

APPENDIX K
COMMENT-RESPONSE DOCUMENT

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APPENDIX K. COMMENT-RESPONSE DOCUMENT

This appendix provides the comments that were received during the public review of the National Aeronautics and Space Administration's (NASA's) Draft Environmental Impact Statement for the Sounding Rockets Program at Poker Flat Research Range (PFRR EIS) and NASA's responses to those comments. Additional information about the process used to obtain public input on the Draft PFRR EIS can be found in Chapter 1 of the Final PFRR EIS.

K.1 INTRODUCTION

The National Aeronautics and Space Administration (NASA) released the *Draft Environmental Impact Statement for the Sounding Rockets Program at Poker Flat Research Range (Draft PFRR EIS)* in September 2012 (**77 FR 59611**) for review and comment by Federal, state, and local agencies; tribal governments; organizations; and the public. NASA distributed copies to those agencies, organizations, and individuals who were known or expected to have an interest in the EIS, as well as to those who specifically requested a copy. Copies were also made available on the project website and in public libraries.

The formal public comment period was 60 days (longer than the 45-day minimum required by the National Environmental Policy Act [NEPA]), from September 28, 2012, through November 28, 2012. Public meetings were held in Anchorage and Fairbanks, Alaska, on October 24 and 25, 2012, respectively, to encourage public comments on the *Draft PFRR EIS* and to provide members of the public with information about the NEPA process and the proposed action. In addition to comments received during the public meeting process, the public was invited to submit comments on the *Draft PFRR EIS* to NASA via (1) the *PFRR EIS* website (http://sites.wff.nasa.gov/code250/pfrr_eis.html), (2) a toll-free telephone number, (3) e-mail (Joshua.A.Bundick@nasa.gov), and (4) the U.S. mail.

NASA received six comment documents, containing approximately 40 comments on the *Draft PFRR EIS*. The comment documents included five submitted in writing and one provided orally at the public meeting in Fairbanks, Alaska. NASA considered all comments to determine whether corrections, clarifications, or other revisions were required before publishing the *Final PFRR EIS*. All comments were considered equally, whether written, spoken, mailed, or submitted electronically. The comments received and NASA's responses to these comments are presented in Section K.2. The transcripts of the public meetings held in Anchorage and Fairbanks, Alaska, are presented in Section K.3.

K.2 COMMENT DOCUMENTS RECEIVED AND NASA'S RESPONSES

Table K-1 lists the comment documents received.

Table K-1. Comments Received on the Draft PFRR EIS

Comment Document	Agency or Organization	Commenter
001	U.S. Environmental Protection Agency	Christine B. Reichgott
002	U.S. Department of the Interior	Pamela Bergmann
003	U.S. Air Force	Ed Lasselle
004	U.S. Fish and Wildlife Service	Richard Voss and Steve Berendzen
005	Northern Alaska Environmental Center ^a	Pamela Miller
006	Wilderness Society ^b	Wendy Loya

a. Comments taken from transcript of the public meeting in Fairbanks, Alaska, on October 25, 2012.

b. Comments submitted on behalf of eight other conservation organizations and two individuals.

**K.2.1 Comment Document No. 001
United States Environmental Protection Agency, Region 10
Christine B. Reichgott**

001



**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 10**
1200 Sixth Avenue, Suite 900
Seattle, WA 98101-3140

OFFICE OF
ECOSYSTEMS,
TRIBAL AND PUBLIC
AFFAIRS

November 20, 2012



NASA Wallops Flight Facility
PFRR EIS – Joshua Bundick, Manager
Mailstop: 250.W
Wallops Island, Virginia 23337

Re: EPA comments on the NASA Sounding Rockets Program at the Poker Flat Research Range (PFRR), Alaska Draft Environmental Impact Statement, EPA Project #11-017-NAS.

Dear Mr. Bundick:

Thank you for the opportunity to review the Draft Environmental Impact Statement (EIS) for the Sounding Rockets Program at the Poker Flat Research Range in interior Alaska (CEQ # 20120308). We have reviewed the EIS in accordance with our responsibilities under Section 309 of the Clean Air Act and the National Environmental Policy Act.

Section 309 specifically directs the EPA to review and comment in writing on the environmental impacts associated with all major federal actions as well as the adequacy of the EIS in meeting procedural and public disclosure requirements of NEPA. We have given this EIS an overall rating of LO (Lack of Objections). A description of our rating system is enclosed.

1

Although the NASA did not identify a preferred alternative, we believe, based on the analysis in the EIS, that Alternative 4-Maximum Cleanup Search and Recovery with Restricted Trajectories would be the environmentally preferable alternative, specifically due to the reduction of potential impacts to Wild and Scenic River segments and the Mollie Beattie Wilderness Area. We encourage the selection of Alternative 4 as the preferred alternative in the Final EIS.

2

We recognize that all action alternatives result in relatively minor impacts, with the exception of the generation of solid waste. Efforts to minimize the amount of waste as well as to properly manage it are incorporated into all alternatives; therefore, we do not have any specific recommendations to further reduce these impacts. We encourage continued communication with interested stakeholders, particularly nearby residents and area users to ensure effective participation in the NEPA process.

3

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Again, we appreciate the opportunity to offer comments on the Draft EIS. Please contact me at (206) 553-1601 or by email at reichgott.christine@epa.gov, or you may contact Jennifer Curtis of my staff in Anchorage at (907) 271-6324 or curtis.jennifer@epa.gov with any questions you have regarding our comments.

Sincerely,



Christine B. Reichgott, Manager
Environmental Review and Sediments Management Unit



Enclosure

**U.S. Environmental Protection Agency Rating System for
Draft Environmental Impact Statements
Definitions and Follow-Up Action***

Environmental Impact of the Action

LO – Lack of Objections

The U.S. Environmental Protection Agency (EPA) review has not identified any potential environmental impacts requiring substantive changes to the proposal. The review may have disclosed opportunities for application of mitigation measures that could be accomplished with no more than minor changes to the proposal.

EC – Environmental Concerns

EPA review has identified environmental impacts that should be avoided in order to fully protect the environment. Corrective measures may require changes to the preferred alternative or application of mitigation measures that can reduce these impacts.

EO – Environmental Objections

EPA review has identified significant environmental impacts that should be avoided in order to provide adequate protection for the environment. Corrective measures may require substantial changes to the preferred alternative or consideration of some other project alternative (including the no-action alternative or a new alternative). EPA intends to work with the lead agency to reduce these impacts.

EU – Environmentally Unsatisfactory

EPA review has identified adverse environmental impacts that are of sufficient magnitude that they are unsatisfactory from the standpoint of public health or welfare or environmental quality. EPA intends to work with the lead agency to reduce these impacts. If the potential unsatisfactory impacts are not corrected at the final EIS stage, this proposal will be recommended for referral to the Council on Environmental Quality (CEQ).

Adequacy of the Impact Statement

Category 1 – Adequate

EPA believes the draft EIS adequately sets forth the environmental impact(s) of the preferred alternative and those of the alternatives reasonably available to the project or action. No further analysis of data collection is necessary, but the reviewer may suggest the addition of clarifying language or information.

Category 2 – Insufficient Information

The draft EIS does not contain sufficient information for EPA to fully assess environmental impacts that should be avoided in order to fully protect the environment, or the EPA reviewer has identified new reasonably available alternatives that are within the spectrum of alternatives analyzed in the draft EIS, which could reduce the environmental impacts of the action. The identified additional information, data, analyses or discussion should be included in the final EIS.

Category 3 – Inadequate

EPA does not believe that the draft EIS adequately assesses potentially significant environmental impacts of the action, or the EPA reviewer has identified new, reasonably available alternatives that are outside of the spectrum of alternatives analyzed in the draft EIS, which should be analyzed in order to reduce the potentially significant environmental impacts. EPA believes that the identified additional information, data, analyses, or discussions are of such a magnitude that they should have full public review at a draft stage. EPA does not believe that the draft EIS is adequate for the purposes of the National Environmental Policy Act and or Section 309 review, and thus should be formally revised and made available for public comment in a supplemental or revised draft EIS. On the basis of the potential significant impacts involved, this proposal could be a candidate for referral to the CEQ.

* From EPA Manual 1640 Policy and Procedures for the Review of Federal Actions Impacting the Environment. February, 1987.

K.2.1.1 *NASA's Response to Comment Document No. 001*

Comment Number	Response
1	NASA appreciates EPA's review of the EIS and notes EPA's rating of "LO."
2	NASA has identified a Preferred Alternative in the Final EIS. The Preferred Alternative is discussed in detail in Chapter 2, Section 2.4.
3	NASA notes EPA's comments regarding the impact assessments discussed in the EIS.
4	NASA agrees with EPA's comment regarding continued public outreach. A major component of the Launch Vehicle and Payload Recovery Plan (Appendix E of the EIS) is continued public outreach and coordination with landowners and stakeholders.

**K.2.2 Comment Document No. 002
United States Department of the Interior
Pamela Bergmann**

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United States Department of the Interior

OFFICE OF THE SECRETARY
Office of Environmental Policy and Compliance
1689 C. Street, Room 119
Anchorage, Alaska 99501-5126



VIA ELECTRONIC MAIL, NO HARD COPY TO FOLLOW

ER 12/695

November 26, 2012

NASA Wallops Flight Facility
PFRR EIS – Joshua Bundick, Manager
Mailstop: 250.W
Wallops Island, VA 23337

Subject: Comments for the Sounding Rockets Program Draft Environmental Impact Statement, Poker Flat Research Range, Alaska

Dear Mr. Bundick:

The U.S. Department of the Interior (DOI) has reviewed the September 2012, Draft Environmental Impact Statement for the National Aeronautics and Space Administration’s (NASA) Sounding Rockets Program at the Poker Flat Research Range in Alaska (Draft EIS). We request that the following comments be taken into account by NASA in the Final Environmental Impact Statement (Final EIS). These comments are submitted in accordance with our expertise pursuant to the National Environmental Policy Act.

Chapter 3, Description of the Affected Environment, Section 3.7.2 Wildlife, Bearded Seals, Page 3-55. Cameron et al. 2010, in the 2010 Status Review for bearded seals, estimated 3,150 resident bearded seals residing in the Beaufort Sea year-round. However, in the Draft EIS, it was inaccurately stated that bearded seals are only seasonal migrants. While most bearded seals do migrate during the winter, many remain in the Beaufort Sea. [See Cameron, M. F., J. L. Bengtson, P. L. Boveng, J. K. Jansen, B. P. Kelly, S. P. Dahle, E. A. Logerwell, J. E. Overland, C. L. Sabine, G. T. Waring, and J. M. Wilder. 2010. Status review of the bearded seal (*Erignathus barbatus*). U.S. Dep. Commerce, NOAA Tech. Memo. NMFS-AFSC-211, 246 p.] This discrepancy needs to be corrected in the Final EIS.

1

Chapter 3, Description of the Affected Environment, Section 3.7.2 Wildlife, Muskoxen, Page 3-39. The Draft EIS states that muskoxen are the only ungulates residing on the North Slope year-round. This statement is inaccurate since the Teshekpuk Lake caribou herd mostly remains around Teshekpuk Lake throughout the year. Small numbers of caribou from the Porcupine Caribou herd, Central Arctic Caribou herd, and Western Arctic herd also reside year-round on the North Slope. [See Parrett, L.S. 2009. Unit 26A, Teshekpuk caribou herd. Pages 271-298 in P. Harper, editor. Caribou Management Report of Survey and Inventory Activities 1 July 2006 –

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002

30 June 2008. Alaska Dept. Fish and Game. Project 3.0 Juneau, Alaska, USA.] This needs to be corrected in the Final EIS.

2
cont'd.

Chapter 3, Description of the Affected Environment, Section 3.7.2 Wildlife, Pages 3-38 – 3-58.
We believe it is important for the Final EIS to include population estimates for all species in the existing environment, not just for some species (e.g. caribou and whales).

3

Thank you for the opportunity to review and comment on the Draft EIS. If you have any questions regarding these comments, please contact Sharon Warren with the Bureau of Ocean Energy Management at 907-334-5272 or sharon.warren@boem.gov.

Sincerely,



Pamela Bergmann
Regional Environmental Officer - Alaska

From: <Warren>, Sharon E <Sharon.Warren@boem.gov>
Date: Wednesday, November 28, 2012 7:30 PM
To: "Bundick, Joshua A. (WFF-2500)" <Joshua.A.Bundick@nasa.gov>
Cc: "Crews, Christopher E" <Christopher.Crews@boem.gov>
Subject: RE: DOI Comments for ER12-695 Sounding Rockets Draft EIS

Joshua,

I hope the following information provides an answer to your question. Chris Crews (a subject matter expert at BOEM) provided the response. He is available to provide you with any additional information or answer any further questions on this issue.

Bentzen et al. (2007) noted the presence of bearded seals in the winter diet of Southern Beaufort Sea polar bears. Generally bearded seals composed <18% of polar bear winter diets in the Southern Beaufort Sea indicating a relatively significant winter presence. Cameron et al. (2010) stated 3,150 bearded seal was an uncorrected estimate derived from surveys conducted in June, which is about the time when much of the sea ice breaks up. The status review (Cameron et al. 2010) went further to suggest such a low population number (3,150) would not explain the harvest of bearded seals in subsistence along the Beaufort Coast, and that the subsistence harvest levels for bearded seals in the Beaufort Sea are possible because of the numbers of bearded seals returning to the Beaufort Sea from the Chukchi and Bering Sea later in summer, after the time when the June surveys by Stirling et al. (1982) were conducted. These particular June surveys were the ones used to formulate the uncorrected population estimate of 3,150 bearded seals, which implies there is a population in June of around 3,150 bearded seals, that swells to a much higher number as seasonal migrants move into the area. This relationship suggests that there is a uncorrected year-round population estimate of about 3,150 bearded seals in the Beaufort Sea. The Bentzen et al. (2007) study clearly shows that there are bearded seals in the Beaufort Sea during winter, consequently it is reasonable to conclude that the 3,150 population estimate is best estimate of an overwinter Beaufort Sea bearded seal population that will increase later on during the summer with an influx of migrants from the Chukchi and Bering Seas.

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cont'd.

Refs.

Cameron et al. 2010

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Bentzen et al. 2007

Bentzen, T.W., Follmann, E.H., Amstrup, S.C., York, G.S., Wooller, M.J. and O'Hara, T.M. 2007. Variation in winter diet of southern Beaufort Sea polar bears inferred from stable isotope analysis. Canadian Journal of Zoology 85: 596–608.

Sharon E. Warren
Regional Supervisor, Environment
Alaska Region
Bureau of Ocean Energy Management
3801 Centerpoint Drive, Suite 500
Anchorage, AK 99503-5823
Phone: 907-334-5272
Email: sharon.warren@boem.gov

From: Warren, Sharon E
Sent: Tuesday, November 27, 2012 2:37 PM
To: 'Bundick, Joshua A. (WFF-2500)'
Subject: RE: DOI Comments for ER12-695 Sounding Rockets Draft EIS

Joshua,

I will have our Subject Matter Expert review and provide you a response soon.

Sharon E. Warren
Regional Supervisor, Environment
Alaska Region
Bureau of Ocean Energy Management
3801 Centerpoint Drive, Suite 500
Anchorage, AK 99503-5823
Phone: 907-334-5272
Email: sharon.warren@boem.gov

From: Bundick, Joshua A. (WFF-2500) [<mailto:joshua.a.bundick@nasa.gov>]
Sent: Tuesday, November 27, 2012 1:17 PM
To: Warren, Sharon E
Subject: FW: DOI Comments for ER12-695 Sounding Rockets Draft EIS

Hi Sharon, thanks for the comments on the DEIS. I was hoping you could help clarify your first comment:

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Chapter 3, Description of the Affected Environment, Section 3.7.2 Wildlife, Bearded Seals, Page 3-55. Cameron et al. 2010, in the 2010 Status Review for bearded seals, estimated 3,150 resident bearded seals residing in the Beaufort Sea year-round. However, in the Draft EIS, it was inaccurately stated that bearded seals are only seasonal migrants. While most bearded seals do migrate during the winter, many remain in the Beaufort Sea.

[See Cameron, M. F., J. L. Bengtson, P. L. Boveng, J. K. Jansen, B. P. Kelly, S. P. Dahle, E. A. Logerwell, J. E. Overland, C. L. Sabine, G. T. Waring, and J. M. Wilder. 2010. Status review of the bearded seal (*Erignathus barbatus*). U.S. Dep. Commerce, NOAA Tech. Memo. NMFS-AFSC-211, 246 p.]

This discrepancy needs to be corrected in the Final EIS.

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However, after researching the referenced document, I found the following, which doesn't seem to suggest that the estimate of 3,150 bearded seals applied to those overwintering; rather that it was a number derived from past surveys to estimate a summer population in both the Canadian and Alaskan Beaufort...please see below. Also, the current version of the EIS states that "bearded seals are not abundant there during winter...", which seems to correspond with the findings of a number of studies we have referenced...is there another document that you could point to that more than just a small amount of bearded seals overwinter in the Beaufort?

From Cameron et al 2010

2.8.1.4 Beaufort Sea

Aerial surveys of the eastern Beaufort Sea conducted in **June** during 1974 – 1979, provided estimates that averaged 2,100 bearded seals (Stirling et al. 1982), uncorrected for seals in the water. Annual variations in abundance (range = 1,300-3,100) may have been due to differences in sea ice conditions. It should be noted that because the surveys were designed chiefly for examining the distribution and density of ringed seals, their coverage of strata with the highest densities of bearded seals may not have been adequate. Bearded seals were much less abundant than ringed seals, and accurate estimates of their densities would have required greater coverage of survey areas (Kelly 1988). The ice-covered continental shelf of the western Beaufort Sea is roughly half the area surveyed by Stirling et al. (1982), **suggesting a crude estimate for the entire Beaufort Sea in June of about 2,100 X 1.5 = 3,150**, uncorrected for seals in the water.

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Please let me know if you need any clarification. Thanks again for your review.

All the best,

Josh

Joshua Bundick
Lead, Environmental Planning
NASA Wallops Flight Facility
Wallops Island, VA 23337
O: (757) 824-2319
F: (757) 824-1819
Joshua.A.Bundick@nasa.gov

On 11/26/12 3:39 PM, "Cochon, Grace" <grace_cochon@ios.doi.gov> wrote:

002

Hi Joshua,

Attached are the comments from the U.S. Department of the Interior for ER12-695 Draft Environmental Impact Statement for the NASA Sounding Rockets Program at the Poker Flat Research Range, AK. Please let me know when you receive this message.

Thank you very much,
Grace

--

Grace Cochon
Regional Environmental Protection Assistant
U.S. Department of the Interior
Office of Environmental Policy and Compliance
1689 C Street, Room 119
Anchorage, Alaska 99501
phone: 907-271-5011
fax: 907-271-4102
grace_cochon@ios.doi.gov
<http://www.doi.gov/pmb/oepec/anchorage.cfm>

K.2.2.1 *NASA's Response to Comment Document No. 002*

Comment Number	Response
1	NASA notes the U.S. Department of the Interior's comment regarding bearded seals. Chapter 3 of the Final EIS has been revised to incorporate this information.
2	Chapter 3 of the Final EIS has been revised to incorporate this information.
3	NASA notes the U.S. Department of the Interior's comment regarding wildlife populations within the launch corridor. Wildlife species within the launch corridor are discussed in Chapter 3, Section 3.7.2. However, due to the low probability of impacting wildlife species within the launch corridor, population estimates for all species were not added to the Final EIS.

K.2.3 Comment Document No. 003
United States Air Force
Ed Lasselle

003

Subject: FW: DEIS for Sounding Rockets Program-Poker Flats

On 11/27/12 9:12 PM, "LASSELLE, J E JR GS-12 USAF PACAF 611 AOC/CODK"
<j.lasselle@us.af.mil> wrote:

>Mr Bundick,

>

>I'm writing on behalf of the 11th Air Force Airspace and Range Team
>(611 AOC/CODK, JBER, AK).

>

>Based on my readings in the DEIS, we have "no comment" since this does
>not appear to affect military airspace (MOAs/ATCAAs); the rocket should
>be above the YUKON MOAs/ATCAAs, not in them. If this assumption is not
>>true, further discussion is required.

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>I would like to re-energize a courtesy notification that someone at
>Poker Flats used to provide the Air Force, but hasn't for the past
>several years.

2

>We're requesting that Eielson Range Control (comm. (907)377-3125) be
>notified prior to a launch. They can be reached during normal business
>hours and anytime the YUKON MOAs are active. Currently, we do not fly
>in the MOAs past 2200 hours (AK local time).

>

>We have a few questions regarding launches: How do you protect the
>airspace for a rocket launch at Poker Flats? Is there a TFR? NOTAM?
>Also, the YUKON ATCAAs can be active as high as 60,000 ft MSL - would
>the rocket trajectory have the rocket above 60,000 ft by 40 nm
>downrange if you used your easterly launch corridor?

3

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>Good luck with your EIS!

>

>//signed//

>Ed Lasselle, GS-12, DAF
>611 AOC/CODK (Airspace & Ranges)

>DSN (317)552-5715

>COM (907)552-5715

>j.lasselle@us.af.mil

>

>

K.2.3.1 NASA's Response to Comment Document No. 003

Comment Number	Response
1	<p>NASA appreciates the U.S. Air Force's review of the EIS and notes the Air Force's statement of "no comment" for the EIS.</p> <p>Regarding the military airspace, generally rockets fly above the Military Operations Areas (MOAs) and Air Traffic Control Assigned Airspace (ATCAAs); however, at times they do pass through them on either the up leg or down leg of a flight. To ensure that all activities within the airspace are de-conflicted, PFRR coordinates directly with FAA prior to launch.</p>
2	<p>As a standard practice, PFRR notifies Eielson Range Control, Fort Wainwright, and Elmendorf Air Force Base (AFB) prior to the launch window opening. NASA will work with PFRR to ensure that this practice continues.</p>
3	<p>Generally, rockets flown from PFRR would be far above 60,000 feet at 40 nautical miles downrange in any direction (with the exception of items re-entering).</p> <p>Regarding the airspace, it is protected in a number of ways. PFRR employs a combination of Temporary Flight Restrictions (TFRs) and Altitude Reservations (ALTRVs), all of which are issued as Notices to Airmen (NOTAMs) by Central Altitude Reservation Function (CARF). Additionally, range staff members are in direct contact with FAA during launch countdown and coordinate real-time to ensure there are no conflicts with airspace usage.</p>

K.2.4 Comment Document No. 004
United States Fish and Wildlife Service
Richard Voss and Steve Berendzen

004



United States Department of the Interior

FISH AND WILDLIFE SERVICE
Yukon Flats National Wildlife Refuge
101 12th Avenue, Room 264
Fairbanks, Alaska 99701-6293



December 3, 2012

NASA Wallops Flight Facility
PFRR EIS – Joshua Bundick, Manager
Mailstop: 250.W
Wallops Island, VA 23337

Subject: U.S. Fish and Wildlife (FWS) comments on the Sounding Rockets Program Draft Environmental Impact Statement, Poker Flat Research Range, Alaska

Dear Mr. Bundick:

Thank you for the opportunity to review the September 2012, Draft Environmental Impact Statement for the National Aeronautics and Space Administration's (NASA) Sounding Rockets Program at the Poker Flat Research Range in Alaska (Draft EIS). We appreciate the inclusion of our earlier comments that we provided you on the pre-release draft. We request that the following comments be taken into account by NASA in their Final Environmental Impact Statement (Final EIS). These comments are submitted in accordance with our responsibilities pursuant to the National Environmental Policy Act and our status as a Cooperating Agency in the EIS.

We are having trouble discerning the tangible/significant differences in the alternatives with respect to the Recovery Plan Actions. Alternatives 1 and 3 include the Environmentally Responsible Search and Recovery of rockets feature. The narrative for these alternatives fails to clearly articulate what we understand to be the principal component of this feature, that the only parts of the rocket that may be routinely left on downrange lands, the safety of the recovery crew notwithstanding, would be those that are sufficiently buried in the ground such that removal would not be possible with simple hand or power tools. In those instances, it is our understanding from our conversations with you, the procedure would be to excavate a shallow trench around the rocket, cut off the above ground part for removal and bury the subterranean section. We would like to see this stated explicitly in the description of the alternatives section entitled "Recovery Procedures" on page 2-56 and in the summary table 2-11 on page 2-74.

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Also per our conversations with NASA, we would like to see additional details in the same Recovery Plan Actions section for Alternatives 2/4 (Section 2.3.5, page 2-59, para2) as outlined below. Please include a detailed description of the types of recovery heavy equipment proposed (we understand this to be analogous to a bulldozer) and how that equipment might get to the recovery site – e.g. by heavy lift helicopter (e.g. Chinook) or by travel over land and the potential impacts that may occur from the various forms of travel to the site. Please describe which areas in the study area would lend itself to travel over land (from our perspective on refuges this would be limited to the immediate vicinity surrounding a village). Please acknowledge that any travel to the site or helicopter landing would have to be approved

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in the special use permit issued by the land management agency. We agree with your assessment of the potential impacts from the heavy equipment itself as described on page 2-59.

Section 2.4.5 (pages 2-64 through 2-66) states that installation of a parachuted payload recovery system on all future missions is not a feasible alternative because it decreases NASA’s ability to accomplish science objectives and is technically challenging. It should be made clear in this discussion that pursuit of a recovery system for all future missions and attaining science objectives are not mutually exclusive. This discussion should state that a continued long-term commitment to develop creative means to recover rocket parts will be pursued in concert with attaining science objectives. We appreciate the example of commitment to continued improvement of location aides found on page 2-51. Please also note that a viable rocket component recovery program is a current condition of the special use permits granted to University of Alaska Fairbanks by the FWS.

- To reinforce NASA’s long term commitment to adoption of a full recovery rocket parts program please amend Section 1.2 Policy, page 1, last sentence, as follows (additions underlined):
 “However, NASA is committed to implementing a multi-tiered recovery approach that addresses both past and future launches including a continued long-term effort in pursuit of a functional recovery system of rocket parts for all future missions in order to continue operations at PFRR within a sensitive environmental context. This will be achieved with continuous technology improvements to track, locate, and remove rocket debris.”
- Please also insert in Section 2.4.5 in the opening paragraph the total number of missions to date that did include a recovery system.

We offer the following component addition to Table2-11 which would apply to alternatives 1-4:

- Pursue long term efforts to implement a full rocket parts recovery program for all future missions through continuous technology improvements to track, locate, and remove rocket debris.

Although NASA did not identify a preferred alternative, we feel that if the above changes are made, Alternative 3, “Environmentally Responsible Search and Recovery with Restricted Trajectories”, would be the best alternative for the National Wildlife Refuges found downrange. Specifically, we believe that removing buried rockets would likely cause more damage to the environment than leaving the buried parts in-situ and we therefore support the cleanup of all rocket parts except those buried deeply in the ground and restricting trajectories to protect the Wild and Scenic River Corridors. We feel that these provisions will reduce potential impacts and best protect the resources and visitor experiences at Arctic and Yukon Flats National Wildlife Refuges.

If you have any questions regarding these comments please contact Anne Marie La Rosa, Deputy Refuge Manager, Arctic NWR, 456-0549 or Mark Bertram, Wildlife Biologist, Yukon Flats NWR, 456-0446.

Sincerely,



Richard Voss
Refuge Manager
Arctic National Wildlife Refuge



Steve Berendzen
Refuge Manager
Yukon Flats National Wildlife Refuge

K.2.4.1 NASA's Response to Comment Document No. 004

Comment Number	Response
1	NASA notes USFWS's comment regarding the need for clarification between alternatives evaluated in the EIS. Chapter 2, Section 2.3, has been revised to add clarification regarding the alternatives evaluated in the <i>PFRR EIS</i> .
2	In response to the USFWS comment, NASA prepared additional detailed analysis of the possible effects of using heavy mechanized equipment for recovery of flight hardware in downrange lands (see Appendix I). In consideration of the logistical, fiscal, and potential environmental costs of conducting such a recovery, NASA has dismissed the regular use of heavy mechanized equipment in its Recovery Program. As such, a summary of this option has been added as an alternative considered but dismissed from further study in Chapter 2, Section 2.5.7.3, of the <i>PFRR EIS</i> .
3	Comment noted. The Launch Vehicle and Payload Recovery Plan (Appendix E) and Chapter 2 of the EIS have been revised per this suggestion.
4	Comment noted. Chapter 2 has been revised per this suggestion.
5	Comment noted. NASA has identified a Preferred Alternative in the Final EIS. The Preferred Alternative is discussed in detail in Chapter 2, Section 2.4.

**K.2.5 Comment Document No. 005
Northern Alaska Environmental Center
Pamela Miller**

1

1 NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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SOUNDING ROCKETS PROGRAM AT POKER

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FLAT RESEARCH RANGE

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DRAFT ENVIRONMENTAL IMPACT STATEMENT

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PUBLIC MEETING

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DATE: OCTOBER 25, 2012

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6:00 p.m.

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BLM FAIRBANKS DISTRICT OFFICE

13

1150 UNIVERSITY AVENUE

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FAIRBANKS, ALASKA 99709

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17 Amy Hartley, Facilitator

18 PANEL MEMBERS:

19 Mr. Joshua Bundick, NASA Wallops Flight Facility

20 Mr. John Hickman, NASA Wallops Flight Facility

21

22 REPORTED BY: Natalie Gil

23 KRON ASSOCIATES

24 COURT REPORTING

25 (907) 276-3554

KRON ASSOCIATES
1113 W. Fireweed Lane, Suite 200
Anchorage, Alaska 99503
(907) 276-3554

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NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

DRAFT ENVIRONMENTAL IMPACT STATEMENT

SOUNDING ROCKETS PROGRAM AT POKER
FLAT RESEARCH RANGE

TRANSCRIPT OF PUBLIC COMMENT

PAMELA A. MILLER
Arctic Program Director
Northern Alaska Environmental Center

Fairbanks, Alaska
October 25, 2012
7:48 o'clock p.m.

KRON ASSOCIATES
1113 W. Fireweed Lane, Suite 200
Anchorage, Alaska 99503
(907) 276-3554

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1 increasingly be important. And I guess, I would hope that this
2 -- these are not very formal comments at this stage in the game.

3 I would hope that the EIS looks forward to -- sometimes
4 it's unforeseen with technology -- may there be a different kind
5 of rocket, a different kind of launch that there will be a lot
6 of demand for the science in the future. And as all this --
7 activities increasingly happening in the ocean as well in our
8 State. How will you adapt the decisions that are made for five
9 or ten years down the road to realize, hey, we've got a whole
10 lot more going here than we had up until now. I think there are
11 impacts to the local residents at the launch site.

12 By rumor at the last meeting, I heard from at least one
13 resident who lived in the area, and that there is noise. And
14 that it is disruptive. And to keep that in mind when timing of
15 the operations. And you probably address that in the EIS. But
16 that is an impact within our regional community here in
17 Fairbanks.

18 Clearly the public lands that are affected down range of
19 this project are a primary concern -- integrity in the purposes
20 of the Arctic Refuge, Yukon Flats Refuge, the White Mountains
21 National Recreation Area, State's conservation area. And I will
22 just note that Yukon Flats National Wildlife Refuge does have a
23 recommended wilderness area along the White Mountains flank
24 that's in existence today. There may be other similar areas

KRON ASSOCIATES
1113 W. Fireweed Lane, Suite 200
Anchorage, Alaska 99503
(907) 276-3554

1 like that in the Arctic Refuge in the future.

2 And there's under consideration for the White Mountains in
3 their ongoing plan that's on the table right now for public
4 comment to have at least one of the alternatives -- recommends a
5 White Mountains area of critical environmental concern to
6 address the sheep and the caribou in the White Mountains. The
7 map -- it looks like you've addressed that issue. But that
8 particular -- that it could be designated in a more protective
9 way than it is today. I think it's important to note. I did
10 look at the map having to do with caribou and it shows the
11 calving areas for the Porcupine Caribou herd. But I think it
12 would be helpful for your operations and for the planning to
13 also include on that map the migratory routes of the caribou and
14 to acknowledge the wintering grounds of the porcupine caribou.
15 Because those are animals that are hunted, as well as it is
16 important habitat for the animals themselves.

5
cont'd.

6

17 I would say for the -- let's see here -- the recovery,
18 it's a tough choice evaluating the trade offs of alternative
19 three and four. How much effort and what kind of impact is
20 there from the recovery effort? And so we're evaluating which
21 alternative to recommend and we'll do that in writing.

7

22 Clearly, we would love to see an alternative analyzed that
23 didn't have any of this in the Arctic Refuge and in these other
24 prized public lands. Given that that's probably unrealistic

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1113 W. Fireweed Lane, Suite 200
Anchorage, Alaska 99503
(907) 276-3554

1 having had such a long use of this program; you know, we think
2 you've done a pretty good job of looking at some management
3 recommendations. I think the fall time and -- for the recovery
4 operation, perhaps more specifics should be identified of the
5 sensitive times, where and what. So that there's no having to
6 plan on the fly in the summer time or the fall time or whatever,
7 because the -- there's -- is a real busy time when the caribou
8 are moving south in August into September. There's hunting in
9 Artic Village. There's a lot of activity -- sports hunters.
10 There's activity of recreational use still. It's a really busy
11 time. And avoiding that time for the recovery efforts, other
12 than if you're piggy backing on something that's already
13 happening in the area or it might make sense. That's the one
14 time I saw that, I'm not sure, I know there's been good input
15 from the land management agencies and I really appreciate their
16 work on it. But that's one time period I could really see
17 issues with.

8
cont'd.

9

18 And, I am concerned about the cumulative impacts in the
19 Arctic Ocean when we're looking out five, ten years from now. I
20 think, taking for granted that it's not a problem to be dumping
21 these things up there. I would like to see a little bit more of
22 that addressed in the document. And as I said in the questions,
23 I think, with a lot of the science programs that are going on
24 right now, there's an effort to have the scientists let the

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1113 W. Fireweed Lane, Suite 200
Anchorage, Alaska 99503
(907) 276-3554

1 communities know when they're coming and give presentations in
2 the schools.

3 I think there's a good opportunity in Kaktovik, as well as
4 some of the other villages that you've already gotten that
5 started in and that could be something that the agencies could
6 consider in their permit aspects of the program.

11
cont'd.

7 And, I think -- we appreciate that you've done that -- the
8 communication with the villages. And I suggest just bringing up
9 the fall time period and just talking about where people are out
10 on the land. Assuming that you know where everybody is all the
11 time, I think is impossible. Because people do travel. We get
12 these crazy skiers who hike up in the winter and ski from
13 Fairbanks to the Arctic Ocean. The chances they're going to get
14 hit by, you know, it's a very low chance. But people can be out
15 there and just keep that in mind.

12

16 Let me just take a quick look to see if I've raised what I
17 wanted to. Oh, I -- with respect to the debris, when it -- in
18 the recovery program, I would recommend that there be a -- a
19 requirement for the mitigation that it not go into the landfills
20 of these villages. It's a burden to them and if there are
21 contaminated materials -- lead, whatever -- it's -- they didn't
22 ask for it to come into their part of the world. And I think it
23 should be properly disposed of. And not add to the long term
24 cost of remote landfills, where once it's here, it's not

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1113 W. Fireweed Lane, Suite 200
Anchorage, Alaska 99503
(907) 276-3554

1 leaving. And it could incur greater costs that way. But I
2 think it's a worthwhile thing to consider and to do.

13
cont'd.

3 So, thank you for your work on this. I think it's a
4 pretty well written, easy to read document. And we will be --
5 I'll be finishing looking at it and make some further, more
6 specific recommendations about the Alternative. Thank you.

7 MS. HARTLEY: Thank you for your comments. Are there any
8 other comments that anybody would like to place on the record?
9 Oh. Come on back.

10 MS. MILLER: I would -- this is Pam Miller again -- I
11 would be in remiss to say that I talked about the remarkable
12 values of these public lands, the conservation system units that
13 we're talking about and wilderness is a really important value.
14 And I think you've acknowledged that in the document. I think
15 it is a really important value for the Fish and Wildlife Service
16 in their permitting of these activities that have gotten into
17 the Refuge a long time ago. And we clearly want to do, you know
18 -- they're remarkable wilderness values and that should be
19 something we all strive to keep well into the future. So, thank
20 you.

14

21 MS. HARTLEY: So it doesn't look like anybody else is
22 interested in providing a formal comment. So we'll go ahead and
23 conclude the public comment portion.

24 7:59 p.m.

KRON ASSOCIATES
1113 W. Fireweed Lane, Suite 200
Anchorage, Alaska 99503
(907) 276-3554

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END OF REQUESTED PORTION

KRON ASSOCIATES
1113 W. Fireweed Lane, Suite 200
Anchorage, Alaska 99503
(907) 276-3554

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TRANSCRIBER'S CERTIFICATE

I, Natalie Gil, hereby certify that the foregoing pages numbered 3 through 8 are a true, accurate and complete transcript of proceedings of the Public Comment for Environmental Impact Statement for the Sounding Rockets Program at Poker Flat Research Range, transcribed by me from a copy of the electronic sound recording to the best of my knowledge and ability.

December 7, 2012

Natalie Gil

Date

Natalie Gil

KRON ASSOCIATES
1113 W. Fireweed Lane, Suite 200
Anchorage, Alaska 99503
(907) 276-3554

K.2.5.1 NASA's Response to Comment Document No. 005

Comment Number	Response
1	NASA notes the commenter's interest in weather and climate-related research. The summary of research enabled by PFRR has been expanded to include more discussion of its applicability to weather and climate-related sciences. Additionally, Appendix J has been added to provide the reader with a more detailed list of recent publications stemming from PFRR-enabled research.
2	<p>Chapter 1, Section 1.1.5, of the EIS discusses the science that is conducted by the NASA Sounding Rockets Program at PFRR. As discussed in Chapter 2, Section 2.3.1, NASA forecasts that an average of about four launches per year would be conducted at PFRR, but could range up to eight launches per year. This is NASA's best estimate based upon recent and reasonably foreseeable future launch rates and program funding profiles.</p> <p>However, as noted by the commenter, given the possibility for future changes in launch frequency, types of launch vehicles, or the environmental conditions within the PFRR flight corridor, NASA undertakes an annual review of all PFRR sounding rocket launches. Should future changes to the program or environmental context have the potential to notably change environmental impacts presented in the EIS, NASA would prepare additional NEPA analysis, as appropriate.</p>
3	Chapter 4 provides detailed discussion of the potential impacts from the alternatives evaluated in the EIS. As a matter of practice, PFRR posts public notices of its upcoming launches such that potential impacts on local residents are minimized.
4	Potential impacts of noise associated with the alternatives evaluated in the EIS are discussed in Chapter 4, Section 4.5. As a matter of practice, PFRR posts public notices of its upcoming launches such that potential impacts on local residents are minimized.
5	USFWS and BLM are cooperating agencies in the development of the EIS, and both have provided key information regarding the existing and potential future land uses within the launch corridor. Potential impacts on and compatibility with existing land use designations within the lands within the launch corridor are discussed in Chapter 4, Section 4.8. Potential future changes in land uses (<i>e.g.</i> , future recommended Wilderness, establishment of BLM Areas of Critical Environmental Concern [ACECs]) are discussed in Section 4.15, "Cumulative Effects."
6	Chapter 3, Figure 3-4, has been revised to include the general migratory routes of the Porcupine Caribou Herd.
7	Chapter 2, Table 2-12, "Summary of Potential Impacts by Alternative," provides a comparison of the potential impacts per alternative evaluated in the EIS. NASA has identified its Preferred Alternative in Section 2.4 of the Final EIS.
8	NASA evaluated a range of potential alternatives that would avoid impacts on the subject public lands; however, they were dismissed from further consideration due to their inability to meet NASA's purpose and need for conducting operations at PFRR. Chapter 2, Section 2.5, of the EIS discusses these alternatives. Additionally, NASA has updated Chapter 2, Section 2.6, and Chapter 4 to include further clarification and impacts analysis of scenarios if BLM and/or USFWS decided not issue an authorization.

Comment Number	Response
9	<p>NASA analyzed the potential impacts on wildlife, recreation, and subsistence use resources from the alternatives evaluated in the EIS. The potential impacts on wildlife are discussed in Chapter 4, Section 4.7.4; the potential impacts on recreation are discussed in Chapter 4, Section 4.8; and the potential impacts on subsistence use resources are discussed in Chapter 4, Section 4.10.</p> <p>Regarding the suggestion of “piggy-backing” recovery efforts onto other operations within the launch corridor, NASA is very interested in leveraging all available resources, including land management agency activities or existing commercial flights, to remove flight hardware from downrange lands, and would direct PFRR to pursue them as appropriate. A recent example of leveraging such resources is when BLM “smoke jumpers” were employed to remove several items in 2011.</p>
10	<p>Cumulative effects are discussed in Chapter 4, Section 4.15, of the EIS.</p>
11	<p>A key component of ensuring the effectiveness of the Recovery Program is to establish and maintain active public outreach efforts. Appendix E, Section 4.0, outlines the outreach and recordkeeping component of the Recovery Program. This includes posting notices in local media (<i>e.g.</i>, newspaper) to inform the public of the upcoming launch; providing downrange landowners a mission “fact sheet” that includes a brief summary of the mission’s objectives, the launch vehicle and recovery aides to be used, a map and location of the planned impact points, and span of the launch window; and distributing handouts to all local commercial aircraft companies, the local chapter of the private pilots association, and local guides to remind aviators and guides of the Rewards Program and the process to follow should either a staff member or client encounter a suspected piece of flight hardware. This same handout would also be distributed to all Alaska Native Village Councils within and adjacent to the PFRR flight corridor.</p> <p>Regarding outreach to Village schools, NASA and PFRR staff gave presentations to several schools in parallel with preparing the EIS. All were well received, and as such, NASA would encourage PFRR to continue this type of outreach as practicable.</p>
12	<p>Safety is NASA’s top priority in conducting its operations at PFRR. As a matter of practice, each year PFRR coordinates with all Villages in the downrange lands to ensure that its population estimates are up to date and to confirm the areas of highest seasonal usage. The information is then utilized in developing safety plans for each mission.</p>
13	<p>Chapter 4, Section 4.12, discusses the potential impacts of waste management from the alternatives discussed in the EIS. As discussed in Section 4.12 and the Launch Vehicle and Payload Recovery Plan (Appendix E of the EIS), when rocket hardware is recovered from the launch corridor, it is returned to the launch site and disposed of in accordance with all Federal, state, and local regulations. Under no circumstances would a PFRR-commissioned recovery operation intentionally dispose of its waste in a Village landfill.</p>
14	<p>Comment noted. NASA recognizes the importance of the downrange lands, and as such has incorporated flight hardware recovery and/or avoidance of the most sensitive lands (<i>i.e.</i>, designated Wilderness, designated Wild Rivers) as integral components of each alternative considered in detail in the EIS.</p>

**K.2.6 Comment Document No. 006
The Wilderness Society
Wendy Loya**

006



December 7, 2012

NASA Goddard Space Flight Center
Wallops Flight Facility
Wallops, Island, VA 23337

RE: Comments on the Poker Flats Research Range (PFRR) Draft Environmental Impact Statement

Dear NASA:

Please accept the following comments on the Draft Environmental Impact Statement (DEIS) for the Sounding Rockets Program at Poker Flat Research Range (SRP at PFRR) with regards to additional important issues that we believe should be addressed in the final EIS. These comments are submitted by The Wilderness Society on behalf of: Alaska Wilderness League, Center for Biological Diversity, Defenders of Wildlife, Friends of Alaska National Wildlife Refuges, Natural Resources Defense Council, Sierra Club, Wilderness Watch, Winter Wildlands Alliance and individuals, Brad Meiklejohn and Allen Smith.

We continue to appreciate the time that individuals at NASA, PFRR, USFWS, BLM and others have taken to help us better understand the EIS process, history of NEPA analyses. We also appreciate the documents produced related to the sounding rockets program that better explain the rockets and debris falling on lands managed by the Department of the Interior.

We also appreciate the efforts put forth by NASA, PFRR and others the past two years to begin to recover debris from recent and past launches. We hope that our comments here can help minimize future impacts to the lands that many Alaskans, Americans and the global community appreciate for their wildness values.

In summary, we do not support any alternatives that diminish or endanger the values of the federal lands managed by USFWS and BLM that are downrange of PFRR and can only support an alternative that protects those values.

The DEIS fails to present a viable alternative as follows and detailed in our technical comments below:

- | | |
|---|---|
| 1. The alternatives presented do not preserve the invaluable Wilderness characteristics of downrange lands. | 1 |
| 2. Landing debris on National Wildlife Refuges (NWR) is not compatible with their purposes. | 2 |
| 3. The current No Action Alternative should be dismissed because it fails to meet the requirements of the existing land use permits from USFWS. | 3 |
| 4. The DEIS should include one or more reasonable alternatives which consider discontinuing the SRP at PFRR, which is essential for providing a baseline for comparing the impacts of the alternatives presented in the DEIS. | 4 |
| 5. The DEIS fails to adequately describe the importance of the science conducted as part of the SRP at PFRR and its relationship to the purposes of the public lands which it impacts. | 5 |
| 6. The DEIS dismisses adoption of NASA's own numerical risk criteria as a means to protect high value lands, including identified wilderness and wild rivers. | 6 |
| 7. DEIS fails to establish USFWS and BLM's purposes in managing lands downrange of PFRR. | 7 |
| 8. The amount of debris that is likely to be removed is overestimated. | 8 |
| 9. The impact on Land Use and Recreation, and the wilderness within this category, has the potential to be significant under all alternatives presented in the DEIS. | 9 |

After carefully considering the information that has been presented in the DEIS, we could support a modified version of Alternative 3, but only if it:

- 1) Reduced the probability to zero (0.0%) of landing debris (stages, payloads or other) on USFWS and BLM lands designated, proposed, and/or recommended as Wilderness or Wilderness Study Areas as well as designated, proposed and recommended Wild and Scenic Rivers. Henceforth, we will define these as "identified wilderness and wild rivers."
- 2) Did not plan to land debris on non-wilderness lands managed under the USFWS National Wildlife Refuge System, unless the research is directly related to providing scientific information to meet the purposes for which the refuges were established.
- 3) For all USFWS and BLM administered public lands, adopt a recovery program that maximizes recovery of all past and future debris while minimizing environmental impacts.
- 4) For all other state, tribal or private lands, establish a recovery program which conveys a responsible land ethic on behalf of NASA and PFRR to land owners and to investigators, especially student mentorees, regardless of permit requirements.

10

Our detailed analysis of the DEIS is as follows:

1. The alternatives presented do not preserve the invaluable Wilderness characteristics of downrange lands and the EIS must consider an alternative that does not allow program impacts on these lands.

When NASA looks at a map of the area north of PFRR, it sees a largely blank area with few towns, airports or high-value infrastructure and perceives this to be an appropriate area where it can drop its debris. For more than 40 years NASA has treated these lands as a dumping ground with no intention of cleaning these areas up. Even today, NASA is only willing to expend 10% of its budget for this program to attempt to cleanup past and future debris on federal lands. It continues to think that leaving all of its debris on state lands, administered by Alaska Department of Natural Resources, is acceptable and therefore exempt from recovery programs presented in the DEIS for the SRP at PFRR.

When our organizations and our members look at this map, we see one of the few remaining large wilderness areas in our nation. The lands administered by the USFWS and BLM remain predominantly free from roads and infrastructure because they are recognized for their wildlife habitat, wilderness and recreational values prior to, and as a result of, ANILCA. While neither Yukon Flats NWR nor Arctic NWR are designated Wilderness in their entirety, nor is there designated Wilderness in the Steese NCA or White Mountains NRA, there is no doubt that both refuges and much of the BLM lands have significant wilderness values. The fact that there is no "high-value infrastructure" in the lands downrange of PFRR makes this land invaluable.

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cont'd.

An individual seeking a wilderness experience is likely to have a diminished experience if they are to come across rocket debris or to have their solitude disrupted by recovery operations. The overlap between the time when most people choose to explore the wilderness of Arctic NWR and the Yukon River wilderness in Yukon Flats NWR is during the summer, the season when recovery operations are permitted to occur. A once-in-a-lifetime experience could be altered by the debris and recovery operations. While the DEIS describes motorized users as less likely to be impacted by debris, we disagree with that generalization. Explorers seeking a wilderness experience in the remote BLM lands may expect to encounter other users, both mechanized and un-mechanized, cabins and intermittent fixed wing aircraft use. Individuals in Arctic NWR might expect to hear fixed wing aircraft but no other sounds, people or infrastructure. Few of any of these users are likely to want to observe garbage on the landscape, such as used toilet paper, abandoned snowmachines or rocket stages.

Wilderness areas hold values protected in law and great value for many people and therefore deserve protection. Because Wilderness designation requires complex legal steps until Congress acts, we feel it is important that wilderness quality lands at all stages of review (proposed, recommended, study areas and designated) be managed and protected to ensure preservation of their wilderness characteristics, as defined by the Wilderness Act of 1964. Wild Rivers are protected for similar unspoiled characteristics within a watershed.

DEFINITION OF WILDERNESS

A wilderness, in contrast with those areas where man and his own works dominate the landscape, is hereby recognized as an area where the earth and its community of life are untrammelled by man, where man himself is a visitor who does not remain. An area of wilderness is further defined to mean in this Act an area of undeveloped Federal land retaining its primeval character and influence, without permanent improvements or human habitation, which is protected and managed so as to preserve its natural conditions and which (1) generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable; (2) has outstanding opportunities for solitude or a primitive and unconfined type of recreation; (3) has at least five thousand acres of land or is of sufficient size as to make practicable its preservation and use in an unimpaired condition; and (4) may also contain ecological, geological, or other features of scientific, educational, scenic, or historical value. [Wilderness Act of 1964]

WILD RIVERS

Those rivers or sections of rivers that are free of impoundments and generally inaccessible except by trail, with watersheds or shorelines essentially primitive and waters unpolluted. These represent vestiges of primitive America.

As part of the revision of the Arctic NWR Comprehensive Conservation Plan (CCP), all lands within the Arctic Refuge are undergoing Wilderness Review, and we fully support that the lands be proposed or recommended by the FWS for Wilderness Designation. Rocket debris landings are inappropriate on lands that are proposed or recommended for Wilderness designation and should be managed to maintain their wilderness qualities. Our organizations have been working to protect this crown jewel of the National Wildlife Refuge System from all forms of threat to its wilderness character for decades, and we have been dismayed to find that NASA feels it is acceptable to land and leave rockets scattered across these wildlands.

It is also likely that the FWS will be revising the CCP for Yukon Flats in the coming year. This refuge is a mosaic of wetlands, rivers, ponds and forest that provide critical habitat for moose, caribou, migratory birds, fish, wolves, grizzly bears and many other species. As with the Arctic Refuge, the communities within the boundaries of Yukon Flats use these lands and their own lands for meeting their subsistence needs, and the refuge contains very high-value wildlife habitat overall. We are concerned about the potential impacts of this program to the entire Yukon Flats Refuge, and believe that, in particular, the USFWS designated Wilderness Study Area, which is along the southern portion of the Refuge and managed as if it were designated Wilderness, should not be a landing site. Impacts to Beaver Creek National Wild and Scenic River are a further concern, and this area should also be exempt (zero probability) from consideration as a landing site for debris. Virtually all of Yukon Flats NWR was found to qualify for Wilderness Area designation under the mandated ANILCA Sec. 1317 Wilderness Reviews.

It should also be noted that the Steese NCA and White Mountains NRA are undergoing evaluation for their wilderness value as part of the Eastern Interior Resource Management Plan and DEIS. In the preferred alternative of the DEIS, the BLM has recommended that wilderness characteristics be maintain 640,000 acres in the Steese and 312,000 acres White Mountains. While it appears unlikely that these areas will be proposed for Wilderness designation at this time, their wilderness characteristics should be maintained, including removal of any rocket debris.

The EIS should analyze an alternative where federal lands falling in the following categories will be exempt from consideration as a landing site for debris from the SRP at PFRR: Proposed Wilderness and Wild Rivers, Recommended Wilderness and Wild Rivers, Wilderness Study Areas and Designated Wilderness and Wild Rivers. This alternative meets the criteria outlined in the DEIS for selection of reasonable alternatives (2.2; DEIS at 2-45), including:

- Continued siting at PFRR;
- Continued ground-based research at Fort Yukon, Toolik, Kaktovik or other air-accessible communities with permission, such as Arctic Village and Venetie;

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cont'd.

- Addresses concerns about impacts to “sensitive areas” defined as designated Wild Rivers and Wilderness areas, but expanded to include lands proposed and recommended through the administrative process for identifying and/or designating Wilderness and Wilderness Study Areas, including USFWS CCPs and BLM Resource Management Plans (RMPs), ;
- Allows for the same launch and recovery operations presented in the DEIS (requires restriction or innovation of vehicles launched); and
- Allows for the same options for recovery of existing flight hardware.

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cont'd.

Failure to consider this reasonable alternative violates NEPA.¹

Although a vehicle to meet the criteria of our recommended alternative may not currently be in NASA’s preferred arsenal, we believe in NASA’s ability to adapt the program to meet research needs while eliminating impacts on wilderness and wild rivers and cleaning up past and future debris is an important outcome of this evaluation.

2. Landing debris on National Wildlife Refuges is not compatible with their purpose

Due to the incapability of the SRP at PFRR with the purposes of the Arctic NWR and Yukon Flats NWR, NASA should not plan to land debris on these lands. NASA should adopt a numerical risk criteria of 1:100 or greater for avoiding impacts to lands administered by USFWS.

We fail to understand how the USFWS has been able to make a Compatibility Determination and permit NASA’s SRP for decades (stated as 1981 for Arctic and 1988 for Yukon Flats (DEIS at 2-21)). In the current compatibility determination (DEIS at C-15-23), the Justification (DEIS at C-22) states:

It is the policy of the Service (4 RM 6.1) to encourage and support **research and management studies in order to provide scientific data upon which to base decisions regarding management of units of the refuge system.** The Service may permit the use of a refuge for investigatory scientific purposes when such use is compatible with the objectives for which the refuge is managed.

Priority will be given to studies that contribute to the enhancement, protection, use, preservation and management of current, indigenous wildlife populations and their habitats in their natural diversity. All proposed research conducted by other agencies or entities will be thoroughly evaluated prior to authorization and then monitored closely to ensure the activities do not materially interfere with or detract from the purposes of the refuge or the mission of the National Wildlife Refuge System.

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cont'd.

Scientific investigations of wildlife, resources, and social interactions will support the refuge's ability to provide for wildlife-dependent priority public uses and to meet other refuge purposes. These investigations must be conducted safely.

According to the DEIS, most of the missions conducted in the past 10 years have been primarily to study space weather, disturbances to the magnetosphere and ionosphere, auroral science, and other high-

¹ NEPA requires that an EIS include “alternatives to the proposed action.” NEPA § 102, 42 U.S.C. § 4332(2)(C)(iii). The alternatives analysis is “the heart of the environmental impact statement,” 40 C.F.R. 1502.14, the purpose of which is to analyze a variety of impacts and present a range of choices to the decision maker. *Id.*; 40 C.F.R. § 1505.1(e). Accordingly, the EIS must include an evaluation of “all reasonable alternatives,” 40 C.F.R. § 1502.14(a), and provide the decisionmaker with a “range of alternatives” from which to elect. 40 C.F.R. § 1505.1(e).

While what is considered a reasonable range will vary depending on the proposed action, the alternatives considered must “cover[] the full spectrum of alternatives.” Forty Most Asked Questions Concerning CEQ’s National Environmental Policy Act Regulations, 46 Fed. Reg. 18026 (1981) (hereinafter “CEQ 40 Questions”). The “existence of a viable but unexamined alternative renders an [EIS] inadequate.” *Westlands*, 376 F.3d at 868 (quoting *Morongo Band of Mission Indians v. Fed. Aviation Admin.*, 161 F.3d 569, 575 (9th Cir. 1998)).

atmosphere phenomena (DEIS Table 1-1 at 1-7-8). Only one study in February 2011 has even a tenuous link to science appropriate to the refuges through indirect climate science applications. None of these missions, or those focused on rocket engineering that are not listed, meet any elements in the Justification in the Compatibility Determination *for investigatory scientific purposes when such use is compatible with the objectives for which the refuge is managed*. Further, it is not at all clear how the data and scientific information gathered from past missions have been used to help FWS make management decisions for the refuges.

Further, as stated in the DEIS, the Fish and Wildlife Service may only authorize uses of refuges that they determine to be compatible with the purpose of the refuge and the mission of the Refuge System. A compatible use, as defined in law² and regulation, is “a proposed or existing wildlife-dependent recreational use or any other use of a national wildlife refuge that, based on sound professional judgment, will not materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission or the purpose(s) of the national wildlife refuge. “In analyzing whether a use is compatible or not, the USFWS must also ensure that it maintains the biological integrity, diversity, and environmental health” of the Refuge System. As stated in the Refuge Compatibility Policy³:

“A significant directive of the Refuge Administration Act is to ensure that we maintain the biological integrity, diversity, and environmental health of the National Wildlife Refuge System for present and future generations of Americans...Uses that we reasonably may anticipate to conflict with pursuing this directive to maintain the ecological integrity of the System are contrary to fulfilling the National Wildlife Refuge System mission and are therefore not compatible. Fragmentation of the National Wildlife Refuge System’s wildlife habitats is a direct threat to the integrity of the National Wildlife Refuge System, both today and in the decades ahead. Uses that we reasonably may anticipate to reduce the quality or quantity or fragment habitats on a national wildlife refuge will not be compatible.”⁴

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While the proper forum to address our concerns with the Compatibility Determination is through the public review process for the Determination, it is clear to us that the USFWS Compatibility Determination does not support the Arctic NWR purposes in ANILCA and does not justify the permitted rocket activity. Although the current Compatibility Determination does not come up for renewal until January 2014, given that there is now an EIS on this issue and increased public involvement, we encourage FWS to reevaluate the compatibility of the use. USFWS Policy 603 FW 2 Compatibility 2.11.H. Further, it appears that a Research and Monitoring Special Use Application and Permit (Research Permit) is submitted for each mission (e.g. DEIS at C-26). We encourage the USFWS, a cooperating agency on this DEIS, to take a hard look at proposed missions to ensure they are research and management studies that provide scientific data upon which to base decisions regarding management of units of the refuge system. Further, the science should be conducted in a way that meets basic academic rigor, including analysis, write-up and publication (Section 24 of the Research Permit). Because of the limited information presented in the DEIS on the outcomes of research through the SRP at PFRR, we have spent some time exploring web-based information from NASA and SRP Investigators to trace the outcomes of the SRP at PFRR from mission to publication. We have failed to find information on how much of the science conducted at PFRR results in publishable, credible science, how it might relate to refuge purposes, how it is used to assist USFWS in making management decisions about the refuges, or how it is applied in other ways to meeting our nation’s most critical science needs. This information should be provided or referenced in the DEIS, as well as to USFWS as part of the Research Permit process, and if it is not adequate to justify the impacts to refuge lands, the permit should be denied.

We support the research elements of the SRP at PFRR that provide quality data in the field of heliophysics, as described in the DEIS, but do not believe that it should come at the cost of unrecoverable debris left on our public lands. Efforts in the past two years to recover debris have only resulted in a 50% recovery, leaving

² United States. National Wildlife Refuge System Improvement Act of 1997. PL 105-57. Congressional Record. Washington DC: GPO, October 9, 1997.

³ 603 FW 2 *Service Manual*.

⁴ 603 FW 2.5A *Service Manual*.

large stages of rockets on the landscape. We also have concerns about launches that are engineering in nature, which are not presented in the DEIS, as these may not need to be at PFRR to meet their goals and thus provide unnecessary impacts on our national conservation estate. PRFRR launches whose mission in improved engineering that will deposit debris on BLM and USFWS lands should only be permitted if they cannot be accomplished elsewhere based on latitude, not economics. We also are concerned that this program trains young scientists in a manner that appears to make it acceptable to leave debris on our public lands. Thus, we support the approach of alternative three, removing as much debris as is feasible without having to use heavy equipment, with previously noted expansion of restrictions on USFWS lands and all identified wilderness and wild river areas.

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3. The current No Action Alternative is flawed.

Failure to meet the basic criteria of the Research Permit issued by USFWS that payloads be tracked and recovered means that the current No Action alternative is illegal and should therefore be eliminated from consideration in the EIS. NASA recognizes this, yet still proceeds with this alternative. As stated in the DEIS (e.g. at 4-79), "The removal of payloads or spent stages, as requested by scientists, as is expected to occur under the No Action Alternative, would not be consistent with existing land use permits." Further, NASA states that installing a recovery system would "have several key considerations that would render it unfeasible for the majority of missions conducted at PFRR" (DEIS at 2-64) and is therefore stating that it will not meet the terms of the Research Permit.

Further, the permit stipulates that recovery overflights must be conducted at 2,000 feet, which would severely limit NASA's ability to locate debris for recovery. This altitude stipulation is important to protect wildlife from disturbance during the winter and to protect both wildlife and wilderness travelers during the summer. This important requirement further demonstrates the flaws with the current alternatives as well as incompatibility of the SRP at PFRR with the management of Arctic NWR and Yukon Flats NWR.

Based on the above discrepancy, the incompatibility of the current SRP at PFRR with the purpose of Arctic NWR and Yukon Flats NWR and our desire to protect identified wilderness and wild rivers, we feel that the DEIS should include an alternative which considers that the activities at PFRR are incompatible with USFWS and BLM lands and therefore no permit would be issued. In the DEIS, NASA explains that the University of Alaska Fairbanks is "seeking authorizations from USFWS and BLM to allow for continued impact on and recovery on their lands of sounding rockets launched from PFRR as part of the NASA Sounding Rocket Program (SRP)." DEIS at 1-1. NASA also explains that "The purpose of this *PFRR EIS* is to evaluate the potential environmental impacts associated with the proposed action and reasonable alternatives, including a No-Action Alternative." EIS at 1-1. The no-action alternative analyzed fails to comply with NEPA because it does fails to consider not receiving authorizations from USFWS and BLM to continue the program. The alternative identified in the current EIS as "no-action" is really an action alternative regarding the level of recovery efforts the agency should undertake, as it assumes that USFWS and BLM will grant permission to use federal lands and that the program will continue. To comply with NEPA, NASA must consider a no-action alternative where the program will not continue because USFWS and BLM will not grant permits to use federal lands. Considering the true no-action alternative ensures that all decision makers and the public understand the baseline against which they can measure the various action alternatives.

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NASA appears to have eliminated the true no-action alternative from study for its failure to meet the purpose and need. EIS at ES-3. This fundamentally misunderstands the purpose of the no-action alternative. By not including an accurate no-action alternative that does not allow the program to continue and to use federal lands, the agencies do not have an accurate baseline against which to measure the action alternatives. While an agency may eliminate an action alternative for its failure to meet the purpose and need, the agency cannot eliminate consideration of a true no-action alternative from consideration given the purpose of the no-action alternative, *i.e.*, providing an environmental baseline. Having an alternative where SRP at PFRR is discontinued would allow the public to understand the debris that would not be added to public lands, how not having a recovery program would affect the amount of debris remaining on public lands and more.

NEPA requires that federal agencies provide a detailed evaluation of alternatives to the proposed action in every environmental impact statement. 42 U.S.C. § 4332(C)(iii); 40 CFR § 1502.14(a). NEPA's implementing regulations recognize that the consideration of alternatives is "the heart of the environmental impact statement." 40 CFR 1502.14. An EIS must "[i]nclude the alternative of no action." 40 C.F.R. § 1502.14(d). See *Pit River Tribe v. U.S. Forest Serv.*, 469 F.3d 768, 786 (9th Cir. 2006) (holding the "no action" alternative inadequate because the EIS failed to take a hard look "at whether the leases should have been extended"); *Pennaco Energy, Inc. v. U.S. Dept. of Interior*, 377 F.3d 1147, 1150 (10th Cir. 2004) (stating, "In order to provide "a clear basis for choice among options by the decisionmaker and the public," an agency's EIS must consider the "no action" alternative."); *Or. Natural Res. Council v. U.S. Forest Serv.*, 445 F. Supp. 2d 1211, 1224 (D. Or. 2006) ("The Forest Service nowhere has analyzed whether the impacts . . . warrant the complete abandonment of this project."); *Friends of Yosemite Valley v. Scarlett*, 439 F. Supp. 2d 1074, 1105 (E.D. Cal. 2006) ("A no action alternative in an EIS is meaningless if it assumes the existence of the very plan being proposed.").

As the Ninth Circuit explained, the "no action" alternative must also be considered in detail:

The goal of the statute is to ensure that federal agencies infuse in project planning a thorough consideration of environmental values. The consideration of alternatives requirement furthers that goal by guaranteeing that agency decision-makers have before them and take into proper account all possible approaches to a particular project (*including total abandonment of the project*) which would alter the environmental impact and the cost-benefit balance.... Informed and meaningful consideration of alternatives—including the no action alternative—is ... an integral part of the statutory scheme.

Alaska Wilderness Recreation & Tourism Ass'n v. Morrison, 67 F.3d 723, 729 (9th Cir. 1995), (internal citations, quotations and alterations omitted), quoting *Bob Marshall Alliance v. Hodel*, 852 F.2d 1223, 1228 (9th Cir. 1988) cert. denied, 489 U.S. 1066, 109 S.Ct. 1340, 103 L.Ed.2d 810 (1989).

As the Council on Environmental Quality ("CEQ") explained, when the agency is considering "instances involving federal decisions on proposals for projects," the no-action alternative "would mean the proposed activity would not take place, and the resulting environmental effects from taking no action would be compared with the effects of permitting the proposed activity or an alternative activity to go forward." Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations, 46 Fed. Reg. 18026, 18,027 (March 23, 1981). Lack of a no action alternative may prevent consideration of the environmental baseline as NEPA requires. *Half Moon Bay Fishermans' Marketing Ass'n v. Carlucci*, 857 F.2d 505 (9th Cir. 1988).

4. The DEIS should include one or more reasonable alternatives which consider discontinuing the SRP at PFRR, which is essential for providing a baseline for comparing the impacts of the alternatives presented in the DEIS.

"In determining the scope of alternatives to be considered, the emphasis is on what is 'reasonable' rather than on whether the proponent or applicant likes or is itself capable of carrying out a particular alternative. Reasonable alternatives include those that are practical or feasible from the technical and economic standpoint and using common sense, rather than simply desirable from the standpoint of the applicant." CEQ, Forty Most Asked Questions Concerning CEQ's National Environmental Policy Act Regulations at Question 2a (available at <http://ceq.hss.doe.gov/nepa/regs/40/1-10.HTM#1>).

"The purpose of NEPA is to require disclosure of relevant environmental considerations that were given a 'hard look' by the agency, and thereby to permit informed public comment on proposed action and any choices or alternatives that might be pursued with less environmental harm." *Te-Moak Tribe of W. Shoshone of Nev. v. U.S. Dept't of Interior*, 608 F.3d 592, 601 (9th Cir. 2010) (quoting *Lands Council v. Powell*, 395 F.3d 1019, 1027 (9th Cir. 2005)); see also 42 U.S.C. § 4332(E) (requiring agencies to "study, develop, and describe appropriate alternatives to recommended courses of action in any proposal which involves unresolved conflicts concerning alternative uses of available resources"). Agencies are required to consider alternatives in an EIS and must give full and meaningful consideration to all reasonable alternatives. *Te-Moak Tribe*, 608 F.3d at 601; see also 40 C.F.R. §§ 1502.14. To adequately consider alternatives to the proposed project, the

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agency “must look at every reasonable alternative within the range dictated by the nature and scope of the proposal.” *Friends of Southeast’s Future v. Morrison*, 153 F.3d 1059, 1065 (9th Cir. 1998). “The existence of a viable but unexamined alternative renders an environmental impact statement inadequate.” *Te-Moak Tribe*, 608 F.3d at 601 (citing *Idaho Conservation League v. Mumma*, 956 F.2d 1508, 1519 (9th Cir. 1992) (quoting *Citizens for a Better Henderson v. Hodel*, 768 F.2d 1051, 1057 (9th Cir. 1985)).

Because “the EIS is intended to be used to guide decision making, the alternatives analysis is naturally ‘the heart of the environmental impact statement.’” *ONDA v. BLM*, 625 F.3d at 1100 (quoting 40 C.F.R. § 1502.14). In the alternatives section, the agency must “[r]igorously explore and objectively evaluate all reasonable alternatives.” C.F.R. § 1502.14. The action agency must “to the fullest extent possible . . . study, develop and describe appropriate alternatives to recommended courses of action in any proposal which includes unresolved conflicts concerning alternative uses of available resources.” *Id.* at 54 (citing 42 U.S.C. § 4332(2)(E)). An alternative that is consistent with the policy goals of the project and is potentially feasible must be analyzed in depth. *Muckleshoot Indian Tribe v. U.S. Forest Serv.*, 177 F.3d 800, 813-14 (9th Cir. 1999).

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The EIS fails to consider all reasonable alternatives in violation of NEPA. See *Natural Resources Defense Council v. U.S. Forest Serv.*, 421 F.3d 797, 813 (9th Cir. 2005), quoting *Citizens for a Better Henderson v. Hodel*, 768 F.2d 1051, 1057 (9th Cir. 1985) (“The existence of a viable but unexamined alternative renders an [EIS] inadequate.”).

Important alternatives were not considered that could meet NASA’s purpose and need because NASA is unwilling to invest more money into the SRP at PFRR to install tracking technology (DEIS 2.4.8), adopt reasonable numerical risk criteria for avoiding sensitive lands (DEIS 2.4.6) or be willing to limit, adapt or innovate vehicles (DEIS at 2.4.8.1, etc.) in order to avoid impacts to identified wilderness and wild rivers.

5. The DEIS fails to adequately describe the importance of the science conducted as part of the SRP at PFRR and its relationship to the purposes of the public lands which it impacts (1.1.5)

As stated previously, we have concerns about the quality and purpose of the science being conducted in the SRP at PFRR, given the impacts to Arctic NWR in particular. We feel that up-to-date information on publications and applications of the science conducted through the SRP at PFRR should be maintained on the internet and referenced in the DEIS. While the SRP does have a web-page, the information is not sufficient to know if the missions have produced science worthy of peer-reviewed publication and also how it has been used to inform the issues identified in the DEIS (e.g. communications, weather, etc.).

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6. The DEIS dismisses adoption of NASA’s own numerical risk criteria as a means to protect high value lands, including identified wilderness and wild rivers (2.4.6).

The DEIS outlines a numerical risk criteria for evaluating the impacts of the SRP at PFRR on high-value public lands, but dismisses meeting this standard requirement for protection of identified wilderness and wild rivers. We feel that the probability of a rocket impacting identified wilderness and wild rivers should be equivalent to zero at 3 sigma. The DEIS states that impacts to the Wilderness Study Area in Yukon Flats is 5.5% (DEIS at 4-77) or 1 in 18, and of impacting the Wind River (a designated Wild River in Arctic NWR) is at least 3.5-7%. These levels of impacts are unacceptable for preserving our identified wilderness and wild river areas and protecting the values for which the NWRs were established. For this reason, we cannot support any of the alternatives as presented in the DEIS without modification.

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7. The DEIS fails to establish USFWS and BLMs purpose in managing lands downrange of PFRR.

Our primary concern continues to be the “landing” of rockets in lands that have high wilderness, wildlife habitat and recreational value that include Arctic NWR, including its designated and recommended wilderness lands and designated Wild River corridors, and Yukon Flats NWR including its Wild River corridor and recommended Wilderness Study Area, as well as other BLM lands. As the USFWS and BLM are Cooperating Agencies on this EIS, it is important that their purposes be included in the EIS. We find the

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USFWS purpose for managing its Refuges, of which Arctic and Yukon Flats NWRs are affected by this program, in section 1.1.6.2, which states:

“The primary purpose of Arctic and Yukon Flats NWRs is to conserve fish and wildlife populations and their habitats in their natural diversity. The USFWS is authorized to permit by regulations the use of any area within the NWR system provided “such uses are compatible with the major purposes for which such areas were established.””

This section (1.1.6.2) should be expanded to capture the key elements of the original purposes of the Arctic Refuge (Range), which include:

“For the purpose of preserving unique wildlife, wilderness and recreational values...” [Public Land Order 2214](#),

as well as the ANILCA purposes for the Arctic NWR and Yukon Flats NWR.

We would like to also see a better description of the purpose for BLM’s management of the Steese NCA and White Mountains NRA spelled out, as the DEIS relies on the reader to explore FLPMA to understand the purpose of these areas (1.1.6.1) and the impact of the program and recovery operations on the values of the areas.

8. The amount of debris that is likely to be removed is overestimated.

By not evaluating an alternative where no future launches are permitted, it is difficult to elucidate how many total payloads and stages are likely to be landed in each of the different downrange land units. We are looking for a total number of stages and payloads that would be launched under four missions per year in order to evaluate Table 4-31 “possible annual recovery of stages and payloads per alternative.” From the information presented in the DEIS, it appears that recovery efforts can reasonably expect to be about 50% for one stage, potentially higher for payloads with required tracking devices and zero for other stages. Also, recovery of past debris is likely to diminish considerably from the past two years given that much of the highly visible and accessible debris has been reported, located and removed. Thus, the net weight of recovery for existing payloads and stages presented in Table 4-31 is likely overestimated.

We are unclear what information is presented in Table 4-29. Please better describe what “Newly Launched” refers to, as it does not appear that the text or table caption convey when these launches occur.

9. The impact on Land Use and Recreation (Section 4.8), and the wilderness within this category, has the potential to be significant under all alternatives presented in the DEIS.

As stated previously, an individual seeking a wilderness experience is likely to have a diminished experience if they are to come across rocket debris or to have their solitude disrupted by recovery operations. The overlap between the time when most people choose to explore the wilderness of Arctic NWR and the Yukon River wilderness in Yukon Flats NWR is during the summer when recovery operations are permitted to occur. A once-in-a-lifetime experience could be altered by the debris and recovery operations. While the DEIS describes motorized users as less likely to be impacted by debris, we disagree with that generalizations. Explorers seeking a wilderness experience in the remote BLM lands may expect to encounter other users, both mechanized and un-mechanized, cabins and intermittent fixed wing aircraft use. Individuals in Arctic NWR might expect to hear fixed wing aircraft but no other sounds, people or infrastructure. Few of any of these users are likely to not want to observe garbage on the landscape, such as used toilet paper, abandoned snowmachines, latex weather balloons or rocket stages.

We therefore recommend that this section be revised to convey that the impacts could be significant under all four action alternatives.

Thank you again for your time and consideration of our concerns.

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Respectfully Submitted By:

The Wilderness Society

Wendy Loya
Ecologist
705 Christensen Drive
Anchorage, Alaska 99501
907-272-9453
wendy_loya@twso.org

On behalf of:

Alaska Wilderness League

Cindy Shogan
Executive Director
122 C St NW, Ste 240
Washington, DC 20001
Tel: 202-544-5205
Fax: 202-544-5197
Cindy@alaskawild.org

Center for Biological Diversity

Rebecca Noblin
Alaska Director
PO Box 100599
Anchorage, AK 99510-0599
907-274-1110
rnoblin@biologicaldiversity.org

Defenders of Wildlife

Karla Dutton
Alaska Program Director
333 W 4th Ave., #302,
Anchorage, AK 99501
907-276-9453
KDutton@defenders.org

Friends of Alaska National Wildlife Refuges

David C. Raskin, Ph.D.
Advocacy Chair
59975 Eider Ave
Homer, AK 99603
907-235-0514 Work/Home
907-299-2420 mobile
davidcraskin@yahoo.com

Natural Resources Defense Council

Charles M. Clusen
Director, Alaska Project
1200 New York Ave., NW
Washington, D.C. 20005
cclusen@nrdc.org

Sierra Club

Dan Ritzman
Alaska Program Director
750 W. 2nd Ave, Suite 100
Anchorage, AK 99501
907-276-4048
dan.ritzman@sierraclub.org

Wilderness Watch

Fran Mauer
Alaska Chapter Chair
Fairbanks, AK 99709
fmauer@mosquitonet.com

Winter Wildlands Alliance

Forrest McCarthy
Public Lands Director
910 Main Street, Suite 235
Boise ID 83702
307-733-3742
fmccarthy@winterwildlands.org

Brad Meiklejohn

BradMeiklejohn@aol.com

Allen E. Smith
6123 Buckthorn Ct. NW
Olympia, WA 98502-3434
360-867-4111
snoshuak@comcast.net

K.2.6.1 NASA's Response to Comment Document No. 006

Comment Number	Response
1	<p>NASA recognizes the importance of the downrange lands, and as such has incorporated flight hardware recovery and/or avoidance of the most sensitive lands (<i>i.e.</i>, designated Wilderness, designated Wild Rivers) as integral components of each alternative considered in detail in the EIS.</p> <p>However, per input from USFWS, affording elevated protections to non-designated Wilderness or Wild Rivers would be inconsistent with USFWS's guiding policies.</p> <p><u>From Service Manual 610 FW 5.18:</u></p> <p>“The review provisions of ANILCA [Alaska National Interest Lands Conservation Act] (see section 1317(c)) do not affect the normal administration and management of the affected areas of the refuge until Congress takes action. We will manage WSAs [Wilderness Study Areas], recommended wilderness, and proposed wilderness according to the management direction in the CCP [comprehensive conservation plan] for these areas. In Alaska, MRAs [minimum requirement analyses] are not required for proposed refuge management activities and commercial services in WSAs, recommended wilderness, and proposed wilderness.”</p> <p>Therefore, in consideration of the referenced policy, NASA did not consider in detail an alternative affording “no impact” protections to the lands referred to as “identified wilderness” by the commenter.</p> <p>However, Chapter 4, Section 4.8, of the EIS discusses in detail the potential impacts of the alternatives on both land use and recreational users of downrange lands seeking a wilderness experience.</p>
2	<p>Compatibility</p> <p>Per input from USFWS, when a use by the public is proposed on a National Wildlife Refuge, the refuge will first determine if the use is compatible. “A compatible use is a proposed or existing wildlife-dependent recreation use <i>or any other use</i> of a national wildlife refuge that, based on sound professional judgment, would not materially interfere with nor detract from the fulfillment of the Refuge System mission or the purposes for which a national wildlife was established. A refuge compatibility determination, with associated protective stipulations to ensure compatibility, is then prepared by the Service [USFWS] and subject to public review and comment. If found compatible, the Refuge may then issue a Special Use Permit to authorize the use pursuant to the National Wildlife Refuge Administration Act (16 U.S.C. 668 dd-ee), as amended, and the Refuge Recreation Act (16 U.S.C. 460K-460K-4).” The permit will stipulate the conditions that are necessary to ensure compatibility of the use. Compatibility determinations are re-evaluated at least every 10 years, except for wildlife-dependent public uses which are re-evaluated every 15 years. In the case of an existing activity or use already under permit, as is the situation with PFRR, the Refuge Manager will work with the permit holder to modify the activity or use to make it compatible or will terminate the permit.</p> <p>Note that previous compatibility determinations conducted in 1994 and 2005 by the Arctic and Yukon Flats NWRs have authorized PFRR to operate on Federal lands classified as minimally managed. Minimally managed lands are managed to maintain natural environmental conditions with very little evidence of human-</p>

Comment Number	Response
<p>2 (cont'd.)</p>	<p>caused change and to minimize disturbance to habitats and resources. Ground-disturbing activities are to be avoided wherever possible. USFWS has served as a cooperating agency in preparing the EIS to ensure that proposed actions by PFRR are compatible with refuge purposes for both the Arctic and Yukon Flats NWRs.</p> <p>Types of Science Conducted</p> <p>Chapter 1, Section 1.1.5, of the EIS has been expanded to provide more information regarding the direct and indirect relationships between the research enabled by PFRR and weather and climate sciences, upon which Arctic and Yukon Flats NWRs depend for their management. Additionally, Appendix J has been added to provide the reader with a summary of recent publications resulting from PFRR-enabled research, many of which are from peer-reviewed scholarly journals.</p>
<p>3</p>	<p>Per Answer 3 in the <i>Forty Most Asked Questions Concerning CEQ's NEPA Regulations</i> (76 FR 18026), there are two distinct interpretations of “no action” that must be considered in a NEPA document, depending on the nature of the proposal being evaluated. The first situation might involve an action where ongoing programs will continue, even as new plans are developed. In these cases, “no action” is “no change” from current direction. Therefore, the “no action” alternative may be thought of in terms of continuing with the present course of action until that action is changed. The second interpretation of “no action” would involve Federal decisions on proposals for projects. “No action” in such cases would mean the proposed activity would not take place.</p> <p>In the case of the <i>PFRR EIS</i>, NASA’s funding the operation of PFRR is an action that has occurred on a regular (<i>i.e.</i>, annual or semi-annual) basis since the late 1960s. Accordingly, NASA has adopted the “status quo” interpretation of “no action” in defining its No Action Alternative; this would mean that PFRR would continue to operate as it has in the recent past.</p> <p>However, for NASA to conduct its operations at PFRR, it requires independent authorizations from both BLM and USFWS. Therefore, to better inform both the BLM and USFWS decisionmaking processes, NASA has now included “no authorization” scenarios as integral components of each alternative evaluated in detail in the EIS, including the “status quo” No Action Alternative.</p>
<p>4</p>	<p>From NASA’s perspective, discontinuing the Sounding Rockets Program at PFRR is neither a “reasonable alternative” under NEPA (as it does not meet purpose and need, discussed in Chapter 1) nor is it consistent with the “status quo” definition of the No Action Alternative discussed above under Comment 3.</p> <p>However, to better inform the BLM and USFWS decisionmaking process, non-issuance of each landowner’s respective authorization is now included as an integral component of each alternative. In the case of non-issuance of the USFWS authorization, NASA would be precluded from launching all of its multi-stage rockets. Given that only the single-stage Orion could be launched from PFRR, it is expected that NASA would discontinue funding PFRR altogether; therefore, the consequences of this scenario are now included in the Final EIS.</p>

Comment Number	Response
5	<p>Chapter 1, Section 1.1.5, of the EIS has been expanded to provide more information regarding the direct and indirect relationships between the research enabled by PFRR and weather and climate sciences, upon which Arctic and Yukon Flats NWRs depend for their management. Additionally, Appendix J has been added to provide the reader with a summary of recent publications resulting from PFRR-enabled research, many of which are from peer-reviewed scholarly journals.</p>
6	<p>As stated in Chapter 2, Section 2.5.5, due to concerns raised during scoping regarding potential impacts on high-value lands, particularly Wilderness Areas and Wild and Scenic Rivers, NASA evaluated the possibility of adopting numerical risk criteria for reducing the probability of impacting those individual features. Two numerical criteria were evaluated. The first criterion, 1 chance in 1,000 (or 1×10^{-3}), was evaluated as it is established in NASA Procedural Requirement 8715.5, <i>Range Safety Program</i>, and the second criterion, a 1 in 100 chance (1×10^{-2}) was evaluated, as it is the criterion established by PFRR as the maximum allowable probability of impacting outside of the range boundaries.</p> <p>A key consideration in determining the reasonableness of this alternative is whether NASA could still conduct its missions within the confines of the newly adopted criteria. Adoption of 1 in 1,000 criteria would essentially result in the discontinuation of sounding rocket flights from PFRR due its elimination of nearly all Black Brant-class vehicles and more than half of the Terrier-Orions. For the 1 in 100 criterion, although impacts would be less in comparison, they would still be severe in that most flights of the Black Brant XII, one-half of the Black Brant IX flights, and one-third of the Terrier-Orion flights would be restricted. In summary, the three vehicles that are expected to be the most commonly specified to meet future scientific objectives at PFRR (Black Brant XII, Black Brant IX, and Terrier-Orion) would be those most affected by the adoption of numerical risk criteria for specially designated environmental features; therefore, this alternative was eliminated from detailed study in the EIS.</p>
7	<p>Additional text describing USFWS's and BLM's purposes in managing downrange lands within the PFRR launch corridor has been added to Chapter 1, Sections 1.2 and 1.3, of the EIS.</p>
8	<p>As stated in Chapter 4, Section 4.12.1 ("Methodology"), NASA understands that the actual quantity of material recovered is dependent on whether the items can be located and recovered. Therefore, the estimated weight of material recovered from future launches is presented as a range reflecting both a 50 percent location success rate (consistent with recent experience from launches) up to a 100 percent location success rate, which would be NASA's ultimate goal.</p> <p>The long-term location and recovery rate for historic items (from past launches) cannot be accurately estimated given the number of variables that would dictate whether something would be found and ultimately removed. One potential outcome is that, as the commenter notes, all of the obvious items have been located and therefore additional recoveries would be less likely. However, another possible outcome is that over time, more users of downrange lands would become aware of the Recovery/Rewards Program, effectively causing recovery rates to meet or exceed those in recent years. Therefore, for the purposes of analysis in the <i>PFRR EIS</i>, NASA assumed a steady recovery rate of historic items based upon recent experience.</p>

Comment Number	Response
8 (<i>cont'd.</i>)	Per the commenter's request, the intent of Chapter 4, Table 4-30, has been clarified in the EIS. "Newly launched" refers to those sounding rockets that would be launched from PFRR in the future at an average rate of four per year and an associated recovery rate ranging from 50-100 percent.
9	<p>NASA notes the commenter's opinion regarding the potential impacts on land use and recreation. Based upon the definition of impacts in the EIS, the primary driver as to whether an impact would be significant under NEPA is whether the activity would be non-compliant with existing land uses (<i>e.g.</i>, not in compliance with a landowner-issued authorization or operating without an authorization) or if the activity would restrict a recreational use from occurring. Neither of these cases is met with the exception of the No Action Alternative.</p> <p>As stated in Chapter 4, Section 4.8, the discovery of a piece of flight hardware has the potential to negatively affect the recreation experience of a user, particularly those persons intending to have a wilderness experience. However, NASA has also been informed that others have found it to be a positive experience to discover a spent stage or payload. It is expected that those persons engaged in hiking and rafting would be the most sensitive to finding flight hardware, with hunters, trappers, and snow machiners the most tolerant. The impact would be on a person-by-person basis and would be influenced by the perception of the individual. In summary, anticipated impacts on recreational activities would be adverse, localized, negligible in intensity, and short-term in duration.</p>
10	NASA notes the commenter's statement. However, as discussed above in the response to Comment 1, providing additional Wilderness- or Wild River-like protections to non-designated lands would be inconsistent with USFWS land management policy.

K.3 DRAFT EIS PUBLIC MEETING TRANSCRIPTS

K.3.1 Anchorage, Alaska, October 24, 2012

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1 NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

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SOUNDING ROCKETS PROGRAM AT POKER

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FLAT RESEARCH RANGE

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DRAFT ENVIRONMENTAL IMPACT STATEMENT

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8

PUBLIC MEETING

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DATE: OCTOBER 24, 2012

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6:00 p.m.

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U.S. FISH AND WILDLIFE SERVICE

13

ALASKA REGIONAL OFFICE

14

1011 EAST TUDOR ROAD

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ANCHORAGE, ALASKA 99503

16

17 Amy Hartley, Facilitator

18 PANEL MEMBERS:

19 Mr. Joshua Bundick, NASA Wallops Flight Facility

20 Mr. John Hickman, NASA Wallops Flight Facility

21

22 REPORTED BY: Natalie Gil

23 KRON ASSOCIATES

24 COURT REPORTING

25 (907) 276-3554

KRON ASSOCIATES
1113 W. Fireweed Lane, Suite 200
Anchorage, Alaska 99503
(907) 276-3554

1 **NASA Sounding Rockets Program at Poker Flat**
2 **Research Range**
3 **Draft Environmental Impact Statement (EIS)**
4 **Public Meeting**
5 **October 24, 2012**
6
7
8

9 **I. POSTER SESSION:**

10
11 The public meeting of the NASA Sounding Rockets Program at
12 Poker Flat, held at 1011 East Tudor Road, Anchorage, Alaska,
13 initiated promptly at 6:00 pm with a poster session for the
14 public.
15

16 **Present:**

- 17 Amy Hartley
18 Joshua Bundick
19 John Hickman
20 Mike Bonsteel
21 Anne Marie LaRosa
22 Audra Upchurch
23 Donna Gindle
24 Marc Conde
25 Kathe Rich
26 Don Hampton
27 Peter Wikoff
28

29
30
31 **II. PRESENTATION:**

32
33 **Environmental Impact Statement Power Point**
34 **Presentation:**
35

36 The project team gave an informational Draft EIS Power Point
37 Presentation from 6:30-7:00 p.m. after the poster session.
38
39

40 **III. Q & A:**
41

KRON ASSOCIATES
1113 W. Fireweed Lane, Suite 200
Anchorage, Alaska 99503
(907) 276-3554

1 After the Power Point presentation, the panel gave members of
2 the public the opportunity to ask questions. Various public
3 members asked questions.
4

5
6 **IV. PUBLIC COMMENT:**

7
8 No public comment was given during this period.

9 **v. Adjournment**

10
11 The Public Meeting concluded thereafter at 7:32 p.m.
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Prepared and submitted by Kron Associates Court Reporting

KRON ASSOCIATES
1113 W. Fireweed Lane, Suite 200
Anchorage, Alaska 99503
(907) 276-3554

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TRANSCRIBER'S CERTIFICATE

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I, Natalie Gil, hereby certify that the foregoing pages numbered 2 through 3 are a true, accurate and complete account of proceedings of the Public Meeting for the Draft Environmental Impact Statement for the Sounding Rockets Program at Poker Flat Research Range, prepared by me to the best of my knowledge and ability.

December 7, 2012

Natalie Gil

Date

Natalie Gil

KRON ASSOCIATES
1113 W. Fireweed Lane, Suite 200
Anchorage, Alaska 99503
(907) 276-3554

K.3.2 Fairbanks, Alaska, October 25, 2012

1

1 NATIONAL AERONAUTICS AND SPACE ADMINISTRATION

2

3

4

SOUNDING ROCKETS PROGRAM AT POKER

5

FLAT RESEARCH RANGE

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DRAFT ENVIRONMENTAL IMPACT STATEMENT

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8

PUBLIC MEETING

9

DATE: OCTOBER 25, 2012

10

6:00 p.m.

11

12

BLM FAIRBANKS DISTRICT OFFICE

13

1150 UNIVERSITY AVENUE

14

FAIRBANKS, ALASKA 99709

15

16

17 Amy Hartley, Facilitator

18 PANEL MEMBERS:

19 Mr. Joshua Bundick, NASA Wallops Flight Facility

20 Mr. John Hickman, NASA Wallops Flight Facility

21

22 REPORTED BY: Natalie Gil

23 KRON ASSOCIATES

24 COURT REPORTING

25 (907) 276-3554

KRON ASSOCIATES
1113 W. Fireweed Lane, Suite 200
Anchorage, Alaska 99503
(907) 276-3554

1 **NASA Sounding Rockets Program at Poker Flat**
2 **Research Range**
3 **Draft Environmental Impact Statement (EIS)**
4 **Public Meeting**
5 **October 25, 2012**

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7
8 **I. POSTER SESSION:**

9
10 The public meeting of the NASA Sounding Rockets Program at
11 Poker Flat, held at the BLM Fairbanks District Office, 1150
12 University Avenue in Fairbanks, Alaska, initiated promptly
13 at 6:00 p.m. with a poster session for the public.

14
15 **Present:**

16 Amy Hartley
17 Joshua Bundick
18 John Hickman
19 Mike Bonsteel
20 Anne Marie LaRosa
21 Audra Upchurch
22 Donna Gindle
23 Marc Conde
24 Kathe Rich
25 Don Hampton
26 Peter Wikoff
27 Lenore Heppler
28 Bob McCoy

29
30
31
32 **II. PRESENTATION:**

33
34 **Environmental Impact Statement Power Point**
35 **Presentation:**

36
37 The project team gave an informational Draft EIS Power Point
38 Presentation from 6:30-7:00 p.m. after the poster session.

39
40
41

 KRON ASSOCIATES
 1113 W. Fireweed Lane, Suite 200
 Anchorage, Alaska 99503
 (907) 276-3554

1 **III. Q & A:**

2
3 After the PowerPoint presentation, the panel gave members of
4 the public the opportunity to ask questions. Various public
5 members asked questions to which the project team promptly
6 answered.

7
8 **IV. PUBLIC COMMENT:**

9
10 Pamela A. Miller, Arctic Program Director of the Northern
11 Alaska Environmental Center, gave public comment during this
12 period.

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14
15 **v. Adjournment**

16
17 The Public Meeting concluded thereafter at 7:59 p.m.

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42 Prepared and submitted by Kron Associates Court Reporting

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 1113 W. Fireweed Lane, Suite 200
 Anchorage, Alaska 99503
 (907) 276-3554

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TRANSCRIBER'S CERTIFICATE

I, Natalie Gil, hereby certify that the foregoing pages numbered 2 through 3 are a true, accurate and complete account of proceedings of the Public Meeting for the Draft Environmental Impact Statement for the Sounding Rockets Program at Poker Flat Research Range, prepared by me to the best of my knowledge and ability.

December 7, 2012

Natalie Gil

Date

Natalie Gil

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