------------|---|
| Relinquished By: (Signature) <i>[Signature]</i> | Date / Time 6-9-16/1600 | Received By: (Signature) FedEx | Relinquished By: (Signature) | Date / Time | Received By: (Signature) 6-16-16 <i>[Signature]</i> |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000017



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 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client: _____ Contact: _____ Phone #: _____ Fax #: _____

Address: See Page 1 State: _____ Zip Code: _____

Purchase Order #: _____ Proj. Name / No.: _____ Katahdin Quote #: _____

Bill (if different than above): _____ Address: _____

Sampler (Print / Sign): _____ Copies To: _____

LAB USE ONLY WORK ORDER #: SJ4230

KATAHDIN PROJECT NUMBER _____

REMARKS: _____

SHIPPING INFO: FED EX UPS CLIENT

AIRBILL NO: _____

TEMP °C _____ TEMP BLANK INTACT NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | | Fit. | Fit. | Fit. | Fit. | Fit. | Fit. | Fit. | Fit. | Fit. | Fit. | Fit. | Fit. | |
|----------------------|--------------------|--------|---------------|---|------|------|------|------|------|------|------|------|------|------|------|------|------------|
| | | | | | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y |
| RR-SB-D3-0612 | 6-8-16 / 1528 | SO | 1 | | | | | | | | | | | | | | |
| RR-SB-D3-1224 | / 1529 | | 1 | | | | | | | | | | | | | | |
| RR-SB-D3-2436 | / 1531 | | 2 | 2 | | | | | | | | | | | | | MSMSD HOLD |
| RR-SB-D3-2436 | / 1530 | | 1 | 1 | | | | | | | | | | | | | HOLD |
| RR-SS-D5-0006 | / 1537 | | 1 | 1 | | | | | | | | | | | | | |
| RR-SB-D5-0612 | / 1538 | | 1 | 1 | | | | | | | | | | | | | |
| RR-SB-D5-1224 | / 1539 | | 1 | 1 | | | | | | | | | | | | | |
| RR-SB-D5-2436 | / 1540 | | 1 | 1 | | | | | | | | | | | | | HOLD |
| RR-SS-D6-0006 | / 1541 | | 1 | 1 | | | | | | | | | | | | | |
| RR-SB-D6-0612 | / 1542 | | 1 | 1 | | | | | | | | | | | | | |
| RR-SB-D6-1224 | / 1543 | | 1 | 1 | | | | | | | | | | | | | |
| RR-SB-D6-2436 | / 1543 | | 1 | 1 | | | | | | | | | | | | | HOLD |
| RR-SS-D7-0006 | / 1559 | | 1 | 1 | | | | | | | | | | | | | |
| RR-SB-D7-0612 | / 1600 | | 1 | 1 | | | | | | | | | | | | | |
| RR-SB-D7-1224 | / 1601 | | 1 | 1 | | | | | | | | | | | | | |
| RR-SB-D7-2436 | ✓ / 1602 ✓ | | 1 | 1 | | | | | | | | | | | | | HOLD |

COMMENTS

| | | | | | |
|--|-----------------------------------|--|------------------------------|-------------|---|
| Relinquished By: (Signature) <u>[Signature]</u> | Date / Time <u>6-8-16 1600</u> | Received By: (Signature) <u>FedEx</u> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <u>[Signature]</u> <u>6-10-16</u> |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <u>[Signature]</u> <u>09.150</u> |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

000013



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 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client: See Page 1 Contact: _____ Phone #: (____) _____ Fax #: (____) _____
 Address: _____ City: _____ State: _____ Zip Code: _____
 Purchase Order #: _____ Proj. Name / No.: _____ Katahdin Quote #: _____

Bill (if different than above) Address: _____

Sampler (Print / Sign) _____ Copies To: _____

LAB USE ONLY WORK ORDER #: SJ4230/SJ4231 ANALYSIS AND CONTAINER TYPE PRESERVATIVES
 KATAHDIN PROJECT NUMBER _____

REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

| * | Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | | | | | | | |
|---|--------------------|--------------------|--------|---------------|---|------|------|------|------|------|------|------|------|------|------|------|---|---|---|---|--|
| | | | | | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | | | | | |
| | | | | | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | |
| | RR-SS-D8-0006 | 6-8-14/1603 | SO | 1 | 1 | | | | | | | | | | | | | | | | |
| | RR-SB-D8-0612 | /1604 | | 2 | 2 | | | | | | | | | | | | | | | | |
| | RR-SB-D8-1224 | /1605 | | 1 | 1 | | | | | | | | | | | | | | | | |
| | RR-Dup09-060816 | /1507 | | 1 | 1 | | | | | | | | | | | | | | | | |
| | RR-Dup10-060816 | /1545 | | 1 | 1 | | | | | | | | | | | | | | | | |
| | RR-Dup11-060816 | ↓/1620 | | 1 | 1 | | | | | | | | | | | | | | | | |
| | RR-SS-E1-0006 | 6-9-16/0738 | | 1 | 1 | | | | | | | | | | | | | | | | |
| | RR-SB-E1-0612 | /0739 | | 1 | 1 | | | | | | | | | | | | | | | | |
| | RR-SB-E1-1224 | /0740 | | 1 | 1 | | | | | | | | | | | | | | | | |
| | RR-SS-E2-0006 | /0741 | | 1 | 1 | | | | | | | | | | | | | | | | |
| | RR-SB-E2-0612 | /0742 | | 1 | 1 | | | | | | | | | | | | | | | | |
| | RR-SB-E2-1224 | /0743 | | 1 | 1 | | | | | | | | | | | | | | | | |
| | RR-SS-E3-0006 | /0752 | | 1 | 1 | | | | | | | | | | | | | | | | |
| | RR-SB-E3-0612 | /0753 | | 1 | 1 | | | | | | | | | | | | | | | | |
| | RR-SB-E3-1224 | /0754 | | 1 | 1 | | | | | | | | | | | | | | | | |
| | RR-SS-E4-0006 | ↓/0755 | ↓ | 1 | 1 | | | | | | | | | | | | | | | | |

COMMENTS

| | | | | | |
|----------------------------------|----------------------------|-----------------------------------|------------------------------|-------------|-------------------------------------|
| Relinquished By: (Signature) | Date / Time 6-9-16 1600 | Received By: (Signature) FedEx | Relinquished By: (Signature) | Date / Time | Received By: (Signature) 6-10-16 |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) 0950 |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

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 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client: _____ Contact: _____ Phone #: () _____ Fax #: () _____
 Address: See Page 1 City: _____ State: _____ Zip Code: _____
 Purchase Order #: _____ Proj. Name / No.: _____ Katahdin Quote #: _____
 Bill (if different than above): _____ Address: _____

LAB USE ONLY WORK ORDER #: SJ4231
 KATAHDIN PROJECT NUMBER _____
 REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

| ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill |
| Y | N | Y | N | Y | N | Y | N | Y | N | Y | N |

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Lead | | | | | | | | | | | | | | | |
|----------------------|--------------------|--------|---------------|------|--|--|--|--|--|--|--|--|--|-------|--|--|--|--|--|
| RR-SB-E4-0612 | 6-9-16/0756 | SO | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-E4-1224 | /0757 | | 1 | 1 | | | | | | | | | | HOLD | | | | | |
| RR-SB-E5-0612 | /0808 | | 2 | 2 | | | | | | | | | | MSMSD | | | | | |
| RR-SS-E5-0006 | /0807 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-E5-1224 | /0809 | | 1 | 1 | | | | | | | | | | HOLD | | | | | |
| RR-SS-E6-0006 | /0810 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-E6-0612 | /0811 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-E6-1224 | /0812 | | 1 | 1 | | | | | | | | | | HOLD | | | | | |
| RR-SS-E7-0006 | /0822 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-E7-0612 | /0823 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-E7-1224 | /0824 | | 1 | 1 | | | | | | | | | | HOLD | | | | | |
| RR-SS-E8-0006 | /0825 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-E8-0612 | /0826 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-E8-1224 | /0827 | | 1 | 1 | | | | | | | | | | HOLD | | | | | |
| RR-SS-F1-0006 | /0835 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-F1-0612 | ✓ /0836 | ✓ | 1 | 1 | | | | | | | | | | | | | | | |

COMMENTS

| | | | | | |
|---|--------------------------------|---------------------------------------|------------------------------|-------------|--|
| Relinquished By: (Signature) <u>[Signature]</u> | Date / Time <u>6-9-16 1600</u> | Received By: (Signature) <u>FedEx</u> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <u>[Signature]</u> |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <u>6-10-16 P.R.S.</u> |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000013



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

| | | | |
|-----------------------------|------------------|--------------------|------------------|
| Client See Page 1 | Contact | Phone # () () | Fax # () () |
| Address | State | | Zip Code |
| Purchase Order # | Proj. Name / No. | Katahdin Quote # | |

Bill (if different than above) _____ Address _____

Sampler (Print / Sign) _____ Copies To: _____

LAB USE ONLY WORK ORDER #: SJ4231/554232
 KATAHDIN PROJECT NUMBER _____

REMARKS: _____

SHIPPING INFO: FED EX UPS CLIENT

AIRBILL NO: _____

TEMP °C _____ TEMP BLANK INTACT NOT INTACT

| ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill |
| Y | N | Y | N | Y | N | Y | N | Y | N | Y | N |
| <input checked="" type="checkbox"/> | | | | | | | | | | | |

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Lead | | | | | | | | | | | | | | | |
|----------------------|--------------------|--------|---------------|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-------|
| RR-SB-F1-1224 | 6-9-16 / 0837 | SO | 1 | 1 | | | | | | | | | | | | | | | HOLD |
| RR-SS-F2-0006 | / 0838 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-F2-0612 | / 0839 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-F2-1224 | / 0840 | | 1 | 1 | | | | | | | | | | | | | | | HOLD |
| RR-SS-F3-0006 | / 0849 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-F3-0612 | / 0850 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-F3-1224 | / 0851 | | 1 | 1 | | | | | | | | | | | | | | | HOLD |
| RR-SS-F4-0006 | / 0852 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-F4-0612 | / 0853 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-Dup12-060916 | / 0800 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-Dup13-060916 | / 0805 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-Dup14-060916 | / 0830 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-F4-1224 | / 0854 | | 1 | 1 | | | | | | | | | | | | | | | HOLD |
| RR-SS-F5-0006 | / 0902 | | 2 | 2 | | | | | | | | | | | | | | | MSMSD |
| RR-SB-F5-0612 | / 0903 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-F5-1224 | ✓ / 0904 | ✓ | 1 | 1 | | | | | | | | | | | | | | | HOLD |

COMMENTS _____

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|--|----------------------------|-----------------------------------|------------------------------|-------------|--|
| Relinquished By: (Signature) <i>[Signature]</i> | Date / Time 6-9-16 1600 | Received By: (Signature) FedEx | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <i>[Signature]</i> |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) 6-10-16 02:15 |

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CHAIN of CUSTODY

PLEASE BEAR DOWN AND
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Client _____ Contact _____ Phone # _____ Fax # _____
 Address See Page 1 City _____ State _____ Zip Code _____
 Purchase Order # _____ Proj. Name / No. _____ Katahdin Quote # _____
 Bill (if different than above) _____ Address _____

Sampler (Print / Sign) _____ Copies To: _____

LAB USE ONLY WORK ORDER #: SJ4232/SJ4233 ANALYSIS AND CONTAINER TYPE PRESERVATIVES
 KATAHDIN PROJECT NUMBER _____

REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Lead | TCLP Vocs | TCLP SVOCs, PCBs | DRO | FOX | FIL | FIL | FIL | FIL | FIL | FIL | FIL | FIL |
|----------------------|--------------------|--------|---------------|------|-----------|------------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| | | | | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y |
| RR-SS-F6-0006 | 6-9-16/0905 | SO | 1 | 1 | | | | | | | | | | | | |
| RR-SB-F6-0612 | /0906 | | 1 | 1 | | | | | | | | | | | | |
| RR-SB-F6-1224 | /0907 | | 1 | 1 | | | | | | | | | | | | |
| RR-SS-F7-0006 | /0918 | | 1 | 1 | | | | | | | | | | | | |
| RR-SB-F7-0612 | /0919 | | 1 | 1 | | | | | | | | | | | | |
| RR-SB-F7-1224 | /0920 | | 1 | 1 | | | | | | | | | | | | |
| RR-SB-F7-2436 | /0921 | | 1 | 1 | | | | | | | | | | | | |
| RR-SS-F8-0006 | /0922 | | 1 | 1 | | | | | | | | | | | | |
| RR-SB-F8-0612 | /0923 | | 1 | 1 | | | | | | | | | | | | |
| RR-SB-F8-1224 | /0924 | | 1 | 1 | | | | | | | | | | | | |
| RR-SS-D4-0006 | /1035 | | 1 | 1 | | | | | | | | | | | | |
| RR-SB-D4-0612 | /1036 | | 1 | 1 | | | | | | | | | | | | |
| RR-SB-D4-1224 | /1037 | | 1 | 1 | | | | | | | | | | | | |
| RR-Dupl5-060916 | /0900 | | 1 | 1 | | | | | | | | | | | | |
| RR-SOCHAROL-0024 | /0930 | | 3 | | 1 | 1 | 1 | | | | | | | | | |
| RR-SOCHAROL-2430 | /0935 | | 3 | | 1 | 1 | 1 | | | | | | | | | |

COMMENTS _____

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|---|--------------------------------|---------------------------------------|------------------------------------|-------------------|---|
| Relinquished By: (Signature) <u>[Signature]</u> | Date / Time <u>6-9-16 1600</u> | Received By: (Signature) <u>FedEx</u> | Relinquished By: (Signature) _____ | Date / Time _____ | Received By: (Signature) <u>[Signature]</u> |
| Relinquished By: (Signature) _____ | Date / Time _____ | Received By: (Signature) _____ | Relinquished By: (Signature) _____ | Date / Time _____ | Received By: (Signature) <u>6-10-16 09:50</u> |

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CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client **Tetra Tech** Contact **Rob Sok** Phone # **(757) 466-4904** Fax # **()**
 Address **5700 Lake Wright Dr. St 309** City **Norfolk** State **VA** Zip Code **23455**
 Purchase Order # _____ Proj. Name / No. **NASA WFF MBER RA** Katahdin Quote # _____
112607723
 Bill (if different than above) _____ Address _____

Sampler (Print / Sign) **Jacob Birkett** Copies To: _____

LAB USE ONLY WORK ORDER #: **SP4633**
 KATAHDIN PROJECT NUMBER _____
 REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: **8744-8572-4640**
 TEMP°C _____ TEMP BLANK INTACT NOT INTACT

| ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | | |
|---|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. |
| <input type="checkbox"/> Y | <input type="checkbox"/> N | <input type="checkbox"/> Y | <input type="checkbox"/> N | <input type="checkbox"/> Y | <input type="checkbox"/> N | <input type="checkbox"/> Y | <input type="checkbox"/> N | <input type="checkbox"/> Y | <input type="checkbox"/> N | <input type="checkbox"/> Y | <input type="checkbox"/> N |

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Lead | | | | | | | | | | | | | | | |
|----------------------|--------------------|--------|---------------|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-----------|
| PR-SB-E4-1224 | 6-22-16/1202 | SO | 1 | 1 | | | | | | | | | | | | | | | 24 HR TAT |
| PR-SB-E4-2436 | / 1203 | | 1 | 1 | | | | | | | | | | | | | | | HOLD |
| RR-SB-C1A-0612 | / 1055 | | 1 | 1 | | | | | | | | | | | | | | | 24 HR TAT |
| RR-SB-C1A-1224 | / 1056 | | 1 | 1 | | | | | | | | | | | | | | | HOLD |
| RR-SB-C4-3648 | / 1110 | | 1 | 1 | | | | | | | | | | | | | | | 24 HR TAT |
| RR-SB-C4-4860 | / 1111 | | 1 | 1 | | | | | | | | | | | | | | | HOLD |
| RR-SS-D9-0006 | / 1124 | | 1 | 1 | | | | | | | | | | | | | | | 24 HR TAT |
| RR-SB-D9-0612 | / 1125 | | 1 | 1 | | | | | | | | | | | | | | | HOLD |
| RR-SB-C9-0612 | / 1118 | | 1 | 1 | | | | | | | | | | | | | | | 24 HR TAT |
| RR-SB-C9-1224 | / 1119 | | 1 | 1 | | | | | | | | | | | | | | | HOLD |
| RR-Dup16-062216 | ↓ / 1200 | ↓ | 1 | 1 | | | | | | | | | | | | | | | 24 HR TAT |
| | / | | | | | | | | | | | | | | | | | | |
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COMMENTS

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|---|-----------------------------|-----------------------------------|------------------------------|-----------------------------|--|
| Relinquished By: (Signature) <i>J. Birkett</i> | Date / Time 6-22-16 1700 | Received By: (Signature) FedEx | Relinquished By: (Signature) | Date / Time 6/23/16 1015 | Received By: (Signature) <i>[Signature]</i> |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

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CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client: **Tetra Tech** Contact: **Rob Sok** Phone #: **(757) 466-4904** Fax #: **()**
 Address: **5700 Lake Wright Dr. #309** City: **Norfolk** State: **VA** Zip Code: **23502**
 Purchase Order #: _____ Proj. Name / No.: **112G07723** Katahdin Quote #: _____

Bill (if different than above) Address: _____
 Sampler (Print / Sign): **Jacob Birkett** Copies To: _____

LAB USE ONLY WORK ORDER #: **SJ5058**
 KATAHDIN PROJECT NUMBER _____
 REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: **8744-8572-4630**
 TEMP°C _____ TEMP BLANK INTACT NOT INTACT

| ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill |
| Y/N | Y/N | Y/N | Y/N | Y/N | Y/N | Y/N | Y/N | Y/N | Y/N | Y/N | Y/N |
| | | | | | | | | | | | |

| * | Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. |
|---------------|----------------------|----------------------|-----------|---------------|
| | PR-SB-F3-6072 | 7-7-16 / 1505 | SO | 1 |
| | PR-SB-F4-6072 | 7-7-16 / 1515 | SO | 1 |
| JBB | | | | |
| 7-7-16 | | | | |

| | | | | | | | | | | | |
|--------------------|--|--|--|--|--|--|--|--|--|--|--|
| Lead | | | | | | | | | | | |
| 24 hour TAT | | | | | | | | | | | |
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COMMENTS

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|--|-----------------------------------|--|------------------------------|-------------|---|
| Relinquished By: (Signature) JBB | Date / Time 7-7-16 1700 | Received By: (Signature) FedEx | Relinquished By: (Signature) | Date / Time | Received By: (Signature) Suton 7-8-16 |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

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CHAIN of CUSTODY

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 PRINT LEGIBLY IN PEN

Client **Tetra Tech** Contact **Rob Suk** Phone # **(757) 466-4904** Fax # **()**
 Address **5700 Lake Wright Dr. St309** City **Norfolk** State **VA** Zip Code **23502**
 Purchase Order # _____ Proj. Name / No. _____ Katahdin Quote # _____

Bill (if different than above) _____ Address _____

Sampler (Print / Sign) **Jacob Birkett** Copies To: _____

LAB USE ONLY WORK ORDER #: **SJS165**
 KATAHDIN PROJECT NUMBER _____

ANALYSIS AND CONTAINER TYPE
 PRESERVATIVES

REMARKS: _____

| Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N |
| | | | | | | | | | | | | | | | |

SHIPPING INFO: FED EX UPS CLIENT

AIRBILL NO: **8724-1973-8014**

TEMP °C _____ TEMP BLANK INTACT NOT INTACT

| * | Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. |
|------------------|----------------------|-----------------------|-----------|---------------|
| | PR-SB-F3-8496 | 7-11-16 / 1445 | SO | 1 |
| Lead | | | | |
| 24 HR TAT | | | | |
| BBB | | | | |
| 7-11-16 | | | | |

COMMENTS _____

| | | | | | |
|---|------------------------------------|---|------------------------------|-------------|---|
| Relinquished By: (Signature) J. Birkett | Date / Time 7-11-16 1700 | Received By: (Signature) Fed Ex | Relinquished By: (Signature) | Date / Time | Received By: (Signature) 7-12-16 0930 |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

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APPENDIX B
DATA VALIDATION REPORTS

Minor Problems

- The percent recoveries (%Rs) for the surrogate 1,2-dinitrobenzene were less than the quality control (QC) limit for the nitroglycerin analyses for samples as listed below. As a result of the surrogate %R non-compliance, the sample detected and non-detected nitroglycerine results for the samples were qualified estimated, (J) and (UJ), respectively.

Samples with low surrogate %Rs

| | | |
|-----------------|-----------------|---------------|
| PR-DUP02-060716 | PR-DUP04-060716 | PR-SB-A1-0612 |
| PR-SB-A2-0612 | PR-SB-A3-0612 | PR-SB-A4-0612 |
| PR-SB-A5-0612 | PR-SB-A6-0612 | PR-SB-B3-0612 |
| PR-SB-B4-0612 | PR-SB-B6-0612 | PR-SS-A3-0006 |
| PR-SS-A4-0006 | PR-SS-A5-0006 | PR-SS-A6-0006 |
| PR-SS-B3-0006 | PR-SS-B5-0006 | PR-SS-B6-0006 |

- The analytical column relative percent differences (RPD) were greater than the 40% QC limit for nitroglycerin analyte results for samples PR-SB-B3-0612 and PR-SS-A1-0006. The detected nitroglycerin results were qualified estimated, (J).
- The spiked sample PR-SS-A6-0006 matrix spike (MS) %Rs for copper, lead, and zinc were less than QC limit. A post digestion spike sample was analyzed with %Rs greater than the QC limit for lead and zinc and the copper %R within the QC limits. As a result of the low MS %Rs, the sample detected results for copper, lead, and zinc were qualified estimated, (J). Additionally this qualification was applied to all SDG sample copper, lead, and zinc detected results (only matrix spike analysis for SDG).
- The sample PR-SS-A6-0006 was analyzed as a duplicate with the result RPD greater than the QC limit for zinc. The sample result for zinc was >5X the contract required quantitation limit (CRQL). As a result of the duplicate sample analysis QC limit non-compliance, all sample zinc detected results were qualified estimated, (J)(only lab duplicate sample analysis for SDG).
- The field duplicate sample pair samples PR-DUP02-060716 / PR-SS-A2-0006 nitroglycerin result RPD was QC limit non-compliant. The sample PR-DUP02-060716 and PR-SS-A2-0006 nitroglycerin results were qualified estimated, (J).
- Detected results reported below the quantitation limit but above the method detection limit were qualified as estimated, (J).

Notes

Sample analyte results were reported to the Method Detection Limit (MDL).

The spiked sample PR-SS-A6-0006 matrix spike (MS) percent recovery (%R) for nitroglycerin was less than the lower QC limit. The sample MS duplicate (MSD) %R for nitroglycerin was compliant. Additionally the relative percent difference (RPD) for the MS/MSD %Rs was QC compliant. No action was taken for a MS %R non-compliance alone.

All samples were analyzed diluted 10X for the metals copper, lead, and zinc.

The following metal contaminants were detected in the preparation or calibration blanks at the following maximum concentrations:

| Analyte | Maximum Conc. µg/l | Maximum Conc. mg/kg |
|---------------------|-----------------------|--------------------------------|
| Lead ⁽¹⁾ | 0.060 | 0.0042 (based on 1.5 gm/100ml) |
| Zinc ⁽¹⁾ | 0.275 | 0.0184 (based on 1.5 gm/100ml) |
| Lead ⁽²⁾ | ***** | 0.026 |
| Zinc ⁽²⁾ | ***** | 0.31 |
| Lead ⁽³⁾ | ***** | 0.016 |
| Zinc ⁽³⁾ | ***** | 0.35 |

- (1) Maximum concentration found in continuing calibration blanks affecting all total metal samples.
- (2) In method blank sample affecting batch samples from JF09IMS1 analyzed at a 5x dilution.
- (3) In method blank sample affecting batch samples from JF09IMS2 analyzed at a 5x dilution.

Dilution factors were taken into account when evaluating samples for blank contamination. All affected samples lead and zinc concentrations greater than the sample reporting limit and the blank contamination detections were less than the RL therefore no action was taken for blank contamination detections.

EXECUTIVE SUMMARY

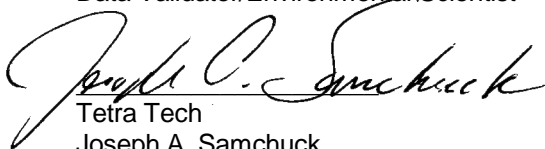
Laboratory Performance Issues: Sample nitroglycerin results were qualified for surrogate recovery non-compliances and analytical column RPD non-compliances. Metal sample results were qualified for lab duplicate analysis RPD non-compliances.

Other Factors Affecting Data Quality: Detected results reported below the quantitation limit but above the method detection limit were qualified as estimated, (J). Sample copper, lead, and zinc results were qualified for MS %R non-compliances.

The data for these analyses were reviewed with reference to USEPA National Functional Guidelines for Superfund Organic Data Review (August 2014) and USEPA National Functional Guidelines for Inorganic Superfund Data Review (August 2014).



Tetra Tech
Joseph Kalinyak
Data Validator/Environmental Scientist



Tetra Tech
Joseph A. Samchuck
Data Validation Manager

- Attachments:
- Appendix A – Qualified Analytical Results
 - Appendix B – Results as Reported by the Laboratory
 - Appendix C – Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate
- Z4 = Sample activity is less than the at uncertainty at 3 standard deviations and greater than the MDC
- Z5 = Sample activity is less than the at uncertainty at 3 standard deviations and less than the MDC

| | | | | | | | | | | | | | |
|---|------------|-----------------|------|--------|-----------------|------|--------|-----------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4100 FRACTION: EXP MEDIA: SOIL | NSAMPLE | PR-DUP01-060616 | | | PR-DUP02-060716 | | | PR-DUP04-060716 | | | PR-SB-A1-0612 | | |
| | LAB_ID | SJ4100-10RA | | | SJ4100-37RA | | | SJ4100-39RA | | | SJ4100-8RA | | |
| | SAMP_DATE | 6/6/2016 | | | 6/7/2016 | | | 6/7/2016 | | | 6/6/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | UG/KG | | | UG/KG | | | UG/KG | | | UG/KG | | |
| | PCT_SOLIDS | 88.1 | | | 85.5 | | | 92.8 | | | 89.8 | | |
| | DUP_OF | PR-SB-A6-0612 | | | PR-SS-A2-0006 | | | PR-SB-B5-0612 | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| NITROGLYCERIN | 120 | U | | 320 | J | GPR | 470 | J | PR | 120 | UJ | R | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4100 FRACTION: EXP MEDIA: SOIL | NSAMPLE | PR-SB-A2-0612 | | | PR-SB-A3-0612 | | | PR-SB-A4-0612 | | | PR-SB-A5-0612 | | |
| | LAB_ID | SJ4100-12RA | | | SJ4100-32RA | | | SJ4100-35RA | | | SJ4100-5RA | | |
| | SAMP_DATE | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | | 6/6/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | UG/KG | | | UG/KG | | | UG/KG | | | UG/KG | | |
| | PCT_SOLIDS | 88.4 | | | 91.3 | | | 88.7 | | | 88.8 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| NITROGLYCERIN | 280 | J | PR | 130 | UJ | R | 120 | UJ | R | 110 | UJ | R | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4100 FRACTION: EXP MEDIA: SOIL | NSAMPLE | PR-SB-A6-0612 | | | PR-SB-B1-0612 | | | PR-SB-B2-0612 | | | PR-SB-B3-0612 | | |
| | LAB_ID | SJ4100-2RA | | | SJ4100-15RA | | | SJ4100-18RA | | | SJ4100-21RA | | |
| | SAMP_DATE | 6/6/2016 | | | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | UG/KG | | | UG/KG | | | UG/KG | | | UG/KG | | |
| | PCT_SOLIDS | 88.7 | | | 96.1 | | | 90.5 | | | 89.5 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| NITROGLYCERIN | 140 | UJ | R | 130 | U | | 1200 | | | 180 | J | PRU | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4100 FRACTION: EXP MEDIA: SOIL | NSAMPLE | PR-SB-B4-0612 | | | PR-SB-B5-0612 | | | PR-SB-B6-0612 | | | PR-SS-A1-0006 | | |
| | LAB_ID | SJ4100-23RA | | | SJ4100-26RA | | | SJ4100-29RA | | | SJ4100-7C | | |
| | SAMP_DATE | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | | 6/6/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | UG/KG | | | UG/KG | | | UG/KG | | | UG/KG | | |
| | PCT_SOLIDS | 89.3 | | | 90.8 | | | 93.1 | | | 83.3 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| NITROGLYCERIN | 480 | J | PR | 270 | J | P | 130 | UJ | R | 190 | J | PU | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4100 FRACTION: EXP MEDIA: SOIL | NSAMPLE | PR-SS-A2-0006 | | | PR-SS-A3-0006 | | | PR-SS-A4-0006 | | | PR-SS-A5-0006 | | |
| | LAB_ID | SJ4100-11RA | | | SJ4100-31RA | | | SJ4100-34RA | | | SJ4100-4RA | | |
| | SAMP_DATE | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | | 6/6/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | UG/KG | | | UG/KG | | | UG/KG | | | UG/KG | | |
| | PCT_SOLIDS | 87.3 | | | 92.6 | | | 91.3 | | | 85.9 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| NITROGLYCERIN | 2500 | J | G | 130 | UJ | R | 610 | J | PR | 450 | J | PR | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4100 FRACTION: EXP MEDIA: SOIL | NSAMPLE | PR-SS-A6-0006 | | | PR-SS-B1-0006 | | | PR-SS-B2-0006 | | | PR-SS-B3-0006 | | |
| | LAB_ID | SJ4100-1RA | | | SJ4100-14RA | | | SJ4100-17RA | | | SJ4100-20DL | | |
| | SAMP_DATE | 6/6/2016 | | | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | UG/KG | | | UG/KG | | | UG/KG | | | UG/KG | | |
| | PCT_SOLIDS | 87.6 | | | 95.4 | | | 91.7 | | | 91.5 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| NITROGLYCERIN | 130 | UJ | R | 120 | U | | 960 | | | 32000 | J | R | |

| | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4100 FRACTION: EXP MEDIA: SOIL | NSAMPLE | PR-SS-B5-0006 | | | PR-SS-B6-0006 | | |
| | LAB_ID | SJ4100-25RA | | | SJ4100-28RA | | |
| | SAMP_DATE | 6/7/2016 | | | 6/7/2016 | | |
| | QC_TYPE | NM | | | NM | | |
| | UNITS | UG/KG | | | UG/KG | | |
| | PCT_SOLIDS | 92.9 | | | 91.7 | | |
| | DUP_OF | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| NITROGLYCERIN | 300 | J | PR | 120 | UJ | R | |

| | | | | | | | | | | | | | |
|---|------------|-----------------|------|--------|-----------------|------|--------|-----------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4100 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-DUP01-060616 | | | PR-DUP02-060716 | | | PR-DUP04-060716 | | | PR-SB-A1-0612 | | |
| | LAB_ID | SJ4100-010 | | | SJ4100-037 | | | SJ4100-039 | | | SJ4100-008 | | |
| | SAMP_DATE | 6/6/2016 | | | 6/7/2016 | | | 6/7/2016 | | | 6/6/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 88.1 | | | 85.5 | | | 92.8 | | | 89.8 | | |
| | DUP_OF | PR-SB-A6-0612 | | | PR-SS-A2-0006 | | | PR-SB-B5-0612 | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| COPPER | 4.2 | J | D | 45.8 | J | D | 5.63 | J | D | 5.55 | J | D | |
| LEAD | 10.8 | J | D | 342 | J | D | 18.5 | J | D | 11.6 | J | D | |
| ZINC | 26 | J | DF | 172 | J | DF | 31.9 | J | DF | 51 | J | DF | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4100 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-SB-A2-0612 | | | PR-SB-A3-0612 | | | PR-SB-A4-0612 | | | PR-SB-A5-0612 | | |
| | LAB_ID | SJ4100-012 | | | SJ4100-032 | | | SJ4100-035 | | | SJ4100-005 | | |
| | SAMP_DATE | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | | 6/6/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 88.4 | | | 91.3 | | | 88.7 | | | 88.8 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| COPPER | 48.5 | J | D | 5.58 | J | D | 5.84 | J | D | 6.6 | J | D | |
| LEAD | 44.9 | J | D | 8.55 | J | D | 8.08 | J | D | 12.6 | J | D | |
| ZINC | 243 | J | DF | 53.1 | J | DF | 30.5 | J | DF | 28 | J | DF | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4100 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-SB-A6-0612 | | | PR-SB-B1-0612 | | | PR-SB-B2-0612 | | | PR-SB-B3-0612 | | |
| | LAB_ID | SJ4100-002 | | | SJ4100-015 | | | SJ4100-018 | | | SJ4100-021 | | |
| | SAMP_DATE | 6/6/2016 | | | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 88.7 | | | 96.1 | | | 90.5 | | | 89.5 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| COPPER | 4.29 | J | D | 1.21 | J | D | 5.57 | J | D | 8.96 | J | D | |
| LEAD | 11.5 | J | D | 1.16 | J | D | 30.3 | J | D | 16.1 | J | D | |
| ZINC | 33.3 | J | DF | 3.34 | J | DF | 28.9 | J | DF | 64.4 | J | DF | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4100 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-SB-B4-0612 | | | PR-SB-B5-0612 | | | PR-SB-B6-0612 | | | PR-SS-A1-0006 | | |
| | LAB_ID | SJ4100-023 | | | SJ4100-026 | | | SJ4100-029 | | | SJ4100-007 | | |
| | SAMP_DATE | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | | 6/6/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 89.3 | | | 90.8 | | | 93.1 | | | 83.3 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| COPPER | 10.9 | J | D | 6.98 | J | D | 2.74 | J | D | 23.6 | J | D | |
| LEAD | 15.1 | J | D | 21.5 | J | D | 13.6 | J | D | 46.2 | J | D | |
| ZINC | 98 | J | DF | 37.6 | J | DF | 16 | J | DF | 131 | J | DF | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4100 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-SS-A2-0006 | | | PR-SS-A3-0006 | | | PR-SS-A4-0006 | | | PR-SS-A5-0006 | | |
| | LAB_ID | SJ4100-011 | | | SJ4100-031 | | | SJ4100-034 | | | SJ4100-004 | | |
| | SAMP_DATE | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | | 6/6/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 87.3 | | | 92.6 | | | 91.3 | | | 85.9 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| COPPER | 48.3 | J | D | 13.6 | J | D | 12.1 | J | D | 22 | J | D | |
| LEAD | 260 | J | D | 22.8 | J | D | 30.8 | J | D | 60.4 | J | D | |
| ZINC | 169 | J | DF | 103 | J | DF | 166 | J | DF | 210 | J | DF | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4100 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-SS-A6-0006 | | | PR-SS-B1-0006 | | | PR-SS-B2-0006 | | | PR-SS-B3-0006 | | |
| | LAB_ID | SJ4100-001 | | | SJ4100-014 | | | SJ4100-017 | | | SJ4100-020 | | |
| | SAMP_DATE | 6/6/2016 | | | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 87.6 | | | 95.4 | | | 91.7 | | | 91.5 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| COPPER | 13.6 | J | D | 1.12 | J | D | 3.63 | J | D | 44.8 | J | D | |
| LEAD | 37 | J | D | 1.76 | J | D | 7.19 | J | D | 101 | J | D | |
| ZINC | 75.6 | J | DF | 4.4 | J | DF | 17.1 | J | DF | 176 | J | DF | |

| | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4100 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-SS-B5-0006 | | | PR-SS-B6-0006 | | |
| | LAB_ID | SJ4100-025 | | | SJ4100-028 | | |
| | SAMP_DATE | 6/7/2016 | | | 6/7/2016 | | |
| | QC_TYPE | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 92.9 | | | 91.7 | | |
| | DUP_OF | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| COPPER | 8.88 | J | D | 2.72 | J | D | |
| LEAD | 15.4 | J | D | 13.8 | J | D | |
| ZINC | 93.2 | J | DF | 10.3 | J | DF | |

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

EXPLOSIVES DATA

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SJ4100-10RA
Client ID: PR-DUP01-060616
Project: NASA Wallops Flight Facility - MBFR
SDG: SJ4100
Lab File ID: HJF10129.D

Sample Date: 06-JUN-16
Received Date: 08-JUN-16
Extract Date: 08-JUN-16
Extracted By: AC
Extraction Method: SW846 8330
Lab Prep Batch: WG185079

Analysis Date: 11-JUN-16
Analyst: AC
Analysis Method: SW846 8330A
Matrix: SL
% Solids: 88.
Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|--------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | U | 120 | ug/Kgdrywt | 1 | 800 | 780 | 120 | 390 |
| 1,2-Dinitrobenzene | | 89.9 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SJ4100-37RA
Client ID: PR-DUP02-060716
Project: NASA Wallops Flight Facility - MBFR
SDG: SJ4100
Lab File ID: HJF10147.D

Sample Date: 07-JUN-16
Received Date: 08-JUN-16
Extract Date: 08-JUN-16
Extracted By: AC
Extraction Method: SW846 8330
Lab Prep Batch: WG185080

Analysis Date: 11-JUN-16
Analyst: AC
Analysis Method: SW846 8330A
Matrix: SL
% Solids: 86.
Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|--------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | J | 320 | ug/Kgdrywt | 1 | 800 | 870 | 130 | 430 |
| 1,2-Dinitrobenzene | * | 81.3 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.
Lab ID: SJ4100-39RA
Client ID: PR-DUP04-060716
Project: NASA Wallops Flight Facility - MBFR
SDG: SJ4100
Lab File ID: HJF10149.D

Sample Date: 07-JUN-16
Received Date: 08-JUN-16
Extract Date: 08-JUN-16
Extracted By: AC
Extraction Method: SW846 8330
Lab Prep Batch: WG185080

Analysis Date: 11-JUN-16
Analyst: AC
Analysis Method: SW846 8330A
Matrix: SL
% Solids: 93.
Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|--------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | J | 470 | ug/Kgdrywt | 1 | 800 | 810 | 130 | 410 |
| 1,2-Dinitrobenzene | * | 80.9 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4100-8RA

Client ID: PR-SB-A1-0612

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4100

Lab File ID: HJF10128.D

Sample Date: 06-JUN-16

Received Date: 08-JUN-16

Extract Date: 08-JUN-16

Extracted By: AC

Extraction Method: SW846 8330

Lab Prep Batch: WG185079

Analysis Date: 11-JUN-16

Analyst: AC

Analysis Method: SW846 8330A

Matrix: SL

% Solids: 90.

Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|--------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | U | 120 | ug/Kgdrywt | 1 | 800 | 750 | 120 | 380 |
| 1,2-Dinitrobenzene | * | 87.7 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4100-12RA

Client ID: PR-SB-A2-0612

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4100

Lab File ID: HJF10130.D

Sample Date: 07-JUN-16

Received Date: 08-JUN-16

Extract Date: 08-JUN-16

Extracted By: AC

Extraction Method: SW846 8330

Lab Prep Batch: WG185079

Analysis Date: 11-JUN-16

Analyst: AC

Analysis Method: SW846 8330A

Matrix: SL

% Solids: 88.

Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|--------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | J | 280 | ug/Kgdrywt | 1 | 800 | 820 | 130 | 410 |
| 1,2-Dinitrobenzene | * | 88.3 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4100-32RA

Client ID: PR-SB-A3-0612

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4100

Lab File ID: HJF10144.D

Sample Date: 07-JUN-16

Received Date: 08-JUN-16

Extract Date: 08-JUN-16

Extracted By: AC

Extraction Method: SW846 8330

Lab Prep Batch: WG185080

Analysis Date: 11-JUN-16

Analyst: AC

Analysis Method: SW846 8330A

Matrix: SL

% Solids: 91.

Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|--------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | U | 130 | ug/Kgdrywt | 1 | 800 | 850 | 130 | 420 |
| 1,2-Dinitrobenzene | * | 84.2 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4100-35RA

Client ID: PR-SB-A4-0612

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4100

Lab File ID: HJF10146.D

Sample Date: 07-JUN-16

Received Date: 08-JUN-16

Extract Date: 08-JUN-16

Extracted By: AC

Extraction Method: SW846 8330

Lab Prep Batch: WG185080

Analysis Date: 11-JUN-16

Analyst: AC

Analysis Method: SW846 8330A

Matrix: SL

% Solids: 89.

Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|--------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | U | 120 | ug/Kgdrywt | 1 | 800 | 800 | 120 | 400 |
| 1,2-Dinitrobenzene | * | 83.8 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4100-5RA

Client ID: PR-SB-A5-0612

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4100

Lab File ID: HJF10125.D

Sample Date: 06-JUN-16

Received Date: 08-JUN-16

Extract Date: 08-JUN-16

Extracted By: AC

Extraction Method: SW846 8330

Lab Prep Batch: WG185079

Analysis Date: 11-JUN-16

Analyst: AC

Analysis Method: SW846 8330A

Matrix: SL

% Solids: 89.

Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|--------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | U | 110 | ug/Kgdrywt | 1 | 800 | 700 | 110 | 350 |
| 1,2-Dinitrobenzene | * | 88.3 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4100-2RA

Client ID: PR-SB-A6-0612

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4100

Lab File ID: HJF10123.D

Sample Date: 06-JUN-16

Received Date: 08-JUN-16

Extract Date: 08-JUN-16

Extracted By: AC

Extraction Method: SW846 8330

Lab Prep Batch: WG185079

Analysis Date: 10-JUN-16

Analyst: AC

Analysis Method: SW846 8330A

Matrix: SL

% Solids: 89.

Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|--------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | U | 140 | ug/Kgdrywt | 1 | 800 | 900 | 140 | 450 |
| 1,2-Dinitrobenzene | * | 87.0 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4100-15RA

Client ID: PR-SB-B1-0612

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4100

Lab File ID: HJF10132.D

Sample Date: 07-JUN-16

Received Date: 08-JUN-16

Extract Date: 08-JUN-16

Extracted By: AC

Extraction Method: SW846 8330

Lab Prep Batch: WG185079

Analysis Date: 11-JUN-16

Analyst: AC

Analysis Method: SW846 8330A

Matrix: SL

% Solids: 96.

Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|--------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | U | 130 | ug/Kgdrywt | 1 | 800 | 820 | 130 | 410 |
| 1,2-Dinitrobenzene | | 90.6 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4100-18RA

Client ID: PR-SB-B2-0612

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4100

Lab File ID: HJF10134.D

Sample Date: 07-JUN-16

Received Date: 08-JUN-16

Extract Date: 08-JUN-16

Extracted By: AC

Extraction Method: SW846 8330

Lab Prep Batch: WG185079

Analysis Date: 11-JUN-16

Analyst: AC

Analysis Method: SW846 8330A

Matrix: SL

% Solids: 90.

Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|----------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | | 1200 | ug/Kgdrywt | 1 | 800 | 820 | 130 | 410 |
| 1,2-Dinitrobenzene | | 91.8 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4100-21RA

Client ID: PR-SB-B3-0612

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4100

Lab File ID: HJF10136.D

Sample Date: 07-JUN-16

Received Date: 08-JUN-16

Extract Date: 08-JUN-16

Extracted By: AC

Extraction Method: SW846 8330

Lab Prep Batch: WG185079

Analysis Date: 11-JUN-16

Analyst: AC

Analysis Method: SW846 8330A

Matrix: SL

% Solids: 90.

Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|--------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | J | 180 | ug/Kgdrywt | 1 | 800 | 850 | 130 | 420 |
| 1,2-Dinitrobenzene | * | 87.0 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4100-23RA

Client ID: PR-SB-B4-0612

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4100

Lab File ID: HJF10138.D

Sample Date: 07-JUN-16

Received Date: 08-JUN-16

Extract Date: 08-JUN-16

Extracted By: AC

Extraction Method: SW846 8330

Lab Prep Batch: WG185079

Analysis Date: 11-JUN-16

Analyst: AC

Analysis Method: SW846 8330A

Matrix: SL

% Solids: 89.

Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|--------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | J | 480 | ug/Kgdrywt | 1 | 800 | 750 | 120 | 380 |
| 1,2-Dinitrobenzene | * | 88.5 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4100-26RA

Client ID: PR-SB-B5-0612

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4100

Lab File ID: HJF10140.D

Sample Date: 07-JUN-16

Received Date: 08-JUN-16

Extract Date: 08-JUN-16

Extracted By: AC

Extraction Method: SW846 8330

Lab Prep Batch: WG185079

Analysis Date: 11-JUN-16

Analyst: AC

Analysis Method: SW846 8330A

Matrix: SL

% Solids: 91.

Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|--------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | J | 270 | ug/Kgdrywt | 1 | 800 | 870 | 140 | 440 |
| 1,2-Dinitrobenzene | | 89.2 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4100-29RA

Client ID: PR-SB-B6-0612

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4100

Lab File ID: HJF10142.D

Sample Date: 07-JUN-16

Received Date: 08-JUN-16

Extract Date: 08-JUN-16

Extracted By: AC

Extraction Method: SW846 8330

Lab Prep Batch: WG185079

Analysis Date: 11-JUN-16

Analyst: AC

Analysis Method: SW846 8330A

Matrix: SL

% Solids: 93.

Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|--------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | U | 130 | ug/Kgdrywt | 1 | 800 | 860 | 130 | 430 |
| 1,2-Dinitrobenzene | * | 87.9 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4100-7C

Client ID: PR-SS-A1-0006

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4100

Lab File ID: HJF10159.D

Sample Date: 06-JUN-16

Received Date: 08-JUN-16

Extract Date: 08-JUN-16

Extracted By: AC

Extraction Method: SW846 8330

Lab Prep Batch: WG185079

Analysis Date: 14-JUN-16

Analyst: AC

Analysis Method: SW846 8330A

Matrix: SL

% Solids: 83.

Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|--------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | J | 190 | ug/Kgdrywt | 1 | 800 | 880 | 140 | 440 |
| 1,2-Dinitrobenzene | | 97.4 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4100-11RA

Client ID: PR-SS-A2-0006

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4100

Lab File ID: HJF10150.D

Sample Date: 07-JUN-16

Received Date: 08-JUN-16

Extract Date: 08-JUN-16

Extracted By: AC

Extraction Method: SW846 8330

Lab Prep Batch: WG185079

Analysis Date: 11-JUN-16

Analyst: AC

Analysis Method: SW846 8330A

Matrix: SL

% Solids: 87.

Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|----------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | | 2500 | ug/Kgdrywt | 1 | 800 | 820 | 130 | 410 |
| 1,2-Dinitrobenzene | | 92.6 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4100-31RA

Client ID: PR-SS-A3-0006

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4100

Lab File ID: HJF10143.D

Sample Date: 07-JUN-16

Received Date: 08-JUN-16

Extract Date: 08-JUN-16

Extracted By: AC

Extraction Method: SW846 8330

Lab Prep Batch: WG185080

Analysis Date: 11-JUN-16

Analyst: AC

Analysis Method: SW846 8330A

Matrix: SL

% Solids: 92.

Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|--------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | U | 130 | ug/Kgdrywt | 1 | 800 | 820 | 130 | 410 |
| 1,2-Dinitrobenzene | * | 87.8 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4100-34RA

Client ID: PR-SS-A4-0006

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4100

Lab File ID: HJF10145.D

Sample Date: 07-JUN-16

Received Date: 08-JUN-16

Extract Date: 08-JUN-16

Extracted By: AC

Extraction Method: SW846 8330

Lab Prep Batch: WG185080

Analysis Date: 11-JUN-16

Analyst: AC

Analysis Method: SW846 8330A

Matrix: SL

% Solids: 91.

Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|--------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | J | 610 | ug/Kgdrywt | 1 | 800 | 760 | 120 | 380 |
| 1,2-Dinitrobenzene | * | 83.2 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4100-4RA

Client ID: PR-SS-A5-0006

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4100

Lab File ID: HJF10124.D

Sample Date: 06-JUN-16

Received Date: 08-JUN-16

Extract Date: 08-JUN-16

Extracted By: AC

Extraction Method: SW846 8330

Lab Prep Batch: WG185079

Analysis Date: 11-JUN-16

Analyst: AC

Analysis Method: SW846 8330A

Matrix: SL

% Solids: 86.

Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|--------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | J | 450 | ug/Kgdrywt | 1 | 800 | 700 | 110 | 350 |
| 1,2-Dinitrobenzene | * | 82.9 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4100-1RA

Client ID: PR-SS-A6-0006

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4100

Lab File ID: HJF10122.D

Sample Date: 06-JUN-16

Received Date: 08-JUN-16

Extract Date: 08-JUN-16

Extracted By: AC

Extraction Method: SW846 8330

Lab Prep Batch: WG185079

Analysis Date: 10-JUN-16

Analyst: AC

Analysis Method: SW846 8330A

Matrix: SL

% Solids: 88.

Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|--------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | UM | 130 | ug/Kgdrywt | 1 | 800 | 860 | 130 | 430 |
| 1,2-Dinitrobenzene | * | 86.2 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4100-14RA

Client ID: PR-SS-B1-0006

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4100

Lab File ID: HJF10131.D

Sample Date: 07-JUN-16

Received Date: 08-JUN-16

Extract Date: 08-JUN-16

Extracted By: AC

Extraction Method: SW846 8330

Lab Prep Batch: WG185079

Analysis Date: 11-JUN-16

Analyst: AC

Analysis Method: SW846 8330A

Matrix: SL

% Solids: 95.

Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|--------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | U | 120 | ug/Kgdrywt | 1 | 800 | 790 | 120 | 400 |
| 1,2-Dinitrobenzene | | 97.0 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4100-17RA

Client ID: PR-SS-B2-0006

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4100

Lab File ID: HJF10133.D

Sample Date: 07-JUN-16

Received Date: 08-JUN-16

Extract Date: 08-JUN-16

Extracted By: AC

Extraction Method: SW846 8330

Lab Prep Batch: WG185079

Analysis Date: 11-JUN-16

Analyst: AC

Analysis Method: SW846 8330A

Matrix: SL

% Solids: 92.

Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|--------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | | 960 | ug/Kgdrywt | 1 | 800 | 830 | 130 | 420 |
| 1,2-Dinitrobenzene | | 90.6 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4100-20DL

Client ID: PR-SS-B3-0006

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4100

Lab File ID: HJF10135.D

Sample Date: 07-JUN-16

Received Date: 08-JUN-16

Extract Date: 08-JUN-16

Extracted By: AC

Extraction Method: SW846 8330

Lab Prep Batch: WG185079

Analysis Date: 11-JUN-16

Analyst: AC

Analysis Method: SW846 8330A

Matrix: SL

% Solids: 92.

Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|----------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | | 32000 | ug/Kgdrywt | 4 | 800 | 3400 | 520 | 1700 |
| 1,2-Dinitrobenzene | * | 74.8 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4100-25RA

Client ID: PR-SS-B5-0006

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4100

Lab File ID: HJF10139.D

Sample Date: 07-JUN-16

Received Date: 08-JUN-16

Extract Date: 08-JUN-16

Extracted By: AC

Extraction Method: SW846 8330

Lab Prep Batch: WG185079

Analysis Date: 11-JUN-16

Analyst: AC

Analysis Method: SW846 8330A

Matrix: SL

% Solids: 93.

Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|--------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | J | 300 | ug/Kgdrywt | 1 | 800 | 790 | 120 | 390 |
| 1,2-Dinitrobenzene | * | 88.5 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4100-28RA

Client ID: PR-SS-B6-0006

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4100

Lab File ID: HJF10141.D

Sample Date: 07-JUN-16

Received Date: 08-JUN-16

Extract Date: 08-JUN-16

Extracted By: AC

Extraction Method: SW846 8330

Lab Prep Batch: WG185079

Analysis Date: 11-JUN-16

Analyst: AC

Analysis Method: SW846 8330A

Matrix: SL

% Solids: 92.

Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|--------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | U | 120 | ug/Kgdrywt | 1 | 800 | 810 | 120 | 400 |
| 1,2-Dinitrobenzene | * | 85.1 | % | | | | | |

METALS DATA

METALS SAMPLE FLAGGING

| FLAG | SPECIFIED MEANING |
|-------------|--|
| E | The reported value is estimated because of the presence of interference (as indicated by serial dilution). |
| N | The pre-digestion spiked sample recovery is not within control limits. |
| * | The duplicate sample analysis relative percent difference (RPD) is not within control limits. |
| B | Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample. |
| A | The post-digestion spiked sample recovery is not within control limits. |
| • | Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits. |
| U | <p>The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ) (previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.</p> <p>Note: All results reported as “U” MDL have a 50% rate for false negatives compared to those results reported as “U” PQL/LOQ or “U” LOD, where the rate of false negatives is <1%.</p> |
| J | The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL). |
| Q | One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV). |

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-DUP01-060616

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 88.1

Lab Sample ID: SJ4100-010

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 4.20 | | | MS | 10 | 0.40 | 0.093 | 0.26 |
| 7439-92-1 | LEAD, TOTAL | 10.8 | | | MS | 10 | 0.13 | 0.0093 | 0.066 |
| 7440-66-6 | ZINC, TOTAL | 26.0 | | | MS | 10 | 1.3 | 0.17 | 1.1 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-DUP02-060716

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 85.5

Lab Sample ID: SJ4100-037

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 45.8 | | | MS | 10 | 0.42 | 0.099 | 0.28 |
| 7439-92-1 | LEAD, TOTAL | 342 | | | MS | 10 | 0.14 | 0.0099 | 0.070 |
| 7440-66-6 | ZINC, TOTAL | 172 | | | MS | 10 | 1.4 | 0.18 | 1.1 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-DUP04-060716

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 92.8

Lab Sample ID: SJ4100-039

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 5.63 | | | MS | 10 | 0.47 | 0.11 | 0.31 |
| 7439-92-1 | LEAD, TOTAL | 18.5 | | | MS | 10 | 0.16 | 0.011 | 0.078 |
| 7440-66-6 | ZINC, TOTAL | 31.9 | | | MS | 10 | 1.6 | 0.20 | 1.2 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-A1-0612

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 89.8

Lab Sample ID: SJ4100-008

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 5.55 | | | MS | 10 | 0.42 | 0.099 | 0.28 |
| 7439-92-1 | LEAD, TOTAL | 11.6 | | | MS | 10 | 0.14 | 0.0099 | 0.071 |
| 7440-66-6 | ZINC, TOTAL | 51.0 | | | MS | 10 | 1.4 | 0.18 | 1.1 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-A2-0612

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 88.4

Lab Sample ID: SJ4100-012

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 48.5 | | | MS | 10 | 0.37 | 0.087 | 0.25 |
| 7439-92-1 | LEAD, TOTAL | 44.9 | | | MS | 10 | 0.12 | 0.0087 | 0.062 |
| 7440-66-6 | ZINC, TOTAL | 243 | | | MS | 10 | 1.2 | 0.16 | 1.0 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-A3-0612

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 91.3

Lab Sample ID: SJ4100-032

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 5.58 | | | MS | 10 | 0.38 | 0.088 | 0.25 |
| 7439-92-1 | LEAD, TOTAL | 8.55 | | | MS | 10 | 0.12 | 0.0088 | 0.063 |
| 7440-66-6 | ZINC, TOTAL | 53.1 | | | MS | 10 | 1.2 | 0.16 | 1.0 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-A4-0612

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 88.7

Lab Sample ID: SJ4100-035

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 5.84 | | | MS | 10 | 0.47 | 0.11 | 0.32 |
| 7439-92-1 | LEAD, TOTAL | 8.08 | | | MS | 10 | 0.16 | 0.011 | 0.079 |
| 7440-66-6 | ZINC, TOTAL | 30.5 | | | MS | 10 | 1.6 | 0.20 | 1.3 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-A5-0612

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 88.8

Lab Sample ID: SJ4100-005

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 6.60 | | | MS | 10 | 0.36 | 0.085 | 0.24 |
| 7439-92-1 | LEAD, TOTAL | 12.6 | | | MS | 10 | 0.12 | 0.0085 | 0.060 |
| 7440-66-6 | ZINC, TOTAL | 28.0 | | | MS | 10 | 1.2 | 0.16 | 0.97 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-A6-0612

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 88.7

Lab Sample ID: SJ4100-002

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 4.29 | | | MS | 10 | 0.43 | 0.10 | 0.29 |
| 7439-92-1 | LEAD, TOTAL | 11.5 | | | MS | 10 | 0.14 | 0.010 | 0.072 |
| 7440-66-6 | ZINC, TOTAL | 33.3 | | | MS | 10 | 1.4 | 0.19 | 1.1 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-B1-0612

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 96.1

Lab Sample ID: SJ4100-015

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 1.21 | | | MS | 10 | 0.34 | 0.081 | 0.23 |
| 7439-92-1 | LEAD, TOTAL | 1.16 | | | MS | 10 | 0.12 | 0.0081 | 0.058 |
| 7440-66-6 | ZINC, TOTAL | 3.34 | | | MS | 10 | 1.2 | 0.15 | 0.92 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-B2-0612

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 90.5

Lab Sample ID: SJ4100-018

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 5.57 | | | MS | 10 | 0.39 | 0.092 | 0.26 |
| 7439-92-1 | LEAD, TOTAL | 30.3 | | | MS | 10 | 0.13 | 0.0092 | 0.065 |
| 7440-66-6 | ZINC, TOTAL | 28.9 | | | MS | 10 | 1.3 | 0.17 | 1.0 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-B3-0612

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 89.5

Lab Sample ID: SJ4100-021

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 8.96 | | | MS | 10 | 0.34 | 0.079 | 0.22 |
| 7439-92-1 | LEAD, TOTAL | 16.1 | | | MS | 10 | 0.11 | 0.0079 | 0.056 |
| 7440-66-6 | ZINC, TOTAL | 64.4 | | | MS | 10 | 1.1 | 0.15 | 0.90 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-B4-0612

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 89.2

Lab Sample ID: SJ4100-023

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 10.9 | | | MS | 10 | 0.39 | 0.090 | 0.26 |
| 7439-92-1 | LEAD, TOTAL | 15.1 | | | MS | 10 | 0.13 | 0.0090 | 0.064 |
| 7440-66-6 | ZINC, TOTAL | 98.0 | | | MS | 10 | 1.3 | 0.17 | 1.0 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-B5-0612

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 90.8

Lab Sample ID: SJ4100-026

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 6.98 | | | MS | 10 | 0.40 | 0.092 | 0.26 |
| 7439-92-1 | LEAD, TOTAL | 21.5 | | | MS | 10 | 0.13 | 0.0092 | 0.066 |
| 7440-66-6 | ZINC, TOTAL | 37.6 | | | MS | 10 | 1.3 | 0.17 | 1.0 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-B6-0612

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 93.1

Lab Sample ID: SJ4100-029

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 2.74 | | | MS | 10 | 0.45 | 0.11 | 0.30 |
| 7439-92-1 | LEAD, TOTAL | 13.6 | | | MS | 10 | 0.15 | 0.011 | 0.075 |
| 7440-66-6 | ZINC, TOTAL | 16.0 | | | MS | 10 | 1.5 | 0.20 | 1.2 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-A1-0006

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 83.3

Lab Sample ID: SJ4100-007

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 23.6 | | | MS | 10 | 0.44 | 0.10 | 0.29 |
| 7439-92-1 | LEAD, TOTAL | 46.2 | | | MS | 10 | 0.14 | 0.010 | 0.073 |
| 7440-66-6 | ZINC, TOTAL | 131 | | | MS | 10 | 1.4 | 0.19 | 1.2 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-A2-0006

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 87.3

Lab Sample ID: SJ4100-011

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 48.3 | | | MS | 10 | 0.38 | 0.089 | 0.25 |
| 7439-92-1 | LEAD, TOTAL | 260 | | | MS | 10 | 0.13 | 0.0089 | 0.064 |
| 7440-66-6 | ZINC, TOTAL | 169 | | | MS | 10 | 1.3 | 0.17 | 1.0 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-A3-0006

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 92.6

Lab Sample ID: SJ4100-031

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 13.6 | | | MS | 10 | 0.39 | 0.092 | 0.26 |
| 7439-92-1 | LEAD, TOTAL | 22.8 | | | MS | 10 | 0.13 | 0.0092 | 0.065 |
| 7440-66-6 | ZINC, TOTAL | 103 | | | MS | 10 | 1.3 | 0.17 | 1.0 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-A4-0006

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 91.3

Lab Sample ID: SJ4100-034

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 12.1 | | | MS | 10 | 0.34 | 0.080 | 0.23 |
| 7439-92-1 | LEAD, TOTAL | 30.8 | | | MS | 10 | 0.11 | 0.0080 | 0.057 |
| 7440-66-6 | ZINC, TOTAL | 166 | | | MS | 10 | 1.1 | 0.15 | 0.92 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-A5-0006

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 85.9

Lab Sample ID: SJ4100-004

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 22.0 | | | MS | 10 | 0.39 | 0.092 | 0.26 |
| 7439-92-1 | LEAD, TOTAL | 60.4 | | | MS | 10 | 0.13 | 0.0092 | 0.065 |
| 7440-66-6 | ZINC, TOTAL | 210 | | | MS | 10 | 1.3 | 0.17 | 1.0 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-A6-0006

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 87.6

Lab Sample ID: SJ4100-001

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|-----|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 13.6 | N* | MS | 10 | 0.45 | 0.10 | 0.30 | |
| 7439-92-1 | LEAD, TOTAL | 37.0 | N*A | MS | 10 | 0.15 | 0.010 | 0.075 | |
| 7440-66-6 | ZINC, TOTAL | 75.6 | N*A | MS | 10 | 1.5 | 0.19 | 1.2 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-B1-0006

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 95.4

Lab Sample ID: SJ4100-014

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 1.12 | | | MS | 10 | 0.34 | 0.079 | 0.22 |
| 7439-92-1 | LEAD, TOTAL | 1.76 | | | MS | 10 | 0.11 | 0.0079 | 0.056 |
| 7440-66-6 | ZINC, TOTAL | 4.40 | | | MS | 10 | 1.1 | 0.15 | 0.90 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-B2-0006

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 91.7

Lab Sample ID: SJ4100-017

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 3.63 | | | MS | 10 | 0.37 | 0.087 | 0.25 |
| 7439-92-1 | LEAD, TOTAL | 7.19 | | | MS | 10 | 0.12 | 0.0087 | 0.062 |
| 7440-66-6 | ZINC, TOTAL | 17.1 | | | MS | 10 | 1.2 | 0.16 | 0.99 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-B3-0006

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 91.5

Lab Sample ID: SJ4100-020

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 44.8 | | | MS | 10 | 0.39 | 0.091 | 0.26 |
| 7439-92-1 | LEAD, TOTAL | 101 | | | MS | 10 | 0.13 | 0.0091 | 0.065 |
| 7440-66-6 | ZINC, TOTAL | 176 | | | MS | 10 | 1.3 | 0.17 | 1.0 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-B5-0006

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 92.9

Lab Sample ID: SJ4100-025

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 8.88 | | | MS | 10 | 0.37 | 0.086 | 0.24 |
| 7439-92-1 | LEAD, TOTAL | 15.4 | | | MS | 10 | 0.12 | 0.0086 | 0.061 |
| 7440-66-6 | ZINC, TOTAL | 93.2 | | | MS | 10 | 1.2 | 0.16 | 0.98 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-B6-0006

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 91.7

Lab Sample ID: SJ4100-028

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 2.72 | | | MS | 10 | 0.40 | 0.093 | 0.27 |
| 7439-92-1 | LEAD, TOTAL | 13.8 | | | MS | 10 | 0.13 | 0.0093 | 0.066 |
| 7440-66-6 | ZINC, TOTAL | 10.3 | | | MS | 10 | 1.3 | 0.17 | 1.1 |

Comments:

APPENDIX C

SUPPORT DOCUMENTATION



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
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| | | | |
|--|--------------------------------------|----------------------------------|--------------------------|
| Client Tetra Tech | Contact Kristi Francisco | Phone # (757) 466-4902 | Fax # () |
| Address 5700 Lake Wright Dr. St 309 City Norfolk, VA | | State VA | Zip Code 23502 |
| Purchase Order # | Proj. Name / No. 112G07723 | Katahdin Quote # | |
| Bill (if different than above) | | Address | |

Sampler (Print / Sign) **Jacob Birkett** *J. Birkett* Copies To:

LAB USE ONLY WORK ORDER #: **574100**
 KATAHDIN PROJECT NUMBER _____
 REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. |
|----------------------|--------------------|--------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | | | ON | ON | ON | ON | ON | ON | ON | ON | ON | ON |
| PR-SS-A6-0006 | 6-6-16/1555 | SO | 2 | 2 | 2 | | | | | | | | |
| PR-SB-A6-0612 | /1556 | | 2 | 1 | 1 | | | | | | | | |
| PR-SB-A6-1224 | /1557 | | 2 | 1 | 1 | | | | | | | | |
| PR-SS-A5-0006 | /1620 | | 2 | 1 | 1 | | | | | | | | |
| PR-SB-A5-0612 | /1621 | | 2 | 1 | 1 | | | | | | | | |
| PR-SB-A5-1224 | /1622 | | 2 | 1 | 1 | | | | | | | | |
| PR-SS-A1-0006 | /1650 | | 2 | 1 | 1 | | | | | | | | |
| PR-SB-A1-0612 | /1651 | | 2 | 1 | 1 | | | | | | | | |
| PR-SB-A1-1224 | /1652 | | 2 | 1 | 1 | | | | | | | | |
| PR-Dup B1-060616 | 6-6-16/1200 | | 2 | 1 | 1 | | | | | | | | |
| PR-SS-A2-0006 | 6-7-16/0800 | | 2 | 1 | 1 | | | | | | | | |
| PR-SB-A2-0612 | /0801 | | 2 | 1 | 1 | | | | | | | | |
| PR-SB-A2-1224 | /0802 | | 2 | 1 | 1 | | | | | | | | |
| PR-SS-B1-0006 | /0812 | | 2 | 1 | 1 | | | | | | | | |
| PR-SB-B1-0612 | /0813 | | 2 | 1 | 1 | | | | | | | | |
| PR-SB-B1-1224 | /0814 | | 2 | 1 | 1 | | | | | | | | |

COMMENTS

| | | | | | |
|---|----------------------------|--|------------------------------|-------------|--------------------------|
| Relinquished By: (Signature) <i>J. Birkett</i> | Date / Time 6-7-16 1700 | Received By: (Signature) <i>FedEx</i> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |
| Relinquished By: (Signature) | Date / Time 6/8/16 1000 | Received By: (Signature) <i>[Signature]</i> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000018 ORIGINAL



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 Scarborough, ME 04074
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 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
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Client: _____ Contact: _____ Phone #: () ()
 Address: _____ City: _____ State: _____ Zip Code: _____
 Purchase Order #: _____ Proj. Name / No.: _____ Katahdin Quote #: _____
 Bill (if different than above): _____ Address: _____
 Sampler (Print / Sign): _____ Copies To: _____

LAB USE ONLY WORK ORDER #: ST4100
 KATAHDIN PROJECT NUMBER: _____
 REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

| * | Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. |
|---|--------------------|--------------------|--------|---------------|---|---|---|---|---|---|---|---|---|---|
| | | | | | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N |
| | | | | | Lead, Copper, Zinc | Nitroglycerin | | | | | | | | |
| | PR-SS-B2-0006 | 6-7-16/0827 | SO | 2 | 1 | 1 | | | | | | | | |
| | PR-SB-B2-0612 | /0828 | | 2 | 1 | 1 | | | | | | | | |
| | PR-SB-B2-1224 | /0829 | | 2 | 1 | 1 | | | | | | | | |
| | PR-SS-B3-0006 | /0850 | | 2 | 1 | 1 | | | | | | | | |
| | PR-SB-B3-0612 | /0851 | | 2 | 1 | 1 | | | | | | | | |
| | PR-SB-B3-1224 | /0852 | | 2 | 1 | 1 | | | | | | | | |
| | PR-SS-B4-0006 | /0905 | | 2 | 1 | 1 | | | | | | | | |
| | PR-SB-B4-0612 | /0905 | | 2 | 1 | 1 | | | | | | | | |
| | PR-SB-B4-1224 | /0906 | | 2 | 1 | 1 | | | | | | | | |
| | PR-SS-B5-0006 | /0917 | | 2 | 1 | 1 | | | | | | | | |
| | PR-SB-B5-0612 | /0918 | | 2 | 1 | 1 | | | | | | | | |
| | PR-SB-B5-1224 | /0919 | | 2 | 1 | 1 | | | | | | | | |
| | PR-SS-B6-0006 | /0938 | | 2 | 1 | 1 | | | | | | | | |
| | PR-SB-B6-0612 | /0939 | | 2 | 1 | 1 | | | | | | | | |
| | PR-SB-B6-1224 | /0940 | | 2 | 1 | 1 | | | | | | | | |
| | PR-SS-A3-0006 | ✓ /0954 | ✓ | 2 | 1 | 1 | | | | | | | | |

COMMENTS

| | | | | | |
|--|----------------------------|--|------------------------------|-------------|--------------------------|
| Relinquished By: (Signature) <i>[Signature]</i> | Date / Time 6-7-16 1700 | Received By: (Signature) <i>[Signature]</i> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |
| Relinquished By: (Signature) | Date / Time 6-7-16 1020 | Received By: (Signature) <i>[Signature]</i> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

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 Scarborough, ME 04074
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 Fax: (207) 775-4029

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Client: _____ Contact: _____ Phone #: () ()
 Address: See Page 1 City: _____ State: _____ Zip Code: _____
 Purchase Order #: _____ Proj. Name / No.: _____ Katahdin Quote #: _____
 Bill (if different than above): _____ Address: _____
 Sampler (Print / Sign): _____ Copies To: _____

LAB USE ONLY WORK ORDER #: 554109/554101
 KATAHDIN PROJECT NUMBER: _____
 REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

| ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. |
| OY ON | OY ON | OY ON | OY ON | OY ON | OY ON | OY ON | OY ON | OY ON | OY ON | OY ON |

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Lead, Copper, Zinc | Nitroglycerin | Lead | | | | | | | | |
|----------------------|--------------------|--------|---------------|--------------------|---------------|------|--|--|--|--|-------|--|--|--|
| PR-SB-A3-0612 | 6-7-16/0955 | SO | 2 | 1 | 1 | | | | | | | | | |
| PR-SB-A3-1224 | /0956 | | 2 | 1 | 1 | | | | | | | | | |
| PR-SS-A4-0006 | /1012 | | 2 | 1 | 1 | | | | | | | | | |
| PR-SB-A4-0612 | /1013 | | 2 | 1 | 1 | | | | | | | | | |
| PR-SB-A4-1224 | /1014 | | 2 | 1 | 1 | | | | | | | | | |
| PR-Dup02-060716 | /0730 | | 2 | 1 | 1 | | | | | | | | | |
| PR-Dup03-060716 | /0830 | | 2 | 1 | 1 | | | | | | | | | |
| PR-Dup04-060716 | /0900 | | 2 | 1 | 1 | | | | | | | | | |
| PR-SS-C1-0006 | /1030 | | 2 | | | 2 | | | | | MSMSD | | | |
| PR-SB-C1-0612 | /1031 | | 1 | | 0 | 1 | | | | | | | | |
| PR-SS-C2-0006 | /1039 | | 1 | | 0 | 1 | | | | | | | | |
| PR-SB-C2-0612 | /1040 | | 1 | | | 1 | | | | | | | | |
| PR-SS-C3-0006 | /1050 | | 1 | | | 1 | | | | | | | | |
| PR-SB-C3-0612 | /1051 | | 1 | | | 1 | | | | | | | | |
| PR-SS-C4-0006 | /1102 | | 1 | | | 1 | | | | | | | | |
| PR-SB-C4-0612 | ↓ / 1103 | ↓ | 1 | | | 1 | | | | | | | | |

COMMENTS

| | | | | | |
|--|----------------------------|--|------------------------------|-------------|--------------------------|
| Relinquished By: (Signature) <i>[Signature]</i> | Date / Time 6-7-16 1700 | Received By: (Signature) FedEx | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |
| Relinquished By: (Signature) | Date / Time 6/8/16 1000 | Received By: (Signature) <i>[Signature]</i> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

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ORIGINAL *[Handwritten marks]*

**SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS, INC.
NASA WALLOPS FLIGHT FACILITY-MBFR
SJ4100**

Sample Receipt

The following samples were received on June 08, 2016 and were logged in under Katahdin Analytical Services work order number SJ4100 for a hardcopy due date of June 27, 2016.

| <u>KATAHDIN</u> <u>Sample No.</u> | <u>TTNUS</u> <u>Sample Identification</u> |
|--------------------------------------|--|
| SJ4100-1 | PR-SS-A6-0006 |
| SJ4100-2 | PR-SB-A6-0612 |
| SJ4100-4 | PR-SS-A5-0006 |
| SJ4100-5 | PR-SB-A5-0612 |
| SJ4100-7 | PR-SS-A1-0006 |
| SJ4100-8 | PR-SB-A1-0612 |
| SJ4100-10 | PR-DUP01-060616 |
| SJ4100-11 | PR-SS-A2-0006 |
| SJ4100-12 | PR-SB-A2-0612 |
| SJ4100-14 | PR-SS-B1-0006 |
| SJ4100-15 | PR-SB-B1-0612 |
| SJ4100-17 | PR-SS-B2-0006 |
| SJ4100-18 | PR-SB-B2-0612 |
| SJ4100-20 | PR-SS-B3-0006 |
| SJ4100-21 | PR-SB-B3-0612 |
| SJ4100-23 | PR-SB-B4-0612 |
| SJ4100-25 | PR-SS-B5-0006 |
| SJ4100-26 | PR-SB-B5-0612 |
| SJ4100-28 | PR-SS-B6-0006 |
| SJ4100-29 | PR-SB-B6-0612 |
| SJ4100-31 | PR-SS-A3-0006 |
| SJ4100-32 | PR-SB-A3-0612 |
| SJ4100-34 | PR-SS-A4-0006 |
| SJ4100-35 | PR-SB-A4-0612 |
| SJ4100-37 | PR-DUP02-060716 |
| SJ4100-39 | PR-DUP04-060716 |

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of work order SJ4100 were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA, and/or for the specific methods listed below or on the Report of Analysis.

Sample SJ4100-1 was used for the matrix spike (MS) and matrix spike duplicate (MSD), as per client request.

8330A Analysis

All samples were initially analyzed on the primary Acclaim E1 column. If a sample has a peak that is within the retention time window of a target analyte and the concentration is above the MDL, the sample is reanalyzed for confirmation on the confirmation Acclaim E2 column. An analyte is considered confirmed if the mentioned criteria are achieved with both columns. Samples SJ4100-4, 7, 11, 12, 17, 18, 20, 21, 23, 25, 26, 34, 35, 37, and 39 were reanalyzed for confirmation on the confirmation Acclaim E2 column. All of the supporting data for the confirmation analysis is included in the report. The results from the primary column are reported for all samples except sample SJ4100-7, which is reported from the confirmation column due to matrix interference on the primary column.

All samples were manually integrated for the target analyte nitroglycerin and/or the surrogate 1,2-dinitrobenzene. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

The method blanks, WG185079-1 and WG185080-1, the LCS, WG185080-2, and the MS/MSD, WG185079-3 and 4, and all samples except SJ4100-7C, 10RA, 11RA, 14RA, 15RA, 17RA, 18RA, and 26RA had low recoveries for the surrogate 1,2-dinitrobenzene which were outside the DoD QSM acceptance limits. The client was contacted and informed the laboratory to proceed with narration.

Samples SJ4100-7 and 21 had RPD's of the result for nitroglycerin that were outside of the method acceptance limit of 40%.

The reported percent recovery acceptance limits for the Laboratory Control Samples (LCSs) are based on the DoD QSM for the full list of spiked compounds. The recoveries of the spiked analytes in the LCS, Matrix Spike (MS) and Matrix Spike Duplicate (MSD) are compared to these acceptance limits. Katahdin standard operating procedure is to take corrective action only if the number of spiked analytes in the LCS that are outside of the QC limits is greater than the

DoD QSM allowable number of exceedances. If the associated MS/MSD has greater than the allowable number of exceedances, no corrective action is taken, as long as the LCS is acceptable.

There were no other protocol deviations or observations noted by the organics laboratory staff.

Metals Analysis

The samples of Katahdin Work Order SJ4100 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Solid-matrix Katahdin Sample Numbers SJ4100- (1,2,4,5,7,8,10,11,12,14,15,17,18,20,21,23,25, 20,28,29) were digested for ICP-MS analysis on 06/09/16 (QC Batch JF09IMS1) in accordance with USEPA Method 3050B. Katahdin Sample Number SJ4100-1 was prepared with a matrix-spiked aliquot and laboratory duplicate per client request.

Katahdin Sample Numbers SJ4101-(31,32,34,35,37,39) were digested for ICP-MS analysis on 06/09/16 (QC Batch JF09IMS2).

ICP-MS analyses of Katahdin Work Order SJ4100 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Sample digestates for Katahdin Work Order SJ4100 were diluted by a factor of 10 in accordance with the project limits.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

| Internal Standard Element | Associated Analytes |
|----------------------------|--|
| Lithium | Beryllium, Boron |
| Scandium | Sodium, Magnesium, Aluminum, Silicon, Potassium, Calcium |
| Germanium or Yttrium | Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Strontium, Molybdenum, Silver, Cadmium |
| Terbium | Tin, Antimony, Barium, Tungsten |
| Bismuth | Lead, Thallium, Thorium, Uranium |

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Matrix QC Summary

The measured recoveries of all analytes in the matrix-spiked aliquots of Katahdin Sample Number SJ4100-1 are not within the project acceptance criteria (80% - 120% recovery of the added element).

The laboratory duplicate analyses of Katahdin Sample Numbers SJ4100-1 are not within the laboratory's acceptance limit (<20% relative difference between duplicate aliquots) for all analytes.

The serial dilution analyses of Katahdin Sample Numbers SJ4100-1 are within the project acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOD) for all analytes.

The measured recoveries of copper in the post-digestion spiked aliquot of Katahdin Sample Numbers SJ4100-1 is within the acceptance criteria (75% - 125% recovery of the added element).

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the LOQ are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQs, MDLs, and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

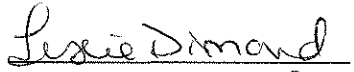
The samples of Work Order SJ4100 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times, and all quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.


06.29.16
Leslie Dimond
Quality Assurance Officer

EXPLOSIVES DATA

Form 8 GC Analytical Sequence

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR
Instrument ID : HPLC02

SDG : SJ4100
Column ID : B

| Client Sample ID | Lab Sample ID | Date Analyzed | Time Analyzed | DNB | |
|----------------------|---------------|---------------|---------------|-------|--|
| Initial Calibration | WG176190-7 | 12/14/15 | 12:27 | 13.81 | |
| Initial Calibration | WG176190-6 | 12/14/15 | 13:18 | 13.78 | |
| Initial Calibration | WG176190-5 | 12/14/15 | 14:09 | 13.78 | |
| Initial Calibration | WG176190-4 | 12/14/15 | 15:00 | 13.77 | |
| Initial Calibration | WG176190-3 | 12/14/15 | 15:51 | 13.78 | |
| Initial Calibration | WG176190-2 | 12/14/15 | 16:42 | 13.77 | |
| Initial Calibration | WG176190-1 | 12/14/15 | 17:33 | 13.80 | |
| Independent Source | WG176190-8 | 12/14/15 | 18:25 | | |
| Continuing Calibrati | WG185170-1 | 06/10/16 | 15:27 | 13.20 | |
| Laboratory Control S | WG185079-2 | 06/10/16 | 17:35 | 13.22 | |
| Laboratory Control S | WG185080-2 | 06/10/16 | 18:25 | 13.21 | |
| Matrix Spike | WG185079-3 | 06/10/16 | 19:15 | 13.24 | |
| Matrix Spike Duplica | WG185079-4 | 06/10/16 | 20:06 | 13.22 | |
| Method Blank Sample | WG185079-1 | 06/10/16 | 20:56 | 13.25 | |
| Method Blank Sample | WG185080-1 | 06/10/16 | 21:46 | 13.22 | |
| PR-SS-A6-0006 | SJ4100-1RA | 06/10/16 | 22:36 | 13.26 | |
| PR-SB-A6-0612 | SJ4100-2RA | 06/10/16 | 23:27 | 13.26 | |
| PR-SS-A5-0006 | SJ4100-4RA | 06/11/16 | 00:17 | 13.27 | |
| PR-SB-A5-0612 | SJ4100-5RA | 06/11/16 | 01:07 | 13.26 | |
| Continuing Calibrati | WG185170-2 | 06/11/16 | 01:58 | 13.25 | |
| PR-SS-A1-0006 | SJ4100-7RA | 06/11/16 | 02:48 | 13.26 | |
| PR-SB-A1-0612 | SJ4100-8RA | 06/11/16 | 03:38 | 13.26 | |
| PR-DUP01-060616 | SJ4100-10RA | 06/11/16 | 04:29 | 13.26 | |
| PR-SB-A2-0612 | SJ4100-12RA | 06/11/16 | 05:19 | 13.26 | |
| PR-SS-B1-0006 | SJ4100-14RA | 06/11/16 | 06:09 | 13.25 | |
| PR-SB-B1-0612 | SJ4100-15RA | 06/11/16 | 06:59 | 13.26 | |
| PR-SS-B2-0006 | SJ4100-17RA | 06/11/16 | 07:50 | 13.27 | |
| PR-SB-B2-0612 | SJ4100-18RA | 06/11/16 | 08:40 | 13.26 | |
| PR-SS-B3-0006 | SJ4100-20DL | 06/11/16 | 09:30 | 13.24 | |
| PR-SB-B3-0612 | SJ4100-21RA | 06/11/16 | 10:21 | 13.26 | |
| Continuing Calibrati | WG185170-3 | 06/11/16 | 11:11 | 13.23 | |
| PR-SB-B4-0612 | SJ4100-23RA | 06/11/16 | 12:01 | 13.25 | |
| PR-SS-B5-0006 | SJ4100-25RA | 06/11/16 | 12:52 | 13.24 | |
| PR-SB-B5-0612 | SJ4100-26RA | 06/11/16 | 13:42 | 13.24 | |
| PR-SS-B6-0006 | SJ4100-28RA | 06/11/16 | 14:32 | 13.24 | |
| PR-SB-B6-0612 | SJ4100-29RA | 06/11/16 | 15:23 | 13.22 | |

Form 8 GC Analytical Sequence

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR
Instrument ID : HPLC02

SDG : SJ4100
Column ID : B

| | | | | | |
|----------------------|-------------|----------|-------|-------|--|
| PR-SS-A3-0006 | SJ4100-31RA | 06/11/16 | 16:13 | 13.23 | |
| PR-SB-A3-0612 | SJ4100-32RA | 06/11/16 | 17:03 | 13.25 | |
| PR-SS-A4-0006 | SJ4100-34RA | 06/11/16 | 17:53 | 13.23 | |
| PR-SB-A4-0612 | SJ4100-35RA | 06/11/16 | 18:44 | 13.23 | |
| PR-DUP02-060716 | SJ4100-37RA | 06/11/16 | 19:34 | 13.24 | |
| Continuing Calibrati | WG185170-4 | 06/11/16 | 20:24 | 13.23 | |
| PR-DUP04-060716 | SJ4100-39RA | 06/11/16 | 21:15 | 13.26 | |
| PR-SS-A2-0006 | SJ4100-11RA | 06/11/16 | 22:05 | 13.24 | |
| Continuing Calibrati | WG185170-5 | 06/11/16 | 22:55 | 13.23 | |

Form 4 Method Blank Summary

| | |
|--|---------------------------------------|
| Lab Name : Katahdin Analytical Services | SDG : SJ4100 |
| Project : NASA Wallops Flight Facility - MBFR | Lab Sample ID : WG185079-1 |
| Lab File ID : HJF10120.D | Date Extracted : 08-JUN-16 |
| Matrix : SL | Extraction Method : SW846 8330 |
| Column A | Column B |
| Instrument ID : HPLC02 | Instrument ID : HPLC02 |
| Date Analyzed : 10-JUN-16 | Date Analyzed : 10-JUN-16 |
| Time Analyzed : 20:56 | Time Analyzed : 20:56 |

This Method Blank applies to the following samples, LCS, MS and MSD:

| Client Sample ID | Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed |
|----------------------|---------------|-------------|---------------|---------------|
| Laboratory Control S | WG185079-2 | HJF10116.1 | 06/10/16 | 17:35 |
| Matrix Spike | WG185079-3 | HJF10118.1 | 06/10/16 | 19:15 |
| Matrix Spike Duplica | WG185079-4 | HJF10119.1 | 06/10/16 | 20:06 |
| PR-SS-A6-0006 | SJ4100-1RA | HJF10122.1 | 06/10/16 | 22:36 |
| PR-SB-A6-0612 | SJ4100-2RA | HJF10123.1 | 06/10/16 | 23:27 |
| PR-SS-A5-0006 | SJ4100-4RA | HJF10124.1 | 06/11/16 | 00:17 |
| PR-SB-A5-0612 | SJ4100-5RA | HJF10125.1 | 06/11/16 | 01:07 |
| PR-SS-A1-0006 | SJ4100-7RA | HJF10127.1 | 06/11/16 | 02:48 |
| PR-SB-A1-0612 | SJ4100-8RA | HJF10128.1 | 06/11/16 | 03:38 |
| PR-DUP01-060616 | SJ4100-10RA | HJF10129.1 | 06/11/16 | 04:29 |
| PR-SB-A2-0612 | SJ4100-12RA | HJF10130.1 | 06/11/16 | 05:19 |
| PR-SS-B1-0006 | SJ4100-14RA | HJF10131.1 | 06/11/16 | 06:09 |
| PR-SB-B1-0612 | SJ4100-15RA | HJF10132.1 | 06/11/16 | 06:59 |
| PR-SS-B2-0006 | SJ4100-17RA | HJF10133.1 | 06/11/16 | 07:50 |
| PR-SB-B2-0612 | SJ4100-18RA | HJF10134.1 | 06/11/16 | 08:40 |
| PR-SS-B3-0006 | SJ4100-20DL | HJF10135.1 | 06/11/16 | 09:30 |
| PR-SB-B3-0612 | SJ4100-21RA | HJF10136.1 | 06/11/16 | 10:21 |
| PR-SB-B4-0612 | SJ4100-23RA | HJF10138.1 | 06/11/16 | 12:01 |
| PR-SS-B5-0006 | SJ4100-25RA | HJF10139.1 | 06/11/16 | 12:52 |
| PR-SB-B5-0612 | SJ4100-26RA | HJF10140.1 | 06/11/16 | 13:42 |
| PR-SS-B6-0006 | SJ4100-28RA | HJF10141.1 | 06/11/16 | 14:32 |
| PR-SB-B6-0612 | SJ4100-29RA | HJF10142.1 | 06/11/16 | 15:23 |
| PR-SS-A2-0006 | SJ4100-11RA | HJF10150.1 | 06/11/16 | 22:05 |

Report of Analytical Results

Client:
Lab ID: WG185079-1
Client ID: Method Blank Sample
Project:
SDG: SJ4100
Lab File ID: HJF10120.D

Sample Date:
Received Date:
Extract Date: 08-JUN-16
Extracted By: AC
Extraction Method: SW846 8330
Lab Prep Batch: WG185079

Analysis Date: 10-JUN-16
Analyst: AC
Analysis Method: SW846 8330A
Matrix: SL
% Solids: NA
Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|--------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | U | 120 | ug/Kgdrywt | 1 | 800 | 800 | 120 | 400 |
| 1,2-Dinitrobenzene | * | 83.6 | % | | | | | |

Form 4 Method Blank Summary

| | |
|--|---|
| <p>Lab Name : Katahdin Analytical Services Project : NASA Wallops Flight Facility - MBFR Lab File ID : HJF10121.D Matrix : SL Column A Instrument ID : HPLC02 Date Analyzed : 10-JUN-16 Time Analyzed : 21:46</p> | <p>SDG : SJ4100 Lab Sample ID : WG185080-1 Date Extracted : 08-JUN-16 Extraction Method : SW846 8330 Column B Instrument ID : HPLC02 Date Analyzed : 10-JUN-16 Time Analyzed : 21:46</p> |
|--|---|

This Method Blank applies to the following samples, LCS, MS and MSD:

| Client Sample ID | Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed |
|----------------------|---------------|-------------|---------------|---------------|
| Laboratory Control S | WG185080-2 | HJF10117.1 | 06/10/16 | 18:25 |
| PR-SS-A3-0006 | SJ4100-31RA | HJF10143.1 | 06/11/16 | 16:13 |
| PR-SB-A3-0612 | SJ4100-32RA | HJF10144.1 | 06/11/16 | 17:03 |
| PR-SS-A4-0006 | SJ4100-34RA | HJF10145.1 | 06/11/16 | 17:53 |
| PR-SB-A4-0612 | SJ4100-35RA | HJF10146.1 | 06/11/16 | 18:44 |
| PR-DUP02-060716 | SJ4100-37RA | HJF10147.1 | 06/11/16 | 19:34 |
| PR-DUP04-060716 | SJ4100-39RA | HJF10149.1 | 06/11/16 | 21:15 |

Report of Analytical Results

Client:
Lab ID: WG185080-1
Client ID: Method Blank Sample
Project:
SDG: SJ4100
Lab File ID: HJF10121.D

Sample Date:
Received Date:
Extract Date: 08-JUN-16
Extracted By: AC
Extraction Method: SW846 8330
Lab Prep Batch: WG185080

Analysis Date: 10-JUN-16
Analyst: AC
Analysis Method: SW846 8330A
Matrix: SL
% Solids: NA
Report Date: 28-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|--------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Nitroglycerin | U | 120 | ug/Kgdrywt | 1 | 800 | 800 | 120 | 400 |
| 1,2-Dinitrobenzene | * | 86.4 | % | | | | | |

LCS Recovery Report

Client:
Lab ID: WG185079-2
Client ID: LCS
Project:
SDG: SJ4100
LCS File ID: HJF10116.D

Sample Date:
Received Date:
Extract Date: 08-JUN-16
Extracted By: AC
Extraction Method: SW846 8330
Lab Prep Batch: WG185079

Analysis Date: 10-JUN-16
Analyst: AC
Analysis Method: SW846 8330A
Matrix: SL
% Solids: NA
Report Date: 24-JUN-16

| Compound | Recovery (%) | Conc Added | Conc Recovered | Conc Units | Limits |
|--------------------|--------------|------------|----------------|------------|--------|
| Nitroglycerin | 77.0 | 1000 | 770. | ug/Kgdrywt | 73-122 |
| 1,2-Dinitrobenzene | 89.4 | | | | 89-123 |

LCS Recovery Report

Client:
Lab ID: WG185080-2
Client ID: LCS
Project:
SDG: SJ4100
LCS File ID: HJF10117.D

Sample Date:
Received Date:
Extract Date: 08-JUN-16
Extracted By: AC
Extraction Method: SW846 8330
Lab Prep Batch: WG185080

Analysis Date: 10-JUN-16
Analyst: AC
Analysis Method: SW846 8330A
Matrix: SL
% Solids: NA
Report Date: 24-JUN-16

| Compound | Recovery (%) | Conc Added | Conc Recovered | Conc Units | Limits |
|--------------------|--------------|------------|----------------|------------|--------|
| Nitroglycerin | 78.5 | 1000 | 785. | ug/Kgdrywt | 73-122 |
| 1,2-Dinitrobenzene | * 86.8 | | | | 89-123 |

MS/MSD Recovery Report

MS ID: WG185079-3
MSD ID: WG185079-4
Sample ID: SJ4100-1
Client ID: PR-SS-A6-0006
Project:
SDG: SJ4100
MS File ID: HJF10118.D

Received Date:
Extract Date: 08-JUN-16
Extracted By: AC
Extraction Method: SW846 8330
Lab Prep Batch: WG185079
Report Date: 28-JUN-16
MSD File ID: HJF10119.D

Analysis Date: 10-JUN-16
Analyst: AC
Analysis Method: SW846 8330A
Matrix: SL
% Solids: 88.

| Compound | MS Spike | MSD Spike | Conc Units | Samp Conc | MS Conc | MSD Conc | MS Rec (%) | MSD Rec (%) | RPD (%) | RPD Limit | Limits |
|--------------------|----------|-----------|------------|-----------|---------|----------|------------|-------------|---------|-----------|--------|
| Nitroglycerin | 1080 | 1100 | ug/Kgdrywt | UM860 | 770 | 820 | 71.9* | 74.4 | 5 | 30 | 73-122 |
| 1,2-Dinitrobenzene | | | | | | | 73.8* | 80.7* | | | 89-123 |

Form 8 GC Analytical Sequence

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR
Instrument ID : HPLC02

SDG : SJ4100
Column ID : B

| Client Sample ID | Lab Sample ID | Date Analyzed | Time Analyzed | DNB | |
|----------------------|---------------|---------------|---------------|-------|--|
| Initial Calibration | WG178164-7 | 01/28/16 | 12:40 | 13.97 | |
| Initial Calibration | WG178164-6 | 01/28/16 | 13:28 | 13.94 | |
| Initial Calibration | WG178164-5 | 01/28/16 | 14:16 | 13.95 | |
| Initial Calibration | WG178164-4 | 01/28/16 | 15:04 | 13.95 | |
| Initial Calibration | WG178164-3 | 01/28/16 | 15:52 | 13.95 | |
| Initial Calibration | WG178164-2 | 01/28/16 | 16:41 | 13.96 | |
| Initial Calibration | WG178164-1 | 01/28/16 | 17:29 | 13.97 | |
| Independent Source | WG178164-8 | 01/28/16 | 18:17 | | |
| Continuing Calibrati | WG185170-6 | 06/14/16 | 10:48 | 14.12 | |
| Method Blank Sample | WG185079-1C | 06/14/16 | 15:09 | 14.14 | |
| Method Blank Sample | WG185080-1C | 06/14/16 | 15:57 | 14.14 | |
| PR-SS-A5-0006 | SJ4100-4C | 06/14/16 | 16:46 | 14.14 | |
| PR-SS-A1-0006 | SJ4100-7C | 06/14/16 | 17:35 | 14.13 | |
| PR-SB-A2-0612 | SJ4100-12C | 06/14/16 | 18:24 | 14.13 | |
| PR-SS-B2-0006 | SJ4100-17C | 06/14/16 | 19:13 | 14.12 | |
| PR-SB-B2-0612 | SJ4100-18C | 06/14/16 | 20:02 | 14.10 | |
| Continuing Calibrati | WG185170-7 | 06/14/16 | 20:51 | 14.10 | |
| PR-SB-B3-0612 | SJ4100-21C | 06/14/16 | 21:39 | 14.14 | |
| PR-SB-B4-0612 | SJ4100-23C | 06/14/16 | 22:28 | 14.14 | |
| PR-SS-B5-0006 | SJ4100-25C | 06/14/16 | 23:17 | 14.14 | |
| PR-SB-B5-0612 | SJ4100-26C | 06/15/16 | 00:06 | 14.12 | |
| PR-SS-A4-0006 | SJ4100-34C | 06/15/16 | 00:55 | 14.12 | |
| PR-SB-A4-0612 | SJ4100-35C | 06/15/16 | 01:44 | 14.12 | |
| PR-DUP02-060716 | SJ4100-37C | 06/15/16 | 02:32 | 14.15 | |
| PR-DUP04-060716 | SJ4100-39C | 06/15/16 | 03:21 | 14.16 | |
| PR-SS-B3-0006 | SJ4100-20CDL | 06/15/16 | 04:10 | 14.14 | |
| PR-SS-A2-0006 | SJ4100-11C | 06/15/16 | 04:59 | 14.16 | |
| Continuing Calibrati | WG185170-8 | 06/15/16 | 05:48 | 14.13 | |

Form 4 Method Blank Summary

| | |
|--|---------------------------------------|
| Lab Name : Katahdin Analytical Services | SDG : SJ4100 |
| Project : NASA Wallops Flight Facility - MBFR | Lab Sample ID : WG185079-1C |
| Lab File ID : HJF10156.D | Date Extracted : 08-JUN-16 |
| Matrix : SL | Extraction Method : SW846 8330 |
| Column A | Column B |
| Instrument ID : HPLC02 | Instrument ID : HPLC02 |
| Date Analyzed : 14-JUN-16 | Date Analyzed : 14-JUN-16 |
| Time Analyzed : 15:09 | Time Analyzed : 15:09 |

This Method Blank applies to the following samples, LCS, MS and MSD:

| Client Sample ID | Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed |
|------------------|---------------|-------------|---------------|---------------|
| PR-SS-A5-0006 | SJ4100-4C | HJF10158.I | 06/14/16 | 16:46 |
| PR-SS-A1-0006 | SJ4100-7C | HJF10159.I | 06/14/16 | 17:35 |
| PR-SB-A2-0612 | SJ4100-12C | HJF10160.I | 06/14/16 | 18:24 |
| PR-SS-B2-0006 | SJ4100-17C | HJF10161.I | 06/14/16 | 19:13 |
| PR-SB-B2-0612 | SJ4100-18C | HJF10162.I | 06/14/16 | 20:02 |
| PR-SB-B3-0612 | SJ4100-21C | HJF10164.I | 06/14/16 | 21:39 |
| PR-SB-B4-0612 | SJ4100-23C | HJF10165.I | 06/14/16 | 22:28 |
| PR-SS-B5-0006 | SJ4100-25C | HJF10166.I | 06/14/16 | 23:17 |
| PR-SB-B5-0612 | SJ4100-26C | HJF10167.I | 06/15/16 | 00:06 |
| PR-SS-B3-0006 | SJ4100-20C | HJF10172.I | 06/15/16 | 04:10 |
| PR-SS-A2-0006 | SJ4100-11C | HJF10173.I | 06/15/16 | 04:59 |

Data File: HJF10156.D
 Report Date: 27-Jun-2016 10:10

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCJF14.b\HPLCJF14.b\HJF10156.D
 Lab Smp Id: WG185079-1C Client Smp ID: WG185079-Blank
 Inj Date : 14-JUN-2016 15:09
 Operator : AC Inst ID: hplc02.i
 Smp Info : WG185079-1C,SJ4100
 Misc Info : WG185170,WG185079,WG178164-5,SJ4100-1
 Comment :
 Method : \\target_server\gg\chem\hplc02.i\HPLCJF14.b\E2014A.m\E2014A.m
 Meth Date : 24-Jun-2016 10:24 hplc02.i Quant Type: ESTD
 Cal Date : 28-JAN-2016 16:41 Cal File: HJA10188.D
 Als bottle: 45 QC Sample: BLANK
 Dil Factor: 1.00000
 Integrator: Falcon Compound Sublist: SW8330A.sub
 Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

| Name | Value | Description |
|---------------|---------|-------------------------|
| DF | 1.000 | Dilution Factor |
| Vt | 0.02000 | Final Volume (L) |
| Ws | 0.01000 | Weight of Sample (Kg) |
| M | 0.00000 | % Moisture |
| Cpnd Variable | | Local Compound Variable |

| Compounds | RT | EXP RT | DLT RT | RESPONSE | CONCENTRATIONS | | REVIEW CODE |
|-------------------------|--------|--------|--------|----------|----------------------|-----------------------|-------------|
| | | | | | ON-COLUMN (ug/mL) | FINAL (ug/Kgdrywt) | |
| \$ 2 1,2-dinitrobenzene | 14.143 | 14.118 | 0.025 | 1096 | 0.23704 | 474 | |

Form 4 Method Blank Summary

| | |
|--|---------------------------------------|
| Lab Name : Katahdin Analytical Services | SDG : SJ4100 |
| Project : NASA Wallops Flight Facility - MBFR | Lab Sample ID : WG185080-1C |
| Lab File ID : HJF10157.D | Date Extracted : 08-JUN-16 |
| Matrix : SL | Extraction Method : SW846 8330 |
| Column A | Column B |
| Instrument ID : HPLC02 | Instrument ID : HPLC02 |
| Date Analyzed : 14-JUN-16 | Date Analyzed : 14-JUN-16 |
| Time Analyzed : 15:57 | Time Analyzed : 15:57 |

This Method Blank applies to the following samples, LCS, MS and MSD:

| Client Sample ID | Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed |
|------------------|---------------|-------------|---------------|---------------|
| PR-SS-A4-0006 | SJ4100-34C | HJF10168.I | 06/15/16 | 00:55 |
| PR-SB-A4-0612 | SJ4100-35C | HJF10169.I | 06/15/16 | 01:44 |
| PR-DUP02-060716 | SJ4100-37C | HJF10170.I | 06/15/16 | 02:32 |
| PR-DUP04-060716 | SJ4100-39C | HJF10171.I | 06/15/16 | 03:21 |

Data File: HJF10157.D
 Report Date: 27-Jun-2016 10:10

Katahdin Analytical Services

Data file : \\target_server\gg\chem\hplc02.i\HPLCJF14.b\HPLCJF14.b\HJF10157.D
 Lab Smp Id: WG185080-1C Client Smp ID: WG185080-Blank
 Inj Date : 14-JUN-2016 15:57
 Operator : AC Inst ID: hplc02.i
 Smp Info : WG185080-1C,SJ4100
 Misc Info : WG185170,WG185080,WG178164-5,SJ4100-1
 Comment :
 Method : \\target_server\gg\chem\hplc02.i\HPLCJF14.b\E2014A.m\E2014A.m
 Meth Date : 24-Jun-2016 10:24 hplc02.i Quant Type: ESTD
 Cal Date : 28-JAN-2016 16:41 Cal File: HJA10188.D
 Als bottle: 46 QC Sample: BLANK
 Dil Factor: 1.00000
 Integrator: Falcon Compound Sublist: SW8330A.sub
 Target Version: 4.12

Concentration Formula: Amt * DF * 1000*Vt*(1/Ws)*(100/(100-M)) * CpndVariable

| Name | Value | Description |
|---------------|---------|-------------------------|
| DF | 1.000 | Dilution Factor |
| Vt | 0.02000 | Final Volume (L) |
| Ws | 0.01000 | Weight of Sample (Kg) |
| M | 0.00000 | % Moisture |
| Cpnd Variable | | Local Compound Variable |

| Compounds | RT | EXP RT | DLT RT | RESPONSE | CONCENTRATIONS | | REVIEW CODE |
|-------------------------|--------|--------|--------|----------|----------------------|-----------------------|-------------|
| | | | | | ON-COLUMN (ug/mL) | FINAL (ug/Kgdrywt) | |
| \$ 2 1,2-dinitrobenzene | 14.140 | 14.118 | 0.022 | 1144 | 0.24734 | 495 | |

Form 2 System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services
Lab Code: KAS

Project: NASA Wallops Flight Facility - MBFR
SDG: SJ4100

Matrix: SL

| Client Sample ID | Lab Sample ID | Col. ID DNB | # |
|----------------------|---------------|-------------|--------|
| PR-DUP01-060616 | SJ4100-10RA | B | 89.9 |
| PR-SS-A2-0006 | SJ4100-11RA | B | 92.6 |
| PR-SB-A2-0612 | SJ4100-12RA | B | 88.3 * |
| PR-SS-B1-0006 | SJ4100-14RA | B | 97.0 |
| PR-SB-B1-0612 | SJ4100-15RA | B | 90.6 |
| PR-SS-B2-0006 | SJ4100-17RA | B | 90.6 |
| PR-SB-B2-0612 | SJ4100-18RA | B | 91.8 |
| PR-SS-A6-0006 | SJ4100-1RA | B | 86.2 * |
| PR-SS-B3-0006 | SJ4100-20DL | B | 74.8 * |
| PR-SB-B3-0612 | SJ4100-21RA | B | 87.0 * |
| PR-SB-B4-0612 | SJ4100-23RA | B | 88.5 * |
| PR-SS-B5-0006 | SJ4100-25RA | B | 88.5 * |
| PR-SB-B5-0612 | SJ4100-26RA | B | 89.2 |
| PR-SS-B6-0006 | SJ4100-28RA | B | 85.1 * |
| PR-SB-B6-0612 | SJ4100-29RA | B | 87.9 * |
| PR-SB-A6-0612 | SJ4100-2RA | B | 87.0 * |
| PR-SS-A3-0006 | SJ4100-31RA | B | 87.8 * |
| PR-SB-A3-0612 | SJ4100-32RA | B | 84.2 * |
| PR-SS-A4-0006 | SJ4100-34RA | B | 83.2 * |
| PR-SB-A4-0612 | SJ4100-35RA | B | 83.8 * |
| PR-DUP02-060716 | SJ4100-37RA | B | 81.3 * |
| PR-DUP04-060716 | SJ4100-39RA | B | 80.9 * |
| PR-SS-A5-0006 | SJ4100-4RA | B | 82.9 * |
| PR-SB-A5-0612 | SJ4100-5RA | B | 88.3 * |
| PR-SS-A1-0006 | SJ4100-7C | B | 97.4 |
| PR-SB-A1-0612 | SJ4100-8RA | B | 87.7 * |
| Method Blank Sample | WG185079-1 | B | 83.6 * |
| Laboratory Control S | WG185079-2 | B | 89.4 |
| Matrix Spike | WG185079-3 | B | 73.8 * |
| Matrix Spike Duplica | WG185079-4 | B | 80.7 * |
| Method Blank Sample | WG185080-1 | B | 86.4 * |
| Laboratory Control S | WG185080-2 | B | 86.8 * |

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services
Lab Code: KAS

Project: NASA Wallops Flight Facility - MBFR
SDG: SJ4100

Matrix: SL

QC Limits

DNB 1,2-DINITROBENZENE 89-123

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR

SDG : SJ4100
Lab Sample ID : SJ4100-37
Client Sample ID : PR-DUP02-060716

Column A
Instrument ID : HPLC02
Date Analyzed : 06/11/16
Time Analyzed : 19:34

Column B
Instrument ID : HPLC02
Date Analyzed : 06/15/16
Time Analyzed : 02:32

| Analyte | Column | RT | Concentration | RPD |
|---------------|--------|-------|---------------|-----|
| Nitroglycerin | A | 18.03 | 322 | 8.1 |
| | A | 20.49 | 297 | |

Form 10 Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR

SDG : SJ4100
Lab Sample ID : SJ4100-39
Client Sample ID : PR-DUP04-060716

Column A
Instrument ID : HPLC02
Date Analyzed : 06/11/16
Time Analyzed : 21:15

Column B
Instrument ID : HPLC02
Date Analyzed : 06/15/16
Time Analyzed : 03:21

| Analyte | Column | RT | Concentration | RPD |
|---------------|--------|-------|---------------|------|
| Nitroglycerin | A | 18.01 | 468 | |
| | A | 20.51 | 344 | 30.5 |

Form 10 Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR

SDG : SJ4100
Lab Sample ID : SJ4100-12
Client Sample ID : PR-SB-A2-0612

Column A
Instrument ID : HPLC02
Date Analyzed : 06/11/16
Time Analyzed : 05:19

Column B
Instrument ID : HPLC02
Date Analyzed : 06/14/16
Time Analyzed : 18:24

| Analyte | Column | RT | Concentration | RPD |
|---------------|--------|-------|---------------|------|
| Nitroglycerin | A | 18.04 | 282 | |
| | A | 20.47 | 223 | 23.4 |

Form 10 Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR

SDG : SJ4100
Lab Sample ID : SJ4100-18
Client Sample ID : PR-SB-B2-0612

Column A
Instrument ID : HPLC02
Date Analyzed : 06/11/16
Time Analyzed : 08:40

Column B
Instrument ID : HPLC02
Date Analyzed : 06/14/16
Time Analyzed : 20:02

| Analyte | Column | RT | Concentration | RPD |
|---------------|--------|-------|---------------|------|
| Nitroglycerin | A | 18.02 | 1250 | |
| | A | 20.45 | 1000 | 22.2 |

Form 10 Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR

SDG : SJ4100
Lab Sample ID : SJ4100-21
Client Sample ID : PR-SB-B3-0612

Column A
Instrument ID : HPLC02
Date Analyzed : 06/11/16
Time Analyzed : 10:21

Column B
Instrument ID : HPLC02
Date Analyzed : 06/14/16
Time Analyzed : 21:39

| Analyte | Column | RT | Concentration | RPD |
|---------------|--------|-------|---------------|------|
| Nitroglycerin | A | 18.04 | 176 | |
| | A | 20.44 | 117 | 40.3 |

Form 10 Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR

SDG : SJ4100
Lab Sample ID : SJ4100-23
Client Sample ID : PR-SB-B4-0612

Column A
Instrument ID : HPLC02
Date Analyzed : 06/11/16
Time Analyzed : 12:01

Column B
Instrument ID : HPLC02
Date Analyzed : 06/14/16
Time Analyzed : 22:28

| Analyte | Column | RT | Concentration | RPD |
|---------------|--------|-------|---------------|------|
| Nitroglycerin | A | 18.01 | 478 | |
| | A | 20.51 | 363 | 27.3 |

Form 10 Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR

SDG : SJ4100
Lab Sample ID : SJ4100-26
Client Sample ID : PR-SB-B5-0612

Column A
Instrument ID : HPLC02
Date Analyzed : 06/11/16
Time Analyzed : 13:42

Column B
Instrument ID : HPLC02
Date Analyzed : 06/15/16
Time Analyzed : 00:06

| Analyte | Column | RT | Concentration | RPD |
|---------------|--------|-------|---------------|------|
| Nitroglycerin | A | 18.01 | 266 | |
| | A | 20.46 | 184 | 36.4 |

Form 10 Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR

SDG : SJ4100
Lab Sample ID : SJ4100-7
Client Sample ID : PR-SS-A1-0006

Column A
Instrument ID : HPLC02
Date Analyzed : 06/11/16
Time Analyzed : 02:48

Column B
Instrument ID : HPLC02
Date Analyzed : 06/14/16
Time Analyzed : 17:35

| Analyte | Column | RT | Concentration | RPD |
|---------------|--------|-------|---------------|------|
| Nitroglycerin | A | 18.01 | 311 | 49.3 |
| | A | 20.49 | 188 | |

Form 10
Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR

SDG : SJ4100
Lab Sample ID : SJ4100-11
Client Sample ID : PR-SS-A2-0006

Column A
Instrument ID : HPLC02
Date Analyzed : 06/11/16
Time Analyzed : 22:05

Column B
Instrument ID : HPLC02
Date Analyzed : 06/15/16
Time Analyzed : 04:59

| Analyte | Column | RT | Concentration | RPD |
|---------------|--------|-------|---------------|------|
| Nitroglycerin | A | 18.02 | 2540 | |
| | A | 20.51 | 1960 | 25.8 |

Form 10 Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR

SDG : SJ4100
Lab Sample ID : SJ4100-34
Client Sample ID : PR-SS-A4-0006

Column A

Instrument ID : HPLC02
Date Analyzed : 06/11/16
Time Analyzed : 17:53

Column B

Instrument ID : HPLC02
Date Analyzed : 06/15/16
Time Analyzed : 00:55

| Analyte | Column | RT | Concentration | RPD |
|---------------|--------|-------|---------------|------|
| Nitroglycerin | A | 18.01 | 614 | |
| | A | 20.48 | 481 | 24.3 |

Form 10 Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR

SDG : SJ4100
Lab Sample ID : SJ4100-4
Client Sample ID : PR-SS-A5-0006

Column A
Instrument ID : HPLC02
Date Analyzed : 06/11/16
Time Analyzed : 00:17

Column B
Instrument ID : HPLC02
Date Analyzed : 06/14/16
Time Analyzed : 16:46

| Analyte | Column | RT | Concentration | RPD |
|---------------|--------|-------|---------------|-----|
| Nitroglycerin | A | 18.03 | 450 | 32 |
| | A | 20.49 | 326 | |

Form 10 Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR

SDG : SJ4100
Lab Sample ID : SJ4100-17
Client Sample ID : PR-SS-B2-0006

Column A
Instrument ID : HPLC02
Date Analyzed : 06/11/16
Time Analyzed : 07:50

Column B
Instrument ID : HPLC02
Date Analyzed : 06/14/16
Time Analyzed : 19:13

| Analyte | Column | RT | Concentration | RPD |
|---------------|--------|-------|---------------|------|
| Nitroglycerin | A | 18.05 | 961 | |
| | A | 20.46 | 720 | 28.7 |

Form 10 Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR

SDG : SJ4100
Lab Sample ID : SJ4100-20
Client Sample ID : PR-SS-B3-0006

Column A
Instrument ID : HPLC02
Date Analyzed : 06/11/16
Time Analyzed : 09:30

Column B
Instrument ID : HPLC02
Date Analyzed : 06/15/16
Time Analyzed : 04:10

| Analyte | Column | RT | Concentration | RPD |
|---------------|--------|-------|---------------|------|
| Nitroglycerin | A | 18 | 32100 | |
| | A | 20.51 | 25000 | 24.9 |

Form 10 Explosives Identification Summary

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR

SDG : SJ4100
Lab Sample ID : SJ4100-25
Client Sample ID : PR-SS-B5-0006

Column A
Instrument ID : HPLC02
Date Analyzed : 06/11/16
Time Analyzed : 12:52

Column B
Instrument ID : HPLC02
Date Analyzed : 06/14/16
Time Analyzed : 23:17

| Analyte | Column | RT | Concentration | RPD |
|---------------|--------|-------|---------------|------|
| Nitroglycerin | A | 18.04 | 300 | |
| | A | 20.52 | 203 | 38.6 |

METALS DATA

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4100

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF09A

Date: 6/9/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | | |
|---------------|-----------|------|-------|----------|----|----|-------|----|----|---|----|----|
| Cal Blank | | 1 | 16:19 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | Zn |
| Cal Std | | 1 | 16:23 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | Zn |
| ICV | | 1 | 16:26 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | Zn |
| ICB | | 1 | 16:29 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | Zn |
| PQL | | 1 | 16:33 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | Zn |
| ZZZZZZ | | 1 | 16:36 | | | | | | | | | |
| ZZZZZZ | | 1 | 16:39 | | | | | | | | | |
| ZZZZZZ | | 1 | 16:42 | | | | | | | | | |
| ICSA | | 1 | 16:46 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | Zn |
| ICSAB | | 1 | 16:49 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | Zn |
| ZZZZZZ | | 1 | 16:53 | | | | | | | | | |
| ZZZZZZ | | 1 | 16:56 | | | | | | | | | |
| CCV | | 1 | 17:00 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | Zn |
| CCB | | 1 | 17:03 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | Zn |
| ZZZZZZ | | 1 | 17:07 | | | | | | | | | |
| ZZZZZZ | | 5 | 17:10 | | | | | | | | | |
| ZZZZZZ | | 1 | 17:13 | | | | | | | | | |
| ZZZZZZ | | 1 | 17:17 | | | | | | | | | |
| ZZZZZZ | | 1 | 17:20 | | | | | | | | | |
| ZZZZZZ | | 1 | 17:24 | | | | | | | | | |
| ZZZZZZ | | 1 | 17:27 | | | | | | | | | |
| ZZZZZZ | | 1 | 17:31 | | | | | | | | | |
| ZZZZZZ | | 1 | 17:34 | | | | | | | | | |
| ZZZZZZ | | 5 | 17:37 | | | | | | | | | |
| CCV | | 1 | 17:41 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | Zn |
| CCB | | 1 | 17:44 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | Zn |
| ZZZZZZ | | 1 | 17:48 | | | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4100

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF09A

Date: 6/9/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | | | |
|---------------|-----------------|------|-------|----------|----|----|-------|----|----|---|----|--|----|
| ZZZZZZ | | 5 | 17:51 | | | | | | | | | | |
| ZZZZZZ | | 5 | 17:55 | | | | | | | | | | |
| ZZZZZZ | | 5 | 17:58 | | | | | | | | | | |
| ZZZZZZ | | 5 | 18:02 | | | | | | | | | | |
| ZZZZZZ | | 5 | 18:05 | | | | | | | | | | |
| ZZZZZZ | | 5 | 18:09 | | | | | | | | | | |
| PBSJF09IMS1 | | 5 | 18:12 | | | Cu | Pb | | | | | | Zn |
| LCSOJF09IMS1 | | 5 | 18:16 | | | Cu | Pb | | | | | | Zn |
| SJ4100-001 | PR-SS-A6-0006 | 10 | 18:19 | | | Cu | Pb | | | | | | Zn |
| CCV | | 1 | 18:23 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | | Zn |
| CCB | | 1 | 18:26 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | | Zn |
| SJ4100-001L | PR-SS-A6-0006L | 50 | 18:30 | | | Cu | Pb | | | | | | Zn |
| SJ4100-001A | PR-SS-A6-0006A | 10 | 18:33 | | | Cu | Pb | | | | | | Zn |
| SJ4100-001D | PR-SS-A6-0006D | 10 | 18:37 | | | Cu | Pb | | | | | | Zn |
| SJ4100-001S | PR-SS-A6-0006S | 10 | 18:40 | | | Cu | Pb | | | | | | Zn |
| SJ4100-002 | PR-SB-A6-0612 | 10 | 18:44 | | | Cu | Pb | | | | | | Zn |
| SJ4100-004 | PR-SS-A5-0006 | 10 | 18:48 | | | Cu | Pb | | | | | | Zn |
| SJ4100-005 | PR-SB-A5-0612 | 10 | 18:51 | | | Cu | Pb | | | | | | Zn |
| SJ4100-007 | PR-SS-A1-0006 | 10 | 18:55 | | | Cu | Pb | | | | | | Zn |
| SJ4100-008 | PR-SB-A1-0612 | 10 | 18:58 | | | Cu | Pb | | | | | | Zn |
| SJ4100-010 | PR-DUP01-060616 | 10 | 19:02 | | | Cu | Pb | | | | | | Zn |
| CCV | | 1 | 19:05 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | | Zn |
| CCB | | 1 | 19:09 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | | Zn |
| SJ4100-011 | PR-SS-A2-0006 | 10 | 19:12 | | | Cu | Pb | | | | | | Zn |
| SJ4100-012 | PR-SB-A2-0612 | 10 | 19:16 | | | Cu | Pb | | | | | | Zn |
| SJ4100-014 | PR-SS-B1-0006 | 10 | 19:19 | | | Cu | Pb | | | | | | Zn |
| SJ4100-015 | PR-SB-B1-0612 | 10 | 19:23 | | | Cu | Pb | | | | | | Zn |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4100

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF09A

Date: 6/9/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | | | | |
|---------------|-----------------|------|-------|----------|--|----|----|-------|----|----|---|--|----|----|
| SJ4100-017 | PR-SS-B2-0006 | 10 | 19:26 | | | | Cu | Pb | | | | | | Zn |
| SJ4100-018 | PR-SB-B2-0612 | 10 | 19:30 | | | | Cu | Pb | | | | | | Zn |
| SJ4100-020 | PR-SS-B3-0006 | 10 | 19:33 | | | | Cu | Pb | | | | | | Zn |
| SJ4100-021 | PR-SB-B3-0612 | 10 | 19:37 | | | | Cu | Pb | | | | | | Zn |
| SJ4100-023 | PR-SB-B4-0612 | 10 | 19:40 | | | | Cu | Pb | | | | | | Zn |
| SJ4100-025 | PR-SS-B5-0006 | 10 | 19:44 | | | | Cu | Pb | | | | | | Zn |
| CCV | | 1 | 19:47 | Al | | Ca | Cu | Fe Pb | Mg | Mo | K | | Na | Zn |
| CCB | | 1 | 19:51 | Al | | Ca | Cu | Fe Pb | Mg | Mo | K | | Na | Zn |
| SJ4100-026 | PR-SB-B5-0612 | 10 | 19:54 | | | | Cu | Pb | | | | | | Zn |
| SJ4100-028 | PR-SS-B6-0006 | 10 | 19:58 | | | | Cu | Pb | | | | | | Zn |
| PBSJF09IMS2 | | 5 | 20:01 | | | | Cu | Pb | | | | | | Zn |
| LCSOJF09IMS2 | | 5 | 20:05 | | | | Cu | Pb | | | | | | Zn |
| SJ4100-031 | PR-SS-A3-0006 | 10 | 20:08 | | | | Cu | Pb | | | | | | Zn |
| SJ4100-032 | PR-SB-A3-0612 | 10 | 20:12 | | | | Cu | Pb | | | | | | Zn |
| SJ4100-034 | PR-SS-A4-0006 | 10 | 20:15 | | | | Cu | Pb | | | | | | Zn |
| SJ4100-035 | PR-SB-A4-0612 | 10 | 20:19 | | | | Cu | Pb | | | | | | Zn |
| SJ4100-037 | PR-DUP02-060716 | 10 | 20:23 | | | | Cu | Pb | | | | | | Zn |
| SJ4100-039 | PR-DUP04-060716 | 10 | 20:26 | | | | Cu | Pb | | | | | | Zn |
| CCV | | 1 | 20:30 | Al | | Ca | Cu | Fe Pb | Mg | Mo | K | | Na | Zn |
| CCB | | 1 | 20:33 | Al | | Ca | Cu | Fe Pb | Mg | Mo | K | | Na | Zn |
| <i>ZZZZZZ</i> | | 10 | 20:37 | | | | | | | | | | | |
| <i>ZZZZZZ</i> | | 50 | 20:40 | | | | | | | | | | | |
| <i>ZZZZZZ</i> | | 10 | 20:44 | | | | | | | | | | | |
| <i>ZZZZZZ</i> | | 10 | 20:48 | | | | | | | | | | | |
| <i>ZZZZZZ</i> | | 10 | 20:51 | | | | | | | | | | | |
| <i>ZZZZZZ</i> | | 10 | 20:55 | | | | | | | | | | | |
| <i>ZZZZZZ</i> | | 10 | 20:58 | | | | | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4100

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF09A

Date: 6/9/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | | | | |
|---------------|-----------|------|-------|----------|----|----|-------|----|----|---|----|--|----|--|
| ZZZZZZ | | 10 | 21:02 | | | | | | | | | | | |
| ZZZZZZ | | 10 | 21:05 | | | | | | | | | | | |
| ZZZZZZ | | 10 | 21:09 | | | | | | | | | | | |
| CCV | | 1 | 21:12 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | | Zn | |
| CCB | | 1 | 21:16 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | | Zn | |
| ZZZZZZ | | 10 | 21:19 | | | | | | | | | | | |
| ZZZZZZ | | 10 | 21:23 | | | | | | | | | | | |
| ZZZZZZ | | 10 | 21:26 | | | | | | | | | | | |
| ZZZZZZ | | 10 | 21:30 | | | | | | | | | | | |
| ZZZZZZ | | 10 | 21:33 | | | | | | | | | | | |
| ZZZZZZ | | 10 | 21:37 | | | | | | | | | | | |
| ZZZZZZ | | 10 | 21:40 | | | | | | | | | | | |
| ZZZZZZ | | 10 | 21:44 | | | | | | | | | | | |
| ZZZZZZ | | 5 | 21:48 | | | | | | | | | | | |
| ZZZZZZ | | 5 | 21:51 | | | | | | | | | | | |
| CCV | | 1 | 21:55 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | | Zn | |
| CCB | | 1 | 21:58 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | | Zn | |
| ZZZZZZ | | 10 | 22:02 | | | | | | | | | | | |
| ZZZZZZ | | 10 | 22:05 | | | | | | | | | | | |
| ZZZZZZ | | 10 | 22:09 | | | | | | | | | | | |
| ZZZZZZ | | 10 | 22:12 | | | | | | | | | | | |
| ZZZZZZ | | 10 | 22:16 | | | | | | | | | | | |
| ZZZZZZ | | 10 | 22:20 | | | | | | | | | | | |
| ZZZZZZ | | 10 | 22:23 | | | | | | | | | | | |
| ZZZZZZ | | 10 | 22:27 | | | | | | | | | | | |
| ZZZZZZ | | 10 | 22:30 | | | | | | | | | | | |
| ZZZZZZ | | 10 | 22:34 | | | | | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4100

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF09A

Date: 6/9/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | | | |
|---------------|-----------|------|-------|----------|----|----|-------|----|----|---|----|----|--|
| CCV | | 1 | 22:37 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | Zn | |
| CCB | | 1 | 22:41 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | Zn | |
| ZZZZZZ | | 10 | 22:44 | | | | | | | | | | |
| ZZZZZZ | | 10 | 22:48 | | | | | | | | | | |
| ZZZZZZ | | 10 | 22:51 | | | | | | | | | | |
| ZZZZZZ | | 10 | 22:55 | | | | | | | | | | |
| ZZZZZZ | | 10 | 22:58 | | | | | | | | | | |
| ZZZZZZ | | 10 | 23:02 | | | | | | | | | | |
| ZZZZZZ | | 10 | 23:05 | | | | | | | | | | |
| ZZZZZZ | | 10 | 23:09 | | | | | | | | | | |
| ZZZZZZ | | 10 | 23:13 | | | | | | | | | | |
| ZZZZZZ | | 10 | 23:16 | | | | | | | | | | |
| CCV | | 1 | 23:19 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | Zn | |
| CCB | | 1 | 23:23 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | Zn | |
| ZZZZZZ | | 50 | 23:27 | | | | | | | | | | |
| ZZZZZZ | | 10 | 23:30 | | | | | | | | | | |
| ZZZZZZ | | 10 | 23:34 | | | | | | | | | | |
| ZZZZZZ | | 10 | 23:37 | | | | | | | | | | |
| ZZZZZZ | | 5 | 23:41 | | | | | | | | | | |
| ZZZZZZ | | 5 | 23:44 | | | | | | | | | | |
| ZZZZZZ | | 10 | 23:48 | | | | | | | | | | |
| ZZZZZZ | | 10 | 23:51 | | | | | | | | | | |
| ZZZZZZ | | 10 | 23:55 | | | | | | | | | | |
| ZZZZZZ | | 10 | 23:58 | | | | | | | | | | |
| CCV | | 1 | 0:02 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | Zn | |
| CCB | | 1 | 0:05 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | Zn | |
| ZZZZZZ | | 10 | 0:09 | | | | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4100

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF09A

Date: 6/10/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | | | | | | | | | | |
|---------------|---------------|------|------|----------|----|----|-------|----|----|---|----|----|--|--|--|--|--|--|--|--|
| ZZZZZZ | | 10 | 0:12 | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | 10 | 0:16 | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | 10 | 0:20 | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | 10 | 0:23 | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | 10 | 0:27 | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | 10 | 0:30 | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | 10 | 0:34 | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | 10 | 0:37 | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | 10 | 0:41 | | | | | | | | | | | | | | | | | |
| CCV | | 1 | 0:44 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | Zn | | | | | | | | |
| CCB | | 1 | 0:48 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | Zn | | | | | | | | |
| ZZZZZZ | | 10 | 0:52 | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | 50 | 0:55 | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | 10 | 0:59 | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | 10 | 1:02 | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | 10 | 1:06 | | | | | | | | | | | | | | | | | |
| SJ4100-029 | PR-SB-B6-0612 | 10 | 1:10 | | | Cu | Pb | | | | | Zn | | | | | | | | |
| CCV | | 1 | 1:13 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | Zn | | | | | | | | |
| CCB | | 1 | 1:17 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | Zn | | | | | | | | |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4100

Concentration Units: ug/L

SAMPLE: ICB

File: JJF09A Jun 09, 2016 16:29

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| COPPER | 0.170 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.837 | J |
| MOLYBDENUM | 0.035 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |
| ZINC | 0.180 | U |

SAMPLE: CCB

File: JJF09A Jun 09, 2016 17:03

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 7.010 | J |
| COPPER | 0.170 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.764 | J |
| MOLYBDENUM | 0.071 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 7.036 | J |
| ZINC | 0.180 | U |

SAMPLE: CCB

File: JJF09A Jun 09, 2016 17:44

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| COPPER | 0.170 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.784 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 3.716 | J |
| ZINC | 0.180 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4100

Concentration Units: ug/L

SAMPLE: CCB

File: JJF09A Jun 09, 2016 18:26

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| COPPER | 0.170 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |
| ZINC | 0.180 | U |

SAMPLE: CCB

File: JJF09A Jun 09, 2016 19:09

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.692 | J |
| CALCIUM | 12.240 | J |
| COPPER | 0.170 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.353 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |
| ZINC | 0.180 | U |

SAMPLE: CCB

File: JJF09A Jun 09, 2016 19:51

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 13.260 | J |
| CALCIUM | 14.710 | J |
| COPPER | 0.170 | U |
| IRON | 8.415 | J |
| LEAD | 0.060 | J |
| MAGNESIUM | 3.476 | J |
| MOLYBDENUM | 0.032 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 3.121 | J |
| ZINC | 0.275 | J |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4100

Concentration Units: ug/L

SAMPLE: CCB

File: JJF09A Jun 09, 2016 20:33

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 9.790 | J |
| COPPER | 0.170 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.904 | J |
| MOLYBDENUM | 0.023 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |
| ZINC | 0.180 | U |

SAMPLE: CCB

File: JJF09A Jun 09, 2016 21:16

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 10.430 | J |
| COPPER | 0.170 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.287 | J |
| MOLYBDENUM | 0.025 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |
| ZINC | 0.180 | U |

SAMPLE: CCB

File: JJF09A Jun 09, 2016 21:58

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 14.120 | J |
| COPPER | 0.170 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.016 | J |
| MOLYBDENUM | 0.021 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |
| ZINC | 0.180 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4100

Concentration Units: ug/L

SAMPLE: CCB

File: JJF09A Jun 09, 2016 22:41

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 5.294 | J |
| CALCIUM | 19.210 | J |
| COPPER | 0.170 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.699 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |
| ZINC | 0.180 | U |

SAMPLE: CCB

File: JJF09A Jun 09, 2016 23:23

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 18.650 | J |
| COPPER | 0.170 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.975 | J |
| MOLYBDENUM | 0.023 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |
| ZINC | 0.180 | U |

SAMPLE: CCB

File: JJF09A Jun 10, 2016 0:05

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 17.300 | J |
| COPPER | 0.170 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.450 | J |
| MOLYBDENUM | 0.021 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |
| ZINC | 0.180 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4100

Concentration Units: ug/L

SAMPLE: CCB

File: JJF09A Jun 10, 2016 0:48

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.034 | J |
| CALCIUM | 19.100 | J |
| COPPER | 0.170 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.500 | J |
| MOLYBDENUM | 0.022 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |
| ZINC | 0.180 | U |

SAMPLE: CCB

File: JJF09A Jun 10, 2016 1:17

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 20.630 | B |
| COPPER | 0.170 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.354 | J |
| MOLYBDENUM | 0.023 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |
| ZINC | 0.180 | U |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF09IMS1

Matrix: SOIL

SDG Name: SJ4100

QC Batch ID: JF09IMS1

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| COPPER | 0.071 | U |
| LEAD | 0.026 | J |
| ZINC | 0.31 | J |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF09IMS2

Matrix: SOIL

SDG Name: SJ4100

QC Batch ID: JF09IMS2

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| COPPER | 0.071 | U |
| LEAD | 0.016 | J |
| ZINC | 0.35 | J |

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services SDG Name: SJ4100

Concentration Units: ug/L

| SAMPLE: ICSA | | | | SAMPLE: ICSAB | | | |
|---------------------|-------------|--------------|------------|----------------------|-------------|--------------|------------|
| File: JJF09A | | Jun 09, 2016 | 16:46 | File: JJF09A | | Jun 09, 2016 | 16:49 |
| Analyte | TRUE | FOUND | % R | Analyte | TRUE | FOUND | % R |
| ALUMINUM | 100000 | 96050 | 96.0 | ALUMINUM | 100000 | 95220 | 95.2 |
| CALCIUM | 100000 | 94720 | 94.7 | CALCIUM | 100000 | 93950 | 94.0 |
| COPPER | 0 | 2 | | COPPER | 20 | 20 | 100.0 |
| IRON | 100000 | 89340 | 89.3 | IRON | 100000 | 88140 | 88.1 |
| LEAD | 0 | 0 | | LEAD | 20 | 21 | 105.0 |
| MAGNESIUM | 100000 | 94670 | 94.7 | MAGNESIUM | 100000 | 95050 | 95.0 |
| MOLYBDENUM | 2000 | 1980 | 99.0 | MOLYBDENUM | 2000 | 1979 | 99.0 |
| POTASSIUM | 100000 | 96750 | 96.8 | POTASSIUM | 100000 | 94770 | 94.8 |
| SODIUM | 100000 | 97340 | 97.3 | SODIUM | 100000 | 94700 | 94.7 |
| ZINC | 0 | 3 | | ZINC | 20 | 21 | 105.0 |

5A
SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services
Matrix: SOIL
Percent Solids: 87.6

Client Field ID: PR-SS-A6-0006S
SDG Name: SJ4100
Lab Sample ID: SJ4100-001S

Concentration Units : mg/Kg drywt

| Analyte | Spiked | | Sample | | Spike Added | | | Control Limits (%R) | | |
|---------------|---------------|---|--------|---|-------------|------|---|---------------------|-----|-----|
| | Sample Result | C | Result | C | | | | %R | Q | Low |
| COPPER, TOTAL | 23.8 | | 13.6 | | 18.65 | 54.6 | N | 84 | 119 | MS |
| LEAD, TOTAL | 42.8 | | 37.0 | | 7.46 | 78.2 | N | 84 | 118 | MS |
| ZINC, TOTAL | 90.0 | | 75.6 | | 37.31 | 38.7 | N | 82 | 119 | MS |

Comments:

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-A6-0006S

Matrix: SOIL

SDG Name: SJ4100

Percent Solids: 87.6

Lab Sample ID: SJ4100-001A

Concentration Units : ug/L

| Analyte | Spiked | | Sample | | Spike Added | %R | Q | Control Limits (%R) | | M |
|---------------|---------------|---|--------|---|-------------|-------|---|---------------------|------|----|
| | Sample Result | C | Result | C | | | | Low | High | |
| COPPER, TOTAL | 25.0 | | 18.2 | | 6 | 114.0 | | 80 | 120 | MS |
| LEAD, TOTAL | 52.5 | | 49.5 | | 2 | 152.0 | A | 80 | 120 | MS |
| ZINC, TOTAL | 132 | | 101 | | 20 | 153.5 | A | 80 | 120 | MS |

Comments:

6
DUPLICATES

Lab Name: Katahdin Analytical Services
Matrix: SOIL
Percent Solids: 87.6

Client Field ID: PR-SS-A6-0006D
SDG Name: SJ4100
Lab Sample ID: SJ4100-001D

Concentration Units : mg/Kg drywt

| Analyte | Control Limits | Sample Result | C | Duplicate | Result | C | RPD | Q | M |
|---------------|----------------|---------------|---|-----------|--------|---|------|---|----|
| COPPER, TOTAL | | 13.5567 | | 11.0647 | | | 20.2 | * | MS |
| LEAD, TOTAL | | 36.9545 | | 28.3594 | | | 26.3 | * | MS |
| ZINC, TOTAL | | 75.5804 | | 51.5931 | | | 37.7 | * | MS |

Comments:

LIMIT 35% FOR SOILS

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF09IMS1**Matrix:** SOIL**SDG Name:** SJ4100**QC Batch ID:** JF09IMS1**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| COPPER | 25.0 | 24.7 | 98.9 | 84 | 119 |
| LEAD | 10.0 | 10.2 | 101.8 | 84 | 118 |
| ZINC | 50.0 | 48.7 | 97.4 | 82 | 119 |

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF09IMS2**Matrix:** SOIL**SDG Name:** SJ4100**QC Batch ID:** JF09IMS2**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| COPPER | 25.0 | 24.1 | 96.5 | 84 | 119 |
| LEAD | 10.0 | 10.1 | 100.7 | 84 | 118 |
| ZINC | 50.0 | 47.2 | 94.5 | 82 | 119 |

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services**Client Field ID:** PR-SS-A6-0006L**Matrix:** SOIL**SDG Name:** SJ4100**Lab Sample ID:** SJ4100-001L**Concentration Units: ug/L**

| Analyte | Sample Result | C | Dilution | Result | C | % Difference | Q | M |
|----------------|----------------------|----------|-----------------|---------------|----------|---------------------|----------|----------|
| COPPER, TOTAL | 18.2 | | | 19.6 | | 7.7 | | MS |
| LEAD, TOTAL | 49.5 | | | 50.3 | | 1.6 | | MS |
| ZINC, TOTAL | 101 | | | 111 | | 9.9 | | MS |

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 3/14/2016**

| Analyte | Concentration Units: ug/L | | |
|------------|---------------------------|-------|----|
| | PQL/LOQ | IDL | M |
| ALUMINUM | 300 | 1.4 | MS |
| CALCIUM | 100 | 6.9 | MS |
| COPPER | 0.60 | 0.17 | MS |
| IRON | 100 | 6.2 | MS |
| LEAD | 0.20 | 0.041 | MS |
| MAGNESIUM | 100 | 0.65 | MS |
| MOLYBDENUM | 1.0 | 0.021 | MS |
| POTASSIUM | 1000 | 13. | MS |
| SODIUM | 1000 | 2.9 | MS |
| ZINC | 2.0 | 0.18 | MS |

10
LIMITS of DETECTION

Lab Name: Katahdin Analytical Services
Instrument Name: AGILENT 7500 ICP-MS

Instrument Code: J
Date: 1/26/2011

| Analyte | LOD | Units | M | EPA Prep./Anal. Method |
|---------|-------|-------|----|---------------------------|
| COPPER | 0.040 | mg/kg | MS | SW846 3050B / SW846 6020A |
| LEAD | 0.010 | mg/Kg | MS | SW846 3050B / SW846 6020A |
| ZINC | 0.16 | mg/kg | MS | SW846 3050B / SW846 6020A |

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 1/26/2011**

| Analyte | MDL | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| COPPER | 0.014 | mg/kg | MS | SW846 3050B / SW846 6020A |
| LEAD | 0.0014 | mg/kg | MS | SW846 3050B / SW846 6020A |
| ZINC | 0.026 | mg/kg | MS | SW846 3050B / SW846 6020A |

12
ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services

Instrument Code: J

Instrument Name: AGILENT 7500 ICP-MS

Date: 4/4/2016

Concentration Units: ug/L

| Analyte | Integration Time (sec) | Linear Range | M |
|------------|------------------------|--------------|----|
| ALUMINUM | 0.01 | 200000 | MS |
| CALCIUM | 0.03 | 200000 | MS |
| COPPER | 0.10 | 2000 | MS |
| IRON | 0.03 | 100000 | MS |
| LEAD | 0.10 | 2000 | MS |
| MAGNESIUM | 0.05 | 200000 | MS |
| MOLYBDENUM | 0.10 | 1000 | MS |
| POTASSIUM | 0.01 | 200000 | MS |
| SODIUM | 0.01 | 200000 | MS |
| ZINC | 0.10 | 2000 | MS |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF09IMS1**Matrix:** SOIL**SDG Name:** SJ4100**Method:** MS**Prep Date:** 06/09/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF09IMS1 | LC SOJF09IMS1 | 1 | 0.1 | |
| PBSJF09IMS1 | PBSJF09IMS1 | 1 | 0.1 | |
| PR-SS-A6-0006 | SJ4100-001 | 1.53 | 0.1 | C |
| PR-SS-A6-0006D | SJ4100-001D | 1.53 | 0.1 | C |
| PR-SS-A6-0006S | SJ4100-001S | 1.53 | 0.1 | C |
| PR-SB-A6-0612 | SJ4100-002 | 1.57 | 0.1 | A |
| PR-SS-A5-0006 | SJ4100-004 | 1.78 | 0.1 | B |
| PR-SB-A5-0612 | SJ4100-005 | 1.86 | 0.1 | B |
| PR-SS-A1-0006 | SJ4100-007 | 1.65 | 0.1 | A |
| PR-SB-A1-0612 | SJ4100-008 | 1.57 | 0.1 | A |
| PR-DUP01-060616 | SJ4100-010 | 1.71 | 0.1 | A |
| PR-SS-A2-0006 | SJ4100-011 | 1.8 | 0.1 | A |
| PR-SB-A2-0612 | SJ4100-012 | 1.81 | 0.1 | A |
| PR-SS-B1-0006 | SJ4100-014 | 1.86 | 0.1 | A |
| PR-SB-B1-0612 | SJ4100-015 | 1.81 | 0.1 | A |
| PR-SS-B2-0006 | SJ4100-017 | 1.76 | 0.1 | A |
| PR-SB-B2-0612 | SJ4100-018 | 1.69 | 0.1 | A |
| PR-SS-B3-0006 | SJ4100-020 | 1.69 | 0.1 | A |
| PR-SB-B3-0612 | SJ4100-021 | 1.98 | 0.1 | A |
| PR-SB-B4-0612 | SJ4100-023 | 1.74 | 0.1 | A |
| PR-SS-B5-0006 | SJ4100-025 | 1.76 | 0.1 | A |
| PR-SB-B5-0612 | SJ4100-026 | 1.67 | 0.1 | A |
| PR-SS-B6-0006 | SJ4100-028 | 1.64 | 0.1 | A |
| PR-SB-B6-0612 | SJ4100-029 | 1.43 | 0.1 | A |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF09IMS2**Matrix:** SOIL**SDG Name:** SJ4100**Method:** MS**Prep Date:** 06/09/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF09IMS2 | LC SOJF09IMS2 | 1 | 0.1 | |
| PBSJF09IMS2 | PBSJF09IMS2 | 1 | 0.1 | |
| PR-SS-A3-0006 | SJ4100-031 | 1.65 | 0.1 | A |
| PR-SB-A3-0612 | SJ4100-032 | 1.74 | 0.1 | A |
| PR-SS-A4-0006 | SJ4100-034 | 1.91 | 0.1 | A |
| PR-SB-A4-0612 | SJ4100-035 | 1.43 | 0.1 | A |
| PR-DUP02-060716 | SJ4100-037 | 1.66 | 0.1 | A |
| PR-DUP04-060716 | SJ4100-039 | 1.38 | 0.1 | A |

CONVENTIONAL AND PHYSICAL ANALYTICAL DATA

Quality Control Report
Blank Sample Summary Report

Total Solids

| <u>Samp Type</u> | <u>QC Batch</u> | <u>Anal. Method</u> | <u>Anal. Date</u> | <u>Prep. Date</u> | <u>Result</u> | <u>PQL</u> | <u>LOD</u> |
|------------------|-----------------|---------------------|-------------------|-------------------|---------------|------------|------------|
| MBLANK | WG185050 | SM2540G | 09-JUN-16 | 08-JUN-16 | U 1 % | 1 % | N/A |
| MBLANK | WG185061 | SM2540G | 09-JUN-16 | 08-JUN-16 | U 1 % | 1 % | N/A |

Quality Control Report
Laboratory Control Sample Summary Report

Total Solids

| Lab Sample Id | Samp Type | QC Batch | Analysis Date | Prep Date | Units | Spike Amt. | Result | Recovery | Acceptance Range | RPD |
|---------------|-----------|----------|---------------|-----------|-------|------------|--------|----------|------------------|-----|
| WG185050-2 | LCS | WG185050 | 09-JUN-16 | 08-JUN-16 | % | 90 | 92. | 102 | 90-110 | |
| WG185061-2 | LCS | WG185061 | 09-JUN-16 | 08-JUN-16 | % | 90 | 92. | 102 | 90-110 | |

Quality Control Report
Duplicate Sample Summary Report

Total Solids

| Duplicate Sample ID | Original Sample ID | QC Batch | Analysis Date | Result Units | Sample Result | Duplicate Result | RPD(%) | RPD Limit |
|---------------------|--------------------|----------|---------------|--------------|---------------|------------------|--------|-----------|
| WG185050-3 | SJ4100-1 | WG185050 | 09-JUN-16 | % | 88. | 86. | 1 | 20 |
| WG185061-3 | SJ4100-31 | WG185061 | 09-JUN-16 | % | 92. | 94. | 1 | 20 |
| WG185061-4 | SJ4100-32 | WG185061 | 09-JUN-16 | % | 91. | 91. | 0 | 20 |
| WG185050-4 | SJ4100-2 | WG185050 | 09-JUN-16 | % | 89. | 88. | 1 | 20 |

| | | FIELD DUPLICATE PRECISION | | | | | | SOIL | 50 | PERCENT LIMIT |
|-----------|---------------|---------------------------|-------|-------------------------|-------|-------|--------|--------------|--|---------------|
| FRACTION | ANALYTES | SAMPLE RESULTS | | DUPLICATE RESULTS | | | | | | |
| Soil Bore | | PR-SB-A6-0612 | | NASB-SITE1-DUP01-062216 | | | | | | |
| | | MG/KG | Qual. | R.L. | MG/KG | Qual. | RPD | EVALUATION | ADDITIONAL EVALUATION FOR "J" & "U" RESULTS | |
| | COPPER | 4.29 | | 0.43 | 4.2 | | 2.12 | SATISFACTORY | | |
| | LEAD | 11.5 | | 0.14 | 10.8 | | 6.28 | SATISFACTORY | | |
| | ZINC | 33.3 | | 1.4 | 26 | | 24.62 | SATISFACTORY | | |
| | | % | | | % | | | | | |
| | TOTAL SOLIDS | 89 | | 1 | 88 | | 1.13 | SATISFACTORY | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | PR-SS-A2-0006 | | PR-DUP02-060716 | | | | | | |
| | | UG/KG | | UG/KG | | | | | | |
| | NITROGLYCERIN | 2500 | | 820 | 320 | J | 154.61 | N/A | EXCEEDS | |
| | | MG/KG | | MG/KG | | | | | | |
| | COPPER | 48.3 | | 0.38 | 45.8 | | 5.31 | SATISFACTORY | | |
| | LEAD | 260 | | 0.13 | 342 | | 27.24 | SATISFACTORY | | |
| | ZINC | 169 | | 1.3 | 172 | | 1.76 | SATISFACTORY | | |
| | | % | | | % | | | | | |
| | TOTAL SOLIDS | 87 | | 1 | 86 | | 1.16 | SATISFACTORY | | |
| | | | | | | | | | | |
| | | | | | | | | | | |
| | | PR-SB-B5-0612 | | PR-DUP04-060716 | | | | | | |
| | | UG/KG | | UG/KG | | | | | | |
| | NITROGLYCERIN | 270 | J | 870 | 470 | J | N/A | N/A | SATISFACTORY - THE DIFFERENCE OF THE RESULTS $\leq 2X$ THE R.L. | |
| | | MG/KG | | MG/KG | | | | | | |
| | COPPER | 6.98 | | 0.4 | 5.63 | | 21.41 | SATISFACTORY | | |
| | LEAD | 21.5 | | 0.13 | 18.5 | | 15.00 | SATISFACTORY | | |
| | ZINC | 37.6 | | 1.3 | 31.9 | | 16.40 | SATISFACTORY | | |
| | | % | | | % | | | | | |
| | TOTAL SOLIDS | 91 | | 1 | 93 | | 2.17 | SATISFACTORY | | |



TO: R. SOK **DATE:** AUGUST 9, 2016
FROM: L. GANSER **COPIES:** DV FILE
SUBJECT: DATA VALIDATION- LEAD
NASA WALLOPS ISLAND, VIRGINIA
SAMPLE DELIVERY GROUP (SDG) SJ4101

SAMPLES: 24/Soil

| | | | |
|---------------|---------------|---------------|---------------|
| PR-SB-C1-0612 | PR-SB-C2-0612 | PR-SB-C3-0612 | PR-SB-C4-0612 |
| PR-SB-C5-0612 | PR-SB-C6-0612 | PR-SB-D1-0612 | PR-SB-D2-0612 |
| PR-SB-D3-0612 | PR-SB-D4-0612 | PR-SB-D5-0612 | PR-SB-D6-0612 |
| PR-SS-C1-0006 | PR-SS-C2-0006 | PR-SS-C3-0006 | PR-SS-C4-0006 |
| PR-SS-C5-0006 | PR-SS-C6-0006 | PR-SS-D1-0006 | PR-SS-D2-0006 |
| PR-SS-D3-0006 | PR-SS-D4-0006 | PR-SS-D5-0006 | PR-SS-D6-0006 |

Overview

The sample set for NASA Wallops Island, SDG SJ4101 consists of twenty four (24) soil samples. All samples were analyzed for lead. Three field duplicate pairs were included in this SDG: PR-SB-C2-0612 / PR-DUP05-060716, PR-SS-C6-0006 / PR-DUP06-060716, and PR-SS-D4-0006 / PR-DUP07-060716. Samples PR-DUP05-060716, PR-DUP06-060716, and PR-DUP07-060716 were included in SDG J4102.

Samples were collected on June 7, 2016 by Tetra Tech and analyzed by Katahdin. Lead analyses were conducted in accordance to SW-846 Method 6020A analytical and reporting protocols.

The data contained in this SDG were validated with regard to the following parameters: data completeness, holding times, MS tuning, laboratory method/preparation blank results, ICP interference results, blank spike results, matrix spike/matrix spike duplicate results, laboratory duplicate results, ICP serial dilution results, and detection limits. Areas of concern with respect to data quality are listed below.

Major Problems – None.

Minor Problems

- Field duplicate imprecision (relative percent difference > 50%) was noted for field duplicate sample pair PR-SS-D4-0006 / PR-DUP07-060716. The detected lead results in samples PR-SS-D4-0006 and PR-DUP07-060716 were qualified as estimated (J).

Notes

Lead was detected in the laboratory preparation blanks at the following maximum concentrations:

| <u>Analyte</u> | <u>Maximum Concentration</u> | <u>Reporting Limit (RL) (> or <)</u> |
|---------------------|------------------------------|--|
| Lead ⁽¹⁾ | 0.016 mg/kg | < |
| Lead ⁽²⁾ | 0.027 mg/kg | < |

- 1 Concentration in preparation blank affecting samples in batch JF09IMS2.
- 2 Concentration in preparation blank affecting samples in batch JF09IMS3.

Dilution factor, if applicable, was taken into consideration when evaluating for blank

To: R. SOK
SDG: SJ4101

contamination. No action was taken as sample results were greater than the RL.

EXECUTIVE SUMMARY

Laboratory Performance Issues: Lead was present in the preparation blanks.

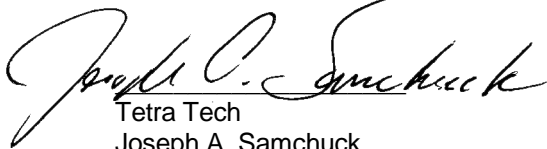
Other Factors Affecting Data Quality: Field duplicate imprecision was noted for lead in one field duplicate sample pair.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review" (August 2014). The text of this report has been formulated to address only those areas affecting data quality.

The text of this report has been formulated to address only those problem areas affecting data quality.



Tetra Tech
Leanne M. Ganser
Environmental Scientist/Data Validator



Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:

- Appendix A – Qualified Analytical Results
- Appendix B – Results as Reported by the Laboratory
- Appendix C – Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate
- Z4 = Sample activity is less than the at uncertainty at 3 standard deviations and greater than the MDC
- Z5 = Sample activity is less than the at uncertainty at 3 standard deviations and less than the MDC

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4101 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-SB-C1-0612 | | | PR-SB-C2-0612 | | | PR-SB-C3-0612 | | | PR-SB-C4-0612 | | |
| | LAB_ID | SJ4101-002 | | | SJ4101-004 | | | SJ4101-006 | | | SJ4101-008 | | |
| | SAMP_DATE | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 96.8 | | | 96.8 | | | 90.4 | | | 88.7 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 1.24 | | | 3.57 | | | 7.75 | | | 16.3 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4101 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-SB-C5-0612 | | | PR-SB-C6-0612 | | | PR-SB-D1-0612 | | | PR-SB-D2-0612 | | |
| | LAB_ID | SJ4101-010 | | | SJ4101-012 | | | SJ4101-024 | | | SJ4101-022 | | |
| | SAMP_DATE | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 96.2 | | | 94.8 | | | 95.8 | | | 95.3 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 6.54 | | | 3.12 | | | 23.7 | | | 11.4 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4101 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-SB-D3-0612 | | | PR-SB-D4-0612 | | | PR-SB-D5-0612 | | | PR-SB-D6-0612 | | |
| | LAB_ID | SJ4101-020 | | | SJ4101-018 | | | SJ4101-016 | | | SJ4101-014 | | |
| | SAMP_DATE | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 92.6 | | | 93.1 | | | 94.3 | | | 94.3 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 46.8 | | | 13.8 | | | 8.35 | | | 9.12 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4101 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-SS-C1-0006 | | | PR-SS-C2-0006 | | | PR-SS-C3-0006 | | | PR-SS-C4-0006 | | |
| | LAB_ID | SJ4101-001 | | | SJ4101-003 | | | SJ4101-005 | | | SJ4101-007 | | |
| | SAMP_DATE | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 95.8 | | | 96.2 | | | 93.1 | | | 93.4 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 1.67 | | | 3.07 | | | 401 | | | 159 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4101 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-SS-C5-0006 | | | PR-SS-C6-0006 | | | PR-SS-D1-0006 | | | PR-SS-D2-0006 | | |
| | LAB_ID | SJ4101-009 | | | SJ4101-011 | | | SJ4101-023 | | | SJ4101-021 | | |
| | SAMP_DATE | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 94.5 | | | 94.5 | | | 95.1 | | | 94.8 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 15.7 | | | 5.17 | | | 85.3 | | | 16.4 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4101 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-SS-D3-0006 | | | PR-SS-D4-0006 | | | PR-SS-D5-0006 | | | PR-SS-D6-0006 | | |
| | LAB_ID | SJ4101-019 | | | SJ4101-017 | | | SJ4101-015 | | | SJ4101-013 | | |
| | SAMP_DATE | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 92.5 | | | 87.9 | | | 90.7 | | | 93.6 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 128 | | | 99 | J | G | 10.5 | | | 16.3 | | | |

Appendix B

Results as Reported by the Laboratory

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-C1-0006

Matrix: SOIL

SDG Name: SJ4101

Percent Solids: 95.8

Lab Sample ID: SJ4101-001

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 1.67 | | | MS | 10 | 0.14 | 0.0097 | 0.069 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-C1-0612

Matrix: SOIL

SDG Name: SJ4101

Percent Solids: 96.8

Lab Sample ID: SJ4101-002

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 1.24 | | | MS | 10 | 0.11 | 0.0080 | 0.057 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-C2-0006

Matrix: SOIL

SDG Name: SJ4101

Percent Solids: 96.2

Lab Sample ID: SJ4101-003

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 3.07 | | | MS | 10 | 0.11 | 0.0078 | 0.056 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services**Client Field ID:** PR-SB-C2-0612**Matrix:** SOIL**SDG Name:** SJ4101**Percent Solids:** 96.8**Lab Sample ID:** SJ4101-004**Concentration Units :** mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 3.57 | | | MS | 10 | 0.11 | 0.0077 | 0.055 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-C3-0006

Matrix: SOIL

SDG Name: SJ4101

Percent Solids: 93.1

Lab Sample ID: SJ4101-005

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 401 | | | MS | 10 | 0.12 | 0.0084 | 0.060 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-C3-0612

Matrix: SOIL

SDG Name: SJ4101

Percent Solids: 90.4

Lab Sample ID: SJ4101-006

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 7.75 | | | MS | 10 | 0.13 | 0.0090 | 0.064 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-C4-0006

Matrix: SOIL

SDG Name: SJ4101

Percent Solids: 93.4

Lab Sample ID: SJ4101-007

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 159 | | | MS | 10 | 0.13 | 0.0091 | 0.065 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-C4-0612

Matrix: SOIL

SDG Name: SJ4101

Percent Solids: 88.7

Lab Sample ID: SJ4101-008

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 16.3 | | | MS | 10 | 0.14 | 0.0098 | 0.070 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services**Client Field ID:** PR-SS-C5-0006**Matrix:** SOIL**SDG Name:** SJ4101**Percent Solids:** 94.5**Lab Sample ID:** SJ4101-009**Concentration Units :** mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 15.7 | | | MS | 10 | 0.13 | 0.0089 | 0.063 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-C5-0612

Matrix: SOIL

SDG Name: SJ4101

Percent Solids: 96.2

Lab Sample ID: SJ4101-010

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 6.54 | | | MS | 10 | 0.13 | 0.0092 | 0.066 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-C6-0006

Matrix: SOIL

SDG Name: SJ4101

Percent Solids: 94.5

Lab Sample ID: SJ4101-011

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 5.17 | | | MS | 10 | 0.12 | 0.0088 | 0.063 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-C6-0612

Matrix: SOIL

SDG Name: SJ4101

Percent Solids: 94.8

Lab Sample ID: SJ4101-012

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 3.12 | | | MS | 10 | 0.13 | 0.0090 | 0.064 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-D6-0006

Matrix: SOIL

SDG Name: SJ4101

Percent Solids: 93.6

Lab Sample ID: SJ4101-013

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 16.3 | | | MS | 10 | 0.12 | 0.0085 | 0.061 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-D6-0612

Matrix: SOIL

SDG Name: SJ4101

Percent Solids: 94.3

Lab Sample ID: SJ4101-014

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 9.12 | | | MS | 10 | 0.11 | 0.0080 | 0.057 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services**Client Field ID:** PR-SS-D5-0006**Matrix:** SOIL**SDG Name:** SJ4101**Percent Solids:** 90.7**Lab Sample ID:** SJ4101-015**Concentration Units :** mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 10.5 | | | MS | 10 | 0.13 | 0.0094 | 0.067 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-D5-0612

Matrix: SOIL

SDG Name: SJ4101

Percent Solids: 94.3

Lab Sample ID: SJ4101-016

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 8.35 | | | MS | 10 | 0.14 | 0.0097 | 0.069 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-D4-0006

Matrix: SOIL

SDG Name: SJ4101

Percent Solids: 87.9

Lab Sample ID: SJ4101-017

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 99.0 | | | MS | 10 | 0.13 | 0.0091 | 0.065 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services**Client Field ID:** PR-SB-D4-0612**Matrix:** SOIL**SDG Name:** SJ4101**Percent Solids:** 93.1**Lab Sample ID:** SJ4101-018**Concentration Units :** mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 13.8 | | | MS | 10 | 0.13 | 0.0093 | 0.067 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services**Client Field ID:** PR-SS-D3-0006**Matrix:** SOIL**SDG Name:** SJ4101**Percent Solids:** 92.5**Lab Sample ID:** SJ4101-019**Concentration Units :** mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 128 | | | MS | 10 | 0.14 | 0.0097 | 0.069 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services**Client Field ID:** PR-SB-D3-0612**Matrix:** SOIL**SDG Name:** SJ4101**Percent Solids:** 92.6**Lab Sample ID:** SJ4101-020**Concentration Units :** mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 46.8 | | | MS | 10 | 0.16 | 0.011 | 0.078 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-D2-0006

Matrix: SOIL

SDG Name: SJ4101

Percent Solids: 94.8

Lab Sample ID: SJ4101-021

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 16.4 | | | MS | 10 | 0.15 | 0.010 | 0.074 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services**Client Field ID:** PR-SB-D2-0612**Matrix:** SOIL**SDG Name:** SJ4101**Percent Solids:** 95.3**Lab Sample ID:** SJ4101-022**Concentration Units :** mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 11.4 | | | MS | 10 | 0.13 | 0.0092 | 0.066 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-D1-0006

Matrix: SOIL

SDG Name: SJ4101

Percent Solids: 95.1

Lab Sample ID: SJ4101-023

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 85.3 | | | MS | 10 | 0.12 | 0.0082 | 0.058 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-D1-0612

Matrix: SOIL

SDG Name: SJ4101

Percent Solids: 95.8

Lab Sample ID: SJ4101-024

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 23.7 | | | MS | 10 | 0.12 | 0.0081 | 0.058 |

Comments:

Appendix C

Support Documentation

**SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECHNUS, INC.
NASA WOLLOPS FLIGHT FACILITY-MBFR
SJ4101**

Sample Receipt

The following samples were received on June 08, 2016 and were logged in under Katahdin Analytical Services work order number SJ4101 for a hardcopy due date of June 27, 2016.

| <u>KATAHDIN</u> <u>Sample No.</u> | <u>TTNUS</u> <u>Sample Identification</u> |
|--------------------------------------|--|
| SJ4101-1 | PR-SS-C1-0006 |
| SJ4101-2 | PR-SB-C1-0612 |
| SJ4101-3 | PR-SS-C2-0006 |
| SJ4101-4 | PR-SB-C2-0612 |
| SJ4101-5 | PR-SS-C3-0006 |
| SJ4101-6 | PR-SB-C3-0612 |
| SJ4101-7 | PR-SS-C4-0006 |
| SJ4101-8 | PR-SB-C4-0612 |
| SJ4101-9 | PR-SS-C5-0006 |
| SJ4101-10 | PR-SB-C5-0612 |
| SJ4101-11 | PR-SS-C6-0006 |
| SJ4101-12 | PR-SB-C6-0612 |
| SJ4101-13 | PR-SS-D6-0006 |
| SJ4101-14 | PR-SB-D6-0612 |
| SJ4101-15 | PR-SS-D5-0006 |
| SJ4101-16 | PR-SB-D5-0612 |
| SJ4101-17 | PR-SS-D4-0006 |
| SJ4101-18 | PR-SB-D4-0612 |
| SJ4101-19 | PR-SS-D3-0006 |
| SJ4101-20 | PR-SB-D3-0612 |
| SJ4101-21 | PR-SS-D2-0006 |
| SJ4101-22 | PR-SB-D2-0612 |
| SJ4101-23 | PR-SS-D1-0006 |
| SJ4101-24 | PR-SB-D1-0612 |

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Metals Analysis

The samples of Katahdin Work Order SJ4101 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Solid-matrix Katahdin Sample Numbers SJ4101-(1-14) were digested for ICP-MS analysis on 06/09/16 (QC Batch JF09IMS2) in accordance with USEPA Method 3050B. Katahdin Sample Number SJ4101-1 was prepared with a matrix-spiked aliquot and laboratory duplicate per client request.

Katahdin Sample Numbers SJ4101-(15-24) were digested for ICP-MS analysis on 06/09/16 (QC Batch JF09IMS3).

ICP-MS analyses of Katahdin Work Order SJ4101 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Sample digestates for Katahdin Work Order SJ4101 were diluted by a factor of 10 in accordance with the project limits.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

| Internal Standard Element | Associated Analytes |
|----------------------------------|--|
| Lithium | Beryllium, Boron |
| Scandium | Sodium, Magnesium, Aluminum, Silicon, Potassium, Calcium |
| Germanium or Yttrium | Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Strontium, Molybdenum, Silver, Cadmium |
| Terbium | Tin, Antimony, Barium, Tungsten |
| Bismuth | Lead, Thallium, Thorium, Uranium |

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Matrix QC Summary

The measured recoveries of all analytes in the matrix-spiked aliquots of Katahdin Sample Number SJ4101-1 are within the project acceptance criteria (80% - 120% recovery of the added element).

The laboratory duplicate analyses of Katahdin Sample Numbers SJ4101-1 are within the laboratory's acceptance limit (<20% relative difference between duplicate aliquots) for all analytes.

The serial dilution analyses of Katahdin Sample Numbers SJ4101-1 are within the project acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOD) for all analytes.

The measured recoveries of all analytes in the post-digestion spiked aliquot of Katahdin Sample Numbers SJ4101-1 are within the acceptance criteria (75% - 125% recovery of the added element).

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the LOQ are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQs, MDLs, and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

The samples of Work Order SJ4101 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times, and all quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.



Leslie Dimond
Quality Assurance Officer

06.27.16

| | | |
|---------------------------------------|------------------------------|------------------------------------|
| Client: <u>Tech Tech</u> | KAS PM: <u>JO</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>JO</u> | Delivered By: <u>FedEx</u> |
| KAS Work Order#: <u>554100-554103</u> | KIMS Review By: <u>JO</u> | Received By: <u>AP</u> |
| SDG #: | Cooler: <u>1</u> of <u>2</u> | Date/Time Rec.: <u>6/8/16 1000</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | / | | | | |
| 2. Chain of Custody present in cooler? | / | | | | |
| 3. Chain of Custody signed by client? | / | | | | |
| 4. Chain of Custody matches samples? | / | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | | / | | / | Temp (°C): <u>25.2 (n/a) metals only</u> |
| Samples received at <6 °C w/o freezing? | | / | | / | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | | / | | / | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | | / | | / | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | / | | / | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | / | |
| Aqueous: No bubble larger than a pea? | | | | / | |
| Soil/Sediment: | | | | / | |
| Received in airtight container? | / | | | / | |
| Received in methanol? | / | | | / | |
| Methanol covering soil? | / | | | / | |
| D.I. Water - Received within 48 hour HT? | / | | | / | |
| Air: Refer to KAS COC for canister/flow controller requirements. | √ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | / | |
| 8. Proper sample containers and volume? | / | | | | |
| 9. Samples within hold time upon receipt? | / | | | | |
| 10. Aqueous samples properly preserved? | | | | / | |
| Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 | | | | / | |
| Sulfide - >9 | | | | / | |
| Cyanide - pH >12 | | | | / | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

0000007

| | | |
|---------------------------------------|------------------------------|------------------------------------|
| Client: <i>Tetra Tech</i> | KAS PM: <i>JO</i> | Sampled By: <i>Client</i> |
| Project: | KIMS Entry By: <i>JO</i> | Delivered By: <i>FedEx</i> |
| KAS Work Order#: <i>SJ4100-SJ4103</i> | KIMS Review By: <i>JO</i> | Received By: <i>AP</i> |
| SDG #: | Cooler: <i>2</i> of <i>2</i> | Date/Time Rec.: <i>6/8/16 1000</i> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | / | | | | |
| 2. Chain of Custody present in cooler? | / | | | | |
| 3. Chain of Custody signed by client? | / | | | | |
| 4. Chain of Custody matches samples? | / | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | / | | | | Temp (°C): <i>1.8</i> |
| Samples received at <6 °C w/o freezing? | / | | | | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | / | | | | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | / | | | | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | / | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | / | |
| Aqueous: No bubble larger than a pea? | | | | / | |
| Soil/Sediment: | | | | | |
| Received in airtight container? | / | | | | |
| Received in methanol? | / | | | | |
| Methanol covering soil? | / | | | | |
| D.I. Water - Received within 48 hour HT? | / | | | | |
| Air: Refer to KAS COC for canister/flow controller requirements. | √ if air included | | | | |
| 7. Trip Blank present in cooler? | / | | | | |
| 8. Proper sample containers and volume? | / | | | | |
| 9. Samples within hold time upon receipt? | / | | | | |
| 10. Aqueous samples properly preserved? | | | | | |
| Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 | | | | / | |
| Sulfide - >9 | | | | / | |
| Cyanide - pH >12 | | | | / | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

000008



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client _____ Contact _____ Phone # _____ Fax # _____
 Address _____ City _____ State _____ Zip Code _____
 Purchase Order # _____ Proj. Name / No. _____ Katahdin Quote # _____
 Bill (if different than above) _____ Address _____

Sampler (Print / Sign) _____ Copies To: _____

LAB USE ONLY WORK ORDER #: SJ4100/SJ4101
 KATAHDIN PROJECT NUMBER _____
 REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. |
|----------------------|--------------------|--------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | | | OY ON | OY ON | OY ON | OY ON | OY ON | OY ON | OY ON | OY ON | OY ON | OY ON |
| PR-SB-A3-0612 | 6-7-16/0955 | SO | 2 | 1 | 1 | | | | | | | | |
| PR-SB-A3-1224 | /0956 | | 2 | 1 | 1 | | | | | | | | |
| PR-SS-A4-0006 | /1012 | | 2 | 1 | 1 | | | | | | | | |
| PR-SB-A4-0612 | /1013 | | 2 | 1 | 1 | | | | | | | | |
| PR-SB-A4-1224 | /1014 | | 2 | 1 | 1 | | | | | | | | |
| PR-Dup02-060716 | /0730 | | 2 | 1 | 1 | | | | | | | | |
| PR-Dup03-060716 | /0830 | | 2 | 1 | 1 | | | | | | | | |
| PR-Dup04-060716 | /0900 | | 2 | 1 | 1 | | | | | | | | |
| PR-SS-C1-0006 | /1030 | | 2 | | | | | | | | | | |
| PR-SB-C1-0612 | /1031 | | 1 | | 0 | 1 | | | | | | | |
| PR-SS-C2-0006 | /1039 | | 1 | | 0 | 1 | | | | | | | |
| PR-SB-C2-0612 | /1040 | | 1 | | | 1 | | | | | | | |
| PR-SS-C3-0006 | /1050 | | 1 | | | 1 | | | | | | | |
| PR-SB-C3-0612 | /1051 | | 1 | | | 1 | | | | | | | |
| PR-SS-C4-0006 | /102 | | 1 | | | 1 | | | | | | | |
| PR-SB-C4-0612 | /1103 | | 1 | | | 1 | | | | | | | |

COMMENTS _____

| | | | | | |
|------------------------------------|-------------------|--------------------------------|------------------------------------|-------------------|--------------------------------|
| Relinquished By: (Signature) _____ | Date / Time _____ | Received By: (Signature) _____ | Relinquished By: (Signature) _____ | Date / Time _____ | Received By: (Signature) _____ |
| Relinquished By: (Signature) _____ | Date / Time _____ | Received By: (Signature) _____ | Relinquished By: (Signature) _____ | Date / Time _____ | Received By: (Signature) _____ |



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CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client _____ Contact _____ Phone # _____ Fax # _____
 Address _____ City _____ State _____ Zip Code _____
 Purchase Order # _____ Proj. Name / No. _____ Katahdin Quote # _____
 Bill (if different than above) _____ Address _____
 Sampler (Print / Sign) _____ Copies To: _____

LAB USE ONLY WORK ORDER #: SJ4101
 KATAHDIN PROJECT NUMBER _____
 REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

| * | Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. |
|---|--------------------|--------------------|--------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | | | | | OY ON | OY ON | OY ON | OY ON | OY ON | OY ON | OY ON | OY ON | OY ON | OY ON |
| | PR-SS-C5-0006 | 6-7-16/1208 | 50 | 1 | X | | | | | | | | | |
| | PR-SB-C5-0612 | /1209 | | 1 | | | | | | | | | | |
| | PR-SS-C6-0006 | /1218 | | 1 | | | | | | | | | | |
| | PR-SB-C6-0612 | /1219 | | 1 | | | | | | | | | | |
| | PR-SS-D6-0006 | /1229 | | 1 | | | | | | | | | | |
| | PR-SB-D6-0612 | /1230 | | 1 | | | | | | | | | | |
| | PR-SS-D5-0006 | /1237 | | 1 | | | | | | | | | | |
| | PR-SB-D5-0612 | /1238 | | 1 | | | | | | | | | | |
| | PR-SS-D4-0006 | /1247 | | 1 | | | | | | | | | | |
| | PR-SB-D4-0612 | /1248 | | 1 | | | | | | | | | | |
| | PR-SS-D3-0006 | /1258 | | 1 | | | | | | | | | | |
| | PR-SB-D3-0006 | /1259 | | 1 | | | | | | | | | | |
| | PR-SS-D2-0006 | /1309 | | 1 | | | | | | | | | | |
| | PR-SB-D2-0612 | /1310 | | 1 | | | | | | | | | | |
| | PR-SS-D1-0006 | /1317 | | 1 | | | | | | | | | | |
| | PR-SB-D1-0612 | ✓ /1318 | ✓ | 1 | | | | | | | | | | |

Lead

COMMENTS

| | | | | | |
|--|----------------------------|--|------------------------------|-------------|--------------------------|
| Relinquished By: (Signature) <i>[Signature]</i> | Date / Time 6-7-16 1700 | Received By: (Signature) FedEx | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |
| Relinquished By: (Signature) | Date / Time 6/8/16 1000 | Received By: (Signature) <i>[Signature]</i> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

ORIGINAL
 0000012

METALS SAMPLE FLAGGING

| FLAG | SPECIFIED MEANING |
|-------------|--|
| E | The reported value is estimated because of the presence of interference (as indicated by serial dilution). |
| N | The pre-digestion spiked sample recovery is not within control limits. |
| * | The duplicate sample analysis relative percent difference (RPD) is not within control limits. |
| B | Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample. |
| A | The post-digestion spiked sample recovery is not within control limits. |
| • | Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits. |
| U | <p>The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ) (previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.</p> <p>Note: All results reported as “U” MDL have a 50% rate for false negatives compared to those results reported as “U” PQL/LOQ or “U” LOD, where the rate of false negatives is <1%.</p> |
| J | The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL). |
| Q | One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV). |

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL "U" LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level (PQL) or LOQ could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

| | | | |
|---------|---------|--------------|------------------------|
| H1 - pH | H2 - DO | H3 - sulfite | H4 - residual chlorine |
|---------|---------|--------------|------------------------|

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

M1 The matrix spike and/or matrix spike duplicate recovery performed on this sample was outside of the laboratory acceptance criteria. Sample matrix is suspected. The laboratory criteria was met for the Laboratory Control Sample (LCS) analyzed concurrently with this sample.

M2 The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory acceptance criteria. The native sample concentration is greater than four times the spike added concentration so the spike added could not be distinguished from the native sample concentration.

R1 The relative percent difference (RPD) between the duplicate analyses performed on this sample was outside of the laboratory acceptance criteria (when both values are greater than ten times the PQL).

| | | | |
|-----|---------------------------|----|----------|
| MCL | Maximum Contaminant Level | NL | No limit |
|-----|---------------------------|----|----------|

| | | | |
|-----|------------------------|-----|---------------------|
| NFL | No Free Liquid Present | FLP | Free Liquid Present |
|-----|------------------------|-----|---------------------|

| | | | |
|-----|------------------|-----|-----------------------|
| NOD | No Odor Detected | TON | Threshold Odor Number |
|-----|------------------|-----|-----------------------|

D-1 As required by Method 5210B, APHA Standard Methods for the Examination of Water and Wastewater (21st edition), the BOD value reported for this sample is 'qualified' because the check standard run concurrently with the sample analysis did not meet the criteria specified in the method (198 +/- 30.5 mg/L). These results may not be reportable for compliance purposes.

D-2 The measured final dissolved oxygen concentrations of all dilutions were less than the method-specified limit of 1 mg/L. The reported BOD result was calculated assuming a final oxygen concentration equal to 1 mg/L. The reported value should be considered a minimum value.

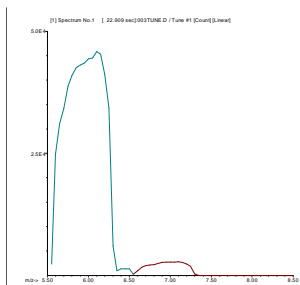
D-3 The dilution water used to prepare this sample did not meet the method and/or regulatory criteria of less than 0.2 or 0.4 mg/L dissolved oxygen (DO) uptake over the five day period of incubation. These results may not be reportable for compliance purposes.

6020 QC Tune Report

Data File: C:\ICPCHEM\1\DATA\JJF09A.B\003TUNE.D
 Date Acquired: Jun 9 2016 03:30 pm
 Acq. Method: TN6020E.M
 Operator: EAM
 Sample Name: 6020 TUNE
 Misc Info:
 Vial Number: 1107
 Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

| Element | Actual | Required | Flag |
|---------|--------|----------|------|
| 7 Li | 2.30 | 5.00 | |
| 59 Co | 0.39 | 5.00 | |
| 115 In | 0.75 | 5.00 | |
| 205 Tl | 0.96 | 5.00 | |



7 Li

Mass Calib.

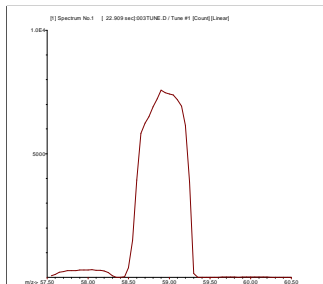
Actual: 7.05
 Required: 6.90 - 7.10

Flag:

Peak Width

Actual: 0.65
 Required: 0.90

Flag:



59 Co

Mass Calib.

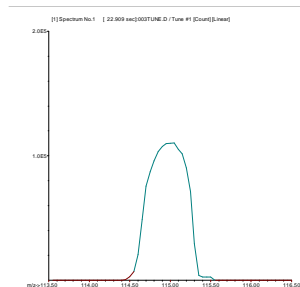
Actual: 58.95
 Required: 58.90 - 59.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:



115 In

Mass Calib.

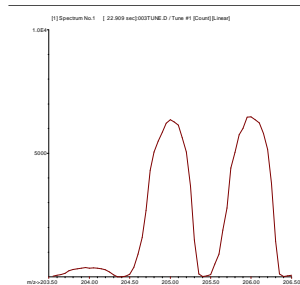
Actual: 115.00
 Required: 114.90 - 115.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:



205 Tl

Mass Calib.

Actual: 205.00
 Required: 204.90 - 205.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4101

Concentration Units: ug/L

SAMPLE: ICB

File: JJF09A Jun 09, 2016 16:29

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.837 | J |
| MOLYBDENUM | 0.035 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF09A Jun 09, 2016 17:03

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 7.010 | J |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.764 | J |
| MOLYBDENUM | 0.071 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 7.036 | J |

SAMPLE: CCB

File: JJF09A Jun 09, 2016 17:44

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.784 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 3.716 | J |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4101

Concentration Units: ug/L

SAMPLE: CCB

File: JJF09A Jun 09, 2016 18:26

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF09A Jun 09, 2016 19:09

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.692 | J |
| CALCIUM | 12.240 | J |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.353 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF09A Jun 09, 2016 19:51

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 13.260 | J |
| CALCIUM | 14.710 | J |
| IRON | 8.415 | J |
| LEAD | 0.060 | J |
| MAGNESIUM | 3.476 | J |
| MOLYBDENUM | 0.032 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 3.121 | J |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4101

Concentration Units: ug/L

SAMPLE: CCB

File: JJF09A Jun 09, 2016 20:33

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 9.790 | J |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.904 | J |
| MOLYBDENUM | 0.023 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF09A Jun 09, 2016 21:16

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 10.430 | J |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.287 | J |
| MOLYBDENUM | 0.025 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF09A Jun 09, 2016 21:58

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 14.120 | J |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.016 | J |
| MOLYBDENUM | 0.021 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4101

Concentration Units: ug/L

SAMPLE: CCB

File: JJF09A Jun 09, 2016 22:41

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 5.294 | J |
| CALCIUM | 19.210 | J |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.699 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF09A Jun 09, 2016 23:23

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 18.650 | J |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.975 | J |
| MOLYBDENUM | 0.023 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF09A Jun 10, 2016 0:05

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 17.300 | J |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.450 | J |
| MOLYBDENUM | 0.021 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4101

Concentration Units: ug/L

SAMPLE: CCB

File: JJF09A Jun 10, 2016 0:48

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.034 | J |
| CALCIUM | 19.100 | J |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.500 | J |
| MOLYBDENUM | 0.022 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF09A Jun 10, 2016 1:17

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 20.630 | B |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.354 | J |
| MOLYBDENUM | 0.023 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF09A Jun 10, 2016 1:28

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 16.890 | J |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.437 | J |
| MOLYBDENUM | 0.023 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF09IMS2

Matrix: SOIL

SDG Name: SJ4101

QC Batch ID: JF09IMS2

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| LEAD | 0.016 | J |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF09IMS3

Matrix: SOIL

SDG Name: SJ4101

QC Batch ID: JF09IMS3

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| LEAD | 0.027 | J |

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services SDG Name: SJ4101

Concentration Units: ug/L

SAMPLE: ICSA

File: JJF09A Jun 09, 2016 16:46

| Analyte | TRUE | FOUND | % R |
|------------|--------|-------|------|
| ALUMINUM | 100000 | 96050 | 96.0 |
| CALCIUM | 100000 | 94720 | 94.7 |
| IRON | 100000 | 89340 | 89.3 |
| LEAD | 0 | 0 | |
| MAGNESIUM | 100000 | 94670 | 94.7 |
| MOLYBDENUM | 2000 | 1980 | 99.0 |
| POTASSIUM | 100000 | 96750 | 96.8 |
| SODIUM | 100000 | 97340 | 97.3 |

SAMPLE: ICSAB

File: JJF09A Jun 09, 2016 16:49

| Analyte | TRUE | FOUND | % R |
|------------|--------|-------|-------|
| ALUMINUM | 100000 | 95220 | 95.2 |
| CALCIUM | 100000 | 93950 | 94.0 |
| IRON | 100000 | 88140 | 88.1 |
| LEAD | 20 | 21 | 105.0 |
| MAGNESIUM | 100000 | 95050 | 95.0 |
| MOLYBDENUM | 2000 | 1979 | 99.0 |
| POTASSIUM | 100000 | 94770 | 94.8 |
| SODIUM | 100000 | 94700 | 94.7 |

5A
SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services
Matrix: SOIL
Percent Solids: 95.8

Client Field ID: PR-SS-C1-0006S
SDG Name: SJ4101
Lab Sample ID: SJ4101-001S

Concentration Units : mg/Kg drywt

| Analyte | Spiked | | Sample | | Spike | %R | Q | Control Limits (%R) | | M |
|-------------|--------|--------|--------|---|-------|------|---|---------------------|------|----|
| | Sample | Result | Result | C | | | | Low | High | |
| LEAD, TOTAL | | 8.42 | 1.67 | | 6.92 | 97.6 | | 84 | 118 | MS |

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-C1-0006S

Matrix: SOIL

SDG Name: SJ4101

Percent Solids: 95.8

Lab Sample ID: SJ4101-001A

Concentration Units : ug/L

| Analyte | Spiked | | Sample | | Spike | %R | Q | Control Limits (%R) | | M |
|-------------|--------|--------|--------|---|-------|------|---|---------------------|------|----|
| | Sample | Result | Result | C | | | | Low | High | |
| LEAD, TOTAL | | 4.35 | 2.41 | C | 2 | 96.9 | | 80 | 120 | MS |

Comments:

6
DUPLICATES

Lab Name: Katahdin Analytical Services
Matrix: SOIL
Percent Solids: 95.8

Client Field ID: PR-SS-C1-0006D
SDG Name: SJ4101
Lab Sample ID: SJ4101-001D

Concentration Units : mg/Kg drywt

| Analyte | Control Limits | Sample Result | C | Duplicate | Result | C | RPD | Q | M |
|-------------|----------------|---------------|---|-----------|--------|---|-----|---|----|
| LEAD, TOTAL | | 1.6694 | | 1.5155 | | | 9.7 | | MS |

Comments:

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF09IMS2**Matrix:** SOIL**SDG Name:** SJ4101**QC Batch ID:** JF09IMS2**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 10.1 | 100.7 | 84 | 118 |

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF09IMS3**Matrix:** SOIL**SDG Name:** SJ4101**QC Batch ID:** JF09IMS3**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 10.0 | 100.2 | 84 | 118 |

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services**Client Field ID:** PR-SS-C1-0006L**Matrix:** SOIL**SDG Name:** SJ4101**Lab Sample ID:** SJ4101-001L**Concentration Units: ug/L**

| Analyte | Sample Result | C | Dilution | Result | C | % Difference | Q | M |
|----------------|----------------------|----------|-----------------|---------------|----------|---------------------|----------|----------|
| LEAD, TOTAL | 2.41 | | | 2.40 | | 0.4 | | MS |

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 3/14/2016**

| Analyte | Concentration Units: ug/L | | |
|------------|---------------------------|-------|----|
| | PQL/LOQ | IDL | M |
| ALUMINUM | 300 | 1.4 | MS |
| CALCIUM | 100 | 6.9 | MS |
| IRON | 100 | 6.2 | MS |
| LEAD | 0.20 | 0.041 | MS |
| MAGNESIUM | 100 | 0.65 | MS |
| MOLYBDENUM | 1.0 | 0.021 | MS |
| POTASSIUM | 1000 | 13. | MS |
| SODIUM | 1000 | 2.9 | MS |

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 1/26/2011**

| Analyte | LOD | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| LEAD | 0.010 | mg/Kg | MS | SW846 3050B / SW846 6020A |

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 1/26/2011**

| Analyte | MDL | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| LEAD | 0.0014 | mg/kg | MS | SW846 3050B / SW846 6020A |

ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 4/4/2016**

Concentration Units: ug/L

| Analyte | Integration Time (sec) | Linear Range | M |
|----------------|-------------------------------|---------------------|----------|
| ALUMINUM | 0.01 | 200000 | MS |
| CALCIUM | 0.03 | 200000 | MS |
| IRON | 0.03 | 100000 | MS |
| LEAD | 0.10 | 2000 | MS |
| MAGNESIUM | 0.05 | 200000 | MS |
| MOLYBDENUM | 0.10 | 1000 | MS |
| POTASSIUM | 0.01 | 200000 | MS |
| SODIUM | 0.01 | 200000 | MS |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF09IMS2**Matrix:** SOIL**SDG Name:** SJ4101**Method:** MS**Prep Date:** 06/09/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF09IMS2 | LC SOJF09IMS2 | 1 | 0.1 | |
| PBSJF09IMS2 | PBSJF09IMS2 | 1 | 0.1 | |
| PR-SS-C1-0006 | SJ4101-001 | 1.51 | 0.1 | A |
| PR-SS-C1-0006D | SJ4101-001D | 1.5 | 0.1 | A |
| PR-SS-C1-0006S | SJ4101-001S | 1.51 | 0.1 | A |
| PR-SB-C1-0612 | SJ4101-002 | 1.82 | 0.1 | A |
| PR-SS-C2-0006 | SJ4101-003 | 1.86 | 0.1 | A |
| PR-SB-C2-0612 | SJ4101-004 | 1.88 | 0.1 | A |
| PR-SS-C3-0006 | SJ4101-005 | 1.79 | 0.1 | A |
| PR-SB-C3-0612 | SJ4101-006 | 1.72 | 0.1 | A |
| PR-SS-C4-0006 | SJ4101-007 | 1.65 | 0.1 | A |
| PR-SB-C4-0612 | SJ4101-008 | 1.61 | 0.1 | A |
| PR-SS-C5-0006 | SJ4101-009 | 1.67 | 0.1 | A |
| PR-SB-C5-0612 | SJ4101-010 | 1.58 | 0.1 | A |
| PR-SS-C6-0006 | SJ4101-011 | 1.68 | 0.1 | A |
| PR-SB-C6-0612 | SJ4101-012 | 1.64 | 0.1 | A |
| PR-SS-D6-0006 | SJ4101-013 | 1.75 | 0.1 | A |
| PR-SB-D6-0612 | SJ4101-014 | 1.85 | 0.1 | A |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF09IMS3**Matrix:** SOIL**SDG Name:** SJ4101**Method:** MS**Prep Date:** 06/09/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF09IMS3 | LC SOJF09IMS3 | 1 | 0.1 | |
| PBSJF09IMS3 | PBSJF09IMS3 | 1 | 0.1 | |
| PR-SS-D5-0006 | SJ4101-015 | 1.64 | 0.1 | A |
| PR-SB-D5-0612 | SJ4101-016 | 1.53 | 0.1 | A |
| PR-SS-D4-0006 | SJ4101-017 | 1.75 | 0.1 | A |
| PR-SB-D4-0612 | SJ4101-018 | 1.61 | 0.1 | A |
| PR-SS-D3-0006 | SJ4101-019 | 1.56 | 0.1 | A |
| PR-SB-D3-0612 | SJ4101-020 | 1.38 | 0.1 | A |
| PR-SS-D2-0006 | SJ4101-021 | 1.42 | 0.1 | A |
| PR-SB-D2-0612 | SJ4101-022 | 1.59 | 0.1 | A |
| PR-SS-D1-0006 | SJ4101-023 | 1.8 | 0.1 | A |
| PR-SB-D1-0612 | SJ4101-024 | 1.8 | 0.1 | A |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4101

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF09A

Date: 6/9/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| 6020 Tune | | 1 | 15:30 | | | | | | | |
| 200.8 Tune | | 1 | 15:33 | | | | | | | |
| Cal Blank | | 1 | 16:19 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| Cal Std | | 1 | 16:23 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICV | | 1 | 16:26 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICB | | 1 | 16:29 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| PQL | | 1 | 16:33 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 16:36 | | | | | | | |
| ZZZZZZ | | 1 | 16:39 | | | | | | | |
| ZZZZZZ | | 1 | 16:42 | | | | | | | |
| ICSA | | 1 | 16:46 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICSAB | | 1 | 16:49 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 16:53 | | | | | | | |
| ZZZZZZ | | 1 | 16:56 | | | | | | | |
| CCV | | 1 | 17:00 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 17:03 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 17:07 | | | | | | | |
| ZZZZZZ | | 5 | 17:10 | | | | | | | |
| ZZZZZZ | | 1 | 17:13 | | | | | | | |
| ZZZZZZ | | 1 | 17:17 | | | | | | | |
| ZZZZZZ | | 1 | 17:20 | | | | | | | |
| ZZZZZZ | | 1 | 17:24 | | | | | | | |
| ZZZZZZ | | 1 | 17:27 | | | | | | | |
| ZZZZZZ | | 1 | 17:31 | | | | | | | |
| ZZZZZZ | | 1 | 17:34 | | | | | | | |
| ZZZZZZ | | 5 | 17:37 | | | | | | | |
| CCV | | 1 | 17:41 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4101

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF09A

Date: 6/9/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| CCB | | 1 | 17:44 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 17:48 | | | | | | | |
| ZZZZZZ | | 5 | 17:51 | | | | | | | |
| ZZZZZZ | | 5 | 17:55 | | | | | | | |
| ZZZZZZ | | 5 | 17:58 | | | | | | | |
| ZZZZZZ | | 5 | 18:02 | | | | | | | |
| ZZZZZZ | | 5 | 18:05 | | | | | | | |
| ZZZZZZ | | 5 | 18:09 | | | | | | | |
| ZZZZZZ | | 5 | 18:12 | | | | | | | |
| ZZZZZZ | | 5 | 18:16 | | | | | | | |
| ZZZZZZ | | 10 | 18:19 | | | | | | | |
| CCV | | 1 | 18:23 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 18:26 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 50 | 18:30 | | | | | | | |
| ZZZZZZ | | 10 | 18:33 | | | | | | | |
| ZZZZZZ | | 10 | 18:37 | | | | | | | |
| ZZZZZZ | | 10 | 18:40 | | | | | | | |
| ZZZZZZ | | 10 | 18:44 | | | | | | | |
| ZZZZZZ | | 10 | 18:48 | | | | | | | |
| ZZZZZZ | | 10 | 18:51 | | | | | | | |
| ZZZZZZ | | 10 | 18:55 | | | | | | | |
| ZZZZZZ | | 10 | 18:58 | | | | | | | |
| ZZZZZZ | | 10 | 19:02 | | | | | | | |
| CCV | | 1 | 19:05 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 19:09 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 19:12 | | | | | | | |
| ZZZZZZ | | 10 | 19:16 | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4101

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF09A

Date: 6/9/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|----------------|------|-------|----------|----|-------|----|----|---|----|--|
| ZZZZZZ | | 10 | 19:19 | | | | | | | | |
| ZZZZZZ | | 10 | 19:23 | | | | | | | | |
| ZZZZZZ | | 10 | 19:26 | | | | | | | | |
| ZZZZZZ | | 10 | 19:30 | | | | | | | | |
| ZZZZZZ | | 10 | 19:33 | | | | | | | | |
| ZZZZZZ | | 10 | 19:37 | | | | | | | | |
| ZZZZZZ | | 10 | 19:40 | | | | | | | | |
| ZZZZZZ | | 10 | 19:44 | | | | | | | | |
| CCV | | 1 | 19:47 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 19:51 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZZ | | 10 | 19:54 | | | | | | | | |
| ZZZZZZ | | 10 | 19:58 | | | | | | | | |
| PBSJF09IMS2 | | 5 | 20:01 | | | Pb | | | | | |
| LCSOJF09IMS2 | | 5 | 20:05 | | | Pb | | | | | |
| ZZZZZZ | | 10 | 20:08 | | | | | | | | |
| ZZZZZZ | | 10 | 20:12 | | | | | | | | |
| ZZZZZZ | | 10 | 20:15 | | | | | | | | |
| ZZZZZZ | | 10 | 20:19 | | | | | | | | |
| ZZZZZZ | | 10 | 20:23 | | | | | | | | |
| ZZZZZZ | | 10 | 20:26 | | | | | | | | |
| CCV | | 1 | 20:30 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 20:33 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| SJ4101-001 | PR-SS-C1-0006 | 10 | 20:37 | | | Pb | | | | | |
| SJ4101-001L | PR-SS-C1-0006L | 50 | 20:40 | | | Pb | | | | | |
| SJ4101-001A | PR-SS-C1-0006A | 10 | 20:44 | | | Pb | | | | | |
| SJ4101-001D | PR-SS-C1-0006D | 10 | 20:48 | | | Pb | | | | | |
| SJ4101-001S | PR-SS-C1-0006S | 10 | 20:51 | | | Pb | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4101

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF09A

Date: 6/9/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | | | |
|---------------|---------------|------|-------|----------|----|-------|----|----|---|----|--|--|--|
| SJ4101-002 | PR-SB-C1-0612 | 10 | 20:55 | | | | Pb | | | | | | |
| SJ4101-003 | PR-SS-C2-0006 | 10 | 20:58 | | | | Pb | | | | | | |
| SJ4101-004 | PR-SB-C2-0612 | 10 | 21:02 | | | | Pb | | | | | | |
| SJ4101-005 | PR-SS-C3-0006 | 10 | 21:05 | | | | Pb | | | | | | |
| SJ4101-006 | PR-SB-C3-0612 | 10 | 21:09 | | | | Pb | | | | | | |
| CCV | | 1 | 21:12 | Al | Ca | Fe Pb | Mg | Mo | K | Na | | | |
| CCB | | 1 | 21:16 | Al | Ca | Fe Pb | Mg | Mo | K | Na | | | |
| SJ4101-007 | PR-SS-C4-0006 | 10 | 21:19 | | | | Pb | | | | | | |
| SJ4101-008 | PR-SB-C4-0612 | 10 | 21:23 | | | | Pb | | | | | | |
| SJ4101-009 | PR-SS-C5-0006 | 10 | 21:26 | | | | Pb | | | | | | |
| SJ4101-010 | PR-SB-C5-0612 | 10 | 21:30 | | | | Pb | | | | | | |
| SJ4101-011 | PR-SS-C6-0006 | 10 | 21:33 | | | | Pb | | | | | | |
| SJ4101-012 | PR-SB-C6-0612 | 10 | 21:37 | | | | Pb | | | | | | |
| SJ4101-013 | PR-SS-D6-0006 | 10 | 21:40 | | | | Pb | | | | | | |
| SJ4101-014 | PR-SB-D6-0612 | 10 | 21:44 | | | | Pb | | | | | | |
| PBSJF09IMS3 | | 5 | 21:48 | | | | Pb | | | | | | |
| LCSOJF09IMS3 | | 5 | 21:51 | | | | Pb | | | | | | |
| CCV | | 1 | 21:55 | Al | Ca | Fe Pb | Mg | Mo | K | Na | | | |
| CCB | | 1 | 21:58 | Al | Ca | Fe Pb | Mg | Mo | K | Na | | | |
| SJ4101-015 | PR-SS-D5-0006 | 10 | 22:02 | | | | Pb | | | | | | |
| SJ4101-016 | PR-SB-D5-0612 | 10 | 22:05 | | | | Pb | | | | | | |
| SJ4101-017 | PR-SS-D4-0006 | 10 | 22:09 | | | | Pb | | | | | | |
| SJ4101-018 | PR-SB-D4-0612 | 10 | 22:12 | | | | Pb | | | | | | |
| SJ4101-019 | PR-SS-D3-0006 | 10 | 22:16 | | | | Pb | | | | | | |
| SJ4101-020 | PR-SB-D3-0612 | 10 | 22:20 | | | | Pb | | | | | | |
| SJ4101-021 | PR-SS-D2-0006 | 10 | 22:23 | | | | Pb | | | | | | |
| SJ4101-022 | PR-SB-D2-0612 | 10 | 22:27 | | | | Pb | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4101

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF09A

Date: 6/9/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|---------------|------|-------|----------|----|-------|----|----|---|----|--|
| SJ4101-023 | PR-SS-D1-0006 | 10 | 22:30 | | | Pb | | | | | |
| SJ4101-024 | PR-SB-D1-0612 | 10 | 22:34 | | | Pb | | | | | |
| CCV | | 1 | 22:37 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 22:41 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZZ | | 10 | 22:44 | | | | | | | | |
| ZZZZZZ | | 10 | 22:48 | | | | | | | | |
| ZZZZZZ | | 10 | 22:51 | | | | | | | | |
| ZZZZZZ | | 10 | 22:55 | | | | | | | | |
| ZZZZZZ | | 10 | 22:58 | | | | | | | | |
| ZZZZZZ | | 10 | 23:02 | | | | | | | | |
| ZZZZZZ | | 10 | 23:05 | | | | | | | | |
| ZZZZZZ | | 10 | 23:09 | | | | | | | | |
| ZZZZZZ | | 10 | 23:13 | | | | | | | | |
| ZZZZZZ | | 10 | 23:16 | | | | | | | | |
| CCV | | 1 | 23:19 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 23:23 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZZ | | 50 | 23:27 | | | | | | | | |
| ZZZZZZ | | 10 | 23:30 | | | | | | | | |
| ZZZZZZ | | 10 | 23:34 | | | | | | | | |
| ZZZZZZ | | 10 | 23:37 | | | | | | | | |
| ZZZZZZ | | 5 | 23:41 | | | | | | | | |
| ZZZZZZ | | 5 | 23:44 | | | | | | | | |
| ZZZZZZ | | 10 | 23:48 | | | | | | | | |
| ZZZZZZ | | 10 | 23:51 | | | | | | | | |
| ZZZZZZ | | 10 | 23:55 | | | | | | | | |
| ZZZZZZ | | 10 | 23:58 | | | | | | | | |
| CCV | | 1 | 0:02 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4101

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF09A

Date: 6/10/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|------|----------|----|-------|----|----|---|----|
| CCB | | 1 | 0:05 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZ | | 10 | 0:09 | | | | | | | |
| ZZZZZ | | 10 | 0:12 | | | | | | | |
| ZZZZZ | | 10 | 0:16 | | | | | | | |
| ZZZZZ | | 10 | 0:20 | | | | | | | |
| ZZZZZ | | 10 | 0:23 | | | | | | | |
| ZZZZZ | | 10 | 0:27 | | | | | | | |
| ZZZZZ | | 10 | 0:30 | | | | | | | |
| ZZZZZ | | 10 | 0:34 | | | | | | | |
| ZZZZZ | | 10 | 0:37 | | | | | | | |
| ZZZZZ | | 10 | 0:41 | | | | | | | |
| CCV | | 1 | 0:44 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 0:48 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZ | | 10 | 0:52 | | | | | | | |
| ZZZZZ | | 50 | 0:55 | | | | | | | |
| ZZZZZ | | 10 | 0:59 | | | | | | | |
| ZZZZZ | | 10 | 1:02 | | | | | | | |
| ZZZZZ | | 10 | 1:06 | | | | | | | |
| ZZZZZ | | 10 | 1:10 | | | | | | | |
| CCV | | 1 | 1:13 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 1:17 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| PQL | | 1 | 1:20 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCV | | 1 | 1:24 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 1:28 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

| ANALYTE | ORIGINAL | SDG | ORIGINAL | DUPLICATE | SDG | DUPLICATE | RL | RPD | RPD > 50% | ORIGINAL SAMPLE CONC >5xRL | DUPLICATE SAMPLE CONC >5xRL | DIFFERENCE >4XRL |
|---------|---------------|--------|----------|-----------------|--------|-----------|------|-------|-----------|----------------------------|-----------------------------|------------------|
| LEAD | PR-SB-C2-0612 | SJ4101 | 3.57 | PR-DUP05-060716 | SJ4102 | 4.15 | 0.11 | 15.03 | FALSE | TRUE | TRUE | TRUE |
| LEAD | PR-SS-C6-0006 | SJ4101 | 5.17 | PR-DUP06-060716 | SJ4102 | 4.08 | 0.12 | 23.57 | FALSE | TRUE | TRUE | TRUE |
| LEAD | PR-SS-D4-0006 | SJ4101 | 99 | PR-DUP07-060716 | SJ4102 | 268 | 0.13 | 92.10 | TRUE | TRUE | TRUE | TRUE |
| LEAD | PR-SB-E4-0612 | SJ4102 | 557 | PR-DUP08-060716 | SJ4102 | 375 | 0.13 | 39.06 | FALSE | TRUE | TRUE | TRUE |
| LEAD | PR-SB-F2-1224 | SJ4102 | 31.3 | PR-DUP09-060716 | SJ4102 | 41.3 | 0.13 | 27.55 | FALSE | TRUE | TRUE | TRUE |



TO: R. SOK **DATE:** AUGUST 9, 2016
FROM: L. GANSER **COPIES:** DV FILE
SUBJECT: DATA VALIDATION- LEAD
 NASA WALLOPS ISLAND, VIRGINIA
 SAMPLE DELIVERY GROUP (SDG) SJ4102

SAMPLES: 26/Soil

| | | | |
|-----------------|-----------------|-----------------|-----------------|
| PR-DUP05-060716 | PR-DUP06-060716 | PR-DUP07-060716 | PR-DUP08-060716 |
| PR-DUP09-060716 | PR-SB-E1-0612 | PR-SB-E2-0612 | PR-SB-E3-0612 |
| PR-SB-E4-0612 | PR-SB-E5-0612 | PR-SB-E6-0612 | PR-SB-F1-0612 |
| PR-SB-F1-1224 | PR-SB-F2-0612 | PR-SB-F2-1224 | PR-SB-F2-2436 |
| PR-SB-F3-2436 | PR-SB-F3-4860 | PR-SS-E1-0006 | PR-SS-E2-0006 |
| PR-SS-E3-0006 | PR-SS-E4-0006 | PR-SS-E5-0006 | PR-SS-E6-0006 |
| PR-SS-F1-0006 | PR-SS-F2-0006 | | |

Overview

The sample set for NASA Wallops Island, SDG SJ4102 consists of twenty six (26) soil samples. All samples were analyzed for lead. Five field duplicate pairs were included in this SDG: PR-SB-C2-0612 / PR-DUP05-060716, PR-SS-C6-0006 / PR-DUP06-060716, PR-SS-D4-0006 / PR-DUP07-060716, PR-SB-E4-0612 / PR-DUP08-060716, and PR-SB-F2-1224 / PR-DUP09-060716. Samples PR-SB-C2-0612, PR-SS-C6-0006, and PR-SS-D4-0006 were included in SDG J4101.

Samples were collected on June 7, 2016 by Tetra Tech and analyzed by Katahdin. Lead analyses were conducted in accordance to SW-846 Method 6020A analytical and reporting protocols.

The data contained in this SDG were validated with regard to the following parameters: data completeness, holding times, MS tuning, laboratory method/preparation blank results, ICP interference results, blank spike results, matrix spike/matrix spike duplicate results, laboratory duplicate results, ICP serial dilution results, field duplicate precision, and detection limits. Areas of concern with respect to data quality are listed below.

Major Problems – None.

Minor Problems

- Field duplicate imprecision (relative percent difference > 50%) was noted for field duplicate sample pair PR-SS-D4-0006 / PR-DUP07-060716. The detected lead results in samples PR-SS-D4-0006 and PR-DUP07-060716 were qualified as estimated (J).

Notes

Lead was detected in the laboratory preparation blanks at the following maximum concentrations:

| <u>Analyte</u> | <u>Maximum Concentration</u> | <u>Reporting Limit (RL) (> or <)</u> |
|---------------------|------------------------------|--|
| Lead ⁽¹⁾ | 0.027 mg/kg | < |
| Lead ⁽²⁾ | 0.115 mg/kg | > |
| Lead ⁽³⁾ | 0.010 mg/kg | < |

1 Concentration in preparation blank affecting samples in batch JF09IMS3.

To: R. SOK
SDG: SJ4102

- 2 Concentration in preparation blank affecting samples in batch JF09IMS4.
- 3 Concentration in preparation blank affecting samples in batch JF15IMS1.

Dilution factor, if applicable, was taken into consideration when evaluating for blank contamination. Samples in batch JF09IMS4, no action was taken as sample results were greater than 10 times the preparation blank results. Samples in batches JF09IMS3 and JF15IMS1, no action was taken as sample results were greater than the RL.

EXECUTIVE SUMMARY

Laboratory Performance Issues: Lead was present in the preparation blanks.

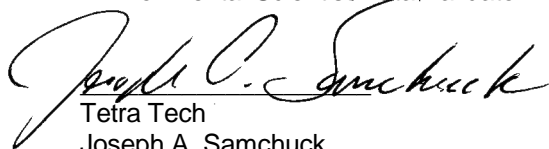
Other Factors Affecting Data Quality: Field duplicate imprecision was noted for lead in one field duplicate sample pair.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review" (August 2014). The text of this report has been formulated to address only those areas affecting data quality.

The text of this report has been formulated to address only those problem areas affecting data quality.



Tetra Tech
Leanne M. Ganser
Environmental Scientist/Data Validator



Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:

- Appendix A – Qualified Analytical Results
- Appendix B – Results as Reported by the Laboratory
- Appendix C – Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate
- Z4 = Sample activity is less than the at uncertainty at 3 standard deviations and greater than the MDC
- Z5 = Sample activity is less than the at uncertainty at 3 standard deviations and less than the MDC

| | | | | | | | | | | | | | |
|---|------------|-----------------|------|--------|-----------------|------|--------|-----------------|------|--------|-----------------|------|--|
| PROJ_NO: 07723 SDG: SJ4102 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-DUP05-060716 | | | PR-DUP06-060716 | | | PR-DUP07-060716 | | | PR-DUP08-060716 | | |
| | LAB_ID | SJ4102-013 | | | SJ4102-014 | | | SJ4102-015 | | | SJ4102-016 | | |
| | SAMP_DATE | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 97.2 | | | 95.7 | | | 90.0 | | | 92.6 | | |
| | DUP_OF | PR-SB-C2-0612 | | | PR-SS-C6-0006 | | | PR-SS-D4-0006 | | | PR-SB-E4-0612 | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 4.15 | | | 4.08 | | | 268 | J | G | 375 | | | |

| | | | | | | | | | | | | | |
|---|------------|-----------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4102 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-DUP09-060716 | | | PR-SB-E1-0612 | | | PR-SB-E2-0612 | | | PR-SB-E3-0612 | | |
| | LAB_ID | SJ4102-027 | | | SJ4102-002 | | | SJ4102-004 | | | SJ4102-006 | | |
| | SAMP_DATE | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 92.7 | | | 93.0 | | | 96.6 | | | 93.4 | | |
| | DUP_OF | PR-SB-F2-1224 | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 41.3 | | | 76.6 | | | 101 | | | 91.5 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4102 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-SB-E4-0612 | | | PR-SB-E5-0612 | | | PR-SB-E6-0612 | | | PR-SB-F1-0612 | | |
| | LAB_ID | SJ4102-008 | | | SJ4102-010 | | | SJ4102-012 | | | SJ4102-018 | | |
| | SAMP_DATE | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 93.0 | | | 94.9 | | | 94.1 | | | 88.7 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 557 | | | 169 | | | 5.1 | | | 10.7 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4102 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-SB-F1-1224 | | | PR-SB-F2-0612 | | | PR-SB-F2-1224 | | | PR-SB-F2-2436 | | |
| | LAB_ID | SJ4102-019 | | | SJ4102-022 | | | SJ4102-023 | | | SJ4102-024 | | |
| | SAMP_DATE | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 86.0 | | | 93.8 | | | 92.8 | | | 93.8 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 34.9 | | | 136 | | | 31.3 | | | 33 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4102 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-SB-F3-2436 | | | PR-SB-F3-4860 | | | PR-SS-E1-0006 | | | PR-SS-E2-0006 | | |
| | LAB_ID | SJ4102-028 | | | SJ4102-030 | | | SJ4102-001 | | | SJ4102-003 | | |
| | SAMP_DATE | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 97.5 | | | 96.6 | | | 93.6 | | | 95.3 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 209 | | | 111 | | | 147 | | | 98.7 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4102 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-SS-E3-0006 | | | PR-SS-E4-0006 | | | PR-SS-E5-0006 | | | PR-SS-E6-0006 | | |
| | LAB_ID | SJ4102-005 | | | SJ4102-007 | | | SJ4102-009 | | | SJ4102-011 | | |
| | SAMP_DATE | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 93.0 | | | 89.1 | | | 92.6 | | | 92.4 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 486 | | | 507 | | | 312 | | | 25.9 | | | |

| | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4102 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-SS-F1-0006 | | | PR-SS-F2-0006 | | |
| | LAB_ID | SJ4102-017 | | | SJ4102-021 | | |
| | SAMP_DATE | 6/7/2016 | | | 6/7/2016 | | |
| | QC_TYPE | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 88.2 | | | 97.3 | | |
| | DUP_OF | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 41.4 | | | 721 | | | |

Appendix B

Results as Reported by the Laboratory

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-E1-0006

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 93.6

Lab Sample ID: SJ4102-001

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 147 | | | MS | 10 | 0.14 | 0.0095 | 0.068 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-E1-0612

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 93.0

Lab Sample ID: SJ4102-002

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 76.6 | | | MS | 10 | 0.12 | 0.0088 | 0.062 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-E2-0006

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 95.3

Lab Sample ID: SJ4102-003

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 98.7 | | | MS | 10 | 0.12 | 0.0086 | 0.062 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-E2-0612

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 96.6

Lab Sample ID: SJ4102-004

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 101 | | | MS | 10 | 0.12 | 0.0087 | 0.062 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-E3-0006

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 93.0

Lab Sample ID: SJ4102-005

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 486 | | | MS | 10 | 0.13 | 0.0090 | 0.064 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-E3-0612

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 93.4

Lab Sample ID: SJ4102-006

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 91.5 | | | MS | 10 | 0.11 | 0.0077 | 0.055 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-E4-0006

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 89.1

Lab Sample ID: SJ4102-007

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 507 | | | MS | 10 | 0.12 | 0.0087 | 0.062 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-E4-0612

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 93.0

Lab Sample ID: SJ4102-008

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 557 | | | MS | 10 | 0.13 | 0.0090 | 0.064 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services**Client Field ID:** PR-SS-E5-0006**Matrix:** SOIL**SDG Name:** SJ4102**Percent Solids:** 92.6**Lab Sample ID:** SJ4102-009**Concentration Units :** mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 312 | | | MS | 10 | 0.12 | 0.0088 | 0.063 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-E5-0612

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 94.9

Lab Sample ID: SJ4102-010

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 169 | B | MS | 10 | 0.12 | 0.0086 | 0.061 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-E6-0006

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 92.4

Lab Sample ID: SJ4102-011

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | LOQ | ADJUSTED | |
|-----------|-------------|---------------|---|----|----|------|--------|----------|-----|
| | | | | | | | | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 25.9 | B | MS | 10 | 0.11 | 0.0078 | 0.055 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-E6-0612

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 94.1

Lab Sample ID: SJ4102-012

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 5.10 | B | MS | 10 | 0.12 | 0.0084 | 0.060 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-DUP05-060716

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 97.2

Lab Sample ID: SJ4102-013

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 4.15 | B | MS | 10 | 0.12 | 0.0085 | 0.060 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-DUP06-060716

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 95.7

Lab Sample ID: SJ4102-014

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 4.08 | B | MS | 10 | 0.12 | 0.0085 | 0.061 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-DUP07-060716

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 90.0

Lab Sample ID: SJ4102-015

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 268 | B | MS | 10 | 0.15 | 0.010 | 0.074 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-DUP08-060716

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 92.6

Lab Sample ID: SJ4102-016

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 375 | B | MS | 10 | 0.14 | 0.010 | 0.072 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-F1-0006

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 88.2

Lab Sample ID: SJ4102-017

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 41.4 | B | MS | 10 | 0.15 | 0.011 | 0.075 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-F1-0612

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 88.7

Lab Sample ID: SJ4102-018

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 10.7 | B | MS | 10 | 0.16 | 0.011 | 0.079 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-F1-1224

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 86.0

Lab Sample ID: SJ4102-019

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 34.9 | B | MS | 10 | 0.15 | 0.010 | 0.074 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-F2-0006

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 97.3

Lab Sample ID: SJ4102-021

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 721 | B | MS | 10 | 0.12 | 0.0084 | 0.060 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-F2-0612

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 93.8

Lab Sample ID: SJ4102-022

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | LOQ | ADJUSTED | |
|-----------|-------------|---------------|----|----|----|------|--------|----------|-----|
| | | | | | | | | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 136 | NA | MS | 10 | 0.13 | 0.0093 | 0.066 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-F2-1224

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 92.8

Lab Sample ID: SJ4102-023

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 31.3 | B | MS | 10 | 0.13 | 0.0089 | 0.063 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-F2-2436

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 93.8

Lab Sample ID: SJ4102-024

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 33.0 | B | MS | 10 | 0.11 | 0.0078 | 0.056 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-DUP09-060716

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 92.7

Lab Sample ID: SJ4102-027

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 41.3 | B | MS | 10 | 0.11 | 0.0077 | 0.055 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-F3-2436

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 97.5

Lab Sample ID: SJ4102-028

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|------|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 209 | | N*BA | MS | 10 | 0.13 | 0.0090 | 0.064 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-F3-4860

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 96.6

Lab Sample ID: SJ4102-030

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 111 | | | MS | 10 | 0.17 | 0.012 | 0.086 |

Comments:

Appendix C

Support Documentation



**SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS, INC.
NASA WALLOPS FLIGHT FACILITY-MBFR
SJ4102**

Sample Receipt

The following samples were received on June 08, 2016 and were logged in under Katahdin Analytical Services work order number SJ4102 for a hardcopy due date of June 27, 2016.

| KATAHDIN <u>Sample No.</u> | TTNUS <u>Sample Identification</u> |
|-------------------------------|---------------------------------------|
| SJ4102-1 | PR-SS-E1-0006 |
| SJ4102-2 | PR-SB-E1-0612 |
| SJ4102-3 | PR-SS-E2-0006 |
| SJ4102-4 | PR-SB-E2-0612 |
| SJ4102-5 | PR-SS-E3-0006 |
| SJ4102-6 | PR-SB-E3-0612 |
| SJ4102-7 | PR-SS-E4-0006 |
| SJ4102-8 | PR-SB-E4-0612 |
| SJ4102-9 | PR-SS-E5-0006 |
| SJ4102-10 | PR-SB-E5-0612 |
| SJ4102-11 | PR-SS-E6-0006 |
| SJ4102-12 | PR-SB-E6-0612 |
| SJ4102-13 | PR-DUP05-060716 |
| SJ4102-14 | PR-DUP06-060716 |
| SJ4105-15 | PR-DUP07-060716 |
| SJ4102-16 | PR-DUP08-060716 |
| SJ4102-17 | PR-SS-F1-0006 |
| SJ4102-18 | PR-SB-F1-0612 |
| SJ4102-19 | PR-SB-F1-1224 |
| SJ4102-21 | PR-SS-F2-0006 |
| SJ4102-22 | PR-SB-F2-0612 |
| SJ4102-23 | PR-SB-F2-1224 |
| SJ4102-24 | PR-SB-F2-2436 |
| SJ4102-27 | PR-DUP09-060716 |
| SJ4102-28 | PR-SB-F3-2436 |

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Metals Analysis

The samples of Katahdin Work Order SJ4102 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Solid-matrix Katahdin Sample Numbers SJ4102-(1-9 and 22) were digested for ICP-MS analysis on 06/09/16 (QC Batch JF09IMS3) in accordance with USEPA Method 3050B. Katahdin Sample Number SJ4102-22 was prepared with a matrix-spiked aliquot and laboratory duplicate per client request.

Katahdin Sample Numbers SJ4102-(10-19,21,23,24,27,28) were digested for ICP-MS analysis on 06/09/16 (QC Batch JF09IMS4). Katahdin Sample Number SJ4102-28 was prepared with a matrix-spiked aliquot and laboratory duplicate per client request. The measured lead concentration in the preparation blank (0.115 mg/Kg drywt); however all lead concentrations for samples in the Katahdin Work Order SJ4102 were greater than 10 times that of the blank. No corrective action was required.

Katahdin Sample Numbers SJ4102-30 was digested for ICP-MS analysis on 06/15/16 (QC Batch JF15IMS1).

ICP-MS analyses of Katahdin Work Order SJ4102 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Sample digestates for Katahdin Work Order SJ4102 were diluted by a factor of 10 in accordance with the project limits.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

| Internal Standard Element | Associated Analytes |
|----------------------------|--|
| Lithium | Beryllium, Boron |
| Scandium | Sodium, Magnesium, Aluminum, Silicon, Potassium, Calcium |
| Germanium or Yttrium | Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Strontium, Molybdenum, Silver, Cadmium |
| Terbium | Tin, Antimony, Barium, Tungsten |
| Bismuth | Lead, Thallium, Thorium, Uranium |

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Matrix QC Summary

The measured recoveries of lead in the matrix-spiked aliquots of Katahdin Sample Numbers SJ4102-22 and 28 are not within the project acceptance criteria (80% - 120% recovery of the added element), at 706 and 328% recovery, respectively.

The laboratory duplicate analyses of Katahdin Sample Number SJ4102-22 is within the laboratory's acceptance limit (<20% relative difference between duplicate aliquots) for lead. The laboratory duplicate analyses of Katahdin Sample Number SJ4102-28 is not within the laboratory's acceptance limit (<20% relative difference between duplicate aliquots) for lead at 21.8%.

The serial dilution analyses of Katahdin Sample Numbers SJ4102-22 and 28 are within the project acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOD) for lead.

The measured recoveries of lead in the post-digestion spiked aliquot of Katahdin Sample Numbers SJ4102-22 and 28 are not within the acceptance criteria (75% - 125% recovery of the added element) at 245 and -80% recovery, respectively.

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IHP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the LOQ are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQs, MDLs, and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are

flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

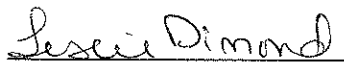
The samples of Work Order SJ4102 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times, and all quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.


06.28.16
Leslie Dimond
Quality Assurance Officer

| | | |
|---------------------------------------|------------------------------|------------------------------------|
| Client: <i>Tetra Tech</i> | KAS PM: <i>JO</i> | Sampled By: <i>Client</i> |
| Project: | KIMS Entry By: <i>JO</i> | Delivered By: <i>FedEx</i> |
| KAS Work Order#: <i>554100-554103</i> | KIMS Review By: <i>JO</i> | Received By: <i>AP</i> |
| SDG #: | Cooler: <i>1</i> of <i>2</i> | Date/Time Rec.: <i>6/8/16 1000</i> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|-----------|-----|----|---|
| 1. Custody seals present / intact? | / | | | | |
| 2. Chain of Custody present in cooler? | / | | | | |
| 3. Chain of Custody signed by client? | / | | | | |
| 4. Chain of Custody matches samples? | / | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | | <i>AP</i> | | / | Temp (°C): <i>25.2 (n/a) metals only</i> |
| Samples received at <6 °C w/o freezing? | | / | | / | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | | / | | / | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | | / | | / | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | / | | / | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | / | |
| Aqueous: No bubble larger than a pea? | | | | / | |
| Soil/Sediment: | | | | / | |
| Received in airtight container? | <i>AP</i> | | | / | |
| Received in methanol? | / | | | / | |
| Methanol covering soil? | / | | | / | |
| D.I. Water - Received within 48 hour HT? | / | | | / | |
| Air: Refer to KAS COC for canister/flow controller requirements. | √ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | / | |
| 8. Proper sample containers and volume? | / | | | | |
| 9. Samples within hold time upon receipt? | / | | | | |
| 10. Aqueous samples properly preserved? | | | | / | |
| Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 | | | | / | |
| Sulfide - >9 | | | | / | |
| Cyanide - pH >12 | | | | / | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

| | | |
|---------------------------------------|------------------------------|------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>JO</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>JO</u> | Delivered By: <u>FedEx</u> |
| KAS Work Order#: <u>SJ4100-SJ4103</u> | KIMS Review By: <u>JO</u> | Received By: <u>AP</u> |
| SDG #: | Cooler: <u>2</u> of <u>2</u> | Date/Time Rec.: <u>6/8/16 1000</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | / | | | | |
| 2. Chain of Custody present in cooler? | / | | | | |
| 3. Chain of Custody signed by client? | / | | | | |
| 4. Chain of Custody matches samples? | / | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | / | | | | Temp (°C): <u>1.8</u> |
| Samples received at <6 °C w/o freezing? | / | | | | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | / | | | | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | / | | | | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | / | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | / | |
| Aqueous: No bubble larger than a pea? | | | | / | |
| Soil/Sediment: | | | | | |
| Received in airtight container? | / | | | | |
| Received in methanol? | / | | | | |
| Methanol covering soil? | / | | | | |
| D.I. Water - Received within 48 hour HT? | / | | | | |
| Air: Refer to KAS COC for canister/flow controller requirements. | √ if air included | | | | |
| 7. Trip Blank present in cooler? | / | | | | |
| 8. Proper sample containers and volume? | / | | | | |
| 9. Samples within hold time upon receipt? | / | | | | |
| 10. Aqueous samples properly preserved? | | | | / | |
| Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 | | | | / | |
| Sulfide - >9 | | | | / | |
| Cyanide - pH >12 | | | | / | |

* Log-in Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.



600 Technology Way
Scarborough, ME 04074
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Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
PRINT LEGIBLY IN PEN

Page 5 of 7

Client: See Page 1 Contact: 1 Phone #: () () Fax #: () ()

Address: See Page 1 City: 1 State: 1 Zip Code: 1

Purchase Order #: 1 Proj. Name / No.: 1 Katahdin Quote #: 1

Bill (if different than above): 1 Address: 1

Sampler (Print / Sign): 1 Copies To: 1

LAB USE ONLY: WORK ORDER #: ST4102
KATAHDIN PROJECT NUMBER: 1

REMARKS: 1

SHIPPING INFO: FED EX UPS CLIENT

AIRBILL NO: 1

TEMP °C: 1 TEMP BLANK INTACT NOT INTACT

| ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. |
| O | Y | O | Y | O | Y | O | Y | O | Y | O | Y |

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | | | | | | | | | | | | |
|----------------------|--------------------|--------|---------------|---|--|--|--|--|--|--|--|--|--|--|--|
| PR-SS-E1-0006 | 6-7-16 / 1326 | SO | 1 | 1 | | | | | | | | | | | |
| PR-SB-E1-0612 | / 1327 | | 1 | 1 | | | | | | | | | | | |
| PR-SS-E2-0006 | / 1334 | | 1 | 1 | | | | | | | | | | | |
| PR-SB-E2-0612 | / 1335 | | 1 | 1 | | | | | | | | | | | |
| PR-SS-E3-0006 | / 1343 | | 1 | 1 | | | | | | | | | | | |
| PR-SB-E3-0612 | / 1344 | | 1 | 1 | | | | | | | | | | | |
| PR-SS-E4-0006 | / 1352 | | 1 | 1 | | | | | | | | | | | |
| PR-SB-E4-0612 | / 1353 | | 1 | 1 | | | | | | | | | | | |
| PR-SS-E5-0006 | / 1402 | | 1 | 1 | | | | | | | | | | | |
| PR-SB-E5-0612 | / 1403 | | 1 | 1 | | | | | | | | | | | |
| PR-SS-E6-0006 | / 1411 | | 1 | 1 | | | | | | | | | | | |
| PR-SB-E6-0612 | / 1412 | | 1 | 1 | | | | | | | | | | | |
| PR-Dup05-060716 | / 1035 | | 1 | 1 | | | | | | | | | | | |
| PR-Dup06-060716 | / 1200 | | 1 | 1 | | | | | | | | | | | |
| PR-Dup07-060716 | / 1240 | | 1 | 1 | | | | | | | | | | | |
| PR-Dup08-060716 | / 1300 | | 1 | 1 | | | | | | | | | | | |

COMMENTS: 1

| | | | | | |
|------------------------------|-------------|--------------------------|------------------------------|-------------|--------------------------|
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |
| <u>[Signature]</u> | 6-7-16 1700 | FedEx | <u>[Signature]</u> | | |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |
| <u>[Signature]</u> | 6/7/16 1000 | <u>[Signature]</u> | <u>[Signature]</u> | | |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000013



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

See Page 1

| | | | |
|--|---------|------------------------|----------------------|
| Client | Contact | Phone # () () () | Fax # () () () |
| Address | | City | State |
| Purchase Order # | | Proj. Name / No. | Katahdin Quote # |
| Bill (if different than above) Address | | | |
| Sampler (Print / Sign) | | | Copies To: |

LAB USE ONLY

WORK ORDER # 8407/ST4103
 KATAHDIN PROJECT NUMBER _____

REMARKS: _____

SHIPPING INFO: FED EX UPS CLIENT

AIRBILL NO: _____

TEMP °C _____ TEMP BLANK INTACT NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

| * | Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Filt. | | Filt. | | Filt. | | Filt. | | Filt. | | Filt. | | Filt. | |
|---|---------------------------|--------------------|--------|---------------|--------------------------------|------------|-----------|-----|-------------------------|------|-------|---|-------|---|-------|---|-------|---|
| | | | | | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N |
| | | | | | Lead, Copper, Zinc and TPH-DRO | Total BTEX | TCMP VOCs | EOX | TCMP SVOCs, Metals, DRO | Lead | | | | | | | | |
| | MBFR-Back Fil. 101-060716 | 6-7-16 / 1120 | SO | 5 | 1 | 4 | | | | | | | | | | | | |
| | MBFR-Top Soil 101-060716 | / 1130 | SO | 5 | 1 | 4 | | | | | | | | | | | | |
| | PR-SOCHAR01-0024 | / 1546 | SO | 3 | | | 1 | 1 | 1 | | | | | | | | | |
| | PR-SOCHAR02-0024 | / 1550 | SO | 3 | | | 1 | 1 | 1 | | | | | | | | | |
| | PR-SS-F1-0006 | / 1445 | | 1 | | | | | | 1 | | | | | | | | |
| | PR-SB-F1-0612 | / 1447 | | 1 | | | | | | 1 | | | | | | | | |
| | PR-SB-F1-1224 | / 1449 | | 1 | | | | | | 1 | | | | | | | | |
| | PR-SB-F1-2436 | / 1451 | | 1 | | | | | | 1 | | | | | | | | |
| | PR-SS-F2-0006 | / 1510 | | 1 | | | | | | 1 | | | | | | | | |
| | PR-SB-F2-0612 | / 1512 | | 2 | | | | | | 2 | | | | | | | | |
| | PR-SB-F2-1224 | / 1514 | | 1 | | | | | | 1 | | | | | | | | |
| | PR-SB-F2-2436 | / 1516 | | 1 | | | | | | 1 | | | | | | | | |
| | PR-SB-F2-3648 | / 1518 | | 1 | | | | | | 1 | | | | | | | | |
| | PR-SB-F2-4860 | / 1520 | | 1 | | | | | | 1 | | | | | | | | |
| | PR-Dup09-060716 | / 1511 | | 1 | | | | | | 1 | | | | | | | | |
| | PR-SB-F3-2436 | / 1545 | | 1 | | | | | | 1 | | | | | | | | |

COMMENTS

| | | | | | |
|--|----------------------------|--|------------------------------|-------------|--------------------------|
| Relinquished By: (Signature) <i>[Signature]</i> | Date / Time 6/7/16 1700 | Received By: (Signature) <i>[Signature]</i> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |
| Relinquished By: (Signature) | Date / Time 6/9/16 1000 | Received By: (Signature) <i>[Signature]</i> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

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CHAIN of CUSTODY

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Page 6 of 7

Client: _____ Contact: _____ Phone #: () _____ Fax #: () _____

Address: _____ City: _____ State: _____ Zip Code: _____

Purchase Order #: _____ Proj. Name / No: _____ Katahdin Quote #: _____

Bill (if different than above): _____ Address: _____

Sampler (Print / Sign): _____ Copies To: _____

LAB USE ONLY WORK ORDER # _____
 KATAHDIN PROJECT NUMBER _____

REMARKS: _____

SHIPPING INFO: FED EX UPS CLIENT

AIRBILL NO: _____

TEMP °C: _____ TEMP BLANK INTACT NOT INTACT

| * Sample Description | | Date / Time | Matrix | No. of CATS | ANALYSIS AND CONTAINER TYPE RESERVATIVES | | | | | | | | | | | | | | | | | |
|------------------------------|--|-------------|--------|-------------|--|---|---|------|---|---|------|---|---|------|---|---|------|---|---|------|--------|---|
| | | | | | Fill | Y | N | Fill | Y | N | Fill | Y | N | Fill | Y | N | Fill | Y | N | Fill | Y | N |
| MBFR-R-47401-0671G71W / 1420 | | | So | 5 | 1 | 4 | | | | | | | | | | | | | | | | |
| MBFR-Top Soil / 130 | | | So | 5 | 1 | 4 | | | | | | | | | | | | | | | | |
| PR-SOIL01-0024 | | 1546 | So | 3 | | | | | | | | | | | | | | | | | | |
| PR-SOCHAR02-0024 | | 1550 | So | 3 | | | | | | | | | | | | | | | | | | |
| PR-SS-F1-0006 | | 1449 | | 1 | | | | | | | | | | | | | | | | | | |
| PR-SB-F1-0612 | | 1447 | | 1 | | | | | | | | | | | | | | | | | | |
| PR-SB-F1-1224 | | 1447 | | 1 | | | | | | | | | | | | | | | | | | |
| PR-SB-F1-2436 | | HOLD / 1451 | | 1 | | | | | | | | | | | | | | | | | | |
| PR-SS-F2-0006 | | 1510 | | 1 | | | | | | | | | | | | | | | | | | |
| PR-SB-F2-0012 | | 1510 | | 2 | | | | | | | | | | | | | | | | | 2MSMSD | |
| PR-SB-F2-1224 | | 1511 | | 1 | | | | | | | | | | | | | | | | | | |
| PR-SB-F2-2436 | | 1510 | | 1 | | | | | | | | | | | | | | | | | | |
| PR-SB-F2-3648 | | HOLD / 1518 | | 1 | | | | | | | | | | | | | | | | | | |
| PR-SB-F2-4860 | | HOLD / 1520 | | 1 | | | | | | | | | | | | | | | | | | |
| PR-Dup09-06676 | | 1511 | | 1 | | | | | | | | | | | | | | | | | | |
| PR-SB-F3-2436 | | 1545 | | 1 | | | | | | | | | | | | | | | | | | |

COMMENTS: _____

| | | | | | |
|------------------------------------|-------------------------|--------------------------------|------------------------------------|--------------------|--------------------------------|
| Relinquished By: (Signature) _____ | Date / Time: 2/16/17 00 | Received By: (Signature) FedEx | Relinquished By: (Signature) _____ | Date / Time: _____ | Received By: (Signature) _____ |
| Relinquished By: (Signature) _____ | Date / Time: _____ | Received By: (Signature) _____ | Relinquished By: (Signature) _____ | Date / Time: _____ | Received By: (Signature) _____ |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.



200 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-6925

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client: _____ Contact: _____ Phone #: () ()
 Address: _____ City: _____ State: _____ Zip Code: _____
 Purchase Order #: _____ Proj Name / No.: _____ Katahdin Quote #: _____
 Bill (if different than above): _____ Address: _____
 Sampler (Print / Sign): _____ Copies To: _____

LAB USE ONLY WORK ORDER # _____
 KATAHDIN PROJECT NUMBER _____
 REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: _____
 TEMP °C: TEMP BLANK INTACT NOT INTACT

| ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill |
| OYON | OYON | OYON | OYON | OYON | OYON | OYON | OYON | OYON | OYON | OYON | OYON |
| | | | | | | | | | | | |

| * Sample Description | Date / Time | Matrix | No. of | | | | | | | | |
|----------------------|-------------|--------|------------|---|---|---|---|---|---|---|---|
| | Collected | | Containers | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| PR SB-F3-3648 | HOLD 547 | SO | 1 | | | | | | | | |
| PR SB-F3-4860 | HOLD 549 | ↓ | 1 | | | | | | | | |
| MBFR T801-660716 | 1/11/15 | MO TE | 4 | | | | | | | | |
| | | | | | | | | | | | |

COMMENTS

| | | | | | |
|------------------------------|-------------|--------------------------|------------------------------|-------------|--------------------------|
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |
| | 6/16/15 | FedEx | | | |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |
| | | | | | |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

Jennifer Obrin

From: Sok, Rob [Rob.Sok@tetrattech.com]
Sent: Wednesday, June 15, 2016 11:46 AM
To: Greg Lull
Cc: 'Jennifer Obrin'
Subject: RE: Hold samples to release

Greg,

After talking with the client, we agreed that we should release two more samples at the Pistol Range. Please prep and run the following hold samples:

PR-SB-F3-4860 and PR-SB-F4-4860
SJ4102-30 SJ4227-3

We would also like these results ASAP and will pay for a 24hr TAT if that can be accommodated.

Thanks,
Rob

From: Greg Lull [mailto:glull@katahdinlab.com]
Sent: Wednesday, June 15, 2016 9:48 AM
To: Sok, Rob <Rob.Sok@tetrattech.com>
Cc: 'Jennifer Obrin' <jobrin@katahdinlab.com>
Subject: RE: Hold samples to release

Rob:

Just want to give you the update after talking with the metals department.

We are digesting the samples below today (a nearly full day process), will get them on the instrument tonight with prelim tomorrow as soon as possible.

We're looking into sample RR-D8-1224 to see if we can pull that one, since it's now not needed.

Greg

From: Sok, Rob [mailto:Rob.Sok@tetrattech.com]
Sent: Wednesday, June 15, 2016 9:33 AM
To: Greg Lull <glull@katahdinlab.com>
Subject: FW: Hold samples to release

000000

METALS SAMPLE FLAGGING

| FLAG | SPECIFIED MEANING |
|-------------|--|
| E | The reported value is estimated because of the presence of interference (as indicated by serial dilution). |
| N | The pre-digestion spiked sample recovery is not within control limits. |
| * | The duplicate sample analysis relative percent difference (RPD) is not within control limits. |
| B | Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample. |
| A | The post-digestion spiked sample recovery is not within control limits. |
| • | Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits. |
| U | <p>The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ) (previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.</p> <p>Note: All results reported as “U” MDL have a 50% rate for false negatives compared to those results reported as “U” PQL/LOQ or “U” LOD, where the rate of false negatives is <1%.</p> |
| J | The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL). |
| Q | One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV). |

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL "U" LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level (PQL) or LOQ could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1 - pH

H2 - DO

H3 - sulfite

H4 - residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

M1 The matrix spike and/or matrix spike duplicate recovery performed on this sample was outside of the laboratory acceptance criteria. Sample matrix is suspected. The laboratory criteria was met for the Laboratory Control Sample (LCS) analyzed concurrently with this sample.

M2 The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory acceptance criteria. The native sample concentration is greater than four times the spike added concentration so the spike added could not be distinguished from the native sample concentration.

R1 The relative percent difference (RPD) between the duplicate analyses performed on this sample was outside of the laboratory acceptance criteria (when both values are greater than ten times the PQL).

MCL Maximum Contaminant Level

NL No limit

NFL No Free Liquid Present

FLP Free Liquid Present

NOD No Odor Detected

TON Threshold Odor Number

D-1 As required by Method 5210B, APHA Standard Methods for the Examination of Water and Wastewater (21st edition), the BOD value reported for this sample is 'qualified' because the check standard run concurrently with the sample analysis did not meet the criteria specified in the method (198 +/- 30.5 mg/L). These results may not be reportable for compliance purposes.

D-2 The measured final dissolved oxygen concentrations of all dilutions were less than the method-specified limit of 1 mg/L. The reported BOD result was calculated assuming a final oxygen concentration equal to 1 mg/L. The reported value should be considered a minimum value.

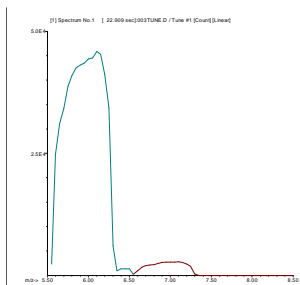
D-3 The dilution water used to prepare this sample did not meet the method and/or regulatory criteria of less than 0.2 or 0.4 mg/L dissolved oxygen (DO) uptake over the five day period of incubation. These results may not be reportable for compliance purposes.

6020 QC Tune Report

Data File: C:\ICPCHEM\1\DATA\JJF09A.B\003TUNE.D
 Date Acquired: Jun 9 2016 03:30 pm
 Acq. Method: TN6020E.M
 Operator: EAM
 Sample Name: 6020 TUNE
 Misc Info:
 Vial Number: 1107
 Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

| Element | Actual | Required | Flag |
|---------|--------|----------|------|
| 7 Li | 2.30 | 5.00 | |
| 59 Co | 0.39 | 5.00 | |
| 115 In | 0.75 | 5.00 | |
| 205 Tl | 0.96 | 5.00 | |

**7 Li****Mass Calib.**

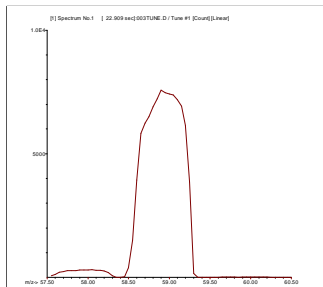
Actual: 7.05
 Required: 6.90 - 7.10

Flag:

Peak Width

Actual: 0.65
 Required: 0.90

Flag:

**59 Co****Mass Calib.**

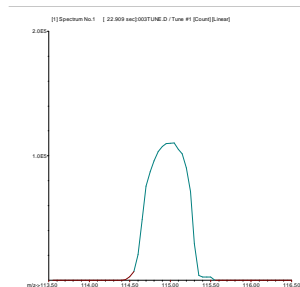
Actual: 58.95
 Required: 58.90 - 59.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:

**115 In****Mass Calib.**

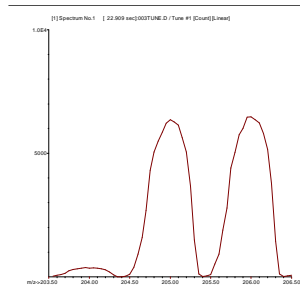
Actual: 115.00
 Required: 114.90 - 115.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:

**205 Tl****Mass Calib.**

Actual: 205.00
 Required: 204.90 - 205.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4102

Concentration Units: ug/L

SAMPLE: ICB

File: JJF09A Jun 09, 2016 16:29

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.837 | J |
| MOLYBDENUM | 0.035 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF09A Jun 09, 2016 17:03

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 7.010 | J |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.764 | J |
| MOLYBDENUM | 0.071 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 7.036 | J |

SAMPLE: CCB

File: JJF09A Jun 09, 2016 17:44

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.784 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 3.716 | J |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4102

Concentration Units: ug/L

SAMPLE: CCB

File: JJF09A Jun 09, 2016 18:26

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF09A Jun 09, 2016 19:09

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.692 | J |
| CALCIUM | 12.240 | J |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.353 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF09A Jun 09, 2016 19:51

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 13.260 | J |
| CALCIUM | 14.710 | J |
| IRON | 8.415 | J |
| LEAD | 0.060 | J |
| MAGNESIUM | 3.476 | J |
| MOLYBDENUM | 0.032 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 3.121 | J |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4102

Concentration Units: ug/L

SAMPLE: CCB

File: JJF09A Jun 09, 2016 20:33

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 9.790 | J |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.904 | J |
| MOLYBDENUM | 0.023 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF09A Jun 09, 2016 21:16

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 10.430 | J |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.287 | J |
| MOLYBDENUM | 0.025 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF09A Jun 09, 2016 21:58

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 14.120 | J |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.016 | J |
| MOLYBDENUM | 0.021 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4102

Concentration Units: ug/L

SAMPLE: CCB

File: JJF09A Jun 09, 2016 22:41

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 5.294 | J |
| CALCIUM | 19.210 | J |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.699 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF09A Jun 09, 2016 23:23

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 18.650 | J |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.975 | J |
| MOLYBDENUM | 0.023 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF09A Jun 10, 2016 0:05

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 17.300 | J |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.450 | J |
| MOLYBDENUM | 0.021 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4102

Concentration Units: ug/L

SAMPLE: CCB

File: JJF09A Jun 10, 2016 0:48

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.034 | J |
| CALCIUM | 19.100 | J |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.500 | J |
| MOLYBDENUM | 0.022 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF09A Jun 10, 2016 1:17

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 20.630 | B |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.354 | J |
| MOLYBDENUM | 0.023 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4102

Concentration Units: ug/L

SAMPLE: ICB

File: JJF15B Jun 15, 2016 19:38

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.049 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF15B Jun 15, 2016 20:12

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.480 | J |
| MOLYBDENUM | 0.066 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 7.517 | J |

SAMPLE: CCB

File: JJF15B Jun 15, 2016 20:54

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.989 | J |
| MOLYBDENUM | 0.044 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 8.785 | J |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4102

Concentration Units: ug/L

SAMPLE: CCB

File: JJF15B Jun 15, 2016 21:37

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.674 | J |
| MOLYBDENUM | 0.024 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF09IMS3

Matrix: SOIL

SDG Name: SJ4102

QC Batch ID: JF09IMS3

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| LEAD | 0.027 | J |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF09IMS4

Matrix: SOIL

SDG Name: SJ4102

QC Batch ID: JF09IMS4

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| LEAD | 0.115 | B |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF15IMS1

Matrix: SOIL

SDG Name: SJ4102

QC Batch ID: JF15IMS1

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| LEAD | 0.010 | J |

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services SDG Name: SJ4102

Concentration Units: ug/L

SAMPLE: ICSA

File: JJF09A Jun 09, 2016 16:46

| Analyte | TRUE | FOUND | % R |
|------------|--------|-------|------|
| ALUMINUM | 100000 | 96050 | 96.0 |
| CALCIUM | 100000 | 94720 | 94.7 |
| IRON | 100000 | 89340 | 89.3 |
| LEAD | 0 | 0 | |
| MAGNESIUM | 100000 | 94670 | 94.7 |
| MOLYBDENUM | 2000 | 1980 | 99.0 |
| POTASSIUM | 100000 | 96750 | 96.8 |
| SODIUM | 100000 | 97340 | 97.3 |

SAMPLE: ICSAB

File: JJF09A Jun 09, 2016 16:49

| Analyte | TRUE | FOUND | % R |
|------------|--------|-------|-------|
| ALUMINUM | 100000 | 95220 | 95.2 |
| CALCIUM | 100000 | 93950 | 94.0 |
| IRON | 100000 | 88140 | 88.1 |
| LEAD | 20 | 21 | 105.0 |
| MAGNESIUM | 100000 | 95050 | 95.0 |
| MOLYBDENUM | 2000 | 1979 | 99.0 |
| POTASSIUM | 100000 | 94770 | 94.8 |
| SODIUM | 100000 | 94700 | 94.7 |

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services SDG Name: SJ4102

Concentration Units: ug/L

| SAMPLE: ICSA | | | | SAMPLE: ICSAB | | | |
|---------------------|--------------|--------------|------------|----------------------|--------------|--------------|------------|
| File: JJF15B | Jun 15, 2016 | 19:55 | | File: JJF15B | Jun 15, 2016 | 19:59 | |
| Analyte | TRUE | FOUND | % R | Analyte | TRUE | FOUND | % R |
| ALUMINUM | 100000 | 95680 | 95.7 | ALUMINUM | 100000 | 96150 | 96.2 |
| CALCIUM | 100000 | 96340 | 96.3 | CALCIUM | 100000 | 95250 | 95.3 |
| IRON | 100000 | 90430 | 90.4 | IRON | 100000 | 92160 | 92.2 |
| LEAD | 0 | 0 | | LEAD | 20 | 21 | 105.0 |
| MAGNESIUM | 100000 | 93380 | 93.4 | MAGNESIUM | 100000 | 93980 | 94.0 |
| MOLYBDENUM | 2000 | 1972 | 98.6 | MOLYBDENUM | 2000 | 2035 | 101.8 |
| POTASSIUM | 100000 | 95070 | 95.1 | POTASSIUM | 100000 | 96210 | 96.2 |
| SODIUM | 100000 | 95120 | 95.1 | SODIUM | 100000 | 95830 | 95.8 |

5A
SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services
Matrix: SOIL
Percent Solids: 93.8

Client Field ID: PR-SB-F2-0612S
SDG Name: SJ4102
Lab Sample ID: SJ4102-022S

Concentration Units : mg/Kg drywt

| Analyte | Spiked | | Sample | | Spike Added | %R | Q | Control Limits (%R) | | M |
|-------------|--------|--------|--------|---|-------------|-------|---|---------------------|------|----|
| | Sample | Result | Result | C | | | | Low | High | |
| LEAD, TOTAL | | 183 | 136 | C | 6.66 | 706.2 | N | 84 | 118 | MS |

Comments:

sample result > 4X spike

5A
SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services
Matrix: SOIL
Percent Solids: 97.5

Client Field ID: PR-SB-F3-2436S
SDG Name: SJ4102
Lab Sample ID: SJ4102-028S

Concentration Units : mg/Kg drywt

| Analyte | Spiked | | Sample | | Spike Added | %R | Q | Control Limits (%R) | | M |
|-------------|--------|--------|--------|---|-------------|-------|---|---------------------|------|----|
| | Sample | Result | Result | C | | | | Low | High | |
| LEAD, TOTAL | | 230 | 209 | C | 6.41 | 328.7 | N | 84 | 118 | MS |

Comments:

sample result > 4X spike

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-F2-0612S

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 93.8

Lab Sample ID: SJ4102-022A

Concentration Units : ug/L

| Analyte | Spiked | | Sample | | Spike Added | %R | Q | Control Limits (%R) | | M |
|-------------|--------|--------|--------|---|-------------|-------|---|---------------------|------|----|
| | Sample | Result | Result | C | | | | Low | High | |
| LEAD, TOTAL | | 211 | 206 | C | 2 | 245.0 | A | 80 | 120 | MS |

Comments:

sample result > 4X spike

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-F3-2436S

Matrix: SOIL

SDG Name: SJ4102

Percent Solids: 97.5

Lab Sample ID: SJ4102-028A

Concentration Units : ug/L

| Analyte | Spiked | | Sample | | Spike | %R | Q | Control Limits (%R) | | M |
|-------------|--------|--------|--------|---|-------|-------|---|---------------------|------|----|
| | Sample | Result | Result | C | | | | Low | High | |
| LEAD, TOTAL | | 324 | 326 | C | 2 | -80.0 | A | 80 | 120 | MS |

Comments:

sample result > 4X spike

6
DUPLICATES

Lab Name: Katahdin Analytical Services
Matrix: SOIL
Percent Solids: 93.8

Client Field ID: PR-SB-F2-0612D
SDG Name: SJ4102
Lab Sample ID: SJ4102-022D

Concentration Units : mg/Kg drywt

| Analyte | Control Limits | Sample Result | C | Duplicate Result | C | RPD | Q | M |
|-------------|----------------|---------------|---|------------------|---|------|---|----|
| LEAD, TOTAL | | 136.4905 | | 118.4938 | | 14.1 | | MS |

Comments:

6
DUPLICATES

Lab Name: Katahdin Analytical Services
Matrix: SOIL
Percent Solids: 97.5

Client Field ID: PR-SB-F3-2436D
SDG Name: SJ4102
Lab Sample ID: SJ4102-028D

Concentration Units : mg/Kg drywt

| Analyte | Control Limits | Sample Result | C | Duplicate Result | C | RPD | Q | M |
|-------------|----------------|---------------|---|------------------|---|------|---|----|
| LEAD, TOTAL | | 209.2434 | | 260.3846 | | 21.8 | * | MS |

Comments:

Within 35% limit for soil samples

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF09IMS3**Matrix:** SOIL**SDG Name:** SJ4102**QC Batch ID:** JF09IMS3**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 10.0 | 100.2 | 84 | 118 |

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF09IMS4**Matrix:** SOIL**SDG Name:** SJ4102**QC Batch ID:** JF09IMS4**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 10.1 | 101.0 | 84 | 118 |

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF15IMS1**Matrix:** SOIL**SDG Name:** SJ4102**QC Batch ID:** JF15IMS1**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 10.0 | 100.6 | 84 | 118 |

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services**Client Field ID:** PR-SB-F2-0612L**Matrix:** SOIL**SDG Name:** SJ4102**Lab Sample ID:** SJ4102-022L**Concentration Units: ug/L**

| Analyte | Sample Result | C | Dilution | Result | C | % Difference | Q | M |
|----------------|----------------------|----------|-----------------|---------------|----------|---------------------|----------|----------|
| LEAD, TOTAL | 206 | | | 205 | | 0.5 | | MS |

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services**Client Field ID:** PR-SB-F3-2436L**Matrix:** SOIL**SDG Name:** SJ4102**Lab Sample ID:** SJ4102-028L**Concentration Units: ug/L**

| Analyte | Sample Result | C | Dilution | Result | C | % Difference | Q | M |
|----------------|----------------------|----------|-----------------|---------------|----------|---------------------|----------|----------|
| LEAD, TOTAL | 326 | | | 323 | | 0.9 | | MS |

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 3/14/2016**

| Analyte | Concentration Units: ug/L | | |
|------------|---------------------------|-------|----|
| | PQL/LOQ | IDL | M |
| ALUMINUM | 300 | 1.4 | MS |
| CALCIUM | 100 | 6.9 | MS |
| IRON | 100 | 6.2 | MS |
| LEAD | 0.20 | 0.041 | MS |
| MAGNESIUM | 100 | 0.65 | MS |
| MOLYBDENUM | 1.0 | 0.021 | MS |
| POTASSIUM | 1000 | 13. | MS |
| SODIUM | 1000 | 2.9 | MS |

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 1/26/2011**

| Analyte | LOD | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| LEAD | 0.010 | mg/Kg | MS | SW846 3050B / SW846 6020A |

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 1/26/2011**

| Analyte | MDL | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| LEAD | 0.0014 | mg/kg | MS | SW846 3050B / SW846 6020A |

12
ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services

Instrument Code: J

Instrument Name: AGILENT 7500 ICP-MS

Date: 4/4/2016

Concentration Units: ug/L

| Analyte | Integration Time (sec) | Linear Range | M |
|------------|------------------------|--------------|----|
| ALUMINUM | 0.01 | 200000 | MS |
| CALCIUM | 0.03 | 200000 | MS |
| IRON | 0.03 | 100000 | MS |
| LEAD | 0.10 | 2000 | MS |
| MAGNESIUM | 0.05 | 200000 | MS |
| MOLYBDENUM | 0.10 | 1000 | MS |
| POTASSIUM | 0.01 | 200000 | MS |
| SODIUM | 0.01 | 200000 | MS |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF09IMS3**Matrix:** SOIL**SDG Name:** SJ4102**Method:** MS**Prep Date:** 06/09/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF09IMS3 | LC SOJF09IMS3 | 1 | 0.1 | |
| PBSJF09IMS3 | PBSJF09IMS3 | 1 | 0.1 | |
| PR-SS-E1-0006 | SJ4102-001 | 1.57 | 0.1 | A |
| PR-SB-E1-0612 | SJ4102-002 | 1.72 | 0.1 | A |
| PR-SS-E2-0006 | SJ4102-003 | 1.7 | 0.1 | A |
| PR-SB-E2-0612 | SJ4102-004 | 1.67 | 0.1 | A |
| PR-SS-E3-0006 | SJ4102-005 | 1.68 | 0.1 | A |
| PR-SB-E3-0612 | SJ4102-006 | 1.95 | 0.1 | A |
| PR-SS-E4-0006 | SJ4102-007 | 1.8 | 0.1 | A |
| PR-SB-E4-0612 | SJ4102-008 | 1.68 | 0.1 | A |
| PR-SS-E5-0006 | SJ4102-009 | 1.72 | 0.1 | A |
| PR-SB-F2-0612 | SJ4102-022 | 1.61 | 0.1 | B |
| PR-SB-F2-0612D | SJ4102-022D | 1.6 | 0.1 | B |
| PR-SB-F2-0612S | SJ4102-022S | 1.6 | 0.1 | B |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF09IMS4**Matrix:** SOIL**SDG Name:** SJ4102**Method:** MS**Prep Date:** 06/09/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF09IMS4 | LC SOJF09IMS4 | 1 | 0.1 | |
| PBSJF09IMS4 | PBSJF09IMS4 | 1 | 0.1 | |
| PR-SB-E5-0612 | SJ4102-010 | 1.72 | 0.1 | A |
| PR-SS-E6-0006 | SJ4102-011 | 1.95 | 0.1 | A |
| PR-SB-E6-0612 | SJ4102-012 | 1.78 | 0.1 | A |
| PR-DUP05-060716 | SJ4102-013 | 1.7 | 0.1 | A |
| PR-DUP06-060716 | SJ4102-014 | 1.72 | 0.1 | A |
| PR-DUP07-060716 | SJ4102-015 | 1.5 | 0.1 | A |
| PR-DUP08-060716 | SJ4102-016 | 1.49 | 0.1 | A |
| PR-SS-F1-0006 | SJ4102-017 | 1.51 | 0.1 | A |
| PR-SB-F1-0612 | SJ4102-018 | 1.42 | 0.1 | A |
| PR-SB-F1-1224 | SJ4102-019 | 1.58 | 0.1 | A |
| PR-SS-F2-0006 | SJ4102-021 | 1.71 | 0.1 | A |
| PR-SB-F2-1224 | SJ4102-023 | 1.7 | 0.1 | A |
| PR-SB-F2-2436 | SJ4102-024 | 1.91 | 0.1 | A |
| PR-DUP09-060716 | SJ4102-027 | 1.96 | 0.1 | A |
| PR-SB-F3-2436 | SJ4102-028 | 1.6 | 0.1 | A |
| PR-SB-F3-2436D | SJ4102-028D | 1.6 | 0.1 | A |
| PR-SB-F3-2436S | SJ4102-028S | 1.6 | 0.1 | A |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF15IMS1**Matrix:** SOIL**SDG Name:** SJ4102**Method:** MS**Prep Date:** 06/15/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF15IMS1 | LC SOJF15IMS1 | 1 | 0.1 | |
| PBSJF15IMS1 | PBSJF15IMS1 | 1 | 0.1 | |
| PR-SB-F3-4860 | SJ4102-030 | 1.2 | 0.1 | A |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4102

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF09A

Date: 6/9/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| 6020 Tune | | 1 | 15:30 | | | | | | | |
| 200.8 Tune | | 1 | 15:33 | | | | | | | |
| Cal Blank | | 1 | 16:19 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| Cal Std | | 1 | 16:23 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICV | | 1 | 16:26 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICB | | 1 | 16:29 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| PQL | | 1 | 16:33 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 16:36 | | | | | | | |
| ZZZZZZ | | 1 | 16:39 | | | | | | | |
| ZZZZZZ | | 1 | 16:42 | | | | | | | |
| ICSA | | 1 | 16:46 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICSAB | | 1 | 16:49 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 16:53 | | | | | | | |
| ZZZZZZ | | 1 | 16:56 | | | | | | | |
| CCV | | 1 | 17:00 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 17:03 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 17:07 | | | | | | | |
| ZZZZZZ | | 5 | 17:10 | | | | | | | |
| ZZZZZZ | | 1 | 17:13 | | | | | | | |
| ZZZZZZ | | 1 | 17:17 | | | | | | | |
| ZZZZZZ | | 1 | 17:20 | | | | | | | |
| ZZZZZZ | | 1 | 17:24 | | | | | | | |
| ZZZZZZ | | 1 | 17:27 | | | | | | | |
| ZZZZZZ | | 1 | 17:31 | | | | | | | |
| ZZZZZZ | | 1 | 17:34 | | | | | | | |
| ZZZZZZ | | 5 | 17:37 | | | | | | | |
| CCV | | 1 | 17:41 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4102

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF09A

Date: 6/9/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| CCB | | 1 | 17:44 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZ | | 1 | 17:48 | | | | | | | |
| ZZZZZ | | 5 | 17:51 | | | | | | | |
| ZZZZZ | | 5 | 17:55 | | | | | | | |
| ZZZZZ | | 5 | 17:58 | | | | | | | |
| ZZZZZ | | 5 | 18:02 | | | | | | | |
| ZZZZZ | | 5 | 18:05 | | | | | | | |
| ZZZZZ | | 5 | 18:09 | | | | | | | |
| ZZZZZ | | 5 | 18:12 | | | | | | | |
| ZZZZZ | | 5 | 18:16 | | | | | | | |
| ZZZZZ | | 10 | 18:19 | | | | | | | |
| CCV | | 1 | 18:23 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 18:26 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZ | | 50 | 18:30 | | | | | | | |
| ZZZZZ | | 10 | 18:33 | | | | | | | |
| ZZZZZ | | 10 | 18:37 | | | | | | | |
| ZZZZZ | | 10 | 18:40 | | | | | | | |
| ZZZZZ | | 10 | 18:44 | | | | | | | |
| ZZZZZ | | 10 | 18:48 | | | | | | | |
| ZZZZZ | | 10 | 18:51 | | | | | | | |
| ZZZZZ | | 10 | 18:55 | | | | | | | |
| ZZZZZ | | 10 | 18:58 | | | | | | | |
| ZZZZZ | | 10 | 19:02 | | | | | | | |
| CCV | | 1 | 19:05 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 19:09 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZ | | 10 | 19:12 | | | | | | | |
| ZZZZZ | | 10 | 19:16 | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4102

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF09A

Date: 6/9/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|--|
| ZZZZZZ | | 10 | 19:19 | | | | | | | | |
| ZZZZZZ | | 10 | 19:23 | | | | | | | | |
| ZZZZZZ | | 10 | 19:26 | | | | | | | | |
| ZZZZZZ | | 10 | 19:30 | | | | | | | | |
| ZZZZZZ | | 10 | 19:33 | | | | | | | | |
| ZZZZZZ | | 10 | 19:37 | | | | | | | | |
| ZZZZZZ | | 10 | 19:40 | | | | | | | | |
| ZZZZZZ | | 10 | 19:44 | | | | | | | | |
| CCV | | 1 | 19:47 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 19:51 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZZ | | 10 | 19:54 | | | | | | | | |
| ZZZZZZ | | 10 | 19:58 | | | | | | | | |
| ZZZZZZ | | 5 | 20:01 | | | | | | | | |
| ZZZZZZ | | 5 | 20:05 | | | | | | | | |
| ZZZZZZ | | 10 | 20:08 | | | | | | | | |
| ZZZZZZ | | 10 | 20:12 | | | | | | | | |
| ZZZZZZ | | 10 | 20:15 | | | | | | | | |
| ZZZZZZ | | 10 | 20:19 | | | | | | | | |
| ZZZZZZ | | 10 | 20:23 | | | | | | | | |
| ZZZZZZ | | 10 | 20:26 | | | | | | | | |
| CCV | | 1 | 20:30 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 20:33 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZZ | | 10 | 20:37 | | | | | | | | |
| ZZZZZZ | | 50 | 20:40 | | | | | | | | |
| ZZZZZZ | | 10 | 20:44 | | | | | | | | |
| ZZZZZZ | | 10 | 20:48 | | | | | | | | |
| ZZZZZZ | | 10 | 20:51 | | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4102

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF09A

Date: 6/9/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|--|--|
| ZZZZZZ | | 10 | 20:55 | | | | | | | | | |
| ZZZZZZ | | 10 | 20:58 | | | | | | | | | |
| ZZZZZZ | | 10 | 21:02 | | | | | | | | | |
| ZZZZZZ | | 10 | 21:05 | | | | | | | | | |
| ZZZZZZ | | 10 | 21:09 | | | | | | | | | |
| CCV | | 1 | 21:12 | Al | Ca | Fe Pb | Mg | Mo | K | Na | | |
| CCB | | 1 | 21:16 | Al | Ca | Fe Pb | Mg | Mo | K | Na | | |
| ZZZZZZ | | 10 | 21:19 | | | | | | | | | |
| ZZZZZZ | | 10 | 21:23 | | | | | | | | | |
| ZZZZZZ | | 10 | 21:26 | | | | | | | | | |
| ZZZZZZ | | 10 | 21:30 | | | | | | | | | |
| ZZZZZZ | | 10 | 21:33 | | | | | | | | | |
| ZZZZZZ | | 10 | 21:37 | | | | | | | | | |
| ZZZZZZ | | 10 | 21:40 | | | | | | | | | |
| ZZZZZZ | | 10 | 21:44 | | | | | | | | | |
| PBSJF09IMS3 | | 5 | 21:48 | | | Pb | | | | | | |
| LCSOJF09IMS3 | | 5 | 21:51 | | | Pb | | | | | | |
| CCV | | 1 | 21:55 | Al | Ca | Fe Pb | Mg | Mo | K | Na | | |
| CCB | | 1 | 21:58 | Al | Ca | Fe Pb | Mg | Mo | K | Na | | |
| ZZZZZZ | | 10 | 22:02 | | | | | | | | | |
| ZZZZZZ | | 10 | 22:05 | | | | | | | | | |
| ZZZZZZ | | 10 | 22:09 | | | | | | | | | |
| ZZZZZZ | | 10 | 22:12 | | | | | | | | | |
| ZZZZZZ | | 10 | 22:16 | | | | | | | | | |
| ZZZZZZ | | 10 | 22:20 | | | | | | | | | |
| ZZZZZZ | | 10 | 22:23 | | | | | | | | | |
| ZZZZZZ | | 10 | 22:27 | | | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4102

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF09A

Date: 6/9/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|-----------------|------|-------|----------|----|-------|----|----|---|----|--|
| ZZZZZZ | | 10 | 22:30 | | | | | | | | |
| ZZZZZZ | | 10 | 22:34 | | | | | | | | |
| CCV | | 1 | 22:37 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 22:41 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| SJ4102-001 | PR-SS-E1-0006 | 10 | 22:44 | | | Pb | | | | | |
| SJ4102-002 | PR-SB-E1-0612 | 10 | 22:48 | | | Pb | | | | | |
| SJ4102-003 | PR-SS-E2-0006 | 10 | 22:51 | | | Pb | | | | | |
| SJ4102-004 | PR-SB-E2-0612 | 10 | 22:55 | | | Pb | | | | | |
| SJ4102-005 | PR-SS-E3-0006 | 10 | 22:58 | | | Pb | | | | | |
| SJ4102-006 | PR-SB-E3-0612 | 10 | 23:02 | | | Pb | | | | | |
| SJ4102-007 | PR-SS-E4-0006 | 10 | 23:05 | | | Pb | | | | | |
| SJ4102-008 | PR-SB-E4-0612 | 10 | 23:09 | | | Pb | | | | | |
| SJ4102-009 | PR-SS-E5-0006 | 10 | 23:13 | | | Pb | | | | | |
| SJ4102-022 | PR-SB-F2-0612 | 10 | 23:16 | | | Pb | | | | | |
| CCV | | 1 | 23:19 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 23:23 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| SJ4102-022L | PR-SB-F2-0612L | 50 | 23:27 | | | Pb | | | | | |
| SJ4102-022A | PR-SB-F2-0612A | 10 | 23:30 | | | Pb | | | | | |
| SJ4102-022D | PR-SB-F2-0612D | 10 | 23:34 | | | Pb | | | | | |
| SJ4102-022S | PR-SB-F2-0612S | 10 | 23:37 | | | Pb | | | | | |
| PBSJF09IMS4 | | 5 | 23:41 | | | Pb | | | | | |
| LCSOJF09IMS4 | | 5 | 23:44 | | | Pb | | | | | |
| SJ4102-010 | PR-SB-E5-0612 | 10 | 23:48 | | | Pb | | | | | |
| SJ4102-011 | PR-SS-E6-0006 | 10 | 23:51 | | | Pb | | | | | |
| SJ4102-012 | PR-SB-E6-0612 | 10 | 23:55 | | | Pb | | | | | |
| SJ4102-013 | PR-DUP05-060716 | 10 | 23:58 | | | Pb | | | | | |
| CCV | | 1 | 0:02 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4102

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF09A

Date: 6/10/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|-----------------|------|------|----------|----|-------|----|----|---|----|--|
| CCB | | 1 | 0:05 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| SJ4102-014 | PR-DUP06-060716 | 10 | 0:09 | | | Pb | | | | | |
| SJ4102-015 | PR-DUP07-060716 | 10 | 0:12 | | | Pb | | | | | |
| SJ4102-016 | PR-DUP08-060716 | 10 | 0:16 | | | Pb | | | | | |
| SJ4102-017 | PR-SS-F1-0006 | 10 | 0:20 | | | Pb | | | | | |
| SJ4102-018 | PR-SB-F1-0612 | 10 | 0:23 | | | Pb | | | | | |
| SJ4102-019 | PR-SB-F1-1224 | 10 | 0:27 | | | Pb | | | | | |
| SJ4102-021 | PR-SS-F2-0006 | 10 | 0:30 | | | Pb | | | | | |
| SJ4102-023 | PR-SB-F2-1224 | 10 | 0:34 | | | Pb | | | | | |
| SJ4102-024 | PR-SB-F2-2436 | 10 | 0:37 | | | Pb | | | | | |
| SJ4102-027 | PR-DUP09-060716 | 10 | 0:41 | | | Pb | | | | | |
| CCV | | 1 | 0:44 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 0:48 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| SJ4102-028 | PR-SB-F3-2436 | 10 | 0:52 | | | Pb | | | | | |
| SJ4102-028L | PR-SB-F3-2436L | 50 | 0:55 | | | Pb | | | | | |
| SJ4102-028A | PR-SB-F3-2436A | 10 | 0:59 | | | Pb | | | | | |
| SJ4102-028D | PR-SB-F3-2436D | 10 | 1:02 | | | Pb | | | | | |
| SJ4102-028S | PR-SB-F3-2436S | 10 | 1:06 | | | Pb | | | | | |
| ZZZZZ | | 10 | 1:10 | | | | | | | | |
| CCV | | 1 | 1:13 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 1:17 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4102

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF15B

Date: 6/15/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| 6020 Tune | | 1 | 18:16 | | | | | | | |
| 200.8 Tune | | 1 | 18:18 | | | | | | | |
| Cal Blank | | 1 | 19:28 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| Cal Std | | 1 | 19:32 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICV | | 1 | 19:35 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICB | | 1 | 19:38 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| PQL | | 1 | 19:42 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 19:45 | | | | | | | |
| ZZZZZZ | | 1 | 19:48 | | | | | | | |
| ZZZZZZ | | 1 | 19:52 | | | | | | | |
| ICSA | | 1 | 19:55 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICSAB | | 1 | 19:59 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 20:02 | | | | | | | |
| ZZZZZZ | | 1 | 20:06 | | | | | | | |
| CCV | | 1 | 20:09 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 20:12 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 20:16 | | | | | | | |
| ZZZZZZ | | 5 | 20:19 | | | | | | | |
| ZZZZZZ | | 1 | 20:23 | | | | | | | |
| ZZZZZZ | | 5 | 20:26 | | | | | | | |
| ZZZZZZ | | 5 | 20:30 | | | | | | | |
| ZZZZZZ | | 5 | 20:33 | | | | | | | |
| ZZZZZZ | | 1 | 20:37 | | | | | | | |
| ZZZZZZ | | 1 | 20:40 | | | | | | | |
| ZZZZZZ | | 1 | 20:44 | | | | | | | |
| ZZZZZZ | | 1 | 20:47 | | | | | | | |
| CCV | | 1 | 20:51 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4102

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF15B

Date: 6/15/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|---------------|------|-------|----------|----|-------|----|----|---|----|--|
| CCB | | 1 | 20:54 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| PBSJF15IMS1 | | 5 | 20:58 | | | Pb | | | | | |
| LCSOJF15IMS1 | | 5 | 21:01 | | | Pb | | | | | |
| SJ4102-030 | PR-SB-F3-4860 | 10 | 21:05 | | | Pb | | | | | |
| ZZZZZZ | | 10 | 21:08 | | | | | | | | |
| ZZZZZZ | | 10 | 21:12 | | | | | | | | |
| ZZZZZZ | | 50 | 21:15 | | | | | | | | |
| ZZZZZZ | | 10 | 21:19 | | | | | | | | |
| ZZZZZZ | | 10 | 21:22 | | | | | | | | |
| ZZZZZZ | | 10 | 21:26 | | | | | | | | |
| ZZZZZZ | | 10 | 21:30 | | | | | | | | |
| CCV | | 1 | 21:33 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 21:37 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |

| ANALYTE | ORIGINAL | SDG | ORIGINAL | DUPLICATE | SDG | DUPLICATE | RL | RPD | RPD > 50% | ORIGINAL SAMPLE CONC >5xRL | DUPLICATE SAMPLE CONC >5xRL | DIFFERENCE >4XRL |
|---------|---------------|--------|----------|-----------------|--------|-----------|------|-------|-----------|----------------------------|-----------------------------|------------------|
| LEAD | PR-SB-C2-0612 | SJ4101 | 3.57 | PR-DUP05-060716 | SJ4102 | 4.15 | 0.11 | 15.03 | FALSE | TRUE | TRUE | TRUE |
| LEAD | PR-SS-C6-0006 | SJ4101 | 5.17 | PR-DUP06-060716 | SJ4102 | 4.08 | 0.12 | 23.57 | FALSE | TRUE | TRUE | TRUE |
| LEAD | PR-SS-D4-0006 | SJ4101 | 99 | PR-DUP07-060716 | SJ4102 | 268 | 0.13 | 92.10 | TRUE | TRUE | TRUE | TRUE |
| LEAD | PR-SB-E4-0612 | SJ4102 | 557 | PR-DUP08-060716 | SJ4102 | 375 | 0.13 | 39.06 | FALSE | TRUE | TRUE | TRUE |
| LEAD | PR-SB-F2-1224 | SJ4102 | 31.3 | PR-DUP09-060716 | SJ4102 | 41.3 | 0.13 | 27.55 | FALSE | TRUE | TRUE | TRUE |



INTERNAL CORRESPONDENCE

TO: R. SOK **DATE:** AUGUST 31, 2016
FROM: L. GANSER **COPIES:** DV FILE
SUBJECT: DATA VALIDATION- BTEX, DRO, EOX, AND SELECT METALS
NASA WALLOPS ISLAND, VIRGINIA
SAMPLE DELIVERY GROUP (SDG) SJ4103

SAMPLES:

3/Soil/BTEX/

MBFR-BACKFILL01-060716 MBFR-TB01-060716 MBFR-TOPSOIL01-060716

2/Soil/DRO/Metals

MBFR-BACKFILL01-060716 MBFR-TOPSOIL01-060716

2/Soil/EOX/DRO

PR-SOCHAR01-0024 PR-SOCHAR02-0024

Overview

The sample set for NASA Wallops Island, SDG SJ4233 consists of four (4) soil samples and one (1) trip blank. Samples were analyzed for benzene, ethylbenzene, toluene, and xylenes (BTEX), diesel range organics (DRO), extractable organic halogens (EOX), and/or select metals (copper, lead, and zinc). The trip blank was analyzed for BTEX. No field duplicate pair was included in this SDG.

Samples were collected on June 7, 2016 by Tetra Tech and analyzed by Katahdin. Analyses were conducted in accordance to SW-846 Methods 8260B for BTEX, 8015D for DRO, 9023 for EOX, and 6020 for metals analytical and reporting protocols.

The data contained in this SDG were validated with regard to the following parameters: data completeness, holding times, laboratory method/preparation blank results, blank spike results, matrix spike/matrix spike duplicate results, laboratory duplicate results, and detection limits. Areas of concern with respect to data quality are listed below.

Major Problems – None.

Minor Problems

- Positive results between the method detection limit (MDL) and reporting limit (RL) were qualified as estimated (J).

To: R. SOK
SDG: SJ4103

Notes

The following analytes were detected in the laboratory preparation blanks at the following maximum concentrations:

| <u>Analyte</u> | <u>Maximum Concentration (mg/kg)</u> | <u>Reporting Limit (RL) (> or <)</u> |
|----------------|--------------------------------------|--|
| Copper | 0.077 | < |
| Lead | 0.018 | < |
| Zinc | 0.61 | < |

Dilution factor, if applicable, was taken into consideration when evaluating for blank contamination. No action was taken as all results were greater than the RL.

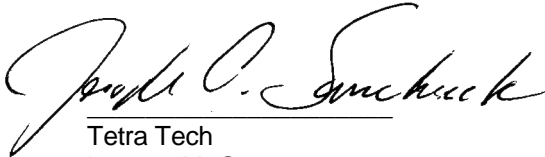
EXECUTIVE SUMMARY

Laboratory Performance Issues: None.

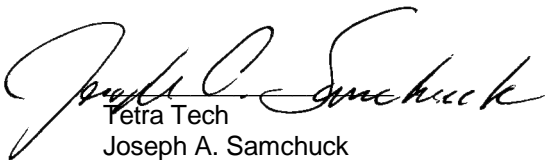
Other Factors Affecting Data Quality: None.

"National Functional Guidelines for Organic Review" (August 2014) and the "National Functional Guidelines for Inorganic Review" (August 2014). The text of this report has been formulated to address only those areas affecting data quality.

The text of this report has been formulated to address only those problem areas affecting data quality.



Tetra Tech
Leanne M. Ganser
Environmental Scientist/Data Validator



Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:

- Appendix A – Qualified Analytical Results
- Appendix B – Results as Reported by the Laboratory
- Appendix C – Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate
- Z4 = Sample activity is less than the at uncertainty at 3 standard deviations and greater than the MDC
- Z5 = Sample activity is less than the at uncertainty at 3 standard deviations and less than the MDC

| | | | | | | | | | | | | | |
|---|------------|------------------------|------|--------|-----------------------|------|--------|------------------|------|--------|------------------|------|--|
| PROJ_NO: 07723 SDG: SJ4103 FRACTION: PET MEDIA: SOIL | NSAMPLE | MBFR-BACKFILL01-060716 | | | MBFR-TOPSOIL01-060716 | | | PR-SOCHAR01-0024 | | | PR-SOCHAR02-0024 | | |
| | LAB_ID | SJ4103-1 | | | SJ4103-2 | | | SJ4103-3 | | | SJ4103-4 | | |
| | SAMP_DATE | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 92.9 | | | 91.1 | | | 93.6 | | | 91.9 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| DIESEL RANGE ORGANICS | 2.3 | U | | 2.8 | J | P | 9.4 | | | 5.7 | | | |

| | | | | | | | | | | | | | |
|--|------------|------------------------|------|--------|------------------|------|--------|-----------------------|------|--------|------------------|------|--|
| PROJ_NO: 07723 SDG: SJ4103 FRACTION: MISC MEDIA: SOIL | NSAMPLE | MBFR-BACKFILL01-060716 | | | MBFR-TB01-060716 | | | MBFR-TOPSOIL01-060716 | | | PR-SOCHAR01-0024 | | |
| | LAB_ID | SJ4103-1 | | | SJ4103-5 | | | SJ4103-2 | | | 490-105346-2 | | |
| | SAMP_DATE | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | % | | | % | | | % | | | % | | |
| | PCT_SOLIDS | 92.9 | | | 100.0 | | | 91.1 | | | 93.6 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| EXTRACTABLE ORGANIC HALOGENS | | | | | | | | | | | | | |
| TOTAL SOLIDS | 93 | | | 100 | | | 91 | | | 94 | | | |

| | | | | | | | | | |
|--|------------|------------------|------|--------|------------------|------|--------|-----|------|
| PROJ_NO: 07723 SDG: SJ4103 FRACTION: MISC MEDIA: SOIL | NSAMPLE | PR-SOCHAR01-0024 | | | PR-SOCHAR02-0024 | | | | |
| | LAB_ID | 490-105346-2 | | | 490-105346-1 | | | | |
| | SAMP_DATE | 6/7/2016 | | | 6/7/2016 | | | | |
| | QC_TYPE | NM | | | NM | | | | |
| | UNITS | MG/KG | | | % | | MG/KG | | |
| | PCT_SOLIDS | 93.6 | | | 91.9 | | 91.9 | | |
| | DUP_OF | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD |
| EXTRACTABLE ORGANIC HALOGENS | 24.5 | U | | | | | 24 | U | |
| TOTAL SOLIDS | | | | 92 | | | | | |

| | | | | | | | | | | |
|--|------------|------------------------|------|--------|------------------|------|--------|-----------------------|------|--|
| PROJ_NO: 07723 SDG: SJ4103 FRACTION: OV MEDIA: SOIL | NSAMPLE | MBFR-BACKFILL01-060716 | | | MBFR-TB01-060716 | | | MBFR-TOPSOIL01-060716 | | |
| | LAB_ID | SJ4103-1RA | | | SJ4103-5 | | | SJ4103-2RA | | |
| | SAMP_DATE | 6/7/2016 | | | 6/7/2016 | | | 6/7/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | |
| | UNITS | UG/KG | | | UG/KG | | | UG/KG | | |
| | PCT_SOLIDS | 92.9 | | | 100.0 | | | 91.1 | | |
| | DUP_OF | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| BENZENE | 0.86 | U | | 0.92 | U | | 0.77 | U | | |
| ETHYLBENZENE | 0.61 | U | | 0.65 | U | | 0.55 | U | | |
| M+P-XYLENES | 1.6 | U | | 1.7 | U | | 1.4 | U | | |
| O-XYLENE | 1.2 | U | | 1.3 | U | | 1.1 | U | | |
| TOLUENE | 1.3 | U | | 1.4 | U | | 1.2 | U | | |
| TOTAL XYLENES | 1.2 | U | | 1.3 | U | | 1.1 | U | | |

| | | | | | | | |
|---|------------|------------------------|------|--------|-----------------------|------|--|
| PROJ_NO: 07723 SDG: SJ4103 FRACTION: M MEDIA: SOIL | NSAMPLE | MBFR-BACKFILL01-060716 | | | MBFR-TOPSOIL01-060716 | | |
| | LAB_ID | SJ4103-001 | | | SJ4103-002 | | |
| | SAMP_DATE | 6/7/2016 | | | 6/7/2016 | | |
| | QC_TYPE | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 92.9 | | | 91.1 | | |
| | DUP_OF | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| COPPER | 1.09 | | | 16.4 | | | |
| LEAD | 1.08 | | | 6.16 | | | |
| ZINC | 3.67 | | | 24.4 | | | |

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4103-1

Client ID: MBFR-BKFL01-060716

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4103

Lab File ID: AJF10058.D

Sample Date: 07-JUN-16

Received Date: 08-JUN-16

Extract Date: 09-JUN-16

Extracted By: HG

Extraction Method: SW846 3550

Lab Prep Batch: WG185101

Analysis Date: 10-JUN-16

Analyst: JLP

Analysis Method: SW846 8015D

Matrix: SL

% Solids: 93.

Report Date: 21-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|-----------------------|------------------|---------------|--------------|-----------------|------------|----------------|----------------|----------------|
| Diesel Range Organics | U | 2.3 | mg/Kgdrywt | 1 | 5 | 5.3 | 2.3 | 4.0 |
| o-Terphenyl | | 99.6 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4103-2

Client ID: MBFR-TPSL01-060716

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4103

Lab File ID: AJF10059.D

Sample Date: 07-JUN-16

Received Date: 08-JUN-16

Extract Date: 09-JUN-16

Extracted By: HG

Extraction Method: SW846 3550

Lab Prep Batch: WG185101

Analysis Date: 10-JUN-16

Analyst: JLP

Analysis Method: SW846 8015D

Matrix: SL

% Solids: 91.

Report Date: 21-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|------------------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Diesel Range Organics | J | 2.8 | mg/Kgdrywt | 1 | 5 | 5.0 | 2.2 | 3.8 |
| o-Terphenyl | | 87.5 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4103-3

Client ID: PR-SOCHAR01-0024

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4103

Lab File ID: AJF10060.D

Sample Date: 07-JUN-16

Received Date: 08-JUN-16

Extract Date: 09-JUN-16

Extracted By: HG

Extraction Method: SW846 3550

Lab Prep Batch: WG185101

Analysis Date: 10-JUN-16

Analyst: JLP

Analysis Method: SW846 8015D

Matrix: SL

% Solids: 94.

Report Date: 21-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|------------------------------|------------------|---------------|--------------|-----------------|------------|----------------|----------------|----------------|
| Diesel Range Organics | | 9.4 | mg/Kgdrywt | 1 | 5 | 4.7 | 2.1 | 3.6 |
| o-Terphenyl | | 88.3 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4103-4

Client ID: PR-SOCHAR02-0024

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4103

Lab File ID: AJF10061.D

Sample Date: 07-JUN-16

Received Date: 08-JUN-16

Extract Date: 09-JUN-16

Extracted By: HG

Extraction Method: SW846 3550

Lab Prep Batch: WG185101

Analysis Date: 10-JUN-16

Analyst: JLP

Analysis Method: SW846 8015D

Matrix: SL

% Solids: 92.

Report Date: 21-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|------------------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Diesel Range Organics | | 5.7 | mg/Kgdrywt | 1 | 5 | 5.3 | 2.3 | 4.0 |
| o-Terphenyl | | 96.2 | % | | | | | |

1B-IN
 INORGANIC ANALYSIS DATA SHEET
 GENERAL CHEMISTRY

Client Sample ID: PR-CHAR02-0024

Lab Sample ID: 490-105346-1

Lab Name: TestAmerica Nashville

Job No.: 490-105346-1

SDG ID.: _____

Matrix: Soil

Date Sampled: 06/07/2016 15:50

Reporting Basis: WET

Date Received: 06/09/2016 09:20

| CAS No. | Analyte | Result | RL | | Units | C | Q | DIL | Method |
|---------|----------------------------------|--------|------|--|-------|---|---|-----|--------|
| | Halogens, Extractable Organic | ND | 48.1 | | mg/Kg | | | 1 | 9023 |

1B-IN
 INORGANIC ANALYSIS DATA SHEET
 GENERAL CHEMISTRY

Client Sample ID: PR-CHAR01-0024

Lab Sample ID: 490-105346-2

Lab Name: TestAmerica Nashville

Job No.: 490-105346-1

SDG ID.: _____

Matrix: Soil

Date Sampled: 06/07/2016 15:46

Reporting Basis: WET

Date Received: 06/09/2016 09:20

| CAS No. | Analyte | Result | RL | | Units | C | Q | DIL | Method |
|---------|----------------------------------|--------|------|--|-------|---|---|-----|--------|
| | Halogens, Extractable Organic | ND | 49.0 | | mg/Kg | | | 1 | 9023 |

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: MBFR-BKFL01-060716

Matrix: SOIL

SDG Name: SJ4103

Percent Solids: 92.9

Lab Sample ID: SJ4103-001

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 1.09 | | | MS | 10 | 0.34 | 0.080 | 0.23 |
| 7439-92-1 | LEAD, TOTAL | 1.08 | | | MS | 10 | 0.11 | 0.0080 | 0.057 |
| 7440-66-6 | ZINC, TOTAL | 3.67 | | | MS | 10 | 1.1 | 0.15 | 0.92 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: MBFR-TPSL01-060716

Matrix: SOIL

SDG Name: SJ4103

Percent Solids: 91.1

Lab Sample ID: SJ4103-002

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|---------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-50-8 | COPPER, TOTAL | 16.4 | | | MS | 10 | 0.36 | 0.084 | 0.24 |
| 7439-92-1 | LEAD, TOTAL | 6.16 | | | MS | 10 | 0.12 | 0.0084 | 0.060 |
| 7440-66-6 | ZINC, TOTAL | 24.4 | | | MS | 10 | 1.2 | 0.16 | 0.96 |

Comments:

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4103-1RA

Client ID: MBFR-BKFL01-060716

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4103

Lab File ID: W6528.D

Sample Date: 07-JUN-16

Received Date: 08-JUN-16

Extract Date: 10-JUN-16

Extracted By: ERL

Extraction Method: SW846 5035

Lab Prep Batch: WG185092

Analysis Date: 10-JUN-16

Analyst: ERL

Analysis Method: SW846 8260C

Matrix: SL

% Solids: 93.

Report Date: 15-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|-----------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Benzene | U | 0.86 | ug/Kgdrywt | 1 | 5 | 4.7 | 0.86 | 2.4 |
| Toluene | U | 1.3 | ug/Kgdrywt | 1 | 5 | 4.7 | 1.3 | 2.4 |
| Ethylbenzene | U | 0.61 | ug/Kgdrywt | 1 | 5 | 4.7 | 0.61 | 2.4 |
| Xylenes (Total) | U | 1.2 | ug/Kgdrywt | 1 | 15 | 14. | 1.2 | 7.0 |
| m+p-Xylenes | U | 1.6 | ug/Kgdrywt | 1 | 10 | 9.4 | 1.6 | 4.7 |
| o-Xylene | U | 1.2 | ug/Kgdrywt | 1 | 5 | 4.7 | 1.2 | 2.4 |
| p-Bromofluorobenzene | | 108. | % | | | | | |
| Toluene-D8 | | 105. | % | | | | | |
| 1,2-Dichloroethane-D4 | | 110. | % | | | | | |
| Dibromofluoromethane | | 113. | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4103-2RA

Client ID: MBFR-TPSL01-060716

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4103

Lab File ID: W6529.D

Sample Date: 07-JUN-16

Received Date: 08-JUN-16

Extract Date: 10-JUN-16

Extracted By: ERL

Extraction Method: SW846 5035

Lab Prep Batch: WG185092

Analysis Date: 10-JUN-16

Analyst: ERL

Analysis Method: SW846 8260C

Matrix: SL

% Solids: 91.

Report Date: 15-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|-----------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Benzene | U | 0.77 | ug/Kgdrywt | 1 | 5 | 4.2 | 0.77 | 2.1 |
| Toluene | U | 1.2 | ug/Kgdrywt | 1 | 5 | 4.2 | 1.2 | 2.1 |
| Ethylbenzene | U | 0.55 | ug/Kgdrywt | 1 | 5 | 4.2 | 0.55 | 2.1 |
| Xylenes (Total) | U | 1.1 | ug/Kgdrywt | 1 | 15 | 13. | 1.1 | 6.3 |
| m+p-Xylenes | U | 1.4 | ug/Kgdrywt | 1 | 10 | 8.4 | 1.4 | 4.2 |
| o-Xylene | U | 1.1 | ug/Kgdrywt | 1 | 5 | 4.2 | 1.1 | 2.1 |
| p-Bromofluorobenzene | | 99.4 | % | | | | | |
| Toluene-D8 | | 104. | % | | | | | |
| 1,2-Dichloroethane-D4 | | 114. | % | | | | | |
| Dibromofluoromethane | | 114. | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4103-5

Client ID: MBFR-TB01-060716

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4103

Lab File ID: W6519.D

Sample Date: 07-JUN-16

Received Date: 08-JUN-16

Extract Date: 10-JUN-16

Extracted By: ERL

Extraction Method: SW846 5035

Lab Prep Batch: WG185092

Analysis Date: 10-JUN-16

Analyst: ERL

Analysis Method: SW846 8260C

Matrix: SL

% Solids: 100

Report Date: 15-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|-----------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Benzene | U | 0.92 | ug/Kgdrywt | 1 | 5 | 5.0 | 0.92 | 2.5 |
| Toluene | U | 1.4 | ug/Kgdrywt | 1 | 5 | 5.0 | 1.4 | 2.5 |
| Ethylbenzene | U | 0.65 | ug/Kgdrywt | 1 | 5 | 5.0 | 0.65 | 2.5 |
| Xylenes (Total) | U | 1.3 | ug/Kgdrywt | 1 | 15 | 15. | 1.3 | 7.5 |
| m+p-Xylenes | U | 1.7 | ug/Kgdrywt | 1 | 10 | 10. | 1.7 | 5.0 |
| o-Xylene | U | 1.3 | ug/Kgdrywt | 1 | 5 | 5.0 | 1.3 | 2.5 |
| p-Bromofluorobenzene | | 108. | % | | | | | |
| Toluene-D8 | | 105. | % | | | | | |
| 1,2-Dichloroethane-D4 | | 112. | % | | | | | |
| Dibromofluoromethane | | 114. | % | | | | | |

APPENDIX C

SUPPORT DOCUMENTATION

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECHNUS, INC.
NASA Wallops Flight Facility-MBFR
SJ4103

Sample Receipt

The following samples were received on June 08, 2016 and were logged in under Katahdin Analytical Services work order number SJ4103 for a hardcopy due date of June 27, 2016.

| KATAHDIN <u>Sample No.</u> | TTNUS <u>Sample Identification</u> |
|-------------------------------|---------------------------------------|
| SJ4103-1 | MBFR-BACKFILL01-060716 |
| SJ4103-2 | MBFR-TOPSOIL01-060716 |
| SJ4103-3 | PR-SOCHAR01-0024 |
| SJ4103-4 | PR-SOCHAR02-0024 |
| SJ4103-5 | MBFR-TB01-060716 |

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Some of the client IDs on the Chain of Custody exceed the 19-character limit of the Katahdin Analytical Information Management System. Therefore, the middle characters "AC" and "IL" in the client ID for sample SJ4103-1 were omitted on all forms. The middle characters "O" and "OI" in the client ID for sample SJ4103-2 were omitted on all forms.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Organics Analysis

The samples of work order SJ4103 were analyzed in accordance with "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846, 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA, and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA, and/or for the specific methods listed below or on the Report of Analysis.

TCLP 8260B Analysis

Note: The Form VII has a column for %D that is set to 20%. The DoD QSM 5.0 criterion for an opening CV is 20%D and a closing CV is 50%D. All of the compounds in the CV's were evaluated to either 20% criteria for opening CVs or 50% criteria for closing CVs.

The independent check standard (file C8492A), associated with the initial calibration analyzed on the C instrument on 05/30/16, had high concentration for the target analytes 2-butanone and tetrachloroethene, which exceeded the DoD QSM acceptance limit of $\pm 20\%$ of the expected value from the ICAL. The Independent Check Report consists of the full list of spiked analytes, but only the client's list of target analytes are evaluated.

The TCLP blank WG184736-5 associated with samples SJ4103-3 and 4 was extracted and analyzed on a different day than the samples. Therefore, the report includes a Report of Analysis (ROA) for the TCLP blank but no supporting data. The supporting data for the samples and its associated extracted QC are included in the report.

8260B Analysis

Note: The Form VII has a column for %D that is set to 20%. The DoD QSM 5.0 criterion for an opening CV is 20%D and a closing CV is 50%D. All of the compounds in the CV's were evaluated to either 20% criteria for opening CVs or 50% criteria for closing CVs.

8270D TCLP Analysis

Note: The Form VII has a column for %D that is set to 20%. The DoD QSM 5.0 criterion for an opening CV is 20%D and a closing CV is 50%D. All of the compounds in the CV's were evaluated to either 20% criteria for opening CVs or 50% criteria for closing CVs.

The independent check standard (file U4537), associated with the initial calibration analyzed on the U instrument on 06/02/16, had a high concentration for the target analyte pentachlorophenol, which exceeded the DoD QSM acceptance limit of $\pm 20\%$ of the expected value from the ICAL. The Independent Check Report consists of the full list of spiked analytes, but only the client's list of target analytes are evaluated.

The closing CV (file U4653) was analyzed outside of the 12-hour analytical shift due to an instrument malfunction. The client was notified and informed the laboratory to proceed with narration.

8015M DRO Analysis

Samples SJ4103-2, 3, and 4 were manually integrated for the DRO range and surrogate o-terphenyl. The specific reasons for the manual integrations are indicated on the raw data by the manual integration codes (M1-M11). These codes are further explained in the attachment following this narrative.

There were no other protocol deviations or observations noted by the organics laboratory staff.

Metals Analysis

The samples of Katahdin Work Order SJ4103 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Solid-matrix Katahdin Sample Numbers SJ4103-1 and 2 were digested for ICP-MS analysis on 06/10/16 (QC Batch JF10IMS3) in accordance with USEPA Method 3050B.

ICP-MS analyses of Katahdin Work Order SJ4103 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

| Internal Standard Element | Associated Analytes |
|----------------------------------|--|
| Lithium | Beryllium, Boron |
| Scandium | Sodium, Magnesium, Aluminum, Silicon, Potassium, Calcium |
| Germanium or Yttrium | Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Strontium, Molybdenum, Silver, Cadmium |
| Terbium | Tin, Antimony, Barium, Tungsten |
| Bismuth | Lead, Thallium, Thorium, Uranium |

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

TCLP Extraction (EPA Method 1311)

Solid-matrix Katahdin Sample Number SJ4103-1 and 2 were subjected to TCLP extraction on 06/11/16 in accordance with USEPA Method 1311. The TCLP fluid blank identified as PBT1316A is associated with this extract. The measured concentrations of contaminants in these TCLP fluid blanks are listed in the Form 3P in the accompanying data package. The measured barium concentration in the TCLP fluid blank PBT1316A (85.5 ug/L) is above the laboratory's reporting limit. However, because this concentration is well below the TCLP regulatory limit of 100000 ug/L for barium, the associated sample was not re-extracted.

Inductively-Coupled Plasma Atomic Emission Spectroscopic Analysis (ICP)

Aqueous-matrix TCLP extraction blank PBT1316A was digested for ICP analysis on 06/01/16 (QC Batch JF011CW1) in accordance with USEPA Method 3010A.

Aqueous-matrix TCLP extraction of Katahdin Sample Numbers SJ4103-3 and 4 were digested for ICP analysis on 06/13/16 (QC Batch JF131CW1) in accordance with USEPA Method 3010A.

Aqueous-matrix TCLP extraction of Katahdin Sample Numbers SJ4103-3 and 4 were digested for mercury analysis on 06/12/16 (QC Batch JF12HG2) in accordance with USEPA Method 7470A.

All TCLP extracts are diluted by a factor of five during digestion to reduce matrix interferences during ICP analysis.

ICP analyses of Katahdin Work Order SJ4103 sample digestates were performed using a Thermo iCAP 6500 ICP spectrometer in accordance with USEPA Method 6010C. All samples were analyzed within holding times and all analytical run QC criteria were met.

Matrix QC Summary

The measured recoveries of all analytes in the post-digestion spiked aliquot of Katahdin Sample Number SJ4103-4 are within the acceptance criteria (75% - 125% recovery of the added element) for lead.

Analysis of Mercury by Cold Vapor Atomic Absorption (CVAA)

Aqueous-matrix TCLP extraction blank PBT1316A was digested for mercury analysis on 04/13/16 (QC Batch JD13HG2) in accordance with USEPA Method 7470A.

Aqueous-matrix TCLP extraction of Katahdin Sample Number SJ4103 were digested for mercury analysis on 06/12/16 (QC Batch JF12HG2) in accordance with USEPA Method 7470A.

Mercury analysis of the Katahdin Work Order SJ4103 sample digestates were performed using a Cetac M6100 automated mercury analyzer in accordance with USEPA Method 7470A. All analytical run QC criteria were met and all samples were analyzed within holding times.

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the LOQ are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQs, MDLs and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

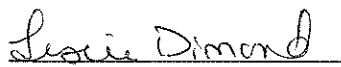
The samples of Work Order SJ4103 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times, and all quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.


06.27.16
Leslie Dimond
Quality Assurance Officer

| | | |
|---------------------------------------|------------------------------|------------------------------------|
| Client: <i>Tetra Tech</i> | KAS PM: <i>JO</i> | Sampled By: <i>Client</i> |
| Project: | KIMS Entry By: <i>JO</i> | Delivered By: <i>FedEx</i> |
| KAS Work Order#: <i>SJ4100-SJ4103</i> | KIMS Review By: <i>JO</i> | Received By: <i>AP</i> |
| SDG #: | Cooler: <i>1</i> of <i>2</i> | Date/Time Rec.: <i>6/8/16 1000</i> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|-----------|-----|----|---|
| 1. Custody seals present / intact? | / | | | | |
| 2. Chain of Custody present in cooler? | / | | | | |
| 3. Chain of Custody signed by client? | / | | | | |
| 4. Chain of Custody matches samples? | / | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | | <i>AP</i> | | / | Temp (°C): <i>25.2 (n/a) metals only</i> |
| Samples received at <6 °C w/o freezing? | | / | | / | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | | / | | / | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | | / | | / | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | / | | / | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | / | |
| Aqueous: No bubble larger than a pea? | | | | / | |
| Soil/Sediment: | | | | / | |
| Received in airtight container? | <i>AP</i> | | | / | |
| Received in methanol? | / | | | / | |
| Methanol covering soil? | / | | | / | |
| D.I. Water - Received within 48 hour HT? | / | | | / | |
| Air: Refer to KAS COC for canister/flow controller requirements. | √ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | / | |
| 8. Proper sample containers and volume? | / | | | | |
| 9. Samples within hold time upon receipt? | / | | | | |
| 10. Aqueous samples properly preserved? | | | | / | |
| Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 | | | | / | |
| Sulfide - >9 | | | | / | |
| Cyanide - pH >12 | | | | / | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

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| | | |
|---------------------------------------|------------------------------|------------------------------------|
| Client: <i>Tetra Tech</i> | KAS PM: <i>JO</i> | Sampled By: <i>Client</i> |
| Project: | KIMS Entry By: <i>JO</i> | Delivered By: <i>FedEx</i> |
| KAS Work Order#: <i>SJ4100-SJ4103</i> | KIMS Review By: <i>JO</i> | Received By: <i>AP</i> |
| SDG #: | Cooler: <i>2</i> of <i>2</i> | Date/Time Rec.: <i>6/8/16 1000</i> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | / | | | | |
| 2. Chain of Custody present in cooler? | / | | | | |
| 3. Chain of Custody signed by client? | / | | | | |
| 4. Chain of Custody matches samples? | / | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | / | | | | Temp (°C): <i>1.8</i> |
| Samples received at <6 °C w/o freezing? | / | | | | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | / | | | | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | / | | | | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | / | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | | |
| Aqueous: No bubble larger than a pea? | | | | / | |
| Soil/Sediment: | | | | | |
| Received in airtight container? | / | | | | |
| Received in methanol? | / | | | | |
| Methanol covering soil? | / | | | | |
| D.I. Water - Received within 48 hour HT? | / | | | | |
| Air: Refer to KAS COC for canister/flow controller requirements. | √ if air included | | | | |
| 7. Trip Blank present in cooler? | / | | | | |
| 8. Proper sample containers and volume? | / | | | | |
| 9. Samples within hold time upon receipt? | / | | | | |
| 10. Aqueous samples properly preserved? | | | | | |
| Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 | | | | / | |
| Sulfide - >9 | | | | / | |
| Cyanide - pH >12 | | | | / | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

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600 Technology Way
 Scarborough ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client _____ Contact _____
 Address _____ City _____ State _____ Zip Code _____
 Phone # _____ Fax # _____
 Purchase Order # _____ Proj. Name / No. _____
 Bill (if different than above) _____ Katahdin Quote # _____
 Sampler (Print / Sign) _____

LAB USE ONLY WORK ORDER # _____ Copies To _____
 KATAHDIN PROJECT NUMBER _____

REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: _____
 TEMP °C TEMP BLANK INTACT NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

| FR | FR | FR | FR | FR | FR | FR | FR | FR | FR | FR | FR | FR | FR | FR | FR |
|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| YO | YO | YO | YO | YO | YO | YO | YO | YO | YO | YO | YO | YO | YO | YO | YO |

| Sample Description | Date / Time | Matrix | No. of Cells | FR | FR | FR | FR | FR | FR | FR | FR | FR | FR | FR | FR |
|--------------------|-------------|--------|--------------|----|----|----|----|----|----|----|----|----|-------|----|----|
| MBFR-F-1-F101-0001 | 6/24/150 | SO | 5 | 1 | 4 | | | | | | | | | | |
| MBFR-F-1-F101-0002 | /1150 | SO | 5 | 1 | 4 | | | | | | | | | | |
| PR-SOCHARD-0024 | /1300 | SO | 3 | | | | | | | | | | | | |
| PR-SOCHARD-0024 | /1350 | SO | 3 | | | | | | | | | | | | |
| PR-SB-F1-0006 | /1415 | | 1 | | | | | | | | | | | | |
| PR-SB-F1-0612 | /1447 | | 1 | | | | | | | | | | | | |
| PR-SB-F1-1224 | /1449 | | 1 | | | | | | | | | | | | |
| PR-SB-F1-2436 | HOLD /1451 | | 1 | | | | | | | | | | | | |
| PR-SB-F2-0026 | /1510 | | 1 | | | | | | | | | | | | |
| PR-SB-F2-0012 | /1512 | | 2 | | | | | | | | | 2 | MSMED | | |
| PR-SB-F2-1224 | /1514 | | 1 | | | | | | | | | | | | |
| PR-SB-F2-2436 | /1514 | | 1 | | | | | | | | | | | | |
| PR-SB-F2-3648 | HOLD /1518 | | 1 | | | | | | | | | | | | |
| PR-SB-F2-4860 | HOLD /1525 | | 1 | | | | | | | | | | | | |
| PR-D409-06076 | /1511 | | 1 | | | | | | | | | | | | |
| PR-SB-F3-2436 | /1549 | | 1 | | | | | | | | | | | | |

COMMENTS

| | | | | | |
|------------------------------------|-------------------|--------------------------------|------------------------------------|-------------------|--------------------------------|
| Relinquished By: (Signature) _____ | Date / Time _____ | Received By: (Signature) _____ | Relinquished By: (Signature) _____ | Date / Time _____ | Received By: (Signature) _____ |
| Relinquished By: (Signature) _____ | Date / Time _____ | Received By: (Signature) _____ | Relinquished By: (Signature) _____ | Date / Time _____ | Received By: (Signature) _____ |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.



6977 Te. Inadous Way
Scarpsvugh, ME 04874
Tel: (207) 874 2400
Fax: (207) 773-4025

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
PRINT LEGIBLY IN PEN

Page 7 of 7

Client _____ Contact _____ Phone # () _____ Fax # () _____
Address _____ City _____ State _____ Zip Code _____
Purchase Order # _____ Proj Name / No. _____ Katahdin Quote # _____
Bill (if different than above) _____ Address _____
Sampler (Print / Sign) _____ Copies To: _____

LAB USE ONLY WORK ORDER # _____
KATAHDIN PROJECT NUMBER _____

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

| Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|---|
| Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N |

REMARKS: _____

SHIPPING INFO FED EX UPS CLIENT

AIRBILL NO: _____
TEMP °C _____ TEMP BLANK INTACT NOT INTACT

| * Sample Description | Date / Time | Matrix | No. of Cntr |
|----------------------|-------------|--------|-------------|
| PR-SB-F3-3648 | HOLD / 1547 | SO | 1 |
| PR-SB-F3-4860 | HOLD / 1549 | ↓ | 1 |
| MBFR-FB01-060716 | HOLD / 1115 | NO PR | 4 |

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|------|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| 1547 | 1549 | | | | | | | | | | | | | | | | |
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COMMENTS _____

| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |
|------------------------------|--------------|--------------------------|------------------------------|-------------|--------------------------|
| | 6/7/16 17:00 | Feds | | | |
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THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000011



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client _____ Contact _____ Phone # _____ Fax # _____
 Address _____ City _____ State _____ Zip Code _____
 Purchase Order # _____ Proj. Name / No. _____ Katahdin Quote # _____
 Bill (if different than above) _____ Address _____

Sampler (Print / Sign) _____ Copies To: _____

LAB USE ONLY WORK ORDER #: ST4103
 KATAHDIN PROJECT NUMBER _____

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

| Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill |
|------|------|------|------|------|------|------|------|------|------|------|
| YO | YN | YO | YN | YO | YN | YO | YN | YO | YN | YO |

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Lead, Copper, Zinc and TPH-DRO | Total BTEX | TCLP VOCs | EOX | TCLP SVOCs | Metals, DRO | Lead |
|--------------------------|--------------------|--------|---------------|--------------------------------|------------|-----------|-----|------------|-------------|------|
| MBFR-Back Fil 101-060716 | 6-7-16 / 1120 | SO | 5 | 1 | 4 | | | | | |
| MBFR-Top Soil 101-060716 | / 1130 | SO | 5 | 1 | 4 | | | | | |
| PR-SOCHAR01-0024 | / 1546 | SO | 3 | | | 1 | 1 | 1 | | |
| PR-SOCHAR02-0024 | / 1550 | SO | 3 | | | 1 | 1 | 1 | | |
| PR-SS-F1-0006 | / 1445 | | 1 | | | | | | 1 | |
| PR-SB-F1-0612 | / 1447 | | 1 | | | | | | 1 | |
| PR-SB-F1-1224 | / 1449 | | 1 | | | | | | 1 | |
| PR-SB-F1-2436 | / 1451 | | 1 | | | | | | 1 | |
| PR-SS-F2-0006 | / 1510 | | 1 | | | | | | 1 | |
| PR-SB-F2-0612 | / 1512 | | 2 | | | | | | 2MSMSD | |
| PR-SB-F2-1224 | / 1514 | | 1 | | | | | | 1 | |
| PR-SB-F2-2436 | / 1516 | | 1 | | | | | | 1 | |
| PR-SB-F2-3648 | / 1518 | | 1 | | | | | | 1 | |
| PR-SB-F2-4860 | / 1528 | | 1 | | | | | | 1 | |
| PR-Dup09-060716 | / 1511 | | 1 | | | | | | 1 | |
| PR-SB-F3-2436 | / 1545 | ✓ | 1 | | | | | | 1 | |

COMMENTS _____

| | | | | | |
|---|--------------------------------|---|------------------------------------|-------------------|--------------------------------|
| Relinquished By: (Signature) <u>[Signature]</u> | Date / Time <u>6/7/16 1700</u> | Received By: (Signature) <u>FedEx</u> | Relinquished By: (Signature) _____ | Date / Time _____ | Received By: (Signature) _____ |
| Relinquished By: (Signature) _____ | Date / Time <u>6/8/16 1000</u> | Received By: (Signature) <u>[Signature]</u> | Relinquished By: (Signature) _____ | Date / Time _____ | Received By: (Signature) _____ |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000012

Client _____ Contact _____ Phone # _____ Fax # _____
 Address _____ City See Page 1 State _____ Zip Code _____
 Purchase Order # _____ Proj. Name / No. _____ Katahdin Quote # _____
 Bill (if different than above) _____ Address _____

Sampler (Print / Sign) _____ Copies To: _____

LAB USE ONLY WORK ORDER #: 554103
 KATAHDIN PROJECT NUMBER _____

| ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. |
| Y | N | Y | N | Y | N | Y | N | Y | N | Y | N |

REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: _____
 TEMP°C _____ TEMP BLANK INTACT NOT INTACT

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. |
|--------------------------|--------------------|--------|---------------|
| PR-SB-F3-3648 | 6-7-16/1547 | SO | 1 |
| PR-SB-F3-4860 | ↓ / 1549 | ↓ | 1 |
| MBFR-TB01-060716 | ↓ / 1115 | AQ TB | 4 |
| <i>[Large Signature]</i> | | | |
| <i>6-7-16</i> | | | |

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| Lead | BTEX | | | | | | | | | | |
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COMMENTS _____

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| Relinquished By: (Signature) <i>[Signature]</i> | Date / Time <u>6/7/16 1700</u> | Received By: (Signature) <i>[Signature]</i> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |
| Relinquished By: (Signature) | Date / Time <u>6/9/16 1000</u> | Received By: (Signature) <i>[Signature]</i> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

Form 8 GC Analytical Sequence

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR
Instrument ID : GC10

SDG : SJ4103
Column ID : A

| Client Sample ID | Lab Sample ID | Date Analyzed | Time Analyzed | OTP | |
|----------------------|---------------|---------------|---------------|-------|--|
| Initial Calibration | WG177717-5 | 01/18/16 | 18:09 | 11.12 | |
| Initial Calibration | WG177717-4 | 01/18/16 | 18:44 | 11.12 | |
| Initial Calibration | WG177717-3 | 01/18/16 | 19:19 | 11.12 | |
| Initial Calibration | WG177717-2 | 01/18/16 | 19:54 | 11.12 | |
| Initial Calibration | WG177717-1 | 01/18/16 | 20:29 | 11.14 | |
| Independent Source | WG177717-6 | 01/18/16 | 21:04 | | |
| Continuing Calibrati | WG185158-1 | 06/10/16 | 16:12 | 10.76 | |
| Method Blank Sample | WG185101-1 | 06/10/16 | 17:22 | 10.76 | |
| Laboratory Control S | WG185101-2 | 06/10/16 | 17:57 | 10.76 | |
| Laboratory Control S | WG185101-3 | 06/10/16 | 18:32 | 10.76 | |
| MBFR-BKFL01-060716 | SJ4103-1 | 06/10/16 | 19:07 | 10.76 | |
| MBFR-TPSL01-060716 | SJ4103-2 | 06/10/16 | 19:41 | 10.76 | |
| PR-SOCHAR01-0024 | SJ4103-3 | 06/10/16 | 20:17 | 10.75 | |
| PR-SOCHAR02-0024 | SJ4103-4 | 06/10/16 | 20:52 | 10.76 | |
| Continuing Calibrati | WG185158-2 | 06/10/16 | 23:46 | 10.76 | |

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR
Lab File ID : AJF10055.D
Instrument ID : GC10
Matrix : SL

SDG : SJ4103
Lab Sample ID : WG185101-1
Date Extracted : 09-JUN-16
Date Analyzed : 10-JUN-16
Time Analyzed : 17:22

This Method Blank applies to the following samples, LCS, MS and MSD:

| Client Sample ID | Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed |
|----------------------|---------------|-------------|---------------|---------------|
| Laboratory Control S | WG185101-2 | AJF10056.I | 06/10/16 | 17:57 |
| Laboratory Control S | WG185101-3 | AJF10057.I | 06/10/16 | 18:32 |
| MBFR-BKFL01-060716 | SJ4103-1 | AJF10058.I | 06/10/16 | 19:07 |
| MBFR-TPSL01-060716 | SJ4103-2 | AJF10059.I | 06/10/16 | 19:41 |
| PR-SOCHAR01-0024 | SJ4103-3 | AJF10060.I | 06/10/16 | 20:17 |
| PR-SOCHAR02-0024 | SJ4103-4 | AJF10061.I | 06/10/16 | 20:52 |

Report of Analytical Results

Client:
Lab ID: WG185101-1
Client ID: Method Blank Sample
Project:
SDG: SJ4103
Lab File ID: AJF10055.D

Sample Date:
Received Date:
Extract Date: 09-JUN-16
Extracted By: HG
Extraction Method: SW846 3550
Lab Prep Batch: WG185101

Analysis Date: 10-JUN-16
Analyst: JLP
Analysis Method: SW846 8015D
Matrix: SL
% Solids: NA
Report Date: 21-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|-----------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Diesel Range Organics | U | 2.2 | mg/Kgdrywt | 1 | 5 | 5.0 | 2.2 | 3.8 |
| o-Terphenyl | | 111. | % | | | | | |

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services
Lab Code: KAS

Project: NASA Wallops Flight Facility - MBFR
SDG: SJ4103

Matrix: SL

| Client Sample ID | Lab Sample ID | Col. ID | OTP | # |
|----------------------|---------------|---------|-----|------|
| MBFR-BKFL01-060716 | SJ4103-1 | A | | 99.6 |
| MBFR-TPSL01-060716 | SJ4103-2 | A | | 87.5 |
| PR-SOCHAR01-0024 | SJ4103-3 | A | | 88.3 |
| PR-SOCHAR02-0024 | SJ4103-4 | A | | 96.2 |
| Method Blank Sample | WG185101-1 | A | | 111. |
| Laboratory Control S | WG185101-2 | A | | 104. |
| Laboratory Control S | WG185101-3 | A | | 85.9 |

QC Limits

OTP O-TERPHENYL

45-130

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

LCS/LCSD Recovery Report

LCS ID: WG185101-2
LCSD ID: WG185101-3
Project:
SDG: SJ4103
Report Date: 21-JUN-16
LCS File ID: AJF10056.D

Received Date:
Extract Date: 09-JUN-16
Extracted By: HG
Extraction Method: SW846 3550
Lab Prep Batch: WG185101
LCSD File ID: AJF10057.D

Analysis Date: 10-JUN-16
Analyst: JLP
Analysis Method: SW846 8015D
Matrix: SL
% Solids: NA

| Compound | Spike Amt | LCS Conc | LCS Rec (%) | LCSD Conc | LCSD Rec (%) | Conc Units | RPD (%) | RPD Limit | Limits |
|-----------------------|-----------|----------|-------------|-----------|--------------|------------|---------|-----------|--------|
| Diesel Range Organics | 18.3 | 16.6 | 90.7 | 12.8 | 69.9 | mg/Kg | 26 | 50 | 38-134 |
| o-Terphenyl | | | 104. | | 85.9 | | | | 45-130 |

2-IN
 CALIBRATION QUALITY CONTROL
 GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville Job No.: 490-105346-1
 SDG No.: _____
 Analyst: CLJ Batch Start Date: 06/21/2016
 Reporting Units: mg/Kg Analytical Batch No.: 349452

| Sample Number | QC Type | Time | Analyte | Result | Spike Amount | (%) Recovery | Limits | Qual | Reagent |
|---------------|---------|-------|-------------------------------|--------|--------------|--------------|--------|------|-----------------|
| 2 | CCV | 16:06 | Halogens, Extractable Organic | 499.3 | 500 | 100 | 90-110 | | W_EOX STD_00045 |
| 14 | CCV | 16:06 | Halogens, Extractable Organic | 525.5 | 500 | 105 | 90-110 | | W_EOX STD_00045 |
| 15 | CCB | 16:06 | Halogens, Extractable Organic | ND | | | | | |
| 17 | CCV | 14:37 | Halogens, Extractable Organic | 531.6 | 500 | 106 | 90-110 | | W_EOX STD_00045 |
| 18 | CCB | 14:37 | Halogens, Extractable Organic | ND | | | | | |
| 22 | CCV | 14:37 | Halogens, Extractable Organic | 523.8 | 500 | 105 | 90-110 | | W_EOX STD_00045 |
| 23 | CCB | 14:37 | Halogens, Extractable Organic | ND | | | | | |

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville

Job No.: 490-105346-1

SDG No.: _____

| Method | Lab Sample ID | Analyte | Result | Qual | Units | RL | Dil |
|---|-------------------|----------------------------------|--------|------|-------|------|-----|
| Batch ID: 349452 Date: 06/21/2016 16:06 Prep Batch: 349446 Date: 06/21/2016 06:30 | | | | | | | |
| 9023 | MB 490-349446/1-A | Halogens, Extractable Organic | ND | | mg/Kg | 50.0 | 1 |

5-IN
 MATRIX SPIKE SAMPLE RECOVERY
 GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville Job No.: 490-105346-1
 SDG No.: _____
 Matrix: Solid

| Method | Lab Sample ID | Analyte | Result | C | Unit | Spike Amount | Pct. Rec. | Limits | RPD | RPD Limit | Q |
|------------------|---------------------|-------------------------------|--------------------|---|------------------------|--------------|-----------|--------|-----|-----------|---|
| Batch ID: 349452 | | Date: 06/21/2016 16:06 | Prep Batch: 349446 | | Date: 06/21/2016 06:30 | | | | | | |
| 9023 | 490-105642-A-1-B | Halogens, Extractable Organic | ND | | mg/Kg | | | | | | |
| 9023 | 490-105642-A-1-B MS | Halogens, Extractable Organic | 1004 | | mg/Kg | 1000 | 100 | 70-130 | | | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

5-IN
 MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
 GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville Job No.: 490-105346-1
 SDG No.: _____
 Matrix: Solid

| Method | Lab Sample ID | Analyte | Result | C | Unit | Spike Amount | Pct. Rec. | Limits | RPD | RPD Limit | Q |
|------------------|--------------------------|----------------------------------|--------|--------------------|-------|------------------------|-----------|--------|-----|-----------|---|
| Batch ID: 349452 | | Date: 06/21/2016 16:06 | | Prep Batch: 349446 | | Date: 06/21/2016 06:30 | | | | | |
| 9023 | 490-105642-A- 1-C MSD | Halogens, Extractable Organic | 1038 | | mg/Kg | 1000 | 104 | 70-130 | 3 | 20 | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

7A-IN
 LAB CONTROL SAMPLE
 GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville Job No.: 490-105346-1
 SDG No.: _____
 Matrix: Solid

| Method | Lab Sample ID | Analyte | Result | C | Unit | Spike Amount | Pct. Rec. | Limits | RPD | RPD Limit | Q |
|---|---------------------------|----------------------------------|---|---|-------|---------------------------------|-----------|--------|-----|-----------|---|
| Batch ID: 349452 Date: 06/21/2016 16:06 | | | Prep Batch: 349446 Date: 06/21/2016 06:30 | | | LCS Source: W_EOXSTDstock_00021 | | | | | |
| 9023 | LCS 490-349446/2- A | Halogens, Extractable Organic | 1056 | | mg/Kg | 1000 | 106 | 80-120 | 6 | 20 | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

7A-IN
 LAB CONTROL SAMPLE DUPLICATE
 GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville Job No.: 490-105346-1
 SDG No.: _____
 Matrix: Solid

| Method | Lab Sample ID | Analyte | Result | C | Unit | Spike Amount | Pct. Rec. | Limits | RPD | RPD Limit | Q |
|---|----------------------------|----------------------------------|---|---|-------|----------------------------------|-----------|--------|-----|-----------|---|
| Batch ID: 349452 Date: 06/21/2016 16:06 | | | Prep Batch: 349446 Date: 06/21/2016 06:30 | | | LCSD Source: W_EOXSTDstock_00021 | | | | | |
| 9023 | LCSD 490-349446/3- A | Halogens, Extractable Organic | 996.1 | | mg/Kg | 1000 | 100 | 80-120 | 6 | 20 | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville

Job Number: 490-105346-1

SDG Number: _____

Matrix: Solid

Instrument ID: NOEQUIP

Method: 9023

MDL Date: 07/03/2013 12:23

Prep Method: 9023

| Analyte | Wavelength/ Mass | RL (mg/Kg) | MDL (mg/Kg) |
|----------------------------------|---------------------|---------------|----------------|
| Halogens, Extractable Organic | | 50 | 25 |

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville Job Number: 490-105346-1
SDG Number: _____
Matrix: Solid Instrument ID: NOEQUIP
Method: 9023 XMDL Date: 04/30/2014 10:04

| Analyte | Wavelength/ Mass | XRL (mg/Kg) | XMDL (mg/Kg) |
|----------------------------------|---------------------|----------------|-----------------|
| Halogens, Extractable Organic | | 50 | 25 |

12-IN
PREPARATION LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville

Job No.: 490-105346-1

SDG No.: _____

Prep Method: 9023

| Lab Sample ID | Preparation Date | Prep Batch | Initial Weight (g) | Initial Volume | Final Volume (mL) |
|----------------------|------------------|------------|--------------------|----------------|-------------------|
| MB 490-349446/1-A | 06/21/2016 06:30 | 349446 | 1.00 | | 1.0 |
| LCS 490-349446/2-A | 06/21/2016 06:30 | 349446 | 1.00 | | 1.0 |
| LCSD 490-349446/3-A | 06/21/2016 06:30 | 349446 | 1.00 | | 1.0 |
| 490-105642-A-1-B MS | 06/21/2016 06:30 | 349446 | 1.00 | | 1.0 |
| 490-105642-A-1-C MSD | 06/21/2016 06:30 | 349446 | 1.00 | | 1.0 |
| 490-105346-1 | 06/21/2016 06:30 | 349446 | 1.02 | | 1.0 |
| 490-105346-2 | 06/21/2016 06:30 | 349446 | 1.00 | | 1.0 |

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville Job No.: 490-105346-1

SDG No.: _____

Instrument ID: NOEQUIP Analysis Method: 9023

Start Date: 06/21/2016 16:06 End Date: 06/22/2016 14:37

| Lab Sample Id | D/F | Type | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|----------------------|-----|------|-------|----------|---|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | E | O | H | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 16:06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV 490-349452/2 | 1 | | 16:06 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MB 490-349446/1-A | 1 | T | 16:06 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LCS 490-349446/2-A | 1 | T | 16:06 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LCSD 490-349446/3-A | 1 | T | 16:06 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 16:06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 16:06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 16:06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 16:06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 16:06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 490-105642-A-1-B MS | 1 | T | 16:06 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 490-105642-A-1-C MSD | 1 | T | 16:06 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 16:06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV 490-349452/14 | 1 | | 16:06 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB 490-349452/15 | 1 | | 16:06 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 14:37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV 490-349452/17 | 1 | | 14:37 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB 490-349452/18 | 1 | | 14:37 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 490-105346-1 | 1 | T | 14:37 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 490-105346-2 | 1 | T | 14:37 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 14:37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV 490-349452/22 | 1 | | 14:37 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB 490-349452/23 | 1 | | 14:37 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Prep Types: _____
T = Total/NA

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4103

Concentration Units: ug/L

SAMPLE: ICB

File: JJF14B Jun 14, 2016 18:57

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| COPPER | 0.170 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.309 | J |
| MOLYBDENUM | 0.047 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF14B Jun 14, 2016 19:32

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| COPPER | 0.170 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.559 | J |
| MOLYBDENUM | 0.059 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 6.380 | J |

SAMPLE: CCB

File: JJF14B Jun 14, 2016 20:10

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| COPPER | 0.170 | U |
| IRON | 6.200 | U |
| LEAD | 0.100 | J |
| MAGNESIUM | 0.924 | J |
| MOLYBDENUM | 0.022 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 3.067 | J |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4103

Concentration Units: ug/L

SAMPLE: CCB

File: JJF14B Jun 14, 2016 20:52

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| COPPER | 0.170 | U |
| IRON | 6.200 | U |
| LEAD | 0.143 | B |
| MAGNESIUM | 0.685 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF14B Jun 14, 2016 21:34

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| COPPER | 0.170 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF14B Jun 14, 2016 22:16

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| COPPER | 0.170 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.653 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4103

Concentration Units: ug/L

SAMPLE: CCB

File: JJF14B Jun 14, 2016 22:58

SAMPLE: CCB

File: JJF14B Jun 14, 2016 23:41

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| COPPER | 0.170 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.860 | J |
| MOLYBDENUM | 0.024 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 7.433 | J |

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | -7.242 | U |
| COPPER | 0.170 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4103

Concentration Units: ug/L

SAMPLE: ICB

File: JJF15B Jun 15, 2016 19:38

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.049 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |
| ZINC | 0.180 | U |

SAMPLE: CCB

File: JJF15B Jun 15, 2016 20:12

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| MAGNESIUM | 2.480 | J |
| MOLYBDENUM | 0.066 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 7.517 | J |
| ZINC | 0.180 | U |

SAMPLE: CCB

File: JJF15B Jun 15, 2016 20:54

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| MAGNESIUM | 0.989 | J |
| MOLYBDENUM | 0.044 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 8.785 | J |
| ZINC | 0.180 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4103

Concentration Units: ug/L

SAMPLE: CCB

File: JJF15B Jun 15, 2016 21:37

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| MAGNESIUM | 0.674 | J |
| MOLYBDENUM | 0.024 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |
| ZINC | 0.180 | U |

SAMPLE: CCB

File: JJF15B Jun 15, 2016 22:15

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |
| ZINC | 0.180 | U |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF10IMS3

Matrix: SOIL

SDG Name: SJ4103

QC Batch ID: JF10IMS3

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|---------|--------|---|
| COPPER | 0.077 | J |
| LEAD | 0.018 | J |
| ZINC | 0.61 | J |

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LC SOJF10IMS3**Matrix:** SOIL**SDG Name:** SJ4103**QC Batch ID:** JF10IMS3**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| COPPER | 25.0 | 24.5 | 97.9 | 84 | 119 |
| LEAD | 10.0 | 9.76 | 97.6 | 84 | 118 |
| ZINC | 50.0 | 47.4 | 94.9 | 82 | 119 |

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 1/26/2011**

| Analyte | LOD | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| COPPER | 0.040 | mg/kg | MS | SW846 3050B / SW846 6020A |
| LEAD | 0.010 | mg/Kg | MS | SW846 3050B / SW846 6020A |
| ZINC | 0.16 | mg/kg | MS | SW846 3050B / SW846 6020A |

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 1/26/2011**

| Analyte | MDL | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| COPPER | 0.014 | mg/kg | MS | SW846 3050B / SW846 6020A |
| LEAD | 0.0014 | mg/kg | MS | SW846 3050B / SW846 6020A |
| ZINC | 0.026 | mg/kg | MS | SW846 3050B / SW846 6020A |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF10IMS3**Matrix:** SOIL**SDG Name:** SJ4103**Method:** MS**Prep Date:** 06/10/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|--------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF10IMS3 | LC SOJF10IMS3 | 1 | 0.1 | |
| PBSJF10IMS3 | PBSJF10IMS3 | 1 | 0.1 | |
| MBFR-BKFL01-060716 | SJ4103-001 | 1.88 | 0.1 | |
| MBFR-TPSL01-060716 | SJ4103-002 | 1.82 | 0.1 | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4103

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF14B

Date: 6/14/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|-----------|------|-------|----------|----|----|-------|----|----|---|----|
| 6020 Tune | | 1 | 16:25 | | | | | | | | |
| 200.8 Tune | | 1 | 16:27 | | | | | | | | |
| Cal Blank | | 1 | 18:47 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na |
| Cal Std | | 1 | 18:50 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na |
| ICV | | 1 | 18:54 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na |
| ICB | | 1 | 18:57 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na |
| PQL | | 1 | 19:01 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 19:04 | | | | | | | | |
| ZZZZZZ | | 1 | 19:07 | | | | | | | | |
| ZZZZZZ | | 1 | 19:11 | | | | | | | | |
| ICSA | | 1 | 19:14 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na |
| ICSAB | | 1 | 19:18 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 19:22 | | | | | | | | |
| ZZZZZZ | | 1 | 19:25 | | | | | | | | |
| CCV | | 1 | 19:29 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 19:32 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 19:36 | | | | | | | | |
| ZZZZZZ | | 1 | 19:39 | | | | | | | | |
| ZZZZZZ | | 1 | 19:43 | | | | | | | | |
| ZZZZZZ | | 1 | 19:46 | | | | | | | | |
| ZZZZZZ | | 1 | 19:50 | | | | | | | | |
| ZZZZZZ | | 1 | 19:53 | | | | | | | | |
| ZZZZZZ | | 50 | 19:57 | | | | | | | | |
| ZZZZZZ | | 50 | 20:00 | | | | | | | | |
| ZZZZZZ | | 100 | 20:04 | | | | | | | | |
| CCV | | 1 | 20:07 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 20:10 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4103

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF14B

Date: 6/14/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | | |
|---------------|-----------|------|-------|----------|----|----|-------|----|----|---|----|--|
| ZZZZZZ | | 50 | 20:14 | | | | | | | | | |
| ZZZZZZ | | 50 | 20:18 | | | | | | | | | |
| ZZZZZZ | | 50 | 20:21 | | | | | | | | | |
| ZZZZZZ | | 50 | 20:24 | | | | | | | | | |
| ZZZZZZ | | 50 | 20:28 | | | | | | | | | |
| ZZZZZZ | | 50 | 20:31 | | | | | | | | | |
| ZZZZZZ | | 50 | 20:35 | | | | | | | | | |
| ZZZZZZ | | 250 | 20:38 | | | | | | | | | |
| ZZZZZZ | | 50 | 20:42 | | | | | | | | | |
| ZZZZZZ | | 100 | 20:45 | | | | | | | | | |
| CCV | | 1 | 20:49 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 20:52 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZZ | | 50 | 20:56 | | | | | | | | | |
| ZZZZZZ | | 5 | 20:59 | | | | | | | | | |
| ZZZZZZ | | 200 | 21:03 | | | | | | | | | |
| ZZZZZZ | | 10 | 21:06 | | | | | | | | | |
| ZZZZZZ | | 10 | 21:10 | | | | | | | | | |
| ZZZZZZ | | 10 | 21:13 | | | | | | | | | |
| ZZZZZZ | | 5 | 21:17 | | | | | | | | | |
| ZZZZZZ | | 5 | 21:20 | | | | | | | | | |
| ZZZZZZ | | 10 | 21:24 | | | | | | | | | |
| ZZZZZZ | | 10 | 21:27 | | | | | | | | | |
| CCV | | 1 | 21:31 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 21:34 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZZ | | 10 | 21:38 | | | | | | | | | |
| ZZZZZZ | | 10 | 21:41 | | | | | | | | | |
| ZZZZZZ | | 10 | 21:45 | | | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4103

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF14B

Date: 6/14/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | | |
|---------------|-----------|------|-------|----------|----|----|-------|----|----|---|----|--|
| ZZZZZZ | | 10 | 21:48 | | | | | | | | | |
| ZZZZZZ | | 10 | 21:52 | | | | | | | | | |
| ZZZZZZ | | 10 | 21:55 | | | | | | | | | |
| ZZZZZZ | | 10 | 21:59 | | | | | | | | | |
| ZZZZZZ | | 10 | 22:02 | | | | | | | | | |
| ZZZZZZ | | 10 | 22:06 | | | | | | | | | |
| ZZZZZZ | | 10 | 22:09 | | | | | | | | | |
| CCV | | 1 | 22:13 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 22:16 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZZ | | 10 | 22:20 | | | | | | | | | |
| ZZZZZZ | | 10 | 22:23 | | | | | | | | | |
| ZZZZZZ | | 1 | 22:27 | | | | | | | | | |
| ZZZZZZ | | 5 | 22:30 | | | | | | | | | |
| ZZZZZZ | | 1 | 22:34 | | | | | | | | | |
| ZZZZZZ | | 5 | 22:37 | | | | | | | | | |
| ZZZZZZ | | 5 | 22:41 | | | | | | | | | |
| ZZZZZZ | | 5 | 22:44 | | | | | | | | | |
| ZZZZZZ | | 1 | 22:48 | | | | | | | | | |
| ZZZZZZ | | 50 | 22:51 | | | | | | | | | |
| CCV | | 1 | 22:55 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 22:58 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZZ | | 2 | 23:02 | | | | | | | | | |
| ZZZZZZ | | 1 | 23:06 | | | | | | | | | |
| ZZZZZZ | | 1 | 23:09 | | | | | | | | | |
| ZZZZZZ | | 1 | 23:13 | | | | | | | | | |
| ZZZZZZ | | 1 | 23:16 | | | | | | | | | |
| ZZZZZZ | | 1 | 23:20 | | | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4103

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF14B

Date: 6/14/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | | | |
|---------------|--------------------|------|-------|----------|----|----|-------|----|----|---|----|--|--|
| PBSJF10IMS3 | | 5 | 23:23 | | | Cu | Pb | | | | | | |
| LCSOJF10IMS3 | | 5 | 23:27 | | | Cu | Pb | | | | | | |
| SJ4103-001 | MBFR-BKFL01-060716 | 10 | 23:30 | | | Cu | Pb | | | | | | |
| SJ4103-002 | MBFR-TPSL01-060716 | 10 | 23:34 | | | Cu | Pb | | | | | | |
| CCV | | 1 | 23:38 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | | |
| CCB | | 1 | 23:41 | Al | Ca | Cu | Fe Pb | Mg | Mo | K | Na | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4103

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF15B

Date: 6/15/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|-----------|------|-------|----------|----|----|----|----|---|----|----|
| 6020 Tune | | 1 | 18:16 | | | | | | | | |
| 200.8 Tune | | 1 | 18:18 | | | | | | | | |
| Cal Blank | | 1 | 19:28 | Al | Ca | Fe | Mg | Mo | K | Na | Zn |
| Cal Std | | 1 | 19:32 | Al | Ca | Fe | Mg | Mo | K | Na | Zn |
| ICV | | 1 | 19:35 | Al | Ca | Fe | Mg | Mo | K | Na | Zn |
| ICB | | 1 | 19:38 | Al | Ca | Fe | Mg | Mo | K | Na | Zn |
| PQL | | 1 | 19:42 | Al | Ca | Fe | Mg | Mo | K | Na | Zn |
| ZZZZZZ | | 1 | 19:45 | | | | | | | | |
| ZZZZZZ | | 1 | 19:48 | | | | | | | | |
| ZZZZZZ | | 1 | 19:52 | | | | | | | | |
| ICSA | | 1 | 19:55 | Al | Ca | Fe | Mg | Mo | K | Na | Zn |
| ICSAB | | 1 | 19:59 | Al | Ca | Fe | Mg | Mo | K | Na | Zn |
| ZZZZZZ | | 1 | 20:02 | | | | | | | | |
| ZZZZZZ | | 1 | 20:06 | | | | | | | | |
| CCV | | 1 | 20:09 | Al | Ca | Fe | Mg | Mo | K | Na | Zn |
| CCB | | 1 | 20:12 | Al | Ca | Fe | Mg | Mo | K | Na | Zn |
| ZZZZZZ | | 1 | 20:16 | | | | | | | | |
| ZZZZZZ | | 5 | 20:19 | | | | | | | | |
| ZZZZZZ | | 1 | 20:23 | | | | | | | | |
| ZZZZZZ | | 5 | 20:26 | | | | | | | | |
| ZZZZZZ | | 5 | 20:30 | | | | | | | | |
| ZZZZZZ | | 5 | 20:33 | | | | | | | | |
| ZZZZZZ | | 1 | 20:37 | | | | | | | | |
| ZZZZZZ | | 1 | 20:40 | | | | | | | | |
| ZZZZZZ | | 1 | 20:44 | | | | | | | | |
| ZZZZZZ | | 1 | 20:47 | | | | | | | | |
| CCV | | 1 | 20:51 | Al | Ca | Fe | Mg | Mo | K | Na | Zn |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4103

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF15B

Date: 6/15/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|--------------------|------|-------|----------|----|----|----|----|---|----|----|
| CCB | | 1 | 20:54 | Al | Ca | Fe | Mg | Mo | K | Na | Zn |
| ZZZZZZ | | 5 | 20:58 | | | | | | | | |
| ZZZZZZ | | 5 | 21:01 | | | | | | | | |
| ZZZZZZ | | 10 | 21:05 | | | | | | | | |
| ZZZZZZ | | 10 | 21:08 | | | | | | | | |
| ZZZZZZ | | 10 | 21:12 | | | | | | | | |
| ZZZZZZ | | 50 | 21:15 | | | | | | | | |
| ZZZZZZ | | 10 | 21:19 | | | | | | | | |
| ZZZZZZ | | 10 | 21:22 | | | | | | | | |
| ZZZZZZ | | 10 | 21:26 | | | | | | | | |
| ZZZZZZ | | 10 | 21:30 | | | | | | | | |
| CCV | | 1 | 21:33 | Al | Ca | Fe | Mg | Mo | K | Na | Zn |
| CCB | | 1 | 21:37 | Al | Ca | Fe | Mg | Mo | K | Na | Zn |
| ZZZZZZ | | 10 | 21:40 | | | | | | | | |
| ZZZZZZ | | 10 | 21:44 | | | | | | | | |
| ZZZZZZ | | 10 | 21:47 | | | | | | | | |
| ZZZZZZ | | 10 | 21:51 | | | | | | | | |
| ZZZZZZ | | 10 | 21:54 | | | | | | | | |
| PBSJF10IMS3 | | 5 | 21:58 | | | | | | | | Zn |
| LCSOJF10IMS3 | | 5 | 22:01 | | | | | | | | Zn |
| SJ4103-001 | MBFR-BKFL01-060716 | 10 | 22:05 | | | | | | | | Zn |
| SJ4103-002 | MBFR-TPSL01-060716 | 10 | 22:08 | | | | | | | | Zn |
| CCV | | 1 | 22:12 | Al | Ca | Fe | Mg | Mo | K | Na | Zn |
| CCB | | 1 | 22:15 | Al | Ca | Fe | Mg | Mo | K | Na | Zn |

Form 5

Volatile Organic Instrument Performance Check

| | |
|--|----------------------------------|
| Lab Name : Katahdin Analytical Services | SDG : SJ4103 |
| Project : NASA Wallops Flight Facility - MBFR | Date Analyzed : 20-MAY-16 |
| Lab File ID : WB420.D | Time Analyzed : 10:04 |
| Instrument ID : GCMS-W | Heated Purge : Yes |

| m/e | Ion Abundance Criteria | % Relative Abundance | |
|-----|------------------------------------|----------------------|--------------------|
| 50 | 15.0 - 40.0% of mass 95 | 28.1 | |
| 75 | 30.0 - 60.0% of mass 95 | 54.8 | |
| 95 | Base Peak, 100% relative abundance | 100 | |
| 96 | 5.0 - 9.0% of mass 95 | 7.0 | |
| 173 | Less than 2.0% of mass 174 | 0.0 | 0.0 ¹ |
| 174 | Greater than 50.0% of mass 95 | 74.6 | |
| 175 | 5.0 - 9.0% of mass 174 | 6.2 | 8.35 ¹ |
| 176 | 95.0 - 101.0% of mass 174 | 71.9 | 96.34 ¹ |
| 177 | 5.0 - 9.0% of mass 176 | 5.1 | 7.05 ² |

1-Value is % mass 174

2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

| Client Sample ID | Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed |
|---------------------|---------------|-------------|---------------|---------------|
| Initial Calibration | WG183903-4 | W6374.D | 05/20/16 | 10:27 |
| Initial Calibration | WG183903-3 | W6375.D | 05/20/16 | 11:07 |
| Initial Calibration | WG183903-2 | W6376.D | 05/20/16 | 11:40 |
| Initial Calibration | WG183903-1 | W6377.D | 05/20/16 | 12:13 |
| Initial Calibration | WG183903-6 | W6378.D | 05/20/16 | 12:45 |
| Initial Calibration | WG183903-5 | W6379.D | 05/20/16 | 13:18 |
| Independent Source | WG183903-7 | W6380A.D | 05/20/16 | 14:02 |

Form 5 Volatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services **SDG :** SJ4103
Project : NASA Wallops Flight Facility - MBFR **Date Analyzed :** 10-JUN-16
Lab File ID : WB429.D **Time Analyzed :** 12:50
Instrument ID : GCMS-W **Heated Purge :** Yes

| m/e | Ion Abundance Criteria | % Relative Abundance | |
|-----|------------------------------------|----------------------|--------------------|
| 50 | 15.0 - 40.0% of mass 95 | 23.7 | |
| 75 | 30.0 - 60.0% of mass 95 | 58.7 | |
| 95 | Base Peak, 100% relative abundance | 100 | |
| 96 | 5.0 - 9.0% of mass 95 | 7.1 | |
| 173 | Less than 2.0% of mass 174 | 0.8 | 0.97 ¹ |
| 174 | Greater than 50.0% of mass 95 | 77.6 | |
| 175 | 5.0 - 9.0% of mass 174 | 5.3 | 6.80 ¹ |
| 176 | 95.0 - 101.0% of mass 174 | 75.0 | 96.62 ¹ |
| 177 | 5.0 - 9.0% of mass 176 | 5.0 | 6.62 ² |

1-Value is % mass 174

2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

| Client Sample ID | Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed |
|----------------------|---------------|-------------|---------------|---------------|
| Continuing Calibrati | WG185092-4 | W6515.D | 06/10/16 | 13:13 |
| Laboratory Control S | WG185092-1 | W6516.D | 06/10/16 | 13:59 |
| Method Blank Sample | WG185092-2 | W6518.D | 06/10/16 | 15:16 |
| MBFR-TB01-060716 | SJ4103-5 | W6519.D | 06/10/16 | 15:49 |
| MBFR-BKFL01-060716 | SJ4103-1RA | W6528.D | 06/10/16 | 20:43 |
| MBFR-TPSL01-060716 | SJ4103-2RA | W6529.D | 06/10/16 | 21:16 |
| Continuing Calibrati | WG185092-5 | W6530.D | 06/10/16 | 21:49 |

Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR
Lab File ID : W6518.D
Instrument ID : GCMS-W
Heated Purge : Yes

SDG : SJ4103
Lab Sample ID : WG185092-2
Date Analyzed : 10-JUN-16
Time Analyzed : 15:16

This Method Blank applies to the following samples, LCS, MS and MSD:

| Client Sample ID | Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed |
|-------------------------|----------------------|--------------------|----------------------|----------------------|
| Laboratory Control S | WG185092-1 | W6516.D | 06/10/16 | 13:59 |
| MBFR-TB01-060716 | SJ4103-5 | W6519.D | 06/10/16 | 15:49 |
| MBFR-BKFL01-060716 | SJ4103-1RA | W6528.D | 06/10/16 | 20:43 |
| MBFR-TPSL01-060716 | SJ4103-2RA | W6529.D | 06/10/16 | 21:16 |

Report of Analytical Results

Client:
Lab ID: WG185092-2
Client ID: Method Blank Sample
Project:
SDG: SJ4103
Lab File ID: W6518.D

Sample Date:
Received Date:
Extract Date: 10-JUN-16
Extracted By: ERL
Extraction Method: SW846 5035
Lab Prep Batch: WG185092

Analysis Date: 10-JUN-16
Analyst: ERL
Analysis Method: SW846 8260C
Matrix: SL
% Solids: NA
Report Date: 14-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|-----------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Benzene | U | 2.5 | ug/Kgdrywt | 1 | 5 | 5.0 | 0.92 | 2.5 |
| Toluene | U | 2.5 | ug/Kgdrywt | 1 | 5 | 5.0 | 1.4 | 2.5 |
| Ethylbenzene | U | 2.5 | ug/Kgdrywt | 1 | 5 | 5.0 | 0.65 | 2.5 |
| Xylenes (Total) | U | 7.5 | ug/Kgdrywt | 1 | 15 | 15. | 1.3 | 7.5 |
| m+p-Xylenes | U | 5.0 | ug/Kgdrywt | 1 | 10 | 10. | 1.7 | 5.0 |
| o-Xylene | U | 2.5 | ug/Kgdrywt | 1 | 5 | 5.0 | 1.3 | 2.5 |
| p-Bromofluorobenzene | | 106. | % | | | | | |
| Toluene-D8 | | 104. | % | | | | | |
| 1,2-Dichloroethane-D4 | | 110. | % | | | | | |
| Dibromofluoromethane | | 112. | % | | | | | |

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services
Lab Code: KAS

Project: NASA Wallops Flight Facility - MBFR
SDG: SJ4103

Matrix: SL

| Client Sample ID | Lab Sample ID | Col. ID | BFB | # DBF | # DCA | # TOL | # |
|----------------------|---------------|---------|-----|-------|-------|-------|------|
| MBFR-BKFL01-060716 | SJ4103-1RA | | | 108. | 113. | 110. | 105. |
| MBFR-TPSL01-060716 | SJ4103-2RA | | | 99.4 | 114. | 114. | 104. |
| MBFR-TB01-060716 | SJ4103-5 | | | 108. | 114. | 112. | 105. |
| Laboratory Control S | WG185092-1 | | | 111. | 108. | 98.8 | 102. |
| Method Blank Sample | WG185092-2 | | | 106. | 112. | 110. | 104. |

QC Limits

| | | |
|-----|-----------------------|--------|
| DBF | DIBROMOFLUOROMETHANE | 78-119 |
| TOL | TOLUENE-D8 | 85-116 |
| BFB | P-BROMOFLUOROBENZENE | 79-119 |
| DCA | 1,2-DICHLOROETHANE-D4 | 71-136 |

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

LCS Recovery Report

Client:
Lab ID: WG185092-1
Client ID: LCS
Project:
SDG: SJ4103
LCS File ID: W6516.D

Sample Date:
Received Date:
Extract Date: 10-JUN-16
Extracted By: ERL
Extraction Method: SW846 5035
Lab Prep Batch: WG185092

Analysis Date: 10-JUN-16
Analyst: ERL
Analysis Method: SW846 8260C
Matrix: SL
% Solids: NA
Report Date: 14-JUN-16

| Compound | Recovery (%) | Conc Added | Conc Recovered | Conc Units | Limits |
|-----------------------|--------------|------------|----------------|------------|--------|
| Benzene | 106. | 50.0 | 53.0 | ug/Kgdrywt | 77-121 |
| Toluene | 106. | 50.0 | 52.8 | ug/Kgdrywt | 77-121 |
| Ethylbenzene | 100. | 50.0 | 50.0 | ug/Kgdrywt | 76-122 |
| Xylenes (Total) | 103. | 150. | 154. | ug/Kgdrywt | 78-124 |
| m+p-Xylenes | 102. | 100. | 102. | ug/Kgdrywt | 77-124 |
| o-Xylene | 105. | 50.0 | 52.7 | ug/Kgdrywt | 77-123 |
| p-Bromofluorobenzene | 111. | | | | 79-119 |
| Toluene-D8 | 102. | | | | 85-116 |
| 1,2-Dichloroethane-D4 | 98.8 | | | | 71-136 |
| Dibromofluoromethane | 108. | | | | 78-119 |



TO: R. SOK DATE: AUGUST 10, 2016
 FROM: L. GANSER COPIES: DV FILE
 SUBJECT: DATA VALIDATION- LEAD
 NASA WALLOPS ISLAND, VIRGINIA
 SAMPLE DELIVERY GROUP (SDG) SJ4227

SAMPLES: 24/Soil

| | | | |
|-----------------|-----------------|-----------------|---------------|
| PR-DUP10-060816 | PR-DUP11-060816 | PR-DUP12-060816 | PR-SB-F4-2436 |
| PR-SB-F4-4860 | PR-SB-F5-0612 | PR-SB-F5-1224 | PR-SB-F5-2436 |
| PR-SB-F6-0612 | PR-SB-F6-1224 | PR-SB-G1-0612 | PR-SB-G1-1224 |
| PR-SB-G2-0612 | PR-SB-G2-1224 | PR-SB-G3-0612 | PR-SB-G3-1224 |
| PR-SB-G4-0612 | PR-SB-G4-1224 | PR-SS-F5-0006 | PR-SS-F6-0006 |
| PR-SS-G1-0006 | PR-SS-G2-0006 | PR-SS-G3-0006 | PR-SS-G4-0006 |

Overview

The sample set for NASA Wallops Island, SDG SJ4227 consists of twenty four (24) soil samples. All samples were analyzed for lead. Three field duplicate pairs were included in this SDG: PR-SB-F5-1224 / PR-DUP10-060816, PR-SS-F6-0006 / PR-DUP11-060816, and PR-SS-G2-0006 / PR-DUP12-060816.

Samples were collected on June 8, 2016 by Tetra Tech and analyzed by Katahdin. Lead analyses were conducted in accordance to SW-846 Method 6020A analytical and reporting protocols.

The data contained in this SDG were validated with regard to the following parameters: data completeness, holding times, MS tuning, laboratory method/preparation blank results, ICP interference results, blank spike results, matrix spike/matrix spike duplicate results, laboratory duplicate results, ICP serial dilution results, field duplicate precision, and detection limits. Areas of concern with respect to data quality are listed below.

Major Problems – None.

Minor Problems

- Field duplicate imprecision (relative percent difference > 50%) was noted for field duplicate sample pair PR-SS-F6-0006 / PR-DUP11-060816. The detected lead results in samples PR-SS-F6-0006 and PR-DUP11-060816 were qualified as estimated (J).

Notes

Lead was detected in the laboratory preparation blanks at the following maximum concentrations:

| <u>Analyte</u> | <u>Maximum Concentration</u> | <u>Reporting Limit (RL) (> or <)</u> |
|---------------------|------------------------------|--|
| Lead ⁽¹⁾ | 0.012 mg/kg | < |
| Lead ⁽²⁾ | 0.0808 mg/kg | < |
| Lead ⁽³⁾ | 0.010 mg/kg | < |

- Concentration in preparation blank affecting samples in batch JF12IMS1.
- Concentration in preparation blank affecting samples in batch JF12IMS2.
- Concentration in preparation blank affecting samples in batch JF15IMS1.

To: R. SOK
SDG: SJ4227

Dilution factor, if applicable, was taken into consideration when evaluating for blank contamination. No action was taken as sample results were greater than the RL.

EXECUTIVE SUMMARY

Laboratory Performance Issues: Lead was present in the preparation blanks.

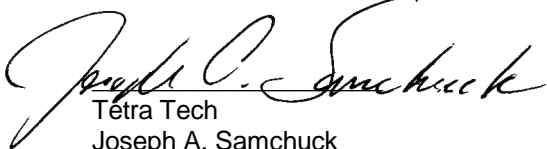
Other Factors Affecting Data Quality: Field duplicate imprecision was noted for lead in one field duplicate sample pair.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review" (August 2014). The text of this report has been formulated to address only those areas affecting data quality.

The text of this report has been formulated to address only those problem areas affecting data quality.



Tetra Tech
Leanne M. Ganser
Environmental Scientist/Data Validator



Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:

- Appendix A – Qualified Analytical Results
- Appendix B – Results as Reported by the Laboratory
- Appendix C – Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate
- Z4 = Sample activity is less than the at uncertainty at 3 standard deviations and greater than the MDC
- Z5 = Sample activity is less than the at uncertainty at 3 standard deviations and less than the MDC

| | | | | | | | | | | | | | |
|---|------------|-----------------|------|--------|-----------------|------|--------|-----------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4227 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-DUP10-060816 | | | PR-DUP11-060816 | | | PR-DUP12-060816 | | | PR-SB-F4-2436 | | |
| | LAB_ID | SJ4227-031 | | | SJ4227-032 | | | SJ4227-033 | | | SJ4227-001 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | | 6/7/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 91.6 | | | 86.3 | | | 85.7 | | | 92.9 | | |
| | DUP_OF | PR-SB-F5-1224 | | | PR-SS-F6-0006 | | | PR-SS-G2-0006 | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 13.6 | | | 74.8 | J | G | 20.8 | | | 277 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4227 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-SB-F4-4860 | | | PR-SB-F5-0612 | | | PR-SB-F5-1224 | | | PR-SB-F5-2436 | | |
| | LAB_ID | SJ4227-003 | | | SJ4227-005 | | | SJ4227-006 | | | SJ4227-007 | | |
| | SAMP_DATE | 6/7/2016 | | | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 93.1 | | | 89.9 | | | 90.8 | | | 90.0 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 359 | | | 22.8 | | | 18.5 | | | 26.3 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4227 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-SB-F6-0612 | | | PR-SB-F6-1224 | | | PR-SB-G1-0612 | | | PR-SB-G1-1224 | | |
| | LAB_ID | SJ4227-011 | | | SJ4227-012 | | | SJ4227-027 | | | SJ4227-028 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 89.0 | | | 88.8 | | | 87.7 | | | 88.5 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 9.84 | | | 9.53 | | | 8.38 | | | 8.38 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4227 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-SB-G2-0612 | | | PR-SB-G2-1224 | | | PR-SB-G3-0612 | | | PR-SB-G3-1224 | | |
| | LAB_ID | SJ4227-023 | | | SJ4227-024 | | | SJ4227-019 | | | SJ4227-020 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 88.5 | | | 86.6 | | | 86.1 | | | 88.2 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 9.26 | | | 10.6 | | | 29.2 | | | 10.2 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4227 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-SB-G4-0612 | | | PR-SB-G4-1224 | | | PR-SS-F5-0006 | | | PR-SS-F6-0006 | | |
| | LAB_ID | SJ4227-015 | | | SJ4227-016 | | | SJ4227-004 | | | SJ4227-010 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 88.2 | | | 89.0 | | | 88.6 | | | 87.3 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 7.99 | | | 8.56 | | | 86 | | | 33.9 | J | G | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4227 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-SS-G1-0006 | | | PR-SS-G2-0006 | | | PR-SS-G3-0006 | | | PR-SS-G4-0006 | | |
| | LAB_ID | SJ4227-026 | | | SJ4227-022 | | | SJ4227-018 | | | SJ4227-014 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 86.2 | | | 85.6 | | | 79.9 | | | 84.5 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 30.7 | | | 22.6 | | | 31.1 | | | 60.8 | | | |

Appendix B

Results as Reported by the Laboratory

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-F4-2436

Matrix: SOIL

SDG Name: SJ4227

Percent Solids: 92.9

Lab Sample ID: SJ4227-001

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 277 | | | MS | 10 | 0.16 | 0.011 | 0.078 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-F4-4860

Matrix: SOIL

SDG Name: SJ4227

Percent Solids: 93.1

Lab Sample ID: SJ4227-003

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 359 | | | MS | 10 | 0.12 | 0.0088 | 0.063 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-F5-0006

Matrix: SOIL

SDG Name: SJ4227

Percent Solids: 88.6

Lab Sample ID: SJ4227-004

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 86.0 | | | MS | 10 | 0.17 | 0.012 | 0.087 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-F5-0612

Matrix: SOIL

SDG Name: SJ4227

Percent Solids: 89.8

Lab Sample ID: SJ4227-005

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 22.8 | | | MS | 10 | 0.20 | 0.014 | 0.10 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-F5-1224

Matrix: SOIL

SDG Name: SJ4227

Percent Solids: 90.8

Lab Sample ID: SJ4227-006

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 18.5 | | | MS | 10 | 0.12 | 0.0085 | 0.060 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-F5-2436

Matrix: SOIL

SDG Name: SJ4227

Percent Solids: 90.0

Lab Sample ID: SJ4227-007

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 26.3 | | | MS | 10 | 0.16 | 0.011 | 0.082 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-F6-0006

Matrix: SOIL

SDG Name: SJ4227

Percent Solids: 87.3

Lab Sample ID: SJ4227-010

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 33.9 | | | MS | 10 | 0.19 | 0.013 | 0.094 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-F6-0612

Matrix: SOIL

SDG Name: SJ4227

Percent Solids: 89.0

Lab Sample ID: SJ4227-011

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 9.84 | | | MS | 10 | 0.10 | 0.0073 | 0.052 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-F6-1224

Matrix: SOIL

SDG Name: SJ4227

Percent Solids: 88.8

Lab Sample ID: SJ4227-012

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 9.53 | | | MS | 10 | 0.14 | 0.0096 | 0.069 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-G4-0006

Matrix: SOIL

SDG Name: SJ4227

Percent Solids: 84.5

Lab Sample ID: SJ4227-014

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 60.8 | | | MS | 10 | 0.13 | 0.0092 | 0.066 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-G4-0612

Matrix: SOIL

SDG Name: SJ4227

Percent Solids: 88.2

Lab Sample ID: SJ4227-015

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 7.99 | | | MS | 10 | 0.14 | 0.010 | 0.072 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-G4-1224

Matrix: SOIL

SDG Name: SJ4227

Percent Solids: 89.0

Lab Sample ID: SJ4227-016

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 8.56 | | | MS | 10 | 0.13 | 0.0090 | 0.064 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services**Client Field ID:** PR-SS-G3-0006**Matrix:** SOIL**SDG Name:** SJ4227**Percent Solids:** 79.9**Lab Sample ID:** SJ4227-018**Concentration Units :** mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 31.1 | | | MS | 10 | 0.16 | 0.011 | 0.081 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-G3-0612

Matrix: SOIL

SDG Name: SJ4227

Percent Solids: 86.1

Lab Sample ID: SJ4227-019

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 29.2 | | | MS | 10 | 0.11 | 0.0080 | 0.057 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-G3-1224

Matrix: SOIL

SDG Name: SJ4227

Percent Solids: 88.2

Lab Sample ID: SJ4227-020

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 10.2 | | | MS | 10 | 0.14 | 0.0096 | 0.068 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-G2-0006

Matrix: SOIL

SDG Name: SJ4227

Percent Solids: 85.6

Lab Sample ID: SJ4227-022

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 22.6 | | | MS | 10 | 0.17 | 0.012 | 0.083 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services**Client Field ID:** PR-SB-G2-0612**Matrix:** SOIL**SDG Name:** SJ4227**Percent Solids:** 88.5**Lab Sample ID:** SJ4227-023**Concentration Units :** mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 9.26 | | | MS | 10 | 0.17 | 0.012 | 0.083 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-G2-1224

Matrix: SOIL

SDG Name: SJ4227

Percent Solids: 86.6

Lab Sample ID: SJ4227-024

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 10.6 | | | MS | 10 | 0.13 | 0.0089 | 0.064 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SS-G1-0006

Matrix: SOIL

SDG Name: SJ4227

Percent Solids: 86.2

Lab Sample ID: SJ4227-026

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 30.7 | | | MS | 10 | 0.089 | 0.0062 | 0.044 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-G1-0612

Matrix: SOIL

SDG Name: SJ4227

Percent Solids: 87.7

Lab Sample ID: SJ4227-027

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 8.38 | | | MS | 10 | 0.13 | 0.0092 | 0.066 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-G1-1224

Matrix: SOIL

SDG Name: SJ4227

Percent Solids: 88.5

Lab Sample ID: SJ4227-028

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 8.38 | | | MS | 10 | 0.12 | 0.0086 | 0.061 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services**Client Field ID:** PR-DUP10-060816**Matrix:** SOIL**SDG Name:** SJ4227**Percent Solids:** 91.6**Lab Sample ID:** SJ4227-031**Concentration Units :** mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 13.6 | | | MS | 10 | 0.15 | 0.010 | 0.073 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services**Client Field ID:** PR-DUP11-060816**Matrix:** SOIL**SDG Name:** SJ4227**Percent Solids:** 86.3**Lab Sample ID:** SJ4227-032**Concentration Units :** mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 74.8 | | | MS | 10 | 0.18 | 0.013 | 0.091 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services**Client Field ID:** PR-DUP12-060816**Matrix:** SOIL**SDG Name:** SJ4227**Percent Solids:** 85.7**Lab Sample ID:** SJ4227-033**Concentration Units :** mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 20.8 | | | MS | 10 | 0.16 | 0.012 | 0.082 |

Comments:

Appendix C

Support Documentation



**SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECHNUS, INC.
NASA WALLOPS FLIGHT FACILITY-MBFR
SJ4227**

Sample Receipt

The following samples were received on June 10, 2016 and were logged in under Katahdin Analytical Services work order number SJ4227 for a hardcopy due date of June 29, 2016.

| <u>KATAHDIN</u> <u>Sample No.</u> | <u>TTNUS</u> <u>Sample Identification</u> |
|--------------------------------------|--|
| SJ4227-1 | PR-SB-F4-2436 |
| SJ4227-3 | PR-SB-F4-4860 |
| SJ4227-4 | PR-SS-F5-0006 |
| SJ4227-5 | PR-SB-F5-0612 |
| SJ4227-6 | PR-SB-F5-1224 |
| SJ4227-7 | PR-SB-F5-2436 |
| SJ4227-10 | PR-SS-F6-0006 |
| SJ4227-11 | PR-SB-F6-0612 |
| SJ4227-12 | PR-SB-F6-1224 |
| SJ4227-14 | PR-SS-G4-0006 |
| SJ4227-15 | PR-SB-G4-0612 |
| SJ4227-16 | PR-SB-G4-1224 |
| SJ4227-18 | PR-SS-G3-0006 |
| SJ4227-19 | PR-SB-G3-0612 |
| SJ4227-20 | PR-SB-G3-1224 |
| SJ4227-22 | PR-SS-G2-0006 |
| SJ4227-23 | PR-SB-G2-0612 |
| SJ4227-24 | PR-SB-G2-1224 |
| SJ4227-26 | PR-SS-G1-0006 |
| SJ4227-27 | PR-SB-G1-0612 |
| SJ4227-28 | PR-SB-G1-1224 |
| SJ4227-30 | PR-DUP09-060716 |
| SJ4227-31 | PR-DUP10-060816 |
| SJ4227-32 | PR-DUP11-060816 |
| SJ4227-33 | PR-DUP12-060816 |

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Metals Analysis

The samples of Katahdin Work Order SJ4227 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Solid-matrix Katahdin Sample Numbers SJ4227-(1,4-7,10-12,14-16,18-20,22-24,26,27) were digested for ICP-MS analysis on 06/12/16 (QC Batch JF12IMS1) in accordance with USEPA Method 3050B.

Katahdin Sample Numbers SJ4227-(28, 31-33) were digested for ICP-MS analysis on 06/12/16 (QC Batch JF12IMS2).

Katahdin Sample Numbers SJ4227-3 were digested for ICP-MS analysis on 06/15/16 (QC Batch JF15IMS1).

ICP-MS analyses of Katahdin Work Order SJ4227 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Sample digestates for Katahdin Work Order SJ4227 were diluted by a factor of 10 in accordance with the project limits.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

| Internal Standard Element | Associated Analytes |
|----------------------------------|--|
| Lithium | Beryllium, Boron |
| Scandium | Sodium, Magnesium, Aluminum, Silicon, Potassium, Calcium |
| Germanium or Yttrium | Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Strontium, Molybdenum, Silver, Cadmium |
| Terbium | Tin, Antimony, Barium, Tungsten |
| Bismuth | Lead, Thallium, Thorium, Uranium |

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the LOQ are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQs, MDLs, and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

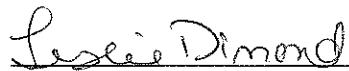
The samples of Work Order SJ4227 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times, and all quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.



Leslie Dimond
Quality Assurance Officer

06.29.16

| | | |
|---------------------------------------|------------------------------|--------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>Jo</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>GN</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>554227 → 4233</u> | KIMS Review By: <u>Jo</u> | Received By: <u>SO</u> |
| SDG #: | Cooler: <u>L</u> of <u>4</u> | Date/Time Rec.: <u>6-10-16 10950</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | ✓ | | | | |
| 2. Chain of Custody present in cooler? | ✓ | | | | |
| 3. Chain of Custody signed by client? | ✓ | | | | |
| 4. Chain of Custody matches samples? | ✓ | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | ✓ | | | | Temp (°C): <u>1.8</u> |
| Samples received at <6 °C w/o freezing? | ✓ | | | | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | ✓ | | | | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | ✓ | | | | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | ✓ | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | | |
| Aqueous: No bubble larger than a pea? | | | | ✓ | |
| Soil/Sediment: | | | | | |
| Received in airtight container? | | | | ✓ | |
| Received in methanol? | | | | ✓ | |
| Methanol covering soil? | | | | ✓ | |
| D.I. Water - Received within 48 hour HT? | | | | ✓ | |
| Air: Refer to KAS COC for canister/flow controller requirements. | ✓ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | ✓ | |
| 8. Proper sample containers and volume? | ✓ | | | | |
| 9. Samples within hold time upon receipt? | ✓ | | | | |
| 10. Aqueous samples properly preserved? | | | | | |
| Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 | | | | ✓ | |
| Sulfide - >9 | | | | ✓ | |
| Cyanide - pH >12 | | | | ✓ | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

- RR-SS-D8-0006 - ms/vol provided.
- no ms/vol provided for D8-0612 which is on chain.
- Dup 09 missing - was received in first shipment - not needed on this chain.

| | | |
|---------------------------------------|------------------------------------|-------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>Jo</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>GN</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>554227 → 4233</u> | KIMS Review By: <u>[Signature]</u> | Received By: <u>SO</u> |
| SDG #: | Cooler: <u>2</u> of <u>4</u> | Date/Time Rec.: <u>6-10-16 0950</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | ✓ | | | | |
| 2. Chain of Custody present in cooler? | ✓ | | | | |
| 3. Chain of Custody signed by client? | ✓ | | | | |
| 4. Chain of Custody matches samples? | ✓ | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | | | | ✓ | Temp (°C): <u>N/A</u> |
| Samples received at <6 °C w/o freezing? | | | | ✓ | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | | | | ✓ | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | | | | ✓ | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | ✓ | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | ✓ | |
| Aqueous: No bubble larger than a pea? | | | | ✓ | |
| Soil/Sediment: | | | | ✓ | |
| Received in airtight container? | | | | ✓ | |
| Received in methanol? | | | | ✓ | |
| Methanol covering soil? | | | | ✓ | |
| D.I. Water - Received within 48 hour HT? | | | | ✓ | |
| Air: Refer to KAS COC for canister/flow controller requirements. | ✓ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | ✓ | |
| 8. Proper sample containers and volume? | ✓ | | | | |
| 9. Samples within hold time upon receipt? | ✓ | | | | |
| 10. Aqueous samples properly preserved? | | | | ✓ | |
| Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 | | | | ✓ | |
| Sulfide - >9 | | | | ✓ | |
| Cyanide - pH >12 | | | | ✓ | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

00000008

| | | |
|---------------------------------------|------------------------------|-------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>JO</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>GN</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>SJ4227 → 4233</u> | KIMS Review By: <u>JO</u> | Received By: <u>SO</u> |
| SDG #: | Cooler: <u>3</u> of <u>4</u> | Date/Time Rec.: <u>6-10-16 0950</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | ✓ | | | | |
| 2. Chain of Custody present in cooler? | ✓ | | | | |
| 3. Chain of Custody signed by client? | ✓ | | | | |
| 4. Chain of Custody matches samples? | ✓ | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | | | | ✓ | Temp (°C): <u>N/A</u> |
| Samples received at <6 °C w/o freezing? | | | | ✓ | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | | | | ✓ | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | | | | ✓ | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | ✓ | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | | |
| Aqueous: No bubble larger than a pea? | | | | ✓ | |
| Soil/Sediment: | | | | | |
| Received in airtight container? | | | | ✓ | |
| Received in methanol? | | | | ✓ | |
| Methanol covering soil? | | | | ✓ | |
| D.I. Water - Received within 48 hour HT? | | | | ✓ | |
| Air: Refer to KAS COC for canister/flow controller requirements. | ✓ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | ✓ | |
| 8. Proper sample containers and volume? | ✓ | | | | |
| 9. Samples within hold time upon receipt? | ✓ | | | | |
| 10. Aqueous samples properly preserved? | | | | | |
| Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 | | | | ✓ | |
| Sulfide - >9 | | | | ✓ | |
| Cyanide - pH >12 | | | | ✓ | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

| | | |
|---------------------------------------|------------------------------------|-------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>JO</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>GN</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>SJ4227 → 4233</u> | KIMS Review By: <u>[Signature]</u> | Received By: <u>JO</u> |
| SDG #: | Cooler: <u>4</u> of <u>4</u> | Date/Time Rec.: <u>6-10-16 0950</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|---|---|-----|-------------------------------------|---|
| 1. Custody seals present / intact? | <input checked="" type="checkbox"/> | | | | |
| 2. Chain of Custody present in cooler? | <input checked="" type="checkbox"/> | | | | |
| 3. Chain of Custody signed by client? | <input checked="" type="checkbox"/> | | | | |
| 4. Chain of Custody matches samples? | <input checked="" type="checkbox"/> | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | | | | <input checked="" type="checkbox"/> | Temp (°C): <u>N/A</u> |
| Samples received at <6 °C w/o freezing? | | | | <input checked="" type="checkbox"/> | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | | | | <input checked="" type="checkbox"/> | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | | | | <input checked="" type="checkbox"/> | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | <input checked="" type="checkbox"/> | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | | |
| Aqueous: No bubble larger than a pea? | | | | <input checked="" type="checkbox"/> | |
| Soil/Sediment: | | | | | |
| Received in airtight container? | | | | <input checked="" type="checkbox"/> | |
| Received in methanol? | | | | <input checked="" type="checkbox"/> | |
| Methanol covering soil? | | | | <input checked="" type="checkbox"/> | |
| D.I. Water - Received within 48 hour HT? | | | | <input checked="" type="checkbox"/> | |
| Air: Refer to KAS COC for canister/flow controller requirements. | <input checked="" type="checkbox"/> if air included | | | | |
| 7. Trip Blank present in cooler? | | | | <input checked="" type="checkbox"/> | |
| 8. Proper sample containers and volume? | <input checked="" type="checkbox"/> | | | | |
| 9. Samples within hold time upon receipt? | <input checked="" type="checkbox"/> | | | | |
| 10. Aqueous samples properly preserved? | | | | | |
| Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 | | | | <input checked="" type="checkbox"/> | |
| Sulfide - >9 | | | | <input checked="" type="checkbox"/> | |
| Cyanide - pH >12 | | | | <input checked="" type="checkbox"/> | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

[Handwritten Signature]

Jennifer Obrin

From: Sok, Rob [Rob.Sok@tetrattech.com]
Sent: Wednesday, June 15, 2016 11:46 AM
To: Greg Lull
Cc: 'Jennifer Obrin'
Subject: RE: Hold samples to release

Greg,

After talking with the client, we agreed that we should release two more samples at the Pistol Range. Please prep and run the following hold samples:

PR-SB-F3-4860 and PR-SB-F4-4860
SJ4102-30 SJ4027-3

We would also like these results ASAP and will pay for a 24hr TAT if that can be accommodated.

Thanks,
Rob

From: Greg Lull [mailto:glull@katahdinlab.com]
Sent: Wednesday, June 15, 2016 9:48 AM
To: Sok, Rob <Rob.Sok@tetrattech.com>
Cc: 'Jennifer Obrin' <jobrin@katahdinlab.com>
Subject: RE: Hold samples to release

Rob:

Just want to give you the update after talking with the metals department.

We are digesting the samples below today (a nearly full day process), will get them on the instrument tonight with prelim tomorrow as soon as possible.

We're looking into sample RR-D8-1224 to see if we can pull that one, since it's now not needed.

Greg

From: Sok, Rob [mailto:Rob.Sok@tetrattech.com]
Sent: Wednesday, June 15, 2016 9:33 AM
To: Greg Lull <glull@katahdinlab.com>
Subject: FW: Hold samples to release



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client: **Tetra Tech** Contact: **Kristi Francisco** Phone #: **(757) 466-4902** Fax #: **()**

Address: **5700 Lake Wright Dr. St 309** City: **Norfolk** State: **VA** Zip Code: **23502**

Purchase Order #: _____ Proj. Name / No.: **112G07723** Katahdin Quote #: _____

Bill (if different than above) Address: _____

Sampler (Print / Sign) **Jacob Birkett** Copies To: _____

LAB USE ONLY WORK ORDER #: **SJ4227**
 KATAHDIN PROJECT NUMBER _____

REMARKS: _____

SHIPPING INFO: FED EX UPS CLIENT

AIRBILL NO: _____

TEMP °C _____ TEMP BLANK INTACT NOT INTACT

| ANALYSIS AND CONTAINER-TYPE PRESERVATIVES | | | | | | | | | | | |
|---|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| FIL | FIL | FIL | FIL | FIL | FIL | FIL | FIL | FIL | FIL | FIL | FIL |
| Y | N | Y | N | Y | N | Y | N | Y | N | Y | N |

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Lead | | | | | | | | | | | | | | | |
|----------------------|--------------------|--------|---------------|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------|
| PR-SB-F4-2436 | 6-7-16 / 1615 | SO | 1 | 1 | | | | | | | | | | | | | | | |
| PR-SB-F4-3648 | 6-7-16 / 1617 | | 1 | 1 | | | | | | | | | | | | | | | HOLD |
| PR-SB-F4-4860 | 6-7-16 / 1619 | | 1 | 1 | | | | | | | | | | | | | | | HOLD |
| PR-SS-F5-0006 | 6-8-16 / 0758 | | 1 | 1 | | | | | | | | | | | | | | | |
| PR-SB-F5-0612 | / 0759 | | 1 | 1 | | | | | | | | | | | | | | | |
| PR-SB-F5-1224 | / 0800 | | 1 | 1 | | | | | | | | | | | | | | | |
| PR-SB-F5-2436 | / 0801 | | 1 | 1 | | | | | | | | | | | | | | | |
| PR-SB-F5-3648 | / 0802 | | 1 | 1 | | | | | | | | | | | | | | | HOLD |
| PR-SB-F5-4860 | / 0803 | | 1 | 1 | | | | | | | | | | | | | | | HOLD |
| PR-SS-F6-0006 | / 0820 | | 1 | 1 | | | | | | | | | | | | | | | |
| PR-SB-F6-0612 | / 0821 | | 1 | 1 | | | | | | | | | | | | | | | |
| PR-SB-F6-1224 | / 0822 | | 1 | 1 | | | | | | | | | | | | | | | |
| PR-SB-F6-2436 | / 0823 | | 1 | 1 | | | | | | | | | | | | | | | HOLD |
| PR-SS-G4-0006 | / 0846 | | 1 | 1 | | | | | | | | | | | | | | | |
| PR-SB-G4-0612 | / 0847 | | 1 | 1 | | | | | | | | | | | | | | | |
| PR-SB-G4-1224 | ✓ / 0848 | ✓ | 1 | 1 | | | | | | | | | | | | | | | |

COMMENTS

| | | | | | |
|--|----------------------------|-----------------------------------|------------------------------|-------------|---|
| Relinquished By: (Signature) <i>Jacob Birkett</i> | Date / Time 6-9-16 1600 | Received By: (Signature) FedEx | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <i>Kristi Francisco</i> 6-10-16 ca:so |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000012

Client: See Page 1 Contact: 1 Phone #: () Fax #: ()
 Address: See Page 1 State: _____ Zip Code: _____
 Purchase Order #: _____ Proj. Name / No.: _____ Katahdin Quote #: _____

Bill (if different than above): _____ Address: _____
 Sampler (Print / Sign): [Signature] Copies To: _____

LAB USE ONLY WORK ORDER #: 55227
 KATAHDIN PROJECT NUMBER: _____
 REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO.: _____
 TEMP °C: _____ TEMP BLANK INTACT NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

| Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. |
|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| <input type="checkbox"/> YES | <input type="checkbox"/> YES | <input type="checkbox"/> YES | <input type="checkbox"/> YES | <input type="checkbox"/> YES | <input type="checkbox"/> YES | <input type="checkbox"/> YES | <input type="checkbox"/> YES | <input type="checkbox"/> YES | <input type="checkbox"/> YES | <input type="checkbox"/> YES |
| <input type="checkbox"/> NO | <input type="checkbox"/> NO | <input type="checkbox"/> NO | <input type="checkbox"/> NO | <input type="checkbox"/> NO | <input type="checkbox"/> NO | <input type="checkbox"/> NO | <input type="checkbox"/> NO | <input type="checkbox"/> NO | <input type="checkbox"/> NO | <input type="checkbox"/> NO |

| * | Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Lead | | | | | | | | | | | | | | | | |
|---|--------------------|--------------------|--------|---------------|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------|
| | PR-SB-G4-2436 | 6-8-16/0849 | SO | 1 | 1 | | | | | | | | | | | | | | | | HOLD |
| | PR-SS-G3-0006 | /0912 | | 1 | 1 | | | | | | | | | | | | | | | | |
| | PR-SB-G3-0612 | /0913 | | 1 | 1 | | | | | | | | | | | | | | | | |
| | PR-SB-G3-1224 | /0914 | | 1 | 1 | | | | | | | | | | | | | | | | |
| | PR-SB-G3-2436 | /0915 | | 1 | 1 | | | | | | | | | | | | | | | | HOLD |
| | PR-SS-G2-0006 | /0935 | | 1 | 1 | | | | | | | | | | | | | | | | |
| | PR-SB-G2-0612 | /0936 | | 1 | 1 | | | | | | | | | | | | | | | | |
| | PR-SB-G2-1224 | /0937 | | 1 | 1 | | | | | | | | | | | | | | | | |
| | PR-SB-G2-2436 | /0938 | | 1 | 1 | | | | | | | | | | | | | | | | HOLD |
| | PR-SS-G1-0006 | /0955 | | 1 | 1 | | | | | | | | | | | | | | | | |
| | PR-SB-G1-0612 | /0956 | | 1 | 1 | | | | | | | | | | | | | | | | |
| | PR-SB-G1-1224 | /0957 | | 1 | 1 | | | | | | | | | | | | | | | | |
| | PR-SB-G1-2436 | 6-8-16/0958 | | 1 | 1 | | | | | | | | | | | | | | | | HOLD |
| | PR-DUP09-060716 | 6-7-16 | | 1 | 1 | | | | | | | | | | | | | | | | |
| | PR-DUP10-060816 | 6-8-16/0730 | | 1 | 1 | | | | | | | | | | | | | | | | |
| | PR-DUP11-060816 | 6-8-16/0815 | v | 1 | 1 | | | | | | | | | | | | | | | | |

COMMENTS: _____

| | | | | | |
|--|-----------------------------------|--|------------------------------|-------------|--|
| Relinquished By: (Signature) <u>[Signature]</u> | Date / Time <u>6-9-16 1600</u> | Received By: (Signature) <u>FedEx</u> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <u>[Signature]</u> <u>6-10-16 09:50</u> |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client: _____ Contact: _____ Phone #: _____ Fax #: _____
 Address: See Page 1 for details State: _____ Zip Code: _____
 Purchase Order #: _____ Proj. Name / No.: _____ Katahdin Quote #: _____

Bill (if different than above): _____ Address: _____
 Sampler (Print / Sign): _____ Copies To: _____

LAB USE ONLY WORK ORDER #: SJ4227/SJ4228
 KATAHDIN PROJECT NUMBER: 4233

REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

| * | Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | | | |
|---|--------------------|--------------------|--------|---------------|---|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|
| | | | | | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | |
| | | | | | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> |
| | PR-Dup 12-060816 | 6-8-16/1000 | SO | 1 | Lead | | | | | | | | | | | | |
| | PR-SOCHAR03-0024 | 6-9-16/0942 | | 3 | | ICLP VOCs | | | | | | | | | | | |
| | PR-SOCHAR03-2436 | 6-9-16/0945 | | 3 | | EOX | | | | | | | | | | | |
| | RR-SS-A1-0006 | 6-8-16/1220 | | 1 | | ICLP SVOCs, Metals | | | | | | | | | | | |
| | RR-SB-A1-0612 | /1221 | | 1 | | ARO | | | | | | | | | | | |
| | RR-SB-A1-1224 | /1222 | | 1 | | | | | | | | | | | | | |
| | RR-SS-A2-0006 | /1223 | | 1 | | | | | | | | | | | | | |
| | RR-SB-A2-0612 | /1224 | | 1 | | | | | | | | | | | | | |
| | RR-SB-A2-1224 | /1225 | | 1 | | | | | | | | | | | | | |
| | RR-SS-A3-0006 | /1234 | | 1 | | | | | | | | | | | | | |
| | RR-SB-A3-0612 | /1235 | | 1 | | | | | | | | | | | | | |
| | RR-SB-A3-1224 | /1236 | | 1 | | | | | | | | | | | | | |
| | RR-SS-A4-0006 | /1237 | | 1 | | | | | | | | | | | | | |
| | RR-SB-A4-0612 | /1238 | | 1 | | | | | | | | | | | | | |
| | RR-SB-A4-1224 | /1239 | | 1 | | | | | | | | | | | | | |
| | RR-SS-A5-0006 | /1247 | | 1 | | | | | | | | | | | | | |

COMMENTS: _____

| | | | | | |
|--|-----------------------------------|--|------------------------------|-------------|--|
| Relinquished By: (Signature) <u>[Signature]</u> | Date / Time <u>6-9-16 1600</u> | Received By: (Signature) <u>FedEx</u> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <u>[Signature]</u> |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <u>61016 09150</u> |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000014

METALS SAMPLE FLAGGING

| FLAG | SPECIFIED MEANING |
|-------------|--|
| E | The reported value is estimated because of the presence of interference (as indicated by serial dilution). |
| N | The pre-digestion spiked sample recovery is not within control limits. |
| * | The duplicate sample analysis relative percent difference (RPD) is not within control limits. |
| B | Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample. |
| A | The post-digestion spiked sample recovery is not within control limits. |
| • | Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits. |
| U | <p>The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ) (previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.</p> <p>Note: All results reported as “U” MDL have a 50% rate for false negatives compared to those results reported as “U” PQL/LOQ or “U” LOD, where the rate of false negatives is <1%.</p> |
| J | The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL). |
| Q | One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV). |

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL "U" LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level (PQL) or LOQ could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1 - pH

H2 - DO

H3 - sulfite

H4 - residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

M1 The matrix spike and/or matrix spike duplicate recovery performed on this sample was outside of the laboratory acceptance criteria. Sample matrix is suspected. The laboratory criteria was met for the Laboratory Control Sample (LCS) analyzed concurrently with this sample.

M2 The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory acceptance criteria. The native sample concentration is greater than four times the spike added concentration so the spike added could not be distinguished from the native sample concentration.

R1 The relative percent difference (RPD) between the duplicate analyses performed on this sample was outside of the laboratory acceptance criteria (when both values are greater than ten times the PQL).

MCL Maximum Contaminant Level

NL No limit

NFL No Free Liquid Present

FLP Free Liquid Present

NOD No Odor Detected

TON Threshold Odor Number

D-1 As required by Method 5210B, APHA Standard Methods for the Examination of Water and Wastewater (21st edition), the BOD value reported for this sample is 'qualified' because the check standard run concurrently with the sample analysis did not meet the criteria specified in the method (198 +/- 30.5 mg/L). These results may not be reportable for compliance purposes.

D-2 The measured final dissolved oxygen concentrations of all dilutions were less than the method-specified limit of 1 mg/L. The reported BOD result was calculated assuming a final oxygen concentration equal to 1 mg/L. The reported value should be considered a minimum value.

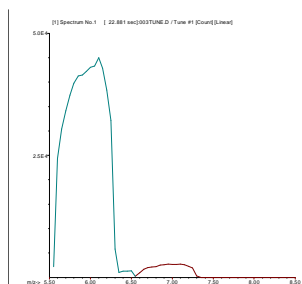
D-3 The dilution water used to prepare this sample did not meet the method and/or regulatory criteria of less than 0.2 or 0.4 mg/L dissolved oxygen (DO) uptake over the five day period of incubation. These results may not be reportable for compliance purposes.

6020 QC Tune Report

Data File: C:\ICPCHEM\1\DATA\JJF13A.B\003TUNE.D
 Date Acquired: Jun 13 2016 01:08 pm
 Acq. Method: TN6020E.M
 Operator: EAM
 Sample Name: 6020 TUNE
 Misc Info:
 Vial Number: 1107
 Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

| Element | Actual | Required | Flag |
|---------|--------|----------|------|
| 7 Li | 2.22 | 5.00 | |
| 59 Co | 0.02 | 5.00 | |
| 115 In | 0.60 | 5.00 | |
| 205 Tl | 1.48 | 5.00 | |



7 Li

Mass Calib.

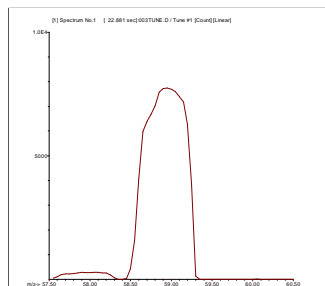
Actual: 7.00
 Required: 6.90 - 7.10

Flag:

Peak Width

Actual: 0.65
 Required: 0.90

Flag:



59 Co

Mass Calib.

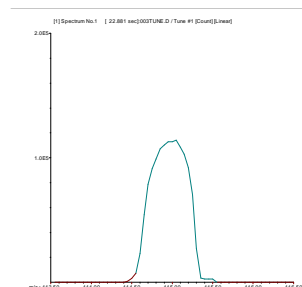
Actual: 58.95
 Required: 58.90 - 59.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:



115 In

Mass Calib.

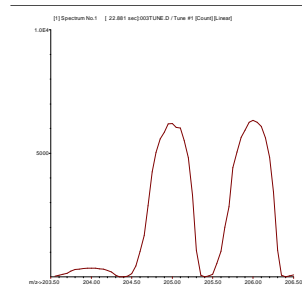
Actual: 115.00
 Required: 114.90 - 115.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:



205 Tl

Mass Calib.

Actual: 205.00
 Required: 204.90 - 205.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4227

Concentration Units: ug/L

SAMPLE: ICB

File: JJF13A Jun 13, 2016 14:08

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.345 | J |
| MOLYBDENUM | 0.051 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 14:42

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.748 | J |
| MOLYBDENUM | 0.065 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 6.660 | J |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 15:23

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.446 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.610 | J |
| MOLYBDENUM | 0.027 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4227

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 13, 2016 16:06

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.634 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.892 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 16:48

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.874 | J |
| MOLYBDENUM | 0.032 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 17:31

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 4.001 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.360 | J |
| MOLYBDENUM | 0.024 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4227

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 13, 2016 18:15

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 7.084 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.607 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 18:58

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.862 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.258 | J |
| MOLYBDENUM | 0.025 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 19:41

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.022 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4227

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 13, 2016 20:20

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 3.036 | J |
| CALCIUM | 6.900 | U |
| IRON | 9.065 | J |
| LEAD | 0.051 | J |
| MAGNESIUM | 1.279 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4227

Concentration Units: ug/L

SAMPLE: ICB

File: JJF15B Jun 15, 2016 19:38

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.049 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF15B Jun 15, 2016 20:12

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.480 | J |
| MOLYBDENUM | 0.066 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 7.517 | J |

SAMPLE: CCB

File: JJF15B Jun 15, 2016 20:54

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.989 | J |
| MOLYBDENUM | 0.044 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 8.785 | J |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4227

Concentration Units: ug/L

SAMPLE: CCB

File: JJF15B Jun 15, 2016 21:37

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.674 | J |
| MOLYBDENUM | 0.024 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF12IMS1

Matrix: SOIL

SDG Name: SJ4227

QC Batch ID: JF12IMS1

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| LEAD | 0.012 | J |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF12IMS2

Matrix: SOIL

SDG Name: SJ4227

QC Batch ID: JF12IMS2

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| LEAD | 0.0808 | J |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF15IMS1

Matrix: SOIL

SDG Name: SJ4227

QC Batch ID: JF15IMS1

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| LEAD | 0.010 | J |

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services SDG Name: SJ4227

Concentration Units: ug/L

SAMPLE: ICSA

File: JJF13A Jun 13, 2016 14:24

| Analyte | TRUE | FOUND | % R |
|------------|--------|-------|------|
| ALUMINUM | 100000 | 96090 | 96.1 |
| CALCIUM | 100000 | 93120 | 93.1 |
| IRON | 100000 | 91500 | 91.5 |
| LEAD | 0 | 0 | |
| MAGNESIUM | 100000 | 93210 | 93.2 |
| MOLYBDENUM | 2000 | 1972 | 98.6 |
| POTASSIUM | 100000 | 94720 | 94.7 |
| SODIUM | 100000 | 95460 | 95.5 |

SAMPLE: ICSAB

File: JJF13A Jun 13, 2016 14:28

| Analyte | TRUE | FOUND | % R |
|------------|--------|-------|-------|
| ALUMINUM | 100000 | 96680 | 96.7 |
| CALCIUM | 100000 | 93830 | 93.8 |
| IRON | 100000 | 91810 | 91.8 |
| LEAD | 20 | 21 | 105.0 |
| MAGNESIUM | 100000 | 92630 | 92.6 |
| MOLYBDENUM | 2000 | 2000 | 100.0 |
| POTASSIUM | 100000 | 94930 | 94.9 |
| SODIUM | 100000 | 95580 | 95.6 |

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services SDG Name: SJ4227

Concentration Units: ug/L

| SAMPLE: ICSA | | | | SAMPLE: ICSAB | | | |
|---------------------|-------------|--------------|------------|----------------------|-------------|--------------|------------|
| File: JJF15B | | Jun 15, 2016 | 19:55 | File: JJF15B | | Jun 15, 2016 | 19:59 |
| Analyte | TRUE | FOUND | % R | Analyte | TRUE | FOUND | % R |
| ALUMINUM | 100000 | 95680 | 95.7 | ALUMINUM | 100000 | 96150 | 96.2 |
| CALCIUM | 100000 | 96340 | 96.3 | CALCIUM | 100000 | 95250 | 95.3 |
| IRON | 100000 | 90430 | 90.4 | IRON | 100000 | 92160 | 92.2 |
| LEAD | 0 | 0 | | LEAD | 20 | 21 | 105.0 |
| MAGNESIUM | 100000 | 93380 | 93.4 | MAGNESIUM | 100000 | 93980 | 94.0 |
| MOLYBDENUM | 2000 | 1972 | 98.6 | MOLYBDENUM | 2000 | 2035 | 101.8 |
| POTASSIUM | 100000 | 95070 | 95.1 | POTASSIUM | 100000 | 96210 | 96.2 |
| SODIUM | 100000 | 95120 | 95.1 | SODIUM | 100000 | 95830 | 95.8 |

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF12IMS1**Matrix:** SOIL**SDG Name:** SJ4227**QC Batch ID:** JF12IMS1**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 10.2 | 101.9 | 84 | 118 |

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF12IMS2**Matrix:** SOIL**SDG Name:** SJ4227**QC Batch ID:** JF12IMS2**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 10.4 | 103.9 | 84 | 118 |

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF15IMS1**Matrix:** SOIL**SDG Name:** SJ4227**QC Batch ID:** JF15IMS1**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 10.0 | 100.6 | 84 | 118 |

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 3/14/2016**

| Analyte | Concentration Units: ug/L | | |
|------------|---------------------------|-------|----|
| | PQL/LOQ | IDL | M |
| ALUMINUM | 300 | 1.4 | MS |
| CALCIUM | 100 | 6.9 | MS |
| IRON | 100 | 6.2 | MS |
| LEAD | 0.20 | 0.041 | MS |
| MAGNESIUM | 100 | 0.65 | MS |
| MOLYBDENUM | 1.0 | 0.021 | MS |
| POTASSIUM | 1000 | 13. | MS |
| SODIUM | 1000 | 2.9 | MS |

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 1/26/2011**

| Analyte | LOD | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| LEAD | 0.010 | mg/Kg | MS | SW846 3050B / SW846 6020A |

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 1/26/2011**

| Analyte | MDL | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| LEAD | 0.0014 | mg/kg | MS | SW846 3050B / SW846 6020A |

ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 4/4/2016**

Concentration Units: ug/L

| Analyte | Integration Time (sec) | Linear Range | M |
|------------|------------------------|--------------|----|
| ALUMINUM | 0.01 | 200000 | MS |
| CALCIUM | 0.03 | 200000 | MS |
| IRON | 0.03 | 100000 | MS |
| LEAD | 0.10 | 2000 | MS |
| MAGNESIUM | 0.05 | 200000 | MS |
| MOLYBDENUM | 0.10 | 1000 | MS |
| POTASSIUM | 0.01 | 200000 | MS |
| SODIUM | 0.01 | 200000 | MS |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF12IMS1**Matrix:** SOIL**SDG Name:** SJ4227**Method:** MS**Prep Date:** 06/12/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF12IMS1 | LC SOJF12IMS1 | 1 | 0.1 | |
| PBSJF12IMS1 | PBSJF12IMS1 | 1 | 0.1 | |
| PR-SB-F4-2436 | SJ4227-001 | 1.37 | 0.1 | A |
| PR-SS-F5-0006 | SJ4227-004 | 1.3 | 0.1 | A |
| PR-SB-F5-0612 | SJ4227-005 | 1.09 | 0.1 | A |
| PR-SB-F5-1224 | SJ4227-006 | 1.82 | 0.1 | A |
| PR-SB-F5-2436 | SJ4227-007 | 1.36 | 0.1 | A |
| PR-SS-F6-0006 | SJ4227-010 | 1.22 | 0.1 | A |
| PR-SB-F6-0612 | SJ4227-011 | 2.16 | 0.1 | A |
| PR-SB-F6-1224 | SJ4227-012 | 1.64 | 0.1 | A |
| PR-SS-G4-0006 | SJ4227-014 | 1.8 | 0.1 | A |
| PR-SB-G4-0612 | SJ4227-015 | 1.57 | 0.1 | A |
| PR-SB-G4-1224 | SJ4227-016 | 1.74 | 0.1 | A |
| PR-SS-G3-0006 | SJ4227-018 | 1.55 | 0.1 | A |
| PR-SB-G3-0612 | SJ4227-019 | 2.03 | 0.1 | A |
| PR-SB-G3-1224 | SJ4227-020 | 1.66 | 0.1 | A |
| PR-SS-G2-0006 | SJ4227-022 | 1.4 | 0.1 | A |
| PR-SB-G2-0612 | SJ4227-023 | 1.36 | 0.1 | A |
| PR-SB-G2-1224 | SJ4227-024 | 1.81 | 0.1 | A |
| PR-SS-G1-0006 | SJ4227-026 | 2.61 | 0.1 | A |
| PR-SB-G1-0612 | SJ4227-027 | 1.73 | 0.1 | A |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF12IMS2**Matrix:** SOIL**SDG Name:** SJ4227**Method:** MS**Prep Date:** 06/12/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF12IMS2 | LC SOJF12IMS2 | 1 | 0.1 | |
| PBSJF12IMS2 | PBSJF12IMS2 | 1 | 0.1 | |
| PR-SB-G1-1224 | SJ4227-028 | 1.84 | 0.1 | A |
| PR-DUP10-060816 | SJ4227-031 | 1.49 | 0.1 | A |
| PR-DUP11-060816 | SJ4227-032 | 1.27 | 0.1 | A |
| PR-DUP12-060816 | SJ4227-033 | 1.42 | 0.1 | A |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF15IMS1**Matrix:** SOIL**SDG Name:** SJ4227**Method:** MS**Prep Date:** 06/15/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF15IMS1 | LC SOJF15IMS1 | 1 | 0.1 | |
| PBSJF15IMS1 | PBSJF15IMS1 | 1 | 0.1 | |
| PR-SB-F4-4860 | SJ4227-003 | 1.71 | 0.1 | A |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4227

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| 6020 Tune | | 1 | 13:08 | | | | | | | |
| 200.8 Tune | | 1 | 13:11 | | | | | | | |
| Cal Blank | | 1 | 13:58 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| Cal Std | | 1 | 14:01 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICV | | 1 | 14:04 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICB | | 1 | 14:08 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| PQL | | 1 | 14:11 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| <i>ZZZZZZ</i> | | 1 | 14:14 | | | | | | | |
| <i>ZZZZZZ</i> | | 1 | 14:17 | | | | | | | |
| <i>ZZZZZZ</i> | | 1 | 14:21 | | | | | | | |
| ICSA | | 1 | 14:24 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICSAB | | 1 | 14:28 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| <i>ZZZZZZ</i> | | 1 | 14:32 | | | | | | | |
| <i>ZZZZZZ</i> | | 1 | 14:35 | | | | | | | |
| CCV | | 1 | 14:38 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 14:42 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| <i>ZZZZZZ</i> | | 5 | 14:45 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 14:48 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 14:52 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 14:55 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 14:59 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 15:02 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 15:06 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 15:09 | | | | | | | |
| PBSJF12IMS1 | | 5 | 15:13 | | | Pb | | | | |
| LCSOJF12IMS1 | | 5 | 15:16 | | | Pb | | | | |
| CCV | | 1 | 15:20 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4227

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|---------------|------|-------|----------|----|-------|----|----|---|----|--|
| CCB | | 1 | 15:23 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| SJ4227-001 | PR-SB-F4-2436 | 10 | 15:27 | | | Pb | | | | | |
| SJ4227-004 | PR-SS-F5-0006 | 10 | 15:30 | | | Pb | | | | | |
| SJ4227-005 | PR-SB-F5-0612 | 10 | 15:34 | | | Pb | | | | | |
| SJ4227-006 | PR-SB-F5-1224 | 10 | 15:37 | | | Pb | | | | | |
| SJ4227-007 | PR-SB-F5-2436 | 10 | 15:41 | | | Pb | | | | | |
| SJ4227-010 | PR-SS-F6-0006 | 10 | 15:44 | | | Pb | | | | | |
| SJ4227-012 | PR-SB-F6-1224 | 10 | 15:48 | | | Pb | | | | | |
| SJ4227-014 | PR-SS-G4-0006 | 10 | 15:51 | | | Pb | | | | | |
| SJ4227-015 | PR-SB-G4-0612 | 10 | 15:55 | | | Pb | | | | | |
| SJ4227-016 | PR-SB-G4-1224 | 10 | 15:58 | | | Pb | | | | | |
| CCV | | 1 | 16:02 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 16:06 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| SJ4227-018 | PR-SS-G3-0006 | 10 | 16:09 | | | Pb | | | | | |
| SJ4227-019 | PR-SB-G3-0612 | 10 | 16:13 | | | Pb | | | | | |
| SJ4227-020 | PR-SB-G3-1224 | 10 | 16:16 | | | Pb | | | | | |
| SJ4227-022 | PR-SS-G2-0006 | 10 | 16:20 | | | Pb | | | | | |
| SJ4227-023 | PR-SB-G2-0612 | 10 | 16:23 | | | Pb | | | | | |
| SJ4227-024 | PR-SB-G2-1224 | 10 | 16:27 | | | Pb | | | | | |
| SJ4227-026 | PR-SS-G1-0006 | 10 | 16:30 | | | Pb | | | | | |
| SJ4227-027 | PR-SB-G1-0612 | 10 | 16:34 | | | Pb | | | | | |
| <u>ZZZZZ</u> | | 10 | 16:37 | | | | | | | | |
| <u>ZZZZZ</u> | | 50 | 16:41 | | | | | | | | |
| CCV | | 1 | 16:44 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 16:48 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| <u>ZZZZZ</u> | | 10 | 16:52 | | | | | | | | |
| <u>ZZZZZ</u> | | 10 | 16:55 | | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4227

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|-----------------|------|-------|----------|----|----|----|----|----|---|----|
| ZZZZZZ | | 10 | 16:59 | | | | | | | | |
| PBSJF12IMS2 | | 5 | 17:02 | | | | | | | | Pb |
| LCSOJF12IMS2 | | 5 | 17:06 | | | | | | | | Pb |
| SJ4227-028 | PR-SB-G1-1224 | 10 | 17:10 | | | | | | | | Pb |
| SJ4227-031 | PR-DUP10-060816 | 10 | 17:13 | | | | | | | | Pb |
| SJ4227-032 | PR-DUP11-060816 | 10 | 17:17 | | | | | | | | Pb |
| SJ4227-033 | PR-DUP12-060816 | 10 | 17:20 | | | | | | | | Pb |
| ZZZZZZ | | 10 | 17:24 | | | | | | | | |
| CCV | | 1 | 17:28 | Al | Ca | Fe | Pb | Mg | Mo | K | Na |
| CCB | | 1 | 17:31 | Al | Ca | Fe | Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 17:35 | | | | | | | | |
| ZZZZZZ | | 10 | 17:38 | | | | | | | | |
| ZZZZZZ | | 10 | 17:42 | | | | | | | | |
| ZZZZZZ | | 10 | 17:46 | | | | | | | | |
| ZZZZZZ | | 10 | 17:49 | | | | | | | | |
| ZZZZZZ | | 10 | 17:53 | | | | | | | | |
| ZZZZZZ | | 10 | 17:56 | | | | | | | | |
| ZZZZZZ | | 10 | 18:00 | | | | | | | | |
| ZZZZZZ | | 10 | 18:04 | | | | | | | | |
| ZZZZZZ | | 10 | 18:07 | | | | | | | | |
| CCV | | 1 | 18:11 | Al | Ca | Fe | Pb | Mg | Mo | K | Na |
| CCB | | 1 | 18:15 | Al | Ca | Fe | Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 18:18 | | | | | | | | |
| ZZZZZZ | | 10 | 18:22 | | | | | | | | |
| ZZZZZZ | | 10 | 18:25 | | | | | | | | |
| ZZZZZZ | | 10 | 18:29 | | | | | | | | |
| ZZZZZZ | | 50 | 18:33 | | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4227

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|---------------|------|-------|----------|----|-------|----|----|---|----|--|
| ZZZZZZ | | 10 | 18:36 | | | | | | | | |
| ZZZZZZ | | 10 | 18:40 | | | | | | | | |
| ZZZZZZ | | 10 | 18:43 | | | | | | | | |
| ZZZZZZ | | 10 | 18:47 | | | | | | | | |
| ZZZZZZ | | 5 | 18:50 | | | | | | | | |
| CCV | | 1 | 18:54 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 18:58 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZZ | | 5 | 19:01 | | | | | | | | |
| ZZZZZZ | | 10 | 19:05 | | | | | | | | |
| ZZZZZZ | | 10 | 19:08 | | | | | | | | |
| ZZZZZZ | | 10 | 19:12 | | | | | | | | |
| ZZZZZZ | | 10 | 19:16 | | | | | | | | |
| ZZZZZZ | | 10 | 19:19 | | | | | | | | |
| ZZZZZZ | | 10 | 19:23 | | | | | | | | |
| ZZZZZZ | | 10 | 19:26 | | | | | | | | |
| ZZZZZZ | | 10 | 19:30 | | | | | | | | |
| ZZZZZZ | | 10 | 19:34 | | | | | | | | |
| CCV | | 1 | 19:37 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 19:41 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZZ | | 10 | 19:44 | | | | | | | | |
| ZZZZZZ | | 10 | 19:48 | | | | | | | | |
| SJ4227-011 | PR-SB-F6-0612 | 10 | 19:52 | | | Pb | | | | | |
| ZZZZZZ | | 10 | 19:55 | | | | | | | | |
| ZZZZZZ | | 10 | 19:59 | | | | | | | | |
| ZZZZZZ | | 10 | 20:02 | | | | | | | | |
| ZZZZZZ | | 10 | 20:06 | | | | | | | | |
| ZZZZZZ | | 10 | 20:09 | | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4227

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| <u>ZZZZZ</u> | | 10 | 20:13 | | | | | | | |
| CCV | | 1 | 20:17 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 20:20 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4227

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF15B

Date: 6/15/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| 6020 Tune | | 1 | 18:16 | | | | | | | |
| 200.8 Tune | | 1 | 18:18 | | | | | | | |
| Cal Blank | | 1 | 19:28 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| Cal Std | | 1 | 19:32 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICV | | 1 | 19:35 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICB | | 1 | 19:38 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| PQL | | 1 | 19:42 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 19:45 | | | | | | | |
| ZZZZZZ | | 1 | 19:48 | | | | | | | |
| ZZZZZZ | | 1 | 19:52 | | | | | | | |
| ICSA | | 1 | 19:55 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICSAB | | 1 | 19:59 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 20:02 | | | | | | | |
| ZZZZZZ | | 1 | 20:06 | | | | | | | |
| CCV | | 1 | 20:09 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 20:12 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 20:16 | | | | | | | |
| ZZZZZZ | | 5 | 20:19 | | | | | | | |
| ZZZZZZ | | 1 | 20:23 | | | | | | | |
| ZZZZZZ | | 5 | 20:26 | | | | | | | |
| ZZZZZZ | | 5 | 20:30 | | | | | | | |
| ZZZZZZ | | 5 | 20:33 | | | | | | | |
| ZZZZZZ | | 1 | 20:37 | | | | | | | |
| ZZZZZZ | | 1 | 20:40 | | | | | | | |
| ZZZZZZ | | 1 | 20:44 | | | | | | | |
| ZZZZZZ | | 1 | 20:47 | | | | | | | |
| CCV | | 1 | 20:51 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4227

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF15B

Date: 6/15/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|---------------|------|-------|----------|----|-------|----|----|---|----|
| CCB | | 1 | 20:54 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| PBSJF15IMS1 | | 5 | 20:58 | | | Pb | | | | |
| LCSOJF15IMS1 | | 5 | 21:01 | | | Pb | | | | |
| ZZZZZZ | | 10 | 21:05 | | | | | | | |
| SJ4227-003 | PR-SB-F4-4860 | 10 | 21:08 | | | Pb | | | | |
| ZZZZZZ | | 10 | 21:12 | | | | | | | |
| ZZZZZZ | | 50 | 21:15 | | | | | | | |
| ZZZZZZ | | 10 | 21:19 | | | | | | | |
| ZZZZZZ | | 10 | 21:22 | | | | | | | |
| ZZZZZZ | | 10 | 21:26 | | | | | | | |
| ZZZZZZ | | 10 | 21:30 | | | | | | | |
| CCV | | 1 | 21:33 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 21:37 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

| ANALYTE | ORIGINAL | ORIGINAL | DUPLICATE | DUPLICATE | RL | RPD | RPD > 50% | ORIGINAL SAMPLE CONC >5xRL | DUPLICATE SAMPLE CONC >5xRL | DIFFERENCE >4xRL |
|---------|---------------|----------|-----------------|-----------|------|-------|-----------|----------------------------|-----------------------------|------------------|
| LEAD | PR-SB-F5-1224 | 18.5 | PR-DUP10-060816 | 13.6 | 0.12 | 30.53 | FALSE | TRUE | TRUE | TRUE |
| LEAD | PR-SS-F6-0006 | 33.9 | PR-DUP11-060816 | 74.8 | 0.19 | 75.25 | TRUE | TRUE | TRUE | TRUE |
| LEAD | PR-SS-G2-0006 | 22.6 | PR-DUP12-060816 | 20.8 | 0.17 | 8.29 | FALSE | TRUE | TRUE | TRUE |



INTERNAL CORRESPONDENCE

TO: R. SOK DATE: AUGUST 10, 2016
FROM: L. GANSER COPIES: DV FILE
SUBJECT: DATA VALIDATION- LEAD
NASA WALLOPS ISLAND, VIRGINIA
SAMPLE DELIVERY GROUP (SDG) SJ4228

SAMPLES: 27/Soil

Table with 4 columns listing sample IDs: RR-DUP01-060816, RR-DUP02-060816, RR-SB-A1-0612, RR-SB-A2-0612, etc.

Overview

The sample set for NASA Wallops Island, SDG SJ4228 consists of twenty-seven (27) soil samples. All samples were analyzed for lead. Two field duplicate pairs were included in this SDG: RR-SS-A3-0006 / RR-DUP01-060816 and RR-SB-A4-0612 / RR-DUP02-060816.

Samples were collected on June 8, 2016 by Tetra Tech and analyzed by Katahdin. Lead analyses were conducted in accordance to SW-846 Method 6020A analytical and reporting protocols.

The data contained in this SDG were validated with regard to the following parameters: data completeness, holding times, MS tuning, laboratory method/preparation blank results, ICP interference results, blank spike results, matrix spike/matrix spike duplicate results, laboratory duplicate results, ICP serial dilution results, field duplicate precision, and detection limits. Areas of concern with respect to data quality are listed below.

Major Problems – None.

Minor Problems

- Laboratory duplicate imprecision (relative percent difference >35%) was noted for lead in sample RR-SS-A6-0006. The lead result in sample RR-SS-A6-0006 was qualified as estimated (J).

Notes

Lead was detected in the laboratory preparation blanks at the following maximum concentrations:

Table with 3 columns: Analyte, Maximum Concentration, Reporting Limit (RL) (> or <). Rows include Lead(1), Lead(2), Lead(3).

- 1 Concentration in preparation blank affecting samples in batch JF12IMS1.
2 Concentration in preparation blank affecting samples in batch JF12IMS2.
3 Concentration in preparation blank affecting samples in batch JF12IMS3.

To: R. SOK
SDG: SJ4228

Dilution factor, if applicable, was taken into consideration when evaluating for blank contamination. No action was taken as sample results were greater than the RL.

EXECUTIVE SUMMARY

Laboratory Performance Issues: Lead was present in the preparation blanks. Lab duplicate imprecision was noted for lead in one sample.

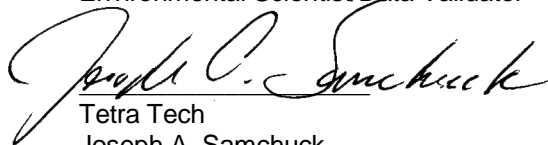
Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review" (August 2014). The text of this report has been formulated to address only those areas affecting data quality.

The text of this report has been formulated to address only those problem areas affecting data quality.



Tetra Tech
Leanne M. Ganser
Environmental Scientist/Data Validator



Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:

- Appendix A – Qualified Analytical Results
- Appendix B – Results as Reported by the Laboratory
- Appendix C – Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate
- Z4 = Sample activity is less than the at uncertainty at 3 standard deviations and greater than the MDC
- Z5 = Sample activity is less than the at uncertainty at 3 standard deviations and less than the MDC

| | | | | | | | | | | | | | |
|---|------------|-----------------|------|--------|-----------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4228 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-DUP01-060816 | | | RR-DUP02-060816 | | | RR-SB-A1-0612 | | | RR-SB-A2-0612 | | |
| | LAB_ID | SJ4228-038 | | | SJ4228-039 | | | SJ4228-002 | | | SJ4228-005 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 87.4 | | | 90.6 | | | 89.6 | | | 89.3 | | |
| | DUP_OF | RR-SS-A3-0006 | | | RR-SB-A4-0612 | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 26.7 | | | 7.41 | | | 12 | | | 9.88 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4228 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SB-A3-0612 | | | RR-SB-A4-0612 | | | RR-SB-A5-0612 | | | RR-SB-A6-0612 | | |
| | LAB_ID | SJ4228-008 | | | SJ4228-011 | | | SJ4228-014 | | | SJ4228-017 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 90.3 | | | 91.0 | | | 81.3 | | | 90.0 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 13 | | | 9.11 | | | 57.9 | | | 32.6 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4228 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SB-A7-0612 | | | RR-SB-A8-0612 | | | RR-SB-B1-0612 | | | RR-SB-B2-0612 | | |
| | LAB_ID | SJ4228-020 | | | SJ4228-023 | | | SJ4228-026 | | | SJ4228-029 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 90.7 | | | 91.7 | | | 90.6 | | | 91.8 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 45 | | | 16.3 | | | 10.9 | | | 9.22 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4228 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SB-B3-0612 | | | RR-SB-B3-1224 | | | RR-SB-B4-0612 | | | RR-SS-A1-0006 | | |
| | LAB_ID | SJ4228-032 | | | SJ4228-033 | | | SJ4228-036 | | | SJ4228-001 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 92.5 | | | 91.5 | | | 91.6 | | | 78.3 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 7.9 | | | 13.8 | | | 60.5 | | | 27.1 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4228 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SS-A2-0006 | | | RR-SS-A3-0006 | | | RR-SS-A4-0006 | | | RR-SS-A5-0006 | | |
| | LAB_ID | SJ4228-004 | | | SJ4228-007 | | | SJ4228-010 | | | SJ4228-013 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 87.4 | | | 81.3 | | | 86.3 | | | 57.3 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 17.2 | | | 26.6 | | | 100 | | | 104 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4228 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SS-A6-0006 | | | RR-SS-A7-0006 | | | RR-SS-A8-0006 | | | RR-SS-B1-0006 | | |
| | LAB_ID | SJ4228-016 | | | SJ4228-019 | | | SJ4228-022 | | | SJ4228-025 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 86.0 | | | 86.6 | | | 81.8 | | | 88.1 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 57.5 | J | F | 183 | | | 223 | | | 14.5 | | | |

| | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4228 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SS-B2-0006 | | | RR-SS-B3-0006 | | | RR-SS-B4-0006 | | |
| | LAB_ID | SJ4228-028 | | | SJ4228-031 | | | SJ4228-035 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 85.8 | | | 89.6 | | | 89.9 | | |
| | DUP_OF | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 23.5 | | | 93.4 | | | 685 | | | |

Appendix B

Results as Reported by the Laboratory

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-A1-0006

Matrix: SOIL

SDG Name: SJ4228

Percent Solids: 78.3

Lab Sample ID: SJ4228-001

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 27.1 | | | MS | 10 | 0.15 | 0.011 | 0.076 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-A1-0612

Matrix: SOIL

SDG Name: SJ4228

Percent Solids: 89.6

Lab Sample ID: SJ4228-002

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 12.0 | | | MS | 10 | 0.10 | 0.0073 | 0.052 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-A2-0006

Matrix: SOIL

SDG Name: SJ4228

Percent Solids: 87.4

Lab Sample ID: SJ4228-004

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 17.2 | | | MS | 10 | 0.14 | 0.0098 | 0.070 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-A2-0612

Matrix: SOIL

SDG Name: SJ4228

Percent Solids: 89.3

Lab Sample ID: SJ4228-005

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 9.88 | | | MS | 10 | 0.17 | 0.012 | 0.087 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services**Client Field ID:** RR-SS-A3-0006**Matrix:** SOIL**SDG Name:** SJ4228**Percent Solids:** 81.3**Lab Sample ID:** SJ4228-007**Concentration Units :** mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 26.6 | | | MS | 10 | 0.15 | 0.011 | 0.077 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-A3-0612

Matrix: SOIL

SDG Name: SJ4228

Percent Solids: 90.3

Lab Sample ID: SJ4228-008

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 13.0 | | | MS | 10 | 0.10 | 0.0070 | 0.050 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-A4-0006

Matrix: SOIL

SDG Name: SJ4228

Percent Solids: 86.3

Lab Sample ID: SJ4228-010

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 100 | | | MS | 10 | 0.14 | 0.010 | 0.072 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-A4-0612

Matrix: SOIL

SDG Name: SJ4228

Percent Solids: 91.0

Lab Sample ID: SJ4228-011

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 9.11 | | | MS | 10 | 0.12 | 0.0086 | 0.061 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-A5-0006

Matrix: SOIL

SDG Name: SJ4228

Percent Solids: 57.3

Lab Sample ID: SJ4228-013

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 104 | | | MS | 10 | 0.26 | 0.018 | 0.13 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-A5-0612

Matrix: SOIL

SDG Name: SJ4228

Percent Solids: 81.3

Lab Sample ID: SJ4228-014

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 57.9 | | | MS | 10 | 0.14 | 0.0097 | 0.069 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-A6-0006

Matrix: SOIL

SDG Name: SJ4228

Percent Solids: 86.0

Lab Sample ID: SJ4228-016

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|-----|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 57.5 | | N*A | MS | 10 | 0.10 | 0.0073 | 0.052 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-A6-0612

Matrix: SOIL

SDG Name: SJ4228

Percent Solids: 90.0

Lab Sample ID: SJ4228-017

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 32.6 | | | MS | 10 | 0.087 | 0.0061 | 0.044 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-A7-0006

Matrix: SOIL

SDG Name: SJ4228

Percent Solids: 86.6

Lab Sample ID: SJ4228-019

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 183 | | | MS | 10 | 0.15 | 0.011 | 0.076 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-A7-0612

Matrix: SOIL

SDG Name: SJ4228

Percent Solids: 90.7

Lab Sample ID: SJ4228-020

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 45.0 | | | MS | 10 | 0.12 | 0.0083 | 0.060 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-A8-0006

Matrix: SOIL

SDG Name: SJ4228

Percent Solids: 81.8

Lab Sample ID: SJ4228-022

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 223 | | | MS | 10 | 0.16 | 0.011 | 0.079 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-A8-0612

Matrix: SOIL

SDG Name: SJ4228

Percent Solids: 91.7

Lab Sample ID: SJ4228-023

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 16.3 | * | MS | 10 | 0.10 | 0.0070 | 0.050 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-B1-0006

Matrix: SOIL

SDG Name: SJ4228

Percent Solids: 88.1

Lab Sample ID: SJ4228-025

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 14.5 | | | MS | 10 | 0.13 | 0.0093 | 0.066 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-B1-0612

Matrix: SOIL

SDG Name: SJ4228

Percent Solids: 90.6

Lab Sample ID: SJ4228-026

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 10.9 | | | MS | 10 | 0.15 | 0.010 | 0.074 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-B2-0006

Matrix: SOIL

SDG Name: SJ4228

Percent Solids: 85.8

Lab Sample ID: SJ4228-028

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 23.5 | | | MS | 10 | 0.10 | 0.0072 | 0.051 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-B2-0612

Matrix: SOIL

SDG Name: SJ4228

Percent Solids: 91.8

Lab Sample ID: SJ4228-029

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 9.22 | | | MS | 10 | 0.096 | 0.0067 | 0.048 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-B3-0006

Matrix: SOIL

SDG Name: SJ4228

Percent Solids: 89.6

Lab Sample ID: SJ4228-031

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 93.4 | | | MS | 10 | 0.16 | 0.011 | 0.081 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-B3-0612

Matrix: SOIL

SDG Name: SJ4228

Percent Solids: 92.5

Lab Sample ID: SJ4228-032

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 7.90 | | | MS | 10 | 0.10 | 0.0071 | 0.051 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-B3-1224

Matrix: SOIL

SDG Name: SJ4228

Percent Solids: 91.5

Lab Sample ID: SJ4228-033

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 13.8 | | | MS | 10 | 0.18 | 0.013 | 0.093 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services**Client Field ID:** RR-SS-B4-0006**Matrix:** SOIL**SDG Name:** SJ4228**Percent Solids:** 89.9**Lab Sample ID:** SJ4228-035**Concentration Units :** mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 685 | | | MS | 10 | 0.13 | 0.0093 | 0.066 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-B4-0612

Matrix: SOIL

SDG Name: SJ4228

Percent Solids: 91.6

Lab Sample ID: SJ4228-036

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 60.5 | | | MS | 10 | 0.12 | 0.0084 | 0.060 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-DUP01-060816

Matrix: SOIL

SDG Name: SJ4228

Percent Solids: 87.4

Lab Sample ID: SJ4228-038

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 26.7 | | | MS | 10 | 0.14 | 0.0095 | 0.068 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services**Client Field ID:** RR-DUP02-060816**Matrix:** SOIL**SDG Name:** SJ4228**Percent Solids:** 90.6**Lab Sample ID:** SJ4228-039**Concentration Units :** mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 7.41 | | | MS | 10 | 0.11 | 0.0079 | 0.057 |

Comments:

Appendix C

Support Documentation

**SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS, INC.
NASA WALLOPS FLIGHT FACILITY-MBFR
SJ4228**

Sample Receipt

The following samples were received on June 10, 2016 and were logged in under Katahdin Analytical Services work order number SJ4228 for a hardcopy due date of June 29, 2016.

| <u>KATAHDIN</u> <u>Sample No.</u> | <u>TTNUS</u> <u>Sample Identification</u> |
|--------------------------------------|--|
| SJ4228-1 | RR-SS-A1-0006 |
| SJ4228-2 | RR-SB-A1-0612 |
| SJ4228-4 | RR-SS-A2-0006 |
| SJ4228-5 | RR-SB-A2-0612 |
| SJ4228-7 | RR-SS-A3-0006 |
| SJ4228-8 | RR-SB-A3-0612 |
| SJ4228-10 | RR-SS-A4-0006 |
| SJ4228-11 | RR-SB-A4-0612 |
| SJ4228-13 | RR-SS-A5-0006 |
| SJ4228-14 | RR-SB-A5-0612 |
| SJ4228-16 | RR-SS-A6-0006 |
| SJ4228-17 | RR-SB-A6-0612 |
| SJ4228-19 | RR-SS-A7-0006 |
| SJ4228-20 | RR-SB-A7-0612 |
| SJ4228-22 | RR-SS-A8-0006 |
| SJ4228-23 | RR-SB-A8-0612 |
| SJ4228-25 | RR-SS-B1-0006 |
| SJ4228-26 | RR-SB-B1-0612 |
| SJ4228-28 | RR-SS-B2-0006 |
| SJ4228-29 | RR-SB-B2-0612 |
| SJ4228-31 | RR-SS-B3-0006 |
| SJ4228-32 | RR-SB-B3-0612 |
| SJ4228-33 | RR-SB-B3-1224 |
| SJ4228-35 | RR-SS-B4-0006 |
| SJ4228-36 | RR-SB-B4-0612 |
| SJ4228-38 | RR-DUP01-060816 |
| SJ4228-39 | RR-DUP02-060816 |

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Metals Analysis

The samples of Katahdin Work Order SJ4228 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Solid-matrix Katahdin Sample Numbers SJ4228-16 was digested for ICP-MS analysis on 06/12/16 (QC Batch JF12IMS1) in accordance with USEPA Method 3050B. Katahdin Sample Number SJ4228-1 was prepared with a matrix-spiked aliquot and laboratory duplicate per client request.

Katahdin Sample Numbers SJ4228-(1,2,4,5,7,8,10,11,13,14,17,19,20,22,23) were digested for ICP-MS analysis on 06/12/16 (QC Batch JF12IMS2). Katahdin Sample Number SJ4228-23 was prepared with a matrix-spiked aliquot and laboratory duplicate per client request.

Solid-matrix Katahdin Sample Numbers SJ4228-(25,26,28,29,31-33,35,36,38,39) were digested for ICP-MS analysis on 06/12/16 (QC Batch JF12IMS3) in accordance with USEPA Method 3050B.

ICP-MS analyses of Katahdin Work Order SJ4228 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Sample digestates for Katahdin Work Order SJ4228 were diluted by a factor of 10 in accordance with the project limits.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

| Internal Standard Element | Associated Analytes |
|----------------------------|--|
| Lithium | Beryllium, Boron |
| Scandium | Sodium, Magnesium, Aluminum, Silicon, Potassium, Calcium |
| Germanium or Yttrium | Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Strontium, Molybdenum, Silver, Cadmium |
| Terbium | Tin, Antimony, Barium, Tungsten |
| Bismuth | Lead, Thallium, Thorium, Uranium |

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Matrix QC Summary

The measured recovery of lead in the matrix-spiked aliquots of Katahdin Sample Number SJ4228-16 is not within the project acceptance criteria (80% - 120% recovery of the added element) at 4660% recovery; however the sample result for lead was greater than four times the spiked amount in the matrix-spiked aliquot. The measured recovery of lead in the matrix-spiked aliquots of Katahdin Sample Number SJ4228-23 is within the project acceptance criteria.

The laboratory duplicate analyses of Katahdin Sample Numbers SJ41228-16 and 23 are not within the laboratory's acceptance limit (<20% relative difference between duplicate aliquots) for lead at 97.3 and 29.9 relative difference, respectively.

The serial dilution analyses of Katahdin Sample Numbers SJ4228-16 and 23 are within the project acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOD) for lead.

The measured recovery of lead in the post-digestion spiked aliquot of Katahdin Sample Numbers SJ4228-16 is not within the acceptance criteria (75% - 125% recovery of the added element) at 65% recovery. The measured recovery of lead in the post-digestion spiked aliquot of Katahdin Sample Numbers SJ4228-23 is within the acceptance criteria.

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the LOQ are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQs, MDLs, and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the

laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs

Wet Chemistry Analysis

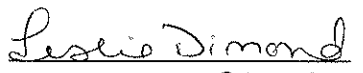
The samples of Work Order SJ4228 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times, and all quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.


06.29.16
Leslie Dimond
Quality Assurance Officer

| | | |
|---------------------------------------|------------------------------|---------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>Jo</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>GN</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>554227 → 4233</u> | KIMS Review By: <u>Jo</u> | Received By: <u>SO</u> |
| SDG #: | Cooler: <u>1</u> of <u>4</u> | Date/Time Rec.: <u>6-10-16 / 0950</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | ✓ | | | | |
| 2. Chain of Custody present in cooler? | ✓ | | | | |
| 3. Chain of Custody signed by client? | ✓ | | | | |
| 4. Chain of Custody matches samples? | ✓ | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | ✓ | | | | Temp (°C): <u>1.8</u> |
| Samples received at <6 °C w/o freezing? | ✓ | | | | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | ✓ | | | | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | ✓ | | | | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | ✓ | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | | |
| Aqueous: No bubble larger than a pea? | | | | ✓ | |
| Soil/Sediment: | | | | | |
| Received in airtight container? | | | | ✓ | |
| Received in methanol? | | | | ✓ | |
| Methanol covering soil? | | | | ✓ | |
| D.I. Water - Received within 48 hour HT? | | | | ✓ | |
| Air: Refer to KAS COC for canister/flow controller requirements. | ✓ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | ✓ | |
| 8. Proper sample containers and volume? | ✓ | | | | |
| 9. Samples within hold time upon receipt? | ✓ | | | | |
| 10. Aqueous samples properly preserved? | | | | | |
| Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 | | | | ✓ | |
| Sulfide - >9 | | | | ✓ | |
| Cyanide - pH >12 | | | | ✓ | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

- RR-SS-D8-0006 - ms/vol provided.
- no ms/vol provided for D8-0612 which is on chain.
- Dup 09 missing - was received in first shipment - not needed on this chain.

0000007

| | | |
|---------------------------------------|------------------------------------|------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>Jo</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>GN</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>SJ4227 → 4233</u> | KIMS Review By: <u>[Signature]</u> | Received By: <u>SO</u> |
| SDG #: | Cooler: <u>2</u> of <u>4</u> | Date/Time Rec.: <u>6-10-16 095</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | ✓ | | | | |
| 2. Chain of Custody present in cooler? | ✓ | | | | |
| 3. Chain of Custody signed by client? | ✓ | | | | |
| 4. Chain of Custody matches samples? | ✓ | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | | | | ✓ | Temp (°C): <u>N/A</u> |
| Samples received at <6 °C w/o freezing? | | | | ✓ | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | | | | ✓ | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | | | | ✓ | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | ✓ | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | ✓ | |
| Aqueous: No bubble larger than a pea? | | | | ✓ | |
| Soil/Sediment: | | | | ✓ | |
| Received in airtight container? | | | | ✓ | |
| Received in methanol? | | | | ✓ | |
| Methanol covering soil? | | | | ✓ | |
| D.I. Water - Received within 48 hour HT? | | | | ✓ | |
| Air: Refer to KAS COC for canister/flow controller requirements. | ✓ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | ✓ | |
| 8. Proper sample containers and volume? | ✓ | | | | |
| 9. Samples within hold time upon receipt? | ✓ | | | | |
| 10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 Sulfide - >9 Cyanide - pH >12 | | | | ✓ | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

[Signature]

| | | |
|---------------------------------------|------------------------------|------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>JO</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>GN</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>SJ4227 → 4233</u> | KIMS Review By: <u>JO</u> | Received By: <u>SO</u> |
| SDG #: | Cooler: <u>3</u> of <u>4</u> | Date/Time Rec.: <u>6-10-16 095</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | ✓ | | | | |
| 2. Chain of Custody present in cooler? | ✓ | | | | |
| 3. Chain of Custody signed by client? | ✓ | | | | |
| 4. Chain of Custody matches samples? | ✓ | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | | | | ✓ | Temp (°C): <u>N/A</u> |
| Samples received at <6 °C w/o freezing? | | | | ✓ | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | | | | ✓ | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | | | | ✓ | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | ✓ | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | ✓ | |
| Aqueous: No bubble larger than a pea? | | | | ✓ | |
| Soil/Sediment: | | | | ✓ | |
| Received in airtight container? | | | | ✓ | |
| Received in methanol? | | | | ✓ | |
| Methanol covering soil? | | | | ✓ | |
| D.I. Water - Received within 48 hour HT? | | | | ✓ | |
| Air: Refer to KAS COC for canister/flow controller requirements. | ✓ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | ✓ | |
| 8. Proper sample containers and volume? | ✓ | | | | |
| 9. Samples within hold time upon receipt? | ✓ | | | | |
| 10. Aqueous samples properly preserved? | | | | ✓ | |
| Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 | | | | ✓ | |
| Sulfide - >9 | | | | ✓ | |
| Cyanide - pH >12 | | | | ✓ | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

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| | | |
|---------------------------------------|------------------------------------|-------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>JO</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>GN</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>SJ4227 → 4233</u> | KIMS Review By: <u>[Signature]</u> | Received By: <u>JO</u> |
| SDG #: | Cooler: <u>4</u> of <u>4</u> | Date/Time Rec.: <u>6-10-16 0950</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | ✓ | | | | |
| 2. Chain of Custody present in cooler? | ✓ | | | | |
| 3. Chain of Custody signed by client? | ✓ | | | | |
| 4. Chain of Custody matches samples? | ✓ | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | | | | ✓ | Temp (°C): <u>N/A</u> |
| Samples received at <6 °C w/o freezing? | | | | ✓ | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | | | | ✓ | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | | | | ✓ | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | ✓ | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | ✓ | |
| Aqueous: No bubble larger than a pea? | | | | ✓ | |
| Soil/Sediment: | | | | ✓ | |
| Received in airtight container? | | | | ✓ | |
| Received in methanol? | | | | ✓ | |
| Methanol covering soil? | | | | ✓ | |
| D.I. Water - Received within 48 hour HT? | | | | ✓ | |
| Air: Refer to KAS COC for canister/flow controller requirements. | ✓ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | ✓ | |
| 8. Proper sample containers and volume? | ✓ | | | | |
| 9. Samples within hold time upon receipt? | ✓ | | | | |
| 10. Aqueous samples properly preserved? | | | | ✓ | |
| Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 | | | | ✓ | |
| Sulfide - >9 | | | | ✓ | |
| Cyanide - pH >12 | | | | ✓ | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

0000010



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client _____ Contact _____ Phone # _____ Fax # _____
 Address See Page 1 for details State _____ Zip Code _____
 Purchase Order # _____ Proj. Name / No. _____ Katahdin Quote # _____

Bill (if different than above) _____ Address _____
 Sampler (Print / Sign) _____ Copies To: _____

LAB USE ONLY WORK ORDER #: SJ4227/SJ4228
 KATAHDIN PROJECT NUMBER 9233

REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

| * | Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | |
|---|--------------------|--------------------|--------|---------------|------|------|------|------|------|------|------|------|------|------|------|------|
| | | | | | O | Y | N | O | Y | N | O | Y | N | O | Y | N |
| | PR-Dup 12-060816 | 6-8-16/1000 | SO | 1 | 1 | | | | | | | | | | | |
| | PR-SOCHAR03-0024 | 6-9-16/0942 | | 3 | | 1 | 1 | 1 | | | | | | | | |
| | PR-SOCHAR03-2436 | 6-9-16/0945 | | 3 | | 1 | 1 | 1 | | | | | | | | |
| | RR-SS-A1-0006 | 6-8-16/1220 | | 1 | 1 | | | | | | | | | | | |
| | RR-SB-A1-0612 | /1221 | | 1 | 1 | | | | | | | | | | | |
| | RR-SB-A1-1224 | /1222 | | 1 | 1 | | | | | | | | | | | HOLD |
| | RR-SS-A2-0006 | /1223 | | 1 | 1 | | | | | | | | | | | |
| | RR-SB-A2-0612 | /1224 | | 1 | 1 | | | | | | | | | | | |
| | RR-SB-A2-1224 | /1225 | | 1 | 1 | | | | | | | | | | | HOLD |
| | RR-SS-A3-0006 | /1234 | | 1 | 1 | | | | | | | | | | | |
| | RR-SB-A3-0612 | /1235 | | 1 | 1 | | | | | | | | | | | |
| | RR-SB-A3-1224 | /1236 | | 1 | 1 | | | | | | | | | | | HOLD |
| | RR-SS-A4-0006 | /1237 | | 1 | 1 | | | | | | | | | | | |
| | RR-SB-A4-0612 | /1238 | | 1 | 1 | | | | | | | | | | | |
| | RR-SB-A4-1224 | /1239 | | 1 | 1 | | | | | | | | | | | HOLD |
| | RR-SS-A5-0006 | /1247 | | 1 | 1 | | | | | | | | | | | |

COMMENTS _____

| | | | | | |
|--|----------------------------|-----------------------------------|------------------------------|-------------|--|
| Relinquished By: (Signature) <i>[Signature]</i> | Date / Time 6-9-16 1600 | Received By: (Signature) FedEx | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <i>[Signature]</i> 6-10-16 09:15 |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000011

Jennifer Obrin

From: Sok, Rob [Rob.Sok@tetrattech.com]
Sent: Monday, June 13, 2016 1:50 PM
To: Jennifer Obrin (jobrin@katahdinlab.com)
Subject: Sample Login and Holds

Follow Up Flag: Follow up
Flag Status: Completed

Jennifer,

Of the last batch of samples, the following duplicates can be placed on hold if they have not been run yet:

RR-DUP03, 04, 05, 06, 10, and 14

- prepped + not run yet

Let me know how it went this weekend.

Thanks,
Rob

Robert Sok, P.G. | Project Manager | Geologist Tetra Tech, Inc. | 5700 Lake Wright Drive | Suite 309 | Norfolk, VA 23502
Direct: 757-466-4904 | Mobile: 757-618-2104 | Fax: 757-461-4148 rob.sok@tetrattech.com <<mailto:ed.corack@tetrattech.com>>

Tetra Tech | Consulting, Engineering, Construction, and Technical Services Complex World, Clear Solutions(tm) | www.tetrattech.com <<http://www.tetrattech.com>> | NASDAQ: TTEK

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RR-DUP03 = SJ4228-40
-DUP04 = ↓ -41
-DUP05 = SJ4229-41
-DUP06 = ↓ -42
-DUP10 = SJ4230-29
↓ -DUP14 = SJ4231-38

0606012



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client: See Page 1 Contact: _____ Phone #: () () Fax #: () ()
 Address: _____ State: _____ Zip Code: _____
 Purchase Order #: _____ Proj. Name / No.: _____ Katahdin Quote #: _____

Bill (if different than above): _____ Address: _____
 Sampler (Print / Sign): _____ Copies To: _____

LAB USE ONLY WORK ORDER #: 5 JY28
 KATAHDIN PROJECT NUMBER: _____
 REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO.: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

| ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill |
| Y | N | Y | N | Y | N | Y | N | Y | N | Y | N |

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | | | | | | | | | | | | | | | | |
|----------------------|--------------------|--------|---------------|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|-------|
| RR-SB-A5-0612 | 6-8-16/1248 | SG | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-A5-1224 | /1249 | | 1 | 1 | | | | | | | | | | | | | | | HOLD |
| RR-SS-A6-0006 | /1250 | | 2 | 2 | | | | | | | | | | | | | | | MSMSD |
| RR-SB-A6-0612 | /1251 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-A6-1224 | /1252 | | 1 | 1 | | | | | | | | | | | | | | | HOLD |
| RR-SS-A7-0006 | /1305 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-A7-0612 | /1306 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-A7-1224 | /1307 | | 1 | 1 | | | | | | | | | | | | | | | HOLD |
| RR-SS-A8-0006 | /1308 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-A8-0612 | /1309 | | 2 | 2 | | | | | | | | | | | | | | | MSMSD |
| RR-SB-A8-1224 | /1310 | | 1 | 1 | | | | | | | | | | | | | | | HOLD |
| RR-SS-B1-0006 | /1320 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-B1-0612 | /1321 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-B1-1224 | /1322 | | 1 | 1 | | | | | | | | | | | | | | | HOLD |
| RR-SS-B2-0006 | /1323 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-B2-0612 | /1324 | | 1 | 1 | | | | | | | | | | | | | | | |

COMMENTS

| | | | | | |
|--|-----------------------------------|--|------------------------------|-------------|--|
| Relinquished By: (Signature) <u>[Signature]</u> | Date / Time <u>6-9-16 1600</u> | Received By: (Signature) <u>FedEx</u> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <u>[Signature]</u> |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <u>6-10-16 09:50</u> |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000013



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client: See Page 1 Contact: _____ Phone #: () () Fax #: () ()

Address: _____ City: _____ State: _____ Zip Code: _____

Purchase Order #: _____ Proj. Name / No.: _____ Katahdin Quote #: _____

Bill (if different than above): _____ Address: _____

Sampler (Print / Sign): _____ Copies To: _____

LAB USE ONLY WORK ORDER #: SJ4228/SJ4229
 KATAHDIN PROJECT NUMBER _____

REMARKS: _____

SHIPPING INFO: FED EX UPS CLIENT

AIRBILL NO: _____

TEMP °C _____ TEMP BLANK INTACT NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | | | | | | | | |
|----------------------|--------------------|--------|---------------|---|------|------|------|------|------|------|------|------|------|------|------|---|---|---|---|---|---|
| | | | | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | | | | | | |
| | | | | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N |
| RR-SB-B2-1224 | 6-21/1325 | SO | 1 | | | | | | | | | | | | | | | | | | |
| RR-SS-B3-0006 | /1339 | | 1 | | | | | | | | | | | | | | | | | | |
| RR-SB-B3-0612 | /1340 | | 1 | | | | | | | | | | | | | | | | | | |
| RR-SB-B3-1224 | /1341 | | 1 | | | | | | | | | | | | | | | | | | |
| RR-SB-B3-2436 | /1342 | | 1 | | | | | | | | | | | | | | | | | | |
| RR-SS-B4-0006 | /1343 | | 1 | | | | | | | | | | | | | | | | | | |
| RR-SB-B4-0612 | /1344 | | 1 | | | | | | | | | | | | | | | | | | |
| RR-SB-B4-1224 | /1345 | | 1 | | | | | | | | | | | | | | | | | | |
| RR-Dup01-060816 | /1200 | | 1 | | | | | | | | | | | | | | | | | | |
| RR-Dup02-060816 | /1230 | | 1 | | | | | | | | | | | | | | | | | | |
| RR-Dup03-060816 | /1300 | | 1 | | | | | | | | | | | | | | | | | | |
| RR-Dup04-060816 | /1315 | | 1 | | | | | | | | | | | | | | | | | | |
| RR-SS-B5-0006 | /1355 | | 1 | | | | | | | | | | | | | | | | | | |
| RR-SB-B5-0612 | /1356 | | 1 | | | | | | | | | | | | | | | | | | |
| RR-SB-B5-1224 | /1357 | | 1 | | | | | | | | | | | | | | | | | | |
| RR-SS-B6-0006 | ✓ /1359 | ✓ | 1 | | | | | | | | | | | | | | | | | | |

COMMENTS

| | | | | | |
|--|---------------------------|-----------------------------------|------------------------------|-------------|--|
| Relinquished By: (Signature) <i>[Signature]</i> | Date / Time 6-9-16/600 | Received By: (Signature) FedEx | Relinquished By: (Signature) | Date / Time | Received By: (Signature) 6-10-16 09:50 |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000014

METALS SAMPLE FLAGGING

| FLAG | SPECIFIED MEANING |
|-------------|--|
| E | The reported value is estimated because of the presence of interference (as indicated by serial dilution). |
| N | The pre-digestion spiked sample recovery is not within control limits. |
| * | The duplicate sample analysis relative percent difference (RPD) is not within control limits. |
| B | Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample. |
| A | The post-digestion spiked sample recovery is not within control limits. |
| • | Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits. |
| U | <p>The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ) (previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.</p> <p>Note: All results reported as “U” MDL have a 50% rate for false negatives compared to those results reported as “U” PQL/LOQ or “U” LOD, where the rate of false negatives is <1%.</p> |
| J | The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL). |
| Q | One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV). |

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as “U” MDL have a 50% rate for false negatives compared to those results reported as “U” PQL “U” LOQ or “U” LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

I-7 The laboratory’s Practical Quantitation Level (PQL) or LOQ could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

H_ Please note that the regulatory holding time for _____ is “analyze immediately”. Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1 - pH

H2 - DO

H3 - sulfite

H4 - residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

M1 The matrix spike and/or matrix spike duplicate recovery performed on this sample was outside of the laboratory acceptance criteria. Sample matrix is suspected. The laboratory criteria was met for the Laboratory Control Sample (LCS) analyzed concurrently with this sample.

M2 The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory acceptance criteria. The native sample concentration is greater than four times the spike added concentration so the spike added could not be distinguished from the native sample concentration.

R1 The relative percent difference (RPD) between the duplicate analyses performed on this sample was outside of the laboratory acceptance criteria (when both values are greater than ten times the PQL).

MCL Maximum Contaminant Level

NL No limit

NFL No Free Liquid Present

FLP Free Liquid Present

NOD No Odor Detected

TON Threshold Odor Number

D-1 As required by Method 5210B, APHA Standard Methods for the Examination of Water and Wastewater (21st edition), the BOD value reported for this sample is ‘qualified’ because the check standard run concurrently with the sample analysis did not meet the criteria specified in the method (198 +/- 30.5 mg/L). These results may not be reportable for compliance purposes.

D-2 The measured final dissolved oxygen concentrations of all dilutions were less than the method-specified limit of 1 mg/L. The reported BOD result was calculated assuming a final oxygen concentration equal to 1 mg/L. The reported value should be considered a minimum value.

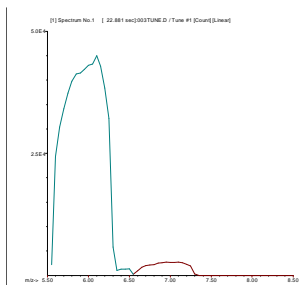
D-3 The dilution water used to prepare this sample did not meet the method and/or regulatory criteria of less than 0.2 or 0.4 mg/L dissolved oxygen (DO) uptake over the five day period of incubation. These results may not be reportable for compliance purposes.

6020 QC Tune Report

Data File: C:\ICPCHEM\1\DATA\JJF13A.B\003TUNE.D
 Date Acquired: Jun 13 2016 01:08 pm
 Acq. Method: TN6020E.M
 Operator: EAM
 Sample Name: 6020 TUNE
 Misc Info:
 Vial Number: 1107
 Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

| Element | Actual | Required | Flag |
|---------|--------|----------|------|
| 7 Li | 2.22 | 5.00 | |
| 59 Co | 0.02 | 5.00 | |
| 115 In | 0.60 | 5.00 | |
| 205 Tl | 1.48 | 5.00 | |

**7 Li****Mass Calib.**

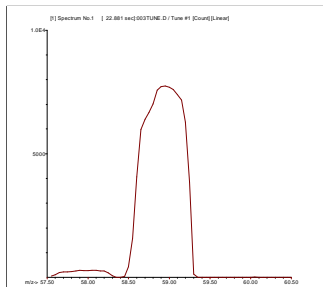
Actual: 7.00
 Required: 6.90 - 7.10

Flag:

Peak Width

Actual: 0.65
 Required: 0.90

Flag:

**59 Co****Mass Calib.**

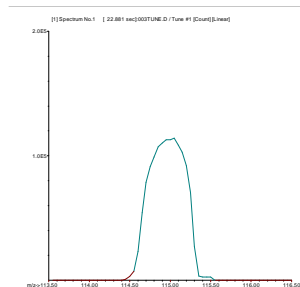
Actual: 58.95
 Required: 58.90 - 59.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:

**115 In****Mass Calib.**

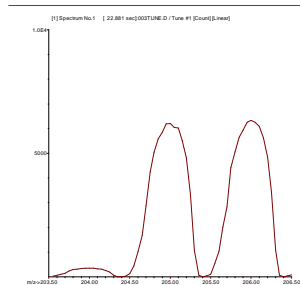
Actual: 115.00
 Required: 114.90 - 115.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:

**205 Tl****Mass Calib.**

Actual: 205.00
 Required: 204.90 - 205.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4228

Concentration Units: ug/L

SAMPLE: ICB

File: JJF13A Jun 13, 2016 14:08

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.345 | J |
| MOLYBDENUM | 0.051 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 14:42

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.748 | J |
| MOLYBDENUM | 0.065 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 6.660 | J |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 15:23

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.446 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.610 | J |
| MOLYBDENUM | 0.027 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4228

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 13, 2016 16:06

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.634 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.892 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 16:48

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.874 | J |
| MOLYBDENUM | 0.032 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 17:31

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 4.001 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.360 | J |
| MOLYBDENUM | 0.024 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4228

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 13, 2016 18:15

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 7.084 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.607 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 18:58

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.862 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.258 | J |
| MOLYBDENUM | 0.025 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 19:41

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.022 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4228

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 13, 2016 20:20

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 3.036 | J |
| CALCIUM | 6.900 | U |
| IRON | 9.065 | J |
| LEAD | 0.051 | J |
| MAGNESIUM | 1.279 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF12IMS1

Matrix: SOIL

SDG Name: SJ4228

QC Batch ID: JF12IMS1

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| LEAD | 0.012 | J |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF12IMS2

Matrix: SOIL

SDG Name: SJ4228

QC Batch ID: JF12IMS2

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| LEAD | 0.0808 | J |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF12IMS3

Matrix: SOIL

SDG Name: SJ4228

QC Batch ID: JF12IMS3

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| LEAD | 0.032 | J |

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services SDG Name: SJ4228

Concentration Units: ug/L

SAMPLE: ICSA

File: JJF13A Jun 13, 2016 14:24

| Analyte | TRUE | FOUND | % R |
|------------|--------|-------|------|
| ALUMINUM | 100000 | 96090 | 96.1 |
| CALCIUM | 100000 | 93120 | 93.1 |
| IRON | 100000 | 91500 | 91.5 |
| LEAD | 0 | 0 | |
| MAGNESIUM | 100000 | 93210 | 93.2 |
| MOLYBDENUM | 2000 | 1972 | 98.6 |
| POTASSIUM | 100000 | 94720 | 94.7 |
| SODIUM | 100000 | 95460 | 95.5 |

SAMPLE: ICSAB

File: JJF13A Jun 13, 2016 14:28

| Analyte | TRUE | FOUND | % R |
|------------|--------|-------|-------|
| ALUMINUM | 100000 | 96680 | 96.7 |
| CALCIUM | 100000 | 93830 | 93.8 |
| IRON | 100000 | 91810 | 91.8 |
| LEAD | 20 | 21 | 105.0 |
| MAGNESIUM | 100000 | 92630 | 92.6 |
| MOLYBDENUM | 2000 | 2000 | 100.0 |
| POTASSIUM | 100000 | 94930 | 94.9 |
| SODIUM | 100000 | 95580 | 95.6 |

5A
SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services
Matrix: SOIL
Percent Solids: 86.0

Client Field ID: RR-SS-A6-0006S
SDG Name: SJ4228
Lab Sample ID: SJ4228-016S

Concentration Units : mg/Kg drywt

| Analyte | Spiked | | Sample | | Spike | %R | Q | Control Limits (%R) | | M |
|-------------|--------|--------|--------|---|-------|--------|---|---------------------|------|----|
| | Sample | Result | Result | C | | | | Low | High | |
| LEAD, TOTAL | | 296 | 57.5 | | 5.12 | 4660.3 | N | 84 | 118 | MS |

Comments:

result > 4x spike

5A
SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services
Matrix: SOIL
Percent Solids: 91.7

Client Field ID: RR-SB-A8-0612S
SDG Name: SJ4228
Lab Sample ID: SJ4228-023S

Concentration Units : mg/Kg drywt

| Analyte | Spiked | | Sample | | Spike | %R | Q | Control Limits (%R) | | M |
|-------------|--------|--------|--------|---|-------|------|---|---------------------|------|----|
| | Sample | Result | Result | C | | | | Low | High | |
| LEAD, TOTAL | | 20.8 | 16.3 | | 5 | 90.4 | | 84 | 118 | MS |

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-A6-0006S

Matrix: SOIL

SDG Name: SJ4228

Percent Solids: 86.0

Lab Sample ID: SJ4228-016A

Concentration Units : ug/L

| Analyte | Spiked | | Sample | | Spike | %R | Q | Control Limits (%R) | | M |
|-------------|--------|--------|--------|---|-------|------|---|---------------------|------|----|
| | Sample | Result | Result | C | | | | Low | High | |
| LEAD, TOTAL | | 112 | 111 | C | 2 | 65.0 | A | 80 | 120 | MS |

Comments:

result > 4x spike

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-A8-0612S

Matrix: SOIL

SDG Name: SJ4228

Percent Solids: 91.7

Lab Sample ID: SJ4228-023A

Concentration Units : ug/L

| Analyte | Spiked | | Sample | | Spike | %R | Q | Control Limits (%R) | | M |
|-------------|--------|--------|--------|---|-------|-------|---|---------------------|------|----|
| | Sample | Result | Result | C | | | | Low | High | |
| LEAD, TOTAL | | 34.8 | 32.8 | C | 2 | 101.5 | | 80 | 120 | MS |

Comments:

6
DUPLICATES

Lab Name: Katahdin Analytical Services
Matrix: SOIL
Percent Solids: 86.0

Client Field ID: RR-SS-A6-0006D
SDG Name: SJ4228
Lab Sample ID: SJ4228-016D

Concentration Units : mg/Kg drywt

| Analyte | Control Limits | Sample Result | C | Duplicate Result | C | RPD | Q | M |
|-------------|----------------|---------------|---|------------------|---|------|---|----|
| LEAD, TOTAL | | 57.5126 | | 166.5253 | | 97.3 | * | MS |

Comments:

6
DUPLICATES

Lab Name: Katahdin Analytical Services
Matrix: SOIL
Percent Solids: 91.7

Client Field ID: RR-SB-A8-0612D
SDG Name: SJ4228
Lab Sample ID: SJ4228-023D

Concentration Units : mg/Kg drywt

| Analyte | Control Limits | Sample Result | C | Duplicate Result | C | RPD | Q | M |
|-------------|----------------|---------------|---|------------------|---|------|---|----|
| LEAD, TOTAL | | 16.3483 | | 12.0975 | | 29.9 | * | MS |

Comments:

< 35% for soil samples

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF12IMS1**Matrix:** SOIL**SDG Name:** SJ4228**QC Batch ID:** JF12IMS1**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 10.2 | 101.9 | 84 | 118 |

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF12IMS2**Matrix:** SOIL**SDG Name:** SJ4228**QC Batch ID:** JF12IMS2**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 10.4 | 103.9 | 84 | 118 |

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF12IMS3**Matrix:** SOIL**SDG Name:** SJ4228**QC Batch ID:** JF12IMS3**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 10.1 | 101.0 | 84 | 118 |

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services**Client Field ID:** RR-SS-A6-0006L**Matrix:** SOIL**SDG Name:** SJ4228**Lab Sample ID:** SJ4228-016L**Concentration Units: ug/L**

| Analyte | Sample Result | C | Dilution | Result | C | % Difference | Q | M |
|----------------|----------------------|----------|-----------------|---------------|----------|---------------------|----------|----------|
| LEAD, TOTAL | 111 | | | 111 | | 0.0 | | MS |

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services**Client Field ID:** RR-SB-A8-0612L**Matrix:** SOIL**SDG Name:** SJ4228**Lab Sample ID:** SJ4228-023L**Concentration Units: ug/L**

| Analyte | Sample Result | C | Dilution | Result | C | % Difference | Q | M |
|----------------|----------------------|----------|-----------------|---------------|----------|---------------------|----------|----------|
| LEAD, TOTAL | 32.8 | | | 33.1 | | 0.9 | | MS |

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 3/14/2016**

| Analyte | Concentration Units: ug/L | | |
|------------|---------------------------|-------|----|
| | PQL/LOQ | IDL | M |
| ALUMINUM | 300 | 1.4 | MS |
| CALCIUM | 100 | 6.9 | MS |
| IRON | 100 | 6.2 | MS |
| LEAD | 0.20 | 0.041 | MS |
| MAGNESIUM | 100 | 0.65 | MS |
| MOLYBDENUM | 1.0 | 0.021 | MS |
| POTASSIUM | 1000 | 13. | MS |
| SODIUM | 1000 | 2.9 | MS |

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 1/26/2011**

| Analyte | LOD | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| LEAD | 0.010 | mg/Kg | MS | SW846 3050B / SW846 6020A |

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 1/26/2011**

| Analyte | MDL | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| LEAD | 0.0014 | mg/kg | MS | SW846 3050B / SW846 6020A |

12
ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services

Instrument Code: J

Instrument Name: AGILENT 7500 ICP-MS

Date: 4/4/2016

Concentration Units: ug/L

| Analyte | Integration Time (sec) | Linear Range | M |
|------------|------------------------|--------------|----|
| ALUMINUM | 0.01 | 200000 | MS |
| CALCIUM | 0.03 | 200000 | MS |
| IRON | 0.03 | 100000 | MS |
| LEAD | 0.10 | 2000 | MS |
| MAGNESIUM | 0.05 | 200000 | MS |
| MOLYBDENUM | 0.10 | 1000 | MS |
| POTASSIUM | 0.01 | 200000 | MS |
| SODIUM | 0.01 | 200000 | MS |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF12IMS1**Matrix:** SOIL**SDG Name:** SJ4228**Method:** MS**Prep Date:** 06/12/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF12IMS1 | LC SOJF12IMS1 | 1 | 0.1 | |
| PBSJF12IMS1 | PBSJF12IMS1 | 1 | 0.1 | |
| RR-SS-A6-0006 | SJ4228-016 | 2.24 | 0.1 | B |
| RR-SS-A6-0006D | SJ4228-016D | 2.39 | 0.1 | B |
| RR-SS-A6-0006S | SJ4228-016S | 2.27 | 0.1 | B |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF12IMS2**Matrix:** SOIL**SDG Name:** SJ4228**Method:** MS**Prep Date:** 06/12/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF12IMS2 | LC SOJF12IMS2 | 1 | 0.1 | |
| PBSJF12IMS2 | PBSJF12IMS2 | 1 | 0.1 | |
| RR-SS-A1-0006 | SJ4228-001 | 1.68 | 0.1 | A |
| RR-SB-A1-0612 | SJ4228-002 | 2.13 | 0.1 | A |
| RR-SS-A2-0006 | SJ4228-004 | 1.64 | 0.1 | A |
| RR-SB-A2-0612 | SJ4228-005 | 1.28 | 0.1 | A |
| RR-SS-A3-0006 | SJ4228-007 | 1.6 | 0.1 | A |
| RR-SB-A3-0612 | SJ4228-008 | 2.22 | 0.1 | A |
| RR-SS-A4-0006 | SJ4228-010 | 1.6 | 0.1 | A |
| RR-SB-A4-0612 | SJ4228-011 | 1.79 | 0.1 | A |
| RR-SS-A5-0006 | SJ4228-013 | 1.32 | 0.1 | A |
| RR-SB-A5-0612 | SJ4228-014 | 1.77 | 0.1 | A |
| RR-SB-A6-0612 | SJ4228-017 | 2.54 | 0.1 | A |
| RR-SS-A7-0006 | SJ4228-019 | 1.51 | 0.1 | A |
| RR-SB-A7-0612 | SJ4228-020 | 1.85 | 0.1 | A |
| RR-SS-A8-0006 | SJ4228-022 | 1.54 | 0.1 | A |
| RR-SB-A8-0612 | SJ4228-023 | 2.19 | 0.1 | A |
| RR-SB-A8-0612D | SJ4228-023D | 2.12 | 0.1 | A |
| RR-SB-A8-0612S | SJ4228-023S | 2.18 | 0.1 | A |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF12IMS3**Matrix:** SOIL**SDG Name:** SJ4228**Method:** MS**Prep Date:** 06/12/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF12IMS3 | LC SOJF12IMS3 | 1 | 0.1 | |
| PBSJF12IMS3 | PBSJF12IMS3 | 1 | 0.1 | |
| RR-SS-B1-0006 | SJ4228-025 | 1.71 | 0.1 | A |
| RR-SB-B1-0612 | SJ4228-026 | 1.5 | 0.1 | A |
| RR-SS-B2-0006 | SJ4228-028 | 2.28 | 0.1 | A |
| RR-SB-B2-0612 | SJ4228-029 | 2.28 | 0.1 | A |
| RR-SS-B3-0006 | SJ4228-031 | 1.37 | 0.1 | A |
| RR-SB-B3-0612 | SJ4228-032 | 2.12 | 0.1 | A |
| RR-SB-B3-1224 | SJ4228-033 | 1.18 | 0.1 | A |
| RR-SS-B4-0006 | SJ4228-035 | 1.68 | 0.1 | A |
| RR-SB-B4-0612 | SJ4228-036 | 1.82 | 0.1 | A |
| RR-DUP01-060816 | SJ4228-038 | 1.68 | 0.1 | A |
| RR-DUP02-060816 | SJ4228-039 | 1.95 | 0.1 | A |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4228

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| 6020 Tune | | 1 | 13:08 | | | | | | | |
| 200.8 Tune | | 1 | 13:11 | | | | | | | |
| Cal Blank | | 1 | 13:58 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| Cal Std | | 1 | 14:01 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICV | | 1 | 14:04 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICB | | 1 | 14:08 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| PQL | | 1 | 14:11 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 14:14 | | | | | | | |
| ZZZZZZ | | 1 | 14:17 | | | | | | | |
| ZZZZZZ | | 1 | 14:21 | | | | | | | |
| ICSA | | 1 | 14:24 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICSAB | | 1 | 14:28 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 14:32 | | | | | | | |
| ZZZZZZ | | 1 | 14:35 | | | | | | | |
| CCV | | 1 | 14:38 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 14:42 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 5 | 14:45 | | | | | | | |
| ZZZZZZ | | 5 | 14:48 | | | | | | | |
| ZZZZZZ | | 5 | 14:52 | | | | | | | |
| ZZZZZZ | | 5 | 14:55 | | | | | | | |
| ZZZZZZ | | 5 | 14:59 | | | | | | | |
| ZZZZZZ | | 5 | 15:02 | | | | | | | |
| ZZZZZZ | | 5 | 15:06 | | | | | | | |
| ZZZZZZ | | 5 | 15:09 | | | | | | | |
| PBSJF12IMS1 | | 5 | 15:13 | | | Pb | | | | |
| LCSOJF12IMS1 | | 5 | 15:16 | | | Pb | | | | |
| CCV | | 1 | 15:20 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4228

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|----------------|------|-------|----------|----|-------|----|----|---|----|
| CCB | | 1 | 15:23 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZ | | 10 | 15:27 | | | | | | | |
| ZZZZZ | | 10 | 15:30 | | | | | | | |
| ZZZZZ | | 10 | 15:34 | | | | | | | |
| ZZZZZ | | 10 | 15:37 | | | | | | | |
| ZZZZZ | | 10 | 15:41 | | | | | | | |
| ZZZZZ | | 10 | 15:44 | | | | | | | |
| ZZZZZ | | 10 | 15:48 | | | | | | | |
| ZZZZZ | | 10 | 15:51 | | | | | | | |
| ZZZZZ | | 10 | 15:55 | | | | | | | |
| ZZZZZ | | 10 | 15:58 | | | | | | | |
| CCV | | 1 | 16:02 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 16:06 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZ | | 10 | 16:09 | | | | | | | |
| ZZZZZ | | 10 | 16:13 | | | | | | | |
| ZZZZZ | | 10 | 16:16 | | | | | | | |
| ZZZZZ | | 10 | 16:20 | | | | | | | |
| ZZZZZ | | 10 | 16:23 | | | | | | | |
| ZZZZZ | | 10 | 16:27 | | | | | | | |
| ZZZZZ | | 10 | 16:30 | | | | | | | |
| ZZZZZ | | 10 | 16:34 | | | | | | | |
| SJ4228-016 | RR-SS-A6-0006 | 10 | 16:37 | | | Pb | | | | |
| SJ4228-016L | RR-SS-A6-0006L | 50 | 16:41 | | | Pb | | | | |
| CCV | | 1 | 16:44 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 16:48 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| SJ4228-016A | RR-SS-A6-0006A | 10 | 16:52 | | | Pb | | | | |
| SJ4228-016D | RR-SS-A6-0006D | 10 | 16:55 | | | Pb | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4228

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | | |
|---------------|----------------|------|-------|----------|----|----|----|----|----|---|----|----|
| SJ4228-016S | RR-SS-A6-0006S | 10 | 16:59 | | | | | | | | | Pb |
| PBSJF12IMS2 | | 5 | 17:02 | | | | | | | | | Pb |
| LCSOJF12IMS2 | | 5 | 17:06 | | | | | | | | | Pb |
| ZZZZZZ | | 10 | 17:10 | | | | | | | | | |
| ZZZZZZ | | 10 | 17:13 | | | | | | | | | |
| ZZZZZZ | | 10 | 17:17 | | | | | | | | | |
| ZZZZZZ | | 10 | 17:20 | | | | | | | | | |
| SJ4228-001 | RR-SS-A1-0006 | 10 | 17:24 | | | | | | | | | Pb |
| CCV | | 1 | 17:28 | Al | Ca | Fe | Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 17:31 | Al | Ca | Fe | Pb | Mg | Mo | K | Na | |
| SJ4228-002 | RR-SB-A1-0612 | 10 | 17:35 | | | | | | | | | Pb |
| SJ4228-004 | RR-SS-A2-0006 | 10 | 17:38 | | | | | | | | | Pb |
| SJ4228-005 | RR-SB-A2-0612 | 10 | 17:42 | | | | | | | | | Pb |
| SJ4228-007 | RR-SS-A3-0006 | 10 | 17:46 | | | | | | | | | Pb |
| SJ4228-008 | RR-SB-A3-0612 | 10 | 17:49 | | | | | | | | | Pb |
| SJ4228-010 | RR-SS-A4-0006 | 10 | 17:53 | | | | | | | | | Pb |
| SJ4228-011 | RR-SB-A4-0612 | 10 | 17:56 | | | | | | | | | Pb |
| SJ4228-013 | RR-SS-A5-0006 | 10 | 18:00 | | | | | | | | | Pb |
| SJ4228-014 | RR-SB-A5-0612 | 10 | 18:04 | | | | | | | | | Pb |
| SJ4228-017 | RR-SB-A6-0612 | 10 | 18:07 | | | | | | | | | Pb |
| CCV | | 1 | 18:11 | Al | Ca | Fe | Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 18:15 | Al | Ca | Fe | Pb | Mg | Mo | K | Na | |
| SJ4228-019 | RR-SS-A7-0006 | 10 | 18:18 | | | | | | | | | Pb |
| SJ4228-020 | RR-SB-A7-0612 | 10 | 18:22 | | | | | | | | | Pb |
| SJ4228-022 | RR-SS-A8-0006 | 10 | 18:25 | | | | | | | | | Pb |
| SJ4228-023 | RR-SB-A8-0612 | 10 | 18:29 | | | | | | | | | Pb |
| SJ4228-023L | RR-SB-A8-0612L | 50 | 18:33 | | | | | | | | | Pb |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4228

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | | |
|---------------|-----------------|------|-------|----------|----|-------|----|----|---|----|--|--|
| SJ4228-023A | RR-SB-A8-0612A | 10 | 18:36 | | | Pb | | | | | | |
| SJ4228-023D | RR-SB-A8-0612D | 10 | 18:40 | | | Pb | | | | | | |
| SJ4228-023S | RR-SB-A8-0612S | 10 | 18:43 | | | Pb | | | | | | |
| <i>ZZZZZ</i> | | 10 | 18:47 | | | | | | | | | |
| PBSJF12IMS3 | | 5 | 18:50 | | | Pb | | | | | | |
| CCV | | 1 | 18:54 | Al | Ca | Fe Pb | Mg | Mo | K | Na | | |
| CCB | | 1 | 18:58 | Al | Ca | Fe Pb | Mg | Mo | K | Na | | |
| LCSOJF12IMS3 | | 5 | 19:01 | | | Pb | | | | | | |
| SJ4228-025 | RR-SS-B1-0006 | 10 | 19:05 | | | Pb | | | | | | |
| SJ4228-026 | RR-SB-B1-0612 | 10 | 19:08 | | | Pb | | | | | | |
| SJ4228-028 | RR-SS-B2-0006 | 10 | 19:12 | | | Pb | | | | | | |
| SJ4228-029 | RR-SB-B2-0612 | 10 | 19:16 | | | Pb | | | | | | |
| SJ4228-031 | RR-SS-B3-0006 | 10 | 19:19 | | | Pb | | | | | | |
| SJ4228-032 | RR-SB-B3-0612 | 10 | 19:23 | | | Pb | | | | | | |
| SJ4228-033 | RR-SB-B3-1224 | 10 | 19:26 | | | Pb | | | | | | |
| SJ4228-035 | RR-SS-B4-0006 | 10 | 19:30 | | | Pb | | | | | | |
| SJ4228-036 | RR-SB-B4-0612 | 10 | 19:34 | | | Pb | | | | | | |
| CCV | | 1 | 19:37 | Al | Ca | Fe Pb | Mg | Mo | K | Na | | |
| CCB | | 1 | 19:41 | Al | Ca | Fe Pb | Mg | Mo | K | Na | | |
| SJ4228-038 | RR-DUP01-060816 | 10 | 19:44 | | | Pb | | | | | | |
| SJ4228-039 | RR-DUP02-060816 | 10 | 19:48 | | | Pb | | | | | | |
| <i>ZZZZZ</i> | | 10 | 19:52 | | | | | | | | | |
| <i>ZZZZZ</i> | | 10 | 19:55 | | | | | | | | | |
| <i>ZZZZZ</i> | | 10 | 19:59 | | | | | | | | | |
| <i>ZZZZZ</i> | | 10 | 20:02 | | | | | | | | | |
| <i>ZZZZZ</i> | | 10 | 20:06 | | | | | | | | | |
| <i>ZZZZZ</i> | | 10 | 20:09 | | | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4228

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| <u>ZZZZZ</u> | | 10 | 20:13 | | | | | | | |
| CCV | | 1 | 20:17 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 20:20 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

| ANALYTE | ORIGINAL | ORIGINAL | DUPLICATE | DUPLICATE | RL | RPD | RPD > 50% | ORIGINAL SAMPLE CONC >5xRL | DUPLICATE SAMPLE CONC >5xRL | DIFFERENCE >4xRL |
|---------|---------------|----------|-----------------|-----------|------|-------|-----------|----------------------------|-----------------------------|------------------|
| LEAD | RR-SS-A3-0006 | 26.6 | RR-DUP01-060816 | 26.7 | 0.15 | 0.38 | FALSE | TRUE | TRUE | FALSE |
| LEAD | RR-SB-A4-0612 | 9.11 | RR-DUP02-060816 | 7.41 | 0.12 | 20.58 | FALSE | TRUE | TRUE | TRUE |



TO: R. SOK DATE: AUGUST 12, 2016
 FROM: L. GANSER COPIES: DV FILE
 SUBJECT: DATA VALIDATION- LEAD
 NASA WALLOPS ISLAND, VIRGINIA
 SAMPLE DELIVERY GROUP (SDG) SJ4229

SAMPLES: 38/Soil

| | | | |
|-----------------|-----------------|-----------------|---------------|
| RR-DUP06-060816 | RR-DUP07-060816 | RR-DUP08-060816 | RR-SB-B5-0612 |
| RR-SB-B6-0612 | RR-SB-B6-1224 | RR-SB-B7-0612 | RR-SB-B8-0612 |
| RR-SB-C1-0612 | RR-SB-C1-1224 | RR-SB-C2-0612 | RR-SB-C2-1224 |
| RR-SB-C3-0612 | RR-SB-C3-1224 | RR-SB-C3-2436 | RR-SB-C4-0612 |
| RR-SB-C4-1224 | RR-SB-C4-2436 | RR-SB-C5-0612 | RR-SB-C5-1224 |
| RR-SB-C5-2436 | RR-SB-C6-0612 | RR-SB-C6-1224 | RR-SB-C6-2436 |
| RR-SB-C7-2436 | RR-SB-C8-0612 | RR-SB-C8-1224 | RR-SS-B5-0006 |
| RR-SS-B6-0006 | RR-SS-B7-0006 | RR-SS-B8-0006 | RR-SS-C1-0006 |
| RR-SS-C2-0006 | RR-SS-C3-0006 | RR-SS-C4-0006 | RR-SS-C5-0006 |
| RR-SS-C6-0006 | RR-SS-C8-0006 | | |

Overview

The sample set for NASA Wallops Island, SDG SJ4229 consists of thirty-eight (38) soil samples. All samples were analyzed for lead. Two field duplicate pairs were included in this SDG: RR-SB-C1-1224 / RR-DUP06-060816, RR-SB-C3-1224 / RR-DUP07-060816, RR-SS-C6-0006 / RR-DUP08-060816.

Samples were collected on June 8, 2016 by Tetra Tech and analyzed by Katahdin. Lead analyses were conducted in accordance to SW-846 Method 6020A analytical and reporting protocols.

The data contained in this SDG were validated with regard to the following parameters: data completeness, holding times, MS tuning, laboratory method/preparation blank results, ICP interference results, blank spike results, matrix spike/matrix spike duplicate results, laboratory duplicate results, ICP serial dilution results, field duplicate precision, and detection limits. Areas of concern with respect to data quality are listed below.

Major Problems – None.

Minor Problems

- Lead was detected in the laboratory blanks at the following maximum concentrations:

| <u>Analyte</u> | <u>Maximum Concentration</u> | <u>Reporting Limit (RL) (> or <)</u> |
|---------------------|------------------------------|--|
| Lead ⁽¹⁾ | 0.0808 mg/kg | > |
| Lead ⁽²⁾ | 0.032 mg/kg | < |
| Lead ⁽³⁾ | 0.131 mg/kg | > |
| Lead ⁽⁴⁾ | 0.103 mg/kg | > |
| Lead ⁽⁵⁾ | 0.010 mg/kg | < |
| Lead ⁽⁶⁾ | 0.756 ug/L (0.0756 mg/kg) | < |

- 1 Concentration in preparation blank affecting samples in batch JF12IMS1.
- 2 Concentration in preparation blank affecting samples in batch JF12IMS2.
- 3 Concentration in preparation blank affecting samples in batch JF12IMS4.

To: R. SOK
SDG: SJ4228

- 4 Concentration in preparation blank affecting samples in batch JF12IMS5.
- 5 Concentration in preparation blank affecting samples in batch JF15IMS1.
- 6 Concentration in calibration blank on 6-13-16 at 22:30 affecting samples RR-SS-C8-0006 and RR-DUP07-060816.

Dilution factor, if applicable, was taken into consideration when evaluating for blank contamination. No action was taken for samples affected by blank concentrations < RL as all results were greater than the RL. For samples affected by blank concentrations >RL, sample results less than 10 times the blank concentration were qualified as nondetect.

- Laboratory duplicate imprecision (relative percent difference >35%) was noted for lead in sample RR-SB-C5-0612. The lead result in sample RR-SB-C5-0612 was qualified as estimated (J).
- Field duplicate imprecision (relative percent difference > 50%) was noted for field duplicate sample pair RR-SB-C3-1224 / RR-DUP07-060816. The detected lead results in samples RR-SB-C3-1224 and RR-DUP07-060816 were qualified as estimated (J).

Notes – None.

EXECUTIVE SUMMARY

Laboratory Performance Issues: Lead was present in the blanks. Lab duplicate imprecision was noted for lead in one sample.

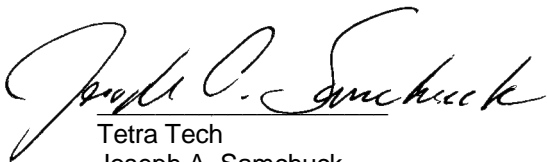
Other Factors Affecting Data Quality: Field duplicate imprecision was noted for lead in one sample.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review" (August 2014). The text of this report has been formulated to address only those areas affecting data quality.

The text of this report has been formulated to address only those problem areas affecting data quality.



Tetra Tech
Leanne M. Ganser
Environmental Scientist/Data Validator



Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:

- Appendix A – Qualified Analytical Results
- Appendix B – Results as Reported by the Laboratory
- Appendix C – Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate
- Z4 = Sample activity is less than the at uncertainty at 3 standard deviations and greater than the MDC
- Z5 = Sample activity is less than the at uncertainty at 3 standard deviations and less than the MDC

| | | | | | | | | | | | | | |
|---|------------|-----------------|------|--------|-----------------|------|--------|-----------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4229 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-DUP06-060816 | | | RR-DUP07-060816 | | | RR-DUP08-060816 | | | RR-SB-B5-0612 | | |
| | LAB_ID | SJ4229-042 | | | SJ4229-043 | | | SJ4229-044 | | | SJ4229-002 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 89.9 | | | 91.3 | | | 85.1 | | | 90.5 | | |
| | DUP_OF | RR-SB-C1-1224 | | | RR-SB-C3-1224 | | | RR-SS-C6-0006 | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 6.62 | U | A | 1230 | J | G | 3630 | | | 22.1 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4229 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SB-B6-0612 | | | RR-SB-B6-1224 | | | RR-SB-B7-0612 | | | RR-SB-B8-0612 | | |
| | LAB_ID | SJ4229-005 | | | SJ4229-006 | | | SJ4229-009 | | | SJ4229-012 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 89.1 | | | 91.0 | | | 89.2 | | | 89.2 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 40.4 | | | 26.2 | | | 309 | | | 16.4 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4229 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SB-C1-0612 | | | RR-SB-C1-1224 | | | RR-SB-C2-0612 | | | RR-SB-C2-1224 | | |
| | LAB_ID | SJ4229-015 | | | SJ4229-016 | | | SJ4229-018 | | | SJ4229-019 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 90.8 | | | 89.7 | | | 89.4 | | | 91.3 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 2770 | | | 5.66 | U | A | 294 | | | 15.8 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4229 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SB-C3-0612 | | | RR-SB-C3-1224 | | | RR-SB-C3-2436 | | | RR-SB-C4-0612 | | |
| | LAB_ID | SJ4229-022 | | | SJ4229-023 | | | SJ4229-024 | | | SJ4229-026 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 88.0 | | | 91.2 | | | 91.6 | | | 88.6 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 1280 | | | 399 | J | G | 10.6 | | | 5640 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4229 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SB-C4-1224 | | | RR-SB-C4-2436 | | | RR-SB-C5-0612 | | | RR-SB-C5-1224 | | |
| | LAB_ID | SJ4229-027 | | | SJ4229-028 | | | SJ4229-030 | | | SJ4229-031 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 93.6 | | | 90.4 | | | 89.2 | | | 88.7 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 3840 | | | 744 | | | 306 | J | F | 3110 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4229 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SB-C5-2436 | | | RR-SB-C6-0612 | | | RR-SB-C6-1224 | | | RR-SB-C6-2436 | | |
| | LAB_ID | SJ4229-032 | | | SJ4229-034 | | | SJ4229-035 | | | SJ4229-036 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 89.7 | | | 90.1 | | | 89.8 | | | 89.8 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 15.8 | | | 339 | | | 5200 | | | 226 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4229 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SB-C7-2436 | | | RR-SB-C8-0612 | | | RR-SB-C8-1224 | | | RR-SS-B5-0006 | | |
| | LAB_ID | SJ4229-037 | | | SJ4229-039 | | | SJ4229-040 | | | SJ4229-001 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 91.7 | | | 89.4 | | | 93.5 | | | 87.7 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 40.6 | | | 4080 | | | 37.4 | | | 575 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4229 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SS-B6-0006 | | | RR-SS-B7-0006 | | | RR-SS-B8-0006 | | | RR-SS-C1-0006 | | |
| | LAB_ID | SJ4229-004 | | | SJ4229-008 | | | SJ4229-011 | | | SJ4229-014 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 80.4 | | | 89.7 | | | 81.8 | | | 84.3 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 950 | | | 146 | | | 252 | | | 41.6 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4229 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SS-C2-0006 | | | RR-SS-C3-0006 | | | RR-SS-C4-0006 | | | RR-SS-C5-0006 | | |
| | LAB_ID | SJ4229-017 | | | SJ4229-021 | | | SJ4229-025 | | | SJ4229-029 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 81.3 | | | 89.8 | | | 87.0 | | | 90.0 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 107 | | | 119 | | | 4050 | | | 880 | | | |

| | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4229 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SS-C6-0006 | | | RR-SS-C8-0006 | | |
| | LAB_ID | SJ4229-033 | | | SJ4229-038 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 88.1 | | | 90.6 | | |
| | DUP_OF | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 2910 | | | 237 | | | |

Appendix B

Results as Reported by the Laboratory

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-B5-0006

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 87.7

Lab Sample ID: SJ4229-001

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 575 | | | MS | 10 | 0.14 | 0.0097 | 0.070 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-B5-0612

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 90.5

Lab Sample ID: SJ4229-002

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 22.1 | | | MS | 10 | 0.18 | 0.013 | 0.091 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-B6-0006

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 80.4

Lab Sample ID: SJ4229-004

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 950 | | | MS | 10 | 0.18 | 0.013 | 0.091 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-B6-0612

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 89.1

Lab Sample ID: SJ4229-005

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 40.4 | | | MS | 10 | 0.11 | 0.0079 | 0.057 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-B6-1224

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 91.0

Lab Sample ID: SJ4229-006

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 26.2 | | | MS | 10 | 0.098 | 0.0069 | 0.049 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-B7-0006

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 89.7

Lab Sample ID: SJ4229-008

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 146 | B | MS | 10 | 0.11 | 0.0078 | 0.056 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-B7-0612

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 89.2

Lab Sample ID: SJ4229-009

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 309 | | | MS | 10 | 0.12 | 0.0088 | 0.063 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-B8-0006

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 81.8

Lab Sample ID: SJ4229-011

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 252 | B | MS | 10 | 0.17 | 0.012 | 0.085 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-B8-0612

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 89.2

Lab Sample ID: SJ4229-012

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 16.4 | B | MS | 10 | 0.16 | 0.011 | 0.080 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-C1-0006

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 84.3

Lab Sample ID: SJ4229-014

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 41.6 | B | MS | 10 | 0.14 | 0.0098 | 0.070 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-C1-0612

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 90.8

Lab Sample ID: SJ4229-015

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 2770 | B | MS | 50 | 0.55 | 0.038 | 0.27 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-C1-1224

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 89.7

Lab Sample ID: SJ4229-016

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 5.66 | * | MS | 10 | 0.12 | 0.0087 | 0.062 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-C2-0006

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 81.3

Lab Sample ID: SJ4229-017

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 107 | B | MS | 10 | 0.13 | 0.0088 | 0.063 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-C2-0612

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 89.4

Lab Sample ID: SJ4229-018

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 294 | B | MS | 10 | 0.12 | 0.0081 | 0.058 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-C2-1224

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 91.3

Lab Sample ID: SJ4229-019

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 15.8 | B | MS | 10 | 0.12 | 0.0081 | 0.058 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-C3-0006

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 89.8

Lab Sample ID: SJ4229-021

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 119 | B | MS | 10 | 0.11 | 0.0076 | 0.054 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-C3-0612

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 88.0

Lab Sample ID: SJ4229-022

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 1280 | B | MS | 10 | 0.17 | 0.012 | 0.086 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-C3-1224

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 91.2

Lab Sample ID: SJ4229-023

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 399 | B | MS | 10 | 0.10 | 0.0073 | 0.052 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-C3-2436

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 91.6

Lab Sample ID: SJ4229-024

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 10.6 | | | MS | 10 | 0.13 | 0.0094 | 0.067 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-C4-0006

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 87.0

Lab Sample ID: SJ4229-025

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 4050 | B | MS | 50 | 0.51 | 0.036 | 0.26 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-C4-0612

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 88.6

Lab Sample ID: SJ4229-026

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|-----|-----|----------|------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 5640 | B | MS | 100 | 1.2 | 0.083 | 0.59 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-C4-1224

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 93.6

Lab Sample ID: SJ4229-027

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 3840 | B | MS | 50 | 0.52 | 0.037 | 0.26 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-C4-2436

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 90.4

Lab Sample ID: SJ4229-028

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 744 | | | MS | 10 | 0.17 | 0.012 | 0.087 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-C5-0006

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 90.0

Lab Sample ID: SJ4229-029

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 880 | B | MS | 10 | 0.10 | 0.0070 | 0.050 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-C5-0612

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 89.2

Lab Sample ID: SJ4229-030

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|-----|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 306 | | N*A | MS | 10 | 0.11 | 0.0078 | 0.055 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-C5-1224

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 88.7

Lab Sample ID: SJ4229-031

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 3110 | B | MS | 50 | 0.56 | 0.039 | 0.28 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-C5-2436

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 89.7

Lab Sample ID: SJ4229-032

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 15.8 | | | MS | 10 | 0.10 | 0.0074 | 0.053 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-C6-0006

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 88.0

Lab Sample ID: SJ4229-033

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 2910 | B | MS | 50 | 0.74 | 0.052 | 0.37 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-C6-0612

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 90.1

Lab Sample ID: SJ4229-034

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 339 | B | MS | 10 | 0.12 | 0.0085 | 0.061 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-C6-1224

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 89.8

Lab Sample ID: SJ4229-035

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 5200 | B | MS | 50 | 0.71 | 0.050 | 0.36 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-C6-2436

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 89.8

Lab Sample ID: SJ4229-036

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 226 | | | MS | 10 | 0.15 | 0.010 | 0.075 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-C7-2436

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 91.7

Lab Sample ID: SJ4229-037

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 40.6 | B | MS | 10 | 0.14 | 0.0099 | 0.070 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-C8-0006

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 90.6

Lab Sample ID: SJ4229-038

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 237 | B | MS | 10 | 0.12 | 0.0083 | 0.060 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-C8-0612

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 89.4

Lab Sample ID: SJ4229-039

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 4080 | B | MS | 50 | 0.52 | 0.037 | 0.26 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-C8-1224

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 93.5

Lab Sample ID: SJ4229-040

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 37.4 | | | MS | 10 | 0.13 | 0.0091 | 0.065 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-DUP06-060816

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 89.9

Lab Sample ID: SJ4229-042

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | LOQ | ADJUSTED | |
|-----------|-------------|---------------|---|----|----|------|--------|----------|-----|
| | | | | | | | | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 6.62 | B | MS | 10 | 0.14 | 0.0096 | 0.069 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-DUP07-060816

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 91.3

Lab Sample ID: SJ4229-043

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 1230 | B | MS | 10 | 0.14 | 0.0098 | 0.070 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services**Client Field ID:** RR-DUP08-060816**Matrix:** SOIL**SDG Name:** SJ4229**Percent Solids:** 85.1**Lab Sample ID:** SJ4229-044**Concentration Units :** mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|-----|----------|------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 3630 | B | MS | 50 | 1.1 | 0.077 | 0.55 | |

Comments:

Appendix C

Support Documentation



**SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS, INC.
NASA WALLOPS FLIGHT FACILITY-MBFR
SJ4229**

Sample Receipt

The following samples were received on June 10, 2016 and were logged in under Katahdin Analytical Services work order number SJ4229 for a hardcopy due date of June 29, 2016.

| <u>KATAHDIN</u> <u>Sample No.</u> | <u>TTNUS</u> <u>Sample Identification</u> |
|--------------------------------------|--|
| SJ4229-1 | RR-SS-B5-0006 |
| SJ4229-2 | RR-SB-B5-0612 |
| SJ4229-4 | RR-SS-B6-0006 |
| SJ4229-5 | RR-SB-B6-0612 |
| SJ4229-6 | RR-SB-B6-1224 |
| SJ4229-8 | RR-SS-B7-0006 |
| SJ4229-9 | RR-SB-B7-0612 |
| SJ4229-11 | RR-SS-B8-0006 |
| SJ4229-12 | RR-SB-B8-0612 |
| SJ4229-14 | RR-SS-C1-0006 |
| SJ4229-15 | RR-SB-C1-0612 |
| SJ4229-16 | RR-SB-C1-1224 |
| SJ4229-17 | RR-SS-C2-0006 |
| SJ4229-18 | RR-SB-C2-0612 |
| SJ4229-19 | RR-SB-C2-1224 |
| SJ4229-21 | RR-SS-C3-0006 |
| SJ4229-22 | RR-SB-C3-0612 |
| SJ4229-23 | RR-SB-C3-1224 |
| SJ4229-24 | RR-SB-C3-2436 |
| SJ4229-25 | RR-SS-C4-0006 |
| SJ4229-26 | RR-SB-C4-0612 |
| SJ4229-27 | RR-SB-C4-1224 |
| SJ4229-28 | RR-SB-C4-2436 |
| SJ4229-29 | RR-SS-C5-0006 |
| SJ4229-30 | RR-SB-C5-0612 |
| SJ4229-31 | RR-SB-C5-1224 |
| SJ4229-32 | RR-SB-C5-2436 |
| SJ4229-33 | RR-SS-C6-0006 |
| SJ4229-34 | RR-SB-C6-0612 |
| SJ4229-35 | RR-SB-C6-1224 |
| SJ4229-36 | RR-SB-C6-2436 |
| SJ4229-37 | RR-SB-C7-2436 |
| SJ4229-38 | RR-SS-C8-0006 |
| SJ4229-39 | RR-SB-C8-0612 |
| SJ4229-40 | RR-SB-C8-1224 |

SJ4229-42 RR-DUP06-060816
SJ4229-43 RR-DUP07-060816
SJ4229-44 RR-DUP08-060816

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Metals Analysis

The samples of Katahdin Work Order SJ4229 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Solid-matrix Katahdin Sample Numbers SJ4229-8 was digested for ICP-MS analysis on 06/12/16 (QC Batch JF12IMS2) in accordance with USEPA Method 3050B. The measured lead concentration in the preparation blank (0.08 mg/Kg drywt) was outside acceptance limits; however all lead concentrations for samples in the Katahdin Work Order SJ4229 were greater than 10 times that of the blank. No corrective action was required.

Katahdin Sample Numbers SJ4229-(1,2,4-6,9,30) were digested for ICP-MS analysis on 06/12/16 (QC Batch JF12IMS3). Katahdin Sample Number SJ4229-30 was prepared with a matrix-spiked aliquot and laboratory duplicate per client request.

Solid-matrix Katahdin Sample Numbers SJ4229-(11,12,14,15,17-19,21-23,25-27,29,31,33-35,37) were digested for ICP-MS analysis on 06/12/16 (QC Batch JF12IMS4) in accordance with USEPA Method 3050B. The measured lead concentration in the preparation blank (0.13 mg/Kg drywt) was outside acceptance limits; however all lead concentrations for samples in the Katahdin Work Order SJ4229 were greater than 10 times that of the blank. No corrective action was required.

Solid-matrix Katahdin Sample Numbers SJ4229-(38,39,42-44) were digested for ICP-MS analysis on 06/12/16 (QC Batch JF12IMS5) in accordance with USEPA Method 3050B. The measured lead concentration in the preparation blank (0.10 mg/Kg drywt) was outside

acceptance limits; however all lead concentrations for samples in the Katahdin Work Order SJ4229 were greater than 10 times that of the blank. No corrective action was required.

Katahdin Sample Numbers SJ4229-(16,24,28,32,36,40) were digested for ICP-MS analysis on 06/12/16 (QC Batch JF12IMS3). Katahdin Sample Number SJ4229-16 was prepared with a matrix-spiked aliquot and laboratory duplicate per client request.

ICP-MS analyses of Katahdin Work Order SJ4229 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met, except for the following:

Continuing calibration blanks (CCBs) that were analyzed in analytical run JFF13A at 21:47, 22:30 and 23:10 were outside acceptance limits for lead however all Katahdin Work Order SJ4229 samples affected by these CCBs had lead results greater than ten times the blank concentration. In analytical run JFF14B, the CCB analyzed at 20:52 was outside acceptance limits for lead however all Katahdin Work Order SJ4229 samples affected by these CCBs had lead results greater than ten times the blank concentration.

Sample digestates for Katahdin Work Order SJ4229 were diluted by at least a factor of 10 in accordance with the project limits.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

| Internal Standard Element | Associated Analytes |
|----------------------------|--|
| Lithium | Beryllium, Boron |
| Scandium | Sodium, Magnesium, Aluminum, Silicon, Potassium, Calcium |
| Germanium or Yttrium | Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Strontium, Molybdenum, Silver, Cadmium |
| Terbium | Tin, Antimony, Barium, Tungsten |
| Bismuth | Lead, Thallium, Thorium, Uranium |

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Matrix QC Summary

The measured recovery of lead in the matrix-spiked aliquots of Katahdin Sample Number SJ4229-16 is within the project acceptance criteria (80% - 120% recovery of the added element). The measured recovery of lead in the matrix-spiked aliquots of Katahdin Sample Number SJ4229-30 is not within the project acceptance criteria at 4634% recovery; however the sample

result for lead was greater than four times the spiked amount in the matrix-spiked aliquot

The laboratory duplicate analyses of Katahdin Sample Numbers SJ41228-16 and 30 are not within the laboratory's acceptance limit (<20% relative difference between duplicate aliquots) for lead at 21.4 and 46.2 relative difference, respectively.

The serial dilution analyses of Katahdin Sample Numbers SJ4229-16 and 30 are within the project acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOD) for lead.

The measured recovery of lead in the post-digestion spiked aliquot of Katahdin Sample Numbers SJ4229-16 is within the acceptance criteria (75% - 125% recovery of the added element). The measured recovery of lead in the post-digestion spiked aliquot of Katahdin Sample Numbers SJ4229-30 is not within the acceptance criteria at -15.0% recovery.

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the LOQ are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQs, MDLs, and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

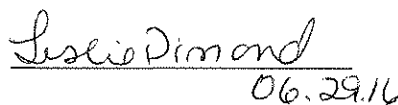
The samples of Work Order SJ4229 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times, and all quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.



Leslie Dimond
06.29.16

Leslie Dimond
Quality Assurance Officer

| | | |
|---------------------------------------|------------------------------|--------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>Jo</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>GN</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>SJ4227 → 4233</u> | KIMS Review By: <u>Jo</u> | Received By: <u>SO</u> |
| SDG #: | Cooler: <u>L</u> of <u>4</u> | Date/Time Rec.: <u>6-10-16 10950</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | ✓ | | | | |
| 2. Chain of Custody present in cooler? | ✓ | | | | |
| 3. Chain of Custody signed by client? | ✓ | | | | |
| 4. Chain of Custody matches samples? | ✓ | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | ✓ | | | | Temp (°C): <u>1.8</u> |
| Samples received at <6 °C w/o freezing? | ✓ | | | | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | ✓ | | | | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | ✓ | | | | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | ✓ | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | | |
| Aqueous: No bubble larger than a pea? | | | | ✓ | |
| Soil/Sediment: | | | | | |
| Received in airtight container? | | | | ✓ | |
| Received in methanol? | | | | ✓ | |
| Methanol covering soil? | | | | ✓ | |
| D.I. Water - Received within 48 hour HT? | | | | ✓ | |
| Air: Refer to KAS COC for canister/flow controller requirements. | ✓ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | ✓ | |
| 8. Proper sample containers and volume? | ✓ | | | | |
| 9. Samples within hold time upon receipt? | ✓ | | | | |
| 10. Aqueous samples properly preserved? | | | | | |
| Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 | | | | ✓ | |
| Sulfide - >9 | | | | ✓ | |
| Cyanide - pH >12 | | | | ✓ | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

- RR-SS-D8-0006 - ms/vol provided.
- no ms/vol provided for D8-0612 which is on chain.
- Dup 09 missing - was received in first shipment - not needed on this chain.

| | | |
|---------------------------------------|------------------------------------|------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>Jo</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>GN</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>SJ4227 → 4233</u> | KIMS Review By: <u>[Signature]</u> | Received By: <u>SO</u> |
| SDG #: | Cooler: <u>2</u> of <u>4</u> | Date/Time Rec.: <u>6-10-16 095</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | ✓ | | | | |
| 2. Chain of Custody present in cooler? | ✓ | | | | |
| 3. Chain of Custody signed by client? | ✓ | | | | |
| 4. Chain of Custody matches samples? | ✓ | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | | | | ✓ | Temp (°C): <u>N/A</u> |
| Samples received at <6 °C w/o freezing? | | | | ✓ | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | | | | ✓ | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | | | | ✓ | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | ✓ | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | ✓ | |
| Aqueous: No bubble larger than a pea? | | | | ✓ | |
| Soil/Sediment: | | | | ✓ | |
| Received in airtight container? | | | | ✓ | |
| Received in methanol? | | | | ✓ | |
| Methanol covering soil? | | | | ✓ | |
| D.I. Water - Received within 48 hour HT? | | | | ✓ | |
| Air: Refer to KAS COC for canister/flow controller requirements. | ✓ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | ✓ | |
| 8. Proper sample containers and volume? | ✓ | | | | |
| 9. Samples within hold time upon receipt? | ✓ | | | | |
| 10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 Sulfide - >9 Cyanide - pH >12 | | | | ✓ | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

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| | | |
|---------------------------------------|------------------------------------|------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>Jo</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>GN</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>SJ4227 → 4233</u> | KIMS Review By: <u>[Signature]</u> | Received By: <u>SO</u> |
| SDG #: | Cooler: <u>2</u> of <u>4</u> | Date/Time Rec.: <u>6-10-16 095</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | ✓ | | | | |
| 2. Chain of Custody present in cooler? | ✓ | | | | |
| 3. Chain of Custody signed by client? | ✓ | | | | |
| 4. Chain of Custody matches samples? | ✓ | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | | | | ✓ | Temp (°C): <u>N/A</u> |
| Samples received at <6 °C w/o freezing? | | | | ✓ | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | | | | ✓ | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | | | | ✓ | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | ✓ | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | ✓ | |
| Aqueous: No bubble larger than a pea? | | | | ✓ | |
| Soil/Sediment: | | | | ✓ | |
| Received in airtight container? | | | | ✓ | |
| Received in methanol? | | | | ✓ | |
| Methanol covering soil? | | | | ✓ | |
| D.I. Water - Received within 48 hour HT? | | | | ✓ | |
| Air: Refer to KAS COC for canister/flow controller requirements. | ✓ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | ✓ | |
| 8. Proper sample containers and volume? | ✓ | | | | |
| 9. Samples within hold time upon receipt? | ✓ | | | | |
| 10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 Sulfide - >9 Cyanide - pH >12 | | | | ✓ | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

| | | |
|---------------------------------------|------------------------------|------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>Jo</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>GN</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>SJ4227 → 4233</u> | KIMS Review By: <u>Jo</u> | Received By: <u>SO</u> |
| SDG #: | Cooler: <u>3</u> of <u>4</u> | Date/Time Rec.: <u>6-10-16 095</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | ✓ | | | | |
| 2. Chain of Custody present in cooler? | ✓ | | | | |
| 3. Chain of Custody signed by client? | ✓ | | | | |
| 4. Chain of Custody matches samples? | ✓ | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | | | | ✓ | Temp (°C): <u>N/A</u> |
| Samples received at <6 °C w/o freezing? | | | | ✓ | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | | | | ✓ | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | | | | ✓ | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | ✓ | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | ✓ | |
| Aqueous: No bubble larger than a pea? | | | | ✓ | |
| Soil/Sediment: | | | | ✓ | |
| Received in airtight container? | | | | ✓ | |
| Received in methanol? | | | | ✓ | |
| Methanol covering soil? | | | | ✓ | |
| D.I. Water - Received within 48 hour HT? | | | | ✓ | |
| Air: Refer to KAS COC for canister/flow controller requirements. | ✓ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | ✓ | |
| 8. Proper sample containers and volume? | ✓ | | | | |
| 9. Samples within hold time upon receipt? | ✓ | | | | |
| 10. Aqueous samples properly preserved? | | | | ✓ | |
| Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 | | | | ✓ | |
| Sulfide - >9 | | | | ✓ | |
| Cyanide - pH >12 | | | | ✓ | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

| | | |
|---------------------------------------|------------------------------------|------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>JO</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>GN</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>SJ4227 → 4233</u> | KIMS Review By: <u>[Signature]</u> | Received By: <u>SO</u> |
| SDG #: | Cooler: <u>4</u> of <u>4</u> | Date/Time Rec.: <u>6-10-16 095</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | ✓ | | | | |
| 2. Chain of Custody present in cooler? | ✓ | | | | |
| 3. Chain of Custody signed by client? | ✓ | | | | |
| 4. Chain of Custody matches samples? | ✓ | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | | | | ✓ | Temp (°C): <u>N/A</u> |
| Samples received at <6 °C w/o freezing? | | | | ✓ | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | | | | ✓ | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | | | | ✓ | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | ✓ | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | | |
| Aqueous: No bubble larger than a pea? | | | | ✓ | |
| Soil/Sediment: | | | | | |
| Received in airtight container? | | | | ✓ | |
| Received in methanol? | | | | ✓ | |
| Methanol covering soil? | | | | ✓ | |
| D.I. Water - Received within 48 hour HT? | | | | ✓ | |
| Air: Refer to KAS COC for canister/flow controller requirements. | ✓ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | ✓ | |
| 8. Proper sample containers and volume? | ✓ | | | | |
| 9. Samples within hold time upon receipt? | ✓ | | | | |
| 10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 Sulfide - >9 Cyanide - pH >12 | | | | ✓ | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Jennifer Obrin

From: Sok, Rob [Rob.Sok@tetrattech.com]
Sent: Monday, June 13, 2016 1:50 PM
To: Jennifer Obrin (jobrin@katahdinlab.com)
Subject: Sample Login and Holds

Follow Up Flag: Follow up
Flag Status: Completed

Jennifer,

Of the last batch of samples, the following duplicates can be placed on hold if they have not been run yet:

RR-DUP03, 04, 05, 06, 10, and 14

- Drepped + not run yet

Let me know how it went this weekend.

Thanks,
Rob

Robert Sok, P.G. | Project Manager | Geologist Tetra Tech, Inc. | 5700 Lake Wright Drive | Suite 309 | Norfolk, VA 23502
Direct: 757-466-4904 | Mobile: 757-618-2104 | Fax: 757-461-4148 rob.sok@tetrattech.com <<mailto:ed.corack@tetrattech.com>>

Tetra Tech | Consulting, Engineering, Construction, and Technical Services Complex World, Clear Solutions(tm) | www.tetrattech.com <<http://www.tetrattech.com/>> | NASDAQ: TTEK

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RR-DUP03 = SJ4228-40
-DUP04 = ↓ -41
-DUP05 = SJ4229-41
-DUP06 = ↓ -42
-DUP10 = SJ4230-29
↓ -DUP14 = SJ4231-38

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Jennifer Obrin

From: Sok, Rob [Rob.Sok@tetrattech.com]
Sent: Tuesday, June 14, 2016 5:56 PM
To: Jennifer Obrin (jobrin@katahdinlab.com)
Cc: Ganser, Leanne
Subject: Hold samples to release

Jennifer,

We looked closer at the results and my revised list of Hold samples to release for analysis is as follows:

SJ4229-

RR-C1-1224 16
RR-C3-2436 24
RR-C4-2436 28
RR-C5-2436 32
RR-C6-2436 36
RR-C8-1224 40
RR-DUP06 42

Please do your best to turn them around ASAP. I will pay for the 24hr TAT if you all can accommodate that for these 7 samples. We can talk in the morning as necessary.

Thanks,
Rob

Robert Sok, P.G. | Project Manager | Geologist Tetra Tech, Inc. | 5700 Lake Wright Drive | Suite 309 | Norfolk, VA 23502
Direct: 757-466-4904 | Mobile: 757-618-2104 | Fax: 757-461-4148 rob.sok@tetrattech.com<<mailto:ed.corack@tetrattech.com>>

Tetra Tech | Consulting, Engineering, Construction, and Technical Services Complex World, Clear Solutions(tm) | www.tetrattech.com<<http://www.tetrattech.com/>> | NASDAQ: TTEK

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600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client: See Page 1 Contact: _____ Phone #: () () Fax #: () ()

Address: _____ City: _____ State: _____ Zip Code: _____

Purchase Order #: _____ Proj. Name / No.: _____ Katahdin Quote #: _____

Bill (if different than above): _____ Address: _____

Sampler (Print / Sign): _____ Copies To: _____

LAB USE ONLY WORK ORDER #: SJ4228/SJ4229
 KATAHDIN PROJECT NUMBER _____

REMARKS: _____

SHIPPING INFO: FED EX UPS CLIENT

AIRBILL NO: _____

TEMP °C _____ TEMP BLANK INTACT NOT INTACT

| ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | | |
|---|-------------------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. |
| YO | YN | YO | YN | YO | YN | YO | YN | YO | YN | YO | YN |
| <input checked="" type="checkbox"/> | <input checked="" type="checkbox"/> | | | | | | | | | | |

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Lead | | | | | | | | | | | | | | | |
|----------------------|--------------------|--------|---------------|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|------|
| RR-SB-B2-1224 | 6-8-16/1325 | SO | 1 | 1 | | | | | | | | | | | | | | | HOLD |
| RR-SS-B3-0006 | /1339 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-B3-0612 | /1340 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-B3-1224 | /1341 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-B3-2436 | /1342 | | 1 | 1 | | | | | | | | | | | | | | | HOLD |
| RR-SS-B4-0006 | /1343 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-B4-0612 | /1344 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-B4-1224 | /1345 | | 1 | 1 | | | | | | | | | | | | | | | HOLD |
| RR-Dup01-060816 | /1200 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-Dup02-060816 | /1230 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-Dup03-060816 | /1300 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-Dup04-060816 | /1315 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SS-B5-0006 | /1355 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-B5-0612 | /1356 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-B5-1224 | /1357 | | 1 | 1 | | | | | | | | | | | | | | | HOLD |
| RR-SS-B6-0006 | ✓ / 1359 | ✓ | 1 | 1 | | | | | | | | | | | | | | | |

COMMENTS _____

| | | | | | |
|--|----------------------------|-----------------------------------|------------------------------|-------------|---|
| Relinquished By: (Signature) <i>[Signature]</i> | Date / Time 6-9-16 1600 | Received By: (Signature) FedEx | Relinquished By: (Signature) | Date / Time | Received By: (Signature) 6-10-16 O.R.S. |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000014



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

| | | | | |
|--------------------------------|-----------------|------------------|----------------|--------------|
| Client | | Contact | Phone # () | Fax # () |
| Address <i>See page 1</i> | | City | State | Zip Code |
| Purchase Order # | Proj. Name / No | Katahdin Quote # | | |
| Bill (if different than above) | Address | | | |
| Sampler (Print / Sign) | | | | Copies To: |

LAB USE ONLY WORK ORDER #: SJ4229
 KATAHDIN PROJECT NUMBER _____

REMARKS: _____

SHIPPING INFO: FED EX UPS CLIENT

AIRBILL NO: _____

TEMP °C _____ TEMP BLANK INTACT NOT INTACT

| ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. |
| Y | N | Y | N | Y | N | Y | N | Y | N | Y | N |
| X | | | | | | | | | | | |

| * | Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | | | | | | | | |
|---|--------------------|--------------------|--------|---------------|---|--|--|-------|------|--|--|--|
| | RR-SB-B6-0612 | 6-8-16 / 1400 | SG | 1 | 1 | | | | | | | |
| | RR-SB-B6-1224 | / 1401 | | 1 | 1 | | | | | | | |
| | RR-SB-B6-2436 | / 1462 | | 1 | 1 | | | | HOLD | | | |
| | RR-SS-B7-0006 | / 1414 | | 1 | 1 | | | | | | | |
| | RR-SB-B7-0612 | / 1415 | | 1 | 1 | | | | | | | |
| | RR-SB-B7-1224 | / 1416 | | 1 | 1 | | | | HOLD | | | |
| | RR-SS-B8-0006 | / 1417 | | 1 | 1 | | | | | | | |
| | RR-SB-B8-0612 | / 1418 | | 1 | 1 | | | | | | | |
| | RR-SB-B8-1224 | / 1419 | | 1 | 1 | | | | HOLD | | | |
| | RR-SS-C1-0006 | / 1436 | | 1 | 1 | | | | | | | |
| | RR-SB-C1-0612 | / 1431 | | 1 | 1 | | | | | | | |
| | RR-SB-C1-1224 | / 1432 | | 1 | 1 | | | | HOLD | | | |
| | RR-SS-C2-0006 | / 1433 | | 1 | 1 | | | | | | | |
| | RR-SB-C2-0612 | / 1434 | | 1 | 1 | | | | | | | |
| | RR-SB-C2-1224 | / 1435 | | 1 | 1 | | | | | | | |
| | RR-SB-C2-2436 | ✓ / 1436 | ✓ | 2 | 2 | | | MSMSD | HOLD | | | |

COMMENTS _____

| | | | | | |
|--|------------------------------|--|------------------------------|-------------|--|
| Relinquished By: (Signature) <i>[Signature]</i> | Date / Time 6-9-16 / 1600 | Received By: (Signature) <i>FedEx</i> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <i>[Signature]</i> 6-10-16 |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) 0430 |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000015



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

See Page 1

| | | | |
|--------------------------------|-----------------|--------------------|------------------|
| Client | Contact | Phone # () () | Fax # () () |
| Address | | State | Zip Code |
| Purchase Order # | Proj. Name /No. | Katahdin Quote # | |
| Bill (if different than above) | Address | | |

Sampler (Print / Sign) _____ Copies To: _____

LAB USE ONLY WORK ORDER #: SJ4229
 KATAHDIN PROJECT NUMBER _____

REMARKS: _____

SHIPPING INFO: FED EX UPS CLIENT

AIRBILL NO: _____

TEMP °C _____ TEMP BLANK INTACT NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | PRESERVATIVES | | | | | | | | | | | | | | | | | | |
|----------------------|--------------------|--------|---------------|---------------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|--|--|--|--|--|--|--|--|
| | | | | Fit. OYON | Fit. OYON | Fit. OYON | Fit. OYON | Fit. OYON | Fit. OYON | Fit. OYON | Fit. OYON | Fit. OYON | Fit. OYON | Fit. OYON | | | | | | | | |
| RR-SS-C3-0066 | 6-8-16 / 1444 | SO | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SB-C3-0612 | / 1445 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SB-C3-1224 | / 1446 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SB-C3-2436 | / 1447 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SS-C4-0006 | / 1448 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SB-C4-0612 | / 1449 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SB-C4-1224 | / 1450 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SB-C4-2436 | / 1451 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SS-C5-0606 | / 1456 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SB-C5-0612 | / 1457 | | 2 | 2 | | | | | | | | | | | | | | | | | | |
| RR-SB-C5-1224 | / 1458 | | 1 | 1 | | | | | | | | | | | | | | | | | | |
| RR-SB-C5-2436 | / 1459 | | 1 | 1 | | | | | | | | | | | | | | | | | | |
| RR-SS-C6-0006 | / 1500 | | 1 | 1 | | | | | | | | | | | | | | | | | | |
| RR-SB-C6-0612 | / 1501 | | 1 | 1 | | | | | | | | | | | | | | | | | | |
| RR-SB-C6-1224 | / 1502 | | 1 | 1 | | | | | | | | | | | | | | | | | | |
| RR-SB-C6-2436 | ✓ / 1503 | ✓ | 1 | 1 | | | | | | | | | | | | | | | | | | |

Lead

HOLD

HOLD

MSMSD

HOLD

HOLD

COMMENTS

| | | | | | |
|--|----------------------------|-----------------------------------|------------------------------|-------------|--|
| Relinquished By: (Signature) <i>[Signature]</i> | Date / Time 6-9-16 1600 | Received By: (Signature) FedEx | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <i>[Signature]</i> 6-10-16 CCL/50 |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000016



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

| | | | | |
|--------------------------------|------------------|---------|--------------------|------------------|
| Client | | Contact | Phone # () () | Fax # () () |
| Address <i>See Page 1</i> | | City | State | Zip Code |
| Purchase Order # | Proj. Name / No. | | Katahdin Quote # | |
| Bill (if different than above) | | Address | | |

Sampler (Print / Sign) _____ Copies To: _____

LAB USE ONLY WORK ORDER #: SJ4229/SJ4230
 KATAHDIN PROJECT NUMBER _____

REMARKS: _____

SHIPPING INFO: FED EX UPS CLIENT

AIRBILL NO: _____

TEMP °C _____ TEMP BLANK INTACT NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

| * | Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | FIL | FIL | FIL | FIL | FIL | FIL | FIL | FIL | FIL | FIL | FIL | |
|---|--------------------|--------------------|--------|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---|
| | | | | | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N |
| | RR-SB-C7-2436 | 6-8-14 / 1508 | SO | 1 | | | | | | | | | | | | |
| | RR-SS-C8-0006 | / 1509 | | 1 | | | | | | | | | | | | |
| | RR-SB-C8-0612 | / 1510 | | 1 | | | | | | | | | | | | |
| | RR-SB-C8-1224 | / 1511 | | 1 | | | | | | | | | | | | |
| | RR-Dup05-060816 | / 1405 | | 1 | | | | | | | | | | | | |
| | RR-Dup06-060816 | / 1425 | | 1 | | | | | | | | | | | | |
| | RR-Dup07-060816 | / 1440 | | 1 | | | | | | | | | | | | |
| | RR-Dup08-060816 | / 1455 | | 1 | | | | | | | | | | | | |
| | RR-SS-D1-0006 | / 1520 | | 1 | | | | | | | | | | | | |
| | RR-SB-D1-0612 | / 1521 | | 1 | | | | | | | | | | | | |
| | RR-SB-D1-1224 | / 1522 | | 1 | | | | | | | | | | | | |
| | RR-SS-D2-0006 | / 1523 | | 1 | | | | | | | | | | | | |
| | RR-SB-D2-0612 | / 1524 | | 1 | | | | | | | | | | | | |
| | RR-SB-D2-1224 | / 1525 | | 1 | | | | | | | | | | | | |
| | RR-SB-D2-2436 | / 1526 | | 1 | | | | | | | | | | | | |
| | RR-SS-D3-0006 | / 1527 | | 1 | | | | | | | | | | | | |

COMMENTS

| | | | | | |
|--|----------------------------|-----------------------------------|------------------------------|-------------|-------------------------------------|
| Relinquished By: (Signature) <i>[Signature]</i> | Date / Time 6-9-16/1600 | Received By: (Signature) FedEx | Relinquished By: (Signature) | Date / Time | Received By: (Signature) 6-10-16 |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) 09/30 |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

METALS SAMPLE FLAGGING

| FLAG | SPECIFIED MEANING |
|-------------|--|
| E | The reported value is estimated because of the presence of interference (as indicated by serial dilution). |
| N | The pre-digestion spiked sample recovery is not within control limits. |
| * | The duplicate sample analysis relative percent difference (RPD) is not within control limits. |
| B | Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample. |
| A | The post-digestion spiked sample recovery is not within control limits. |
| • | Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits. |
| U | <p>The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ) (previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.</p> <p>Note: All results reported as “U” MDL have a 50% rate for false negatives compared to those results reported as “U” PQL/LOQ or “U” LOD, where the rate of false negatives is <1%.</p> |
| J | The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL). |
| Q | One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV). |

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL "U" LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level (PQL) or LOQ could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1 - pH

H2 - DO

H3 - sulfite

H4 - residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

M1 The matrix spike and/or matrix spike duplicate recovery performed on this sample was outside of the laboratory acceptance criteria. Sample matrix is suspected. The laboratory criteria was met for the Laboratory Control Sample (LCS) analyzed concurrently with this sample.

M2 The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory acceptance criteria. The native sample concentration is greater than four times the spike added concentration so the spike added could not be distinguished from the native sample concentration.

R1 The relative percent difference (RPD) between the duplicate analyses performed on this sample was outside of the laboratory acceptance criteria (when both values are greater than ten times the PQL).

MCL Maximum Contaminant Level

NL No limit

NFL No Free Liquid Present

FLP Free Liquid Present

NOD No Odor Detected

TON Threshold Odor Number

D-1 As required by Method 5210B, APHA Standard Methods for the Examination of Water and Wastewater (21st edition), the BOD value reported for this sample is 'qualified' because the check standard run concurrently with the sample analysis did not meet the criteria specified in the method (198 +/- 30.5 mg/L). These results may not be reportable for compliance purposes.

D-2 The measured final dissolved oxygen concentrations of all dilutions were less than the method-specified limit of 1 mg/L. The reported BOD result was calculated assuming a final oxygen concentration equal to 1 mg/L. The reported value should be considered a minimum value.

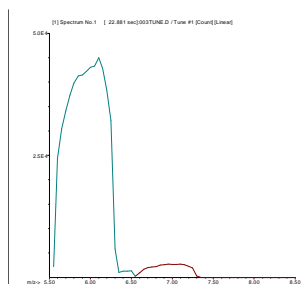
D-3 The dilution water used to prepare this sample did not meet the method and/or regulatory criteria of less than 0.2 or 0.4 mg/L dissolved oxygen (DO) uptake over the five day period of incubation. These results may not be reportable for compliance purposes.

6020 QC Tune Report

Data File: C:\ICPCHEM\1\DATA\JJF13A.B\003TUNE.D
 Date Acquired: Jun 13 2016 01:08 pm
 Acq. Method: TN6020E.M
 Operator: EAM
 Sample Name: 6020 TUNE
 Misc Info:
 Vial Number: 1107
 Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

| Element | Actual | Required | Flag |
|---------|--------|----------|------|
| 7 Li | 2.22 | 5.00 | |
| 59 Co | 0.02 | 5.00 | |
| 115 In | 0.60 | 5.00 | |
| 205 Tl | 1.48 | 5.00 | |



7 Li

Mass Calib.

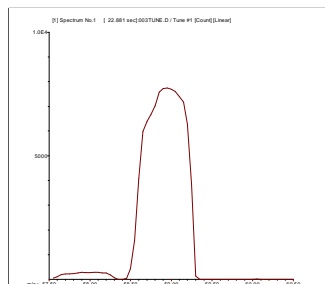
Actual: 7.00
 Required: 6.90 - 7.10

Flag:

Peak Width

Actual: 0.65
 Required: 0.90

Flag:



59 Co

Mass Calib.

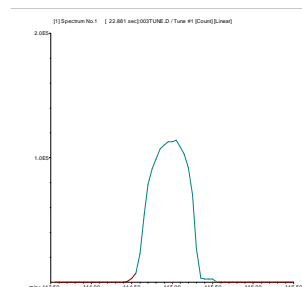
Actual: 58.95
 Required: 58.90 - 59.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:



115 In

Mass Calib.

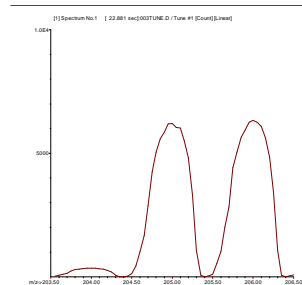
Actual: 115.00
 Required: 114.90 - 115.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:



205 Tl

Mass Calib.

Actual: 205.00
 Required: 204.90 - 205.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4229

Concentration Units: ug/L

SAMPLE: ICB

File: JJF13A Jun 13, 2016 14:08

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.345 | J |
| MOLYBDENUM | 0.051 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 14:42

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.748 | J |
| MOLYBDENUM | 0.065 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 6.660 | J |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 15:23

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.446 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.610 | J |
| MOLYBDENUM | 0.027 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4229

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 13, 2016 16:06

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.634 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.892 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 16:48

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.874 | J |
| MOLYBDENUM | 0.032 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 17:31

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 4.001 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.360 | J |
| MOLYBDENUM | 0.024 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4229

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 13, 2016 18:15

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 7.084 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.607 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 18:58

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.862 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.258 | J |
| MOLYBDENUM | 0.025 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 19:41

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.022 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4229

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 13, 2016 20:20

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 3.036 | J |
| CALCIUM | 6.900 | U |
| IRON | 9.065 | J |
| LEAD | 0.051 | J |
| MAGNESIUM | 1.279 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 21:03

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.023 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 21:47

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.980 | J |
| CALCIUM | 6.900 | U |
| IRON | 7.932 | J |
| LEAD | 0.872 | B |
| MAGNESIUM | 1.062 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4229

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 13, 2016 22:30

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 8.131 | J |
| LEAD | 0.756 | B |
| MAGNESIUM | 0.846 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 23:10

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.058 | J |
| CALCIUM | 8.772 | J |
| IRON | 6.268 | J |
| LEAD | 0.225 | B |
| MAGNESIUM | 0.764 | J |
| MOLYBDENUM | 0.024 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4229

Concentration Units: ug/L

SAMPLE: ICB

File: JJF14B Jun 14, 2016 18:57

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.309 | J |
| MOLYBDENUM | 0.047 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF14B Jun 14, 2016 19:32

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.559 | J |
| MOLYBDENUM | 0.059 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 6.380 | J |

SAMPLE: CCB

File: JJF14B Jun 14, 2016 20:10

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.100 | J |
| MAGNESIUM | 0.924 | J |
| MOLYBDENUM | 0.022 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 3.067 | J |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4229

Concentration Units: ug/L

SAMPLE: CCB

File: JJF14B Jun 14, 2016 20:52

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.143 | B |
| MAGNESIUM | 0.685 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF14B Jun 14, 2016 21:34

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF14B Jun 14, 2016 22:16

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.653 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4229

Concentration Units: ug/L

SAMPLE: CCB

File: JJF14B Jun 14, 2016 22:58

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.860 | J |
| MOLYBDENUM | 0.024 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 7.433 | J |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4229

Concentration Units: ug/L

SAMPLE: ICB

File: JJF15B Jun 15, 2016 19:38

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.049 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF15B Jun 15, 2016 20:12

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.480 | J |
| MOLYBDENUM | 0.066 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 7.517 | J |

SAMPLE: CCB

File: JJF15B Jun 15, 2016 20:54

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.989 | J |
| MOLYBDENUM | 0.044 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 8.785 | J |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4229

Concentration Units: ug/L

SAMPLE: CCB

File: JJF15B Jun 15, 2016 21:37

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.674 | J |
| MOLYBDENUM | 0.024 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF15B Jun 15, 2016 22:15

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF12IMS2

Matrix: SOIL

SDG Name: SJ4229

QC Batch ID: JF12IMS2

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| LEAD | 0.0808 | B |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF12IMS3

Matrix: SOIL

SDG Name: SJ4229

QC Batch ID: JF12IMS3

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|---------|--------|---|
| LEAD | 0.032 | J |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF12IMS4

Matrix: SOIL

SDG Name: SJ4229

QC Batch ID: JF12IMS4

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| LEAD | 0.131 | B |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF12IMS5

Matrix: SOIL

SDG Name: SJ4229

QC Batch ID: JF12IMS5

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| LEAD | 0.103 | B |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF15IMS1

Matrix: SOIL

SDG Name: SJ4229

QC Batch ID: JF15IMS1

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| LEAD | 0.010 | J |

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services SDG Name: SJ4229

Concentration Units: ug/L

SAMPLE: ICSA

File: JJF13A Jun 13, 2016 14:24

| Analyte | TRUE | FOUND | % R |
|------------|--------|-------|------|
| ALUMINUM | 100000 | 96090 | 96.1 |
| CALCIUM | 100000 | 93120 | 93.1 |
| IRON | 100000 | 91500 | 91.5 |
| LEAD | 0 | 0 | |
| MAGNESIUM | 100000 | 93210 | 93.2 |
| MOLYBDENUM | 2000 | 1972 | 98.6 |
| POTASSIUM | 100000 | 94720 | 94.7 |
| SODIUM | 100000 | 95460 | 95.5 |

SAMPLE: ICSAB

File: JJF13A Jun 13, 2016 14:28

| Analyte | TRUE | FOUND | % R |
|------------|--------|-------|-------|
| ALUMINUM | 100000 | 96680 | 96.7 |
| CALCIUM | 100000 | 93830 | 93.8 |
| IRON | 100000 | 91810 | 91.8 |
| LEAD | 20 | 21 | 105.0 |
| MAGNESIUM | 100000 | 92630 | 92.6 |
| MOLYBDENUM | 2000 | 2000 | 100.0 |
| POTASSIUM | 100000 | 94930 | 94.9 |
| SODIUM | 100000 | 95580 | 95.6 |

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services SDG Name: SJ4229

Concentration Units: ug/L

| SAMPLE: ICSA | | | | SAMPLE: ICSAB | | | |
|---------------------|--------------|--------------|------------|----------------------|--------------|--------------|------------|
| File: JJF14B | Jun 14, 2016 | 19:14 | | File: JJF14B | Jun 14, 2016 | 19:18 | |
| Analyte | TRUE | FOUND | % R | Analyte | TRUE | FOUND | % R |
| ALUMINUM | 100000 | 93510 | 93.5 | ALUMINUM | 100000 | 94390 | 94.4 |
| CALCIUM | 100000 | 92880 | 92.9 | CALCIUM | 100000 | 93090 | 93.1 |
| IRON | 100000 | 91570 | 91.6 | IRON | 100000 | 93650 | 93.7 |
| LEAD | 0 | 0 | | LEAD | 20 | 21 | 105.0 |
| MAGNESIUM | 100000 | 92810 | 92.8 | MAGNESIUM | 100000 | 92780 | 92.8 |
| MOLYBDENUM | 2000 | 2013 | 100.6 | MOLYBDENUM | 2000 | 2038 | 101.9 |
| POTASSIUM | 100000 | 95330 | 95.3 | POTASSIUM | 100000 | 95570 | 95.6 |
| SODIUM | 100000 | 93880 | 93.9 | SODIUM | 100000 | 94930 | 94.9 |

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services SDG Name: SJ4229

Concentration Units: ug/L

| SAMPLE: ICSA | | | | SAMPLE: ICSAB | | | |
|---------------------|--------------|--------------|------------|----------------------|--------------|--------------|------------|
| File: JJF15B | Jun 15, 2016 | 19:55 | | File: JJF15B | Jun 15, 2016 | 19:59 | |
| Analyte | TRUE | FOUND | % R | Analyte | TRUE | FOUND | % R |
| ALUMINUM | 100000 | 95680 | 95.7 | ALUMINUM | 100000 | 96150 | 96.2 |
| CALCIUM | 100000 | 96340 | 96.3 | CALCIUM | 100000 | 95250 | 95.3 |
| IRON | 100000 | 90430 | 90.4 | IRON | 100000 | 92160 | 92.2 |
| LEAD | 0 | 0 | | LEAD | 20 | 21 | 105.0 |
| MAGNESIUM | 100000 | 93380 | 93.4 | MAGNESIUM | 100000 | 93980 | 94.0 |
| MOLYBDENUM | 2000 | 1972 | 98.6 | MOLYBDENUM | 2000 | 2035 | 101.8 |
| POTASSIUM | 100000 | 95070 | 95.1 | POTASSIUM | 100000 | 96210 | 96.2 |
| SODIUM | 100000 | 95120 | 95.1 | SODIUM | 100000 | 95830 | 95.8 |

5A
SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services
Matrix: SOIL
Percent Solids: 89.7

Client Field ID: RR-SB-C1-1224S
SDG Name: SJ4229
Lab Sample ID: SJ4229-016S

Concentration Units : mg/Kg drywt

| Analyte | Spiked | | Sample | | Spike | %R | Q | Control Limits (%R) | | M |
|-------------|--------|--------|--------|---|-------|-------|---|---------------------|------|----|
| | Sample | Result | Result | C | | | | Low | High | |
| LEAD, TOTAL | | 12.2 | 5.66 | | 6.09 | 106.7 | | 84 | 118 | MS |

Comments:

5A
SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services
Matrix: SOIL
Percent Solids: 89.2

Client Field ID: RR-SB-C5-0612S
SDG Name: SJ4229
Lab Sample ID: SJ4229-030S

Concentration Units : mg/Kg drywt

| Analyte | Spiked | | Sample | | Spike Added | %R | Q | Control Limits (%R) | | M |
|-------------|--------|--------|--------|---|-------------|--------|---|---------------------|------|----|
| | Sample | Result | Result | C | | | | Low | High | |
| LEAD, TOTAL | | 564 | 306 | C | 5.57 | 4634.4 | N | 84 | 118 | MS |

Comments:

sample result >4x spike

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-C1-1224S

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 89.7

Lab Sample ID: SJ4229-016A

Concentration Units : ug/L

| Analyte | Spiked | | Sample | | Spike | %R | Q | Control Limits (%R) | | M |
|-------------|--------|--------|--------|---|-------|------|---|---------------------|------|----|
| | Sample | Result | Result | C | | | | Low | High | |
| LEAD, TOTAL | | 10.9 | 9.14 | | 2 | 89.0 | | 80 | 120 | MS |

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-C5-0612S

Matrix: SOIL

SDG Name: SJ4229

Percent Solids: 89.2

Lab Sample ID: SJ4229-030A

Concentration Units : ug/L

| Analyte | Spiked | | Sample | | Spike | %R | Q | Control Limits (%R) | | M |
|-------------|--------|--------|--------|---|-------|-------|---|---------------------|------|----|
| | Sample | Result | Result | C | | | | Low | High | |
| LEAD, TOTAL | | 551 | 551 | C | 2 | -15.0 | A | 80 | 120 | MS |

Comments:

sample result >4x
spike

6
DUPLICATES

Lab Name: Katahdin Analytical Services
Matrix: SOIL
Percent Solids: 89.7

Client Field ID: RR-SB-C1-1224D
SDG Name: SJ4229
Lab Sample ID: SJ4229-016D

Concentration Units : mg/Kg drywt

| Analyte | Control Limits | Sample Result | C | Duplicate Result | C | RPD | Q | M |
|-------------|----------------|---------------|---|------------------|---|------|---|----|
| LEAD, TOTAL | | 5.6571 | | 7.0116 | | 21.4 | * | MS |

RPD < 35% for soil samples

Comments:

6
DUPLICATES

Lab Name: Katahdin Analytical Services
Matrix: SOIL
Percent Solids: 89.2

Client Field ID: RR-SB-C5-0612D
SDG Name: SJ4229
Lab Sample ID: SJ4229-030D

Concentration Units : mg/Kg drywt

| Analyte | Control Limits | Sample Result | C | Duplicate Result | C | RPD | Q | M |
|-------------|----------------|---------------|---|------------------|---|------|---|----|
| LEAD, TOTAL | | 305.8005 | | 191.1224 | | 46.2 | * | MS |

Comments:

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF12IMS2**Matrix:** SOIL**SDG Name:** SJ4229**QC Batch ID:** JF12IMS2**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 10.4 | 103.9 | 84 | 118 |

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF12IMS3**Matrix:** SOIL**SDG Name:** SJ4229**QC Batch ID:** JF12IMS3**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 10.1 | 101.0 | 84 | 118 |

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF12IMS4**Matrix:** SOIL**SDG Name:** SJ4229**QC Batch ID:** JF12IMS4**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 9.96 | 99.6 | 84 | 118 |

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF12IMS5**Matrix:** SOIL**SDG Name:** SJ4229**QC Batch ID:** JF12IMS5**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 10.4 | 104.5 | 84 | 118 |

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF15IMS1**Matrix:** SOIL**SDG Name:** SJ4229**QC Batch ID:** JF15IMS1**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 10.0 | 100.6 | 84 | 118 |

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services**Client Field ID:** RR-SB-C1-1224L**Matrix:** SOIL**SDG Name:** SJ4229**Lab Sample ID:** SJ4229-016L**Concentration Units: ug/L**

| Analyte | Sample Result | C | Dilution | Result | C | % Difference | Q | M |
|----------------|----------------------|----------|-----------------|---------------|----------|---------------------|----------|----------|
| LEAD, TOTAL | 9.14 | | | 8.98 | | 1.8 | | MS |

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services**Client Field ID:** RR-SB-C5-0612L**Matrix:** SOIL**SDG Name:** SJ4229**Lab Sample ID:** SJ4229-030L**Concentration Units: ug/L**

| Analyte | Sample Result | C | Dilution | Result | C | % Difference | Q | M |
|----------------|----------------------|----------|-----------------|---------------|----------|---------------------|----------|----------|
| LEAD, TOTAL | 551 | | | 538 | | 2.4 | | MS |

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 3/14/2016**

| Analyte | Concentration Units: ug/L | | |
|------------|---------------------------|-------|----|
| | PQL/LOQ | IDL | M |
| ALUMINUM | 300 | 1.4 | MS |
| CALCIUM | 100 | 6.9 | MS |
| IRON | 100 | 6.2 | MS |
| LEAD | 0.20 | 0.041 | MS |
| MAGNESIUM | 100 | 0.65 | MS |
| MOLYBDENUM | 1.0 | 0.021 | MS |
| POTASSIUM | 1000 | 13. | MS |
| SODIUM | 1000 | 2.9 | MS |

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 1/26/2011**

| Analyte | LOD | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| LEAD | 0.010 | mg/Kg | MS | SW846 3050B / SW846 6020A |

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 1/26/2011**

| Analyte | MDL | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| LEAD | 0.0014 | mg/kg | MS | SW846 3050B / SW846 6020A |

12
ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services

Instrument Code: J

Instrument Name: AGILENT 7500 ICP-MS

Date: 4/4/2016

Concentration Units: ug/L

| Analyte | Integration Time (sec) | Linear Range | M |
|----------------|-------------------------------|---------------------|----------|
| ALUMINUM | 0.01 | 200000 | MS |
| CALCIUM | 0.03 | 200000 | MS |
| IRON | 0.03 | 100000 | MS |
| LEAD | 0.10 | 2000 | MS |
| MAGNESIUM | 0.05 | 200000 | MS |
| MOLYBDENUM | 0.10 | 1000 | MS |
| POTASSIUM | 0.01 | 200000 | MS |
| SODIUM | 0.01 | 200000 | MS |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF12IMS2**Matrix:** SOIL**SDG Name:** SJ4229**Method:** MS**Prep Date:** 06/12/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF12IMS2 | LC SOJF12IMS2 | 1 | 0.1 | |
| PBSJF12IMS2 | PBSJF12IMS2 | 1 | 0.1 | |
| RR-SS-B7-0006 | SJ4229-008 | 1.99 | 0.1 | A |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF12IMS3**Matrix:** SOIL**SDG Name:** SJ4229**Method:** MS**Prep Date:** 06/12/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF12IMS3 | LC SOJF12IMS3 | 1 | 0.1 | |
| PBSJF12IMS3 | PBSJF12IMS3 | 1 | 0.1 | |
| RR-SS-B5-0006 | SJ4229-001 | 1.64 | 0.1 | A |
| RR-SB-B5-0612 | SJ4229-002 | 1.21 | 0.1 | A |
| RR-SS-B6-0006 | SJ4229-004 | 1.37 | 0.1 | A |
| RR-SB-B6-0612 | SJ4229-005 | 1.98 | 0.1 | A |
| RR-SB-B6-1224 | SJ4229-006 | 2.24 | 0.1 | A |
| RR-SB-B7-0612 | SJ4229-009 | 1.79 | 0.1 | A |
| RR-SB-C5-0612 | SJ4229-030 | 2.02 | 0.1 | B |
| RR-SB-C5-0612D | SJ4229-030D | 1.92 | 0.1 | B |
| RR-SB-C5-0612S | SJ4229-030S | 2.01 | 0.1 | B |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF12IMS4**Matrix:** SOIL**SDG Name:** SJ4229**Method:** MS**Prep Date:** 06/12/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF12IMS4 | LC SOJF12IMS4 | 1 | 0.1 | |
| PBSJF12IMS4 | PBSJF12IMS4 | 1 | 0.1 | |
| RR-SS-B8-0006 | SJ4229-011 | 1.43 | 0.1 | A |
| RR-SB-B8-0612 | SJ4229-012 | 1.4 | 0.1 | A |
| RR-SS-C1-0006 | SJ4229-014 | 1.69 | 0.1 | A |
| RR-SB-C1-0612 | SJ4229-015 | 2.01 | 0.1 | A |
| RR-SS-C2-0006 | SJ4229-017 | 1.95 | 0.1 | A |
| RR-SB-C2-0612 | SJ4229-018 | 1.94 | 0.1 | A |
| RR-SB-C2-1224 | SJ4229-019 | 1.89 | 0.1 | A |
| RR-SS-C3-0006 | SJ4229-021 | 2.04 | 0.1 | A |
| RR-SB-C3-0612 | SJ4229-022 | 1.32 | 0.1 | A |
| RR-SB-C3-1224 | SJ4229-023 | 2.1 | 0.1 | A |
| RR-SS-C4-0006 | SJ4229-025 | 2.25 | 0.1 | A |
| RR-SB-C4-0612 | SJ4229-026 | 1.9 | 0.1 | A |
| RR-SB-C4-1224 | SJ4229-027 | 2.04 | 0.1 | A |
| RR-SS-C5-0006 | SJ4229-029 | 2.23 | 0.1 | A |
| RR-SB-C5-1224 | SJ4229-031 | 2.01 | 0.1 | A |
| RR-SS-C6-0006 | SJ4229-033 | 1.53 | 0.1 | A |
| RR-SB-C6-0612 | SJ4229-034 | 1.82 | 0.1 | A |
| RR-SB-C6-1224 | SJ4229-035 | 1.56 | 0.1 | A |
| RR-SB-C7-2436 | SJ4229-037 | 1.55 | 0.1 | A |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF12IMS5**Matrix:** SOIL**SDG Name:** SJ4229**Method:** MS**Prep Date:** 06/12/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF12IMS5 | LC SOJF12IMS5 | 1 | 0.1 | |
| PBSJF12IMS5 | PBSJF12IMS5 | 1 | 0.1 | |
| RR-SS-C8-0006 | SJ4229-038 | 1.85 | 0.1 | A |
| RR-SB-C8-0612 | SJ4229-039 | 2.14 | 0.1 | A |
| RR-DUP06-060816 | SJ4229-042 | 1.62 | 0.1 | A |
| RR-DUP07-060816 | SJ4229-043 | 1.57 | 0.1 | A |
| RR-DUP08-060816 | SJ4229-044 | 1.07 | 0.1 | A |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF15IMS1**Matrix:** SOIL**SDG Name:** SJ4229**Method:** MS**Prep Date:** 06/15/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF15IMS1 | LC SOJF15IMS1 | 1 | 0.1 | |
| PBSJF15IMS1 | PBSJF15IMS1 | 1 | 0.1 | |
| RR-SB-C1-1224 | SJ4229-016 | 1.8 | 0.1 | A |
| RR-SB-C1-1224D | SJ4229-016D | 1.78 | 0.1 | A |
| RR-SB-C1-1224S | SJ4229-016S | 1.83 | 0.1 | A |
| RR-SB-C3-2436 | SJ4229-024 | 1.62 | 0.1 | A |
| RR-SB-C4-2436 | SJ4229-028 | 1.27 | 0.1 | A |
| RR-SB-C5-2436 | SJ4229-032 | 2.11 | 0.1 | A |
| RR-SB-C6-2436 | SJ4229-036 | 1.49 | 0.1 | A |
| RR-SB-C8-1224 | SJ4229-040 | 1.64 | 0.1 | A |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4229

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| 6020 Tune | | 1 | 13:08 | | | | | | | |
| 200.8 Tune | | 1 | 13:11 | | | | | | | |
| Cal Blank | | 1 | 13:58 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| Cal Std | | 1 | 14:01 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICV | | 1 | 14:04 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICB | | 1 | 14:08 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| PQL | | 1 | 14:11 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| <i>ZZZZZZ</i> | | 1 | 14:14 | | | | | | | |
| <i>ZZZZZZ</i> | | 1 | 14:17 | | | | | | | |
| <i>ZZZZZZ</i> | | 1 | 14:21 | | | | | | | |
| ICSA | | 1 | 14:24 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICSAB | | 1 | 14:28 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| <i>ZZZZZZ</i> | | 1 | 14:32 | | | | | | | |
| <i>ZZZZZZ</i> | | 1 | 14:35 | | | | | | | |
| CCV | | 1 | 14:38 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 14:42 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| <i>ZZZZZZ</i> | | 5 | 14:45 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 14:48 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 14:52 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 14:55 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 14:59 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 15:02 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 15:06 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 15:09 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 15:13 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 15:16 | | | | | | | |
| CCV | | 1 | 15:20 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4229

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| CCB | | 1 | 15:23 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 15:27 | | | | | | | |
| ZZZZZZ | | 10 | 15:30 | | | | | | | |
| ZZZZZZ | | 10 | 15:34 | | | | | | | |
| ZZZZZZ | | 10 | 15:37 | | | | | | | |
| ZZZZZZ | | 10 | 15:41 | | | | | | | |
| ZZZZZZ | | 10 | 15:44 | | | | | | | |
| ZZZZZZ | | 10 | 15:48 | | | | | | | |
| ZZZZZZ | | 10 | 15:51 | | | | | | | |
| ZZZZZZ | | 10 | 15:55 | | | | | | | |
| ZZZZZZ | | 10 | 15:58 | | | | | | | |
| CCV | | 1 | 16:02 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 16:06 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 16:09 | | | | | | | |
| ZZZZZZ | | 10 | 16:13 | | | | | | | |
| ZZZZZZ | | 10 | 16:16 | | | | | | | |
| ZZZZZZ | | 10 | 16:20 | | | | | | | |
| ZZZZZZ | | 10 | 16:23 | | | | | | | |
| ZZZZZZ | | 10 | 16:27 | | | | | | | |
| ZZZZZZ | | 10 | 16:30 | | | | | | | |
| ZZZZZZ | | 10 | 16:34 | | | | | | | |
| ZZZZZZ | | 10 | 16:37 | | | | | | | |
| ZZZZZZ | | 50 | 16:41 | | | | | | | |
| CCV | | 1 | 16:44 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 16:48 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 16:52 | | | | | | | |
| ZZZZZZ | | 10 | 16:55 | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4229

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|--|
| ZZZZZZ | | 10 | 16:59 | | | | | | | | |
| PBSJF12IMS2 | | 5 | 17:02 | | | | Pb | | | | |
| LCSOJF12IMS2 | | 5 | 17:06 | | | | Pb | | | | |
| ZZZZZZ | | 10 | 17:10 | | | | | | | | |
| ZZZZZZ | | 10 | 17:13 | | | | | | | | |
| ZZZZZZ | | 10 | 17:17 | | | | | | | | |
| ZZZZZZ | | 10 | 17:20 | | | | | | | | |
| ZZZZZZ | | 10 | 17:24 | | | | | | | | |
| CCV | | 1 | 17:28 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 17:31 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZZ | | 10 | 17:35 | | | | | | | | |
| ZZZZZZ | | 10 | 17:38 | | | | | | | | |
| ZZZZZZ | | 10 | 17:42 | | | | | | | | |
| ZZZZZZ | | 10 | 17:46 | | | | | | | | |
| ZZZZZZ | | 10 | 17:49 | | | | | | | | |
| ZZZZZZ | | 10 | 17:53 | | | | | | | | |
| ZZZZZZ | | 10 | 17:56 | | | | | | | | |
| ZZZZZZ | | 10 | 18:00 | | | | | | | | |
| ZZZZZZ | | 10 | 18:04 | | | | | | | | |
| ZZZZZZ | | 10 | 18:07 | | | | | | | | |
| CCV | | 1 | 18:11 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 18:15 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZZ | | 10 | 18:18 | | | | | | | | |
| ZZZZZZ | | 10 | 18:22 | | | | | | | | |
| ZZZZZZ | | 10 | 18:25 | | | | | | | | |
| ZZZZZZ | | 10 | 18:29 | | | | | | | | |
| ZZZZZZ | | 50 | 18:33 | | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4229

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|---------------|------|-------|----------|----|-------|----|----|---|----|--|
| ZZZZZZ | | 10 | 18:36 | | | | | | | | |
| ZZZZZZ | | 10 | 18:40 | | | | | | | | |
| ZZZZZZ | | 10 | 18:43 | | | | | | | | |
| SJ4229-008 | RR-SS-B7-0006 | 10 | 18:47 | | | | | | | Pb | |
| PBSJF12IMS3 | | 5 | 18:50 | | | | | | | Pb | |
| CCV | | 1 | 18:54 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 18:58 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| LCSOJF12IMS3 | | 5 | 19:01 | | | | | | | Pb | |
| ZZZZZZ | | 10 | 19:05 | | | | | | | | |
| ZZZZZZ | | 10 | 19:08 | | | | | | | | |
| ZZZZZZ | | 10 | 19:12 | | | | | | | | |
| ZZZZZZ | | 10 | 19:16 | | | | | | | | |
| ZZZZZZ | | 10 | 19:19 | | | | | | | | |
| ZZZZZZ | | 10 | 19:23 | | | | | | | | |
| ZZZZZZ | | 10 | 19:26 | | | | | | | | |
| ZZZZZZ | | 10 | 19:30 | | | | | | | | |
| ZZZZZZ | | 10 | 19:34 | | | | | | | | |
| CCV | | 1 | 19:37 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 19:41 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZZ | | 10 | 19:44 | | | | | | | | |
| ZZZZZZ | | 10 | 19:48 | | | | | | | | |
| ZZZZZZ | | 10 | 19:52 | | | | | | | | |
| SJ4229-001 | RR-SS-B5-0006 | 10 | 19:55 | | | | | | | Pb | |
| SJ4229-002 | RR-SB-B5-0612 | 10 | 19:59 | | | | | | | Pb | |
| SJ4229-004 | RR-SS-B6-0006 | 10 | 20:02 | | | | | | | Pb | |
| SJ4229-005 | RR-SB-B6-0612 | 10 | 20:06 | | | | | | | Pb | |
| SJ4229-006 | RR-SB-B6-1224 | 10 | 20:09 | | | | | | | Pb | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4229

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|----------------|------|-------|----------|----|-------|----|----|---|----|--|
| SJ4229-009 | RR-SB-B7-0612 | 10 | 20:13 | | | Pb | | | | | |
| CCV | | 1 | 20:17 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 20:20 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| SJ4229-030 | RR-SB-C5-0612 | 10 | 20:24 | | | Pb | | | | | |
| SJ4229-030L | RR-SB-C5-0612L | 50 | 20:27 | | | Pb | | | | | |
| SJ4229-030A | RR-SB-C5-0612A | 10 | 20:31 | | | Pb | | | | | |
| SJ4229-030D | RR-SB-C5-0612D | 10 | 20:35 | | | Pb | | | | | |
| SJ4229-030S | RR-SB-C5-0612S | 10 | 20:38 | | | Pb | | | | | |
| PBSJF12IMS4 | | 5 | 20:42 | | | Pb | | | | | |
| LCSOJF12IMS4 | | 5 | 20:45 | | | Pb | | | | | |
| SJ4229-011 | RR-SS-B8-0006 | 10 | 20:49 | | | Pb | | | | | |
| SJ4229-012 | RR-SB-B8-0612 | 10 | 20:52 | | | Pb | | | | | |
| SJ4229-014 | RR-SS-C1-0006 | 10 | 20:56 | | | Pb | | | | | |
| CCV | | 1 | 21:00 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 21:03 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| <i>ZZZZZ</i> | | 10 | 21:07 | | | | | | | | |
| SJ4229-017 | RR-SS-C2-0006 | 10 | 21:11 | | | Pb | | | | | |
| SJ4229-018 | RR-SB-C2-0612 | 10 | 21:14 | | | Pb | | | | | |
| SJ4229-019 | RR-SB-C2-1224 | 10 | 21:18 | | | Pb | | | | | |
| SJ4229-021 | RR-SS-C3-0006 | 10 | 21:22 | | | Pb | | | | | |
| SJ4229-022 | RR-SB-C3-0612 | 10 | 21:25 | | | Pb | | | | | |
| SJ4229-023 | RR-SB-C3-1224 | 10 | 21:29 | | | Pb | | | | | |
| <i>ZZZZZ</i> | | 10 | 21:32 | | | | | | | | |
| <i>ZZZZZ</i> | | 10 | 21:36 | | | | | | | | |
| <i>ZZZZZ</i> | | 10 | 21:39 | | | | | | | | |
| CCV | | 1 | 21:43 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 21:47 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4229

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|-----------------|------|-------|----------|----|-------|----|----|---|----|----|
| SJ4229-029 | RR-SS-C5-0006 | 10 | 21:51 | | | | | | | | Pb |
| <i>ZZZZZ</i> | | 10 | 21:54 | | | | | | | | |
| <i>ZZZZZ</i> | | 10 | 21:58 | | | | | | | | |
| SJ4229-034 | RR-SB-C6-0612 | 10 | 22:01 | | | | | | | | Pb |
| <i>ZZZZZ</i> | | 10 | 22:05 | | | | | | | | |
| SJ4229-037 | RR-SB-C7-2436 | 10 | 22:09 | | | | | | | | Pb |
| <i>ZZZZZ</i> | | 10 | 22:12 | | | | | | | | |
| <i>ZZZZZ</i> | | 50 | 22:16 | | | | | | | | |
| <i>ZZZZZ</i> | | 10 | 22:19 | | | | | | | | |
| <i>ZZZZZ</i> | | 10 | 22:23 | | | | | | | | |
| CCV | | 1 | 22:26 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 22:30 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| <i>ZZZZZ</i> | | 10 | 22:34 | | | | | | | | |
| <i>ZZZZZ</i> | | 5 | 22:37 | | | | | | | | |
| LCSOJF12IMS5 | | 5 | 22:41 | | | | | | | | Pb |
| SJ4229-038 | RR-SS-C8-0006 | 10 | 22:45 | | | | | | | | Pb |
| <i>ZZZZZ</i> | | 10 | 22:48 | | | | | | | | |
| SJ4229-043 | RR-DUP07-060816 | 10 | 22:52 | | | | | | | | Pb |
| <i>ZZZZZ</i> | | 10 | 22:55 | | | | | | | | |
| <i>ZZZZZ</i> | | 10 | 22:59 | | | | | | | | |
| <i>ZZZZZ</i> | | 10 | 23:02 | | | | | | | | |
| CCV | | 1 | 23:06 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 23:10 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4229

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF14B

Date: 6/14/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|---------------|------|-------|----------|----|-------|----|----|---|----|
| 6020 Tune | | 1 | 16:25 | | | | | | | |
| 200.8 Tune | | 1 | 16:27 | | | | | | | |
| Cal Blank | | 1 | 18:47 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| Cal Std | | 1 | 18:50 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICV | | 1 | 18:54 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICB | | 1 | 18:57 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| PQL | | 1 | 19:01 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 19:04 | | | | | | | |
| ZZZZZZ | | 1 | 19:07 | | | | | | | |
| ZZZZZZ | | 1 | 19:11 | | | | | | | |
| ICSA | | 1 | 19:14 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICSAB | | 1 | 19:18 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 19:22 | | | | | | | |
| ZZZZZZ | | 1 | 19:25 | | | | | | | |
| CCV | | 1 | 19:29 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 19:32 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 19:36 | | | | | | | |
| ZZZZZZ | | 1 | 19:39 | | | | | | | |
| ZZZZZZ | | 1 | 19:43 | | | | | | | |
| ZZZZZZ | | 1 | 19:46 | | | | | | | |
| ZZZZZZ | | 1 | 19:50 | | | | | | | |
| ZZZZZZ | | 1 | 19:53 | | | | | | | |
| SJ4229-015 | RR-SB-C1-0612 | 50 | 19:57 | Pb | | | | | | |
| SJ4229-025 | RR-SS-C4-0006 | 50 | 20:00 | Pb | | | | | | |
| SJ4229-026 | RR-SB-C4-0612 | 100 | 20:04 | Pb | | | | | | |
| CCV | | 1 | 20:07 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 20:10 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4229

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF14B

Date: 6/14/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|-----------------|------|-------|----------|----|-------|----|----|---|----|--|
| SJ4229-027 | RR-SB-C4-1224 | 50 | 20:14 | | | Pb | | | | | |
| SJ4229-031 | RR-SB-C5-1224 | 50 | 20:18 | | | Pb | | | | | |
| SJ4229-033 | RR-SS-C6-0006 | 50 | 20:21 | | | Pb | | | | | |
| SJ4229-035 | RR-SB-C6-1224 | 50 | 20:24 | | | Pb | | | | | |
| SJ4229-039 | RR-SB-C8-0612 | 50 | 20:28 | | | Pb | | | | | |
| SJ4229-044 | RR-DUP08-060816 | 50 | 20:31 | | | Pb | | | | | |
| <i>ZZZZZZ</i> | | 50 | 20:35 | | | | | | | | |
| <i>ZZZZZZ</i> | | 250 | 20:38 | | | | | | | | |
| <i>ZZZZZZ</i> | | 50 | 20:42 | | | | | | | | |
| <i>ZZZZZZ</i> | | 100 | 20:45 | | | | | | | | |
| CCV | | 1 | 20:49 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 20:52 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| <i>ZZZZZZ</i> | | 50 | 20:56 | | | | | | | | |
| PBSJF12IMS5 | | 5 | 20:59 | | | Pb | | | | | |
| <i>ZZZZZZ</i> | | 200 | 21:03 | | | | | | | | |
| <i>ZZZZZZ</i> | | 10 | 21:06 | | | | | | | | |
| <i>ZZZZZZ</i> | | 10 | 21:10 | | | | | | | | |
| <i>ZZZZZZ</i> | | 10 | 21:13 | | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 21:17 | | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 21:20 | | | | | | | | |
| <i>ZZZZZZ</i> | | 10 | 21:24 | | | | | | | | |
| <i>ZZZZZZ</i> | | 10 | 21:27 | | | | | | | | |
| CCV | | 1 | 21:31 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 21:34 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| <i>ZZZZZZ</i> | | 10 | 21:38 | | | | | | | | |
| <i>ZZZZZZ</i> | | 10 | 21:41 | | | | | | | | |
| <i>ZZZZZZ</i> | | 10 | 21:45 | | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4229

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF14B

Date: 6/14/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------------|------|-------|----------|----|-------|----|----|---|----|
| ZZZZZZ | | 10 | 21:48 | | | | | | | |
| ZZZZZZ | | 10 | 21:52 | | | | | | | |
| ZZZZZZ | | 10 | 21:55 | | | | | | | |
| ZZZZZZ | | 10 | 21:59 | | | | | | | |
| ZZZZZZ | | 10 | 22:02 | | | | | | | |
| ZZZZZZ | | 10 | 22:06 | | | | | | | |
| ZZZZZZ | | 10 | 22:09 | | | | | | | |
| CCV | | 1 | 22:13 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 22:16 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 22:20 | | | | | | | |
| SJ4229-042 | RR-DUP06-060816 | 10 | 22:23 | | | Pb | | | | |
| ZZZZZZ | | 1 | 22:27 | | | | | | | |
| ZZZZZZ | | 5 | 22:30 | | | | | | | |
| ZZZZZZ | | 1 | 22:34 | | | | | | | |
| ZZZZZZ | | 5 | 22:37 | | | | | | | |
| ZZZZZZ | | 5 | 22:41 | | | | | | | |
| ZZZZZZ | | 5 | 22:44 | | | | | | | |
| ZZZZZZ | | 1 | 22:48 | | | | | | | |
| ZZZZZZ | | 50 | 22:51 | | | | | | | |
| CCV | | 1 | 22:55 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 22:58 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4229

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF15B

Date: 6/15/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| 6020 Tune | | 1 | 18:16 | | | | | | | |
| 200.8 Tune | | 1 | 18:18 | | | | | | | |
| Cal Blank | | 1 | 19:28 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| Cal Std | | 1 | 19:32 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICV | | 1 | 19:35 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICB | | 1 | 19:38 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| PQL | | 1 | 19:42 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 19:45 | | | | | | | |
| ZZZZZZ | | 1 | 19:48 | | | | | | | |
| ZZZZZZ | | 1 | 19:52 | | | | | | | |
| ICSA | | 1 | 19:55 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICSAB | | 1 | 19:59 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 20:02 | | | | | | | |
| ZZZZZZ | | 1 | 20:06 | | | | | | | |
| CCV | | 1 | 20:09 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 20:12 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 20:16 | | | | | | | |
| ZZZZZZ | | 5 | 20:19 | | | | | | | |
| ZZZZZZ | | 1 | 20:23 | | | | | | | |
| ZZZZZZ | | 5 | 20:26 | | | | | | | |
| ZZZZZZ | | 5 | 20:30 | | | | | | | |
| ZZZZZZ | | 5 | 20:33 | | | | | | | |
| ZZZZZZ | | 1 | 20:37 | | | | | | | |
| ZZZZZZ | | 1 | 20:40 | | | | | | | |
| ZZZZZZ | | 1 | 20:44 | | | | | | | |
| ZZZZZZ | | 1 | 20:47 | | | | | | | |
| CCV | | 1 | 20:51 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4229

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF15B

Date: 6/15/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|----------------|------|-------|----------|----|-------|----|----|---|----|--|
| CCB | | 1 | 20:54 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| PBSJF15IMS1 | | 5 | 20:58 | | | Pb | | | | | |
| LCSOJF15IMS1 | | 5 | 21:01 | | | Pb | | | | | |
| ZZZZZZ | | 10 | 21:05 | | | | | | | | |
| ZZZZZZ | | 10 | 21:08 | | | | | | | | |
| SJ4229-016 | RR-SB-C1-1224 | 10 | 21:12 | | | Pb | | | | | |
| SJ4229-016L | RR-SB-C1-1224L | 50 | 21:15 | | | Pb | | | | | |
| SJ4229-016A | RR-SB-C1-1224A | 10 | 21:19 | | | Pb | | | | | |
| SJ4229-016D | RR-SB-C1-1224D | 10 | 21:22 | | | Pb | | | | | |
| SJ4229-016S | RR-SB-C1-1224S | 10 | 21:26 | | | Pb | | | | | |
| SJ4229-024 | RR-SB-C3-2436 | 10 | 21:30 | | | Pb | | | | | |
| CCV | | 1 | 21:33 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 21:37 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| SJ4229-028 | RR-SB-C4-2436 | 10 | 21:40 | | | Pb | | | | | |
| SJ4229-032 | RR-SB-C5-2436 | 10 | 21:44 | | | Pb | | | | | |
| SJ4229-036 | RR-SB-C6-2436 | 10 | 21:47 | | | Pb | | | | | |
| SJ4229-040 | RR-SB-C8-1224 | 10 | 21:51 | | | Pb | | | | | |
| ZZZZZZ | | 10 | 21:54 | | | | | | | | |
| ZZZZZZ | | 5 | 21:58 | | | | | | | | |
| ZZZZZZ | | 5 | 22:01 | | | | | | | | |
| ZZZZZZ | | 10 | 22:05 | | | | | | | | |
| ZZZZZZ | | 10 | 22:08 | | | | | | | | |
| CCV | | 1 | 22:12 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 22:15 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |

| ANALYTE | ORIGINAL | ORIGINAL | DUPLICATE | DUPLICATE | RL | RPD | RPD > 50% | ORIGINAL SAMPLE CONC >5xRL | DUPLICATE SAMPLE CONC >5xRL | DIFFERENCE >4xRL |
|---------|---------------|----------|-----------------|-----------|------|--------|-----------|----------------------------|-----------------------------|------------------|
| LEAD | RR-SB-C1-1224 | 5.66 | RR-DUP06-060816 | 6.62 | 0.12 | 15.64 | FALSE | TRUE | TRUE | TRUE |
| LEAD | RR-SB-C3-1224 | 399 | RR-DUP07-060816 | 1230 | 0.1 | 102.03 | TRUE | TRUE | TRUE | TRUE |
| LEAD | RR-SS-C6-0006 | 2910 | RR-DUP08-060816 | 3630 | 0.74 | 22.02 | FALSE | TRUE | TRUE | TRUE |



TO: R. SOK DATE: AUGUST 15, 2016
 FROM: L. GANSER COPIES: DV FILE
 SUBJECT: DATA VALIDATION- LEAD
 NASA WALLEPS ISLAND, VIRGINIA
 SAMPLE DELIVERY GROUP (SDG) SJ4230

SAMPLES: 21/Soil

| | | | |
|-----------------|-----------------|---------------|---------------|
| RR-DUP09-060816 | RR-DUP11-060816 | RR-SB-D1-0612 | RR-SB-D2-0612 |
| RR-SB-D2-1224 | RR-SB-D3-0612 | RR-SB-D3-1224 | RR-SB-D5-0612 |
| RR-SB-D5-1224 | RR-SB-D6-0612 | RR-SB-D6-1224 | RR-SB-D7-0612 |
| RR-SB-D7-1224 | RR-SB-D8-0612 | RR-SS-D1-0006 | RR-SS-D2-0006 |
| RR-SS-D3-0006 | RR-SS-D5-0006 | RR-SS-D6-0006 | RR-SS-D7-0006 |
| RR-SS-D8-0006 | | | |

Overview

The sample set for NASA Wallops Island, SDG SJ4230 consists of twenty-one (21) soil samples. All samples were analyzed for lead. Two field duplicate pairs were included in this SDG: RR-SB-D1-0612 / RR-DUP09-060816 and RR-SB-D8-0612 / RR-DUP11-060816.

Samples were collected on June 8, 2016 by Tetra Tech and analyzed by Katahdin. Lead analyses were conducted in accordance to SW-846 Method 6020A analytical and reporting protocols.

The data contained in this SDG were validated with regard to the following parameters: data completeness, holding times, MS tuning, laboratory method/preparation blank results, ICP interference results, blank spike results, matrix spike/matrix spike duplicate results, laboratory duplicate results, ICP serial dilution results, field duplicate precision, and detection limits. Areas of concern with respect to data quality are listed below.

Major Problems – None.

Minor Problems

- Laboratory duplicate imprecision (relative percent difference >35%) was noted for lead in sample RR-SB-D8-0006. The lead result in sample RR-SB-D8-0006 was qualified as estimated (J).
- Lead was detected in the laboratory blanks at the following maximum concentrations:

| <u>Analyte</u> | <u>Maximum Concentration</u> | <u>Reporting Limit (RL) (> or <)</u> |
|---------------------|------------------------------|--|
| Lead ⁽¹⁾ | 0.131 mg/kg | > |
| Lead ⁽²⁾ | 0.103 mg/kg | > |
| Lead ⁽³⁾ | 0.024 mg/kg | < |

- Concentration in preparation blank affecting samples in batch JF12IMS4.
- Concentration in preparation blank affecting samples in batch JF12IMS5.
- Concentration in preparation blank affecting samples in batch JF13IMS2.

Dilution factor, if applicable, was taken into consideration when evaluating for blank contamination. No action was taken for samples affected by blank concentrations < RL as all results were greater than the RL. For samples affected by blank concentrations >RL, sample

To: R. SOK
SDG: SJ4230

results less than 10 times the blank concentration were qualified as nondetect.

Notes – None.

EXECUTIVE SUMMARY

Laboratory Performance Issues: Lead was present in the blanks. Lab duplicate imprecision was noted for lead in one sample.

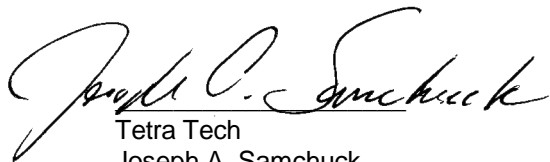
Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review" (August 2014). The text of this report has been formulated to address only those areas affecting data quality.

The text of this report has been formulated to address only those problem areas affecting data quality.



Tetra Tech
Leanne M. Ganser
Environmental Scientist/Data Validator



Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:

- Appendix A – Qualified Analytical Results
- Appendix B – Results as Reported by the Laboratory
- Appendix C – Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate
- Z4 = Sample activity is less than the at uncertainty at 3 standard deviations and greater than the MDC
- Z5 = Sample activity is less than the at uncertainty at 3 standard deviations and less than the MDC

| | | | | | | | | | | | | | |
|---|------------|-----------------|------|--------|-----------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4230 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-DUP09-060816 | | | RR-DUP11-060816 | | | RR-SB-D1-0612 | | | RR-SB-D2-0612 | | |
| | LAB_ID | SJ4230-028 | | | SJ4230-030 | | | SJ4230-002 | | | SJ4230-005 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 90.7 | | | 90.8 | | | 91.1 | | | 91.0 | | |
| | DUP_OF | RR-SB-D1-0612 | | | RR-SB-D8-0612 | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 12.4 | | | 16.4 | | | 11.8 | | | 6.13 | U | A | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4230 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SB-D2-1224 | | | RR-SB-D3-0612 | | | RR-SB-D3-1224 | | | RR-SB-D5-0612 | | |
| | LAB_ID | SJ4230-006 | | | SJ4230-009 | | | SJ4230-010 | | | SJ4230-014 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 91.0 | | | 92.1 | | | 92.3 | | | 92.1 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 15.8 | | | 11.4 | | | 3.24 | U | A | 7.19 | U | A | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4230 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SB-D5-1224 | | | RR-SB-D6-0612 | | | RR-SB-D6-1224 | | | RR-SB-D7-0612 | | |
| | LAB_ID | SJ4230-015 | | | SJ4230-018 | | | SJ4230-019 | | | SJ4230-022 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 90.4 | | | 91.3 | | | 93.0 | | | 91.2 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 5.27 | U | A | 106 | | | 29.1 | | | 60.6 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4230 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SB-D7-1224 | | | RR-SB-D8-0612 | | | RR-SS-D1-0006 | | | RR-SS-D2-0006 | | |
| | LAB_ID | SJ4230-023 | | | SJ4230-026 | | | SJ4230-001 | | | SJ4230-004 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 93.5 | | | 91.9 | | | 86.4 | | | 90.0 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 3.4 | | | 22.4 | | | 68 | | | 114 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4230 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SS-D3-0006 | | | RR-SS-D5-0006 | | | RR-SS-D6-0006 | | | RR-SS-D7-0006 | | |
| | LAB_ID | SJ4230-008 | | | SJ4230-013 | | | SJ4230-017 | | | SJ4230-021 | | |
| | SAMP_DATE | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | | 6/8/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 91.2 | | | 89.4 | | | 90.3 | | | 90.7 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 71.8 | | | 300 | | | 920 | | | 359 | | | |

| | | | | |
|---|------------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4230 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SS-D8-0006 | | |
| | LAB_ID | SJ4230-025 | | |
| | SAMP_DATE | 6/8/2016 | | |
| | QC_TYPE | NM | | |
| | UNITS | MG/KG | | |
| | PCT_SOLIDS | 90.1 | | |
| | DUP_OF | | | |
| PARAMETER | RESULT | VQL | QLCD | |
| LEAD | 2180 | J | F | |

Appendix B

Results as Reported by the Laboratory

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-D1-0006

Matrix: SOIL

SDG Name: SJ4230

Percent Solids: 86.4

Lab Sample ID: SJ4230-001

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 68.0 | B | MS | 10 | 0.17 | 0.012 | 0.083 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-D1-0612

Matrix: SOIL

SDG Name: SJ4230

Percent Solids: 91.0

Lab Sample ID: SJ4230-002

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 11.8 | B | MS | 10 | 0.13 | 0.0089 | 0.063 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-D2-0006

Matrix: SOIL

SDG Name: SJ4230

Percent Solids: 90.0

Lab Sample ID: SJ4230-004

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 114 | B | MS | 10 | 0.14 | 0.0095 | 0.068 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-D2-0612

Matrix: SOIL

SDG Name: SJ4230

Percent Solids: 91.0

Lab Sample ID: SJ4230-005

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|-------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 6.13 | B | MS | 10 | 0.094 | 0.0066 | 0.047 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-D2-1224

Matrix: SOIL

SDG Name: SJ4230

Percent Solids: 91.0

Lab Sample ID: SJ4230-006

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 15.8 | B | MS | 10 | 0.12 | 0.0086 | 0.061 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-D3-0006

Matrix: SOIL

SDG Name: SJ4230

Percent Solids: 91.2

Lab Sample ID: SJ4230-008

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 71.8 | B | MS | 10 | 0.16 | 0.011 | 0.081 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services**Client Field ID:** RR-SB-D3-0612**Matrix:** SOIL**SDG Name:** SJ4230**Percent Solids:** 92.0**Lab Sample ID:** SJ4230-009**Concentration Units :** mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 11.4 | B | MS | 10 | 0.13 | 0.0089 | 0.064 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-D3-1224

Matrix: SOIL

SDG Name: SJ4230

Percent Solids: 92.3

Lab Sample ID: SJ4230-010

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 3.24 | B | MS | 10 | 0.13 | 0.0094 | 0.067 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-D5-0006

Matrix: SOIL

SDG Name: SJ4230

Percent Solids: 89.4

Lab Sample ID: SJ4230-013

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 300 | B | MS | 10 | 0.11 | 0.0077 | 0.055 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-D5-0612

Matrix: SOIL

SDG Name: SJ4230

Percent Solids: 92.1

Lab Sample ID: SJ4230-014

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 7.19 | B | MS | 10 | 0.15 | 0.010 | 0.074 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-D5-1224

Matrix: SOIL

SDG Name: SJ4230

Percent Solids: 90.4

Lab Sample ID: SJ4230-015

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 5.27 | B | MS | 10 | 0.18 | 0.012 | 0.089 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-D6-0006

Matrix: SOIL

SDG Name: SJ4230

Percent Solids: 90.3

Lab Sample ID: SJ4230-017

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 920 | B | MS | 10 | 0.15 | 0.010 | 0.074 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services**Client Field ID:** RR-SB-D6-0612**Matrix:** SOIL**SDG Name:** SJ4230**Percent Solids:** 91.3**Lab Sample ID:** SJ4230-018**Concentration Units :** mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 106 | B | MS | 10 | 0.13 | 0.0092 | 0.066 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-D6-1224

Matrix: SOIL

SDG Name: SJ4230

Percent Solids: 93.0

Lab Sample ID: SJ4230-019

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|----|----|------|----------|-------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 29.1 | B | MS | 10 | 0.11 | 0.0080 | 0.057 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-D7-0006

Matrix: SOIL

SDG Name: SJ4230

Percent Solids: 90.6

Lab Sample ID: SJ4230-021

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 359 | | | MS | 10 | 0.17 | 0.012 | 0.084 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-D7-0612

Matrix: SOIL

SDG Name: SJ4230

Percent Solids: 91.2

Lab Sample ID: SJ4230-022

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 60.6 | | | MS | 10 | 0.13 | 0.0090 | 0.064 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-D7-1224

Matrix: SOIL

SDG Name: SJ4230

Percent Solids: 93.5

Lab Sample ID: SJ4230-023

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 3.40 | | | MS | 10 | 0.13 | 0.0094 | 0.067 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-D8-0006

Matrix: SOIL

SDG Name: SJ4230

Percent Solids: 90.0

Lab Sample ID: SJ4230-025

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|-----|----|----|----------|-------|------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 2180 | | N*B | MS | 50 | 0.58 | 0.041 | 0.29 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-D8-0612

Matrix: SOIL

SDG Name: SJ4230

Percent Solids: 91.9

Lab Sample ID: SJ4230-026

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 22.4 | | | MS | 10 | 0.11 | 0.0078 | 0.056 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-DUP09-060816

Matrix: SOIL

SDG Name: SJ4230

Percent Solids: 90.7

Lab Sample ID: SJ4230-028

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 12.4 | | | MS | 10 | 0.11 | 0.0074 | 0.053 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-DUP11-060816

Matrix: SOIL

SDG Name: SJ4230

Percent Solids: 90.8

Lab Sample ID: SJ4230-030

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 16.4 | | | MS | 10 | 0.12 | 0.0084 | 0.060 |

Comments:

Appendix C

Support Documentation

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS, INC.
NASA WALLOPS FLIGHT FACILITY-MBFR
SJ4230

Sample Receipt

The following samples were received on June 10, 2016 and were logged in under Katahdin Analytical Services work order number SJ4230 for a hardcopy due date of June 29, 2016.

| KATAHDIN <u>Sample No.</u> | TTNUS <u>Sample Identification</u> |
|-------------------------------|---------------------------------------|
| SJ4230-1 | RR-SS-D1-0006 |
| SJ4230-2 | RR-SB-D1-0612 |
| SJ4230-4 | RR-SS-D2-0006 |
| SJ4230-5 | RR-SB-D2-0612 |
| SJ4230-6 | RR-SB-D2-1224 |
| SJ4230-8 | RR-SS-D3-0006 |
| SJ4230-9 | RR-SB-D3-0612 |
| SJ4230-10 | RR-SB-D3-1224 |
| SJ4230-13 | RR-SS-D5-0006 |
| SJ4230-14 | RR-SB-D5-0612 |
| SJ4230-15 | RR-SB-D5-1224 |
| SJ4230-17 | RR-SS-D6-0006 |
| SJ4230-18 | RR-SB-D6-0612 |
| SJ4230-19 | RR-SB-D6-1224 |
| SJ4230-21 | RR-SS-D7-0006 |
| SJ4230-22 | RR-SB-D7-0612 |
| SJ4230-23 | RR-SB-D7-1224 |
| SJ4230-25 | RR-SS-D8-0006 |
| SJ4230-26 | RR-SB-D8-0612 |
| SJ4230-28 | RR-DUP09-060816 |
| SJ4230-30 | RR-DUP11-060816 |

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Metals Analysis

The samples of Katahdin Work Order SJ4230 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Solid-matrix Katahdin Sample Number SJ4230-25 was digested for ICP-MS analysis on 06/12/16 (QC Batch JF12IMS4) in accordance with USEPA Method 3050B. Katahdin Sample Number SJ4230-25 was prepared with a matrix-spiked aliquot and laboratory duplicate per client request. The measured lead concentration in the preparation blank (0.13 mg/Kg dry wt) was outside acceptance limits; however the lead concentration of Katahdin Sample Number SJ4230-25 was greater than 10 times that of the blank. No corrective action was required.

Solid-matrix Katahdin Sample Numbers SJ4230-(1, 2, 4-6, 8-10, 13-15, and 17-19) were digested for ICP-MS analysis on 06/12/16 (QC Batch JF12IMS5) in accordance with USEPA Method 3050B. The measured lead concentration in the preparation blank (0.10 mg/Kg dry wt) was outside acceptance limits; however all lead concentrations for samples in this batch were greater than 10 times that of the blank. No corrective action was required.

Solid-matrix Katahdin Sample Numbers SJ4230-(21-23, 26, 28, and 30) were digested for ICP-MS analysis on 06/13/16 (QC Batch JF13IMS2) in accordance with USEPA Method 3050B.

ICP-MS analyses of Katahdin Work Order SJ4230 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met, except for the following:

Continuing calibration blanks (CCBs) that were analyzed in analytical run JF13A at 21:47, 22:30 and 23:10 were outside acceptance limits for lead, however, all Katahdin Work Order SJ4230 samples affected by these CCBs had lead results greater than ten times the blank concentration.

Sample digestates for Katahdin Work Order SJ4230 were diluted by at least a factor of 10 in accordance with the project limits.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

| Internal Standard Element | Associated Analytes |
|----------------------------|--|
| Lithium | Beryllium, Boron |
| Scandium | Sodium, Magnesium, Aluminum, Silicon, Potassium, Calcium |
| Germanium or Yttrium | Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Strontium, Molybdenum, Silver, Cadmium |
| Terbium | Tin, Antimony, Barium, Tungsten |
| Bismuth | Lead, Thallium, Thorium, Uranium |

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Matrix QC Summary

The measured recovery of lead in the matrix-spiked aliquot of Katahdin Sample Number SJ4230-25 is outside the project acceptance criteria (80% - 120% recovery of the added element). This may be attributable to the native concentration in the sample being much greater than the spike amount added.

The laboratory duplicate analysis of Katahdin Sample Number SJ4230-25 are outside the laboratory's acceptance limit (<20% relative difference between duplicate aliquots) for lead.

The serial dilution analysis of Katahdin Sample Number SJ4230-25 is within the project acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOD) for lead.

The measured recovery of lead in the post-digestion spiked aliquot of Katahdin Sample Number SJ4230-25 is outside the acceptance criteria (75% - 125% recovery of the added element). This may be attributable to the native concentration in the sample being much greater than the spike amount added.

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the LOQ are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQs, MDLs, and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are

flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis


The samples of Work Order SJ4230 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times, and all quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.


06.29.16
Leslie Dimond
Quality Assurance Officer

| | | |
|---------------------------------------|------------------------------|---------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>Jo</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>GN</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>554227 → 4233</u> | KIMS Review By: <u>Jo</u> | Received By: <u>SO</u> |
| SDG #: | Cooler: <u>L</u> of <u>4</u> | Date/Time Rec.: <u>6-10-16 / 0950</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | ✓ | | | | |
| 2. Chain of Custody present in cooler? | ✓ | | | | |
| 3. Chain of Custody signed by client? | ✓ | | | | |
| 4. Chain of Custody matches samples? | ✓ | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | ✓ | | | | Temp (°C): <u>1.8</u> |
| Samples received at <6 °C w/o freezing? | ✓ | | | | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | ✓ | | | | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | ✓ | | | | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | ✓ | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | | |
| Aqueous: No bubble larger than a pea? | | | | ✓ | |
| Soil/Sediment: | | | | | |
| Received in airtight container? | | | | ✓ | |
| Received in methanol? | | | | ✓ | |
| Methanol covering soil? | | | | ✓ | |
| D.I. Water - Received within 48 hour HT? | | | | ✓ | |
| Air: Refer to KAS COC for canister/flow controller requirements. | √ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | ✓ | |
| 8. Proper sample containers and volume? | ✓ | | | | |
| 9. Samples within hold time upon receipt? | ✓ | | | | |
| 10. Aqueous samples properly preserved? | | | | | |
| Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 | | | | ✓ | |
| Sulfide - >9 | | | | ✓ | |
| Cyanide - pH >12 | | | | ✓ | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

- RR-55-D8-0006 - ms/vol provided.
- no ms/vol provided for D8-0612 which is on chain.
- Dup 09 missing - was received in first shipment - not needed on this chain.

| | | |
|---------------------------------------|------------------------------------|------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>Jo</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>GN</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>SJ4227 → 4233</u> | KIMS Review By: <u>[Signature]</u> | Received By: <u>SO</u> |
| SDG #: <u>-</u> | Cooler: <u>2</u> of <u>4</u> | Date/Time Rec.: <u>6-10-16 095</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | ✓ | | | | |
| 2. Chain of Custody present in cooler? | ✓ | | | | |
| 3. Chain of Custody signed by client? | ✓ | | | | |
| 4. Chain of Custody matches samples? | ✓ | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | | | | ✓ | Temp (°C): <u>N/A</u> |
| Samples received at <6 °C w/o freezing? | | | | ✓ | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | | | | ✓ | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | | | | ✓ | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | ✓ | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | ✓ | |
| Aqueous: No bubble larger than a pea? | | | | ✓ | |
| Soil/Sediment: | | | | ✓ | |
| Received in airtight container? | | | | ✓ | |
| Received in methanol? | | | | ✓ | |
| Methanol covering soil? | | | | ✓ | |
| D.I. Water - Received within 48 hour HT? | | | | ✓ | |
| Air: Refer to KAS COC for canister/flow controller requirements. | ✓ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | ✓ | |
| 8. Proper sample containers and volume? | ✓ | | | | |
| 9. Samples within hold time upon receipt? | ✓ | | | | |
| 10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 Sulfide - >9 Cyanide - pH >12 | | | | ✓ | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

| | | |
|---------------------------------------|------------------------------|------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>SO</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>GN</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>SJ4227 → 4233</u> | KIMS Review By: <u>SO</u> | Received By: <u>SO</u> |
| SDG #: | Cooler: <u>3</u> of <u>4</u> | Date/Time Rec.: <u>6-10-16 095</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | ✓ | | | | |
| 2. Chain of Custody present in cooler? | ✓ | | | | |
| 3. Chain of Custody signed by client? | ✓ | | | | |
| 4. Chain of Custody matches samples? | ✓ | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | | | | ✓ | Temp (°C): <u>N/A</u> |
| Samples received at <6 °C w/o freezing? | | | | ✓ | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | | | | ✓ | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | | | | ✓ | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | ✓ | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | ✓ | |
| Aqueous: No bubble larger than a pea? | | | | ✓ | |
| Soil/Sediment: | | | | ✓ | |
| Received in airtight container? | | | | ✓ | |
| Received in methanol? | | | | ✓ | |
| Methanol covering soil? | | | | ✓ | |
| D.I. Water - Received within 48 hour HT? | | | | ✓ | |
| Air: Refer to KAS COC for canister/flow controller requirements. | ✓ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | ✓ | |
| 8. Proper sample containers and volume? | ✓ | | | | |
| 9. Samples within hold time upon receipt? | ✓ | | | | |
| 10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 Sulfide - >9 Cyanide - pH >12 | | | | ✓ | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

| | | |
|---------------------------------------|------------------------------------|------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>JO</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>GN</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>SJ4227 → 4233</u> | KIMS Review By: <u>[Signature]</u> | Received By: <u>SO</u> |
| SDG #: | Cooler: <u>4</u> of <u>4</u> | Date/Time Rec.: <u>6-10-16 095</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|--|---|---|-----|-------------------------------------|---|
| 1. Custody seals present / intact? | <input checked="" type="checkbox"/> | | | | |
| 2. Chain of Custody present in cooler? | <input checked="" type="checkbox"/> | | | | |
| 3. Chain of Custody signed by client? | <input checked="" type="checkbox"/> | | | | |
| 4. Chain of Custody matches samples? | <input checked="" type="checkbox"/> | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | | | | <input checked="" type="checkbox"/> | Temp (°C): <u>N/A</u> |
| Samples received at <6 °C w/o freezing? | | | | <input checked="" type="checkbox"/> | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | | | | <input checked="" type="checkbox"/> | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | | | | <input checked="" type="checkbox"/> | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | <input checked="" type="checkbox"/> | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | | |
| Aqueous: No bubble larger than a pea? | | | | <input checked="" type="checkbox"/> | |
| Soil/Sediment: | | | | | |
| Received in airtight container? | | | | <input checked="" type="checkbox"/> | |
| Received in methanol? | | | | <input checked="" type="checkbox"/> | |
| Methanol covering soil? | | | | <input checked="" type="checkbox"/> | |
| D.I. Water - Received within 48 hour HT? | | | | <input checked="" type="checkbox"/> | |
| Air: Refer to KAS COC for canister/flow controller requirements. | <input checked="" type="checkbox"/> if air included | | | | |
| 7. Trip Blank present in cooler? | | | | <input checked="" type="checkbox"/> | |
| 8. Proper sample containers and volume? | <input checked="" type="checkbox"/> | | | | |
| 9. Samples within hold time upon receipt? | <input checked="" type="checkbox"/> | | | | |
| 10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 Sulfide - >9 Cyanide - pH >12 | | | | <input checked="" type="checkbox"/> | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

Jennifer Obrin

From: Sok, Rob [Rob.Sok@tetratech.com]
Sent: Monday, June 13, 2016 1:50 PM
To: Jennifer Obrin (jbrin@katahdinlab.com)
Subject: Sample Login and Holds

Follow Up Flag: Follow up
Flag Status: Completed

Jennifer,

Of the last batch of samples, the following duplicates can be placed on hold if they have not been run yet:

RR-DUP03, 04, 05, 06, 10, and 14

- prepped + not run yet

Let me know how it went this weekend.

Thanks,
Rob

Robert Sok, P.G. | Project Manager | Geologist Tetra Tech, Inc. | 5700 Lake Wright Drive | Suite 309 | Norfolk, VA 23502
Direct: 757-466-4904 | Mobile: 757-618-2104 | Fax: 757-461-4148 rob.sok@tetratech.com <<mailto:rob.sok@tetratech.com>>

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RR-DUP03 = SJ4228-40
-DUPO4 = ↓ -41
-DUP05 = SJ4229-41
-DUP06 = ↓ -42
-DUP10 = SJ4230-29
-DUP14 = SJ4231-38



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client _____ Contact _____ Phone # _____ Fax # _____
 Address See Page 1 State _____ Zip Code _____
 Purchase Order # _____ Proj. Name / No. _____ Katahdin Quote # _____

Bill (if different than above) _____ Address _____

Sampler (Print / Sign) _____ Copies To: _____

LAB USE ONLY WORK ORDER #: SJ4229/SJ4230
 KATAHDIN PROJECT NUMBER _____

REMARKS: _____

SHIPPING INFO: FED EX UPS CLIENT

AIRBILL NO: _____

TEMP °C _____ TEMP BLANK INTACT NOT INTACT

| ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Flt. | Flt. | Flt. | Flt. | Flt. | Flt. | Flt. | Flt. | Flt. | Flt. | Flt. | Flt. |
| Y | N | Y | N | Y | N | Y | N | Y | N | Y | N |
| | | | | | | | | | | | |

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. |
|----------------------|--------------------|--------|---------------|
| RR-SB-C7-2436 | 6-8-16 / 1508 | SO | 1 |
| RR-SS-C8-0006 | / 1509 | | 1 |
| RR-SB-C8-0612 | / 1510 | | 1 |
| RR-SB-C8-1224 | / 1511 | | 1 |
| RR-Dup05-060816 | / 1465 | | 1 |
| RR-Dup06-060816 | / 1425 | | 1 |
| RR-Dup07-060816 | / 1440 | | 1 |
| RR-Dup08-060816 | / 1455 | | 1 |
| RR-SS-D1-0006 | / 1520 | | 1 |
| RR-SB-D1-0612 | / 1521 | | 1 |
| RR-SB-D1-1224 | / 1522 | | 1 |
| RR-SS-D2-0006 | / 1523 | | 1 |
| RR-SB-D2-0612 | / 1524 | | 1 |
| RR-SB-D2-1224 | / 1525 | | 1 |
| RR-SB-D2-2436 | / 1526 | | 1 |
| RR-SS-D3-0006 | / 1527 | | 1 |

Lead

HOLD

HOLD

HOLD

HOLD

COMMENTS _____

| | | | | | |
|--|----------------------------|-----------------------------------|------------------------------|-------------|-------------------------------------|
| Relinquished By: (Signature) <i>[Signature]</i> | Date / Time 6-9-16/1600 | Received By: (Signature) FedEx | Relinquished By: (Signature) | Date / Time | Received By: (Signature) 8-16-16 |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) 09/23 |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client: See Page 1 Contact: _____ Phone #: () () Fax #: () ()
 Address: See Page 1 State: _____ Zip Code: _____
 Purchase Order #: _____ Proj. Name / No.: _____ Katahdin Quote #: _____
 Bill (if different than above): _____ Address: _____

Sampler (Print / Sign): _____ Copies To: _____

LAB USE ONLY WORK ORDER #: SJ4230
 KATAHDIN PROJECT NUMBER: _____
 REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: _____
 TEMP°C: _____ TEMP BLANK INTACT NOT INTACT

| ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. |
| Y | N | Y | N | Y | N | Y | N | Y | N | Y | N |

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Lead | | | | | | | | | | | | | | | |
|----------------------|--------------------|--------|---------------|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| RR-SB-D3-0612 | 6-8-16/1528 | SO | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-D3-1224 | /1529 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-D4-2436 | /1531 | | 2 | 2 | | | | | | | | | | | | | | | |
| RR-SB-D3-2436 | /1530 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SS-D5-0006 | /1537 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-D5-0612 | /1538 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-D5-1224 | /1539 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-D5-2436 | /1540 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SS-D6-0006 | /1541 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-D6-0612 | /1542 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-D6-1224 | /1543 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-D6-2436 | /1543 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SS-D7-0006 | /1559 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-D7-0612 | /1600 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-D7-1224 | /1601 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-D7-2436 | ✓ /1602 | ✓ | 1 | 1 | | | | | | | | | | | | | | | |

COMMENTS

| | | | | | |
|--|-----------------------------------|--|------------------------------|-------------|--|
| Relinquished By: (Signature) <u>[Signature]</u> | Date / Time <u>6-8-16 1600</u> | Received By: (Signature) <u>FedEx</u> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <u>[Signature]</u> <u>6-10-16</u> <u>09:50</u> |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client: See Page 1 Contact: _____ Phone #: (____) _____ Fax #: (____) _____
 Address: _____ City: _____ State: _____ Zip Code: _____
 Purchase Order #: _____ Proj. Name / No.: _____ Katahdin Quote #: _____

Bill (if different than above): _____ Address: _____
 Sampler (Print / Sign): _____ Copies To: _____

LAB USE ONLY WORK ORDER #: SJ4230/SJ4231
 KATAHDIN PROJECT NUMBER: _____
 REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO.: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

| ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill |
| <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N |
| | | | | | | | | | | |

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Lead | | | | | | | | | | | | | | | | |
|----------------------|--------------------|--------|---------------|------|---|-------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| RR-SS-D8-0006 | 6-8-14 / 1603 | SO | 1 | 1 | | | | | | | | | | | | | | | | |
| RR-SB-D8-0612 | / 1604 | | 2 | 2 | 2 | MSMSD | | | | | | | | | | | | | | |
| RR-SB-D8-1224 | / 1605 | | 1 | 1 | | | | | | | | | | | | | | | | |
| RR-Dup 09-060816 | / 1507 | | 1 | 1 | | | | | | | | | | | | | | | | |
| RR-Dup 10-060816 | / 1545 | | 1 | 1 | | | | | | | | | | | | | | | | |
| RR-Dup 11-060816 | ↓ / 1620 | | 1 | 1 | | | | | | | | | | | | | | | | |
| RR-SS-E1-0006 | 6-9-16 / 0738 | | 1 | 1 | | | | | | | | | | | | | | | | |
| RR-SB-E1-0612 | / 0739 | | 1 | 1 | | | | | | | | | | | | | | | | |
| RR-SB-E1-1224 | / 0740 | | 1 | 1 | | | | | | | | | | | | | | | | |
| RR-SS-E2-0006 | / 0741 | | 1 | 1 | | | | | | | | | | | | | | | | |
| RR-SB-E2-0612 | / 0742 | | 1 | 1 | | | | | | | | | | | | | | | | |
| RR-SB-E2-1224 | / 0743 | | 1 | 1 | | | | | | | | | | | | | | | | |
| RR-SS-E3-0006 | / 0752 | | 1 | 1 | | | | | | | | | | | | | | | | |
| RR-SB-E3-0612 | / 0753 | | 1 | 1 | | | | | | | | | | | | | | | | |
| RR-SB-E3-1224 | / 0754 | | 1 | 1 | | | | | | | | | | | | | | | | |
| RR-SS-E4-0006 | ↓ / 0755 | ↓ | 1 | 1 | | | | | | | | | | | | | | | | |

COMMENTS

| | | | | | |
|--|-----------------------------------|--|------------------------------|-------------|---|
| Relinquished By: (Signature) <u>[Signature]</u> | Date / Time <u>6-9-16 1600</u> | Received By: (Signature) <u>FedEx</u> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <u>[Signature]</u> |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <u>6-10-16 0930</u> |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

METALS SAMPLE FLAGGING

| FLAG | SPECIFIED MEANING |
|-------------|--|
| E | The reported value is estimated because of the presence of interference (as indicated by serial dilution). |
| N | The pre-digestion spiked sample recovery is not within control limits. |
| * | The duplicate sample analysis relative percent difference (RPD) is not within control limits. |
| B | Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample. |
| A | The post-digestion spiked sample recovery is not within control limits. |
| • | Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits. |
| U | <p>The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ) (previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.</p> <p>Note: All results reported as “U” MDL have a 50% rate for false negatives compared to those results reported as “U” PQL/LOQ or “U” LOD, where the rate of false negatives is <1%.</p> |
| J | The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL). |
| Q | One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV). |

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL "U" LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level (PQL) or LOQ could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1 - pH

H2 - DO

H3 - sulfite

H4 - residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

M1 The matrix spike and/or matrix spike duplicate recovery performed on this sample was outside of the laboratory acceptance criteria. Sample matrix is suspected. The laboratory criteria was met for the Laboratory Control Sample (LCS) analyzed concurrently with this sample.

M2 The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory acceptance criteria. The native sample concentration is greater than four times the spike added concentration so the spike added could not be distinguished from the native sample concentration.

R1 The relative percent difference (RPD) between the duplicate analyses performed on this sample was outside of the laboratory acceptance criteria (when both values are greater than ten times the PQL).

MCL Maximum Contaminant Level

NL No limit

NFL No Free Liquid Present

FLP Free Liquid Present

NOD No Odor Detected

TON Threshold Odor Number

D-1 As required by Method 5210B, APHA Standard Methods for the Examination of Water and Wastewater (21st edition), the BOD value reported for this sample is 'qualified' because the check standard run concurrently with the sample analysis did not meet the criteria specified in the method (198 +/- 30.5 mg/L). These results may not be reportable for compliance purposes.

D-2 The measured final dissolved oxygen concentrations of all dilutions were less than the method-specified limit of 1 mg/L. The reported BOD result was calculated assuming a final oxygen concentration equal to 1 mg/L. The reported value should be considered a minimum value.

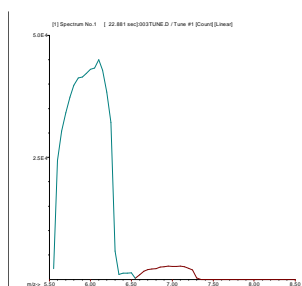
D-3 The dilution water used to prepare this sample did not meet the method and/or regulatory criteria of less than 0.2 or 0.4 mg/L dissolved oxygen (DO) uptake over the five day period of incubation. These results may not be reportable for compliance purposes.

6020 QC Tune Report

Data File: C:\ICPCHEM\1\DATA\JJF13A.B\003TUNE.D
 Date Acquired: Jun 13 2016 01:08 pm
 Acq. Method: TN6020E.M
 Operator: EAM
 Sample Name: 6020 TUNE
 Misc Info:
 Vial Number: 1107
 Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

| Element | Actual | Required | Flag |
|---------|--------|----------|------|
| 7 Li | 2.22 | 5.00 | |
| 59 Co | 0.02 | 5.00 | |
| 115 In | 0.60 | 5.00 | |
| 205 Tl | 1.48 | 5.00 | |



7 Li

Mass Calib.

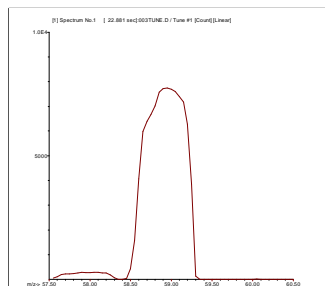
Actual: 7.00
 Required: 6.90 - 7.10

Flag:

Peak Width

Actual: 0.65
 Required: 0.90

Flag:



59 Co

Mass Calib.

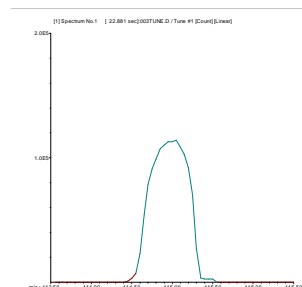
Actual: 58.95
 Required: 58.90 - 59.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:



115 In

Mass Calib.

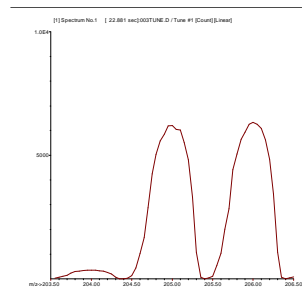
Actual: 115.00
 Required: 114.90 - 115.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:



205 Tl

Mass Calib.

Actual: 205.00
 Required: 204.90 - 205.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4230

Concentration Units: ug/L

SAMPLE: ICB

File: JJF13A Jun 13, 2016 14:08

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.345 | J |
| MOLYBDENUM | 0.051 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 14:42

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.748 | J |
| MOLYBDENUM | 0.065 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 6.660 | J |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 15:23

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.446 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.610 | J |
| MOLYBDENUM | 0.027 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4230

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 13, 2016 16:06

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.634 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.892 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 16:48

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.874 | J |
| MOLYBDENUM | 0.032 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 17:31

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 4.001 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.360 | J |
| MOLYBDENUM | 0.024 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4230

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 13, 2016 18:15

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 7.084 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.607 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 18:58

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.862 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.258 | J |
| MOLYBDENUM | 0.025 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 19:41

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.022 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4230

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 13, 2016 20:20

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 3.036 | J |
| CALCIUM | 6.900 | U |
| IRON | 9.065 | J |
| LEAD | 0.051 | J |
| MAGNESIUM | 1.279 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 21:03

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.023 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 21:47

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.980 | J |
| CALCIUM | 6.900 | U |
| IRON | 7.932 | J |
| LEAD | 0.872 | B |
| MAGNESIUM | 1.062 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4230

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 13, 2016 22:30

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 8.131 | J |
| LEAD | 0.756 | B |
| MAGNESIUM | 0.846 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 23:10

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.058 | J |
| CALCIUM | 8.772 | J |
| IRON | 6.268 | J |
| LEAD | 0.225 | B |
| MAGNESIUM | 0.764 | J |
| MOLYBDENUM | 0.024 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 23:53

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 7.403 | J |
| LEAD | 0.063 | J |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.030 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4230

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 14, 2016 0:37

| Analyte | Result | C |
|----------------|---------------|----------|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.155 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 3.531 | J |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4230

Concentration Units: ug/L

SAMPLE: ICB

File: JJF14B Jun 14, 2016 18:57

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.309 | J |
| MOLYBDENUM | 0.047 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF14B Jun 14, 2016 19:32

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.559 | J |
| MOLYBDENUM | 0.059 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 6.380 | J |

SAMPLE: CCB

File: JJF14B Jun 14, 2016 20:10

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.100 | J |
| MAGNESIUM | 0.924 | J |
| MOLYBDENUM | 0.022 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 3.067 | J |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4230

Concentration Units: ug/L

SAMPLE: CCB

File: JJF14B Jun 14, 2016 20:52

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.143 | J |
| MAGNESIUM | 0.685 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF14B Jun 14, 2016 21:34

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF14B Jun 14, 2016 22:16

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.653 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF12IMS4

Matrix: SOIL

SDG Name: SJ4230

QC Batch ID: JF12IMS4

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| LEAD | 0.131 | B |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF12IMS5

Matrix: SOIL

SDG Name: SJ4230

QC Batch ID: JF12IMS5

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| LEAD | 0.103 | B |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF13IMS2

Matrix: SOIL

SDG Name: SJ4230

QC Batch ID: JF13IMS2

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| LEAD | 0.024 | J |

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services SDG Name: SJ4230

Concentration Units: ug/L

SAMPLE: ICSA

File: JJF13A Jun 13, 2016 14:24

| Analyte | TRUE | FOUND | % R |
|------------|--------|-------|------|
| ALUMINUM | 100000 | 96090 | 96.1 |
| CALCIUM | 100000 | 93120 | 93.1 |
| IRON | 100000 | 91500 | 91.5 |
| LEAD | 0 | 0 | |
| MAGNESIUM | 100000 | 93210 | 93.2 |
| MOLYBDENUM | 2000 | 1972 | 98.6 |
| POTASSIUM | 100000 | 94720 | 94.7 |
| SODIUM | 100000 | 95460 | 95.5 |

SAMPLE: ICSAB

File: JJF13A Jun 13, 2016 14:28

| Analyte | TRUE | FOUND | % R |
|------------|--------|-------|-------|
| ALUMINUM | 100000 | 96680 | 96.7 |
| CALCIUM | 100000 | 93830 | 93.8 |
| IRON | 100000 | 91810 | 91.8 |
| LEAD | 20 | 21 | 105.0 |
| MAGNESIUM | 100000 | 92630 | 92.6 |
| MOLYBDENUM | 2000 | 2000 | 100.0 |
| POTASSIUM | 100000 | 94930 | 94.9 |
| SODIUM | 100000 | 95580 | 95.6 |

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services SDG Name: SJ4230

Concentration Units: ug/L

| SAMPLE: ICSA | | | | SAMPLE: ICSAB | | | |
|---------------------|-------------|--------------|------------|----------------------|-------------|--------------|------------|
| File: JJF14B | | Jun 14, 2016 | 19:14 | File: JJF14B | | Jun 14, 2016 | 19:18 |
| Analyte | TRUE | FOUND | % R | Analyte | TRUE | FOUND | % R |
| ALUMINUM | 100000 | 93510 | 93.5 | ALUMINUM | 100000 | 94390 | 94.4 |
| CALCIUM | 100000 | 92880 | 92.9 | CALCIUM | 100000 | 93090 | 93.1 |
| IRON | 100000 | 91570 | 91.6 | IRON | 100000 | 93650 | 93.7 |
| LEAD | 0 | 0 | | LEAD | 20 | 21 | 105.0 |
| MAGNESIUM | 100000 | 92810 | 92.8 | MAGNESIUM | 100000 | 92780 | 92.8 |
| MOLYBDENUM | 2000 | 2013 | 100.6 | MOLYBDENUM | 2000 | 2038 | 101.9 |
| POTASSIUM | 100000 | 95330 | 95.3 | POTASSIUM | 100000 | 95570 | 95.6 |
| SODIUM | 100000 | 93880 | 93.9 | SODIUM | 100000 | 94930 | 94.9 |

5A
SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services
Matrix: SOIL
Percent Solids: 90.0

Client Field ID: RR-SS-D8-0006S
SDG Name: SJ4230
Lab Sample ID: SJ4230-025S

Concentration Units : mg/Kg drywt

| Analyte | Spiked | | Sample | | Spike | %R | Q | Control Limits (%R) | | M |
|-------------|--------|--------|--------|---|-------|---------|---|---------------------|------|----|
| | Sample | Result | Result | C | | | | Low | High | |
| LEAD, TOTAL | | 3200 | 2180 | | 5.88 | 17333.5 | N | 84 | 118 | MS |

Comments:

sample result > 4x
spike

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-D8-0006S

Matrix: SOIL

SDG Name: SJ4230

Percent Solids: 90.0

Lab Sample ID: SJ4230-025A

Concentration Units : ug/L

| Analyte | Spiked | | Sample | | Spike | %R | Q | Control Limits (%R) | | M |
|-------------|--------|--------|--------|---|-------|-------|---|---------------------|------|----|
| | Sample | Result | Result | C | | | | Low | High | |
| LEAD, TOTAL | | 752 | 748 | C | 2 | 185.0 | A | 80 | 120 | MS |

Comments:

sample result > 4x spike

6
DUPLICATES

Lab Name: Katahdin Analytical Services
Matrix: SOIL
Percent Solids: 90.0

Client Field ID: RR-SS-D8-0006D
SDG Name: SJ4230
Lab Sample ID: SJ4230-025D

Concentration Units : mg/Kg drywt

| Analyte | Control Limits | Sample Result | C | Duplicate Result | C | RPD | Q | M |
|-------------|----------------|---------------|---|------------------|---|-------|---|----|
| LEAD, TOTAL | | 2185.8716 | | 9767.2237 | | 126.9 | * | MS |

Comments:

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF12IMS4**Matrix:** SOIL**SDG Name:** SJ4230**QC Batch ID:** JF12IMS4**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 9.96 | 99.6 | 84 | 118 |

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF12IMS5**Matrix:** SOIL**SDG Name:** SJ4230**QC Batch ID:** JF12IMS5**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 10.4 | 104.5 | 84 | 118 |

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF13IMS2**Matrix:** SOIL**SDG Name:** SJ4230**QC Batch ID:** JF13IMS2**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 9.84 | 98.4 | 84 | 118 |

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services**Client Field ID:** RR-SS-D8-0006L**Matrix:** SOIL**SDG Name:** SJ4230**Lab Sample ID:** SJ4230-025L**Concentration Units: ug/L**

| Analyte | Sample Result | C | Dilution | Result | C | % Difference | Q | M |
|----------------|----------------------|----------|-----------------|---------------|----------|---------------------|----------|----------|
| LEAD, TOTAL | 748 | | | 742 | | 0.8 | | MS |

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 3/14/2016**

| Analyte | Concentration Units: ug/L | | |
|------------|---------------------------|-------|----|
| | PQL/LOQ | IDL | M |
| ALUMINUM | 300 | 1.4 | MS |
| CALCIUM | 100 | 6.9 | MS |
| IRON | 100 | 6.2 | MS |
| LEAD | 0.20 | 0.041 | MS |
| MAGNESIUM | 100 | 0.65 | MS |
| MOLYBDENUM | 1.0 | 0.021 | MS |
| POTASSIUM | 1000 | 13. | MS |
| SODIUM | 1000 | 2.9 | MS |

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 1/26/2011**

| Analyte | LOD | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| LEAD | 0.010 | mg/Kg | MS | SW846 3050B / SW846 6020A |

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 1/26/2011**

| Analyte | MDL | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| LEAD | 0.0014 | mg/kg | MS | SW846 3050B / SW846 6020A |

12
ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services

Instrument Code: J

Instrument Name: AGILENT 7500 ICP-MS

Date: 4/4/2016

Concentration Units: ug/L

| Analyte | Integration Time (sec) | Linear Range | M |
|------------|------------------------|--------------|----|
| ALUMINUM | 0.01 | 200000 | MS |
| CALCIUM | 0.03 | 200000 | MS |
| IRON | 0.03 | 100000 | MS |
| LEAD | 0.10 | 2000 | MS |
| MAGNESIUM | 0.05 | 200000 | MS |
| MOLYBDENUM | 0.10 | 1000 | MS |
| POTASSIUM | 0.01 | 200000 | MS |
| SODIUM | 0.01 | 200000 | MS |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF12IMS4**Matrix:** SOIL**SDG Name:** SJ4230**Method:** MS**Prep Date:** 06/12/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF12IMS4 | LC SOJF12IMS4 | 1 | 0.1 | |
| PBSJF12IMS4 | PBSJF12IMS4 | 1 | 0.1 | |
| RR-SS-D8-0006 | SJ4230-025 | 1.9 | 0.1 | A |
| RR-SS-D8-0006D | SJ4230-025D | 1.81 | 0.1 | A |
| RR-SS-D8-0006S | SJ4230-025S | 1.89 | 0.1 | A |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF12IMS5**Matrix:** SOIL**SDG Name:** SJ4230**Method:** MS**Prep Date:** 06/12/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF12IMS5 | LC SOJF12IMS5 | 1 | 0.1 | |
| PBSJF12IMS5 | PBSJF12IMS5 | 1 | 0.1 | |
| RR-SS-D1-0006 | SJ4230-001 | 1.39 | 0.1 | A |
| RR-SB-D1-0612 | SJ4230-002 | 1.73 | 0.1 | A |
| RR-SS-D2-0006 | SJ4230-004 | 1.64 | 0.1 | A |
| RR-SB-D2-0612 | SJ4230-005 | 2.33 | 0.1 | A |
| RR-SB-D2-1224 | SJ4230-006 | 1.79 | 0.1 | A |
| RR-SS-D3-0006 | SJ4230-008 | 1.35 | 0.1 | A |
| RR-SB-D3-0612 | SJ4230-009 | 1.71 | 0.1 | A |
| RR-SB-D3-1224 | SJ4230-010 | 1.61 | 0.1 | A |
| RR-SS-D5-0006 | SJ4230-013 | 2.03 | 0.1 | A |
| RR-SB-D5-0612 | SJ4230-014 | 1.47 | 0.1 | A |
| RR-SB-D5-1224 | SJ4230-015 | 1.24 | 0.1 | A |
| RR-SS-D6-0006 | SJ4230-017 | 1.49 | 0.1 | A |
| RR-SB-D6-0612 | SJ4230-018 | 1.66 | 0.1 | A |
| RR-SB-D6-1224 | SJ4230-019 | 1.87 | 0.1 | A |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF13IMS2**Matrix:** SOIL**SDG Name:** SJ4230**Method:** MS**Prep Date:** 06/13/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF13IMS2 | LC SOJF13IMS2 | 1 | 0.1 | |
| PBSJF13IMS2 | PBSJF13IMS2 | 1 | 0.1 | |
| RR-SS-D7-0006 | SJ4230-021 | 1.32 | 0.1 | A |
| RR-SB-D7-0612 | SJ4230-022 | 1.7 | 0.1 | A |
| RR-SB-D7-1224 | SJ4230-023 | 1.59 | 0.1 | A |
| RR-SB-D8-0612 | SJ4230-026 | 1.95 | 0.1 | A |
| RR-DUP09-060816 | SJ4230-028 | 2.08 | 0.1 | A |
| RR-DUP11-060816 | SJ4230-030 | 1.84 | 0.1 | A |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4230

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| 6020 Tune | | 1 | 13:08 | | | | | | | |
| 200.8 Tune | | 1 | 13:11 | | | | | | | |
| Cal Blank | | 1 | 13:58 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| Cal Std | | 1 | 14:01 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICV | | 1 | 14:04 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICB | | 1 | 14:08 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| PQL | | 1 | 14:11 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| <i>ZZZZZZ</i> | | 1 | 14:14 | | | | | | | |
| <i>ZZZZZZ</i> | | 1 | 14:17 | | | | | | | |
| <i>ZZZZZZ</i> | | 1 | 14:21 | | | | | | | |
| ICSA | | 1 | 14:24 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICSAB | | 1 | 14:28 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| <i>ZZZZZZ</i> | | 1 | 14:32 | | | | | | | |
| <i>ZZZZZZ</i> | | 1 | 14:35 | | | | | | | |
| CCV | | 1 | 14:38 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 14:42 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| <i>ZZZZZZ</i> | | 5 | 14:45 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 14:48 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 14:52 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 14:55 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 14:59 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 15:02 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 15:06 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 15:09 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 15:13 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 15:16 | | | | | | | |
| CCV | | 1 | 15:20 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4230

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| CCB | | 1 | 15:23 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 15:27 | | | | | | | |
| ZZZZZZ | | 10 | 15:30 | | | | | | | |
| ZZZZZZ | | 10 | 15:34 | | | | | | | |
| ZZZZZZ | | 10 | 15:37 | | | | | | | |
| ZZZZZZ | | 10 | 15:41 | | | | | | | |
| ZZZZZZ | | 10 | 15:44 | | | | | | | |
| ZZZZZZ | | 10 | 15:48 | | | | | | | |
| ZZZZZZ | | 10 | 15:51 | | | | | | | |
| ZZZZZZ | | 10 | 15:55 | | | | | | | |
| ZZZZZZ | | 10 | 15:58 | | | | | | | |
| CCV | | 1 | 16:02 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 16:06 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 16:09 | | | | | | | |
| ZZZZZZ | | 10 | 16:13 | | | | | | | |
| ZZZZZZ | | 10 | 16:16 | | | | | | | |
| ZZZZZZ | | 10 | 16:20 | | | | | | | |
| ZZZZZZ | | 10 | 16:23 | | | | | | | |
| ZZZZZZ | | 10 | 16:27 | | | | | | | |
| ZZZZZZ | | 10 | 16:30 | | | | | | | |
| ZZZZZZ | | 10 | 16:34 | | | | | | | |
| ZZZZZZ | | 10 | 16:37 | | | | | | | |
| ZZZZZZ | | 50 | 16:41 | | | | | | | |
| CCV | | 1 | 16:44 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 16:48 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 16:52 | | | | | | | |
| ZZZZZZ | | 10 | 16:55 | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4230

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| ZZZZZZ | | 10 | 16:59 | | | | | | | |
| ZZZZZZ | | 5 | 17:02 | | | | | | | |
| ZZZZZZ | | 5 | 17:06 | | | | | | | |
| ZZZZZZ | | 10 | 17:10 | | | | | | | |
| ZZZZZZ | | 10 | 17:13 | | | | | | | |
| ZZZZZZ | | 10 | 17:17 | | | | | | | |
| ZZZZZZ | | 10 | 17:20 | | | | | | | |
| ZZZZZZ | | 10 | 17:24 | | | | | | | |
| CCV | | 1 | 17:28 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 17:31 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 17:35 | | | | | | | |
| ZZZZZZ | | 10 | 17:38 | | | | | | | |
| ZZZZZZ | | 10 | 17:42 | | | | | | | |
| ZZZZZZ | | 10 | 17:46 | | | | | | | |
| ZZZZZZ | | 10 | 17:49 | | | | | | | |
| ZZZZZZ | | 10 | 17:53 | | | | | | | |
| ZZZZZZ | | 10 | 17:56 | | | | | | | |
| ZZZZZZ | | 10 | 18:00 | | | | | | | |
| ZZZZZZ | | 10 | 18:04 | | | | | | | |
| ZZZZZZ | | 10 | 18:07 | | | | | | | |
| CCV | | 1 | 18:11 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 18:15 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 18:18 | | | | | | | |
| ZZZZZZ | | 10 | 18:22 | | | | | | | |
| ZZZZZZ | | 10 | 18:25 | | | | | | | |
| ZZZZZZ | | 10 | 18:29 | | | | | | | |
| ZZZZZZ | | 50 | 18:33 | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4230

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|--|--|--|
| ZZZZZZ | | 10 | 18:36 | | | | | | | | | | |
| ZZZZZZ | | 10 | 18:40 | | | | | | | | | | |
| ZZZZZZ | | 10 | 18:43 | | | | | | | | | | |
| ZZZZZZ | | 10 | 18:47 | | | | | | | | | | |
| ZZZZZZ | | 5 | 18:50 | | | | | | | | | | |
| CCV | | 1 | 18:54 | Al | Ca | Fe Pb | Mg | Mo | K | Na | | | |
| CCB | | 1 | 18:58 | Al | Ca | Fe Pb | Mg | Mo | K | Na | | | |
| ZZZZZZ | | 5 | 19:01 | | | | | | | | | | |
| ZZZZZZ | | 10 | 19:05 | | | | | | | | | | |
| ZZZZZZ | | 10 | 19:08 | | | | | | | | | | |
| ZZZZZZ | | 10 | 19:12 | | | | | | | | | | |
| ZZZZZZ | | 10 | 19:16 | | | | | | | | | | |
| ZZZZZZ | | 10 | 19:19 | | | | | | | | | | |
| ZZZZZZ | | 10 | 19:23 | | | | | | | | | | |
| ZZZZZZ | | 10 | 19:26 | | | | | | | | | | |
| ZZZZZZ | | 10 | 19:30 | | | | | | | | | | |
| ZZZZZZ | | 10 | 19:34 | | | | | | | | | | |
| CCV | | 1 | 19:37 | Al | Ca | Fe Pb | Mg | Mo | K | Na | | | |
| CCB | | 1 | 19:41 | Al | Ca | Fe Pb | Mg | Mo | K | Na | | | |
| ZZZZZZ | | 10 | 19:44 | | | | | | | | | | |
| ZZZZZZ | | 10 | 19:48 | | | | | | | | | | |
| ZZZZZZ | | 10 | 19:52 | | | | | | | | | | |
| ZZZZZZ | | 10 | 19:55 | | | | | | | | | | |
| ZZZZZZ | | 10 | 19:59 | | | | | | | | | | |
| ZZZZZZ | | 10 | 20:02 | | | | | | | | | | |
| ZZZZZZ | | 10 | 20:06 | | | | | | | | | | |
| ZZZZZZ | | 10 | 20:09 | | | | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4230

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|--|
| ZZZZZZ | | 10 | 20:13 | | | | | | | | |
| CCV | | 1 | 20:17 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 20:20 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZZ | | 10 | 20:24 | | | | | | | | |
| ZZZZZZ | | 50 | 20:27 | | | | | | | | |
| ZZZZZZ | | 10 | 20:31 | | | | | | | | |
| ZZZZZZ | | 10 | 20:35 | | | | | | | | |
| ZZZZZZ | | 10 | 20:38 | | | | | | | | |
| PBSJF12IMS4 | | 5 | 20:42 | | | Pb | | | | | |
| LCSOJF12IMS4 | | 5 | 20:45 | | | Pb | | | | | |
| ZZZZZZ | | 10 | 20:49 | | | | | | | | |
| ZZZZZZ | | 10 | 20:52 | | | | | | | | |
| ZZZZZZ | | 10 | 20:56 | | | | | | | | |
| CCV | | 1 | 21:00 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 21:03 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZZ | | 10 | 21:07 | | | | | | | | |
| ZZZZZZ | | 10 | 21:11 | | | | | | | | |
| ZZZZZZ | | 10 | 21:14 | | | | | | | | |
| ZZZZZZ | | 10 | 21:18 | | | | | | | | |
| ZZZZZZ | | 10 | 21:22 | | | | | | | | |
| ZZZZZZ | | 10 | 21:25 | | | | | | | | |
| ZZZZZZ | | 10 | 21:29 | | | | | | | | |
| ZZZZZZ | | 10 | 21:32 | | | | | | | | |
| ZZZZZZ | | 10 | 21:36 | | | | | | | | |
| ZZZZZZ | | 10 | 21:39 | | | | | | | | |
| CCV | | 1 | 21:43 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 21:47 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |

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ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4230

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|---------------|------|-------|----------|----|-------|----|----|---|----|--|
| ZZZZZZ | | 10 | 21:51 | | | | | | | | |
| ZZZZZZ | | 10 | 21:54 | | | | | | | | |
| ZZZZZZ | | 10 | 21:58 | | | | | | | | |
| ZZZZZZ | | 10 | 22:01 | | | | | | | | |
| ZZZZZZ | | 10 | 22:05 | | | | | | | | |
| ZZZZZZ | | 10 | 22:09 | | | | | | | | |
| ZZZZZZ | | 10 | 22:12 | | | | | | | | |
| ZZZZZZ | | 50 | 22:16 | | | | | | | | |
| ZZZZZZ | | 10 | 22:19 | | | | | | | | |
| ZZZZZZ | | 10 | 22:23 | | | | | | | | |
| CCV | | 1 | 22:26 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 22:30 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZZ | | 10 | 22:34 | | | | | | | | |
| ZZZZZZ | | 5 | 22:37 | | | | | | | | |
| LCSOJF12IMS5 | | 5 | 22:41 | | | Pb | | | | | |
| ZZZZZZ | | 10 | 22:45 | | | | | | | | |
| ZZZZZZ | | 10 | 22:48 | | | | | | | | |
| ZZZZZZ | | 10 | 22:52 | | | | | | | | |
| ZZZZZZ | | 10 | 22:55 | | | | | | | | |
| SJ4230-001 | RR-SS-D1-0006 | 10 | 22:59 | | | Pb | | | | | |
| SJ4230-002 | RR-SB-D1-0612 | 10 | 23:02 | | | Pb | | | | | |
| CCV | | 1 | 23:06 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 23:10 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| SJ4230-004 | RR-SS-D2-0006 | 10 | 23:13 | | | Pb | | | | | |
| SJ4230-005 | RR-SB-D2-0612 | 10 | 23:17 | | | Pb | | | | | |
| SJ4230-006 | RR-SB-D2-1224 | 10 | 23:21 | | | Pb | | | | | |
| SJ4230-008 | RR-SS-D3-0006 | 10 | 23:24 | | | Pb | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4230

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | | |
|---------------|---------------|------|-------|----------|----|----|----|----|----|---|----|----|
| SJ4230-009 | RR-SB-D3-0612 | 10 | 23:28 | | | | | | | | | Pb |
| SJ4230-010 | RR-SB-D3-1224 | 10 | 23:32 | | | | | | | | | Pb |
| SJ4230-013 | RR-SS-D5-0006 | 10 | 23:35 | | | | | | | | | Pb |
| SJ4230-014 | RR-SB-D5-0612 | 10 | 23:39 | | | | | | | | | Pb |
| SJ4230-015 | RR-SB-D5-1224 | 10 | 23:43 | | | | | | | | | Pb |
| SJ4230-017 | RR-SS-D6-0006 | 10 | 23:46 | | | | | | | | | Pb |
| CCV | | 1 | 23:50 | Al | Ca | Fe | Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 23:53 | Al | Ca | Fe | Pb | Mg | Mo | K | Na | |
| SJ4230-018 | RR-SB-D6-0612 | 10 | 23:57 | | | | | | | | | Pb |
| SJ4230-019 | RR-SB-D6-1224 | 10 | 0:01 | | | | | | | | | Pb |
| <i>ZZZZZZ</i> | | 10 | 0:05 | | | | | | | | | |
| <i>ZZZZZZ</i> | | 50 | 0:08 | | | | | | | | | |
| <i>ZZZZZZ</i> | | 10 | 0:12 | | | | | | | | | |
| <i>ZZZZZZ</i> | | 10 | 0:15 | | | | | | | | | |
| <i>ZZZZZZ</i> | | 10 | 0:19 | | | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 0:23 | | | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 0:26 | | | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 0:30 | | | | | | | | | |
| CCV | | 1 | 0:34 | Al | Ca | Fe | Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 0:37 | Al | Ca | Fe | Pb | Mg | Mo | K | Na | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4230

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF14B

Date: 6/14/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| 6020 Tune | | 1 | 16:25 | | | | | | | |
| 200.8 Tune | | 1 | 16:27 | | | | | | | |
| Cal Blank | | 1 | 18:47 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| Cal Std | | 1 | 18:50 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICV | | 1 | 18:54 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICB | | 1 | 18:57 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| PQL | | 1 | 19:01 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 19:04 | | | | | | | |
| ZZZZZZ | | 1 | 19:07 | | | | | | | |
| ZZZZZZ | | 1 | 19:11 | | | | | | | |
| ICSA | | 1 | 19:14 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICSAB | | 1 | 19:18 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 19:22 | | | | | | | |
| ZZZZZZ | | 1 | 19:25 | | | | | | | |
| CCV | | 1 | 19:29 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 19:32 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 19:36 | | | | | | | |
| ZZZZZZ | | 1 | 19:39 | | | | | | | |
| ZZZZZZ | | 1 | 19:43 | | | | | | | |
| ZZZZZZ | | 1 | 19:46 | | | | | | | |
| ZZZZZZ | | 1 | 19:50 | | | | | | | |
| ZZZZZZ | | 1 | 19:53 | | | | | | | |
| ZZZZZZ | | 50 | 19:57 | | | | | | | |
| ZZZZZZ | | 50 | 20:00 | | | | | | | |
| ZZZZZZ | | 100 | 20:04 | | | | | | | |
| CCV | | 1 | 20:07 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 20:10 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4230

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF14B

Date: 6/14/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|-----------------|------|-------|----------|----|-------|----|----|---|----|--|
| ZZZZZZ | | 50 | 20:14 | | | | | | | | |
| ZZZZZZ | | 50 | 20:18 | | | | | | | | |
| ZZZZZZ | | 50 | 20:21 | | | | | | | | |
| ZZZZZZ | | 50 | 20:24 | | | | | | | | |
| ZZZZZZ | | 50 | 20:28 | | | | | | | | |
| ZZZZZZ | | 50 | 20:31 | | | | | | | | |
| SJ4230-025 | RR-SS-D8-0006 | 50 | 20:35 | | | | Pb | | | | |
| SJ4230-025L | RR-SS-D8-0006L | 250 | 20:38 | | | | Pb | | | | |
| SJ4230-025A | RR-SS-D8-0006A | 50 | 20:42 | | | | Pb | | | | |
| SJ4230-025D | RR-SS-D8-0006D | 100 | 20:45 | | | | Pb | | | | |
| CCV | | 1 | 20:49 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 20:52 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| SJ4230-025S | RR-SS-D8-0006S | 50 | 20:56 | | | | Pb | | | | |
| PBSJF12IMS5 | | 5 | 20:59 | | | | Pb | | | | |
| ZZZZZZ | | 200 | 21:03 | | | | | | | | |
| ZZZZZZ | | 10 | 21:06 | | | | | | | | |
| ZZZZZZ | | 10 | 21:10 | | | | | | | | |
| ZZZZZZ | | 10 | 21:13 | | | | | | | | |
| PBSJF13IMS2 | | 5 | 21:17 | | | | Pb | | | | |
| LCSOJF13IMS2 | | 5 | 21:20 | | | | Pb | | | | |
| SJ4230-021 | RR-SS-D7-0006 | 10 | 21:24 | | | | Pb | | | | |
| SJ4230-022 | RR-SB-D7-0612 | 10 | 21:27 | | | | Pb | | | | |
| CCV | | 1 | 21:31 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 21:34 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| SJ4230-023 | RR-SB-D7-1224 | 10 | 21:38 | | | | Pb | | | | |
| SJ4230-026 | RR-SB-D8-0612 | 10 | 21:41 | | | | Pb | | | | |
| SJ4230-028 | RR-DUP09-060816 | 10 | 21:45 | | | | Pb | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4230

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF14B

Date: 6/14/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|-----------------|------|-------|----------|----|-------|----|----|---|----|--|
| SJ4230-030 | RR-DUP11-060816 | 10 | 21:48 | | | Pb | | | | | |
| ZZZZZZ | | 10 | 21:52 | | | | | | | | |
| ZZZZZZ | | 10 | 21:55 | | | | | | | | |
| ZZZZZZ | | 10 | 21:59 | | | | | | | | |
| ZZZZZZ | | 10 | 22:02 | | | | | | | | |
| ZZZZZZ | | 10 | 22:06 | | | | | | | | |
| ZZZZZZ | | 10 | 22:09 | | | | | | | | |
| CCV | | 1 | 22:13 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 22:16 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |

| ANALYTE | ORIGINAL | ORIGINAL | DUPLICATE | DUPLICATE | RL | RPD | RPD > 50% | ORIGINAL SAMPLE CONC >5xRL | DUPLICATE SAMPLE CONC >5xRL | DIFFERENCE >4XRL |
|---------|---------------|----------|-----------------|-----------|------|-------|-----------|----------------------------|-----------------------------|------------------|
| LEAD | RR-SB-D1-0612 | 11.8 | RR-DUP09-060816 | 12.4 | 0.13 | 4.96 | FALSE | TRUE | TRUE | TRUE |
| LEAD | RR-SB-D8-0612 | 22.4 | RR-DUP11-060816 | 16.4 | 0.11 | 30.93 | FALSE | TRUE | TRUE | TRUE |

To: R. SOK
SDG: SJ4231

Notes – None.

EXECUTIVE SUMMARY

Laboratory Performance Issues: Lead was present in the blanks.

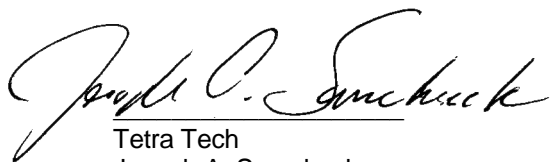
Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review" (August 2014). The text of this report has been formulated to address only those areas affecting data quality.

The text of this report has been formulated to address only those problem areas affecting data quality.



Tetra Tech
Leanne M. Ganser
Environmental Scientist/Data Validator



Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:

- Appendix A – Qualified Analytical Results
- Appendix B – Results as Reported by the Laboratory
- Appendix C – Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate
- Z4 = Sample activity is less than the at uncertainty at 3 standard deviations and greater than the MDC
- Z5 = Sample activity is less than the at uncertainty at 3 standard deviations and less than the MDC

| | | | | | | | | | | | | | |
|---|------------|-----------------|------|--------|-----------------|------|--------|-----------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4231 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-DUP12-060916 | | | RR-DUP13-060916 | | | RR-DUP14-060916 | | | RR-SB-E1-0612 | | |
| | LAB_ID | SJ4231-036 | | | SJ4231-037 | | | SJ4231-038 | | | SJ4231-002 | | |
| | SAMP_DATE | 6/9/2016 | | | 6/9/2016 | | | 6/9/2016 | | | 6/9/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 90.6 | | | 91.0 | | | 92.9 | | | 90.9 | | |
| | DUP_OF | RR-SB-E3-0612 | | | RR-SS-E6-0006 | | | RR-SB-F1-1224 | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 227 | | | 184 | | | 2.46 | | | 4.72 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4231 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SB-E2-0612 | | | RR-SB-E3-0612 | | | RR-SB-E4-0612 | | | RR-SB-E5-0612 | | |
| | LAB_ID | SJ4231-005 | | | SJ4231-008 | | | SJ4231-011 | | | SJ4231-013 | | |
| | SAMP_DATE | 6/9/2016 | | | 6/9/2016 | | | 6/9/2016 | | | 6/9/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 92.1 | | | 90.1 | | | 92.7 | | | 91.9 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 19 | | | 153 | | | 3.48 | | | 5.57 | U | A | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4231 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SB-E6-0612 | | | RR-SB-E7-0612 | | | RR-SB-E8-0612 | | | RR-SB-F1-0612 | | |
| | LAB_ID | SJ4231-017 | | | SJ4231-020 | | | SJ4231-023 | | | SJ4231-026 | | |
| | SAMP_DATE | 6/9/2016 | | | 6/9/2016 | | | 6/9/2016 | | | 6/9/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 91.5 | | | 92.9 | | | 93.2 | | | 91.3 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 16.5 | | | 5.22 | | | 28 | | | 6.88 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4231 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SB-F2-0612 | | | RR-SB-F3-0612 | | | RR-SB-F4-0612 | | | RR-SS-E1-0006 | | |
| | LAB_ID | SJ4231-029 | | | SJ4231-032 | | | SJ4231-035 | | | SJ4231-001 | | |
| | SAMP_DATE | 6/9/2016 | | | 6/9/2016 | | | 6/9/2016 | | | 6/9/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 92.9 | | | 90.9 | | | 93.2 | | | 88.6 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 3.5 | | | 11.3 | | | 2.98 | | | 20.3 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4231 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SS-E2-0006 | | | RR-SS-E3-0006 | | | RR-SS-E4-0006 | | | RR-SS-E5-0006 | | |
| | LAB_ID | SJ4231-004 | | | SJ4231-007 | | | SJ4231-010 | | | SJ4231-014 | | |
| | SAMP_DATE | 6/9/2016 | | | 6/9/2016 | | | 6/9/2016 | | | 6/9/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 90.5 | | | 87.6 | | | 91.9 | | | 89.5 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 67 | | | 209 | | | 62.4 | | | 187 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4231 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SS-E6-0006 | | | RR-SS-E7-0006 | | | RR-SS-E8-0006 | | | RR-SS-F1-0006 | | |
| | LAB_ID | SJ4231-016 | | | SJ4231-019 | | | SJ4231-022 | | | SJ4231-025 | | |
| | SAMP_DATE | 6/9/2016 | | | 6/9/2016 | | | 6/9/2016 | | | 6/9/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 90.9 | | | 90.6 | | | 91.8 | | | 90.5 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 151 | | | 91.3 | | | 152 | | | 16.2 | | | |

| | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4231 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SS-F2-0006 | | | RR-SS-F3-0006 | | | RR-SS-F4-0006 | | |
| | LAB_ID | SJ4231-028 | | | SJ4231-031 | | | SJ4231-034 | | |
| | SAMP_DATE | 6/9/2016 | | | 6/9/2016 | | | 6/9/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 91.5 | | | 88.0 | | | 87.4 | | |
| | DUP_OF | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 5.39 | | | 53.5 | | | 107 | | | |

Appendix B

Results as Reported by the Laboratory

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-E1-0006

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 88.6

Lab Sample ID: SJ4231-001

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 20.3 | | | MS | 10 | 0.097 | 0.0068 | 0.049 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-E1-0612

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 90.9

Lab Sample ID: SJ4231-002

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 4.72 | | | MS | 10 | 0.10 | 0.0073 | 0.052 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-E2-0006

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 90.5

Lab Sample ID: SJ4231-004

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 67.0 | | | MS | 10 | 0.12 | 0.0084 | 0.060 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-E2-0612

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 92.1

Lab Sample ID: SJ4231-005

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 19.0 | | | MS | 10 | 0.13 | 0.0092 | 0.065 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-E3-0006

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 87.6

Lab Sample ID: SJ4231-007

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 209 | | | MS | 10 | 0.18 | 0.013 | 0.092 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-E3-0612

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 90.0

Lab Sample ID: SJ4231-008

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 153 | | | MS | 10 | 0.14 | 0.0095 | 0.068 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-E4-0006

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 91.9

Lab Sample ID: SJ4231-010

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 62.4 | | | MS | 10 | 0.12 | 0.0086 | 0.061 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-E4-0612

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 92.7

Lab Sample ID: SJ4231-011

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 3.48 | | | MS | 10 | 0.15 | 0.010 | 0.074 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-E5-0612

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 91.8

Lab Sample ID: SJ4231-013

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | LOQ | ADJUSTED | |
|-----------|-------------|---------------|---|----|----|------|--------|----------|-----|
| | | | | | | | | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 5.57 | B | MS | 10 | 0.13 | 0.0094 | 0.067 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-E5-0006

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 89.5

Lab Sample ID: SJ4231-014

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 187 | | | MS | 10 | 0.17 | 0.012 | 0.085 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-E6-0006

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 90.9

Lab Sample ID: SJ4231-016

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 151 | | | MS | 10 | 0.11 | 0.0079 | 0.057 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-E6-0612

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 91.5

Lab Sample ID: SJ4231-017

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 16.5 | | | MS | 10 | 0.12 | 0.0082 | 0.058 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-E7-0006

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 90.6

Lab Sample ID: SJ4231-019

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 91.3 | | | MS | 10 | 0.10 | 0.0071 | 0.051 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-E7-0612

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 92.8

Lab Sample ID: SJ4231-020

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 5.22 | | | MS | 10 | 0.18 | 0.012 | 0.088 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-E8-0006

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 91.8

Lab Sample ID: SJ4231-022

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 152 | | | MS | 10 | 0.18 | 0.012 | 0.089 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-E8-0612

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 93.2

Lab Sample ID: SJ4231-023

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 28.0 | | | MS | 10 | 0.15 | 0.011 | 0.076 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-F1-0006

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 90.5

Lab Sample ID: SJ4231-025

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 16.2 | | | MS | 10 | 0.15 | 0.011 | 0.077 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-F1-0612

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 91.3

Lab Sample ID: SJ4231-026

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 6.88 | | | MS | 10 | 0.11 | 0.0077 | 0.055 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-F2-0006

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 91.5

Lab Sample ID: SJ4231-028

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 5.39 | | | MS | 10 | 0.14 | 0.010 | 0.071 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-F2-0612

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 92.9

Lab Sample ID: SJ4231-029

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 3.50 | | | MS | 10 | 0.16 | 0.012 | 0.083 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-F3-0006

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 88.0

Lab Sample ID: SJ4231-031

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 53.5 | | | MS | 10 | 0.16 | 0.011 | 0.079 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services**Client Field ID:** RR-SB-F3-0612**Matrix:** SOIL**SDG Name:** SJ4231**Percent Solids:** 90.8**Lab Sample ID:** SJ4231-032**Concentration Units :** mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 11.3 | | | MS | 10 | 0.11 | 0.0076 | 0.054 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-F4-0006

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 87.4

Lab Sample ID: SJ4231-034

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 107 | | | MS | 10 | 0.12 | 0.0087 | 0.062 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-F4-0612

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 93.2

Lab Sample ID: SJ4231-035

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 2.98 | | | MS | 10 | 0.12 | 0.0088 | 0.063 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-DUP12-060916

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 90.6

Lab Sample ID: SJ4231-036

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 227 | | | MS | 10 | 0.10 | 0.0072 | 0.051 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-DUP13-060916

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 91.0

Lab Sample ID: SJ4231-037

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 184 | | | MS | 10 | 0.12 | 0.0086 | 0.062 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-DUP14-060916

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 92.9

Lab Sample ID: SJ4231-038

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 2.46 | | | MS | 10 | 0.10 | 0.0073 | 0.052 |

Comments:

Appendix C

Support Documentation

SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS, INC.
NASA WALLOPS FLIGHT FACILITY-MBFR
SJ4231

Sample Receipt

The following samples were received on June 10, 2016 and were logged in under Katahdin Analytical Services work order number SJ4231 for a hardcopy due date of June 29, 2016.

| KATAHDIN <u>Sample No.</u> | TTNUS <u>Sample Identification</u> |
|-------------------------------|---------------------------------------|
| SJ4231-1 | RR-SS-E1-0006 |
| SJ4231-2 | RR-SB-E1-0612 |
| SJ4231-4 | RR-SS-E2-0006 |
| SJ4231-5 | RR-SB-E2-0612 |
| SJ4231-7 | RR-SS-E3-0006 |
| SJ4231-8 | RR-SB-E3-0612 |
| SJ4231-10 | RR-SS-E4-0006 |
| SJ4231-11 | RR-SB-E4-0612 |
| SJ4231-13 | RR-SB-E5-0612 |
| SJ4231-14 | RR-SS-E5-0006 |
| SJ4231-16 | RR-SS-E6-0006 |
| SJ4231-17 | RR-SB-E6-0612 |
| SJ4231-19 | RR-SS-E7-0006 |
| SJ4231-20 | RR-SB-E7-0612 |
| SJ4231-22 | RR-SS-E8-0006 |
| SJ4231-23 | RR-SB-E8-0612 |
| SJ4231-25 | RR-SS-F1-0006 |
| SJ4231-26 | RR-SB-F1-0612 |
| SJ4231-28 | RR-SS-F2-0006 |
| SJ4231-29 | RR-SB-F2-0612 |
| SJ4231-31 | RR-SS-F3-0006 |
| SJ4231-32 | RR-SB-F3-0612 |
| SJ4231-34 | RR-SS-F4-0006 |
| SJ4231-35 | RR-SB-F4-0612 |
| SJ4231-36 | RR-DUP12-060916 |
| SJ4231-37 | RR-DUP13-060916 |

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Metals Analysis

The samples of Katahdin Work Order SJ4231 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Solid-matrix Katahdin Sample Numbers SJ4231-13 was digested for ICP-MS analysis on 06/12/16 (QC Batch JF12IMS5) in accordance with USEPA Method 3050B. Katahdin Sample Number SJ4231-13 was prepared with a matrix-spiked aliquot and laboratory duplicate per client request. The measured lead concentration in the preparation blank (0.103 mg/Kg drywt) was outside acceptance limits; however the lead concentration for Katahdin Work Sample No. SJ4231-13 was greater than 10 times that of the blank. No corrective action was required.

Katahdin Sample Numbers SJ4231-(1,2,4,5,7,8,10,11,14,16,17,19) were digested for ICP-MS analysis on 06/13/16 (QC Batch JF13IMS2) in accordance with USEPA Method 3050B.

Solid-matrix Katahdin Sample Numbers SJ4231-(20,22,23,25,26,28,29,31,32,34-38) were digested for ICP-MS analysis on 06/13/16 (QC Batch JF13IMS3) in accordance with USEPA Method 3050B.

ICP-MS analyses of Katahdin Work Order SJ4231 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met, except for the following:

Continuing calibration blanks (CCBs) that were analyzed in analytical run JF13A at 22:30 and 23:10 were outside acceptance limits for lead, however the preparatory Laboratory Control Sample that was analyzed between the affected CCBs had a lead result greater than ten times the blank concentration.

Sample digestates for Katahdin Work Order SJ4231 were diluted by at least a factor of 10 in accordance with the project limits.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

| Internal Standard Element | Associated Analytes |
|----------------------------|--|
| Lithium | Beryllium, Boron |
| Scandium | Sodium, Magnesium, Aluminum, Silicon, Potassium, Calcium |
| Germanium or Yttrium | Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Strontium, Molybdenum, Silver, Cadmium |
| Terbium | Tin, Antimony, Barium, Tungsten |
| Bismuth | Lead, Thallium, Thorium, Uranium |

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Matrix QC Summary

The measured recovery of lead in the matrix-spiked aliquot of Katahdin Sample Number SJ4231-13 is within the project acceptance criteria (80% - 120% recovery of the added element).

The laboratory duplicate analyses of Katahdin Sample Number SJ41228-13 are within the laboratory's acceptance limit (<20% relative difference between duplicate aliquots) for lead.

The serial dilution analyses of Katahdin Sample Number SJ4231-13 are within the project acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOD) for lead.

The measured recovery of lead in the post-digestion spiked aliquot of Katahdin Sample Numbers SJ4231-13 is within the acceptance criteria (75% - 125% recovery of the added element).

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the LOQ are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQs, MDLs, and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

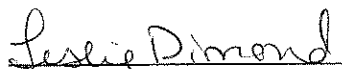
The samples of Work Order SJ4231 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times, and all quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.



Leslie Dimond
Quality Assurance Officer

06.29.16

| | | |
|---------------------------------------|------------------------------|---------------------------------------|
| Client: Tetra Tech | KAS PM: Jo | Sampled By: Client |
| Project: | KIMS Entry By: GN | Delivered By: Fedex |
| KAS Work Order#: 554227 → 4233 | KIMS Review By: Jo | Received By: SO |
| SDG #: | Cooler: 1 of 4 | Date/Time Rec.: 6-10-16 / 0950 |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | ✓ | | | | |
| 2. Chain of Custody present in cooler? | ✓ | | | | |
| 3. Chain of Custody signed by client? | ✓ | | | | |
| 4. Chain of Custody matches samples? | ✓ | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | ✓ | | | | Temp (°C): 1.8 |
| Samples received at <6 °C w/o freezing? | ✓ | | | | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | ✓ | | | | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | ✓ | | | | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | ✓ | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | | |
| Aqueous: No bubble larger than a pea? | | | | ✓ | |
| Soil/Sediment: | | | | | |
| Received in airtight container? | | | | ✓ | |
| Received in methanol? | | | | ✓ | |
| Methanol covering soil? | | | | ✓ | |
| D.I. Water - Received within 48 hour HT? | | | | ✓ | |
| Air: Refer to KAS COC for canister/flow controller requirements. | ✓ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | ✓ | |
| 8. Proper sample containers and volume? | ✓ | | | | |
| 9. Samples within hold time upon receipt? | ✓ | | | | |
| 10. Aqueous samples properly preserved? | | | | | |
| Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 | | | | ✓ | |
| Sulfide - >9 | | | | ✓ | |
| Cyanide - pH >12 | | | | ✓ | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

- RA:55-D8-0006 - ms/vol provided.
- no ms/vol provided for D8-0612 which is on chain.
- Dup 09 missing - was received in first shipment - not needed on this chain.

0600007

| | | |
|---------------------------------------|------------------------------------|------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>Jo</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>GN</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>SJ4227 → 4233</u> | KIMS Review By: <u>[Signature]</u> | Received By: <u>SO</u> |
| SDG #: | Cooler: <u>2</u> of <u>4</u> | Date/Time Rec.: <u>6-10-16 095</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|--|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | ✓ | | | | |
| 2. Chain of Custody present in cooler? | ✓ | | | | |
| 3. Chain of Custody signed by client? | ✓ | | | | |
| 4. Chain of Custody matches samples? | ✓ | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | | | | ✓ | Temp (°C): <u>N/A</u> |
| Samples received at <6 °C w/o freezing? | | | | ✓ | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | | | | ✓ | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | | | | ✓ | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | ✓ | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | ✓ | |
| Aqueous: No bubble larger than a pea? | | | | ✓ | |
| Soil/Sediment: | | | | ✓ | |
| Received in airtight container? | | | | ✓ | |
| Received in methanol? | | | | ✓ | |
| Methanol covering soil? | | | | ✓ | |
| D.I. Water - Received within 48 hour HT? | | | | ✓ | |
| Air: Refer to KAS COC for canister/flow controller requirements. | ✓ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | ✓ | |
| 8. Proper sample containers and volume? | ✓ | | | | |
| 9. Samples within hold time upon receipt? | ✓ | | | | |
| 10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 Sulfide - >9 Cyanide - pH >12 | | | | ✓ | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

0600006

| | | |
|---------------------------------------|------------------------------|------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>Jo</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>GN</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>SJ4227 → 4233</u> | KIMS Review By: <u>Jo</u> | Received By: <u>SO</u> |
| SDG #: | Cooler: <u>3</u> of <u>4</u> | Date/Time Rec.: <u>6-10-16 095</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | ✓ | | | | |
| 2. Chain of Custody present in cooler? | ✓ | | | | |
| 3. Chain of Custody signed by client? | ✓ | | | | |
| 4. Chain of Custody matches samples? | ✓ | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | | | | ✓ | Temp (°C): <u>N/A</u> |
| Samples received at <6 °C w/o freezing? | | | | ✓ | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | | | | ✓ | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | | | | ✓ | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | ✓ | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | ✓ | |
| Aqueous: No bubble larger than a pea? | | | | ✓ | |
| Soil/Sediment: | | | | ✓ | |
| Received in airtight container? | | | | ✓ | |
| Received in methanol? | | | | ✓ | |
| Methanol covering soil? | | | | ✓ | |
| D.I. Water - Received within 48 hour HT? | | | | ✓ | |
| Air: Refer to KAS COC for canister/flow controller requirements. | ✓ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | ✓ | |
| 8. Proper sample containers and volume? | ✓ | | | | |
| 9. Samples within hold time upon receipt? | ✓ | | | | |
| 10. Aqueous samples properly preserved? | | | | ✓ | |
| Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 | | | | ✓ | |
| Sulfide - >9 | | | | ✓ | |
| Cyanide - pH >12 | | | | ✓ | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

0000009

| | | |
|---------------------------------------|------------------------------------|------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>JO</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>GN</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>SJ4227 → 4233</u> | KIMS Review By: <u>[Signature]</u> | Received By: <u>SO</u> |
| SDG #: | Cooler: <u>4</u> of <u>4</u> | Date/Time Rec.: <u>6-10-16 095</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | ✓ | | | | |
| 2. Chain of Custody present in cooler? | ✓ | | | | |
| 3. Chain of Custody signed by client? | ✓ | | | | |
| 4. Chain of Custody matches samples? | ✓ | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | | | | ✓ | Temp (°C): <u>N/A</u> |
| Samples received at <6 °C w/o freezing? | | | | ✓ | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | | | | ✓ | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | | | | ✓ | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | ✓ | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | ✓ | |
| Aqueous: No bubble larger than a pea? | | | | ✓ | |
| Soil/Sediment: | | | | ✓ | |
| Received in airtight container? | | | | ✓ | |
| Received in methanol? | | | | ✓ | |
| Methanol covering soil? | | | | ✓ | |
| D.I. Water - Received within 48 hour HT? | | | | ✓ | |
| Air: Refer to KAS COC for canister/flow controller requirements. | ✓ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | ✓ | |
| 8. Proper sample containers and volume? | ✓ | | | | |
| 9. Samples within hold time upon receipt? | ✓ | | | | |
| 10. Aqueous samples properly preserved? | | | | ✓ | |
| Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 | | | | ✓ | |
| Sulfide - >9 | | | | ✓ | |
| Cyanide - pH >12 | | | | ✓ | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

0000010

Jennifer Obrin

From: Sok, Rob [Rob.Sok@tetrattech.com]
Sent: Monday, June 13, 2016 1:50 PM
To: Jennifer Obrin (jobrin@katahdinlab.com)
Subject: Sample Login and Holds

Follow Up Flag: Follow up
Flag Status: Completed

Jennifer,

Of the last batch of samples, the following duplicates can be placed on hold if they have not been run yet:

RR-DUP03, 04, 05, 06, 10, and 14

- Drepped + not run yet

Let me know how it went this weekend.

Thanks,
Rob

Robert Sok, P.G. | Project Manager | Geologist Tetra Tech, Inc. | 5700 Lake Wright Drive | Suite 309 | Norfolk, VA 23502
Direct: 757-466-4904 | Mobile: 757-618-2104 | Fax: 757-461-4148 rob.sok@tetrattech.com <<mailto:ed.corack@tetrattech.com>>

Tetra Tech | Consulting, Engineering, Construction, and Technical Services Complex World, Clear Solutions(tm) | www.tetrattech.com <<http://www.tetrattech.com/>> | NASDAQ: TTEK

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RR-DUP03 = SJ4228-40
-DUP04 = ↓ -41
-DUP05 = SJ4229-41
-DUP06 = ↓ -42
-DUP10 = SJ4230-29
↓ -DUP14 = SJ4231-38

11000011



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client: See Page 1 Contact: _____ Phone #: () () Fax #: () ()
 Address: _____ State: _____ Zip Code: _____
 Purchase Order #: _____ Proj. Name / No.: _____ Katahdin Quote #: _____
 Bill (if different than above): _____ Address: _____

Sampler (Print / Sign): _____ Copies To: _____

LAB USE ONLY WORK ORDER #: SJY230/SJY231
 KATAHDIN PROJECT NUMBER _____
 REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO.: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

| * | Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | |
|---|--------------------|--------------------|--------|---------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|------|
| | | | | | OYON | OYON | OYON | OYON | OYON | OYON | OYON | OYON | OYON | OYON | OYON | OYON |
| | RR-SS-D8-0006 | 6-8-16/1603 | SO | 1 | 1 | | | | | | | | | | | |
| | RR-SB-D8-0612 | /1604 | | 2 | 2 | 2 | MSMSD | | | | | | | | | |
| | RR-SB-D8-1224 | /1605 | | 1 | 1 | | | | | | | | | | | HOLD |
| | RR-Dup09-060816 | /1507 | | 1 | 1 | | | | | | | | | | | |
| | RR-Dup10-060816 | /1545 | | 1 | 1 | | | | | | | | | | | |
| | RR-Dup11-060816 | ↓/1620 | | 1 | 1 | | | | | | | | | | | |
| | RR-SS-E1-0006 | 6-9-16/0738 | | 1 | 1 | | | | | | | | | | | |
| | RR-SB-E1-0612 | /0739 | | 1 | 1 | | | | | | | | | | | |
| | RR-SB-E1-1224 | /0740 | | 1 | 1 | | | | | | | | | | | HOLD |
| | RR-SS-E2-0006 | /0741 | | 1 | 1 | | | | | | | | | | | |
| | RR-SB-E2-0612 | /0742 | | 1 | 1 | | | | | | | | | | | |
| | RR-SB-E2-1224 | /0743 | | 1 | 1 | | | | | | | | | | | HOLD |
| | RR-SS-E3-0006 | /0752 | | 1 | 1 | | | | | | | | | | | |
| | RR-SB-E3-0612 | /0753 | | 1 | 1 | | | | | | | | | | | |
| | RR-SB-E3-1224 | /0754 | | 1 | 1 | | | | | | | | | | | HOLD |
| | RR-SS-E4-0006 | ↓/0755 | ↓ | 1 | 1 | | | | | | | | | | | |

COMMENTS

| | | | | | |
|--|----------------------------|-----------------------------------|------------------------------|-------------|---|
| Relinquished By: (Signature) <i>[Signature]</i> | Date / Time 6-9-16 1600 | Received By: (Signature) FedEx | Relinquished By: (Signature) | Date / Time | Received By: (Signature) 6-10-16 o.a.s. |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000012



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client: See Page 1 Contact: _____ Phone #: () () Fax #: () ()
 Address: _____ City: _____ State: _____ Zip Code: _____
 Purchase Order #: _____ Proj. Name / No.: _____ Katahdin Quote #: _____

Bill (if different than above): _____ Address: _____
 Sampler (Print / Sign): _____ Copies To: _____

LAB USE ONLY WORK ORDER #: SJ4231
 KATAHDIN PROJECT NUMBER: _____
 REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO.: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

| ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | | |
|---|------|------|------|------|------|------|------|------|------|------|------|
| Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill |
| Y | N | Y | N | Y | N | Y | N | Y | N | Y | N |

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Lead | | | | | | | | | | | | | | | |
|----------------------|--------------------|--------|---------------|------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| RR-SB-E4-0612 | 6-9-16/0756 | SO | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-E4-1224 | /0757 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-E5-0612 | /0808 | | 2 | 2 | | | | | | | | | | | | | | | |
| RR-SS-E5-0006 | /0807 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-E5-1224 | /0809 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SS-E6-0006 | /0810 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-E6-0612 | /0811 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-E6-1224 | /0812 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SS-E7-0006 | /0822 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-E7-0612 | /0823 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-E7-1224 | /0824 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SS-E8-0006 | /0825 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-E8-0612 | /0826 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-E8-1224 | /0827 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SS-F1-0006 | /0835 | | 1 | 1 | | | | | | | | | | | | | | | |
| RR-SB-F1-0612 | ✓ /0836 | ✓ | 1 | 1 | | | | | | | | | | | | | | | |

COMMENTS

| | | | | | |
|--|-----------------------------------|--|------------------------------|-------------|--|
| Relinquished By: (Signature) <u>[Signature]</u> | Date / Time <u>6-9-16 1600</u> | Received By: (Signature) <u>FedEx</u> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <u>[Signature]</u> |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <u>6-10-16</u> |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000013



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client: See Page 1 Contact: _____ Phone #: () () Fax #: () ()
 Address: _____ State: _____ Zip Code: _____
 Purchase Order #: _____ Proj. Name / No.: _____ Katahdin Quote #: _____

Bill (if different than above): _____ Address: _____
 Sampler (Print / Sign): _____ Copies To: _____

LAB USE ONLY WORK ORDER #: SJ4231/554232
 KATAHDIN PROJECT NUMBER: _____
 REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO.: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

| | | | | | | | | | | | | | | | |
|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill |
| YO | YO | YO | YO | YO | YO | YO | YO | YO | YO | YO | YO | YO | YO | YO | YO |
| N | N | N | N | N | N | N | N | N | N | N | N | N | N | N | N |

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Lead | | | | | | | | | | | |
|----------------------|--------------------|--------|---------------|------|--|--|--|--|--|-------|--|--|--|--|------|
| RR-SB-F1-1224 | 6-9-16 / 0837 | SO | 1 | 1 | | | | | | | | | | | HOLD |
| RR-SS-F2-0006 | / 0838 | | 1 | 1 | | | | | | | | | | | |
| RR-SB-F2-0612 | / 0839 | | 1 | 1 | | | | | | | | | | | |
| RR-SB-F2-1224 | / 0840 | | 1 | 1 | | | | | | | | | | | HOLD |
| RR-SS-F3-0006 | / 0849 | | 1 | 1 | | | | | | | | | | | |
| RR-SB-F3-0612 | / 0850 | | 1 | 1 | | | | | | | | | | | |
| RR-SB-F3-1224 | / 0851 | | 1 | 1 | | | | | | | | | | | HOLD |
| RR-SS-F4-0006 | / 0852 | | 1 | 1 | | | | | | | | | | | |
| RR-SB-F4-0612 | / 0853 | | 1 | 1 | | | | | | | | | | | |
| RR-Dupl2-060916 | / 0800 | | 1 | 1 | | | | | | | | | | | |
| RR-Dupl3-060916 | / 0805 | | 1 | 1 | | | | | | | | | | | |
| RR-Dupl4-060916 | / 0830 | | 1 | 1 | | | | | | | | | | | |
| RR-SB-F4-1224 | / 0854 | | 1 | 1 | | | | | | | | | | | HOLD |
| RR-SS-F5-0006 | / 0902 | | 2 | 2 | | | | | | MSMSD | | | | | |
| RR-SB-F5-0612 | / 0903 | | 1 | 1 | | | | | | | | | | | |
| RR-SB-F5-1224 | ✓ / 0904 | ✓ | 1 | 1 | | | | | | | | | | | HOLD |

COMMENTS

| | | | | | |
|--|-----------------------------------|--|------------------------------|-------------|---|
| Relinquished By: (Signature) <u>[Signature]</u> | Date / Time <u>6-9-16 1600</u> | Received By: (Signature) <u>FedEx</u> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <u>[Signature]</u> |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <u>6-10-16</u> <u>0215</u> |

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0000014

METALS SAMPLE FLAGGING

| FLAG | SPECIFIED MEANING |
|-------------|--|
| E | The reported value is estimated because of the presence of interference (as indicated by serial dilution). |
| N | The pre-digestion spiked sample recovery is not within control limits. |
| * | The duplicate sample analysis relative percent difference (RPD) is not within control limits. |
| B | Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample. |
| A | The post-digestion spiked sample recovery is not within control limits. |
| • | Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits. |
| U | <p>The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ) (previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.</p> <p>Note: All results reported as “U” MDL have a 50% rate for false negatives compared to those results reported as “U” PQL/LOQ or “U” LOD, where the rate of false negatives is <1%.</p> |
| J | The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL). |
| Q | One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV). |

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as “U” MDL have a 50% rate for false negatives compared to those results reported as “U” PQL “U” LOQ or “U” LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

I-7 The laboratory’s Practical Quantitation Level (PQL) or LOQ could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

H_ Please note that the regulatory holding time for _____ is “analyze immediately”. Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

| | | | |
|---------|---------|--------------|------------------------|
| H1 - pH | H2 - DO | H3 - sulfite | H4 - residual chlorine |
|---------|---------|--------------|------------------------|

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

M1 The matrix spike and/or matrix spike duplicate recovery performed on this sample was outside of the laboratory acceptance criteria. Sample matrix is suspected. The laboratory criteria was met for the Laboratory Control Sample (LCS) analyzed concurrently with this sample.

M2 The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory acceptance criteria. The native sample concentration is greater than four times the spike added concentration so the spike added could not be distinguished from the native sample concentration.

R1 The relative percent difference (RPD) between the duplicate analyses performed on this sample was outside of the laboratory acceptance criteria (when both values are greater than ten times the PQL).

| | | | |
|-----|---------------------------|----|----------|
| MCL | Maximum Contaminant Level | NL | No limit |
|-----|---------------------------|----|----------|

| | | | |
|-----|------------------------|-----|---------------------|
| NFL | No Free Liquid Present | FLP | Free Liquid Present |
|-----|------------------------|-----|---------------------|

| | | | |
|-----|------------------|-----|-----------------------|
| NOD | No Odor Detected | TON | Threshold Odor Number |
|-----|------------------|-----|-----------------------|

D-1 As required by Method 5210B, APHA Standard Methods for the Examination of Water and Wastewater (21st edition), the BOD value reported for this sample is ‘qualified’ because the check standard run concurrently with the sample analysis did not meet the criteria specified in the method (198 +/- 30.5 mg/L). These results may not be reportable for compliance purposes.

D-2 The measured final dissolved oxygen concentrations of all dilutions were less than the method-specified limit of 1 mg/L. The reported BOD result was calculated assuming a final oxygen concentration equal to 1 mg/L. The reported value should be considered a minimum value.

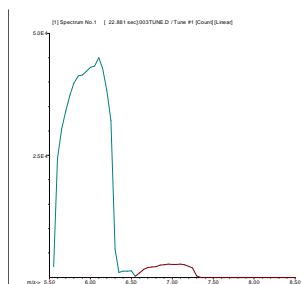
D-3 The dilution water used to prepare this sample did not meet the method and/or regulatory criteria of less than 0.2 or 0.4 mg/L dissolved oxygen (DO) uptake over the five day period of incubation. These results may not be reportable for compliance purposes.

6020 QC Tune Report

Data File: C:\ICPCHEM\1\DATA\JJF13A.B\003TUNE.D
 Date Acquired: Jun 13 2016 01:08 pm
 Acq. Method: TN6020E.M
 Operator: EAM
 Sample Name: 6020 TUNE
 Misc Info:
 Vial Number: 1107
 Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

| Element | Actual | Required | Flag |
|---------|--------|----------|------|
| 7 Li | 2.22 | 5.00 | |
| 59 Co | 0.02 | 5.00 | |
| 115 In | 0.60 | 5.00 | |
| 205 Tl | 1.48 | 5.00 | |



7 Li

Mass Calib.

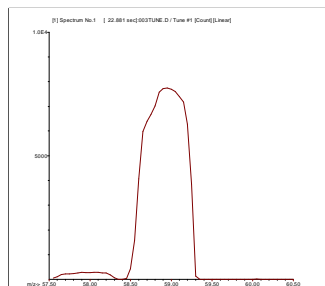
Actual: 7.00
 Required: 6.90 - 7.10

Flag:

Peak Width

Actual: 0.65
 Required: 0.90

Flag:



59 Co

Mass Calib.

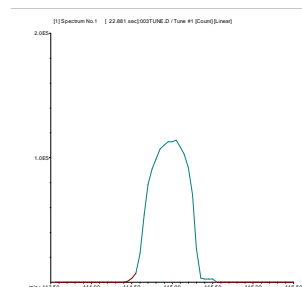
Actual: 58.95
 Required: 58.90 - 59.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:



115 In

Mass Calib.

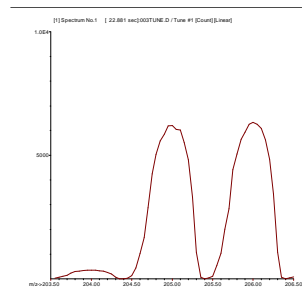
Actual: 115.00
 Required: 114.90 - 115.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:



205 Tl

Mass Calib.

Actual: 205.00
 Required: 204.90 - 205.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4231

Concentration Units: ug/L

SAMPLE: ICB

File: JJF13A Jun 13, 2016 14:08

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.345 | J |
| MOLYBDENUM | 0.051 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 14:42

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.748 | J |
| MOLYBDENUM | 0.065 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 6.660 | J |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 15:23

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.446 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.610 | J |
| MOLYBDENUM | 0.027 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4231

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 13, 2016 16:06

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.634 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.892 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 16:48

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.874 | J |
| MOLYBDENUM | 0.032 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 17:31

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 4.001 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.360 | J |
| MOLYBDENUM | 0.024 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4231

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 13, 2016 18:15

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 7.084 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.607 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 18:58

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.862 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.258 | J |
| MOLYBDENUM | 0.025 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 19:41

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.022 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4231

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 13, 2016 20:20

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 3.036 | J |
| CALCIUM | 6.900 | U |
| IRON | 9.065 | J |
| LEAD | 0.051 | J |
| MAGNESIUM | 1.279 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 21:03

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.023 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 21:47

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.980 | J |
| CALCIUM | 6.900 | U |
| IRON | 7.932 | J |
| LEAD | 0.872 | B |
| MAGNESIUM | 1.062 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4231

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 13, 2016 22:30

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 8.131 | J |
| LEAD | 0.756 | B |
| MAGNESIUM | 0.846 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 23:10

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.058 | J |
| CALCIUM | 8.772 | J |
| IRON | 6.268 | J |
| LEAD | 0.225 | B |
| MAGNESIUM | 0.764 | J |
| MOLYBDENUM | 0.024 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 23:53

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 7.403 | J |
| LEAD | 0.063 | J |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.030 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4231

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 14, 2016 0:37

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.155 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 3.531 | J |

SAMPLE: CCB

File: JJF13A Jun 14, 2016 1:21

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.137 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.898 | J |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.040 | J |
| MOLYBDENUM | 0.028 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 3.407 | J |

SAMPLE: CCB

File: JJF13A Jun 14, 2016 2:05

| Analyte | Result | C |
|------------|---------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | -52.900 | B |
| IRON | -42.570 | B |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | -82.920 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4231

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 14, 2016 2:46

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.175 | J |
| CALCIUM | 7.585 | J |
| IRON | 6.839 | J |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.738 | J |
| MOLYBDENUM | 0.029 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 3.174 | J |

SAMPLE: CCB

File: JJF13A Jun 14, 2016 3:30

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 9.134 | J |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.075 | J |
| MOLYBDENUM | 0.024 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 14, 2016 4:15

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 8.547 | J |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.534 | J |
| MOLYBDENUM | 0.023 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4231

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 14, 2016 5:00

| Analyte | Result | C |
|----------------|---------------|----------|
| ALUMINUM | 1.400 | U |
| CALCIUM | 11.210 | J |
| IRON | 7.282 | J |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.514 | J |
| MOLYBDENUM | 0.026 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 3.014 | J |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4231

Concentration Units: ug/L

SAMPLE: ICB

File: JJF14B Jun 14, 2016 18:57

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.309 | J |
| MOLYBDENUM | 0.047 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF14B Jun 14, 2016 19:32

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.559 | J |
| MOLYBDENUM | 0.059 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 6.380 | J |

SAMPLE: CCB

File: JJF14B Jun 14, 2016 20:10

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.100 | J |
| MAGNESIUM | 0.924 | J |
| MOLYBDENUM | 0.022 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 3.067 | J |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4231

Concentration Units: ug/L

SAMPLE: CCB

File: JJF14B Jun 14, 2016 20:52

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.143 | J |
| MAGNESIUM | 0.685 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF14B Jun 14, 2016 21:34

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF14B Jun 14, 2016 22:16

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.653 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4231

Concentration Units: ug/L

SAMPLE: CCB

File: JJF14B Jun 14, 2016 22:58

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.860 | J |
| MOLYBDENUM | 0.024 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 7.433 | J |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF12IMS5

Matrix: SOIL

SDG Name: SJ4231

QC Batch ID: JF12IMS5

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| LEAD | 0.103 | B |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF13IMS2

Matrix: SOIL

SDG Name: SJ4231

QC Batch ID: JF13IMS2

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| LEAD | 0.024 | J |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF13IMS3

Matrix: SOIL

SDG Name: SJ4231

QC Batch ID: JF13IMS3

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| LEAD | 0.026 | J |

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services SDG Name: SJ4231

Concentration Units: ug/L

SAMPLE: ICSA

File: JJF13A Jun 13, 2016 14:24

| Analyte | TRUE | FOUND | % R |
|------------|--------|-------|------|
| ALUMINUM | 100000 | 96090 | 96.1 |
| CALCIUM | 100000 | 93120 | 93.1 |
| IRON | 100000 | 91500 | 91.5 |
| LEAD | 0 | 0 | |
| MAGNESIUM | 100000 | 93210 | 93.2 |
| MOLYBDENUM | 2000 | 1972 | 98.6 |
| POTASSIUM | 100000 | 94720 | 94.7 |
| SODIUM | 100000 | 95460 | 95.5 |

SAMPLE: ICSAB

File: JJF13A Jun 13, 2016 14:28

| Analyte | TRUE | FOUND | % R |
|------------|--------|-------|-------|
| ALUMINUM | 100000 | 96680 | 96.7 |
| CALCIUM | 100000 | 93830 | 93.8 |
| IRON | 100000 | 91810 | 91.8 |
| LEAD | 20 | 21 | 105.0 |
| MAGNESIUM | 100000 | 92630 | 92.6 |
| MOLYBDENUM | 2000 | 2000 | 100.0 |
| POTASSIUM | 100000 | 94930 | 94.9 |
| SODIUM | 100000 | 95580 | 95.6 |

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services SDG Name: SJ4231

Concentration Units: ug/L

| SAMPLE: ICSA | | | | SAMPLE: ICSAB | | | |
|---------------------|-------------|--------------|------------|----------------------|-------------|--------------|------------|
| File: JJF14B | | Jun 14, 2016 | 19:14 | File: JJF14B | | Jun 14, 2016 | 19:18 |
| Analyte | TRUE | FOUND | % R | Analyte | TRUE | FOUND | % R |
| ALUMINUM | 100000 | 93510 | 93.5 | ALUMINUM | 100000 | 94390 | 94.4 |
| CALCIUM | 100000 | 92880 | 92.9 | CALCIUM | 100000 | 93090 | 93.1 |
| IRON | 100000 | 91570 | 91.6 | IRON | 100000 | 93650 | 93.7 |
| LEAD | 0 | 0 | | LEAD | 20 | 21 | 105.0 |
| MAGNESIUM | 100000 | 92810 | 92.8 | MAGNESIUM | 100000 | 92780 | 92.8 |
| MOLYBDENUM | 2000 | 2013 | 100.6 | MOLYBDENUM | 2000 | 2038 | 101.9 |
| POTASSIUM | 100000 | 95330 | 95.3 | POTASSIUM | 100000 | 95570 | 95.6 |
| SODIUM | 100000 | 93880 | 93.9 | SODIUM | 100000 | 94930 | 94.9 |

5A
SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services
Matrix: SOIL
Percent Solids: 91.8

Client Field ID: RR-SB-E5-0612S
SDG Name: SJ4231
Lab Sample ID: SJ4231-013S

Concentration Units : mg/Kg drywt

| Analyte | Spiked | | Sample | | Spike | %R | Q | Control Limits (%R) | | M |
|-------------|--------|--------|--------|---|-------|------|---|---------------------|------|----|
| | Sample | Result | Result | C | | | | Low | High | |
| LEAD, TOTAL | | 11.3 | 5.57 | | 6.48 | 88.0 | | 84 | 118 | MS |

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-E5-0612S

Matrix: SOIL

SDG Name: SJ4231

Percent Solids: 91.8

Lab Sample ID: SJ4231-013A

Concentration Units : ug/L

| Analyte | Spiked | | Sample | | Spike | %R | Q | Control Limits (%R) | | M |
|-------------|--------|--------|--------|---|-------|-------|---|---------------------|------|----|
| | Sample | Result | Result | C | | | | Low | High | |
| LEAD, TOTAL | | 10.5 | 8.28 | | 2 | 109.0 | | 80 | 120 | MS |

Comments:

6
DUPLICATES

Lab Name: Katahdin Analytical Services
Matrix: SOIL
Percent Solids: 91.8

Client Field ID: RR-SB-E5-0612D
SDG Name: SJ4231
Lab Sample ID: SJ4231-013D

Concentration Units : mg/Kg drywt

| Analyte | Control Limits | Sample Result | C | Duplicate | Result | C | RPD | Q | M |
|-------------|----------------|---------------|---|-----------|--------|---|------|---|----|
| LEAD, TOTAL | | 5.5671 | | 6.4759 | | | 15.1 | | MS |

Comments:

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF12IMS5**Matrix:** SOIL**SDG Name:** SJ4231**QC Batch ID:** JF12IMS5**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 10.4 | 104.5 | 84 | 118 |

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF13IMS2**Matrix:** SOIL**SDG Name:** SJ4231**QC Batch ID:** JF13IMS2**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 9.84 | 98.4 | 84 | 118 |

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF13IMS3**Matrix:** SOIL**SDG Name:** SJ4231**QC Batch ID:** JF13IMS3**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 9.90 | 99.0 | 84 | 118 |

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services**Client Field ID:** RR-SB-E5-0612L**Matrix:** SOIL**SDG Name:** SJ4231**Lab Sample ID:** SJ4231-013L**Concentration Units: ug/L**

| Analyte | Sample Result | C | Dilution | Result | C | % Difference | Q | M |
|----------------|----------------------|----------|-----------------|---------------|----------|---------------------|----------|----------|
| LEAD, TOTAL | 8.28 | | | 8.43 | | 1.8 | | MS |

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 3/14/2016**

| Analyte | Concentration Units: ug/L | | |
|------------|---------------------------|-------|----|
| | PQL/LOQ | IDL | M |
| ALUMINUM | 300 | 1.4 | MS |
| CALCIUM | 100 | 6.9 | MS |
| IRON | 100 | 6.2 | MS |
| LEAD | 0.20 | 0.041 | MS |
| MAGNESIUM | 100 | 0.65 | MS |
| MOLYBDENUM | 1.0 | 0.021 | MS |
| POTASSIUM | 1000 | 13. | MS |
| SODIUM | 1000 | 2.9 | MS |

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 1/26/2011**

| Analyte | LOD | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| LEAD | 0.010 | mg/Kg | MS | SW846 3050B / SW846 6020A |

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 1/26/2011**

| Analyte | MDL | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| LEAD | 0.0014 | mg/kg | MS | SW846 3050B / SW846 6020A |

12
ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services

Instrument Code: J

Instrument Name: AGILENT 7500 ICP-MS

Date: 4/4/2016

Concentration Units: ug/L

| Analyte | Integration Time (sec) | Linear Range | M |
|------------|------------------------|--------------|----|
| ALUMINUM | 0.01 | 200000 | MS |
| CALCIUM | 0.03 | 200000 | MS |
| IRON | 0.03 | 100000 | MS |
| LEAD | 0.10 | 2000 | MS |
| MAGNESIUM | 0.05 | 200000 | MS |
| MOLYBDENUM | 0.10 | 1000 | MS |
| POTASSIUM | 0.01 | 200000 | MS |
| SODIUM | 0.01 | 200000 | MS |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF12IMS5**Matrix:** SOIL**SDG Name:** SJ4231**Method:** MS**Prep Date:** 06/12/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF12IMS5 | LC SOJF12IMS5 | 1 | 0.1 | |
| PBSJF12IMS5 | PBSJF12IMS5 | 1 | 0.1 | |
| RR-SB-E5-0612 | SJ4231-013 | 1.62 | 0.1 | B |
| RR-SB-E5-0612D | SJ4231-013D | 1.74 | 0.1 | B |
| RR-SB-E5-0612S | SJ4231-013S | 1.68 | 0.1 | B |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF13IMS2**Matrix:** SOIL**SDG Name:** SJ4231**Method:** MS**Prep Date:** 06/13/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF13IMS2 | LC SOJF13IMS2 | 1 | 0.1 | |
| PBSJF13IMS2 | PBSJF13IMS2 | 1 | 0.1 | |
| RR-SS-E1-0006 | SJ4231-001 | 2.32 | 0.1 | A |
| RR-SB-E1-0612 | SJ4231-002 | 2.12 | 0.1 | A |
| RR-SS-E2-0006 | SJ4231-004 | 1.84 | 0.1 | A |
| RR-SB-E2-0612 | SJ4231-005 | 1.66 | 0.1 | A |
| RR-SS-E3-0006 | SJ4231-007 | 1.24 | 0.1 | A |
| RR-SB-E3-0612 | SJ4231-008 | 1.64 | 0.1 | A |
| RR-SS-E4-0006 | SJ4231-010 | 1.77 | 0.1 | A |
| RR-SB-E4-0612 | SJ4231-011 | 1.46 | 0.1 | A |
| RR-SS-E5-0006 | SJ4231-014 | 1.32 | 0.1 | A |
| RR-SS-E6-0006 | SJ4231-016 | 1.94 | 0.1 | A |
| RR-SB-E6-0612 | SJ4231-017 | 1.87 | 0.1 | A |
| RR-SS-E7-0006 | SJ4231-019 | 2.17 | 0.1 | A |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF13IMS3**Matrix:** SOIL**SDG Name:** SJ4231**Method:** MS**Prep Date:** 06/13/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF13IMS3 | LC SOJF13IMS3 | 1 | 0.1 | |
| PBSJF13IMS3 | PBSJF13IMS3 | 1 | 0.1 | |
| RR-SB-E7-0612 | SJ4231-020 | 1.22 | 0.1 | A |
| RR-SS-E8-0006 | SJ4231-022 | 1.22 | 0.1 | A |
| RR-SB-E8-0612 | SJ4231-023 | 1.41 | 0.1 | A |
| RR-SS-F1-0006 | SJ4231-025 | 1.44 | 0.1 | A |
| RR-SB-F1-0612 | SJ4231-026 | 1.98 | 0.1 | A |
| RR-SS-F2-0006 | SJ4231-028 | 1.53 | 0.1 | A |
| RR-SB-F2-0612 | SJ4231-029 | 1.3 | 0.1 | A |
| RR-SS-F3-0006 | SJ4231-031 | 1.43 | 0.1 | A |
| RR-SB-F3-0612 | SJ4231-032 | 2.03 | 0.1 | A |
| RR-SS-F4-0006 | SJ4231-034 | 1.84 | 0.1 | A |
| RR-SB-F4-0612 | SJ4231-035 | 1.71 | 0.1 | A |
| RR-DUP12-060916 | SJ4231-036 | 2.16 | 0.1 | A |
| RR-DUP13-060916 | SJ4231-037 | 1.78 | 0.1 | A |
| RR-DUP14-060916 | SJ4231-038 | 2.07 | 0.1 | A |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4231

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| 6020 Tune | | 1 | 13:08 | | | | | | | |
| 200.8 Tune | | 1 | 13:11 | | | | | | | |
| Cal Blank | | 1 | 13:58 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| Cal Std | | 1 | 14:01 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICV | | 1 | 14:04 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICB | | 1 | 14:08 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| PQL | | 1 | 14:11 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| <i>ZZZZZZ</i> | | 1 | 14:14 | | | | | | | |
| <i>ZZZZZZ</i> | | 1 | 14:17 | | | | | | | |
| <i>ZZZZZZ</i> | | 1 | 14:21 | | | | | | | |
| ICSA | | 1 | 14:24 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICSAB | | 1 | 14:28 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| <i>ZZZZZZ</i> | | 1 | 14:32 | | | | | | | |
| <i>ZZZZZZ</i> | | 1 | 14:35 | | | | | | | |
| CCV | | 1 | 14:38 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 14:42 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| <i>ZZZZZZ</i> | | 5 | 14:45 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 14:48 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 14:52 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 14:55 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 14:59 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 15:02 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 15:06 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 15:09 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 15:13 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 15:16 | | | | | | | |
| CCV | | 1 | 15:20 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4231

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| CCB | | 1 | 15:23 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZ | | 10 | 15:27 | | | | | | | |
| ZZZZZ | | 10 | 15:30 | | | | | | | |
| ZZZZZ | | 10 | 15:34 | | | | | | | |
| ZZZZZ | | 10 | 15:37 | | | | | | | |
| ZZZZZ | | 10 | 15:41 | | | | | | | |
| ZZZZZ | | 10 | 15:44 | | | | | | | |
| ZZZZZ | | 10 | 15:48 | | | | | | | |
| ZZZZZ | | 10 | 15:51 | | | | | | | |
| ZZZZZ | | 10 | 15:55 | | | | | | | |
| ZZZZZ | | 10 | 15:58 | | | | | | | |
| CCV | | 1 | 16:02 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 16:06 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZ | | 10 | 16:09 | | | | | | | |
| ZZZZZ | | 10 | 16:13 | | | | | | | |
| ZZZZZ | | 10 | 16:16 | | | | | | | |
| ZZZZZ | | 10 | 16:20 | | | | | | | |
| ZZZZZ | | 10 | 16:23 | | | | | | | |
| ZZZZZ | | 10 | 16:27 | | | | | | | |
| ZZZZZ | | 10 | 16:30 | | | | | | | |
| ZZZZZ | | 10 | 16:34 | | | | | | | |
| ZZZZZ | | 10 | 16:37 | | | | | | | |
| ZZZZZ | | 50 | 16:41 | | | | | | | |
| CCV | | 1 | 16:44 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 16:48 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZ | | 10 | 16:52 | | | | | | | |
| ZZZZZ | | 10 | 16:55 | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4231

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| ZZZZZZ | | 10 | 16:59 | | | | | | | |
| ZZZZZZ | | 5 | 17:02 | | | | | | | |
| ZZZZZZ | | 5 | 17:06 | | | | | | | |
| ZZZZZZ | | 10 | 17:10 | | | | | | | |
| ZZZZZZ | | 10 | 17:13 | | | | | | | |
| ZZZZZZ | | 10 | 17:17 | | | | | | | |
| ZZZZZZ | | 10 | 17:20 | | | | | | | |
| ZZZZZZ | | 10 | 17:24 | | | | | | | |
| CCV | | 1 | 17:28 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 17:31 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 17:35 | | | | | | | |
| ZZZZZZ | | 10 | 17:38 | | | | | | | |
| ZZZZZZ | | 10 | 17:42 | | | | | | | |
| ZZZZZZ | | 10 | 17:46 | | | | | | | |
| ZZZZZZ | | 10 | 17:49 | | | | | | | |
| ZZZZZZ | | 10 | 17:53 | | | | | | | |
| ZZZZZZ | | 10 | 17:56 | | | | | | | |
| ZZZZZZ | | 10 | 18:00 | | | | | | | |
| ZZZZZZ | | 10 | 18:04 | | | | | | | |
| ZZZZZZ | | 10 | 18:07 | | | | | | | |
| CCV | | 1 | 18:11 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 18:15 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 18:18 | | | | | | | |
| ZZZZZZ | | 10 | 18:22 | | | | | | | |
| ZZZZZZ | | 10 | 18:25 | | | | | | | |
| ZZZZZZ | | 10 | 18:29 | | | | | | | |
| ZZZZZZ | | 50 | 18:33 | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4231

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|--|
| ZZZZZZ | | 10 | 18:36 | | | | | | | | |
| ZZZZZZ | | 10 | 18:40 | | | | | | | | |
| ZZZZZZ | | 10 | 18:43 | | | | | | | | |
| ZZZZZZ | | 10 | 18:47 | | | | | | | | |
| ZZZZZZ | | 5 | 18:50 | | | | | | | | |
| CCV | | 1 | 18:54 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 18:58 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZZ | | 5 | 19:01 | | | | | | | | |
| ZZZZZZ | | 10 | 19:05 | | | | | | | | |
| ZZZZZZ | | 10 | 19:08 | | | | | | | | |
| ZZZZZZ | | 10 | 19:12 | | | | | | | | |
| ZZZZZZ | | 10 | 19:16 | | | | | | | | |
| ZZZZZZ | | 10 | 19:19 | | | | | | | | |
| ZZZZZZ | | 10 | 19:23 | | | | | | | | |
| ZZZZZZ | | 10 | 19:26 | | | | | | | | |
| ZZZZZZ | | 10 | 19:30 | | | | | | | | |
| ZZZZZZ | | 10 | 19:34 | | | | | | | | |
| CCV | | 1 | 19:37 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 19:41 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZZ | | 10 | 19:44 | | | | | | | | |
| ZZZZZZ | | 10 | 19:48 | | | | | | | | |
| ZZZZZZ | | 10 | 19:52 | | | | | | | | |
| ZZZZZZ | | 10 | 19:55 | | | | | | | | |
| ZZZZZZ | | 10 | 19:59 | | | | | | | | |
| ZZZZZZ | | 10 | 20:02 | | | | | | | | |
| ZZZZZZ | | 10 | 20:06 | | | | | | | | |
| ZZZZZZ | | 10 | 20:09 | | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4231

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| ZZZZZZ | | 10 | 20:13 | | | | | | | |
| CCV | | 1 | 20:17 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 20:20 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 20:24 | | | | | | | |
| ZZZZZZ | | 50 | 20:27 | | | | | | | |
| ZZZZZZ | | 10 | 20:31 | | | | | | | |
| ZZZZZZ | | 10 | 20:35 | | | | | | | |
| ZZZZZZ | | 10 | 20:38 | | | | | | | |
| ZZZZZZ | | 5 | 20:42 | | | | | | | |
| ZZZZZZ | | 5 | 20:45 | | | | | | | |
| ZZZZZZ | | 10 | 20:49 | | | | | | | |
| ZZZZZZ | | 10 | 20:52 | | | | | | | |
| ZZZZZZ | | 10 | 20:56 | | | | | | | |
| CCV | | 1 | 21:00 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 21:03 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 21:07 | | | | | | | |
| ZZZZZZ | | 10 | 21:11 | | | | | | | |
| ZZZZZZ | | 10 | 21:14 | | | | | | | |
| ZZZZZZ | | 10 | 21:18 | | | | | | | |
| ZZZZZZ | | 10 | 21:22 | | | | | | | |
| ZZZZZZ | | 10 | 21:25 | | | | | | | |
| ZZZZZZ | | 10 | 21:29 | | | | | | | |
| ZZZZZZ | | 10 | 21:32 | | | | | | | |
| ZZZZZZ | | 10 | 21:36 | | | | | | | |
| ZZZZZZ | | 10 | 21:39 | | | | | | | |
| CCV | | 1 | 21:43 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 21:47 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4231

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| ZZZZZZ | | 10 | 21:51 | | | | | | | |
| ZZZZZZ | | 10 | 21:54 | | | | | | | |
| ZZZZZZ | | 10 | 21:58 | | | | | | | |
| ZZZZZZ | | 10 | 22:01 | | | | | | | |
| ZZZZZZ | | 10 | 22:05 | | | | | | | |
| ZZZZZZ | | 10 | 22:09 | | | | | | | |
| ZZZZZZ | | 10 | 22:12 | | | | | | | |
| ZZZZZZ | | 50 | 22:16 | | | | | | | |
| ZZZZZZ | | 10 | 22:19 | | | | | | | |
| ZZZZZZ | | 10 | 22:23 | | | | | | | |
| CCV | | 1 | 22:26 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 22:30 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 22:34 | | | | | | | |
| ZZZZZZ | | 5 | 22:37 | | | | | | | |
| LCSOJF12IMS5 | | 5 | 22:41 | | | Pb | | | | |
| ZZZZZZ | | 10 | 22:45 | | | | | | | |
| ZZZZZZ | | 10 | 22:48 | | | | | | | |
| ZZZZZZ | | 10 | 22:52 | | | | | | | |
| ZZZZZZ | | 10 | 22:55 | | | | | | | |
| ZZZZZZ | | 10 | 22:59 | | | | | | | |
| ZZZZZZ | | 10 | 23:02 | | | | | | | |
| CCV | | 1 | 23:06 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 23:10 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 23:13 | | | | | | | |
| ZZZZZZ | | 10 | 23:17 | | | | | | | |
| ZZZZZZ | | 10 | 23:21 | | | | | | | |
| ZZZZZZ | | 10 | 23:24 | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4231

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|----------------|------|-------|----------|----|-------|----|----|---|----|--|
| ZZZZZZ | | 10 | 23:28 | | | | | | | | |
| ZZZZZZ | | 10 | 23:32 | | | | | | | | |
| ZZZZZZ | | 10 | 23:35 | | | | | | | | |
| ZZZZZZ | | 10 | 23:39 | | | | | | | | |
| ZZZZZZ | | 10 | 23:43 | | | | | | | | |
| ZZZZZZ | | 10 | 23:46 | | | | | | | | |
| CCV | | 1 | 23:50 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 23:53 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZZ | | 10 | 23:57 | | | | | | | | |
| ZZZZZZ | | 10 | 0:01 | | | | | | | | |
| SJ4231-013 | RR-SB-E5-0612 | 10 | 0:05 | | | Pb | | | | | |
| SJ4231-013L | RR-SB-E5-0612L | 50 | 0:08 | | | Pb | | | | | |
| SJ4231-013A | RR-SB-E5-0612A | 10 | 0:12 | | | Pb | | | | | |
| SJ4231-013D | RR-SB-E5-0612D | 10 | 0:15 | | | Pb | | | | | |
| SJ4231-013S | RR-SB-E5-0612S | 10 | 0:19 | | | Pb | | | | | |
| ZZZZZZ | | 5 | 0:23 | | | | | | | | |
| ZZZZZZ | | 5 | 0:26 | | | | | | | | |
| ZZZZZZ | | 5 | 0:30 | | | | | | | | |
| CCV | | 1 | 0:34 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 0:37 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZZ | | 5 | 0:41 | | | | | | | | |
| ZZZZZZ | | 5 | 0:45 | | | | | | | | |
| ZZZZZZ | | 5 | 0:48 | | | | | | | | |
| ZZZZZZ | | 5 | 0:52 | | | | | | | | |
| ZZZZZZ | | 5 | 0:56 | | | | | | | | |
| ZZZZZZ | | 5 | 0:59 | | | | | | | | |
| ZZZZZZ | | 5 | 1:03 | | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4231

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/14/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|------|----------|----|-------|----|----|---|----|
| ZZZZZZ | | 10 | 1:07 | | | | | | | |
| ZZZZZZ | | 10 | 1:10 | | | | | | | |
| ZZZZZZ | | 10 | 1:14 | | | | | | | |
| CCV | | 1 | 1:18 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 1:21 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 1:25 | | | | | | | |
| ZZZZZZ | | 10 | 1:28 | | | | | | | |
| ZZZZZZ | | 10 | 1:32 | | | | | | | |
| ZZZZZZ | | 10 | 1:36 | | | | | | | |
| ZZZZZZ | | 5 | 1:39 | | | | | | | |
| ZZZZZZ | | 5 | 1:43 | | | | | | | |
| ZZZZZZ | | 10 | 1:47 | | | | | | | |
| ZZZZZZ | | 10 | 1:50 | | | | | | | |
| ZZZZZZ | | 10 | 1:54 | | | | | | | |
| ZZZZZZ | | 10 | 1:58 | | | | | | | |
| CCV | | 1 | 2:01 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 2:05 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 2:09 | | | | | | | |
| ZZZZZZ | | 10 | 2:12 | | | | | | | |
| ZZZZZZ | | 10 | 2:16 | | | | | | | |
| ZZZZZZ | | 10 | 2:20 | | | | | | | |
| ZZZZZZ | | 10 | 2:24 | | | | | | | |
| ZZZZZZ | | 10 | 2:27 | | | | | | | |
| ZZZZZZ | | 10 | 2:31 | | | | | | | |
| ZZZZZZ | | 10 | 2:35 | | | | | | | |
| ZZZZZZ | | 10 | 2:38 | | | | | | | |
| CCV | | 1 | 2:42 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4231

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/14/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|---------------|------|------|----------|----|-------|----|----|---|----|
| CCB | | 1 | 2:46 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| SJ4231-011 | RR-SB-E4-0612 | 10 | 2:49 | | | Pb | | | | |
| SJ4231-014 | RR-SS-E5-0006 | 10 | 2:53 | | | Pb | | | | |
| SJ4231-016 | RR-SS-E6-0006 | 10 | 2:57 | | | Pb | | | | |
| SJ4231-017 | RR-SB-E6-0612 | 10 | 3:00 | | | Pb | | | | |
| SJ4231-019 | RR-SS-E7-0006 | 10 | 3:04 | | | Pb | | | | |
| ZZZZZZ | | 10 | 3:08 | | | | | | | |
| ZZZZZZ | | 50 | 3:12 | | | | | | | |
| ZZZZZZ | | 10 | 3:15 | | | | | | | |
| ZZZZZZ | | 10 | 3:19 | | | | | | | |
| ZZZZZZ | | 10 | 3:23 | | | | | | | |
| CCV | | 1 | 3:27 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 3:30 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| PBSJF13IMS3 | | 5 | 3:34 | | | Pb | | | | |
| LCSOJF13IMS3 | | 5 | 3:38 | | | Pb | | | | |
| SJ4231-020 | RR-SB-E7-0612 | 10 | 3:42 | | | Pb | | | | |
| SJ4231-022 | RR-SS-E8-0006 | 10 | 3:45 | | | Pb | | | | |
| SJ4231-023 | RR-SB-E8-0612 | 10 | 3:49 | | | Pb | | | | |
| SJ4231-025 | RR-SS-F1-0006 | 10 | 3:53 | | | Pb | | | | |
| SJ4231-026 | RR-SB-F1-0612 | 10 | 3:57 | | | Pb | | | | |
| SJ4231-028 | RR-SS-F2-0006 | 10 | 4:00 | | | Pb | | | | |
| SJ4231-029 | RR-SB-F2-0612 | 10 | 4:04 | | | Pb | | | | |
| SJ4231-031 | RR-SS-F3-0006 | 10 | 4:08 | | | Pb | | | | |
| CCV | | 1 | 4:12 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 4:15 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| SJ4231-032 | RR-SB-F3-0612 | 10 | 4:19 | | | Pb | | | | |
| SJ4231-034 | RR-SS-F4-0006 | 10 | 4:23 | | | Pb | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4231

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/14/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|-----------------|------|------|----------|----|-------|----|----|---|----|----|
| SJ4231-035 | RR-SB-F4-0612 | 10 | 4:26 | | | | | | | | Pb |
| SJ4231-036 | RR-DUP12-060916 | 10 | 4:30 | | | | | | | | Pb |
| SJ4231-037 | RR-DUP13-060916 | 10 | 4:34 | | | | | | | | Pb |
| SJ4231-038 | RR-DUP14-060916 | 10 | 4:37 | | | | | | | | Pb |
| <i>ZZZZZZ</i> | | 10 | 4:41 | | | | | | | | |
| <i>ZZZZZZ</i> | | 10 | 4:45 | | | | | | | | |
| <i>ZZZZZZ</i> | | 10 | 4:49 | | | | | | | | |
| <i>ZZZZZZ</i> | | 10 | 4:52 | | | | | | | | |
| CCV | | 1 | 4:56 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 5:00 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4231

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF14B

Date: 6/14/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| 6020 Tune | | 1 | 16:25 | | | | | | | |
| 200.8 Tune | | 1 | 16:27 | | | | | | | |
| Cal Blank | | 1 | 18:47 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| Cal Std | | 1 | 18:50 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICV | | 1 | 18:54 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICB | | 1 | 18:57 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| PQL | | 1 | 19:01 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 19:04 | | | | | | | |
| ZZZZZZ | | 1 | 19:07 | | | | | | | |
| ZZZZZZ | | 1 | 19:11 | | | | | | | |
| ICSA | | 1 | 19:14 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICSAB | | 1 | 19:18 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 19:22 | | | | | | | |
| ZZZZZZ | | 1 | 19:25 | | | | | | | |
| CCV | | 1 | 19:29 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 19:32 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 19:36 | | | | | | | |
| ZZZZZZ | | 1 | 19:39 | | | | | | | |
| ZZZZZZ | | 1 | 19:43 | | | | | | | |
| ZZZZZZ | | 1 | 19:46 | | | | | | | |
| ZZZZZZ | | 1 | 19:50 | | | | | | | |
| ZZZZZZ | | 1 | 19:53 | | | | | | | |
| ZZZZZZ | | 50 | 19:57 | | | | | | | |
| ZZZZZZ | | 50 | 20:00 | | | | | | | |
| ZZZZZZ | | 100 | 20:04 | | | | | | | |
| CCV | | 1 | 20:07 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 20:10 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4231

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF14B

Date: 6/14/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|--|
| ZZZZZZ | | 50 | 20:14 | | | | | | | | |
| ZZZZZZ | | 50 | 20:18 | | | | | | | | |
| ZZZZZZ | | 50 | 20:21 | | | | | | | | |
| ZZZZZZ | | 50 | 20:24 | | | | | | | | |
| ZZZZZZ | | 50 | 20:28 | | | | | | | | |
| ZZZZZZ | | 50 | 20:31 | | | | | | | | |
| ZZZZZZ | | 50 | 20:35 | | | | | | | | |
| ZZZZZZ | | 250 | 20:38 | | | | | | | | |
| ZZZZZZ | | 50 | 20:42 | | | | | | | | |
| ZZZZZZ | | 100 | 20:45 | | | | | | | | |
| CCV | | 1 | 20:49 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 20:52 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZZ | | 50 | 20:56 | | | | | | | | |
| PBSJF12IMS5 | | 5 | 20:59 | | | Pb | | | | | |
| ZZZZZZ | | 200 | 21:03 | | | | | | | | |
| ZZZZZZ | | 10 | 21:06 | | | | | | | | |
| ZZZZZZ | | 10 | 21:10 | | | | | | | | |
| ZZZZZZ | | 10 | 21:13 | | | | | | | | |
| PBSJF13IMS2 | | 5 | 21:17 | | | Pb | | | | | |
| LCSOJF13IMS2 | | 5 | 21:20 | | | Pb | | | | | |
| ZZZZZZ | | 10 | 21:24 | | | | | | | | |
| ZZZZZZ | | 10 | 21:27 | | | | | | | | |
| CCV | | 1 | 21:31 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 21:34 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZZ | | 10 | 21:38 | | | | | | | | |
| ZZZZZZ | | 10 | 21:41 | | | | | | | | |
| ZZZZZZ | | 10 | 21:45 | | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4231

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF14B

Date: 6/14/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|---------------|------|-------|----------|----|----|----|----|----|---|----|
| <u>ZZZZZZ</u> | | 10 | 21:48 | | | | | | | | |
| SJ4231-001 | RR-SS-E1-0006 | 10 | 21:52 | | | | | | | | Pb |
| SJ4231-002 | RR-SB-E1-0612 | 10 | 21:55 | | | | | | | | Pb |
| SJ4231-004 | RR-SS-E2-0006 | 10 | 21:59 | | | | | | | | Pb |
| SJ4231-005 | RR-SB-E2-0612 | 10 | 22:02 | | | | | | | | Pb |
| SJ4231-007 | RR-SS-E3-0006 | 10 | 22:06 | | | | | | | | Pb |
| SJ4231-008 | RR-SB-E3-0612 | 10 | 22:09 | | | | | | | | Pb |
| CCV | | 1 | 22:13 | Al | Ca | Fe | Pb | Mg | Mo | K | Na |
| CCB | | 1 | 22:16 | Al | Ca | Fe | Pb | Mg | Mo | K | Na |
| SJ4231-010 | RR-SS-E4-0006 | 10 | 22:20 | | | | | | | | Pb |
| <u>ZZZZZZ</u> | | 10 | 22:23 | | | | | | | | |
| <u>ZZZZZZ</u> | | 1 | 22:27 | | | | | | | | |
| <u>ZZZZZZ</u> | | 5 | 22:30 | | | | | | | | |
| <u>ZZZZZZ</u> | | 1 | 22:34 | | | | | | | | |
| <u>ZZZZZZ</u> | | 5 | 22:37 | | | | | | | | |
| <u>ZZZZZZ</u> | | 5 | 22:41 | | | | | | | | |
| <u>ZZZZZZ</u> | | 5 | 22:44 | | | | | | | | |
| <u>ZZZZZZ</u> | | 1 | 22:48 | | | | | | | | |
| <u>ZZZZZZ</u> | | 50 | 22:51 | | | | | | | | |
| CCV | | 1 | 22:55 | Al | Ca | Fe | Pb | Mg | Mo | K | Na |
| CCB | | 1 | 22:58 | Al | Ca | Fe | Pb | Mg | Mo | K | Na |

| ANALYTE | ORIGINAL | ORIGINAL | DUPLICATE | DUPLICATE | RL | RPD | RPD > 50% | ORIGINAL SAMPLE CONC >5xRL | DUPLICATE SAMPLE CONC >5xRL | DIFFERENCE >4XRL |
|---------|---------------|----------|-----------------|-----------|------|-------|-----------|----------------------------|-----------------------------|------------------|
| LEAD | RR-SB-E3-0612 | 153 | RR-DUP12-060916 | 227 | 0.14 | 38.95 | FALSE | TRUE | TRUE | TRUE |
| LEAD | RR-SS-E6-0006 | 151 | RR-DUP13-060916 | 184 | 0.11 | 19.70 | FALSE | TRUE | TRUE | TRUE |
| LEAD | RR-SB-F1-1224 | NA | RR-DUP14-060916 | 2.46 | | | | | | |



TO: R. SOK DATE: AUGUST 15, 2016
 FROM: L. GANSER COPIES: DV FILE
 SUBJECT: DATA VALIDATION- LEAD
 NASA WALLOPS ISLAND, VIRGINIA
 SAMPLE DELIVERY GROUP (SDG) SJ4232

SAMPLES: 13/Soil

| | | | |
|-----------------|---------------|---------------|---------------|
| RR-DUP15-060916 | RR-SB-D4-0612 | RR-SB-D4-1224 | RR-SB-F5-0612 |
| RR-SB-F6-0612 | RR-SB-F7-0612 | RR-SB-F7-1224 | RR-SB-F8-0612 |
| RR-SS-D4-0006 | RR-SS-F5-0006 | RR-SS-F6-0006 | RR-SS-F7-0006 |
| RR-SS-F8-0006 | | | |

Overview

The sample set for NASA Wallops Island, SDG SJ4232 consists of thirteen (13) soil samples. All samples were analyzed for lead. One field duplicate pair was included in this SDG: RR-SB-F5-0612 / RR-DUP15-060916.

Samples were collected on June 9, 2016 by Tetra Tech and analyzed by Katahdin. Lead analyses were conducted in accordance to SW-846 Method 6020A analytical and reporting protocols.

The data contained in this SDG were validated with regard to the following parameters: data completeness, holding times, MS tuning, laboratory method/preparation blank results, ICP interference results, blank spike results, matrix spike/matrix spike duplicate results, laboratory duplicate results, ICP serial dilution results, field duplicate precision, and detection limits. Areas of concern with respect to data quality are listed below.

Major Problems – None.

Minor Problems – None.

Notes

Lead was detected in the laboratory blanks at the following maximum concentrations:

| <u>Analyte</u> | <u>Maximum Concentration</u> | <u>Reporting Limit (RL) (> or <)</u> |
|---------------------|------------------------------|--|
| Lead ⁽¹⁾ | 0.035 mg/kg | < |
| Lead ⁽²⁾ | 0.024 mg/kg | < |
| Lead ⁽³⁾ | 0.026 mg/kg | < |

- 1 Concentration in preparation blank affecting samples in batch JF13IMS1.
- 2 Concentration in preparation blank affecting samples in batch JF13IMS2.
- 3 Concentration in preparation blank affecting samples in batch JF13IMS3.

Dilution factor, if applicable, was taken into consideration when evaluating for blank contamination. No action was taken for samples affected by blank concentrations < RL as all results were greater than the RL.

To: R. SOK
SDG: SJ4232

EXECUTIVE SUMMARY

Laboratory Performance Issues: Lead was present in the blanks.

Other Factors Affecting Data Quality: None.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review" (August 2014). The text of this report has been formulated to address only those areas affecting data quality.

The text of this report has been formulated to address only those problem areas affecting data quality.



Tetra Tech
Leanne M. Ganser
Environmental Scientist/Data Validator



Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:

- Appendix A – Qualified Analytical Results
- Appendix B – Results as Reported by the Laboratory
- Appendix C – Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate
- Z4 = Sample activity is less than the at uncertainty at 3 standard deviations and greater than the MDC
- Z5 = Sample activity is less than the at uncertainty at 3 standard deviations and less than the MDC

| | | | | | | | | | | | | | |
|---|------------|-----------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4232 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-DUP15-060916 | | | RR-SB-D4-0612 | | | RR-SB-D4-1224 | | | RR-SB-F5-0612 | | |
| | LAB_ID | SJ4232-018 | | | SJ4232-016 | | | SJ4232-017 | | | SJ4232-003 | | |
| | SAMP_DATE | 6/9/2016 | | | 6/9/2016 | | | 6/9/2016 | | | 6/9/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 91.9 | | | 90.6 | | | 92.5 | | | 91.9 | | |
| | DUP_OF | RR-SB-F5-0612 | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 3.15 | | | 108 | | | 17.4 | | | 3.61 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4232 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SB-F6-0612 | | | RR-SB-F7-0612 | | | RR-SB-F7-1224 | | | RR-SB-F8-0612 | | |
| | LAB_ID | SJ4232-006 | | | SJ4232-009 | | | SJ4232-010 | | | SJ4232-013 | | |
| | SAMP_DATE | 6/9/2016 | | | 6/9/2016 | | | 6/9/2016 | | | 6/9/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 88.8 | | | 91.4 | | | 93.4 | | | 93.6 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 13.3 | | | 9.18 | | | 2.18 | | | 3.67 | | | |

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4232 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SS-D4-0006 | | | RR-SS-F5-0006 | | | RR-SS-F6-0006 | | | RR-SS-F7-0006 | | |
| | LAB_ID | SJ4232-015 | | | SJ4232-002 | | | SJ4232-005 | | | SJ4232-008 | | |
| | SAMP_DATE | 6/9/2016 | | | 6/9/2016 | | | 6/9/2016 | | | 6/9/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 84.2 | | | 90.9 | | | 85.0 | | | 91.9 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 14100 | | | 42.1 | | | 135 | | | 9.88 | | | |

| | | | | |
|---|------------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4232 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SS-F8-0006 | | |
| | LAB_ID | SJ4232-012 | | |
| | SAMP_DATE | 6/9/2016 | | |
| | QC_TYPE | NM | | |
| | UNITS | MG/KG | | |
| | PCT_SOLIDS | 92.6 | | |
| | DUP_OF | | | |
| PARAMETER | RESULT | VQL | QLCD | |
| LEAD | 4.87 | | | |

Appendix B

Results as Reported by the Laboratory

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-F5-0006

Matrix: SOIL

SDG Name: SJ4232

Percent Solids: 90.8

Lab Sample ID: SJ4232-002

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 42.1 | | | MS | 10 | 0.17 | 0.012 | 0.084 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-F5-0612

Matrix: SOIL

SDG Name: SJ4232

Percent Solids: 91.9

Lab Sample ID: SJ4232-003

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 3.61 | | | MS | 10 | 0.11 | 0.0078 | 0.056 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-F6-0006

Matrix: SOIL

SDG Name: SJ4232

Percent Solids: 85.0

Lab Sample ID: SJ4232-005

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 135 | | | MS | 10 | 0.15 | 0.010 | 0.075 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-F6-0612

Matrix: SOIL

SDG Name: SJ4232

Percent Solids: 88.8

Lab Sample ID: SJ4232-006

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 13.3 | | | MS | 10 | 0.11 | 0.0075 | 0.054 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-F7-0006

Matrix: SOIL

SDG Name: SJ4232

Percent Solids: 91.9

Lab Sample ID: SJ4232-008

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 9.88 | | | MS | 10 | 0.13 | 0.0090 | 0.064 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-F7-0612

Matrix: SOIL

SDG Name: SJ4232

Percent Solids: 91.4

Lab Sample ID: SJ4232-009

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 9.18 | | | MS | 10 | 0.14 | 0.0095 | 0.068 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-F7-1224

Matrix: SOIL

SDG Name: SJ4232

Percent Solids: 93.4

Lab Sample ID: SJ4232-010

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | LOQ | ADJUSTED | |
|-----------|-------------|---------------|---|----|----|------|--------|----------|-----|
| | | | | | | | | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 2.18 | * | MS | 10 | 0.11 | 0.0078 | 0.055 | |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-F8-0006

Matrix: SOIL

SDG Name: SJ4232

Percent Solids: 92.6

Lab Sample ID: SJ4232-012

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 4.87 | | | MS | 10 | 0.14 | 0.010 | 0.072 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-F8-0612

Matrix: SOIL

SDG Name: SJ4232

Percent Solids: 93.6

Lab Sample ID: SJ4232-013

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 3.67 | | | MS | 10 | 0.14 | 0.0097 | 0.069 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-D4-0006

Matrix: SOIL

SDG Name: SJ4232

Percent Solids: 84.2

Lab Sample ID: SJ4232-015

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|-----|----------|------|-----|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 14100 | | | MS | 200 | 2.6 | 0.18 | 1.3 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-D4-0612

Matrix: SOIL

SDG Name: SJ4232

Percent Solids: 90.6

Lab Sample ID: SJ4232-016

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 108 | | | MS | 10 | 0.13 | 0.0091 | 0.065 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-D4-1224

Matrix: SOIL

SDG Name: SJ4232

Percent Solids: 92.5

Lab Sample ID: SJ4232-017

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 17.4 | | | MS | 10 | 0.15 | 0.010 | 0.074 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-DUP15-060916

Matrix: SOIL

SDG Name: SJ4232

Percent Solids: 91.9

Lab Sample ID: SJ4232-018

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 3.15 | | | MS | 10 | 0.16 | 0.011 | 0.082 |

Comments:

Appendix C

Support Documentation



**SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS, INC.
NASA WALLOPS FLIGHT FACILITY-MBFR
SJ4232**

Sample Receipt

The following samples were received on June 10, 2016 and were logged in under Katahdin Analytical Services work order number SJ4232 for a hardcopy due date of June 29, 2016.

| <u>KATAHDIN</u> <u>Sample No.</u> | <u>TTNUS</u> <u>Sample Identification</u> |
|--------------------------------------|--|
| SJ4232-2 | RR-SS-F5-0006 |
| SJ4232-3 | RR-SB-F5-0612 |
| SJ4232-5 | RR-SS-F6-0006 |
| SJ4232-6 | RR-SB-F6-0612 |
| SJ4232-8 | RR-SS-F7-0006 |
| SJ4232-9 | RR-SB-F7-0612 |
| SJ4232-10 | RR-SB-F7-1224 |
| SJ4232-12 | RR-SS-F8-0006 |
| SJ4232-13 | RR-SB-F8-0612 |
| SJ4232-15 | RR-SS-D4-0006 |
| SJ4232-16 | RR-SB-D4-0612 |
| SJ4232-17 | RR-SB-D4-1224 |
| SJ4232-18 | RR-DUP15-060916 |

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Metals Analysis

The samples of Katahdin Work Order SJ4232 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Solid-matrix Katahdin Sample Numbers SJ4232-(12,13,15,16,17,18) was digested for ICP-MS analysis on 06/13/16 (QC Batch JF13IMS1) in accordance with USEPA Method 3050B.

Katahdin Sample Number SJ4232-2 AS digested for ICP-MS analysis on 06/13/16 (QC Batch JF13IMS2) in accordance with USEPA Method 3050B. Katahdin Sample Number SJ4232-2 was prepared with a matrix-spiked aliquot and laboratory duplicate per client request.

Solid-matrix Katahdin Sample Numbers SJ4232-(3,5,6,8,9,10) were digested for ICP-MS analysis on 06/13/16 (QC Batch JF13IMS3) in accordance with USEPA Method 3050B. Katahdin Sample Number SJ4232-10 was prepared with a matrix-spiked aliquot and laboratory duplicate per client request.

ICP-MS analyses of Katahdin Work Order SJ4232 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Sample digestates for Katahdin Work Order SJ4232 were diluted by at least a factor of 10 in accordance with the project limits.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

| Internal Standard Element | Associated Analytes |
|----------------------------|--|
| Lithium | Beryllium, Boron |
| Scandium | Sodium, Magnesium, Aluminum, Silicon, Potassium, Calcium |
| Germanium or Yttrium | Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Strontium, Molybdenum, Silver, Cadmium |
| Terbium | Tin, Antimony, Barium, Tungsten |
| Bismuth | Lead, Thallium, Thorium, Uranium |

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Matrix QC Summary

The measured recovery of lead in the matrix-spiked aliquot of Katahdin Sample Numbers SJ4232-2 and 10 are within the project acceptance criteria (80% - 120% recovery of the added element).

The laboratory duplicate analyses of Katahdin Sample Number SJ4232-2 are within the laboratory's acceptance limit (<20% relative difference between duplicate aliquots) for lead. The laboratory duplicate analyses of Katahdin Sample Number SJ4232-2 are not within the laboratory's acceptance limit for lead at 20.8 relative difference.

The serial dilution analyses of Katahdin Sample Numbers SJ4232-2 and 10 are within the project acceptance limit (<10% relative percent difference, if the concentration in the original sample is greater than 50 times the LOD) for lead.

The measured recovery of lead in the post-digestion spiked aliquot of Katahdin Sample Numbers SJ4232-2 and 10 are within the acceptance criteria (75% - 125% recovery of the added element).

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the LOQ are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQs, MDLs, and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

The samples of Work Order SJ4232 were analyzed in accordance with the specific methods listed on the Report of Analysis.


Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are

flagged “U” and reported as “U LOD”, where “LOD” is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times, and all quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.



Leslie Dimond
06.29.16

Leslie Dimond
Quality Assurance Officer

| | | |
|---------------------------------------|------------------------------|---------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>Ja</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>GN</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>554227 → 4233</u> | KIMS Review By: <u>JO</u> | Received By: <u>SO</u> |
| SDG #: | Cooler: <u>1</u> of <u>4</u> | Date/Time Rec.: <u>6-10-16 / 0950</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|---|-----|-------------|---|
| 1. Custody seals present / intact? | ✓ | | | | |
| 2. Chain of Custody present in cooler? | ✓ | | | | |
| 3. Chain of Custody signed by client? | ✓ | | | | |
| 4. Chain of Custody matches samples? | ✓ | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | ✓ | | | | Temp (°C): <u>1.8</u> |
| Samples received at <6 °C w/o freezing? | ✓ | | | | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | ✓ | | | | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | ✓ | | | | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | ✓ | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | | |
| Aqueous: No bubble larger than a pea? | | | | ✓ | |
| Soil/Sediment: | | | | | |
| Received in airtight container? | | | | ✓ | |
| Received in methanol? | | | | ✓ | |
| Methanol covering soil? | | | | ✓ | |
| D.I. Water - Received within 48 hour HT? | | | | ✓ | |
| Air: Refer to KAS COC for canister/flow controller requirements. | ✓ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | ✓ | |
| 8. Proper sample containers and volume? | ✓ | | | | |
| 9. Samples within hold time upon receipt? | ✓ | | | | |
| 10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 Sulfide - >9 Cyanide - pH >12 | | | | ✓ ✓ ✓ | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

- RR-SS-D8-0006 - ms/vol provided.
- no ms/vol provided for D8-0612 which is on chain.
- Dup 09 missing - was received in first shipment - not needed on this chain.

0000007

| | | |
|---------------------------------------|------------------------------------|------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>Jo</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>GN</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>SJ4227 → 4233</u> | KIMS Review By: <u>[Signature]</u> | Received By: <u>SO</u> |
| SDG #: | Cooler: <u>2</u> of <u>4</u> | Date/Time Rec.: <u>6-10-16 095</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|--|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | ✓ | | | | |
| 2. Chain of Custody present in cooler? | ✓ | | | | |
| 3. Chain of Custody signed by client? | ✓ | | | | |
| 4. Chain of Custody matches samples? | ✓ | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | | | | ✓ | Temp (°C): <u>N/A</u> |
| Samples received at <6 °C w/o freezing? | | | | ✓ | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | | | | ✓ | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | | | | ✓ | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | ✓ | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | ✓ | |
| Aqueous: No bubble larger than a pea? | | | | ✓ | |
| Soil/Sediment: | | | | ✓ | |
| Received in airtight container? | | | | ✓ | |
| Received in methanol? | | | | ✓ | |
| Methanol covering soil? | | | | ✓ | |
| D.I. Water - Received within 48 hour HT? | | | | ✓ | |
| Air: Refer to KAS COC for canister/flow controller requirements. | ✓ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | ✓ | |
| 8. Proper sample containers and volume? | ✓ | | | | |
| 9. Samples within hold time upon receipt? | ✓ | | | | |
| 10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 Sulfide - >9 Cyanide - pH >12 | | | | ✓ | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

0000008

| | | |
|---------------------------------------|------------------------------|------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>SO</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>GN</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>SJ4227 → 4233</u> | KIMS Review By: <u>SO</u> | Received By: <u>SO</u> |
| SDG #: | Cooler: <u>3</u> of <u>4</u> | Date/Time Rec.: <u>6-10-16 095</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|---|---|-----|-------------------------------------|---|
| 1. Custody seals present / intact? | <input checked="" type="checkbox"/> | | | | |
| 2. Chain of Custody present in cooler? | <input checked="" type="checkbox"/> | | | | |
| 3. Chain of Custody signed by client? | <input checked="" type="checkbox"/> | | | | |
| 4. Chain of Custody matches samples? | <input checked="" type="checkbox"/> | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | | | | <input checked="" type="checkbox"/> | Temp (°C): <u>N/A</u> |
| Samples received at <6 °C w/o freezing? | | | | <input checked="" type="checkbox"/> | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | | | | <input checked="" type="checkbox"/> | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | | | | <input checked="" type="checkbox"/> | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | <input checked="" type="checkbox"/> | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | <input checked="" type="checkbox"/> | |
| Aqueous: No bubble larger than a pea? | | | | <input checked="" type="checkbox"/> | |
| Soil/Sediment: | | | | <input checked="" type="checkbox"/> | |
| Received in airtight container? | | | | <input checked="" type="checkbox"/> | |
| Received in methanol? | | | | <input checked="" type="checkbox"/> | |
| Methanol covering soil? | | | | <input checked="" type="checkbox"/> | |
| D.I. Water - Received within 48 hour HT? | | | | <input checked="" type="checkbox"/> | |
| Air: Refer to KAS COC for canister/flow controller requirements. | <input checked="" type="checkbox"/> if air included | | | | |
| 7. Trip Blank present in cooler? | | | | <input checked="" type="checkbox"/> | |
| 8. Proper sample containers and volume? | <input checked="" type="checkbox"/> | | | | |
| 9. Samples within hold time upon receipt? | <input checked="" type="checkbox"/> | | | | |
| 10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 Sulfide - >9 Cyanide - pH >12 | | | | <input checked="" type="checkbox"/> | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

0000009

| | | |
|---------------------------------------|------------------------------------|------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>JO</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>GN</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>SJ4227 → 4233</u> | KIMS Review By: <u>[Signature]</u> | Received By: <u>SO</u> |
| SDG #: | Cooler: <u>4</u> of <u>4</u> | Date/Time Rec.: <u>6-10-16 095</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | ✓ | | | | |
| 2. Chain of Custody present in cooler? | ✓ | | | | |
| 3. Chain of Custody signed by client? | ✓ | | | | |
| 4. Chain of Custody matches samples? | ✓ | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | | | | ✓ | Temp (°C): <u>N/A</u> |
| Samples received at <6 °C w/o freezing? | | | | ✓ | Note: Not required for metals (except Hg soil) analysis. |
| Ice packs or ice present? | | | | ✓ | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | | | | ✓ | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | ✓ | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | ✓ | |
| Aqueous: No bubble larger than a pea? | | | | ✓ | |
| Soil/Sediment: | | | | ✓ | |
| Received in airtight container? | | | | ✓ | |
| Received in methanol? | | | | ✓ | |
| Methanol covering soil? | | | | ✓ | |
| D.I. Water - Received within 48 hour HT? | | | | ✓ | |
| Air: Refer to KAS COC for canister/flow controller requirements. | ✓ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | ✓ | |
| 8. Proper sample containers and volume? | ✓ | | | | |
| 9. Samples within hold time upon receipt? | ✓ | | | | |
| 10. Aqueous samples properly preserved? Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH - pH <2 Sulfide - >9 Cyanide - pH >12 | | | | ✓ | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.

[Handwritten Signature]

Client: See Page 1 Contact: _____ Phone #: () () Fax #: () ()
 Address: _____ State: _____ Zip Code: _____
 Purchase Order #: _____ Proj. Name / No.: _____ Katahdin Quote #: _____
 Bill (if different than above): _____ Address: _____

Sampler (Print / Sign): _____ Copies To: _____

LAB USE ONLY WORK ORDER #: SJ4231/554232
 KATAHDIN PROJECT NUMBER: _____

REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO.: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

| ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | | |
|---|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. |
| Y | N | Y | N | Y | N | Y | N | Y | N | Y | N |
| | | | | | | | | | | | |

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Lead | | | | | | | |
|----------------------|--------------------|--------|---------------|------|--|-------|--|--|--|------|--|
| RR-SB-F1-1224 | 6-9-16 / 0837 | SO | 1 | 1 | | | | | | HOLD | |
| RR-SS-F2-0006 | / 0838 | | 1 | 1 | | | | | | | |
| RR-SB-F2-0612 | / 0839 | | 1 | 1 | | | | | | | |
| RR-SB-F2-1224 | / 0840 | | 1 | 1 | | | | | | HOLD | |
| RR-SS-F3-0006 | / 0849 | | 1 | 1 | | | | | | | |
| RR-SB-F3-0612 | / 0850 | | 1 | 1 | | | | | | | |
| RR-SB-F3-1224 | / 0851 | | 1 | 1 | | | | | | HOLD | |
| RR-SS-F4-0006 | / 0852 | | 1 | 1 | | | | | | | |
| RR-SB-F4-0612 | / 0853 | | 1 | 1 | | | | | | | |
| RR-Dup12-060916 | / 0800 | | 1 | 1 | | | | | | | |
| RR-Dup13-060916 | / 0805 | | 1 | 1 | | | | | | | |
| RR-Dup14-060916 | / 0830 | | 1 | 1 | | | | | | | |
| RR-SB-F4-1224 | / 0854 | | 1 | 1 | | | | | | HOLD | |
| RR-SS-F5-0006 | / 0902 | | 2 | 2 | | MSMSD | | | | | |
| RR-SB-F5-0612 | / 0903 | | 1 | 1 | | | | | | | |
| RR-SB-F5-1224 | ✓ / 0904 ✓ | | 1 | 1 | | | | | | HOLD | |

COMMENTS

| | | | | | |
|--|----------------------------|-----------------------------------|------------------------------|-------------|--|
| Relinquished By: (Signature) <i>[Signature]</i> | Date / Time 6-9-16 1600 | Received By: (Signature) FedEx | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <i>[Signature]</i> 6-10-16 09:20 |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000011



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client: _____ Contact: _____ Phone #: () _____ Fax #: () _____
 Address: See Page 1 City: _____ State: _____ Zip Code: _____
 Purchase Order #: _____ Proj. Name / No.: _____ Katahdin Quote #: _____
 Bill (if different than above): _____ Address: _____

Sampler (Print / Sign): _____ Copies To: _____

LAB USE ONLY WORK ORDER #: SJ4232/SJ4233
 KATAHDIN PROJECT NUMBER: _____

| REMARKS: | ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | |
|----------|---|------|------|------|------|------|------|------|------|------|
| | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill |
| | Y | N | Y | N | Y | N | Y | N | Y | N |

SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: _____
 TEMP °C: _____ TEMP BLANK INTACT NOT INTACT

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Lead | TCLP VOCs | TCLP SVOCs, PCBs | DRO | FOX | | | | | | | | | | |
|----------------------|--------------------|--------|---------------|------|-----------|------------------|-----|-----|--|--|--|--|--|--|--|--|--|--|
| RR-SS-F6-0006 | 6-9-16/0905 | SO | 1 | 1 | | | | | | | | | | | | | | |
| RR-SB-F6-0612 | /0906 | | 1 | 1 | | | | | | | | | | | | | | |
| RR-SB-F6-1224 | /0907 | | 1 | 1 | | | | | | | | | | | | | | |
| RR-SS-F7-0006 | /0918 | | 1 | 1 | | | | | | | | | | | | | | |
| RR-SB-F7-0612 | /0919 | | 1 | 1 | | | | | | | | | | | | | | |
| RR-SB-F7-1224 | /0920 | | 1 | 1 | | | | | | | | | | | | | | |
| RR-SB-F7-2436 | /0921 | | 1 | 1 | | | | | | | | | | | | | | |
| RR-SS-F8-0006 | /0922 | | 1 | 1 | | | | | | | | | | | | | | |
| RR-SB-F8-0612 | /0923 | | 1 | 1 | | | | | | | | | | | | | | |
| RR-SB-F8-1224 | /0924 | | 1 | 1 | | | | | | | | | | | | | | |
| RR-SS-D4-0006 | /1035 | | 1 | 1 | | | | | | | | | | | | | | |
| RR-SB-D4-0612 | /1036 | | 1 | 1 | | | | | | | | | | | | | | |
| RR-SB-D4-1224 | /1037 | | 1 | 1 | | | | | | | | | | | | | | |
| RR-Dupl 5-060916 | /0900 | | 1 | 1 | | | | | | | | | | | | | | |
| RR-SOCHAROL-0024 | /0930 | | 3 | | 1 | 1 | 1 | | | | | | | | | | | |
| RR-SOCHAROL-2436 | ✓ /0935 | ✓ | 3 | | 1 | 1 | 1 | | | | | | | | | | | |

COMMENTS

| | | | | | |
|--|----------------------------|-----------------------------------|------------------------------|-------------|--|
| Relinquished By: (Signature) <i>[Signature]</i> | Date / Time 6-9-16 1600 | Received By: (Signature) FedEx | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <i>[Signature]</i> 6-10-16 |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) 0930 |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000012

METALS SAMPLE FLAGGING

| FLAG | SPECIFIED MEANING |
|-------------|--|
| E | The reported value is estimated because of the presence of interference (as indicated by serial dilution). |
| N | The pre-digestion spiked sample recovery is not within control limits. |
| * | The duplicate sample analysis relative percent difference (RPD) is not within control limits. |
| B | Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample. |
| A | The post-digestion spiked sample recovery is not within control limits. |
| • | Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits. |
| U | <p>The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ) (previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.</p> <p>Note: All results reported as “U” MDL have a 50% rate for false negatives compared to those results reported as “U” PQL/LOQ or “U” LOD, where the rate of false negatives is <1%.</p> |
| J | The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL). |
| Q | One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV). |

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL "U" LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level (PQL) or LOQ could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1 - pH

H2 - DO

H3 - sulfite

H4 - residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

M1 The matrix spike and/or matrix spike duplicate recovery performed on this sample was outside of the laboratory acceptance criteria. Sample matrix is suspected. The laboratory criteria was met for the Laboratory Control Sample (LCS) analyzed concurrently with this sample.

M2 The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory acceptance criteria. The native sample concentration is greater than four times the spike added concentration so the spike added could not be distinguished from the native sample concentration.

R1 The relative percent difference (RPD) between the duplicate analyses performed on this sample was outside of the laboratory acceptance criteria (when both values are greater than ten times the PQL).

MCL Maximum Contaminant Level

NL No limit

NFL No Free Liquid Present

FLP Free Liquid Present

NOD No Odor Detected

TON Threshold Odor Number

D-1 As required by Method 5210B, APHA Standard Methods for the Examination of Water and Wastewater (21st edition), the BOD value reported for this sample is 'qualified' because the check standard run concurrently with the sample analysis did not meet the criteria specified in the method (198 +/- 30.5 mg/L). These results may not be reportable for compliance purposes.

D-2 The measured final dissolved oxygen concentrations of all dilutions were less than the method-specified limit of 1 mg/L. The reported BOD result was calculated assuming a final oxygen concentration equal to 1 mg/L. The reported value should be considered a minimum value.

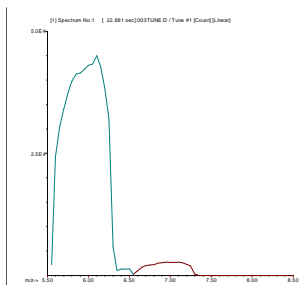
D-3 The dilution water used to prepare this sample did not meet the method and/or regulatory criteria of less than 0.2 or 0.4 mg/L dissolved oxygen (DO) uptake over the five day period of incubation. These results may not be reportable for compliance purposes.

6020 QC Tune Report

Data File: C:\ICPCHEM\1\DATA\JJF13A.B\003TUNE.D
 Date Acquired: Jun 13 2016 01:08 pm
 Acq. Method: TN6020E.M
 Operator: EAM
 Sample Name: 6020 TUNE
 Misc Info:
 Vial Number: 1107
 Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

| Element | Actual | Required | Flag |
|---------|--------|----------|------|
| 7 Li | 2.22 | 5.00 | |
| 59 Co | 0.02 | 5.00 | |
| 115 In | 0.60 | 5.00 | |
| 205 Tl | 1.48 | 5.00 | |



7 Li

Mass Calib.

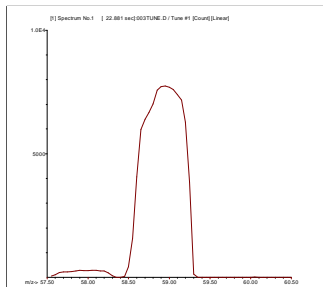
Actual: 7.00
 Required: 6.90 - 7.10

Flag:

Peak Width

Actual: 0.65
 Required: 0.90

Flag:



59 Co

Mass Calib.

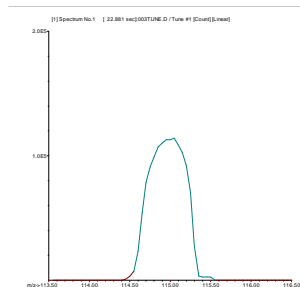
Actual: 58.95
 Required: 58.90 - 59.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:



115 In

Mass Calib.

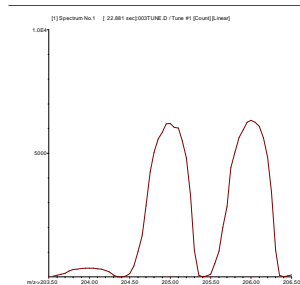
Actual: 115.00
 Required: 114.90 - 115.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:



205 Tl

Mass Calib.

Actual: 205.00
 Required: 204.90 - 205.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4232

Concentration Units: ug/L

SAMPLE: ICB

File: JJF13A Jun 13, 2016 14:08

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.345 | J |
| MOLYBDENUM | 0.051 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 14:42

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.748 | J |
| MOLYBDENUM | 0.065 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 6.660 | J |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 15:23

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.446 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.610 | J |
| MOLYBDENUM | 0.027 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4232

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 13, 2016 16:06

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.634 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.892 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 16:48

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.874 | J |
| MOLYBDENUM | 0.032 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 17:31

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 4.001 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.360 | J |
| MOLYBDENUM | 0.024 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4232

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 13, 2016 18:15

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 7.084 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.607 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 18:58

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.862 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.258 | J |
| MOLYBDENUM | 0.025 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 19:41

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.022 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4232

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 13, 2016 20:20

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 3.036 | J |
| CALCIUM | 6.900 | U |
| IRON | 9.065 | J |
| LEAD | 0.051 | J |
| MAGNESIUM | 1.279 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 21:03

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.023 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 21:47

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.980 | J |
| CALCIUM | 6.900 | U |
| IRON | 7.932 | J |
| LEAD | 0.872 | B |
| MAGNESIUM | 1.062 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4232

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 13, 2016 22:30

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 8.131 | J |
| LEAD | 0.756 | B |
| MAGNESIUM | 0.846 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 23:10

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.058 | J |
| CALCIUM | 8.772 | J |
| IRON | 6.268 | J |
| LEAD | 0.225 | B |
| MAGNESIUM | 0.764 | J |
| MOLYBDENUM | 0.024 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 13, 2016 23:53

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 7.403 | J |
| LEAD | 0.063 | J |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.030 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4232

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 14, 2016 0:37

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.155 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 3.531 | J |

SAMPLE: CCB

File: JJF13A Jun 14, 2016 1:21

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.137 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.898 | J |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.040 | J |
| MOLYBDENUM | 0.028 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 3.407 | J |

SAMPLE: CCB

File: JJF13A Jun 14, 2016 2:05

| Analyte | Result | C |
|------------|---------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | -52.900 | B |
| IRON | -42.570 | B |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | -82.920 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4232

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 14, 2016 2:46

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.175 | J |
| CALCIUM | 7.585 | J |
| IRON | 6.839 | J |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.738 | J |
| MOLYBDENUM | 0.029 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 3.174 | J |

SAMPLE: CCB

File: JJF13A Jun 14, 2016 3:30

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 9.134 | J |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.075 | J |
| MOLYBDENUM | 0.024 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF13A Jun 14, 2016 4:15

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 8.547 | J |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.534 | J |
| MOLYBDENUM | 0.023 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4232

Concentration Units: ug/L

SAMPLE: CCB

File: JJF13A Jun 14, 2016 5:00

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 11.210 | J |
| IRON | 7.282 | J |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.514 | J |
| MOLYBDENUM | 0.026 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 3.014 | J |

SAMPLE: CCB

File: JJF13A Jun 14, 2016 5:30

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 3.704 | J |
| CALCIUM | 12.700 | J |
| IRON | 7.458 | J |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.845 | J |
| MOLYBDENUM | 0.026 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 3.255 | J |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4232

Concentration Units: ug/L

SAMPLE: ICB

File: JJF14B Jun 14, 2016 18:57

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.309 | J |
| MOLYBDENUM | 0.047 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF14B Jun 14, 2016 19:32

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.559 | J |
| MOLYBDENUM | 0.059 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 6.380 | J |

SAMPLE: CCB

File: JJF14B Jun 14, 2016 20:10

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.100 | J |
| MAGNESIUM | 0.924 | J |
| MOLYBDENUM | 0.022 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 3.067 | J |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4232

Concentration Units: ug/L

SAMPLE: CCB

File: JJF14B Jun 14, 2016 20:52

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.143 | J |
| MAGNESIUM | 0.685 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF14B Jun 14, 2016 21:34

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF13IMS1

Matrix: SOIL

SDG Name: SJ4232

QC Batch ID: JF13IMS1

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|---------|--------|---|
| LEAD | 0.035 | J |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF13IMS2

Matrix: SOIL

SDG Name: SJ4232

QC Batch ID: JF13IMS2

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| LEAD | 0.024 | J |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF13IMS3

Matrix: SOIL

SDG Name: SJ4232

QC Batch ID: JF13IMS3

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| LEAD | 0.026 | J |

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services SDG Name: SJ4232

Concentration Units: ug/L

SAMPLE: ICSA

File: JJF13A Jun 13, 2016 14:24

| Analyte | TRUE | FOUND | % R |
|------------|--------|-------|------|
| ALUMINUM | 100000 | 96090 | 96.1 |
| CALCIUM | 100000 | 93120 | 93.1 |
| IRON | 100000 | 91500 | 91.5 |
| LEAD | 0 | 0 | |
| MAGNESIUM | 100000 | 93210 | 93.2 |
| MOLYBDENUM | 2000 | 1972 | 98.6 |
| POTASSIUM | 100000 | 94720 | 94.7 |
| SODIUM | 100000 | 95460 | 95.5 |

SAMPLE: ICSAB

File: JJF13A Jun 13, 2016 14:28

| Analyte | TRUE | FOUND | % R |
|------------|--------|-------|-------|
| ALUMINUM | 100000 | 96680 | 96.7 |
| CALCIUM | 100000 | 93830 | 93.8 |
| IRON | 100000 | 91810 | 91.8 |
| LEAD | 20 | 21 | 105.0 |
| MAGNESIUM | 100000 | 92630 | 92.6 |
| MOLYBDENUM | 2000 | 2000 | 100.0 |
| POTASSIUM | 100000 | 94930 | 94.9 |
| SODIUM | 100000 | 95580 | 95.6 |

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services SDG Name: SJ4232

Concentration Units: ug/L

SAMPLE: ICSA

File: JJF14B Jun 14, 2016 19:14

| Analyte | TRUE | FOUND | % R |
|------------|--------|-------|-------|
| ALUMINUM | 100000 | 93510 | 93.5 |
| CALCIUM | 100000 | 92880 | 92.9 |
| IRON | 100000 | 91570 | 91.6 |
| LEAD | 0 | 0 | |
| MAGNESIUM | 100000 | 92810 | 92.8 |
| MOLYBDENUM | 2000 | 2013 | 100.6 |
| POTASSIUM | 100000 | 95330 | 95.3 |
| SODIUM | 100000 | 93880 | 93.9 |

SAMPLE: ICSAB

File: JJF14B Jun 14, 2016 19:18

| Analyte | TRUE | FOUND | % R |
|------------|--------|-------|-------|
| ALUMINUM | 100000 | 94390 | 94.4 |
| CALCIUM | 100000 | 93090 | 93.1 |
| IRON | 100000 | 93650 | 93.7 |
| LEAD | 20 | 21 | 105.0 |
| MAGNESIUM | 100000 | 92780 | 92.8 |
| MOLYBDENUM | 2000 | 2038 | 101.9 |
| POTASSIUM | 100000 | 95570 | 95.6 |
| SODIUM | 100000 | 94930 | 94.9 |

5A
SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-F5-0006S

Matrix: SOIL

SDG Name: SJ4232

Percent Solids: 90.8

Lab Sample ID: SJ4232-002S

Concentration Units : mg/Kg drywt

| Analyte | Spiked | | Sample | | Spike | %R | Q | Control Limits (%R) | | M |
|-------------|--------|--------|--------|---|-------|-------|---|---------------------|------|----|
| | Sample | Result | Result | C | | | | Low | High | |
| LEAD, TOTAL | | 51.1 | 42.1 | | 8.67 | 103.6 | | 84 | 118 | MS |

Comments:

5A

SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-F7-1224S

Matrix: SOIL

SDG Name: SJ4232

Percent Solids: 93.4

Lab Sample ID: SJ4232-010S

Concentration Units : mg/Kg drywt

| Analyte | Spiked | | Sample | | Spike | %R | Q | Control Limits (%R) | | M |
|-------------|--------|--------|--------|---|-------|-------|---|---------------------|------|----|
| | Sample | Result | Result | C | | | | Low | High | |
| LEAD, TOTAL | | 7.31 | 2.18 | C | 5.12 | 100.2 | | 84 | 118 | MS |

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SS-F5-0006S

Matrix: SOIL

SDG Name: SJ4232

Percent Solids: 90.8

Lab Sample ID: SJ4232-002A

Concentration Units : ug/L

| Analyte | Spiked | | Sample | | Spike | %R | Q | Control Limits (%R) | | M |
|-------------|--------|--------|--------|---|-------|-------|---|---------------------|------|----|
| | Sample | Result | Result | C | | | | Low | High | |
| LEAD, TOTAL | | 52.3 | 50.2 | C | 2 | 106.0 | | 80 | 120 | MS |

Comments:

5B

POST DIGEST SPIKE SAMPLE RECOVERY

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-F7-1224S

Matrix: SOIL

SDG Name: SJ4232

Percent Solids: 93.4

Lab Sample ID: SJ4232-010A

Concentration Units : ug/L

| Analyte | Spiked | | Sample | | Spike | %R | Q | Control Limits (%R) | | M |
|-------------|--------|--------|--------|---|-------|-------|---|---------------------|------|----|
| | Sample | Result | Result | C | | | | Low | High | |
| LEAD, TOTAL | | 6.06 | 3.94 | C | 2 | 105.9 | | 80 | 120 | MS |

Comments:

6
DUPLICATES

Lab Name: Katahdin Analytical Services
Matrix: SOIL
Percent Solids: 90.8

Client Field ID: RR-SS-F5-0006D
SDG Name: SJ4232
Lab Sample ID: SJ4232-002D

Concentration Units : mg/Kg drywt

| Analyte | Control Limits | Sample Result | C | Duplicate Result | C | RPD | Q | M |
|-------------|----------------|---------------|---|------------------|---|-----|---|----|
| LEAD, TOTAL | | 42.1451 | | 42.0678 | | 0.2 | | MS |

Comments:

6
DUPLICATES

Lab Name: Katahdin Analytical Services
Matrix: SOIL
Percent Solids: 93.4

Client Field ID: RR-SB-F7-1224D
SDG Name: SJ4232
Lab Sample ID: SJ4232-010D

Concentration Units : mg/Kg drywt

| Analyte | Control Limits | Sample Result | C | Duplicate Result | C | RPD | Q | M |
|-------------|----------------|---------------|---|------------------|---|------|---|----|
| LEAD, TOTAL | | 2.1838 | | 2.6916 | | 20.8 | * | MS |

RPD < 35% for soil samples

Comments:

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF13IMS1**Matrix:** SOIL**SDG Name:** SJ4232**QC Batch ID:** JF13IMS1**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 10.0 | 100.6 | 84 | 118 |

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF13IMS2**Matrix:** SOIL**SDG Name:** SJ4232**QC Batch ID:** JF13IMS2**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 9.84 | 98.4 | 84 | 118 |

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF13IMS3**Matrix:** SOIL**SDG Name:** SJ4232**QC Batch ID:** JF13IMS3**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 9.90 | 99.0 | 84 | 118 |

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services**Client Field ID:** RR-SS-F5-0006L**Matrix:** SOIL**SDG Name:** SJ4232**Lab Sample ID:** SJ4232-002L**Concentration Units: ug/L**

| Analyte | Sample Result | C | Dilution | Result | C | % Difference | Q | M |
|----------------|----------------------|----------|-----------------|---------------|----------|---------------------|----------|----------|
| LEAD, TOTAL | 50.2 | | | 49.9 | | 0.6 | | MS |

ICP SERIAL DILUTION

Lab Name: Katahdin Analytical Services**Client Field ID:** RR-SB-F7-1224L**Matrix:** SOIL**SDG Name:** SJ4232**Lab Sample ID:** SJ4232-010L**Concentration Units: ug/L**

| Analyte | Sample Result | C | Dilution | Result | C | % Difference | Q | M |
|----------------|----------------------|----------|-----------------|---------------|----------|---------------------|----------|----------|
| LEAD, TOTAL | 3.94 | | | 3.94 | | 0.0 | | MS |

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 3/14/2016**

| Analyte | Concentration Units: ug/L | | |
|------------|---------------------------|-------|----|
| | PQL/LOQ | IDL | M |
| ALUMINUM | 300 | 1.4 | MS |
| CALCIUM | 100 | 6.9 | MS |
| IRON | 100 | 6.2 | MS |
| LEAD | 0.20 | 0.041 | MS |
| MAGNESIUM | 100 | 0.65 | MS |
| MOLYBDENUM | 1.0 | 0.021 | MS |
| POTASSIUM | 1000 | 13. | MS |
| SODIUM | 1000 | 2.9 | MS |

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 1/26/2011**

| Analyte | LOD | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| LEAD | 0.010 | mg/Kg | MS | SW846 3050B / SW846 6020A |

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 1/26/2011**

| Analyte | MDL | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| LEAD | 0.0014 | mg/kg | MS | SW846 3050B / SW846 6020A |

12
ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services

Instrument Code: J

Instrument Name: AGILENT 7500 ICP-MS

Date: 4/4/2016

Concentration Units: ug/L

| Analyte | Integration Time (sec) | Linear Range | M |
|------------|------------------------|--------------|----|
| ALUMINUM | 0.01 | 200000 | MS |
| CALCIUM | 0.03 | 200000 | MS |
| IRON | 0.03 | 100000 | MS |
| LEAD | 0.10 | 2000 | MS |
| MAGNESIUM | 0.05 | 200000 | MS |
| MOLYBDENUM | 0.10 | 1000 | MS |
| POTASSIUM | 0.01 | 200000 | MS |
| SODIUM | 0.01 | 200000 | MS |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF13IMS1**Matrix:** SOIL**SDG Name:** SJ4232**Method:** MS**Prep Date:** 06/13/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF13IMS1 | LC SOJF13IMS1 | 1 | 0.1 | |
| PBSJF13IMS1 | PBSJF13IMS1 | 1 | 0.1 | |
| RR-SS-F8-0006 | SJ4232-012 | 1.51 | 0.1 | A |
| RR-SB-F8-0612 | SJ4232-013 | 1.54 | 0.1 | A |
| RR-SS-D4-0006 | SJ4232-015 | 1.83 | 0.1 | A |
| RR-SB-D4-0612 | SJ4232-016 | 1.69 | 0.1 | A |
| RR-SB-D4-1224 | SJ4232-017 | 1.45 | 0.1 | A |
| RR-DUP15-060916 | SJ4232-018 | 1.33 | 0.1 | A |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF13IMS2**Matrix:** SOIL**SDG Name:** SJ4232**Method:** MS**Prep Date:** 06/13/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF13IMS2 | LC SOJF13IMS2 | 1 | 0.1 | |
| PBSJF13IMS2 | PBSJF13IMS2 | 1 | 0.1 | |
| RR-SS-F5-0006 | SJ4232-002 | 1.31 | 0.1 | A |
| RR-SS-F5-0006D | SJ4232-002D | 1.41 | 0.1 | A |
| RR-SS-F5-0006S | SJ4232-002S | 1.27 | 0.1 | A |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF13IMS3**Matrix:** SOIL**SDG Name:** SJ4232**Method:** MS**Prep Date:** 06/13/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF13IMS3 | LC SOJF13IMS3 | 1 | 0.1 | |
| PBSJF13IMS3 | PBSJF13IMS3 | 1 | 0.1 | |
| RR-SB-F5-0612 | SJ4232-003 | 1.96 | 0.1 | A |
| RR-SS-F6-0006 | SJ4232-005 | 1.57 | 0.1 | A |
| RR-SB-F6-0612 | SJ4232-006 | 2.09 | 0.1 | A |
| RR-SS-F7-0006 | SJ4232-008 | 1.69 | 0.1 | A |
| RR-SB-F7-0612 | SJ4232-009 | 1.62 | 0.1 | A |
| RR-SB-F7-1224 | SJ4232-010 | 1.93 | 0.1 | A |
| RR-SB-F7-1224D | SJ4232-010D | 1.97 | 0.1 | A |
| RR-SB-F7-1224S | SJ4232-010S | 2.09 | 0.1 | A |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4232

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| 6020 Tune | | 1 | 13:08 | | | | | | | |
| 200.8 Tune | | 1 | 13:11 | | | | | | | |
| Cal Blank | | 1 | 13:58 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| Cal Std | | 1 | 14:01 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICV | | 1 | 14:04 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICB | | 1 | 14:08 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| PQL | | 1 | 14:11 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| <i>ZZZZZZ</i> | | 1 | 14:14 | | | | | | | |
| <i>ZZZZZZ</i> | | 1 | 14:17 | | | | | | | |
| <i>ZZZZZZ</i> | | 1 | 14:21 | | | | | | | |
| ICSA | | 1 | 14:24 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICSAB | | 1 | 14:28 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| <i>ZZZZZZ</i> | | 1 | 14:32 | | | | | | | |
| <i>ZZZZZZ</i> | | 1 | 14:35 | | | | | | | |
| CCV | | 1 | 14:38 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 14:42 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| <i>ZZZZZZ</i> | | 5 | 14:45 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 14:48 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 14:52 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 14:55 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 14:59 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 15:02 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 15:06 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 15:09 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 15:13 | | | | | | | |
| <i>ZZZZZZ</i> | | 5 | 15:16 | | | | | | | |
| CCV | | 1 | 15:20 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4232

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| CCB | | 1 | 15:23 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 15:27 | | | | | | | |
| ZZZZZZ | | 10 | 15:30 | | | | | | | |
| ZZZZZZ | | 10 | 15:34 | | | | | | | |
| ZZZZZZ | | 10 | 15:37 | | | | | | | |
| ZZZZZZ | | 10 | 15:41 | | | | | | | |
| ZZZZZZ | | 10 | 15:44 | | | | | | | |
| ZZZZZZ | | 10 | 15:48 | | | | | | | |
| ZZZZZZ | | 10 | 15:51 | | | | | | | |
| ZZZZZZ | | 10 | 15:55 | | | | | | | |
| ZZZZZZ | | 10 | 15:58 | | | | | | | |
| CCV | | 1 | 16:02 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 16:06 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 16:09 | | | | | | | |
| ZZZZZZ | | 10 | 16:13 | | | | | | | |
| ZZZZZZ | | 10 | 16:16 | | | | | | | |
| ZZZZZZ | | 10 | 16:20 | | | | | | | |
| ZZZZZZ | | 10 | 16:23 | | | | | | | |
| ZZZZZZ | | 10 | 16:27 | | | | | | | |
| ZZZZZZ | | 10 | 16:30 | | | | | | | |
| ZZZZZZ | | 10 | 16:34 | | | | | | | |
| ZZZZZZ | | 10 | 16:37 | | | | | | | |
| ZZZZZZ | | 50 | 16:41 | | | | | | | |
| CCV | | 1 | 16:44 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 16:48 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 16:52 | | | | | | | |
| ZZZZZZ | | 10 | 16:55 | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4232

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| ZZZZZZ | | 10 | 16:59 | | | | | | | |
| ZZZZZZ | | 5 | 17:02 | | | | | | | |
| ZZZZZZ | | 5 | 17:06 | | | | | | | |
| ZZZZZZ | | 10 | 17:10 | | | | | | | |
| ZZZZZZ | | 10 | 17:13 | | | | | | | |
| ZZZZZZ | | 10 | 17:17 | | | | | | | |
| ZZZZZZ | | 10 | 17:20 | | | | | | | |
| ZZZZZZ | | 10 | 17:24 | | | | | | | |
| CCV | | 1 | 17:28 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 17:31 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 17:35 | | | | | | | |
| ZZZZZZ | | 10 | 17:38 | | | | | | | |
| ZZZZZZ | | 10 | 17:42 | | | | | | | |
| ZZZZZZ | | 10 | 17:46 | | | | | | | |
| ZZZZZZ | | 10 | 17:49 | | | | | | | |
| ZZZZZZ | | 10 | 17:53 | | | | | | | |
| ZZZZZZ | | 10 | 17:56 | | | | | | | |
| ZZZZZZ | | 10 | 18:00 | | | | | | | |
| ZZZZZZ | | 10 | 18:04 | | | | | | | |
| ZZZZZZ | | 10 | 18:07 | | | | | | | |
| CCV | | 1 | 18:11 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 18:15 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 18:18 | | | | | | | |
| ZZZZZZ | | 10 | 18:22 | | | | | | | |
| ZZZZZZ | | 10 | 18:25 | | | | | | | |
| ZZZZZZ | | 10 | 18:29 | | | | | | | |
| ZZZZZZ | | 50 | 18:33 | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4232

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|--|
| ZZZZZZ | | 10 | 18:36 | | | | | | | | |
| ZZZZZZ | | 10 | 18:40 | | | | | | | | |
| ZZZZZZ | | 10 | 18:43 | | | | | | | | |
| ZZZZZZ | | 10 | 18:47 | | | | | | | | |
| ZZZZZZ | | 5 | 18:50 | | | | | | | | |
| CCV | | 1 | 18:54 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 18:58 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZZ | | 5 | 19:01 | | | | | | | | |
| ZZZZZZ | | 10 | 19:05 | | | | | | | | |
| ZZZZZZ | | 10 | 19:08 | | | | | | | | |
| ZZZZZZ | | 10 | 19:12 | | | | | | | | |
| ZZZZZZ | | 10 | 19:16 | | | | | | | | |
| ZZZZZZ | | 10 | 19:19 | | | | | | | | |
| ZZZZZZ | | 10 | 19:23 | | | | | | | | |
| ZZZZZZ | | 10 | 19:26 | | | | | | | | |
| ZZZZZZ | | 10 | 19:30 | | | | | | | | |
| ZZZZZZ | | 10 | 19:34 | | | | | | | | |
| CCV | | 1 | 19:37 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 19:41 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZZ | | 10 | 19:44 | | | | | | | | |
| ZZZZZZ | | 10 | 19:48 | | | | | | | | |
| ZZZZZZ | | 10 | 19:52 | | | | | | | | |
| ZZZZZZ | | 10 | 19:55 | | | | | | | | |
| ZZZZZZ | | 10 | 19:59 | | | | | | | | |
| ZZZZZZ | | 10 | 20:02 | | | | | | | | |
| ZZZZZZ | | 10 | 20:06 | | | | | | | | |
| ZZZZZZ | | 10 | 20:09 | | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4232

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| ZZZZZZ | | 10 | 20:13 | | | | | | | |
| CCV | | 1 | 20:17 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 20:20 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 20:24 | | | | | | | |
| ZZZZZZ | | 50 | 20:27 | | | | | | | |
| ZZZZZZ | | 10 | 20:31 | | | | | | | |
| ZZZZZZ | | 10 | 20:35 | | | | | | | |
| ZZZZZZ | | 10 | 20:38 | | | | | | | |
| ZZZZZZ | | 5 | 20:42 | | | | | | | |
| ZZZZZZ | | 5 | 20:45 | | | | | | | |
| ZZZZZZ | | 10 | 20:49 | | | | | | | |
| ZZZZZZ | | 10 | 20:52 | | | | | | | |
| ZZZZZZ | | 10 | 20:56 | | | | | | | |
| CCV | | 1 | 21:00 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 21:03 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 21:07 | | | | | | | |
| ZZZZZZ | | 10 | 21:11 | | | | | | | |
| ZZZZZZ | | 10 | 21:14 | | | | | | | |
| ZZZZZZ | | 10 | 21:18 | | | | | | | |
| ZZZZZZ | | 10 | 21:22 | | | | | | | |
| ZZZZZZ | | 10 | 21:25 | | | | | | | |
| ZZZZZZ | | 10 | 21:29 | | | | | | | |
| ZZZZZZ | | 10 | 21:32 | | | | | | | |
| ZZZZZZ | | 10 | 21:36 | | | | | | | |
| ZZZZZZ | | 10 | 21:39 | | | | | | | |
| CCV | | 1 | 21:43 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 21:47 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

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ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4232

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| ZZZZZZ | | 10 | 21:51 | | | | | | | |
| ZZZZZZ | | 10 | 21:54 | | | | | | | |
| ZZZZZZ | | 10 | 21:58 | | | | | | | |
| ZZZZZZ | | 10 | 22:01 | | | | | | | |
| ZZZZZZ | | 10 | 22:05 | | | | | | | |
| ZZZZZZ | | 10 | 22:09 | | | | | | | |
| ZZZZZZ | | 10 | 22:12 | | | | | | | |
| ZZZZZZ | | 50 | 22:16 | | | | | | | |
| ZZZZZZ | | 10 | 22:19 | | | | | | | |
| ZZZZZZ | | 10 | 22:23 | | | | | | | |
| CCV | | 1 | 22:26 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 22:30 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 22:34 | | | | | | | |
| ZZZZZZ | | 5 | 22:37 | | | | | | | |
| ZZZZZZ | | 5 | 22:41 | | | | | | | |
| ZZZZZZ | | 10 | 22:45 | | | | | | | |
| ZZZZZZ | | 10 | 22:48 | | | | | | | |
| ZZZZZZ | | 10 | 22:52 | | | | | | | |
| ZZZZZZ | | 10 | 22:55 | | | | | | | |
| ZZZZZZ | | 10 | 22:59 | | | | | | | |
| ZZZZZZ | | 10 | 23:02 | | | | | | | |
| CCV | | 1 | 23:06 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 23:10 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 23:13 | | | | | | | |
| ZZZZZZ | | 10 | 23:17 | | | | | | | |
| ZZZZZZ | | 10 | 23:21 | | | | | | | |
| ZZZZZZ | | 10 | 23:24 | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4232

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/13/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| ZZZZZZ | | 10 | 23:28 | | | | | | | |
| ZZZZZZ | | 10 | 23:32 | | | | | | | |
| ZZZZZZ | | 10 | 23:35 | | | | | | | |
| ZZZZZZ | | 10 | 23:39 | | | | | | | |
| ZZZZZZ | | 10 | 23:43 | | | | | | | |
| ZZZZZZ | | 10 | 23:46 | | | | | | | |
| CCV | | 1 | 23:50 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 23:53 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 23:57 | | | | | | | |
| ZZZZZZ | | 10 | 0:01 | | | | | | | |
| ZZZZZZ | | 10 | 0:05 | | | | | | | |
| ZZZZZZ | | 50 | 0:08 | | | | | | | |
| ZZZZZZ | | 10 | 0:12 | | | | | | | |
| ZZZZZZ | | 10 | 0:15 | | | | | | | |
| ZZZZZZ | | 10 | 0:19 | | | | | | | |
| ZZZZZZ | | 5 | 0:23 | | | | | | | |
| ZZZZZZ | | 5 | 0:26 | | | | | | | |
| ZZZZZZ | | 5 | 0:30 | | | | | | | |
| CCV | | 1 | 0:34 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 0:37 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 5 | 0:41 | | | | | | | |
| ZZZZZZ | | 5 | 0:45 | | | | | | | |
| ZZZZZZ | | 5 | 0:48 | | | | | | | |
| ZZZZZZ | | 5 | 0:52 | | | | | | | |
| ZZZZZZ | | 5 | 0:56 | | | | | | | |
| PBSJF13IMS1 | | 5 | 0:59 | | | | Pb | | | |
| LCSOJF13IMS1 | | 5 | 1:03 | | | | Pb | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4232

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/14/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|---------------|------|------|----------|----|-------|----|----|---|----|
| ZZZZZZ | | 10 | 1:07 | | | | | | | |
| SJ4232-012 | RR-SS-F8-0006 | 10 | 1:10 | | | | Pb | | | |
| SJ4232-013 | RR-SB-F8-0612 | 10 | 1:14 | | | | Pb | | | |
| CCV | | 1 | 1:18 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 1:21 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 1:25 | | | | | | | |
| ZZZZZZ | | 10 | 1:28 | | | | | | | |
| ZZZZZZ | | 10 | 1:32 | | | | | | | |
| ZZZZZZ | | 10 | 1:36 | | | | | | | |
| ZZZZZZ | | 5 | 1:39 | | | | | | | |
| ZZZZZZ | | 5 | 1:43 | | | | | | | |
| ZZZZZZ | | 10 | 1:47 | | | | | | | |
| ZZZZZZ | | 10 | 1:50 | | | | | | | |
| ZZZZZZ | | 10 | 1:54 | | | | | | | |
| ZZZZZZ | | 10 | 1:58 | | | | | | | |
| CCV | | 1 | 2:01 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 2:05 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 2:09 | | | | | | | |
| ZZZZZZ | | 10 | 2:12 | | | | | | | |
| ZZZZZZ | | 10 | 2:16 | | | | | | | |
| ZZZZZZ | | 10 | 2:20 | | | | | | | |
| ZZZZZZ | | 10 | 2:24 | | | | | | | |
| ZZZZZZ | | 10 | 2:27 | | | | | | | |
| ZZZZZZ | | 10 | 2:31 | | | | | | | |
| ZZZZZZ | | 10 | 2:35 | | | | | | | |
| ZZZZZZ | | 10 | 2:38 | | | | | | | |
| CCV | | 1 | 2:42 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4232

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/14/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|----------------|------|------|----------|----|-------|----|----|---|----|--|
| CCB | | 1 | 2:46 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZ | | 10 | 2:49 | | | | | | | | |
| ZZZZZ | | 10 | 2:53 | | | | | | | | |
| ZZZZZ | | 10 | 2:57 | | | | | | | | |
| ZZZZZ | | 10 | 3:00 | | | | | | | | |
| ZZZZZ | | 10 | 3:04 | | | | | | | | |
| SJ4232-002 | RR-SS-F5-0006 | 10 | 3:08 | | | Pb | | | | | |
| SJ4232-002L | RR-SS-F5-0006L | 50 | 3:12 | | | Pb | | | | | |
| SJ4232-002A | RR-SS-F5-0006A | 10 | 3:15 | | | Pb | | | | | |
| SJ4232-002D | RR-SS-F5-0006D | 10 | 3:19 | | | Pb | | | | | |
| SJ4232-002S | RR-SS-F5-0006S | 10 | 3:23 | | | Pb | | | | | |
| CCV | | 1 | 3:27 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 3:30 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| PBSJF13IMS3 | | 5 | 3:34 | | | Pb | | | | | |
| LCSOJF13IMS3 | | 5 | 3:38 | | | Pb | | | | | |
| ZZZZZ | | 10 | 3:42 | | | | | | | | |
| ZZZZZ | | 10 | 3:45 | | | | | | | | |
| ZZZZZ | | 10 | 3:49 | | | | | | | | |
| ZZZZZ | | 10 | 3:53 | | | | | | | | |
| ZZZZZ | | 10 | 3:57 | | | | | | | | |
| ZZZZZ | | 10 | 4:00 | | | | | | | | |
| ZZZZZ | | 10 | 4:04 | | | | | | | | |
| ZZZZZ | | 10 | 4:08 | | | | | | | | |
| CCV | | 1 | 4:12 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 4:15 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZ | | 10 | 4:19 | | | | | | | | |
| ZZZZZ | | 10 | 4:23 | | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4232

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF13A

Date: 6/14/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|----------------|------|------|----------|----|-------|----|----|---|----|--|
| ZZZZZZ | | 10 | 4:26 | | | | | | | | |
| ZZZZZZ | | 10 | 4:30 | | | | | | | | |
| ZZZZZZ | | 10 | 4:34 | | | | | | | | |
| ZZZZZZ | | 10 | 4:37 | | | | | | | | |
| SJ4232-003 | RR-SB-F5-0612 | 10 | 4:41 | Pb | | | | | | | |
| SJ4232-005 | RR-SS-F6-0006 | 10 | 4:45 | Pb | | | | | | | |
| SJ4232-006 | RR-SB-F6-0612 | 10 | 4:49 | Pb | | | | | | | |
| SJ4232-008 | RR-SS-F7-0006 | 10 | 4:52 | Pb | | | | | | | |
| CCV | | 1 | 4:56 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 5:00 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| SJ4232-009 | RR-SB-F7-0612 | 10 | 5:04 | Pb | | | | | | | |
| SJ4232-010 | RR-SB-F7-1224 | 10 | 5:07 | Pb | | | | | | | |
| SJ4232-010L | RR-SB-F7-1224L | 50 | 5:11 | Pb | | | | | | | |
| SJ4232-010A | RR-SB-F7-1224A | 10 | 5:15 | Pb | | | | | | | |
| SJ4232-010D | RR-SB-F7-1224D | 10 | 5:18 | Pb | | | | | | | |
| SJ4232-010S | RR-SB-F7-1224S | 10 | 5:22 | Pb | | | | | | | |
| CCV | | 1 | 5:26 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 5:30 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4232

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF14B

Date: 6/14/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| 6020 Tune | | 1 | 16:25 | | | | | | | |
| 200.8 Tune | | 1 | 16:27 | | | | | | | |
| Cal Blank | | 1 | 18:47 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| Cal Std | | 1 | 18:50 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICV | | 1 | 18:54 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICB | | 1 | 18:57 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| PQL | | 1 | 19:01 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 19:04 | | | | | | | |
| ZZZZZZ | | 1 | 19:07 | | | | | | | |
| ZZZZZZ | | 1 | 19:11 | | | | | | | |
| ICSA | | 1 | 19:14 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICSAB | | 1 | 19:18 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 19:22 | | | | | | | |
| ZZZZZZ | | 1 | 19:25 | | | | | | | |
| CCV | | 1 | 19:29 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 19:32 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 19:36 | | | | | | | |
| ZZZZZZ | | 1 | 19:39 | | | | | | | |
| ZZZZZZ | | 1 | 19:43 | | | | | | | |
| ZZZZZZ | | 1 | 19:46 | | | | | | | |
| ZZZZZZ | | 1 | 19:50 | | | | | | | |
| ZZZZZZ | | 1 | 19:53 | | | | | | | |
| ZZZZZZ | | 50 | 19:57 | | | | | | | |
| ZZZZZZ | | 50 | 20:00 | | | | | | | |
| ZZZZZZ | | 100 | 20:04 | | | | | | | |
| CCV | | 1 | 20:07 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 20:10 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4232

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF14B

Date: 6/14/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------------|------|-------|----------|----|-------|----|----|---|----|
| ZZZZZZ | | 50 | 20:14 | | | | | | | |
| ZZZZZZ | | 50 | 20:18 | | | | | | | |
| ZZZZZZ | | 50 | 20:21 | | | | | | | |
| ZZZZZZ | | 50 | 20:24 | | | | | | | |
| ZZZZZZ | | 50 | 20:28 | | | | | | | |
| ZZZZZZ | | 50 | 20:31 | | | | | | | |
| ZZZZZZ | | 50 | 20:35 | | | | | | | |
| ZZZZZZ | | 250 | 20:38 | | | | | | | |
| ZZZZZZ | | 50 | 20:42 | | | | | | | |
| ZZZZZZ | | 100 | 20:45 | | | | | | | |
| CCV | | 1 | 20:49 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 20:52 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 50 | 20:56 | | | | | | | |
| ZZZZZZ | | 5 | 20:59 | | | | | | | |
| SJ4232-015 | RR-SS-D4-0006 | 200 | 21:03 | | | Pb | | | | |
| SJ4232-016 | RR-SB-D4-0612 | 10 | 21:06 | | | Pb | | | | |
| SJ4232-017 | RR-SB-D4-1224 | 10 | 21:10 | | | Pb | | | | |
| SJ4232-018 | RR-DUP15-060916 | 10 | 21:13 | | | Pb | | | | |
| PBSJF13IMS2 | | 5 | 21:17 | | | Pb | | | | |
| LCSOJF13IMS2 | | 5 | 21:20 | | | Pb | | | | |
| ZZZZZZ | | 10 | 21:24 | | | | | | | |
| ZZZZZZ | | 10 | 21:27 | | | | | | | |
| CCV | | 1 | 21:31 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 21:34 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

| ANALYTE | ORIGINAL | ORIGINAL | DUPLICATE | DUPLICATE | RL | RPD | RPD > 50% | ORIGINAL SAMPLE CONC >5xRL | DUPLICATE SAMPLE CONC >5xRL | DIFFERENCE >4XRL |
|---------|---------------|----------|-----------------|-----------|------|-------|-----------|----------------------------|-----------------------------|------------------|
| LEAD | RR-SB-F5-0612 | 3.61 | RR-DUP15-060916 | 3.15 | 0.11 | 13.61 | FALSE | TRUE | TRUE | TRUE |

To: R. SOK
SDG: SJ4233 & SJ5500

EXECUTIVE SUMMARY

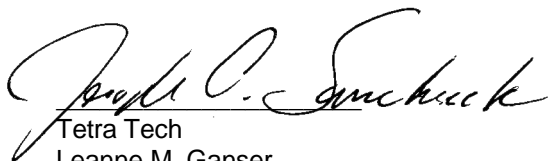
Laboratory Performance Issues: N A low surrogate recovery was reported in the aqueous characterization sample for DRO.

Other Factors Affecting Data Quality: None.

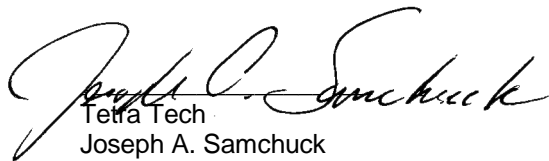
The data for these analyses were reviewed with reference to the "National Functional Guidelines for Organic Review" (August 2014) and "National Functional Guidelines for Inorganic Review" (August 2014). The text of this report has been formulated to address only those areas affecting data quality.

The text of this report has been formulated to address only those problem areas affecting data quality.

for



Tetra Tech
Leanne M. Ganser
Environmental Scientist/Data Validator



Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:

- Appendix A – Qualified Analytical Results
- Appendix B – Results as Reported by the Laboratory
- Appendix C – Support Documentation

APPENDIX A

QUALIFIED ANALYTICAL RESULTS

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate
- Z4 = Sample activity is less than the at uncertainty at 3 standard deviations and greater than the MDC
- Z5 = Sample activity is less than the at uncertainty at 3 standard deviations and less than the MDC

| | | | | | | | | | | | | | |
|---|------------|------------------|------|--------|------------------|------|--------|------------------|------|--------|------------------|------|--|
| PROJ_NO: 07723 SDG: SJ4233 FRACTION: PET MEDIA: SOIL | NSAMPLE | PR-SOCHAR03-0024 | | | PR-SOCHAR03-2436 | | | RR-SOCHAR01-0024 | | | RR-SOCHAR01-2436 | | |
| | LAB_ID | SJ4233-1 | | | SJ4233-2 | | | SJ4233-3 | | | SJ4233-4 | | |
| | SAMP_DATE | 6/9/2016 | | | 6/9/2016 | | | 6/9/2016 | | | 6/9/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 92.2 | | | 91.0 | | | 90.3 | | | 90.2 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| DIESEL RANGE ORGANICS | 3.5 | J | P | 5.9 | | | 3.5 | J | P | 2.3 | U | | |

| | | | | | | | | | | | | | |
|--|------------|------------------|------|--------|-------|------|--------|------------------|------|--------|-------|------|--|
| PROJ_NO: 07723 SDG: SJ4233 FRACTION: MISC MEDIA: SOIL | NSAMPLE | PR-SOCHAR03-0024 | | | | | | PR-SOCHAR03-2436 | | | | | |
| | LAB_ID | 490-105642-1 | | | | | | 490-105642-2 | | | | | |
| | SAMP_DATE | 6/9/2016 | | | | | | 6/9/2016 | | | | | |
| | QC_TYPE | NM | | | | | | NM | | | | | |
| | UNITS | % | | | MG/KG | | | % | | | MG/KG | | |
| | PCT_SOLIDS | 92.2 | | | 92.2 | | | 91.0 | | | 91.0 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| EXTRACTABLE ORGANIC HALOGENS | | | | 25 | U | | | | | 25 | U | | |
| TOTAL SOLIDS | 92 | | | | | | 91 | | | | | | |

| | | | | | | | | | | | | | |
|--|------------|------------------|------|--------|-------|------|--------|------------------|------|--------|-------|------|--|
| PROJ_NO: 07723 SDG: SJ4233 FRACTION: MISC MEDIA: SOIL | NSAMPLE | RR-SOCHAR01-0024 | | | | | | RR-SOCHAR01-2436 | | | | | |
| | LAB_ID | 490-105642-3 | | | | | | 490-105642-4 | | | | | |
| | SAMP_DATE | 6/9/2016 | | | | | | 6/9/2016 | | | | | |
| | QC_TYPE | NM | | | | | | NM | | | | | |
| | UNITS | % | | | MG/KG | | | % | | | MG/KG | | |
| | PCT_SOLIDS | 90.3 | | | 90.3 | | | 90.2 | | | 90.2 | | |
| | DUP_OF | | | | | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| EXTRACTABLE ORGANIC HALOGENS | | | | 26 | U | | | | | 23.6 | U | | |
| TOTAL SOLIDS | 90 | | | | | | 90 | | | | | | |

| | | | | |
|---|------------|---------------------|------|--|
| PROJ_NO: 07723 SDG: SJ5500 FRACTION: OV MEDIA: WATER | NSAMPLE | MBFR-AQCHAR1-072016 | | |
| | LAB_ID | SJ5500-2 | | |
| | SAMP_DATE | 7/20/2016 | | |
| | QC_TYPE | NM | | |
| | UNITS | UG/L | | |
| | PCT_SOLIDS | 0.0 | | |
| | DUP_OF | | | |
| PARAMETER | RESULT | VQL | QLCD | |
| BENZENE | 0.26 | U | | |
| ETHYLBENZENE | 0.21 | U | | |
| M+P-XYLENES | 0.59 | U | | |
| O-XYLENE | 0.25 | U | | |
| TOLUENE | 0.27 | U | | |
| TOTAL XYLENES | 0.25 | U | | |

| | | | | |
|--|------------|---------------------|------|--|
| PROJ_NO: 07723 SDG: SJ5500 FRACTION: TCLPV MEDIA: WATER | NSAMPLE | MBFR-AQCHAR1-072016 | | |
| | LAB_ID | SJ5500-1DL | | |
| | SAMP_DATE | 7/20/2016 | | |
| | QC_TYPE | NM | | |
| | UNITS | UG/L | | |
| | PCT_SOLIDS | 0.0 | | |
| | DUP_OF | | | |
| PARAMETER | RESULT | VQL | QLCD | |
| 1,1-DICHLOROETHENE | 7 | U | | |
| 1,2-DICHLOROETHANE | 4 | U | | |
| 2-BUTANONE | 26 | U | | |
| BENZENE | 5.2 | U | | |
| CARBON TETRACHLORIDE | 4.4 | U | | |
| CHLOROBENZENE | 4.4 | U | | |
| CHLOROFORM | 6.4 | U | | |
| TETRACHLOROETHENE | 8 | U | | |
| TRICHLOROETHENE | 5.6 | U | | |
| VINYL CHLORIDE | 5 | U | | |

| | | | | |
|--|------------|---------------------|------|--|
| PROJ_NO: 07723 SDG: SJ5500 FRACTION: TCLPS MEDIA: WATER | NSAMPLE | MBFR-AQCHAR1-072016 | | |
| | LAB_ID | SJ5500-1 | | |
| | SAMP_DATE | 7/20/2016 | | |
| | QC_TYPE | NM | | |
| | UNITS | UG/L | | |
| | PCT_SOLIDS | 0.0 | | |
| | DUP_OF | | | |
| PARAMETER | RESULT | VQL | QLCD | |
| 1,4-DICHLOROBENZENE | 11 | U | | |
| 2,4,5-TRICHLOROPHENOL | 18 | U | | |
| 2,4,6-TRICHLOROPHENOL | 14 | U | | |
| 2,4-DINITROTOLUENE | 11 | U | | |
| 2-METHYLPHENOL | 19 | U | | |
| 3&4-METHYLPHENOL | 28 | U | | |
| HEXACHLOROBENZENE | 10 | U | | |
| HEXACHLOROBUTADIENE | 9 | U | | |
| HEXACHLOROETHANE | 12 | U | | |
| NITROBENZENE | 16 | U | | |
| PENTACHLOROPHENOL | 12 | U | | |
| PYRIDINE | 7.5 | U | | |

| | | | | |
|--|------------|---------------------|------|--|
| PROJ_NO: 07723 SDG: SJ5500 FRACTION: PET MEDIA: WATER | NSAMPLE | MBFR-AQCHAR1-072016 | | |
| | LAB_ID | SJ5500-1DL | | |
| | SAMP_DATE | 7/20/2016 | | |
| | QC_TYPE | NM | | |
| | UNITS | UG/L | | |
| | PCT_SOLIDS | 0.0 | | |
| | DUP_OF | | | |
| PARAMETER | RESULT | VQL | QLCD | |
| DIESEL RANGE ORGANICS | 2400 | J | R | |

| | | | | |
|--|------------|---------------------|------|--|
| PROJ_NO: 07723 SDG: SJ5500 FRACTION: TCLPM MEDIA: WATER | NSAMPLE | MBFR-AQCHAR1-072016 | | |
| | LAB_ID | SJ5500-001 | | |
| | SAMP_DATE | 7/20/2016 | | |
| | QC_TYPE | NM | | |
| | UNITS | UG/L | | |
| | PCT_SOLIDS | 0.0 | | |
| | DUP_OF | | | |
| PARAMETER | RESULT | VQL | QLCD | |
| ARSENIC | 7.3 | J | P | |
| BARIUM | 251 | | | |
| CADMIUM | 0.4 | J | P | |
| CHROMIUM | 18.9 | J | P | |
| LEAD | 486 | | | |
| MERCURY | 0.059 | J | P | |
| SELENIUM | 12 | U | | |
| SILVER | 1.4 | U | | |

| | | | | |
|---|------------|---------------------|------|--|
| PROJ_NO: 07723 SDG: SJ5500 FRACTION: MISC MEDIA: WATER | NSAMPLE | MBFR-AQCHAR1-072016 | | |
| | LAB_ID | SJ5500-1DL | | |
| | SAMP_DATE | 7/20/2016 | | |
| | QC_TYPE | NM | | |
| | UNITS | MG/L | | |
| | PCT_SOLIDS | 0.0 | | |
| | DUP_OF | | | |
| PARAMETER | RESULT | VQL | QLCD | |
| TOTAL ORGANIC HALIDES | 0.076 | | | |

APPENDIX B

RESULTS AS REPORTED BY THE LABORATORY

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4233-1

Client ID: PR-SOCHAR03-0024

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4233

Lab File ID: AJF10115.D

Sample Date: 09-JUN-16

Received Date: 10-JUN-16

Extract Date: 14-JUN-16

Extracted By: WAS

Extraction Method: SW846 3550

Lab Prep Batch: WG185338

Analysis Date: 15-JUN-16

Analyst: JLP

Analysis Method: SW846 8015D

Matrix: SL

% Solids: 92.

Report Date: 21-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|------------------------------|-----------|--------|------------|----------|-----|---------|---------|---------|
| Diesel Range Organics | J | 3.5 | mg/Kgdrywt | 1 | 5 | 5.0 | 2.2 | 3.8 |
| o-Terphenyl | | 84.1 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4233-2

Client ID: PR-SOCHAR03-2436

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4233

Lab File ID: AJF10116.D

Sample Date: 09-JUN-16

Received Date: 10-JUN-16

Extract Date: 14-JUN-16

Extracted By: WAS

Extraction Method: SW846 3550

Lab Prep Batch: WG185338

Analysis Date: 15-JUN-16

Analyst: JLP

Analysis Method: SW846 8015D

Matrix: SL

% Solids: 91.

Report Date: 21-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|------------------------------|------------------|---------------|--------------|-----------------|------------|----------------|----------------|----------------|
| Diesel Range Organics | | 5.9 | mg/Kgdrywt | 1 | 5 | 5.5 | 2.4 | 4.2 |
| o-Terphenyl | | 81.9 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4233-3

Client ID: RR-SOCHAR01-0024

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4233

Lab File ID: AJF10117.D

Sample Date: 09-JUN-16

Received Date: 10-JUN-16

Extract Date: 14-JUN-16

Extracted By: WAS

Extraction Method: SW846 3550

Lab Prep Batch: WG185338

Analysis Date: 15-JUN-16

Analyst: JLP

Analysis Method: SW846 8015D

Matrix: SL

% Solids: 90.

Report Date: 21-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|------------------------------|------------------|---------------|--------------|-----------------|------------|----------------|----------------|----------------|
| Diesel Range Organics | J | 3.5 | mg/Kgdrywt | 1 | 5 | 5.3 | 2.3 | 4.0 |
| o-Terphenyl | | 90.8 | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ4233-4

Client ID: RR-SOCHAR01-2436

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ4233

Lab File ID: AJF10118.D

Sample Date: 09-JUN-16

Received Date: 10-JUN-16

Extract Date: 14-JUN-16

Extracted By: WAS

Extraction Method: SW846 3550

Lab Prep Batch: WG185338

Analysis Date: 15-JUN-16

Analyst: JLP

Analysis Method: SW846 8015D

Matrix: SL

% Solids: 90.

Report Date: 21-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|-----------------------|------------------|---------------|--------------|-----------------|------------|----------------|----------------|----------------|
| Diesel Range Organics | U | 2.3 | mg/Kgdrywt | 1 | 5 | 5.3 | 2.3 | 4.0 |
| o-Terphenyl | | 76.2 | % | | | | | |

1B-IN
 INORGANIC ANALYSIS DATA SHEET
 GENERAL CHEMISTRY

Client Sample ID: PR-SOCHAR03-0024

Lab Sample ID: 490-105642-1

Lab Name: TestAmerica Nashville

Job No.: 490-105642-1

SDG ID.: _____

Matrix: Solid

Date Sampled: 06/09/2016 09:42

Reporting Basis: WET

Date Received: 06/14/2016 09:25

| CAS No. | Analyte | Result | RL | MDL | Units | C | Q | DIL | Method |
|---------|----------------------------------|--------|------|------|-------|---|---|-----|--------|
| | Halogens, Extractable Organic | 50.0 | 50.0 | 25.0 | mg/Kg | U | | 1 | 9023 |

1B-IN
 INORGANIC ANALYSIS DATA SHEET
 GENERAL CHEMISTRY

Client Sample ID: PR-SOCHAR03-2436

Lab Sample ID: 490-105642-2

Lab Name: TestAmerica Nashville

Job No.: 490-105642-1

SDG ID.: _____

Matrix: Solid

Date Sampled: 06/09/2016 09:45

Reporting Basis: WET

Date Received: 06/14/2016 09:25

| CAS No. | Analyte | Result | RL | MDL | Units | C | Q | DIL | Method |
|---------|----------------------------------|--------|------|------|-------|---|---|-----|--------|
| | Halogens, Extractable Organic | 50.0 | 50.0 | 25.0 | mg/Kg | U | | 1 | 9023 |

1B-IN
 INORGANIC ANALYSIS DATA SHEET
 GENERAL CHEMISTRY

RR

Client Sample ID: ~~RR~~-SOCHAR01-0024

Lab Sample ID: 490-105642-3

Lab Name: TestAmerica Nashville

Job No.: 490-105642-1

SDG ID.: _____

Matrix: Solid

Date Sampled: 06/09/2016 09:30

Reporting Basis: WET

Date Received: 06/14/2016 09:25

| CAS No. | Analyte | Result | RL | MDL | Units | C | Q | DIL | Method |
|---------|----------------------------------|--------|------|------|-------|---|---|-----|--------|
| | Halogens, Extractable Organic | 52.1 | 52.1 | 26.0 | mg/Kg | U | | 1 | 9023 |

1B-IN
 INORGANIC ANALYSIS DATA SHEET
 GENERAL CHEMISTRY

RR

Client Sample ID: ~~PR~~-SOCHAR01-2436

Lab Sample ID: 490-105642-4

Lab Name: TestAmerica Nashville

Job No.: 490-105642-1

SDG ID.: _____

Matrix: Solid

Date Sampled: 06/09/2016 09:35

Reporting Basis: WET

Date Received: 06/14/2016 09:25

| CAS No. | Analyte | Result | RL | MDL | Units | C | Q | DIL | Method |
|---------|----------------------------------|--------|------|------|-------|---|---|-----|--------|
| | Halogens, Extractable Organic | 47.1 | 47.1 | 23.6 | mg/Kg | U | | 1 | 9023 |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ5500-1DL

Client ID: MBFR-AQCHAR1-072016

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ5500

Lab File ID: T8298.D

Sample Date: 20-JUL-16

Received Date: 21-JUL-16

Extract Date: 25-JUL-16

Extracted By: ERL

Extraction Method: SW846 5030/1311

Lab Prep Batch: WG187435

Analysis Date: 25-JUL-16

Analyst: ERL

Analysis Method: SW846 8260C

Matrix: AQ

% Solids: NA

Report Date: 27-JUL-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|-----------------------|-----------|--------|-------|----------|-----|---------|---------|---------|
| Benzene | U | 5.2 | ug/L | 20 | 5 | 100 | 5.2 | 10. |
| Carbon Tetrachloride | U | 4.4 | ug/L | 20 | 5 | 100 | 4.4 | 10. |
| Chlorobenzene | U | 4.4 | ug/L | 20 | 5 | 100 | 4.4 | 10. |
| Chloroform | U | 6.4 | ug/L | 20 | 5 | 100 | 6.4 | 10. |
| 1,2-Dichloroethane | U | 4.0 | ug/L | 20 | 5 | 100 | 4.0 | 10. |
| 1,1-Dichloroethene | U | 7.0 | ug/L | 20 | 5 | 100 | 7.0 | 10. |
| 2-Butanone | U | 26 | ug/L | 20 | 15 | 300 | 26. | 50. |
| Tetrachloroethene | U | 8.0 | ug/L | 20 | 5 | 100 | 8.0 | 10. |
| Trichloroethene | U | 5.6 | ug/L | 20 | 5 | 100 | 5.6 | 10. |
| Vinyl Chloride | U | 5.0 | ug/L | 20 | 5 | 100 | 5.0 | 20. |
| 1,2-Dichloroethane-D4 | | 112. | % | | | | | |
| Toluene-D8 | | 99.4 | % | | | | | |
| p-Bromofluorobenzene | | 94.3 | % | | | | | |
| Dibromofluoromethane | | 100. | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ5500-2

Client ID: MBFR-AQCHAR1-072016

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ5500

Lab File ID: T8324.D

Sample Date: 20-JUL-16

Received Date: 21-JUL-16

Extract Date: 26-JUL-16

Extracted By: ERL

Extraction Method: SW846 5030

Lab Prep Batch: WG187716

Analysis Date: 26-JUL-16

Analyst: ERL

Analysis Method: SW846 8260C

Matrix: AQ

% Solids: NA

Report Date: 27-JUL-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|-----------------------|-----------|--------|-------|----------|-----|---------|---------|---------|
| Benzene | U | 0.26 | ug/L | 1 | 1 | 1.0 | 0.26 | 0.50 |
| Toluene | U | 0.27 | ug/L | 1 | 1 | 1.0 | 0.27 | 0.50 |
| Ethylbenzene | U | 0.21 | ug/L | 1 | 1 | 1.0 | 0.21 | 0.50 |
| Xylenes (Total) | U | 0.25 | ug/L | 1 | 3 | 3.0 | 0.25 | 1.5 |
| m+p-Xylenes | U | 0.59 | ug/L | 1 | 2 | 2.0 | 0.59 | 1.0 |
| o-Xylene | U | 0.25 | ug/L | 1 | 1 | 1.0 | 0.25 | 0.50 |
| P-Bromofluorobenzene | | 93.9 | % | | | | | |
| Toluene-d8 | | 100. | % | | | | | |
| 1,2-Dichloroethane-d4 | | 115. | % | | | | | |
| Dibromofluoromethane | | 103. | % | | | | | |

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ5500-1

Client ID: MBFR-AQCHAR1-072016

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ5500

Lab File ID: U5014.D

Sample Date: 20-JUL-16

Received Date: 21-JUL-16

Extract Date: 22-JUL-16

Extracted By: WAS

Extraction Method: 3510/1311

Lab Prep Batch: WG187504

Analysis Date: 22-JUL-16

Analyst: JCG

Analysis Method: SW846 8270D

Matrix: AQ

% Solids: NA

Report Date: 26-JUL-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|-----------------------|-----------|--------|-------|----------|-----|---------|---------|---------|
| Pyridine | U | 7.5 | ug/L | 1 | 50 | 250 | 7.5 | 190 |
| 1,4-Dichlorobenzene | U | 11 | ug/L | 1 | 10 | 50. | 11. | 38. |
| 2-Methylphenol | U | 19 | ug/L | 1 | 10 | 50. | 19. | 38. |
| 3&4-Methylphenol | U | 28 | ug/L | 1 | 10 | 50. | 28. | 38. |
| Hexachloroethane | U | 12 | ug/L | 1 | 10 | 50. | 12. | 38. |
| Nitrobenzene | U | 16 | ug/L | 1 | 10 | 50. | 16. | 38. |
| Hexachlorobutadiene | U | 9.0 | ug/L | 1 | 10 | 50. | 9.0 | 38. |
| 2,4,6-Trichlorophenol | U | 14 | ug/L | 1 | 10 | 50. | 14. | 38. |
| 2,4,5-Trichlorophenol | U | 18 | ug/L | 1 | 25 | 120 | 18. | 94. |
| 2,4-Dinitrotoluene | U | 11 | ug/L | 1 | 10 | 50. | 11. | 38. |
| Hexachlorobenzene | U | 10 | ug/L | 1 | 10 | 50. | 10. | 38. |
| Pentachlorophenol | U | 12 | ug/L | 1 | 25 | 120 | 12. | 94. |
| 2-Fluorophenol | | 31.4 | % | | | | | |
| Phenol-D6 | | 23.6 | % | | | | | |
| Nitrobenzene-D5 | | 71.6 | % | | | | | |
| 2-Fluorobiphenyl | | 69.8 | % | | | | | |
| 2,4,6-Tribromophenol | | 86.6 | % | | | | | |
| Terphenyl-D14 | | 68.7 | % | | | | | |

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: MBFR-AQCHAR1-072016

Matrix: WATER

SDG Name: SJ5500

Percent Solids: 0.00

Lab Sample ID: SJ5500-001

Concentration Units : ug/L

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|----------------|---------------|---|---|----|----|----------|-------|------|
| | | | | | | | LOQ | MDL | LOD |
| 7440-38-2 | ARSENIC, TCLP | 7.3 | J | | P | 1 | 40 | 7.0 | 25 |
| 7440-39-3 | BARIUM, TCLP | 251 | | | P | 1 | 25 | 1.2 | 15 |
| 7440-43-9 | CADMIUM, TCLP | 0.40 | J | | P | 1 | 25 | 0.25 | 15 |
| 7440-47-3 | CHROMIUM, TCLP | 18.9 | J | | P | 1 | 50 | 1.8 | 20 |
| 7439-92-1 | LEAD, TCLP | 486 | | | P | 1 | 25 | 5.5 | 20 |
| 7439-97-6 | MERCURY, TCLP | 0.059 | J | | CV | 1 | 0.20 | 0.013 | 0.10 |
| 7782-49-2 | SELENIUM, TCLP | 12. | U | | P | 1 | 50 | 12. | 35 |
| 7440-22-4 | SILVER, TCLP | 1.4 | U | | P | 1 | 50 | 1.4 | 20 |

Comments:

Report of Analytical Results

Client: Tetra Tech NUS, Inc.

Lab ID: SJ5500-1DL

Client ID: MBFR-AQCHAR1-072016

Project: NASA Wallops Flight Facility - MBFR

SDG: SJ5500

Lab File ID: AJG10317.D

Sample Date: 20-JUL-16

Received Date: 21-JUL-16

Extract Date: 25-JUL-16

Extracted By: WAS

Extraction Method: SW846 3510

Lab Prep Batch: WG187624

Analysis Date: 26-JUL-16

Analyst: AC

Analysis Method: SW846 8015D

Matrix: AQ

% Solids: NA

Report Date: 27-JUL-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|------------------------------|------------------|---------------|--------------|-----------------|------------|----------------|----------------|----------------|
| Diesel Range Organics | | 2400 | ug/L | 2 | 50 | 96. | 18. | 48. |
| o-Terphenyl | * | 44.4 | % | | | | | |

1B-IN
 INORGANIC ANALYSIS DATA SHEET
 GENERAL CHEMISTRY

Client Sample ID: MBFR-AQCHAR01-072016

Lab Sample ID: 490-108298-1

Lab Name: TestAmerica Nashville

Job No.: 490-108298-1

SDG ID.:

Matrix: Water

Date Sampled: 07/20/2016 15:10

Reporting Basis: WET

Date Received: 07/22/2016 10:00

| CAS No. | Analyte | Result | RL | MDL | Units | C | Q | DIL | Method |
|---------|-------------------------|--------|--------|--------|-------|---|---|-----|--------|
| | Halogens, Total Organic | 0.0760 | 0.0300 | 0.0100 | mg/L | | | 1 | 9020B |
| | TOX Result 1 | 0.0748 | 0.0300 | 0.0100 | mg/L | | | 1 | 9020B |
| | TOX Result 2 | 0.0771 | 0.0300 | 0.0100 | mg/L | | | 1 | 9020B |

APPENDIX C

SUPPORT DOCUMENTATION



Scarborough, ME 04074
Tel: (207) 874-2400
Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND PRINT LEGIBLY IN PEN

Client _____ Contact _____ Phone # _____ Fax # _____
 Address **See Page 1 for details** State _____ Zip Code _____
 Purchase Order # _____ Proj. Name / No. _____ Katahdin Quote # _____

Bill (if different than above) _____ Address _____

Sampler (Print / Sign) _____ Copies To: _____

LAB USE ONLY WORK ORDER #: **SJ4227/SJ4228**
 KATAHDIN PROJECT NUMBER **9235**

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

REMARKS: _____

SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: _____
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | | | | | | | | | |
|----------------------|--------------------|--------|---------------|---|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|--|--|--|--|--|--|--|
| | | | | FIL OY N | FIL OY N | FIL OY N | FIL OY N | FIL OY N | FIL OY N | FIL OY N | FIL OY N | FIL OY N | FIL OY N | FIL OY N | FIL OY N | | | | | | | |
| PR-Dup 12-060816 | 6-8-16/1000 | SO | 1 | | | | | | | | | | | | | | | | | | | |
| PR-SOCHAR03-0024 | 6-9-16/0942 | | 3 | | | | | | | | | | | | | | | | | | | |
| PR-SOCHAR03-2436 | 6-9-16/0945 | | 3 | | | | | | | | | | | | | | | | | | | |
| RR-SS-A1-0006 | 6-8-16/1230 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SB-A1-0612 | /1221 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SB-A1-1224 | /1222 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SS-A2-0006 | /1223 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SB-A2-0612 | /1224 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SB-A2-1224 | /1225 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SS-A3-0006 | /1234 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SB-A3-0612 | /1235 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SB-A3-1224 | /1236 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SS-A4-0006 | /1237 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SB-A4-0612 | /1238 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SB-A4-1224 | /1239 | | 1 | | | | | | | | | | | | | | | | | | | |
| RR-SS-A5-0006 | /1247 | | 1 | | | | | | | | | | | | | | | | | | | |

head
 TCLP VOCs
 FOX
 TCLP SVOCs, Metals
 PRO

COMMENTS _____

| | | | | | |
|--|----------------------------|-----------------------------------|------------------------------|-------------|---|
| Relinquished By: (Signature) <i>[Signature]</i> | Date / Time 6-9-16 1600 | Received By: (Signature) FedEx | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <i>[Signature]</i> 6-10-16 09:5 |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000011



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client: _____ Contact: _____ Phone #: () ()
 Address: *See Page 1* City: _____ State: _____ Zip Code: _____
 Purchase Order #: _____ Proj. Name / No.: _____ Katahdin Quote #: _____
 Bill (if different than above): _____ Address: _____

Sampler (Print / Sign): _____ Copies To: _____

LAB USE ONLY: WORK ORDER #: *SJ4232/SJ423*
 KATAHDIN PROJECT NUMBER: _____

REMARKS: _____

SHIPPING INFO: FED EX UPS CLIENT

AIRBILL NO: _____

TEMP°C _____ TEMP BLANK INTACT NOT INTACT

| * | Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | | | | | | | | |
|---|--------------------|--------------------|--------|---------------|---|------|------|------|------|------|------|------|------|------|------|------|---|---|---|---|---|---|
| | | | | | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | | | | | | |
| | | | | | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N | Y | N |
| | | | | | | | | | | | | | | | | | | | | | | |
| | RR-SS-F6-0006 | 6-9-16/0905 | SO | 1 | 1 | | | | | | | | | | | | | | | | | |
| | RR-SB-F6-0612 | /0906 | | 1 | 1 | | | | | | | | | | | | | | | | | |
| | RR-SB-F6-1224 | /0907 | | 1 | 1 | | | | | | | | | | | | | | | | | |
| | RR-SS-F7-0006 | /0918 | | 1 | 1 | | | | | | | | | | | | | | | | | |
| | RR-SB-F7-0612 | /0919 | | 1 | 1 | | | | | | | | | | | | | | | | | |
| | RR-SB-F7-1224 | /0920 | | 1 | 1 | | | | | | | | | | | | | | | | | |
| | RR-SB-F7-2436 | /0921 | | 1 | 1 | | | | | | | | | | | | | | | | | |
| | RR-SS-F8-0006 | /0922 | | 1 | 1 | | | | | | | | | | | | | | | | | |
| | RR-SB-F8-0612 | /0923 | | 1 | 1 | | | | | | | | | | | | | | | | | |
| | RR-SB-F8-1224 | /0924 | | 1 | 1 | | | | | | | | | | | | | | | | | |
| | RR-SS-D4-0006 | /1035 | | 1 | 1 | | | | | | | | | | | | | | | | | |
| | RR-SB-D4-0612 | /1036 | | 1 | 1 | | | | | | | | | | | | | | | | | |
| | RR-SB-D4-1224 | /1037 | | 1 | 1 | | | | | | | | | | | | | | | | | |
| | RR-Dupl5-060916 | /0900 | | 1 | 1 | | | | | | | | | | | | | | | | | |
| | RR-SOCHAROL-0024 | /0930 | | 3 | 1 | 1 | 1 | | | | | | | | | | | | | | | |
| | RR-SOCHAROL-2436 | ↓ /0935 ↓ | | 3 | 1 | 1 | 1 | | | | | | | | | | | | | | | |

COMMENTS: _____

| | | | | | |
|--|----------------------------|-----------------------------------|------------------------------|-------------|--|
| Relinquished By: (Signature) <i>[Signature]</i> | Date / Time 6-9-16 1600 | Received By: (Signature) FedEx | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <i>[Signature]</i> |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000012



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Page ____ of ____

| | | | |
|--------|-------------------------------|--------------------|------------------|
| Client | Contact <i>Jen O'Brien</i> | Phone # () () | Fax # () () |
|--------|-------------------------------|--------------------|------------------|

| | | | |
|---------|------|-------|----------|
| Address | City | State | Zip Code |
|---------|------|-------|----------|

| | | |
|------------------|------------------|------------------|
| Purchase Order # | Proj. Name / No. | Katahdin Quote # |
|------------------|------------------|------------------|

| | |
|--------------------------------|---------|
| Bill (if different than above) | Address |
|--------------------------------|---------|

| | |
|------------------------|------------|
| Sampler (Print / Sign) | Copies To: |
|------------------------|------------|

| | |
|--------------|--|
| LAB USE ONLY | WORK ORDER #: KATAHDIN PROJECT NUMBER _____ |
|--------------|--|

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

REMARKS: _____

SHIPPING INFO: FED EX UPS CLIENT

AIRBILL NO: _____

TEMP°C _____ TEMP BLANK INTACT NOT INTACT

| Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. |
|---|---|---|---|---|---|---|---|---|---|---|---|
| <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N | <input type="checkbox"/> Y <input type="checkbox"/> N |

| * | Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. |
|---|--------------------|--------------------|--------|---------------|
| | PA-SOCHAR03-0024 | 6-4-16 / 09.42 | B5L | 1 |
| | " " -02436 | ↓ / 09.45 | ↓ | 1 |
| | PA-SOCHAR01-0024 | ↓ / 09.30 | ↓ | 1 |
| | " " -2436 | ↓ / 09.35 | ↓ | 1 |
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|---|---|---|---|---|---|---|---|---|---|---|---|

Loc: 490
105642

COMMENTS

| | | | | | |
|--|--------------------------------|--|------------------------------|-------------|--------------------------|
| Relinquished By: (Signature) <i>[Signature]</i> | Date / Time 6-13-16 / 15:55 | Received By: (Signature) <i>Daniel TAN</i> 6-14-16 09:25 | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

Form 8 GC Analytical Sequence

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR
Instrument ID : GC10

SDG : SJ4233
Column ID : A

| Client Sample ID | Lab Sample ID | Date Analyzed | Time Analyzed | OTP | |
|----------------------|---------------|---------------|---------------|-------|--|
| Initial Calibration | WG185308-1 | 06/13/16 | 15:14 | 10.82 | |
| Initial Calibration | WG185308-2 | 06/13/16 | 15:49 | 10.81 | |
| Initial Calibration | WG185308-3 | 06/13/16 | 16:24 | 10.81 | |
| Initial Calibration | WG185308-4 | 06/13/16 | 16:59 | 10.82 | |
| Initial Calibration | WG185308-5 | 06/13/16 | 17:34 | 10.82 | |
| Independent Source | WG185308-6 | 06/13/16 | 18:09 | | |
| Continuing Calibrati | WG185308-21 | 06/15/16 | 13:55 | 10.81 | |
| Method Blank Sample | WG185338-1 | 06/15/16 | 15:39 | 10.81 | |
| Laboratory Control S | WG185338-2 | 06/15/16 | 16:14 | 10.81 | |
| Laboratory Control S | WG185338-3 | 06/15/16 | 16:49 | 10.81 | |
| PR-SOCHAR03-0024 | SJ4233-1 | 06/15/16 | 17:24 | 10.81 | |
| PR-SOCHAR03-2436 | SJ4233-2 | 06/15/16 | 17:59 | 10.81 | |
| RR-SOCHAR01-0024 | SJ4233-3 | 06/15/16 | 18:34 | 10.81 | |
| RR-SOCHAR01-2436 | SJ4233-4 | 06/15/16 | 19:09 | 10.81 | |
| Continuing Calibrati | WG185308-22 | 06/15/16 | 21:29 | 10.81 | |

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR
Lab File ID : AJF10112.D
Instrument ID : GC10
Matrix : SL

SDG : SJ4233
Lab Sample ID : WG185338-1
Date Extracted : 14-JUN-16
Date Analyzed : 15-JUN-16
Time Analyzed : 15:39

This Method Blank applies to the following samples, LCS, MS and MSD:

| Client Sample ID | Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed |
|----------------------|---------------|-------------|---------------|---------------|
| Laboratory Control S | WG185338-2 | AJF10113.I | 06/15/16 | 16:14 |
| Laboratory Control S | WG185338-3 | AJF10114.I | 06/15/16 | 16:49 |
| PR-SOCHAR03-0024 | SJ4233-1 | AJF10115.I | 06/15/16 | 17:24 |
| PR-SOCHAR03-2436 | SJ4233-2 | AJF10116.I | 06/15/16 | 17:59 |
| RR-SOCHAR01-0024 | SJ4233-3 | AJF10117.I | 06/15/16 | 18:34 |
| RR-SOCHAR01-2436 | SJ4233-4 | AJF10118.I | 06/15/16 | 19:09 |

Report of Analytical Results

Client:
Lab ID: WG185338-1
Client ID: Method Blank Sample
Project:
SDG: SJ4233
Lab File ID: AJF10112.D

Sample Date:
Received Date:
Extract Date: 14-JUN-16
Extracted By: WAS
Extraction Method: SW846 3550
Lab Prep Batch: WG185338

Analysis Date: 15-JUN-16
Analyst: JLP
Analysis Method: SW846 8015D
Matrix: SL
% Solids: NA
Report Date: 21-JUN-16

| Compound | Qualifier | Result | Units | Dilution | LOQ | ADJ LOQ | ADJ MDL | ADJ LOD |
|-----------------------|------------------|---------------|--------------|-----------------|------------|----------------|----------------|----------------|
| Diesel Range Organics | U | 2.2 | mg/Kgdrywt | 1 | 5 | 5.0 | 2.2 | 3.8 |
| o-Terphenyl | | 94.8 | % | | | | | |

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services
Lab Code: KAS

Project: NASA Wallops Flight Facility - MBFR
SDG: SJ4233

Matrix: SL

| Client Sample ID | Lab Sample ID | Col. ID | OTP | # |
|----------------------|---------------|---------|-----|------|
| PR-SOCHAR03-0024 | SJ4233-1 | A | | 84.1 |
| PR-SOCHAR03-2436 | SJ4233-2 | A | | 81.9 |
| RR-SOCHAR01-0024 | SJ4233-3 | A | | 90.8 |
| RR-SOCHAR01-2436 | SJ4233-4 | A | | 76.2 |
| Method Blank Sample | WG185338-1 | A | | 94.8 |
| Laboratory Control S | WG185338-2 | A | | 91.3 |
| Laboratory Control S | WG185338-3 | A | | 94.6 |

QC Limits

OTP O-TERPHENYL

45-130

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

LCS/LCSD Recovery Report

LCS ID: WG185338-2
LCSD ID: WG185338-3
Project:
SDG: SJ4233
Report Date: 21-JUN-16
LCS File ID: AJF10113.D

Received Date:
Extract Date: 14-JUN-16
Extracted By: WAS
Extraction Method: SW846 3550
Lab Prep Batch: WG185338
LCSD File ID: AJF10114.D

Analysis Date: 15-JUN-16
Analyst: JLP
Analysis Method: SW846 8015D
Matrix: SL
% Solids: NA

| Compound | Spike Amt | LCS Conc | LCS Rec (%) | LCSD Conc | LCSD Rec (%) | Conc Units | RPD (%) | RPD Limit | Limits |
|-----------------------|-----------|----------|-------------|-----------|--------------|------------|---------|-----------|--------|
| Diesel Range Organics | 18.3 | 15.2 | 83.1 | 15.2 | 83.1 | mg/Kg | 0 | 50 | 38-134 |
| o-Terphenyl | | | 91.3 | | 94.6 | | | | 45-130 |

2-IN
 CALIBRATION QUALITY CONTROL
 GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville Job No.: 490-105642-1
 SDG No.: _____
 Analyst: CLJ Batch Start Date: 06/21/2016
 Reporting Units: mg/Kg Analytical Batch No.: 349452

| Sample Number | QC Type | Time | Analyte | Result | Spike Amount | (%) Recovery | Limits | Qual | Reagent |
|---------------|---------|-------|-------------------------------|--------|--------------|--------------|--------|------|-----------------|
| 2 | CCV | 16:06 | Halogens, Extractable Organic | 499.3 | 500 | 100 | 90-110 | | W_EOX STD_00045 |
| 14 | CCV | 16:06 | Halogens, Extractable Organic | 525.5 | 500 | 105 | 90-110 | | W_EOX STD_00045 |
| 15 | CCB | 16:06 | Halogens, Extractable Organic | 50.0 | | | | U | |

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville

Job No.: 490-105642-1

SDG No.: _____

| Method | Lab Sample ID | Analyte | Result | Qual | Units | RL | Dil |
|---|-------------------|----------------------------------|--------|------|-------|------|-----|
| Batch ID: 349452 Date: 06/21/2016 16:06 Prep Batch: 349446 Date: 06/21/2016 06:30 | | | | | | | |
| 9023 | MB 490-349446/1-A | Halogens, Extractable Organic | 50.0 | U | mg/Kg | 50.0 | 1 |

5-IN
 MATRIX SPIKE SAMPLE RECOVERY
 GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville Job No.: 490-105642-1

SDG No.: _____

Matrix: Solid

| Method | Lab Sample ID | Analyte | Result | C | Unit | Spike Amount | Pct. Rec. | Limits | RPD | RPD Limit | Q |
|------------------|---------------|-------------------------------|--------|--------------------|-------|------------------------|-----------|--------|-----|-----------|---|
| Batch ID: 349452 | | Date: 06/21/2016 16:06 | | Prep Batch: 349446 | | Date: 06/21/2016 06:30 | | | | | |
| 9023 | 490-105642-1 | Halogens, Extractable Organic | 50.0 | U | mg/Kg | | | | | | |
| 9023 | 490-105642-1 | Halogens, Extractable Organic | 1004 | | mg/Kg | 1000 | 100 | 70-130 | | | |
| | MS | | | | | | | | | | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

5-IN
 MATRIX SPIKE DUPLICATE SAMPLE RECOVERY
 GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville Job No.: 490-105642-1

SDG No.: _____

Matrix: Solid

| Method | Lab Sample ID | Analyte | Result | C | Unit | Spike Amount | Pct. Rec. | Limits | RPD | RPD Limit | Q |
|------------------|---------------|------------------------|--------|--------------------|-------|------------------------|-----------|--------|-----|-----------|---|
| Batch ID: 349452 | | Date: 06/21/2016 16:06 | | Prep Batch: 349446 | | Date: 06/21/2016 06:30 | | | | | |
| 9023 | 490-105642-1 | Halogens, Extractable | 1038 | | mg/Kg | 1000 | 104 | 70-130 | 3 | 20 | |
| | MSD | Organic | | | | | | | | | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

7A-IN
 LAB CONTROL SAMPLE
 GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville Job No.: 490-105642-1
 SDG No.: _____
 Matrix: Solid

| Method | Lab Sample ID | Analyte | Result | C | Unit | Spike Amount | Pct. Rec. | Limits | RPD | RPD Limit | Q |
|---|---------------------------|----------------------------------|---|---|-------|---------------------------------|-----------|--------|-----|-----------|---|
| Batch ID: 349452 Date: 06/21/2016 16:06 | | | Prep Batch: 349446 Date: 06/21/2016 06:30 | | | LCS Source: W_EOXSTDstock_00021 | | | | | |
| 9023 | LCS 490-349446/2- A | Halogens, Extractable Organic | 1056 | | mg/Kg | 1000 | 106 | 80-120 | 6 | 20 | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

7A-IN
 LAB CONTROL SAMPLE DUPLICATE
 GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville Job No.: 490-105642-1
 SDG No.: _____
 Matrix: Solid

| Method | Lab Sample ID | Analyte | Result | C | Unit | Spike Amount | Pct. Rec. | Limits | RPD | RPD Limit | Q |
|---|----------------------------|----------------------------------|---|---|-------|----------------------------------|-----------|--------|-----|-----------|---|
| Batch ID: 349452 Date: 06/21/2016 16:06 | | | Prep Batch: 349446 Date: 06/21/2016 06:30 | | | LCSD Source: W_EOXSTDstock_00021 | | | | | |
| 9023 | LCSD 490-349446/3- A | Halogens, Extractable Organic | 996.1 | | mg/Kg | 1000 | 100 | 80-120 | 6 | 20 | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville

Job Number: 490-105642-1

SDG Number: _____

Matrix: Solid

Instrument ID: NOEQUIP

Method: 9023

MDL Date: 07/03/2013 12:23

Prep Method: 9023

| Analyte | Wavelength/ Mass | RL (mg/Kg) | MDL (mg/Kg) |
|----------------------------------|---------------------|---------------|----------------|
| Halogens, Extractable Organic | | 50 | 25 |

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville Job Number: 490-105642-1
SDG Number: _____
Matrix: Solid Instrument ID: NOEQUIP
Method: 9023 XMDL Date: 04/30/2014 10:04

| Analyte | Wavelength/ Mass | XRL (mg/Kg) | XMDL (mg/Kg) |
|----------------------------------|---------------------|----------------|-----------------|
| Halogens, Extractable Organic | | 50 | 25 |

12-IN
PREPARATION LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville

Job No.: 490-105642-1

SDG No.: _____

Prep Method: 9023

| Lab Sample ID | Preparation Date | Prep Batch | Initial Weight (g) | Initial Volume | Final Volume (mL) |
|---------------------|------------------|------------|--------------------|----------------|-------------------|
| MB 490-349446/1-A | 06/21/2016 06:30 | 349446 | 1.00 | | 1.0 |
| LCS 490-349446/2-A | 06/21/2016 06:30 | 349446 | 1.00 | | 1.0 |
| LCSD 490-349446/3-A | 06/21/2016 06:30 | 349446 | 1.00 | | 1.0 |
| 490-105642-1 | 06/21/2016 06:30 | 349446 | 1.00 | | 1.0 |
| 490-105642-1 MS | 06/21/2016 06:30 | 349446 | 1.00 | | 1.0 |
| 490-105642-1 MSD | 06/21/2016 06:30 | 349446 | 1.00 | | 1.0 |
| 490-105642-2 | 06/21/2016 06:30 | 349446 | 1.00 | | 1.0 |
| 490-105642-3 | 06/21/2016 06:30 | 349446 | 0.98 | | 1.0 |
| 490-105642-4 | 06/21/2016 06:30 | 349446 | 1.03 | | 1.0 |

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville Job No.: 490-105642-1
 SDG No.: _____
 Instrument ID: NOEQUIP Analysis Method: 9023
 Start Date: 06/21/2016 16:06 End Date: 06/22/2016 14:37

| Lab Sample Id | D/F | Type | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---------------------|-----|------|-------|----------|---|---|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | E | O | H | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 16:06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV 490-349452/2 | 1 | | 16:06 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| MB 490-349446/1-A | 1 | T | 16:06 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LCS 490-349446/2-A | 1 | T | 16:06 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| LCSD 490-349446/3-A | 1 | T | 16:06 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 16:06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 490-105642-2 | 1 | T | 16:06 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 490-105642-3 | 1 | T | 16:06 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 490-105642-4 | 1 | T | 16:06 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 490-105642-1 | 1 | T | 16:06 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 490-105642-1 MS | 1 | T | 16:06 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| 490-105642-1 MSD | 1 | T | 16:06 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 16:06 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV 490-349452/14 | 1 | | 16:06 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB 490-349452/15 | 1 | | 16:06 | X | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 14:37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV 490-349452/17 | | | 14:37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB 490-349452/18 | | | 14:37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 14:37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 14:37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 14:37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV 490-349452/22 | | | 14:37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB 490-349452/23 | | | 14:37 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

Prep Types: _____
 T = Total/NA

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services
Lab Code: KAS

Project: NASA Wallops Flight Facility - MBFR
SDG: SJ5500

Matrix: AQ

| Client Sample ID | Lab Sample ID | Col. ID | BFB | # DBF | # DCA | # TOL | # |
|----------------------|---------------|---------|-----|-------|-------|-------|------|
| MBFR-AQCHAR1-072016 | SJ5500-IDL | | | 94.3 | 100. | 112. | 99.4 |
| Laboratory Control S | WG187435-1 | | | 95.9 | 87.6 | 88.5 | 95.7 |
| Method Blank Sample | WG187435-2 | | | 92.3 | 100. | 105. | 98.5 |

QC Limits

| | | |
|-----|-----------------------|--------|
| DCA | 1,2-DICHLOROETHANE-D4 | 81-118 |
| TOL | TOLUENE-D8 | 89-112 |
| DBF | DIBROMOFLUOROMETHANE | 80-119 |
| BFB | P-BROMOFLUOROBENZENE | 85-114 |

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR
Lab File ID : T8294.D
Instrument ID : GCMS-T
Heated Purge : No

SDG : SJ5500
Lab Sample ID : WG187435-2
Date Analyzed : 25-JUL-16
Time Analyzed : 13:19

This Method Blank applies to the following samples, LCS, MS and MSD:

| Client Sample ID | Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed |
|-------------------------|----------------------|--------------------|----------------------|----------------------|
| Laboratory Control S | WG187435-1 | T8292.D | 07/25/16 | 11:55 |
| MBFR-AQCHAR1-072016 | SJ5500-1DL | T8298.D | 07/25/16 | 15:38 |

Form 5 Volatile Organic Instrument Performance Check

| | |
|--|----------------------------------|
| Lab Name : Katahdin Analytical Services | SDG : SJ5500 |
| Project : NASA Wallops Flight Facility - MBFR | Date Analyzed : 01-JUL-16 |
| Lab File ID : TB172.D | Time Analyzed : 11:05 |
| Instrument ID : GCMS-T | Heated Purge : No |

| m/e | Ion Abundance Criteria | % Relative Abundance | |
|-----|------------------------------------|----------------------|---------------------|
| 50 | 15.0 - 40.0% of mass 95 | 17.5 | |
| 75 | 30.0 - 60.0% of mass 95 | 49.4 | |
| 95 | Base Peak, 100% relative abundance | 100 | |
| 96 | 5.0 - 9.0% of mass 95 | 7.3 | |
| 173 | Less than 2.0% of mass 174 | 0.9 | 1.19 ¹ |
| 174 | Greater than 50.0% of mass 95 | 74.4 | |
| 175 | 5.0 - 9.0% of mass 174 | 5.3 | 7.19 ¹ |
| 176 | 95.0 - 101.0% of mass 174 | 75.0 | 100.81 ¹ |
| 177 | 5.0 - 9.0% of mass 176 | 4.9 | 6.56 ² |

1-Value is % mass 174

2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

| Client Sample ID | Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed |
|---------------------|---------------|-------------|---------------|---------------|
| Initial Calibration | WG186304-2 | T8073.D | 07/01/16 | 12:21 |
| Initial Calibration | WG186304-3 | T8074.D | 07/01/16 | 12:56 |
| Initial Calibration | WG186304-4 | T8075.D | 07/01/16 | 13:31 |
| Initial Calibration | WG186304-6 | T8076.D | 07/01/16 | 14:05 |
| Initial Calibration | WG186304-5 | T8077.D | 07/01/16 | 14:40 |
| Initial Calibration | WG186304-1 | T8081.D | 07/01/16 | 16:58 |
| Independent Source | WG186304-7 | T8082A.D | 07/01/16 | 17:33 |

Form 5

Volatile Organic Instrument Performance Check

| | |
|--|----------------------------------|
| Lab Name : Katahdin Analytical Services | SDG : SJ5500 |
| Project : NASA Wallops Flight Facility - MBFR | Date Analyzed : 25-JUL-16 |
| Lab File ID : TB187.D | Time Analyzed : 09:47 |
| Instrument ID : GCMS-T | Heated Purge : No |

| m/e | Ion Abundance Criteria | % Relative Abundance | |
|-----|------------------------------------|----------------------|--------------------|
| 50 | 15.0 - 40.0% of mass 95 | 17.4 | |
| 75 | 30.0 - 60.0% of mass 95 | 51.9 | |
| 95 | Base Peak, 100% relative abundance | 100 | |
| 96 | 5.0 - 9.0% of mass 95 | 6.0 | |
| 173 | Less than 2.0% of mass 174 | 1.3 | 1.72 ¹ |
| 174 | Greater than 50.0% of mass 95 | 76.8 | |
| 175 | 5.0 - 9.0% of mass 174 | 5.5 | 7.10 ¹ |
| 176 | 95.0 - 101.0% of mass 174 | 75.2 | 97.87 ¹ |
| 177 | 5.0 - 9.0% of mass 176 | 4.8 | 6.37 ² |

1-Value is % mass 174

2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

| Client Sample ID | Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed |
|----------------------|---------------|-------------|---------------|---------------|
| Continuing Calibrati | WG187435-4 | T8291.D | 07/25/16 | 10:58 |
| Laboratory Control S | WG187435-1 | T8292.D | 07/25/16 | 11:55 |
| Method Blank Sample | WG187435-2 | T8294.D | 07/25/16 | 13:19 |
| MBFR-AQCHAR1-072016 | SJ5500-1DL | T8298.D | 07/25/16 | 15:38 |
| Continuing Calibrati | WG187435-5 | T8307.D | 07/25/16 | 20:50 |

Form 8

Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - 1
Lab ID : WG186304-4
Lab File ID : T8075.D

SDG: SJ5500
Analytical Date: 07/01/16 13:31
Instrument ID: GCMS-T

| Client Sample ID | Lab Sample ID | PENTAFLUOROBENZENE | | 1,4-DIFLUOROBENZENE | | CHLOROBENZENE-D5 | |
|----------------------|---------------|--------------------|--------|---------------------|--------|------------------|--------|
| | | Area | # RT # | Area | # RT # | Area | # RT # |
| | Std . | 860988 | 7.53 | 1391280 | 8.31 | 1250291 | 12.56 |
| | Upper Limit | 1721976 | 8.03 | 2782560 | 8.81 | 2500582 | 13.06 |
| | Lower Limit | 430494 | 7.03 | 695640 | 7.81 | 625145.5 | 12.06 |
| Continuing Calibrati | WG187435-4 | 713307 | 7.53 | 1095863 | 8.31 | 990190 | 12.56 |
| Laboratory Control S | WG187435-1 | 771635 | 7.53 | 1161930 | 8.31 | 1037842 | 12.56 |
| Method Blank Sample | WG187435-2 | 621701 | 7.53 | 1003474 | 8.31 | 907872 | 12.56 |
| MBFR-AQCHAR1-072 | SJ5500-1DL | 561164 | 7.53 | 924706 | 8.31 | 840332 | 12.56 |
| Continuing Calibrati | WG187435-5 | 688759 | 7.53 | 1035983 | 8.31 | 950118 | 12.56 |

Area Upper Limit = +100% of internal standard area
 Area Lower Limit = - 50% of internal standard area
 RT Upper Limit = + 0.50 minutes of internal standard RT
 RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
 * Values outside of QC limits.

Form 8

Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - 1
Lab ID : WG186304-4
Lab File ID : T8075.D

SDG: SJ5500
Analytical Date: 07/01/16 13:31
Instrument ID: GCMS-T

| | | 1,4-DICHLOROBENZENE-D4 | |
|----------------------|---------------|------------------------|-------|
| | | Area # | RT # |
| | Std . | 641508 | 16.26 |
| | Upper Limit | 1283016 | 16.76 |
| | Lower Limit | 320754 | 15.76 |
| Client Sample ID | Lab Sample ID | | |
| Continuing Calibrati | WG187435-4 | 524477 | 16.26 |
| Laboratory Control S | WG187435-1 | 549287 | 16.26 |
| Method Blank Sample | WG187435-2 | 459090 | 16.26 |
| MBFR-AQCHAR1-072 | SJ5500-1DL | 423288 | 16.26 |
| Continuing Calibrati | WG187435-5 | 504115 | 16.26 |

Area Upper Limit = +100% of internal standard area
 Area Lower Limit = - 50% of internal standard area
 RT Upper Limit = + 0.50 minutes of internal standard RT
 RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
 * Values outside of QC limits.

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services
Lab Code: KAS

Project: NASA Wallops Flight Facility - MBFR
SDG: SJ5500

Matrix: AQ

| Client Sample ID | Lab Sample ID | Col. ID | BFB | # DBF | # DCA | # TOL | # |
|----------------------|---------------|---------|-----|-------|-------|-------|------|
| MBFR-AQCHAR1-072016 | SJ5500-2 | | | 93.9 | 103. | 115. | 100. |
| Laboratory Control S | WG187716-1 | | | 92.9 | 89.2 | 90.5 | 96.6 |
| Method Blank Sample | WG187716-2 | | | 91.6 | 99.6 | 109. | 98.1 |

QC Limits

| | | |
|-----|-----------------------|--------|
| DCA | 1,2-DICHLOROETHANE-D4 | 81-118 |
| TOL | TOLUENE-D8 | 89-112 |
| DBF | DIBROMOFLUOROMETHANE | 80-119 |
| BFB | P-BROMOFLUOROBENZENE | 85-114 |

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

Form 4
Method Blank Summary - VOA

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR
Lab File ID : T8317.D
Instrument ID : GCMS-T
Heated Purge : No

SDG : SJ5500
Lab Sample ID : WG187716-2
Date Analyzed : 26-JUL-16
Time Analyzed : 10:53

This Method Blank applies to the following samples, LCS, MS and MSD:

| Client Sample ID | Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed |
|-------------------------|----------------------|--------------------|----------------------|----------------------|
| Laboratory Control S | WG187716-1 | T8315.D | 07/26/16 | 09:36 |
| MBFR-AQCHAR1-072016 | SJ5500-2 | T8324.D | 07/26/16 | 15:14 |

Form 5

Volatile Organic Instrument Performance Check

| | |
|--|----------------------------------|
| Lab Name : Katahdin Analytical Services | SDG : SJ5500 |
| Project : NASA Wallops Flight Facility - MBFR | Date Analyzed : 01-JUL-16 |
| Lab File ID : TB172.D | Time Analyzed : 11:05 |
| Instrument ID : GCMS-T | Heated Purge : No |

| m/e | Ion Abundance Criteria | % Relative Abundance | |
|-----|------------------------------------|----------------------|---------------------|
| 50 | 15.0 - 40.0% of mass 95 | 17.5 | |
| 75 | 30.0 - 60.0% of mass 95 | 49.4 | |
| 95 | Base Peak, 100% relative abundance | 100 | |
| 96 | 5.0 - 9.0% of mass 95 | 7.3 | |
| 173 | Less than 2.0% of mass 174 | 0.9 | 1.19 ¹ |
| 174 | Greater than 50.0% of mass 95 | 74.4 | |
| 175 | 5.0 - 9.0% of mass 174 | 5.3 | 7.19 ¹ |
| 176 | 95.0 - 101.0% of mass 174 | 75.0 | 100.81 ¹ |
| 177 | 5.0 - 9.0% of mass 176 | 4.9 | 6.56 ² |

1-Value is % mass 174

2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

| Client Sample ID | Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed |
|---------------------|---------------|-------------|---------------|---------------|
| Initial Calibration | WG186304-2 | T8073.D | 07/01/16 | 12:21 |
| Initial Calibration | WG186304-3 | T8074.D | 07/01/16 | 12:56 |
| Initial Calibration | WG186304-4 | T8075.D | 07/01/16 | 13:31 |
| Initial Calibration | WG186304-6 | T8076.D | 07/01/16 | 14:05 |
| Initial Calibration | WG186304-5 | T8077.D | 07/01/16 | 14:40 |
| Initial Calibration | WG186304-1 | T8081.D | 07/01/16 | 16:58 |
| Independent Source | WG186304-7 | T8082A.D | 07/01/16 | 17:33 |

Form 5 Volatile Organic Instrument Performance Check

| | |
|--|----------------------------------|
| Lab Name : Katahdin Analytical Services | SDG : SJ5500 |
| Project : NASA Wallops Flight Facility - MBFR | Date Analyzed : 26-JUL-16 |
| Lab File ID : TB188.D | Time Analyzed : 08:24 |
| Instrument ID : GCMS-T | Heated Purge : No |

| m/e | Ion Abundance Criteria | % Relative Abundance | |
|-----|------------------------------------|----------------------|---------------------|
| 50 | 15.0 - 40.0% of mass 95 | 19.4 | |
| 75 | 30.0 - 60.0% of mass 95 | 53.4 | |
| 95 | Base Peak, 100% relative abundance | 100 | |
| 96 | 5.0 - 9.0% of mass 95 | 7.4 | |
| 173 | Less than 2.0% of mass 174 | 0.0 | 0.0 ¹ |
| 174 | Greater than 50.0% of mass 95 | 74.7 | |
| 175 | 5.0 - 9.0% of mass 174 | 5.7 | 7.59 ¹ |
| 176 | 95.0 - 101.0% of mass 174 | 75.2 | 100.58 ¹ |
| 177 | 5.0 - 9.0% of mass 176 | 4.8 | 6.39 ² |

1-Value is % mass 174

2-Value is % mass 176

This check applies to the following samples, LCS, MS, MSD and standards:

| Client Sample ID | Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed |
|----------------------|---------------|-------------|---------------|---------------|
| Continuing Calibrati | WG187716-4 | T8314.D | 07/26/16 | 08:48 |
| Laboratory Control S | WG187716-1 | T8315.D | 07/26/16 | 09:36 |
| Method Blank Sample | WG187716-2 | T8317.D | 07/26/16 | 10:53 |
| MBFR-AQCHAR1-072016 | SJ5500-2 | T8324.D | 07/26/16 | 15:14 |
| Continuing Calibrati | WG187716-5 | T8330.D | 07/26/16 | 18:43 |

Form 8

Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - 1
Lab ID : WG186304-4
Lab File ID : T8075.D

SDG: SJ5500
Analytical Date: 07/01/16 13:31
Instrument ID: GCMS-T

| Client Sample ID | Lab Sample ID | PENTAFLUOROBENZENE | | 1,4-DIFLUOROBENZENE | | CHLOROBENZENE-D5 | |
|----------------------|---------------|--------------------|--------|---------------------|--------|------------------|--------|
| | | Area | # RT # | Area | # RT # | Area | # RT # |
| | Std . | 860988 | 7.53 | 1391280 | 8.31 | 1250291 | 12.56 |
| | Upper Limit | 1721976 | 8.03 | 2782560 | 8.81 | 2500582 | 13.06 |
| | Lower Limit | 430494 | 7.03 | 695640 | 7.81 | 625145.5 | 12.06 |
| Continuing Calibrati | WG187716-4 | 718541 | 7.53 | 1101351 | 8.31 | 998234 | 12.56 |
| Laboratory Control S | WG187716-1 | 743023 | 7.53 | 1140795 | 8.31 | 1010434 | 12.56 |
| Method Blank Sample | WG187716-2 | 601888 | 7.53 | 984843 | 8.31 | 903765 | 12.56 |
| MBFR-AQCHAR1-072 | SJ5500-2 | 545098 | 7.53 | 887689 | 8.31 | 820018 | 12.56 |
| Continuing Calibrati | WG187716-5 | 734521 | 7.53 | 1137041 | 8.31 | 1022689 | 12.56 |

Area Upper Limit = +100% of internal standard area
 Area Lower Limit = - 50% of internal standard area
 RT Upper Limit = + 0.50 minutes of internal standard RT
 RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
 * Values outside of QC limits.

Form 8

Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - 1
Lab ID : WG186304-4
Lab File ID : T8075.D

SDG: SJ5500
Analytical Date: 07/01/16 13:31
Instrument ID: GCMS-T

| | | 1,4-DICHLOROBENZENE-D4 | |
|----------------------|---------------|------------------------|-------|
| | | Area # | RT # |
| | Std . | 641508 | 16.26 |
| | Upper Limit | 1283016 | 16.76 |
| | Lower Limit | 320754 | 15.76 |
| Client Sample ID | Lab Sample ID | | |
| Continuing Calibrati | WG187716-4 | 528709 | 16.26 |
| Laboratory Control S | WG187716-1 | 533189 | 16.26 |
| Method Blank Sample | WG187716-2 | 441698 | 16.26 |
| MBFR-AQCHAR1-072 | SJ5500-2 | 414260 | 16.26 |
| Continuing Calibrati | WG187716-5 | 536395 | 16.26 |

Area Upper Limit = +100% of internal standard area
 Area Lower Limit = - 50% of internal standard area
 RT Upper Limit = + 0.50 minutes of internal standard RT
 RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
 * Values outside of QC limits.

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services
Lab Code: KAS

Project: NASA Wallops Flight Facility - MBFR
SDG: SJ5500

Matrix: AQ

| Client Sample ID | Lab Sample ID | Col. ID | 2FBP | # 2FP | # NBZ | # PHL | # TBP | # TPH | # |
|----------------------|---------------|---------|------|-------|-------|-------|-------|-------|---|
| MBFR-AQCHAR1-072016 | SJ5500-1 | | 69.8 | 31.4 | 71.6 | 23.6 | 86.6 | 68.7 | |
| Method Blank Sample | WG187504-1 | | 63.0 | 32.1 | 78.0 | 21.9 | 81.3 | 83.8 | |
| Laboratory Control S | WG187504-2 | | 61.9 | 30.6 | 72.3 | 18.9 | 80.7 | 88.8 | |

QC Limits

| | | |
|------|----------------------|--------|
| 2FP | 2-FLUOROPHENOL | 19-119 |
| NBZ | NITROBENZENE-D5 | 44-120 |
| TBP | 2,4,6-TRIBROMOPHENOL | 43-140 |
| PHL | PHENOL-D6 | 10-115 |
| TPH | TERPHENYL-D14 | 50-134 |
| 2FBP | 2-FLUOROBIPHENYL | 44-119 |

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR
Lab File ID : U5011.D
Instrument ID : GCMS-U
Matrix : AQ

SDG : SJ5500
Lab Sample ID : WG187504-1
Date Extracted : 22-JUL-16
Date Analyzed : 22-JUL-16
Time Analyzed : 15:49

This Method Blank applies to the following samples, LCS, MS and MSD:

| Client Sample ID | Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed |
|----------------------|---------------|-------------|---------------|---------------|
| Laboratory Control S | WG187504-2 | U5012.D | 07/22/16 | 16:19 |
| MBFR-AQCHAR1-072016 | SJ5500-1 | U5014.D | 07/22/16 | 17:20 |

Form 5

Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services **SDG :** SJ5500
Project : NASA Wallops Flight Facility - MBFR **Date Analyzed :** 12-JUL-16
Lab File ID : UD594.D **Time Analyzed :** 14:13
Instrument ID : GCMS-U

| m/e | Ion Abundance Criteria | % Relative Abundance | |
|-----|------------------------------------|----------------------|--------------------|
| 51 | 30.0 - 60.0% of mass 198 | 35.0 | |
| 68 | Less than 2.0% of mass 69 | 0.0 | 0.0 ¹ |
| 69 | Less than 100.0% of mass 198 | 40.1 | |
| 70 | Less than 2.0% of mass 69 | 0.0 | 0.0 ¹ |
| 127 | 40.0 - 60.0% of mass 198 | 54.3 | |
| 197 | Less than 1.0% of mass 198 | 0.0 | |
| 198 | Base Peak, 100% relative abundance | 100 | |
| 199 | 5.0 - 9.0% of mass 198 | 7.1 | |
| 275 | 10.0 - 30.0% of mass 198 | 18.3 | |
| 365 | 1.0 - 100.0% of mass 198 | 1.9 | |
| 441 | 0.0 - 100.0% of mass 443 | 9.8 | 80.22 ² |
| 442 | 40.0 - 100.0% of mass 198 | 65.2 | |
| 443 | 17.0 - 23.0% of mass 442 | 12.3 | 18.84 ³ |

1-Value is % mass 69
3-Value is % mass 442

2-Value is % mass 443

This check applies to the following samples, LCS, MS, MSD and standards:

| Client Sample ID | Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed |
|---------------------|---------------|-------------|---------------|---------------|
| Initial Calibration | WG186902-4 | U4878.D | 07/12/16 | 14:34 |
| Initial Calibration | WG186902-2 | U4879.D | 07/12/16 | 15:05 |
| Initial Calibration | WG186902-3 | U4880.D | 07/12/16 | 15:35 |
| Initial Calibration | WG186902-5 | U4881.D | 07/12/16 | 16:05 |
| Initial Calibration | WG186902-6 | U4882.D | 07/12/16 | 16:36 |
| Initial Calibration | WG186902-7 | U4883.D | 07/12/16 | 17:06 |
| Independent Source | WG186902-8 | U4884.D | 07/12/16 | 17:36 |

Form 5

Semivolatile Organic Instrument Performance Check

Lab Name : Katahdin Analytical Services **SDG :** SJ5500
Project : NASA Wallops Flight Facility - MBFR **Date Analyzed :** 22-JUL-16
Lab File ID : UD601.D **Time Analyzed :** 15:00
Instrument ID : GCMS-U

| m/e | Ion Abundance Criteria | % Relative Abundance | |
|-----|------------------------------------|----------------------|--------------------|
| 51 | 30.0 - 60.0% of mass 198 | 33.1 | |
| 68 | Less than 2.0% of mass 69 | 0.3 | 0.66 ¹ |
| 69 | Less than 100.0% of mass 198 | 38.5 | |
| 70 | Less than 2.0% of mass 69 | 0.0 | 0.0 ¹ |
| 127 | 40.0 - 60.0% of mass 198 | 52.3 | |
| 197 | Less than 1.0% of mass 198 | 0.0 | |
| 198 | Base Peak, 100% relative abundance | 100 | |
| 199 | 5.0 - 9.0% of mass 198 | 6.3 | |
| 275 | 10.0 - 30.0% of mass 198 | 18.2 | |
| 365 | 1.0 - 100.0% of mass 198 | 2.1 | |
| 441 | 0.0 - 100.0% of mass 443 | 12.0 | 81.48 ² |
| 442 | 40.0 - 100.0% of mass 198 | 75.4 | |
| 443 | 17.0 - 23.0% of mass 442 | 14.8 | 19.58 ³ |

1-Value is % mass 69
 3-Value is % mass 442

2-Value is % mass 443

This check applies to the following samples, LCS, MS, MSD and standards:

| Client Sample ID | Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed |
|----------------------|---------------|-------------|---------------|---------------|
| Continuing Calibrati | WG187494-2 | U5010.D | 07/22/16 | 15:19 |
| Method Blank Sample | WG187504-1 | U5011.D | 07/22/16 | 15:49 |
| Laboratory Control S | WG187504-2 | U5012.D | 07/22/16 | 16:19 |
| MBFR-AQCHAR1-072016 | SJ5500-1 | U5014.D | 07/22/16 | 17:20 |
| Continuing Calibrati | WG187494-3 | U5030.D | 07/23/16 | 01:24 |

Form 8

Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - 1
Lab ID : WG186902-4
Lab File ID : U4878.D

SDG: SJ5500
Analytical Date: 07/12/16 14:34
Instrument ID: GCMS-U

| Client Sample ID | Lab Sample ID | 1,4-DICHLOROBENZENE-D4 | | NAPHTHALENE-D8 | | ACENAPHTHENE-D10 | |
|----------------------|---------------|------------------------|--------|----------------|--------|------------------|--------|
| | | Area | # RT # | Area | # RT # | Area | # RT # |
| | Std . | 290115 | 4.84 | 1057710 | 6.54 | 466744 | 9.12 |
| | Upper Limit | 580230 | 5.34 | 2115420 | 7.04 | 933488 | 9.62 |
| | Lower Limit | 145057.5 | 4.34 | 528855 | 6.04 | 233372 | 8.62 |
| Continuing Calibrati | WG187494-2 | 307295 | 4.78 | 1109979 | 6.48 | 500789 | 9.05 |
| Method Blank Sample | WG187504-1 | 319276 | 4.78 | 1175558 | 6.48 | 559621 | 9.04 |
| Laboratory Control S | WG187504-2 | 291516 | 4.78 | 1075286 | 6.48 | 489921 | 9.04 |
| MBFR-AQCHAR1-072 | SJ5500-1 | 298442 | 4.78 | 1127756 | 6.48 | 530785 | 9.04 |
| Continuing Calibrati | WG187494-3 | 295963 | 4.78 | 1124478 | 6.47 | 504177 | 9.05 |

Area Upper Limit = +100% of internal standard area
 Area Lower Limit = - 50% of internal standard area
 RT Upper Limit = + 0.50 minutes of internal standard RT
 RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
 * Values outside of QC limits.

Form 8

Internal Standard Area and RT Summary

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - 1
Lab ID : WG186902-4
Lab File ID : U4878.D

SDG: SJ5500
Analytical Date: 07/12/16 14:34
Instrument ID: GCMS-U

| Client Sample ID | Lab Sample ID | PHENANTHRENE-D10 | | CHRYSENE-D12 | | PERYLENE-D12 | |
|----------------------|---------------|------------------|--------|--------------|--------|--------------|--------|
| | | Area | # RT # | Area | # RT # | Area | # RT # |
| | Std . | 819332 | 11.33 | 495579 | 15.43 | 343358 | 18.47 |
| | Upper Limit | 1638664 | 11.83 | 991158 | 15.93 | 686716 | 18.97 |
| | Lower Limit | 409666 | 10.83 | 247789.5 | 14.93 | 171679 | 17.97 |
| Continuing Calibrati | WG187494-2 | 885644 | 11.27 | 498470 | 15.35 | 406908 | 18.37 |
| Method Blank Sample | WG187504-1 | 932283 | 11.26 | 674536 | 15.34 | 485713 | 18.36 |
| Laboratory Control S | WG187504-2 | 863060 | 11.26 | 479071 | 15.34 | 442211 | 18.36 |
| MBFR-AQCHAR1-072 | SJ5500-1 | 889078 | 11.26 | 561003 | 15.34 | 384118 | 18.36 |
| Continuing Calibrati | WG187494-3 | 861367 | 11.27 | 478843 | 15.34 | 380363 | 18.37 |

Area Upper Limit = +100% of internal standard area
 Area Lower Limit = - 50% of internal standard area
 RT Upper Limit = + 0.50 minutes of internal standard RT
 RT Lower Limit = - 0.50 minutes of internal standard RT

Column used to flag values outside QC limits with an asterisk.
 * Values outside of QC limits.

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services

SDG Name: SJ5500

Concentration Units: ug/L

SAMPLE: ICV

| | | | |
|---------------------|--------------|--------------|---------------|
| File: HJG26A | Jul 26, 2016 | 12:54 | |
| Analyte | True | Found | %R (1) |
| MERCURY | 6.0 | 6.08 | 101.3 |

SAMPLE: CCV

| | | | |
|---------------------|--------------|--------------|---------------|
| File: HJG26A | Jul 26, 2016 | 13:03 | |
| Analyte | True | Found | %R (1) |
| MERCURY | 5.0 | 5.11 | 102.2 |

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

Katahdin Analytical Services 400007

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services

SDG Name: SJ5500

Concentration Units: ug/L

SAMPLE: CCV

| | | | |
|---------------------|--------------|--------------|---------------|
| File: HJG26A | Jul 26, 2016 | 13:26 | |
| Analyte | True | Found | %R (1) |
| MERCURY | 5.0 | 5.16 | 103.2 |

SAMPLE: CCV

| | | | |
|---------------------|--------------|--------------|---------------|
| File: HJG26A | Jul 26, 2016 | 13:52 | |
| Analyte | True | Found | %R (1) |
| MERCURY | 5.0 | 5.22 | 104.4 |

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

Katahdin Analytical Services 4000008

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services

SDG Name: SJ5500

Concentration Units: ug/L

SAMPLE: CCV

| | | | |
|---------------------|--------------|--------------|---------------|
| File: HJG26A | Jul 26, 2016 | 14:18 | |
| Analyte | True | Found | %R (1) |
| MERCURY | 5.0 | 5.16 | 103.2 |

SAMPLE: CCV

| | | | |
|---------------------|--------------|--------------|---------------|
| File: HJG26A | Jul 26, 2016 | 14:43 | |
| Analyte | True | Found | %R (1) |
| MERCURY | 5.0 | 5.18 | 103.6 |

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services

SDG Name: SJ5500

Concentration Units: ug/L

SAMPLE: CCV

File: HJG26A Jul 26, 2016 15:09

| Analyte | True | Found | %R (1) |
|---------|------|-------|--------|
| MERCURY | 5.0 | 5.20 | 104.0 |

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services

SDG Name: SJ5500

Concentration Units: ug/L

SAMPLE: ICV

File: IJG25A Jul 25, 2016 15:48

| Analyte | True | Found | %R (1) |
|-----------|---------|----------|--------|
| ALUMINUM | 10000.0 | 10200.00 | 102.0 |
| ARSENIC | 400.0 | 387.10 | 96.8 |
| BARIUM | 400.0 | 400.80 | 100.2 |
| CADMIUM | 400.0 | 396.60 | 99.2 |
| CALCIUM | 10000.0 | 10260.00 | 102.6 |
| CHROMIUM | 400.0 | 404.20 | 101.1 |
| IRON | 10000.0 | 9711.00 | 97.1 |
| LEAD | 400.0 | 402.70 | 100.7 |
| MAGNESIUM | 10000.0 | 10250.00 | 102.5 |
| SELENIUM | 400.0 | 396.90 | 99.2 |
| SILVER | 400.0 | 400.60 | 100.2 |

SAMPLE: CCV

File: IJG25A Jul 25, 2016 16:10

| Analyte | True | Found | %R (1) |
|-----------|---------|----------|--------|
| ALUMINUM | 12500.0 | 12760.00 | 102.1 |
| ARSENIC | 500.0 | 500.00 | 100.0 |
| BARIUM | 500.0 | 511.70 | 102.3 |
| CADMIUM | 500.0 | 500.20 | 100.0 |
| CALCIUM | 12500.0 | 12760.00 | 102.1 |
| CHROMIUM | 500.0 | 508.50 | 101.7 |
| IRON | 12500.0 | 12810.00 | 102.5 |
| LEAD | 500.0 | 505.80 | 101.2 |
| MAGNESIUM | 12500.0 | 12810.00 | 102.5 |
| SELENIUM | 500.0 | 498.60 | 99.7 |
| SILVER | 500.0 | 506.00 | 101.2 |

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

Katahdin Analytical Services 4000011

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services

SDG Name: SJ5500

Concentration Units: ug/L

SAMPLE: CCV

| File: IJG25A | Jul 25, 2016 | 16:29 | |
|--------------|--------------|----------|--------|
| Analyte | True | Found | %R (1) |
| ALUMINUM | 12500.0 | 13180.00 | 105.4 |
| ARSENIC | 500.0 | 498.20 | 99.6 |
| BARIUM | 500.0 | 537.20 | 107.4 |
| CADMIUM | 500.0 | 489.60 | 97.9 |
| CALCIUM | 12500.0 | 13260.00 | 106.1 |
| CHROMIUM | 500.0 | 519.50 | 103.9 |
| IRON | 12500.0 | 13510.00 | 108.1 |
| LEAD | 500.0 | 496.70 | 99.3 |
| MAGNESIUM | 12500.0 | 12660.00 | 101.3 |
| SELENIUM | 500.0 | 496.30 | 99.3 |
| SILVER | 500.0 | 507.20 | 101.4 |

SAMPLE: CCV

| File: IJG25A | Jul 25, 2016 | 17:19 | |
|--------------|--------------|----------|--------|
| Analyte | True | Found | %R (1) |
| ALUMINUM | 12500.0 | 13020.00 | 104.2 |
| ARSENIC | 500.0 | 502.20 | 100.4 |
| BARIUM | 500.0 | 531.20 | 106.2 |
| CADMIUM | 500.0 | 496.30 | 99.3 |
| CALCIUM | 12500.0 | 13120.00 | 105.0 |
| CHROMIUM | 500.0 | 521.70 | 104.3 |
| IRON | 12500.0 | 12970.00 | 103.8 |
| LEAD | 500.0 | 502.30 | 100.5 |
| MAGNESIUM | 12500.0 | 12850.00 | 102.8 |
| SELENIUM | 500.0 | 502.70 | 100.5 |
| SILVER | 500.0 | 513.70 | 102.7 |

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services

SDG Name: SJ5500

Concentration Units: ug/L

SAMPLE: CCV

| File: IJG25A | Jul 25, 2016 | 18:12 | |
|--------------|--------------|----------|--------|
| Analyte | True | Found | %R (1) |
| ALUMINUM | 12500.0 | 12860.00 | 102.9 |
| ARSENIC | 500.0 | 506.80 | 101.4 |
| BARIUM | 500.0 | 524.90 | 105.0 |
| CADMIUM | 500.0 | 497.50 | 99.5 |
| CALCIUM | 12500.0 | 12940.00 | 103.5 |
| CHROMIUM | 500.0 | 523.80 | 104.8 |
| IRON | 12500.0 | 12790.00 | 102.3 |
| LEAD | 500.0 | 504.20 | 100.8 |
| MAGNESIUM | 12500.0 | 12960.00 | 103.7 |
| SELENIUM | 500.0 | 506.20 | 101.2 |
| SILVER | 500.0 | 515.90 | 103.2 |

SAMPLE: CCV

| File: IJG25A | Jul 25, 2016 | 18:59 | |
|--------------|--------------|----------|--------|
| Analyte | True | Found | %R (1) |
| ALUMINUM | 12500.0 | 13080.00 | 104.6 |
| ARSENIC | 500.0 | 505.70 | 101.1 |
| BARIUM | 500.0 | 527.40 | 105.5 |
| CADMIUM | 500.0 | 502.10 | 100.4 |
| CALCIUM | 12500.0 | 13110.00 | 104.9 |
| CHROMIUM | 500.0 | 521.20 | 104.2 |
| IRON | 12500.0 | 12830.00 | 102.6 |
| LEAD | 500.0 | 509.70 | 101.9 |
| MAGNESIUM | 12500.0 | 12980.00 | 103.8 |
| SELENIUM | 500.0 | 506.50 | 101.3 |
| SILVER | 500.0 | 517.10 | 103.4 |

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

Katahdin Analytical Services 4000013

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services

SDG Name: SJ5500

Concentration Units: ug/L

SAMPLE: CCV

| File: IJG25A | Jul 25, 2016 | 19:45 | |
|--------------|--------------|----------|--------|
| Analyte | True | Found | %R (1) |
| ALUMINUM | 12500.0 | 13070.00 | 104.6 |
| ARSENIC | 500.0 | 507.50 | 101.5 |
| BARIUM | 500.0 | 529.60 | 105.9 |
| CADMIUM | 500.0 | 501.50 | 100.3 |
| CALCIUM | 12500.0 | 13110.00 | 104.9 |
| CHROMIUM | 500.0 | 521.10 | 104.2 |
| IRON | 12500.0 | 12840.00 | 102.7 |
| LEAD | 500.0 | 508.80 | 101.8 |
| MAGNESIUM | 12500.0 | 12950.00 | 103.6 |
| SELENIUM | 500.0 | 507.20 | 101.4 |
| SILVER | 500.0 | 517.30 | 103.5 |

SAMPLE: CCV

| File: IJG25A | Jul 25, 2016 | 20:40 | |
|--------------|--------------|----------|--------|
| Analyte | True | Found | %R (1) |
| ALUMINUM | 12500.0 | 13150.00 | 105.2 |
| ARSENIC | 500.0 | 510.50 | 102.1 |
| BARIUM | 500.0 | 535.80 | 107.2 |
| CADMIUM | 500.0 | 499.50 | 99.9 |
| CALCIUM | 12500.0 | 13190.00 | 105.5 |
| CHROMIUM | 500.0 | 529.70 | 105.9 |
| IRON | 12500.0 | 12880.00 | 103.0 |
| LEAD | 500.0 | 507.30 | 101.5 |
| MAGNESIUM | 12500.0 | 13120.00 | 105.0 |
| SELENIUM | 500.0 | 512.70 | 102.5 |
| SILVER | 500.0 | 526.60 | 105.3 |

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

Katahdin Analytical Services 4000014

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services

SDG Name: SJ5500

Concentration Units: ug/L

SAMPLE: ICV

| SAMPLE: ICV | | | |
|---------------------|--------------|--------------|---------------|
| File: IJG26A | Jul 26, 2016 | 16:03 | |
| Analyte | True | Found | %R (1) |
| ALUMINUM | 10000.0 | 10530.00 | 105.3 |
| CALCIUM | 10000.0 | 10640.00 | 106.4 |
| IRON | 10000.0 | 10090.00 | 100.9 |
| MAGNESIUM | 10000.0 | 10250.00 | 102.5 |
| SELENIUM | 400.0 | 397.40 | 99.3 |

SAMPLE: CCV

| SAMPLE: CCV | | | |
|---------------------|--------------|--------------|---------------|
| File: IJG26A | Jul 26, 2016 | 16:25 | |
| Analyte | True | Found | %R (1) |
| ALUMINUM | 12500.0 | 11840.00 | 94.7 |
| CALCIUM | 12500.0 | 12000.00 | 96.0 |
| IRON | 12500.0 | 11480.00 | 91.8 |
| MAGNESIUM | 12500.0 | 12850.00 | 102.8 |
| SELENIUM | 500.0 | 498.00 | 99.6 |

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

Katahdin Analytical Services 4000015

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services

SDG Name: SJ5500

Concentration Units: ug/L

SAMPLE: CCV

| SAMPLE: CCV | | | |
|---------------------|--------------|--------------|---------------|
| File: IJG26A | Jul 26, 2016 | 16:45 | |
| Analyte | True | Found | %R (1) |
| ALUMINUM | 12500.0 | 12610.00 | 100.9 |
| CALCIUM | 12500.0 | 12790.00 | 102.3 |
| IRON | 12500.0 | 12240.00 | 97.9 |
| MAGNESIUM | 12500.0 | 12820.00 | 102.6 |
| SELENIUM | 500.0 | 499.40 | 99.9 |

SAMPLE: CCV

| SAMPLE: CCV | | | |
|---------------------|--------------|--------------|---------------|
| File: IJG26A | Jul 26, 2016 | 17:34 | |
| Analyte | True | Found | %R (1) |
| ALUMINUM | 12500.0 | 12550.00 | 100.4 |
| CALCIUM | 12500.0 | 12750.00 | 102.0 |
| IRON | 12500.0 | 12250.00 | 98.0 |
| MAGNESIUM | 12500.0 | 12900.00 | 103.2 |
| SELENIUM | 500.0 | 500.60 | 100.1 |

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

INITIAL AND CONTINUING CALIBRATION VERIFICATION

Lab Name: Katahdin Analytical Services

SDG Name: SJ5500

Concentration Units: ug/L

SAMPLE: CCV

| SAMPLE: CCV | | | |
|---------------------|--------------|--------------|---------------|
| File: IJG26A | Jul 26, 2016 | 18:21 | |
| Analyte | True | Found | %R (1) |
| ALUMINUM | 12500.0 | 12390.00 | 99.1 |
| CALCIUM | 12500.0 | 12630.00 | 101.0 |
| IRON | 12500.0 | 12160.00 | 97.3 |
| MAGNESIUM | 12500.0 | 12790.00 | 102.3 |
| SELENIUM | 500.0 | 495.40 | 99.1 |

SAMPLE: CCV

| SAMPLE: CCV | | | |
|---------------------|--------------|--------------|---------------|
| File: IJG26A | Jul 26, 2016 | 19:09 | |
| Analyte | True | Found | %R (1) |
| ALUMINUM | 12500.0 | 12680.00 | 101.4 |
| CALCIUM | 12500.0 | 12860.00 | 102.9 |
| IRON | 12500.0 | 12350.00 | 98.8 |
| MAGNESIUM | 12500.0 | 12960.00 | 103.7 |
| SELENIUM | 500.0 | 500.80 | 100.2 |

(1) Control Limits: Mercury 80-120; Other Metals 90-110

FORM II (Part 1) - IN

2C
PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services **SDG Name:** SJ5500

Concentration Units: ug/L

SAMPLE: PQL

File: HJG26A Jul 26, 2016 13:01

| Analyte | TRUE | FOUND | % R |
|----------------|-------------|--------------|------------|
| MERCURY | 0.2 | 0.21 | 105.0 |

2C
PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services SDG Name: SJ5500

Concentration Units: ug/L

SAMPLE: PQL

File: IJG25A Jul 25, 2016 15:56

| Analyte | TRUE | FOUND | % R |
|----------------|-------------|--------------|------------|
| ALUMINUM | 300.0 | 312.30 | 104.1 |
| ARSENIC | 8.0 | 7.81 | 97.6 |
| BARIUM | 5.0 | 4.62 | 92.4 |
| CADMIUM | 5.0 | 4.94 | 98.8 |
| CALCIUM | 100.0 | 96.47 | 96.5 |
| CHROMIUM | 10.0 | 9.51 | 95.1 |
| IRON | 100.0 | 85.78 | 85.8 |
| LEAD | 5.0 | 4.42 | 88.4 |
| MAGNESIUM | 100.0 | 109.30 | 109.3 |
| SELENIUM | 10.0 | 11.68 | 116.8 |
| SILVER | 10.0 | 9.72 | 97.2 |

2C
PQL STANDARD FOR AA AND ICP

Lab Name: Katahdin Analytical Services SDG Name: SJ5500

Concentration Units: ug/L

SAMPLE: PQL

File: IJG26A Jul 26, 2016 16:11

| Analyte | TRUE | FOUND | % R |
|----------------|-------------|--------------|------------|
| ALUMINUM | 300.0 | 300.50 | 100.2 |
| CALCIUM | 100.0 | 93.28 | 93.3 |
| IRON | 100.0 | 101.40 | 101.4 |
| MAGNESIUM | 100.0 | 106.80 | 106.8 |
| SELENIUM | 10.0 | 11.11 | 111.1 |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ5500

Concentration Units: ug/L

SAMPLE: ICB

File: HJG26A Jul 26, 2016 12:56

| Analyte | Result | C |
|---------|--------|---|
| MERCURY | 0.015 | U |

SAMPLE: CCB

File: HJG26A Jul 26, 2016 13:05

| Analyte | Result | C |
|---------|--------|---|
| MERCURY | -0.025 | U |

SAMPLE: CCB

File: HJG26A Jul 26, 2016 13:29

| Analyte | Result | C |
|---------|--------|---|
| MERCURY | 0.015 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ5500

Concentration Units: ug/L

SAMPLE: CCB

File: HJG26A Jul 26, 2016 13:54

| Analyte | Result | C |
|---------|--------|---|
| MERCURY | 0.015 | U |

SAMPLE: CCB

File: HJG26A Jul 26, 2016 14:20

| Analyte | Result | C |
|---------|--------|---|
| MERCURY | 0.015 | U |

SAMPLE: CCB

File: HJG26A Jul 26, 2016 14:45

| Analyte | Result | C |
|---------|--------|---|
| MERCURY | 0.015 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services**SDG Name: SJ5500**

Concentration Units: ug/L

SAMPLE: CCB

File: HJG26A Jul 26, 2016 15:11

| Analyte | Result | C |
|----------------|---------------|----------|
| MERCURY | 0.015 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ5500

Concentration Units: ug/L

SAMPLE: ICB

File: IJG25A Jul 25, 2016 15:52

| Analyte | Result | C |
|-----------|--------|---|
| ALUMINUM | 26.000 | U |
| ARSENIC | 1.100 | U |
| BARIUM | 0.490 | U |
| CADMIUM | 0.080 | U |
| CALCIUM | 14.000 | U |
| CHROMIUM | 0.460 | U |
| IRON | 7.100 | U |
| LEAD | 1.500 | U |
| MAGNESIUM | 4.199 | J |
| SELENIUM | 2.000 | U |
| SILVER | 0.430 | U |

SAMPLE: CCB

File: IJG25A Jul 25, 2016 16:13

| Analyte | Result | C |
|-----------|---------|---|
| ALUMINUM | 26.000 | U |
| ARSENIC | 1.100 | U |
| BARIUM | 0.490 | U |
| CADMIUM | 0.080 | U |
| CALCIUM | 14.000 | U |
| CHROMIUM | 0.460 | U |
| IRON | -11.340 | U |
| LEAD | 1.500 | U |
| MAGNESIUM | 4.611 | J |
| SELENIUM | 2.000 | U |
| SILVER | 0.430 | U |

SAMPLE: CCB

File: IJG25A Jul 25, 2016 16:33

| Analyte | Result | C |
|-----------|--------|---|
| ALUMINUM | 26.000 | U |
| ARSENIC | 1.100 | U |
| BARIUM | 0.490 | U |
| CADMIUM | 0.080 | U |
| CALCIUM | 14.000 | U |
| CHROMIUM | 0.460 | U |
| IRON | 7.100 | U |
| LEAD | 1.500 | U |
| MAGNESIUM | 3.600 | U |
| SELENIUM | 2.000 | U |
| SILVER | 0.430 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ5500

Concentration Units: ug/L

SAMPLE: CCB

File: IJG25A Jul 25, 2016 17:23

| Analyte | Result | C |
|-----------|---------|---|
| ALUMINUM | -27.940 | U |
| ARSENIC | 1.100 | U |
| BARIUM | 0.490 | U |
| CADMIUM | 0.080 | U |
| CALCIUM | -20.090 | U |
| CHROMIUM | 0.460 | U |
| IRON | 7.100 | U |
| LEAD | 1.500 | U |
| MAGNESIUM | 3.600 | U |
| SELENIUM | 2.000 | U |
| SILVER | 0.430 | U |

SAMPLE: CCB

File: IJG25A Jul 25, 2016 18:16

| Analyte | Result | C |
|-----------|--------|---|
| ALUMINUM | 26.000 | U |
| ARSENIC | 1.100 | U |
| BARIUM | 0.490 | U |
| CADMIUM | 0.092 | J |
| CALCIUM | 14.000 | U |
| CHROMIUM | 0.460 | U |
| IRON | -7.199 | U |
| LEAD | 1.500 | U |
| MAGNESIUM | 5.311 | J |
| SELENIUM | 2.000 | U |
| SILVER | 0.430 | U |

SAMPLE: CCB

File: IJG25A Jul 25, 2016 19:02

| Analyte | Result | C |
|-----------|---------|---|
| ALUMINUM | 26.000 | U |
| ARSENIC | 1.100 | U |
| BARIUM | -0.829 | U |
| CADMIUM | 0.080 | U |
| CALCIUM | -14.620 | U |
| CHROMIUM | 0.460 | U |
| IRON | -10.620 | U |
| LEAD | 1.500 | U |
| MAGNESIUM | 4.878 | J |
| SELENIUM | 2.000 | U |
| SILVER | 0.430 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ5500

Concentration Units: ug/L

SAMPLE: CCB

File: IJG25A Jul 25, 2016 19:49

| Analyte | Result | C |
|-----------|--------|---|
| ALUMINUM | 26.000 | U |
| ARSENIC | 1.100 | U |
| BARIUM | 0.490 | U |
| CADMIUM | 0.080 | U |
| CALCIUM | 14.000 | U |
| CHROMIUM | 0.460 | U |
| IRON | -7.626 | U |
| LEAD | 1.500 | U |
| MAGNESIUM | 4.559 | J |
| SELENIUM | 2.000 | U |
| SILVER | 0.712 | J |

SAMPLE: CCB

File: IJG25A Jul 25, 2016 20:44

| Analyte | Result | C |
|-----------|--------|---|
| ALUMINUM | 26.000 | U |
| ARSENIC | 1.100 | U |
| BARIUM | 0.490 | U |
| CADMIUM | 0.148 | J |
| CALCIUM | 14.000 | U |
| CHROMIUM | 0.460 | U |
| IRON | 7.100 | U |
| LEAD | 1.500 | U |
| MAGNESIUM | 5.046 | J |
| SELENIUM | 2.000 | U |
| SILVER | 0.430 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ5500

Concentration Units: ug/L

SAMPLE: ICB

File: IJG26A Jul 26, 2016 16:07

| Analyte | Result | C |
|-----------|--------|---|
| ALUMINUM | 26.000 | U |
| CALCIUM | 14.000 | U |
| IRON | 7.100 | U |
| MAGNESIUM | 3.600 | U |
| SELENIUM | -2.496 | U |

SAMPLE: CCB

File: IJG26A Jul 26, 2016 16:29

| Analyte | Result | C |
|-----------|--------|---|
| ALUMINUM | 26.000 | U |
| CALCIUM | 14.000 | U |
| IRON | 14.160 | J |
| MAGNESIUM | 13.950 | J |
| SELENIUM | 2.000 | U |

SAMPLE: CCB

File: IJG26A Jul 26, 2016 16:49

| Analyte | Result | C |
|-----------|--------|---|
| ALUMINUM | 26.000 | U |
| CALCIUM | 27.320 | J |
| IRON | 21.980 | J |
| MAGNESIUM | 12.090 | J |
| SELENIUM | 2.000 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ5500

Concentration Units: ug/L

SAMPLE: CCB

File: IJG26A Jul 26, 2016 17:38

| Analyte | Result | C |
|-----------|--------|---|
| ALUMINUM | 26.000 | U |
| CALCIUM | 14.000 | U |
| IRON | 7.527 | J |
| MAGNESIUM | 5.866 | J |
| SELENIUM | 2.000 | U |

SAMPLE: CCB

File: IJG26A Jul 26, 2016 18:25

| Analyte | Result | C |
|-----------|--------|---|
| ALUMINUM | 26.000 | U |
| CALCIUM | 14.000 | U |
| IRON | 9.024 | J |
| MAGNESIUM | 6.843 | J |
| SELENIUM | 2.000 | U |

SAMPLE: CCB

File: IJG26A Jul 26, 2016 19:13

| Analyte | Result | C |
|-----------|--------|---|
| ALUMINUM | 26.000 | U |
| CALCIUM | 14.000 | U |
| IRON | 10.350 | J |
| MAGNESIUM | 8.378 | J |
| SELENIUM | 2.000 | U |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBWJG25HGW2

Matrix: WATER

SDG Name: SJ5500

QC Batch ID: JG25HGW2

Concentration Units : ug/L

| Analyte | RESULT | C |
|---------|--------|---|
| MERCURY | 0.013 | U |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBWJG25ICW1

Matrix: WATER

SDG Name: SJ5500

QC Batch ID: JG25ICW1

Concentration Units : ug/L

| Analyte | RESULT | C |
|----------|--------|---|
| ARSENIC | 1.4 | U |
| BARIUM | 0.23 | U |
| CADMIUM | 0.049 | U |
| CHROMIUM | 0.36 | U |
| LEAD | 1.1 | U |
| SELENIUM | 2.4 | U |
| SILVER | 0.27 | U |

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services SDG Name: SJ5500

Concentration Units: ug/L

| SAMPLE: ICSA | | | | SAMPLE: ICSAB | | | |
|---------------------|--------------|--------------|------------|----------------------|--------------|--------------|------------|
| File: IJG25A | Jul 25, 2016 | 15:59 | | File: IJG25A | Jul 25, 2016 | 16:05 | |
| Analyte | TRUE | FOUND | % R | Analyte | TRUE | FOUND | % R |
| ALUMINUM | 500000 | 509800 | 102.0 | ALUMINUM | 500000 | 511700 | 102.3 |
| ARSENIC | 0 | 0 | | ARSENIC | 100 | 97 | 97.0 |
| BARIUM | 0 | 0 | | BARIUM | 500 | 500 | 100.0 |
| CADMIUM | 0 | 0 | | CADMIUM | 1000 | 941 | 94.1 |
| CALCIUM | 500000 | 490700 | 98.1 | CALCIUM | 500000 | 492800 | 98.6 |
| CHROMIUM | 0 | -1 | | CHROMIUM | 500 | 493 | 98.6 |
| IRON | 200000 | 184400 | 92.2 | IRON | 200000 | 185700 | 92.8 |
| LEAD | 0 | -1 | | LEAD | 50 | 46 | 92.0 |
| MAGNESIUM | 500000 | 456400 | 91.3 | MAGNESIUM | 500000 | 453900 | 90.8 |
| SELENIUM | 0 | 1 | | SELENIUM | 50 | 47 | 94.0 |
| SILVER | 0 | 1 | | SILVER | 200 | 213 | 106.5 |

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services SDG Name: SJ5500

Concentration Units: ug/L

SAMPLE: ICSA

File: IJG26A Jul 26, 2016 16:15

| Analyte | TRUE | FOUND | % R |
|-----------|--------|--------|-------|
| ALUMINUM | 500000 | 506400 | 101.3 |
| CALCIUM | 500000 | 482400 | 96.5 |
| IRON | 200000 | 182800 | 91.4 |
| MAGNESIUM | 500000 | 452400 | 90.5 |
| SELENIUM | 0 | -1 | |

SAMPLE: ICSAB

File: IJG26A Jul 26, 2016 16:20

| Analyte | TRUE | FOUND | % R |
|-----------|--------|--------|-------|
| ALUMINUM | 500000 | 507400 | 101.5 |
| CALCIUM | 500000 | 487100 | 97.4 |
| IRON | 200000 | 184400 | 92.2 |
| MAGNESIUM | 500000 | 450400 | 90.1 |
| SELENIUM | 50 | 46 | 92.0 |

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSWJG25HGW2**Matrix:** WATER**SDG Name:** SJ5500**QC Batch ID:** JG25HGW2

| Concentration Units : ug/L | | | | | |
|----------------------------|------|-------|------|------------|-----|
| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
| MERCURY | 5.00 | 4.86 | 97.2 | 82 | 119 |

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSWJG25ICW1**Matrix:** WATER**SDG Name:** SJ5500**QC Batch ID:** JG25ICW1**Concentration Units :** ug/L

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| ARSENIC | 100 | 111 | 110.8 | 87 | 113 |
| BARIUM | 2000 | 2200 | 110.1 | 88 | 113 |
| CADMIUM | 250 | 259 | 103.6 | 88 | 113 |
| CHROMIUM | 200 | 224 | 111.9 | 90 | 113 |
| LEAD | 100 | 110 | 109.6 | 86 | 113 |
| SELENIUM | 100 | 107 | 107.2 | 83 | 114 |
| SILVER | 50.0 | 52.9 | 105.8 | 84 | 115 |

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: H****Instrument Name: CETAC M6100****Date: 2/9/2011**

| Analyte | Concentration Units: ug/L | | |
|---------|---------------------------|-------|----|
| | PQL/LOQ | IDL | M |
| MERCURY | 0.20 | 0.013 | CV |

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: H****Instrument Name: CETAC M6100****Date: 3/14/2016**

| Analyte | Concentration Units: ug/L | | |
|----------------|---------------------------|------------|----------|
| | PQL/LOQ | IDL | M |
| MERCURY | 0.20 | 0.015 | CV |

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: I****Instrument Name: THERMO ICAP 6500****Date: 1/19/2011**

| Analyte | Concentration Units: ug/L | | |
|----------|---------------------------|-------|---|
| | PQL/LOQ | IDL | M |
| ARSENIC | 8.0 | 1.4 | P |
| BARIUM | 5.0 | 0.23 | P |
| CADMIUM | 5.0 | 0.049 | P |
| CHROMIUM | 10 | 0.36 | P |
| LEAD | 5.0 | 1.1 | P |
| SELENIUM | 10 | 2.4 | P |
| SILVER | 10 | 0.27 | P |

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: I****Instrument Name: THERMO ICAP 6500****Date: 3/14/2016**

| Analyte | Concentration Units: ug/L | | |
|-----------|---------------------------|-------|---|
| | PQL/LOQ | IDL | M |
| ALUMINUM | 300 | 26. | P |
| ARSENIC | 8.0 | 1.1 | P |
| BARIUM | 5.0 | 0.49 | P |
| CADMIUM | 5.0 | 0.080 | P |
| CALCIUM | 100 | 14. | P |
| CHROMIUM | 10 | 0.46 | P |
| IRON | 100 | 7.1 | P |
| LEAD | 5.0 | 1.5 | P |
| MAGNESIUM | 100 | 3.6 | P |
| SELENIUM | 10 | 2.0 | P |
| SILVER | 10 | 0.43 | P |

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services**Instrument Code: H****Instrument Name: CETAC M6100****Date: 2/9/2011**

| Analyte | LOD | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| MERCURY | 0.10 | ug/L | CV | SW846 7470A / SW846 7470A |

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services**Instrument Code: I****Instrument Name: THERMO ICAP 6500****Date: 1/19/2011**

| Analyte | LOD | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| ARSENIC | 5.0 | ug/L | P | SW846 3010A / SW846 6010C |
| BARIUM | 3.0 | ug/L | P | SW846 3010A / SW846 6010C |
| CADMIUM | 3.0 | ug/L | P | SW846 3010A / SW846 6010C |
| CHROMIUM | 4.0 | ug/L | P | SW846 3010A / SW846 6010C |
| LEAD | 4.0 | ug/L | P | SW846 3010A / SW846 6010C |
| SELENIUM | 7.0 | ug/L | P | SW846 3010A / SW846 6010C |
| SILVER | 4.0 | ug/L | P | SW846 3010A / SW846 6010C |

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: H****Instrument Name: CETAC M6100****Date: 2/9/2011**

| Analyte | MDL | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| MERCURY | 0.013 | ug/L | CV | SW846 7470A / SW846 7470A |

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: I****Instrument Name: THERMO ICAP 6500****Date: 1/19/2011**

| Analyte | MDL | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| ARSENIC | 1.4 | ug/L | P | SW846 3010A / SW846 6010C |
| BARIUM | 0.23 | ug/L | P | SW846 3010A / SW846 6010C |
| CADMIUM | 0.049 | ug/L | P | SW846 3010A / SW846 6010C |
| CHROMIUM | 0.36 | ug/L | P | SW846 3010A / SW846 6010C |
| LEAD | 1.1 | ug/L | P | SW846 3010A / SW846 6010C |
| SELENIUM | 2.4 | ug/L | P | SW846 3010A / SW846 6010C |
| SILVER | 0.27 | ug/L | P | SW846 3010A / SW846 6010C |

Form 2
System Monitoring Compound Recovery

Lab Name: Katahdin Analytical Services
Lab Code: KAS

Project: NASA Wallops Flight Facility - MBFR
SDG: SJ5500

Matrix: AQ

| Client Sample ID | Lab Sample ID | Col. ID | OTP | # |
|----------------------|---------------|---------|------|---|
| MBFR-AQCHAR1-072016 | SJ5500-IDL | A | 44.4 | * |
| Method Blank Sample | WG187624-1 | A | 93.5 | |
| Laboratory Control S | WG187624-2 | A | 91.5 | |
| Laboratory Control S | WG187624-3 | A | 85.5 | |

QC Limits

OTP O-TERPHENYL

56-125

= Column to be used to flag recovery limits.
* = Values outside of contract required QC limits.
D= System Monitoring Compound diluted out.

Method Blank Summary

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR
Lab File ID : AJG10287.D
Instrument ID : GC10
Matrix : AQ

SDG : SJ5500
Lab Sample ID : WG187624-1
Date Extracted : 25-JUL-16
Date Analyzed : 25-JUL-16
Time Analyzed : 16:02

This Method Blank applies to the following samples, LCS, MS and MSD:

| Client Sample ID | Lab Sample ID | Lab File ID | Date Analyzed | Time Analyzed |
|----------------------|---------------|-------------|---------------|---------------|
| Laboratory Control S | WG187624-2 | AJG10288. | 07/25/16 | 16:37 |
| Laboratory Control S | WG187624-3 | AJG10289. | 07/25/16 | 17:12 |
| MBFR-AQCHAR1-072016 | SJ5500-1DL | AJG10317. | 07/26/16 | 10:57 |

Form 8 GC Analytical Sequence

Lab Name : Katahdin Analytical Services
Project : NASA Wallops Flight Facility - MBFR
Instrument ID : GC10

SDG : SJ5500
Column ID : A

| Client Sample ID | Lab Sample ID | Date Analyzed | Time Analyzed | OTP | |
|----------------------|---------------|---------------|---------------|-------|--|
| Initial Calibration | WG186887-3 | 07/11/16 | 16:56 | 11.93 | |
| Initial Calibration | WG186887-5 | 07/11/16 | 17:31 | 11.94 | |
| Initial Calibration | WG186887-4 | 07/11/16 | 18:06 | 11.93 | |
| Initial Calibration | WG186887-2 | 07/11/16 | 18:41 | 11.92 | |
| Initial Calibration | WG186887-1 | 07/11/16 | 19:16 | 11.92 | |
| Independent Source | WG186887-6 | 07/11/16 | 19:51 | | |
| Continuing Calibrati | WG187723-1 | 07/25/16 | 11:25 | 11.98 | |
| Method Blank Sample | WG187624-1 | 07/25/16 | 16:02 | 12.00 | |
| Laboratory Control S | WG187624-2 | 07/25/16 | 16:37 | 11.98 | |
| Laboratory Control S | WG187624-3 | 07/25/16 | 17:12 | 11.98 | |
| Continuing Calibrati | WG187723-2 | 07/25/16 | 20:06 | 11.98 | |
| Continuing Calibrati | WG187723-4 | 07/26/16 | 09:47 | 11.99 | |
| MBFR-AQCHAR1-072016 | SJ5500-1DL | 07/26/16 | 10:57 | 11.98 | |
| Continuing Calibrati | WG187723-5 | 07/26/16 | 19:39 | 11.99 | |

Sample Data Section

KATAHDIN ANALYTICAL SERVICES - ORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Limit of Quantitation (LOQ)(previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL/LOQ or "U" LOD, where the rate of false negatives is <1%.

* Compound recovery or percent RPD (relative percent difference) was outside of quality control limits.

D Indicates the result was obtained from analysis of a diluted sample. Surrogate recoveries may not be calculable.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ)(previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL).

or

J Used for Pesticides, PCBs, Herbicides, Formaldehyde, Explosives and Method 504.1 analytes when there is a greater than 40% difference for detected concentrations between the two GC columns.

B Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample.

C Indicates that the flagged compound did not meet DoD criteria in the corresponding daily calibration verification (CV).

L Indicates that the flagged compound did not meet DoD criteria in the corresponding Laboratory Control Sample (LCS) and/or Laboratory Control Sample Duplicate (LCSD) prepared and/or analyzed concurrently with the sample.

M Indicates that the flagged compound did not meet DoD criteria in the Matrix Spike and/or Matrix Spike Duplicate prepared and/or analyzed concurrently with the native sample.

N Presumptive evidence of a compound based on a mass spectral library search.

A Indicates that a tentatively identified compound is a suspected aldol-condensation product.

P Used for Pesticide/Aroclor analyte when there is a greater than 25% difference for detected concentrations between the two GC columns. (for CLP methods only).

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

| | |
|-----|---|
| M1 | Peak splitting. |
| M2 | Well defined peaks on the shoulders of the other peaks. |
| M3 | There is additional area due to a coeluting interferant. |
| M4 | There are negative spikes in the baseline. |
| M5 | There are rising or falling baselines. |
| M6 | The software has failed to detect a peak or misidentified a peak. |
| M7 | Excessive peak tailing. |
| M8 | Analysis such as GRO, DRO and TPH require a baseline hold. |
| M9 | Peak was not completely integrated as in GC/MS. |
| M10 | Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS. |
| M11 | For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated. |
| M12 | Manual integration saved in method due to TurboChrom floating point error. |

1B-IN
 INORGANIC ANALYSIS DATA SHEET
 GENERAL CHEMISTRY

Client Sample ID: MBFR-AQCHAR01-072016

Lab Sample ID: 490-108298-1

Lab Name: TestAmerica Nashville

Job No.: 490-108298-1

SDG ID.: _____

Matrix: Water

Date Sampled: 07/20/2016 15:10

Reporting Basis: WET

Date Received: 07/22/2016 10:00

| CAS No. | Analyte | Result | RL | MDL | Units | C | Q | DIL | Method |
|---------|-------------------------|--------|--------|--------|-------|---|---|-----|--------|
| | Halogens, Total Organic | 0.0760 | 0.0300 | 0.0100 | mg/L | | | 1 | 9020B |
| | TOX Result 1 | 0.0748 | 0.0300 | 0.0100 | mg/L | | | 1 | 9020B |
| | TOX Result 2 | 0.0771 | 0.0300 | 0.0100 | mg/L | | | 1 | 9020B |

2-IN
 CALIBRATION QUALITY CONTROL
 GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville Job No.: 490-108298-1
 SDG No.: _____
 Analyst: RN Batch Start Date: 07/21/2016
 Reporting Units: mg/L Analytical Batch No.: 357570

| Sample Number | QC Type | Time | Analyte | Result | Spike Amount | (%) Recovery | Limits | Qual | Reagent |
|---------------|---------|-------|-------------------------|--------|--------------|--------------|--------|------|-----------------|
| 2 | CCV | 09:27 | Halogens, Total Organic | 995.5 | 1000 | 100 | 90-110 | | W_TOX CCV_00018 |
| | | | TOX Result 1 | 1041 | | | | | |
| | | | TOX Result 2 | 950.0 | | | | | |
| 8 | CCV | 09:27 | Halogens, Total Organic | 1004 | 1000 | 100 | 90-110 | | W_TOX CCV_00018 |
| | | | TOX Result 1 | 1063 | | | | | |
| | | | TOX Result 2 | 945.2 | | | | | |
| 9 | CCB | 09:27 | Halogens, Total Organic | 0.0300 | | | | U | |
| | | | TOX Result 1 | 0.0300 | | | | U | |
| 35 | CCV | 09:13 | Halogens, Total Organic | 1054 | 1000 | 105 | 90-110 | | W_TOX CCV_00018 |
| | | | TOX Result 1 | 1089 | | | | | |
| | | | TOX Result 2 | 1018 | | | | | |
| 36 | CCB | 09:13 | Halogens, Total Organic | 0.0300 | | | | U | |
| | | | TOX Result 1 | 0.0300 | | | | U | |
| 41 | CCV | 09:13 | Halogens, Total Organic | 1002 | 1000 | 100 | 90-110 | | W_TOX CCV_00018 |
| | | | TOX Result 1 | 978.8 | | | | | |
| | | | TOX Result 2 | 1025 | | | | | |
| 42 | CCB | 09:13 | Halogens, Total Organic | 0.0300 | | | | U | |
| | | | TOX Result 1 | 0.0300 | | | | U | |

Note! Calculations are performed before rounding to avoid round-off errors in calculated results.

3-IN
METHOD BLANK
GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville

Job No.: 490-108298-1

SDG No.: _____

| Method | Lab Sample ID | Analyte | Result | Qual | Units | RL | Dil |
|---|-----------------|-------------------------|--------|------|-------|--------|-----|
| Batch ID: 357570 Date: 07/21/2016 09:27 | | | | | | | |
| 9020B | MB 490-357570/3 | Halogens, Total Organic | 0.0300 | U | mg/L | 0.0300 | 1 |
| 9020B | MB 490-357570/3 | TOX Result 1 | 0.0300 | U | mg/L | 0.0300 | 1 |
| 9020B | MB 490-357570/3 | TOX Result 2 | 0.0300 | U | mg/L | 0.0300 | 1 |

7A-IN
 LAB CONTROL SAMPLE
 GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville Job No.: 490-108298-1

SDG No.: _____

Matrix: Water

| Method | Lab Sample ID | Analyte | Result | C | Unit | Spike Amount | Pct. Rec. | Limits | RPD | RPD Limit | Q |
|---|---------------------|-------------------------|-----------------------------|---|------|--------------|-----------|--------|-----|-----------|---|
| Batch ID: 357570 Date: 07/21/2016 09:27 | | | LCS Source: W_TOX LCS_00011 | | | | | | | | |
| 9020B | LCS 490-357570/4 | Halogens, Total Organic | 0.2528 | | mg/L | 0.250 | 101 | 90-110 | | | |
| 9020B | LCS 490-357570/4 | TOX Result 1 | 0.2542 | | mg/L | 0.250 | 102 | 90-110 | | | |
| 9020B | LCS 490-357570/4 | TOX Result 2 | 0.2513 | | mg/L | 0.250 | 100 | 90-110 | | | |

Calculations are performed before rounding to avoid round-off errors in calculated results.

9-IN
DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville Job Number: 490-108298-1
SDG Number: _____
Matrix: Water Instrument ID: NOEQUIP
Method: 9020B MDL Date: 02/10/2016 13:59

| Analyte | Wavelength/ Mass | RL (mg/L) | MDL (mg/L) |
|-------------------------|---------------------|--------------|---------------|
| Halogens, Total Organic | | 0.03 | 0.01 |
| TOX Result 1 | | 0.03 | 0.01 |
| TOX Result 2 | | 0.03 | 0.01 |

9-IN
CALIBRATION BLANK DETECTION LIMITS
GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville Job Number: 490-108298-1
SDG Number: _____
Matrix: Water Instrument ID: NOEQUIP
Method: 9020B XMDL Date: 07/03/2013 14:39

| Analyte | Wavelength/ Mass | XRL (mg/L) | XMDL (mg/L) |
|-------------------------|---------------------|---------------|----------------|
| Halogens, Total Organic | | 0.03 | 0.015 |
| TOX Result 1 | | 0.03 | 0.015 |
| TOX Result 2 | | 0.03 | 0.015 |

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville Job No.: 490-108298-1

SDG No.: _____

Instrument ID: NOEQUIP Analysis Method: 9020B

Start Date: 07/21/2016 09:27 End Date: 07/27/2016 09:13

| Lab Sample Id | D/F | Type | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------|-----|------|-------|----------|------|-------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | TOH | TOX2 | TOXR1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 09:27 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV 490-357570/2 | 1 | | 09:27 | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| MB 490-357570/3 | 1 | T | 09:27 | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| LCS 490-357570/4 | 1 | T | 09:27 | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 09:27 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 09:27 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 09:27 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV 490-357570/8 | 1 | | 09:27 | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB 490-357570/9 | 1 | | 09:27 | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV 490-357570/10 | | | 07:43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB 490-357570/11 | | | 07:43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 07:43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 07:43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV 490-357570/14 | | | 07:43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB 490-357570/15 | | | 07:43 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV 490-357570/16 | | | 09:52 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB 490-357570/17 | | | 09:52 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 09:52 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 09:52 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 09:52 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV 490-357570/21 | | | 09:52 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB 490-357570/22 | | | 09:52 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV 490-357570/23 | | | 07:45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB 490-357570/24 | | | 07:45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 07:45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 07:45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 07:45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 07:45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 07:45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 07:45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 07:45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV 490-357570/32 | | | 07:45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB 490-357570/33 | | | 07:45 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 10:33 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV 490-357570/35 | 1 | | 09:13 | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB 490-357570/36 | 1 | | 09:13 | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 09:13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 09:13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| ZZZZZZ | | | 09:13 | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

13-IN
ANALYSIS RUN LOG
GENERAL CHEMISTRY

Lab Name: TestAmerica Nashville Job No.: 490-108298-1

SDG No.: _____

Instrument ID: NOEQUIP Analysis Method: 9020B

Start Date: 07/21/2016 09:27 End Date: 07/27/2016 09:13

| Lab Sample Id | D/F | Type | Time | Analytes | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|-------------------|-----|------|-------|-------------|------------------|-----------------------|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|--|
| | | | | T O H | T O X 2 | T O X R 1 | | | | | | | | | | | | | | | | | | | | | | | | | |
| 490-108298-1 | 1 | T | 09:13 | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCV 490-357570/41 | 1 | | 09:13 | X | X | X | | | | | | | | | | | | | | | | | | | | | | | | | |
| CCB 490-357570/42 | 1 | | 09:13 | X | | X | | | | | | | | | | | | | | | | | | | | | | | | | |

Prep Types: _____
T = Total/NA

TOX-7
1020B
357570
7-21-16

07/25/2016

RCW

Blank Report

Blank Results

Data ID : AOX1072116MB1.001

| Reps. | Mode | Counts (µg) | Total Counts | \bar{X} | RSD | RSD(%) | ABC No. | Date |
|-------|-------|-------------|--------------|-----------|--------|--------|---------|----------------|
| 1 | AOX-1 | 0.353 * | 0.000 | | | | 2 | 07/21/16 09:48 |
| 2 | AOX-1 | 0.149 * | 0.000 | | | | 2 | 07/21/16 10:03 |
| 3 | AOX-1 | 0.000 K | 0.000 | 0.000 | ***.** | ***.** | 0 | 07/21/16 10:08 |

Re

Blank Report

Blank Results

Data ID : AOX1072116BLK2.001

| Reps. | Mode | Counts (μg) | Total Counts | \bar{X} | RSD | RSD(%) | ABC No. | Date |
|-------|-------|--------------------------|--------------|-----------|--------|--------|---------|----------------|
| 1 | AOX-1 | 0.457 * | 0.000 | | | | 2 | 07/21/16 15:28 |
| 2 | AOX-1 | 0.000 K | 0.000 | 0.000 | ***.** | ***.** | 0 | 07/21/16 15:28 |

RCL

Blank Report

Blank Results

Data ID : AOX1072216BLK3.001

| Reps. | Mode | Counts (µg) | Total Counts | \bar{X} | RSD | RSD(%) | ABC No. | Date |
|-------|-------|-------------|--------------|-----------|---------|---------|---------|----------------|
| 1 | AOX-1 | 0.197 * | 0.000 | | | | 2 | 07/22/16 08:27 |
| 2 | AOX-1 | 0.000 K | 0.000 | 0.000 | ***. ** | ***. ** | 0 | 07/22/16 08:35 |

Red

Blank Report

Blank Results

Data ID : AOX1072216BLK4.001

| Reps. | Mode | Counts (µg) | Total Counts | \bar{X} | RSD | RSD (%) | ABC No. | Date |
|-------|-------|-------------|--------------|-----------|--------|---------|---------|----------------|
| 1 | AOX-1 | 0.282 * | 0.000 | | | | 2 | 07/22/16 15:16 |
| 2 | AOX-1 | 0.000 K | 0.000 | 0.000 | ***.** | ***.** | 0 | 07/22/16 15:16 |

recs

AOX-1 Results Accessory:

Sample Results

| Data ID | Sample ID | Date/Time | Reps. | Sample Size | Count | Blank | Conc. | ppm | Conc. X |
|----------------------|------------|-----------------|-------|-------------|-------|-------|------------|--------|---------|
| AOX1072216BLK4.001 | | | | | | | | | |
| AOX1072216NEAT14.001 | Neat Check | 7/22/2016 14:52 | 1 | 5.00 ul | 5.194 | 0.000 | 0.10 % | 1038.8 | |
| AOX1072216NEAT14.001 | Neat Check | 7/22/2016 15:06 | 2 | 5.00 ul | 5.049 | 0.000 | 0.10 % | 1009.8 | 1024.3 |
| AOX1072216BLK3.001 | | | | | | | | | |
| AOX1072216NEAT13.001 | Neat Check | 7/22/2016 7:43 | 1 | 5.00 ul | 5.324 | 0.000 | 0.11 % | 1064.8 | |
| AOX1072216NEAT13.001 | Neat Check | 7/22/2016 8:09 | 2 | 5.00 ul | 4.982 | 0.000 | 996.40 ppm | 996.4 | 1030.6 |
| AOX1072116BLK2.001 | | | | | | | | | |
| AOX1072116NEAT12.001 | Neat Check | 7/21/2016 14:50 | 1 | 5.00 ul | 5.315 | 0.000 | 0.11 % | 1063 | |
| AOX1072116NEAT12.001 | Neat Check | 7/21/2016 15:20 | 2 | 5.00 ul | 4.726 | 0.000 | 945.20 ppm | 945.2 | 1004.1 |
| AOX1072116MB1.001 | | | | | | | | | |
| AOX1072116NEAT11.001 | Neat Check | 7/21/2016 9:27 | 1 | 5.00 ul | 5.203 | 0.000 | 0.10 % | 1040.6 | |
| AOX1072116NEAT11.001 | Neat Check | 7/21/2016 9:36 | 2 | 5.00 ul | 4.750 | 0.000 | 950.00 ppm | 950 | 995.3 |
| AOX1072116CELL1.001 | | | | | | | | | |

1022.8
1030.6
1004.1
1000.6

REN

AOX-2 Results

Accessory:

Sample Results

| Data ID | Sample ID | Date/Time | Reps. | Sample Size | Count1 | Count2 | Blank | Conc. | ppm | Conc.X %Brkthru |
|-----------------------|--------------------|-----------------|-------|-------------|--------|--------|-------|------------|--------|-----------------|
| AOX2072216SSAMP3B.001 | 85006-G-2 (310) | 7/22/2016 9:22 | 1 | 25.00 ml | 8.644 | 5.658 | 0.251 | 552.00 ppb | 0.552 | 39.2 |
| AOX2072216SSAMP3B.001 | 85006-G-2 (310) | 7/22/2016 10:04 | 2 | 25.00 ml | 9.232 | 6.613 | 0.251 | 613.72 ppb | 0.6137 | 41.5 |
| AOX2072216SSAMP2.001 | 85006-G-2 (310) | 7/22/2016 8:46 | 1 | 100.00 ml | 28.000 | 17.137 | 0.251 | 446.35 ppb | 0.4464 | 37.8 |
| AOX2072116SSAMP2.001 | 85006-F-1 (310) | 7/21/2016 14:10 | 1 | 100.00 ml | 1.868 | | 0.251 | 16.17 ppb | 0.0162 | 0.0 |
| AOX2072116SSAMP2.001 | 85006-F-1 (310) | 7/21/2016 14:32 | 2 | 100.00 ml | 0.988 | | 0.251 | 7.37 ppb | 0.0074 | 0.0 |
| AOX2072116MS1.001 | 84867-F-8 MS (310) | 7/21/2016 12:35 | 1 | 100.00 ml | 11.849 | 0.922 | 0.251 | 122.69 ppb | 0.1227 | 5.5 |
| AOX2072116MS1.001 | 84867-F-8 MS (310) | 7/21/2016 13:34 | 2 | 100.00 ml | 11.320 | 1.081 | 0.251 | 118.99 ppb | 0.119 | 7.0 |
| AOX2072116SSAMP1.001 | 84867-F-8 (310) | 7/21/2016 11:05 | 1 | 100.00 ml | 2.037 | | 0.251 | 17.86 ppb | 0.0179 | 0.0 |
| AOX2072116SSAMP1.001 | 84867-F-8 (310) | 7/21/2016 12:04 | 2 | 100.00 ml | 1.888 | | 0.251 | 16.37 ppb | 0.0164 | 0.01712 |
| AOX2072116LCS.001 | LCS | 7/21/2016 10:26 | 1 | 100.00 ml | 25.666 | | 0.251 | 254.15 ppb | 0.2542 | 0.0 |
| AOX2072116LCS.001 | LCS | 7/21/2016 10:40 | 2 | 100.00 ml | 25.385 | | 0.251 | 251.34 ppb | 0.2513 | 0.0 |

low flow
12/1/2016

rew

Blank Report

Blank Results

Data ID : AOX1072516BLK5.001

| Reps. | Mode | Counts (μg) | Total Counts | \bar{X} | RSD | RSD (%) | ABC No. | Date |
|-------|-------|--------------------------|--------------|-----------|---------|---------|---------|----------------|
| 1 | AOX-1 | 0.343 * | 0.000 | | | | 2 | 07/25/16 10:20 |
| 2 | AOX-1 | 0.000 K | 0.000 | 0.000 | ***. ** | ***. ** | 0 | 07/25/16 10:23 |

PCW

Blank Report

Blank Results

Data ID : AOX1072516BLK6.001

| Reps. | Mode | Counts (µg) | Total Counts | \bar{X} | RSD | RSD(%) | ABC No. | Date |
|-------|-------|-------------|--------------|-----------|--------|--------|---------|----------------|
| 1 | AOX-1 | 0.053 * | 0.000 | | | | 2 | 07/25/16 15:38 |
| 2 | AOX-1 | 0.000 K | 0.000 | 0.000 | ***.** | ***.** | 0 | 07/25/16 15:39 |

RLW

Blank Report

Blank Results

Data ID : AOX1072616BLK7.001

| Reps. | Mode | Counts (µg) | Total Counts | \bar{X} | RSD | RSD (%) | ABC No. | Date |
|-------|-------|-------------|--------------|-----------|--------|---------|---------|----------------|
| 1 | AOX-1 | 0.246 * | 0.000 | | | | 2 | 07/26/16 08:18 |
| 2 | AOX-1 | 0.000 K | 0.000 | 0.000 | ***.** | ***.** | 0 | 07/26/16 08:33 |

Rev

Blank Report

Blank Results

Data ID : AOX1072616BLK8.001

| Reps. | Mode | Counts (µg) | Total Counts | \bar{X} | RSD | RSD(%) | ABC No. | Date |
|-------|-------|-------------|--------------|-----------|--------|--------|---------|----------------|
| 1 | AOX-1 | 0.121 * | 0.000 | | | | 2 | 07/26/16 15:32 |
| 2 | AOX-1 | 0.000 K | 0.000 | 0.000 | ***.** | ***.** | 0 | 07/26/16 15:32 |

PCN

AOX-1 Results

Accessory:

Sample Results

| Date ID | Sample ID | Date/Time | Reps | Sample Size | Counts | Blank | Conc. | ppm | Conc. X |
|---------------------|------------|-----------------|------|-------------|--------|-------|------------|--------|---------|
| AOX1072616NEAT8.001 | Neat Check | 7/26/2016 15:09 | 1 | 5.00 ul | 5.350 | 0.000 | 0.11 % | 1070 | |
| AOX1072616NEAT8.001 | Neat Check | 7/26/2016 15:23 | 2 | 5.00 ul | 5.159 | 0.000 | 0.10 % | 1031.8 | 1050.9 |
| AOX1072616NEAT7.001 | Neat Check | 7/26/2016 7:45 | 1 | 5.00 ul | 4.909 | 0.000 | 981.80 ppm | 981.8 | 1050.9 |
| AOX1072616NEAT7.001 | Neat Check | 7/26/2016 7:57 | 2 | 5.00 ul | 5.060 | 0.000 | 0.10 % | 1012 | 996.9 |
| AOX1072516NEAT6.001 | Neat Check | 7/25/2016 15:20 | 1 | 5.00 ul | 5.229 | 0.000 | 0.10 % | 1045.8 | |
| AOX1072516NEAT6.001 | Neat Check | 7/25/2016 15:28 | 2 | 5.00 ul | 4.551 | 0.000 | 910.20 ppm | 910.2 | 978 |
| AOX1072516NEAT5.001 | Neat Check | 7/25/2016 9:52 | 1 | 5.00 ul | 5.410 | 0.000 | 0.11 % | 1082 | |
| AOX1072516NEAT5.001 | Neat Check | 7/25/2016 10:10 | 2 | 5.00 ul | 5.105 | 0.000 | 0.10 % | 1021 | 1051.5 |

read

AOX-2 Results Accessory:

Sample Results

| Data ID | Sample ID | Date/Time | Reps. | Sample Size | Count1 | Count2 | Blank | Conc. | ppm | Conc. X | %Brkthru |
|----------------------|---------------------|-----------------|-------|-------------|--------|--------|-------|------------|--------|---------|----------|
| AOX2072616MS2.001 | 103344-D-7 MS (480) | 7/26/2016 14:32 | 1 | 100.00 ml | 10.393 | -0.021 | 0.251 | 101.42 ppb | 0.1014 | | 0.0 |
| AOX2072616MS2.001 | 103344-D-7 MS (480) | 7/26/2016 14:51 | 2 | 100.00 ml | 10.375 | -0.034 | 0.251 | 101.24 ppb | 0.1012 | 0.10133 | 0.0 |
| AOX2072616SAMP12.001 | 103344-D-7 (480) | 7/26/2016 13:59 | 1 | 100.00 ml | 0.399 | | 0.251 | 1.48 ppb | 0.0015 | | 0.0 |
| AOX2072616SAMP12.001 | 103344-D-7 (480) | 7/26/2016 14:18 | 2 | 100.00 ml | 0.242 | | 0.251 | 0.00 ppm | 0 | 0.00074 | 0.0 |
| AOX2072616SAMP11.001 | 103344-D-1 (480) | 7/26/2016 13:22 | 1 | 100.00 ml | 1.500 | | 0.251 | 12.49 ppb | 0.0125 | | 0.0 |
| AOX2072616SAMP11.001 | 103344-D-1 (480) | 7/26/2016 13:38 | 2 | 100.00 ml | 1.847 | | 0.251 | 15.96 ppb | 0.016 | 0.01423 | 0.0 |
| AOX2072616SAMP10.001 | 85190-G-3 (310) | 7/26/2016 11:16 | 1 | 100.00 ml | 10.688 | 0.338 | 0.251 | 105.24 ppb | 0.1052 | | 0.8 |
| AOX2072616SAMP10.001 | 85190-G-3 (310) | 7/26/2016 11:41 | 2 | 100.00 ml | 12.590 | 1.195 | 0.251 | 132.83 ppb | 0.1328 | | 7.1 |
| AOX2072616SAMP10.001 | 85190-G-3 (310) | 7/26/2016 11:58 | 3 | 100.00 ml | 18.536 | 0.405 | 0.251 | 184.39 ppb | 0.1844 | | 0.8 |
| AOX2072616SAMP10.001 | 85190-G-3 (310) | 7/26/2016 12:19 | 4 | 100.00 ml | 19.274 | 0.424 | 0.251 | 191.96 ppb | 0.192 | 0.18818 | 0.9 |
| AOX2072616SAMP9B.001 | 85190-G-2 (310) | 7/26/2016 10:12 | 1 | 100.00 ml | 4.100 | 0.769 | 0.251 | 43.67 ppb | 0.0437 | | 11.9 |
| AOX2072616SAMP9B.001 | 85190-G-2 (310) | 7/26/2016 10:32 | 2 | 100.00 ml | 5.178 | 0.635 | 0.251 | 53.11 ppb | 0.0531 | 0.04839 | 7.2 |
| AOX2072616SAMP9.001 | 85190-G-2 (310) | 7/26/2016 9:35 | 1 | 50.00 ml | 2.461 | | 0.251 | 44.20 ppb | 0.0442 | 0.0442 | 0.0 |
| AOX2072616SAMP8.001 | 85190-G-1 (310) | 7/26/2016 8:43 | 1 | 100.00 ml | 6.303 | 0.377 | 0.251 | 61.78 ppb | 0.0618 | | 2.0 |
| AOX2072616SAMP8.001 | 85190-G-1 (310) | 7/26/2016 9:03 | 2 | 100.00 ml | 5.263 | 0.316 | 0.251 | 50.77 ppb | 0.0508 | 0.05628 | 1.3 |
| AOX2072616SAMP7.001 | 85116-E-4 (310) | 7/26/2016 14:24 | 1 | 25.00 ml | 3.400 | 1.284 | 0.251 | 167.28 ppb | 0.1673 | | 24.7 |
| AOX2072616SAMP7.001 | 85116-E-4 (310) | 7/26/2016 14:41 | 2 | 25.00 ml | 4.355 | 2.962 | 0.251 | 272.60 ppb | 0.2726 | | 39.8 |
| AOX2072616SAMP7.001 | 85116-E-4 (310) | 7/26/2016 15:00 | 3 | 25.00 ml | 3.183 | 1.501 | 0.251 | 167.28 ppb | 0.1673 | 0.16728 | 29.9 |
| AOX2072616SAMP6.001 | 85116-E-2 (310) | 7/26/2016 13:28 | 1 | 25.00 ml | 5.181 | 2.921 | 0.251 | 304.00 ppb | 0.304 | | 35.1 |
| AOX2072616SAMP6.001 | 85116-E-2 (310) | 7/26/2016 13:47 | 2 | 25.00 ml | 2.802 | | 0.251 | 102.04 ppb | 0.102 | | 0.0 |
| AOX2072616SAMP6.001 | 85116-E-2 (310) | 7/26/2016 13:58 | 3 | 25.00 ml | 5.828 | 3.341 | 0.251 | 346.68 ppb | 0.3467 | 0.32534 | 35.7 |
| AOX2072616SAMP5.001 | 85060-B-1 (310) | 7/26/2016 11:36 | 1 | 100.00 ml | 18.672 | 2.178 | 0.251 | 203.48 ppb | 0.2035 | | 9.5 |
| AOX2072616SAMP5.001 | 85060-B-1 (310) | 7/26/2016 12:11 | 2 | 100.00 ml | 14.440 | 1.802 | 0.251 | 157.40 ppb | 0.1574 | | 9.9 |
| AOX2072616SAMP5.001 | 85060-B-1 (310) | 7/26/2016 12:41 | 3 | 100.00 ml | 12.540 | 2.685 | 0.251 | 147.23 ppb | 0.1472 | 0.15232 | 16.5 |
| AOX2072216SAMP4.001 | 85006-G-4 (310) | 7/22/2016 10:52 | 1 | 50.00 ml | 9.275 | 4.608 | 0.251 | 267.62 ppb | 0.2676 | | 32.6 |
| AOX2072216SAMP4.001 | 85006-G-4 (310) | 7/22/2016 14:19 | 2 | 50.00 ml | 7.377 | 3.504 | 0.251 | 207.58 ppb | 0.2076 | | 31.3 |
| AOX2072216SAMP4.001 | 85006-G-4 (310) | 7/26/2016 10:33 | 3 | 50.00 ml | 8.042 | 4.576 | 0.251 | 242.32 ppb | 0.2423 | 0.25497 | 35.7 |

3/4 2L
 2 LLS
 126/126/126
 1/3 confirms
 1/3 LLS
 1/3 LLS

REN

Blank Report**Blank Results**

Data ID : AOX1072716BLK9.001

| Reps. | Mode | Counts (µg) | Total Counts | \bar{X} | RSD | RSD (%) | ABC No. | Date |
|-------|-------|-------------|--------------|-----------|--------|---------|---------|----------------|
| 1 | AOX-1 | 0.181 | 0.181 | 0.091 | ***.** | ***.** | 2 | 07/27/16 09:42 |

RCW

Blank Report

Blank Results

Data ID : AOX1072716BLK10.001

| Reps. | Mode | Counts (µg) | Total Counts | \bar{X} | RSD | RSD (%) | ABC No. | Date |
|-------|-------|-------------|--------------|-----------|--------|---------|---------|----------------|
| 1 | AOX-1 | -0.069 | 0.000 | 0.000 | ***.** | ***.** | 2 | 07/27/16 15:37 |

221

AOX-1 Results Accessory:

Sample Results

| Data ID | Sample ID | Date/Time | Reps. | Sample Size | Counts | Blank | Conc. | ppm | Conc. X |
|----------------------|------------|-----------------|-------|-------------|--------|-------|------------|--------|---------|
| AOX1072716BLK10.001 | | | | | | | | | |
| AOX1072716NEAT10.001 | Neat Check | 7/27/2016 15:17 | 1 | 5.00 ul | 4.894 | 0.000 | 978.80 ppm | 978.8 | |
| AOX1072716NEAT10.001 | Neat Check | 7/27/2016 15:28 | 2 | 5.00 ul | 5.124 | 0.000 | 0.10 % | 1024.8 | 1001.8 |
| AOX1072716BLK9.001 | | | | | | | | | |
| AOX1072716NEAT9.001 | Neat Check | 7/27/2016 9:13 | 1 | 5.00 ul | 5.444 | 0.000 | 0.11 % | 1088.8 | |
| AOX1072716NEAT9.001 | Neat Check | 7/27/2016 9:23 | 2 | 5.00 ul | 5.088 | 0.000 | 0.10 % | 1017.6 | 1053.2 |

10260

10532

Red

AOX-2 Results Accessory:

Sample Results

| Data ID | Sample ID | Date/Time | Reps. | Sample Size | Count1 | Count2 | Blank | Conc. | ppm | Conc.X | %Bkthru |
|------------------------|------------------|-----------------|-------|-------------|--------|--------|-------|------------|--------|---------|---------|
| AOX207Z716SSAMP15.001 | 108298-A-1 (490) | 7/27/2016 13:34 | 1 | 100.00 ml | 4.201 | 3.780 | 0.251 | 74.79 ppb | 0.0748 | | 47.2 |
| AOX207Z716SSAMP15.001 | 108298-A-1 (490) | 7/27/2016 14:09 | 2 | 100.00 ml | 4.524 | 3.690 | 0.251 | 77.12 ppb | 0.0771 | 0.07596 | 44.6 |
| AOX207Z716SSAMP14.001 | 56812-C-1 (180) | 7/27/2016 11:26 | 1 | 25.00 ml | 2.759 | | 0.251 | 100.32 ppb | 0.1003 | | 0.0 |
| AOX207Z716SSAMP14.001 | 56812-C-1 (180) | 7/27/2016 11:54 | 2 | 25.00 ml | 4.874 | 3.091 | 0.251 | 298.52 ppb | 0.2985 | | 38.1 |
| AOX207Z716SSAMP14.001 | 56812-C-1 (180) | 7/27/2016 12:17 | 3 | 25.00 ml | 6.219 | 3.779 | 0.251 | 379.84 ppb | 0.3798 | | 37.2 |
| AOX207Z716SSAMP14.001 | 56812-C-1 (180) | 7/27/2016 12:36 | 4 | 25.00 ml | 5.351 | 2.654 | 0.251 | 300.12 ppb | 0.3001 | 0.29932 | 32.0 |
| AOX207Z716SSAMP13B.001 | 56800-C-1 (180) | 7/27/2016 10:30 | 1 | 25.00 ml | 7.912 | 7.106 | 0.251 | 580.64 ppb | 0.5806 | | 47.2 |
| AOX207Z716SSAMP13B.001 | 56800-C-1 (180) | 7/27/2016 10:50 | 2 | 25.00 ml | 8.003 | 6.073 | 0.251 | 542.96 ppb | 0.543 | 0.5618 | 42.9 |
| AOX207Z716SSAMP13.001 | 56800-C-1 (180) | 7/27/2016 9:58 | 1 | 10.00 ml | 3.373 | 2.258 | 0.251 | 512.90 ppb | 0.5129 | | 39.1 |
| AOX207Z716SSAMP13.001 | 56800-C-1 (180) | 7/27/2016 10:17 | 2 | 10.00 ml | 2.298 | | 0.251 | 204.70 ppb | 0.2047 | 0.3588 | 0.0 |

2 LCS
 2/4 Confirms
 Confirms
 Rejected

GENERAL CHEMISTRY BATCH WORKSHEET

Lab Name: TestAmerica Nashville Job No.: 490-108298-1

SDG No.: _____

Batch Number: 357570 Batch Start Date: 07/21/16 09:27 Batch Analyst: Nowak, Ryan

Batch Method: 9020B Batch End Date: _____

| Lab Sample ID | Client Sample ID | Method Chain | Basis | FinalAmount | W_TOX CCV 00018 | W_TOX LCS 00011 | | | |
|----------------------|------------------|--------------|-------|-------------|-----------------|-----------------|--|--|--|
| CCV 490-357570/2 | | 9020B | | | 5 uL | | | | |
| LCS 490-357570/4 | | 9020B | | 100 mL | | 25 uL | | | |
| CCV 490-357570/8 | | 9020B | | | 5 uL | | | | |
| CCV 490-357570/35 | | 9020B | | | 5 uL | | | | |
| CCV 490-357570/41 | | 9020B | | | 5 uL | | | | |

| Batch Notes | |
|------------------|-------------------------------|
| Batch Comment | Pipette ID 21011026, 21061149 |
| Cartridge Lot ID | 3113088 |
| Nitrate Wash ID | 3150162 |

| Basis | Basis Description |
|-------|-------------------|
| | |

The pound sign (#) in the amount added field denotes that the reagent was used undiluted. All calculations are performed using the stated concentration for this reagent.



TO: R. SOK DATE: AUGUST 15, 2016
 FROM: L. GANSER COPIES: DV FILE
 SUBJECT: DATA VALIDATION- LEAD
 NASA WALLOPS ISLAND, VIRGINIA
 SAMPLE DELIVERY GROUP (SDG) SJ4633, SJ5058, AND SJ5165

SAMPLES:

SDG SJ4633: 6/Soil

PR-SB-E4-1224 RR-DUP16-062216 RR-SB-C1A-0612 RR-SB-C4-3648
 RR-SB-C9-0612 RR-SB-D9-0006

SDG SJ5058: 2/Soil

PR-SB-F3-6072 PR-SB-F4-6072

SDG SJ5165: 1/Soil

PR-SB-F3-8496

Overview

The sample set for NASA Wallops Island, SDG SJ4633, SJ5058, and SJ5165 consists of six (6), two (2), and one (1) soil samples, respectively. All samples were analyzed for lead. One field duplicate pair was included in this SDG: RR-SB-C4-3648 / RR-DUP16-062216.

Samples were collected on June 22, July 7, and July 11, 2016 by Tetra Tech and analyzed by Katahdin. Lead analyses were conducted in accordance to SW-846 Method 6020A analytical and reporting protocols.

The data contained in this SDG were validated with regard to the following parameters: data completeness, holding times, MS tuning, laboratory method/preparation blank results, ICP interference results, blank spike results, matrix spike/matrix spike duplicate results, laboratory duplicate results, ICP serial dilution results, field duplicate precision, and detection limits. Areas of concern with respect to data quality are listed below.

Major Problems – None.

Minor Problems

- Field duplicate imprecision (relative percent difference > 50%) was noted for field duplicate sample pair RR-SB-C4-3648 / RR-DUP16-062216. The detected lead results in samples RR-SB-C4-3648 and RR-DUP16-062216 were qualified as estimated (J).

Notes

Lead was detected in the laboratory blanks at the following maximum concentrations:

| Analyte | Maximum Concentration | Reporting Limit (RL) (> or <) |
|---------------------|-----------------------|-------------------------------|
| Lead ⁽¹⁾ | 0.034 mg/kg | < |
| Lead ⁽²⁾ | 0.029 mg/kg | < |
| Lead ⁽³⁾ | 0.035 mg/kg | < |

To: R. SOK
SDG: SJ4633, SJ5058, AND SJ5165

- 1 Concentration in preparation blank affecting samples in batch JF23IMS1 in SDG SJ4633.
- 2 Concentration in preparation blank affecting samples in batch JG08IMS1 in SDG SJ5058.
- 3 Concentration in preparation blank affecting samples in batch JG12IMS2 in SDG 5165.

Dilution factor, if applicable, was taken into consideration when evaluating for blank contamination. No action was taken for samples affected by blank concentrations < RL as all results were greater than the RL.

EXECUTIVE SUMMARY

Laboratory Performance Issues: Lead was present in the blanks.

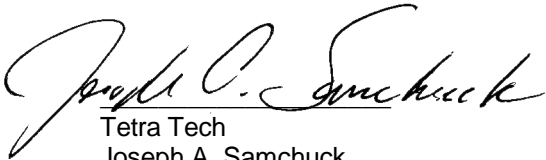
Other Factors Affecting Data Quality: Field duplicate imprecision was noted for lead.

The data for these analyses were reviewed with reference to the "National Functional Guidelines for Inorganic Review" (August 2014). The text of this report has been formulated to address only those areas affecting data quality.

The text of this report has been formulated to address only those problem areas affecting data quality.



Tetra Tech
Leanne M. Ganser
Environmental Scientist/Data Validator



Tetra Tech
Joseph A. Samchuck
Data Validation Manager

Attachments:

- Appendix A – Qualified Analytical Results
- Appendix B – Results as Reported by the Laboratory
- Appendix C – Support Documentation

Appendix A

Qualified Analytical Results

Qualifier Codes:

- A = Lab Blank Contamination
- B = Field Blank Contamination
- C = Calibration Noncompliance (i.e., % RSDs, %Ds, ICVs, CCVs, RRFs, etc.)
- C01 = GC/MS Tuning Noncompliance
- D = MS/MSD Recovery Noncompliance
- E = LCS/LCSD Recovery Noncompliance
- F = Lab Duplicate Imprecision
- G = Field Duplicate Imprecision
- H = Holding Time Exceedance
- I = ICP Serial Dilution Noncompliance
- J = ICP PDS Recovery Noncompliance; MSA's $r < 0.995$
- K = ICP Interference - includes ICS % R Noncompliance
- L = Instrument Calibration Range Exceedance
- M = Sample Preservation Noncompliance
- N = Internal Standard Noncompliance
- N01 = Internal Standard Recovery Noncompliance Dioxins
- N02 = Recovery Standard Noncompliance Dioxins
- N03 = Clean-up Standard Noncompliance Dioxins
- O = Poor Instrument Performance (i.e., base-time drifting)
- P = Uncertainty near detection limit ($< 2 \times$ IDL for inorganics and $<$ CRQL for organics)
- Q = Other problems (can encompass a number of issues; i.e.chromatography,interferences, etc.)
- R = Surrogates Recovery Noncompliance
- S = Pesticide/PCB Resolution
- T = % Breakdown Noncompliance for DDT and Endrin
- U = RPD between columns/detectors $>40\%$ for positive results determined via GC/HPLC
- V = Non-linear calibrations; correlation coefficient $r < 0.995$
- W = EMPC result
- X = Signal to noise response drop
- Y = Percent solids $<30\%$
- Z = Uncertainty at 2 standard deviations is greater than sample activity
- Z1 = Tentatively Identified Compound considered presumptively present
- Z2 = Tentatively Identified Compound column bleed
- Z3 = Tentatively Identified Compound aldol condensate
- Z4 = Sample activity is less than the at uncertainty at 3 standard deviations and greater than the MDC
- Z5 = Sample activity is less than the at uncertainty at 3 standard deviations and less than the MDC

| | | | | | | | | | | | | | |
|---|------------|---------------|------|--------|-----------------|------|--------|----------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4633 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-SB-E4-1224 | | | RR-DUP16-062216 | | | RR-SB-C1A-0612 | | | RR-SB-C4-3648 | | |
| | LAB_ID | SJ4633-001 | | | SJ4633-011 | | | SJ4633-003 | | | SJ4633-005 | | |
| | SAMP_DATE | 6/22/2016 | | | 6/22/2016 | | | 6/22/2016 | | | 6/22/2016 | | |
| | QC_TYPE | NM | | | NM | | | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 88.8 | | | 89.6 | | | 87.8 | | | 90.0 | | |
| | DUP_OF | | | | RR-SB-C4-3648 | | | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 30.6 | | | 214 | J | G | 24.4 | | | 28.2 | J | G | |

| | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ4633 FRACTION: M MEDIA: SOIL | NSAMPLE | RR-SB-C9-0612 | | | RR-SB-D9-0006 | | |
| | LAB_ID | SJ4633-009 | | | SJ4633-007 | | |
| | SAMP_DATE | 6/22/2016 | | | 6/22/2016 | | |
| | QC_TYPE | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 90.4 | | | 87.6 | | |
| | DUP_OF | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 110 | | | 158 | | | |

| | | | | | | | |
|---|------------|---------------|------|--------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ5058 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-SB-F3-6072 | | | PR-SB-F4-6072 | | |
| | LAB_ID | SJ5058-001 | | | SJ5058-002 | | |
| | SAMP_DATE | 7/7/2016 | | | 7/7/2016 | | |
| | QC_TYPE | NM | | | NM | | |
| | UNITS | MG/KG | | | MG/KG | | |
| | PCT_SOLIDS | 95.5 | | | 93.0 | | |
| | DUP_OF | | | | | | |
| PARAMETER | RESULT | VQL | QLCD | RESULT | VQL | QLCD | |
| LEAD | 939 | | | 243 | | | |

| | | | | |
|---|------------|---------------|------|--|
| PROJ_NO: 07723 SDG: SJ5165 FRACTION: M MEDIA: SOIL | NSAMPLE | PR-SB-F3-8496 | | |
| | LAB_ID | SJ5165-001 | | |
| | SAMP_DATE | 7/11/2016 | | |
| | QC_TYPE | NM | | |
| | UNITS | MG/KG | | |
| | PCT_SOLIDS | 92.4 | | |
| | DUP_OF | | | |
| PARAMETER | RESULT | VQL | QLCD | |
| LEAD | 79.4 | | | |

Appendix B

Results as Reported by the Laboratory

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-E4-1224

Matrix: SOIL

SDG Name: SJ4633

Percent Solids: 88.8

Lab Sample ID: SJ4633-001

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 30.6 | | | MS | 10 | 0.13 | 0.0092 | 0.066 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-C1A-0612

Matrix: SOIL

SDG Name: SJ4633

Percent Solids: 87.8

Lab Sample ID: SJ4633-003

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 24.4 | | | MS | 10 | 0.10 | 0.0074 | 0.053 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-C4-3648

Matrix: SOIL

SDG Name: SJ4633

Percent Solids: 90.0

Lab Sample ID: SJ4633-005

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 28.2 | | | MS | 10 | 0.12 | 0.0083 | 0.059 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-D9-0006

Matrix: SOIL

SDG Name: SJ4633

Percent Solids: 87.6

Lab Sample ID: SJ4633-007

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 158 | | | MS | 10 | 0.12 | 0.0083 | 0.059 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-SB-C9-0612

Matrix: SOIL

SDG Name: SJ4633

Percent Solids: 90.4

Lab Sample ID: SJ4633-009

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|-------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 110 | | | MS | 10 | 0.16 | 0.012 | 0.082 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: RR-DUP16-062216

Matrix: SOIL

SDG Name: SJ4633

Percent Solids: 89.6

Lab Sample ID: SJ4633-011

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 214 | | | MS | 10 | 0.11 | 0.0079 | 0.056 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-F3-6072

Matrix: SOIL

SDG Name: SJ5058

Percent Solids: 95.5

Lab Sample ID: SJ5058-001

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 939 | | | MS | 10 | 0.098 | 0.0069 | 0.049 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services**Client Field ID:** PR-SB-F4-6072**Matrix:** SOIL**SDG Name:** SJ5058**Percent Solids:** 93.0**Lab Sample ID:** SJ5058-002**Concentration Units :** mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 243 | | | MS | 10 | 0.10 | 0.0074 | 0.053 |

Comments:

INORGANIC ANALYSIS DATA SHEET

Lab Name: Katahdin Analytical Services

Client Field ID: PR-SB-F3-8496

Matrix: SOIL

SDG Name: SJ5165

Percent Solids: 92.4

Lab Sample ID: SJ5165-001

Concentration Units : mg/Kg drywt

| CAS No. | Analyte | Concentration | C | Q | M | DF | ADJUSTED | | |
|-----------|-------------|---------------|---|---|----|----|----------|--------|-------|
| | | | | | | | LOQ | MDL | LOD |
| 7439-92-1 | LEAD, TOTAL | 79.4 | | | MS | 10 | 0.12 | 0.0088 | 0.063 |

Comments:

Appendix C

Support Documentation

**SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECHNUS, INC.
NASA WOLLOPS FLIGHT FACILITY-MBFR
SJ4633**

Sample Receipt

The following samples were received on June 23, 2016 and were logged in under Katahdin Analytical Services work order number SJ4633 for a hardcopy due date of July 12, 2016.

| <u>KATAHDIN</u> <u>Sample No.</u> | <u>TTNUS</u> <u>Sample Identification</u> |
|--------------------------------------|--|
| SJ4633-1 | PR-SB-E4-1224 |
| SJ4633-3 | PR-SB-C1A-0612 |
| SJ4633-5 | PR-SB-C4-3648 |
| SJ4633-7 | PR-SB-D9-0006 |
| SJ4633-9 | PR-SB-C9-0612 |
| SJ4633-11 | RR-DUP16-062216 |

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Metals Analysis

The samples of Katahdin Work Order SJ4633 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Solid-matrix Katahdin Sample Numbers SJ4633-(1-11) were digested for ICP-MS analysis on 06/23/16 (QC Batch JF23IMS1) in accordance with USEPA Method 3050B. Katahdin Sample Numbers SJ4633-(2, 4, 6, 8, and 10) were canceled per client request and not reported in the accompanying data package.

ICP-MS analyses of Katahdin Work Order SJ4633 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Sample digestates for Katahdin Work Order SJ4633 were diluted by at least a factor of 10 in accordance with the project limits.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

| Internal Standard Element | Associated Analytes |
|----------------------------|--|
| Lithium | Beryllium, Boron |
| Scandium | Sodium, Magnesium, Aluminum, Silicon, Potassium, Calcium |
| Germanium or Yttrium | Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Strontium, Molybdenum, Silver, Cadmium |
| Terbium | Tin, Antimony, Barium, Tungsten |
| Bismuth | Lead, Thallium, Thorium, Uranium |

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the LOQ are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQs, MDLs, and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

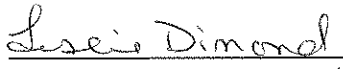
The samples of Work Order SJ4633 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times, and all quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.


Leslie Dimond
07.13.16
Leslie Dimond
Quality Assurance Officer

Katahdin Analytical Services, Inc.

Manual Integration Codes For GC/MS, GC, HPLC and/or IC

| | |
|-----|---|
| M1 | Peak splitting. |
| M2 | Well defined peaks on the shoulders of the other peaks. |
| M3 | There is additional area due to a coeluting interferant. |
| M4 | There are negative spikes in the baseline. |
| M5 | There are rising or falling baselines. |
| M6 | The software has failed to detect a peak or misidentified a peak. |
| M7 | Excessive peak tailing. |
| M8 | Analysis such as GRO, DRO and TPH require a baseline hold. |
| M9 | Peak was not completely integrated as in GC/MS. |
| M10 | Primary ion was correctly integrated, but secondary or tertiary ion needed manual integration as in GC/MS. |
| M11 | For GC analysis, when a sample is diluted by 1:10 or more, the surrogate is set to undetected and then the area under the surrogate is manually integrated. |
| M12 | Manual integration saved in method due to TurboChrom floating point error. |

| | | |
|----------------------------------|------------------------------|--|
| Client: <u>Tetra Tech</u> | KAS PM: <u>Jo</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>Jo</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>SJ4633 -</u> | KIMS Review By: <u>Jo</u> | Received By: <u>SO</u> |
| SDG #: | Cooler: <u>1</u> of <u>1</u> | Date/Time Rec.: <u>6-23-16</u> <u>1615</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | ✓ | | | | |
| 2. Chain of Custody present in cooler? | ✓ | | | | |
| 3. Chain of Custody signed by client? | ✓ | | | | |
| 4. Chain of Custody matches samples? | ✓ | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | | ✓ | | | Temp (°C): <u>N/A</u> |
| Samples received at <6 °C w/o freezing? | | | | ✓ | Note: Not required for <u>metals</u> (except Hg soil) analysis. |
| Ice packs or ice present? | | | | ✓ | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | | | | ✓ | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | ✓ | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | ✓ | |
| Aqueous: No bubble larger than a pea? | | | | ✓ | |
| Soil/Sediment: | | | | ✓ | |
| Received in airtight container? | | | | ✓ | |
| Received in methanol? | | | | ✓ | |
| Methanol covering soil? | | | | ✓ | |
| D.I. Water - Received within 48 hour HT? | | | | ✓ | |
| Air: Refer to KAS COC for canister/flow controller requirements. | ✓ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | ✓ | |
| 8. Proper sample containers and volume? | ✓ | | | | |
| 9. Samples within hold time upon receipt? | ✓ | | | | |
| 10. Aqueous samples properly preserved? | | | | ✓ | |
| Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2 | | | | ✓ | |
| Sulfide - >9 | | | | ✓ | |
| Cyanide – pH >12 | | | | ✓ | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

| | | | |
|--|--|---------------------------------|-----------------------|
| Client Tetra Tech | Contact Rob Sok | Phone # (757)466-4904 | Fax # () |
| Address 5700 Lake Wright Dr. St 309 City Norfolk | | State VA | Zip Code 23455 |
| Purchase Order # | Proj. Name / No. NASA WFF MBER RA 112607723 | Katahdin Quote # | |
| Bill (if different than above) | Address | | |

Sampler (Print / Sign) **Jacob Birkett** *[Signature]* Copies To:

LAB USE ONLY WORK ORDER #: **574633**
 KATAHDIN PROJECT NUMBER _____
 REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: **8744-8572-4640**
 TEMP °C _____ TEMP BLANK INTACT NOT INTACT

| ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | | |
|---|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. |
| <input type="checkbox"/> Y | <input type="checkbox"/> N | <input type="checkbox"/> Y | <input type="checkbox"/> N | <input type="checkbox"/> Y | <input type="checkbox"/> N | <input type="checkbox"/> Y | <input type="checkbox"/> N | <input type="checkbox"/> Y | <input type="checkbox"/> N | <input type="checkbox"/> Y | <input type="checkbox"/> N |

| * | Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. | Lead | | | | | | | | |
|---|--------------------|--------------------|--------|---------------|------|--|--|--|--|--|--|--|-----------|
| | PR-SB-E4-1224 | 6-22-16/1202 | SO | 1 | 1 | | | | | | | | 24 HR TAT |
| | PR-SB-E4-2436 | /1203 | | 1 | 1 | | | | | | | | HOLD |
| | RR-SB-C1A-0612 | /1055 | | 1 | 1 | | | | | | | | 24 HR TAT |
| | RR-SB-C1A-1224 | /1056 | | 1 | 1 | | | | | | | | HOLD |
| | RR-SB-C4-3648 | /1110 | | 1 | 1 | | | | | | | | 24 HR TAT |
| | RR-SB-C4-4860 | /1111 | | 1 | 1 | | | | | | | | HOLD |
| | RR-SS-D9-0006 | /1124 | | 1 | 1 | | | | | | | | 24 HR TAT |
| | RR-SB-D9-0612 | /1125 | | 1 | 1 | | | | | | | | HOLD |
| | RR-SB-C9-0612 | /1118 | | 1 | 1 | | | | | | | | 24 HR TAT |
| | RR-SB-C9-1224 | /1119 | | 1 | 1 | | | | | | | | HOLD |
| | RR-Dup16-062216 | ↓ / 1200 | ↓ | 1 | 1 | | | | | | | | 24 HR TAT |
| | | / | | | | | | | | | | | |
| | | / | | | | | | | | | | | |
| | | / | | | | | | | | | | | |
| | | / | | | | | | | | | | | |
| | | / | | | | | | | | | | | |

COMMENTS

| | | | | | |
|--|-----------------------------|--|------------------------------|-----------------------------|--|
| Relinquished By: (Signature) <i>[Signature]</i> | Date / Time 6-22-16 1700 | Received By: (Signature) FedEx | Relinquished By: (Signature) | Date / Time 6/23/16 1015 | Received By: (Signature) <i>[Signature]</i> |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000007

METALS SAMPLE FLAGGING

| FLAG | SPECIFIED MEANING |
|-------------|--|
| E | The reported value is estimated because of the presence of interference (as indicated by serial dilution). |
| N | The pre-digestion spiked sample recovery is not within control limits. |
| * | The duplicate sample analysis relative percent difference (RPD) is not within control limits. |
| B | Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample. |
| A | The post-digestion spiked sample recovery is not within control limits. |
| • | Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits. |
| U | <p>The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ) (previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.</p> <p>Note: All results reported as “U” MDL have a 50% rate for false negatives compared to those results reported as “U” PQL/LOQ or “U” LOD, where the rate of false negatives is <1%.</p> |
| J | The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL). |
| Q | One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV). |

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL "U" LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level (PQL) or LOQ could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1 - pH

H2 - DO

H3 - sulfite

H4 - residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

M1 The matrix spike and/or matrix spike duplicate recovery performed on this sample was outside of the laboratory acceptance criteria. Sample matrix is suspected. The laboratory criteria was met for the Laboratory Control Sample (LCS) analyzed concurrently with this sample.

M2 The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory acceptance criteria. The native sample concentration is greater than four times the spike added concentration so the spike added could not be distinguished from the native sample concentration.

R1 The relative percent difference (RPD) between the duplicate analyses performed on this sample was outside of the laboratory acceptance criteria (when both values are greater than ten times the PQL).

MCL Maximum Contaminant Level

NL No limit

NFL No Free Liquid Present

FLP Free Liquid Present

NOD No Odor Detected

TON Threshold Odor Number

D-1 As required by Method 5210B, APHA Standard Methods for the Examination of Water and Wastewater (21st edition), the BOD value reported for this sample is 'qualified' because the check standard run concurrently with the sample analysis did not meet the criteria specified in the method (198 +/- 30.5 mg/L). These results may not be reportable for compliance purposes.

D-2 The measured final dissolved oxygen concentrations of all dilutions were less than the method-specified limit of 1 mg/L. The reported BOD result was calculated assuming a final oxygen concentration equal to 1 mg/L. The reported value should be considered a minimum value.

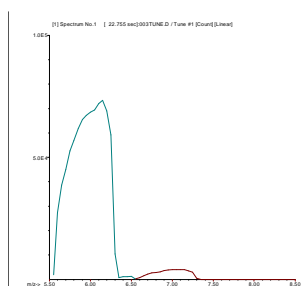
D-3 The dilution water used to prepare this sample did not meet the method and/or regulatory criteria of less than 0.2 or 0.4 mg/L dissolved oxygen (DO) uptake over the five day period of incubation. These results may not be reportable for compliance purposes.

6020 QC Tune Report

Data File: C:\ICPCHEM\1\DATA\JJF23A.B\003TUNE.D
 Date Acquired: Jun 23 2016 05:39 pm
 Acq. Method: TN6020E.M
 Operator: EAM
 Sample Name: 6020 TUNE
 Misc Info:
 Vial Number: 1107
 Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

| Element | Actual | Required | Flag |
|---------|--------|----------|------|
| 7 Li | 0.58 | 5.00 | |
| 59 Co | 1.33 | 5.00 | |
| 115 In | 1.11 | 5.00 | |
| 205 Tl | 1.22 | 5.00 | |



7 Li

Mass Calib.

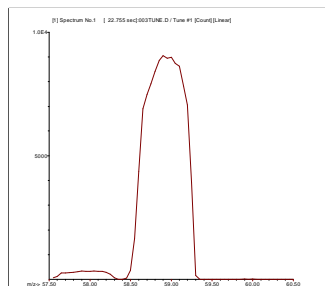
Actual: 7.05
 Required: 6.90 - 7.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:



59 Co

Mass Calib.

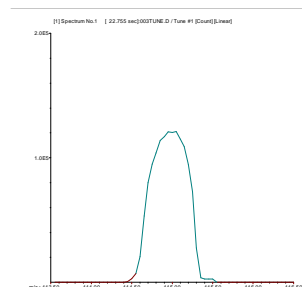
Actual: 58.95
 Required: 58.90 - 59.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:



115 In

Mass Calib.

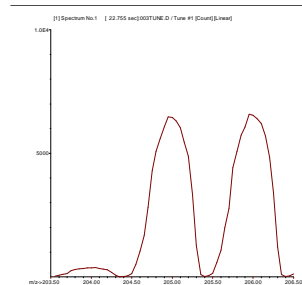
Actual: 115.00
 Required: 114.90 - 115.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:



205 Tl

Mass Calib.

Actual: 205.00
 Required: 204.90 - 205.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4633

Concentration Units: ug/L

SAMPLE: ICB

File: JJF23A Jun 23, 2016 18:39

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.031 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF23A Jun 23, 2016 19:13

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.429 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 3.329 | J |
| MOLYBDENUM | 0.052 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 8.762 | J |

SAMPLE: CCB

File: JJF23A Jun 23, 2016 19:55

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.176 | J |
| MOLYBDENUM | 0.027 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 7.902 | J |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ4633

Concentration Units: ug/L

SAMPLE: CCB

File: JJF23A Jun 23, 2016 20:37

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.036 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 6.026 | J |

SAMPLE: CCB

File: JJF23A Jun 23, 2016 21:20

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.721 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.156 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJF23A Jun 23, 2016 21:53

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.654 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 4.772 | J |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJF23IMS1

Matrix: SOIL

SDG Name: SJ4633

QC Batch ID: JF23IMS1

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| LEAD | 0.034 | J |

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services SDG Name: SJ4633

Concentration Units: ug/L

SAMPLE: ICSA

File: JJF23A Jun 23, 2016 18:56

| Analyte | TRUE | FOUND | % R |
|------------|--------|-------|------|
| ALUMINUM | 100000 | 93240 | 93.2 |
| CALCIUM | 100000 | 93850 | 93.8 |
| IRON | 100000 | 92040 | 92.0 |
| LEAD | 0 | 0 | |
| MAGNESIUM | 100000 | 92350 | 92.3 |
| MOLYBDENUM | 2000 | 1965 | 98.3 |
| POTASSIUM | 100000 | 93980 | 94.0 |
| SODIUM | 100000 | 92910 | 92.9 |

SAMPLE: ICSAB

File: JJF23A Jun 23, 2016 18:59

| Analyte | TRUE | FOUND | % R |
|------------|--------|-------|-------|
| ALUMINUM | 100000 | 92750 | 92.8 |
| CALCIUM | 100000 | 94180 | 94.2 |
| IRON | 100000 | 90950 | 91.0 |
| LEAD | 20 | 21 | 105.0 |
| MAGNESIUM | 100000 | 92800 | 92.8 |
| MOLYBDENUM | 2000 | 2002 | 100.1 |
| POTASSIUM | 100000 | 94290 | 94.3 |
| SODIUM | 100000 | 92760 | 92.8 |

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJF23IMS1**Matrix:** SOIL**SDG Name:** SJ4633**QC Batch ID:** JF23IMS1**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 11.0 | 110.0 | 84 | 118 |

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 3/14/2016**

| Analyte | Concentration Units: ug/L | | |
|------------|---------------------------|-------|----|
| | PQL/LOQ | IDL | M |
| ALUMINUM | 300 | 1.4 | MS |
| CALCIUM | 100 | 6.9 | MS |
| IRON | 100 | 6.2 | MS |
| LEAD | 0.20 | 0.041 | MS |
| MAGNESIUM | 100 | 0.65 | MS |
| MOLYBDENUM | 1.0 | 0.021 | MS |
| POTASSIUM | 1000 | 13. | MS |
| SODIUM | 1000 | 2.9 | MS |

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 1/26/2011**

| Analyte | LOD | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| LEAD | 0.010 | mg/Kg | MS | SW846 3050B / SW846 6020A |

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 1/26/2011**

| Analyte | MDL | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| LEAD | 0.0014 | mg/kg | MS | SW846 3050B / SW846 6020A |

12
ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services

Instrument Code: J

Instrument Name: AGILENT 7500 ICP-MS

Date: 4/4/2016

Concentration Units: ug/L

| Analyte | Integration Time (sec) | Linear Range | M |
|------------|------------------------|--------------|----|
| ALUMINUM | 0.01 | 200000 | MS |
| CALCIUM | 0.03 | 200000 | MS |
| IRON | 0.03 | 100000 | MS |
| LEAD | 0.10 | 2000 | MS |
| MAGNESIUM | 0.05 | 200000 | MS |
| MOLYBDENUM | 0.10 | 1000 | MS |
| POTASSIUM | 0.01 | 200000 | MS |
| SODIUM | 0.01 | 200000 | MS |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JF23IMS1**Matrix:** SOIL**SDG Name:** SJ4633**Method:** MS**Prep Date:** 06/23/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJF23IMS1 | LC SOJF23IMS1 | 1 | 0.1 | |
| PBSJF23IMS1 | PBSJF23IMS1 | 1 | 0.1 | |
| PR-SB-E4-1224 | SJ4633-001 | 1.71 | 0.1 | A |
| PR-SB-E4-2436 | SJ4633-002 | 1.68 | 0.1 | A |
| RR-SB-C1A-0612 | SJ4633-003 | 2.16 | 0.1 | A |
| RR-SB-C1A-1224 | SJ4633-004 | 1.58 | 0.1 | A |
| RR-SB-C4-3648 | SJ4633-005 | 1.88 | 0.1 | A |
| RR-SB-C4-4860 | SJ4633-006 | 1.62 | 0.1 | A |
| RR-SB-D9-0006 | SJ4633-007 | 1.93 | 0.1 | A |
| RR-SB-D9-0612 | SJ4633-008 | 1.54 | 0.1 | A |
| RR-SB-C9-0612 | SJ4633-009 | 1.34 | 0.1 | A |
| RR-SB-C9-1224 | SJ4633-010 | 1.44 | 0.1 | A |
| RR-DUP16-062216 | SJ4633-011 | 1.99 | 0.1 | A |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4633

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF23A

Date: 6/23/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| 6020 Tune | | 1 | 17:39 | | | | | | | |
| 200.8 Tune | | 1 | 17:42 | | | | | | | |
| Cal Blank | | 1 | 18:29 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| Cal Std | | 1 | 18:32 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICV | | 1 | 18:36 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICB | | 1 | 18:39 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| PQL | | 1 | 18:42 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 18:46 | | | | | | | |
| ZZZZZZ | | 1 | 18:49 | | | | | | | |
| ZZZZZZ | | 1 | 18:52 | | | | | | | |
| ICSA | | 1 | 18:56 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICSAB | | 1 | 18:59 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 19:03 | | | | | | | |
| ZZZZZZ | | 1 | 19:06 | | | | | | | |
| CCV | | 1 | 19:10 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 19:13 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 19:17 | | | | | | | |
| ZZZZZZ | | 1 | 19:20 | | | | | | | |
| ZZZZZZ | | 1 | 19:23 | | | | | | | |
| ZZZZZZ | | 1 | 19:27 | | | | | | | |
| ZZZZZZ | | 1 | 19:30 | | | | | | | |
| ZZZZZZ | | 1 | 19:34 | | | | | | | |
| ZZZZZZ | | 1 | 19:37 | | | | | | | |
| ZZZZZZ | | 5 | 19:41 | | | | | | | |
| ZZZZZZ | | 1 | 19:44 | | | | | | | |
| ZZZZZZ | | 1 | 19:48 | | | | | | | |
| CCV | | 1 | 19:51 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4633

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF23A

Date: 6/23/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------------|------|-------|----------|----|-------|----|----|---|----|
| CCB | | 1 | 19:55 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZ | | 5 | 19:58 | | | | | | | |
| ZZZZZ | | 5 | 20:02 | | | | | | | |
| ZZZZZ | | 5 | 20:05 | | | | | | | |
| ZZZZZ | | 1 | 20:09 | | | | | | | |
| ZZZZZ | | 2 | 20:12 | | | | | | | |
| ZZZZZ | | 5 | 20:16 | | | | | | | |
| ZZZZZ | | 2 | 20:20 | | | | | | | |
| ZZZZZ | | 5 | 20:23 | | | | | | | |
| PBSJF23IMS1 | | 5 | 20:27 | | | Pb | | | | |
| LCSOJF23IMS1 | | 5 | 20:31 | | | Pb | | | | |
| CCV | | 1 | 20:34 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 20:37 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| SJ4633-001 | PR-SB-E4-1224 | 10 | 20:41 | | | Pb | | | | |
| SJ4633-002 | PR-SB-E4-2436 | 10 | 20:45 | | | Pb | | | | |
| SJ4633-003 | RR-SB-C1A-0612 | 10 | 20:48 | | | Pb | | | | |
| SJ4633-004 | RR-SB-C1A-1224 | 10 | 20:52 | | | Pb | | | | |
| SJ4633-005 | RR-SB-C4-3648 | 10 | 20:55 | | | Pb | | | | |
| SJ4633-006 | RR-SB-C4-4860 | 10 | 20:59 | | | Pb | | | | |
| SJ4633-007 | RR-SB-D9-0006 | 10 | 21:02 | | | Pb | | | | |
| SJ4633-008 | RR-SB-D9-0612 | 10 | 21:06 | | | Pb | | | | |
| SJ4633-009 | RR-SB-C9-0612 | 10 | 21:10 | | | Pb | | | | |
| SJ4633-010 | RR-SB-C9-1224 | 10 | 21:13 | | | Pb | | | | |
| CCV | | 1 | 21:17 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 21:20 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| SJ4633-011 | RR-DUP16-062216 | 10 | 21:24 | | | Pb | | | | |
| ZZZZZ | | 5 | 21:28 | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ4633

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJF23A

Date: 6/23/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| ZZZZZZ | | 25 | 21:31 | | | | | | | |
| ZZZZZZ | | 5 | 21:35 | | | | | | | |
| ZZZZZZ | | 5 | 21:39 | | | | | | | |
| ZZZZZZ | | 5 | 21:42 | | | | | | | |
| ZZZZZZ | | 1 | 21:46 | | | | | | | |
| CCV | | 1 | 21:49 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 21:53 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

**SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS, INC.
NASA WALLOPS FLIGHT FACILITY-MBFR
SJ5058**

Sample Receipt

The following samples were received on July 08, 2016 and were logged in under Katahdin Analytical Services work order number SJ5058 for a hardcopy due date of July 26, 2016.

| <u>Sample No.</u> | <u>Sample Identification</u> |
|----------------------|------------------------------|
| KATAHDIN SJ5058-1 | TTNUS PR-SB-F3-6072 |
| SJ5058-2 | PR-SB-F4-6072 |

The samples were logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Metals Analysis

The samples of Katahdin Work Order SJ5058 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Solid-matrix Katahdin Sample Numbers SJ5058-(1 and 2) were digested for ICP-MS analysis on 07/08/16 (QC Batch JG08IMS1) in accordance with USEPA Method 3050B.

ICP-MS analyses of Katahdin Work Order SJ5058 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Sample digestates for Katahdin Work Order SJ5058 were diluted by at least a factor of 10 in accordance with the project limits.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

| Internal Standard Element | Associated Analytes |
|----------------------------|--|
| Lithium | Beryllium, Boron |
| Scandium | Sodium, Magnesium, Aluminum, Silicon, Potassium, Calcium |
| Germanium or Yttrium | Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Strontium, Molybdenum, Silver, Cadmium |
| Terbium | Tin, Antimony, Barium, Tungsten |
| Bismuth | Lead, Thallium, Thorium, Uranium |

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the LOQ are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQs, MDLs, and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

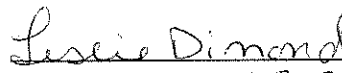
The samples of Work Order SJ5058 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times, and all quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.


07.26.16
Leslie Dimond
Quality Assurance Officer

| | | |
|---------------------------------|------------------------------|-------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>JO</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>SO</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>SJ 5058</u> | KIMS Review By: <u>JO</u> | Received By: <u>SO</u> |
| SDG #: | Cooler: <u>1</u> of <u>1</u> | Date/Time Rec.: <u>7-8-16 10:00</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|---|-----|----|---|
| 1. Custody seals present / intact? | ✓ | | | | |
| 2. Chain of Custody present in cooler? | ✓ | | | | |
| 3. Chain of Custody signed by client? | ✓ | | | | |
| 4. Chain of Custody matches samples? | ✓ | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | | | | ✓ | Temp (°C): <u>N/A</u> |
| Samples received at <6 °C w/o freezing? | | | | ✓ | Note: Not required for <u>metals</u> (except Hg soil) analysis. |
| Ice packs or ice present? | | | | ✓ | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | | | | ✓ | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | ✓ | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | ✓ | |
| Aqueous: No bubble larger than a pea? | | | | ✓ | |
| Soil/Sediment: | | | | ✓ | |
| Received in airtight container? | | | | ✓ | |
| Received in methanol? | | | | ✓ | |
| Methanol covering soil? | | | | ✓ | |
| D.I. Water - Received within 48 hour HT? | | | | ✓ | |
| Air: Refer to KAS COC for canister/flow controller requirements. | ✓ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | ✓ | |
| 8. Proper sample containers and volume? | ✓ | | | | |
| 9. Samples within hold time upon receipt? | ✓ | | | | |
| 10. Aqueous samples properly preserved? | | | | ✓ | |
| Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2 | | | | ✓ | |
| Sulfide - >9 | | | | ✓ | |
| Cyanide – pH >12 | | | | ✓ | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client **Tetra Tech** Contact **Rob Sak** Phone # **(757) 466-4904** Fax # **()**

Address **5700 Lake Wright Dr. #309** City **Norfolk** State **VA** Zip Code **23502**

Purchase Order # _____ Proj. Name / No. **112G07723** Katahdin Quote # _____

Bill (if different than above) _____ Address _____

Sampler (Print / Sign) **Jacob Birkett** Copies To: _____

LAB USE ONLY WORK ORDER #: **SJ5058**
 KATAHDIN PROJECT NUMBER _____

ANALYSIS AND CONTAINER TYPE PRESERVATIVES

REMARKS: _____

SHIPPING INFO: FED EX UPS CLIENT

AIRBILL NO: **8744-8572-4630**

TEMP°C _____ TEMP BLANK INTACT NOT INTACT

| Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. | Filt. |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Y | N | Y | N | Y | N | Y | N | Y | N | Y | N |
| | | | | | | | | | | | |

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. |
|----------------------|--------------------|--------|---------------|
| PR-SB-F3-6072 | 7-7-16 / 1505 | SO | 1 |
| PR-SB-F4-6072 | 7-7-16 / 1515 | SO | 1 |
| <i>JBB</i> | | | |
| <i>7-7-16</i> | | | |

Lead 24 hr TAT

24 HR TAT

COMMENTS _____

| | | | | | |
|--|-----------------------------------|--|------------------------------|-------------|--|
| Relinquished By: (Signature) <i>JBB</i> | Date / Time 7-7-16 1700 | Received By: (Signature) <i>FedEx</i> | Relinquished By: (Signature) | Date / Time | Received By: (Signature) <i>S. L. O. 7-8-16</i> |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000007

METALS SAMPLE FLAGGING

| FLAG | SPECIFIED MEANING |
|-------------|--|
| E | The reported value is estimated because of the presence of interference (as indicated by serial dilution). |
| N | The pre-digestion spiked sample recovery is not within control limits. |
| * | The duplicate sample analysis relative percent difference (RPD) is not within control limits. |
| B | Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample. |
| A | The post-digestion spiked sample recovery is not within control limits. |
| • | Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits. |
| U | <p>The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ) (previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.</p> <p>Note: All results reported as “U” MDL have a 50% rate for false negatives compared to those results reported as “U” PQL/LOQ or “U” LOD, where the rate of false negatives is <1%.</p> |
| J | The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL). |
| Q | One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV). |

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL "U" LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level (PQL) or LOQ could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1 - pH

H2 - DO

H3 - sulfite

H4 - residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

M1 The matrix spike and/or matrix spike duplicate recovery performed on this sample was outside of the laboratory acceptance criteria. Sample matrix is suspected. The laboratory criteria was met for the Laboratory Control Sample (LCS) analyzed concurrently with this sample.

M2 The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory acceptance criteria. The native sample concentration is greater than four times the spike added concentration so the spike added could not be distinguished from the native sample concentration.

R1 The relative percent difference (RPD) between the duplicate analyses performed on this sample was outside of the laboratory acceptance criteria (when both values are greater than ten times the PQL).

MCL Maximum Contaminant Level

NL No limit

NFL No Free Liquid Present

FLP Free Liquid Present

NOD No Odor Detected

TON Threshold Odor Number

D-1 As required by Method 5210B, APHA Standard Methods for the Examination of Water and Wastewater (21st edition), the BOD value reported for this sample is 'qualified' because the check standard run concurrently with the sample analysis did not meet the criteria specified in the method (198 +/- 30.5 mg/L). These results may not be reportable for compliance purposes.

D-2 The measured final dissolved oxygen concentrations of all dilutions were less than the method-specified limit of 1 mg/L. The reported BOD result was calculated assuming a final oxygen concentration equal to 1 mg/L. The reported value should be considered a minimum value.

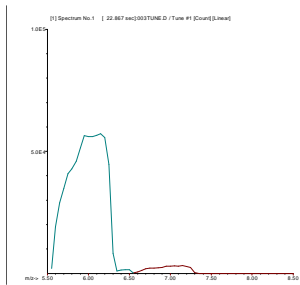
D-3 The dilution water used to prepare this sample did not meet the method and/or regulatory criteria of less than 0.2 or 0.4 mg/L dissolved oxygen (DO) uptake over the five day period of incubation. These results may not be reportable for compliance purposes.

6020 QC Tune Report

Data File: C:\ICPCHEM\1\DATA\JJG08A.B\003TUNE.D
 Date Acquired: Jul 8 2016 12:36 pm
 Acq. Method: TN6020E.M
 Operator: EAM
 Sample Name: 6020 TUNE
 Misc Info:
 Vial Number: 1107
 Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

| Element | Actual | Required | Flag |
|---------|--------|----------|------|
| 7 Li | 2.12 | 5.00 | |
| 59 Co | 0.81 | 5.00 | |
| 115 In | 0.87 | 5.00 | |
| 205 Tl | 0.83 | 5.00 | |



7 Li

Mass Calib.

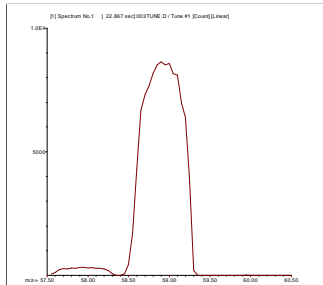
Actual: 7.05
 Required: 6.90 - 7.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:



59 Co

Mass Calib.

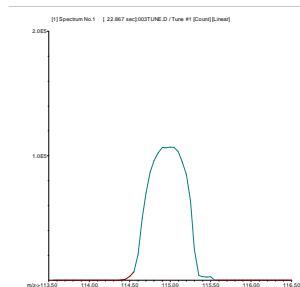
Actual: 58.90
 Required: 58.90 - 59.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:



115 In

Mass Calib.

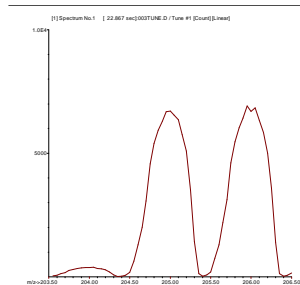
Actual: 115.00
 Required: 114.90 - 115.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:



205 Tl

Mass Calib.

Actual: 205.00
 Required: 204.90 - 205.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ5058

Concentration Units: ug/L

SAMPLE: ICB

File: JJG08A Jul 08, 2016 13:33

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.040 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJG08A Jul 08, 2016 14:07

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.439 | J |
| CALCIUM | 10.170 | J |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.752 | J |
| MOLYBDENUM | 0.068 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 11.060 | J |

SAMPLE: CCB

File: JJG08A Jul 08, 2016 14:48

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.775 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.558 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ5058

Concentration Units: ug/L

SAMPLE: CCB

File: JJG08A Jul 08, 2016 15:32

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 4.438 | J |
| CALCIUM | 9.874 | J |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 2.705 | J |
| MOLYBDENUM | 0.027 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJG08A Jul 08, 2016 16:15

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.682 | J |
| MOLYBDENUM | 0.028 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 4.186 | J |

SAMPLE: CCB

File: JJG08A Jul 08, 2016 16:57

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 14.940 | J |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.046 | J |
| MOLYBDENUM | 0.132 | J |
| POTASSIUM | 17.740 | J |
| SODIUM | 38.660 | J |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ5058

Concentration Units: ug/L

SAMPLE: CCB

File: JJG08A Jul 08, 2016 17:30

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.750 | J |
| MOLYBDENUM | 0.033 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 13.630 | J |

SAMPLE: CCB

File: JJG08A Jul 08, 2016 18:14

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.224 | J |
| MOLYBDENUM | 0.024 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 4.874 | J |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJG08IMS1

Matrix: SOIL

SDG Name: SJ5058

QC Batch ID: JG08IMS1

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| LEAD | 0.029 | J |

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services SDG Name: SJ5058

Concentration Units: ug/L

SAMPLE: ICSA

File: JJG08A Jul 08, 2016 13:49

| Analyte | TRUE | FOUND | % R |
|------------|--------|-------|------|
| ALUMINUM | 100000 | 91890 | 91.9 |
| CALCIUM | 100000 | 94020 | 94.0 |
| IRON | 100000 | 90530 | 90.5 |
| LEAD | 0 | 0 | |
| MAGNESIUM | 100000 | 89900 | 89.9 |
| MOLYBDENUM | 2000 | 1937 | 96.9 |
| POTASSIUM | 100000 | 94760 | 94.8 |
| SODIUM | 100000 | 90340 | 90.3 |

SAMPLE: ICSAB

File: JJG08A Jul 08, 2016 13:53

| Analyte | TRUE | FOUND | % R |
|------------|--------|-------|-------|
| ALUMINUM | 100000 | 94550 | 94.5 |
| CALCIUM | 100000 | 95760 | 95.8 |
| IRON | 100000 | 89270 | 89.3 |
| LEAD | 20 | 20 | 100.0 |
| MAGNESIUM | 100000 | 92000 | 92.0 |
| MOLYBDENUM | 2000 | 1962 | 98.1 |
| POTASSIUM | 100000 | 94890 | 94.9 |
| SODIUM | 100000 | 93490 | 93.5 |

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJG08IMS1**Matrix:** SOIL**SDG Name:** SJ5058**QC Batch ID:** JG08IMS1**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 9.80 | 98.0 | 84 | 118 |

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 3/14/2016**

| Analyte | Concentration Units: ug/L | | |
|------------|---------------------------|-------|----|
| | PQL/LOQ | IDL | M |
| ALUMINUM | 300 | 1.4 | MS |
| CALCIUM | 100 | 6.9 | MS |
| IRON | 100 | 6.2 | MS |
| LEAD | 0.20 | 0.041 | MS |
| MAGNESIUM | 100 | 0.65 | MS |
| MOLYBDENUM | 1.0 | 0.021 | MS |
| POTASSIUM | 1000 | 13. | MS |
| SODIUM | 1000 | 2.9 | MS |

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 1/26/2011**

| Analyte | LOD | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| LEAD | 0.010 | mg/Kg | MS | SW846 3050B / SW846 6020A |

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 1/26/2011**

| Analyte | MDL | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| LEAD | 0.0014 | mg/kg | MS | SW846 3050B / SW846 6020A |

12
ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services

Instrument Code: J

Instrument Name: AGILENT 7500 ICP-MS

Date: 4/4/2016

Concentration Units: ug/L

| Analyte | Integration Time (sec) | Linear Range | M |
|------------|------------------------|--------------|----|
| ALUMINUM | 0.01 | 200000 | MS |
| CALCIUM | 0.03 | 200000 | MS |
| IRON | 0.03 | 100000 | MS |
| LEAD | 0.10 | 2000 | MS |
| MAGNESIUM | 0.05 | 200000 | MS |
| MOLYBDENUM | 0.10 | 1000 | MS |
| POTASSIUM | 0.01 | 200000 | MS |
| SODIUM | 0.01 | 200000 | MS |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JG08IMS1**Matrix:** SOIL**SDG Name:** SJ5058**Method:** MS**Prep Date:** 07/08/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJG08IMS1 | LC SOJG08IMS1 | 1 | 0.1 | |
| PB SJG08IMS1 | PB SJG08IMS1 | 1 | 0.1 | |
| PR-SB-F3-6072 | SJ5058-001 | 2.13 | 0.1 | A |
| PR-SB-F4-6072 | SJ5058-002 | 2.04 | 0.1 | A |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ5058

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJG08A

Date: 7/8/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| 6020 Tune | | 1 | 12:36 | | | | | | | |
| 200.8 Tune | | 1 | 12:39 | | | | | | | |
| Cal Blank | | 1 | 13:23 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| Cal Std | | 1 | 13:26 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICV | | 1 | 13:29 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICB | | 1 | 13:33 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| PQL | | 1 | 13:36 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 13:39 | | | | | | | |
| ZZZZZZ | | 1 | 13:42 | | | | | | | |
| ZZZZZZ | | 1 | 13:46 | | | | | | | |
| ICSA | | 1 | 13:49 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICSAB | | 1 | 13:53 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 13:57 | | | | | | | |
| ZZZZZZ | | 1 | 14:00 | | | | | | | |
| CCV | | 1 | 14:03 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 14:07 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 14:10 | | | | | | | |
| ZZZZZZ | | 20 | 14:14 | | | | | | | |
| ZZZZZZ | | 100 | 14:17 | | | | | | | |
| ZZZZZZ | | 20 | 14:20 | | | | | | | |
| ZZZZZZ | | 20 | 14:24 | | | | | | | |
| ZZZZZZ | | 20 | 14:27 | | | | | | | |
| ZZZZZZ | | 10 | 14:31 | | | | | | | |
| ZZZZZZ | | 10 | 14:34 | | | | | | | |
| ZZZZZZ | | 10 | 14:38 | | | | | | | |
| ZZZZZZ | | 10 | 14:41 | | | | | | | |
| CCV | | 1 | 14:45 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ5058

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJG08A

Date: 7/8/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| CCB | | 1 | 14:48 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 14:52 | | | | | | | |
| ZZZZZZ | | 10 | 14:56 | | | | | | | |
| ZZZZZZ | | 10 | 14:59 | | | | | | | |
| ZZZZZZ | | 10 | 15:03 | | | | | | | |
| ZZZZZZ | | 10 | 15:06 | | | | | | | |
| ZZZZZZ | | 10 | 15:10 | | | | | | | |
| ZZZZZZ | | 10 | 15:14 | | | | | | | |
| ZZZZZZ | | 10 | 15:18 | | | | | | | |
| ZZZZZZ | | 10 | 15:21 | | | | | | | |
| ZZZZZZ | | 10 | 15:25 | | | | | | | |
| CCV | | 1 | 15:29 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 15:32 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 10 | 15:36 | | | | | | | |
| ZZZZZZ | | 1 | 15:40 | | | | | | | |
| ZZZZZZ | | 1 | 15:43 | | | | | | | |
| ZZZZZZ | | 1 | 15:47 | | | | | | | |
| ZZZZZZ | | 1 | 15:50 | | | | | | | |
| ZZZZZZ | | 1 | 15:54 | | | | | | | |
| ZZZZZZ | | 1 | 15:57 | | | | | | | |
| ZZZZZZ | | 1 | 16:01 | | | | | | | |
| ZZZZZZ | | 1 | 16:04 | | | | | | | |
| ZZZZZZ | | 1 | 16:08 | | | | | | | |
| CCV | | 1 | 16:11 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 16:15 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 16:19 | | | | | | | |
| ZZZZZZ | | 1 | 16:22 | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ5058

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJG08A

Date: 7/8/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|---------------|------|-------|----------|----|-------|----|----|---|----|
| ZZZZZZ | | 1 | 16:26 | | | | | | | |
| ZZZZZZ | | 1 | 16:29 | | | | | | | |
| ZZZZZZ | | 1 | 16:33 | | | | | | | |
| ZZZZZZ | | 1 | 16:36 | | | | | | | |
| ZZZZZZ | | 5 | 16:40 | | | | | | | |
| ZZZZZZ | | 1 | 16:43 | | | | | | | |
| ZZZZZZ | | 1 | 16:47 | | | | | | | |
| ZZZZZZ | | 1 | 16:50 | | | | | | | |
| CCV | | 1 | 16:54 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 16:57 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 17:01 | | | | | | | |
| ZZZZZZ | | 1 | 17:05 | | | | | | | |
| ZZZZZZ | | 5 | 17:09 | | | | | | | |
| CCV | | 1 | 17:27 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 17:30 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 17:34 | | | | | | | |
| ZZZZZZ | | 1 | 17:37 | | | | | | | |
| PBSJG08IMS1 | | 5 | 17:41 | | | Pb | | | | |
| LCSOJG08IMS1 | | 5 | 17:45 | | | Pb | | | | |
| SJ5058-001 | PR-SB-F3-6072 | 10 | 17:48 | | | Pb | | | | |
| SJ5058-002 | PR-SB-F4-6072 | 10 | 17:52 | | | Pb | | | | |
| ZZZZZZ | | 5 | 17:55 | | | | | | | |
| ZZZZZZ | | 25 | 17:59 | | | | | | | |
| ZZZZZZ | | 5 | 18:03 | | | | | | | |
| ZZZZZZ | | 10 | 18:07 | | | | | | | |
| CCV | | 1 | 18:10 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 18:14 | Al | Ca | Fe Pb | Mg | Mo | K | Na |



**SDG NARRATIVE
KATAHDIN ANALYTICAL SERVICES
TETRA TECH NUS, INC.
NASA WALLOPS FLIGHT FACILITY-MBFR
SJ5165**

Sample Receipt

The following sample was received on July 12, 2016 and was logged in under Katahdin Analytical Services work order number SJ5165 for a hardcopy due date of July 29, 2016.

| | |
|-------------------|------------------------------|
| KATAHDIN | TTNUS |
| <u>Sample No.</u> | <u>Sample Identification</u> |
| SJ5165-1 | PR-SB-F3-8496 |

The sample was logged in for the analyses specified on the chain of custody form. All problems encountered and resolved during sample receipt have been documented on the applicable chain of custody forms.

We certify that the test results provided in this report meet all the requirements of the NELAC standards unless otherwise noted in this narrative or in the Report of Analysis.

Sample analyses have been performed by the methods as noted herein.

Should you have any questions or comments concerning this Report of Analysis, please do not hesitate to contact your Katahdin Analytical Services Project Manager, **Ms. Jennifer Obrin**. This narrative is an integral part of the Report of Analysis.

Metals Analysis

The samples of Katahdin Work Order SJ5165 were prepared and analyzed for metals in accordance with the "Test Methods for Evaluating Solid Wastes: Physical/Chemical Methods." SW-846. 2nd edition, 1982 (revised 1984), 3rd edition, 1986, and Updates I, II, IIA, III, IIIA and IIIB 1996, 1998 & 2004, Office of Solid Waste and Emergency Response, U.S. EPA.

Inductively-Coupled Plasma Mass Spectrometric Analysis (ICP-MS)

Solid-matrix Katahdin Sample Number SJ5165-1 was digested for ICP-MS analysis on 07/12/16 (QC Batch JG12IMS2) in accordance with USEPA Method 3050B.

ICP-MS analyses of Katahdin Work Order SJ5165 sample digestates were performed using an Agilent 7500 ICP-MS spectrometer in accordance with USEPA Method 6020A. Results for all standards and samples are reported using the mean of 3 replicate measurements. All sample digestates were diluted by a factor of 5 during analysis to reduce mass interferences from chlorine, which is present in the digestates from the hydrochloric acid used in digesting the samples. All samples were analyzed within holding times and all analytical run QC criteria were met.

Sample digestates for Katahdin Work Order SJ5165 were diluted by at least a factor of 10 in accordance with the project limits.

Internal standard recoveries for ICP-MS analyses can be found in the raw data section of the accompanying data package. The following table indicates which analytes are associated with each internal standard element.

| Internal Standard Element | Associated Analytes |
|----------------------------|--|
| Lithium | Beryllium, Boron |
| Scandium | Sodium, Magnesium, Aluminum, Silicon, Potassium, Calcium |
| Germanium or Yttrium | Vanadium, Chromium, Manganese, Iron, Cobalt, Nickel, Copper, Zinc, Arsenic, Selenium, Strontium, Molybdenum, Silver, Cadmium |
| Terbium | Tin, Antimony, Barium, Tungsten |
| Bismuth | Lead, Thallium, Thorium, Uranium |

Instrument tuning information can also be found in the raw data section in the report labeled "6020 QC Tune Report". The relative standard deviation was determined from 4 replicate measurements. The peak width was measured at 10% of the peak height.

Reporting of Metals Results

Per client request, analytical results for client samples on Form I and preparation blanks on Form IIP have been reported using the laboratory's limits of detection (LOD). All results were evaluated down to the laboratory's method detection limits (MDLs). Results that fall between the MDL and the LOQ are flagged with "J" in the C-qualifier column, and the measured concentration appears in the concentration column. Results that are less than the MDL are flagged with "U" in the C-qualifier column, and the LOD is listed in the concentration column. These LOQs, MDLs, and LODs have been adjusted for each sample based on the sample amounts used in preparation and analysis.

Analytical results on Forms VA, VD, VII, and IX for client samples, matrix QC samples (duplicates and matrix spikes), and laboratory control samples have been reported down to the laboratory's method detection limits (MDLs). Analytical results that are below the MDLs are flagged with "U" in the C-qualifier column, and the measured concentration is listed in the concentration column.

Analytical results for instrument run QC samples (ICVs, ICBs, etc.) have been reported down to the laboratory's instrument detection limits (IDLs).

IDLs, LODs, MDLs, and LOQs are listed on Form 10 of the accompanying data package.

Wet Chemistry Analysis

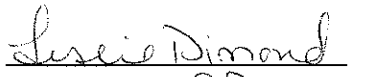
The samples of Work Order SJ5165 were analyzed in accordance with the specific methods listed on the Report of Analysis.

Analyses for total solids were performed according to "Standard Methods for the Examination of Water and Wastewater", 15th, 16th, 17th, 18th, 19th, and 20th editions, 1980, 1985, 1989, 1992, 1995, 1999. APHA-AWWA-WPCF.

All Wet Chemistry results were evaluated to Katahdin Analytical Services' Method Detection Limits (MDL). Measured concentrations that fall between the MDL and Katahdin's Limit of Quantitation (LOQ) are flagged "J". Measured concentrations that are below the MDL are flagged "U" and reported as "U LOD", where "LOD" is the numerical value of the Limit of Detection.

All analyses were performed within analytical holding times, and all quality control criteria were met.

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package has been authorized by the Operations Manager or the Quality Assurance Officer as verified by the following signature.


07.27.16
Leslie Dimond
Quality Assurance Officer

| | | |
|---------------------------------|------------------------------|---------------------------------------|
| Client: <u>Tetra Tech</u> | KAS PM: <u>SO</u> | Sampled By: <u>Client</u> |
| Project: | KIMS Entry By: <u>SO</u> | Delivered By: <u>Fedex</u> |
| KAS Work Order#: <u>SS 5165</u> | KIMS Review By: <u>SO</u> | Received By: <u>SO</u> |
| SDG #: | Cooler: <u>1</u> of <u>1</u> | Date/Time Rec.: <u>1006 / 7.12.16</u> |

| Receipt Criteria | Y | N | EX* | NA | Comments and/or Resolution |
|---|-------------------|--------------|-----|----|---|
| 1. Custody seals present / intact? | ✓ | | | | |
| 2. Chain of Custody present in cooler? | ✓ | | | | |
| 3. Chain of Custody signed by client? | ✓ | | | | |
| 4. Chain of Custody matches samples? | ✓ | | | | |
| 5. Temperature Blanks present? If not, take temperature of any sample w/ IR gun. | | | | | Temp (°C): <u>24 (n/a)</u> |
| Samples received at <6 °C w/o freezing? | ✓ | ✓ | | ✓ | Note: Not required for <u>metals</u> (except Hg soil) analysis. |
| Ice packs or ice present? | | ✓ | | ✓ | The lack of ice or ice packs (i.e. no attempt to begin cooling process) or insufficient ice may not meet certain regulatory requirements and may invalidate certain data. |
| If yes, was there sufficient ice to meet temperature requirements? | | | | ✓ | |
| If temp. out, has the cooling process begun (i.e. ice or packs present) and sample collection times <6hrs., but samples are not yet cool? | | | | ✓ | Note: No cooling process required for metals (except Hg soil) analysis. |
| 6. Volatiles: | | | | | |
| Aqueous: No bubble larger than a pea? | | | | ✓ | |
| Soil/Sediment: | | | | | |
| Received in airtight container? | | | | ✓ | |
| Received in methanol? | | | | ✓ | |
| Methanol covering soil? | | | | ✓ | |
| D.I. Water - Received within 48 hour HT? | | | | ✓ | |
| Air: Refer to KAS COC for canister/flow controller requirements. | ✓ if air included | | | | |
| 7. Trip Blank present in cooler? | | | | | |
| 8. Proper sample containers and volume? | ✓ | | | | |
| 9. Samples within hold time upon receipt? | ✓ | | | | |
| 10. Aqueous samples properly preserved? | | | | | |
| Metals, COD, NH3, TKN, O/G, phenol, TPO4, N+N, TOC, DRO, TPH – pH <2 | | | | ✓ | |
| Sulfide - >9 | | | | ✓ | |
| Cyanide – pH >12 | | | | ✓ | |

* Log-In Notes to Exceptions: document any problems with samples or discrepancies or pH adjustments.



600 Technology Way
 Scarborough, ME 04074
 Tel: (207) 874-2400
 Fax: (207) 775-4029

CHAIN of CUSTODY

PLEASE BEAR DOWN AND
 PRINT LEGIBLY IN PEN

Client **Tetra Tech** Contact **Rob Sok** Phone # **(757) 466-4904** Fax # **()**
 Address **5700 Lake Wright Dr. St 309** City **Norfolk** State **VA** Zip Code **23502**
 Purchase Order # _____ Proj. Name / No. _____ Katahdin Quote # _____

Bill (if different than above) _____ Address _____
 Sampler (Print / Sign) **Jacob Birkett** Copies To: _____

LAB USE ONLY WORK ORDER #: **SJS165**
 KATAHDIN PROJECT NUMBER _____
 REMARKS: _____
 SHIPPING INFO: FED EX UPS CLIENT
 AIRBILL NO: **8724-1973-8014**
 TEMP°C _____ TEMP BLANK INTACT NOT INTACT

| ANALYSIS AND CONTAINER TYPE PRESERVATIVES | | | | | | | | | | |
|---|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill | Fill |
| <input type="checkbox"/> Y | <input type="checkbox"/> N | <input type="checkbox"/> Y | <input type="checkbox"/> N | <input type="checkbox"/> Y | <input type="checkbox"/> N | <input type="checkbox"/> Y | <input type="checkbox"/> N | <input type="checkbox"/> Y | <input type="checkbox"/> N | <input type="checkbox"/> Y |
| | | | | | | | | | | |

| * Sample Description | Date / Time coll'd | Matrix | No. of Cntrs. |
|--------------------------|-----------------------|-----------|---------------|
| PR-SB-F3-8496 | 7-11-16 / 1445 | SO | 1 |
| Lead | | | |
| 234 HR TAT | | | |
| [Large Signature] | | | |
| 7-11-16 | | | |

COMMENTS _____

| | | | | | |
|--|------------------------------------|---|------------------------------|-------------|--|
| Relinquished By: (Signature) [Signature] | Date / Time 7-11-16 1700 | Received By: (Signature) Fed Ex | Relinquished By: (Signature) | Date / Time | Received By: (Signature) [Signature] |
| Relinquished By: (Signature) | Date / Time | Received By: (Signature) | Relinquished By: (Signature) | Date / Time | Received By: (Signature) |

THE TERMS AND CONDITIONS ON THE REVERSE SIDE HEREOF SHALL GOVERN SERVICES, EXCEPT WHEN A SIGNED CONTRACTUAL AGREEMENT EXISTS.

0000007

METALS SAMPLE FLAGGING

| FLAG | SPECIFIED MEANING |
|-------------|--|
| E | The reported value is estimated because of the presence of interference (as indicated by serial dilution). |
| N | The pre-digestion spiked sample recovery is not within control limits. |
| * | The duplicate sample analysis relative percent difference (RPD) is not within control limits. |
| B | Indicates the analyte was detected in the laboratory method blank analyzed concurrently with the sample. |
| A | The post-digestion spiked sample recovery is not within control limits. |
| • | Analytical run QC sample (e.g. ICV, CCV, ICB, CCB, ICSA, ICSAB) not within control limits. |
| U | <p>The analyte was not detected above the specified level. This level may be the Limit of Quantitation (LOQ) (previously called Practical Quantitation Level (PQL)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.</p> <p>Note: All results reported as “U” MDL have a 50% rate for false negatives compared to those results reported as “U” PQL/LOQ or “U” LOD, where the rate of false negatives is <1%.</p> |
| J | The analyte was detected in the sample at a concentration less than the laboratory Limit of Quantitation (LOQ) (previously called Practical Quantitation Limit (PQL)), but above the Method Detection Limit (MDL). |
| Q | One or more quality control criteria failed (e.g., LCS recovery, surrogate spike recovery or CCV). |

KATAHDIN ANALYTICAL SERVICES – INORGANIC DATA QUALIFIERS

The sampled date indicated on the attached Report(s) of Analysis (ROA) is the date for which a grab sample was collected or the date for which a composite sample was completed. Beginning and start times for composite samples can be found on the Chain-of-Custody.

U Indicates the compound was analyzed for but not detected above the specified level. This level may be the Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), the Limit of Detection (LOD) or Method Detection Limit (MDL) as required by the client.

Note: All results reported as "U" MDL have a 50% rate for false negatives compared to those results reported as "U" PQL "U" LOQ or "U" LOD, where the rate of false negatives is <1%.

E Estimated value. This flag identifies compounds whose concentrations exceed the upper level of the calibration range of the instrument for that specific analysis.

J Estimated value. The analyte was detected in the sample at a concentration less than the laboratory Practical Quantitation Level (PQL) (also called Limit of Quantitation (LOQ)), but above the Method Detection Limit (MDL).

I-7 The laboratory's Practical Quantitation Level (PQL) or LOQ could not be achieved for this parameter due to sample composition, matrix effects, sample volume, or quantity used for analysis.

A-4 Please refer to cover letter or narrative for further information.

H_ Please note that the regulatory holding time for _____ is "analyze immediately". Ideally, this analysis must be performed in the field at the time of sample collection. _____ for this sample was not performed at the time of sample collection. The analysis was performed as soon as possible after receipt by the laboratory.

H1 - pH

H2 - DO

H3 - sulfite

H4 - residual chlorine

T1 The client did not provide the full volume of at least one liter for analysis of TSS. Therefore, the PQL of 2.5 mg/L could not be achieved.

T2 The client provided the required volume of at least one liter for analysis of TSS, but the laboratory could not filter the full one liter volume due to the sample matrix. Therefore, the PQL of 2.5 mg/L could not be achieved.

M1 The matrix spike and/or matrix spike duplicate recovery performed on this sample was outside of the laboratory acceptance criteria. Sample matrix is suspected. The laboratory criteria was met for the Laboratory Control Sample (LCS) analyzed concurrently with this sample.

M2 The matrix spike and/or matrix spike duplicate recovery was outside of the laboratory acceptance criteria. The native sample concentration is greater than four times the spike added concentration so the spike added could not be distinguished from the native sample concentration.

R1 The relative percent difference (RPD) between the duplicate analyses performed on this sample was outside of the laboratory acceptance criteria (when both values are greater than ten times the PQL).

MCL Maximum Contaminant Level

NL No limit

NFL No Free Liquid Present

FLP Free Liquid Present

NOD No Odor Detected

TON Threshold Odor Number

D-1 As required by Method 5210B, APHA Standard Methods for the Examination of Water and Wastewater (21st edition), the BOD value reported for this sample is 'qualified' because the check standard run concurrently with the sample analysis did not meet the criteria specified in the method (198 +/- 30.5 mg/L). These results may not be reportable for compliance purposes.

D-2 The measured final dissolved oxygen concentrations of all dilutions were less than the method-specified limit of 1 mg/L. The reported BOD result was calculated assuming a final oxygen concentration equal to 1 mg/L. The reported value should be considered a minimum value.

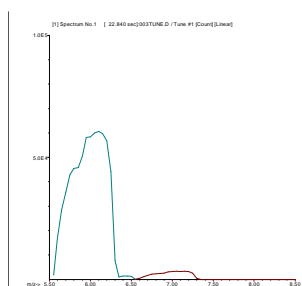
D-3 The dilution water used to prepare this sample did not meet the method and/or regulatory criteria of less than 0.2 or 0.4 mg/L dissolved oxygen (DO) uptake over the five day period of incubation. These results may not be reportable for compliance purposes.

6020 QC Tune Report

Data File: C:\ICPCHEM\1\DATA\JJG12A.B\003TUNE.D
 Date Acquired: Jul 12 2016 04:50 pm
 Acq. Method: TN6020E.M
 Operator: EAM
 Sample Name: 6020 TUNE
 Misc Info:
 Vial Number: 1107
 Current Method: C:\ICPCHEM\1\METHODS\TN6020E.M

RSD (%)

| Element | Actual | Required | Flag |
|---------|--------|----------|------|
| 7 Li | 0.96 | 5.00 | |
| 59 Co | 0.95 | 5.00 | |
| 115 In | 0.53 | 5.00 | |
| 205 Tl | 0.51 | 5.00 | |



7 Li

Mass Calib.

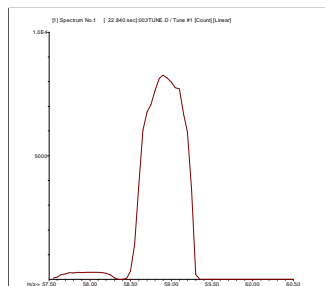
Actual: 7.10
 Required: 6.90 - 7.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:



59 Co

Mass Calib.

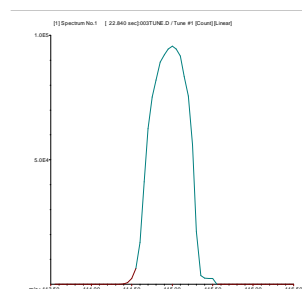
Actual: 58.95
 Required: 58.90 - 59.10

Flag:

Peak Width

Actual: 0.65
 Required: 0.90

Flag:



115 In

Mass Calib.

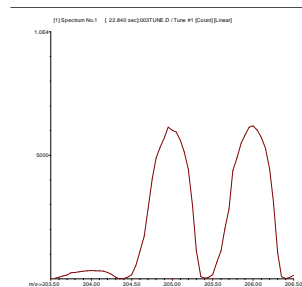
Actual: 115.00
 Required: 114.90 - 115.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:



205 Tl

Mass Calib.

Actual: 205.00
 Required: 204.90 - 205.10

Flag:

Peak Width

Actual: 0.70
 Required: 0.90

Flag:

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ5165

Concentration Units: ug/L

SAMPLE: ICB

File: JJG12C Jul 12, 2016 18:55

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.881 | J |
| MOLYBDENUM | 0.041 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 2.900 | U |

SAMPLE: CCB

File: JJG12C Jul 12, 2016 19:30

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.999 | J |
| MOLYBDENUM | 0.062 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 11.940 | J |

SAMPLE: CCB

File: JJG12C Jul 12, 2016 20:13

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.663 | J |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 7.813 | J |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ5165

Concentration Units: ug/L

SAMPLE: CCB

File: JJG12C Jul 12, 2016 20:55

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.024 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 39.760 | J |

SAMPLE: CCB

File: JJG12C Jul 12, 2016 21:38

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.998 | J |
| MOLYBDENUM | 0.028 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 13.880 | J |

SAMPLE: CCB

File: JJG12C Jul 12, 2016 22:21

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.024 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 5.653 | J |

INITIAL AND CONTINUING CALIBRATION BLANKS

Lab Name: Katahdin Analytical Services

SDG Name: SJ5165

Concentration Units: ug/L

SAMPLE: CCB

File: JJG12C Jul 12, 2016 23:04

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 1.400 | U |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 0.650 | U |
| MOLYBDENUM | 0.021 | U |
| POTASSIUM | 13.000 | U |
| SODIUM | 3.842 | J |

SAMPLE: CCB

File: JJG12C Jul 12, 2016 23:18

| Analyte | Result | C |
|------------|--------|---|
| ALUMINUM | 2.173 | J |
| CALCIUM | 6.900 | U |
| IRON | 6.200 | U |
| LEAD | 0.041 | U |
| MAGNESIUM | 1.394 | J |
| MOLYBDENUM | 0.027 | J |
| POTASSIUM | 13.000 | U |
| SODIUM | 4.143 | J |

3P
PREPARATION BLANKS

Lab Name: Katahdin Analytical Services

Sample ID: PBSJG12IMS2

Matrix: SOIL

SDG Name: SJ5165

QC Batch ID: JG12IMS2

Concentration Units : mg/Kg drywt

| Analyte | RESULT | C |
|----------------|---------------|----------|
| LEAD | 0.035 | J |

ICP INTERFERENCE CHECK SAMPLE

Lab Name: Katahdin Analytical Services SDG Name: SJ5165

Concentration Units: ug/L

SAMPLE: ICSA

File: JJG12C Jul 12, 2016 19:12

| Analyte | TRUE | FOUND | % R |
|------------|--------|-------|------|
| ALUMINUM | 100000 | 92210 | 92.2 |
| CALCIUM | 100000 | 93230 | 93.2 |
| IRON | 100000 | 91660 | 91.7 |
| LEAD | 0 | 0 | |
| MAGNESIUM | 100000 | 90460 | 90.5 |
| MOLYBDENUM | 2000 | 1973 | 98.7 |
| POTASSIUM | 100000 | 92590 | 92.6 |
| SODIUM | 100000 | 91590 | 91.6 |

SAMPLE: ICSAB

File: JJG12C Jul 12, 2016 19:16

| Analyte | TRUE | FOUND | % R |
|------------|--------|-------|-------|
| ALUMINUM | 100000 | 92000 | 92.0 |
| CALCIUM | 100000 | 92560 | 92.6 |
| IRON | 100000 | 91630 | 91.6 |
| LEAD | 20 | 20 | 100.0 |
| MAGNESIUM | 100000 | 89640 | 89.6 |
| MOLYBDENUM | 2000 | 1976 | 98.8 |
| POTASSIUM | 100000 | 91420 | 91.4 |
| SODIUM | 100000 | 90560 | 90.6 |

LABORATORY CONTROL SAMPLES

Lab Name: Katahdin Analytical Services**Sample ID:** LCSOJG12IMS2**Matrix:** SOIL**SDG Name:** SJ5165**QC Batch ID:** JG12IMS2**Concentration Units :** mg/Kg drywt

| Analyte | TRUE | FOUND | % R | LIMITS (%) | |
|----------------|-------------|--------------|------------|-------------------|-----|
| LEAD | 10.0 | 10.3 | 103.1 | 84 | 118 |

INSTRUMENT DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 3/14/2016**

| Analyte | Concentration Units: ug/L | | |
|------------|---------------------------|-------|----|
| | PQL/LOQ | IDL | M |
| ALUMINUM | 300 | 1.4 | MS |
| CALCIUM | 100 | 6.9 | MS |
| IRON | 100 | 6.2 | MS |
| LEAD | 0.20 | 0.041 | MS |
| MAGNESIUM | 100 | 0.65 | MS |
| MOLYBDENUM | 1.0 | 0.021 | MS |
| POTASSIUM | 1000 | 13. | MS |
| SODIUM | 1000 | 2.9 | MS |

LIMITS of DETECTION

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 1/26/2011**

| Analyte | LOD | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| LEAD | 0.010 | mg/Kg | MS | SW846 3050B / SW846 6020A |

METHOD DETECTION LIMITS

Lab Name: Katahdin Analytical Services**Instrument Code: J****Instrument Name: AGILENT 7500 ICP-MS****Date: 1/26/2011**

| Analyte | MDL | Units | M | EPA Prep./Anal. Method |
|----------------|------------|--------------|----------|-------------------------------|
| LEAD | 0.0014 | mg/kg | MS | SW846 3050B / SW846 6020A |

12
ICP LINEAR RANGES

Lab Name: Katahdin Analytical Services

Instrument Code: J

Instrument Name: AGILENT 7500 ICP-MS

Date: 4/4/2016

Concentration Units: ug/L

| Analyte | Integration Time (sec) | Linear Range | M |
|------------|------------------------|--------------|----|
| ALUMINUM | 0.01 | 200000 | MS |
| CALCIUM | 0.03 | 200000 | MS |
| IRON | 0.03 | 100000 | MS |
| LEAD | 0.10 | 2000 | MS |
| MAGNESIUM | 0.05 | 200000 | MS |
| MOLYBDENUM | 0.10 | 1000 | MS |
| POTASSIUM | 0.01 | 200000 | MS |
| SODIUM | 0.01 | 200000 | MS |

PREPARATION LOG

Lab Name: Katahdin Analytical Services**QC Batch ID:** JG12IMS2**Matrix:** SOIL**SDG Name:** SJ5165**Method:** MS**Prep Date:** 07/12/2016

| Client ID | Lab Sample ID | Initial (g) | Final (L) | Bottle ID |
|------------------|----------------------|--------------------|------------------|------------------|
| LC SOJG12IMS2 | LC SOJG12IMS2 | 1 | 0.1 | |
| PB SJG12IMS2 | PB SJG12IMS2 | 1 | 0.1 | |
| PR-SB-F3-8496 | SJ5165-001 | 1.72 | 0.1 | A |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ5165

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJG12C

Date: 7/12/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| 6020 Tune | | 1 | 16:50 | | | | | | | |
| 200.8 Tune | | 1 | 16:53 | | | | | | | |
| Cal Blank | | 1 | 18:44 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| Cal Std | | 1 | 18:48 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICV | | 1 | 18:51 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICB | | 1 | 18:55 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| PQL | | 1 | 18:58 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 19:02 | | | | | | | |
| ZZZZZZ | | 1 | 19:05 | | | | | | | |
| ZZZZZZ | | 1 | 19:08 | | | | | | | |
| ICSA | | 1 | 19:12 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ICSAB | | 1 | 19:16 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 19:20 | | | | | | | |
| ZZZZZZ | | 1 | 19:23 | | | | | | | |
| CCV | | 1 | 19:27 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 19:30 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 1 | 19:34 | | | | | | | |
| ZZZZZZ | | 1 | 19:37 | | | | | | | |
| ZZZZZZ | | 1 | 19:41 | | | | | | | |
| ZZZZZZ | | 5 | 19:44 | | | | | | | |
| ZZZZZZ | | 1000 | 19:48 | | | | | | | |
| ZZZZZZ | | 50 | 19:51 | | | | | | | |
| ZZZZZZ | | 1 | 19:55 | | | | | | | |
| ZZZZZZ | | 50 | 19:58 | | | | | | | |
| ZZZZZZ | | 5 | 20:02 | | | | | | | |
| ZZZZZZ | | 1 | 20:06 | | | | | | | |
| CCV | | 1 | 20:09 | Al | Ca | Fe Pb | Mg | Mo | K | Na |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ5165

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJG12C

Date: 7/12/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | |
|---------------|-----------|------|-------|----------|----|-------|----|----|---|----|
| CCB | | 1 | 20:13 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 5 | 20:16 | | | | | | | |
| ZZZZZZ | | 5 | 20:20 | | | | | | | |
| ZZZZZZ | | 5 | 20:23 | | | | | | | |
| ZZZZZZ | | 1 | 20:27 | | | | | | | |
| ZZZZZZ | | 1 | 20:30 | | | | | | | |
| ZZZZZZ | | 1 | 20:34 | | | | | | | |
| ZZZZZZ | | 5 | 20:38 | | | | | | | |
| ZZZZZZ | | 5 | 20:41 | | | | | | | |
| ZZZZZZ | | 5 | 20:45 | | | | | | | |
| ZZZZZZ | | 25 | 20:48 | | | | | | | |
| CCV | | 1 | 20:52 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 20:55 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 5 | 20:59 | | | | | | | |
| ZZZZZZ | | 5 | 21:02 | | | | | | | |
| ZZZZZZ | | 5 | 21:06 | | | | | | | |
| ZZZZZZ | | 5 | 21:09 | | | | | | | |
| ZZZZZZ | | 5 | 21:13 | | | | | | | |
| ZZZZZZ | | 5 | 21:17 | | | | | | | |
| ZZZZZZ | | 5 | 21:20 | | | | | | | |
| ZZZZZZ | | 5 | 21:24 | | | | | | | |
| ZZZZZZ | | 5 | 21:27 | | | | | | | |
| ZZZZZZ | | 5 | 21:31 | | | | | | | |
| CCV | | 1 | 21:35 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| CCB | | 1 | 21:38 | Al | Ca | Fe Pb | Mg | Mo | K | Na |
| ZZZZZZ | | 5 | 21:42 | | | | | | | |
| ZZZZZZ | | 5 | 21:45 | | | | | | | |

14
ANALYSIS RUN LOG

Lab Name: Katahdin Analytical Services

SDG Name: SJ5165

Instrument ID: AGILENT 7500 ICP-MS

File Name: JJG12C

Date: 7/12/2016

Method: MS

| Lab Sample ID | Client ID | D.F. | Time | Elements | | | | | | | |
|---------------|---------------|------|-------|----------|----|-------|----|----|---|----|--|
| ZZZZZZ | | 5 | 21:49 | | | | | | | | |
| ZZZZZZ | | 5 | 21:52 | | | | | | | | |
| ZZZZZZ | | 5 | 21:56 | | | | | | | | |
| ZZZZZZ | | 5 | 21:59 | | | | | | | | |
| ZZZZZZ | | 5 | 22:03 | | | | | | | | |
| ZZZZZZ | | 5 | 22:07 | | | | | | | | |
| ZZZZZZ | | 5 | 22:10 | | | | | | | | |
| ZZZZZZ | | 5 | 22:14 | | | | | | | | |
| CCV | | 1 | 22:17 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 22:21 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| ZZZZZZ | | 5 | 22:25 | | | | | | | | |
| ZZZZZZ | | 5 | 22:28 | | | | | | | | |
| ZZZZZZ | | 5 | 22:32 | | | | | | | | |
| ZZZZZZ | | 5 | 22:35 | | | | | | | | |
| ZZZZZZ | | 25 | 22:39 | | | | | | | | |
| ZZZZZZ | | 5 | 22:42 | | | | | | | | |
| ZZZZZZ | | 5 | 22:46 | | | | | | | | |
| ZZZZZZ | | 5 | 22:50 | | | | | | | | |
| ZZZZZZ | | 5 | 22:53 | | | | | | | | |
| PBSJG12IMS2 | | 5 | 22:57 | | | | Pb | | | | |
| CCV | | 1 | 23:00 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 23:04 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| LCSOJG12IMS2 | | 5 | 23:08 | | | | Pb | | | | |
| SJ5165-001 | PR-SB-F3-8496 | 10 | 23:11 | | | | Pb | | | | |
| CCV | | 1 | 23:15 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |
| CCB | | 1 | 23:18 | Al | Ca | Fe Pb | Mg | Mo | K | Na | |

| ANALYTE | ORIGINAL | ORIGINAL | DUPLICATE | DUPLICATE | RL | RPD | RPD > 50% | ORIGINAL SAMPLE CONC >5xRL | DUPLICATE SAMPLE CONC >5xRL | DIFFERENCE >4XRL |
|---------|---------------|----------|-----------------|-----------|------|--------|-----------|----------------------------|-----------------------------|------------------|
| LEAD | RR-SB-C4-3648 | 28.2 | RR-DUP16-062216 | 214 | 0.12 | 153.43 | TRUE | TRUE | TRUE | TRUE |

APPENDIX C
WASTE CHARACTERIZATION AND BACKFILL/TOPSOIL ANALYTICAL DATA

APPENDIX C
SOIL WASTE CHARACTERIZATION ANALYTICAL RESULTS
MAIN BASE FIRING RANGE COMPLEX PISTOL RANGE AND RIFLE RANGE
NASA WOLLOPS FLIGHT FACILITY, WOLLOPS ISLAND, VIRGINIA

| LOCATION SAMPLE ID SAMPLE DATE TOP DEPTH BOTTOM DEPTH | IDW Pistol Range | | | | IDW Rifle Range | |
|---|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|------------------------------|
| | PR-SOCHAR01-0024 20160607 | PR-SOCHAR02-0024 20160607 | PR-SOCHAR03-0024 20160609 | PR-SOCHAR03-2436 20160609 | RR-SOCHAR01-0024 20160609 | RR-SOCHAR01-2436 20160609 |
| PETROLEUM HYDROCARBONS (MG/KG) | | | | | | |
| DIESEL RANGE ORGANICS | 9.4 | 5.7 | 3.5 J | 5.9 | 3.5 J | 2.3 U |
| MISCELLANEOUS PARAMETERS (MG/KG) | | | | | | |
| EXTRACTABLE ORGANIC HALOGENS | 24.5 U | 24 U | 25 U | 25 U | 26 U | 23.6 U |
| TCLP VOLATILES (UG/L) | | | | | | |
| 1,1-DICHLOROETHENE | 7 U | 7 U | 7 U | 7 U | 7 U | 7 U |
| 1,2-DICHLOROETHANE | 4 U | 4 U | 4 U | 4 U | 4 U | 4 U |
| 2-BUTANONE | 26 U | 26 U | 26 U | 26 U | 26 U | 26 U |
| BENZENE | 5.2 U | 5.2 U | 5.2 U | 5.2 U | 5.2 U | 5.2 U |
| CARBON TETRACHLORIDE | 4.4 U | 4.4 U | 4.4 U | 4.4 U | 4.4 U | 4.4 U |
| CHLOROBENZENE | 4.4 U | 4.4 U | 4.4 U | 4.4 U | 4.4 U | 4.4 U |
| CHLOROFORM | 6.4 U | 6.4 U | 6.4 U | 6.4 U | 6.4 U | 6.4 U |
| TETRACHLOROETHENE | 8 U | 8 U | 8 U | 8 U | 8 U | 8 U |
| TRICHLOROETHENE | 5.6 U | 24 J | 5.6 U | 5.6 U | 6.4 J | 5.6 U |
| VINYL CHLORIDE | 5 U | 5 U | 5 U | 5 U | 5 U | 5 U |
| TCLP SEMIVOLATILES (UG/L) | | | | | | |
| 1,4-DICHLOROBENZENE | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U |
| 2,4,5-TRICHLOROPHENOL | 18 U | 18 U | 18 U | 18 U | 18 U | 18 U |
| 2,4,6-TRICHLOROPHENOL | 14 U | 14 U | 14 U | 14 U | 14 U | 14 U |
| 2,4-DINITROTOLUENE | 11 U | 11 U | 11 U | 11 U | 11 U | 11 U |
| 2-METHYLPHENOL | 19 U | 19 U | 19 U | 19 U | 19 U | 19 U |
| 3&4-METHYLPHENOL | 28 U | 28 U | 28 U | 28 U | 28 U | 28 U |
| HEXACHLOROBENZENE | 10 U | 10 U | 10 U | 10 U | 10 U | 10 U |
| HEXACHLOROBUTADIENE | 9 U | 9 U | 9 U | 9 U | 9 U | 9 U |
| HEXACHLOROETHANE | 12 U | 12 U | 12 U | 12 U | 12 U | 12 U |
| NITROBENZENE | 16 U | 16 U | 16 U | 16 U | 16 U | 16 U |
| PENTACHLOROPHENOL | 12 U | 12 U | 12 U | 12 U | 12 U | 12 U |
| PYRIDINE | 7.5 U | 7.5 U | 7.5 U | 7.5 U | 7.5 U | 7.5 U |
| TCLP METALS (UG/L) | | | | | | |
| ARSENIC | 7.9 J | 12 J | 25 U | 25 U | 8.6 J | 7.2 J |
| BARIUM | 582 | 342 | 313 | 894 | 576 | 771 |
| CADMIUM | 2.57 J | 0.34 J | 0.43 J | 0.39 J | 15 U | 15 U |
| CHROMIUM | 2 J | 20 U | 20 U | 20 U | 20 U | 20 U |
| LEAD | 33 | 4230 | 1880 | 231 | 3950 | 314 |
| MERCURY | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U | 0.1 U |
| SELENIUM | 35 U | 35 U | 35 U | 35 U | 35 U | 35 U |
| SILVER | 20 U | 20 U | 20 U | 20 U | 20 U | 20 U |
| MISCELLANEOUS PARAMETERS (%) | | | | | | |
| TOTAL SOLIDS | 94 | 92 | 92 | 91 | 90 | 90 |

APPENDIX C
AQUEOUS WASTE CHARACTERIZATION ANALYTICAL RESULTS
MAIN BASE FIRING RANGE COMPLEX PISTOL RANGE AND RIFLE RANGE
NASA Wallops Flight Facility, Wallops Island, Virginia

| | |
|--|----------------------------|
| LOCATION | IDW |
| SAMPLE ID | MBFR-AQCHAR1-072016 |
| SAMPLE DATE | 20160720 |
| PETROLEUM HYDROCARBONS (UG/L) | |
| DIESEL RANGE ORGANICS | 2400 J |
| MISCELLANEOUS PARAMETERS (MG/L) | |
| TOTAL ORGANIC HALIDES | 0.076 |
| VOLATILES (UG/L) | |
| BENZENE | 0.26 U |
| ETHYLBENZENE | 0.21 U |
| M+P-XYLENES | 0.59 U |
| O-XYLENE | 0.25 U |
| TOLUENE | 0.27 U |
| TOTAL XYLENES | 0.25 U |
| TCLP VOLATILES (UG/L) | |
| 1,1-DICHLOROETHENE | 7 U |
| 1,2-DICHLOROETHANE | 4 U |
| 2-BUTANONE | 26 U |
| BENZENE | 5.2 U |
| CARBON TETRACHLORIDE | 4.4 U |
| CHLOROBENZENE | 4.4 U |
| CHLOROFORM | 6.4 U |
| TETRACHLOROETHENE | 8 U |
| TRICHLOROETHENE | 5.6 U |
| VINYL CHLORIDE | 5 U |
| TCLP SEMIVOLATILES (UG/L) | |
| 1,4-DICHLOROBENZENE | 11 U |
| 2,4,5-TRICHLOROPHENOL | 18 U |
| 2,4,6-TRICHLOROPHENOL | 14 U |
| 2,4-DINITROTOLUENE | 11 U |
| 2-METHYLPHENOL | 19 U |
| 3&4-METHYLPHENOL | 28 U |
| HEXACHLOROBENZENE | 10 U |
| HEXACHLOROBUTADIENE | 9 U |
| HEXACHLOROETHANE | 12 U |
| NITROBENZENE | 16 U |
| PENTACHLOROPHENOL | 12 U |
| PYRIDINE | 7.5 U |
| TCLP METALS (UG/L) | |
| ARSENIC | 7.3 J |
| BARIUM | 251 |
| CADMIUM | 0.4 J |
| CHROMIUM | 18.9 J |
| LEAD | 486 |
| MERCURY | 0.059 J |
| SELENIUM | 12 U |
| SILVER | 1.4 U |

APPENDIX C
BACKFILL AND TOPSOIL ANALYTICAL RESULTS
MAIN BASE FIRING RANGE COMPLEX PISTOL RANGE AND RIFLE RANGE
NASA Wallops Flight Facility, Wallops Island, Virginia

| LOCATION | MBFR-BACKFILL01 | MBFR-TOPSOIL01 |
|---------------------------------------|------------------------|-----------------------|
| SAMPLE ID | MBFR-BACKFILL01-060716 | MBFR-TOPSOIL01-060716 |
| SAMPLE DATE | 20160607 | 20160607 |
| VOLATILES (UG/KG) | | |
| BENZENE | 0.86 U | 0.77 U |
| ETHYLBENZENE | 0.61 U | 0.55 U |
| M+P-XYLENES | 1.6 U | 1.4 U |
| O-XYLENE | 1.2 U | 1.1 U |
| TOLUENE | 1.3 U | 1.2 U |
| TOTAL XYLENES | 1.2 U | 1.1 U |
| METALS (MG/KG) | | |
| COPPER | 1.09 | 16.4 |
| LEAD | 1.08 | 6.16 |
| ZINC | 3.67 | 24.4 |
| PETROLEUM HYDROCARBONS (MG/KG) | | |
| DIESEL RANGE ORGANICS | 2.3 U | 2.8 J |
| MISCELLANEOUS PARAMETERS (%) | | |
| TOTAL SOLIDS | 93 | 91 |

APPENDIX D
PHOTOGRAPHIC LOGS

Appendix D
Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 1: Standing just south of the firing line structure, A-27, looking northeast towards the Pistol Range target mound. However trees are obscuring the view of the target mound.



Photograph 2: Looking north towards the target mound during the demolition of firing line structure, A-27 at the Pistol Range. A portion of the trees had been removed.

Appendix D
Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 3: Looking north at the Pistol Range target mound during tree clearing activities.



Photograph 4: Looking north at the Pistol Range target mound and concrete backstop during the final stages of tree clearing.

Appendix D
Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia

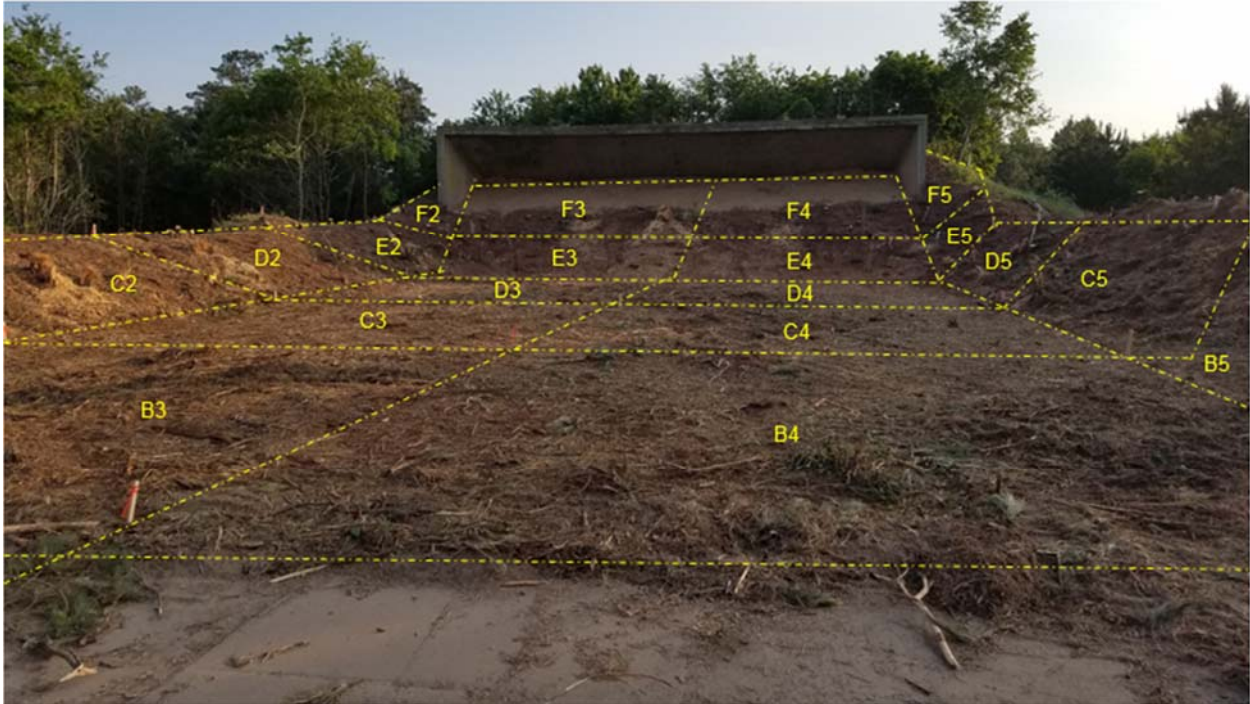


Photograph 5: Standing on the northern berm of the Pistol Range looking southeast at trenching activities in preparation for silt fence installation.



Photograph 6: Standing on the southern berm of the Pistol Range looking northeast at the silt fencing and target mound. Wood stakes indicate grid corners and pin flags indicate sampling locations.

Appendix D
Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 7: Standing on concrete pad at the Pistol Range looking northeast at the target mound and concrete backstop with the sampling/excavation grid overlain.



Photograph 8: Looking southwest at the soil sampling via hand auger in grid F5 at the Pistol Range.

Appendix D
Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 9: Standing on the southern berm of the Pistol Range looking at the target mound during excavation of grids F2 and F3.



Photograph 10: Looking west at the Pistol Range target mound after the initial phase of excavating was completed at grids F2, F3, and F4. The white line on the concrete indicates the original grade of the soil.

Appendix D
Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 11: Looking west at a truck being loaded with lead-impacted soil at the Pistol Range.



Photograph 12: Looking northwest at the initial excavation at the Pistol Range. This photo does not show the deeper excavation which took place later in grid F3.

Appendix D
Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 13: Looking southeast during the backfilling of grids E3 and E4 at the Pistol Range. Confirmation samples were pending at grids F3 and F4 so backfilling was not started in these grids.



Photograph 14: Looking west at the Pistol Range target mound during the second phase of excavating in grid F3. The confirmation sampling revealed an additional 2 feet needed to be taken out. The green line on the concrete indicates the level of the soil after the first phase of excavating was completed.

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Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 15: Looking east across the target mound at the Pistol Range after grid F3 was excavated an additional 2 feet.



Photograph 16: Looking north at the excavated A4 and B4 grids at the Pistol Range. The stockpiled lead-impacted soils, target mound, and concrete backstop are visible in the background.

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Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 17: Looking northeast at the excavated A3 and B3 grids at the Pistol Range with the stockpiled backfill on the right and the target mound in the background.



Photograph 18: Decontaminating the excavator bucket at the concrete pad after excavation activities were completed at the Pistol Range.

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Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 19: Looking southeast at the backfilling of grids A3 and B3 at the Pistol Range.



Photograph 20: Looking northeast at the target mound, concrete backstop, and the backfilled E3 and E4 grids at the Pistol Range.

Appendix D
Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 21: Looking north at the target mound at the Pistol Range as the remaining backfill was spread and graded.



Photograph 22: Standing on the concrete backstop looking southwest across the Pistol Range. The top soil was spread and graded. The access roads and support area can be seen in the background.

Appendix D
Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 23: Looking northeast at the target mound and concrete backstop during seeding after the top soil was graded at the Pistol Range.



Photograph 24: View of the straw blower at the Pistol Range.

Appendix D
Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 25: Looking northeast at the target mound, concrete backstop, and berms after straw was spread and coconut fiber matting was installed at the backstop at the Pistol Range.



Photograph 26: Looking northwest at the target mound and concrete backstop at the Pistol Range. Hay bales were staked in to prevent erosion, as well as to keep the coconut fiber matting in place.

Appendix D
Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 27: Projectiles and casings recovered from the Pistol Range.

Appendix D
Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 28: Looking north at the Rifle Range at the beginning of tree clearing. The target mound is present in the background but is mostly concealed by the trees.



Photograph 29: Looking west across the Rifle Range target mound during the layout of the sampling/excavation grid. A GPS unit with an external antennae was used to locate grid corners.

Appendix D
Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 30: Looking north at the Rifle Range target mound with the sampling/excavation grid overlain.



Photograph 31: Looking northwest at trenching activities in preparation for silt fence installation at the Rifle Range. The trench cut through the grid A1.

Appendix D
Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 32: Looking northwest at silt fence installation at the Rifle Range.



Photograph 33: Looking northeast at the Rifle Range target mound at the start of excavating. In this photograph the excavator is shown digging out grid D6.

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Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 34: Looking northeast at the Rifle Range target mound after grids D4 through D8 were dug out. The lead-impacted soil was stockpiled in grids B5 and B6.



Photograph 35: Looking east across the Rifle Range target mound after all grids were dug out. The lead-impacted soil was stockpiled in grids C5, C6, B5, and B6 awaiting loading into trucks.

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Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
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Photograph 36: View of lead-impacted soil being loaded into trucks for disposal offsite. It should be noted that the soil pile shown in the picture is clean backfill.



Photograph 37: Looking north at the Rifle Range target mound after all lead-impacted was hauled offsite. The soil stockpiled in the photograph is clean backfill.

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Photographic Documentation
NTCRA at Main Base Firing Range Complex
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NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 38: Looking north at the Rifle Range target mound during backfilling.



Photograph 39: Looking north at the Rifle Range target mound as top soil is being spread.

Appendix D
Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 40: Standing on the Rifle Range target mound looking south. The top soil has been spread and final grading was completed. In this photograph chipping of the stockpiled trees is being carried out.



Photograph 41: A bag spreader was used to spread the seed at the Rifle Range target mound.

Appendix D
Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 42: Looking northeast at the Rifle Range target mound after it was seeded, fertilized, and coconut fiber matting was installed. In this photograph the flat portions are being seeded.



Photograph 43: Looking north at the Rifle Range target mound and flat portions of the site after seeding, fertilizing, and erosion control measures were completed.

Appendix D
Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 44: Standing at the gate to the Pistol Range looking southeast at the access road. Traction mats were used to limit the effects of truck traffic on the landscape.



Photograph 45: Standing on the asphalt road looking northwest at the access road towards the gate to the Pistol Range. Despite the use of the traction mats the access road got rutted.

Appendix D
Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 46: Standing at the gate to the Pistol Range looking southeast at the access road after all truck traffic had passed. Note a heavy rainfall of approximately 2 inches fell the night before.



Photograph 47: Standing at the gate to the Pistol Range looking southeast at the access road during restoration activities. The soil stockpiled from the asphalt road repair was used to backfill the ruts.

Appendix D
Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 48: View of the access road after restoration activities were completed. The disturbed areas were seeded and fertilized but no straw was spread due to concerns with airfield.



Photograph 49: Looking southwest down the asphalt road. Truck traffic deteriorated the road because no subbase was present.

Appendix D
Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 50: Looking northwest as the excavator starts removing the asphalt from the damaged portion of the asphalt road. The asphalt was stockpiled onsite and eventually dropped off at a recycling facility.



Photograph 51: Looking northeast as the bulldozer grades the damaged portion of the asphalt road.

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Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 52: Looking southwest as the bulldozer adds the subbase to the damaged portion of the asphalt road.



Photograph 53: Standing next to Building A-131 looking down the undamaged portion of the asphalt road. The IDW from the site was temporarily stored on the asphalt pad before being transported to Building B-29 by NASA personnel.

Appendix D
Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 54: Looking southwest down damaged portion of the asphalt road during the re-paving.



Photograph 55: Looking southwest down the asphalt road after the paving and site restoration was complete.

Appendix D
Photographic Documentation
NTCRA at Main Base Firing Range Complex
Pistol Range and Rifle Range
NASA Wallops Flight Facility (WFF)
Wallops Island, Virginia



Photograph 56: Looking northeast down the asphalt road after the paving and site restoration was complete.





Photograph 57: Throughout the project, the roads adjacent to the airfield were swept to prevent road debris from making it out onto the runways.

APPENDIX E
CONSTRUCTION DAILY REPORTS

DAILY ACTIVITY REPORT (DAR)

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|--------------------|--|-------------------|--------------------|
| Project No: | Project Title: | Contract # | Date: |
| 112G07723 | MBFR Pistol Range and Rifle Range | NNG14WA44C | 27-Jun |
| Task No: | NASA WFF - Wallops Island, Virginia | | Year: |
| 2 | | | 2016 |
| | | | Day: Monday |

Personnel Summary

|  TETRA TECH <small>Committed to</small>  Safety <small>Globally, locally, personally</small> | Tetra Tech, Inc. (Tt) | Init. | Name | Clearfield MMG | Init. | Name |
|---|-----------------------|-------|---------------|----------------|-------|------------------|
| | Supervisor/FOL | RS | Rob Sok | Superintendent | CH | Chuck Harrell |
| | Geologist | JB | Jacob Birkett | Operator | TD | Tony Darden |
| | | | | Laborer | WR | Will Ruffin |
| | | | | Laborer | SR | Steve Richardson |
| | | | | Laborer | TJ | Tony Jessup |
| | | | | | | |

Visitors:

Rodney Godwin (Utility Locator) and Eric Littleton (Airfield Operations)

Description of Work Performed

Tetra Tech and Clearfield MMG (Clearfield) staff received badges at pass and ID office. A Health and Safety (H&S) meeting and "Three Rs" training was conducted and the H&S plan was signed by all members of the field crew. Rodney issued a dig permit and confirmed that a fiber optic line was located in the area but not within the excavation foot print.

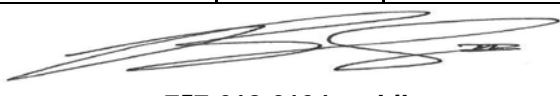
Clearfield unloaded a John Deere Gator and 318 polyethylene mats to be used on truck access routes. BlueLine Rentals delivered a Volvo loader (model No. L70G) and a walk behind Ditch Witch (model No. RT12). CAT Rentals delivered a 320e excavator.

Clearfield began the placement of matting to create an access route for trucks. Matting was placed around the taxiway occupied by two older aircrafts and up to the site access gate. RS and JB identified and marked the location for the silt fence installation based on the revised excavation plan as determined by the Pre-Confirmation sampling results. Clearfield completed the installation of approximately 325 feet of silt fence at the Pistol Range.

Eric Littleton met with RS to discuss truck access, schedule, and proposed signage for truck route. No signs will be placed near runway 17 as proposed due to FOD concerns. RS spoke with NASA and received approval to remove debris piles (wood and corrugated tin from firing line shelter demolition) located at the southwest corner of the firing line at the Pistol Range. NASA also approved the field change to grind the piles of felled trees onsite.

Problems Encountered and Resolutions:



None encountered.

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|----------------------------|---|--------------|-------------------|
| Comments: | Truck Totals: | Today | Cumulative |
| | Transport & Dispose: | 0 | 0 |
| Temperature Range: |  72 F AM 83 F PM | | |
| Weather Conditions: | Sunny | | |
| | 757-618-2104 mobile Robert Sok - Construction Supervisor | | |

DAILY ACTIVITY REPORT (DAR)

| | | | |
|--------------------|--|-------------------|---------------------|
| Project No: | Project Title: | Contract # | Date: |
| 112G07723 | MBFR Pistol Range and Rifle Range | NNG14WA44C | 28-Jun |
| Task No: | NASA WFF - Wallops Island, Virginia | | Year: |
| 2 | | | 2016 |
| | | | Day: Tuesday |

Personnel Summary

|  TETRA TECH <small>Committed to</small>  <small>Globally, locally, personally</small> | Tetra Tech, Inc. (Tt) | Init. | Name | Clearfield MMG | Init. | Name |
|--|-----------------------|-------|---------------|----------------|-------|---------------|
| | Supervisor/FOL | RS | Rob Sok | Superintendent | CH | Chuck Harrell |
| | Geologist | JB | Jacob Birkett | Operator | TD | Tony Darden |
| | | | | Laborer | WR | Will Ruffin |
| | | | | | | |

Visitors:

None.


Description of Work Performed

Crew attended a tailgate Health and Safety meeting prior to the start of work.

RS and JB identified and marked the location for the silt fence installation based on the revised excavation plan as determined by the Pre-Confirmation sampling results at the Rifle Range. Clearfield completed the installation of approximately 150 feet of silt fence at the Rifle Range. Clearfield excavated a portion of the eastern berm at the Pistol Range to facilitate truck access and route to the Rifle Range along the fence line.

Problems Encountered and Resolutions:

Heavy rain delayed work in the morning and throughout the day. Lighting advisories were received from NASA. Crew was concerned about the very wet and muddy conditions along access route and the placement of the remaining matting is postponed until tomorrow.

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|----------------------------|---|--------------|-------------------|
| Comments: | Truck Totals: | Today | Cumulative |
| | Transport & Dispose: | 0 | 0 |
| Temperature Range: |  757-618-2104 mobile Robert Sok - Construction Supervisor | | |
| Weather Conditions: | Rainy | | |

EQUIPMENT & PRODUCTION & QC REPORT

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|---------------------------------|--|---------------------------------|------------------------|
| Project No: 112G07441 | Project Title: MBFR Pistol Range and Rifle Range | Contract # NNG14WA44C | Date: 28-Jun |
| Task No: 2 | NASA WFF - Wallops Island, Virginia | | Year: 2016 |
| | | | Day: Tuesday |

Contractor Equipment

| Description | Qty | Daily Use | Previous Total | # Days Worked | Comments |
|---------------------|-----|-----------|----------------|---------------|----------|
| Ditch Witch (RT12) | 1 | 1 | 1 | 2 | |
| John Deere Gator | 1 | 1 | 1 | 2 | |
| Volvo Loader (L70G) | 1 | 1 | 1 | 2 | |
| CAT 320e Excavator | 1 | 1 | 1 | 2 | |
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| TOTALS | 4 | 4 | 4 | 8 | |

Contractor Quantities

| Description | Unit | Daily Qty | Previous Total | Cumulative Total |
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Contractor Quality Control Rework Items


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QUALITY CONTROL COMMENTS

EPA concurred with the excavation limits presented in NASA's submittal on 6/27/16. (DEQ concurred on 6/27/2016.)

E&S CONTROL COMMENTS

Silt fence was inspected at the Pistol Range.



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| Comments: |  |
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Robert Sok - Construction Supervisor

DAILY ACTIVITY REPORT (DAR)

| | | | |
|--------------------|--|-------------------|-----------------------|
| Project No: | Project Title: | Contract # | Date: |
| 112G07723 | MBFR Pistol Range and Rifle Range | NNG14WA44C | 29-Jun |
| Task No: | NASA WFF - Wallops Island, Virginia | | Year: |
| 2 | | | 2016 |
| | | | Day: Wednesday |

Personnel Summary

|  TETRA TECH <small>Committed to</small>  <small>Globally, locally, personally</small> | Tetra Tech, Inc. (Tt) | Init. | Name | Clearfield MMG | Init. | Name |
|--|-----------------------|-------|---------------|----------------|-------|---------------|
| | Supervisor/FOL | RS | Rob Sok | Superintendent | CH | Chuck Harrell |
| | Geologist | JB | Jacob Birkett | Operator | TD | Tony Darden |
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Visitors:

None.

Description of Work Performed

Crew attended a tailgate Health and Safety meeting prior to the start of work. Gate #10 (near the Pistol Range) was opened and security was notified.

RS and JB inspected the silt fence and site for damage from yesterday's heavy rain (6/28). No damage was observed and the silt fence was intact.

Site preparation activities continued. Clearfield finished work on eastern berm and cleaned up the truck route access at the Pistol Range. Two stumps were removed near the access gate to level out matting in this area and additional mats were installed on the planned truck route from the Pistol Range to the Rifle Range. Rumble strips were placed on the portion of the asphalt road in between the taxi way and access route to the gate. Signage was installed along the truck access route to direct truck traffic to the site.


Clearfield began excavation at Row D of the Rifle Range. Excavation of Grids D4 through D8 and C7 and C8 were completed. Excavation at Grid C3 was partially completed. Stumps were pulled from D5 and D8 and set aside within the excavation. Soils were piled within the excavation area for direct load out in trucks scheduled to arrive tomorrow morning (6/30).

RS met with staff at Airfield Operations to discuss signage, truck schedule, and runway closure. Airfield Operations was concerned about truck clearance under the wing of airplane on the taxiway. RS directed Clearfield to warn and guide truck drivers and make sure they have adequate clearance under the airplane wing when they arrive on 6/30/2016.

Gate #10 was closed at the end of the day and security was notified.

Problems Encountered and Resolutions:

None.

| | | | |
|----------------------------|--|--------------|-------------------|
| Comments: | Truck Totals: | Today | Cumulative |
| | Transport & Dispose: | 0 | 0 |
| Temperature Range: |  757-618-2104 mobile | | |
| Weather Conditions: | Robert Sok - Construction Supervisor | | |

EQUIPMENT & PRODUCTION & QC REPORT

| | | | |
|---------------------------------|--|---------------------------------|--------------------------|
| Project No: 112G07441 | Project Title: MBFR Pistol Range and Rifle Range | Contract # NNG14WA44C | Date: 29-Jun |
| Task No: 2 | NASA WFF - Wallops Island, Virginia | Year: 2016 | Day: Wednesday |

Contractor Equipment

| Description | Qty | Daily Use | Previous Total | # Days Worked | Comments |
|---------------------|-----|-----------|----------------|---------------|----------|
| Ditch Witch (RT12) | 1 | 1 | 2 | 3 | |
| John Deere Gator | 1 | 1 | 2 | 3 | |
| Volvo Loader (L70G) | 1 | 1 | 2 | 3 | |
| CAT 320e Excavator | 1 | 1 | 2 | 3 | |
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| TOTALS | 4 | 4 | 8 | 12 | |

Contractor Quantities

| Description | Unit | Daily Qty | Previous Total | Cumulative Total |
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Contractor Quality Control Rework Items

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QUALITY CONTROL COMMENTS

None.

E&S CONTROL COMMENTS

Silt fence was inspected at the Pistol and Rifle Range.



Comments:


Robert Sok - Construction Supervisor

DAILY ACTIVITY REPORT (DAR)

| | | | |
|--------------------|--|-------------------|----------------------|
| Project No: | Project Title: | Contract # | Date: |
| 112G07723 | MBFR Pistol Range and Rifle Range | NNG14WA44C | 30-Jun |
| Task No: | NASA WFF - Wallops Island, Virginia | | Year: |
| 2 | | | 2016 |
| | | | Day: Thursday |

Personnel Summary

|  TETRA TECH <small>Committed to</small>  <small>Globally, locally, personally</small> | Tetra Tech, Inc. (Tt) | Init. | Name | Clearfield MMG | Init. | Name |
|--|-----------------------|-------|---------------|------------------------|-------|----------------|
| | Supervisor/FOL | RS | Rob Sok | Superintendent | CH | Chuck Harrell |
| | Geologist | JB | Jacob Birkett | Operator | TD | Tony Darden |
| | | | | Operator, Truck Driver | TJ | Tony Jessup |
| | | | | Truck Driver | WM | William Martin |
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Visitors:

David Liu, Susan Dunn, and one intern (NASA), Rob Sacks (NASA Safety)

Description of Work Performed

Crew attended a tailgate Health and Safety meeting prior to the start of work. Gate #10 was opened and security was notified.

Excavation continued in Row C of the Rifle Range. Soil from Grids C1, C2, C3, and C4 were pulled towards the center of the excavation boundary (Grid C4 and Grids in Row B) in preparation for direct load out.

Six trucks (approximately 14 cubic yard capacity each) were direct loaded with soil from the Rifle Range. The stumps removed from the Grids within the excavation were direct loaded in trucks as well. Manifests were signed and accompanied each truck load of material transported offsite. Soil (and stumps) were transported to Clearfield's approved disposal facility in Suffolk, Virginia.

Clearfield maintained the access routes, taxiway, and runway crossing by cleaning with the sweeper attachment on the skid steer and prepared for loadout tomorrow (7/1).

Clearfield consolidated excavated soils at the rifle range for load out in the morning. Clearfield deconed the excavator and mobilized to the Pistol Range. Clearfield loaded the firing line shelter debris into roll off trucks for transportation and disposal tomorrow morning. Clearfield also excavated some soil in Grid F3 at the Pistol Range to prepare for loading trucks after finishing remaining waste soils at the rifle range.

Gate #10 was closed at the end of the day and security was notified.

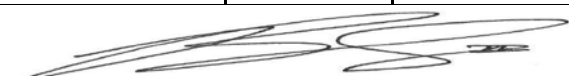
Problems Encountered and Resolutions:

None.

| Comments: | Truck Totals: | |
|-----------|------------------------|------------|
| | Today | Cumulative |
| | Transport & Dispose: 6 | 6 |

Temperature Range: 71 F AM
80 F PM

Weather Conditions: Mostly Cloudy



757-618-2104 mobile

Robert Sok - Construction Supervisor

EQUIPMENT & PRODUCTION & QC REPORT

| | | | |
|--------------------|--|-------------------|----------------------|
| Project No: | Project Title: | Contract # | Date: |
| 112G07441 | MBFR Pistol Range and Rifle Range | NNG14WA44C | 30-Jun |
| Task No: 2 | NASA WFF - Wallops Island, Virginia | | Year: 2016 |
| | | | Day: Thursday |

Contractor Equipment

| Description | Qty | Daily Use | Previous Total | # Days Worked | Comments |
|-----------------------|-----|-----------|----------------|---------------|----------|
| Ditch Witch (RT12) | 1 | 1 | 2 | 3 | |
| John Deere Gator | 1 | 1 | 2 | 3 | |
| Volvo Loader (L70G) | 1 | 1 | 2 | 3 | |
| CAT 320e Excavator | 1 | 1 | 2 | 3 | |
| Skid Steer w/ sweeper | 1 | 1 | 0 | 1 | |
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| TOTALS | 5 | 5 | 8 | 13 | |

Contractor Quantities

| Description | Unit | Daily Qty | Previous Total | Cumulative Total |
|-----------------|------|-----------|----------------|------------------|
| Truck with soil | Each | 6 | 0 | 6 |
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Contractor Quality Control Rework Items


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QUALITY CONTROL COMMENTS

None.

E&S CONTROL COMMENTS

Silt fence was inspected at the Pistol and Rifle Range.



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| Comments: |  |
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Robert Sok - Construction Supervisor

DAILY ACTIVITY REPORT (DAR)

| | | | |
|--------------------|--|-------------------|--------------------|
| Project No: | Project Title: | Contract # | Date: |
| 112G07723 | MBFR Pistol Range and Rifle Range | NNG14WA44C | 1-Jul |
| Task No: | NASA WFF - Wallops Island, Virginia | | Year: |
| 2 | | | 2016 |
| | | | Day: Friday |

Personnel Summary

|  TETRA TECH <small>Committed to</small>  <small>Globally, locally, personally</small> | Tetra Tech, Inc. (Tt) | Init. | Name | Clearfield MMG | Init. | Name |
|--|-----------------------|-------|---------------|------------------------|-------|----------------|
| | Supervisor/FOL | RS | Rob Sok | Superintendent | CH | Chuck Harrell |
| | Geologist | JB | Jacob Birkett | Operator | TD | Tony Darden |
| | | | | Operator, Truck Driver | TJ | Tony Jessup |
| | | | | Truck Driver | WM | William Martin |
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Visitors:

None.

Description of Work Performed

Crew attended a tailgate Health and Safety meeting prior to the start of work. Gate #10 was opened and security was notified.

Excavation continued at the Pistol Range.

A total of seven trucks were direct loaded with soil from the Rifle Range and / or the Pistol Range. Three trucks were filled with soil from the Rifle Range, one truck contained waste from both ranges, and the remaining three trucks contained target mound waste from the Pistol Range. Manifests were signed and accompanied each truck load of material transported offsite. Soils were transported to Clearfield's approved disposal facility in Suffolk, Virginia.

Ten loads of fill material was delivered to the site and dumped within the excavation boundary at the Rifle Range in preparation for restoration activities.


Clearfield maintained the access routes, taxiway, and runway crossing by cleaning with the sweeper attachment on the skid steer. Heavy rain storms caused matting along the access route to sink (see Problems Encountered and Resolution section below).

The site was secured for the holiday weekend. Gate #10 was closed at the end of the day and security was notified.

Problems Encountered and Resolutions:

The target mound topography was steeper than anticipated and as a result, additional fill material will be required to stabilize the slope. Heavy rain created muddy conditions along the access route from the Pistol Range to the Rifle Range. Despite efforts to maintain the access route (shifting the matting and repairing ruts), delivery trucks will no longer be able to access the Rifle Range. Clearfield is planning to bring in an off road dump or additional loader to complete the larger than anticipated backfilling activities at the Rifle Range.

Lighting advisories from NASA and the site was shut down off and on throughout the day.

| Comments: | Truck Totals: | |
|----------------------------|---|------------|
| | Today | Cumulative |
| | Transport & Dispose: 7 | 13 |
| Temperature Range: | <div style="display: flex; justify-content: space-around;"> 71 F AM 80 F PM </div> | |
| Weather Conditions: | Cloudy / Rain Storms | |
| |  757-618-2104 mobile Robert Sok - Construction Supervisor | |

EQUIPMENT & PRODUCTION & QC REPORT

| | | | |
|---------------------------------|--|---------------------------------|-----------------------|
| Project No: 112G07441 | Project Title: MBFR Pistol Range and Rifle Range | Contract # NNG14WA44C | Date: 1-Jul |
| Task No: 2 | NASA WFF - Wallops Island, Virginia | | Year: 2016 |
| | | | Day: Friday |

Contractor Equipment

| Description | Qty | Daily Use | Previous Total | # Days Worked | Comments |
|-----------------------|-----|-----------|----------------|---------------|----------|
| Ditch Witch (RT12) | 1 | 1 | 4 | 5 | |
| John Deere Gator | 1 | 1 | 4 | 5 | |
| Volvo Loader (L70G) | 1 | 1 | 4 | 5 | |
| CAT 320e Excavator | 1 | 1 | 4 | 5 | |
| Skid Steer w/ sweeper | 1 | 1 | 2 | 3 | |
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| TOTALS | 5 | 5 | 18 | 23 | |

Contractor Quantities

| Description | Unit | Daily Qty | Previous Total | Cumulative Total |
|--------------------------------|------|-----------|----------------|------------------|
| Truck with soil (Rifle Range) | Each | 3.5 | 6 | 9.5 |
| Truck with soil (Pistol Range) | Each | 3.5 | 0 | 3.5 |
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Contractor Quality Control Rework Items


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QUALITY CONTROL COMMENTS

None.

E&S CONTROL COMMENTS


Silt fence was inspected at the Pistol and Rifle Range.
The backfill material was inspected and found free of debris.

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| Comments: |  |
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| | Robert Sok - Construction Supervisor |

DAILY ACTIVITY REPORT (DAR)

| | | | |
|--------------------|--|-------------------|---------------------|
| Project No: | Project Title: | Contract # | Date: |
| 112G07723 | MBFR Pistol Range and Rifle Range | NNG14WA44C | 5-Jul |
| Task No: | NASA WFF - Wallops Island, Virginia | | Year: |
| 2 | | | 2016 |
| | | | Day: Tuesday |

Personnel Summary

| | | | | | | |
|---|------------------------------|--------------|---------------|-----------------------|--------------|---------------|
|  <p>TETRA TECH Committed to Safety Globally, locally, personally</p> | Tetra Tech, Inc. (Tt) | Init. | Name | Clearfield MMG | Init. | Name |
| | Supervisor/FOL | RS | Rob Sok | Superintendent | CH | Chuck Harrell |
| | Geologist | JB | Jacob Birkett | Operator | TD | Tony Darden |
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Visitors:

None.

Description of Work Performed

Crew attended a tailgate Health and Safety meeting prior to the start of work. Gate #10 was opened and security was notified.

Excavation continued at the Pistol Range. Excavation was completed at Grid F2, and continued in Grids F3, and F4. Excavation began at Grid B4 to allow space at the Pistol Range for the staging of backfill (to be delivered tomorrow) because delivery trucks can no longer traverse the access road to the Rifle Range.


A total of twelve trucks were direct loaded with soil from the Pistol Range. Manifests were signed and accompanied each truck load of material transported offsite. Soils were transported to Clearfield's approved disposal facility in Suffolk, Virginia.

Heavy rain storms caused matting along the access route to sink into the mud (portion of route from asphalt road to Gate #10). The first haul truck was briefly stuck in the mud along this route and pulled out with onsite equipment. The traction matting on the access route was moved further north due to the muddy and soft surface conditions from the asphalt road to Gate #10. Maintenance of the access route matting was ongoing throughout the day and Clearfield repaired the access route from the Pistol Range to the Rifle Range to prepare for hauling fill material with the loader tomorrow. Clearfield maintained the access routes, taxiway, and runway crossing by cleaning with the sweeper attachment on the skid steer.

Gate #10 was closed at the end of the day and security was notified.

Problems Encountered and Resolutions:

Rain over the weekend caused muddy conditions to persist at the site. Clearfield continued throughout the day to pull / shift matting to remove the mud and smooth out ruts. The continued trucking on the asphalt road north of the taxiway is causing some cracking and subsidence and the road condition will need to be monitored.

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|----------------------------|---------------------------------|---|--------------|-------------------|
| Comments: | Truck Totals: | | Today | Cumulative |
| | Transport & Dispose: | | 12 | 25 |
| Temperature Range: | 74 F AM |  757-618-2104 mobile Robert Sok - Construction Supervisor | | |
| | 90 F PM | | | |
| Weather Conditions: | Partly cloudy / humid | | | |

EQUIPMENT & PRODUCTION & QC REPORT

| | | | |
|---------------------------------|--|---------------------------------|------------------------|
| Project No: 112G07441 | Project Title: MBFR Pistol Range and Rifle Range | Contract # NNG14WA44C | Date: 5-Jul |
| Task No: 2 | NASA WFF - Wallops Island, Virginia | | Year: 2016 |
| | | | Day: Tuesday |

Contractor Equipment

| Description | Qty | Daily Use | Previous Total | # Days Worked | Comments |
|-----------------------|-----|-----------|----------------|---------------|----------|
| Ditch Witch (RT12) | 1 | 1 | 5 | 6 | |
| John Deere Gator | 1 | 1 | 5 | 6 | |
| Volvo Loader (L70G) | 1 | 1 | 5 | 6 | |
| CAT 320e Excavator | 1 | 1 | 5 | 6 | |
| Skid Steer w/ sweeper | 1 | 1 | 3 | 4 | |
| | | | | | |
| | | | | | |
| TOTALS | 5 | 5 | 23 | 28 | |

Contractor Quantities

| Description | Unit | Daily Qty | Previous Total | Cumulative Total |
|--------------------------------|------|-----------|----------------|------------------|
| Truck with soil (Rifle Range) | Each | 0 | 9.5 | 9.5 |
| Truck with soil (Pistol Range) | Each | 12 | 3.5 | 15.5 |
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Contractor Quality Control Rework Items


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QUALITY CONTROL COMMENTS

None.

E&S CONTROL COMMENTS

Silt fence was inspected at the Pistol and Rifle Range.



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| Comments: |  |
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Robert Sok - Construction Supervisor

DAILY ACTIVITY REPORT (DAR)

| | | | |
|--------------------|--|-------------------|-----------------------|
| Project No: | Project Title: | Contract # | Date: |
| 112G07723 | MBFR Pistol Range and Rifle Range | NNG14WA44C | 6-Jul 2016 |
| Task No: | NASA WFF - Wallops Island, Virginia | | Day: Wednesday |
| 2 | | | |

Personnel Summary

|  TETRA TECH <small>Committed to</small>  Safety <small>Globally, locally, personally</small> | Tetra Tech, Inc. (Tt) | Init. | Name | Clearfield MMG | Init. | Name |
|---|-----------------------|-------|---------------|----------------|-------|---------------|
| | Supervisor/FOL | RS | Rob Sok | Superintendent | CH | Chuck Harrell |
| | Geologist | JB | Jacob Birkett | Operator | TD | Tony Darden |
| | | | | | | |
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Visitors:

Rodney Godwin (NASA)

Description of Work Performed

Crew attended a tailgate Health and Safety meeting prior to the start of work. Gate #10 was opened and security was notified.

Conditions between Gate #10 and the concrete pad (firing line of Pistol Range) were still soft and muddy from the weekend rain events. Some fill material was used to repair the access area before repositioning the traction matting between Gate #10 and the concrete pad prior to trucks arriving onsite. Excavation continued at the Pistol Range. Excavation was completed in F3, F4, and B4. Excavation began in Grid E4.

A total of seven trucks were direct loaded with soil from the Pistol Range. Manifests were signed and accompanied each truck load of material transported offsite. Soils were transported to Clearfield's approved disposal facility in Suffolk, Virginia.

A total of 17 loads of backfill was delivered to the site and staged in Grid B4 and along the eastern berm. A front end loader was used to haul/move approximately half of the fill material to the Rifle Range.


Cracking and subsidence on the asphalt road was observed as getting worse during the heavy truck traffic today. RS notified NASA (Susan Dunn) and requested a site visit.

Gate #10 was closed at the end of the day and security was notified.

Problems Encountered and Resolutions:

A coolant line on a haul truck broke while driving between the asphalt road and Gate #10 on the way out. A traction mat along the access route popped up and damaged the line. Coolant dripped on some of the matting and the asphalt road. Most all of the coolant that leaked (< 2 gallons) was collected in an unused mortar tub (available onsite for decontamination) and was also cleaned up with oil-dry material and rags. The truck remains on the asphalt road and Clearfield is scheduling a mechanic to mobilize to the site to fix the line tomorrow.

The asphalt road is deteriorating from the weight of truck traffic. RS will meet with NASA to determine path forward and need to repair the road.

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|---|---|-------------------|
| Comments: | Truck Totals: | |
| | Today | Cumulative |
| | Transport & Dispose: | 7 32 |
| Temperature Range: |  73 F AM 87 F PM | |
| Weather Conditions: | Sunny / humid | |
| 757-618-2104 mobile | | |
| Robert Sok - Construction Supervisor | | |

EQUIPMENT & PRODUCTION & QC REPORT

| | | | |
|---------------------------------|--|---------------------------------|-----------------------|
| Project No: 112G07441 | Project Title: MBFR Pistol Range and Rifle Range | Contract # NNG14WA44C | Date: 6-Jul |
| Task No: 2 | NASA WFF - Wallops Island, Virginia | | Year: 2016 |
| | | | Day: Wednesday |

Contractor Equipment

| Description | Qty | Daily Use | Previous Total | # Days Worked | Comments |
|-----------------------|----------|-----------|----------------|---------------|----------|
| Ditch Witch (RT12) | 1 | 0 | 6 | 6 | |
| John Deere Gator | 1 | 1 | 6 | 7 | |
| Volvo Loader (L70G) | 1 | 1 | 6 | 7 | |
| CAT 320e Excavator | 1 | 1 | 6 | 7 | |
| Skid Steer w/ sweeper | 1 | 1 | 4 | 5 | |
| | | | | | |
| | | | | | |
| TOTALS | 5 | 4 | 28 | 32 | |

Contractor Quantities

| Description | Unit | Daily Qty | Previous Total | Cumulative Total |
|--------------------------------|------|-----------|----------------|------------------|
| Truck with soil (Rifle Range) | Each | 0 | 9.5 | 9.5 |
| Truck with soil (Pistol Range) | Each | 7 | 15.5 | 22.5 |
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Contractor Quality Control Rework Items


| Identified | Corrected |
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QUALITY CONTROL COMMENTS

None.

E&S CONTROL COMMENTS



Silt fence was inspected at the Pistol and Rifle Range.

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| Comments: |  Robert Sok - Construction Supervisor |
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DAILY ACTIVITY REPORT (DAR)

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|---------------------------------|--|---------------------------------|-----------------------|
| Project No: 112G07723 | Project Title: MBFR Pistol Range and Rifle Range | Contract # NNG14WA44C | Date: 7-Jul |
| Task No: 2 | NASA WFF - Wallops Island, Virginia | | Year: 2016 |
| | | | Day: Thursday |

Personnel Summary

| | | | | | | |
|---|------------------------------|--------------|---------------|-----------------------|--------------|---------------|
|  TETRA TECH Committed to  Safety Globally, locally, personally | Tetra Tech, Inc. (Tt) | Init. | Name | Clearfield MMG | Init. | Name |
| | Supervisor/FOL | RS | Rob Sok | Superintendent | CH | Chuck Harrell |
| | Geologist | JB | Jacob Birkett | Operator | TD | Tony Darden |
| | | | | Mechanic | MH | Micah Hughes |
| | | | | | | |
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Visitors:

Susan Dunn (NASA), NASA WFF facility personnel (inspected asphalt road)

Description of Work Performed

Crew attended a tailgate Health and Safety meeting prior to the start of work. Gate #10 was opened and security was notified.

Traction matting was moved/re-arranged around the taxiway and damaged areas of the asphalt road. Excavation continued at the Pistol Range. Excavation was completed in Grid E3 and E4 and began in Grid B3. Two soil confirmation samples (5 pt composite) were collected from pistol range Grids F3 and F4 at approximately 60 to 72-inches below ground surface. These samples will be analyzed on a 24-hour turn around time.

A total of five trucks were direct loaded with soil from the Pistol Range. Manifests were signed and accompanied each truck load of material transported offsite. Soils were transported to Clearfield's approved disposal facility in Suffolk, Virginia.


A total of 17 loads of backfill was delivered to the site and staged in pistol range Grid B4 and along the eastern berm. A front end loader was used to haul/move approximately 1/3 of the fill material to the Rifle Range. Excavator was used to spread and compact fill material at the rifle range.

A NASA facilities representative visited the asphalt road to inspect/document the damaged asphalt. RS measured the damaged asphalt road at approximately 275 feet in length.

Gate #10 was closed at the end of the day and security was notified.

Problems Encountered and Resolutions:

The coolant line on the broken down haul truck was repaired. The truck left the site and transported the load to Clearfield's approved disposal facility in Suffolk, Virginia. This load is part yesterday's (7/6/16) load total.

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|----------------------------|---------------------------------|--|-------------------|
| Comments: | Truck Totals: | Today | Cumulative |
| | Transport & Dispose: | 5 | 37 |
| Temperature Range: | 73 F AM 91 F PM |  757-618-2104 mobile Robert Sok - Construction Supervisor | |
| Weather Conditions: | Sunny / humid | | |

EQUIPMENT & PRODUCTION & QC REPORT

| | | | |
|---------------------------------|--|---------------------------------|-------------------------|
| Project No: 112G07441 | Project Title: MBFR Pistol Range and Rifle Range | Contract # NNG14WA44C | Date: 7-Jul |
| Task No: 2 | NASA WFF - Wallops Island, Virginia | | Year: 2016 |
| | | | Day: Thursday |

Contractor Equipment

| Description | Qty | Daily Use | Previous Total | # Days Worked | Comments |
|-----------------------|-----|-----------|----------------|---------------|----------|
| Ditch Witch (RT12) | 1 | 0 | 6 | 6 | |
| John Deere Gator | 1 | 1 | 7 | 8 | |
| Volvo Loader (L70G) | 1 | 1 | 7 | 8 | |
| CAT 320e Excavator | 1 | 1 | 7 | 8 | |
| Skid Steer w/ sweeper | 1 | 1 | 5 | 6 | |
| | | | | | |
| | | | | | |
| TOTALS | 5 | 4 | 32 | 36 | |

Contractor Quantities

| Description | Unit | Daily Qty | Previous Total | Cumulative Total |
|--------------------------------|------|-----------|----------------|------------------|
| Truck with soil (Rifle Range) | Each | 0 | 9.5 | 9.5 |
| Truck with soil (Pistol Range) | Each | 5 | 22.5 | 27.5 |
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Contractor Quality Control Rework Items


| Identified | Corrected |
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QUALITY CONTROL COMMENTS

None.

E&S CONTROL COMMENTS



Silt fence was inspected at the Pistol and Rifle Range.

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| Comments: |  Robert Sok - Construction Supervisor |
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DAILY ACTIVITY REPORT (DAR)

| | | | |
|--------------------|--|-------------------|--------------|
| Project No: | Project Title: | Contract # | Date: |
| 112G07723 | MBFR Pistol Range and Rifle Range | NNG14WA44C | 8-Jul |
| Task No: | NASA WFF - Wallops Island, Virginia | | Year: |
| 2 | | | 2016 |
| | | | Day: |
| | | | Friday |

Personnel Summary

|  TETRA TECH <small>Committed to</small>  <small>Globally, locally, personally</small> | Tetra Tech, Inc. (Tt) | Init. | Name | Clearfield MMG | Init. | Name |
|--|-----------------------|-------|---------------|----------------|-------|---------------|
| | Supervisor/FOL | RS | Rob Sok | Superintendent | CH | Chuck Harrell |
| | Geologist | JB | Jacob Birkett | Operator | TD | Tony Darden |
| | | | | | | |
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Visitors:

Wesley Parks (Branscome, Inc.) to assess asphalt road repairs. Rodney Godwin (NASA utilities), Rob Sacks (NASA safety)

Description of Work Performed

Crew attended a tailgate Health and Safety meeting prior to the start of work. Gate #10 was opened and security was notified.

Traction matting was fixed and re-arranged around the taxiway and damaged areas of the asphalt road. Excavation continued and was completed at Pistol Range Grid B3. Excavation plan is now complete at pistol range and waiting on confirmation sample results for Grids F3 and F4. Pistol Range Grid B3 was backfilled with clean fill material/compacted. Traction matting was placed on top of Pistol Range Grid B3 to facilitate truck load out of remaining contaminated soil scraped and staged in Grid D3.


A total of three trucks were direct loaded with soil from the Pistol Range. Manifests were signed and accompanied each truck load of material transported offsite. Soils were transported to Clearfield's approved disposal facility in Suffolk, Virginia. A small pile of soil remains (approximately 3 truckloads) onsite for loading on Monday. The soil pile was covered for the weekend.

A total of 13 loads of topsoil was delivered to the site and staged at the pistol range, west edge of the concrete pad and up along the western berm. Several loads of backfill and topsoil were transferred to, spread/compacted at the rifle range. Two areas of silt fence that were separating along NASA WFF perimeter security fence (eastside of the pistol range) was repaired.

Gate #10 was closed at the end of the day and security was notified.

Problems Encountered and Resolutions:

Branscome, Inc. representative assessed the damaged road this morning and will provide Clearfield an estimate for asphalt repair. Clearfield will complete an estimate to remove old asphalt, prepare paving subsurface and replace approximately 300 feet of asphalt road that was damaged during trucking. A brief written approach for repairing asphalt road will be provided for the NASA review and approval.

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|----------------------------|---|-------------------|
| Comments: | Truck Totals: | |
| | Today | Cumulative |
| | Transport & Dispose: | 3 40 |
| Temperature Range: |  73 F AM 92 F PM | |
| Weather Conditions: | Sunny / humid 757-618-2104 mobile Robert Sok - Construction Supervisor | |

EQUIPMENT & PRODUCTION & QC REPORT

| | | | |
|---------------------------------|--|---------------------------------|-----------------------|
| Project No: 112G07441 | Project Title: MBFR Pistol Range and Rifle Range | Contract # NNG14WA44C | Date: 8-Jul |
| Task No: 2 | NASA WFF - Wallops Island, Virginia | | Year: 2016 |
| | | | Day: Friday |

| Contractor Equipment | | | | | |
|-----------------------------|-----|-----------|----------------|---------------|----------|
| Description | Qty | Daily Use | Previous Total | # Days Worked | Comments |
| Ditch Witch (RT12) | 1 | 0 | 6 | 6 | |
| John Deere Gator | 1 | 0 | 7 | 7 | |
| Volvo Loader (L70G) | 1 | 1 | 8 | 9 | |
| CAT 320e Excavator | 1 | 1 | 8 | 9 | |
| Skid Steer w/ sweeper | 1 | 1 | 6 | 7 | |
| | | | | | |
| TOTALS | 5 | 3 | 35 | 38 | |

| Contractor Quantities | | | | |
|---------------------------------------|------|-----------|----------------|------------------|
| Description | Unit | Daily Qty | Previous Total | Cumulative Total |
| Truck with soil (Rifle Range - waste) | Each | 0 | 9.5 | 9.5 |
| Truck with soil (Pistol Range -waste) | Each | 3 | 27.5 | 30.5 |
| | | | | |
| Site Restoration | | | | |
| Truck load - clean backfill | Each | 0 | 44 | 44 |
| Truck load - clean top soil | Each | 13 | 0 | 13 |
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| Contractor Quality Control Rework Items | |
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| Identified | Corrected |
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QUALITY CONTROL COMMENTS

None.

E&S CONTROL COMMENTS

Two areas of silt fence, along NASA WFF perimeter security fence at the eastern portion of the pistol range was repaired.



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| Comments: |  |
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Robert Sok - Construction Supervisor

DAILY ACTIVITY REPORT (DAR)

| | | | |
|--------------------|--|-------------------|--------------------|
| Project No: | Project Title: | Contract # | Date: |
| 112G07723 | MBFR Pistol Range and Rifle Range | NNG14WA44C | 11-Jul |
| Task No: | NASA WFF - Wallops Island, Virginia | | Year: |
| 2 | | | 2016 |
| | | | Day: Monday |

Personnel Summary

|  TETRA TECH <small>Committed to</small>  Safety <small>Globally, locally, personally</small> | Tetra Tech, Inc. (Tt) | Init. | Name | Clearfield MMG | Init. | Name |
|---|-----------------------|-------|---------------|----------------|-------|---------------|
| | Supervisor/FOL | RS | Rob Sok | Superintendent | CH | Chuck Harrell |
| | Geologist | JB | Jacob Birkett | Operator | TD | Tony Darden |
| | | | | Operator | TJ | Tony Jessup |
| | | | | | | |
| | | | | | | |

Visitors:

David Liu (NASA WFF), 3 NASA summer interns

Description of Work Performed

Crew attended a tailgate Health and Safety meeting prior to the start of work. Gate #10 was opened and security was notified.

Traction matting was fixed and re-arranged around the taxiway and damaged areas of the asphalt road. Analytical results received from confirmation samples collected from PR Grids F3 and F4 (60 to 72-inches sample depth) indicated PR Grid F4 (243 mg/kg) was below the cleanup goal (480 mg/kg), but PR Grid F3 (940 mg/kg) was above cleanup goal. Additional excavation was performed. Based on discussions with NASA, approximately 2-foot of soil from the backstop above PR Grids F3 and F4 (top edge wedge) was scrapped/removed for off-site disposal and PR Grid F3 was excavated an additional 2 foot (total depth excavated to approximately 7 ft). After excavation, a 5-point composite, confirmation sample was collected from PR Grid F3 at 84-96" interval. The sample was shipped via FedEx priority to the lab for 24-hr analysis.


A total of four trucks were direct loaded with excavated soil from the Pistol Range. Manifests were signed and accompanied each truck load of material transported offsite. Soils were transported to Clearfield's approved disposal facility in Suffolk, Virginia.

Restoration materials (seed and vegetative matting) was brought on-site.

Swept access road prior to shutting down the site for the day. Gate #10 was closed at the end of the day and security was notified.

Problems Encountered and Resolutions:

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| Comments: | Truck Totals: | |
|----------------------------|--|------------|
| | Today | Cumulative |
| | 4 | 44 |
| Temperature Range: | <div style="text-align: center;"> 70 F AM 82 F PM </div> | |
| Weather Conditions: | Sunny / humid | |
| |  757-618-2104 mobile Robert Sok - Construction Supervisor | |

EQUIPMENT & PRODUCTION & QC REPORT

| | | | | |
|--------------------|-------------------------------------|-------------------|--------------|--------|
| Project No: | Project Title: | Contract # | Date: | 11-Jul |
| 112G07441 | MBFR Pistol Range and Rifle Range | NNG14WA44C | Year: | 2016 |
| Task No: | NASA WFF - Wallops Island, Virginia | | Day: | Monday |

Contractor Equipment

| Description | Qty | Daily Use | Previous Total | # Days Worked | Comments |
|--------------------------------|-----|-----------|----------------|---------------|----------|
| Ditch Witch | 1 | 0 | 6 | 6 | |
| John Deere Gator | 1 | 0 | 7 | 7 | |
| Volvo Loader (L70G) | 1 | 1 | 9 | 10 | |
| CAT 320e Excavator | 1 | 1 | 9 | 10 | |
| Skid Steer w/ sweeper | 1 | 1 | 7 | 8 | |
| Kubota tractor with back blade | 1 | 1 | 0 | 1 | |
| TOTALS | 6 | 4 | 38 | 42 | |

Contractor Quantities

| Description | Unit | Daily Qty | Previous Total | Cumulative Total |
|---------------------------------------|------|-----------|----------------|------------------|
| Truck with soil (Rifle Range - waste) | Each | 0 | 9.5 | 9.5 |
| Truck with soil (Pistol Range -waste) | Each | 4 | 30.5 | 34.5 |
| | | | | |
| Site Restoration | | | | |
| Truck load - clean backfill | Each | 0 | 44 | 44 |
| Truck load - clean top soil | Each | 0 | 13 | 13 |
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Contractor Quality Control Rework Items

| Identified | Corrected |
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QUALITY CONTROL COMMENTS

None.

E&S CONTROL COMMENTS



Comments:


Robert Sok - Construction Supervisor

DAILY ACTIVITY REPORT (DAR)

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|--------------------|--|-------------------|--------------|
| Project No: | Project Title: | Contract # | Date: |
| 112G07723 | MBFR Pistol Range and Rifle Range | NNG14WA44C | 12-Jul |
| Task No: | NASA WFF - Wallops Island, Virginia | | Year: |
| 2 | | | 2016 |
| | | | Day: |
| | | | Tue |

Personnel Summary

|  TETRA TECH <small>Committed to</small>  <small>Globally, locally, personally</small> | Tetra Tech, Inc. (Tt) | Init. | Name | Clearfield MMG | Init. | Name |
|--|-----------------------|-------|---------------|----------------|-------|---------------|
| | Supervisor/FOL | RS | Rob Sok | Superintendent | CH | Chuck Harrell |
| | Geologist | JB | Jacob Birkett | Operator | TD | Tony Darden |
| | | | | Operator | TJ | Tony Jessup |
| | | | | | | |
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Visitors:

Garth Glenn (Tetra Tech)

Description of Work Performed

Crew attended a tailgate Health and Safety meeting prior to the start of work. Gate #10 was opened and security was notified.

Traction matting was fixed and re-arranged around the taxiway and damaged areas of the asphalt road. PR Grids E3 and E4 were backfilled.


A total of four trucks were direct loaded with excavated soil from the PR. Manifests were signed and accompanied each truck load of material transported offsite. Soils were transported to Clearfield's approved disposal facility in Suffolk, Virginia. All excavated waste soil have been transported off-site for disposal at the approved facility.

4 truckloads of fill material received. Continued installing/compacting backfill and placing/grading topsoil at the RR. Chipped cut trees from the pile staged at PR Gate 10. Approximately 80% of tree pile was chipped and spread around the Site.

Swept access road prior to shutting down the Site for the day. Gate #10 was closed at the end of the day and security was notified.

Problems Encountered and Resolutions:

The plan to replace the damaged asphalt road was submitted to NASA Facilities for review. NASA Facilities requested modifications to the submitted plan. The requested modifications were agreed upon and have been approved by NASA Facilities.

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|----------------------------|---------------------------------|--|-------------------|
| Comments: | Truck Totals: | Today | Cumulative |
| | Transport & Dispose: | 4 | 48 |
| Temperature Range: | 69 F AM |  757-618-2104 mobile Robert Sok - Construction Supervisor | |
| | 82 F PM | | |
| Weather Conditions: | Sunny / humid | | |

EQUIPMENT & PRODUCTION & QC REPORT

| | | | |
|--------------------|--|-------------------|--------------|
| Project No: | Project Title: | Contract # | Date: |
| 112G07441 | MBFR Pistol Range and Rifle Range | NNG14WA44C | 12-Jul |
| Task No: | NASA WFF - Wallops Island, Virginia | Year: | Day: |
| 2 | | 2016 | Tue |

Contractor Equipment

| Description | Qty | Daily Use | Previous Total | # Days Worked | Comments |
|--------------------------------|----------|-----------|----------------|---------------|----------|
| Ditch Witch | 1 | 0 | 6 | 6 | |
| John Deere Gator | 1 | 0 | 7 | 7 | |
| Volvo Loader (L70G) | 1 | 1 | 9 | 10 | |
| CAT 320e Excavator | 1 | 1 | 9 | 10 | |
| Skid Steer w/ sweeper | 1 | 1 | 8 | 9 | |
| Kubota tractor with back blade | 1 | 1 | 0 | 1 | |
| chipper vermeer B3 1000 | 1 | 1 | 0 | 1 | |
| Cat D3K2 dozer | 1 | 1 | 0 | 1 | |
| TOTALS | 8 | 6 | 39 | 45 | |

Contractor Quantities

| Description | Unit | Daily Qty | Previous Total | Cumulative Total |
|---------------------------------------|------|-----------|----------------|------------------|
| Truck with soil (Rifle Range - waste) | Each | 0 | 9.5 | 9.5 |
| Truck with soil (Pistol Range -waste) | Each | 4 | 34.5 | 38.5 |
| | | | | |
| | | | | |
| Site Restoration | | | | |
| Truck load - clean backfill | Each | 4 | 44 | 48 |
| Truck load - clean top soil | Each | 0 | 13 | 13 |
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Contractor Quality Control Rework Items

| Identified | Corrected |
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QUALITY CONTROL COMMENTS

None.

E&S CONTROL COMMENTS



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| Comments: |  |
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Robert Sok - Construction Supervisor

DAILY ACTIVITY REPORT (DAR)

| | | | |
|--------------------|--|-------------------|--------------|
| Project No: | Project Title: | Contract # | Date: |
| 112G07723 | MBFR Pistol Range and Rifle Range | NNG14WA44C | 13-Jul |
| Task No: | NASA WFF - Wallops Island, Virginia | | Year: |
| 2 | | | 2016 |
| | | | Day: |
| | | | Wed |

Personnel Summary

|  TETRA TECH <small>Committed to</small>  <small>Globally, locally, personally</small> | Tetra Tech, Inc. (Tt) | Init. | Name | Clearfield MMG | Init. | Name |
|--|-----------------------|-------|---------------|----------------|-------|---------------|
| | Supervisor/FOL | RS | Rob Sok | Superintendent | CH | Chuck Harrell |
| | Geologist | JB | Jacob Birkett | Operator | TD | Tony Darden |
| | | | | Operator | TJ | Tony Jessup |
| | | | | | | |
| | | | | | | |

Visitors:

David Liu (NASA)

Description of Work Performed

Crew attended a tailgate Health and Safety meeting prior to the start of work. Gate #10 was opened and security was notified.


Traction matting was fixed and re-arranged around the taxiway and damaged areas of the asphalt road. Received analytical results for soil confirmation sample PR-SB-F3-8496, total lead at 79.4 mg/kg. EPA and VDEQ were notified of the results and concurred the cleanup goal was met for PR Grid F3 (final excavation depth to 7 ft bgs). Excavation for PR is confirmed complete.

Transported necessary topsoil from PR to RR to complete RR restoration. Completed topsoil spread/grading at RR. Completed seeding/fertilizing the RR mound. Began installation of erosion control matting over seeded area of RR Mound (80% complete). Began chipping cut tree at the RR. Completed chipping of the cut tree pile at PR.

Swept access road prior to shutting down the Site for the day. Gate #10 was closed at the end of the day and security was notified.

Problems Encountered and Resolutions:

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| Comments: | Truck Totals: | |
|----------------------------|--|------------|
| | Today | Cumulative |
| | 0 | 48 |
| Temperature Range: | <div style="display: flex; justify-content: space-around;"> 75 F AM 80 F PM </div> | |
| Weather Conditions: | Sunny / humid | |
| |  757-618-2104 mobile Robert Sok - Construction Supervisor | |

EQUIPMENT & PRODUCTION & QC REPORT

| | | | | |
|--------------------|-----------------------------------|-------------------------------------|--------------|--------|
| Project No: | Project Title: | Contract # | Date: | 13-Jul |
| 112G07441 | MBFR Pistol Range and Rifle Range | NNG14WA44C | Year: | 2016 |
| Task No: | 2 | NASA WFF - Wallops Island, Virginia | Day: | Wed |

Contractor Equipment

| Description | Qty | Daily Use | Previous Total | # Days Worked | Comments |
|--------------------------------|-----|-----------|----------------|---------------|----------|
| Ditch Witch | 1 | 0 | 6 | 6 | |
| John Deere Gator | 1 | 1 | 7 | 8 | |
| Volvo Loader (L70G) | 1 | 1 | 10 | 11 | |
| CAT 320e Excavator | 1 | 1 | 10 | 11 | |
| Skid Steer w/ sweeper | 1 | 1 | 9 | 10 | |
| Kobota tractor with back blade | 1 | 1 | 0 | 1 | |
| chipper vermeer B3 1000 | 1 | 1 | 1 | 2 | |
| Cat D3K2 dozer | 1 | 1 | 1 | 2 | |
| TOTALS | 8 | 7 | 44 | 51 | |

Contractor Quantities

| Description | Unit | Daily Qty | Previous Total | Cumulative Total |
|---------------------------------------|------|-----------|----------------|------------------|
| Truck with soil (Rifle Range - waste) | Each | 0 | 9.5 | 9.5 |
| Truck with soil (Pistol Range -waste) | Each | 0 | 38.5 | 38.5 |
| | | | | |
| | | | | |
| Site Restoration | | | | |
| Truck load - clean backfill | Each | 0 | 48 | 48 |
| Truck load - clean top soil | Each | 0 | 13 | 13 |
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Contractor Quality Control Rework Items

| Identified | Corrected |
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QUALITY CONTROL COMMENTS

None.

E&S CONTROL COMMENTS



| | |
|------------------|---|
| Comments: |  |
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Robert Sok - Construction Supervisor

DAILY ACTIVITY REPORT (DAR)

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|--------------------|--|-------------------|----------------------|
| Project No: | Project Title: | Contract # | Date: |
| 112G07723 | MBFR Pistol Range and Rifle Range | NNG14WA44C | 14-Jul |
| Task No: | NASA WFF - Wallops Island, Virginia | | Year: |
| 2 | | | 2016 |
| | | | Day: Thursday |

Personnel Summary

|  TETRA TECH <small>Committed to</small>  Safety <small>Globally, locally, personally</small> | Tetra Tech, Inc. (Tt) | Init. | Name | Clearfield MMG | Init. | Name |
|---|-----------------------|-------|---------------|----------------|-------|---------------|
| | Supervisor/FOL | RS | Rob Sok | Superintendent | CH | Chuck Harrell |
| | Geologist | JB | Jacob Birkett | Operator | TD | Tony Darden |
| | | | | Operator | TJ | Tony Jessup |
| | | | | | | |
| | | | | | | |

Visitors:

David Liu, TJ Meyer, Rob Saks, Rodney Godwin (NASA)

Description of Work Performed

Crew attended a tailgate Health and Safety meeting prior to the start of work. Gate #10 was opened and security was notified.

The crew began backfilling the Pistol Range.

The installation of erosion control matting was completed over the seeded area of Rifle Range (RR) Mound. The crew completed chipping of cut trees at the RR mound. A dozer was utilized to regrade the southern area of the RR that was disturbed by truck traffic.


Rodney Godwin arrived onsite and marked out utilities in the area of the asphalt road that will be repaired. Two fiber optic cable lines were marked at the northern and southern portion of the section of asphalt road that requires repair. Rodney confirmed that the existing dig permit would cover work at the asphalt road. Five loads (approximately 80 tons) of sub-base material (21A stone) was delivered to the site. The crew began cutting the asphalt road (approximately 50% complete). Sub-base material was placed over the exposed portion of the road and compacted with tracks of the equipment. One load of asphalt was transported offsite to a recycling facility located at Onley, Virginia.

RS met with NASA and discussed site restoration of the disturbed areas inside the gate and the concern for placing hay at the airfield. Airfield operations and NASA agreed that straw should not be blown inside the gate. The area will be seeded and fertilized only.

Swept access road prior to shutting down the Site for the day. Gate #10 was closed at the end of the day and security was notified.

Problems Encountered and Resolutions:

None.

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|----------------------------|---------------------------------|--|-------------------|
| Comments: | Truck Totals: | Today | Cumulative |
| | Transport & Dispose: | 0 | 48 |
| Temperature Range: | 75 F AM |  757-618-2104 mobile Robert Sok - Construction Supervisor | |
| | 93 F PM | | |
| Weather Conditions: | Sunny / humid | | |

EQUIPMENT & PRODUCTION & QC REPORT

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|--------------------|--|-------------------|----------------------|
| Project No: | Project Title: | Contract # | Date: |
| 112G07441 | MBFR Pistol Range and Rifle Range | NNG14WA44C | 14-Jul |
| Task No: | NASA WFF - Wallops Island, Virginia | | Year: 2016 |
| 2 | | | Day: Thursday |

| Contractor Equipment | | | | | |
|--------------------------------|-----|-----------|----------------|---------------|----------|
| Description | Qty | Daily Use | Previous Total | # Days Worked | Comments |
| Ditch Witch | 1 | 0 | 6 | 6 | |
| John Deere Gator | 1 | 1 | 8 | 9 | |
| Volvo Loader (L70G) | 1 | 1 | 11 | 12 | |
| CAT 320e Excavator | 1 | 1 | 11 | 12 | |
| Skid Steer w/ sweeper | 1 | 1 | 10 | 11 | |
| Kobota tractor with back blade | 1 | 1 | 1 | 2 | |
| chipper vermeer B3 1000 | 1 | 1 | 2 | 3 | |
| Cat D3K2 dozer | 1 | 1 | 2 | 3 | |
| TOTALS | 8 | 7 | 51 | 58 | |

| Contractor Quantities | | | | |
|---------------------------------------|------|-----------|----------------|------------------|
| Description | Unit | Daily Qty | Previous Total | Cumulative Total |
| Truck with soil (Rifle Range - waste) | Each | 0 | 9.5 | 9.5 |
| Truck with soil (Pistol Range -waste) | Each | 0 | 38.5 | 38.5 |
| Truck with Asphalt (recycled) | Each | 1 | 0 | 1 |
| | | | | |
| Site Restoration | | | | |
| Truck load - clean backfill | Each | 0 | 48 | 48 |
| Truck load - clean top soil | Each | 0 | 13 | 13 |
| Truck load - 21A Stone | Each | 5 | 0 | 5 |
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| Contractor Quality Control Rework Items | |
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| Identified | Corrected |
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QUALITY CONTROL COMMENTS

None.

E&S CONTROL COMMENTS



Comments:


Robert Sok - Construction Supervisor

DAILY ACTIVITY REPORT (DAR)

| | | | |
|--------------------|--|-------------------|--------------------|
| Project No: | Project Title: | Contract # | Date: |
| 112G07723 | MBFR Pistol Range and Rifle Range | NNG14WA44C | 15-Jul |
| Task No: | NASA WFF - Wallops Island, Virginia | | Year: 2016 |
| 2 | | | Day: Friday |

Personnel Summary

| | | | | | | |
|---|------------------------------|--------------|---------------|-----------------------|--------------|---------------|
|  TETRA TECH <small>Committed to</small>  Safety <small>Globally, locally, personally</small> | Tetra Tech, Inc. (Tt) | Init. | Name | Clearfield MMG | Init. | Name |
| | Supervisor/FOL | RS | Rob Sok | Superintendent | CH | Chuck Harrell |
| | Geologist | JB | Jacob Birkett | Operator | TJ | Tony Jessup |
| | | | | | | |
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Visitors:

Rodney Godwin (NASA)

Description of Work Performed

Crew attended a tailgate Health and Safety meeting prior to the start of work. Gate #10 was opened and security was notified.


The crew completed cutting the approximate 300 feet of asphalt road. A marked fiber optic cable was encountered and exposed in the northern portion of the road. The cable was shallow at approximately 1-foot below the surface. Rodney was notified and confirmed that the cable was exposed but not damaged; and we could continue backfilling with subbase material. Six inches of subbase material was placed and compacted over the exposed portion of the road. The second load of asphalt was transported offsite to a recycling facility located in Onley, Virginia. Waiting on response from Branscome to finalize paving schedule and complete the replacement road.

The crew began pulling up matting from the access route from asphalt road to Gate #10.

The site was secured for the weekend. Gate #10 was closed at the end of the day and security was notified.

Problems Encountered and Resolutions:

None.

| | | | |
|----------------------------|---------------------------------|--|-------------------|
| Comments: | Truck Totals: | Today | Cumulative |
| | Transport & Dispose: | 0 | 48 |
| Temperature Range: | 75 F AM |  757-618-2104 mobile Robert Sok - Construction Supervisor | |
| | 92 F PM | | |
| Weather Conditions: | Sunny / humid | | |

EQUIPMENT & PRODUCTION & QC REPORT

| | | | | |
|--------------------|-------------------------------------|-------------------|--------------|--------|
| Project No: | Project Title: | Contract # | Date: | 15-Jul |
| 112G07441 | MBFR Pistol Range and Rifle Range | NNG14WA44C | Year: | 2016 |
| Task No: | NASA WFF - Wallops Island, Virginia | | Day: | Friday |

Contractor Equipment

| Description | Qty | Daily Use | Previous Total | # Days Worked | Comments |
|--------------------------------|-----|-----------|----------------|---------------|----------|
| Ditch Witch | 1 | 0 | 6 | 6 | |
| John Deere Gator | 1 | 1 | 9 | 10 | |
| Volvo Loader (L70G) | 1 | 1 | 12 | 13 | |
| CAT 320e Excavator | 1 | 1 | 12 | 13 | |
| Skid Steer w/ sweeper | 1 | 1 | 11 | 12 | |
| Kobota tractor with back blade | 1 | 1 | 2 | 3 | |
| chipper vermeer B3 1000 | 1 | 1 | 3 | 4 | |
| Cat D3K2 dozer | 1 | 1 | 3 | 4 | |
| TOTALS | 8 | 7 | 58 | 65 | |

Contractor Quantities

| Description | Unit | Daily Qty | Previous Total | Cumulative Total |
|---------------------------------------|------|-----------|----------------|------------------|
| Truck with soil (Rifle Range - waste) | Each | 0 | 9.5 | 9.5 |
| Truck with soil (Pistol Range -waste) | Each | 0 | 38.5 | 38.5 |
| Truck with asphalt (recycling) | Each | 1 | 1 | 2 |
| Site Restoration | | | | |
| Truck load - clean backfill | Each | 0 | 48 | 48 |
| Truck load - clean top soil | Each | 0 | 13 | 13 |
| Truck load - 21A Stone | Each | 3 | 5 | 8 |
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Contractor Quality Control Rework Items

| Identified | Corrected |
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QUALITY CONTROL COMMENTS

None.

E&S CONTROL COMMENTS



Comments:


Robert Sok - Construction Supervisor

DAILY ACTIVITY REPORT (DAR)

| | | | |
|--------------------|--|-------------------|--------------------|
| Project No: | Project Title: | Contract # | Date: |
| 112G07723 | MBFR Pistol Range and Rifle Range | NNG14WA44C | 18-Jul |
| Task No: | NASA WFF - Wallops Island, Virginia | | Year: 2016 |
| 2 | | | Day: Monday |

Personnel Summary

| | | | | | | |
|---|------------------------------|--------------|---------------|-----------------------|--------------|---------------|
|  TETRA TECH <small>Committed to</small>  Safety <small>Globally, locally, personally</small> | Tetra Tech, Inc. (Tt) | Init. | Name | Clearfield MMG | Init. | Name |
| | Supervisor/FOL | RS | Rob Sok | Superintendent | CH | Chuck Harrell |
| | Geologist | JB | Jacob Birkett | Operator | TJ | Tony Jessup |
| | | | | Operator | WR | Wilcox Ruffin |
| | | | | | | |
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Visitors:

Rob Sacks (NASA) and Jack Ruffin (Clearfield)

Description of Work Performed

Crew mobilized to the site and attended a tailgate Health and Safety meeting prior to the start of work. Gate #10 was opened and security was notified.

Clearfield mobilized twenty hay bales to the site in preparation for seeding / final restoration. Sunbelt rentals picked up the tree chipper and dropped off a straw blower.


Clearfield continued to place and grade topsoil at the Pistol Range. The crew completed the removal of all traction matting from the access route around the taxiway and near Gate #10.

Clearfield setup a decontamination pad and began decontaminating traction matting used inside the excavation as well as heavy equipment. Decontamination fluid was transferred into 55-gallon drums.

Gate #10 was closed at the end of the day and security was notified.

Problems Encountered and Resolutions:

None.

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|----------------------------|---|--------------|-------------------|
| Comments: | Truck Totals: | Today | Cumulative |
| | Transport & Dispose: | 0 | 48 |
| Temperature Range: |  757-618-2104 mobile Robert Sok - Construction Supervisor | | |
| Weather Conditions: | Sunny / humid | | |

EQUIPMENT & PRODUCTION & QC REPORT

| | | | |
|---------------------------------|--|---------------------------------|------------------------|
| Project No: 112G07441 | Project Title: MBFR Pistol Range and Rifle Range | Contract # NNG14WA44C | Date: 18-Jul |
| Task No: 2 | NASA WFF - Wallops Island, Virginia | | Year: 2016 |
| | | | Day: Monday |

Contractor Equipment

| Description | Qty | Daily Use | Previous Total | # Days Worked | Comments |
|--------------------------------|----------|-----------|----------------|---------------|----------|
| Ditch Witch | 1 | 0 | 6 | 6 | |
| John Deere Gator | 1 | 1 | 10 | 11 | |
| Volvo Loader (L70G) | 1 | 1 | 13 | 14 | |
| CAT 320e Excavator | 1 | 1 | 13 | 14 | |
| Skid Steer w/ sweeper | 1 | 1 | 12 | 13 | |
| Kobota tractor with back blade | 1 | 1 | 3 | 4 | |
| chipper vermeer B3 1000 | 1 | 0 | 4 | 4 | |
| Cat D3K2 dozer | 1 | 1 | 4 | 5 | |
| Straw Blower | 1 | 0 | 0 | 0 | |
| TOTALS | 9 | 6 | 65 | 71 | |

Contractor Quantities

| Description | Unit | Daily Qty | Previous Total | Cumulative Total |
|---------------------------------------|------|-----------|----------------|------------------|
| Truck with soil (Rifle Range - waste) | Each | 0 | 9.5 | 9.5 |
| Truck with soil (Pistol Range -waste) | Each | 0 | 38.5 | 38.5 |
| Truck with asphalt (recycling) | Each | 1 | 1 | 2 |
| Site Restoration | | | | |
| Truck load - clean backfill | Each | 0 | 48 | 48 |
| Truck load - clean top soil | Each | 0 | 13 | 13 |
| Truck load - 21A Stone | Each | 0 | 8 | 8 |
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Contractor Quality Control Rework Items

| Identified | Corrected |
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QUALITY CONTROL COMMENTS

None.



E&S CONTROL COMMENTS

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|------------------|---|
| Comments: |  |
| | Robert Sok - Construction Supervisor |
| | |

DAILY ACTIVITY REPORT (DAR)

| | | | |
|--------------------|--|-------------------|---------------------|
| Project No: | Project Title: | Contract # | Date: |
| 112G07723 | MBFR Pistol Range and Rifle Range | NNG14WA44C | 19-Jul |
| Task No: | NASA WFF - Wallops Island, Virginia | | Year: |
| 2 | | | 2016 |
| | | | Day: Tuesday |

Personnel Summary

|  TETRA TECH <small>Committed to</small>  <small>Globally, locally, personally</small> | Tetra Tech, Inc. (Tt) | Init. | Name | Clearfield MMG | Init. | Name |
|--|-----------------------|-------|---------------|----------------|-------|---------------|
| | Supervisor/FOL | RS | Rob Sok | Superintendent | CH | Chuck Harrell |
| | Geologist | JB | Jacob Birkett | Operator | TJ | Tony Jessup |
| | | | | Operator | WR | Wilcox Ruffin |
| | | | | | | |
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Visitors:

David Liu and Susan Dunn (NASA)

Description of Work Performed

Crew attended a tailgate Health and Safety meeting prior to the start of work. Gate #10 was opened and security was notified.

The site was inspected after receiving approximately 2 inches of rain overnight. Water was ponded at the Pistol Range and in the ruts of the access routes. Silt fencing was inspected and found intact. However, some sections were stressed from the build up of sediment and will need to be repaired/replaced. The Rifle Range was inspected and found to be in good condition (no repairs required).


The placement of top soil was suspended as the site was reworked from the rain event. After some drying, the crew continued to grade topsoil at the Pistol Range. Extra topsoil was placed and compacted up against back of target mound structure.

Decontamination of the traction matting was completed and Rain For Rent picked up the matting (approximately 320 mats) and demobilized the material offsite. Decontamination fluid was transferred into 55-gallon drums. Four drums are currently staged onsite. Clearfield dismantled the containment pads and loaded the materials onto a trailer to demobilize offsite.

The taxiway and other areas were swept throughout the day. Clearfield obtained 45 additional straw bales for site restoration activities. Gate #10 was closed at the end of the day and security was notified.

Problems Encountered and Resolutions:

Heavy rain overnight caused minor erosional issues in the backfill placed at the Pistol Range near the target mound structure. This would most likely be an issue for future rainstorm events. The rain water also created ponding in the center of the Pistol Range (between former firing line and target mound). Clearfield and Tetra Tech discussed options to manage ponded water and fix/minimize the erosion issue in the target area before the site is seeded. Additional fill and topsoil was placed and compacted in the backside of the target mound structure and sides of the concrete structure. The area will be seeded and erosion control matting will be installed to protect fill from future erosion during rain events.

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|----------------------------|---------------------------------|--|-------------------|
| Comments: | Truck Totals: | Today | Cumulative |
| | Transport & Dispose: | 0 | 48 |
| Temperature Range: | 71 F AM |  757-618-2104 mobile Robert Sok - Construction Supervisor | |
| | 85 F PM | | |
| Weather Conditions: | Partly cloudy / humid | | |

EQUIPMENT & PRODUCTION & QC REPORT

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|--------------------|-------------------------------------|-------------------|--------------|---------|
| Project No: | Project Title: | Contract # | Date: | 19-Jul |
| 112G07441 | MBFR Pistol Range and Rifle Range | NNG14WA44C | Year: | 2016 |
| Task No: 2 | NASA WFF - Wallops Island, Virginia | | Day: | Tuesday |

Contractor Equipment

| Description | Qty | Daily Use | Previous Total | # Days Worked | Comments |
|--------------------------------|-----|-----------|----------------|---------------|----------|
| Ditch Witch | 1 | 0 | 6 | 6 | |
| John Deere Gator | 1 | 1 | 10 | 11 | |
| Volvo Loader (L70G) | 1 | 1 | 13 | 14 | |
| CAT 320e Excavator | 1 | 1 | 13 | 14 | |
| Skid Steer w/ sweeper | 1 | 1 | 12 | 13 | |
| Kobota tractor with back blade | 1 | 1 | 3 | 4 | |
| chipper vermeer B3 1000 | 1 | 0 | 4 | 4 | |
| Cat D3K2 dozer | 1 | 1 | 4 | 5 | |
| Straw Blower | 1 | 0 | 0 | 0 | |
| TOTALS | 9 | 6 | 65 | 71 | |

Contractor Quantities

| Description | Unit | Daily Qty | Previous Total | Cumulative Total |
|---------------------------------------|------|-----------|----------------|------------------|
| Truck with soil (Rifle Range - waste) | Each | 0 | 9.5 | 9.5 |
| Truck with soil (Pistol Range -waste) | Each | 0 | 38.5 | 38.5 |
| Truck with asphalt (recycling) | Each | 1 | 1 | 2 |
| Site Restoration | | | | |
| Truck load - clean backfill | Each | 0 | 48 | 48 |
| Truck load - clean top soil | Each | 0 | 13 | 13 |
| Truck load - 21A Stone | Each | 0 | 8 | 8 |
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Contractor Quality Control Rework Items


| Identified | Corrected |
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QUALITY CONTROL COMMENTS

None.

E&S CONTROL COMMENTS



Inspected silt fence after rain event. Sections of the silt fence were stressed from sediment. Sediment will be removed and the silt fence will be replaced or repaired in these areas that were stressed from the rain event prior to demobilization.

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|------------------|--|
| Comments: |  Robert Sok - Construction Supervisor |
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DAILY ACTIVITY REPORT (DAR)

| | | | |
|--------------------|--|-------------------|-----------------------|
| Project No: | Project Title: | Contract # | Date: |
| 112G07723 | MBFR Pistol Range and Rifle Range | NNG14WA44C | 20-Jul |
| Task No: | NASA WFF - Wallops Island, Virginia | | Year: 2016 |
| 2 | | | Day: Wednesday |

Personnel Summary

|  TETRA TECH <small>Committed to</small>  Safety <small>Globally, locally, personally</small> | Tetra Tech, Inc. (Tt) | Init. | Name | Clearfield MMG | Init. | Name |
|---|-----------------------|-------|---------------|----------------|-------|---------------|
| | Supervisor/FOL | RS | Rob Sok | Superintendent | CH | Chuck Harrell |
| | Geologist | JB | Jacob Birkett | Operator | TJ | Tony Jessup |
| | | | | Operator | WR | Wilcox Ruffin |
| | | | | | | |
| | | | | | | |

Visitors:

David Liu (NASA), Eric Littleton (NASA Airfield Operations)

Description of Work Performed

Crew attended a tailgate Health and Safety meeting prior to the start of work. Gate #10 was opened and security was notified.

Clearfield continued grading at the Pistol Range and finished final grading across entire range area in preparation for seeding. Grading was also completed along the entire access route to the Rifle Range. Material removed from the road cut was used to repair and grade the access routes inside the perimeter fence and the route around the taxiway. All finish grading was completed today.


The Rifle Range, access route, and Pistol Range areas were seeded, fertilized and straw was blown to cover all disturbed areas outside of Gate #10. Some of the erosion control matting was installed on the Pistol Range target mound and will be finished tomorrow. Additional silt fence installation began at the Rifle Range and some damaged silt fence was replaced along the access route to the Rifle Range (adjacent perimeter fence).

Composite sample was collected from the four 55-gallon drums of decontamination fluid staged near Building A-131. The sample was shipped to the laboratory for a 10 day TAT.

Gate #10 was closed at the end of the day and security was notified.

Problems Encountered and Resolutions:

None.

| | | | | |
|----------------------------|---------------------------------|--|--------------|-------------------|
| Comments: | Truck Totals: | | Today | Cumulative |
| | Transport & Dispose: | 0 | 48 | |
| Temperature Range: | 78 F AM |  757-618-2104 mobile Robert Sok - Construction Supervisor | | |
| | 86 F PM | | | |
| Weather Conditions: | Mostly sunny / humid | | | |

EQUIPMENT & PRODUCTION & QC REPORT

| | | | | |
|--------------------|-------------------------------------|-------------------|--------------|-----------|
| Project No: | Project Title: | Contract # | Date: | 20-Jul |
| 112G07441 | MBFR Pistol Range and Rifle Range | NNG14WA44C | Year: | 2016 |
| Task No: | NASA WFF - Wallops Island, Virginia | | Day: | Wednesday |

Contractor Equipment

| Description | Qty | Daily Use | Previous Total | # Days Worked | Comments |
|--------------------------------|-----|-----------|----------------|---------------|----------|
| Ditch Witch | 1 | 1 | 6 | 7 | |
| John Deere Gator | 1 | 1 | 11 | 12 | |
| Volvo Loader (L70G) | 1 | 1 | 14 | 15 | |
| CAT 320e Excavator | 1 | 1 | 14 | 15 | |
| Skid Steer w/ sweeper | 1 | 1 | 13 | 14 | |
| Kobota tractor with back blade | 1 | 1 | 4 | 5 | |
| chipper vermeer B3 1000 | 1 | 0 | 4 | 4 | |
| Cat D3K2 dozer | 1 | 1 | 5 | 6 | |
| Straw Blower | 1 | 1 | 0 | 1 | |
| TOTALS | 9 | 8 | 71 | 79 | |

Contractor Quantities

| Description | Unit | Daily Qty | Previous Total | Cumulative Total |
|---------------------------------------|------|-----------|----------------|------------------|
| Truck with soil (Rifle Range - waste) | Each | 0 | 9.5 | 9.5 |
| Truck with soil (Pistol Range -waste) | Each | 0 | 38.5 | 38.5 |
| Truck with asphalt (recycling) | Each | 0 | 2 | 2 |
| | | | | |
| Site Restoration | | | | |
| Truck load - clean backfill | Each | 0 | 48 | 48 |
| Truck load - clean top soil | Each | 0 | 13 | 13 |
| Truck load - 21A Stone | Each | 0 | 8 | 8 |
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Contractor Quality Control Rework Items

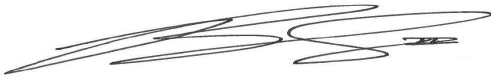
| Identified | Corrected |
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QUALITY CONTROL COMMENTS

None.

E&S CONTROL COMMENTS



Silt fence installtion and repairs began today in areas that were stressed from the rain event and all replacement/repairs will be completed prior to demobilization tomorrow.

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| Comments: |  Robert Sok - Construction Supervisor |
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DAILY ACTIVITY REPORT (DAR)

| | | | |
|--------------------|-------------------------------------|-------------------|----------------------|
| Project No: | Project Title: | Contract # | Date: |
| 112G07723 | MBFR Pistol Range and Rifle Range | NNG14WA44C | 21-Jul |
| Task No: | | | Year: |
| 2 | NASA WFF - Wallops Island, Virginia | | 2016 |
| | | | Day: Thursday |

Personnel Summary

| | | | | | | |
|---|------------------------------|--------------|---------------|-----------------------|--------------|---------------|
|  TETRA TECH <small>Committed to</small>  Safety <small>Globally, locally, personally</small> | Tetra Tech, Inc. (Tt) | Init. | Name | Clearfield MMG | Init. | Name |
| | Supervisor/FOL | RS | Rob Sok | Superintendent | CH | Chuck Harrell |
| | Geologist | JB | Jacob Birkett | Operator | TJ | Tony Jessup |
| | | | | Operator | WR | Wilcox Ruffin |
| | | | | | | |

Visitors:

None.

Description of Work Performed

Crew attended a tailgate Health and Safety meeting prior to the start of work. Gate #10 was opened and security was notified.

Clearfield completed all seeding and fertilizing of the access routes inside the perimeter fence.


The erosion control matting installation was completed at the Pistol Range target mound. Straw bales were also staked in the topside of the mound to aid in erosion control from future storm events. All the additional silt fence installation was completed at the Rifle Range and all silt fence repairs and replacement was also completed.

Clearfield continued demobilization activities and all equipment was staged for rental company pick ups. All remaining supplies, tools, and equipment were loaded onto a trailers and demobilized offsite.

Clearfield completed final sweeping of runway, taxiway, and asphalt road. Gate #10 was closed at the end of the day and security was notified. Truck route signs were removed on the way out of facility and demobilization was completed.

Problems Encountered and Resolutions:

None.

| | | | |
|----------------------------|--|--------------|-------------------|
| Comments: | Truck Totals: | Today | Cumulative |
| | Transport & Dispose: | 0 | 48 |
| Temperature Range: |  757-618-2104 mobile Robert Sok - Construction Supervisor | | |
| Weather Conditions: | Sunny and humid | | |

EQUIPMENT & PRODUCTION & QC REPORT

| | | | | |
|--------------------|-------------------------------------|-------------------|--------------|----------|
| Project No: | Project Title: | Contract # | Date: | 21-Jul |
| 112G07441 | MBFR Pistol Range and Rifle Range | NNG14WA44C | Year: | 2016 |
| Task No: | NASA WFF - Wallops Island, Virginia | | Day: | Thursday |

Contractor Equipment

| Description | Qty | Daily Use | Previous Total | # Days Worked | Comments |
|--------------------------------|-----|-----------|----------------|---------------|----------|
| Ditch Witch | 1 | 1 | 7 | 8 | |
| John Deere Gator | 1 | 1 | 12 | 13 | |
| Volvo Loader (L70G) | 1 | 0 | 15 | 15 | |
| CAT 320e Excavator | 1 | 1 | 15 | 16 | |
| Skid Steer w/ sweeper | 1 | 1 | 14 | 15 | |
| Kobota tractor with back blade | 1 | 1 | 5 | 6 | |
| chipper vermeer B3 1000 | 1 | 0 | 4 | 4 | |
| Cat D3K2 dozer | 1 | 1 | 6 | 7 | |
| Straw Blower | 1 | 1 | 0 | 1 | |
| TOTALS | 9 | 7 | 78 | 85 | |

Contractor Quantities

| Description | Unit | Daily Qty | Previous Total | Cumulative Total |
|---------------------------------------|------|-----------|----------------|------------------|
| Truck with soil (Rifle Range - waste) | Each | 0 | 9.5 | 9.5 |
| Truck with soil (Pistol Range -waste) | Each | 0 | 38.5 | 38.5 |
| Truck with asphalt (recycling) | Each | 0 | 2 | 2 |
| Site Restoration | | | | |
| Truck load - clean backfill | Each | 0 | 48 | 48 |
| Truck load - clean top soil | Each | 0 | 13 | 13 |
| Truck load - 21A Stone | Each | 0 | 8 | 8 |
| | | | | |
| | | | | |
| | | | | |
| | | | | |

Contractor Quality Control Rework Items

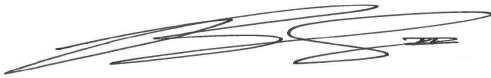
| Identified | Corrected |
|------------|-----------|
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |
| | |

QUALITY CONTROL COMMENTS

None.

E&S CONTROL COMMENTS

All silt fence installation, replacement, and repairs were completed prior to demobilization.

| | |
|------------------|---|
| Comments: |  |
| | |
| | |

Robert Sok - Construction Supervisor

APPENDIX F
WASTE DISPOSAL DOCUMENTATION



MANIFEST SUMMARY

Submitted To: Tetra Tech, Inc.
Pittsburgh, PA

Material: Soil Disposal

Project: NASA Wallops Flight Facility
Wallops Island, VA

Date: 7/12/2016

| Manifest No | Gross Weight | Tare Weight | Net Weight | Tons |
|-------------|--------------|-------------|--------------------|---------------|
| 001 | 64500 | 25300 | 39200 | 19.60 |
| 002 | 65920 | 25420 | 40500 | 20.25 |
| 003 | 64640 | 23940 | 40700 | 20.35 |
| 004 | 66040 | 22720 | 43320 | 21.66 |
| 005 | 68360 | 24120 | 44240 | 22.12 |
| 006 | 60800 | 27540 | 33260 | 16.63 |
| 007 | 67600 | 27820 | 39780 | 19.89 |
| 008 | 63180 | 24120 | 39060 | 19.53 |
| 009 | 66800 | 25180 | 41620 | 20.81 |
| 010 | 68200 | 23940 | 44260 | 22.13 |
| 011 | 67060 | 25420 | 41640 | 20.82 |
| 012 | 63880 | 25300 | 38580 | 19.29 |
| 013 | 65840 | 27560 | 38280 | 19.14 |
| 014 | 61060 | 27640 | 33420 | 16.71 |
| 015 | 65780 | 25180 | 40600 | 20.30 |
| 016 | 59580 | 24120 | 35460 | 17.73 |
| 017 | 59820 | 23940 | 35880 | 17.94 |
| 018 | 61800 | 25300 | 36500 | 18.25 |
| 019 | 58820 | 25220 | 33600 | 16.80 |
| 020 | 57460 | 27420 | 30040 | 15.02 |
| | | | Tons Page 1 | 384.97 |

| Date | Gross Weight | Tare Weight | Net Weight | Tons |
|------|--------------|-------------|--------------------|---------------|
| 021 | 60180 | 25180 | 35000 | 17.50 |
| 022 | 65180 | 24120 | 41060 | 20.53 |
| 023 | 65020 | 23940 | 41080 | 20.54 |
| 024 | 67760 | 25420 | 42340 | 21.17 |
| 025 | 67340 | 25300 | 42040 | 21.02 |
| 026 | 56300 | 27940 | 28360 | 14.18 |
| 027 | 61780 | 25300 | 36480 | 18.24 |
| 028 | 60280 | 24120 | 36160 | 18.08 |
| 029 | 63180 | 25420 | 37760 | 18.88 |
| 030 | 60940 | 25180 | 35760 | 17.88 |
| 031 | 59640 | 24020 | 35620 | 17.81 |
| 032 | 60540 | 27420 | 33120 | 16.56 |
| 033 | 62200 | 27940 | 34260 | 17.13 |
| 034 | 61340 | 25300 | 36040 | 18.02 |
| 035 | 61440 | 25180 | 36260 | 18.13 |
| 036 | 62680 | 25420 | 37260 | 18.63 |
| 037 | 60460 | 24120 | 36340 | 18.17 |
| 038 | 61520 | 25180 | 36340 | 18.17 |
| 039 | 64600 | 25420 | 39180 | 19.59 |
| 040 | 64320 | 24120 | 40200 | 20.10 |
| 041 | 61380 | 24120 | 37260 | 18.63 |
| 042 | 63220 | 25420 | 37800 | 18.90 |
| 043 | 63140 | 24120 | 39020 | 19.51 |
| 044 | 63720 | 25420 | 38300 | 19.15 |
| 045 | 65800 | 25300 | 40500 | 20.25 |
| 046 | 61020 | 24120 | 36900 | 18.45 |
| 047 | 63240 | 25420 | 37820 | 18.91 |
| 048 | 56960 | 25300 | 31660 | 15.83 |
| | | | Tons Page 2 | 519.96 |
| | | | Total Tons | 904.93 |



Post Office Box 1444
Chesapeake, VA 23327
(757) 549-8448
FAX: (757) 549-6668

**NON-HAZARDOUS
SHIPPING MANIFEST**

MANIFEST NO. 601

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Island Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM _____
 ADDRESS _____ OTHER _____

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER Soil & Debris
 PETROLEUM TYPE (S): VIRGIN PRODUCT * DL 6-30-16 NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

DL
Signature of Generator / Agent
Mr. David Liu / 6-30-16
Printed Name / Date

TRANSPORTER

TRANSPORTER NAME ATCO TELEPHONE 757-638-7795 TRUCK NO. AT-23
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.
BS. Mreedy 6-30-16
 Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY William D DATE 6/30/16
 REASONS FOR REJECTION _____

| | |
|--------------|-------|
| Gross Weight | 64500 |
| Tare Weight | 25300 |
| Net Weight | 39200 |
| Tons | 19.60 |

FACILITY

SOUTHEASTERN PUBLIC
 SERVICE AUTHORITY
 723 Woodlake Dr
 CHESAPEAKE, VA 23320-8909
 (757) 420-4700

| | | |
|---------------|------|-------------------------|
| Truck: ATCO23 | Tag: | Transaction #: 13348901 |
| Trailer: | Tag: | Attendant ID: SW |

| | |
|----------------------|----------------|
| Customer: 600769 | Date: 06/30/16 |
| CLEARFIELD MMG, INC. | Time: 13:42 |
| P O BOX 1444 | Site: 13 |
| CHESAPEAKE VA 23327 | |

| | | | |
|---|-------|------------------------------------|--------------------------------|
| REFUSE TYPE: SXP-Pre-Processed Material (Clearfield Only) | | | |
| RATE: \$0.00 / tn | | Tran Type: Waste Disposal - Credit | |
| LBS | TONS | Pymt Type: Charge | |
| GROSS WEIGHT: 64500 | 32.25 | SCALE: MAN WT | Origin: Offsite Waste Producer |
| TARE WEIGHT: 25300 | 12.65 | SCALE: (K) | Dest: Clearfield Facility |
| NET WEIGHT: 39200 | 19.60 | | State: VA MSW |
| VOL: 0 | | | Driver: N/A |

TRANSACTION AMOUNT: 0
 PAYABLE TO: SPSA
 REMARKS:

THANK YOU FOR CHOOSING SPSA!



Clearfield MMG

Post Office Box 1444
Chesapeake, VA 23327
(757) 549-8448
FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 002

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Island Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM _____
 ADDRESS _____ OTHER _____

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER **Soil & Debris**
 PETROLEUM TYPE (S): VIRGIN PRODUCT *** DL 6-30-16** NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING **X** DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Signature of Generator / Agent

Mr. David Liu / 6-30-16

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME **ATCO** TELEPHONE **6387914** TRUCK NO. **25**
 I certify that the materials described above were received by me for shipment and delivered to the designated facility. **MEG B...** **6/30/16**
 Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY **[Signature]** DATE **6/30/2016**

REASONS FOR REJECTION _____

| | |
|--------------|--------------|
| Gross Weight | 65920 |
| Tare Weight | 25420 |
| Net Weight | 40500 |
| Tons | 20.25 |

FACILITY

SOUTHEASTERN PUBLIC
SERVICE AUTHORITY
723 Woodlake Dr
CHESAPEAKE, VA 23320-8909
(757) 420-4700

Truck: ATCO25 Tag: Transaction #: 13348908
Trailer: Tag: Attendant ID: SW

Customer: 600769
CLEARFIELD MMG, INC. Date: 06/30/16
P O BOX 1444 Time: 13:56
CHESAPEAKE VA 23327 Site: 13

REFUSE TYPE: SXP-Pre-Processed Material (Clearfield Only)
RATE: \$0.00 / tn Tran Type: Waste Disposal - Credit
 LBS TONS Pymt Type: Charge
GROSS WEIGHT: 65920 32.96 SCALE: MAN WT Origin: Offsite Waste Producer
TARE WEIGHT: 25420 12.71 SCALE: (K) Dest: Clearfield Facility
NET WEIGHT: 40500 20.25 State: VA MSW
VOL: 0 Driver: N/A

TRANSACTION AMOUNT: 0
PAYABLE TO: SPSA
REMARKS:

THANK YOU FOR CHOOSING SPSA!



Clearfield MMG

Post Office Box 1444
Chesapeake, VA 23327
(757) 549-8448
FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 003

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Island Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM _____
 ADDRESS _____ OTHER _____

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER **Soil & Debris**
 PETROLEUM TYPE (S): VIRGIN PRODUCT ^{DL} * 6-30-16 NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Signature of Generator / Agent

Mr. David Liu / 6-30-16

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME Dash Campbell TELEPHONE 757 6387914 TRUCK NO. 27
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.

 Transporter Signature / Date

FACILITY

13:57

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY DATE 6/30/2016

REASONS FOR REJECTION _____

| | |
|--------------|-------|
| Gross Weight | 64640 |
| Tare Weight | 23940 |
| Net Weight | 40700 |
| Tons | 20.35 |

FACILITY

SOUTHEASTERN PUBLIC
SERVICE AUTHORITY
723 Woodlake Dr
CHESAPEAKE, VA 23320-8909
(757) 420-4700

Truck:ATCO27 Tag: Transaction #: 13348910
Trailer: Tag: Attendant ID: SW

Customer: 600769
CLEARFIELD MMG, INC. Date: 06/30/16
P O BOX 1444 Time: 13:57
CHESAPEAKE VA 23327 Site: 13

REFUSE TYPE:SXP-Pre-Processed Material (Clearfield Only)
RATE: \$0.00 / tn Tran Type: Waste Disposal - Credit
 LBS TONS Pymt Type: Charge
GROSS WEIGHT: 64640 32.32 SCALE:MAN WT Origin: Offsite Waste Producer
TARE WEIGHT: 23940 11.97 SCALE:(K) Dest: Clearfield Facility
NET WEIGHT: 40700 20.35 State: VA MSW
VOL: 0 Driver: N/A

TRANSACTION AMOUNT: 0
PAYABLE TO: SPSA
REMARKS:

THANK YOU FOR CHOOSING SPSA!



Clearfield MMG

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FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 004

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Island Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM _____
 ADDRESS _____ OTHER _____

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER **Soil & Debris**
 PETROLEUM TYPE (S): VIRGIN PRODUCT *** DL 6-30-16** NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING **X** DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**


I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Signature of Generator / Agent

Mr. David Liu / 6-30-16

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME **Chuck** TELEPHONE **975-6879** TRUCK NO. **P-69**
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.
 **6/30/16**
 Transporter Signature / Date

FACILITY

14:20

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY **Milli X** DATE **6/30/2016**

REASONS FOR REJECTION _____

| | |
|--------------|--------------|
| Gross Weight | 66040 |
| Tare Weight | 22720 |
| Net Weight | 43320 |
| Tons | 21.66 |

FACILITY

SOUTHEASTERN PUBLIC
SERVICE AUTHORITY
723 Woodlake Dr
CHESAPEAKE, VA 23320-8909
(757) 420-4700

Truck:ML8765 Tag: Transaction #: 13348923
Trailer: Tag: Attendant ID: SW

Customer: 600769
CLEARFIELD MMG, INC.
P O BOX 1444
CHESAPEAKE VA 23327

Date: 06/30/16
Time: 14:20
Site: 13

REFUSE TYPE:SXP-Pre-Processed Material (Clearfield Only)
RATE: \$0.00 / tn Tran Type: Waste Disposal - Credit
LBS TONS Pymt Type: Charge
GROSS WEIGHT: 66040 33.02 SCALE:MAN WT Origin: Offsite Waste Producer
TARE WEIGHT: 22720 11.36 SCALE:MAN WT Dest: Clearfield Facility
NET WEIGHT: 43320 21.66 State: VA MSW
VOL: 0 Driver: N/A

TRANSACTION AMOUNT: 0

PAYABLE TO: SPSA

REMARKS:

THANK YOU FOR CHOOSING SPSA!



Clearfield MMG

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FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 005

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Island Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM _____
 ADDRESS _____ OTHER _____

GROSS - 68360

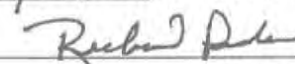
MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER **Soil & Debris**
 PETROLEUM TYPE (S): VIRGIN PRODUCT *R 6-30-16 NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.


 Signature of Generator / Agent
Mr. David Liu / 6-30-16
 Printed Name / Date

TRANSPORTER

TRANSPORTER NAME Richard PAVOEN TELEPHONE 757/327-2058 TRUCK NO. 26
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.

 Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY  DATE 6/30/2016
 REASONS FOR REJECTION _____

| | |
|--------------|-------|
| Gross Weight | 68360 |
| Tare Weight | 24120 |
| Net Weight | 44240 |
| Tons | 28.12 |

FACILITY

SOUTHEASTERN PUBLIC
SERVICE AUTHORITY
723 Woodlake Dr
CHESAPEAKE, VA 23320-8909
(757) 420-4700

Truck: ATCO26 Tag: Transaction #: 13348927
Trailer: Tag: Attendant ID: DS

Customer: 600769 Date: 06/30/16
CLEARFIELD MMG, INC. Time: 14:29
P O BOX 1444 Site: 13
CHESAPEAKE VA 23327

REFUSE TYPE: SXP-Pre-Processed Material (Clearfield Only)
RATE: \$0.00 / tn Tran Type: Waste Disposal - Credit
LBS TONS Pymt Type: Charge
GROSS WEIGHT: 68360 34.18 SCALE: MAN WT Origin: Offsite Waste Producer
TARE WEIGHT: 24120 12.06 SCALE: MAN WT Dest: Clearfield Facility
NET WEIGHT: 44240 22.12 State: VA MSW
VOL: 0 Driver: N/A

TRANSACTION AMOUNT: 0
PAYABLE TO: **SPSA**
REMARKS:

THANK YOU FOR CHOOSING SPSA!



Post Office Box 1444
 Chesapeake, VA 23327
 (757) 549-8448
 FAX: (757) 549-6668

**NON-HAZARDOUS
 SHIPPING MANIFEST**

MANIFEST NO. 006

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Island Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM _____
 ADDRESS _____ OTHER _____

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER Soil & Debris
 PETROLEUM TYPE (S): VIRGIN PRODUCT * DL 6-30-16 NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

David Liu
 Signature of Generator / Agent
 Mr. David Liu / 6-30-16
 Printed Name / Date

TRANSPORTER

TRANSPORTER NAME CLEARFIELD MMG TELEPHONE 549-8448 TRUCK NO. 17
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.
Wm. Martin 6-30-16
 Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY Martin DATE 6-30-16

REASONS FOR REJECTION _____

| | |
|--------------|-------|
| Gross Weight | 60800 |
| Tare Weight | 27540 |
| Net Weight | 33260 |
| Tons | 16.63 |

FACILITY



P.O. Box 1444
Chesapeake, VA 23327
(757) 549-8448

WEIGHT RECEIPT

Project NASA Wallops Flight Facility
Truck Name CLEARFIELD
Truck Number 17

16.63

Received By Martin
46685

Post Office Box 1444
 Chesapeake, VA 23327
 (757) 549-8448
 FAX: (757) 549-6668

MANIFEST NO. 007

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Island Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM _____
 ADDRESS _____ OTHER _____

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER **Soil & Debris**
 PETROLEUM TYPE (S): VIRGIN PRODUCT * DL 7-1-16 NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

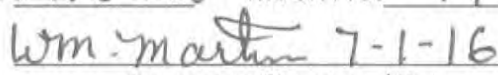


Signature of Generator / Agent

Mr. David Liu / 7-1-16

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME CLEARFIELD MMG TELEPHONE 549-8448 TRUCK NO. 17
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.

 Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY Jal DATE 7-1-16

REASONS FOR REJECTION _____

| | |
|--------------|-------|
| Gross Weight | 67600 |
| Tare Weight | 27820 |
| Net Weight | 39780 |
| Tons | 19.89 |



P.O. Box 1444
Chesapeake, VA 23327
(757) 549-8448

WEIGHT RECEIPT

Project NASA Wallops
Truck Name Clearfield
Truck Number 17

19.89

Received By J. Outman
46689



Clearfield MMG

Post Office Box 1444
Chesapeake, VA 23327
(757) 549-8448
FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 008

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Island Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM _____
 ADDRESS _____ OTHER _____

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER **Soil & Debris**
 PETROLEUM TYPE (S): VIRGIN PRODUCT DL 7-1-30 NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

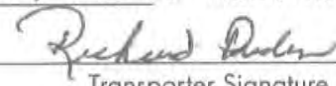
I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Signature of Generator / Agent

Mr. David Liu / **7-1-30**

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME Richard Pruder TELEPHONE 757-3272058 TRUCK NO. 26
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.

 Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY [Signature] DATE 7/1/2016

REASONS FOR REJECTION _____

| | |
|--------------|------------------|
| Gross Weight | 63180 |
| Tare Weight | 24120 |
| Net Weight | 39060 |
| Tons | 22.13 |

FACILITY

14.29
19.53



Post Office Box 1444
 Chesapeake, VA 23327
 (757) 549-8448
 FAX: (757) 549-6668

**NON-HAZARDOUS
 SHIPPING MANIFEST**

MANIFEST NO. 009

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Island Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM _____
 ADDRESS _____ OTHER _____

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER **Soil & Debris**
 PETROLEUM TYPE (S): VIRGIN PRODUCT * DL 7-1-16 NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Signature of Generator / Agent

Mr. David Liu / **7-1-16**

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME Puryear TELEPHONE 638-7914 TRUCK NO. P57
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.
7/1/16
 Transporter Signature / Date

FACILITY

13:11

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY Willi X DATE 7/1/2016

REASONS FOR REJECTION _____

| | |
|--------------|----------------|
| Gross Weight | <u>461,800</u> |
| Tare Weight | <u>25,180</u> |
| Net Weight | <u>41,600</u> |
| Tons | <u>20.81</u> |

FACILITY

SOUTHEASTERN PUBLIC
SERVICE AUTHORITY
723 Woodlake Dr
CHESAPEAKE, VA 23320-8909
(757) 420-4700

Truck: P56 Tag: ML8727 Transaction #: 13349175
Trailer: Tag: Attendant ID: DS

Customer: 600769
CLEARFIELD MMG, INC. Date: 07/01/16
P O BOX 1444 Time: 13:11
CHESAPEAKE VA 23327 Site: 13

REFUSE TYPE: SXP-Pre-Processed Material (Clearfield Only)
RATE: \$0.00 / tn Tran Type: Waste Disposal - Credit
 LBS TONS Pymt Type: Charge
GROSS WEIGHT: 66800 33.40 SCALE: MAN WT Origin: Offsite Waste Producer
TARE WEIGHT: 25180 12.59 SCALE: (K) Dest: Clearfield Facility
NET WEIGHT: 41620 20.81 State: VA MSW
VOL: 0 Driver: N/A

TRANSACTION AMOUNT: 0
PAYABLE TO: SPSA
REMARKS:

THANK YOU FOR CHOOSING SPSA!



Post Office Box 1444
 Chesapeake, VA 23327
 (757) 549-8448
 FAX: (757) 549-6668

**NON-HAZARDOUS
 SHIPPING MANIFEST**

MANIFEST NO. 010

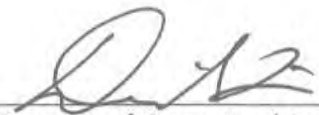
GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Island Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM _____
 ADDRESS _____ OTHER _____

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER **Soil & Debris**
 PETROLEUM TYPE (S): VIRGIN PRODUCT *DL 7-1-16 NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.


 Signature of Generator / Agent
Mr. David Liu / 7-1-16
 Printed Name / Date

TRANSPORTER

TRANSPORTER NAME Josh Campbell TELEPHONE 757 353 7841 TRUCK NO. 27
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.
JM CM 7/1/16
 Transporter Signature / Date

FACILITY

19:25

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY Willie X DATE 7/1/2016

REASONS FOR REJECTION _____

| | |
|--------------|---------------|
| Gross Weight | <u>68,200</u> |
| Tare Weight | <u>23,940</u> |
| Net Weight | <u>44,260</u> |
| Tons | <u>22.13</u> |

FACILITY

SOUTHEASTERN PUBLIC
SERVICE AUTHORITY
723 Woodlake Dr
CHESAPEAKE, VA 23320-8909
(757) 420-4700

Truck: ATCO27 Tag: Transaction #: 13349226
Trailer: Tag: Attendant ID: DS

Customer: 600769 Date: 07/01/16
CLEARFIELD MMG, INC. Time: 14:25
P O BOX 1444 Site: 13
CHESAPEAKE VA 23327

REFUSE TYPE: SXP-Pre-Processed Material (Clearfield Only)
RATE: \$0.00 / tn Tran Type: Waste Disposal - Credit
LBS TONS Pymt Type: Charge
GROSS WEIGHT: 68200 34.10 SCALE: MAN WT Origin: Offsite Waste Producer
TARE WEIGHT: 23940 11.97 SCALE: (K) Dest: Clearfield Facility
NET WEIGHT: 44260 22.13 State: VA MSW
VOL: 0 Driver: N/A

TRANSACTION AMOUNT: 0
PAYABLE TO: SPSA
REMARKS:

THANK YOU FOR CHOOSING SPSA!



Clearfield MMG

Post Office Box 1444
Chesapeake, VA 23327
(757) 549-8448
FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 011

GENERATOR

| | | | |
|------------------|---------------------------------------|-----------|--------------------------------|
| NAME | NASA Wallops Flight Facility | TELEPHONE | (757) 824-2141 |
| ADDRESS | Building F-160, Code 250 | CITY | Wallops Island STATE VA |
| SHIPMENT ORIGIN | Wallops Island Flight Facility | CITY | Wallops Island STATE VA |
| AUTHORIZED AGENT | Mr. David Liu | FIRM | |
| ADDRESS | | OTHER | |

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER Soil & Debris

PETROLEUM TYPE (S): VIRGIN PRODUCT *~~DL~~ 7-1-30 NON-VIRGIN PRODUCT _____

PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____

HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**

FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**

DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Signature of Generator / Agent

Mr. David Liu / 7-1-30

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME A TCO TELEPHONE 6387514 TRUCK NO. 25

I certify that the materials described above were received by me for shipment and delivered to the designated facility.

Al Bass 7/1/16
Transporter Signature / Date

FACILITY

715:39

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY Will D DATE 7/1/2016

REASONS FOR REJECTION _____

| | |
|--------------|---------------|
| Gross Weight | <u>67.060</u> |
| Tare Weight | <u>25.420</u> |
| Net Weight | <u>41.640</u> |
| Tons | <u>20.82</u> |

FACILITY

SOUTHEASTERN PUBLIC
SERVICE AUTHORITY
723 Woodlake Dr
CHESAPEAKE, VA 23320-8909
(757) 420-4700

Truck: ATCO25 Tag: Transaction #: 13349285
Trailer: Tag: Attendant ID: DS

Customer: 600769
CLEARFIELD MMG, INC. Date: 07/01/16
P O BOX 1444 Time: 15:39
CHESAPEAKE VA 23327 Site: 13

REFUSE TYPE: SXP-Pre-Processed Material (Clearfield Only)
RATE: \$0.00 / tn Tran Type: Waste Disposal - Credit
 LBS TONS Pymt Type: Charge
GROSS WEIGHT: 67060 33.53 SCALE: MAN WT Origin: Offsite Waste Producer
TARE WEIGHT: 25420 12.71 SCALE: (K) Dest: Clearfield Facility
NET WEIGHT: 41640 20.82 State: VA MSW
VOL: 0 Driver: N/A

TRANSACTION AMOUNT: 0
PAYABLE TO: SPSA
REMARKS:

THANK YOU FOR CHOOSING SPSA!



Clearfield MMG

Post Office Box 1444
Chesapeake, VA 23327
(757) 549-8448
FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 012

GENERATOR

| | | | |
|------------------|---------------------------------------|-----------|--------------------------------|
| NAME | NASA Wallops Flight Facility | TELEPHONE | (757) 824-2141 |
| ADDRESS | Building F-160, Code 250 | CITY | Wallops Island STATE VA |
| SHIPMENT ORIGIN | Wallops Island Flight Facility | CITY | Wallops Island STATE VA |
| AUTHORIZED AGENT | Mr. David Liu | FIRM | |
| ADDRESS | | OTHER | |

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER Soil & Debris

PETROLEUM TYPE (S): VIRGIN PRODUCT *DL 7-1-16 NON-VIRGIN PRODUCT _____

PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____

HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**

FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**

DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Signature of Generator / Agent

Mr. David Liu / 7-1-16

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME ATCO TELEPHONE 757-638-7746 TUCK NO. AT-23

I certify that the materials described above were received by me for shipment and delivered to the designated facility.

B. B. Breggy
Transporter Signature / Date

FACILITY

15-10

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY William D DATE 7/1/2016

REASONS FOR REJECTION _____

| | |
|--------------|---------------|
| Gross Weight | <u>63,880</u> |
| Tare Weight | <u>25,300</u> |
| Net Weight | <u>38,580</u> |
| Tons | <u>19.29</u> |

FACILITY

SOUTHEASTERN PUBLIC
SERVICE AUTHORITY
723 Woodlake Dr
CHESAPEAKE, VA 23320-8909
(757) 420-4700

Truck: ATCO23 Tag: Transaction #: 13349266
Trailer: Tag: Attendant ID: SW

Customer: 600769
CLEARFIELD MMG, INC. Date: 07/01/16
P O BOX 1444 Time: 15:10
CHESAPEAKE VA 23327 Site: 13

REFUSE TYPE: SXP-Pre-Processed Material (Clearfield Only)
RATE: \$0.00 / tn Tran Type: Waste Disposal - Credit
 LBS TONS Pymt Type: Charge
GROSS WEIGHT: 63880 31.94 SCALE: MAN WT Origin: Offsite Waste Producer
TARE WEIGHT: 25300 12.65 SCALE: (K) Dest: Clearfield Facility
NET WEIGHT: 38580 19.29 State: VA MSW
VOL: 0 Driver: N/A

TRANSACTION AMOUNT: 0
PAYABLE TO: SPSA
REMARKS:

THANK YOU FOR CHOOSING SPSA!



Clearfield MMG

Post Office Box 1444
Chesapeake, VA 23327
(757) 549-8448
FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 013

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Island Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM _____
 ADDRESS _____ OTHER _____

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER **Soil & Debris**
 PETROLEUM TYPE (S): VIRGIN PRODUCT x⁰⁵ 7-1-16 NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Signature of Generator / Agent

Mr. David Liu / 7-1-16

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME ClearField MMG TELEPHONE 945-8448 TRUCK NO. 17
 I certify that the materials described above were received by me for shipment and delivered to the designated facility. Wm. Martin 7-1-16
 Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY JGL DATE 7-1-16

REASONS FOR REJECTION _____

| | |
|--------------|--------------|
| Gross Weight | <u>65840</u> |
| Tare Weight | <u>27560</u> |
| Net Weight | <u>38280</u> |
| Tons | <u>19.14</u> |

FACILITY



P.O. Box 1444
Chesapeake, VA 23327
(757) 549-8448

WEIGHT RECEIPT

Project NASA Wallops Flight Facility

Truck Name CLEARFIELD

Truck Number 17

DATE RECEIVED: 11/19/14
TIME: 10:00 AM
BY: [Signature]

19.14

Received By Martin

46694



Clearfield MMG

Post Office Box 1444
Chesapeake, VA 23327
(757) 549-8448
FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 014

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Island Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM _____
 ADDRESS _____ OTHER _____

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER Soil & Debris
 PETROLEUM TYPE (S): VIRGIN PRODUCT PL 7-5-16 NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Signature of Generator / Agent

Mr. David Liu / 7-5-16

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME Clearfield MMG TELEPHONE 549-8448 TRUCK NO. 17
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.
Wm. Martin 7-5-16
 Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY A. Outman DATE 7/5/16

REASONS FOR REJECTION _____

| | |
|--------------|-------|
| Gross Weight | 61060 |
| Tare Weight | 27640 |
| Net Weight | 33420 |
| Tons | 16.71 |

FACILITY



Clearfield MMG

P.O. Box 1444
Chesapeake, VA 23327
(757) 549-8448

WEIGHT RECEIPT

Project Wallops
Truck Name Clearfield
Truck Number 17

27640

16.71

Received By L. Outman
46699



Post Office Box 1444
 Chesapeake, VA 23327
 (757) 549-8448
 FAX: (757) 549-6668

**NON-HAZARDOUS
 SHIPPING MANIFEST**

MANIFEST NO. 15

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Island Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM _____
 ADDRESS _____ OTHER _____

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER **Soil & Debris**
 PETROLEUM TYPE (S): VIRGIN PRODUCT *DL 7-5-16 NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

David Liu
 Signature of Generator / Agent
Mr. David Liu / 7-5-16
 Printed Name / Date

TRANSPORTER

TRANSPORTER NAME Perryear Trucking TELEPHONE 638-7914 TRUCK NO. 256
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.
David Liu 7/5/16
 Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY [Signature] DATE 7/5/16
 REASONS FOR REJECTION _____

12:12

| | |
|--------------|--------|
| Gross Weight | 65,780 |
| Tare Weight | 25,180 |
| Net Weight | 40,600 |
| Tons | 2030 |

FACILITY

SOUTHEASTERN PUBLIC
SERVICE AUTHORITY
723 Woodlake Dr
CHESAPEAKE, VA 23320-8909
(757) 420-4700

Truck:P56 Tag:ML8727 Transaction #: 13349717
Trailer: Tag: Attendant ID: BRH

Customer: 600769 .
CLEARFIELD MMG, INC. Date: 07/05/16
P O BOX 1444 Time: 12:12
CHESAPEAKE VA 23327 Site: 13

REFUSE TYPE:SXP-Pre-Processed Material (Clearfield Only)
RATE: \$0.00 / tn Tran Type: Waste Disposal - Credit
 LBS TONS Pymt Type: Charge
GROSS WEIGHT: 65780 32.89 SCALE:MAN WT Origin: Offsite Waste Producer
TARE WEIGHT: 25180 12.59 SCALE:(K) Dest: Clearfield Facility
NET WEIGHT: 40600 20.30 State: VA MSW
VOL: 0 Driver: N/A

TRANSACTION AMOUNT: 0
PAYABLE TO: SPSA
REMARKS:

THANK YOU FOR CHOOSING SPSA!



Clearfield MMG

Post Office Box 1444
Chesapeake, VA 23327
(757) 549-8448
FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 016

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Island Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM _____
 ADDRESS _____ OTHER _____

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER **Soil & Debris**
 PETROLEUM TYPE (S): VIRGIN PRODUCT * DL 7-5-16 NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

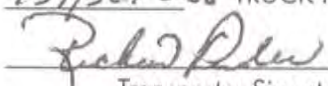
I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Signature of Generator / Agent

Mr. David Liu / 7-5-16

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME Richard Pruden TELEPHONE 757/327-2058 TRUCK NO. 26
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.

 Transporter Signature / Date

FACILITY

12 31

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY [Signature] DATE 7/5/2016

REASONS FOR REJECTION _____

| | |
|--------------|--------|
| Gross Weight | 59,580 |
| Tare Weight | 24,120 |
| Net Weight | 35,460 |
| Tons | 17.73 |

FACILITY

SOUTHEASTERN PUBLIC
SERVICE AUTHORITY
723 Woodlake Dr
CHESAPEAKE, VA 23320-8909
(757) 420-4700

Truck: ATCO26
Trailer:

Tag:
Tag:

Transaction #: 13349728
Attendant ID: BRH

Customer: 600769
CLEARFIELD MMG, INC.
P O BOX 1444
CHESAPEAKE VA 23327

Date: 07/05/16
Time: 12:31
Site: 13

REFUSE TYPE: SXP-Pre-Processed Material (Clearfield Only)

RATE: \$0.00 / tn

Tran Type: Waste Disposal - Credit

LBS TONS

Pymt Type: Charge

GROSS WEIGHT: 59580 29.79 SCALE: MAN WT

Origin: Offsite Waste Producer

TARE WEIGHT: 24120 12.06 SCALE: (K)

Dest: Clearfield Facility

NET WEIGHT: 35460 17.73

State: VA MSW

VOL: 0

Driver: N/A

TRANSACTION AMOUNT: 0

PAYABLE TO: SPSA

REMARKS:

THANK YOU FOR CHOOSING SPSA!



Post Office Box 1444
 Chesapeake, VA 23327
 (757) 549-8448
 FAX: (757) 549-6668

**NON-HAZARDOUS
 SHIPPING MANIFEST**

MANIFEST NO. 017

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Island Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM
 ADDRESS OTHER

MATERIAL CHARACTERIZATION

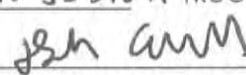
ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER Soil & Debris
 PETROLEUM TYPE (S): VIRGIN PRODUCT X DL 7-5-16 NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.


 Signature of Generator / Agent

Mr. David Liu / 7-5-16
 Printed Name / Date

TRANSPORTER

TRANSPORTER NAME Josh Campbell TELEPHONE 1513531841 TRUCK NO. 27
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.

 Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY  DATE 7/5/16

REASONS FOR REJECTION _____

| | |
|--------------|------------------------|
| Gross Weight | <u>12.26</u> 59.820 |
| Tare Weight | <u>23.940</u> |
| Net Weight | <u>35.880</u> |
| Tons | <u>17.94</u> |

FACILITY

SOUTHEASTERN PUBLIC
SERVICE AUTHORITY
723 Woodlake Dr
CHESAPEAKE, VA 23320-8909
(757) 420-4700

Truck: ATCO27 Tag: Transaction #: 13349723
Trailer: Tag: Attendant ID: DS

Customer: 600769
CLEARFIELD MMG, INC. Date: 07/05/16
P O BOX 1444 Time: 12:26
CHESAPEAKE VA 23327 Site: 13

REFUSE TYPE: SXP-Pre-Processed Material (Clearfield Only)
RATE: \$0.00 / tn Tran Type: Waste Disposal - Credit
 LBS TONS Pymt Type: Charge
GROSS WEIGHT: 59820 29.91 SCALE: MAN WT Origin: Offsite Waste Producer
TARE WEIGHT: 23940 11.97 SCALE: (K) Dest: Clearfield Facility
NET WEIGHT: 35880 17.94 State: VA MSW
VOL: 0 Driver: N/A

TRANSACTION AMOUNT: 0
PAYABLE TO: SPSA
REMARKS:

THANK YOU FOR CHOOSING SPSA!



Clearfield MMG

Post Office Box 1444
Chesapeake, VA 23327
(757) 549-8448
FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 018

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Island Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM _____
 ADDRESS _____ OTHER _____

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER **Soil & Debris**
 PETROLEUM TYPE (S): VIRGIN PRODUCT *DC 7-5-16 NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Signature of Generator / Agent

Mr. David Liu / 7-5-16

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME ATCO TELEPHONE 757-638-7795 TRUCK NO. AT-23

I certify that the materials described above were received by me for shipment and delivered to the designated facility.

Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY [Signature] DATE 7/5/16

REASONS FOR REJECTION _____

12:45

| | |
|--------------|----------------|
| Gross Weight | <u>461,800</u> |
| Tare Weight | <u>25,300</u> |
| Net Weight | <u>346,500</u> |
| Tons | <u>18.25</u> |

FACILITY

SOUTHEASTERN PUBLIC
SERVICE AUTHORITY
723 Woodlake Dr
CHESAPEAKE, VA 23320-8909
(757) 420-4700

Truck:ATCO23 Tag: Transaction #: 13349735
Trailer: Tag: Attendant ID: BRH

Customer: 600769
CLEARFIELD MMG, INC.
P O BOX 1444
CHESAPEAKE VA 23327

Date: 07/05/16
Time: 12:45
Site: 13

REFUSE TYPE:SXP-Pre-Processed Material (Clearfield Only)
RATE: \$0.00 / tn Tran Type: Waste Disposal - Credit
 LBS TONS Pymt Type: Charge
GROSS WEIGHT: 61800 30.90 SCALE:MAN WT Origin: Offsite Waste Producer
TARE WEIGHT: 25300 12.65 SCALE:(K) Dest: Clearfield Facility
NET WEIGHT: 36500 18.25 State: VA MSW
VOL: 0 Driver: N/A

TRANSACTION AMOUNT: 0
PAYABLE TO: SPSA
REMARKS:

THANK YOU FOR CHOOSING SPSA!



Clearfield MMG

Post Office Box 1444
Chesapeake, VA 23327
(757) 549-8448
FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 019

GENERATOR

| | | | |
|------------------|---------------------------------------|-----------|--------------------------------|
| NAME | NASA Wallops Flight Facility | TELEPHONE | (757) 824-2141 |
| ADDRESS | Building F-150, Code 250 | CITY | Wallops Island STATE VA |
| SHIPMENT ORIGIN | Wallops Island Flight Facility | CITY | Wallops Island STATE VA |
| AUTHORIZED AGENT | Mr. David Liu | FIRM | |
| ADDRESS | | OTHER | |

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER Soil & Debris

PETROLEUM TYPE (S): VIRGIN PRODUCT * PL 7-5-16 NON-VIRGIN PRODUCT _____

PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____

HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**

FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**

DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Signature of Generator / Agent

Mr. David Liu / 7-5-16

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME ATCO TELEPHONE 6387914 TRUCK NO. 25

I certify that the materials described above were received by me for shipment and delivered to the designated facility.

M. Davis 7/5/16
Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY d. Outman DATE 7/5/16

REASONS FOR REJECTION _____

| | |
|--------------|--------------|
| Gross Weight | <u>58820</u> |
| Tare Weight | <u>25220</u> |
| Net Weight | <u>33600</u> |
| Tons | <u>16.80</u> |

FACILITY



P.O. Box 1444
Chesapeake, VA 23327
(757) 549-8448

WEIGHT RECEIPT

Project Wallops Island
Truck Name Arco
Truck Number 25

16.80

Received By A. Dutton

46701



Clearfield MMG

Post Office Box 1444
Chesapeake, VA 23327
(757) 549-8448
FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 020


GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Island Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM _____
 ADDRESS _____ OTHER _____

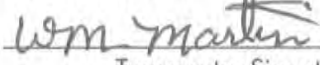
MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER **Soil & Debris**
 PETROLEUM TYPE (S): VIRGIN PRODUCT *DL 7-5-16 NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.


 Signature of Generator / Agent
 Mr. David Liu / 7-5-16
 Printed Name / Date

TRANSPORTER

TRANSPORTER NAME Clearfield MMG TELEPHONE 549-8448 TRUCK NO. 17
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.

 Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY Martin DATE 7-5-16
 REASONS FOR REJECTION _____

| | |
|--------------|-------|
| Gross Weight | 57460 |
| Tare Weight | 27420 |
| Net Weight | 30040 |
| Tons | 15.02 |

FACILITY



P.O. Box 1444
Chesapeake, VA 23327
(757) 549-8448

WEIGHT RECEIPT

Project NASA Wallops Flight Facility

Truck Name CLEARFIELD

Truck Number 17

15.02

Received By Martin

46702



Clearfield MMG

Post Office Box 1444
Chesapeake, VA 23327
(757) 549-8448
FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 021

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Island Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM _____
 ADDRESS _____ OTHER _____

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER **Soil & Debris**
 PETROLEUM TYPE (S): VIRGIN PRODUCT ~~_____~~ ^{DL} 7-5-16 NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Signature of Generator / Agent

Mr. David Liu / 7-5-16

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME Boyear Trucking Inc. TELEPHONE 638-7014 TRUCK NO. P56

I certify that the materials described above were received by me for shipment and delivered to the designated facility.

Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY [Signature] DATE 7-6-16

REASONS FOR REJECTION _____

| | |
|--------------|---------------|
| Gross Weight | <u>60,180</u> |
| Tare Weight | <u>25,180</u> |
| Net Weight | <u>35,000</u> |
| Tons | <u>17.50</u> |

FACILITY

SOUTHEASTERN PUBLIC
SERVICE AUTHORITY
723 Woodlake Dr
CHESAPEAKE, VA 23320-8909
(757) 420-4700

Truck:P56 Tag:ML8727 Transaction #: 13349854
Trailer: Tag: Attendant ID: FMS

Customer: 600769
CLEARFIELD MMG, INC. Date: 07/06/16
P O BOX 1444 Time: 07:04
CHESAPEAKE VA 23327 Site: 13

REFUSE TYPE:SXP-Pre-Processed Material (Clearfield Only)
RATE: \$0.00 / tn Tran Type: Waste Disposal - Credit
 LBS TONS Pymt Type: Charge
GROSS WEIGHT: 60180 30.09 SCALE:MAN WT Origin: Offsite Waste Producer
TARE WEIGHT: 25180 12.59 SCALE:(K) Dest: Clearfield Facility
NET WEIGHT: 35000 17.50 State: VA MSW
VOL: 0 Driver: N/A

TRANSACTION AMOUNT: 0
PAYABLE TO: SPSA
REMARKS:

THANK YOU FOR CHOOSING SPSA!



Clearfield MMG

Post Office Box 1444
Chesapeake, VA 23327
(757) 549-8448
FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 022

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**

ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**

SHIPMENT ORIGIN **Wallops Flight Facility** CITY **Wallops Island** STATE **VA**

AUTHORIZED AGENT **Mr. David Liu** FIRM _____

ADDRESS _____ OTHER _____

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER Soil & Debris

PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____

PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____

HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**

FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**

DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

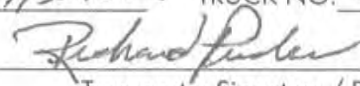

Signature of Generator / Agent

Mr. David Liu / 7-5-16
Printed Name / Date

TRANSPORTER

TRANSPORTER NAME Recycle Proden TELEPHONE 757/3072058 TRUCK NO. 26

I certify that the materials described above were received by me for shipment and delivered to the designated facility.


Transporter Signature / Date

FACILITY

7101

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY Melli A DATE 7/6/2016

REASONS FOR REJECTION _____

| | |
|--------------|---------------|
| Gross Weight | <u>65,180</u> |
| Tare Weight | <u>24,120</u> |
| Net Weight | <u>41,060</u> |
| Tons | <u>20.53</u> |

FACILITY

SOUTHEASTERN PUBLIC
SERVICE AUTHORITY
723 Woodlake Dr
CHESAPEAKE, VA 23320-8909
(757) 420-4700

Truck: ATCO26
Trailer:

Tag:
Tag:

Transaction #: 13349851
Attendant ID: FMS

Customer: 600769
CLEARFIELD MMG, INC.
P O BOX 1444
CHESAPEAKE VA 23327

Date: 07/06/16
Time: 07:01
Site: 13

REFUSE TYPE: SXP-Pre-Processed Material (Clearfield Only)
RATE: \$0.00 / tn Tran Type: Waste Disposal - Credit
LBS TONS Pymt Type: Charge
GROSS WEIGHT: 65180 32.59 SCALE: MAN WT Origin: Offsite Waste Producer
TARE WEIGHT: 24120 12.06 SCALE: (K) Dest: Clearfield Facility
NET WEIGHT: 41060 20.53 State: VA MSW
VOL: 0 Driver: N/A

TRANSACTION AMOUNT: 0
PAYABLE TO: SPSA
REMARKS:

THANK YOU FOR CHOOSING SPSA!



Clearfield MMG

Post Office Box 1444
Chesapeake, VA 23327
(757) 549-8448
FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 023

GENERATOR

| | | | |
|------------------|-------------------------------------|-----------|--------------------------------|
| NAME | NASA Wallops Flight Facility | TELEPHONE | (757) 824-2141 |
| ADDRESS | Building F-160, Code 250 | CITY | Wallops Island STATE VA |
| SHIPMENT ORIGIN | Wallops Flight Facility | CITY | Wallops Island STATE VA |
| AUTHORIZED AGENT | Mr. David Liu | FIRM | |
| ADDRESS | | OTHER | |

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER Soil & Debris

PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____

PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____

HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**

FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**

DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Signature of Generator / Agent

Mr. David Liu / 7-5-16

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME Dash Campbell TELEPHONE 757 3537844 TRUCK NO. 27

I certify that the materials described above were received by me for shipment and delivered to the designated facility.

Jen Ann
Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY [Signature] DATE 7-6-16

REASONS FOR REJECTION _____

| | |
|--------------|------------------------------|
| Gross Weight | <u>7:02</u> <u>65,080</u> |
| Tare Weight | <u>23,940</u> |
| Net Weight | <u>41,080</u> |
| Tons | <u>20.54</u> |

FACILITY

SOUTHEASTERN PUBLIC
SERVICE AUTHORITY
723 Woodlake Dr
CHESAPEAKE, VA 23320-8909
(757) 420-4700

Truck: ATCO27 Tag: Transaction #: 13349852
Trailer: Tag: Attendant ID: FMS

Customer: 600769
CLEARFIELD MMG, INC. Date: 07/06/16
P O BOX 1444 Time: 07:02
CHESAPEAKE VA 23327 Site: 13

REFUSE TYPE: SXP-Pre-Processed Material (Clearfield Only)
RATE: \$0.00 / tn Tran Type: Waste Disposal - Credit
 LBS TONS Pymt Type: Charge
GROSS WEIGHT: 65020 32.51 SCALE: MAN WT Origin: Offsite Waste Producer
TARE WEIGHT: 23940 11.97 SCALE: (K) Dest: Clearfield Facility
NET WEIGHT: 41080 20.54 State: VA MSW
VOL: 0 Driver: N/A

TRANSACTION AMOUNT: 0
PAYABLE TO: SPSA
REMARKS:

THANK YOU FOR CHOOSING SPSA!

Post Office Box 1444
 Chesapeake, VA 23327
 (757) 549-8448
 FAX: (757) 549-6668

MANIFEST NO. 024


GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM _____
 ADDRESS _____ OTHER _____

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER **Soil & Debris**
 PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING **X** DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.


 Signature of Generator / Agent
Mr. David Liu / 7-5-16
 Printed Name / Date

TRANSPORTER

TRANSPORTER NAME ATCO Hauling TELEPHONE 6387914 TRUCK NO. 25
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.
Mr. Dan 7/5/16
 Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY [Signature] DATE 7-6-16

REASONS FOR REJECTION _____

7:03

| | |
|--------------|--------|
| Gross Weight | 69,760 |
| Tare Weight | 25,420 |
| Net Weight | 42,340 |
| Tons | 21.17 |



Clearfield MMG

Post Office Box 1444
Chesapeake, VA 23327
(757) 549-8448
FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 025

GENERATOR

| | | | |
|------------------|-------------------------------------|-----------|---------------------------------------|
| NAME | NASA Wallops Flight Facility | TELEPHONE | (757) 824-2141 |
| ADDRESS | Building F-160, Code 250 | CITY | Wallops Island STATE VA |
| SHIPMENT ORIGIN | Wallops Flight Facility | CITY | Wallops Island STATE VA |
| AUTHORIZED AGENT | Mr. David Liu | FIRM | |
| ADDRESS | | OTHER | |

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER Soil & Debris

PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____

PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____

HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**

FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**

DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Signature of Generator / Agent

Mr. David Liu / **7-5-16**

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME ATCO TELEPHONE 757-638-7795 TRUCK NO. AT-23

I certify that the materials described above were received by me for shipment and delivered to the designated facility.

B.S. Gregory 7/5-16
Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY [Signature] DATE 7-6-16

REASONS FOR REJECTION _____

| | |
|--------------|---------------------------|
| Gross Weight | ⁷¹²⁴ 67,340 |
| Tare Weight | 25,300 |
| Net Weight | 42,040 |
| Tons | 21.02 |

FACILITY

SOUTHEASTERN PUBLIC
SERVICE AUTHORITY
723 Woodlake Dr
CHESAPEAKE, VA 23320-8909
(757) 420-4700

Truck: ATCO23 Tag: Transaction #: 13349867
Trailer: Tag: Attendant ID: FMS

Customer: 600769
CLEARFIELD MMG, INC. Date: 07/06/16
P O BOX 1444 Time: 07:24
CHESAPEAKE VA 23327 Site: 13

REFUSE TYPE: SXP-Pre-Processed Material (Clearfield Only)
RATE: \$0.00 / tn Tran Type: Waste Disposal - Credit
 LBS TONS Pymt Type: Charge
GROSS WEIGHT: 67340 33.67 SCALE: MAN WT Origin: Offsite Waste Producer
TARE WEIGHT: 25300 12.65 SCALE: (K) Dest: Clearfield Facility
NET WEIGHT: 42040 21.02 State: VA MSW
VOL: 0 Driver: N/A

TRANSACTION AMOUNT: 0
PAYABLE TO: SPSA
REMARKS:

THANK YOU FOR CHOOSING SPSA!



Post Office Box 1444
 Chesapeake, VA 23327
 (757) 549-8448
 FAX: (757) 549-6668

**NON-HAZARDOUS
 SHIPPING MANIFEST**

MANIFEST NO. 026

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM
 ADDRESS OTHER

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER Soil & Debris
 PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Signature of Generator / Agent

Mr. David Liu / 7-6-16

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME ClearField MMG TELEPHONE 549-8448 TRUCK NO. 17
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.
Wm. Martin 7-6-16
 Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY A. Outman DATE 7/6/16

REASONS FOR REJECTION _____

| | |
|--------------|--------------|
| Gross Weight | <u>56300</u> |
| Tare Weight | <u>27940</u> |
| Net Weight | <u>28360</u> |
| Tons | <u>14.18</u> |

FACILITY



P.O. Box 1444
Chesapeake, VA 23327
(757) 549-8448

WEIGHT RECEIPT

Project Wallops

Truck Name Clearfield

Truck Number 17

Received By L. Otman

46708

Post Office Box 1444
 Chesapeake, VA 23327
 (757) 549-8448
 FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 027

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM
 ADDRESS OTHER

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER Soil & Debris
 PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.



Signature of Generator / Agent

Mr. David Liu / 7-6-16

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME ATCO TELEPHONE 757-638-7775 TRUCK NO. AT-23
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.
B.S. Jreagy
 Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY [Signature] DATE 7/6/2016

REASONS FOR REJECTION _____

| | |
|--------------|---------------|
| Gross Weight | <u>61,780</u> |
| Tare Weight | <u>25,300</u> |
| Net Weight | <u>36,480</u> |
| Tons | <u>18.24</u> |

FACILITY



Post Office Box 1444
 Chesapeake, VA 23327
 (757) 549-8448
 FAX: (757) 549-6668

**NON-HAZARDOUS
 SHIPPING MANIFEST**

MANIFEST NO. 028

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM
 ADDRESS OTHER

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER Soil & Debris
 PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Signature of Generator / Agent

Mr. David Liu / 7-6-16

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME RICHARD PRUDEN TELEPHONE 757/3272058 TRUCK NO. 24
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.

 Transporter Signature / Date

FACILITY

15:32

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY [Signature] DATE 7/6/2016

REASONS FOR REJECTION _____

| | |
|--------------|---------------|
| Gross Weight | <u>60,280</u> |
| Tare Weight | <u>24,120</u> |
| Net Weight | <u>36,160</u> |
| Tons | <u>18.08</u> |

FACILITY



Clearfield MMG

Post Office Box 1444
Chesapeake, VA 23327
(757) 549-8448
FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 029

GENERATOR

| | | | |
|------------------|-------------------------------------|-----------|--------------------------------|
| NAME | NASA Wallops Flight Facility | TELEPHONE | (757) 824-2141 |
| ADDRESS | Building F-160, Code 250 | CITY | Wallops Island STATE VA |
| SHIPMENT ORIGIN | Wallops Flight Facility | CITY | Wallops Island STATE VA |
| AUTHORIZED AGENT | Mr. David Liu | FIRM | |
| ADDRESS | | OTHER | |

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER Soil & Debris

PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____

PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____

HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**

FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**

DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Signature of Generator / Agent

Mr. David Liu / 7-6-16

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME ATCO Hauling TELEPHONE 638 7514 TRUCK NO. 25

I certify that the materials described above were received by me for shipment and delivered to the designated facility.

M. Brown 7/6/16
Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY William A DATE 7/6/2016

REASONS FOR REJECTION _____

| | |
|--------------|---------------|
| Gross Weight | <u>63,180</u> |
| Tare Weight | <u>25,420</u> |
| Net Weight | <u>37,760</u> |
| Tons | <u>18.88</u> |

FACILITY

SOUTHEASTERN PUBLIC
SERVICE AUTHORITY
723 Woodlake Dr
CHESAPEAKE, VA 23320-8909
(757) 420-4700

Truck: ATCO25
Trailer:

Tag:
Tag:

Transaction #: 13350123
Attendant ID: FMS

Customer: 600769
CLEARFIELD MMG, INC.
P O BOX 1444
CHESAPEAKE VA 23327

Date: 07/07/16
Time: 07:01
Site: 13

REFUSE TYPE: SXP-Pre-Processed Material (Clearfield Only)

RATE: \$0.00 / tn

Tran Type: Waste Disposal - Credit

LBS TONS

Pynt Type: Charge

GROSS WEIGHT: 63180 31.59 SCALE: MAN WT Origin: Offsite Waste Producer

TARE WEIGHT: 25420 12.71 SCALE: (K) Dest: Clearfield Facility

NET WEIGHT: 37760 18.88 State: VA MSW

VOL: 0

Driver: N/A

TRANSACTION AMOUNT: 0

PAYABLE TO: SPSA

REMARKS:

THANK YOU FOR CHOOSING SPSA!



Clearfield MMG

Post Office Box 1444
Chesapeake, VA 23327
(757) 549-8448
FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 030

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM _____
 ADDRESS _____ OTHER _____

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER Soil & Debris
 PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**


I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Signature of Generator / Agent

Mr. David Liu / 7-6-16

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME Puryear Trucking TELEPHONE 638-7914 TRUCK NO. P-576
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.

 Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY Mills DATE 7/6/2016

REASONS FOR REJECTION _____

| | |
|--------------|-------------------|
| | 17.88 |
| | 60,940 |
| Gross Weight | 60,940 |
| Tare Weight | 25,180 |
| Net Weight | 35,760 |
| Tons | 17.88 |

FACILITY

SOUTHEASTERN PUBLIC
SERVICE AUTHORITY
723 Woodlake Dr
CHESAPEAKE, VA 23320-8909
(757) 420-4700

Truck:P56 Tag:ML8727 Transaction #: 13350126
Trailer: Tag: Attendant ID: FMS

Customer: 600769 Date: 07/07/16
CLEARFIELD MMG, INC. Time: 07:02
P O BOX 1444 Site: 13
CHESAPEAKE VA 23327

REFUSE TYPE:SXP-Pre-Processed Material (Clearfield Only)
RATE: \$0.00 / tn Tran Type: Waste Disposal - Credit
LBS TONS Pymt Type: Charge
GROSS WEIGHT: 60940 30.47 SCALE:MAN WT Origin: Offsite Waste Producer
TARE WEIGHT: 25180 12.59 SCALE:(K) Dest: Clearfield Facility
NET WEIGHT: 35760 17.88 State: VA MSW
VOL: 0 Driver: N/A

TRANSACTION AMOUNT: 0
PAYABLE TO: SPSA
REMARKS:

THANK YOU FOR CHOOSING SPSA!



Clearfield MMG

Post Office Box 1444
Chesapeake, VA 23327
(757) 549-8448
FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 031

GENERATOR

| | | | |
|------------------|-------------------------------------|-----------|---------------------------------------|
| NAME | NASA Wallops Flight Facility | TELEPHONE | (757) 824-2141 |
| ADDRESS | Building F-160, Code 250 | CITY | Wallops Island STATE VA |
| SHIPMENT ORIGIN | Wallops Flight Facility | CITY | Wallops Island STATE VA |
| AUTHORIZED AGENT | Mr. David Liu | FIRM | |
| ADDRESS | | OTHER | |

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER Soil & Debris

PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____

PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____

HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**

FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**

DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

David Liu
Signature of Generator / Agent

Mr. David Liu / 7-6-16
Printed Name / Date

TRANSPORTER

TRANSPORTER NAME *Jsh CWL* TELEPHONE 757 353 7841 TRUCK NO. 27

I certify that the materials described above were received by me for shipment and delivered to the designated facility.

Jsh CWL
Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY *J. Outen* DATE 7/7/16

REASONS FOR REJECTION _____

| | |
|--------------|--------------|
| Gross Weight | <u>59640</u> |
| Tare Weight | <u>24020</u> |
| Net Weight | <u>35620</u> |
| Tons | <u>17.81</u> |

FACILITY



Clearfield MMG

P.O. Box 1444
Chesapeake, VA 23327
(757) 549-8448

WEIGHT RECEIPT

Project Wallops
Truck Name ATCO
Truck Number 27

17.81

Received By A. Damon

46724



Post Office Box 1444
 Chesapeake, VA 23327
 (757) 549-8448
 FAX: (757) 549-6668

**NON-HAZARDOUS
 SHIPPING MANIFEST**

MANIFEST NO. 032

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM
 ADDRESS OTHER

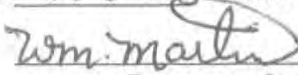
MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER Soil & Debris
 PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.


 Signature of Generator / Agent
Mr. David Liu 7-6-16
 Printed Name / Date

TRANSPORTER

TRANSPORTER NAME Clearfield MMG TELEPHONE 549-8448 TRUCK NO. 17
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.

 Transporter Signature / Date 7-6-16

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY Martin DATE 7-6-16
 REASONS FOR REJECTION _____

| | |
|--------------|--------------|
| Gross Weight | <u>60540</u> |
| Tare Weight | <u>27420</u> |
| Net Weight | <u>33120</u> |
| Tons | <u>16.56</u> |

FACILITY



P.O. Box 1444
Chesapeake, VA 23327
(757) 549-8448

WEIGHT RECEIPT

Project NASA Wallops Flight Facility

Truck Name CLEARFIELD

Truck Number 17

Received By

Martin

46709



Clearfield MMG

Post Office Box 1444
Chesapeake, VA 23327
(757) 549-8448
FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 033

GENERATOR

| | | | |
|------------------|-------------------------------------|-----------|--------------------------------|
| NAME | NASA Wallops Flight Facility | TELEPHONE | (757) 824-2141 |
| ADDRESS | Building F-160, Code 250 | CITY | Wallops Island STATE VA |
| SHIPMENT ORIGIN | Wallops Flight Facility | CITY | Wallops Island STATE VA |
| AUTHORIZED AGENT | Mr. David Liu | FIRM | |
| ADDRESS | | OTHER | |

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER Soil & Debris

PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____

PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____

HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**

FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**

DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Signature of Generator / Agent

Mr. David Liu / 7-7-16

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME Clearfield MMG TELEPHONE 549-8448 TRUCK NO. 17

I certify that the materials described above were received by me for shipment and delivered to the designated facility.

Wym. Martin 7-7-16
Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY A. Olson DATE 7/7/16

REASONS FOR REJECTION _____

| | |
|--------------|--------------|
| Gross Weight | <u>62200</u> |
| Tare Weight | <u>27940</u> |
| Net Weight | <u>34260</u> |
| Tons | <u>17.13</u> |

FACILITY



Clearfield MMG

P.O. Box 1444
Chesapeake, VA 23327
(757) 549-8448

WEIGHT RECEIPT

Project Wallops
Truck Name Clearfield
Truck Number 17

17-13

Received By A. Cannon
46714



Clearfield MMG

Post Office Box 1444
Chesapeake, VA 23327
(757) 549-8448
FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 034

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM _____
 ADDRESS _____ OTHER _____

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER Soil & Debris
 PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Signature of Generator / Agent

Mr. David Liu / 7-7-16

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME ATCO TELEPHONE 757-638-7795 TRUCK NO. AT-23

I certify that the materials described above were received by me for shipment and delivered to the designated facility.

Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY Millie A DATE 7/7/2016

REASONS FOR REJECTION _____

| | |
|--------------|---------------|
| Gross Weight | <u>61,340</u> |
| Tare Weight | <u>25,300</u> |
| Net Weight | <u>36,040</u> |
| Tons | <u>18.02</u> |

FACILITY



Clearfield MMG

Post Office Box 1444
Chesapeake, VA 23327
(757) 549-8448
FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 035

GENERATOR

| | | | |
|------------------|-------------------------------------|-----------|--------------------------------|
| NAME | NASA Wallops Flight Facility | TELEPHONE | (757) 824-2141 |
| ADDRESS | Building F-160, Code 250 | CITY | Wallops Island STATE VA |
| SHIPMENT ORIGIN | Wallops Flight Facility | CITY | Wallops Island STATE VA |
| AUTHORIZED AGENT | Mr. David Liu | FIRM | |
| ADDRESS | | OTHER | |

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER Soil & Debris

PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____

PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____

HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**

FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**

DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Signature of Generator / Agent

Mr. David Liu / 7-7-16

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME Purveyor Trucking TELEPHONE 638-7914 TRUCK NO. R256

I certify that the materials described above were received by me for shipment and delivered to the designated facility.

Transporter Signature / Date

FACILITY

15:01

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY Michelle A DATE 7/7/2016

REASONS FOR REJECTION _____

| | |
|--------------|---------------|
| Gross Weight | <u>61,440</u> |
| Tare Weight | <u>25,180</u> |
| Net Weight | <u>36,260</u> |
| Tons | <u>18.13</u> |

FACILITY

SOUTHEASTERN PUBLIC
SERVICE AUTHORITY
723 Woodlake Dr
CHESAPEAKE, VA 23320-8909
(757) 420-4700

Truck: P56 Tag: ML8727 Transaction #: 13350383
Trailer: Tag: Attendant ID: DS

Customer: 600769
CLEARFIELD MMG, INC. Date: 07/07/16
P O BOX 1444 Time: 15:01
CHESAPEAKE VA 23327 Site: 13

REFUSE TYPE: SXP-Pre-Processed Material (Clearfield Only)
RATE: \$0.00 / tn Tran Type: Waste Disposal - Credit
 LBS TONS Pymt Type: Charge
GROSS WEIGHT: 61440 30.72 SCALE: MAN WT Origin: Offsite Waste Producer
TARE WEIGHT: 25180 12.59 SCALE: (K) Dest: Clearfield Facility
NET WEIGHT: 36260 18.13 State: VA MSW
VOL: 0 Driver: N/A

TRANSACTION AMOUNT: 0
PAYABLE TO: SPSA
REMARKS:

THANK YOU FOR CHOOSING SPSA!



Clearfield MMG

Post Office Box 1444
Chesapeake, VA 23327
(757) 549-8448
FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 036

GENERATOR

| | | | |
|------------------|-------------------------------------|-----------|--------------------------------|
| NAME | NASA Wallops Flight Facility | TELEPHONE | (757) 824-2141 |
| ADDRESS | Building F-160, Code 250 | CITY | Wallops Island STATE VA |
| SHIPMENT ORIGIN | Wallops Flight Facility | CITY | Wallops Island STATE VA |
| AUTHORIZED AGENT | Mr. David Liu | FIRM | |
| ADDRESS | | OTHER | |

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER Soil & Debris

PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____


PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____

HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**

FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**

DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.


Signature of Generator / Agent

Mr. David Liu / 7-7-16
Printed Name / Date

TRANSPORTER

TRANSPORTER NAME ATCO Hauling TELEPHONE 638 7914 TRUCK NO. 25

I certify that the materials described above were received by me for shipment and delivered to the designated facility.

Al Dan 7/7/16
Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY Will X DATE 7/7/2016

REASONS FOR REJECTION _____

| | |
|--------------|---------------|
| Gross Weight | <u>62,680</u> |
| Tare Weight | <u>25,420</u> |
| Net Weight | <u>37,260</u> |
| Tons | <u>18.63</u> |

FACILITY



Post Office Box 1444
 Chesapeake, VA 23327
 (757) 549-8448
 FAX: (757) 549-6668

**NON-HAZARDOUS
 SHIPPING MANIFEST**

MANIFEST NO. 037


GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM
 ADDRESS OTHER

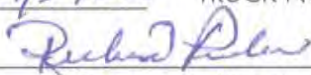
MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER **Soil & Debris**
 PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING **X** DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.


 Signature of Generator / Agent
Mr. David Liu / 7-7-16
 Printed Name / Date

TRANSPORTER

TRANSPORTER NAME Richard Pender TELEPHONE 757/327-2058 TRUCK NO. 29
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.

 Transporter Signature / Date

FACILITY

15:29

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY Willis D DATE 7/7/2016
 REASONS FOR REJECTION _____

| | |
|--------------|--------|
| Gross Weight | 60,460 |
| Tare Weight | 24,120 |
| Net Weight | 36,340 |
| Tons | 18.17 |

FACILITY



Clearfield MMG

Post Office Box 1444
Chesapeake, VA 23327
(757) 549-8448
FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 038

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**

ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**

SHIPMENT ORIGIN **Wallops Flight Facility** CITY **Wallops Island** STATE **VA**

AUTHORIZED AGENT **Mr. David Liu** FIRM _____

ADDRESS _____ OTHER _____

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER **Soil & Debris**

PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____

PHYSICAL STATE: STOCKPILED _____ EXCAVATING **X** DRUMS _____ OTHER _____

HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**

FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**

DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Signature of Generator / Agent

Mr. David Liu / 7-8-16

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME Pryear Trucking Inc TELEPHONE 638-7914 TRUCK NO. P-56

I certify that the materials described above were received by me for shipment and delivered to the designated facility.

Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY DATE 7-8-16

REASONS FOR REJECTION _____

| | |
|--------------|-------------------------|
| Gross Weight | ^{15:16} 61,520 |
| Tare Weight | 25,180 |
| Net Weight | 36,340 |
| Tons | 18.17 |

FACILITY

SOUTHEASTERN PUBLIC
SERVICE AUTHORITY
723 Woodlake Dr
CHESAPEAKE, VA 23320-8909
(757) 420-4700

Truck:P56 Tag:ML8727 Transaction #: 13350652
Trailer: Tag: Attendant ID: FMS

Customer: 600769
CLEARFIELD MMG, INC. Date: 07/08/16
P O BOX 1444 Time: 15:16
CHESAPEAKE VA 23327 Site: 13

REFUSE TYPE:SXP-Pre-Processed Material (Clearfield Only)
RATE: \$0.00 / tn Tran Type: Waste Disposal - Credit
 LBS TONS Pymt Type: Charge
GROSS WEIGHT: 61520 30.76 SCALE:MAN WT Origin: Offsite Waste Producer
TARE WEIGHT: 25180 12.59 SCALE:(K) Dest: Clearfield Facility
NET WEIGHT: 36340 18.17 State: VA MSW
VOL: 0 Driver: N/A

TRANSACTION AMOUNT: 0
PAYABLE TO: SPSA
REMARKS: THANK YOU FOR CHOOSING SPSA!



Post Office Box 1444
 Chesapeake, VA 23327
 (757) 549-8448
 FAX: (757) 549-6668

**NON-HAZARDOUS
 SHIPPING MANIFEST**

MANIFEST NO. 039


GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM
 ADDRESS OTHER

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER **Soil & Debris**
 PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING **X** DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.


 Signature of Generator / Agent
Mr. David Liu / 7-8-16
 Printed Name / Date

TRANSPORTER

TRANSPORTER NAME ATCO Hauling TELEPHONE 638 7914 TRUCK NO. 25
 I certify that the materials described above were received by me for shipment and delivered to the designated facility. M. Gross 7/8/16
 Transporter Signature / Date

FACILITY

15.48

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY Michelle Ash DATE 7/8/2016

REASONS FOR REJECTION _____

| | |
|--------------|---------------|
| Gross Weight | <u>64,600</u> |
| Tare Weight | <u>25,420</u> |
| Net Weight | <u>39,180</u> |
| Tons | <u>19.59</u> |

FACILITY



Clearfield MMG

Post Office Box 1444
Chesapeake, VA 23327
(757) 549-8448
FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 040

GENERATOR

| | | | |
|------------------|-------------------------------------|-----------|--------------------------------|
| NAME | NASA Wallops Flight Facility | TELEPHONE | (757) 824-2141 |
| ADDRESS | Building F-160, Code 250 | CITY | Wallops Island STATE VA |
| SHIPMENT ORIGIN | Wallops Flight Facility | CITY | Wallops Island STATE VA |
| AUTHORIZED AGENT | Mr. David Liu | FIRM | |
| ADDRESS | | OTHER | |

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER Soil & Debris

PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____

PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____

HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**

FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**

DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Signature of Generator / Agent

Mr. David Liu / 7-8-16

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME RICHARD PRUDEN TELEPHONE 757/327-2988 TRUCK NO. 26

I certify that the materials described above were received by me for shipment and delivered to the designated facility.

Transporter Signature / Date

FACILITY

1541

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY [Signature] DATE 7/8/2016

REASONS FOR REJECTION _____

| | |
|--------------|----------------|
| Gross Weight | <u>641.320</u> |
| Tare Weight | <u>24.120</u> |
| Net Weight | <u>401.200</u> |
| Tons | <u>20.10</u> |

FACILITY



Clearfield MMG

Post Office Box 1444
Chesapeake, VA 23327
(757) 549-8448
FAX: (757) 549-6668

NON-HAZARDOUS SHIPPING MANIFEST

MANIFEST NO. 041

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM _____
 ADDRESS _____ OTHER _____

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER **Soil & Debris**
 PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

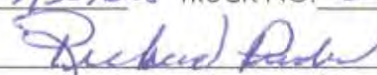
I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Signature of Generator / Agent

Mr. David Liu / 7-11-16

Printed Name / Date

TRANSPORTER

TRANSPORTER NAME Richard Pruden TELEPHONE 757/327208 TRUCK NO. 26
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.

 Transporter Signature / Date

FACILITY

1201

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY [Signature] DATE 7/11/2014

REASONS FOR REJECTION _____

| | |
|--------------|-------|
| Gross Weight | 61380 |
| Tare Weight | 24120 |
| Net Weight | 37260 |
| Tons | 18.63 |

FACILITY

SOUTHEASTERN PUBLIC
SERVICE AUTHORITY
723 Woodlake Dr
CHESAPEAKE, VA 23320-8909
(757) 420-4700

Truck:ATCO26
Trailer:

Tag:
Tag:

Transaction #: 13351030
Attendant ID: FMS

Customer: 600769
CLEARFIELD MMG, INC.
P O BOX 1444
CHESAPEAKE VA 23327

Date: 07/11/16
Time: 12:01
Site: 13

REFUSE TYPE:SXP-Pre-Processed Material (Clearfield Only)
RATE: \$0.00 / tn Tran Type: Waste Disposal - Credit
LBS TONS Pymt Type: Charge
GROSS WEIGHT: 61380 30.69 SCALE:MAN WT Origin: Offsite Waste Producer
TARE WEIGHT: 24120 12.06 SCALE:(K) Dest: Clearfield Facility
NET WEIGHT: 37260 18.63 State: VA MSW
VOL: 0 Driver: N/A

TRANSACTION AMOUNT: 0

PAYABLE TO: SPSA

REMARKS:

THANK YOU FOR CHOOSING SPSA!



Post Office Box 1444
 Chesapeake, VA 23327
 (757) 549-8448
 FAX: (757) 549-6668

**NON-HAZARDOUS
 SHIPPING MANIFEST**

MANIFEST NO. 042

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM
 ADDRESS OTHER

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER Soil & Debris
 PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Joel Marshall for
 Signature of Generator / Agent
 Mr. David Liu / 7-11-16
 Printed Name / Date

TRANSPORTER

TRANSPORTER NAME ATCO Hauling TELEPHONE 638 7914 TRUCK NO. 25
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.
Alison 7/11/16
 Transporter Signature / Date

FACILITY

12:44

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY BAJ DATE 7-11-16
 REASONS FOR REJECTION _____

| | |
|--------------|-------|
| Gross Weight | 63220 |
| Tare Weight | 25420 |
| Net Weight | 37800 |
| Tons | 18.90 |

FACILITY

Post Office Box 1444
 Chesapeake, VA 23327
 (757) 549-8448
 FAX: (757) 549-6668

MANIFEST NO. 043

GENERATOR

| | | | |
|------------------|-------------------------------------|-----------|--------------------------------|
| NAME | NASA Wallops Flight Facility | TELEPHONE | (757) 824-2141 |
| ADDRESS | Building F-160, Code 250 | CITY | Wallops Island STATE VA |
| SHIPMENT ORIGIN | Wallops Flight Facility | CITY | Wallops Island STATE VA |
| AUTHORIZED AGENT | Mr. David Liu | FIRM | |
| ADDRESS | | OTHER | |

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER Soil & Debris

PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____

PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____

HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**

FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**

DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Joel Arnold / 02
 Signature of Generator / Agent

Mr. David Liu / 7-11-16
 Printed Name / Date

TRANSPORTER

TRANSPORTER NAME Richard Proder TELEPHONE 757/3272058 TRUCK NO. 26

I certify that the materials described above were received by me for shipment and delivered to the designated facility.

Richard Proder
 Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY [Signature] DATE 7-12-16

REASONS FOR REJECTION _____

| | |
|--------------|-----------------------|
| Gross Weight | <u>7:02</u> 63.140 |
| Tare Weight | 24.120 |
| Net Weight | 39.020 |
| Tons | 19.51 |

SOUTHEASTERN PUBLIC
SERVICE AUTHORITY
723 Woodlake Dr
CHESAPEAKE, VA 23320-8909
(757) 420-4700

Truck:ATCO26
Trailer:

Tag:
Tag:

Transaction #: 13351122
Attendant ID: DS

Customer: 600769
CLEARFIELD MMG, INC.
P O BOX 1444
CHESAPEAKE VA 23327

Date: 07/12/16
Time: 07:02
Site: 13

REFUSE TYPE:SXP-Pre-Processed Material (Clearfield Only)
RATE: \$0.00 / tn Tran Type: Waste Disposal - Credit
LBS TONS Pymt Type: Charge
GROSS WEIGHT: 63140 31.57 SCALE:MAN WT Origin: Offsite Waste Producer
TARE WEIGHT: 24120 12.06 SCALE:(K) Dest: Clearfield Facility
NET WEIGHT: 39020 19.51 State: VA MSW
VOL: 0 Driver: N/A

TRANSACTION AMOUNT: 0
PAYABLE TO: SPSA
REMARKS:

THANK YOU FOR CHOOSING SPSA!



Post Office Box 1444
 Chesapeake, VA 23327
 (757) 549-8448
 FAX: (757) 549-6668

**NON-HAZARDOUS
 SHIPPING MANIFEST**

MANIFEST NO. 094

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM _____
 ADDRESS _____ OTHER _____

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER **Soil & Debris**
 PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING **X** DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Joel Mitchell for
 Signature of Generator / Agent

Mr. David Liu / **7-11-16**
 Printed Name / Date

TRANSPORTER

TRANSPORTER NAME ATCO Hauling TELEPHONE 6387914 TRUCK NO. 25
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.

 Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY [Signature] DATE 7-12-16

REASONS FOR REJECTION _____

| | |
|--------------|--------|
| | 7:01 |
| Gross Weight | 63,720 |
| Tare Weight | 25,420 |
| Net Weight | 38,300 |
| Tons | 19:15 |

FACILITY

SOUTHEASTERN PUBLIC
SERVICE AUTHORITY
723 Woodlake Dr
CHESAPEAKE, VA 23320-8909
(757) 420-4700

Truck:ATCO25 Tag: Transaction #: 13351121
Trailer: Tag: Attendant ID: DS

Customer: 600769 Date: 07/12/16
CLEARFIELD MMG, INC. Time: 07:01
P O BOX 1444 Site: 13
CHESAPEAKE VA 23327

REFUSE TYPE:SXP-Pre-Processed Material (Clearfield Only)
RATE: \$0.00 / tn Tran Type: Waste Disposal - Credit
LBS TONS Pymt Type: Charge
GROSS WEIGHT: 63720 31.86 SCALE:MAN WT Origin: Offsite Waste Producer
TARE WEIGHT: 25420 12.71 SCALE:(K) Dest: Clearfield Facility
NET WEIGHT: 38300 19.15 State: VA MSW
VOL: 0 Driver: N/A

TRANSACTION AMOUNT: 0

PAYABLE TO: SPSA

REMARKS:

THANK YOU FOR CHOOSING SPSA!



Post Office Box 1444
 Chesapeake, VA 23327
 (757) 549-8448
 FAX: (757) 549-6668

**NON-HAZARDOUS
 SHIPPING MANIFEST**

MANIFEST NO. 045

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM _____
 ADDRESS _____ OTHER _____

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER **Soil & Debris**
 PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING **X** DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

David Liu
 Signature of Generator / Agent
 Mr. David Liu / 7-12-16
 Printed Name / Date

TRANSPORTER

TRANSPORTER NAME ATCO TELEPHONE 757-638-7795 TRUCK NO. AT-23
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.
B.J. Dreezy
 Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY *[Signature]* DATE 7-12-16
 REASONS FOR REJECTION _____

| | |
|--------------|---------------------------|
| Gross Weight | ^{11:42} 65800 |
| Tare Weight | 25300 |
| Net Weight | 40500 |
| Tons | 20.25 |

FACILITY

SOUTHEASTERN PUBLIC
SERVICE AUTHORITY
723 Woodlake Dr
CHESAPEAKE, VA 23320-8909
(757) 420-4700

Truck: ATCO23 Tag: Transaction #: 13351274
Trailer: Tag: Attendant ID: DS

Customer: 600769
CLEARFIELD MMG, INC. Date: 07/12/16
P O BOX 1444 Time: 11:42
CHESAPEAKE VA 23327 Site: 13

REFUSE TYPE: SXP-Pre-Processed Material (Clearfield Only)
RATE: \$0.00 / tn Tran Type: Waste Disposal - Credit
 LBS TONS Pymt Type: Charge
GROSS WEIGHT: 65800 32.90 SCALE: MAN WT Origin: Offsite Waste Producer
TARE WEIGHT: 25300 12.65 SCALE: (K) Dest: Clearfield Facility
NET WEIGHT: 40500 20.25 State: VA MSW
VOL: 0 Driver: N/A

TRANSACTION AMOUNT: 0
PAYABLE TO: **SPSA**
REMARKS:

THANK YOU FOR CHOOSING SPSA!



Post Office Box 1444
 Chesapeake, VA 23327
 (757) 549-8448
 FAX: (757) 549-6668

**NON-HAZARDOUS
 SHIPPING MANIFEST**

MANIFEST NO. 046

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM _____
 ADDRESS _____ OTHER _____

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER **Soil & Debris**
 PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING **X** DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

David Liu
 Signature of Generator / Agent
 Mr. David Liu / 7-12-16
 Printed Name / Date

TRANSPORTER

TRANSPORTER NAME Richard Ruder TELEPHONE 757/3222050 TRUCK NO. 26
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.
Richard Ruder
 Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY Will X DATE 7/12/2016
 REASONS FOR REJECTION _____

| | |
|--------------|-------|
| Gross Weight | 61020 |
| Tare Weight | 24120 |
| Net Weight | 36900 |
| Tons | 18.45 |

FACILITY



Post Office Box 1444
 Chesapeake, VA 23327
 (757) 549-8448
 FAX: (757) 549-6668

**NON-HAZARDOUS
 SHIPPING MANIFEST**

MANIFEST NO. 047

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM
 ADDRESS OTHER

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER **Soil & Debris**
 PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING X DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

David Liu
 Signature of Generator / Agent
Mr. David Liu **7-12-16**
 Printed Name / Date

TRANSPORTER

TRANSPORTER NAME ATCO Hauling TELEPHONE 638 2914 TRUCK NO. 25
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.
M. Liu 7/12/16
 Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY [Signature] DATE 7/12/2016
 REASONS FOR REJECTION _____

| | |
|--------------|--------------|
| Gross Weight | <u>63240</u> |
| Tare Weight | <u>25420</u> |
| Net Weight | <u>37820</u> |
| Tons | <u>18.91</u> |

FACILITY

SOUTHEASTERN PUBLIC
SERVICE AUTHORITY
723 Woodlake Dr
CHESAPEAKE, VA 23320-8909
(757) 420-4700

Truck: ATCO25 Tag: Transaction #: 13351361
Trailer: Tag: Attendant ID: FMS

Customer: 600769 Date: 07/12/16
CLEARFIELD MMG, INC. Time: 14:55
P O BOX 1444 Site: 13
CHESAPEAKE VA 23327

REFUSE TYPE: SXP-Pre-Processed Material (Clearfield Only)
RATE: \$0.00 / tn Tran Type: Waste Disposal - Credit
LBS TONS Pymt Type: Charge
GROSS WEIGHT: 63240 31.62 SCALE: MAN WT Origin: Offsite Waste Producer
TARE WEIGHT: 25420 12.71 SCALE: (K) Dest: Clearfield Facility
NET WEIGHT: 37820 18.91 State: VA MSW
VOL: 0 Driver: N/A

TRANSACTION AMOUNT: 0
PAYABLE TO: SPSA
REMARKS:

THANK YOU FOR CHOOSING SPSA!



Post Office Box 1444
 Chesapeake, VA 23327
 (757) 549-8448
 FAX: (757) 549-6668

**NON-HAZARDOUS
 SHIPPING MANIFEST**

MANIFEST NO. 048

GENERATOR

NAME **NASA Wallops Flight Facility** TELEPHONE **(757) 824-2141**
 ADDRESS **Building F-160, Code 250** CITY **Wallops Island** STATE **VA**
 SHIPMENT ORIGIN **Wallops Flight Facility** CITY **Wallops Island** STATE **VA**
 AUTHORIZED AGENT **Mr. David Liu** FIRM
 ADDRESS OTHER

MATERIAL CHARACTERIZATION

ACTIVITY GENERATING THIS MATERIAL: UST/AST REMOVAL _____ OTHER **Soil & Debris**
 PETROLEUM TYPE (S): VIRGIN PRODUCT _____ NON-VIRGIN PRODUCT _____
 PHYSICAL STATE: STOCKPILED _____ EXCAVATING DRUMS _____ OTHER _____
 HANDLING INSTRUCTIONS: **Transport To Facility Designated Below**
 FIRE OR SPILL INSTRUCTIONS: **Non-Flammable / Non-Hazardous**
 DESTINATION: **Suffolk Facility**

I hereby certify, to the best of my knowledge, the material characterized above is non-hazardous as defined by the Virginia Hazardous Waste Management Regulations, Federal Regulations under Subtitle C - RCRA, U.S. Department of Transportation, or local / state of origin regulations.

Paul Matwell Jr
 Signature of Generator / Agent
 Mr. David Liu / 7-12-16
 Printed Name / Date

TRANSPORTER

TRANSPORTER NAME ATCO TELEPHONE 157-638-7795 TRUCK NO. AT-23
 I certify that the materials described above were received by me for shipment and delivered to the designated facility.
B3 Gregory 7-12-16
 Transporter Signature / Date

FACILITY

I certify that the materials described above were delivered to the facility and received by me.

ACCEPTED BY Willis A DATE 7/13/2014
 REASONS FOR REJECTION _____

| | |
|--------------|-------|
| Gross Weight | 56960 |
| Tare Weight | 25300 |
| Net Weight | 31660 |
| Tons | 15.83 |

FACILITY

SOUTHEASTERN PUBLIC
SERVICE AUTHORITY
723 Woodlake Dr
CHESAPEAKE, VA 23320-8909
(757) 420-4700

Truck: ATCO23 Tag: Transaction #: 13351394
Trailer: Tag: Attendant ID: DS

Customer: 600769
CLEARFIELD MMG, INC. Date: 07/13/16
P O BOX 1444 Time: 07:15
CHESAPEAKE VA 23327 Site: 13

REFUSE TYPE: SXP-Pre-Processed Material (Clearfield Only)
RATE: \$0.00 / tn Tran Type: Waste Disposal - Credit
 LBS TONS Pymt Type: Charge
GROSS WEIGHT: 56960 28.48 SCALE: MAN WT Origin: Offsite Waste Producer
TARE WEIGHT: 25300 12.65 SCALE: (K) Dest: Clearfield Facility
NET WEIGHT: 31660 15.83 State: VA MSW
VOL: 0 Driver: N/A

TRANSACTION AMOUNT: 0
PAYABLE TO: SPSA
REMARKS:

THANK YOU FOR CHOOSING SPSA!

APPENDIX G
BACKFILL AND TOPSOIL DELIVERY TICKETS



BRANSCOME
INCORPORATED

OFFICE PHONE
(757) 229-2504

**PIT
TICKET**

TICKET NO.
80574



BRANSCOME
INCORPORATED

**PIT
TICKET**

TICKET NO.
80575



BRANSCOME
INCORPORATED

PHONE
29-2504

**PIT
TICKET**

TICKET NO.
80576

| | | | |
|---|--|---------------------|----|
| PIT NAME | | DATE | |
| LATHSUILE | | 7-1-16 | |
| SOLD TO | | | |
| CLEAR FIELD | | | |
| ADDRESS | | | |
| main Base | | | |
| PROJECT | | | |
| 10145127 | | | |
| THE MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | | | |
| SIGNATURE | | | |
| [Signature] | | | |
| MATERIAL DESCRIPTION | 15 yd | | |
| | Fill | | |
| PAID FOR BY | | TOTAL | |
| <input type="checkbox"/> HOUR | <input type="checkbox"/> CUBIC YARD @ \$ | PER UNIT | \$ |
| HAULER | | TRUCK NO. | |
| Atco | | AT-26 | |
| DRIVER | | TIME LEAVING | |
| Richard Ruder | | | |
| RECEIVED BY | | | |
| [Signature] | | | |
| MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWN POWER. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED. | | | |

| | | | |
|---|--|---------------------|----|
| PIT NAME | | DATE | |
| LATHSUILE | | 7-1-16 | |
| SOLD TO | | | |
| CLEAR FIELD | | | |
| ADDRESS | | | |
| main Base | | | |
| PROJECT | | | |
| 10145127 | | | |
| D UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | | | |
| SIGNATURE | | | |
| [Signature] | | | |
| MATERIAL DESCRIPTION | 15 yd | | |
| | Fill | | |
| PAID FOR BY | | TOTAL | |
| <input type="checkbox"/> HOUR | <input type="checkbox"/> CUBIC YARD @ \$ | PER UNIT | \$ |
| HAULER | | TRUCK NO. | |
| Atco | | P-56 | |
| DRIVER | | TIME LEAVING | |
| [Signature] | | | |
| RECEIVED BY | | | |
| [Signature] | | | |
| MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWN POWER. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED. | | | |

| | | | |
|---|--|---------------------|----|
| PIT NAME | | DATE | |
| LATHSUILE | | 7-1-16 | |
| SOLD TO | | | |
| CLEAR FIELD | | | |
| ADDRESS | | | |
| main Base | | | |
| PROJECT | | | |
| 10145127 | | | |
| RIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE (HORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | | | |
| SIGNATURE | | | |
| [Signature] | | | |
| MATERIAL DESCRIPTION | 15 yd | | |
| | Fill | | |
| PAID FOR BY | | TOTAL | |
| <input type="checkbox"/> HOUR | <input type="checkbox"/> CUBIC YARD @ \$ | PER UNIT | \$ |
| HAULER | | TRUCK NO. | |
| Atco | | AT-27 | |
| DRIVER | | TIME LEAVING | |
| [Signature] | | | |
| RECEIVED BY | | | |
| [Signature] | | | |
| ALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWN TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON RTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER ES WILL BE BILLED. | | | |

CUSTOMER COPY

CUSTOMER COPY

CUSTOMER COPY



PHONE
229-2504

PIT
TICKET

TICKET NO.
80577

| | | | |
|---|--|--------------|--|
| PIT NAME | | DATE | |
| Wattsville | | 7-1-16 | |
| TO | | | |
| Clearfield | | | |
| CLASS | | | |
| Main Base | | | |
| TRACT | | | |
| 10145127 | | | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | | | |
| NATURE | | | |
| 15yd Fill | | | |
| PURCHASER BY | | TOTAL | |
| CUBIC YARD @ \$ | | PER UNIT \$ | |
| Atco | | TRUCK NO. | |
| | | AT-25 | |
| DRIVER BY | | TIME LEAVING | |
| M. Bann | | | |
| MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS AUTHORITY. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON BUYER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED. | | | |

508027-2/1

CUSTOMER COPY



PHONE
2504

PIT
TICKET

TICKET NO.
80578

| | | | |
|---|--|--------------|--|
| PIT NAME | | DATE | |
| Wattsville | | 7-1-16 | |
| TO | | | |
| Clearfield | | | |
| CLASS | | | |
| Main Base | | | |
| TRACT | | | |
| 10145127 | | | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | | | |
| NATURE | | | |
| 15yd Fill | | | |
| PURCHASER BY | | TOTAL | |
| CUBIC YARD @ \$ | | PER UNIT \$ | |
| Atco | | TRUCK NO. | |
| | | AT-23 | |
| DRIVER BY | | TIME LEAVING | |
| subregory | | | |
| MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS AUTHORITY. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON BUYER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED. | | | |

508027-2/1



PHONE
229-2504

PIT
TICKET

TICKET NO.
80579

| | | | |
|---|--|--------------|--|
| PIT NAME | | DATE | |
| Wattsville | | 7-1-16 | |
| TO | | | |
| Clearfield | | | |
| CLASS | | | |
| Main Base | | | |
| TRACT | | | |
| 10145127 | | | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | | | |
| NATURE | | | |
| 15yd Fill | | | |
| PURCHASER BY | | TOTAL | |
| CUBIC YARD @ \$ | | PER UNIT \$ | |
| Atco | | TRUCK NO. | |
| | | AT-26 | |
| DRIVER BY | | TIME LEAVING | |
| Richard P. ... | | | |
| MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS AUTHORITY. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON BUYER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED. | | | |

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BRANSCOME
INCORPORATED

PHONE
9-2504

**PIT
TICKET**

TICKET NO.
80580

| PIT NAME | DATE |
|--|--------|
| WATTSVILLE | 7-1-16 |
| Clearfield | |
| MAIN BASE | |
| 10145127 | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | |
| 15yd Fill | |

| BY | PER UNIT | TOTAL |
|--|--------------|-------|
| <input type="checkbox"/> CUBIC YARD @ \$ | \$ | |
| Receiver | | |
| | TRUCK NO. | R56 |
| | TIME LEAVING | |

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWN TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON BUYER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER FEES WILL BE BILLED.

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BRANSCOME
INCORPORATED

PHONE
9-2504

**PIT
TICKET**

TICKET NO.
80581

| PIT NAME | DATE |
|--|--------|
| WATTSVILLE | 7-1-16 |
| Clearfield | |
| MAIN BASE | |
| 10145127 | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | |
| 15yd Fill | |

| BY | PER UNIT | TOTAL |
|--|--------------|-------|
| <input type="checkbox"/> CUBIC YARD @ \$ | \$ | |
| Atco | | |
| Josh Campbell John Gault | TRUCK NO. | A1-27 |
| | TIME LEAVING | |

APPROVED BY:

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWN TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON BUYER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER FEES WILL BE BILLED.

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BRANSCOME
INCORPORATED

PHONE
9-2504

**PIT
TICKET**

TICKET NO.
80582

| PIT NAME | DATE |
|--|--------|
| WATTSVILLE | 7-1-16 |
| Clearfield | |
| MAIN BASE | |
| 10145127 | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | |
| 15yd Fill | |

| BY | PER UNIT | TOTAL |
|--|--------------|-------|
| <input type="checkbox"/> CUBIC YARD @ \$ | \$ | |
| Atco | | |
| M Bess | TRUCK NO. | A1-25 |
| | TIME LEAVING | |

APPROVED BY:

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWN TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON BUYER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER FEES WILL BE BILLED.



PHONE
29-2504

**PIT
TICKET**

TICKET NO.
97901

| PIT NAME | DATE |
|------------|------|
| Wattsville | |

LEAFIELD

MAK BASE

1014527

MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS.

RE

15 yd
Fill

| ORDER BY | PER UNIT | TOTAL |
|--|----------|-------|
| <input type="checkbox"/> CUBIC YARD @ \$ | \$ | |

TRUCK NO.
A100

TIME LEAVING

RECEIVED BY

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED.

503575-1

CUSTOMER COPY



PHONE
29-2504

**PIT
TICKET**

TICKET NO.
99503

| PIT NAME | DATE |
|------------|--------|
| Wattsville | 7-6-16 |

Clearcreek

Wallopas/NSA

10145127

MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS.

RE

15 yd
Fill

| ORDER BY | PER UNIT | TOTAL |
|--|----------|-------|
| <input type="checkbox"/> CUBIC YARD @ \$ | \$ | |

TRUCK NO.
A100

TIME LEAVING
for call

RECEIVED BY

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED.

503575-1

CUSTOMER COPY



PHONE
57) 229-2504

**PIT
TICKET**

TICKET NO.
99504

| PIT NAME | DATE |
|------------|--------|
| Wattsville | 7-6-16 |

Clearcreek

Wallopas/NSA

10145127

MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS.

RE

15 yd
Fill

| ORDER BY | PER UNIT | TOTAL |
|--|----------|-------|
| <input type="checkbox"/> CUBIC YARD @ \$ | \$ | |

TRUCK NO.
A100

TIME LEAVING
B.B. Gregory

RECEIVED BY

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED.

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BRANSCOME
INCORPORATED

PHONE
(229) 229-2504

**PIT
TICKET**

TICKET NO.
99534

| PIT NAME | DATE |
|------------|--------|
| Wattsville | 7-6-16 |

TO
Clearfield

TO
Wallops / NASA

TO
10145127

MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS.

SIGNATURE

15 yd
Fill

| FOR BY | TOTAL |
|--|-------------|
| OUR <input type="checkbox"/> CUBIC YARD @ \$ | PER UNIT \$ |

| | |
|-------------------|--------------------|
| TRUCK NO. Alco | TRUCK NO. A1-26 |
|-------------------|--------------------|

| | |
|--------------------------|--------------|
| DRIVER Richard Pender | TIME LEAVING |
|--------------------------|--------------|

DELIVERED BY

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER FEES WILL BE BILLED.

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PHONE
229-2504

**PIT
TICKET**

TICKET NO.
99535

| PIT NAME | DATE |
|------------|--------|
| Wattsville | 7-6-16 |

TO
Clearfield

TO
Wallops / NASA

TO
10145127

MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS.

SIGNATURE

15 yd
Fill

| FOR BY | TOTAL |
|--|-------------|
| OUR <input type="checkbox"/> CUBIC YARD @ \$ | PER UNIT \$ |

| | |
|-------------------|--------------------|
| TRUCK NO. Alco | TRUCK NO. A1-25 |
|-------------------|--------------------|

| | |
|----------------|--------------|
| DRIVER Bass | TIME LEAVING |
|----------------|--------------|

DELIVERED BY

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER FEES WILL BE BILLED.

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INCORPORATED

PHONE
229-2504

**PIT
TICKET**

TICKET NO.
99536

| PIT NAME | DATE |
|------------|--------|
| Wattsville | 7-6-16 |

TO
Clearfield

TO
Wallops / NASA

TO
10145127

MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS.

SIGNATURE

15 yd
Fill

| FOR BY | TOTAL |
|--|-------------|
| OUR <input type="checkbox"/> CUBIC YARD @ \$ | PER UNIT \$ |

| | |
|-------------------|--------------------|
| TRUCK NO. Alco | TRUCK NO. A1-26 |
|-------------------|--------------------|

| | |
|--------------------------|--------------|
| DRIVER Richard Pender | TIME LEAVING |
|--------------------------|--------------|

DELIVERED BY

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER FEES WILL BE BILLED.

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INCORPORATED

PHONE
29-2504

**PIT
TICKET**

TICKET NO.
99537

| PIT NAME | DATE |
|------------|--------|
| Wattsville | 7-6-16 |

Clearfield

Wallopss/Nasa

10145127

MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS.

DESCRIPTION

15yd
Fill

| ORDER BY | TOTAL |
|--|-------|
| <input type="checkbox"/> CUBIC YARD @ \$ PER UNIT \$ | |

TRUCK NO. **P-56**

TIME LEAVING

ORDERED BY

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER FEES WILL BE BILLED.

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INCORPORATED

PHONE
29-2504

**PIT
TICKET**

TICKET NO.
99538

| PIT NAME | DATE |
|------------|--------|
| Wattsville | 7-6-16 |

Clearfield

Wallopss/Nasa

10145127

MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS.

DESCRIPTION

15yd
Fill

| ORDER BY | TOTAL |
|--|-------|
| <input type="checkbox"/> CUBIC YARD @ \$ PER UNIT \$ | |

TRUCK NO. **AH-27**

TIME LEAVING

ORDERED BY

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER FEES WILL BE BILLED.

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INCORPORATED

OFFICE PHONE
(757) 229-2504

**PIT
TICKET**

TICKET NO.
99539

| PIT NAME | DATE |
|------------|--------|
| Wattsville | 7-6-16 |

Clearfield

Wallopss/Nasa

10145127

MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS.

SIGNATURE

15yd
Fill

| ORDERED FOR BY | TOTAL |
|--|-------|
| <input type="checkbox"/> HOUR <input type="checkbox"/> CUBIC YARD @ \$ PER UNIT \$ | |

TRUCK NO. **AH-23**

TIME LEAVING

ORDERED BY

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER FEES WILL BE BILLED.

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INCORPORATED

PHONE
229-2504

**PIT
TICKET**

TICKET NO.

99540

PIT NAME DATE

Wattsville

7-6-16

Clearfield

Wallops / NASA

10145127

MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS.

15 yd
Fill

ORDER BY
CUBIC YARD @ \$ PER UNIT \$ TOTAL

TRUCK NO.

TIME LEAVING

Atco

AT-25

M Bass

ORDERED BY

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS OWNERS. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED.

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BRANSCOME
INCORPORATED

PHONE
2504

**PIT
TICKET**

TICKET NO.

99541

PIT NAME

DATE

Wattsville

7-6-16

Clearfield

Wallops / NASA

10145127

MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS.

15 yd
Fill

ORDER BY
CUBIC YARD @ \$ PER UNIT \$ TOTAL

TRUCK NO.

TIME LEAVING

Atco

AT-26

land

ORDERED BY

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS OWNERS. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED.

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INCORPORATED

PHONE
(57) 229-2504

**PIT
TICKET**

TICKET NO.

99542

PIT NAME

DATE

Wattsville

7-6-16

Clearfield

Wallops / NASA

10145127

MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS.

15 yd
Fill

ORDER BY
CUBIC YARD @ \$ PER UNIT \$ TOTAL

TRUCK NO.

TIME LEAVING

HAULER

DRIVER

RECEIVED BY

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS OWNERS. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED.

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BRANSCOME
INCORPORATED

PHONE
229-2504

**PIT
TICKET**

TICKET NO.

99543

| | |
|--|-----------------|
| PIT NAME | DATE |
| WATTSVILLE | 7-6-16 |
| Clearfield | |
| WATTOPPS/WASA | |
| 10145127 | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | |
| 15 yd Fill | |
| PAID FOR BY | TOTAL |
| <input type="checkbox"/> CUBIC YARD @ \$ | PER UNIT \$ |
| Atco | TRUCK NO. A1-27 |
| Sh. with | TIME LEAVING |
| MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS POWER. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED. | |

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INCORPORATED

PHONE
229-2504

**PIT
TICKET**

TICKET NO.

99544

| | |
|--|-----------------|
| PIT NAME | DATE |
| WATTSVILLE | 7-6-16 |
| Clearfield | |
| WATTOPPS/WASA | |
| 10145127 | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | |
| 15 yd Fill | |
| <input type="checkbox"/> CUBIC YARD @ \$ | PER UNIT \$ |
| Atco | TRUCK NO. A1-23 |
| Gregory | TIME LEAVING |
| MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS POWER. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED. | |

503575-1

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BRANSCOME
INCORPORATED

PHONE
229-2504

**PIT
TICKET**

TICKET NO.

99545

| | |
|--|-----------------|
| PIT NAME | DATE |
| WATTSVILLE | 7-6-16 |
| Clearfield | |
| WATTOPPS/WASA | |
| 10145127 | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | |
| 15 yd Fill | |
| PAID FOR BY | TOTAL |
| <input type="checkbox"/> HOUR <input type="checkbox"/> CUBIC YARD @ \$ | PER UNIT \$ |
| Atco | TRUCK NO. A1-26 |
| DRIVER Richard [Signature] | TIME LEAVING |
| RECEIVED BY | |
| MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS POWER. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED. | |

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BRANSCOME
INCORPORATED

PHONE
229-2504

**PIT
TICKET**

TICKET NO.

99546

| PIT NAME | DATE |
|------------|--------|
| Wattsville | 7-6-16 |

TO
Clearfield

CLASS
Wallop/WASA

PROJECT
10145127

MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE
BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS.

NATURE
15yd
Fill

| FOR BY | PER UNIT | TOTAL |
|--|----------|-------|
| OUR <input type="checkbox"/> CUBIC YARD @ \$ | \$ | |

TRUCK NO.
Atco A1-25

TIME LEAVING
M. Base

RECEIVED BY

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER FEES WILL BE BILLED.

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CUSTOMER COPY



BRANSCOME
INCORPORATED

PHONE
229-2504

**PIT
TICKET**

TICKET NO.

99547

| PIT NAME | DATE |
|------------|--------|
| Wattsville | 7-6-16 |

TO
Clearfield

CLASS
Wallop/WASA

PROJECT
10145127

MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE
BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS.

NATURE
15yd
Fill

| FOR BY | PER UNIT | TOTAL |
|--|----------|-------|
| OUR <input type="checkbox"/> CUBIC YARD @ \$ | \$ | |

TRUCK NO.
Atco Pioneer P-56

TIME LEAVING
@ Truck

RECEIVED BY

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER FEES WILL BE BILLED.

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BRANSCOME
INCORPORATED

PHONE
229-2504

**PIT
TICKET**

TICKET NO.

99548

| PIT NAME | DATE |
|------------|--------|
| Wattsville | 7-6-16 |

TO
Clearfield

CLASS
Wallop/WASA

PROJECT
10145127

MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE
BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS.

NATURE
15yd
Fill

| FOR BY | PER UNIT | TOTAL |
|--|----------|-------|
| OUR <input type="checkbox"/> CUBIC YARD @ \$ | \$ | |

TRUCK NO.
Atco A1-27

TIME LEAVING
John W. M.

RECEIVED BY

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER FEES WILL BE BILLED.

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BRANSCOME
INCORPORATED

OFFICE PHONE
(57) 229-2504

**PIT
TICKET**

TICKET NO.
99505

| | |
|--|--------|
| PIT NAME | DATE |
| WATTSVILLE | 7-7-16 |
| TO | |
| CLEARFIELD | |
| ADDRESS | |
| WALLOPPS/NASA | |
| PROJECT | |
| 10145127 | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | |
| SIGNATURE | |
| 15 yd Fill | |

| | | | | |
|---------------|--------------------------|-----------------|----------|-------|
| PAID FOR BY | PER HOUR | CUBIC YARD @ \$ | PER UNIT | TOTAL |
| | <input type="checkbox"/> | | \$ | |
| TRUCKER | TRUCK NO. | | | |
| Atco | A1-26 | | | |
| DRIVER | TIME LEAVING | | | |
| Richard De... | | | | |
| RECEIVED BY | | | | |

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS AUTHORITY. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED.

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CUSTOMER COPY



BRANSCOME
INCORPORATED

OFFICE PHONE
229-2504

**PIT
TICKET**

TICKET NO.
99506

| | |
|--|--------|
| PIT NAME | DATE |
| WATTSVILLE | 7-7-16 |
| TO | |
| CLEARFIELD | |
| ADDRESS | |
| WALLOPPS/NASA | |
| PROJECT | |
| 10145127 | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | |
| SIGNATURE | |
| 15 yd Fill | |

| | | | | |
|---------------|--------------------------|-----------------|----------|-------|
| PAID FOR BY | PER HOUR | CUBIC YARD @ \$ | PER UNIT | TOTAL |
| | <input type="checkbox"/> | | \$ | |
| TRUCKER | TRUCK NO. | | | |
| Atco | A1-26 | | | |
| DRIVER | TIME LEAVING | | | |
| Richard De... | | | | |
| RECEIVED BY | | | | |

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS AUTHORITY. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED.

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(57) 229-2504

**PIT
TICKET**

TICKET NO.
99507

| | |
|--|------|
| PIT NAME | DATE |
| WATTSVILLE | |
| TO | |
| CLEARFIELD | |
| ADDRESS | |
| WALLOPPS/NASA | |
| PROJECT | |
| 10145127 | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | |
| SIGNATURE | |
| 15 yd Fill | |

| | | | | |
|-------------|--------------------------|-----------------|----------|-------|
| PAID FOR BY | PER HOUR | CUBIC YARD @ \$ | PER UNIT | TOTAL |
| | <input type="checkbox"/> | | \$ | |
| TRUCKER | TRUCK NO. | | | |
| Atco | A1-23 | | | |
| DRIVER | TIME LEAVING | | | |
| B.C. Hooper | | | | |
| RECEIVED BY | | | | |

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS AUTHORITY. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED.

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INCORPORATED

PHONE
229-2504

**PIT
TICKET**

TICKET NO.
99508

| | |
|--|-------------|
| PIT NAME | DATE |
| WATTSVILLE | |
| CLEARFIELD | |
| WALLOPPS/NASA | |
| 10145127 | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | |
| 15yd Fill | |

| | |
|---|----------------|
| ORDER BY | TOTAL |
| <input type="checkbox"/> HOUR <input type="checkbox"/> CUBIC YARD @ \$ | PER UNIT \$ |
| Puryear | TRUCK NO. A-56 |
| <i>[Signature]</i> | TIME LEAVING |

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS OWN. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED.

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INCORPORATED

PHONE
229-2504

**PIT
TICKET**

TICKET NO.
99509

| | |
|--|-------------|
| PIT NAME | DATE |
| WATTSVILLE | |
| CLEARFIELD | |
| WALLOPPS/NASA | |
| 10145127 | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | |
| 15yd Fill | |

| | |
|---|----------------|
| ORDER BY | TOTAL |
| <input type="checkbox"/> HOUR <input type="checkbox"/> CUBIC YARD @ \$ | PER UNIT \$ |
| Atco | TRUCK NO. A-26 |
| <i>[Signature]</i> | TIME LEAVING |

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS OWN. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED.

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INCORPORATED

PHONE
229-2504

**PIT
TICKET**

TICKET NO.
99510

| | |
|--|-------------|
| PIT NAME | DATE |
| WATTSVILLE | 7-7-16 |
| CLEARFIELD | |
| WALLOPPS/NASA | |
| 10145127 | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | |
| 15yd Fill | |

| | |
|---|----------------|
| ORDER BY | TOTAL |
| <input type="checkbox"/> HOUR <input type="checkbox"/> CUBIC YARD @ \$ | PER UNIT \$ |
| Atco | TRUCK NO. A-26 |
| <i>[Signature]</i> | TIME LEAVING |

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS OWN. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED.

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PHONE
9-2504

**PIT
TICKET**

TICKET NO.
99511

| PIT NAME | DATE |
|------------|--------|
| WATTSVILLE | 7-7-16 |

Clearfield

Wallopps / NASA

10145127

MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS.

BY

15 yd
Fill

| BY | PER UNIT | TOTAL |
|--|----------|-------|
| <input type="checkbox"/> CUBIC YARD @ \$ | \$ | \$ |

| TRUCK NO. |
|-----------|
| ATCO |

| TIME LEAVING |
|--------------|
| AT-25 |

BY
MR Bass

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED.

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PHONE
9-2504

**PIT
TICKET**

TICKET NO.
99512

| PIT NAME | DATE |
|------------|--------|
| WATTSVILLE | 7-7-16 |

Clearfield

Wallopps / NASA

10145127

MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS.

BY

15 yd
Fill

| BY | PER UNIT | TOTAL |
|--|----------|-------|
| <input type="checkbox"/> CUBIC YARD @ \$ | \$ | \$ |

| TRUCK NO. |
|-----------|
| Prayer |

| TIME LEAVING |
|--------------|
| P-56 |

BY
B. Buck

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED.

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**PIT
TICKET**

TICKET NO.
99513

| PIT NAME | DATE |
|------------|--------|
| WATTSVILLE | 7-7-16 |

Clearfield

Wallopps / NASA

10145127

MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS.

BY

15 yd
Fill

| PAID FOR BY | PER UNIT | TOTAL |
|--|----------|-------|
| <input type="checkbox"/> HOUR <input type="checkbox"/> CUBIC YARD @ \$ | \$ | \$ |

| TRUCK NO. |
|-----------|
| Atco |

| TIME LEAVING |
|--------------|
| At-26 |

BY
R. Buck

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED.

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PHONE
29-2504

PIT
TICKET

TICKET NO.
99514

| PIT NAME | DATE |
|--|-------------|
| WATTSVILLE | 7-7-16 |
| Clearfield | |
| WALLOPPS/NASA | |
| 10145127 | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | |
| NATURE | |
| 15yd Fill | |
| TOTAL | |
| <input type="checkbox"/> CUBIC YARD @ \$ | PER UNIT \$ |
| TRUCK NO. | |
| DRIVER | |
| MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED. | |

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PHONE
7) 229-2504

PIT
TICKET

TICKET NO.
99515

| PIT NAME | DATE |
|--|-------------|
| WATTSVILLE | 7-7-16 |
| Clearfield | |
| WALLOPPS/NASA | |
| 10145127 | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | |
| NATURE | |
| 15yd Fill | |
| TOTAL | |
| <input type="checkbox"/> HOUR <input type="checkbox"/> CUBIC YARD @ \$ | PER UNIT \$ |
| TRUCK NO. | |
| DRIVER | |
| MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED. | |

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PHONE
29-2504

PIT
TICKET

TICKET NO.
99516

| PIT NAME | DATE |
|--|-------------|
| WATTSVILLE | 7-7-16 |
| Clearfield | |
| WALLOPPS/NASA | |
| 10145127 | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | |
| NATURE | |
| 15yd Fill | |
| TOTAL | |
| <input type="checkbox"/> HOUR <input type="checkbox"/> CUBIC YARD @ \$ | PER UNIT \$ |
| TRUCK NO. | |
| DRIVER | |
| MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED. | |

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PHONE
-2504

**PIT
TICKET**

TICKET NO.
99517

| PIT NAME | DATE |
|------------|--------|
| WATTSVILLE | 7-7-16 |

Clearfield

Walters/Wasa

10145127

MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS.

URE

15yd
Fill

| FOR BY | TOTAL |
|--|-------|
| <input type="checkbox"/> CUBIC YARD @ \$ PER UNIT \$ | |

| TRUCK NO. |
|------------|
| Atco A1-26 |

| TIME LEAVING |
|-----------------------|
| <i>Richard P. ...</i> |

ED BY

ALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWN TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER ES WILL BE BILLED.

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PHONE
229-2504

**PIT
TICKET**

TICKET NO.
99518

| PIT NAME | DATE |
|------------|------|
| WATTSVILLE | |

Clearfield

Walters/Wasa

10145127

MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS.

URE

15yd
Fill

| FOR BY | TOTAL |
|--|-------|
| <input type="checkbox"/> CUBIC YARD @ \$ PER UNIT \$ | |

| TRUCK NO. |
|------------|
| Atco A1-23 |

| TIME LEAVING |
|----------------|
| <i>Gregory</i> |

ED BY

ALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWN TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER ES WILL BE BILLED.

5) 503575-1

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PHONE
7) 229-2504

**PIT
TICKET**

TICKET NO.
99519

| PIT NAME | DATE |
|------------|--------|
| WATTSVILLE | 7-7-16 |

Clearfield

Walters/Wasa

10145127

MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS.

NATURE

15yd
Fill

| FOR BY | TOTAL |
|--|-------|
| <input type="checkbox"/> CUBIC YARD @ \$ PER UNIT \$ | |

| TRUCK NO. |
|---------------|
| Pureayer P-56 |

| TIME LEAVING |
|-----------------|
| <i>To Truck</i> |

IVED BY

ERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWN /ER. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON /ERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER VICES WILL BE BILLED.

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BRANSCOME
INCORPORATED

PHONE
229-2504

**PIT
TICKET**

TICKET NO.

99520

| PIT NAME | DATE |
|--|--------|
| WATSON | 7-7-16 |
| Clearfield | |
| Wallops/NASA | |
| 10145127 | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | |
| 15yd Fill | |
| BY OUR <input type="checkbox"/> CUBIC YARD @ \$ PER UNIT \$ | TOTAL |
| TRUCK NO. Atco | At-25 |
| TIME LEAVING M. Brass | |
| DELIVERED BY | |

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER FEES WILL BE BILLED.

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INCORPORATED

PHONE
229-2504

**PIT
TICKET**

TICKET NO.

99521

| PIT NAME | DATE |
|--|--------|
| WATSON | 7-7-16 |
| Clearfield | |
| Wallops/NASA | |
| 10145127 | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | |
| 15yd Fill | |
| BY OUR <input type="checkbox"/> CUBIC YARD @ \$ PER UNIT \$ | TOTAL |
| TRUCK NO. Atco | At-26 |
| TIME LEAVING Richard Punter | |
| DELIVERED BY | |

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER FEES WILL BE BILLED.

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INCORPORATED

PHONE
229-2504

**PIT
TICKET**

TICKET NO.

98847

| PIT NAME | DATE |
|--|--------|
| WATSON | 7-7-16 |
| Clearfield | |
| Wallops/NASA | |
| 10145127 | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | |
| 15yd Fill | |
| BY OUR <input type="checkbox"/> CUBIC YARD @ \$ PER UNIT \$ | TOTAL |
| TRUCK NO. At-26 | 26 |
| TIME LEAVING Richard Punter | |
| DELIVERED BY | |

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER FEES WILL BE BILLED.

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INCORPORATED

OFFICE PHONE
229-2504

**PIT
TICKET**

TICKET NO.
99718

| PIT NAME | DATE |
|----------|------|
|----------|------|

| | |
|------------|---------|
| wattsville | 7.12.16 |
|------------|---------|

OLD TO
25-10178477

ADDRESS
Job

OBJECT
C000010811

MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE
AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS.

NATURE

15yd
Fill

| FOR BY | TOTAL |
|---|-------|
| OUR <input checked="" type="checkbox"/> CUBIC YARD @ \$ PER UNIT \$ | |

| | |
|--------------------|-----------------|
| TRUCK NO. HC-25 | TRUCK NO. 25 |
|--------------------|-----------------|

| | |
|--------------|--|
| TIME LEAVING | |
|--------------|--|

RECEIVED BY
Tom [Signature]

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS AUTHORITY. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED.

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INCORPORATED

OFFICE PHONE
(57) 229-2504

**PIT
TICKET**

TICKET NO.
99720

| PIT NAME | DATE |
|----------|------|
|----------|------|

| | |
|------------|---------|
| wattsville | 7.12.16 |
|------------|---------|

OLD TO
25-10178477

ADDRESS
Job

OBJECT
C000010811

MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE
AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS.

NATURE

15
Fill

| FOR BY | TOTAL |
|---|-------|
| OUR <input checked="" type="checkbox"/> CUBIC YARD @ \$ PER UNIT \$ | |

| | |
|--------------------|-----------------|
| TRUCK NO. HC-25 | TRUCK NO. 25 |
|--------------------|-----------------|

| | |
|--------------|--|
| TIME LEAVING | |
|--------------|--|

RECEIVED BY
Tom [Signature]

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS AUTHORITY. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED.

PHONE
9-2504

**PIT
TICKET**

TICKET NO.
99717

| PIT NAME | DATE |
|----------|------|
|----------|------|

| | |
|--|---------|
| | 7.12.16 |
|--|---------|

OLD TO

ADDRESS

OBJECT

MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE
AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS.

NATURE

15yd
Fill

| FOR BY | TOTAL |
|---|-------|
| OUR <input checked="" type="checkbox"/> CUBIC YARD @ \$ PER UNIT \$ | |

| | |
|--------------------|-----------------|
| TRUCK NO. HC-25 | TRUCK NO. 25 |
|--------------------|-----------------|

| | |
|--------------|--|
| TIME LEAVING | |
|--------------|--|

RECEIVED BY
Tom [Signature]

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS AUTHORITY. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED.

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INCORPORATED

PHONE
229-2504

**PIT
TICKET**

TICKET NO.

98802

| | | | |
|--|-------------|--------------|--|
| PIT NAME | | DATE | |
| WATTSVILLE | | 7-8-16 | |
| TO CLEAR FIELD | | | |
| TO 10/45127 | | | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | | | |
| 15 Top Soil | | | |
| FOR BY | | TOTAL | |
| OUR <input type="checkbox"/> CUBIC YARD @ \$ | PER UNIT \$ | | |
| TRUCK NO. | | TRUCK NO. | |
| 26 | | 36 | |
| TIME LEAVING | | TIME LEAVING | |
| Richard Anderson | | | |
| MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER FEES WILL BE BILLED. | | | |

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BRANSCOME
INCORPORATED

PHONE
229-2504

**PIT
TICKET**

TICKET NO.

99203

| | | | |
|--|-------------|--------------|--|
| PIT NAME | | DATE | |
| WATTSVILLE | | 7-8-2016 | |
| TO clear field | | | |
| TO 10/45127 | | | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | | | |
| 15 yd Top Soil | | | |
| FOR BY | | TOTAL | |
| OUR <input type="checkbox"/> CUBIC YARD @ \$ | PER UNIT \$ | | |
| TRUCK NO. | | TRUCK NO. | |
| 26 | | 36 | |
| TIME LEAVING | | TIME LEAVING | |
| Richard Anderson | | | |
| MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER FEES WILL BE BILLED. | | | |

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BRANSCOME
INCORPORATED

PHONE
229-2504

**PIT
TICKET**

TICKET NO.

98801

| | | | |
|--|-------------|--------------|--|
| PIT NAME | | DATE | |
| WATTSVILLE | | 7-9-16 | |
| TO CLEAR FIELD | | | |
| TO 10/45127 | | | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | | | |
| 15 Top Soil | | | |
| FOR BY | | TOTAL | |
| OUR <input type="checkbox"/> CUBIC YARD @ \$ | PER UNIT \$ | | |
| TRUCK NO. | | TRUCK NO. | |
| 26 | | 36 | |
| TIME LEAVING | | TIME LEAVING | |
| Richard Anderson | | | |
| MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER FEES WILL BE BILLED. | | | |

8/05) 503575-1

CUSTOMER COPY



PHONE
229-2504

**PIT
TICKET**

TICKET NO.

98804

| | |
|---|-------------|
| PIT NAME | DATE |
| Wattsville | 7.8.16 |
| 2 YEAR FEE | |
| 10145127 | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | |
| 15yd Top Soil | |
| FOR BY CUBIC YARD @ \$ | PER UNIT \$ |
| TOTAL | |
| TRUCK NO. | 26 |
| TIME LEAVING | |
| RECEIVED BY Richard Anderson | |
| MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED. | |

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PHONE
(229) 229-2504

**PIT
TICKET**

TICKET NO.

98803

| | |
|---|-------------|
| PIT NAME | DATE |
| Wattsville | 7.8.16 |
| 2 YEAR FEE | |
| 10145127 | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | |
| 15yd Top Soil | |
| FOR BY CUBIC YARD @ \$ | PER UNIT \$ |
| TOTAL | |
| TRUCK NO. | 56 |
| TIME LEAVING | |
| RECEIVED BY Richard Anderson | |
| MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED. | |

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PHONE
229-2504

**PIT
TICKET**

TICKET NO.

98806

| | |
|---|-------------|
| PIT NAME | DATE |
| Wattsville | 7.8.16 |
| 2 YEAR FEE | |
| 10145127 | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | |
| 15yd Top Soil | |
| FOR BY CUBIC YARD @ \$ | PER UNIT \$ |
| TOTAL | |
| TRUCK NO. | 26 |
| TIME LEAVING | |
| RECEIVED BY Richard Anderson | |
| MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED. | |

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BRANSCOME
INCORPORATED

PHONE
229-2504

**PIT
TICKET**

TICKET NO.

98805

| | | | |
|--|---|--------------|-------|
| PIT NAME | | DATE | |
| WATTSVILLE | | 7.8.16 | |
| TO CLEAR FILL | | | |
| ADDRESS | | | |
| PROJECT 0145127 | | | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | | | |
| SIGNATURE | | | |
| 15yd Top Soil | | | |
| FOR BY | <input checked="" type="checkbox"/> CUBIC YARD @ \$ | PER UNIT \$ | TOTAL |
| DRIVER | TRUCK NO. | TIME LEAVING | |
| DRIVER | TRUCK NO. | TIME LEAVING | |
| RECEIVED BY | | | |
| MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS AUTHORITY. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER FEES WILL BE BILLED. | | | |

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BRANSCOME
INCORPORATED

PHONE
504

**PIT
TICKET**

TICKET NO.

98807

| | | | |
|--|-------------|--------------|--|
| PIT NAME | | DATE | |
| WATTSVILLE | | 7.8.16 | |
| TO CLEAR FILL | | | |
| ADDRESS | | | |
| PROJECT 0145127 | | | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | | | |
| SIGNATURE | | | |
| 15yd Top Soil | | | |
| <input type="checkbox"/> CUBIC YARD @ \$ | PER UNIT \$ | TOTAL | |
| DRIVER | TRUCK NO. | TIME LEAVING | |
| DRIVER | TRUCK NO. | TIME LEAVING | |
| RECEIVED BY | | | |
| MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS AUTHORITY. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER FEES WILL BE BILLED. | | | |

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INCORPORATED

PHONE
229-2504

**PIT
TICKET**

TICKET NO.

98808

| | | | |
|--|--|--------------|-------|
| PIT NAME | | DATE | |
| WATTSVILLE | | 7.8.16 | |
| TO CLEAR FILL | | | |
| ADDRESS | | | |
| PROJECT 0145127 | | | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | | | |
| SIGNATURE | | | |
| 15yd Top Soil | | | |
| FOR BY | <input type="checkbox"/> CUBIC YARD @ \$ | PER UNIT \$ | TOTAL |
| DRIVER | TRUCK NO. | TIME LEAVING | |
| DRIVER | TRUCK NO. | TIME LEAVING | |
| RECEIVED BY | | | |
| MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS AUTHORITY. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER FEES WILL BE BILLED. | | | |

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) 229-2504

**PIT
TICKET**

TICKET NO.
98809

| | | | |
|--|--|--------------|--|
| PIT NAME | | DATE | |
| WATBYVILLE | | 7.8.16 | |
| TO CLEAR FIELD | | | |
| ADDRESS | | | |
| PROJECT 10145127 10145127 | | | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | | | |
| SIGNATURE | | | |
| 15yd Top Soil | | | |
| FOR BY | | TOTAL | |
| HOUR | <input type="checkbox"/> CUBIC YARD @ \$ | PER UNIT \$ | |
| DRIVER | | TRUCK NO. | |
| Richard | | 56 | |
| DRIVER | | TIME LEAVING | |
| Richard | | | |
| RECEIVED BY | | | |
| MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED. | | | |

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INCORPORATED

PHONE
) 229-2504

**PIT
TICKET**

TICKET NO.
98810

| | | | |
|--|--|--------------|--|
| PIT NAME | | DATE | |
| WATBYVILLE | | 7.8.16 | |
| TO CLEAR FIELD | | | |
| ADDRESS | | | |
| PROJECT 10145127 | | | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | | | |
| SIGNATURE | | | |
| 15yd Top Soil | | | |
| FOR BY | | TOTAL | |
| HOUR | <input type="checkbox"/> CUBIC YARD @ \$ | PER UNIT \$ | |
| DRIVER | | TRUCK NO. | |
| Mt-26 | | 26 | |
| DRIVER | | TIME LEAVING | |
| Richard | | | |
| RECEIVED BY | | | |
| MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED. | | | |

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INCORPORATED

PHONE
9-2504

**PIT
TICKET**

TICKET NO.
98851

| | | | |
|--|--|--------------|--|
| PIT NAME | | DATE | |
| WATBYVILLE | | 7.8.16 | |
| TO CLEAR FIELD | | | |
| ADDRESS | | | |
| PROJECT 145107 | | | |
| MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS. | | | |
| SIGNATURE | | | |
| 15yd Top Soil | | | |
| FOR BY | | TOTAL | |
| HOUR | <input type="checkbox"/> CUBIC YARD @ \$ | PER UNIT \$ | |
| DRIVER | | TRUCK NO. | |
| TC-25 | | 25 | |
| DRIVER | | TIME LEAVING | |
| Ben | | | |
| RECEIVED BY | | | |
| MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWNERS. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED. | | | |

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BRANSCOME INCORPORATED

OFFICE PHONE
(757) 229-2504

PIT TICKET

TICKET NO.
98811

| | |
|------------|---------|
| PIT NAME | DATE |
| WATTSVILLE | 7.11.16 |

SOLD TO
CLEAR FIELD

ADDRESS

PROJECT
10145127

THE MATERIAL SHIPPED UNDER THIS CERTIFICATION HAS BEEN TESTED AND APPROVED AT THE SOURCE BY AN AUTHORIZED REPRESENTATIVE OF THE VA. DEPT. OF HIGHWAYS.

SIGNATURE

MATERIAL DESCRIPTION
15yd
Top Soil

| | |
|--|-------|
| PAID FOR BY | TOTAL |
| <input type="checkbox"/> HOUR <input type="checkbox"/> CUBIC YARD @ \$ PER UNIT \$ | |

| | |
|-----------------|-----------------|
| HAULER Ht-24 | TRUCK NO. 26 |
|-----------------|-----------------|

| | |
|--------------------------|--------------|
| DRIVER Richard Pender | TIME LEAVING |
|--------------------------|--------------|

RECEIVED BY

MATERIALS TO BE DELIVERED TO NEAREST ACCESSIBLE POINT UNDER TRUCKS OWN POWER. TRUCKS ARE NOT PERMITTED TO GO BEYOND CURB LINE EXCEPT UPON PROPERTY OWNER'S (BUYER) AUTHORIZATION AND RISK. NECESSARY WRECKER SERVICES WILL BE BILLED.