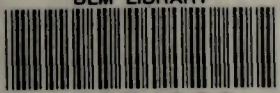


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# Proposed Greater Mooses Tooth Two Development Project

Supplemental Environmental Impact Statement for the Alpine Satellite Development Plan



**FINAL**

*Volume 4: Public Comments and BLM Responses*



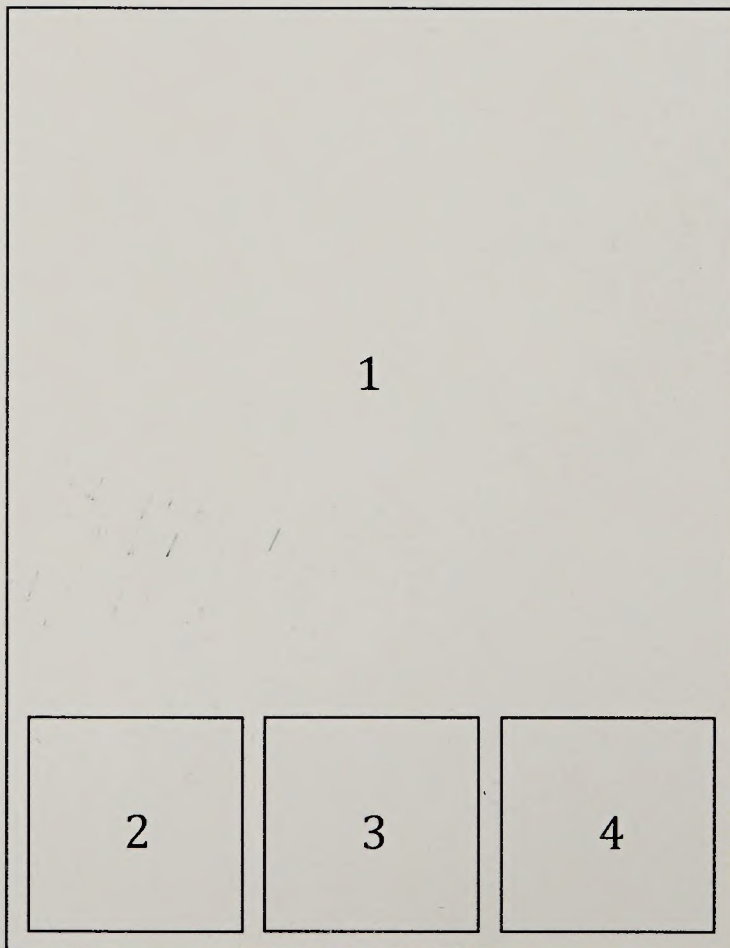
# The Bureau of Land Management Today

## *Our Vision*

To enhance the quality of life for all citizens through the balanced stewardship of America's public lands and resources.

## *Our Mission*

To sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.



### **1. BLM Cover Photos**

2. Aerial of production pad, North Slope  
© ConocoPhillips
3. Caribou, National Petroleum Reserve, Alaska
4. Crea Creek flowing into Lake L9819,  
National Petroleum Reserve, Alaska
5. White-fronted goose, National Petroleum  
Reserve, Alaska

# Alpine Satellite Development Plan for the Proposed Greater Mooses Tooth 2 Development Project

## Final Supplemental Environmental Impact Statement

### Volume 4: Public Comments and BLM Response

Prepared by:

U.S. Department of the Interior  
Bureau of Land Management  
Anchorage, AK

In cooperation with:

Native Village of Nuiqsut  
U.S. Army Corps of Engineers  
U.S. Environmental Protection Agency  
U.S. DOI Fish and Wildlife Service  
U.S. DOI Bureau of Ocean Energy Management  
State of Alaska  
North Slope Borough  
Inupiat Community of the Arctic Slope

August 2018

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## PUBLIC COMMENTS AND BLM RESPONSES

This volume presents comments Bureau of Land Management (BLM) received on the Greater Mooses Tooth 2 (GMT2) Draft Supplemental Environmental Impact Statement (EIS). It also includes a description of the public comment process, how all comments were considered, and responses to all substantive comments.

### GMT2 Supplemental EIS Comment Process

Public involvement is an important part of the NEPA process. The National Environmental Policy Act (NEPA) requires that all substantive comments received before reaching a decision must be considered to the extent feasible, and that agencies must respond to all substantive written comments submitted during the public comment period for an EIS (40 CFR 1503.4). Comments must be in writing (including paper or electronic format or a court reporter's transcript taken at a formal hearing), substantive, and timely, in order to merit a written response.

Substantive comments do one or more of the following:

- question, with reasonable basis, the accuracy of information in the EIS or EA.
- question, with reasonable basis, the adequacy of, methodology for, or assumptions used for the environmental analysis.
- present new information relevant to the analysis.
- present reasonable alternatives other than those analyzed in the EIS or EA.
- cause changes or revisions in one or more of the alternatives.

Comments that are not considered substantive include the following.

- comments in favor of or against the proposed action or alternatives without reasoning that meet the criteria listed above (such as “we disagree with Alternative A and believe the BLM should select Alternative C”).
- comments that only agree or disagree with BLM policy or resource decisions without justification or supporting data that meet the criteria listed above (such as “more grazing should be permitted”).
- comments that don't pertain to the project area or the project (such as “the government should eliminate all dams,” when the project is about a grazing permit).
- comments that take the form of vague, open-ended questions.

The GMT2 Draft SEIS was made available for public review and a public comment period was announced with publication of a Notice of Availability in the Federal Register on March 23, 2018. The public comment period lasted for 55 days, closing on May 17, 2018. Public comments were accepted by mail, email, fax, hand-delivery at BLM's office, and in-person at public meetings.

The BLM held public meetings during the comment period in North Slope communities, Anchorage, and Fairbanks. Pursuant to ANILCA §810(a)(1) and (2), BLM also conducted hearings in North Slope communities to gather comments regarding potential impacts to subsistence use resulting from the alternatives considered in the SEIS. The public meetings in North Slope communities that were also ANILCA §810 hearings are noted by asterisk. A list of the meetings and meeting dates are provided below. In order to capture all relevant comments, the entirety of the public meetings in North Slope communities were captured by a court reporter and reviewed for substantive comments.

- Monday, April 9: Utqiagvik \*
- Tuesday, April 10: Atqasuk\*
- Thursday, April 12: Anaktuvuk Pass \*
- Monday, April 16: Anchorage
- Tuesday, April 17: Fairbanks
- Monday, April 30: Nuiqsut\*

A total of 1,333 written communications were received, and 14 unique communications were derived from public meetings. Of the public meeting communications, four were the transcripts of the meetings, in which numerous community residents gave oral testimony. Of the written communications received, 33 were considered unique communications, many of which were detailed multi-page letters. The vast majority of the email communications (1,240) were “canned” messages from members of the Alaska Industry Alliance who submitted a form letter developed specifically for this project.

All communications received as part of the public comment process were reviewed, individual comments that were considered substantive were parsed from the over-arching letter and entered into the comment analysis database and the Administrative Record. In total, 817 individual substantive comments were identified and entered into the database for a BLM response.

Consistent with federal regulations and BLM’s National Environmental Policy Act (NEPA) Handbook, BLM has drafted responses to substantive comments. Substantive comments were directed to BLM subject matter experts (SMEs) for consideration by resource category or section of the SEIS document. Responses were drafted to all such comments, and where appropriate, changes were made in the analysis in the Final SEIS. The majority of communications received have not received specific responses because they did not meet the definition of “substantive.” Many of these communications were expressions of personal preference that expressed the writers’ views on what management actions BLM should take. While these communications may have indicated why the writers advocated a certain course of action, they did not propose a new reasonable alternative or mitigation measure or present new information. Rather, the management action advocated was reflected in the existing alternatives or was within the range of the alternatives in the Draft SEIS, and the information provided was a part of the analysis considered by BLM in the Draft SEIS.

## How to Read This Volume

BLM assigned a letter or public meeting comment number to every unique communication received during the Draft public comment period. Table 4-1 lists all the substantive letters, public meeting transcripts and verbal comments with the name of the individual or entity submitting the comments and the letter number/public meeting comment number assigned to them. Within each written communication or transcript, substantive comments were categorized and given a unique identifier. For example, the North Slope Borough’s comment letter was assigned the letter number L86, and the first substantive comment from that letter was categorized as a comment on mitigation and assigned the communication number L86-1. Some letters were determined to be non-substantive in their entirety and are not included in this volume. Public meeting transcripts were assigned one public meeting number, and substantive comments within the transcript are identified by speaker and given a unique communication number in Table 4-2. Table 4-2 contains all substantive comments with BLM’s response and is organized by communication number. Complete transcripts of public meetings and copies of all substantive comment letters are available on BLM’s project website at: <https://www.blm.gov/programs/planning-and-nepa/plans-in-development/alaska/GMT2-SEIS>

**Table 4-1: Substantive Comments and Identification Number**

| Letter or Public Meeting Number | Commenter Name  |
|---------------------------------|---|
| AKP1                            | Anaktuvuk Pass Public Meeting and Subsistence Hearing Transcript  |
| ATQ1                            | Charles, Last Name Unknown  |
| ATQ2                            | Ethel, Last Name Unknown  |
| ATQ3                            | Atqasuk Public Meeting and Subsistence Hearing Transcript   |
| L02                             | Anchorage Chamber of Commerce   |
| L16                             | Michael Timmcke   |
| L30                             | Sabin Center for Climate Change Law   |
| L32                             | Resource Development Council  |
| L42                             | Levi Frampton   |
| L43                             | Lynden Transport  |
| L44                             | Doyon, Limited  |
| L51                             | Robert Meyer  |
| L53                             | Scott Jepsen  |
| L56                             | Joseph Marushack  |
| L57                             | James Brodie  |
| L58                             | Jon Schultz   |
| L60                             | Frederick Herbert   |
| L61                             | Kuukpik Corporation   |
| L65                             | Hawk Consultants, LLC   |
| L67                             | Alaska Trucking Association   |
| L68                             | Barbara Fulmer  |
| L70                             | Laborers' International Union of North America Local 341  |
| L75                             | Robert Stinson  |
| L76                             | EarthJustice  |
| L77                             | Audubon Alaska  |
| L78                             | Jerry Birch   |
| L81                             | US Fish and Wildlife Service  |
| L82                             | Conservation Lands Foundation   |
| L83                             | Environmental Defense Fund, Institute for Policy Integrity, Natural Resources Defense Council, Sierra Club, Union of Concerned Scientists, Wilderness Society |
| L85                             | BP Exploration Alaska, Inc.   |
| L86                             | North Slope Borough   |
| L87                             | Arctic Slope Regional Corporation   |
| L88                             | ConocoPhillips Alaska, Incorporated   |
| L89                             | Wilderness Society, Alaska Wilderness League, Conservation Lands Foundation, Defenders of Wildlife, Northern Alaska Environmental Center, Sierra Club         |
| L90                             | Native Village of Nuiqsut   |
| L91                             | State of Alaska   |
| L92                             | Environmental Protection Agency   |
| NQT1                            | Mamie Pardue  |
| NQT2                            | Frank Tukie, Sr   |
| NQT3                            | Peter Kosbruk   |
| NQT4                            | Dora Leavitt, Verbal Comments   |
| NQT6                            | Dave Arnold   |
| NQT7                            | Native Village of Nuiqsut Tribal Council, Verbal Comments   |
| NQT8                            | Native Village of Nuiqsut Tribal Council, Verbal Comments   |
| NQT9                            | Nuiqsut Public Meeting and Subsistence Hearing Transcript   |
| UTQ1                            | Utqiagvik Public Meeting and Subsistence Hearing Transcript   |

**Table 4-2: Substantive Comments and BLM Response**

| Comm #  | Commenter Name                          | Comments   | Comment Category Code   | Comment Response   |
|---------|---|--|---|--|
| AKP1-11 | Unidentified member of Anaktuvuk Pass   | The major impact [from Alternative C is to [the bear cubs with] the helicopters that could land in a 50 foot bank. Apparently that's not going to be resolved.   | 3.12 Mammals  | Helicopter traffic in general, unless it is low level and repetitive, is unlikely to have an impact on denning bears. Disruption from a helicopter landing near a bear den could impact the adult with consequences for a newborn cub. A female could potentially abandon a den, even with a cub inside, due to the disruption from a helicopter and associated human activity near a den. However, it is unlikely that helicopter traffic associated with GMT2 will disturb denning bears. An analysis of terrestrial maternal den sites estimated 95% of all dens between the Kavik River and Barrow were within 8 km (5 miles) of the coast (74 FR 56058). At the closest points, the Beaufort Sea coastline is 14.7 km (9.1 miles) from the GMT-2 road and 26.9 km (16.7 miles) from the GMT-2 drill site. The nearest documented den record is more than 6.5 km (4.0 miles) north of GMT-2 in the Fish Creek drainage and no dens have been documented within the GMT-2 Project Area. |
| AKP1-3  | Unidentified resident of Anaktuvuk Pass | The [BLM] confronts the native peoples, after the fact that they have done things. The exploration, the biological and physical studies. You should already have that information before you come out here. I'm sure we have 30,000 pages from 2004. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | One purpose of preparing a supplemental EIS is to provide updated information that did not exist when the original EIS was written. The GMT2 SEIS updates the 2004 EIS to include the most recent data regarding wildlife resources, subsistence use, and other issues identified as potentially impacted by the proposed action.  |



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| Comm # | Commenter Name                          | Comments   | Comment Category Code         | Comment Response  |
|--------|---|--|-------------------------------|---|
| AKP1-5 | Unidentified member of Anaktuvuk Pass   | Referring to Slide 11: I think GMT1 had air pollution, there was nothing in your impact statements on this. People are afraid for their lives on containments from CD1. They were asking for assistance from the State and CPAI, but nothing was done. It's like these are capricious statements. Your modeling should be more than what this is right here. If you're going to put peoples lives in peril from your drill rigs and platforms from the ground, you need to be aware of the air quality. You can't say we're sorry our work almost killed you, but we're going to put that in our impact statement. | 3.5 Air Quality & Meteorology | BLM is aware of the air quality concerns in the community. The federal NEPA and State air permitting process is designed to prohibit any air quality impacts. As part of the Environmental Impact Analysis, the projected air quality impacts for GMT-2 sources have been assessed and been found to be minimal. Nonetheless, BLM is considering mitigation measures to guarantee continued air quality monitoring to alleviate concerns, see Section 4.2.3.2, Potential Mitigation Measures 1-11 |
| AKP1-6 | Unidentified member of Anaktuvuk Pass   | Are you going to measure the air quality, [and] will it be an ongoing measurement?   | 3.5 Air Quality & Meteorology | Air quality monitoring is currently being done at the Nuiqsut Air Quality Monitoring Station and will continue. The data currently collected at the air monitoring site in Nuiqsut is property of CPAI. BLM is considering a requirement to expedite the timeframe for data review and dissemination of the Nuiqsut monitoring data in the GMT2 ROD, see Section 4.2.3 Atmospheric Environment, Potential Mitigation Measure 4.   |
| AKP1-7 | Unidentified resident of Anaktuvuk Pass | Some of those (chemical and air) agents you can't smell or detect until they are dead. I'm adamant about that. We can't have that happen again.  | 3.18 Public Health            | Air pollutants that are harmful to human health, such as carbon monoxide, were evaluated for the GMT2 Project. Results of the air quality modeling can be found in Section 4.2.3.   |
| AKP1-8 | Unidentified member of Anaktuvuk Pass   | Evidently, the [air quality measuring station in Nuiqsut] was turned off. It should have measured some pollutants in the air and it didn't.  | 3.5 Air Quality & Meteorology | Thank you for the comment. The data from the Nuiqsut monitoring station was reviewed by EPA and others to determine the validity of the data, namely that a representative set of data were used. When the number of valid observations was below 60%, the data were removed from the analysis. In addition, the monitoring stations data used in the near-field and far-field modeling used three years of data to ensure proper and comprehensive monitoring data.                              |

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| Comm # | Commenter Name                          | Comments   | Comment Category Code   | Comment Response  |
|--------|---|--|---|---|
| AKP1-9 | Unidentified resident of Anaktuvuk Pass | We've had so many people dying of cancer all over the slope, maybe 6 people here. For the small community, that's a big impact. I'm not saying it's from there, it's from the military activity. Radioactive testing, nuclear testing. I'm not comfortable with you saying these are so small they're not showing up on your bar graph. But they could show up any where in the air.   | 3.18 Public Health  | Self-reported cancer prevalence in the NSB is 3.6 percent, which is lower than statewide prevalence (2011-2013) (6.7 percent Alaska Native, 8.0 percent for all of Alaska).   |
| ATQ1-1 | Charles                                 | The Inupiat land of Nuiqsut has been taken over by GMT1 and will also be impacted by GMT2 even more so. The land is impacted by the oil companies and feel we the neighboring village is not happy for them to loose so much of their hunting grounds. I vote for the GMT2 project to be paused for the sake of our younger generations subsistence way of life.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | GMT2 was originally approved for development as CD-7 in 2004 under the Alpine Satellite Development Plan EIS, as was GMT1 (as CD-6). As described in Section 1.4 Purpose and Need for Federal Action, under federal statutes the BLM is required to issue the GMT2 permit for oil development in the NPR-A and cannot choose the No-Action alternative. |
| ATQ2-1 | Ethel                                   | Concern built on hospitals, clinics, research of illnesses in villages, treatments, identify the illness, more science research on tundra, edible plants, soil, air pollution is already impacted, weather change, erosion, which is already in the EIS, concern of cancer disease, this will be like another addition of destruction? That is already happening with disaster, changes, sickness in fish, birds, whales, caribou, plants, will all the money in the world be able to fix, bring, built, make food, move the village, ALL the land is food. Because it's darkening the land, why these should be a different alternative? Slowly moving to kicking us all out, killing my grandchildren. Our people. This is in my Inupiaq way of writing. We may someday live again like our ancestors. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Thank you very much for your comment. We recognize the incredible resilience of the Inupiaq people in the face of all the changes associated with modern technology and industrial development.   |
| ATQ3-1 | Paul Bodfish                            | Comment that if a caribou herd comes by, Conoco Phillips could cease operations to reduce herd impacts.  | 4.2 Mitigation  | See Section 4.3.4 Mammals, Potential Mitigation Measure 2: Minimize Potential Ground Vehicle Traffic Disturbance of Caribou.  |

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| Comm #  | Commenter Name        | Comments   | Comment Category Code | Comment Response   |
|---------|-----------------------|--|-----------------------|--|
| ATQ3-10 | Paul Bodfish          | Comment that a marine mammal observer could be hired to monitor actual marine mammal numbers for impacted species.   | 3.12 Mammals          | Since impacts to marine mammals are unlikely due to distance and the low potential for a spill to reach the marine environment, and since marine mammal populations may be affected by a number of other factors, monitoring populations for this project would likely not yield valuable information.   |
| ATQ3-11 | Paul Bodfish          | Comment that an observer for caribou herd numbers who can communicate to the community where the animals are could be a valuable mitigation measure if populations are displaced.  | 4.2 Mitigation        | While use of an observer to communicate the presence and location of game species is not specifically addressed in the Federal Subsistence Hunting Regulations, taking wildlife with the aid of "radio communication," is prohibited. The BLM lacks the regulatory authority to create a program by which observers assist local hunters with locating the presence of game animals for harvest. |
| ATQ3-12 | Fred Kanuarak         | Comment that caribou herds were southeast of Nuiqsut, during mosquito season. The numbers of herds in the area were different than what was observed in the past, and that the herds should have been closer to the coast at the time. Commenter surmised that either air traffic or hunters had changed the caribou migration patterns. | 3.11 Caribou          | Thank you for your comment. The response of caribou to insects varies over the summer and behavior changes when Ostrid flies begin to pester the herds.  |
| ATQ3-13 | Unidentified resident | Comment that chemicals coming from development could be getting into caribou, possibly in the lichens that the caribou feed on, and that the chemicals from caribou meat could cause cancer deaths in local communities.   | 3.11 Caribou          | This comment is not supported by the literature, nor do harvest surveys indicate that incidence of sick caribou harvested has increased. No text changes made.   |
| ATQ3-14 | Paul Bodfish          | Comment that sick caribou are being found more frequently than 15 years ago.   | 3.11 Caribou          | Thank you for your comment. The BLM is not aware of any data pertaining to an abnormal number of sick caribou being found on the north slope. State and federal agencies will be monitoring the health of caribou on the north slope due to the recent confirmation of <i>Mycoplasma ovipneumoniae</i> detected from a single animal from the 40 mile caribou herd.                              |

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| Comm #  | Commenter Name | Comments  | Comment Category Code | Comment Response  |
|---------|----------------|---|-----------------------|---|
| ATQ3-16 | Paul Bodfish   | Comment that sick caribou are found with lungs being attached to rib cages, or half a lung.   | 3.11 Caribou          | Thank you for your comment. The BLM is not aware of any data pertaining to an abnormal number of sick caribou being found on the north slope. State and federal agencies will be monitoring the health of caribou on the north slope due to the recent confirmation of <i>Mycoplasma ovipneumoniae</i> detected from a single animal from the 40 mile caribou herd. |
| ATQ3-2  | Fred Kanuarak  | Comment that information and numbers on swan populations in the Atqasuk presentation is not correct.  | 3.10 Birds            | Information on swan populations contained in the EIS has been reviewed for accuracy.  |
| ATQ3-20 | Paul Bodfish   | Comment that both BLM and Fish and Game staff flying in planes chase caribou away from herds due to flying at low altitudes.                          | 3.11 Caribou          | Thank you for your comment. See comment response L89-68 regarding how BLM manages flight authorizations.  |
| ATQ3-21 | Fred Kanuarak  | Comment that a plane flew 250 feet above a caribou herd and spooked them.   | 3.11 Caribou          | Thank you for your comments. See comment response L89-68 regarding how BLM manages flight authorizations.   |
| ATQ3-23 | Paul Bodfish   | Comment that early rainfall is causing caribou to die off because they cannot dig through the snow due to ice crusting and snow being harder to find. | 3.7 Climate Change    | The GMT2 SEIS tiers to and incorporates by reference the analysis of climate change to caribou from the 2012 NPR-A IAP EIS, including the effects of deep snow pack and icing events on caribou populations.  |
| ATQ3-24 | Paul Bodfish   | Comment that there was recently a big die off of caribou due to an early rain freezing the snow.  | 3.7 Climate Change    | See response to ATQ3-24   |

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| Comm #  | Commenter Name | Comments  | Comment Category Code | Comment Response  |
|---------|----------------|---|-----------------------|---|
| ATQ3-25 | Fred Kanuarak  | Comment/question on how swan populations can be determined to be healthy when the overall population numbers in the area aren't known.  | 3.10 Birds            | <p>The BLM follows a specific process to document visual resource inventory (VRI) and decisions for visual resource management (VRM). During the development of a land-use plan, the BLM conducts a visual resources inventory to identify the scenic qualities and sensitivity to change within the landscape. The land-use plan determines what the visual resource management objectives of the area will be. This means that while BLM recognizes that there may be high scenic values present, there could be a plan decision made that says that the area will be managed for other resource values.</p> <p>The proposed GMT2 project area is managed for Visual Resource Management Class IV objectives which allows for high modifications of the landscape. In the NPR-A the objectives allow for a built environment of constructed structures and linear features such as buildings, roads and pipelines that change or modify the landscape. GMT2 is 16-miles from Nuiqsut and should have a reduced visual contrast due to distance.</p> |
| ATQ3-26 | Paul Bodfish   | Comment that snow geese populations have quadrupled in recent years.  | 3.10 Birds            | The area of greatest snow goose increase is on the Ikpikpuk River delta, outside of the GMT2 project area. Additional information on current snow goose population growth rates have been added to Chapter 3.   |
| ATQ3-27 | Paul Bodfish   | Comment that an observer for caribou herd numbers, placed between the road section and the drill side, would be a good mitigation measure. The observer could then tell the villagers where to go to harvest caribou. | 4.2 Mitigation        | While use of an observer to communicate the presence and location of game species is not specifically addressed in the Federal Subsistence Hunting Regulations, taking wildlife with the aid of "radio communication" is prohibited under both Federal and State regulations. The BLM lacks the regulatory authority to create a program by which observers assist local hunters with locating the presence of game animals for harvest.  |

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| Comm #  | Commenter Name        | Comments  | Comment Category Code   | Comment Response  |
|---------|-----------------------|---|---|---|
| ATQ3-28 | Paul Bodfish          | Comment that communities should be allowed to utilize the road system that will be built, to better connect villages to each other.                                 | 2.1 Proposed Action & Alternatives                                  | The proposed GMT2 gravel road is intended to be available for use by the residents of Nuiqsut under a similar road access agreement currently in place for use of the GMT1 Access Road. At this time, Nuiqsut is the only community that is physically connected to the road due to the presence of the Kuukpik Spur Road. Should the BLM receive an application for additional gravel road(s), either industrial or municipal, to be constructed in the NPR-A that connect to other villages, it is assumed that the residents of those communities will be able to access and utilize the road. |
| ATQ3-3  | Fred Kanuarak         | Comment that air traffic disrupts caribou migration routes and hunting.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Impacts associated with Air Traffic are discussed in detail in Subsistence Section 4.4.5.5 Drilling and Operation.  |
| ATQ3-4  | Unidentified resident | Comment and question regarding the Porcupine herd changing migration routes to southwest routes due to development and if GMT2 will further impact their migration. | 3.11 Caribou  | The Porcupine Caribou Herd ranges well outside the project area and is thus not anticipated to be impacted by GMT2's cumulative impacts to caribou on the North Slope. No text changes made.  |
| ATQ3-5  | Fred Kanuarak         | Comment regarding confusion on how GMT2 would have minor to negligible impacts on spectacled eiders when the birds nest close to each other.                        | 3.10 Birds  | There are very few spectacled eiders nesting in the GMT2 project area. The statement that there would be a minor impact to the overall population of spectacled eiders is valid given the very low numbers expected in the project area. Consultation under section 7 of the endangered species act will be conducted in addition to BLMs analysis of the species.  |

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| Comm # | Commenter Name | Comments  | Comment Category Code         | Comment Response   |
|--------|----------------|---|-------------------------------|--|
| ATQ3-6 | Fred Kanuarak  | Comment that the air quality impacts outside of a 300 kilometer circle are unknown. | 3.5 Air Quality & Meteorology | <p>The concentration of air pollutants typically decreases with distance from the emissions source. For example, the Q/D screening test used by the Federal Land Managers' (FLMs) in the FLM Air Quality Related Values Work Group (FLAG) 2010 guidance can be referred to. The Q/D screening test is evaluated by the sum of total SO<sub>2</sub>, NO<sub>x</sub>, PM<sub>10</sub>, and H<sub>2</sub>SO<sub>4</sub> annual emissions in tons per year divided by the distance in kilometers between the source and the analysis area. As the distance between the source and the area is further apart the Q/D value is smaller. Q/D values below 10 are considered to have negligible impacts. During the maximum emissions year for GMT2 (Year 2 for Alternative C (which is higher than Alternative A)), the Q/D is 1.3 for areas located 300 kilometers from the project area (Q=394 and D=300) and impacts are anticipated to be negligible.</p> |
| ATQ3-8 | Fred Kanuarak  | Comment that the health of locals has declined, possibly due to particulate matter. | 3.5 Air Quality & Meteorology | <p>Thank you for the comment. Potential impacts from particulate matter were evaluated as part of the GMT2 Project and compared to the National Ambient Air Quality Standards and Alaska Ambient Air Quality Standards. The primary standards are set to provide public health protection and secondary standards are set to provide public welfare protection. Based on the analysis presented in the SEIS, the potential impacts from the proposed GMT2 Project are below the primary and secondary standards of the NAAQS/AAQs for all pollutants including particulate matter.</p>   |

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| Comm # | Commenter Name                | Comments  | Comment Category Code   | Comment Response   |
|--------|-------------------------------|---|---|--|
| ATQ3-9 | Paul Bodfish                  | Comment that in Barrow, a fill mixture of a foot and a half controls dust from the road, and could easily be graded. Resident comments that such a fill mixture could be considered for dust control on GMT2 roads. The fill is composed of all-natural ingredients that were mixed together. Resident comments that Harry Brower with the Barrow planning department could provide information on the fill used. | 4.2 Mitigation  | See Section 4.2.3 Atmospheric Environment, Potential Mitigation Measure 1: Reduce fugitive dust generation.  |
| L02-4  | Anchorage Chamber of Commerce | Information collected and provided since ConocoPhillips first started development in the Colville River Delta, with the Alpine field, shows that the subsistence lifestyle is thriving, and harvests are equal to or greater than before Alpine development.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been revised to include the assertion by ConocoPhillips and numerous commenters that the subsistence lifestyle is thriving. While it is true that subsistence harvests have remained steady since the Alpine development, community harvest amounts are not the only measure of the health of the subsistence lifestyle. Research conducted both before and after Alpine development provides evidence of the impacts of development, including Alpine, on subsistence users and activities. Reported impacts include increased time and effort involved in harvesting resources, discomfort in hunting areas due to the presence of industry, changes in or loss of hunting areas due to avoidance or displacement, and disruptions from development-related traffic and noise. The continued harvest of subsistence resources despite these impacts is testament to the adaptability of subsistence harvesters in the face of change. To address the commenter and to provide a summary of existing levels of impacts on subsistence (including the acknowledgement that impacts have so far not affected overall harvests), SRB&A has added a section to the AE entitled "Existing Levels of Subsistence Impacts," because these data should be considered as part of the baseline environment. The section briefly summarizes the baseline status of impacts affecting Nuiqsut subsistence based on the available data. |



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| Comm # | Commenter Name                      | Comments  | Comment Category Code | Comment Response   |
|--------|-------------------------------------|---|-----------------------|--|
| L16-1  | Michael Timmcke                     | Increased air traffic from a road less development stresses caribou herds while limited vehicle traffic seems to be un concerning to wildlife. I also observed that wildlife used gravel pads and roads to rest and get relief from the unrelenting attach of mosquitos in the tundra. Possibly that is part of the reason the herd numbers continue to improve.  | 3.11 Caribou          | Thank you for your comment. Your observation of the response of caribou to roads could very well be correct, however, the time of year could be important with regard to caribou behavior and response to vehicle traffic. For example, during the insect season, caribou are distracted and more concerned with finding relief and less concerned about vehicle traffic. On the other hand, it is well documented that caribou do not tolerate road traffic and other disturbance during the calving season.  |
| L30-01 | Sabin Center for Climate Change Law | <i>BLM should reconsider the assumptions underpinning its analysis of net GHG emissions generated under the proposed action and the no action alternative. We appreciate the fact that BLM has analyzed both direct and indirect emissions from the proposed action, including emissions from the transportation, refinement, and consumption of oil produced from the GMT2 project. However, BLM has made a serious analytical error in comparing the total emissions from this action with those that would occur as a result of the use of other energy sources if the action is not approved. Specifically, BLM notes that its model for forecasting energy substitution "uses a projection of near constant demand [for oil and gas] over the next 40-70 years using the 2016 AEO Reference Case, for which EIA does not assume any future changes in laws or policies other than what is incorporated in existing laws and policies."</i> <sup>2</sup> This assumption does not comport with reality. | 3.7 Climate Change    | The implications for oil and gas production in other countries relating to U.S. decisions about issuing leases are highly uncertain. In the substitution analysis based on MarketSim, the assumption is made that other oil producing countries will supply oil for U.S. import without additional restraints due to GHG-related policies in those countries. This might change in the future if other countries establish policies to achieve their GHG-related targets. Excluding the foreign oil and gas consumption is reasonable. First, the oil produced by GMT2 would be consumed domestically, therefore the substitution sources for GMT2 would also be consumed domestically. Second, oil consumption in each country is different, and BOEM does not have information related to which countries would consume less oil. This is important information since consumption patterns vary by country. For gas consumption, BOEM does not have information related to how changes in the U.S. market would affect other countries. Typically, any single project has a negligible impact on overall GHG globally. Geographical factors and time frame can also play an important role. In the short term, EIA tends to project continued demand. Here is the link to the BOEM GHG technical report: <a href="https://www.boem.gov/OCS-Report-BOEM-2016-065/">https://www.boem.gov/OCS-Report-BOEM-2016-065/</a> |

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| Comm #                     | Commenter Name                      | Comments  | Comment Category Code | Comment Response                  |
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| L30-01<br><i>Continued</i> | Sabin Center for Climate Change Law | <p>The U.S. and almost every other country in the world have made a commitment to enact policies aimed at dramatically reducing greenhouse gas emissions in the coming decades, and this will inevitably involve a reduction in the utilization of and demand for fossil fuels.<sup>3</sup> Thus it is nearly certain that there will be future changes in laws and policies aimed at reducing the consumption of oil and gas in the next 40-70 years. BLM explicitly recognizes that “[a]s countries, including the U.S., address climate change with individual policy targets, this assumption could no longer hold” and that “as new energy sources become more economically feasible, they could displace existing sources and/or alter the composition of energy supply.”<sup>4</sup> BLM should therefore abandon this assumption as well as the analysis that depends on it. We recognize that there may not be a more accurate baseline that BLM can use to model potential energy substitutions and net emissions. If that is the case, BLM should explain that it cannot perform this analysis accurately due to uncertainties about future energy consumption patterns. This would be more prudent than presenting quantitative emission projections that are based on faulty assumptions, as those projections can mislead decision-makers and the public.</p> | 3.7 Climate Change    | <i>See above for BLM Response</i> |

| Comm # | Commenter Name                      | Comments  | Comment Category Code | Comment Response  |
|--------|-------------------------------------|---|-----------------------|---|
| L30-02 | Sabin Center for Climate Change Law | <p>BLM should reconsider its significance determination (or lack thereof) with respect to GHG emissions from this project. BLM should use tools such as the social cost of carbon and EPA's GHG equivalency calculator to evaluate the magnitude of the projected emissions and their corresponding impacts. BLM should also refer to the factors outlined in the NEPA regulations (40 C.F.R. § 1508.27) to evaluate significance. When the projected emissions from this proposal are evaluated in light of the NEPA regulations and available analytical tools, it becomes clear that the emissions are significant by any reasonable standard. Despite finding that the project will generate relatively large quantities of CO<sub>2</sub>-e (whether measured as gross or net emissions), BLM does not issue findings with respect to whether these emissions represent a "significant impact" under NEPA. BLM also asserts that the "tools necessary to quantify climatic impacts of single projects are presently unavailable" and thus it cannot evaluate the magnitude of the GHG impacts that will occur as a result of this action.<sup>7</sup> There are several problems with BLM's analysis of significance. First, the fact that the federal government has not established a specific significance threshold for GHG emissions does not prevent the agency from reaching its own determination as to whether those emissions qualify as a "significant impact" under NEPA (see letter for discussion, p. 3, fifth paragraph). It is also incorrect to say that "no single project or action contributes a significant amount of greenhouse gases when compared to global greenhouse gas emissions."</p> | 3.7 Climate Change    | <p>Estimates of downstream greenhouse gas emissions are provided in the DSEIS to facilitate comparison of impacts associated with various alternatives and support analyses of cumulative impacts. The DSEIS indicates that emissions from anthropogenic activities such as production and combustion of fossil fuels do contribute to ongoing climate change processes, but existing models and tools are not sufficient to quantify specific impacts upon local resources. Climate change is by nature a cumulative global issue and no single action contributes an amount of greenhouse gases that can significantly impact global systems. Specific regulatory thresholds for greenhouse gas emissions have not been promulgated and there is no means to quantitatively assess impacts to local resources. It is recognized in the DEIS that there is inherent uncertainty in these estimates (from market influences and other factors).</p> |

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| Comm #                     | Commenter Name                      | Comments   | Comment Category Code | Comment Response           |
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| L30-02<br><i>Continued</i> | Sabin Center for Climate Change Law | <p>The concept of significance cannot be distilled down to a question of proportion – i.e., whether a project’s emissions are relatively small in comparison to global or even national totals. Rather, the NEPA regulations outline two overarching factors and a variety of considerations to be considered when assessing significance. The first factor is context (see letter for discussion - p.4 first paragraph). The second factor is intensity (see letter for discussion - p.4 second paragraph, etc.). The other considerations relevant to the intensity question also weigh in favor of a positive significance determination for the emissions generated by the GMT2 project (see letter for discussion p.5). In light of all these factors, we urge BLM to revisit its analysis of significance and to issue a positive significance finding for this project.</p> | 3.7 Climate Change    | See above for BLM Response |

| Comm # | Commenter Name                      | Comments   | Comment Category Code | Comment Response  |
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| L30-03 | Sabin Center for Climate Change Law | <p>BLM should elaborate on its analysis of climate change impacts on the project and its affected environment. BLM does not fully analyze how the changing conditions in the project area may affect the environmental outcomes of the project. For example, BLM notes that "[d]epending on the type of material and the mining method used to extract that material, a changing climate could make the excavation easier, due to the melting of the permafrost, or more difficult when attempting to develop deposits in areas with melted permafrost, which may necessitate removing water, or the need to excavate in swampy conditions."<sup>17</sup> But the analysis stops there. BLM does not consider what environmental outcomes may occur if it is necessary to remove water or excavate in swampy conditions. For example: could these excavation activities have adverse effects on endangered species or other environmental values in the area? For this reason, we recommend that BLM elaborate further on the implications that climate change may have for the environmental outcomes of the project.</p> | 3.7 Climate Change    | <p>The text quoted by the commenter is from Section 3.2.4.3 Potential Climate Change Impacts in the Study Area, which is a description of current conditions within the affected environment that may be being affected by climate change, and not a description of impacts of the proposed project or alternatives. In this way, it is not an "analysis," but is simply a description of our understanding of conditions and their implications. The effects of gravel mining on various resources and species is discussed in those sections of Chapter 4 Environmental Consequences. See for example, sections 4.3.3 Birds and 4.3.5 Threatened and Endangered Species for discussion of impacts from gravel mining, placement and climate change.</p> |
| L32-1  | Resource Development Council        | <p>BMP E-7(c) requires that a minimum separation distance of 500 feet between pipelines and roads be maintained to minimize disruption of caribou movement and subsistence use. However, 500-foot separation of roads and pipelines may not be feasible in narrow land corridors between lakes and where pipelines and roads converge on a drill pad. For the GMT2 project, where it is not feasible to separate pipelines and roads, BLM should approve deviation from BMP-E-7(c) and instead employ supplemental mitigation measures such as speed limits and other design and operation measures that reduce impacts to subsistence resources.</p>  | 4.2 Mitigation        | <p>Thank you for your comment. Section 2.2 of the SEIS describes the two deviations that are being requested by the applicant, and provides information regarding the rationale of the request. If the deviations are granted in the Record of Decision, the document will include text that explains the information considered in making the decision to allow a deviation to occur.</p>  |

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| L42-6  | Levi Frampton  | The proposed Alternate A includes a gravel road connecting existing infrastructure at GMT1. This gravel road assures a faster response in the unlikely event of an environmental or safety issues.   | 3.18 Public Health    | Noted, further discussion in SEIS in Section 2.7, Alternative C: Roadless Access   |
| L42-9  | Levi Frampton  | Pipeline design standards and separation from the road were developed to ensure caribou movement is protected for subsistence hunting. The project has incorporated pull-outs on the gravel road to support safety and subsistence access on the GMT2 road.  | 3.18 Public Health    | Noted, further discussion in SEIS in Section 2.7, Alternative C: Roadless Access, and Section 4.4.5, Subsistence   |
| L43-2  | Lynden         | It has been concluded that with proposed alternative A there will be fewest possible impacts to caribou migrations and historical substance hunting opportunities  | 3.11 Caribou          | Thank you for your comment. The impact analysis comparing Alt A and B with the roadless alternative C shows that the absence of impacts from roads would likely be offset by the increase from air traffic at the CD1/Alpine Processing Facility and GMT2 site. However, movements would likely be less restricted under the roadless alternative compared to other action alternatives. |
| L43-3  | Lynden         | With Alternative A there would be a road providing necessary emergency response and lessor impact on the substance lifestyle by those residents of nearby community Nuiqsut.   | 3.18 Public Health    | Noted, further discussion in SEIS in Section 2.7, Alternative C: Roadless Access, and Section 4.4.5, Subsistence   |
| L44-3  | Doyon, Limited | Doyon notes that Alternative A consists of an 8.2 mile long gravel road and pipeline, which will connect to GMT2 to existing infrastructure from Greater Mooses Tooth 1 ("GMT1"). The option for the road allows for emergency access and access in bad weather. The project has incorporated pull-outs to support safety. | 3.18 Public Health    | Noted, further discussion in SEIS in Section 2.7, Alternative C: Roadless Access.  |

| Comm # | Commenter Name | Comments  | Comment Category Code   | Comment Response  |
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| L51-01 | Robert Meyer   | Having reviewed the subject Draft EIS, I would like to point out that much of the fish data upon which the analysis is base is almost 20 years old. Considering the rapid warming of the Arctic much has changed since these data were collected. An exception is that some data on Grayling is current.  | 3.9 Fish  | A majority of the fish surveys were conducted in the project area between 2000-2009. These surveys are recent enough to be considered valid and provide adequate information to analyze and compare alternatives.   |
| L53-2  | Scott Jepsen   | There are a number of areas I recommend the BLM focus on to improve the DSEIS. First, the description of the NPRA Impact Mitigation Fund on page 447 is misleading. The description of the program describes the grants as being "limited" to three categories. Although there are only three categories, those categories and the way they are interpreted and implemented provide a much wider scope than the DSEIS implies. A short perusal of the report issued by the State of Alaska every year regarding the grant program will support this observation. In addition, the DSEIS leaves the impression that the City of Nuiqsut is not eligible to receive grants and cannot manage the audits necessary to receive large grants (pg. 176). In fact, the city has resolved its past audit issues and is eligible to receive grants. This section should be revised to reflect the current state of affairs for the city. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been revised to update the City of Nuiqsut's status and eligibility to receive grants from the State of Alaska in 2018. While the BLM cannot publish the entire annual report produced by the State of Alaska Department of Community and Economic Development, a range of Nuiqsut projects from the three categories that have been funded by these grants is included. |

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| L53-3  | Scott Jepsen   | <p>The subsistence observations in the report do not appear to be based upon sound science. I draw this conclusion because of the use of hypotheticals (e.g., "If residents decrease use...", pg. 423; "If harvests or the number of active participants in harvesting declines...", pg. 424) to make adverse subsistence impact statements. The report should not be based upon hypotheticals, but rather actual data. The report also does not provide a balanced perspective regarding subsistence. It emphasizes negative comments and outcomes but does not give equal weight to the positive benefits the roads bring to subsistence hunters. For example, subsistence hunters have used the CD5 road to hunt. This has increased hunter success and made it easier to access caribou. In fact, this last winter several caribou were harvested between the GMT1 road and pipeline while the pipeline was under construction.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment [40 CFR 1500.1 (c)]. An EIS must identify the known and predicted effects that are related to issues identified that could be affected by a proposed action [40 CFR 1500.4 (c), 40 CFR 1500.4(g), 40 CFR 1500.5(d), 40 CFR 1502.16]. Federal Agencies are required to use all practicable means, consistent with the requirements of the Act and other essential considerations of national policy, to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment [40 CFR 1500.2(f)]. Inherently, NEPA analyses are statements about potential future outcomes, based on our understanding of effects that have already occurred, are currently occurring, or could occur, focusing on adverse effects in order to identify ways to address them.</p> |
| L53-4  | Scott Jepsen   | <p>Regarding additional mitigation measures, the 265 mitigation measures and best practices that already apply to NPRA in combination with funds available to impacted villages from the NPRA Impact Mitigation Fund provide a substantial framework for protecting resources and mitigating impacts. BLM should not apply any additional mitigation measures.</p>  | 4.2 Mitigation  | <p>BLM NEPA Guidance and CEQ regulations for EIS analyses require that all relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the agency [40 CFR 1502.14(f), 40 CFR 1502.16(h)]. Following this requirement, the BLM included and analyzed several potential mitigation measures in the SEIS. The final suite of new mitigation measures applicable to the GMT2 Project will be determined in the ROD.</p>   |



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| L56-3  | Joseph Marushack | The description of the NPRA Impact Mitigation Fund does not take into consideration a full spectrum of benefits and mitigation measures already in place. For instance, the draft SEIS leaves the impression that the City of Nuiqsut is not eligible to receive grants. In fact, the city is eligible to receive grants and the FEIS should reflect this.                      | 4.2 Mitigation  | At the time of writing the Draft SEIS the BLM had been informed that the city was ineligible. This has changed, and text has been updated to reflect the fact that the city is eligible to receive grants from the State under this program.  |
| L56-4  | Joseph Marushack | The subsistence observations in the report do not appear to be based upon sound science. The report must rely on actual data, not speculative potential. The report does not provide a balanced perspective regarding subsistence. It emphasizes negative comments and outcomes but does not give equal weight to the positive benefits the roads bring to subsistence hunters. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment [40 CFR 1500.1 (c)]. An EIS must identify the known and predicted effects that are related to issues identified that could be affected by a proposed action [40 CFR 1500.4 (c), 40 CFR 1500.4(g), 40 CFR 1500.5(d), 40 CFR 1502.16]. Federal Agencies are required to use all practicable means, consistent with the requirements of the Act and other essential considerations of national policy, to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment [40 CFR 1500.2(f)]. Inherently, NEPA analyses are statements about potential future outcomes, based on our understanding of effects that have already occurred, are currently occurring, or could occur, focusing on adverse effects in order to identify ways to address them. |

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| Comm # | Commenter Name   | Comments  | Comment Category Code | Comment Response  |
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| L56-5  | Joseph Marushack | Regarding additional mitigation measures, there exist over 200 mitigation measures and best practices that already apply to NPRA in combination with funds available to impacted villages from the NPRA Impact Mitigation Fund that provide a substantial framework for protecting resources and mitigating impacts. BLM should not apply any additional mitigation measures. | 4.2 Mitigation        | BLM NEPA Guidance and CEQ regulations for EIS analyses require that all relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the agency [40 CFR 1502.14(f), 40 CFR 1502.16(h)]. Following this requirement, the BLM included and analyzed several potential mitigation measures in the SEIS. The final suite of new mitigation measures applicable to the GMT2 Project will be determined in the ROD. |
| L57-7  | James Brodie     | The hundreds of mitigation measures and best practices required by BLM help ensure that environmental impacts are minimized.  | 4.2 Mitigation        | BLM NEPA Guidance and CEQ regulations for EIS analyses require that all relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the agency [40 CFR 1502.14(f), 40 CFR 1502.16(h)]. Following this requirement, the BLM included and analyzed several potential mitigation measures in the SEIS. The final suite of new mitigation measures applicable to the GMT2 Project will be determined in the ROD. |

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| L58-2  | Jon Schultz    | <p>There are a number of areas I recommend the BLM focus on to improve the DSEIS. First, the description of the NPRA Impact Mitigation Fund on page 447 is misleading. The description of the program describes the grants as being "limited" to three categories. In fact, the language describing the grant categories is so broad that there is practically no limitation on qualifying projects. A short perusal of the report issued by the State of Alaska every year regarding the grant program will support this observation. In addition, the DSEIS leaves the impression that the City of Nuiqsut is not eligible to receive grants and cannot manage the audits necessary to receive large grants (page 176). In fact, the city has resolved its past audit issues and is eligible to receive grants. This section should be revised to reflect the current state of affairs for the city.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>Text has been revised to update the City of Nuiqsut status and eligibility to receive grants from the State of Alaska in 2018. While the BLM cannot publish the entire annual report produced by the State of Alaska Department of Community and Economic Development, a range of Nuiqsut projects from the three categories that have been funded by these grants is included.</p> |

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| L58-3  | Jon Schultz    | <p>The subsistence observations in the report do not appear to be based upon sound science. I draw this conclusion because of the use of hypotheticals (e.g., "If residents decrease use ... ", pg. 423; "If harvests or the number of active participants in harvesting declines ... ", pg. 424) to make adverse subsistence impact statements. The report should not be based upon hypotheticals, but rather actual data. The report also does not provide a balanced perspective regarding subsistence. It emphasizes negative comments and outcomes but does not give equal weight to the positive benefits the roads bring to subsistence hunters. For example, subsistence hunters have used the CDS road to hunt. This has increased hunter success and made it easier to access caribou. In fact, this last winter several caribou were harvested between the GMTI road and pipeline while the pipeline was under construction.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment [40 CFR 1500.1 (c)]. An EIS must identify the known and predicted effects that are related to issues identified that could be affected by a proposed action [40 CFR 1500.4 (c), 40 CFR 1500.4(g), 40 CFR 1500.5(d), 40 CFR 1502.16]. Federal Agencies are required to use all practicable means, consistent with the requirements of the Act and other essential considerations of national policy, to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment [40 CFR 1500.2(f)]. Inherently, NEPA analyses are statements about potential future outcomes, based on our understanding of effects that have already occurred, are currently occurring, or could occur, focusing on adverse effects in order to identify ways to address them.</p> |
| L58-4  | Jon Schultz    | <p>Regarding additional mitigation measures, the 265 mitigation measures and best practices that already apply to NPRA in combination with funds available to impacted villages from the NPRA Impact Mitigation Fund provide a substantial framework for protecting resources and mitigating impacts. BLM should not apply any additional mitigation measures.</p>  | 4.2 Mitigation  | <p>BLM NEPA Guidance and CEQ regulations for EIS analyses require that all relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the agency [40 CFR 1502.14(f), 40 CFR 1502.16(h)]. Following this requirement, the BLM included and analyzed several potential mitigation measures in the SEIS. The final suite of new mitigation measures applicable to the GMT2 Project will be determined in the ROD.</p>   |

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| L60-7  | Frederick Herbert | Air quality exceeds ambient air quality standards  | 3.5 Air Quality & Meteorology | Based on the current background values from the Nuiqsut Monitoring Station from 2014 through 2016, current ambient air does not exceed national or state ambient air standards (Table 3.2-8 of SEIS). Analysis of the potential project impacts in the near-field and far-field for all analyzed pollutants and scenarios, the potential GMT2 Project impacts are less than their respective NAAQS/AAQS (Section 4.2 of SEIS).  |
| L60-9  | Frederick Herbert | The hundreds of mitigation measures and best practices required by BLM help ensure that environmental impacts are minimized. | 4.2 Mitigation                | BLM NEPA Guidance and CEQ regulations for EIS analyses require that all relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the agency [40 CFR 1502.14(f), 40 CFR 1502.16(h)]. Following this requirement, the BLM included and analyzed several potential mitigation measures in the SEIS. The final suite of new mitigation measures applicable to the GMT2 Project will be determined in the ROD. |

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| L61-10  | Kuukpik Corporation | <p>The GMT2 DSEIS was spared the arbitrary page number limitation because it was already mostly drafted by the time Secretarial Order 3355 issued. 12 But there has apparently been a large change in the Draft SEIS' analysis of long term warming in the Arctic. Kuukpik wants to address both the specific changes in the Draft SEIS, as well as express Kuukpik's concerns as to future NEPA processes. Based on announcements of recent discoveries it is abundantly clear that GMT2 is far from the last oil development project Nuiqsut will face in the next couple of years. And if the community can't rely on a thorough and detailed EIS document, it is likely to promote anti-development sentiment in Nuiqsut. If an EIS is not thorough, many people and organizations in Nuiqsut may decide that no development or delayed development is a lot safer than uninformed development.</p> | 3.7 Climate Change    | <p>CEQ regulations direct that: <i>Agencies shall incorporate material into an environmental impact statement by reference when the effect will be to cut down on bulk without impeding agency and public review of the action. The incorporated material shall be cited in the statement and its content briefly described. No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested parties within the time allowed for comment. (40 CFR 1502.21).</i> The text provided in the GMT2 SEIS incorporates by reference and summarizes the text from the GMT1 SEIS and includes updated information where such information was available (i.e., minimum sea ice extent). Our understanding of climate change and its effects on the Arctic are not significantly different than what is stated in the GMT1 SEIS.</p> |
| L61-100 | Kuukpik Corporation | <p>Page 522, Cumulative Impacts to Social Systems -Recreation, Future Impacts and Their Accumulation, Activities Not Associated with Oil and Gas Exploration and Development: The first passage states that "Development of the Colville River Access Road could provide easier access for recreationalists in the GMT2 Project area if the road is open to the public." (emphasis added)<br/>                     This comment reflects a lack of understanding by the BLM, and possibly other entities: since public funds have been used for this planned road, it is almost certain that the road must be open to the public. This section is also out of date because, contrary to the suggestion in this section, the CD5-GMT1 road has already been built.</p>   | 3.17 Land Use         | <p>Thank-you for your comment. Reworded section to reflect that vehicle access to Nuiqsut is restricted out of Deadhorse at the oil fields guard shacks and corrected CD5-GMT1 information.</p>   |

| Comm #  | Commenter Name      | Comments  | Comment Category Code   | Comment Response  |
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| L61-101 | Kuukpik Corporation | Page 526, Cumulative Impacts to Social Systems - Local Transportation, Future Impacts and Their Accumulation, Activities Not Associated with Oil and Gas Exploration and Development: The sole passage in this section states: "The addition of the Colville River Road Access would complete a road connection providing year-around vehicle access to fish and wildlife resources along the Colville River and its delta, as well as to estuarine and marine resources along the coast." This statement is misleading, at best. The Colville River Access Road, when constructed, will only provide year-round vehicle access to one location on the Colville River. Although boats could then travel the river, this section suggests vehicle access would be much more extensive. | 3.17 Land Use   | Revised wording in section: The addition of the Colville River Road Access would complete a road connection to the Colville River providing year-around vehicle access to fish and wildlife resources of the river and through river traffic its delta, as well as to estuarine and marine resources along the coast. |
| L61-102 | Kuukpik Corporation | Page 530, Cumulative Impacts to Social Systems - Subsistence, Future Impacts and Their Accumulation, Oil and Gas Development Activities: The discussion of Putu should be moved to the Colville River Unit and should note exploratory drilling was completed in 2018.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been edited to move discussion of Putu to Colville River Unit.   |
| L61-103 | Kuukpik Corporation | Page 538, Cumulative Impacts to Social Systems - Environmental Justice, Future Impacts and Their Accumulation, Oil and Gas Exploration and Development Activities, Conclusion: There is no Alternative E.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been changed to indicate Alternative D.  |

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| L61-104 | Kuukpik Corporation | Appendix L 810 Analysis: Page 7, Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Uses and Needs, Subsistence Resource Availability: Both Figure 3 (GMT2 Construction Project Study Area, Caribou Subsistence Use Area) and Figure 4 (GMT2 Drilling and Operation Project Study Area, Caribou Subsistence Use Area) show that the GMT2 pad and the GMT1-GMT2 access road are not in the highest caribou subsistence use areas. Also, Figure 4 has a hashmarked area which is not defined. Presumably, this marking was included to highlight the project study area for drilling and operation. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Maps were reviewed; the hatched area outlined in gray is "Project Area for Drilling and Operations" as indicated on the map. NEPA requires the BLM to evaluate the impacts of the entirety of a project, including areas of associated activities and connected actions. The project area is defined to include such connected areas as the ASRC gravel pit from which gravel will be derived and Alpine which is the origination point of most traffic to and from GMT2, to name just two examples. |
| L61-105 | Kuukpik Corporation | Appendix L 810 Analysis: Page 10, Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Uses and Needs, Access to Subsistence Resources, Access during construction: How was the footprint of the safety area (approximately 142 acres) calculated? Also, only a small portion of this footprint would be less than 5 miles from Nuiqsut, based on the planned ice road routes.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The calculation for the safety areas was estimated based on maps provided by the applicant that are distributed with the GMT1 Road Access guidelines, which include red circles around drill pads and processing facilities. The actual amount of land included within these areas has been provided by the applicant and the text has been updated with accurate information.   |



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| L61-106 | Kuukpik Corporation | Appendix L 810 Analysis: Page 11, Evaluation of the Effect of Use, Occupancy, or Disposition on Subsistence Uses and Needs, Access to Subsistence Resources, Access during construction: Figure 5 (Nuiqsut travel routes) is misleading since it does not distinguish between winter travel routes and summer travel routes.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Figure 3.4-22, introduced and explained in Chapter 3: Affected Environment and summarized in Appendix L, shows travel routes that have been documented for Nuiqsut based on Stephen R. Braund and Associates (2010a) interviews. Multiple travel routes within the project study area have been reported by residents of Nuiqsut. The majority of these travel routes head northwest of the community towards the coast and Utqiagvik (formerly Barrow). The Nigliq channel of the Colville River is also a heavily utilized travel corridor to access use areas in the Colville Delta, Beaufort Sea, and Fish and Judy creeks. It is true that the figure does not distinguish between winter and summer routes. The map shows the data that exists regarding travel routes utilized by Nuiqsut residents. These are travel routes for both subsistence and general traveling to locations such as to Utqiagvik, Anaktuvuk Pass, or subsistence camps. However, the vast majority of them are travel to subsistence use areas and even those that are used for travel to other communities like Utqiagvik or Anaktuvuk Pass are generally used for subsistence as well. |
| L61-107 | Kuukpik Corporation | Appendix L 810 Analysis: Page 12, Evaluation of the Availability of Other Lands: This passage explains that BLM "considered the possibility of moving the location of the GMT2 drill pad, but such an alternative would have moved the drill pad off Kuukpik-selected lands. This would have resulted in less revenue to the Kuukpik Corporation shareholders, and would have lessened the ability of those shareholders to adapt to the impacts of the GMT2 Project." BLM is both over-simplifying things and assuming facts that it doesn't know enough about. Moving the pad off Kuukpik-selected lands would not necessarily result in less revenue to Kuukpik. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text regarding Kuukpuk Corporation revenues has been removed. Kuukpik Corporation is encouraged to provide details on existing revenues and anticipated revenue sources so that the sections that should include this information (Economy, Sociocultural Systems, and ANILCA 810 evaluation of the availability of other lands) can be more accurate.   |

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| L61-108 | Kuukpik Corporation | Appendix L 810 Analysis: Page 17, Evaluation and Findings for the Cumulative Case: The Nanushuk development is not planned to begin in 2018. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been changed to indicate that the Nanushuk project is currently under analysis through an EIS that is being prepared by the U.S. Army Corps of Engineers. Effective March 15, 2018, Oil Search Alaska, LLC has officially assumed the role of Operator for the Nanushuk development. The schedule for addressing public and agency comments on the Draft EIS, and completing the Final EIS is being extended, to allow the new operator time to communicate with various interested parties and stakeholders to assess possible additional opportunities to avoid and minimize impacts to the environment as a result of project activities, and develop responses to the outstanding project related Requests for Information (RFIs) from the U.S. Army Corps of Engineers. The former operator (Armstrong) expected the first development in the Pikka Unit to go online no later than 2022. |
| L61-12  | Kuukpik Corporation | The Final SEIS should identify and analyze mitigation measures that will be needed in order for GMT2 to adapt to a warming Arctic.           | 3.7 Climate Change  | Any development in the NPR-A is currently subject to a extensive suite of best management practices (BMPs) pursuant to the IAP ROD, including BMPs for Facility Design and Construction. In addition, a potential mitigation measure specific to GMT2 has been proposed that includes the following requirement: <i>Equipment used to develop hydrocarbons must meet the following standards: Equipment must be designed in accordance with standard Arctic engineering practices for use in Arctic conditions; Design criteria must be based on conservative estimates.</i>  |

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| L61-14 | Kuukpik Corporation | Kuukpik compared the GMT2 analysis of long-term climate issues with the similar analysis in the GMT1 Final SEIS. Instead of incorporating new and updated knowledge (both western and traditional) into this Draft SEIS, there is actually much less discussion of the trends Native people on the North Slope have observed over the past several decades or more. This includes things like changes in the annual migration timing of certain species (particularly whales), a shorter ice road season, reduction in sea ice, and increasingly unpredictable permafrost and hydrological events. Most of these issues aren't discussed in the Draft EIS with any particularity.   | 3.7 Climate Change    | CEQ regulations direct that: <i>Agencies shall incorporate material into an environmental impact statement by reference when the effect will be to cut down on bulk without impeding agency and public review of the action. The incorporated material shall be cited in the statement and its content briefly described. No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested parties within the time allowed for comment. (40 CFR 1502.21).</i> The text provided in the GMT2 SEIS incorporates by reference and summarizes the text from the GMT1 SEIS and includes updated information where such information was available (i.e., minimum sea ice extent). Our understanding of climate change and its effects on the Arctic are not significantly different than what is stated in the GMT1 SEIS.                                |
| L61-15 | Kuukpik Corporation | Worse, the bulk of information that's been omitted is the forward looking analysis that helps stakeholders understand how warming trends in the Arctic will impact the land and subsistence activities in the coming decades. That type of information is by far the most important to include in an EIS. Among the types of information and conclusions that were included in the GMT1 Final SEIS but not in the Draft GMT2 SEIS are the following: Changes in the Arctic marine environment are affecting the foundation of the food web in both terrestrial and marine ecosystems. (GMT1 FSEIS, p. 119). Climate change has also been shown to have some impact in the NSB, including erosion problems, less reliable ice conditions, and higher risk to hunters and spring whalers. | 3.7 Climate Change    | CEQ regulations direct that: <i>Agencies shall incorporate material into an environmental impact statement by reference when the effect will be to cut down on bulk without impeding agency and public review of the action. The incorporated material shall be cited in the statement and its content briefly described. No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested parties within the time allowed for comment. (40 CFR 1502.21).</i> The text provided in the GMT2 SEIS incorporates by reference and summarizes the text from the GMT1 SEIS and includes updated information where such information was available (i.e., most up to date information on minimum sea ice extent). Our understanding of climate change and its effects on the Arctic are not significantly different than what is stated in the GMT1 SEIS. |

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| L61-15<br><i>Continued</i> | Kuukpik Corporation | <p>The NPR-A IAP (BLM 2012 p. 513) concludes that climate change will likely result in rapidly changing physical environmental and health conditions for the NSB population in the coming years. Climate change may affect both subsistence food availability and storage and may increase risks associated with subsistence activities, which in turn may lead to dietary and cultural change. Climate change can also affect water, sanitation, housing, transportation infrastructure, cultural continuity, community stress levels, the spread of infection, and even the types of diseases and infections to which the population is susceptible. (GMTI FSEIS, p. 211). Warming of the climate will have major impacts on the ecosystems of the North Slope and the project study area. The climate change scenario for the rest of this century suggests that climate will get warmer, with greater precipitation, but that longer, warmer summers will increase evapotranspiration so that there will actually be less moisture available to plants (Grimm et al. 2013). (GMTI FSEIS, p. 121). BLM (2012, § 4.8.7) concluded the cumulative effect of climate change is likely more pronounced on the North Slope than elsewhere in Alaska and may include an increase in particulate matter to the extent shallow lakes and ponds dry up or are smaller, watersheds would experience a change to drier soils, and thermokarsting may increase as ice-rich permafrost becomes unstable with increases in ambient surface temperatures. Raynolds et al. (2014) found that climate change induced thermokarsting, lakeshore erosion, and changes to river bars and banks, has occurred across the Prudhoe Bay Oilfield and west of the field. (GMT1 DSEIS, p. 528).</p> | 3.7 Climate Change    | See above for BLM Response |

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| L61-15<br><i>Continued</i> | Kuukpik Corporation | People in Nuiqsut have observed many of these trends and are concerned about them. A failure to acknowledge their existence and the warming trend does not inspire confidence.   | 3.7 Climate Change    | <i>See above for BLM Response</i>  |
| L61-16                     | Kuukpik Corporation | The Draft appears to deliberately omit the most troubling information and concerns about warming trends in the Arctic that BLM identified just 3 years ago with GMT1. Instead, the Draft doesn't state many conclusions at all, instead jumping around between random facts, overly technical discussions of less important issues, and data that will help defend BLM in court from the argument that it arbitrarily failed to analyze climate change, but which don't contribute to or include any important conclusions about its impacts on subsistence, the ecosystem, or how to design the GMT2 project to be the LEDPA. | 3.7 Climate Change    | Although it is unclear what the subject of "overly technical discussion of less important issues" is referring to, the SEIS does tier to previous NEPA analysis, including the ASDP 2004, IAP 2012, and GMT1 2014. Following BLM guidance <i>tiering is using the coverage of general matters in broader NEPA documents in subsequent, narrower NEPA documents (40 CFR 1508.28, 40 CFR 1502.20). This allows the tiered NEPA document to narrow the range of alternatives and concentrate solely on the issues not already addressed. Tiering is appropriate when the analysis for the proposed action will be a more site-specific or project-specific refinement or extension of the existing NEPA document.</i> The BLM has included more detailed information on subjects that were not previously covered in existing NEPA analysis. See also the response to L61-15. |
| L61-17                     | Kuukpik Corporation | Whether or not the Administration believes the climate is warming slightly over time or not, the people of Nuiqsut have seen enough changes to be convinced that something is going on. Like them, Kuukpik frankly doesn't really care that much about what exactly is causing the warming trends we've seen over the years (because we're not really in a position to do anything about that) but we care profoundly about what these changes mean for the community, for subsistence, and for the infrastructure that is currently being built in this area.   | 3.7 Climate Change    | Thank you for your comment. The BLM is also committed to understanding the effects of climate change in the NPR-A, and will continue to conduct research and monitoring to be able to respond to changing conditions through adaptive management.  |

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| L61-18 | Kuukpik Corporation | <p>Previous NEPA documents have covered two aspects of how a project relates to climate change: "[1] How the Project could contribute to climate change through direct GHG emissions, and how mitigation measures could potentially reduce those emissions, [and 2] How regional climate change could have an impact on the Project, and how mitigation measures could potentially reduce those impacts." But the GMT2 Draft SEIS only discusses the first question in any detail, in fact going into great and unnecessary detail describing the (lack of) differences between the greenhouse gas emissions from each alternative. This misses the point because what really matters to Kuukpik, Nuiqsut and other stakeholders (including, we hope, the Corps of Engineers) is not how the project will affect climate change, but how a warming Arctic will affect the project, the project area, and the resources the EIS is supposed to be analyzing. That information is effectively absent from the GMT2 Draft EIS (save for some cursory mentions in the cumulative impacts section). Omitting this information is short-sighted because BLM and CPAI need to be planning now for what the North Slope is going to look like in 20 and 30 years. The Final EIS must consider long term warming trends in the Arctic because the project needs to be designed to withstand them.</p> | 3.7 Climate Change    | <p>The impacts of climate change on the resources in the Arctic is analyzed in section 3.2.4, Climate Change. Regarding project infrastructure design, the project applicant has adjusted design standards over the years to ensure a conservative safety margin. One example of this is changing road thickness from an average 5-foot thickness to a minimum 5-foot thickness.</p> |

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| L61-19 | Kuukpik Corporation | <p>A prime example is the evolving understanding of how gravel roads and pads may need to be designed to accommodate warming temperatures. Less than a year ago, the Corps of Engineers concluded in at least one instance that pads only 35 miles away from GMT2 would need to be about 30-35% thicker than previously constructed (6.4 feet deep instead of the usual 5 feet) in order to prevent the pads from excessively and unevenly settling into the tundra, which could damage the structures and equipment on those pads. This is precisely the type of new information and updated analysis the GMT2 Supplemental EIS should include and prioritize. On-the-ground impacts caused by weakening permafrost are the very definition of information that wasn't fully known and understood when the ASDP EIS (which includes an early version of GMT2) was completed in 2004. But instead of including real analysis and projections like those cited above, the Draft EIS (way back in the cumulative impacts section) treats the issue of whether 5 foot thick roads will be sufficient as a hypothetical question that doesn't need to be answered right now: "If global climate change persists, the cumulative effects to soil from oil and gas development, and non-oil and gas development, on the North Slope could be greater than predicted. If the climate warms, the permafrost will thaw to an increased depth each season, which will cause varying degrees of impacts on subsidence, soil moisture, and vegetation.</p> | 3.7 Climate Change    | <p>The regulatory division of the Army Corps of Engineers does not have any design considerations/requirements in regard to permafrost conditions. In general, the applicant is responsible for the engineering of their projects. The gravel depth for the Nanushuk project was proposed by the applicant and is not endorsed or required by the Corps. The BLM follows a similar model and defers to the applicant to design a project that will be resilient in the face of a changing climate. ConocoPhillips Alaska, Inc. designed GMT2 to withstand the harshest projected conditions with a margin of safety, which will account for changes in the climate over the life of the project.</p> |

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| L61-19<br><i>Continued</i> | Kuukpik Corporation | <p>Since there is great depth of the permafrost on the North Slope it would take several decades of warming at the predicted rate before it would transition into discontinuous permafrost. However, if the permafrost continues to warm, its ability to support structures would diminish, which could affect development on the North Slope. Thicker gravel may be needed to support structures." This last sentence, without benefit of any further analysis or information, is particularly elusive and frustrating in light of the Corps's recent conclusion for another facility, quoted above, that, yes, more than 5 feet of gravel will be needed to support structures-about one and half feet more to be exact. Is this the wave of the future? Perhaps. Probably nobody knows, but these are highly significant developments and the Draft SEIS doesn't really even address the question.</p> | 3.7 Climate Change    | See above for BLM Response |



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| L61-20 | Kuukpik Corporation | <p>Recent experience suggests that projections about weakening permafrost could be accurate and that they could be affecting roads as well. Various oil companies have recently proposed to make existing roads thicker than five feet in Kuparuk. CP AI proposed one such effort {in the Kuparuk area) in part because it claims the roads are settling more and more unevenly as the permafrost has weakened. CPAI claims that the current thickness/height of some of those roads above the tundra is as little as one foot. Those roads were originally built to a minimum depth of 5 feet-the same depth proposed for the GMT2 Access Road. Whether CPAI's claims are accurate or not, the very fact that CPAI believes a warming trend is negatively impacting its existing roads confirms that the Final EIS needs to consider whether trends like this one are going to continue, and more importantly, help develop mitigation measures that will help GMT2 facilities withstand those long term changes. The current best available data strongly suggests that the currently-proposed 5 foot thick GMT2 Access Road and pads may not be sufficient for the long term protection of the tundra and the stability of CPAI's facilities. That may very well mean that 5 foot thick pads and roads are not the Least Environmentally Damaging Practicable Alternative. BLM, CPAI, and the Draft SEIS should at least address and consider whether it would be appropriate to construct thicker roads now rather than trying to solve these kinds of problems later when all the equipment is already in place and the oil is flowing.</p> | 3.7 Climate Change    | <p>Climate conditions over the life of the project are factored into the design and ConocoPhillips Alaska, Inc. has adjusted design standards over the years as design best practices have been identified. One example of this is changing road thickness from an average 5-foot thickness to a minimum 5-foot thickness. The roads in the Kuparuk unit that have been improved were improved to bring them up to the 5-foot thickness minimum standard.</p> |

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| L61-21 | Kuukpik Corporation | In its present form, the Draft SEIS seems to largely ignore Nuiqsut's longer term traditional knowledge as well as the last several decades of more recent Kuukpikmiut experience with warming trends on the North Slope.   | 3.7 Climate Change  | The text has been edited to include a section on climate change in the Cumulative Effects - Subsistence section (4.6.8.9) that describes recent scientific reports and Nuiqsut observations. Climate change is noted as a threat identified by residents of Nuiqsut in Section 4.6.8.2 (Cumulative Effects - Sociocultural Systems): the text notes that several effects of climate change are particularly significant in the western Arctic and are likely to create significant social anxiety for the Iñupiat. The Cumulative Effects - Environmental Justice section (4.6.8.10) also notes that Inupiaq communities will bear a disproportionate burden of these effects.   |
| L61-22 | Kuukpik Corporation | The discussion of socio-cultural issues in Nuiqsut is full of incorrect information, gossip, and opinions that are not relevant to this project. Kuukpik found it difficult to understand what BLM had in mind as a replacement when BLM announced that the GMT2 SEIS wouldn't use "impact criteria" to evaluate and describe impacts to important topics like subsistence and socio-cultural systems. Although simple one word labels ("minor," "major", etc.) can be difficult to apply in particular instances, such labels are intended to represent a meaningful conclusion that is the end product of a logical analysis of widely accepted facts. Properly applied, such an analysis and conclusions offer highly valuable information. Kuukpik disagreed with some of the application of those criteria and the conclusions drawn in the GMT1 SEIS, for instance, but Kuukpik far prefers that impact criteria to the fuzzy, subjective, gossipy alternative that BLM presents in its stead in the Draft GMT2 SEIS. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | According to BLM's NEPA guidance, the effects analysis must demonstrate that the BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and the alternatives. NEPA does not require the agency to classify impacts to each resource as minor, moderate or major. The BLM found that the use of GMT2 Impact Criteria did not contribute to meaningfully distinguish the alternatives from each other, and instead detracted from the impact analysis due to confusion and differences of opinion regarding the criteria being applied over focusing on the identified impacts. |

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| L61-23 | Kuukpik Corporation | <p>What the BLM and the Draft SEIS offer in place of the usual analysis and conclusions using "impact criteria" is a fragmented, anecdotal and highly subjective discussion that seems like an effort to describe as many viewpoints and opinions as possible, but which ends up being far less informative and represents not so much an "analysis" as rumor mongering and gossiping. The change, at least as presented in the GMT2 Draft SEIS, is misleading and unacceptable. This new approach includes extensive unscientific and unsupported opinion, much of it offered as though it represents a widely shared view in the community, when in fact no evidence is offered that it represents anything more than the opinion of the single interviewee or the author. Much of what factual information is offered is demonstrably wrong-see the extensive list of factual errors in the DSEIS in the Attachment to this comment letter. Dignifying and publicizing gossip may make for a more titillating text and more entertainment value, but it doesn't help anyone effectively evaluate the potential impacts of developing GMT2.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>According to BLM's NEPA guidance, the effects analysis must demonstrate that the BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and the alternatives. NEPA does not require the agency to classify impacts to each resource as minor, moderate or major. The BLM found that the use of GMT2 Impact Criteria did not contribute to meaningfully distinguish the alternatives from each other, and instead detracted from the impact analysis due to confusion and differences of opinion regarding the criteria being applied over focusing on the identified impacts.</p> |

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| L61-24 | Kuukpik Corporation | <p>BLM's choice of sources probably contributed to this problem significantly. The Draft SEIS draws heavily from Redmond and Thonsohn's <i>The Next Horizon: A socio-cultural study of the impact of oil development on the Native community of Nuiqsut, Alaska</i> (2016). But <i>The Next Horizon</i> is far from the type of scientific "study" on which NEPA documents have relied on in past analyses of oil industry projects affecting Nuiqsut and the North Slope. It isn't an authoritative source-in fact, it isn't even a scientific publication. The authors of <i>The Next Horizon</i> are not sociologists, anthropologists, or academics, but lay people from a TV station in Denmark who came to Nuiqsut to film a TV documentary and subsequently generated <i>The Next Horizon</i> after the documentary was not completed. As film makers, their job is to find and tell a compelling and entertaining story, not to objectively and scientifically gather and analyze data. Put another way, a documentary film maker by definition is seeking a story that will attract an audience, versus a trained sociologist or biologist who is trying to objectively and accurately record and describe existing conditions. Quite simply, <i>The Next Horizon</i> is not the type of scientific report the NSB, the State, CPAI or the federal government would normally rely upon as part of a NEPA process. And yet the Draft SEIS unquestioningly treats it as though it were exactly that type of scientific study. That is simply incorrect and inappropriate usage of the source material. Kuukpik is not saying that it's a completely unacceptable source, but it does not have the same weight as either a scientific study or traditional knowledge.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>One purpose of preparing a supplemental EIS is to provide updated information that did not exist when the original EIS was written. BLM NEPA Guidance regarding information to be used as part of the analysis does not specify any minimum requirements. BLM NEPA handbook states "Data and other information used to describe existing conditions and trends may be obtained from other documents and summarized and incorporated by reference or otherwise appropriately referenced. You may also obtain data and other information from cooperating agency partners or other agencies, organizations, or individuals, as identified during scoping." The 2016 "Next Horizon" study was provided to BLM by the applicant as a source of recent socio-cultural information for Nuiqsut. The publication notes that it was commissioned and funded by the applicant for the Kuukpik Corporation.</p> |

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| L61-24<br><i>Continued</i> | Kuukpik Corporation | It's more akin to a detailed piece of journalism than it is a scientific study. That distinction-and the difference between actual facts reported in The Next Horizon, as opposed to interpretation or opinion-needs to be made abundantly clear in the SEIS if (or to the extent) BLM chooses to rely on this source.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <i>See above for BLM Response</i>  |
| L61-25                     | Kuukpik Corporation | In addition, though, The Next Horizon gets a lot of its facts wrong, and many of those inaccurate facts are carried over into the Draft SEIS. Certainly the extent of those inaccurate facts very much bears on the credibility of The Next Horizon. For example, the Draft SEIS repeats information from The Next Horizon about basic facts regarding Kuukpik's shareholders and internal governance that are flat out wrong and misleading, not to mention irrelevant to the GMT2 project. The Draft SEIS incorporates The Next Horizon's statement (incorrectly citing one of Kuukpik's former Presidents, no less) that only one-third of Kuukpik's original shareholders are still alive. Actually, it's just the opposite: about one-third of Kuukpik's original shareholders have passed away and about two-thirds are alive. Nor are Board members elected by those with 100 shares as The Next Horizon and Draft SEIS both state; all shares are eligible to vote for Kuukpik's directors. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The text has been edited to include this information from Kuukpik. One purpose of preparing a supplemental EIS is to provide updated information that did not exist when the original EIS was written. BLM NEPA Guidance regarding information to be used as part of the analysis does not specify any minimum requirements. BLM NEPA handbook states "Data and other information used to describe existing conditions and trends may be obtained from other documents and summarized and incorporated by reference or otherwise appropriately referenced. You may also obtain data and other information from cooperating agency partners or other agencies, organizations, or individuals, as identified during scoping." The 2016 "Next Horizon" study was provided to BLM by the applicant as a source of recent socio-cultural information for Nuiqsut. The publication notes that it was commissioned and funded by the applicant for the Kuukpik Corporation. |

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| L61-26 | Kuukpik Corporation | <p>For documentary film makers, weaknesses in human nature, dissension and divisiveness make a much better story than dry fact, but the Draft SEIS incorporates The Next Horizon's discussion of these topics without a hint of skepticism or question. For instance, the Draft SEIS portrays Nuiqsut residents as so little concerned with the fate of their community and culture that they wouldn't attend an agency or industry community meeting unless they receive a handout. Citing a highly offensive statement from The Next Horizon, the Draft suggests that residents care less about receiving information and voicing their concerns at public meetings than they do about enjoying a "sumptuous buffet and door prizes". This is as false as it is insulting. We can't recall if the authors of The Next Horizon even attended a public meeting, but they clearly weren't at one of the many, many meetings where people have sat hungry for hours just to make sure heard voices were heard. This unequivocal and patronizing statement that, absent a "sumptuous" buffet, "no public meeting is well attended" is a perfect example of the kind of emotional and inaccurate information that may be acceptable in TV studios, but has no place in an EIS. The fact that much of this "information" and these characterizations in the Draft SEIS are taken straight from The Next Horizon tells Kuukpik (and should tell BLM and the authors of the Draft SEIS) that The Next Horizon is not a valid scientific study and is not a source to rely on in this NEPA analysis. BLM should delete these paragraphs from the Final EIS, and should carefully consider whether there is any real value in relying on this publication at all.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>The DSEIS includes a detailed discussion of the problematic nature of development meetings but does not assert that residents are not concerned with the fate of their community. It describes, with numerous examples, how deeply concerned they are. The information used in the analysis was gathered from a variety of sources. Text has been revised to remove information perceived as insulting by the commenter. One purpose of preparing a supplemental EIS is to provide updated information that did not exist when the original EIS was written. BLM NEPA Guidance regarding information to be used as part of the analysis does not specify any minimum requirements. BLM NEPA handbook states "Data and other information used to describe existing conditions and trends may be obtained from other documents and summarized and incorporated by reference or otherwise appropriately referenced. You may also obtain data and other information from cooperating agency partners or other agencies, organizations, or individuals, as identified during scoping." The 2016 "Next Horizon" study was provided to BLM by the applicant as a source of recent socio-cultural information for Nuiqsut. The publication notes that it was commissioned and funded by the applicant for the Kuukpik Corporation.</p> |

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| L61-27 | Kuukpik Corporation | Kuukpik also objects to the descriptions of Nuiqsut and certain meetings-again taken primarily from The Next Horizon-that are unnecessary, untrue, and frankly insulting. The final paragraph of page 390 and first paragraph of page 391 of the Draft SEIS attempt to describe, for some reason, why federal meetings are the "least popular", which the Draft concludes is because of the "lack of gifts and food" at such meetings. Not only is this patronizing, inaccurate (see, e.g., Footnote 34), and going far beyond prior BLM commentary on these issues, but its effect is to denigrate the residents of the community of Nuiqsut.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Meetings are recognized as a social impact for Nuiqsut. The descriptions of Nuiqsut meetings were not taken primarily from The Next Horizon. A recent master's thesis by an Inupiaq anthropology student (Stotts 2016) explored North Slope development meetings and analyzed why federal government meetings are more constrained, rigid, official, and culturally obtuse. One reason is the lack of gifts and food at federal government meetings, which are understood as standard compensation for time and effort. The BLM regrets that official policies prevent it from compensating meeting participants for their time and input. |
| L61-28 | Kuukpik Corporation | Under the guise of discussing the problem of some Nuiqsut residents' frustration with the pace of development, the Draft SEIS also proceeds to question the validity and credibility testimony from Nuiqsut residents and stakeholders, stating "On the North Slope, participants often believe that it is in their duty and best interest to describe impacts in the most dramatic manner possible in order to make [sic] their comments be considered." It is hard to see this as anything other than a broad grant of permission for public agencies to discount and disregard testimony from Nuiqsut residents and stakeholders. The fact that this comment comes from BLM instead of The Next Horizon is deeply troubling, and suggests BLM is falling into the same gossip and rumor mongering trap as The Next Horizon. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The sociocultural systems section reports on a BLM effort to systematically record and analyze every single comment made by residents of Nuiqsut at public meetings on development. This is an effort to establish validity, trends, and credibility in regards to their testimony. The pace of development is repeatedly mentioned by residents as a concern; this impact is described in the analysis in several places and is not used as a guise to discount other reported impacts.   |

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| L61-29 | Kuukpik Corporation | <p>The discussion of possible differing views of GMT2 between shareholder and non shareholders in Nuiqsut is another example of the problems caused by the Draft SEIS's unquestioning acceptance of statements in The Next Horizon and the undue attention the Draft SEIS gives to perceived dissension and "conflicts" within Nuiqsut. Much like The Next Horizon- whose producers must have believed (like every other Alaska-based "reality" show) that focusing on conflict would make better TV-the Draft SEIS spends an inordinate amount of time describing strife in the community, as though that is the defining feature of the community for purposes of possible impacts from GMT2,16 and not nearly enough describing the far more defining aspects of the community and its culture that are in reality far more likely to be impacted by oil development than the conflicts The Next Horizon features so prominently. Nuiqsut and its vulnerabilities to oil development are so much more than the sort of near-civil war depicted in The Next Horizon and the Draft SEIS that the one-side descriptions in these documents are misleading rather than informative.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>The Final SEIS has replaced the citation from Redmond with other references and with verbatim statements from Nuiqsut residents made at recent public meetings to provide a more accurate description of these concerns and is edited to clarify that they do not define the community. One purpose of preparing a supplemental EIS is to provide updated information that did not exist when the original EIS was written. BLM NEPA Guidance regarding information to be used as part of the analysis does not specify any minimum requirements. BLM NEPA handbook states "Data and other information used to describe existing conditions and trends may be obtained from other documents and summarized and incorporated by reference or otherwise appropriately referenced. You may also obtain data and other information from cooperating agency partners or other agencies, organizations, or individuals, as identified during scoping." The 2016 "Next Horizon" study was provided to BLM by the applicant as a source of recent socio-cultural information for Nuiqsut. The publication notes that it was commissioned and funded by the applicant for the Kuukpik Corporation.</p> |



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| L61-3  | Kuukpik Corporation | <p>Regardless of these new standards (NEPA page limits), it is patently unreasonable to ignore long term warming trends in the Arctic and the current and likely future effect of those trends on oil project designs and local Arctic communities. Any EIS document that refuses to acknowledge and analyze those changes is not only vulnerable to a legal challenge, it is ethically wrong, fundamentally flawed and of limited use to local stakeholders such as Kuukpik, our shareholders, and the residents of Nuiqsut.</p> | 3.7 Climate Change    | <p>In the GMT2 Supplemental EIS, the BLM tiers to and incorporates by reference previous NEPA analysis including the ASDP EIS (2004), the NPR-A IAP (2012) and the GMT1 SEIS (2014). CEQ regulations direct that: <i>Agencies shall incorporate material into an environmental impact statement by reference when the effect will be to cut down on bulk without impeding agency and public review of the action. The incorporated material shall be cited in the statement and its content briefly described. No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested parties within the time allowed for comment. (40 CFR 1502.21).</i> The text provided in the GMT2 SEIS incorporates by reference and summarizes the text from the GMT1 SEIS and includes updated information where such information was available (i.e., most up to date information on minimum sea ice extent). Our understanding of climate change and its effects on the Arctic are not significantly different than what is stated in the GMT1 SEIS.</p> |

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| L61-30 | Kuukpik Corporation | <p>It takes just a few facts to demonstrate that the possible impact of GMT2 on subsistence for Nuiqsut inevitably has a much greater bearing on virtually any resident's view of GMT2, shareholder or non-shareholder, than the information on which the Next Horizon and the Draft SEIS choose to focus. Consider that forty-four percent of the households in Nuiqsut share half or more of their subsistence harvest with other households, according to the Nuiqsut Profile subsection of the North Slope Borough's 2003 Economic Profile and Census Report. (p. 33) Thirty-six percent of Nuiqsut households substantially dependent on subsistence foods get half or more of their food through sharing by other households. Only 35 percent of Nuiqsut households substantially dependent on subsistence foods got little or none of their subsistence foods through sharing. Only 10 percent of the households in Nuiqsut would be unaffected by a decrease in sharing, and sharing is especially sensitive to harvest disruptions. While there are few general statements in the Draft SEIS on the importance of sharing subsistence resources, Kuukpik has not located anything like this level of detail of information in the text of the Draft SEIS-which is probably all that most users will read. The type of far more valuable and illustrative information on sharing that Kuukpik cites above is instead buried in two Appendices o the SEIS.40 This effectively omits that type of information for many users and makes the Draft SEIS affirmatively misleading.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>A more detailed discussion of the importance of sharing and participation has been provided in the Final SEIS. Statistics on participation and sharing (provided in Appendix F) have been updated to include data made available since the Draft SEIS was published, including:</p> <ul style="list-style-type: none"> <li>• 100 percent of households use subsistence food and over 90 percent attempt to harvest.</li> <li>• Community participation is highest for non-salmon fish (mainly broad whitefish), large land mammals (mainly caribou), and migratory birds.</li> <li>• 2014: 66 percent of Nuiqsut households participated in harvest of caribou (highest rate of harvest participation)</li> <li>• 2016: 76 percent of Nuiqsut households participated in caribou hunting activities</li> <li>• All available study years: 73 percent of Nuiqsut households attempt harvest of caribou</li> </ul> <p>Cultural Importance, measured quantitatively using data related to 2) sharing (percent of households receiving each resource).</p> <ul style="list-style-type: none"> <li>• Sharing: between 70 and 92 percent of households receive caribou <ul style="list-style-type: none"> <li>○ 2014: 72 percent of households received caribou</li> <li>○ All available study years: 75 percent</li> </ul> </li> </ul> |

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| L61-31 | Kuukpik Corporation | <p>This sharing data is also far more illustrative of the community's concerns and attitudes as they relate to the possible impacts of GMT2 than the out-of-context disagreements on which The Next Horizon and then the Draft SEIS have chosen to focus. Consider, as well, the information in the first paragraph of this letter that approximately 90 percent of the residents of Nuiqsut are shareholders in Kuukpik Corporation, are married to Kuukpik shareholders, or are descendants of Kuukpik shareholders (and will thus become shareholders of Kuukpik in the future through inheritance). With most housing in Nuiqsut consisting of three or more generations of a single family under a single roof due to Nuigsut's long term/long standing housing shortage, dividends to one generation support shareholders, their (often adult) children, and their grandchildren in the multi-generational households. Given the Inupiat cultural focus on sharing described and illustrated in the North Slope Borough statistics above, it is the Next Horizon and Draft SEIS focus on dissension and divisiveness and disagreement which is misleading and unrepresentative in describing the community of Nuigsut's view of the impacts of possible GMT2 development.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>One purpose of preparing a supplemental EIS is to provide updated information that did not exist when the original EIS was written. BLM NEPA Guidance regarding information to be used as part of the analysis does not specify any minimum requirements. BLM NEPA handbook states "Data and other information used to describe existing conditions and trends may be obtained from other documents and summarized and incorporated by reference or otherwise appropriately referenced. You may also obtain data and other information from cooperating agency partners or other agencies, organizations, or individuals, as identified during scoping." The 2016 "Next Horizon" study was provided to BLM by the applicant as a source of recent socio-cultural information for Nuiqsut. The publication notes that it was commissioned and funded by the applicant for the Kuukpik Corporation. A more detailed discussion of the importance of sharing and participation has been provided in the Final SEIS. Statistics on participation and sharing (provided in Appendix F) have been updated to include data made available since the Draft SEIS was published, including:</p> <ul style="list-style-type: none"> <li>• 100 percent of households use subsistence food and over 90 percent attempt to harvest.</li> <li>• Community participation is highest for non-salmon fish (mainly broad whitefish), large land mammals (mainly caribou), and migratory birds.</li> <li>• 2014: 66 percent of Nuiqsut households participated in harvest of caribou (highest rate of harvest participation)</li> <li>• 2016: 76 percent of Nuiqsut households participated in caribou hunting activities</li> </ul> |

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| L61-31<br><i>Continued</i> | Kuukpik Corporation | <i>See above for Comment</i>   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <ul style="list-style-type: none"> <li>• All available study years: 73 percent of Nuiqsut households attempt harvest of caribou Cultural Importance, measured quantitatively using data related to 2) sharing (percent of households receiving each resource).</li> <li>• Sharing: between 70 and 92 percent of households receive caribou               <ul style="list-style-type: none"> <li>○ 2014: 72 percent of households received caribou</li> <li>○ All available study years: 75 percent</li> </ul> </li> </ul>  |
| L61-32                     | Kuukpik Corporation | <p>A clear example of this gossip-based distortion in the Draft SEIS is the suggestion that possible differences in "land rental fees" rent paid to Kuukpik for portions of the GMT2 road in Alternative A vs. Alternative B might add to or detract from "multi-faceted conflict that the proposed GMT2 Project is causing in Nuiqsut". This is nothing less than a suggestion that more rent to Kuukpik would exacerbate possible conflict between shareholders and nonshareholders in Nuiqsut. Let's get real. As discussed below, this is mere inaccurate conjecture. BLM doesn't know anything about rental payments Kuukpik receives. In fact, there is no difference in rent paid to Kuukpik if Alternative A were constructed vs. Alternative B. But even if there were such a difference, the idea that any rent paid to Kuukpik under one road-based Alternative vs. another, slightly different road-based Alternative would make any meaningful difference in dividends paid to shareholders is yet another overreaching and unsupported conjecture. It again illustrates the misleading and inaccurate focus of the Draft SEIS.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>BLM does not believe that the sociocultural systems analysis has a misleading and inaccurate focus: the analysis is drawn from numerous published sources and highlights the relative prevalence of concerns articulated by residents, whose comments have been recorded, transcribed, coded, and analyzed via numerous metrics. BLM mistakenly understood that Kuukpik would be able to charge surface rental fees for portions of infrastructure that would be constructed on Kuukpik Corporation land. Text has been revised to remove reference to surface use or rental payments to Kuukpik Corporation.</p> |

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| L61-33 | Kuukpik Corporation | <p>The Draft SEIS' socio-cultural portrait manages to include descriptions of all kinds of such perceived rivalries, conflicts and infighting. Where is the detailed information on the far more critical aspects of the community that simultaneously make it vulnerable to oil development and also simultaneously provide some resilience? As the Alpine Satellite Development Project FEIS ("ASDP FEIS") stated in 2005: "The sharing of subsistence foods is essential to the maintenance of family ties, kinship networks and community well being. Disruption of subsistence-harvest patterns could alter these cultural values and affect community social structure. For the system of sharing to operate properly, some households must consistently produce a surplus of subsistence goods. For this reason, the supply of subsistence foods in the sharing network is more sensitive to harvest disruptions than the actual harvest and consumption of these foods by the primary producer. Thus, when disturbance to the subsistence harvest occurs, it could disrupt the community culture." his type of information is far more relevant to a discussion of the impacts of development of GMT2 on Nuiqsut than some conjectural and mistaken discussion about rents paid to Kuukpik or speculation on differences in attitude towards development between shareholders and non-shareholders. The entire community depends on subsistence, and impacts to subsistence are the primary concern of virtually all the Inupiat residents of Nuiqsut. As demonstrated above in the NSB's 2003 Economic Profile and Census Report data, those who do not subsistence hunt themselves get much of their daily food supply from sharing by the residents of Nuiqsut who are of an age and in good enough health that they do subsistence hunt.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>In response to efforts to tier to previous NEPA documents, important basic information such as this can be under-represented in supplemental analyses. The BLM agrees that this information on sharing and community participation is critical. The information was in the sections on subsistence and revised text includes this and updated data on the importance of the sharing network in Nuiqsut in the Final SEIS. A more detailed discussion of the importance of sharing and participation has been provided in the Final SEIS. Statistics on participation and sharing (provided in Appendix F) have been updated to include data made available since the Draft SEIS was published, including:</p> <ul style="list-style-type: none"> <li>• 100 percent of households use subsistence food and over 90 percent attempt to harvest.</li> <li>• Community participation is highest for non-salmon fish (mainly broad whitefish), large land mammals (mainly caribou), and migratory birds.</li> <li>• 2014: 66 percent of Nuiqsut households participated in harvest of caribou (highest rate of harvest participation)</li> <li>• 2016: 76 percent of Nuiqsut households participated in caribou hunting activities</li> <li>• All available study years: 73 percent of Nuiqsut households attempt harvest of caribou</li> </ul> <p>Cultural Importance, measured quantitatively using data related to 2) sharing (percent of households receiving each resource).</p> <ul style="list-style-type: none"> <li>• Sharing: between 70 and 92 percent of households receive caribou <ul style="list-style-type: none"> <li>o 2014: 72 percent of households received caribou</li> <li>o All available study years: 75 percent</li> </ul> </li> </ul> |

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| L61-34 | Kuukpik Corporation | <p>But equally important, what's the point of the Draft SEIS painting this particular picture of dissension and disagreement anyway? How, for example, is the history and process of trying to distribute Kuukpik shares to community members born after ANCSA was passed (which has not ever been discussed in any other North Slope NEPA documents that we are aware of) relevant to analyzing the potential impacts of GMT2? The Draft SEIS tries to make it relevant by concluding that there is "a degree of distrust due to this situation. The prospect of additional royalties accruing to Kuukpik Corporation from development of GMT2 could exacerbate this source of conflict." But this makes no sense whatsoever. As noted, over 90 percent of Nuiqsut residents are shareholders, are married to shareholders, or will inherit shares.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>The issue of potential concerns over perceived economic disparity between shareholders and non-shareholders was previously described in the SEIS for GMT1. BLM cannot disregard testimony from residents and BLM has been informed by some residents that this is a social and economic concern. BLM has edited the text in the Final SEIS to more accurately disclose that these are individual opinions that are not held by all residents.</p> |

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| L61-35 | Kuukpik Corporation | <p>This statement reflects even more ill-informed and misleading speculation. GMT2 royalties are not expected to be a particularly significant source of revenue for Kuukpik. The satellite reservoir that GMT2 would tap is largely located on lands not owned and that never will be owned by Kuukpik. If someone has told BLM that the prospect of GMT2 royalties from a satellite oil field that is largely located on lands not owned by Kuukpik, not selected by Kuukpik, and that never will be owned by Kuukpik is weighing heavily on his or her opinion of whether or not GMT2 should be developed, that person is not only missing the forest for the trees in light of the sharing data on subsistence resources cited above, they are probably looking for a conflict that either doesn't exist or has little size or value. The Draft doesn't even conclude otherwise, merely stating that such revenues "could" matter to some people. Does that hypothetical concern really justify the Draft SEIS' speculative deep dive into Kuukpik's internal governance and some individual community members' opinion of it? In fact, does it serve any purpose other than to institutionalize and publicize someone's negative view of Kuukpik? Kuukpik thinks not, especially since this "issue" never featured in any other NEPA analysis by any public agency of any project on or near Kuukpik land or Nuiqsut.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>The economic and sociocultural systems sections of the Draft SEIS describe that Kuukpik has pursued benefits for all residents and represented the interests of the entire community with great success. The issue of some level of distrust (for some individuals) of the Kuukpik Corporation due to possible economic incentives to support development in general was disclosed in the 2015 GMT1 SEIS; this analysis also discloses it because BLM cannot disregard prevalent and repeated testimony from residents. BLM does not have specific information on nor does it speculate on Kuukpik's internal governance. The text has been edited to more accurately describe that Kuukpik reports that the corporation would most likely not be receiving significant royalties from production at GMT2. Kuukpik Corporation is encouraged to provide details on existing revenues and anticipated revenue sources so that the sections that should include this information (Economy, Sociocultural Systems, and ANILCA 810 evaluation of the availability of other lands) can be more accurate.</p> |

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| L61-36 | Kuukpik Corporation | <p>In another area needing correction, Kuukpik was surprised to see the Draft SEIS suggesting that Kuukpik has already concluded that the sociocultural impacts from GMT2 will be "substantial". Kuukpik has not said that, and has not reached a final conclusion yet on the size and scope of the likely sociocultural impacts of GMT2. Kuukpik's GMT2 scoping letter (cited as the source for this claim) urged BLM to, among other things, carefully study the proposed GMT2 project and not simply rely on the 2004 Alpine EIS or the GMTI EIS. Kuukpik did point out that some impacts from Alpine have been greater than anticipated for a variety of reasons e.g., exceeding production expectations and the annual ice road that was not entirely anticipated). But the point of that information was to explain why the 2004 ASDP EIS is not a reliable predictor of GMT2's impacts, not to argue that all NEPA analyses under-estimate impacts on the community. Nor should the fact that Kuukpik has previously critiqued specific impact estimates be interpreted as an over-arching position that every oil project will, by definition, cause substantial negative impacts, or that BLM should start its analysis with that assumption in mind. BLM needs to eliminate the incorrect and speculative information from the socio-cultural impacts analysis and adequately discuss the critical subsistence issues described here.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been revised to remove reference to Nukapigak and Kuukpik 2016 in Section 4.4.2.5. |



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| L61-37 | Kuukpik Corporation | <p>The Draft SEIS fails to adequately analyze the likely impacts the GMT2 Access Road would have on subsistence access and hunting patterns. Much like the more general conclusions discussed in the previous section, the Draft SEIS focuses heavily on potential negative impacts of the GMT2 Access Road without really evaluating its potential subsistence benefits. Some of the positive impacts are discussed below. But there are also negative impacts that the Draft SEIS does not identify or evaluate.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>The Draft SEIS discloses both potential benefits and potential negative impacts of the road and attempts to be succinct. Recent data on use of roads, gathered since the Draft SEIS was published, and verbatim testimony from hunters, has been included in the Final SEIS.</p> |

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| L61-38 | Kuukpik Corporation | <p>As to impacts not identified in the Draft SEIS, Kuukpik is gravely concerned that a new road extending farther west than any other permanent road in NPR-A could have the unintended consequence of encouraging more outsiders to try to drive street vehicles overland between Prudhoe Bay and Utqiagvik or Atkasuk, or to access or cross Kuukpik (and BLM) lands without benefit of ice roads or other accepted protection for the tundra and streams that these vehicles cross. This practice has increased significantly in the last couple of years, and Nuiqsut is beginning to see the impacts first hand as ill-prepared travelers get stuck on the tundra where Nuiqsut emergency personnel are often called to tow them out (leaving them unavailable to respond to emergencies). Several vehicles have been simply abandoned after breaking down on a snow trail. The impacts of all this traffic have not been adequately analyzed in this or prior EIS efforts (even at current levels of traffic), but are only likely to increase if the GMT2 road is constructed. One of the drafts of the North Slope Borough's proposed 5 year plan to construct these snow trails suggested that users could hunt all along the trail-putting other North Slope residents and potentially members of the public from outside the North Slope into competition for subsistence resources on Nuiqsut's traditional subsistence range. This is one of Kuukpik's biggest concerns with the proposed road.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>These concerns of Kuukpik have been included in the Final SEIS. Kuukpik Corporation is encouraged to provide details on these impacts in order for the Final SEIS and future analyses to be accurate. The restrictions that should preclude access to both the Nuiqsut spur road and the oil field roads by outsiders are described in detail. The increasing demands on Nuiqsut Search and Rescue are also described. A potential new mitigation measure has been included in the Final SEIS that is responsive to this comment and to comments L87-4; L89-12 and 23; ATQ1-1; NQT9-45, 57, 67, 71, and 72. Draft mitigation measure language (below) has been expanded to include these concerns.</p> <p>Search and Rescue Assistance: Local residents of Nuiqsut have expressed concern regarding the ability of current Search and Rescue capabilities within the community given that local hunters are traveling farther away to harvest resources, leading to safety concerns both in terms of increased potential for local residents to need assistance, and increased capacity for Search and Rescue response. Specific Requests include:</p> <ul style="list-style-type: none"> <li>• Upgrades for Search and Rescue Equipment</li> <li>• Upgrades for Search and Rescue communications, radio and satellite</li> <li>• Additional training for Search and Rescue Responders</li> </ul> <p>BLM encourages Nuiqsut to submit applications to the State of Alaska NPR-A Impact Mitigation Grant Program for funds for Search and Rescue.</p> |

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| L61-39 | Kuukpik Corporation | <p>On the benefits side, such a road would create far easier access to new areas for Nuiqsut subsistence hunters. The Draft SEIS, however, makes no meaningful effort to analyze the scope of those potential benefits. Our scoping comments identified some specific questions that need to be addressed (even in estimate form) in order to flesh out the details of what building this road would mean for the community, which are set out in the accompanying footnote. But instead of answering those questions, the Draft SEIS begs off, substituting individual opinions and worst case hypotheticals for even a cursory analysis of data regarding subsistence practices and harvests since the completion of the Spur Road.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>The Draft SEIS discloses both potential benefits and potential negative impacts of the road and attempts to be succinct. Recent data on use of roads, gathered since the Draft SEIS was published, and verbatim testimony from hunters, has been included in the Final SEIS.</p> |

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| L61-4  | Kuukpik Corporation | <p>Kuukpik and Nuiqsut depend on the NEPA process to provide an honest, unbiased analysis of the ways proposed oil and gas projects will impact our lands, our subsistence culture, and our future as a community. But this Draft SEIS doesn't do that because, among other things, it never confronts the reality that the Arctic climate is noticeably and rapidly warming. How can a document that so clearly conflicts with the experience of every community on the North Slope be accepted as credible and impartial? Worse, warming trends are already impacting the way that projects need to be designed. An oil industry project that doesn't factor warming trends into its design is highly likely to face real (and costly) problems later when the project has to be updated, expanded, or retro-fitted with design components that should have been identified during the NEPA process. Such omissions also mean that stakeholders (including the Corps in its effort to determine the Least Environmentally Damaging Practicable Alternative ("LEDPA")) would not be getting an accurate description of potential impacts and consequences of the project.</p> | 3.7 Climate Change  | <p>In the GMT2 Supplemental EIS, the BLM tiers to and incorporates by reference previous NEPA analysis including the ASDP EIS (2004), the NPR-A IAP (2012) and the GMT1 SEIS (2014). CEQ regulations direct that: <i>Agencies shall incorporate material into an environmental impact statement by reference when the effect will be to cut down on bulk without impeding agency and public review of the action. The incorporated material shall be cited in the statement and its content briefly described. No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested parties within the time allowed for comment. (40 CFR 1502.21).</i> The text provided in the GMT2 SEIS incorporates by reference and summarizes the text from the GMT1 SEIS and includes updated information where such information was available (i.e., most up to date information on minimum sea ice extent). Our understanding of climate change and its effects on the Arctic are not significantly different than what is stated in the GMT1 SEIS.</p> |
| L61-40 | Kuukpik Corporation | <p>The issues described are legitimate, but the reasons cited in support of this conclusion are basically one side of a two-sided coin. "Direct overlap with a use area" for example, would apply to any development in Nuiqsut's subsistence range, and so isn't very helpful. Impacts to overland travel would be effectively limited to snowmachiners "not using the road, which is not a huge number of hunters now, and will be even fewer if the road is constructed since almost everyone wanting to access this area will take the road.</p>   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>The Draft SEIS discloses both potential benefits and potential negative impacts of the road and attempts to be succinct. Recent data on use of roads, gathered since the Draft SEIS was published, and verbatim testimony from hunters, has been included in the Final SEIS.</p>  |

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| L61-41 | Kuukpik Corporation | <p>"Hunter avoidance" is a huge issue, and one that Kuukpik has described for years. But this sentence suggests that BLM has concluded that the road will cause more areas to be avoided ("by hunters who cannot or chose not to use the road") than to be made available and accessible (by those who use it). If that is BLM's conclusion, where is the calculation that supports it? Where are the estimates of current users of this area who will go elsewhere to avoid the road, so we can compare those estimates to new users who will use the road to access this and other areas to the west where they otherwise would not have gone? Where are the descriptions of the areas that will be more accessible if people can drive all the way to GMT2, so those can be compared to the areas close to the road, pipeline, and drill pad that will be avoided? The Draft doesn't contain any of that. So how can BLM conclude that the avoidance of the road and GMT2 facility will outweigh the improved access to other areas? Well, obviously BLM can make the conclusion because it did so- but the conclusion is wrong and needs to be corrected. In point of fact, the vast majority of adults and sub-adult licensed drivers in Nuiqsut have signed up to use the Nuiqsut Spur Road.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>The Draft SEIS discloses both potential benefits and potential negative impacts of the road and attempts to be succinct. Recent data on use of roads, gathered since the Draft SEIS was published, and verbatim testimony from hunters, has been included in the Final SEIS. The Draft SEIS did include updated discussions on avoidance, noting that much of the research and conclusions related to harvester avoidance are based on pre-Alpine hunting patterns. While avoidance has continued to occur, and has been documented in the Caribou Subsistence Monitoring Project, it is important to note that as industry has moved closer to Nuiqsut, it has become more difficult for residents to avoid industry. Future research will reveal how harvesters respond when infrastructure is established closer to town or in their core hunting areas. Avoidance may be less of an option as fewer areas without development are present.</p> |

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| L61-42 | Kuukpik Corporation | <p>These impacts can and should also be mitigated significantly by including plenty of subsistence ramps along the GMT2 Access Road, and by designing those ramps to be long and wide enough to allow safe ingress and egress to and from the Road. The Draft doesn't seem to put much faith in that mitigation measure, but Kuukpik's experience is that they are quite effective for facilitating road crossings and use, and will only become more so as design features are improved and incorporated that make them safer and more effective for users.</p>                       | 4.2 Mitigation  | <p>Subsistence ramps in three locations are included as a design feature of Alternatives A and B. BLM is also considering a proposed mitigation measure that would allow input from the community on the ramp design to ensure they are effective (See Potential Mitigation Measure 7, Section 4.4.5.6).</p>   |
| L61-43 | Kuukpik Corporation | <p>The rest of the reasons supporting BLM's conclusion are a mix of speculation and a laundry list of negative impacts that are not actually associated with the road this paragraph is supposed analyze. There is no evidence supporting BLM's speculation that access to subsistence ramps will eventually be restricted ... due to tundra damage." Use of subsistence ramps has never been restricted at any other road to Kuukpik's knowledge. This isn't to say it's impossible to imagine a scenario where some usage rules would become necessary, but this is speculation.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>BLM is required to evaluate potential impacts that are reasonably likely to occur over the 30-32 year life of the project. Repeated passes in a single location by four-wheelers (or other wheeled vehicles) during non-frozen periods would likely result in trail braiding, breaking the tundra mat, ruts and channeling of water into vehicle tracks, and exposure of frozen soil with potential localized permafrost thawing and thermokarsting near the ramps. Over the course of 3 decades, it is reasonable to anticipate that these effects could eventually increase the risk and reduce the feasibility of overland access by four-wheeler in the area via the ramps. Evidence is provided by the numerous citations included in section 4.1.2.5.</p> |

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| L61-44 | Kuukpik Corporation | <p>The remaining laundry list is less speculative, to be sure, but simply lists impacts associated with developing GMT2 generally ("hazards, dust, road and aircraft traffic, noise, emissions, ice fog, and localized deflection of caribou and furbearers"). All of these are real issues, but not all of them are even related to the Access Road (e.g., aircraft traffic) or limited to Alternatives A and B. Moreover, it's not clear how the magnitude of these negative impacts would compare to the potential benefits from improvements in subsistence access created by the GMT2 Access Road.</p>  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The Draft SEIS discloses both potential benefits and potential negative impacts of the road and attempts to be succinct. Recent data on use of roads, gathered since the Draft SEIS was published, and verbatim testimony from hunters, has been included in the Final SEIS. |
| L61-45 | Kuukpik Corporation | <p>The most obvious flaw in this part of the analysis is the failure to acknowledge and explore the developing information on how subsistence users are beginning to use roads around Nuiqsut and how they might use the GMT2 Access Road. Although the Draft acknowledges in a few sentences that access to the west "would increase" if a road is built to GMT2, it doesn't make any effort to quantify whether and how use would increase. This is in spite of recent studies by Stephen Braund &amp; Associates that note the increase in hunting caribou through Spur Road access to the CP AI road system. The Draft should be describing in detail the areas that would be accessible by vehicle, how many "new" trips would be expected if road access was available, and whether those areas would be (or become) productive hunting areas.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The Draft SEIS discloses both potential benefits and potential negative impacts of the road and attempts to be succinct. Recent data on use of roads, gathered since the Draft SEIS was published, and verbatim testimony from hunters, has been included in the Final SEIS. |
| L61-46 | Kuukpik Corporation | GMT2 DSEIS, p. 111 ("Traffic is restricted on unfrozen ground in the NPR-A.") What restrictions is this referring to?  | 3.7 Climate Change  | The text is referring to NPR-A IAP ROD Best Management Practice C-2(a): <i>Ground operations shall be allowed only when frost and snow cover are at sufficient depths to protect the tundra.</i>   |

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| L61-47 | Kuukpik Corporation | <p>Instead, the Draft focuses on access issues that are not important or which are overwhelmingly negative. The main section that should address the questions that Kuukpik posed above (and many more) ("User Access" and "GMT2 Access Road", pp. 430-434) instead first generalizes about the role of roads in general (opining that they are less important than rivers-except, apparently, the so-called "critical" Colville River Access Road), before moving on to describe various use restrictions that apply on the Spur Road and others that might apply to the GMT2 Access Roads (several of which are not likely to be adopted and which are hardly important enough to consume a quarter of this discussion). This part of the discussion then concludes that "Hunters who have the appropriate vehicles and permission from the Kuukpik Corporation to use the Spur Road would likely benefit from this facilitated access. Hunters who lack appropriate vehicles or permission, or who choose not to use the road, would not benefit from it. "</p> <p>Much like the Draft's later conclusion that "some hunters are using [the Spur Road] and some are avoiding it," this cursory summation is misleading because it suggests that there about as many people who don't benefit from the Spur Road as those who do (i.e., "some hunters" in each camp). That's simply not true, since some 75-80 percent have such access, and the others can get that access without out-of-pocket cost. Vastly more subsistence users use the Spur Road than not. BLM's speculative conclusions to the contrary erroneously downplay the community-wide benefits of the Spur Road.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>There are several reasons that preliminary data on the benefits of increased access provided by the Spur Road should not be used to predict the impacts of the GMT2 road. Data gathered by SRB&amp;A that was available for the Draft SEIS on use of the Spur Road reflects hunter reports on uses of the Spur Road before there was any development northwest or west of it (i.e., the GMT1 road or proposed GMT2 road), and the roads themselves are different. The Final SEIS includes the most recent data on the facilitated access provided by industry roads and it is used to more accurately predict the effects of the GMT2 road. The Draft SEIS discloses both potential benefits and potential negative impacts of the road and attempts to be succinct. Recent data on use of roads, gathered since the Draft SEIS was published, and verbatim testimony from hunters, has been included in the Final SEIS.</p> |



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| L61-48 | Kuukpik Corporation | <p>BLM justifies the decision not to go into detail on the benefits of the Spur Road and its connection to the Alpine Road system (and therefore to a GMT2 Access Road) on the basis that there isn't enough hard data yet to reach any firm conclusions about its impacts. That won't fly for a number of reasons. First of all, a lack of data didn't keep BLM from hypothesizing about other subsistence impacts. The fact that the Draft includes unsupported information critical of the Spur Road suggests that BLM is not applying the same standard to anecdotal information on potential impacts that "fit" with the Draft's seemingly negative perspective on Spur Road-enabled road use for subsistence purposes. If anecdotal information is enough to give BLM confidence to discuss perceived negative impacts of the Spur Road (and, by implication, a potential GMT2 Road), then the EIS should also include anecdotal information about the successes of the Spur Road, not stay silent until studies finish confirming what the people in Nuiqsut are seeing with their own eyes.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>The Draft SEIS discloses both potential benefits and potential negative impacts of the road and attempts to be succinct. Recent data on use of roads, gathered since the Draft SEIS was published, and verbatim testimony from hunters, has been included in the Final SEIS.</p> |

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| L61-48<br><i>Continued</i> | Kuukpik Corporation | <p>FOOTNOTE: An example is the Draft's statement that "While construction of the road is too recent to document changes in caribou movements via multi-year collar or harvest data, Nuiqsut hunters and Native Village of Nuiqsut (NVN) Tribal Council members reported reduced availability of caribou south of the CDS road (NVN Council Member, 2017)." GMT2 DSEIS, Appx. L, p. 251. In other words, even though there is no data to document a decrease in caribou resources in the Spur Road area, the Draft includes anecdotal information suggesting such a decrease is happening. Moreover, that statement is not consistent with our experiences last winter when caribou were abundantly present in the area south of the CDS road and west of the Spur Road.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | See above for BLM Response |

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| L61-49 | Kuukpik Corporation | <p>But critically, now that the Spur Road has been operational for a couple of years, there actually is some data to interpret. The latest information from SRB&amp;A (from 2017) showed a shift in hunting patterns to areas accessible from the Spur Road, and to a lesser extent, the CD5 road. This evidence is certainly not conclusive, nor does it guarantee (by any means) that people will use the GMT2 Access Road. But it certainly supports the conclusion that Kuukpik has reached (based on the observations of its Board, their households and families) that the Spur Road is fast becoming a significant component of Nuiqsut subsistence practices. This makes sense from an economic perspective because the Spur Road gives people the option of hopping in their trucks and driving north from Nuiqsut on a safe gravel road to look for caribou. So far, the road (which is much narrower than most industry or public roads) has not proven to be a major impediment to caribou movement, so hunters have had great success finding game within sight of the road (on both sides). This is a major benefit because shorter trips on roads save time and money, and are much safer, which is especially important for younger families with young children and potential day care issues. When hunters don't find resources right along the Spur Road, they can either keep going (often west towards GMT1) or come back to the village and try again another time. Both are better options than existed prior to the Spur Road.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>The Draft SEIS discloses both potential benefits and potential negative impacts of the road and attempts to be succinct. Recent data on use of roads, gathered since the Draft SEIS was published, and verbatim testimony from hunters, has been included in the Final SEIS.</p> |

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| L61-49<br><i>Continued</i> | Kuukpik Corporation | This potential shift towards increasing road usage by subsistence hunters, in fact, is one of the most significant evolutions in the environment and subsistence landscape since 2004, and it is one that the Final SEIS should therefore look at much more closely and strive to present a fair picture of. The decision to treat the impacts of the Spur Road as if they are simply unknown leaves this analysis woefully short on specific information that would allow us and BLM to evaluate the potential impacts of a road to GMT2. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <i>See above for BLM response</i> |

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| L61-5  | Kuukpik Corporation | <p>There is another large problem with the Draft SEIS. NEPA also isn't the background for some reality TV show. Unfortunately, portions of the Draft seem to treat it that way by focusing on conflict and rivalries - real or perceived - that have no business being in an EIS. Relying heavily on a publication that was literally written by TV producers, not scientists or sociologists, the socio-cultural impacts analysis in particular seems to be an effort to describe and dramatize the entire social and emotional fabric of Nuiqsut. The result is a gossipy, subjective, and anecdotal description of individual and conflicting opinions on a wide range of issues, and speculation that lacks the kind of data and science that is normally the basis of such EIS evaluations. Instead of contributing to the EIS analysis, all this type of information does is institutionalize town gossip and perpetuate conflicts that Kuukpik and other community organizations would rather heal than stoke. That some of this information (particularly from The Next Horizon) is factually wrong and none of it is relevant to the potential impacts of constructing a development at GMT2 simply confirms that this socio-cultural analysis needs to be drastically revised. The Final SETS needs to pay more attention to substantive impacts, and less to gossip and innuendo that do not provide any meaningful insight into understanding the likely impacts of GMT2.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>One purpose of preparing a supplemental EIS is to provide updated information that did not exist when the original EIS was written. BLM NEPA Guidance regarding information to be used as part of the analysis does not specify any minimum requirements. BLM NEPA handbook states "Data and other information used to describe existing conditions and trends may be obtained from other documents and summarized and incorporated by reference or otherwise appropriately referenced. You may also obtain data and other information from cooperating agency partners or other agencies, organizations, or individuals, as identified during scoping." The 2016 "Next Horizon" study was provided to BLM by the applicant as a source of recent socio-cultural information for Nuiqsut. The publication notes that it was commissioned and funded by the applicant for the Kuukpik Corporation.</p> |

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| L61-50 | Kuukpik Corporation | <p>Regardless of the precise extent of any benefits from the GMT2 road, they won't be enough to offset the development's impacts on Nuiqsut residents. And while the DSEIS correctly notes that there will be some modest economic benefits to the community due to Kuukpik and ASRC's interests in the oil to be produced at GMT2, most of those benefits will not be substantial, direct, or immediate enough to meaningfully impact those most affected by the development. BLM and others must therefore continue to promote and foster other ways to allow the Native community to share in some of the rewards from drilling at GMT2.</p> <p>FOOTNOTE: We therefore have to disagree with what seems to be the Draft SEIS's more optimistic view of the potential benefits that Kuukpik and ASRC shareholders will receive from this project, much less the idea that "the GMT2 project is partly driven by" these entities. GMT2 DSEIS, p. 459. Kuukpik owns a small over-riding royalty in some of the oil that will be produced at GMT2. That royalty interest does not give us any say over whether and how the project will be constructed or operated. ASRC's ownership interest is larger, but is also a passive one nonetheless. Neither of these corporations is "driving" the GMT2 project. So while the environmental justice analysis may be "particularly complex," it's not because this project is anything other than a typical "outsider-driven industrial activity." GMT2 DSEIS, p. 459.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | This input has been included in the economic and sociocultural systems section of the Final SEIS. |

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| L61-51 | Kuukpik Corporation | <p>The Draft SEIS acknowledges in passing that the collapse of oil prices in 2015 has resulted in severe cuts in public funding (p. 169-70 and 176-77), but fails to emphasize the extent to which these changes have impacted rural communities more than any other. Services that used to be funded or partially funded by the State are now gone or are being provided by other sources, like the local village corporations. These costs can easily offset some of the potential income a company like Kuukpik stands to receive from development on its land, even with oil prices rising (for now). Residents are also feeling the pain directly. Shareholder dividends have been cut along with those from the State Permanent Fund. Those dividends often make up a much larger percentage of household incomes in rural communities than they do elsewhere, so these losses hurt even more in places like Nuiqsut.</p> | 3.16 Economy          | <p>Section 3.4.4. notes that declining state revenues have resulted in cuts to public spending that have affected many Alaskans. Section 3.4.4.2 discusses reduction in dividends for ASRC. Section 3.4.4.3 discusses dividends from Kuukpik and ASRC focused on Nuiqsut. Without specific information on Kuukpik's profits and dividends, the BLM cannot accurately discuss the local impacts of the 2015 decline in oil prices.</p>   |
| L61-52 | Kuukpik Corporation | <p>Kuukpik has talked for years about the need to try to mitigate these disproportionate impacts by positioning more locals to be able to obtain oilfield services jobs, particularly year round jobs that can truly impact an entire family and its standard of living. Kuukpik itself has created dozens of year-round and seasonal job for shareholders in Nuiqsut, Anchorage, and throughout the Alpine and Kuparuk oil fields.<sup>66</sup> But subsistence needs and other barriers to entry have prevented many residents from obtaining or holding the most coveted jobs. Consequently, it remains critical for BLM to analyze and proliferate measures that can bring financial benefits to the community. We recognize, as the Draft emphasizes (repeatedly), that BLM doesn't have authority over certain aspects of the project that might advance that goal.</p>   | 3.16 Economy          | <p>Section 3.4.4.3 of the DEIS discusses the Nuiqsut cash economy including employment generally and related to oil and gas activities. Section 4.4.3.1 discusses employment impacts associated with construction of GMT2 including recognizing opportunities for Nuiqsut and other North Slope Borough communities. This analysis anticipates local employment impact to be similar to past projects. As noted in the comment, the BLM lacks authority related to hiring decisions made by the proponent and other affected businesses. However, the BLM does encourage that the local communities work with business to identify opportunities for increase workforce participation by local residents.</p> |

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| L61-53 | Kuukpik Corporation | <p>One of our biggest concerns is the NPR-A Mitigation Fund situation. Despite professing no ability to influence the use of these funds, BLM describes the program fairly comprehensively. What it fails to mention is the depth of the community's dissatisfaction with how that program has functioned towards Nuiqsut over the last several years. These funds are supposed to be prioritized and distributed to the communities most directly or severely impacted by oil and gas development. Frankly, that means the City of Nuiqsut should be at the head of the line every time. Nuiqsut lies in the heart of the most active (and growing) oil and gas fields on the North Slope. It is far and away the community most affected by oil development on the North Slope to date...</p> <p>Considering the far lesser direct impacts which those communities have suffered and the staggering amount of revenue the Borough in particular receives from oil development, 69 BLM and the State need to make it a priority to distribute more of these funds to Nuiqsut.</p> | 3.16 Economy          | Revised and incorporated updated information for section on "Local Economy: Community of Nuiqsut" and oil and gas operations impacts. |
| L61-54 | Kuukpik Corporation | <p>Instead, at least as of a year or so ago, the State had apparently put the City of Nuiqsut in a nearly impossible situation that has long prevented/is preventing it from actually receiving a more proportionate and appropriate share of NPR-A Impact Fund grants. Though Kuukpik has been told by City of Nuiqsut representatives that the information below from the Draft SEIS contains inaccuracies and that a correction is expected to be provided to BLM by the City... This information is over a year old and apparently some of it is outdated, so it needs to be corrected in the Final SEIS.</p>  | 3.16 Economy          | Revised and incorporated updated information for section on "Local Economy: Community of Nuiqsut" and operation impacts.              |



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| L61-55 | Kuukpik Corporation | <p>The Draft SEIS suggests CPAI "evaluate" several potential mitigation measures that would reduce emissions further but which so far appear not to be part of the project. It's not clear whether these measures are just a suggestion, or something that CPAI is being required to study and implement if feasible, but Kuukpik believes the Final SEIS should analyze the most critical of these so that the responsible agencies (whether BLM or otherwise) can determine whether to impose stipulations that will prevent unnecessary degradation of air quality. These measures include at least the following (omitting some additional measures that are effectively legal requirements already, such as a leak detection program):</p> <ol style="list-style-type: none"> <li>1. Use of Tier 4 engines for ALL drilling activities until the rigs can be operated using high line power. The recent successful drilling with such generators at Putu 2 confirms that these low emission generators need to become the new operating standard on the North Slope.</li> <li>2. implement high quality monitoring systems that can be monitored remotely. CPAI should make every effort to construct equipment and production monitoring systems that can be automated and monitored from GMTI (or wherever is feasible) so that the number of routine manned vehicle trips for monitoring purposes can be reduced.</li> <li>3. Onsite air quality monitoring at GMT2. CPA must conduct real time air quality monitoring at the GMT2 site, and have protocols in place for shutdown ( or "warm shutdown") when certain key threshold emissions are exceeded or about to be exceeded.</li> </ol> | 3.5 Air Quality & Meteorology | These mitigation measures were included in the Final SEIS for consideration as mitigation measures in the Record of Decision. Modeling was updated to assume a 35 mph speed limit. |

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| <b>L61-55</b><br><i>Continued</i> | Kuukpik Corporation | <p>4. Enforce a speed limit of 20 MPH on the Access Road and 5 MPH onsite. This measure is necessary because these speed limits were assumed for purposes of the AQM (p. 289). Because higher speeds would affect the calculation of fugitive dust and possibly other emissions, these speed limits must be observed.</p> <p>In short, given the community's extreme concern and sensitivity to air quality issues in the village, CPAI has every incentive to implement these practical mitigation measures (in addition to those that would be legally required anyway) in order to reduce the risks further and demonstrate to the community that it is willing to take the steps needed to help the community feel more comfortable with its operations in this area.</p> | 3.5 Air Quality & Meteorology        | See above for BLM response   |
| <b>L61-56</b>                     | Kuukpik Corporation | Page 2, Introduction: This section states that only exploration drilling has occurred in the GMT Unit. This information may be out of date. Kuukpik believes the first or possibly second development well is currently being drilled at GMT I.   | 1.1 Executive Summary & Introduction | The BLM reviewed and revised this section to make sure it is up to date.             |
| <b>L61-57</b>                     | Kuukpik Corporation | Page 12, Table 1.4-1, Key permits, approval, and other requirements for GMT2: This table does not list the DOI ANCSA Corporation Consultation Policy signed by Ken Salazar on August 10, 2012.  | 1.1 Executive Summary & Introduction | The BLM added the DOI Policy on consultation with ANCSA corporations to Table 1.4-1. |
| <b>L61-58</b>                     | Kuukpik Corporation | Page 23, Table 2.1-1, Summary of changes in the GMT2 Project Over Time: This table refers to three 1.2 acre subsistence pullouts. This appears to conflict with Table 2.3-2 (pp. 29-30), which states that the total acreage for all three subsistence pullouts is 1.2 acres. Kuukpik believes Table 2.1-1 needs correction.  | 2.1 Proposed Action & Alternatives   | Table updated to reflect 1.2 acres total for all three pullouts.                     |

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| L61-59 | Kuukpik Corporation | Pages 34-35, Ice Roads: The last sentence in the first passage reads: .. The ice road length for GMT2 will be approximately three times longer than the ice road needed for CD3, which will result in a 20 percent decrease in the useable ice road season." How was this determined? The length of an ice road does not directly equate to the useable ice road season (though a warming climate does). BLM should more fully explain the conclusion that the GMT2 construction ice road season will be limited to about 80 days. | 2.1 Proposed Action & Alternatives                                  | Text has been revised to clarify assumptions regarding the length of the ice road season. "The shorter ice road season is assumed based on the distance of GMT2 from Alpine (i.e., it will most likely be completed last and closed to vehicle use first) and correlates well with the 80-day ice road season documented for exploration projects which have occurred in NPR-A over the last decade." |
| L61-6  | Kuukpik Corporation | From Kuukpik's perspective, the most important issues that need to be covered are, first, the potential impacts this project will have on subsistence activities and, second, the ways the project can provide offsetting benefits to those most affected: the residents of Nuiqsut.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | This input has been included in the economic and sociocultural systems section of the Final SEIS.   |
| L61-60 | Kuukpik Corporation | Page 37, Water Use and Page 44, Roads, Ice Roads and Pads (Table 2.5-2): These passages indicate that a 10-acre ice pad (requiring 2.5 million gallons of water) is planned under all alternatives. Why is this pad required since there will be a permanent gravel pad to support drilling operations? This is not how drilling at Alpine (including CDS and GMTI) is routinely conducted.  | 2.1 Proposed Action & Alternatives                                  | Text has been revised to explain the purpose of the ice pad for the drilling period. CD3, CD5 and GMT1 have all used a similar setup to reduce the acreage of the permanent gravel pad.   |
| L61-61 | Kuukpik Corporation | Page 45, Vehicle Traffic: The table in this section states that 9,000 one way trips to or from GMT2 will be needed for years 3-10. That's 4,500 round trips annually or 12.3 round trips per day. This seems a bit low in view of the drilling and production activities that would be occurring during this time frame. This comment also applies to Alternative B.   | 2.1 Proposed Action & Alternatives                                  | The information presented in Table 2.5-3 regarding vehicle traffic for Alternative A represents the estimated number of vehicle trips based on the actual number of trips that occurred during these same phases of drilling and operations at similar locations, such as CD4.  |

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| L61-62 | Kuukpik Corporation | Page 45, Aircraft Traffic: This section states there will be between 5 and 15 flights per month for crew changes during construction. This estimate seems low since Alpine has these numbers of flights during non-construction season. If these are additional flights over the current baseline, the document should state that. | 2.1 Proposed Action & Alternatives | Text has been revised to clarify that the estimated 5-15 fixed wing flights per month are additional, resulting from construction of GMT2.  |
| L61-63 | Kuukpik Corporation | Pages 46-47, Camps: There is no reference to the Arctic Wolf Camp (owned by Kuukpik) in Nuiqsut which is opened seasonally as needed. This section also describes the "Kuukpik Camp" as being located on Kuukpik's 10 acre pad, which is not correct. This comment also applies to Alternatives B and C.                           | 2.1 Proposed Action & Alternatives | Edits have been made to the text to indicate that the Arctic Wolf Camp located in Nuiqsut is anticipated for use by the applicant during the ice road season, and what is referred to as the GMT2 Temporary Construction Camp located on the Kuukpik Pad near the confluence of the Kuukpik Spur Road and the CD5 Road will be utilized year-round during construction. |
| L61-64 | Kuukpik Corporation | Page 71, Alpine Spill History: How can 0.7 spills (of hazardous substances) due to human factors be correct?   | 3.19 Hazardous Materials Spills    | Table 3.1-1 presents the volume of substances spilled by cause, not the number of spills. There were 0.7 gallons of hazardous substances spilled due to human factors over the time period evaluated. Added "gallons" after numbers in the table to clarify.  |
| L61-65 | Kuukpik Corporation | Page 116, Fish Species: Why isn't the ongoing ABR study of Arctic cisco included as part of the industry conducted surveys, particularly since there is a later reference in this section to large numbers of Arctic cisco being captured in the lower Colville River?   | 3.9 Fish                           | Text and references were added to include the Colville River fall fishery monitoring work.  |
| L61-66 | Kuukpik Corporation | Page 171, Regional Economy-North Slope Borough: ENI's Nikaitchuq project is not currently suspended as far as Kuukpik knows. There is no reference to Armstrong's Horseshoe exploration, which was reported (in the spring of 2017) to be another large find in the Nanushuk formation.  | 3.16 Economy                       | Revised text. Horseshoe is listed in the cumulative effects table and considered in the analysis.   |

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| L61-67 | Kuukpik Corporation | Page 174, Local Economy-Community of Nuiqsut: Neither Kuukpik/Carlile nor Nanuq are "Joint ventures" as stated here. Kuukpik/Carlile no longer exists. Nanuq is a wholly-owned Kuukpik subsidiary, like Kuukpik Drilling, which is not listed. The information in the third paragraph is also a bit outdated since it is from 2015.  | 3.16 Economy  | Revised to update description of contracts. Added most recent employment information (2016) from Alaska Labor & Workforce Development. |
| L61-68 | Kuukpik Corporation | Page 177, Land Use: The last sentence on this page needs revision and/or correction.   | 3.17 Land Use   | Reworded and recalculated acres and made correction.   |
| L61-69 | Kuukpik Corporation | Page 178-79, Local Transportation, Recreation, and Visual Resources: All of these sections incorrectly refer to the City of Nuiqsut as the Native Village of Nuiqsut.  | 3.17 Land Use   | Corrected.   |
| L61-7  | Kuukpik Corporation | On subsistence, the primary impacts of GMT2 are likely to be (1) avoidance of both the footprint where GMT2 would be constructed and the couple of miles around it that typically becomes effectively off-limits to subsistence users, and (2) indirect impacts that may result from constructing the project in an important migration corridor. Both of these impacts, however, may be partially offset by the access to other areas that would be facilitated by the road to GMT2. On the other hand, that same road may have real psychological impacts for a community that for years has felt-and become-increasingly surrounded by oil development. Much of the community views GMT2 as a significant contribution to that problem because it will expand the network of roads farther west and south of town, further encircling (literally) the community with roads. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | This input has been included in the economic and sociocultural systems section of the Final SEIS.                                      |

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| L61-70 | Kuukpik Corporation | Page 242, Physiography and Geomorphology/Soils and Permafrost -Drilling and Operation: The last two full passages on this page discuss impacts from subsistence users and four-wheelers. There is no discussion about industry off-road traffic in non-frozen conditions. Industry often uses Tuckers, rolligons, and other ADNR-approved summer tundra travel vehicles for a variety of purposes (e.g. study work, permit conditions, etc.). There should be a discussion of industry uses of tundra travel during non-frozen conditions and the potential impacts. The tundra damage near the ASRC Mine Site caused by rolligons several years ago is a prime example of the tundra impacts that can result from industry during non-frozen conditions. | 3.2 Soils & Permafrost | Industry use of off road vehicles and machinery is limited to frozen conditions except for emergency response situations. use during non-frozen periods is likely to have long lasting effects on tundra including the potential for thermokarst due to the loss of insulation. This type of damage takes many decades or more to recover. |
| L61-71 | Kuukpik Corporation | Page 260, Construction, Drilling and Operation: Cross-drainage culverts are typically 24 inches in diameter, not 48 as indicated here. Note that the source of the proposed 48 inch cross-drainage culverts was from 2004.  | 3.4 Water Resources    | The sentence was modified to reflect the standard 24 inch size.  |
| L61-72 | Kuukpik Corporation | Page 328, Fish -Construction, Ice Roads and Pads: CPAI should be required to conduct in season monitoring at the Ublutuoch crossing if the ice road is constructed near the permanent bridge.   | 3.9 Fish               | The permanent bridge across the Ublutuoch River and the river reaches immediately upstream and downstream are not on BLM land, so the BLM cannot require monitoring there.   |
| L61-73 | Kuukpik Corporation | Page 330, Fish, Table 4.3-6: The last line in this table for Alternative C states that diesel and mineral oil pipelines may be needed. Why is mineral oil needed at the drill site?   | 3.9 Fish               | See 2.7.3 Drill Pad and Support Facilities. Mineral oil is a component of the "muds make-up". Under a roadless alternative, mineral oil would be piped in rather than flown in.  |
| L61-74 | Kuukpik Corporation | Page 332, Fish-Mitigation: Did CPAI conduct the hydrology and fish studies required by BMP E-14 to determine the anticipated impacts of the proposed culverts at the stream crossing on the access road to GMT2?  | 3.9 Fish               | BMP E-14 does not apply to the M9925 outlet, as the "stream" at the road crossing is not channelized, but is a wetland/marsh. As such, BMP E-6 applies and requires that culverts placed in that section allow for natural drainage patterns and fish passage.   |

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| L61-75 | Kuukpik Corporation | Page 351, Terrestrial Mammals -Construction, Mortality or Injury: This section hypothesizes that increased use of the developed road system by local hunters under Alternatives A and B could increase "mortality of caribou, moose, muskoxen, or grizzly bears". This assertion should be deleted or acknowledge that instances of residents killing animals with vehicles is extremely rare. The likelihood that locals would hit moose, muskoxen or grizzly bears is even lower. | 3.12 Mammals                       | Alternatives A and B would enable local hunters to use the developed road system, potentially having a minor increase on localized mortality of caribou, moose, muskoxen, or grizzly bears. Verbiage updated to be more clear.   |
| L61-76 | Kuukpik Corporation | Page 353, Terrestrial Mammals -Drilling and Operation, Aircraft: This section states "Alternatives A and B would require 540 helicopter flights (90/year) for drilling and 2070 helicopter flights (90/year) for operations." Why are so many helicopter flights needed for drilling and operations for a road connected drill site?  | 2.1 Proposed Action & Alternatives | Helicopter flights during drilling and operations will support required monitoring and studies in the GMT2 project area, and may be used for other activities such as placing spill response equipment. For analysis purposes, an additional 15 flights were included above the estimated amount in order to ensure potential impacts were adequately identified in Chapter 4. |
| L61-77 | Kuukpik Corporation | Page 359, Marine Mammals: How was it concluded that spotted seals, bearded seals, and beluga whales may occur in the project area?  | 3.12 Mammals                       | The marine mammals identified in the document are species that are reported to occur along the coast of Harrison Bay, in the Colville River Delta, or in the Beaufort Sea offshore north of the GMT2 Project area, not in the project area.  |
| L61-78 | Kuukpik Corporation | Page 400, Table 4.4-4 Projected crude oil production: It should be noted that production from Pikka (Oil Search), Willow (CPAI), and Liberty (Hilcorp) and others (e.g., Nuna, Putu, Smith Bay, Horseshoe, Stony Hill, etc.) is not included in this table.   | 3.16 Economy                       | Total Alaska North Slope production numbers were updated with the most current projections from the Alaska Department of Revenue.  |
| L61-79 | Kuukpik Corporation | Page 411, 4.4.3 Recreation -Construction: Who is the "one special recreation permittee (wildlife and nature viewing) authorized to conduct activity in the GMT2 area"? Is he or she aware of Kuukpik-owned and selected lands in the area?  | 3.17 Land Use                      | We always inform our permittees that we only authorize lands that are managed by BLM and have no authority over non BLM Managed land. Permittees are also notified when there are such lands.  |

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| L61-8  | Kuukpik Corporation | <p>Kuukpik doesn't think that psychological hurdle is immutable, however. Subsistence hunters are practical people. We believe the tangible benefits offered by increased access along the GMT2 road could ultimately reduce many Nuiqsut residents' traditional reluctance to use oil and gas infrastructure such as in-field roads for subsistence purposes. That shift in attitude is, we believe, increasing as the Nuiqsut Spur Road continues to become an increasingly valuable asset for people looking to practice subsistence near the community. Recent caribou monitoring and harvest data confirm this trend. So it's not at all clear why the Draft SEIS isn't acknowledging those changes, and more importantly, trying to analyze and estimate how the changes will impact subsistence practices over time if and when additional roads are constructed. By treating those impacts as if they are completely unknown (and currently unknowable), the analysis is completely skewed because we cannot compare the potential negative impacts of the GMT2 Access Road against the potential benefits-as far as one can tell from the Draft SEIS there basically are no benefits. This analysis must be updated in the Final SEIS and the real questions this road raises need to be answered.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>There are several reasons that preliminary data on the benefits of increased access provided by the Spur Road should not be used to predict the impacts of the GMT2 road. Data gathered by SRB&amp;A that was available for the Draft SEIS on use of the Spur Road reflects hunter reports on uses of the Spur Road before there was any development northwest or west of it (i.e., the GMT1 road or proposed GMT2 road), and the roads themselves are different. The Final SEIS includes the most recent data on the facilitated access provided by industry roads and it is used to more accurately predict the effects of the GMT2 road. The Draft SEIS discloses both potential benefits and potential negative impacts of the road and attempts to be succinct. Recent data on use of roads, gathered since the Draft SEIS was published, and verbatim testimony from hunters, has been included in the Final SEIS.</p> |
| L61-80 | Kuukpik Corporation | <p>Pages 431-432, Subsistence, Table 4.4-13: The table lists Years 1 to 8 but does not state which years the data represents. Also, the table shows a shift from use of boats and snowmachines to greater use of four wheelers and trucks. Knowing which years are portrayed may help explain this shift and, presumably, would confirm that it coincides with the increasing use of the Spur Road.</p>   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>Text has been edited to add years to the table.</p>  |



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| L61-81 | Kuukpik Corporation | <p>Page 440, Subsistence -Drilling and Operation (Alternatives A and B), Resource Availability, Deflection of Resources by Infrastructure and Road and Air Traffic: This section suggests that subsistence users are increasingly accessing the GMT2 Project Study Area in September (and less in winter). Something seems amiss here. How did hunters access the GMT2 project area in September? Does the data show exactly what part of the GMT2 project area was accessed in September? There are no roads present, so vehicles weren't used. September is too early for snowmachine use. This info may be skewed by the definition of the GMT2 project area, which goes east past the ASRC mine site, includes portions of the Nigliq channel and portions of the Colville River.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | NEPA requires the BLM to evaluate the impacts of the entirety of a project, including areas of associated activities and connected actions. The project area is defined to include such connected areas as the ASRC gravel pit from which gravel will be derived and Alpine which is the origination point of most traffic to and from GMT2, to name just two examples. |

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| L61-82 | Kuukpik Corporation | <p>Pages 445-446, Subsistence -Stipulations and Best Management Practices on Avoiding Conflict: There is an extensive write-up on the BLM Subsistence Advisory Panel. However, this entity has not met since November 2016. Also, there is no reference to the NPR-A Working Group. The suspension of advisory panel and working group meetings by Interior Secretary Zinke makes it unlikely that such groups will continue in the future.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>The NPR-A Working Group, established by the 2013 NPR-A IAP ROD, is an advisory body established to provide input to BLM on implementation of the IAP, specifically on issues at a macro-level, such as leasing, land-use conflicts, adjustments of special area boundaries, etc. (see pg. 8-9 of IAP ROD). As such, the group is referred to in Chapter 4: Subsistence: Environmental Consequences under 1) the introduction, as an original source considered in analyzing the potential relevance of impacts that could be a result of GMT2 Project; 2) in 4.1.2.3 Impacts Common to All Alternatives: Rehabilitation of Infrastructure, where the group's assertion that decisions about whether and how to rehabilitate infrastructure should only be made through consultation with local communities is noted; 3) in 4.1.2.5: Operations and Drilling under Alternatives A and B: Deflection of Resources by Infrastructure and Road and Air Traffic, where the Working Group's "General Principles for Development of Infrastructure in Northern Alaska" (2014) is cited, ("Local and traditional knowledge and direct experience tell us that aircraft pose one of the greatest potential negative impacts to the success of subsistence hunters and that such flights can also impact caribou movements over the long term,"), and; 4) under Section 4.4.7.4. Environmental Justice - Mitigation. Neither the NPR-A Subsistence Advisory Panel (established in 1998) or the NPR-A Working Group has convened since the Dept. of Interior postponed advisory groups pending review in spring 2017. However, input received from both groups continues to be an important source in analyzing the effects of development and in formulating mitigation measures.</p> |

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| L61-83 | Kuukpik Corporation | Pages 446-448, Mitigation: These passages discuss the State of Alaska NPR-A Impact Mitigation Program, the CPAI Subsistence Mitigation activities, and the GMTI Compensatory Mitigation Fund. There is no reference to the Regional Mitigation Strategy created via GMTI or to any similar mitigation fund related to GMT2.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text revised to include discussion regarding the GMT1 Compensatory Mitigation Fund and the Regional Mitigation Strategy.  |
| L61-84 | Kuukpik Corporation | Pages 449-452, Mitigation -Potential Mitigation Measures: These passages specify six potential mitigation measures which are: 1) GMT2 Road Right of Access Agreement; 2) Suspend Non-Essential Helicopter Traffic During Peak Caribou Hunting Season; 3) Consultation Regarding Aircraft Communication Protocols; 4) Aircraft Monitoring Data Requirements; 5) Reduce Flights by Utilizing Unmanned Aerial Vehicles; and 6) Subsistence Monitoring Studies. Item 1 is effectively already in place. Item 2 may have some merit but CPAI doesn't do "joyriding" with helicopters due to costs. Item 3 is already in place via the KSOP. Item 4 is already required by the BLM via the permit stipulations imposed by the BLM in the NPR-A. Item 5 is worthwhile, but what has CPAI done on this same requirement, which was contained in the GMTI ROD? Item 6 may be worthwhile but may need some adjustments to really focus on and identify changes in subsistence activities. In summary, these proposals don't seem to be anything new or innovative. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The proposed mitigation measures presented in the DSEIS comprise those measures from GMT1 that had merit in potentially being adopted for GMT2. One purpose of presenting impact analysis and proposed mitigation measures in a DSEIS is to disclose to the public possible negative effects of a proposed action and ways that these negative effects could be addressed, with the intent of soliciting additional information from the public, especially input on additional suggestions regarding additional potential mitigation measures. Local stakeholders with the greatest knowledge of the area and feasible mitigation measures are particularly encouraged to suggest mitigation measures that BLM could propose for the GMT2 ROD. |

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| L61-85 | Kuukpik Corporation | Pages 457-458, Public Health -Mitigation: There are three potential mitigation measures cited: 1)GMT2 Industrial Disaster Response Plan for Nuiqsut; 2) Minimize Undue Idling of Vehicles; and 3) Public Health Monitoring. Item 1 is actually a NSB responsibility. Item 2 was already required for GMTI. Item 3 is already being worked by NVN, including an indoor air monitoring program. This potential measure calls for monitoring at a regional level. "Regional" is undefined. Again, these don't seem to be particularly new, innovative, or even additive since they are already required or underway. | 3.18 Public Health  | BLM is identifying all reasonable mitigation measures proposed during the public comment period in the Final SEIS for consideration in the ROD. Issues such as the ones identified in your comment may be used as justification for not adopting certain proposed mitigation measures. |
| L61-86 | Kuukpik Corporation | Pages 459-460, Environmental Justice: The third bullet stating Kuukpik receives "tax revenues" is plainly incorrect since Kuukpik is not a governmental entity.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been corrected to indicate City of Nuiqsut.   |
| L61-88 | Kuukpik Corporation | Page 468, Cumulative Impacts -Methodology, Geographic Area of Relevant Past and Reasonably Foreseeable Actions: Map 4.6-1, depicting the geographic extent for the cumulative impacts analysis, lacks key information. The Caelus Nuna 1 drill site is shown, but the proposed Nuna 2 drill site is not. There is no hypothetical pipeline from Nanushuk to Kugaruk, but there is one depicted from Smith Bay to the Bear Tooth and from Cassin to GMTI (even though the latter are more speculative---or at least more remote in time-than the former). CO2 and CD3 are shown for Fiord West development.        | 5.1 Maps and GIS Data   | Edits to the map have been made to reflect indicated changes.  |

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| L61-89 | Kuukpik Corporation | Page 469, Cumulative Impacts, Table 4.6-1 Summary of resource/issues time frame and geographic scope: What is the rationale for stating that oil, saltwater, and hazardous substance spills would continue until 2100? All other items in this table only go to 2050.  | 3.19 Hazardous Materials Spills | As described in Section 4.6.2, the time frame and geographic scope were defined for each resource/issue. For the Oil, Saltwater, and Hazardous Materials Spills, the time frame is defined as the 1940s (earlier than many of the other resources) to 2100 to account for previous activities that resulted in spills or releases within the defined geographic scope, and to address the persistence of some contaminants in the environment and the possibility of long-term cleanup activities.  |
| L61-9  | Kuukpik Corporation | The Final SEIS should meaningfully consider how the recent warming trends in the Arctic will impact GMT2 over the long term. Limiting the scope of a NEPA analysis undermines the integrity of the process and the conclusions reached in this Draft SEIS. As noted above, Kuukpik and Nuiqsut rely on the NEPA process and the EIS documents to take a "hard look" at oil industry projects and their impacts. Kuukpik is very much concerned that recent internal Department of the Interior directives are going to substantially reduce the value of the NEPA process and its credibility in Nuiqsut in future years. Kuukpik and Nuiqsut rely on the NEPA process and the EIS documents to take a "hard look" at oil industry projects and their impacts. Kuukpik is very much concerned that recent internal Department of the Interior directives are going to substantially reduce the value of the NEPA process and its credibility in Nuiqsut in future years. | 3.7 Climate Change              | In the GMT2 Supplemental EIS, the BLM tiers to and incorporates by reference previous NEPA analysis including the ASDP EIS (2004), the NPR-A IAP (2012) and the GMT1 SEIS (2014). CEQ regulations direct that: <i>Agencies shall incorporate material into an environmental impact statement by reference when the effect will be to cut down on bulk without impeding agency and public review of the action. The incorporated material shall be cited in the statement and its content briefly described. No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested parties within the time allowed for comment. (40 CFR 1502.21).</i> The text provided in the GMT2 SEIS incorporates by reference and summarizes the text from the GMT1 SEIS and includes updated information where such information was available (i.e., most up to date information on minimum sea ice extent). Our understanding of climate change and its effects on the Arctic are not significantly different than what is stated in the GMT1 SEIS. |

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| L61-90 | Kuukpik Corporation | Pages 471-474, Cumulative Impacts, Table 4.6-2 Past, Present and Reasonably Foreseeable Future Developments: Putu is shown as being in no unit, but in fact is part of the Colville River Unit. In the utilities section, it references a "pipeline" from CPF1 to the power plant, but does not identify this as a gas pipeline or reference gas being provided to most Nuiqsut buildings and homes. Also, the Spur Road is stated as connecting Nuiqsut to the CD5 access road but states that this road is "Within Community".                      | 4.0 Cumulative Effects Projects and Methodology | The BLM corrected Table 4.6-2 as suggested. Spur road distance from Nuiqsut is 0 to 6 miles.  |
| L61-91 | Kuukpik Corporation | Page 476, Cumulative Impacts -Cumulative Impacts to the Terrestrial Environment: This passage suggests that because the "future impact to the existing physiography, soil, permafrost regimes and to petroleum resources" cannot be accurately estimated at this time, the analysis does not include ANY future gravel footprint in the cumulative impacts analysis. The EIS should be making some effort to predict gravel use and footprints over the long term. It's also not clear how the data on the following pages "fits" with this analysis. | 3.2 Soils & Permafrost                          | Text updated to provide an estimate of future gravel disturbance: Developments in permitting total approximately 23,000 acres, which represents 0.5 percent of the geographic extent of this analysis. An analysis of the current and known future projects indicates that the impacts of each development run about 0.26 to 0.27 percent of the project area. The potential for future impact to the existing physiography, soil, permafrost regimes and to petroleum resources are recognized and at this time are expected to be less than 0.3 percent of each development area in the future as well; therefore, potential future impacts are expected to be similar to the approximately 23,000 acres described above. |

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| L61-92 | Kuukpik Corporation | Page 478, Cumulative Impacts -Future Impacts and their Accumulation, Oil and Gas Exploration and Development Activities: This section claims that ice roads are routinely "constructed between staging areas in the Kuparuk River Unit to locations within the NPR-A as far as the Utqiagvik (formerly Barrow) area." What is the source of this information? Kuukpik believes the western-most ice roads extended about 75 miles west of Nuiqsut (believed to be the Kokoda exploration wells drilled by CP AI in the 1990-2000 time frame), which is far from Utqiagvik. There have been many rolligon trails (mostly constructed annually) between Kuparuk and the Utqiagvik area, but these are very different from a usage and safety standpoint than ice roads. | 3.4 Water Resources           | The sentence was modified to reflect Smith Bay as the western-most ice road constructed to date.   |
| L61-93 | Kuukpik Corporation | Page 481, Cumulative Impacts -Cumulative Impacts to Air Quality, Table 4.6-3: Why does this table have a "no" for Evaluated in GMT2? This DSEIS does analyze the air impacts from GMT2. Perhaps this was copy and pasted from the GMT1 EIS but not updated.   | 3.5 Air Quality & Meteorology | Table 4.6-3 indicates which sources are included as Reasonably Foreseeable Development (RFD) sources in the cumulative emissions inventory. GMT2 is not a RFD source in the cumulative inventory for the GMT2 EIS, rather it is <u>the</u> project source. Similarly, GMT1 is not an RFD source in the cumulative inventory for the GMT1 EIS. This has been clarified in the SEIS. |
| L61-94 | Kuukpik Corporation | Page 486, Cumulative Impacts to Biological Resources -Vegetation and Wetlands, Past and Present Impacts and Their Accumulation: The first passage describes "the recently built Nuiqsut Spur Road" as an impact from oil and gas activities, but the Spur Road is a community-led effort, the primary purpose of which is to facilitate subsistence and economic opportunities for Nuiqsut residents.   | 3.8 Vegetation and Wetlands   | Sentence has been revised.   |

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| L61-95 | Kuukpik Corporation | Page 487, Cumulative Impacts to Biological Resources -Vegetation and Wetlands, Oil and Gas Development and Production: The reference to the Tofkat Unit is out of date since that unit no longer exists.   | 3.8 Vegetation and Wetlands   | Reference to the Tofkat Unit has been deleted.  |
| L61-96 | Kuukpik Corporation | Page 498, Cumulative Impacts to Biological Resources -Terrestrial Mammals, Grizzly Bear, Fox, and Other Terrestrial Mammals, Contribution of the Alternatives to Cumulative Impacts: This passage claims that "The greatest threat to grizzly bears may be increased hunter access under Alternative A or B, as well as a potential increase in mortality in the defense of life and property at the GMT2 site." First, this comment casts a negative light on subsistence. Second, it isn't even consistent with the previous sentence stating that grizzly bears have been little affected by development on the North Slope. Third, it's not true. Kuukpik is aware of just one somewhat recent situation where a grizzly bear was killed (in the Prudhoe Bay area). This action is believed to have been taken by ADF&G reps. Oilfield operators generally don't kill grizzly bears. There are regulatory programs in place that discourage this practice and require implementation of other tactics (e.g., hazing, etc.) before lethally dealing with grizzly bears. | 3.12 Mammals  | While greatest is relative to the other potential impacts, some could assume it to mean that it is a large and significant effect. The wording will be reviewed to ensure this is clear. Further below in the SEIS, see the statement "Based on population trends of game mammals on the North Slope, neither hunting nor other human activities appear to be adversely affecting mammal populations (BLM 2012)." |
| L61-97 | Kuukpik Corporation | Page 516, Cumulative Impacts to Social Systems -Sociocultural Systems, Oil and Gas Development Actions: Qugruk is east of the community, not west, and is associated with Nanushuk.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been corrected to include Qugruk with Nanushuk east of the Colville River.   |
| L61-98 | Kuukpik Corporation | Page 518, Cumulative Impacts to Social Systems -Economy, Past and Present Impacts and Their Accumulation: Kuukpik has no "ownership" in the Alpine Field.  | 3.16 Economy  | Text clarified to state that Kuukpik owns the surface land that CD2, 4 and 5 are built on and collects revenue from surface access agreements.  |



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| L61-99 | Kuukpik Corporation         | Page 519, Cumulative Impacts to Social Systems -Economy, Contribution of the Alternatives to Cumulative Impacts: The final paragraph appears to be a holdover from the GMT 1 Final SEIS that is not applicable to GMT2. See GMT1 Final SEIS, p. 569. There is no Alternative D1. If this discussion were relevant, it would still be wrong because the Native Village of Nuiqsut would not receive increased economic benefits from use of the airport and hotel. Kuukpik owns the hotel, and no entity in Nuiqsut receives economic benefits from increased use of the airport. | 3.16 Economy          | Paragraph deleted.   |
| L65-5  | Hawk Consultants LLC        | The currently proposed GMT2 project (formerly CD7) is essentially the same as that approved for permitting in 2004 with changes that reduce the overall footprint. These changes include removing the drill site location from the Colville River Special Area, and reducing the road and pipeline length, thereby reducing the amount of fill and associated impacts to wetlands. Relocation of the drill site also mitigates the potential for impacts on peregrine falcons, an endangered species.  | 4.2 Mitigation        | Peregrine falcons were delisted on August 20, 1999 and were removed from the Endangered Species List by the Department of the Interior. However, the BLM is required under the NPRPA, which guides management of the reserve, to protect the surface resources and wildlife located in the NPR-A to the maximum extent possible. To this end, the BLM encourages applicants to incorporate design elements into their proposals for activity that serve to minimize environmental impacts. |
| L65-6  | Hawk Consultants LLC        | Alternative C, the aircraft and roadless alternative, would not allow adequate access to emergency response resources and creates significant environmental and safety risk in the unlikely event of an issue. On bad weather days, there would be no access to GMT2.  | 3.18 Public Health    | Noted, further discussion in SEIS in Section 2.7, Alternative C: Roadless Access and Section 4.5, Impacts of Oil, Saltwater and Hazardous Materials Spills.  |
| L67-3  | Alaska Trucking Association | As proposed in Alternative A, GMT2 will include a gravel road connection to existing infrastructure at GMT1 facilities. The road is necessary to insure that the operator can respond to the unlikely event of an environmental or safety issue in an adequate and timely manner.  | 3.18 Public Health    | Noted, further discussion in SEIS in Section 2.7, Alternative C: Roadless Access and Section 4.5, Impacts of Oil, Saltwater and Hazardous Materials Spills.  |

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| L68-2  | Barbara Fullmer | <p>One area that should be improved in the DSEIS is the basis described for the analysis of social systems impacts. The BLM has used prescribed criteria for evaluating impacts to physical characteristics and the biological environment, and it is important that the BLM also clearly explain the analysis of social systems impacts, including the methodology and criteria. The DSEIS (at Chapter 4.4 - Social Systems) does not describe impact criteria or identify impact levels for its analysis of cultural resources, socio-cultural systems, economic impacts, land use, subsistence, public health or environmental justice. While impact levels are not required under NEPA, the BLM should more clearly address the criteria for its evaluation. One way to do so is to apply the criteria and methodology in place for the ANILCA Section 810 analysis for assessing subsistence impacts, for the other social systems analyses, many of which are largely impacted by subsistence. Using the Section 810 criteria would allow the BLM to focus on facts and material issues to reach meaningful conclusions, while avoiding speculation, focus on issues that are only tangentially relevant, and a false precision in lieu of accuracy.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>According to BLM's NEPA guidance, the effects analysis must demonstrate that the BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and the alternatives. NEPA does not require the agency to classify impacts to each resource as minor, moderate or major. The BLM found that the use of GMT2 Impact Criteria did not contribute to meaningfully distinguish the alternatives from each other, and instead detracted from the impact analysis due to confusion and differences of opinion regarding the criteria being applied over focusing on the identified impacts. The ANILCA Section 810 criteria is specific to answering a single question: whether or not there may be a significant restriction to subsistence use, and our guidance is based on case law regarding that overriding factor. The NEPA requirement to take a "hard look" (also based on case law) goes beyond addressing a single question, and instead requires BLM to address a whole host of issues, including those identified during scoping, through consultation with stakeholders, and based on a review of relevant literature. In short, NEPA's hard look requires a more comprehensive analysis than that required pursuant to ANILCA Section 810.</p> |

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| L68-3  | Barbara Fullmer | <p>Another area that should be improved is the analysis of potential impacts to subsistence (DSEIS at Section 4.4.5 and Appendix L). The analysis as currently presented emphasizes potential negative impacts on subsistence without consideration of positive impacts and results. For example, the DSEIS uses hypotheticals and then starts each with a negative stance (e.g., "If residents decrease use ... ", DSEIS at p. 423; "If harvests or the number of active participants in harvesting declines ... ", DSEIS at p. 424) to make adverse subsistence impact statements. Another unsupported negative emphasis is the subtle but pervasive repetition of allegedly detrimental potential impacts that, in the end, are not supported by the facts. For example, the numerous references to concerns about deflection of caribou by roads are not supported by the many years of data available on North Slope caribou herds. A DSEIS (and the subsequent SEIS) should not be based upon hypotheticals, but on facts, and those facts should be broad enough to provide a balanced perspective regarding potential impacts to subsistence. And, in fact, there are positive impacts to subsistence from developments in this area, and they should be mentioned. There are Nuiqsut area subsistence reports that are not quoted in the DSEIS, which indicate that roads in this area have facilitated access to hunting areas and increased hunter success. For example, the CD-5 road is used for subsistence hunting with positive results (see, e.g., SRB&amp;A Nuiqsut interview, November 2014), and it has been reported that several caribou were taken by hunters using the GMT1 road during the GMT1 pipeline construction season in 2018.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>The NEPA process is intended to help public officials make decisions that are based on understanding of environmental consequences, and take actions that protect, restore, and enhance the environment [40 CFR 1500.1 (c)]. An EIS must identify the known and predicted effects that are related to issues identified that could be affected by a proposed action [40 CFR 1500.4 (c), 40 CFR 1500.4(g), 40 CFR 1500.5(d), 40 CFR 1502.16]. Federal Agencies are required to use all practicable means, consistent with the requirements of the Act and other essential considerations of national policy, to restore and enhance the quality of the human environment and avoid or minimize any possible adverse effects of their actions upon the quality of the human environment [40 CFR 1500.2(f)]. Inherently, NEPA analyses are statements about potential future outcomes, based on our understanding of effects that have already occurred, are currently occurring, or could occur, focusing on adverse effects in order to identify ways to address them. The Draft SEIS disclosed both potential benefits and potential negative impacts of the road and attempts to be succinct. Recent data on use of roads, gathered since the Draft SEIS was published, and verbatim testimony from hunters, has been included in the Final SEIS. The Draft SEIS did include updated discussions on avoidance, noting that much of the research and conclusions related to harvester avoidance are based on pre-Alpine hunting patterns. While avoidance has continued to occur, and has been documented in the Caribou Subsistence Monitoring Project, it is important to note that as industry has moved closer to Nuiqsut, it has become more difficult for residents to avoid industry. Future research will reveal how harvesters respond when infrastructure is established closer to town or in their core hunting areas. Avoidance may be less of an option as fewer areas without development are present.</p> |

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| L68-3<br><i>Continued</i> | Barbara Fullmer  | By selecting and using only negatively focused references and sources, the DSEIS does not provide a balanced perspective regarding subsistence; instead, it emphasizes negative comments and outcomes without giving equal weight to the positive benefits the roads and other aspects of the development bring to subsistence hunters. A DSEIS should present a reasoned fact-based approach and unbiased analyses. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <i>See above for BLM response</i>   |
| L70-1                     | Laborers' International Union of North America Local 341 | Proposed Alternative A involves a gravel road between GMT2 and the current infrastructure at GMT1, which is critical to ensure that the operator can respond promptly in the unlikely event of an unanticipated issue at the site.   | 4.2 Mitigation  | Section 4.5.5 of the SEIS discusses the benefits of having a gravel road connection in responding to any unforeseen issues.   |
| L75-2                     | Robert Stinson   | Throughout the development of the DEIS, many improvements have been made to lessen the impacts on the environment including a relocated drilling site outside of the Colville River Special Area, and reducing the road and pipeline length, thereby reducing the amount of fill and associated impacts to wetlands. Relocation of the drilling pad also mitigates the potential impacts on waterfowl.               | 4.2 Mitigation  | The BLM is required under the NPRPA, which guides management of the reserve, to protect the surface resources and wildlife located in the NPR-A to the extent possible while remaining consistent with the oil and gas requirements of the Act. To this end, the BLM encourages applicants to incorporate design elements into their proposals for activity that serve to minimize environmental impacts. |

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| L76-01 | EarthJustice   | <p>The DSEIS does not adequately assess these impacts, nor does it account for the reasonably foreseeable impacts from development of the Willow prospect, which is only possible if the Bureau of Land Management (BLM) selects Alternative A or B for GMT-2.</p> | 4.0 Cumulative Effects Projects and Methodology | <p>The BLM received a request from ConocoPhillips Alaska, Inc., to conduct a Master Development Plan EIS to evaluate the Willow development in May 2018. The most current information from that request letter has been incorporated into the cumulative effects analysis. Although the Willow development would use GMT2 and Alpine infrastructure to the maximum extent possible, this project has independent utility from GMT2 and is not considered a connected action under NEPA. The Willow find is sufficiently large that even in the absence of a road connection between GMT2 and GMT1, the Willow project could be developed roadlessly similar to the Alpine field. Deferral of a project authorization would be inconsistent with the directive in the Naval Petroleum Reserves Production Act to expeditiously carry out an oil and gas leasing program and the rights ConocoPhillips acquired with the subject leases to reasonably develop the oil and gas within those lease tracts.</p> |

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| L76-02 | EarthJustice   | Development of the Willow prospect is a reasonably foreseeable indirect effect of both Alternative A and Alternative B and therefore must be assessed in the GMT-2 SEIS. According to the DSEIS, “[d]evelopment and production at the Willow prospect requires GMT2 to be operational,” <sup>3</sup> and “[s]pecifically, development of the Willow prospect is dependent on construction of GMT2 with a road.” <sup>4</sup> Despite the admission that development and production at Willow cannot happen without GMT-2 and an associated road, BLM does not analyze Willow’s reasonably foreseeable effects. | 4.0 Cumulative Effects Projects and Methodology | The BLM received a request from ConocoPhillips Alaska, Inc., to conduct a Master Development Plan EIS to evaluate the Willow development in May 2018. The most current information from that request letter has been incorporated into the cumulative effects analysis. Although the Willow development would use GMT2 and Alpine infrastructure to the maximum extent possible, this project has independent utility from GMT2 and is not considered a connected action under NEPA. The Willow find is sufficiently large that even in the absence of a road connection between GMT2 and GMT1, the Willow project could be developed roadlessly similar to the Alpine field. Deferral of a project authorization would be inconsistent with the directive in the Naval Petroleum Reserves Production Act to expeditiously carry out an oil and gas leasing program and the rights ConocoPhillips acquired with the subject leases to reasonably develop the oil and gas within those lease tracts. |

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| L76-03 | EarthJustice   | <p>Development and production at Willow is reasonably foreseeable if GMT-2 is developed with a road. The DSEIS states that Willow is estimated to contain 300 million barrels (mmbbl) of oil<sup>7</sup>—three times the GMT-2 estimate. In April, ConocoPhillips confirmed that recent exploration drilling “support the previously announced estimate of a recoverable resource potential of more than 300 million barrels of oil.”<sup>8</sup> Given its resource potential and proximity to GMT-2, BLM cannot reasonably assume that Willow will not be developed. Thus, NEPA requires BLM to analyze those potential indirect and cumulative impacts of Willow that may be reasonably foreseen at this time.</p> | 4.0 Cumulative Effects Projects and Methodology | <p>The BLM received a request from ConocoPhillips Alaska, Inc., to conduct a Master Development Plan EIS to evaluate the Willow development in May 2018. The most current information from that request letter has been incorporated into the cumulative effects analysis. Although the Willow development would use GMT2 and Alpine infrastructure to the maximum extent possible, this project has independent utility from GMT2 and is not considered a connected action under NEPA. The Willow find is sufficiently large that even in the absence of a road connection between GMT2 and GMT1, the Willow project could be developed roadlessly similar to the Alpine field. Deferral of a project authorization would be inconsistent with the directive in the Naval Petroleum Reserves Production Act to expeditiously carry out an oil and gas leasing program and the rights ConocoPhillips acquired with the subject leases to reasonably develop the oil and gas within those lease tracts.</p> |

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| L76-04 | EarthJustice   | <p>BLM's failure to disclose and analyze impacts from Willow under Alternatives A and B falsely minimizes the impacts of those alternatives and makes them look less environmentally damaging than Alternative C (the roadless alternative). Given the size of the Willow find and its proximity to GMT-2, BLM must reasonably assume that Willow will affect most, if not all, of the same resources that GMT-2 affects, and that the impacts from Willow will be at least as significant as GMT-2 standing alone, and will be additive, cumulative, and synergistic to GMT-2's impacts.</p> | 4.0 Cumulative Effects Projects and Methodology | <p>The BLM received a request from ConocoPhillips Alaska, Inc., to conduct a Master Development Plan EIS to evaluate the Willow development in May 2018. The most current information from that request letter has been incorporated into the cumulative effects analysis. Although the Willow development would use GMT2 and Alpine infrastructure to the maximum extent possible, this project has independent utility from GMT2 and is not considered a connected action under NEPA. The Willow find is sufficiently large that even in the absence of a road connection between GMT2 and GMT1, the Willow project could be developed roadlessly similar to the Alpine field. Deferral of a project authorization would be inconsistent with the directive in the Naval Petroleum Reserves Production Act to expeditiously carry out an oil and gas leasing program and the rights ConocoPhillips acquired with the subject leases to reasonably develop the oil and gas within those lease tracts.</p> |



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| L76-05 | EarthJustice   | Although the DSEIS contains a reference to Willow in the cumulative impact section,6 BLM has not taken a hard look at the project's foreseeable effects, nor does the DSEIS reflect the fact that the cumulative impacts of Alternatives A and B may be much more significant than Alternative C because Alternatives A and B will enable development of Willow. | 4.0 Cumulative Effects Projects and Methodology | The BLM received a request from ConocoPhillips Alaska, Inc., to conduct a Master Development Plan EIS to evaluate the Willow development in May 2018. The most current information from that request letter has been incorporated into the cumulative effects analysis. Although the Willow development would use GMT2 and Alpine infrastructure to the maximum extent possible, this project has independent utility from GMT2 and is not considered a connected action under NEPA. The Willow find is sufficiently large that even in the absence of a road connection between GMT2 and GMT1, the Willow project could be developed roadlessly similar to the Alpine field. Deferral of a project authorization would be inconsistent with the directive in the Naval Petroleum Reserves Production Act to expeditiously carry out an oil and gas leasing program and the rights ConocoPhillips acquired with the subject leases to reasonably develop the oil and gas within those lease tracts. |
| L76-06 | EarthJustice   | Finally, BLM's analysis ignores the reasonably foreseeable greenhouse gas emissions from the Willow development that are an indirect effect of GMT-2. BLM cannot approve the GMT-2 Project based on the flawed analysis in the DSEIS.  | 4.0 Cumulative Effects Projects and Methodology | Estimates of downstream greenhouse gas emissions are provided in the DSEIS to facilitate comparison of impacts associated with various alternatives and support analyses of cumulative impacts. The DSEIS indicates that emissions from anthropogenic activities such as production and combustion of fossil fuels do contribute to ongoing climate change processes, but existing models and tools are not sufficient to quantify specific impacts upon local resources. Climate change is by nature a cumulative global issue and no single action contributes an amount of greenhouse gases that can significantly impact global systems. Specific regulatory thresholds for greenhouse gas emissions have not been promulgated and there is no means to quantitatively assess major, moderate, or minor impacts to local resources. It is recognized in the DEIS that there is inherent uncertainty in these estimates (from market influences and other factors).                              |

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| L76-07 | EarthJustice   | <p>First, BLM fails to account for foreign oil consumption, which leads it to assert that the GMT-2 action alternatives will result in only slightly higher greenhouse gas emissions than the No Action Alternative. Second, economic analyses show that near-total substitution for oil and gas production does not occur in the real world and is not a reasonable assumption. To the contrary, numerous studies show that every barrel of oil, and unit of gas, left undeveloped results in significant reductions in global oil and gas consumption with associated decreases in greenhouse gas pollution. Third, BLM's DSEIS fails to adequately disclose that continued fossil fuel extraction from federal waters and lands is not compatible with the United States' greenhouse gas commitments or with staying within a United States or global carbon budget necessary for avoiding the worst impacts of climate change.</p> | 3.7 Climate Change    | <p>The implications for oil and gas production in other countries relating to U.S. decisions about issuing leases are highly uncertain. In the substitution analysis based on MarketSim, the assumption is made that other oil producing countries will supply oil for U.S. import without additional restraints due to GHG-related policies in those countries. This might change in the future if other countries establish policies to achieve their GHG-related targets. Excluding the foreign oil and gas consumption is reasonable. First, the oil produced by GMT2 would be consumed domestically, therefore the substitution sources for GMT2 would also be consumed domestically. Second, oil consumption in each country is different, and BOEM does not have information related to which countries would consume less oil. This is important information since consumption patterns vary by country. For gas consumption, BOEM does not have information related to how changes in the U.S. market would affect other countries. Typically, any single project has a negligible impact on overall GHG globally. Geographical factors and time frame can also play an important role. In the short term, EIA tends to project continued demand. Here is the link to the BOEM GHG technical report: <a href="https://www.boem.gov/OCS-Report-BOEM-2016-065/">https://www.boem.gov/OCS-Report-BOEM-2016-065/</a></p> |

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| L76-08 | EarthJustice   | <p>The court held that it was arbitrary for the agency to consider the economic benefits of the expansion without also assessing the climate consequences of the end use of coal using the Social Cost of Carbon protocol, described below. At the very least, the agency had to explain why it opted not to use the protocol.</p>   | 3.7 Climate Change    | <p>Executive Order 13783 (Promoting Energy Independence and Economic Growth) issued in 2017, rescinded the policy requirement for federal agencies to consider the social cost of carbon in decision making. NEPA does not require a cost-benefit analysis (40 CFR Part 1502.23) and one has not been conducted in this supplemental EIS. Without monetized estimates of other effects, including the social benefits of energy production, inclusion of a global social cost of carbon analysis would be unbalanced and of limited use to the decision-maker. Given the uncertainties associated with assigning a specific and accurate social cost of carbon resulting from the GMT2 Project, the BLM has elected not to utilize this tool in its analysis.</p>   |
| L76-09 | EarthJustice   | <p>Applying SEI's methodology to BLM's production estimates for GMT-2 shows larger emissions reductions under the No Action Alternative. Foregoing the production of 100.2 mmbbl of oil at GMT-2 would lead to an approximate net reduction of 50 mmbbl in global oil consumption (i.e., around half of that amount would be replaced by increased oil production elsewhere in the world). Additionally, under SEI's model, around 25 mmbbl of oil would be replaced by other oil substitutes such as biofuels or electricity (with an average carbon intensity of 85 percent of oil). Together these substitutions would lead to a net global reduction of greenhouse gas emissions of 11.5 million metric tons of CO2 under the No Action Alternative—more than five times larger than BLM's estimate.</p> | 3.7 Climate Change    | <p>SEI's analysis is incompatible with the method used to calculate emissions from substituted sources. In order to calculate those emissions from a particular fuel, BOEM's Greenhouse Gas Lifecycle Model, uses the emissions expected from refineries as well as the emissions from consumption of fuels based on how those fuels would be consumed. For example, few countries use motor gasoline in as high a proportion to the rest of their oil use as the United States. This means other oil products are consumed at higher rates in those countries, however emissions rate differs based on type of oil product consumed. Without knowing each country's consumption pattern, and the refineries which supply those products (in the United States we use a national emissions factor for refineries) any assumption the model makes would reduce its accuracy. In order to compare the results of the No Action Alternative to the Action Alternatives, the same methodology must be used.</p> |

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| L76-10 | EarthJustice   | Additionally, using BLM's timeline for the production of GMT-2 oil from years 2020 to 2050, 66 we can apply the official social cost of carbon estimates to calculate the avoided social costs under the No Action Alternative. We find that these social costs range from \$197 million to \$1.9 billion (2018 US\$) depending on the choice of a discount rate. <sup>67</sup> Given that the official social cost of carbon estimates are likely quite conservative, this indicates that the social costs of the GMT-2 are comparable to BLM's quantified economic benefits.  | 3.7 Climate Change    | Executive Order 13783 (Promoting Energy Independence and Economic Growth) issued in 2017, rescinded the policy requirement for federal agencies to consider the social cost of carbon in decision making. NEPA does not require a cost-benefit analysis (40 CFR Part 1502.23) and one has not been conducted in this supplemental EIS. Without monetized estimates of other effects, including the social benefits of energy production, inclusion of a global social cost of carbon analysis would be unbalanced and of limited use to the decision-maker. Given the uncertainties associated with assigning a specific and accurate social cost of carbon resulting from the GMT2 Project, the BLM has elected not to utilize this tool in its analysis. |
| L76-11 | EarthJustice   | An accurate estimate of net carbon emissions resulting from the proposed action is a prerequisite for applying a social cost of carbon analysis. A complete and accurate assessment of the costs of GMT-2's impacts on the climate is even more essential to a reasoned decision because BLM takes into account the potential economic benefits of the project. For example, it states that total royalties from GMT-2 would amount to approximately \$1.45 billion; property tax revenue would be about \$226 million; and \$379 million in severance taxes. <sup>68</sup> It is arbitrary for the agency to quantify certain economic benefits of GMT2 (and allude to others) without accurately disclosing the social cost of its likely carbon emissions. | 3.7 Climate Change    | Executive Order 13783 (Promoting Energy Independence and Economic Growth) issued in 2017, rescinded the policy requirement for federal agencies to consider the social cost of carbon in decision making. NEPA does not require a cost-benefit analysis (40 CFR Part 1502.23) and one has not been conducted in this supplemental EIS. Without monetized estimates of other effects, including the social benefits of energy production, inclusion of a global social cost of carbon analysis would be unbalanced and of limited use to the decision-maker. Given the uncertainties associated with assigning a specific and accurate social cost of carbon resulting from the GMT2 Project, the BLM has elected not to utilize this tool in its analysis. |

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| L76-12 | EarthJustice   | <p>BLM also fails to estimate black carbon emissions from GMT-2. GMT-2's potential to affect the Arctic climate and melting sea ice is not limited to greenhouse gas emissions; black carbon also is a concern that BLM must address in its NEPA analysis.</p> | 3.5 Air Quality & Meteorology | <p>Black carbon would be emitted during the GMT2 Project as part of the PM2.5 emissions from diesel-fired equipment, such as engines, boilers, heaters, and pumping units, and other equipment including aircrafts and flares. Although black carbon emissions from the GMT2 Project are not explicitly quantified, black carbon is implicitly included as part of the GMT2 Project PM2.5 emissions inventory used in the air quality impact analysis.</p> <p>Black carbon's influence on arctic climate is complex and still an active area of research. Section 4.2.4 in the SEIS has been revised to include additional information about black carbon and its potential effects on climate based on available, peer-reviewed literature. The revised Section 4.2.4 in the SEIS describes known processes involving black carbon that can have warming or cooling effects on climate. Black carbon's effects on climate depend on location and seasonality of emissions; associated co-emissions; atmospheric mixing state; and dominant meteorological, dynamical, and removal pathways. Furthermore, there are still many uncertainties to resolve to better understand the complex mechanisms and feedbacks between black carbon and its effect on Arctic climate. As a result, it is not currently possible to quantitatively assess the effect of a Project's black carbon emissions on global climate change.</p> |

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| L76-13 | EarthJustice   | BLM fails to estimate GMT-2's emissions of black carbon or identify potential mitigation measures when discussing air quality impacts and climate change. BLM must address this omission in its SEIS to give an accurate accounting of the project's environmental impacts. | 3.7 Climate Change    | <p>Black carbon would be emitted during the GMT2 Project as part of the PM2.5 emissions from diesel-fired equipment, such as engines, boilers, heaters, and pumping units, and other equipment including aircrafts and flares. Although black carbon emissions from the GMT2 Project are not explicitly quantified, black carbon is implicitly included as part of the GMT2 Project PM2.5 emissions inventory used in the air quality impact analysis.</p> <p>Black carbon's influence on arctic climate is complex and still an active area of research. Section 4.2.4 in the SEIS has been revised to include additional information about black carbon and its potential effects on climate based on available, peer-reviewed literature. The revised Section 4.2.4 in the SEIS describes known processes involving black carbon that can have warming or cooling effects on climate. Black carbon's effects on climate depend on location and seasonality of emissions; associated co-emissions; atmospheric mixing state; and dominant meteorological, dynamical, and removal pathways. Furthermore, there are still many uncertainties to resolve to better understand the complex mechanisms and feedbacks between black carbon and its effect on Arctic climate. As a result, it is not currently possible to quantitatively assess the effect of a Project's black carbon emissions on global climate change.</p> |

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| L76-14 | EarthJustice   | BLM asserts that the No Action Alternative would result in only 5 percent less greenhouse gas emissions than the action alternatives. Invoking market substitution, BLM claims that “the energy that would have been produced from the GMT2 Project would be replaced by alternate energy sources.” However, by excluding one of the largest factors in its analysis (non-domestic oil consumption), BLM presents a misleading view of the impacts of its action. Artificially limiting its analysis and not fully reporting the findings of its own model allows BLM to irrationally conclude that increased oil production from GMT-2 would lead to only a negligible increase in emissions over the No Action Alternative. | 3.5 Air Quality & Meteorology | The implications for oil and gas production in other countries relating to U.S. decisions about issuing leases are highly uncertain. In the substitution analysis based on MarketSim, the assumption is made that other oil producing countries will supply oil for U.S. import without additional restraints due to GHG-related policies in those countries. This might change in the future if other countries establish policies to achieve their GHG-related targets. Excluding the foreign oil and gas markets is reasonable. Oil consumption in each country is different, and BOEM does not have information related to which countries would consume less oil. This is important information since consumption patterns vary by country. For gas consumption, BOEM does not have information related to how changes in the U.S. market would affect other countries. Typically, any single project has a negligible impact on overall GHG. Geographical factors and time frame can also play an important role. In the short term, EIA tends to project continued demand. Here is the link to the BOEM GHG technical report:<br><a href="https://www.boem.gov/OCS-Report-BOEM-2016-065/">https://www.boem.gov/OCS-Report-BOEM-2016-065/</a> |
| L76-15 | EarthJustice   | GMT-2, which would lead to oil production for many years into the future, would undermine the country’s—and the world’s—urgently needed implementation of its goals for moving swiftly away from dependence on carbon-based fuels. BLM’s analysis will have to ask a set of questions about how the choice to authorize GMT-2 relates to the overall carbon budget and to decisions about whether to pursue other fossil fuels in light of the reality that a vast majority of already-discovered—much less undiscovered—fossil fuels must be left undeveloped.   | 3.7 Climate Change            | The BLM has prepared the Supplemental EIS to inform decision making related to a proposed project to construct a drill site, access road, pipelines, and ancillary facilities to develop and transport petroleum from the GMT2 production pad for shipment to market. Broader energy policy issues such as the Nation’s ongoing use of fossil fuels or other types of energy sources are beyond the scope of the proposed project and are not included in the Supplemental EIS. The comment also refers to an overall carbon budget which does not exist given the decision by the United States to withdraw from the Paris Agreement in 2017.  |

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| L76-16 | EarthJustice   | <p>BLM must analyze development of Willow as an indirect effect of Alternatives A and B in the GMT-2 EIS because “development of the Willow prospect is dependent on construction of GMT2 with a road.” One of the foreseeable consequences of the development of Willow, which is estimated to contain 300 mmbbl of economically recoverable oil, is additional greenhouse gas emissions. The DSEIS calculates the indirect greenhouse gas emissions of burning the 100 mmbbl of economically recoverable oil in GMT-2. But because development of an additional 300 mmbbl of oil is likely under GMT-2 Alternatives A and B (the roaded alternatives), these alternatives must calculate the greenhouse gas emissions from burning 400 mmbbl and contrast those with Alternative C (the roadless alternative) and the No Action Alternative. BLM’s failure to include the significant increase in foreseeable indirect greenhouse gas emissions under Alternatives A and B skews the comparison of alternatives and makes Alternatives A and B look significantly less environmentally damaging than they are.</p> | 3.5 Air Quality & Meteorology | <p>The BLM received a request from ConocoPhillips Alaska, Inc., to conduct a Master Development Plan EIS to evaluate the Willow development in May 2018. The most current information from that request letter has been incorporated into the cumulative effects analysis. Although the Willow development would use GMT2 and Alpine infrastructure to the maximum extent possible, this project has independent utility from GMT2 and is not considered a connected action under NEPA. The Willow find is sufficiently large that even in the absence of a road connection between GMT2 and GMT1, the Willow project could be developed roadlessly similar to the Alpine field. The direct and indirect impacts of Willow will be analyzed pursuant to NEPA as part of the Willow MDP EIS, which includes a central processing facility as part of the project proposal.</p> |



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| L76-17 | EarthJustice   | <p>In scoping comments, commenters requested that BLM consider a seasonal drilling roadless alternative that would permit drilling only in the winter. BLM considered such a seasonal alternative in its final SEIS for the Greater Mooses Tooth 1 (GMT-1) development project. However, in the DSEIS for GMT-2, BLM eliminated the seasonal alternative from further study because it was not "economically viable" under either a \$62 per barrel and \$123 per barrel price scenario. In order to comply with NEPA, BLM must consider the seasonal alternative because it is reasonable and would meet the purpose and need of the project.</p> <p>...</p> <p>There is nothing in the purpose and need that would eliminate a seasonal alternative from consideration. Nor is there any explanation why an alternative that was considered reasonable under the same purpose and need for GMT-1 has become unreasonable for GMT-2.</p> | 2.1 Proposed Action & Alternatives | <p>Section 1502.14 of NEPA and CEQ guidance requires the EIS to examine all reasonable alternatives to the proposal. 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. When proposed as part of the GMT1 SEIS, it was unknown if seasonal drilling was an economically feasible alternative until the analysis was completed. For the GMT2 SEIS, BLM has included the economic analyses used to screen out a roadless alternative with seasonal drilling as Appendix O. The initial analysis was done in November 2016, and a version with confidential information removed was provided in February 2017. As part of producing the Final SEIS, ConocoPhillips provided updated production estimates for GMT2. The economic analysis was re-run using the same methodology, and showed a roadless alternative with seasonal drilling was still uneconomic. See Appendix O for more details.</p> |

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| L76-18 | Earth justice  | <p>Moreover, BLM has provided no explanation about what assumptions have gone into its economic viability analysis. Given that commenters specifically asked for a seasonal drilling alternative as a possible way to meet the defined project purpose of “protecting important surface resources,” BLM cannot reject such an alternative in one conclusory paragraph. Analysis of the seasonal drilling alternative is especially important because, as explained above, when BLM considers the full impacts of Alternatives A and B, those alternatives might not fulfill the purpose and need of the project to “protect[] important surface resources.”</p>   | 2.1 Proposed Action & Alternatives                                  | <p>BLM has included the economic analyses used to screen out a roadless alternative with seasonal drilling as Appendix O. The initial analysis was done in November 2016, and a version with confidential information removed was provided in February 2017. As part of producing the Final SEIS, ConocoPhillips provided updated production estimates for GMT2. The economic analysis was re-run using the same methodology, and showed a roadless alternative with seasonal drilling was still uneconomic. See Appendix O for more details.</p>   |
| L76-19 | EarthJustice   | <p>BLM’s discussion of social system (including subsistence and environmental justice) impacts is inconsistent with its analysis of other resources in the DSEIS. For all other resources, BLM applies impact levels that rate impacts as negligible, minor, moderate, or major. For social systems, however, BLM does not disclose where the impacts fall on this spectrum. BLM’s decision to disregard these impact levels for a resource for which the impacts will almost certainly be major serves to obfuscate the human impacts of GMT-2 and mislead the public.</p> <p>At the beginning of the Environmental Consequences section in the DSEIS, BLM explains its methodology for determining the impacts of GMT-2 on the various resources....The DSEIS then contains a table called “summary of impact levels for physical and biological resources” that rates impacts for each resource or issue except those categorized as social system resources. BLM does not explain why social system impacts are absent from this table.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>According to BLM's NEPA guidance, the effects analysis must demonstrate that the BLM took a “hard look” at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and the alternatives. NEPA does not require the agency to classify impacts to each resource as minor, moderate or major. The BLM found that the use of GMT2 Impact Criteria did not contribute to meaningfully distinguish the alternatives from each other, and instead detracted from the impact analysis due to confusion and differences of opinion regarding the criteria being applied over focusing on the identified impacts.</p> |

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| L76-20 | EarthJustice   | <p>In the GMT-1 FSEIS, BLM applied a similar impact methodology and presented a similar table of impact levels. But for GMT-1, social system resources, including subsistence and environmental justice, were included in the table. Impacts to sociocultural systems, subsistence, and environmental justice were all rated as “major” in the GMT-1 FSEIS. BLM’s failure to apply the same methodology to social system resources in GMT-2, along with its failure to explain the omission, serves to obscure the severity of impacts to social system resources and presents an incomplete picture of the severity of impacts from GMT-2.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>According to BLM's NEPA guidance, the effects analysis must demonstrate that the BLM took a “hard look” at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and the alternatives. NEPA does not require the agency to classify impacts to each resource as minor, moderate or major. The BLM found that the use of GMT2 Impact Criteria did not contribute to meaningfully distinguish the alternatives from each other, and instead detracted from the impact analysis due to confusion and differences of opinion regarding the criteria being applied over focusing on the identified impacts.</p> |
| L76-21 | EarthJustice   | <p>As explained above, these impacts include the foreseeable indirect impacts of development of the Willow prospect under Alternatives A and B. Willow will occur in close proximity to GMT-2 and will affect the same subsistence resources as GMT-2, further harming the Nuiqsut community’s ability to participate in subsistence hunting and gathering. BLM has failed to fully account for and disclose the significant impacts to subsistence that will flow from GMT-2.</p>  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>As a reasonably foreseeable future development the Willow Master Development Plan is covered in the cumulative effects analyses for all resources, including subsistence.</p>  |

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| L76-22 | EarthJustice   | <p>BLM must fully disclose the risks and environmental impacts of hydraulic fracturing (“fracking”) and other well stimulation to be used at the GMT-2 drilling project....BLM acknowledges that ConocoPhillips intends to use fracking to stimulate oil production, but the DSEIS is silent on the environmental effects of the practice. Fracking and acidizing cause environmental damages beyond those of conventional oil and gas development by producing water and air pollution, increasing the risk of earthquakes and oil spills, and prolonging the life of aging infrastructure and the production and consumption of fossil fuels.</p> | 2.1 Proposed Action & Alternatives | <p>Hydraulic fracturing will only occur in the initial stage of drilling to stimulate flow at the production wells, and is not needed for continued production during the life of the well. All hydraulic fracturing activities will comply with Alaska Oil and Gas Conservation Commission (AOGCC) regulation found in 20 AAC 25.283. Seawater will be hard-piped to the GMT2 site for use in the hydraulic fracturing. There are no plans to use freshwater or to truck the seawater to GMT2. Acidizing will not occur at GMT2 wells because the source rock does not lack permeability that can be enhanced by acidizing. As of July 2018, there have been no reports to AOGCC of increased seismicity on the North Slope or contamination of drinking water resulting from fracking operations. The spill risk associated with trucking fracking waste back to Alpine/CD1 for disposal is addressed in Section 4.5, Impacts of Oil, Saltwater and Hazardous Materials. GMT2 is a conventional sandstone formation, and will not require continuous hydraulic fracturing like unconventional shale formations in the lower 48.</p> |

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| L76-23 | EarthJustice   | Water contamination is a significant risk of fracking because of the hundreds of chemicals used in fracking fluid. | 3.19 Hazardous Materials Spills | <p>The Alaska Oil and Gas Conservation Commission (AOGCC) white paper on hydraulic fracturing in Alaska states "On the North Slope, Alaska's most prolific oil and gas province, freshwater is not a concern. In this part of Alaska, a thick layer of soil is underlain by permafrost – ground that remains frozen year round – so there is no liquid water, other than surface water, to a depth of 1000 to 2000 feet. Below the permafrost, only salt water is present, with very few exceptions. Regardless, wells on the North Slope are held to the same stringent statewide construction requirements." In addition, "In over fifty years of oil and gas production, Alaska has yet to suffer a single documented instance of subsurface damage to an underground source of drinking water. As long as each well is properly constructed and its mechanical integrity is maintained, hydraulic fracturing should have no potential to damage any freshwater."</p> <p>Updated Section 4.5 to include this information.</p> |
| L76-24 | EarthJustice   | Moreover, emissions from fracking have been found to pollute the air hundreds of miles downwind of operations.     | 3.5 Air Quality & Meteorology   | <p>Impacts associated with drilling and hydraulic fracturing operations were evaluated as part of the long-range air quality analyses for Alternatives A and C. Impacts were assessed at two sensitive areas (Arctic National Wildlife Refuge and Gates of the Arctic National Park and Preserve) which are located over 200 kilometers (125 miles) from the GMT2 Project Area. Maximum far-field impacts predicted for Alternative A at these two areas are reported in Tables 4.2-20 and 4.2-21, respectively, of the Draft SEIS. Maximum impacts predicted for Alternative C at these two areas are reported in Tables 4.2-29 and 4.2-30, respectively. The analysis demonstrates potential air quality impacts, including those from drilling and hydraulic fracturing activities, from the GMT2 Project are minimal.</p>  |

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| L76-25 | EarthJustice   | Wastewater from well stimulation is injected underground, a disposal method that can result in leaks and contamination through the loss of well casing integrity.   | 3.1 Geology and Physiography    | No Class 1 disposal wells would be located at the GMT2 pad due to the lack of an acceptable disposal horizon . All Class 1 wastes would be transported offsite for disposal at CD1/Alpine Central Processing Facility, Prudhoe Bay drill site 4 grind and inject. This waste disposal wells are tightly regulated by the Alaska Oil and Gas Conservation Commission (AOGCC) for many reasons including to prevent damage to well-casing. The sites are monitored and regulated by the EPA.   |
| L76-26 | EarthJustice   | Risks to wetlands and water quality can arise from the storage and transport of well stimulation chemicals.   | 3.4 Water Resources             | Agreed. This was mentioned in 2nd paragraph above 4.2.2.4, Comparison of Alternatives.   |
| L76-27 | EarthJustice   | Chemicals that are being stored for fracking can also be susceptible to accidental spills and leaks... The site for GMT-2 is 99 percent wetlands, and it is subject to flooding, ice jams, and other severe weather that make the project vulnerable to spills and leaks. | 3.19 Hazardous Materials Spills | <p>Section 4.5 is updated to include a discussion of potential spills associated with fracking.</p> <p>No changes to the text in response to the 2nd part of this comment. The GMT2 site is predominantly wetlands, and is subject to severe weather, as is the entire North Slope. The Conoco Phillips Oil Discharge Prevention and Contingency Plan for the Alpine Field and Satellites and Alpine Pipeline system provides a description of spill prevention and response strategies, and theoretical for spill responses for different weather conditions.</p> <p>As stated in Section 3.2.2.1, page 80, "There are no large or perennial streams along the GMT2 proposed road and pipeline corridor. The route crosses a small, unnamed beaded stream pool outlet draining from Lake M9925. There are no additional new stream or river crossings proposed for the GMT2 Project, although smaller, seasonal flow drainages may be crossed."</p> |

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| L76-28 | EarthJustice   | The water withdrawal from lakes for the use in fracking must be evaluated... The substantial water withdrawals needed for fracking could cause fish mortality and low water levels in the project area, which could also harm birds such as the yellow-billed loon and spectacled eiders. The DSEIS has not adequately evaluated the volume, use, or environmental impacts of water use for fracking. | 3.4 Water Resources   | Saltwater will be used for all hydraulic fracturing activities and will not result in impacts from water withdrawals from lakes.   |
| L76-29 | EarthJustice   | The water withdrawal from lakes for the use in fracking must be evaluated... The substantial water withdrawals needed for fracking could cause fish mortality and low water levels in the project area, which could also harm birds such as the yellow-billed loon and spectacled eiders. The DSEIS has not adequately evaluated the volume, use, or environmental impacts of water use for fracking. | 3.9 Fish              | Seawater would be hard-piped to GMT2 for use in hydraulic fracturing (HF) at approximately half the wells. There are no plans to utilize freshwater for HF. The Alaska Oil and Gas Conservation Commission regulates HF activities and those regulations can be found at <a href="http://doa.alaska.gov/ogc/regulations/regindex.html">http://doa.alaska.gov/ogc/regulations/regindex.html</a> |
| L76-30 | EarthJustice   | The water withdrawal from lakes for the use in fracking must be evaluated... The substantial water withdrawals needed for fracking could cause fish mortality and low water levels in the project area, which could also harm birds such as the yellow-billed loon and spectacled eiders. The DSEIS has not adequately evaluated the volume, use, or environmental impacts of water use for fracking. | 3.10 Birds            | Hydraulic fracturing for GMT2 will use seawater piped in from the Alpine facility. No water withdrawals from nearby freshwater lakes will occur for use in hydraulic fracturing. Section 2.4, Features Common to All Alternatives, has been updated with a detailed description of the hydraulic fracturing that will occur for the GMT2 Project.  |

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| L76-31 | EarthJustice   | <p>Even if the earthquakes that fracking or related wastewater injection directly generates are small, fracking could be contributing to increased stress in faults that leaves those faults more susceptible to otherwise naturally triggered earthquakes of a greater magnitude. Alaska is seismically active, and the impacts on this seismicity on the project area need to be disclosed.</p> | 3.1 Geology and Physiography | <p>There is no evidence of induced seismicity from oil and gas activities on Alaska's North Slope. Concerns regarding hydraulic fracturing on the North Slope of Alaska appear to be based in the understanding of hydraulic fracturing activities in unconventional plays in the lower 48. Hydraulic Fracturing activities at GMT2 will occur in conventional plays, meaning reservoirs have a well defined areal extent and are porous and permeable, which generally only require initial stimulation and far less volumes of fluid. All hydraulic fracturing activities are required to be reported to <a href="http://www.fracfocus.org">www.fracfocus.org</a>, which includes well information and chemical disclosure. AOGCC regulations regarding hydraulic fracturing activities can be found at <a href="http://doa.alaska.gov/ogc/regulations.regindex.html">http://doa.alaska.gov/ogc/regulations.regindex.html</a>.</p> |



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| L76-32 | EarthJustice   | BLM must analyze these serious hazards of fracking and well stimulation in its SEIS. It must also analyze the cumulative environmental, health and climate change impacts of well stimulation that is occurring across the North Slope. | 4.0 Cumulative Effects Projects and Methodology | Hydraulic fracturing will only occur in the initial stage of drilling to stimulate flow at the production wells, and is not needed for continued production during the life of the well. All hydraulic fracturing activities will comply with Alaska Oil and Gas Conservation Commission (AOGCC) regulation found in 20 AAC 25.283. Seawater will be hard-piped to the GMT2 site for use in the hydraulic fracturing. There are no plans to use freshwater or to truck the seawater to GMT2. Acidizing will not occur at GMT2 wells because the source rock does not lack permeability that can be enhanced by acidizing. As of July 2018, there have been no reports to AOGCC of increased seismicity on the North Slope or contamination of drinking water resulting from fracking operations. The spill risk associated with trucking fracking waste back to Alpine/CD1 for disposal is addressed in Section 4.5, Impacts of Oil, Saltwater and Hazardous Materials. GMT2 is a conventional sandstone formation, and will not require continuous hydraulic fracturing like unconventional shale formations in the lower 48. GHG emissions from hydraulic fracturing were included in the quantitative estimate of GHG resulting from GMT2. |

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| L76-33 | EarthJustice   | BLM must analyze these serious hazards of fracking and well stimulation in its SEIS. It must also analyze the cumulative environmental, health and climate change impacts of well stimulation that is occurring across the North Slope. | 3.18 Public Health    | Hydraulic fracturing will only occur in the initial stage of drilling to stimulate flow at the production wells, and is not needed for continued production during the life of the well. All hydraulic fracturing activities will comply with Alaska Oil and Gas Conservation Commission (AOGCC) regulation found in 20 AAC 25.283. Seawater will be hard-piped to the GMT2 site for use in the hydraulic fracturing. There are no plans to use freshwater or to truck the seawater to GMT2. Acidizing will not occur at GMT2 wells because the source rock does not lack permeability that can be enhanced by acidizing. As of July 2018, there have been no reports to AOGCC of increased seismicity on the North Slope or contamination of drinking water resulting from fracking operations. The spill risk associated with trucking fracking waste back to Alpine/CD1 for disposal is addressed in Section 4.5, Impacts of Oil, Saltwater and Hazardous Materials. GMT2 is a conventional sandstone formation, and will not require continuous hydraulic fracturing like unconventional shale formations in the lower 48. GHG emissions from hydraulic fracturing were included in the quantitative estimate of GHG resulting from GMT2. |

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| L76-34 | EarthJustice   | BLM must analyze these serious hazards of fracking and well stimulation in its SEIS. It must also analyze the cumulative environmental, health and climate change impacts of well stimulation that is occurring across the North Slope.  | 3.7 Climate Change                   | Hydraulic fracturing will only occur in the initial stage of drilling to stimulate flow at the production wells, and is not needed for continued production during the life of the well. All hydraulic fracturing activities will comply with Alaska Oil and Gas Conservation Commission (AOGCC) regulation found in 20 AAC 25.283. Seawater will be hard-piped to the GMT2 site for use in the hydraulic fracturing. There are no plans to use freshwater or to truck the seawater to GMT2. Acidizing will not occur at GMT2 wells because the source rock does not lack permeability that can be enhanced by acidizing. As of July 2018, there have been no reports to AOGCC of increased seismicity on the North Slope or contamination of drinking water resulting from fracking operations. The spill risk associated with trucking fracking waste back to Alpine/CD1 for disposal is addressed in Section 4.5, Impacts of Oil, Saltwater and Hazardous Materials. GMT2 is a conventional sandstone formation, and will not require continuous hydraulic fracturing like unconventional shale formations in the lower 48. Text in Sections 2.4, 4.3 and 4.5 have been updated to reflect this information. |
| L76-35 | Earth justice  | BLM must consider alternatives that mitigate or avoid the effects of fracking on the human environment, including an alternative that prohibits fracking and acidization.  | 2.1 Proposed Action & Alternatives   | Acidizing will not occur at GMT2 wells because the source rock does not lack permeability that can be enhanced by acidizing .   |
| L76-36 | Earth justice  | For the foregoing reasons, GMT-2, as proposed, threatens significant impacts to the climate and to biological and social resources. The DSEIS does not satisfy NEPA's requirements to take a hard look at these significant impacts. We therefore request that BLM revise the DSEIS and solicit public comment on the revised draft before it considers finalizing the DSEIS and selecting an alternative. | 1.1 Executive Summary & Introduction | This is a supplemental EIS, supplementing the 2004 Alpine Satellite Development Plan EIS to address new information and minor changes to the project proposal. The 2004 EIS addressed impacts to climate, biological, and social resources. Changes to the project proposal reduce impacts compared to those analyzed in the 2004 Alpine EIS.   |

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| L77-1  | Audubon Alaska | <p>Explain deviations from Best Management Practices as described in the IAP</p> <p>The recommended lease stipulations and best management practices (BMPs) that appear in the IAP are important tools for maintaining the balanced approach as development takes place in the NPRA. The GMT2 project should adhere as closely as possible to the BMPs in the IAP.</p>   | 2.1 Proposed Action & Alternatives | <p>The BLM regards the BMPs identified in the 2013 IAP ROD as extremely important requirements applicable to operation and development in the reserve. However, given that the IAP covers the entirety of the 23 million acre NPR-A, it was recognized by the BLM that in certain circumstances, operators may not be able to meet the requirements/specified in certain BMPs. It is for this reason that the ability for an applicant to request a deviation from BMPs as part of an authorization application is included within the IAP ROD. In proposing a deviation, the BLM must determine whether or not the objective of the BMP will be met before granting the deviation. The SEIS does not grant deviations to existing lease stipulations or best management practices, only a Record of Decision can grant a deviation. Instead, Section 2.2 of the SEIS describes the two deviations that are being requested by the applicant, and provides information regarding the rationale of the request. If the deviations are granted in the Record of Decision, the document will include text that explains the information considered in making the decision to allow a deviation to occur.</p> |
| L77-10 | Audubon Alaska | <p>The DEIS should also compare the cumulative impacts to caribou between the alternatives. The cumulative impacts section for caribou compares the direct impacts of roads and air traffic for caribou from the alternatives, but does not actually compare the cumulative impacts between the alternatives. This is an opportunity to discuss whether and how a road-based or roadless alternative may shape future development in the project area. If this type of discussion and analysis exists in prior planning documents, the agency should reference that material and apply those ideas to the current project.</p> | 3.11 Caribou                       | <p>The DEIS acknowledges future leases and proposed oil development could expose a large number of the TCH caribou to exploration and development activities during most of the year.</p>   |

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| L77-11 | Audubon Alaska | <p>Monitoring and public access to data</p> <p>Audubon Alaska continues to advocate for greater public access to the data that underlie the agency's analysis and conclusions for the Western Arctic, like those contained in this DEIS. For example, in the section on caribou in the Affected Environment Chapter, the agency relies heavily on data contained in industry reports which are not available to the public. The agency should consider offering shapefiles or geodatabases on their e-planning website in a similar manner to data made available that was used in developing the IAP.</p>   | 5.1 Maps and GIS Data              | <p>We understand the request for greater transparency of project data and thank you for noticing that our IAP website did make GIS data available to the public. GIS data for the NPRA IAP were created by BLM-Alaska and were, therefore, public information. Data for the GMT-2 project from Conoco was used with a data use agreement stating that the data are "the proprietary confidential property of Conoco Phillips Alaska Inc. to be used solely to create maps and diagrams of CPAI project areas." Data were, therefore, not distributed to the public.</p> |
| L77-2  | Audubon Alaska | <p>The Draft EIS explains that BLM will grant deviations from Stipulation E-2 and BMP E-7(c), but does not connect the dots to explain why in this case these deviations are being granted. Instead, the agency references reasons for granting these deviations in the past for GMT1,1 or simply states that the agency will grant the deviations. The DEIS does explain that the road for both Alternative A and Alternative B will be placed to protect the Fish Creek drainage area from a potential oil spill from the pipeline,<sup>3</sup> but it's not clear whether this rationale supports the placement of the road north of the pipeline, or if this rationale supports the granting of the BMP deviations. The agency should add explanation for why it grants the deviations for the areas indicated on Map 2.5-2 and Map 2.6-2.</p> | 2.1 Proposed Action & Alternatives | <p>The SEIS does not grant deviations to existing lease stipulations or best management practices, only a Record of Decision can grant a deviation. Instead, Section 2.2 of the SEIS describes the two deviations that are being requested by the applicant, and provides information regarding the rationale of the request. If the deviations are granted in the Record of Decision, the document will include text that explains the information considered in making the decision to allow a deviation to occur.</p>  |

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| L77-4  | Audubon Alaska | <p>The issue of predation on loons, however, merits more analysis and description in the DEIS. In the Affected Environment section, the DEIS explains that loons are vulnerable to nest predation by a number of avian predators including Golden Eagles, Bald Eagles, Short-eared Owls, Northern Harriers, Glaucous Gulls, Parasitic Jaegers, and Common Ravens. The DEIS also notes that the abundance of predators, including Common Ravens, have increased as infrastructure in Prudhoe Bay has increased. But in the section on Environmental Consequences, the analysis on the topic of predation on Yellow-billed Loons is a single statement that only mentions ravens specifically at the Alpine site.</p> | 3.10 Birds            | <p>Thank you for your comment. Information has been added in the yellow-billed loon sections of chapter 3 and 4 to provide more information for the reader.</p> |

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| L77-5  | Audubon Alaska | <p>This short statement misses consideration of other avian predators that are mentioned earlier in the DEIS, and does not make clear the connection between observations and studies elsewhere and what could occur at GMT2. The increase of ravens in Prudhoe Bay is applicable to the GMT2 site and the cumulative effects analysis. Research on the connection between infrastructure and increased nest predation on passerines and shorebirds is also applicable to analysis on this topic. Explaining the dynamics—or pointing out the gaps in our understanding—of infrastructure causing or correlating with an increase in avian predation should be included in the sections analyzing impacts on Yellow-billed Loons in the area, as well as part of the cumulative impacts section. This topic is of particular interest for this project as development abuts the Colville River Special Area, an area where raptors nest in high densities. With abundant source populations so close to novel nesting and perching habitat, these areas could experience significantly more colonization than that observed in the Prudhoe Bay industrial complex.</p> | 3.10 Birds            | <p>Thank you for your comment. Research on the connection between infrastructure and increased nest predation on passerines and shorebirds (Liebezeit et al. 2009) showed no effect of human infrastructure on nest survival for shorebirds as a group and that posteriori fine-scale analysis suggested that red phalaroped and red-necked phalaropes combined had lower productivity closer to infrastructure but no relationship was found for the 2 most abundant shorebirds in the study area. However evidence was found that risk of predation for passerine nests increased within 5 km of infrastructure. Text will be added to the passerine sections in chapter 3 and 4 to reflect this information.</p> |

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| L77-7  | Audubon Alaska | <p>Cumulative impacts on caribou</p> <p>The cumulative impacts section for caribou in the DEIS should acknowledge the uncertainty in population-level impacts to caribou herds from oil and gas development. The cumulative impacts section concludes, “[o]verall, industry and agency actions on the North Slope are expected to have minor impacts to caribou herd productivity.” But in other sections the DEIS discusses data, observations, and trends that would tend to support a conclusion of uncertainty instead of a conclusion of cumulatively “minor” impacts in the overall development picture facing the North Slope of Alaska. The DEIS notes how the Central Arctic Herd has in fact responded to oil and gas development in Prudhoe Bay, but notes that research has yet to determine whether these impacts are reflected in population trends:</p> <p>“Oil and gas development has altered the distribution of female Central Arctic Herd caribou during the calving season and interfered with caribou movements between inland feeding areas and coastal insect relief areas. Female caribou may experience lower parturition rates when in close proximity to oil field development. . . . Thus, disturbance of caribou due to oil field development may adversely affect caribou populations, but these impacts are not readily apparent based on population trends.”</p> | 3.11 Caribou          | <p>This is a relevant comment pertaining to the uncertainty in population-level impacts to caribou herds from oil and gas development. The comment challenges the concluding statement that industry and agency actions on the North Slope are expected to have minor impacts to caribou herd productivity. The cumulative impacts from Willow would include: direct and indirect loss of habitat that could displace caribou from preferred habitats and result in long term changes in distribution of the TCH. The cumulative impact section reflects this uncertainty in population level effects due to oil development. In addition the new Willow Project has been added to the cumulative impact section.</p> |



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| L77-8  | Audubon<br>Alaska | <p>The DEIS should consider that the GMT2 project is one part of overall past and present oil infrastructure that could give rise to a level of development that causes caribou in the project area to respond with this type of behavior. Whether this in fact manifests in a population-level impact is not yet definitively known, but the agency's conclusion on this matter should be one of uncertainty rather than an expectation of minor impacts.</p>  | 3.11 Caribou          | <p>This is a relevant comment pertaining to the uncertainty in population-level impacts to caribou herds from oil and gas development. The comment challenges the concluding statement that industry and agency actions on the North Slope are expected to have minor impacts to caribou herd productivity. The cumulative impacts from Willow would include: direct and indirect loss of habitat that could displace caribou from preferred habitats and result in long term changes in distribution of the TCH. The cumulative impact section reflects this uncertainty in population level effects due to oil development. In addition the new Willow Project has been added to the cumulative impact section.</p>   |
| L77-9  | Audubon<br>Alaska | <p>The cumulative impacts section for caribou should also tie the discussion on the Central Arctic Herd response to infrastructure to population numbers for the Central Arctic Herd and the Teshekpuk Herd. In the same paragraph where the DEIS notes the pattern of displacement seen in the Central Arctic Herd, the agency mentions the Western Arctic Caribou Herd population numbers, but omits even any reference to current population numbers for the Teshekpuk and Central Arctic Herds. The agency should add reference to the population estimates and trends for these two herds, which overlap the project area. The agency should also offer analysis of a connection between the response pattern seen in the Central Arctic Herd and the trend and population status for the herds within the project area. We also note that a greater proportion of caribou are over-wintering in the NPRA, which has implications for winter road construction. This issue needs more discussion, and should be tied to the cumulative impacts analysis for caribou in the DEIS.</p> | 3.11 Caribou          | <p>Part 1. 2017 population estimates and trends for the TCH show an increase in population since 2015. Results from 2016 and 2017 population estimates were not directly comparable but demographic metrics collected during this same period indicated the herd has probably remained relatively stable. (see update to 3.3.4.1 Population dynamics from ADGF). The statement that "disturbance of caribou due to oil field development may adversely affect caribou populations, but these impacts are not readily apparent based on population trends." is still relevant. Part 2. An analysis of a connection between the response pattern seen in the Central Arctic Herd and trend and population status for the TCH based on data discussed in the Population Dynamics section show similar patterns of population increases and decreases since 1990, although the TCH population seems to have increased in recent years (since 2011) while the CAH has steadily decreased or remained stable. The CAH is currently about 26,000 animals much less than a peak of 68,000 animals in 2010. TCH is estimated at over 50,000 animals compared to a peak estimate of 68,000 caribou in 2008.</p> |

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| L78-2  |                              | Alternative A will include a road connection to existing infrastructure at GMTI facilities. This would increase access to emergency response resources from both the human resource and environmental perspectives removing the weather factor involved with remote sites that are dependent on aircraft only.  | 3.18 Public Health    | Noted, further discussion in SEIS in Section 2.7, Alternative C: Roadless Access and Section 4.5, Impacts of Oil, Saltwater and Hazardous Materials Spills. |
| L81-1  | US Fish And Wildlife Service | The DSEIS indicates the new cells mined for the GMT-2 development will be rehabilitated as a matrix of undisturbed tundra, deep water, shallow, and very shallow littoral, and waterfowl nesting islands. The previous rehabilitation efforts of Phase 1, mined in the late 1990s and early 2000s, to create similar habitats as described above have failed. As of 12-years post-construction approximately 80% of the overburden islands have disappeared and the channel cut islands and adjacent littoral area are beginning to subside. The latest photo (2017) shows an approximately 95% reduction in the overburden islands and continued subsidence of the channel cut islands and complete subsidence of the littoral shelf to the north. The Service therefore suggests Phase 3 of the ASRC pit be mined without the intention of creating shallow habitats. Best Management Practices (BMPs) should be used during excavation (3:1 side slopes and a perimeter berm to prevent thermokarsting and for safety.) Once the pit fills with water the perimeter berm can be pushed into the pit. | 4.2 Mitigation        | See Section 4.3.3 Birds, Potential Mitigation Measure 3: Gravel Pit Rehabilitation.   |

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| L81-10 | US Fish And Wildlife Service | <p>Cumulative Wetlands Impacts: Wetland impacts are assessed as the difference between the current wetland functional condition (baseline) and the anticipated functional condition after the wetland impact (USACE undated). The length of time after the impact when the wetland functional condition is assessed can have a substantial impact on the difference between before and after wetland function. Wetland type and latitude can also affect this "temporal" delay between baseline function and the reclaimed function. In addition, some wetland types never recover all their wetland functions after an impact (i.e., a permanent loss of function). The Service recommends the impacts analysis for wetlands include an assessment of the difference between baseline and post-impact wetland function, based on a defined length of recovery. Any functional loss after that period should be considered a permanent loss. Temporal loss (i.e., the time lag between the loss and replacement of wetland function) should also be considered. The Service recommends considering any temporary loss in wetland function after 10 to 15 growing seasons on the North Slope a permanent loss.</p> | 3.8 Vegetation and Wetlands | <p>Added: "All areas of direct impact are expected to remain impacted for more than 10 to 15 years, which will result in a permanent loss of wetland function." in impacts section for Alt. A, B, and C.</p> |

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| L81-3  | US Fish And Wildlife Service | Migratory Birds: Approximately 80 species of migratory birds are known to move through or nest within the vicinity of the proposed project. Of these, nine species (red-throated loon, yellow-billed loon, peregrine falcon, whimbrel, bar-tailed godwit, red knot, dunlin, buff-breasted sandpiper, and arctic tern) are considered to be Birds of Conservation Concern by the Service due to their small population size, population decline, and/or sensitivity to disturbance. Three species of birds, golden eagle, short-eared owl, and red knot are listed as sensitive species by the Bureau of Land Management (BLM) and may occur in the project area.                                    | 3.10 Birds            | Thank you for your comment. This EIS lists the BLM sensitive species and provides information on those species  |
| L81-4  | US Fish And Wildlife Service | Fish: Eighteen freshwater, anadromous, and nearshore marine fish species are known to occur within the GMT-2 project area including Arctic grayling, broad whitefish, and least cisco. Of these, 8 species (arctic and least cisco, Dolly Varden, arctic grayling, broad and humpback whitefish, and pink and chum salmon) are considered to be important subsistence species for Nuiqsut. Essential Fish Habitat (EFH) has been established for pink and chum salmon in the lower Colville River. The Ublutuocho River and Fish Creek are used by most fish as migratory channels within the GMT-2 area, providing overwintering habitat and access to beaded streams and lakes during the summer. | 3.9 Fish              | Potential impacts to fish species ("trust resources" of the USFWS) are thoroughly analyzed for each alternative, with numerous BMPs included that are intended to mitigate each of those potential impacts. |

| Comm # | Commenter Name               | Comments   | Comment Category Code                  | Comment Response  |
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| L81-6  | US Fish And Wildlife Service | <p>The Service listed the polar bear as a threatened species under the Endangered Species Act on May 15, 2008 (73 FR 28212). On October 29, 2009, the Service proposed critical habitat for polar bears (74 FR 56058) and a final rule designating critical habitat was issued on December 7, 2010 (75 FR 76086). However, the U.S. District Court for the District of Alaska issued a decision to the Service on January 11, 2013 which vacated and remanded the final rule on polar bear critical habitat in Alaska Oil and Gas Association et al. v. Salazar et al. (D. Alaska) (3:11-cv-00025-RRB). On February 29, 2016 the Ninth Circuit Court of Appeals upheld the final polar bear critical habitat rule on all points. The GMT-2 project area would occur within Unit 2, terrestrial denning habitat, of designated polar bear critical habitat (75 FR 76085).</p> | 3.13 Threatened and Endangered Species | Thank you for your comment. The polar bear section has been edited to make clear that part of the project study area is within polar bear critical habitat.                         |
| L81-6  | US Fish And Wildlife Service | <p>Wetlands and Vegetation: The Wetlands and Vegetation chapter of the DSEIS is comprehensive and is generally well written. The Service appreciates the development and inclusion of inundation and drying estimates as impacts from diverted sheetflow due to construction of GMT-2 infrastructure. Even with 2 ft. diameter culverts placed approximately every 1000 ft. along the road, upstream inundation estimates for Alternative A (preferred alternative) exceed 160 acres and downstream drying impacts exceed 70 acres. The alteration of sheetflow across the landscape as a result of long-linear structures, such as roads, has substantive impacts and may over time change vegetation and habitats through alteration and channelization of sheetflow through culverts.</p>   | 3.8 Vegetation and Wetlands            | Added: "... however, change in vegetation over time is still possible due to alteration and channelization of sheet flow through culverts." in list of direct and indirect impacts. |

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| L81-7  | US Fish And Wildlife Service | <p>Dust impacts from vehicles on the road also may impact vegetation on the downwind side of the road. According to the DSEIS however, these impacts likely do not exceed beyond 300 ft. from the road. This estimate is based on a study conducted in the 1970s along the haul road. The Service believes dust impacts exceed 300 ft. (based on field observations and measurements) and encourages the development of a comprehensive study to determine dust-related impacts associated with new developments in the NPR-A. The Service also supports the Proposed New Mitigation Measure 1: Alaska Natural Resources Conservation Service Level II Soil Survey to establish baseline conditions of soils within 1,000-meter radius of all planned gravel infrastructure in NPR-A. This study would establish baseline soil conditions and allow the BLM to monitor changes to the soil profile and vegetation as a result of dust resulting from industrial activity.</p> | 3.8 Vegetation and Wetlands | <p>The best available information indicates a 300 ft. zone of impact from dust. Therefore, that is the only information available to base effects upon.</p> |

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| L81-8  | US Fish And Wildlife Service | <p>Facility Lighting: As with any development project, unavoidable impacts to the area surrounding the GMT-2 development are likely to occur. However, the Service believes some of these impacts such as excessive light can be mitigated through the incorporation of specific design features and placement of the facilities. Lighted facilities (drill rigs and buildings) can cause episodic bird collisions with infrastructure, especially during migration and inclement weather. On the North Slope birds are especially vulnerable to collisions during fall (mostly westward) migration when ambient light is low and there are frequent periods of stormy weather and fog. Birds are attracted to the lights and become disoriented potentially colliding with buildings and drill rigs. To mitigate the collision risk, the Service recommends facility lighting be shielded from above thereby reducing reflectivity in clouds and fog.</p> | 4.2 Mitigation        | See Section 4.3.3 Birds, Potential Mitigation Measure 2: Facility Lighting. |

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| L81-9  | US Fish And Wildlife Service | <p>Invasive Weeds: The Service recommends implementing BMPs for minimizing the introduction and proliferation of invasive species, including thoroughly washing equipment to remove dirt and debris that might harbor invasive seeds before entering the jobsite, using weed-free fill, appropriately disposing of spoil and vegetation contaminated with invasive species, and revegetating with local native plant species. This is particularly important at sites adjacent to waterways where an introduced species could be easily transported downstream and spread throughout areas that would not otherwise be exposed to invasive species. River corridors provide an easy pathway for spreading invasive species throughout the otherwise inaccessible regions of Alaska. We also recommend on-the-ground personnel understand their role in preventing and controlling the introduction and spread of aquatic and terrestrial invasive species.</p> | 3.8 Vegetation and Wetlands | <p>The following stipulation was included in the last Integrated Activity Plan for all development in NPRA. Alternative B-2 was chosen in the ROD, so this stipulation applies to GMT2.<br/> <b>M-2 Best Management Practice. NOTE: This best management practice is applicable only to Alternative B-2.</b> There would be no comparable provision for any of the other alternatives. <u>Objective:</u> Prevent the introduction, or spread, of non-native, invasive plant species in the NPR-A.<br/> <u>Requirement/Standard:</u> Certify that all equipment and vehicles (intended for use either off or on roads) are weed-free prior to transporting them into the NPR-A. Monitor annually along roads for non-native invasive species, and initiate effective weed control measures upon evidence of their introduction. Prior to operations in the NPR-A, submit a plan for the BLM's approval, detailing the methods for cleaning equipment and vehicles, monitoring for weeds and weed control.</p> |



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| L82-1  | Conservation Lands Foundation | <p>Statistics generated from GMT-1 Final SEIS and BLM lease sale data, and Braund &amp; Associates 1994-2003, as reported in Appendix G, Figure G-1 of the Final Supplemental EIS for GMT1, suggest there are approximately 724,774 acres of leased lands within the NPR-A within Nuiqsut's subsistence use area. Statistics generated from GMT-1 Final SEIS, BLM lease sale data, Alaska Department of Natural Resources data, and Bureau of Ocean Energy Management data, indicate that the total acreage of Nuiqsut subsistence area lands and waters that has been leased is much greater and includes approximately 3 million acres broken down as follows: 724,774 acres of NPR-A lands; 1,581,213 acres of state onshore lands; 302,575 acres in federal off- shore waters, and 416,255 acres in State offshore waters.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>The text has been edited to include this information in the Cumulative Effects: Subsistence section.</p>  |
| L82-2  | Conservation Lands Foundation | <p>GMT-2 should not move forward until the BLM completes the RMS and offsets impacts resulting from the violation of the Fish Creek Setback. Instead, Conoco and BLM are pushing forward with permitting for GMT-2. The GMT-2 project would further extend the industrial footprint and road network by requiring an additional 8.1-mile gravel access road, a 14-acre gravel pad with capacity for 48 wells, an additional 8.6 miles of pipeline and more, while also serving as a building block for future development. This infrastructure represents a doubling of the size of GMT-1, which was already found to have major unavoidable and adverse impacts to subsistence access and resources for Alaska Native communities in the arctic. This is happening without the RMS.</p>   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>GMT2 was originally approved for development as CD-7 in 2004 under the Alpine Satellite Development Plan EIS, as was GMT1 (as CD-6). As described in Section 1.4 Purpose and Need for Federal Action, under federal statutes the BLM is required to issue the GMT2 permit for oil development in the NPR-A and cannot choose the No-Action alternative. Text is revised to include discussion regarding the GMT1 Compensatory Mitigation Fund and the Regional Mitigation Strategy.</p> |

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| L82-3  | Conservation Lands Foundation | CLF staff recently attended the GMT-2 meeting in Nuiqsut. Members of the community proposed a no-action alternative until the impacts of GMT-1 are fully realized. They noted that BLM was moving too quickly without fully analyzing the effects to human health and subsistence resources. Many expressed the need for a comprehensive plan. These are very reasonable requests and CLF strongly urges BLM to listen-to and follow through on the promises made to the Village of Nuiqsut. Specifically, BLM should delay further development until the agency: 1) fully studies the impacts to human health and subsistence of GMT-1 & GMT-2; and 2) finalize the RMS and mitigate for the harm caused by GMT-1  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | GMT2 was originally approved for development as CD-7 in 2004 under the Alpine Satellite Development Plan EIS, as was GMT1 (as CD-6). As described in Section 1.4 Purpose and Need for Federal Action, under federal statutes the BLM is required to issue the GMT2 permit for oil development in the NPR-A and cannot choose the No-Action alternative. Text is revised to include discussion regarding the GMT1 Compensatory Mitigation Fund and the Regional Mitigation Strategy.  |
| L82-4  | Conservation Lands Foundation | CLF staff recently attended the GMT-2 meeting in Nuiqsut. Members of the community proposed a no-action alternative until the impacts of GMT-1 are fully realized. They noted that BLM was moving too quickly without fully analyzing the effects to human health and subsistence resources. Many expressed the need for a comprehensive plan. These are very reasonable requests and CLF strongly urges BLM to listen-to and follow through on the promises made to the Village of Nuiqsut. Specifically, BLM should delay further development until the agency: 1) fully studies the impacts to human health and subsistence of GMT-1 & GMT-2; and 2) finalize the RMS and mitigate for the harm caused by GMT-1. | 3.18 Public Health  | GMT2 was originally approved for development as CD-7 in 2004 under the Alpine Satellite Development Plan EIS, as was GMT1 (as CD-6). As described in Section 1.4 Purpose and Need for Federal Action, under federal statutes and the terms of the subject NPR-A leases the BLM is required to issue a permit allowing for develop of GMT2's oil and gas, subject to reasonable regulation and cannot choose the No-Action alternative. The BLM is also required to process permit applications in a timely manner pursuant to Onshore Order 1. Text is revised to include discussion regarding the GMT1 Compensatory Mitigation Fund and the Regional Mitigation Strategy. |

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| L83    | Environmental Defense Fund, Institute for Policy Integrity, Natural Resources Defense Council, Sierra Club, Union of Concerned Scientists, and Wilderness Society | See Letter L83   | 3.7 Climate Change    | Executive Order 13783 (Promoting Energy Independence and Economic Growth) issued in 2017, rescinded the policy requirement for federal agencies to consider the social cost of carbon in decision making. NEPA does not require a cost-benefit analysis (40 CFR Part 1502.23) and one has not been conducted in this supplemental EIS. Without monetized estimates of other effects, including the social benefits of energy production, inclusion of a global social cost of carbon analysis would be unbalanced and of limited use to the decision-maker. Given the uncertainties associated with assigning a specific and accurate social cost of carbon resulting from the GMT2 Project, the BLM has elected not to utilize this tool in its analysis. |
| L85-1  | BP Exploration Alaska, Inc.   | The Draft SEIS seeks to provide both qualitative and quantitative impacts from GHG emissions from the project. However, the document does not provide a context for the estimated GHG emissions from this relatively small project. While the DSEIS estimates that GHG emissions over the life of the project (30 years), the estimated direct GHG emissions (457,000 metric tons) are quite small on a national/global perspective. On an annual basis, these GHG emissions (16,000 metric tpy) are equivalent to the GHG emissions from roughly 1,700 homes in the U.S. [US EPA GHG Equivalencies Calculator, <a href="https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator">https://www.epa.gov/energy/greenhouse-gas-equivalencies-calculator</a> ]. As a point of reference, the U.S. builds roughly 900,000 to 1.4 million new homes annually. Thus, the direct GHG emissions from GMT2 represent only 0.2% of the emissions from new homes in the U.S. on an annual basis. This level of GHG emissions for the project therefore does not warrant significant further analysis in the SEIS. | 3.7 Climate Change    | It is not appropriate to evaluate emissions solely as a specific portion of national emissions. What matters is the difference between the Alternatives, not the difference between some of the Alternatives and other projects (like home building) which would not replace the proposed action. The climate change analysis has been updated between Draft and Final to include a comparison of the estimated oil production at GMT2 to oil produced on the North Slope, oil produced in the State of Alaska, and oil produced nationally. See section 4.2.4, Climate Change.  |

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| L85-2  | BP Exploration Alaska, Inc. | As calculated in the DSEIS, the indirect GHG emissions are nearly 2 orders of magnitude greater than the direct GHG emissions (457,000 metric tons vs. 43.18 million metric tons), and the indirect GHG emissions are mostly related to downstream refining and consumption of the oil produced from GMT2. Market forces drive these indirect emissions and oil refinery production and oil consumption will be produced regardless of the development of GMT2. The "No Action" alternative essentially verifies this; however, the assumptions and inputs used for the calculation of the indirect emissions (for both the Action and the No Action alternatives) have significant inherent uncertainties. Additionally, minor oil market influences (such as fuel efficiency policies, refinery outages, and/or global market stability) may greatly impact the levels of these indirect emissions. | 3.7 Climate Change    | The BOEM Greenhouse Gas Lifecycle Model represents the best available information incorporating such market forces and was used in the GMT2 analysis for this reason. Uncertainties and assumptions of the modeling are spelled out in Appendix H. |
| L85-3  | BP Exploration Alaska, Inc. | The DSEIS does not fully quantify the benefits produced from the development of the project. The development of GMT2 provides additional oil for the continued operations of the Alpine production facility, which in turn provides oil for the continued operations of the Trans-Alaska Pipeline System (TAPS) and the greater Alaska North Slope. The Alpine facility also provides natural gas for home heating and power plant operations for the Village of Nuiqsut (as described in Section 4.4.2.1). This natural gas would likely not be available if Alpine operations were ended.   | 3.16 Economy          | Extending the life of the Trans-Alaska Pipeline System is disclosed in 4.4.3.2. The benefits of access to natural gas for the community of Nuiqsut as a result of oil and gas development are mentioned in Section 4.4.7, Public Health.           |

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| L85-4  | BP Exploration Alaska, Inc. | The environmental benefits of this natural gas are not evaluated in the DSEIS. As compared to the Village's prior use of fuel oil, natural gas results in improved air quality, lower GHG emissions, and lower fuel spill risks. These beneficial environmental impacts from continued Alpine operations should be considered in the SEIS. | 3.18 Public Health                                    | An acknowledgement of the GMT2 Project's contribution to Nuiqsut's natural gas program has been added to Section 4.4.6.1   |
| L85-5  | BP Exploration Alaska, Inc. | The environmental benefits of this natural gas are not evaluated in the DSEIS. As compared to the Village's prior use of fuel oil, natural gas results in improved air quality, lower GHG emissions, and lower fuel spill risks. These beneficial environmental impacts from continued Alpine operations should be considered in the SEIS. | 3.5 Air Quality, Climate and Meteorology, Air Quality | The text of the SEIS has been updated in Section 4.4.6.1 to acknowledge GMT2's contributions to natural gas energy in Nuiqsut.   |
| L85-6  | BP Exploration Alaska, Inc. | The DSEIS should be updated to reflect current North Slope projected TAPS throughputs and assumptions for the economic impact analyses described in Section 4.4.3 (Table 4.4-4) (e.g. the Fall 2017 and Spring 2018 Revenue Forecast, and the EIA's Annual Energy Outlook for 2017).   | 3.16 Economy  | Total Alaska North Slope production numbers were updated with the most current projections from the Alaska Department of Revenue.  |
| L86-1  | North Slope Borough         | Nuiqsut's hunters are concerned that seismic exploration and helicopter activity drive caribou away. We request that aerial helicopter surveys be cut down to every other year to reduce air traffic.  | 4.2 Mitigation  | Two proposed mitigation measures described in Section 4.4.5 Subsistence address concerns about caribou during high activity. Potential Mitigation Measure 2: Suspend Non-essential Helicopter Traffic during Peak Caribou Season addresses a break of air activity during peak caribou hunting time. Potential Mitigation Measure 3: Consultation Regarding Aircraft Communication Protocols addresses communication protocols with Nuiqsut about flight patterns and frequency. |

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| L86-10 | North Slope Borough | <p>It is important to make the phrase "Proposed Study Area" clear and distinct to understanding overall risk analysis. BLM notes that risk analysis on all resources is related to the larger "Proposed Study Area" and not merely the "Proposed Permanent Infrastructure." An unclear distinction at the beginning of an EIS makes a significant difference when reading sentences, such as the following on page 332, Section 4.3.2.5 Conclusion: "[g]iven the fairly low level of fish resources present in the immediate area between GMT1 and GMT2, the intensity of effects would likely be 'low' and the duration would likely be 'temporary.'"</p>  | 2.1 Proposed Action & Alternatives | Additional text regarding the project study area has been added to the beginning of Chapters 3 and 4 in Sections 3.1.1 and 4.1.1 that will assist the reader in understanding the affected environment and environmental consequences of the alternatives. |
| L86-11 | North Slope Borough | <p>With an unclear distinction among areas, one might easily conclude that risk analysis is restricted to the area specified with its "fairly low level of fish resources" is the study area. This is not the case, of course. The "proposed study area" is most likely not an area with "fairly low level of fish resources." (See maps Fig. 3.4-7, Fig. 3.4-13, -14, and -15 and for more evidence, see Map 3.3-2 indicating anadromous rivers and streams and identifying specific lakes designated as "Sensitive Fish Species Present," including ones near GMT1 and GMT2. Map 3.3-4 also notes essential fish habitat within the "Project Study Area" as having king salmon and pink-chum salmon present. In 2009, the Tingmiaqsiugvik (Ublutuochoch River) was found to have nine species present in June and July, including Arctic grayling, whitefishes (broad, least, humpback, and round) (Moulton, L. Fish populations in streams to be crossed by a proposed road to the GMT-1 well pad in Eastern NPR-A: 2009. Final report).</p> | 3.9 Fish                           | "fairly low level of fish resources" was removed from the text.  |

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| L86-12 | North Slope Borough | <p>Additionally, much of the in-depth discussion and analysis produced for the GMTI SEIS applies as well to GMT2, since GMT2 is close to and associated with GMTI. However, discussions and analyses from the GMTI SEIS are not included or summarized in any detail in the GMT2 DSEIS and should be incorporated rather than simply cited. For instance, "Pedersen et al. (2000) provides the most detailed analysis of . . . impact, noting that harvest location information for Nuiqsut from 1993 and 1994 'provide support for the claim of displacement from traditional hunting areas.'" If this was true for GMTI, then it seems that the impact of GMT2 would further displace hunters and be even more of a substantial restriction on subsistence uses. (page 435, Section 4.4.5.3 Impacts under Alternative A, in Alpine Satellite Development Plan GMTI Development Project Final Supplemental Environmental Impact Statement).</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>Avoidance was discussed as an impact to subsistence both under the section on Construction (4.4.5.4) and under Drilling and Operation (4.4.5.5) in the Draft SEIS. The research noted in the comment was discussed under Construction. In the Final SEIS, the text has been edited and the detailed discussion of avoidance has been consolidated into section 4.4.5.5 (Drilling and Operation) to discuss possible impacts and countervailing impacts to avoidance of the GMT2 project and access road during the life of the project. Input from key stakeholders on the potential magnitude of the avoidance effect has also been included in that section.</p> |
| L86-13 | North Slope Borough | <p>In Section 4.4.2.8, page 395, reference is made to new measures proposed to mitigate sociocultural impacts. The section also cites the measures discussed in Section 4.4.5.8 designed to mitigate subsistence impacts as also having the potential to address sociocultural impacts. No Section 4.4.5.8 exists. The citation presumably should be to Section 4.4.5.6, titled Mitigation, beginning on page 446. In any event, BLM cannot implement and enforce many of the mitigation measures described in these sections.</p>   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>Text has been revised to correct section call-outs. BLM NEPA Guidance and CEQ regulations for EIS analyses require that all relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the agency [40 CFR 1502.14(f), 40 CFR 1502.16(h)].</p>  |

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| L86-14 | North Slope Borough | In Section 4.4.2.8, page 395, reference is made to new measures proposed to mitigate sociocultural impacts. The section also cites the measures discussed in Section 4.4.5.8 designed to mitigate subsistence impacts as also having the potential to address sociocultural impacts. No Section 4.4.5.8 exists. The citation presumably should be to Section 4.4.5.6, titled Mitigation, beginning on page 446. In any event, BLM cannot implement and enforce many of the mitigation measures described in these sections.   | 4.2 Mitigation  | Text has been revised to correct section call-outs. BLM NEPA Guidance and CEQ regulations for EIS analyses require that all relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the agency [40 CFR 1502.14(f), 40 CFR 1502.16(h)]. |
| L86-15 | North Slope Borough | We would suggest adding an additional new mitigation measure under the listed measures "Provide Administrative and Technical Support" and "Provide Educational Support." Industry could be asked to fund a local science center associated with one of the other buildings suggested. The Borough has had great success over many years, with minimal available local resources and without dedicated facilities, conducting science within our communities, typically with the assistance and support of local hunters and the participation of local residents. With a dedicated facility containing basic equipment, industry could support occasional important scientific research in Nuiqsut with the support and participation of local residents. | 4.2 Mitigation  | The NSB recommendation has been added to the Potential Mitigation Measures discussed in Section 4.4.2 Sociocultural Systems.  |
| L86-17 | North Slope Borough | Page iii, what are the major issues and focus of controversy? Para. 2: This section should include a description of the conclusions in the ANILCA 810 analysis and cite Appendix L, including findings of major redistribution of resources and extensive interference of access.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Reference to the ANILCA 810 evaluation has been added to the Executive Summary.   |
| L86-18 | North Slope Borough | Page 6, Secretarial Order 3352: Last sentence, define "DNA" in the list of acronyms.  | 1.1 Executive Summary & Introduction                                | Reference to DNA has been removed from the document; therefore, no addition was made to the list of acronym.  |



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| L86-19 | North Slope Borough | Page 6, Secretarial Order 3355: Second sentence, define "RMP" in the list of acronyms. Third sentence define "NOI" in the list of acronyms.  | 1.1 Executive Summary & Introduction | NOI and RMP have been added to the list of acronyms.   |
| L86-2  | North Slope Borough | Caribou may have difficulty crossing the elevated road to GMT2, especially in the winter when snow builds up alongside the road. Hunters have also complained of the difficulty of crossing these elevated industry roads. Industry maintains that these roads need to be high and steep to support industrial traffic. We ask that the BLM require developers to continue to work with local residents to modify standard road designs or identify other means to mitigate road-related impacts to tundra travel. | 3.11 Caribou                         | The concerns voiced by this comment are accommodated under "Subsistence consultation for permitted activities" on pg. 540 of the DSEIS. No text change made.   |
| L86-20 | North Slope Borough | Page 7, Secretarial Order 3360: Second para, define "IM" in the list of acronyms.  | 1.1 Executive Summary & Introduction | IM has been added to the list of acronyms.   |
| L86-21 | North Slope Borough | Page 15, Section 1.4.5, Para 2: "... no appreciable changes in the physical, biological, or social resources ... since BLM (2004). This conclusion is inaccurate. The Teshekpuk Caribou Herd has declined by 13% between 2008 and 2017 and the Central Arctic Caribou Herd declined by 37% between 2007 and 2017. We consider a 37% decline in a population an appreciable change.   | 3.11 Caribou                         | Thank you for your comment. To clarify the statement in Section 1.4.5 should state "other than natural cycles and perturbations, there are no appreciable changes in the physical, biological or social resources associated with the project study area since BLM (2004). |

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| L86-22 | North Slope Borough | Page 74, Section 3.2.1.6 Paleontological Resources: "[t]he indirect impact analysis area is the project study area and lands beyond existing project facilities and proposed GMT2 Project." Clarification is necessary. Does this sentence imply that only "indirect impact" is analyzed beyond the "project facilities and proposed GMT2 Project?" Within the "proposed study area" of > 158,000 acres, will direct and indirect impacts be analyzed? | 3.14 Cultural and Paleontological Resources | Text has been revised to clarify that the project study area is the boundary for indirect effects, and the ground-disturbing footprint is used for direct effects. |

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| L86-23 | North Slope Borough | <p>Page 116, Section 3.3.1.2 Invasive Plant Species Non-native. It states that the " .. higher-latitude regions which include the project area are considered to be invasion resistant [although the] common dandelion (<i>Taraxacum officinale</i>) has been found north of the Brooks Range and there has been anecdotal observation of dandelion in the NPR-A (BLM 2012)." Two points: 1). This is not anecdotal evidence. This species as well as other species of dandelion grow as far north as Barrow, Alaska (Johnson 1995 and Borough staff observation). Most likely, the species is <i>Taraxacum ceratophorum</i>. Sometimes the plant is treated as a subspecies of <i>T officinale</i> (subsp. <i>ceratophorum</i> ). The document must include this direct evidence of invasive plants existing farther north than the project area, and the project area should not be considered "invasion resistant." 2). Even within the GMT2 document itself, it states on p. 325, 4.3.1.6, Potential Impacts Due to Climate Change: "[a]s the climate warms, spread of invasive plants northward would become more likely (Carlson et al. 2015), and project components would provide vectors and establishment sites for such plants (BLM 2012)." Johnson, Michele, M. Barrow Wildflower Sketchbook: Flowering Plants of Barrow, Alaska. North Slope Borough. 1995 ed. 18 pp.</p> | 3.8 Vegetation and Wetlands | Deleted "anecdotal" and included reference (Johnson 1995) |

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| L86-24 | North Slope Borough | <p>Page 116. While it is true that no "reports of waterweed (Elodea spp.) infestations in the Arctic or the NPR-A have been identified (Alaska Natural Heritage Program 2015)," in recent conferences and papers, experts conclude that " ... the remoteness of Arctic and Subarctic systems such as Alaska is no longer a protective attribute against invasions, as transportation pathways now reach throughout these regions" (Carey et al. 2016). See also Fig. 2 Panel C in this paper that indicates potential North Slope Borough risk areas: "[floatplane charter routes for companies with valid business licenses registered with the State of Alaska. These routes represent regularly traveled, high-traffic floatplane routes and are indicative of potential high-risk Elodea spp. transport routes should the invader arrive at a given route starting or ending location." Carey, Michael, Suresh A. Sethi, Sabrina J. Larsen , Cecil F. Rich. A primer on potential impacts, management priorities, and future directions for Elodea spp. in high latitude systems: learning from the Alaskan experience. Hydrobiologia (2016) 777:1-19 DOI 10.1007/s10750-016-2767-x.</p> | 3.8 Vegetation and Wetlands | This comment is supportive of what has been already written in this section of the document. Nothing to add. |

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| L86-25 | North Slope Borough | Page 124, Para 2: This paragraph fails to describe the methods used to determine habitat selection and preference by focal birds and animals. The estimated density of focal birds per square kilometer in Tables 3.3-5 through Table 3.3-12 and accompanying maps 3.3-7 through 3.3-9 appear to be arbitrarily assigned to quintiles. It seems a better approach would be to delineate the quintiles by dividing the highest density of focal birds by five to assign each of the density categories- low density, medium low, medium, medium high, high. Better still would be to reduce the number of density categories to 3. In the case of Yellow-billed loons the difference between medium (0.12) and low density (0.02) loons per square kilometer does not seem biologically significant. | 3.10 Birds            | BLM used the 5 quintiles as they are what is used in the Fish and Wildlife Service reporting of their bird density contour data. If BLM changed the quintiles it would be very difficult to compare this EIS with past or future publications by the Fish and Wildlife Service. BLM used the Jenks optimization method, also called the Jenks natural breaks classification method, which is a data clustering method designed to determine the best arrangement of values into different classes. This is done by seeking to minimize each class's average deviation from the class mean, while maximizing each class's deviation from the means of the other groups. In other words, the method seeks to reduce the variance within classes and maximize the variance between classes. This method is applicable to these bird density datasets that have uneven (and not statistically standard) distributions because it does not create classes in even intervals, instead favoring class divisions that are visually interpretable. |
| L86-26 | North Slope Borough | Page 144, Population Dynamics, Paragraph 1: More recent results from a photocensus conducted in 2017 are available. The TCH and CAH population estimates were 56,250 and 28,000, respectively.  | 3.11 Caribou          | Thank you for your comment. The BLM has updated the section 3.3.4, Population Dynamics section to showing results of the 2017 photocensus for TCH and CAH . The BLM updated figure 3.3-3 and requested permission from ADGF to add a figure showing TCH abundance estimates.  |
| L86-27 | North Slope Borough | Page 145, Population Dynamics, Paragraph 2: Person et al. (2007) provides estimates of the rate of emigration from the TCH to be $0.07 \pm 0.03$ .  | 3.11 Caribou          | Thank your for your comment. The Person et al. (2007) reference providing estimates of the rate of emigration from the TCH will be added to the document.   |

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| L86-28 | North Slope Borough | <p>Page 146, Fox, Paragraph 1: Pamperin (2008) found that Arctic fox fitted with a satellite collar in Prudhoe Bay in late summer had a winter home range based on a 50% kernel distribution, of 23 km-2. In comparison, Arctic fox collared in undeveloped regions of the NPR-A had a winter home range, 50% kernel distribution, of 10,050 k.m-2. Lehner (2012) repeated this work and found similar differences in winter home ranges and attributed the difference to the availability of anthropogenic foods. He found that fox that remained in Prudhoe Bay had consumed anthropogenic foods whereas fox collared in NPR-A had not eaten anthropogenic foods based on isotopic signatures of tissues collected from collared fox in late winter. It is likely that GMT2 will result in similar effects to Arctic fox behavior and diet.</p> | 3.12 Mammals                           | <p>There is potential that the same results could occur around GMT-2 and nearby developments. A short summary of this paper has been added.</p>  |
| L86-29 | North Slope Borough | <p>Page 150, Section 3.3.5.2 Spectacled Eider, Paragraphs 4 and 5: As previously described, the density index contours seem to be arbitrarily assigned. By definition, a quintile is 5 equal groups. Table 3.3-16 and associated maps 3.3-12 are biologically irrelevant as it pertains to the study area because the difference between low (0.03) and medium low (0.1) density km-2 is both minimal and arbitrary.</p>  | 3.13 Threatened and Endangered Species | <p>BLM used the 5 quintiles as they are what is used in the Fish and Wildlife Service reporting of their bird density contour data. If BLM changed the quintiles it would be very difficult to compare this EIS with past or future publications by the Fish and Wildlife Service. BLM used the Jenks optimization method, also called the Jenks natural breaks classification method, which is a data clustering method designed to determine the best arrangement of values into different classes. This is done by seeking to minimize each class's average deviation from the class mean, while maximizing each class's deviation from the means of the other groups. In other words, the method seeks to reduce the variance within classes and maximize the variance between classes. This method is applicable to these bird density datasets that have uneven (and not statistically standard) distributions because it does not create classes in even intervals, instead favoring class divisions that are visually interpretable.</p> |

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| L86-3  | North Slope Borough | We need to continue to monitor and analyze the impacts of the GMTI project and road, and other development projects on caribou to make more informed decisions concerning the construction of roads in the area. Nuiqsut's residents feel that development is moving too quickly. The GMTI development has only just begun, and its impacts are not yet known. For this reason, we request BLM to require CPAI to continue monitoring the subsistence harvest of caribou. CPAI should continue funding the Nuiqsut Caribou Subsistence Household Harvest Surveys conducted by Stephen R. Braund and Associates, or another similar harvest survey. Furthermore, the Record of Decision should require this survey to continue every year to avoid gaps in the analysis. Analysis of this data will be essential in understanding the localized impacts of road development on subsistence. This data will be useful when evaluating whether or not to support the construction of a road to future developments, including any associated with the Willow Prospect. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM has included potential mitigation measures to address continued monitoring of the caribou harvest and subsistence users' impacts, disturbance, and access. See Section 4.4.5 Subsistence, Potential Mitigation Measures 6 and 8. |
| L86-30 | North Slope Borough | Page 160 mentions "Point Utqiagvik (formerly Barrow) ..." While the city has been renamed, the point remains Point Barrow.  | 3.0 Affected Environment  | Thank you, text has been updated.  |
| L86-31 | North Slope Borough | Page 168, Section 3.4.1, Para 2: A more recent census was conducted by the North Slope Borough in 2014 and published in 2015.   | 3.0 Affected Environment  | Thank you, text has been updated.  |

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| L86-32 | North Slope Borough | <p>Page 179, Section 3.4.5.3 Visual Resources: This section is ambiguous and inadequate in assessing the aesthetics of the "Proposed Study Area," especially considering that it emphasizes the more immediate area near GMT2 and GMT1 and not the entire study area. Since all action alternatives will create new industrial development, these and previous developments are measureable cumulative effects resulting in cultural modifications in the study area. Some oil and gas infrastructure (including the facilities at Alpine), pipelines, and ice roads are visible from Nuiqsut and other portions of the proposed study area. To assess these specific proposed changes as well as the cumulative aesthetic effects on the study area, one should assess the horizon's unobstructed view (zero volume) to compare to obstructed view (X volume). One can then gauge the incremental impacts of past, present and provide estimates of reasonably foreseeable future actions that will obstruct the visual and aesthetic resources. Providing quantitative values should not be a burden. One tool that BLM could use is the US Army Corps OMBIL Regulatory Module (ORM), which is a central database deployed locally to each District. The BLM, like the ACOE certainly "values the importance of cumulative impacts analysis because it forces analysis outside of agency missions" ( quote from Army Corps of Engineers, Michael Salyer, Chief, North Branch Regulatory Division, DOI Arctic Cumulative Impacts Workshop FINAL REPORT Campbell Creek Science Center - Anchorage, Alaska April 12 -13, 2016). Please present the relevant documents for this project from OMBIL.</p> | 3.17 Land Use         | <p>The BLM follows a specific process to document visual resource inventory (VRI) and decisions for visual resource management (VRM). During the development of a land-use plan, the BLM conducts a visual resources inventory to identify the scenic qualities and sensitivity to change within the landscape. The land-use plan determines what the visual resource management objectives of the area will be. This means that while BLM recognizes that there may be high scenic values present, there could be a plan decision made that says that the area will be managed for other resource values.</p> |



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| L86-33 | North Slope Borough | <p>Page 180, Paragraph 2: "The study area for subsistence includes all areas used by the community of Nuiqsut for subsistence activities because these areas could potentially be directly or indirectly affected by the proposed project. The project study area is defined as a 2.5-mile buffer surrounding the GMT2 Project Footprint and is the area where direct impacts may occur, particularly in overland areas where project components are proposed. Indirect impacts may occur in the project study area, but may also extend to the study area for impacts related to resource availability or hunter avoidance." The delineation of a 2.5 mile buffer for direct impacts is unreasonable. The range of activities for the duration of all phases of GMT2 encompass will occur in a much larger area. See Figure 3.4.7 and Figures 1 and 2 in Appendix L.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>NEPA requires the BLM to evaluate the impacts of the entirety of a project, including areas of associated activities and connected actions. The project area is defined to include such connected areas as the ASRC gravel pit from which gravel will be derived and Alpine which is the origination point of most traffic to and from GMT2, to name just two examples. See Section 4.4.5.1 Methodology - GMT2 Areas of Potential Effects for Subsistence for a complete explanation of the project area including the 2.5 mile buffer.</p>  |
| L86-34 | North Slope Borough | <p>Page 416, Evaluating Impacts to Subsistence: It should be explained why this section does not use similar impact criteria categories (intensity, duration, context, and geographic extent) and magnitudes as were used in Section 4.3 Biological Environment and in the previous GMTI SEIS.</p>  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>According to BLM's NEPA guidance, the effects analysis must demonstrate that the BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and the alternatives. NEPA does not require the agency to classify impacts to each resource as minor, moderate or major. The BLM found that the use of GMT2 Impact Criteria did not contribute to meaningfully distinguish the alternatives from each other, and instead detracted from the impact analysis due to confusion and differences of opinion regarding the criteria being applied over focusing on the identified impacts.</p> |

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| L86-35 | North Slope Borough | Page 423, Section 4.4.5.3 Impacts Common to All Action Alternatives, Spills: the paragraph does not address the potential impacts to subsistence associated with spill response activities, including any efforts to halt a spill in progress, mobilization and transport of response equipment and personnel, any hazing of wildlife, any capture and treatment of oiled wildlife, and any post-response construction or other activities necessary to restore facilities to their full function. | 3.19 Hazardous Materials Spills                                     | <p>The Conoco Phillips Oil Discharge Prevention and Contingency Plan for the Alpine Field and Satellites and Alpine Pipeline system provides a description of spill response activities including mobilization and transportation of response equipment and personnel. In addition, any cleanup would follow procedures outlined in the ADEC Tundra Treatment Manual. These documents are described and referenced in Section 2.4.10 (Features Common to All Alternatives - Spill Prevention and Response) and/or Section 4.5 Impacts of Oil, Saltwater, and Hazardous Materials Spills.</p> <p>No changes made to the text.</p> |
| L86-36 | North Slope Borough | Page 426, Air Traffic: here and wherever else air traffic is discussed in the document, use of the term "flight" should be clarified as to whether it is used to mean a round-trip or one-way transit, as each out and back transit, with some time spent at the project site, should be seen as a separate potentially impact-producing event.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | All flights refer to a single take-off and landing, i.e., a helicopter that takes off from Alpine, lands along the GMT2 ice road route for stick picking in the summer, and transports the crew back to Alpine would be counted as two flights. Text will be updated to clarify this.  |
| L86-37 | North Slope Borough | Page 436, at the top of the page, reference is made to the Borough's "annual Oil and Gas Forum." To clarify, the 2016 Forum was an extremely productive 3-day gathering, but similar events have only been held sporadically rather than annually.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Removed the word annual from the description.  |

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| L86-38 | North Slope Borough | <p>Page 446, in discussing the creation and operation of the NPR-A Subsistence Advisory Panel as a mechanism to reduce conflicts between subsistence users and the oil and gas industry, BLM rightly notes that "[f]rustration is a persistent issue because a large percentage of the long-standing recommendations and concerns that the Subsistence Advisory Panel and residents have are matters that BLM has no authority on which to act." This is a critical observation, and must be properly acknowledged and addressed where relevant in various sections throughout the Final EIS. Nuiqsut residents, more so than residents of other North Slope communities, and perhaps more so than any other Alaskan residents, have lived with a decades-long, ever-increasing, near constant level of frustration and apprehension as expanding oil and gas facilities and operations have impinged upon their traditional onshore and offshore subsistence harvest areas. The psychological toll of perpetually having to cope with increasing threats to the nutritional and cultural well-being of the community must be significant and should not be ignored in the EIS analysis.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | See section 4.4.2.1 Sociocultural Systems -Impacts Common to all Alternatives, <i>Tensions Related to Permitting Processes for Development</i>                                |
| L86-39 | North Slope Borough | <p>Page 447, the Piuraagvik Recreation Center addition is listed as an example of a Nuiqsut project funded by NPR-A impact mitigation funds when the Center is actually located in Utqiagvik (Barrow). It perhaps was intended that the bulleted section be introduced as "Examples of North Slope projects funded by NPR-A impact mitigation funds include:"</p>  | 4.2 Mitigation  | The sentence preceding the list of example grants indicates North Slope projects, not Nuiqsut. Text has been added to indicate the recreation center is located in Utqiagvik. |

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| <p><b>L86-4</b></p> | <p>North Slope Borough</p> | <p>We have concerns over the air quality analysis in the DSEIS. It appears that air quality modeling scenarios did not account for concurrent construction activities. Construction has been constant in the vicinity of Nuiqsut since the development of Alpine, and construction activities are projected to continue into the foreseeable future. The analysis assumed that construction activities would be complete for Nanushuk and GMT1 by the time GMT2 construction begins. We find this scenario unlikely. Furthermore, the background data used in modeling should include predicted cumulative impacts of future developments in the area, including Willow and Stoney Hill. BLM needs to remodel its air quality analysis to account for current and future construction activities and developments.</p> | <p>3.5 Air Quality &amp; Meteorology</p> | <p>Thank you for the comment. Based on the timelines for the GMT1 and Nanushuk Projects, the construction phases are expected to be complete by the time the GMT2 Project begins construction. Therefore, the emissions from the operational phases were used for these cumulative sources in the models. It is important to note that the emissions from the operational phase of the Nanushuk Project, as presented in their EIS, are a magnitude larger than during the construction phase, therefore the emissions for that Project are conservatively included. Projects such as Willow and Stoney Hill do not meet the definition of foreseeable development as there is no clearly defined, proposed, or accepted scope of the projects.</p> <p>For the far-field analysis, the air quality analysis assessed the impact of the worst-case (i.e., highest) emission years for each pollutant. The years considered included construction activities in addition to other activities during that year. Tables 4.2-20, 4.2-21, 4.2-29, and 4.2-30 show that GMT2 project-only impacts are much lower than the National Ambient Air Quality Standards (NAAQS) for all pollutants and averaging periods at the sensitive Class II areas analyzed that are over 200 kilometers from the project area. Similarly, the GMT1 EIS showed that GMT1 worst-case project-impacts were very small at these Class II areas. Emissions rates for the Nanushuk RFD sources are based on the modeled emissions rates presented in the 2017 Nanushuk draft SEIS AQIA. As discussed in Section 5.2 of the AQIA, the “modeled EU [emission unit] locations, physical parameters, and emission rates, respectively, of each modeled EU are based upon worst-case emission scenarios for the Construction and Drilling and Drilling and Operations scenarios, respectively.” Therefore, the cumulative GMT2 air quality analysis considers the worst-case impact for Nanushuk and GMT1 at these two Class II areas, and shows that impacts are lower than air quality standards.</p> |
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| L86-40 | North Slope Borough | Page 475, the brief discussion of potential overlapping impacts of the Liberty Development Project with GMT2 identifies as the only social impacts the "participation in multiple simultaneous NEPA processes." Reasonably foreseeable sociocultural impacts to the community of Nuiqsut certainly would extend beyond that only, and would also include a potentially reduced bowhead whale harvest paired with an ongoing constriction of previously utilized onshore traditional subsistence harvest areas and transportation routes, associated food security, impacts to sharing networks, added economic costs of longer and more distant hunting trips, extended time away from families and jobs and amplified community-wide stress. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The text referred to is in Section 4.6.2.2 (Cumulative Impacts - Methodology - Past, Present, and Reasonably Foreseeable Future Actions), where the actions that are considered as cumulative are introduced. The analyses of sociocultural impacts (direct, indirect, and cumulative) includes details on the tensions related to multiple permitting processes and pace of development. The text in the cumulative analysis for subsistence (Section 4.6.8.9) has been edited to include this input from the NSB. |
| L86-41 | North Slope Borough | Page 476, Section 4.6.3 Cumulative Impacts to the Terrestrial Environment: "The GMT2 site, in combination with existing gravel footprints and footprints of developments in permitting total approximately 23,000 acres, which represents 0.5 percent of the geographic extent of this analysis." The meaning of the sentence is unclear. Does it mean that the GMT2 site in combination with all other existing development would represent only 0.5 percent in area of some considerably larger area? If so, what specific larger area, and what point is the statement attempting to make?   | 3.1 Geology and Physiography  | Text has been updated to remove this description. Updated text reads: The GMT2 site, in combination with existing gravel footprints and footprints of GMT1, and CD5 pads would represent present disturbance. Additional footprints from Willow, including a central processing facility, development pads, and gravel from a prospective source cannot be quantified at this time.   |

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| L86-42 | North Slope Borough | <p>Page 478, Section 4.6.4.2 Future Impacts and Their Accumulation: "The BLM (2012) determined that some lakes were being pumped annually along primary transportation routes until development commenced. If lakes do not fully recharge or have water quality changes, future withdrawals may be conditional upon permit stipulations. It is possible that if water is drawn from a majority of lakes in a concentrated area, this could affect the surface flow regime of an area (BLM 2012, Section 4.8.7.4, p. 94)." The EIS should specify which lakes this comment is referring to and create a table to indicate cumulative yearly water removal in these lakes, even if removal is by more than one company. A yearly monitoring plan for ensuring re-charge and water quality should be initiated for these lakes. A time-to-recharge date should be maintained since climate change and fugitive dust can increase or decrease re-charge time. These comments are driven by the conditional language in the preceding paragraph that appears to be insinuating some difficulty in re-charge.</p> | 3.4 Water Resources   | <p>To date, there have been no lakes used during winter drilling operations which have not re-charged the next season. It is agreed that problem lakes that do not re-charge could be placed into a table under cumulative impacts in a future EIS. Generating a table of lakes which have been pumped multiple times may not be useful since many lakes are not pumped to the maximum withdrawal limits allowed.</p> |

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| L86-43 | North Slope Borough | <p>Pages 478-79, Section 4.6.4.2 Future Impacts and Their Accumulation: "Dust deposition along roads can increase turbidity of adjacent water bodies. Snowdrifts along gravel and building structures can increase wintertime soil surface temperatures and result in increased thaw depths, Draft Supplemental Environmental Impact Statement Alpine Satellite Development Plan for the Proposed Greater Mooses Tooth 2 Development Project 479 contributing to thermokarsting (BLM 2012, Section 4.8.7.4, page 91)." This section is incomplete. Please note more recent documents and studies. For instance, Walker DA, Raynolds MK, Buchhom M, Peirce JL (eds.) (2014) Landscape and permafrost changes in the Prudhoe Bay Oilfield, Alaska. Alaska Geobotany Center Publication AGC 14-01, 84 pp. University of Alaska Fairbanks, Fairbanks, AK. Read especially the following chapters within this publication:</p> <ul style="list-style-type: none"> <li>• Supplementary information regarding calculation of impacts of oilfield development, North Slope, Alaska, by Kenneth J. Ambrosius</li> <li>• Supplementary information regarding the Integrated Geocological and Historical Change Mapping (IGHCM) method 33</li> </ul> | 3.2 Soils & Permafrost | Text revised to read: " Dust deposition along roads can increase turbidity of adjacent water bodies, increase the rate of thermokarst (Walker et al 2014) and affect the vegetation, soils and permafrost at distances of 600 to 1000 meters from the road. These affects are most pronounced within 200 meters of the road and increase logarithmically as distance to the road decreases (Everett 1980, Myers-Smith et al 2006). Snowdrifts...." |

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| L86-44 | North Slope Borough | <p>Pages 478-79, Section 4.6.4.2 Future Impacts and Their Accumulation: "Dust deposition along roads can increase turbidity of adjacent water bodies. Snowdrifts along gravel and building structures can increase wintertime soil surface temperatures and result in increased thaw depths, Draft Supplemental Environmental Impact Statement Alpine Satellite Development Plan for the Proposed Greater Mooses Tooth 2 Development Project 479 contributing to thermokarsting (BLM 2012, Section 4.8.7.4, page 91)." This section is incomplete. Please note more recent documents and studies. For instance, Walker DA, Raynolds MK, Buchhom M, Peirce JL (eds.) (2014) Landscape and permafrost changes in the Prudhoe Bay Oilfield, Alaska. Alaska Geobotany Center Publication AGC 14-01, 84 pp. University of Alaska Fairbanks, Fairbanks, AK. Read especially the following chapters within this publication:</p> <ul style="list-style-type: none"> <li>• Supplementary information regarding calculation of impacts of oilfield development, North Slope, Alaska, by Kenneth J. Ambrosius</li> <li>• Supplementary information regarding the Integrated Geoecological and Historical Change Mapping (IGHCM) method 33</li> </ul> | 3.7 Climate Change    | Text updated. This reference was added under the climate change paragraph in the conclusions. |



| Comm # | Commenter Name      | Comments  | Comment Category Code | Comment Response  |
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| L86-45 | North Slope Borough | <p>Pages 478-79, Section 4.6.4.2 Future Impacts and Their Accumulation: "Dust deposition along roads can increase turbidity of adjacent water bodies. Snowdrifts along gravel and building structures can increase wintertime soil surface temperatures and result in increased thaw depths, Draft Supplemental Environmental Impact Statement Alpine Satellite Development Plan for the Proposed Greater Mooses Tooth 2 Development Project 479 contributing to thermokarsting (BLM 2012, Section 4.8.7.4, page 91)." This section is incomplete. Please note more recent documents and studies. For instance, Walker DA, Raynolds MK, Buchhom M, Peirce JL (eds.) (2014) Landscape and permafrost changes in the Prudhoe Bay Oilfield, Alaska. Alaska Geobotany Center Publication AGC 14-01, 84 pp. University of Alaska Fairbanks, Fairbanks, AK. Read especially the following chapters within this publication:</p> <ul style="list-style-type: none"> <li>• Supplementary information regarding calculation of impacts of oilfield development, North Slope, Alaska, by Kenneth J. Ambrosius</li> <li>• Supplementary information regarding the Integrated Geocological and Historical Change Mapping (IGHCM) method 33</li> </ul> | 3.4 Water Resources   | This reference was added under the climate change paragraph in the conclusions. |

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| Comm # | Commenter Name      | Comments  | Comment Category Code  | Comment Response  |
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| L86-46 | North Slope Borough | With respect to the BLM statement on thermokarst above, note that not only manmade but also climate change and atmospheric temperature could increase thermokarst development. This point should incorporate new findings from the following:<br>Walker, DA, Buchhom M, Kanevskiy M et al. (2015) Infrastructure-Thermokarst-SoilVegetation Interactions at Lake Colleen Site A, Prudhoe Bay, Alaska. Alaska Geobotany Center Data Report AGC 15-01, 92 pp. Institute of Arctic Biology, University of Alaska Fairbanks, Fairbanks, AK. | 3.2 Soils & Permafrost | More information on how cumulative development impacts will interact synergistically with climate change can be found in Section 4.6.3, Terrestrial Environment. Text has been updated with the proposed reference. |

| Comm # | Commenter Name      | Comments   | Comment Category Code         | Comment Response   |
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| L86-47 | North Slope Borough | <p>Finally, regarding dust and fugitive dust, the DSEIS does not adequately address dust under its Contribution of the Alternatives to Cumulative Impacts (pp. 479-481). The DSEIS notes in only the most general (and therefore vague) terms that increasing climate change and fugitive dust could lead to drying out of shallow lakes, watersheds ... (p. 481). However, the DSEIS should directly reference, discuss, and incorporate the work of Walker, DA, Buchhom M, Kanevskiy M et al. (2015) Infrastructure-Thermokarst-SoilVegetation Interactions at Lake Colleen Site A, Prudhoe Bay, Alaska. Alaska Geobotany Center Data Report AGC 15-01, 92 pp. Institute of Arctic Biology, University of Alaska Fairbanks, Fairbanks, AK. In their chapter entitled "Effects of development on permafrost and tundra along the Spine Road at Prudhoe Bay, Alaska," it was noted that 50m off road, "[ c ]lear surface mineral horizons up to 18 cm thick occur near the south west side of the road and up to 10 cm thick on the northeast side. The mineral surface horizons decrease in thickness away from the road, but even at 200 m from the road the underlying organic material have a gray color indicating leached dust." Road dust that accumulates on top of the moss layer causes centimeters of mineral horizons to develop and changes the plant environment leading to reduction in mosses, lichens, and small forbs. In terms of mitigation and restoration, monitoring and reporting, these effects (not observed until 20 or more years later) might have to be considered 40 years (or more) later. This is also an example of cumulative and indirect effects that should be accounted for within the "Proposed Study Area."</p> | 3.5 Air Quality & Meteorology | <p>Text in Section 4.6.3 Cumulative Impacts to the Water Resources has been revised to read: "Dust deposition along roads can increase turbidity of adjacent water bodies, increase the rate of thermokarst (Walker et al 2014) and affect the vegetation, soils and permafrost at distances of 600 to 1000 meters from the road. These affects are most pronounced within 200 meters of the road and increase logarithmically as distance to the road decreases (Everett 1980, Myers-Smith et al 2006). Snowdrifts...."</p> |

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| L86-48 | North Slope Borough | Map 4.6-1 is intended to be a "Cumulative Effects Analysis Map." However, it does not show potential and past overlap of study areas. For reasonably foreseeable projects, please add a mean size boundary for gas and oil development projects on the North Slope. This would allow one to get a sense of past, present, and future overlap of areas. See Alaska Daily News 16 April 201 8 for a map that list North Slope Oil and Gas Activity. While this map delineates general activity, it does not locate the community of Nuiqsut.   | 3.0 Affected Environment  | We acknowledge that it seems like adding boundaries for past and potential projects to highlight overlap would be relatively straightforward. Unfortunately, projects are permitted by different administrative entities, permit documents are often done by contractors, and some project areas are considered proprietary and confidential. We do not have the information to add a mean size boundary for oil and gas developments and could not gather all the different study areas to add to the cumulative effects map. |
| L86-49 | North Slope Borough | In terms of monitoring cumulative effects, see Martha K. Raynolds, et al., Cumulative geocological effects of 62 years of infrastructure and climate change in ice-rich permafrost landscapes, Prudhoe Bay Oilfield, Alaska, in Global Change Biology, 2014, Volume 20, Issue 4, pp. 1211-122 4. While some changes may take place decades after development, these very long term changes are now understood as reasonably foreseeable. See Sect. 3: Supplementary information regarding calculation of impacts of oilfield development, North Slope, Alaska, by Kenneth J. Ambrosiusin <a href="http://www.geobotany.uaf.edu/library/pubs/WalkerDA2014_agc14-01.pdf">http://www.geobotany.uaf.edu/library/pubs/WalkerDA2014_agc14-01.pdf</a> . | 3.7 Climate Change  | Additional text has been added to the discussion of Climate Change in Chapter 3 that summarizes the article indicated in the comment. The cumulative effects described in the article were considered in applicable sections in Chapter 4 (e.g., vegetation, hydrology, and socio-cultural).   |
| L86-5  | North Slope Borough | We urge BLM to require the permittee to allow the community of Nuiqsut access to the GMT2 road. CP AI should allow hunting from the GMT2 road and produce concise policies regarding the use of its roads concerning hunting.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM has included a potential mitigation measure requiring a road access agreement by ConocoPhillips for the community of Nuiqsut that specifies the rules for utilizing the road and guarantees continued access.  |

| Comm # | Commenter Name      | Comments  | Comment Category Code | Comment Response  |
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| L86-50 | North Slope Borough | <p>Page 490, Section 4.6. 7 .2, Conclusion: "The direct, indirect, and cumulative impacts to fish and fish habitat associated with the proposed GMT2 Project and other regional oil and gas activities (Map 4. 6-1) would be additive and in some scenarios, could be synergistic. Because of the highly migratory life history of many Arctic fish species, if enough local impacts on fish occurred in the various oil and gas areas near GMT2, these impacts could accumulate and result in a decline in productivity for fish populations at a regional scale." The "conclusion " is not a conclusion, but a conditional statement in the form of "would be ... if ... could ... " The conditional "conclusion" is that "impacts could accumulate and result in a decline in productivity for fish populations at a regional scale." Does this imply potential population-level effects? It is not analyzed thoroughly enough to conclude high, medium, or low impact. The above statement also begs for an answer concerning " ... if enough local impacts on fish occurred ... ". How many is "enough?"</p> | 3.9 Fish              | <p>The text was changed to be more direct and definitive.</p> |

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| Comm # | Commenter Name      | Comments  | Comment Category Code   | Comment Response   |
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| L86-51 | North Slope Borough | Page 490, Section 4.6.7.2 Paragraph 2: The number of gravel and ice roads in the region may cause a decline in fish productivity and its populations at a regional scale. It is strongly recommended that studies on fish habitat, movement and population biology be conducted before, during and after the duration of the GMT2 project. Especially for the main subsistence species: Arctic Cisco, Burbot and Broad Whitefish. | 3.9 Fish  | Movement studies in the project area have been conducted for Arctic grayling, burbot, and broad whitefish (Morris 2003; Heim et al. 2014, 2015). While specific patterns of these species may differ, one commonality is that many individuals make seasonal movements between lakes, small streams, and rivers. As such, BMPs aim to maintain natural hydrologic regimes and thus water body connectivity so that these patterns are not disrupted. Long-term monitoring of the fall Colville fishery and focused work on Arctic cisco has lead to an understanding of juvenile fish transport from the Mackenzie River (where they all originate), several years of habitat use primarily along the coast and in the Colville delta, and a return spawning run to the Mackenzie - patterns that would not be impacted by the GMT2 project. |
| L86-54 | North Slope Borough | Page 516, Contribution of the Alternatives to Cumulative Impacts, last paragraph, first sentence: " ... residents of Nuiqsut will have facilitated to subsistence areas .... " Though the sentence is obviously missing something, its meaning is clear. It should also be noted that, alternatively, some hunters will voluntarily avoid the road because it is a nontraditional route.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been revised to correct sentence.   |

| Comm # | Commenter Name      | Comments  | Comment Category Code | Comment Response  |
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| L86-56 | North Slope Borough | <p>Page 51 7, despite the frank discussion of potential impacts that precedes it, the last sentence on this page somewhat vaguely concludes that, "[ a]ppropriate mitigation and performance-based lease stipulations and best management practices should reduce the cumulative effect to sociocultural systems in Nuiqsut from oil and gas activities, and nonoil and gas activities." BLM, lease holders and potential developers must acknowledge that continued industrial expansion in close proximity to Nuiqsut and within its traditional harvest areas cannot occur indefinitely. At some point, and perhaps this is that point, the cumulative impacts will be greater than the community can reasonably be expected to absorb. All possible measures must therefore be taken moving forward to collaborate with Nuiqsut as decisions regarding this project and future management of the area are made. Rather than simply relying on "appropriate mitigation and performancebased lease stipulations and best management practices," we suggest that it is time to develop new strategies that would provide for the long-term viability of Nuiqsut as a subsistence-based community, with its residents maintaining their health and cultural well-being.</p> | 4.2 Mitigation        | <p>The BLM manages the NPR-A pursuant to the requirements of the NPRPA of 1976 and the DOI Appropriations Act FY 1981 implemented at 43 CFR 2360, and 43 CFR 3130. The NPRPA and these regulations require the BLM to conduct an oil and gas leasing program within the NPR-A, specify that the intent of the leasing program is oil and gas development leading to production, and gives the Secretary authority to protect surface resources to the extent consistent with the oil and gas requirements of the NPRPA. Other applicable laws, such as Section 810 of ANILCA and NEPA, assist the BLM in carrying out these responsibilities. The BLM is limited in our ability to carry out requests or actions that are contrary to the requirements of existing federal law. Once issued, oil and gas leases provide a right of development, subject to reasonable regulation. We encourage local and regional stakeholders to utilize the avenues afforded them through State and Municipal law, and through the federal political process to identify and implement solutions.</p> |
| L86-6  | North Slope Borough | <p>BLM and CPAI should also consider: suspending helicopter flights around select rivers for month long periods during peak caribou hunting season; and implementing mitigation measures for road dust including speed limits, a dust control plan, increased remote monitoring of facilities to reduce traffic and the watering of roads; and constructing a warm storage building to house vehicles, minimizing the need to idle vehicles for long periods of time.</p>   | 4.2 Mitigation        | <p>See Section 4.4.5 Subsistence, Potential Mitigation Measure 2: Suspend Non-essential Helicopter Traffic during Peak Caribou Hunting Season; Section 4.3.4 Mammals, Potential Mitigation Measure 2: Minimize Potential Ground Vehicle Traffic Disturbance of Caribou; and Section 4.4.6 Public Health, Potential Mitigation Measure 2: Minimize Undue Idling of all Vehicles.</p>   |

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| L86-60 | North Slope Borough | Again, these are among the most significant findings of the DSEIS. Given their scope and severity, they demand more than vague general assurances that "appropriate mitigation and performance-based lease stipulations and best management practices" will reduce significant long-term adverse cumulative impacts. | 4.2 Mitigation        | The BLM manages the NPR-A pursuant to the requirements of the NPRPA of 1976 and the DOI Appropriations Act FY 1981 implemented at 43 CFR 2360, and 43 CFR 3130. The NPRPA and these regulations require the BLM to conduct an oil and gas leasing program within the NPR-A, specify that the intent of the leasing program is oil and gas development leading to production, and gives the Secretary authority to protect surface resources to the extent consistent with the oil and gas requirements of the NPRPA. Other applicable laws, such as Section 810 of ANILCA and NEPA, assist the BLM in carrying out these responsibilities. The BLM is limited in our ability to carry out requests or actions that are contrary to the requirements of existing federal law. Once issued, oil and gas leases provide a right of development, subject to reasonable regulation. We encourage local and regional stakeholders to utilize the avenues afforded them through State and Municipal law, and through the federal political process to identify and implement solutions. |



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| L86-61 | North Slope Borough | On Map 3.3-4, Oil Creek is not indicated. In the past, it has been a creek from Oil Lake to Crea Creek. If it no longer exists, then its absence may be an example of drying as noted on pages 480-481, Section 4.6.4.3 Conclusion: "BLM (2012, Section 4.8.7) concluded that climate change may increase particulate matter (fugitive dust, byproducts of combustion, and evaporation of hydrocarbons) to the extent shallow lakes and ponds dry up Draft Supplemental Environmental Impact Statement Alpine Satellite Development Plan for the Proposed Greater Mooses Tooth 2 Development Project 481 or become smaller, watersheds would experience a change to drier soils and thermokarsting may increase as ice-rich permafrost becomes unstable with increases in ambient surface temperatures." | 3.7 Climate Change  | Oil Creek flows from Oil Lake to the Ublutuoch, not Crea Creek. See map 3.3-4 from the GMT1 SEIS (it is the drainage just to the west of CD5).<br><br>Also, it is not drying, but is healthy and flowing, having been gauged since 2009, with data through 2016 posted to: <a href="http://www.fishcreekwatershed.org/data.html">http://www.fishcreekwatershed.org/data.html</a> |
| L86-62 | North Slope Borough | Appendix B, Aircraft Flights for Alternative A through D: These tables provide information on the number of flights associated with CD/ APF and GMT2 but do not provide information on the origin of those flights. Are any flights expected to utilize the runway at Nuiqsut?   | 2.1 Proposed Action & Alternatives                                  | No flights are expected to use the runway in Nuiqsut. Appendix B has been updated with footnotes explaining the origin and destination of the flights listed.  |
| L86-63 | North Slope Borough | Appendix D: Appendix D does little to clarify the methods used to determine density index contours. The section titled "Cross reference for habitat and vegetation types" needs some text to describe the table and how habitat and vegetation types are related.  | 3.8 Vegetation and Wetlands   | Section deleted.   |
| L86-64 | North Slope Borough | Appendix L, ANILCA Sect. 810 Subsistence Analysis, Findings with respect to Alternative A<br><br>Page 10, Paragraph 4: Hunters should receive fuel vouchers to compensate for the longer travel distances to access subsistence resources during construction phase.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM has included the use of fuel vouchers as a potential mitigation measure under Section 4.4.2 Sociocultural System; however, the BLM lacks the regulatory authority to require the applicant to provide funding to local residents in this manner.   |

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| L86-65 | North Slope Borough | <p>Page 13 Paragraph 2 states: "given the importance of caribou availability, uncertainties regarding the extent and duration of altered caribou availability preclude a finding that the effects of Alternative A will not cause a major redistribution of caribou and thus will not significantly restrict subsistence uses for Nuiqsut hunters." Given this dire conclusion, it is strongly recommended that studies on caribou distribution, migrations and habitat be conducted before, during and after the duration of the GMT2 project. Between the cumulative effects on fish and caribou, the residents of Nuiqsut can have their subsistence resource availability significantly reduced or eliminated for several years, especially in the case of an oil spill (Page 18 Appendix L Para 4). Oil spill simulation models should be developed and run for this area, in order to better assess the risks and consequences of an oil spill, especially if it reaches the Colville River Delta.</p> | 3.11 Caribou          | <p>BLM has included potential mitigation measures including Subsistence Harvest Monitoring Studies, and Subsistence User Monitoring and Adaptive Management.</p> |

| Comm # | Commenter Name      | Comments   | Comment Category Code   | Comment Response   |
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| L86-65 | North Slope Borough | <p>Page 13 Paragraph 2 states: "given the importance of caribou availability, uncertainties regarding the extent and duration of altered caribou availability preclude a finding that the effects of Alternative A will not cause a major redistribution of caribou and thus will not significantly restrict subsistence uses for Nuiqsut hunters." Given this dire conclusion, it is strongly recommended that studies on caribou distribution, migrations and habitat be conducted before, during and after the duration of the GMT2 project. Between the cumulative effects on fish and caribou, the residents of Nuiqsut can have their subsistence resource availability significantly reduced or eliminated for several years, especially in the case of an oil spill (Page 18 Appendix L Para 4). Oil spill simulation models should be developed and run for this area, in order to better assess the risks and consequences of an oil spill, especially if it reaches the Colville River Delta.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM has included potential mitigation measures to address continued monitoring of the caribou harvest and subsistence users' impacts, disturbance, and access. See Section 4.4.5 Subsistence, Potential Mitigation Measures 6 and 8. |

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| L86-66 | North Slope Borough | <p>Page 13 Paragraph 2 states: "given the importance of caribou availability, uncertainties regarding the extent and duration of altered caribou availability preclude a finding that the effects of Alternative A will not cause a major redistribution of caribou and thus will not significantly restrict subsistence uses for Nuiqsut hunters." Given this dire conclusion, it is strongly recommended that studies on caribou distribution, migrations and habitat be conducted before, during and after the duration of the GMT2 project. Between the cumulative effects on fish and caribou, the residents of Nuiqsut can have their subsistence resource availability significantly reduced or eliminated for several years, especially in the case of an oil spill (Page 18 Appendix L Para 4). Oil spill simulation models should be developed and run for this area, in order to better assess the risks and consequences of an oil spill, especially if it reaches the Colville River Delta.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM has included potential mitigation measures to address continued monitoring of the caribou harvest and subsistence users' impacts, disturbance, and access. See Section 4.4.5 Subsistence, Potential Mitigation Measures 6 and 8. |

| Comm # | Commenter Name      | Comments  | Comment Category Code   | Comment Response  |
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| L86-7  | North Slope Borough | <p>The DSEIS contains no summary that indicates significant findings. After reading Vol. 1, one could easily conclude that subsistence resources are not at risk. However, the ANILCA 810 analysis in Appendix L finds that there is a potential "substantial restriction of subsistence uses." Both points should have been presented early in a summary statement, especially because a common practice among reviewers is to focus on chapters that are of most interest. BLM has noted and advocated this practice in public meetings to help readers get through large EIS (&gt; 600 page) documents when only a short comment period has been provided. One could easily miss and misunderstand the overall findings of significance because Appendix L is not tied to typical biological studies that emphasize resource population-level effects.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | A statement regarding the ANILC 810 evaluation and findings has been added to the Executive Summary at the front of the document. |

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| L86-8  | North Slope Borough | <p>Among the central conclusions that must be highlighted in the final EIS is that the small community of Nuiqsut will likely suffer significant adverse impacts to subsistence as a result of the GMT2 project and cumulative past, present, and future developments in the area. These impacts must be called out in some clear manner, so that they are easily recognized by all readers. In addition, it must be acknowledged that Nuiqsut residents have expressed for many years their growing concerns regarding the scope and pace of industrial development as it has expanded nearer to the community and within traditional subsistence harvest areas. It follows that what must be a paramount goal of all proponents of the GMT2 development is the avoidance, minimization and mitigation of impacts to Nuiqsut through all reasonable means, working in a partnership that extends beyond this project and includes all area industry operators, all responsible federal, state, and local government land, wildlife management, and social service agencies, organizations with relevant expertise and the community itself.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Language describing the primary impacts to subsistence is now included in both the introduction to the Subsistence Section (4.1.2) and in the conclusion (4.1.2.7). |

| Comm # | Commenter Name      | Comments   | Comment Category Code              | Comment Response   |
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| L86-9  | North Slope Borough | <p>There is a problem in consistency in referring to the "proposed study area" versus smaller, multiple sub-sets of areas. Page 69, Section 3.1.1 Project Study Area, states: "[t]he study area extends approximately 2.5 miles in radius from proposed project facilities and encompasses 158,480 acres." Clarification is necessary with this statement. First, while the phrase "study area extends approximately 2.5 miles in radius from proposed project facilities" is clear, that area would encompass - 12,560 acres, not &gt; 158,000 acres. Table 2.3-2 (pp. 29-30) even provides a summary of major project components for each action alternative. Part of the preceding sentence is the table legend 2.3-2 itself. Nowhere in this table is the complete "study area" of &gt; 158,000 acres indicated. In fact, part of the phrase "study area" is used seemingly indiscriminately on maps and in the text to designate at times the larger area, at times the "proposed permanent infrastructure" area, and at times other smaller areas. To remedy this, a clearer understanding of the study area is provided on page 4, Appendix L: "[t]he GMT2 construction project area encompasses 158,480 acres (Figure 1) and project (sic) area includes the community of Nuiqsut, the gravel mine located 4.5 miles northeast of Nuiqsut, the Alpine Central Processing Facility (CPF), CD2, and CD4 in the Colville Delta north of Nuiqsut, bridges over the Nigliq Channel of the Colville River (and 3 smaller bridges between the Nigliq and CDS and over the Ublutuoch River), the CDS drill site, the CDS-GMTI access road, the GMTI drill site northwest of Nuiqsut, and the proposed GMT1-GMT2 access road and GMT2 drill site west of Nuiqsut" (p. 4, Appendix L).</p> | 2.1 Proposed Action & Alternatives | <p>Additional text regarding the project study area has been added to the beginning of Chapters 3 and 4 in Sections 3.1.1 and 4.1.1 that will assist the reader in understanding the environmental consequences of the alternatives.</p> |

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| L87-10 | Arctic Slope Regional Corporation | BLM goes further to state that subsistence users who utilize the GMT2 Road will “disadvantage” (SEIS, pg. 440 and 441) users who choose not to. This type of assumption creates wedges and friction in the Native community which provides no value to the analysis of the proposed project. BLM notes that subsistence users have traditionally and culturally managed how we hunt so as to not disrupt other hunters, ensure successful hunts by all, and share subsistence resources in the community and across the North Slope (SEIS, pg. 441). | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The statement referred to in the comment is a partial reading of the sentence which begins "If the road has a tendency to prevent caribou from coming closer to town, then..." BLM will revise the "will" that is at issue to "could" in order to match the assertion that the statement is a future possibility.   |
| L87-11 | Arctic Slope Regional Corporation | ASRC finds it confusing how BLM has characterized movement and deflection of Caribou with respect to the Red Dog Mine and the Teshekpuk Caribou Herd (SEIS, pg. 350).  | 3.11 Caribou  | Thank you for your comment. Point number 3 on page 350 of the DSEIS discusses caribou responses to the Red Dog Mine road. A study by Wilson et al. (2016) was provided as one example of how caribou responded to a newly-constructed road. The authors point out that annual variability of responses to the Red Dog Mine road was high and cautioned that caribou behavior is very context -dependent (i.e. exacerbated or mitigated by environmental variables, herd-dependent, or individual-dependent). The BLM used this example to offer insight in to the potential impacts of the proposed GMT1-GMT2 Access Road, Alternatives A and B. One of the points from Wilson (2016) is that predicting a caribou herd's response to a newly constructed road is largely speculative because of the variables associated with behavior. Nonetheless the impacts associated with roads require disclosure. Some of the impacts may include potential obstruction due to snow accumulation, disturbance from traffic, access and related impacts from subsistence hunting. Cumulatively, the roaded alternative will expedite development in the NPRA compared to the constraints on industry from Alt. C. and the potential of incremental increase in development. |



| Comm # | Commenter Name                    | Comments  | Comment Category Code   | Comment Response  |
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| L87-12 | Arctic Slope Regional Corporation | <p>As ASRC raised in both our scoping comments and during consultation, BLM should consider how the GMT2 Road will provide additional access to over-land subsistence areas for hunters who may not have the means or access to boats to hunt via the Colville River, where the majority of subsistence hunting occurs. ASRC is concerned why this likely outcome is noted only once and not carried through in BLM's analysis (SEIS, pg. 432). Recent studies from Stephan R. Braund assessing the Spur Road also support the trend towards an increase in overland hunting (which can be more economical) since the Spur Road was finished (SEIS, pg. 431).</p>   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>This positive impact is described under the analysis for Alternatives A and B, both of which include a road connection between GMT1 and GMT2 (the section is entitled GMT2 Access Road). It is not carried forward under the Alternative C or D analysis because those alternatives do not include a road between GMT1 and GMT2.</p> |
| L87-13 | Arctic Slope Regional Corporation | <p>In several areas BLM states that the "eventual restriction" of subsistence users on the GMT2 Road is possible due to tundra damage (SEIS, pg. 434 and 452). It is unclear to ASRC why BLM has included this in their analysis and how the GMT2 Road could possibly be restricted to subsistence users. The local people have made clear their preference that the GMT2 Road remain a private road to eliminate outside hunter competition in the area, while the operator has clearly committed that local people will be allowed access to the GMT2 Road for subsistence purposes and even designed subsistence pull-outs and ramps for ease of access. It is unclear if BLM is proposing that BLM may in the future legally restrict local access of the GMT2 Road to mitigate tundra damage. If BLM plans to legally limit access, BLM should be transparent in their intention or otherwise remove this language from the SEIS as it is unnecessary and not supported by ASRC. Some of the GMT2 Road will traverse Native-owned land and BLM should not assume authority over access to Native-owned land.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>Text and references have been added to clarify the intent of the discussion regarding how tundra damage can physically restrict travelers, and to provide additional information regarding existing BMPs or regulations that do not allow tundra damage by BLM or other agencies with regulatory authority.</p>                      |

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| L87-14 | Arctic Slope Regional Corporation | BLM's analysis does not include the likely scenario that over-land hunting in the GMT2 area may increase as a result of GMT2 Road. As a result of the additional access provided by the GMT2 Road, the "avoidance affect" BLM notes in their analysis may be reduced or eliminated. This countervailing impact is currently overlooked in BLM's analysis but is worth noting as a likely outcome of the GMT2 Road.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM states "subsistence access to areas west of the community would increase after construction because some hunters would use the GMT2 road to reach the area and many would likely continue to travel overland via the off-road vehicles."   |
| L87-15 | Arctic Slope Regional Corporation | While BLM describes in one area how subsistence access to areas west of the community would increase because of the GMT2 Road (SEIS, pg. 432), this assessment is not carried through BLM's analysis and remains mostly unaddressed. ASRC is disappointed BLM did not fully assess this benefit as additional road access and connectivity is desired and supported by nearly every community on the North Slope and the sociocultural benefits of this additional infrastructure have been seen in Nuiqsut and Utqiagvik. In Utqiagvik, the Barrow Gas Field Road east of the community provides a further jumping off point for subsistence users. This has become a highly used road for subsistence purposes and has provided convenient access to an otherwise low-use area. The Nuiqsut Spur Road, road to CD5, and now GMT1 also are examples of how road connectivity serves subsistence users and provides a direct benefit of expanding the range of subsistence. The proposed Colville River Access Road planned by Native Village of Nuiqsut, is also a good example of how additional road connectivity provides a direct benefit to subsistence users in the community. These roads were championed locally and can provide a good analogue to the GMT2 road. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | This positive impact is described under the analysis for Alternatives A and B, both of which include a road connection between GMT1 and GMT2 (the section is entitled GMT2 Access Road). It is not carried forward under the Alternative C or D analysis because those alternatives do not include a road between GMT1 and GMT2. |

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| L87-16 | Arctic Slope Regional Corporation | BLM should note in their analysis that access provided by the GMT2 Road may lessen the avoidance affect, or perhaps provide a benefit by creating additional throughways to other subsistence areas which would in turn benefit subsistence users and expand traditional hunting areas near GMT2.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM states "Under Alternatives A and B, the avoidance effect may be decreased by facilitated access provided by the GMT2 road."  |
| L87-17 | Arctic Slope Regional Corporation | Through our consultation, ASRC was made aware that BLM's Impact Criteria was removed from the Draft SEIS because there was growing concern internally within BLM and Department of Interior that the Impact Criteria was highly subjective and tended towards an outcome of major impacts to subsistence. BLM has made several comments that they have had difficulty coming up with objective criteria to evaluate subsistence and that this is not required under NEPA. ASRC recommends that BLM adhere to their NEPA requirements with respect to their subsistence criteria. As an alternative, BLM should use the ANILCA 810 Criteria to evaluate impacts to subsistence. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | According to BLM's NEPA guidance, the effects analysis must demonstrate that the BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and the alternatives. NEPA does not require the agency to classify impacts to each resource as minor, moderate or major. The BLM found that the use of GMT2 Impact Criteria did not contribute to meaningfully distinguish the alternatives from each other, and instead detracted from the impact analysis due to confusion and differences of opinion regarding the criteria being applied over focusing on the identified impacts. The ANILCA Section 810 criteria is specific to answering a single question: whether or not there may be a significant restriction to subsistence use, and our guidance is based on case law regarding that specific factor. The NEPA requirement to take a "hard look" (also based on case law) goes beyond addressing a single question, and instead requires BLM to address a whole host of issues, including those identified during scoping, through consultation with stakeholders, and based on a review of relevant literature. In short, NEPA's hard look requires a more comprehensive analysis than that required pursuant to ANILCA Section 810. |

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| L87-18 | Arctic Slope Regional Corporation | ASRC especially encourages ConocoPhillips to evaluate the slope of subsistence ramps, height of the GMT2 Road, and work with local subsistence hunters on continually evaluating impacts to subsistence users and subsistence resources from the Alpine development, GMT1, and GMT2. Through this collaboration, local subsistence hunters can express their concerns directly to the operator and the operator can directly address concerns whenever appropriate. ASRC supports this level of coordination and looks forward to participating in future engagements.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM has included a potential mitigation measure requiring ConocoPhillips to work with the community of Nuiqsut to identify the location and design specification for the access ramps and pull outs along the GMT2 road. See Section 4.4.6, Potential Mitigation Measure 7   |
| L87-19 | Arctic Slope Regional Corporation | ASRC recommends that BLM's closely examine their description of the ASRC Gravel Pit and impacts associated with its use. ASRC was shocked by the level of attention the gravel pit received in the SEIS as it is not the proposed action, is already a permitted activity, and was never mentioned as a concern during ASRC's regular consultation with BLM. Throughout the SEIS, BLM uses different maps to show the area to be mined which leads to confusion. Some of the maps reflect the permitted area of 300 acres while others show the mine area of approximately 23 acres. The inconsistencies in the various maps have already led to confusion in public meetings and should be standardized in the Final SEIS. | 2.1 Proposed Action & Alternatives                                  | Use of gravel from the ASRC Gravel Pit as part of the project proposal makes gravel mining at the pit a connected action as defined by 40 CFR 1508.25 (a), and the BLM must demonstrate that we have considered the connected action in the NEPA document. According to the BLM NEPA Handbook, if the connected action (either Federal or non-Federal) and its effects can be prevented by BLM decision-making, then the effects of the action are properly considered indirect effects of the BLM action and must be analyzed as effects of the BLM action [(40 CFR 1508.25(c); H-1790-1 Section 6.5.2.1 Connected Actions)]. The maps and description of the mine site have been reviewed and edited to provide a consistent description of the use of the mine site associated with the GMT2 project. |
| L87-2  | Arctic Slope Regional Corporation | Although ASRC notes ConocoPhillips's efforts to proactively address subsistence impacts through monetary means, project design features, mitigation measures and other mechanism, valid concerns remain from local stakeholders on the cumulative impact and pace of local resource development on the subsistence lifestyle of the local people.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM discusses the pace of development in Section 4.4.2 Sociocultural Systems - Pace.   |

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| L87-20 | Arctic Slope Regional Corporation | The ASRC Gravel Pit is permitted by the United States Army Corps of Engineers (Corps), a cooperating agency on the SEIS. The ASRC gravel mine site has been permitted and thoroughly analyzed by the Corps, State of Alaska Department of Fish & Game, North Slope Borough, and other authorizing agencies since the mid-1990s. ASRC's disagrees with the degree of impacts BLM has attributed to the gravel pit and the subjective language used to describe assumed sociocultural impacts associated with activity at the gravel pit (SEIS, pg. 383). This is the eighth take from gravel pit that has been permitted at this site since 1996. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | One purpose of preparing a supplemental EIS is to provide updated information that did not exist when the original EIS was written. The BLM has added citations to the section describing concerns related to gravel mining to provide the source of the concerns that have been raised to the BLM from residents within the community regarding recent mining activity.   |
| L87-21 | Arctic Slope Regional Corporation | BLM should refine their analysis of the gravel pit, focus their NEPA analysis on the proposed activity, and consult with the Corps and ASRC on how to accurately describe the gravel pit.  | 2.1 Proposed Action & Alternatives                                  | The BLM has obtained information from the US Army Corps of Engineers regarding the NEPA analysis and permit that has been issued for mining in the ASRC gravel pit. Use of gravel from the ASRC Gravel Pit as part of the project proposal makes gravel mining at the pit a connected action as defined by 40 CFR 1508.25 (a), and the BLM must demonstrate that we have considered the connected action in the NEPA document. According to the BLM NEPA Handbook, if the connected action (either Federal or non-Federal) and its effects can be prevented by BLM decision-making, then the effects of the action are properly considered indirect effects of the BLM action and must be analyzed as effects of the BLM action [(40 CFR 1508.25(c); H-1790-1 Section 6.5.2.1 Connected Actions)]. The maps and description of the mine site have been reviewed and edited to provide a consistent description of the use of the mine site associated with the GMT2 project. |

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| L87-22 | Arctic Slope Regional Corporation | ASRC disagrees with the inclusion of the blasting study in the SEIS as it is not a proper analogue, doesn't reflect current blasting practices and technologies, and provides no actual analytical value; we request that this be removed from the SEIS (SEIS, pg. 102)  | 3.6 Acoustical Environment  | In the absence of site-specific noise data for blasting operations at the mine, we used published blast data from the Pääkkönen (1991) study as a reasonable proxy. But we also noted the importance of acquiring accurate on-site data for levels of blast noise near Nuiqsut as a means of determining the need for mitigation measures.                               |
| L87-23 | Arctic Slope Regional Corporation | The language describing the mine as "unnerving" should either be cited with a source or removed as again, as it is not representative and does not provide any analytical value (SEIS, pg. 383). BLM also raises concerns over damage to heating or plumbing infrastructure. ASRC has investigated these concerns along with the Corps, North Slope Borough, and the operator and found that many of the impacts to local infrastructure are due to ground settling. This is well documented in the 2014 report, Climate Change in Nuiqsut in Alaska <sup>1</sup> , issued by the Alaska Native Health Tribal Consortium in coordination with the North Slope Borough and the Native Village of Nuiqsut. ASRC encourages BLM to utilize this resource as a reference rather than incorrectly attributing these concerns to the gravel pit. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | One purpose of preparing a supplemental EIS is to provide updated information that did not exist when the original EIS was written. The BLM has added citations to the section describing concerns related to gravel mining to provide the source of the concerns that have been raised to the BLM from residents within the community regarding recent mining activity. |
| L87-24 | Arctic Slope Regional Corporation | BLM raises concerns over potential dust impacts from blasting and references a presentation from the U.S. Office of Surface and Mining created out of Denver, Colorado addressing blasting at coal mines in Wyoming. This citation has no bearing to the GMT2 project or its ancillary activities, and the presentation clearly states "this module is not intended to stand alone". BLM should remove this citation and clarify their analysis.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | One purpose of preparing a supplemental EIS is to provide updated information that did not exist when the original EIS was written. The BLM has added citations to the section describing concerns related to gravel mining to provide the source of the concerns that have been raised to the BLM from residents within the community regarding recent mining activity. |

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| L87-25 | Arctic Slope Regional Corporation | Under the gravel permitting, the gravel pit has already gone through a NEPA process which BLM should tier from and consult with ASRC and the Corps on the many mitigation measures already incorporated into operations at the pit that address many of the concerns mentioned in the SEIS. | 2.1 Proposed Action & Alternatives | The BLM has obtained information from the US Army Corps of Engineers regarding the NEPA analysis and permit that has been issued for mining in the ASRC gravel pit. Use of gravel from the ASRC Gravel Pit as part of the project proposal makes gravel mining at the pit a connected action as defined by 40 CFR 1508.25 (a), and the BLM must demonstrate that we have considered the connected action in the NEPA document. According to the BLM NEPA Handbook, if the connected action (either Federal or non-Federal) and its effects can be prevented by BLM decision-making, then the effects of the action are properly considered indirect effects of the BLM action and must be analyzed as effects of the BLM action [(40 CFR 1508.25(c); H-1790-1 Section 6.5.2.1 Connected Actions)]. The maps and description of the mine site have been reviewed and edited to provide a consistent description of the use of the mine site associated with the GMT2 project. |
| L87-26 | Arctic Slope Regional Corporation | To address Air Quality concerns, ASRC recommends a table in the SEIS comparing the Nuiqsut air quality with air quality data from Fairbanks, Prudhoe Bay, Barrow, and Anchorage.  | 3.5 Air Quality & Meteorology      | Thank you for the comment. In order to address the comment, we evaluated each of the suggested locations. The Anchorage and Fairbanks locations are over 600 kilometers away and would therefore not be a useful comparison to address concerns. The air quality data at Prudhoe Bay is impacted by nearby portable and mobile sources as described in the GMT1 AQIA for exclusion of background monitoring data at Deadhorse and A Pad. Therefore, these datasets are also not a useful comparison to address air quality concerns. The monitoring station at Barrow is not an EPA monitoring station and is instead observed and maintained by NOAA's Earth System Research Laboratory (ESRL). At this time, that monitoring station only records carbon monoxide and ozone. The incomplete dataset would not be useful for comparison to Nuiqsut's suite of data including NO2 and PM.  |

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| L87-27 | Arctic Slope Regional Corporation | To address Air Quality concerns, ASRC recommends the BLM should revise Slide 15 in the public meeting presentation to show values  | 3.5 Air Quality & Meteorology                                       | Comment does not relate to the analysis in the SEIS.   |
| L87-29 | Arctic Slope Regional Corporation | To address Air Quality concerns, ASRC recommends BLM obtain from Alaska Department of Environment Conservation an inclusive and thorough list of air quality mitigation measures and design features that will be applied to the GMT2 project  | 3.5 Air Quality & Meteorology                                       | See Appendix J for a description of State of Alaska regulations regarding air quality.   |
| L87-3  | Arctic Slope Regional Corporation | In a recent public meeting in Nuiqsut for the GMT2 SEIS, concerns were voiced that the slope of subsistence access ramps were problematic for fully-loaded sleds and that the planned height of the road may be problematic. ASRC encourages Conoco to work closely with local hunters to address these concerns and, where possible, reduce the slope of the subsistence ramps and height of the road to an acceptable level. ASRC is pleased that Conoco increased the number of subsistence pull outs since this project was originally proposed and their commitment to work with the community to address impacts to subsistence and subsistence users. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM has included a potential mitigation measure requiring ConocoPhillips to work with the community of Nuiqsut to identify the location and design specification for the access ramps and pull outs along the GMT2 road. See Section 4.4.6, Potential Mitigation Measure 7 |



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| L87-30 | Arctic Slope Regional Corporation | BLM correctly notes the burdensome permitting process creates sociocultural impacts on the community of Nuiqsut. ASRC has raised this impact to BLM several times. To alleviate this impact on the community, ASRC urges BLM to host the required, mandatory meetings in the community of Nuiqsut or when requested by the Native Village of Nuiqsut or Kuukpik Corporation. ASRC encourages BLM to maintain alignment with ANILCA with respect to public meetings and adhere to the input from Kuukpik and the Native Village of Nuiqsut on ways to minimize BLM's permitting footprint in the community which has caused unnecessary anxiety and exhaustion. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM will continue to host meetings within the community at the request of the Native Village of Nuiqsut and/or the Kuukpik Corporation, and will strive to combine those meetings with other requirements as possible so as to minimize the negative effects of these meetings to the community. However, we are also required through statute and regulation to hold other meetings or hearings, and it may not be possible to apply measures that could alleviate the associated stress and anxiety. BLM is highly conscious of the burden of permitting and our regulatory requirements, and where we have the ability to effect change to reduce these burdens we will do so. |
| L87-31 | Arctic Slope Regional Corporation | Regional benefits from the NPR-A Impact Fund which allocates funds to the municipal governments of the NPR-A communities should be fully considered in BLM's analysis. The NPR-A Impact Fund has provided benefits to the local communities as a direct result of development within NPR-A, and will be further stimulated by GMT-2. Evidence of this positive impact can be seen with the gas pipeline in Nuiqsut, which was funded by the NPR-A Impact Fund.   | 4.2 Mitigation  | The NPR-A Impact Mitigation Fund administered by the State of Alaska is described in detail in Section 4.4.5 Subsistence.   |
| L87-32 | Arctic Slope Regional Corporation | Despite the documented, regional economic benefits of resource development for the local people, ASRC was disappointed by BLM's multiple references to the "economic disparity" attributed to the GMT2 Project. ASRC objects to this characterization and encourages BLM to approach topics of community affairs with great sensitivity and only when absolutely necessary.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Through the NEPA process, the BLM has been presented information from local residents regarding economic disparity within the community (see NUI Public Meeting Transcript as a recent example), and it continues to be a topic of concern.   |

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| L87-33 | Arctic Slope Regional Corporation | As BLM points out, Kuukpik Corporation is not open to "after-births" despite multiple proposals to expand their shares. However, as the regional ANC, ASRC shareholders include "after-births" and the Nuiqsut residents who are not Kuukpik shareholders are likely ASRC shareholders who still receive ASRC's dividends and benefit financially from GMT2. BLM should not characterized the descendants of our shareholders as "after-births", this offensive language should be removed from the SEIS.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM does not use the phrase "after-births." The footnote referenced states that "...subsequent generation's of Alaska Natives, commonly referred to as "afterborns"..." This is the terminology used in <i>Village Journey: The Report of the Alaska Native Review Commission by Thomas Berger, 1985</i> and is referred to in numerous ANCSA reports and citations. |
| L87-34 | Arctic Slope Regional Corporation | BLM should remove references to the City of Nuiqsut's eligibility to receive funds from the NPRA Impact Grant Fund. BLM's comments are inaccurate and inappropriate. ASRC encouraged BLM to make these changes and to take great sensitivity when discussing affairs and economic disparity.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM has revised these sections.  |
| L87-35 | Arctic Slope Regional Corporation | In general, ASRC recommends that BLM be sensitive when discussing Native ownership, economic standing, and community affairs within the SEIS. ASRC concern is that BLM may inaccurately state certain items and may cause wedges between different community entities and members. Of these inaccuracies, ASRC notes that BLM has mischaracterized ASRC as the "largest private landowner in Alaska. Most of ASRC's lands are rich in subsurface oil, gas, and base metals" (SEIS, pg. 173). ASRC finds this statement to be inaccurate and irrelevant to include in the SEIS. ASRC is not the largest private landowner in Alaska, but on the North Slope. Of landowners on the North Slope, BLM is likely the largest landowner, with known resource rich lands like the NPRA. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM has removed the sentence regarding ASRC as the largest private landowner.  |

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| L87-4  | Arctic Slope Regional Corporation | Another concern raised at the public meeting in Nuiqsut was the timing of the GMT2 decision making prior to understanding the impacts from the recent GMT1 development. Specifically, ASRC notes that local hunters are wary of impacts to subsistence from GMT1 that may not be fully realized prior to the GMT2 Record of Decision. With respect to this concern, ASRC recommends that ConocoPhillips work directly with Nuiqsut Trilateral Group, local hunter, and the NPRA Working Group to closely examine any impacts from GMT1 and proactively address these with respect to GMT2. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM has included a potential mitigation measure for the applicant to conduct monitoring of subsistence uses aimed at understanding the impacts of GMT1 and GMT2, in order to further minimize impacts through adaptive management. |
| L87-5  | Arctic Slope Regional Corporation | The working relationship between hunters and industry does not end with BLM's NEPA's permitting process but should be maintained throughout life of GMT2. To this end, ASRC recommends that Conoco engage hunters directly and together closely examine how lessons learned from GMT1 can inform the development of GMT2 outside and beyond the permitting process.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM has included a potential mitigation measure for the applicant to conduct monitoring of subsistence uses aimed at understanding the impacts of GMT1 and GMT2, in order to further minimize impacts through adaptive management. |

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| L87-6  | Arctic Slope Regional Corporation | Throughout the SEIS, ASRC has several concerns for how subsistence and subsistence impacts are currently described and the inconsistencies in BLM's analysis that would benefit from some additional clarity. First, there are several places in the SEIS where the area of GMT2 is referred generally as a "high-use" (SEIS, pg. 419) subsistence area for caribou but in other instances it is described as "on the periphery of Nuiqsut's core caribou hunting area" (SEIS, pg. 428, 420, 426- 427). Given these very basic inconsistencies in BLM's analysis, it becomes very challenging for the reader to distinguish the significance of the GMT2 area and the actual impacts of the additive GMT2 infrastructure to subsistence. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The statement referred to on page 419 under Summary of Nuiqsut Subsistence Uses regarding the GMT2 Project Area is for all subsistence resources, not only caribou.   |
| L87-7  | Arctic Slope Regional Corporation | Furbearers are mentioned multiple times in the SEIS and ANILCA 810 Analysis as a significant subsistence resource in the GMT2 area with high overlapping areas for hunting (SEIS, pg. 428 and 441). However, at other points in the SEIS it is noted that furbearers are "uncommon" in the GMT2 area (SEIS, pg. 146). ASRC is concerned these inconsistencies at best are confusing to the reader and decision-maker, and, at worst, may be misleading regarding potential impacts to furbearers as it relates to GMT2 and subsistence.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The wildlife section has been updated to include recent data regarding wolverine populations. However, the subsistence section draws from data from subsistence harvesters, and the Terrestrial Mammals section from data regarding wildlife populations or population density that may not be comparable due to a general lack of information for these species. |

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| L87-8  | Arctic Slope Regional Corporation | <p>Impacts to subsistence are generally very broadly described to the extent that in some places it is not clear to the reader which subsistence resource BLM is analyzing (SEIS, pg. 427 and 428) or how seasonality of subsistence hunting of that resource and actual activity at GMT2 (i.e., construction occurring in the winter and not during peak subsistence hunting [SEIS, pg. 424, 427, 428]) is taken into consideration or even noted in BLM's analysis. ASRC is concerned that this gross generalization tends towards a conclusion of significant impacts that isn't well understood by BLM, stakeholders, or the reader. By generalizing impacts to all subsistence resource unilaterally, BLM fails to conduct a meaningful or clear analysis to aid valuable stakeholders and eventually the decision-maker in determining impacts from the GMT2 project. BLM should avoid oversimplifying the subsistence practices of the local people or the subsistence resources in order to produce an outcome of significant impacts. Rather, ASRC recommends BLM carefully review these inconsistencies and make the necessary changes to provide a more clear analysis of subsistence and subsistence impacts.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>The text has been revised to provide clarity regarding the subsistence resources being referred to, and the seasonality of the impact. We believe the text was shortened in an attempt to tier to existing analyses, and this may be leading to confusion.</p> |

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| L87-9  | Arctic Slope Regional Corporation | ASRC is concerned with BLM's language assessing how subsistence users who choose to utilize the GMT2 Road would create an impact to subsistence users who chose not to use the road for subsistence (SEIS, pg. 433 and 441). ASRC feels this commentary is inappropriate, outside the scope of NEPA, and an attempt to normalize an idea that subsistence users are impacting other subsistence users. We find this type of reasoning worrisome and inappropriate for BLM to analyze subsistence in this fashion. Our concern is that subsistence is becoming the source of the impact, rather than the project BLM is required to analyze. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | NEPA requires the BLM to evaluate the direct and indirect impacts of a proposed action. The concern cited by the commenter is an example of an indirect impact that could result due to the presence of a gravel road. |
| L88-01 | ConocoPhillips Alaska, Inc.       | Update to Tables 3.3-1, 4.3-2, and 4.3-3. See Attachment B-1, B-2 and B-3 of L88, ConocoPhillips comment letter   | 3.8 Vegetation and Wetlands   | Tables 3.3-1, 4.3-2, and 4.3-3 have been updated.  |
| L88-02 | ConocoPhillips Alaska, Inc.       | on page 89, there is a reference to Table 3.2-9 in this paragraph that should be a reference to Table 3.2-8. See ConocoPhillips comment letter Attachment A.  | 3.8 Vegetation and Wetlands   | Reference has been corrected.  |
| L88-03 | ConocoPhillips Alaska, Inc.       | See ConocoPhillips comment letter Attachment A. On page 113, There is a slight difference in wetlands mapping between the ConocoPhillips USACE 404 permit application and the SEIS because the BLM used different wetlands mapping than CPAI provided in the USACE Individual Permit Application. This should be noted.   | 3.8 Vegetation and Wetlands   | The slight difference has been corrected with the new tables.  |

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| L88-04 | ConocoPhillips Alaska, Inc. | <p>See ConocoPhillips comment letter Attachment A. The hydrologic regime is missing from the NWI code for "Seral Herbs" and the assigned NWI code is PSS1 which is typically assigned to wetlands dominated by scrub-shrub vegetation types. Recommend considering "PEM1" NWI code which is typically assigned to wetlands dominated by herbaceous vegetation types, and assigning a hydrologic regime code based on aerial imagery interpretation or a description of plant species composition and occurrence on the landscape. "Seral Herbs" is also missing from Appendix D - Classification and Description of Vegetation and Wildlife Habitat Types submitted as part of the DSEIS. Descriptions for Coastal Complex, Elymus Meadow, Halophytic Grass Wet Meadow, Halophytic Willow-Graminoid Dwarf Shrub Tundra, Open Low Willow-Sedge Shrub Tundra, or Wet Sedge-Willow Tundra, all of which are listed in Table 3.3-1, are also missing from Appendix D. Many of these vegetation types are missing from Tables 4.3-2 and 4.3-3 as well. Recommend verifying that descriptions for all vegetation types referenced in the tables are included in Appendix D and checking the consistency of vegetation types listed in Chapters 3 and 4 tables.</p> | 3.8 Vegetation and Wetlands | <p>Error for Seral Herbs has been corrected in the updated Table 3.3-1. Error of omission of 7 vegetation types in Tables 4.3-2 and 4.3-3 has been corrected in the updated tables.</p> <p>Descriptions of Coastal Complex, Elymus Meadow, Halophytic Grass Wet Meadow, Halophytic Willow-Graminoid Dwarf Shrub Tundra will be added by Writer Editor.</p> <p>Still looking for descriptions of:<br/>Seral Herbs<br/>Open Low Willow-Sedge Shrub Tundra<br/>Wet Sedge-Willow Tundra</p> |
| L88-05 | ConocoPhillips Alaska, Inc. | <p>See ConocoPhillips comment letter Attachment A. NWI code of Human Modified Barrens should be "Upland" instead of N/A since this vegetation type characterizes areas where gravel fill has been placed, as indicated in the table footnotes.</p>   | 3.8 Vegetation and Wetlands | <p>Correction has been made in the updated Table 3.3-1.</p>   |

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| L88-06  | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Recommend revising first sentence "Areas not classified as water bodies or wetlands are considered uplands or Natural Barrens". The NWI codes assigned to Natural Barrens in Table 3.3-1 includes E2US3P, which would be considered a water body. | 3.8 Vegetation and Wetlands | Corrected to say: " Areas not classified as water bodies or wetlands occupy just over 3 percent of the project area as shown in Table 3.3-1."         |
| L88-07  | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Figure 3.3-3: Caption should say "111 surveys....2001-2016". It appears the source for this graphic is Prichard et al 2017 Figure 5.  | 3.12 Mammals                | The figure caption has been updated.  |
| L88-08  | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Mistake - "... (Johnson square kilometer et al. 2005; Lawhead 2014b). That square kilometer part in the citation is a mistake.  | 3.12 Mammals                | Thank you for noting this error.  |
| L88-09  | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. In paragraph 4 on page 170, it states there are approximately 250 Kuukpik shareholders while on page 174, paragraph 4, it states there are 325.   | 3.16 Economy                | Updated information regarding the approximate number of current shareholders was obtained from Kuukpik Corporation, and the section has been revised. |
| L88-10  | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Section 3.4.4.2 This section erroneously states the Ooguruk and Nikaitchuq developments are suspended. Both are in production.  | 3.16 Economy                | Revised text.   |
| L88-100 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment B-0. A more recent version of this figure would show Conoco's 2016 additions to the NPRA survey area. BLM has the 2016 report with the survey area extended to the west; this should be used.  | 3.12 Mammals                | The figure has been updated.  |



| Comm #  | Commenter Name              | Comments   | Comment Category Code       | Comment Response  |
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| L88-101 | ConocoPhillips Alaska, Inc. | <p>See ConocoPhillips comment letter Attachment B-0. Please update Tables 3.3-1, 4.3-2, and 4.3-3 with new Tables 3.3-1, 4.3-2, and 4.3-3 included below. The numbers are only slightly different in each new table but updated to reflect more recent analyses that were unavailable when the Modified NEPA Analysis Document (MNAD) was prepared and submitted to BLM in March 2016 and for consistency with the GMT2 404 application for wetlands fill. We also note that the existing tables 3.3-1, 4.3-2, and 4.3-3 in the DSEIS are internally inconsistent so believe it best to update them. For reference, the acreages in the tables have been revised using the vegetation type detail from Jorgenson, et al. (2004) and Wells, et al. (2014), and the latest project footprints for each action alternative as follows:</p> <ul style="list-style-type: none"> <li>- Alternative A footprint – submitted to BLM on 26 May 2017</li> <li>- Alternative B footprint – submitted to BLM on 9 June 2017</li> <li>- Alternative C footprint – submitted to BLM on 7 December 2016 (as Alternative D1); the appropriate citations are:<br/>                     Jorgenson, M.T., J.E. Roth, M. Emers, W. Davis, E.R. Pullman, and G.J. Frost. 2004. An Ecological Land Survey in the Northeast Planning Area of the National Petroleum Reserve-Alaska. 2003: Addendum to the 2002 Report. Prepared by ABR, Inc. - Environmental Research &amp; Services (ABR, Inc.). Prepared for ConocoPhillips Alaska, Inc. and Anadarko Petroleum Corporation.</li> <li>Wells, A.F., M.W. Macander, C.S. Swingley, T.C. Cater, T. Christopherson, A.N. Cade, T.C. Morgan, and W.F. St. Lawrence. 2014. 2013 Habitat Monitoring and Assessment CD5 Development Project. ABR, Inc. Fairbanks, AK, and Polar Alpine, Inc. Berkeley, CA.</li> </ul> | 3.8 Vegetation and Wetlands | Updated tables inserted into the document and outdated tables were removed. |

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| L88-102 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment B-0. As depicted in red on the below graphic labeled Sheet 23 of 33, the messenger cable may be attached to the sides of the horizontal support members rather than suspended beneath them.   | 2.1 Proposed Action & Alternatives | Updated Sheet 23 of 33 has been added to Appendix A: Permit Drawings Package.                             |
| L88-103 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment B-0. Attachment D contains updated inundation analyses for Alternatives A & B. Tables 4.2-4 and 4.2-5 of the DSEIS use information from the MNAD Alternative A analysis prior to the change in the way the road enters the GMT2 pad. These should be updated to reflect the new road alignment. The Alternative B values should also be updated in order to be consistent with the updated Alternative A method. The text on the bottom of page 255 and top of 256 should also be adjusted to account for the additional conservatism built into the analysis: The historical gage data indicated typical duration of snowmelt runoff is seven days, with peak flow conditions occurring approximately 3.5 days after the start of runoff. It is assumed that the duration of snowmelt runoff at the USGS gage is representative of conditions along the proposed GMT2 Alternative A alignment. To provide a conservative estimate for this analysis, the duration of snowmelt runoff was condensed to a five-day period with peak flow conditions occurring 2.5 days after the start of runoff. (page 1 of Alternative A update in Attachment D) | 3.4 Water Resources                | Edits were made to Tables 4.2-4 to 4.2-7 and all referrals to this table and the snowmelt runoff periods. |

| Comm #  | Commenter Name              | Comments   | Comment Category Code   | Comment Response   |
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| L88-104 | ConocoPhillips Alaska, Inc. | BLM Should Explain Its Method for Assessing Impacts to Social Systems Elements. BLM used prescribed criteria for evaluating impacts to physical characteristics and the biological environment and, accordingly, it would be helpful for BLM to clarify its analytical approach to the assessment of potential impacts to social systems elements. This is true regardless of whether BLM chooses to adopt different criteria for the social systems assessments or to adopt no criteria at all. In either case, it is important that BLM clearly explain (i) why it is using a different approach for its analyses of social systems impacts, and (ii) the supporting rationale for the methodology used by BLM to evaluate social systems impacts. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | According to BLM's NEPA guidance, the effects analysis must demonstrate that the BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and the alternatives. NEPA does not require the agency to classify impacts to each resource as minor, moderate or major. The BLM found that the use of GMT2 Impact Criteria did not contribute to meaningfully distinguish the alternatives from each other, and instead detracted from the impact analysis due to confusion and differences of opinion regarding the criteria being applied over focusing on the identified impacts. |
| L88-105 | ConocoPhillips Alaska, Inc. | BLM Should Explain Its Method for Assessing Impacts to Social Systems Elements. BLM used prescribed criteria for evaluating impacts to physical characteristics and the biological environment and, accordingly, it would be helpful for BLM to clarify its analytical approach to the assessment of potential impacts to social systems elements. This is true regardless of whether BLM chooses to adopt different criteria for the social systems assessments or to adopt no criteria at all. In either case, it is important that BLM clearly explain (i) why it is using a different approach for its analyses of social systems impacts, and (ii) the supporting rationale for the methodology used by BLM to evaluate social systems impacts. | 3.18 Public Health  | According to BLM's NEPA guidance, the effects analysis must demonstrate that the BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and the alternatives. NEPA does not require the agency to classify impacts to each resource as minor, moderate or major. The BLM found that the use of GMT2 Impact Criteria did not contribute to meaningfully distinguish the alternatives from each other, and instead detracted from the impact analysis due to confusion and differences of opinion regarding the criteria being applied over focusing on the identified impacts. |

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| L88-106 | ConocoPhillips Alaska, Inc. | BLM Should Explain Its Method for Assessing Impacts to Social Systems Elements. BLM used prescribed criteria for evaluating impacts to physical characteristics and the biological environment and, accordingly, it would be helpful for BLM to clarify its analytical approach to the assessment of potential impacts to social systems elements. This is true regardless of whether BLM chooses to adopt different criteria for the social systems assessments or to adopt no criteria at all. In either case, it is important that BLM clearly explain (i) why it is using a different approach for its analyses of social systems impacts, and (ii) the supporting rationale for the methodology used by BLM to evaluate social systems impacts. | 3.16 Economy                                | According to BLM's NEPA guidance, the effects analysis must demonstrate that the BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and the alternatives. NEPA does not require the agency to classify impacts to each resource as minor, moderate or major. The BLM found that the use of GMT2 Impact Criteria did not contribute to meaningfully distinguish the alternatives from each other, and instead detracted from the impact analysis due to confusion and differences of opinion regarding the criteria being applied over focusing on the identified impacts. |
| L88-107 | ConocoPhillips Alaska, Inc. | BLM Should Explain Its Method for Assessing Impacts to Social Systems Elements. BLM used prescribed criteria for evaluating impacts to physical characteristics and the biological environment and, accordingly, it would be helpful for BLM to clarify its analytical approach to the assessment of potential impacts to social systems elements. This is true regardless of whether BLM chooses to adopt different criteria for the social systems assessments or to adopt no criteria at all. In either case, it is important that BLM clearly explain (i) why it is using a different approach for its analyses of social systems impacts, and (ii) the supporting rationale for the methodology used by BLM to evaluate social systems impacts. | 3.14 Cultural and Paleontological Resources | According to BLM's NEPA guidance, the effects analysis must demonstrate that the BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and the alternatives. NEPA does not require the agency to classify impacts to each resource as minor, moderate or major. The BLM found that the use of GMT2 Impact Criteria did not contribute to meaningfully distinguish the alternatives from each other, and instead detracted from the impact analysis due to confusion and differences of opinion regarding the criteria being applied over focusing on the identified impacts. |

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| L88-108 | ConocoPhillips Alaska, Inc. | CPAI recommends that BLM adopt the criteria of the Alaska National Interest Lands Conservation Act (ANILCA) Section 810 analysis, described in Appendix L, as the criteria for assessing subsistence impacts, and also the other social systems for which the impacts are largely determined by subsistence. In our view, this would allow for adherence to the legally prescribed analysis for subsistence while also allowing for consideration of the other factors that BLM has included in its analysis. It would also allow BLM to draw meaningful conclusions that are not so detailed that they convey a false precision. The analysis should be consistent with the Section 810 subsistence analysis, and focus on facts and material issues while avoiding speculation and tangential issues. If BLM adopts this approach (or any other approach), it should explain the basis for it and why BLM is using an approach that is different than the criteria assessment used to address impacts to physical characteristics and the biological environment. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | According to BLM's NEPA guidance, the effects analysis must demonstrate that the BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and the alternatives. NEPA does not require the agency to classify impacts to each resource as minor, moderate or major. The BLM found that the use of GMT2 Impact Criteria did not contribute to meaningfully distinguish the alternatives from each other, and instead detracted from the impact analysis due to confusion and differences of opinion regarding the criteria being applied over focusing on the identified impacts. The ANILCA Section 810 criteria is specific to answering a single question: whether or not there may be a significant restriction to subsistence use, and our guidance is based on case law regarding that overriding factor. The NEPA requirement to take a "hard look" (also based on case law) goes beyond addressing a single question, and instead requires BLM to address a whole host of issues, including those identified during scoping, through consultation with stakeholders, and based on a review of relevant literature. In short, NEPA's hard look requires a more comprehensive analysis than that required pursuant to ANILCA Section 810. |
| L88-109 | ConocoPhillips Alaska, Inc. | The DSEIS states at page 431 that "[b]rief stops for subsistence purposes would be permitted at designated pullouts or parking areas." (Emphasis added.) By adding the word "brief," the DSEIS minimizes the fact that CPAI has designed the road with pullouts for Nuiqsut residents to use for subsistence, with no prescribed time limit on their use. This type of negative characterization appears throughout the subsistence analysis.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | This language was taken from the concise one-page guidelines that accompany the GMT1 Road Access Agreement (see bullet seven) prepared by ConocoPhillips. It was assumed that the rules that are applicable to the GMT1 Road and other industrial roads in the Alpine area would be consistent with those to be applied to the GMT2 Road.  |

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| L88-11  | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. The statement, "Nuiqsut, like all other North Slope Borough communities, does not qualify as economically distressed" is no longer correct. The Denali Commission 2017 report lists Anaktuvuk Pass and Point Hope as economically distressed.   | 3.16 Economy  | Revised text to incorporate results of more recent report.  |
| L88-110 | ConocoPhillips Alaska, Inc. | The idea of caribou deflection pervades the entire subsistence analysis. See, e.g., DSEIS, p. 428 ("[E]ffects of resources availability could occur . . . due to deflection."); see also DSEIS, pp. 439, 443; App. L, p. 8. By raising the issue repeatedly as a concern, the DSEIS conveys a sense of negative impact that is out of proportion to the available data. The data, as discussed in Attachment C, support the conclusion that caribou are being harvested closer to Nuiqsut and closer to roads than before, so current roads do not appear to be significantly impairing caribou harvest generally, and there is no reason to think the GMT2 road would have a greater impact. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been revised to include data from year 9 of the Nuiqsut Caribou Monitoring Study which includes additional information regarding use of the road for subsistence harvesting. Deflection of resources, including caribou, is one of the most frequent concerns raised by local residents regarding oil industry and associated activities. This section has been carefully reviewed to ensure the text is consistent with comments received as part of the review of the draft SEIS, and duplicative or speculative text without supporting information has been revised. |
| L88-111 | ConocoPhillips Alaska, Inc. | The DSEIS analysis also tends to present speculation as known negative impacts that are attributable to GMT2. For example, the DSEIS states: "If residents decrease the use of the project area, the opportunity to transmit traditional knowledge about the area would diminish and could eventually be lost to younger generations. . . . Any changes to residents' ability . . . to harvest resources in traditional places at the appropriate times . . . could have long-term or permanent effects on culture[.]" <sup>20</sup> That sounds ominous, but it is pure speculation and not an analysis of the reasonably anticipated impacts of the GMT2 project.                           | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | This section has been carefully reviewed to ensure the text is consistent with comments received as part of the review of the draft SEIS, and duplicative or speculative text without supporting information has been revised.  |

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| L88-112 | ConocoPhillips Alaska, Inc. | <p>The DSEIS does not, however, include countervailing information, such as the following quote from the subsistence reports: [At the] end of July or August, I went out with the four-wheeler five or six or seven or eight times, around these lakes here. Let's see, all around over here is where we went. This area here all the way to CD5 here ... from CD5 I traveled to here [to the west], around this area right here. Right around this way. I get some caribou at CD5. I tried at CD5 but there was quite a few caribou – like 10 to 15. The people that were working there, they keep seeing a lot. My nephew was telling me they were seeing caribou around that area ... I can't remember, practically every day or every other day. Yeah, late August to September I probably went like every other day [by four-wheeler]. Yeah, June, July, August by Honda.... Yeah, they were pretty much in that whole area, they still go to that area even though CD5 is there. They are all over that area, they have still been seeing them in that area. (SRB&amp;A Nuiqsut Interview November 2014)[</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>Many direct quotations in the DSEIS text were removed in order to be consistent with new NEPA requirements regarding brevity of analysis. The text was revised to include relevant quotations, such as this, to help explain the context of identified positive and negative impacts.</p> |

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| L88-113 | ConocoPhillips Alaska, Inc. | <p>The DSEIS simply ignores some of the most important harvest data, which provide strong evidence that subsistence is healthy in Nuiqsut and can reasonably be expected to remain healthy even with the construction and operation of GMT2. As described in more detail with supporting data in Attachment C, subsistence harvests of the most important resources are stable or increasing for Nuiqsut residents. This is relevant, objective, scientifically documented information from an independent third party. It should be an important part of the subsistence analysis, but instead it is treated dismissively with the statements that harvest data are “not the only measure of health of the subsistence lifestyle”<sup>21</sup> and “not always reflective of changes in the subsistence lifestyle.”<sup>22</sup> Neither of these statements address the fact that there are objective, relevant, independent subsistence data that are not presented in the DSEIS and that counter some of the statements that are included in the DSEIS.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>A new section entitled "Existing Levels of Impacts on Subsistence Uses" has been included in Chapter 3, Section 3.4.6 Subsistence that discusses subsistence harvest data. Community harvest amounts and participation rates are only one indicator of the health of the subsistence lifestyle, and sustained harvests may occur in spite of increased impacts on subsistence.</p> |
| L88-114 | ConocoPhillips Alaska, Inc. | <p>See ConocoPhillips comment letter Attachment C. CPAI urges BLM to incorporate the information presented in this Section III.B of the comment letter, and the more technical information in Attachment C, into the Section 4.4.5 analysis of subsistence impacts in the FSEIS. In light of what appear to be competing viewpoints regarding the scope and magnitude of the impacts (both negative and positive) associated with development in the NPR-A generally, and for the GMT2 project in particular, BLM should ensure that both viewpoints are presented in the FSEIS.</p>  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>Many direct quotations in the DSEIS text were removed in order to be consistent with new NEPA requirements regarding brevity of analysis. The text was revised to include relevant quotations, such as this, to help explain the context of identified positive and negative impacts.</p>  |



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| L88-115 | ConocoPhillips Alaska, Inc. | <p>The DSEIS discusses the potential for caribou deflection specifically due to road height.<sup>23</sup> The GMT2 road is proposed to be five feet high with 2:1 side slopes. The photo below shows caribou climbing a slope that is 38 feet high, over a distance of 91 feet, with a slope of 2.4:1, which is similar to the GMT2 road and about seven times as high. This photo was taken during the summer of 2017 at Mine Site E on the border between the Kuparuk River Unit and the Milne Point Unit. Oilfield facilities are visible in the upper left corner of the photo. While the DSEIS reports instances in which individuals have expressed concern about deflection, the photo indicates that caribou have no trouble climbing a steep embankment, even one they cannot see over.</p> | 3.11 Caribou          | <p>The text referenced on pg. 428 does not specify "road height" as the cause of deflection, but rather mentions deflection generally. The DSEIS, as written, accurately describes public concerns regarding road features and caribou movements.</p> |

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| L88-116 | ConocoPhillips Alaska, Inc. | <p>The DSEIS also presents other concerns about the road, not specific to road height, such as the assertion that local hunters “frequently report deflection of caribou from industrial roads.”<sup>24</sup> The DSEIS fails to include evidence supporting the view that caribou grow habituated to roads relatively easily, and roads provide useful access to hunting opportunities. The following testimony from reports available to BLM should have been included in the DSEIS: In contrast, several respondents expressed the view that the road will not negatively affect the caribou, and even thought that it could be advantageous for hunters. One respondent observed that caribou have grown accustomed to past development projects and activities, while another pointed out that the road will make hunting access easier.</p> <p>Just on CD5, it is a brand new road. I don't think there would be any impact [from] the road. All these here, the CDs, I never did hunt in the area... We observed the caribou are kind of getting used to all the activity up here. They don't mind it, when they migrate they go through all of that. They don't even run away from the choppers anymore. (SRB&amp;A Nuiqsut Interview November 2014)</p> <p>I believe [I'll keep hunting on the Spur Road] because it's a prominent road. It's pretty bumpy on the tundra and this makes it easier. It's pretty safe, I believe, since they made the road wider. (SRB&amp;A Nuiqsut Interview January 2015)[<sup>25</sup>]</p> <p>CPAI recommends that BLM include this positive testimony in the final SEIS to provide a more balanced analysis of the potential impact of roads.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Many direct quotations in the DSEIS text were removed in order to be consistent with new NEPA requirements regarding brevity of analysis. The text was revised to include relevant quotations, such as this, to help explain the context of identified positive and negative impacts. |

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| L88-117 | ConocoPhillips Alaska, Inc. | <p>The DSEIS emphasizes that hunters avoid hunting near infrastructure, causing a negative impact on subsistence.<sup>26</sup> This position is incorrectly supported by the assertion that “72 percent of respondents” made “observations of avoidance” in 2015.<sup>27</sup> The study cited in support of this number first asks hunters if they avoided areas where they previously hunted, and then asks why. <sup>28</sup> But the 72 percent number applies only to the subset of observations from hunters who reported avoiding an area at all, which in 2015 was 58 percent and in the draft 2016 report is 51 percent. Thus, the number of observations of avoidance of development is even less than 58 percent of respondents in 2015 and 51 percent of respondents in 2016. It should be noted in the Stephen R. Braund &amp; Associates (SRB&amp;A) presentation given to the NSB (Attachment H) that the percent of observations on the cause of avoidance dropped from 72 percent to 53 percent in Year 9. This data is indicative that fewer than 50 percent of hunters report avoiding an area due to development. The result of BLM’s use of the 72 percent figure is a serious misrepresentation of the data, and an incorrect conclusion about the magnitude of infrastructure avoidance. This misrepresentation is magnified by the fact that the numbers of hunters harvesting within 2.5 miles of infrastructure is increasing.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been revised to clarify the data from SRB&A. |

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| L88-118 | ConocoPhillips Alaska, Inc. | The DSEIS asserts than an "industry-established safety area would be delineated and restricted to authorized use during construction (2-3 years), thereby restricting access to this area by subsistence users during that time. The footprint of that safety area would be approximately 142 acres. It is within close proximity (<5 miles) of the community."29 Since the GMT2 pad is 16 miles from Nuiqsut, it is entirely unclear what area is being described here. In any case, the only safety restrictions during construction are on shooting across or towards ice roads and pad. Travel on the ice and gravel roads is available as soon as they are complete and ready for use. Ice roads are typically open by February 1st each year and the gravel road is open by October in the year it is constructed. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been revised to clarify information regarding the safety area, and unavailability of the gravel road during construction.  |
| L88-119 | ConocoPhillips Alaska, Inc. | another example of the errors contained in the subsistence analysis is the incorrect assertion that "[a]uthorized subsistence hunters would be permitted to use the GMT1-GMT2 access road."30 That statement lays a foundation for a later conclusion that the road would pose a legal barrier to access to subsistence resources. But CPAI does not authorize some users and withhold authorization from others. Residents of Nuiqsut are allowed to use the road, subject only to basic coordination rules that provide for safety of all users. There is no authorization program, requirement, or restriction.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The text has been revised to remove the word authorized and to clarify that subsistence users are permitted to use the road subject to basic coordination and safety rules. |
| L88-12  | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. On page 200, Reference to map 3.3-1 should be 3.1-1  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Map reference has been corrected.   |

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| L88-120 | ConocoPhillips Alaska, Inc. | <p>The Section 4.4.5 analysis does not adequately distinguish between impacts that might be caused in the future by the GMT2 project, and impacts that may be happening already for other reasons. This is partly because the GMT2 "project area," as described and analyzed in the DSEIS, is expansive. It includes CD1/ACF, the City of Nuiqsut, all areas that might be used under any of the potential alternatives (even though only one will actually be selected), and a 2.5-mile wide buffer on every side of every area.<sup>31</sup> By comparison, the actual road, pad, and pipeline that will be constructed for GMT2 is a fraction of the defined project area. Even though pipelines will extend from CD5 to ACF, they will be laid alongside existing pipelines on existing support members, and thus present no new infrastructure footprint in this area. These details are not clearly explained in the current analysis. Overbroad use of the project area definition was a defect in the subsistence analysis in BLM 2014, and it should be corrected here, not perpetuated.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>NEPA requires the BLM to evaluate the impacts of the entirety of a project, including areas of associated activities and connected actions. The project area is defined to include such connected areas as the ASRC gravel pit from which gravel will be derived and Alpine which is the origination point of most traffic to and from GMT2, to name just two examples. See Section 4.4.5.1 Methodology - GMT2 Areas of Potential Effects for Subsistence for a complete explanation of the project area including the 2.5 mile buffer.</p> |

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| L88-121 | ConocoPhillips Alaska, Inc. | <p>The subsistence analysis relies heavily on observations of the degree to which subsistence activities overlap with the project area, as it has been expansively defined in the DSEIS. For example, the DSEIS states that “[t]he GMT2 Project study area overlaps with many of Nuiqsut’s most concentrated subsistence use areas,”<sup>32</sup> “[t]he GMT2 project area would overlap 27% of subsistence use areas for all resources during the construction phase and would overlap 23% of overland subsistence use areas for all resources during the drilling and operations phase,”<sup>33</sup> and “374 caribou use areas . . . overlapped use areas within the project study area.”<sup>34</sup> Such observations, however, do not accurately reflect the actual impacts of the GMT2 project because many of the areas in which subsistence activities overlap with the project area contain infrastructure that is already constructed and not part of the GMT2 project. Indeed, much of the infrastructure in the project area has been in place for nearly 20 years. Whether or not GMT2 is constructed, the City of Nuiqsut, the Alpine facilities, the ASRC gravel mine, and the annual ice roads, all of which are located in the GMT2 project area as defined by BLM, will continue to exist. So, repeating that the GMT2 project area overlaps with subsistence use areas is not helpful in understanding the potential impacts of the GMT2 project on subsistence.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | NEPA requires the BLM to evaluate the impacts of the entirety of a project, including areas of associated activities and connected actions. The project area is defined to include such connected areas as the ASRC gravel pit from which gravel will be derived and Alpine which is the origination point of most traffic to and from GMT2, to name just two examples. See Section 4.4.5.1 Methodology - GMT2 Areas of Potential Effects for Subsistence for a complete explanation of the project area including the 2.5 mile buffer. |

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| L88-122 | ConocoPhillips Alaska, Inc. | The analysis in Section 4.4.5 of the DSEIS should focus on the key aspects of the GMT2 project, especially the construction and use of the new road and pad, and any potential subsistence-related impacts associated with those aspects. Appropriate delineation between project-specific impacts and baseline or cumulative impact information will result in a more analytically correct, and accurate, subsistence analysis. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM has reviewed the sociocultural impacts section, and has revised text to ensure that those aspects of the discussion that should be included in the cumulative section are addressed there, and not in the direct or indirect impacts resulting from the proposed action and alternatives. |

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| L88-123 | ConocoPhillips Alaska, Inc. | <p>The DSEIS analyzes “User Access,”<sup>35</sup> the “GMT2 Access Road,”<sup>36</sup> and “Avoidance”<sup>37</sup> as independent variables, all of which are focused on the notion of access to subsistence resources. The effect of analyzing these closely-related categories distinctly is to magnify the impression of potential subsistence impacts associated with the avoidance of infrastructure, including roads. The DSEIS discusses various types of restrictions on access at length, such as the notion that access is restricted when the road is being constructed: “During [construction], access onto or via the road would be physically and legally restricted.”<sup>38</sup> This discussion ignores the fact that CPAI is committed to making this road, some of which is on private lands owned by Kuukpik Corporation, available to residents of Nuiqsut and therefore useful for subsistence. The DSEIS characterizes the open-access road, which is subject only to basic coordination requirements to ensure the safety of both industrial and residential users, as a barrier to subsistence.<sup>39</sup> However, a rig will be moved to GMT2 before drilling commences, and moved offsite months or years later—this cannot reasonably be characterized as a “legal restriction” on access to subsistence resources. A typical rig move may intermittently occupy the road over one to two days and includes periods of time when traffic may pass. Very few other uses of the road would restrict use of the road for subsistence. More detailed discussion about coordinated use of the road during phases of project construction and operation is set forth in Attachment C.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been revised to include information from Conoco to clarify extent of potential access issues due to industrial activity. |



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| L88-124 | ConocoPhillips Alaska, Inc. | The DSEIS acknowledges that the GMT2 ramps “likely” will be better, but relates that “concerns remain.” <sup>42</sup> CPAI submits that the improved design has substantially addressed the concerns, and the subsistence pullouts and access ramps make year-round access to this area more reliable, more convenient, and less time-consuming.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | This section has been carefully reviewed to ensure the text is consistent with comments received as part of the review of the draft SEIS, and duplicative or speculative text without supporting information will be revised. |
| L88-125 | ConocoPhillips Alaska, Inc. | In Appendix L of the DSEIS, the factors are not described using the same words as in the BLM guidance. The most significant deviation is that in the DSEIS’s statement addressing limitations on access references only “increased competition for the resources” and does not reference physical and legal barriers (as directed by the BLM guidance). <sup>44</sup> This deviation is not explained, and we recommend that the BLM guidance be stated accurately and followed by BLM. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The text has been revised to more clearly address the factors required by BLM guidance.   |

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| L88-126 | ConocoPhillips Alaska, Inc. | CPAI recommends that BLM clearly articulate the ANILCA Section 810 factors in Section 4.4.5 and how they are used in both Section 4.4.5 and Appendix L to define the level of impact. We also recommend that BLM include a summary to characterize the level of impact. In our view, the Section 810 distinction between actions that "would significantly restrict subsistence uses" and those that would not is a sound way to summarize the analysis, as long as the summary is adequately explained. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | According to BLM's NEPA guidance, the effects analysis must demonstrate that the BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and the alternatives. NEPA does not require the agency to classify impacts to each resource as minor, moderate or major. The BLM found that the use of GMT2 Impact Criteria did not contribute to meaningfully distinguish the alternatives from each other, and instead detracted from the impact analysis due to confusion and differences of opinion regarding the criteria being applied over focusing on the identified impacts. The ANILCA Section 810 criteria is specific to answering a single question: whether or not there may be a significant restriction to subsistence use, and our guidance is based on case law regarding that overriding factor. The NEPA requirement to take a "hard look" (also based on case law) goes beyond addressing a single question, and instead requires BLM to address a whole host of issues, including those identified during scoping, through consultation with stakeholders, and based on a review of relevant literature. In short, NEPA's hard look requires a more comprehensive analysis than that required pursuant to ANILCA Section 810. |

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| L88-127 | ConocoPhillips Alaska, Inc. | <p>Attachment C includes data that should be included in subsistence analysis. The information supports the following points:</p> <ul style="list-style-type: none"> <li>• The GMT2 project is not expected to decrease the abundance or availability of harvestable subsistence resources.</li> <li>• Harvest levels are healthy, and GMT2 is not expected to cause a decrease in harvest.</li> <li>• Time required for caribou harvest is not increasing, and GMT2 is not expected to cause an increase in time required.</li> <li>• Overlap of subsistence use areas and the expansively defined GMT2 project area does not mean that a significant loss of subsistence use area will occur.</li> <li>• The GMT2 road will not pose a significant physical or legal barrier to subsistence.</li> </ul>   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM appreciates your comment, and has included it and the information cited in Appendix C in our analysis.  |
| L88-128 | ConocoPhillips Alaska, Inc. | <p>The DSEIS section addressing sociocultural impacts also does not correctly distinguish between (i) the direct and indirect effects of the GMT2 project and (ii) cumulative impacts. Instead the DSEIS conflates these impact categories, which results in the improper attribution of some cumulative impacts to the GMT2 project itself. For example, in Section 4.4.2.1, Impacts Common to All Alternatives, the DSEIS states, "the [annual ice road that connects Nuiqsut to the Dalton Highway] facilitates the importation of alcohol and other drugs to Nuiqsut and other North Slope communities."<sup>45</sup> Since the annual ice road exists and will continue to exist with or without GMT2, the impact of the road is not a GMT2 impact. Other examples include the DSEIS's discussions about economic disparity,<sup>46</sup> the pace of development,<sup>47</sup> and the frequency and nature of meetings related to permitting.<sup>48</sup></p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM has reviewed the sociocultural impacts section, and has revised text to ensure that those aspects of the discussion that should be included in the cumulative section are addressed there, and not in the direct or indirect impacts resulting from the proposed action and alternatives. |

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| L88-129 | ConocoPhillips Alaska, Inc. | As an initial matter, the DSEIS substantively addresses the key elements for analyzing the potential climate change-related effects of the GMT2 project. However, it would be helpful for Section 4.2.4 to include an introductory section that provides an overview of the relevant issues and the approach and methodologies used by BLM to evaluate potential climate change-related effects. An example of one such introduction can be found in Section 3.26 of the recently issued final EIS for the Donlin Gold Project. <sup>49</sup> | 3.7 Climate Change    | The Donlin EIS includes a description of how climate change will impact the resources of the project area, which can be found in the GMT2 Final SEIS in Section 3.2.4, Climate Change. A description of the methodology used to evaluate the alternatives' contributions to climate change can be found in Section 4.2.4.1, Methodology. |
| L88-13  | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. The statement, "The percentage of adults reporting very good to excellent health was lower in Nuiqsut (39 percent) than it was statewide (56 percent)" is misleading. The statement should note that the percentage of adults reporting very good to excellent health in North Slope Borough villages ranged from 21% in Atqasuk to 56% in Point Lay with Nuiqsut being similar to Alaska Native adults statewide (42%). This is from North Slope Borough (2012).                             | 3.18 Public Health    | NSB 2012 citation and information added to 3.4.7.1   |

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| L88-130 | ConocoPhillips Alaska, Inc. | <p>The DSEIS reasonably uses the amount of downstream GHG emissions as a proxy for the potential indirect effects of the project.<sup>50</sup> CPAI recommends that, as a precaution, BLM include a more detailed explanation of the significance (if any) of the additional 2.14 mmt produced by the action alternatives compared to the no-action alternative.<sup>51</sup> Such an explanation could address the context in which the production of 2.14 mmt is relevant, such as how it compares to overall carbon production from the State of Alaska.<sup>52</sup> The additional 2.14 mmt of CO<sub>2</sub>e that the action alternatives produce over the 30-year life of the project, compared to the no-action alternative, represents roughly 0.23% of the industrial CO<sub>2</sub>e emissions for the entire State of Alaska over 30 years (anthropogenic and non-transportation sources). It also represents only 0.001% of the national GHG emissions and 0.0003% of the global GHG emissions.<sup>53</sup> Consequently, the additional 2.14 mmt of CO<sub>2</sub>e produced by the action alternatives, compared to the no-action alternative, is, at most, negligible.</p> | 3.7 Climate Change    | <p>The text of the SEIS has been updated to include a comparison of GMT2 to regional, statewide and national production estimates through GMT2's peak production (2027). See section 4.2.4, Climate Change.</p> |

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| L88-131 | ConocoPhillips Alaska, Inc. | <p>Accordingly, as a precautionary matter, CPAI provides the following comments for BLM's consideration and potential inclusion in the FSEIS regarding the MarketSim analysis:</p> <ul style="list-style-type: none"> <li>• MarketSim creates predictions by utilizing data produced by a modified version of the Energy Information Administration's (EIA) National Energy Modeling System (NEMS) Annual Energy Outlook (AEO). The MarketSim model's strong reliance on the peer-reviewed NEMS AEO model supports BLM's choice to use the MarketSim model.</li> <li>• We suggest that BLM consider running the MarketSim model with the NEMS AEO 2017 projections, rather than the 2016 projections. BLM should also clarify the information presented in Appendix H, which references the 2015 MarketSim model, rather than the 2017 MarketSim model.</li> <li>• Projected production from the GMT2 project is already taken into account in both the BOEM-modified AEO 2016 and EIA's AEO 2017 and, accordingly, BLM's evaluation of the action alternatives essentially double-counts the assumed production from GMT2. Nevertheless, the modeled results do not appear sensitive to this issue because Alaska represents only a small portion of the global energy market (approximately 0.5% on a daily basis), and the modeled results are more sensitive to the relative simulated changes in demand rather than baseline estimates.</li> </ul> | 3.7 Climate Change    | <p>Bullet 1 -Thank you for your comment. BLM is in the process of modifying the MarketSim for their own purposes which will allow for additional analyses like this one, tailored for the onshore, and expanded to include coal.</p> <p>Bullet 2 - Updated for 2018 AEO</p> <p>Bullet 3 - BLM received a comment on the application of BOEM's MarketSim to the BLM data as the baseline AEO data in the MarketSim assumes new onshore leasing the model would already occur and thus double counts the GMT2 project. While that is technically correct, the model does not account for the new oil and gas production that would occur from new leasing from 2019 forward. As such, any double counting of the additional onshore production is accounted for by the underestimation of new offshore oil and gas leasing.</p> <p>Bullet 4 -The limitations of static emissions is addressed in Appendix H (see Assumption 2 in Section 7 Key Assumptions).</p> <p>Bullet 5 - Oil is a global commodity and the impact of any one particular project is limited.</p> |

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| <b>L88-131</b><br><i>Continued</i> | ConocoPhillips<br>Alaska, Inc. | <ul style="list-style-type: none"> <li>• The emission factors considered in the MarketSim model are high-level resource-wide estimates based on current or recent operating conditions, markets, and technologies. Therefore, those emission factors do not account for improving control technologies and equipment or changing energy mix, policies, and use over time, which will change the carbon intensity of the production and consumption of those resources. Because these changes will likely make activities less carbon intensive over time, the MarketSim model may overestimate the indirect GHG emissions from the GMT2</li> <li>• Generally, the record should reflect that the MarketSim model's conclusions are not particularly sensitive to assumptions given that Alaska represents a very small portion of the global energy market and that the GMT2 project would represent an even smaller fraction of the global energy market as it would only amount to approximately 5% of Alaska oil production.</li> </ul> | 3.7 Climate Change    | See above BLM response  |
| <b>L88-132</b>                     | ConocoPhillips<br>Alaska, Inc. | We recommend that the GMT2 SEIS expressly incorporate the climate change-related analyses in the IAP EIS by reference, including Appendix C.   | 3.7 Climate Change    | The Draft Supplemental EIS provides a summary of previous analyses included in prior documents. The full context of analyses in such documents is being incorporated by reference into the Draft Supplemental EIA. Incorporation by reference is used to ensure relevant information and analyses is disclosed and considered for decision making, but without duplicating content. |

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| L88-133 | ConocoPhillips Alaska, Inc. | <p>Additionally, although the DSEIS addresses the effects of climate change on the project study area, an evaluation of the potential effects of climate change on the project features, such as the planned infrastructure, is not readily apparent. We request that the FSEIS include a clear discussion of these potential effects. Finally, the FSEIS should address potential climate change-related effects in its discussions of the potential effects of the project on specific resources and in the cumulative impacts section. The Donlin Gold Project FSEIS referenced above provides a good example of this approach.</p>   | 3.7 Climate Change    | See Section 3.2.4, Climate Change.   |
| L88-134 | ConocoPhillips Alaska, Inc. | <p>Table 4.1-2 on page 238 of the DSEIS is a summary of impact levels for physical and biological resources. The climate change impacts are summarized as "N/A, see Section 4.2.4." We urge BLM to either follow impact criteria of Section 4.1.2 using the levels identified in Section 4.1.3, and conclude that the climate change impacts are, as the best available information demonstrates, "negligible"; or expressly adopt and explain other criteria and impacts levels that are suitable for climate change analysis, and use those terms. While we do not see this as a substantive issue, we believe that failure to apply the stated criteria and make conclusions in terms of the adopted terminology creates at least a superficial discrepancy that might be incorrectly portrayed as a faulty analysis.</p> | 3.7 Climate Change    | <p>The BLM found that the use of GMT2 Impact Criteria did not contribute to meaningfully distinguish the alternatives from each other, and instead detracted from the impact analysis due to confusion and differences of opinion regarding the criteria being applied over focusing on the identified impacts. Therefore, impact criteria has been removed in the Final SEIS for all resources.</p> |



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| L88-135 | ConocoPhillips Alaska, Inc. | BLM should similarly reconsider the rating for atmospheric environment in Table 4.1-2, or explain the rating in Sections 4.1.2-4.1.3. The same summary table, Table 4.1-2, summarizes the impacts for air quality (in the row for Atmospheric Environment) as "not significant." CPAI agrees with that conclusion, but we are concerned that it creates confusion and could be a basis for objection to the analysis because "not significant" is not an impact level presented in Sections 4.1.2 and 4.1.3, where the framework for impact criteria and impacts levels are discussed. This discrepancy can be fixed by either changing the terminology to conform to Section 4.1.3 (e.g., find that the impacts are "negligible") or adding the terms "not significant" to Section 4.1.3 and explaining the basis for it in Section 4.1.2. This issue is about consistent terminology and clear expression of analysis, not substantive conclusions. | 3.5 Air Quality & Meteorology | Based on other comments received, the impact criteria has been removed from the SEIS. All impacts are described and quantified as a percent of existing standards.   |
| L88-136 | ConocoPhillips Alaska, Inc. | Yellow-billed loons were at one point a candidate species for listing under the Endangered Species Act (ESA). Listing was found to be "not warranted" in 2014. In the DSEIS, BLM includes yellow-billed loons in the Chapter 3 description of the affected environment, specifically in Section 3.3.3.7, but not the Chapter 4 analysis of environmental consequences. While yellow-billed loons would not seem to fall within the scope of Section 4.3.5 on ESA-listed species, for the purpose of completeness and clarity CPAI recommends that BLM address yellow-billed loons expressly, as a "special status species" in the Section 4.3.3 discussion of impacts on birds. We are confident the GMT2 project poses no substantial risk to yellow-billed loons, and believe the FSEIS should be clear on that point.  | 3.10 Birds                    | Thank you for your comment. Chapter 4 of the bird section does not specifically call out individual bird species but treats the potential consequences as covering all bird species. A paragraph has been added in Chapter 4 discussing the importance of nest site selection to yellow-billed loons and calls the species out as being of conservation concern. |

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| L88-137 | ConocoPhillips Alaska, Inc. | <p>The analysis of impacts on Steller's eiders and polar bears in Section 4.3.5 appears to use different criteria for the two different species. BLM's analyses and conclusions are well-reasoned and supported, but for purposes of ensuring a thorough analysis, we recommend that BLM explain the criteria used in the analyses, including an explanation of the reason why different criteria were used, if that is the case. This is primarily a matter of documentation rather than substance.</p>  | 3.13 Threatened and Endangered Species | <p>Thank you for your comment. There was no analysis of impacts on Steller's eiders in section 4.3.5 as they are considered extremely unlikely to be found in the project study area. There is a difference in the criteria used between spectacled eiders and polar bears and that difference follows the same criteria as in GMT-1</p>  |
| L88-138 | ConocoPhillips Alaska, Inc. | <p>None of those stated uses of a soil survey has an apparent purpose for the GMT2 project. And the data on vegetation, landforms, and hydrology already exist in the form of the ITU mapping that has been performed to date for this area. CPAI estimates that this proposed requirement would add \$100-\$300 thousand in costs to GMT2, while providing no discernible benefit. Most significantly, from a project planning perspective, the proposed mitigation measures introduce a very real risk of delaying the project by a year. Assuming the survey must be conducted before laying gravel, which appears to be a sound assumption, a survey could not be performed in time after the ROD is issued. Since CPAI plans to begin laying gravel in January 2019, a soil survey requirement, which appears to serve no particular purpose, poses a serious risk of unnecessarily delaying the project for a year, with significant economic impacts. CPAI urges BLM to eliminate this proposed mitigation measure from further consideration.</p> | 3.2 Soils & Permafrost                 | <p>The soil survey is required to assess long term impacts of the development. The impacts would include changes in active layer depth due to the development as well as impacts of dust on vegetation and active layer. This will help address changes due to increasing temperatures and to assign impacts of the development as separate impacts from the climate change impacts. This data will help inform future decisions and designs for arctic operations. Conducting the soil survey during the first summer after gravel placement would be acceptable to the BLM.</p> |

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| L88-14  | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. In the second paragraph under Asthma, there is a reference to a 2003 study but this study has no citation.   | 3.18 Public Health  | Omitted from 3.4.7.1, no citation  |
| L88-140 | ConocoPhillips Alaska, Inc. | Proposed mitigation measures 2, 4, and 5 on DSEIS pages 449 to 451 are unnecessary. See ConocoPhillips Comment Letter, pages 19-20.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | CEQ NEPA regulations and BLM's NEPA guidance requires that : In an EIS, all "relevant, reasonable mitigation measures that could improve the project are to be identified," (see Question 19b, CEQ, Forty Most Asked Questions Concerning CEQ's NEPA Regulations, March 23, 1981). |
| L88-141 | ConocoPhillips Alaska, Inc. | The impact finding for Atmospheric Environment was "not significant" because conservative modeling shows the GMT2 project will not threaten any health-based ambient air quality standards. Decades of ambient air quality measurements amply demonstrate this, and technological improvements in oilfield equipment will continue driving the impacts down. These realities obviate the need to impose new air quality requirements such as those listed under Best Management Practices and Best Available Control Technology on pages 289 and 290 of the DSEIS. | 3.5 Air Quality & Meteorology                                       | All reasonable mitigation measures were included in the Final SEIS for consideration in the Record of Decision.  |

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| L88-142 | ConocoPhillips Alaska, Inc. | Section 4.7 of the DSEIS, "Mitigation Measures and Monitoring," does not include discussion of compensatory mitigation under the Clean Water Act Section 404 permitting program administered by the Department of the Army, Corps of Engineers. CPAI's permit application, available online in the Corps' Alaska District website, contains CPAI's proposal to restore a degraded stream and road crossing in Nuiqsut, or to preserve threatened wetlands in the region, as mitigation for the wetlands impacts of the GMT2 gravel fill. Ultimately, mitigation will be determined by the Corps, but the Corps' process and current proposals should be acknowledged in the FSEIS to ensure a more comprehensive accounting of GMT2-specific project mitigation measures. | 4.2 Mitigation        | The applicant-proposed GMT2 Development Project Wetlands Mitigation Plan is included in the Final SEIS as Appendix R. |

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| L88-143 | ConocoPhillips Alaska, Inc. | <p>The NPR-A Impact Mitigation Grant Program is inaccurately described on pages 447 to 448 of the DSEIS, and BLM should fix the errors in the final document because the program is a very important part of the context in which NPR-A development must be considered and evaluated. The NPR-A Impact Mitigation Grant fund is inaccurately described as a State of Alaska program, not subject to federal influence, and extended to only "limited" categories of grants.</p>   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>Federal Legislation 42 U.S.C. Chapter 78, Sections 6501-6508 directs the federal government to provide a percentage of revenue from the NPR-A to the State of Alaska. Specifically, Section 6506a, or former 6508, of the federal statute requires that 50 percent of the money received by the federal government from the "sales, rentals, bonuses, and royalties on leases issued..." be paid to the State of Alaska. In accordance with Section 6506a, or former 42 U.S.C. 6508, the monies are to be used by "the State of Alaska for (a) planning, (b) construction, maintenance, and operation of essential public facilities, and (c) other necessary provisions of public service: Provided further, that in the allocation of such funds, the State shall give priority to use by subdivisions of the State most directly or severely impacted by development of oil and gas leased under this section." The State of Alaska NPR-A Impact Mitigation Program is solely governed by the Alaska legislature, under state code AS 37.05.530 (a) and (b), and is a grant program managed and administered by the State of Alaska Department of Commerce, Community and Economic Development.</p> |
| L88-144 | ConocoPhillips Alaska, Inc. | <p>The DSEIS, at pages 175 and 176, inaccurately suggests that the City of Nuiqsut is not eligible for grants under the NPR-A Impact Mitigation Grant program. The grant database maintained by the Alaska Department of Commerce, Community, and Economic Development (DCCED) shows that the City of Nuiqsut was awarded grants every year from 2005 to 2017 with the exception of fiscal years 2015 and 2018. The two grants for FY 2017 are still active and they have received \$260,134 out of the total awarded of \$410,000. These grants provide significant support for the City of Nuiqsut.</p> | 3.16 Economy  | <p>Revised and incorporated updated information for Section on "Local Economy: Community of Nuiqsut"</p>  |

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| L88-145 | ConocoPhillips Alaska, Inc. | The DSEIS does not fully describe existing mitigation measures. The GMT2 administrative record should reflect all existing mitigation measures, however, because the existing measures provide a strong foundation for the conclusion that it is not necessary or even helpful to add additional layers of mitigation on top of what has been required, agreed, or volunteered in the past. | 4.2 Mitigation                                  | Existing mitigation including the NPR-A IAP ROD BMPs and Alpine Satellite Development Plan ROD requirements are included by reference. In addition, all existing mitigation that serve to reduce impacts are identified and discussed for each resource in Chapter 4: Environmental Consequences. Mitigation required by other agencies is discussed in Section 4.4.5 Subsistence. BLM NEPA Guidance and CEQ regulations for EIS analyses require that all relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the agency [40 CFR 1502.14(f), 40 CFR 1502.16(h)]. Following this requirement, the BLM included and analyzed several new potential mitigation measures in the SEIS that are not already covered by existing mitigation. The final suite of new mitigation measures applicable to the GMT2 Project will be determined in the ROD. |
| L88-146 | ConocoPhillips Alaska, Inc. | Although the DSEIS was complete at the time it was prepared, there is new information about the potential Willow development that should be included in the cumulative impacts analysis in the FSEIS for GMT2.  | 4.0 Cumulative Effects Projects and Methodology | Updated information about Willow was added to Table 4.6-2 Past, Present and Reasonable Foreseeable Future Developments.  |
| L88-147 | ConocoPhillips Alaska, Inc. | Under the circumstances, it bears stating here that GMT2 and the Willow development project each have independent utility and, accordingly, are not "connected actions."  | 4.0 Cumulative Effects Projects and Methodology | The BLM received a request from ConocoPhillips Alaska, Inc., to conduct a Master Development Plan EIS to evaluate the Willow development in May 2018. The most current information from that request letter has been incorporated into the cumulative effects analysis. Although the Willow development would use GMT2 and Alpine infrastructure to the maximum extent possible, this project has independent utility from GMT2 and is not considered a connected action under NEPA. The Willow find is sufficiently large that even in the absence of a road connection between GMT2 and GMT1, the Willow project could be developed roadlessly similar to the Alpine field.  |

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| L88-148 | ConocoPhillips Alaska, Inc. | In 2018, CPAI not only appraised the potential Willow development, but also drilled exploration wells at West Willow, Putu, and Stony Hill. Each of the exploration wells encountered oil and verified the potential of the play. <sup>71</sup> This recent information should be incorporated into the FSEIS.  | 4.0 Cumulative Effects Projects and Methodology | The FEIS was updated to incorporate this recent information. |
| L88-15  | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. The statement, “recent research into the transportation of pollution nanoparticles (not regulated by EPA) from oil and gas activities in Prudhoe Bay (Kolesar et al. 2017) indicates that there are potentially forms of pollution that are not currently monitored in Nuiqsut” is inappropriate and should be removed. There are neither standards for “nanoparticles” nor reference methods to monitor them. The unsupported implication this statement conveys is that there are unmonitored pollutants in the village impacting health; there is no support whatsoever for this. Finally, inclusion of statements like this opens up the analysis to any class of matter, whether recognized as pollution or not. | 3.18 Public Health                              | Omitted.   |
| L88-16  | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. In the second paragraph under Food Security, there is a reference to Table ##. There should be a number, of course, but we also could not locate that table.  | 3.18 Public Health                              | Corrected: The SEIS now references Table 5 from Appendix G   |
| L88-17  | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Incorrect reference to waste being injected into a Ukpeagvik Inupiat Corporation facility; UIC stands for Underground Injection Control well.   | 3.4 Water Resources                             | Correction was made as suggested                             |

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| L88-18 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. The footnote beneath each of these tables is confusing and lacks context. We recommend it either be explained better in the paragraphs referencing the tables or that it be removed altogether. | 3.5 Air Quality & Meteorology | Based on the reviewer's comment, the note below each of the referenced tables has been removed. The clarification these notes intended to give is explained in detail in the AQIA. |



| Comm # | Commenter Name              | Comments  | Comment Category Code         | Comment Response  |
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| L88-19 | ConocoPhillips Alaska, Inc. | <p>See ConocoPhillips comment letter Attachment A. BLM lists a number of “Best Management Practices” and “Best Available Control Technology” measures meant to minimize air emissions. ConocoPhillips’ project design will employ many of these but the document must be clear that these cannot be considered requirements. For example, the project’s base design is to operate the drill site on grid power but there will be times when that power is unavailable so the flexibility for on-site power generation must be maintained. Related to fugitive dust control, ConocoPhillips will employ speed limits but 20 mph, as suggested by the DSEIS, is too low to be practicable. In a transmittal to BLM in November 2017, ConocoPhillips identified 35 mph as a speed control measure that represents best management practice. In addition, watering will be employed during the months when fugitive dust from roads may be an issue (June-September). It is unnecessary to translate modeling assumptions into requirements or limits as the modeling was conservative and real-time ambient air measurements show that fugitive dust is not an issue around North Slope roads. For leak detection and repair and the items under “Best Available Control Technology”, ConocoPhillips will comply with EPA’s New Source Performance Standards which do impose stringent control technologies. Finally, no new ambient air monitoring requirements should be imposed as the ambient air quality is adequately measured at Nuiqsut and CD5.</p> | 3.5 Air Quality & Meteorology | All reasonable mitigation measures proposed by BLM subject matter experts or members of the public were included in the Final SEIS for consideration in the Record of Decision. |

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| Comm # | Commenter Name              | Comments  | Comment Category Code       | Comment Response  |
|--------|-----------------------------|---|-----------------------------|---|
| L88-20 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Correction - gravel depth of 5 feet is required to keep active layer "frozen" all-year. Frozen materials resist compression. In addition, this section should mention that temporary trenching (about 400 square feet) will be required to allow the power and fiber optic cables to cross the existing gravel access roads.              | 3.8 Vegetation and Wetlands | Text updated to add information about trenching.  |
| L88-21 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. BLM considers the GMT2 project impacts for gravel mining as the entire Phase 3 expansion of the ASRC pit (465.3 acres), while the GMT2 project will only utilize ~35 acres of the total Phase 3 expansion. BLM must confine the assessment to just the 35 acres of the total expansion.   | 3.8 Vegetation and Wetlands | Text has been revised to reflect 35 acres.  |
| L88-22 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Inappropriate literature citation: The paper cited - Felix and Raynolds 1989 - refers entirely to seismic trails in ANWR from 1984 and 1985. The results in that paper do not apply to seasonal ice infrastructure considering the methods used today are different.  | 3.8 Vegetation and Wetlands | Citation to Felix and Reynolds 1989 "Landscape function and Disturbance in Arctic Tundra" has been corrected. Replaced Yokel with Guyer et. el 2005 full citations found under 4.1.1 conclusion |
| L88-23 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. "Drilling activities would not have specific impacts to wetlands and vegetation different than those discussed for construction." Since construction would involve impact from gravel fill while drilling activities would not, this is a confusing statement. Drilling impacts on vegetation and wetlands would, in fact, be negligible. | 3.8 Vegetation and Wetlands | Paragraph has been rewritten.   |
| L88-24 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Recommend revising first sentence by deleting "(100 meters)". One hundred meters are equal to 328 feet rather than 300 feet.  | 3.8 Vegetation and Wetlands | Edit has been made to read 328 feet (100 meters)  |

| Comm # | Commenter Name              | Comments   | Comment Category Code       | Comment Response                                 |
|--------|-----------------------------|--|-----------------------------|--|
| L88-25 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. This section states that Alternative A would directly impact 77.9 acres of vegetation. The total impact to vegetation by Alternative A is 78.1 acres (77.9 to waters of the US and 0.2 to uplands).  | 3.8 Vegetation and Wetlands | Paragraph has been rewritten.                    |
| L88-26 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. "All areas of direct and indirect impacts from Alternative A are within potential wetlands" is incorrect. 0.2 acres of direct and 2.4-acres Indirect impacts occur in non-Jurisdictional uplands.  | 3.8 Vegetation and Wetlands | Paragraph has been rewritten.                    |
| L88-27 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Recommend revising third sentence to reference Alternative B, not Alternative A.   | 3.8 Vegetation and Wetlands | Corrected.                                       |
| L88-28 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. BLM restates that the GMT2 project would impact the entire ASRC Pit Expansion. Evaluation should only be for the ~35 acres of GMT2 portion of ASRC Pit   | 3.8 Vegetation and Wetlands | Agree, edits have be made.                       |
| L88-29 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A "Under all action alternatives, gravel placement would cover between 0.0 and 74.4 acres of each of five vegetation/wetland types." The range according to Table 4.3-2 is 0 to 92 acres  | 3.8 Vegetation and Wetlands | Corrected to indicate 92.0 acres                 |
| L88-30 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. "These results may be additive, although at least one study as suggested otherwise (Yokel et al 2007)." BLM offers no other citation to suggest that they are additive, and the Yokel paper indicates that year after year ice structures aren't additive. As such, the statement departs from available evidence and should be corrected. | 3.8 Vegetation and Wetlands | The sentence has been deleted from the document. |

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| Comm # | Commenter Name              | Comments  | Comment Category Code       | Comment Response  |
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| L88-31 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. A list of the Applicant provided design features and activities intended to minimize impacts from the project should be included in the DSEIS and referenced in Section 4.3.1. These minimization measures are contained in the USACE 404 permit application and include maximized use of existing infrastructure such as VSMs and the use of ice pads for wintertime drilling activities.            | 3.8 Vegetation and Wetlands | Added paragraphs from 404 permit application to mitigation section 4.1.1.5                                      |
| L88-32 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. In the Potential column, "Exposure of bare substrate and decreased vigor of associated vegetation around water sources if complete recharge does not occur", and "Changes in chemical composition of tundra by discharges of treated domestic wastewater..." are not discussed in Chapter 4. The text should contain a discussion of these potential impacts if they are to be included in the table. | 3.8 Vegetation and Wetlands | Agree, edits have be made.  |
| L88-33 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Recommend deleting the last two sentences or provide an analysis of impacts to "edge-effects" to provide context for the reader.  | 3.8 Vegetation and Wetlands | Sentences have been deleted as indicated.   |
| L88-34 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. When listing BMPs, BLM should write out the entire BMP because, in some cases (such as BMP B-1), exceptions are allowed. As worded, the abbreviated BMPs in the DSEIS can be interpreted as more restrictive than the underlying full text of the BMP in the IAP.   | 3.9 Fish                    | Text updated to direct the reader to full descriptions of the BMP's and explain that deviations can be granted. |

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|--------|-----------------------------|---|-----------------------|---|
| L88-35 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. The USGS recently released a study of greater white-fronted geese and nesting productivity during industrial cleanup of the Pt. Lonely site which found that birds are not as disturbed by DC6 and helicopter activity as this paragraph indicates. They hunkered down versus leaving the nest, thus not affecting productivity. <a href="https://www.alaskapublic.org/2018/02/28/what-can-geese-teach-us-about-the-future-of-arctic-development/">https://www.alaskapublic.org/2018/02/28/what-can-geese-teach-us-about-the-future-of-arctic-development/</a> .  | 3.10 Birds            | Thank you for your comment. Text has been added in chapter 4 of the bird section to include the Meixell and Flint 2017 study results.   |
| L88-36 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Last sentence of paragraph "...however, re-use of ice annual road routes and ice pad locations could damage tundra, resulting in potential long-term impact to potential high value bird habitats." As mentioned above, Yokel et al (2007) states that year after year ice structures are NOT additive.   | 3.10 Birds            | Thank you for your comment. Text has been added in chapter 4 comparison of alternative section within the bird section to include this information.   |
| L88-37 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Inappropriate literature citation: Tyler (1991) was a study of Svalbard reindeer wherein snowmobile drivers were instructed to intentionally search out groups of reindeer. Upon spotting them, reindeer groups were intentionally provoked by driving one snowmobile slowly (20km/hr) until reaching the spot where the animals had been - dropping sticks along the way when the caribou showed any visible reaction, then again when any member of the caribou group showed unease or alarm, and again when the group fled. These distances were measured and analyzed. This study isn't analogous to what occurs in the oil field - snowmachines are used infrequently and typically only in the beginning of the winter season and are not intentionally driven towards mammals. | 3.11 Caribou          | Thank you for your comment. Tyler (1991) conducted a study of reindeer to quantify distances in which reindeer groups exhibit certain behaviors to approaching vehicles. This study is relevant to the SEIS with regards to the potential of increased hunting pressure from new gravel roads. Even though snowmobiles are used infrequently in the oil field, hunters commonly use all terrain vehicles to access hunting areas. The expected disturbance to caribou, whether from a snowmobile or all terrain vehicle would be similar. |

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| L88-38 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. A Table 4.4-1 is referenced but no such table could be located in the DSEIS.  | 3.14 Cultural and Paleontological Resources                         | This was a typo where the in text reference to the table was not linked to the table it was referencing. This has been fixed.  |
| L88-39 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. We believe it important to add to this transportation benefits discussion the fact that ConocoPhillips allows Nuiqsut residents to park vehicles at Oliktok Point which is connected to the road system. Thus, during summer months, people can use boat transportation to get to Oliktok Point and have access to the Dalton Highway and urban centers during that period as well. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been added to add the beneficial use of Oliktok Point by Nuiqsut residents due to permission from ConocoPhillips.   |
| L88-40 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. References to Kuukpik Corporations lack of support for exploratory drilling at the Putu 1 well should be updated because Kuukpik ultimately did support the drilling at Putu 1.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text been revised regarding support of the Kuukpik Corporation to drill the Putu well.   |
| L88-41 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. The listing of Potential New Mitigation Measures, measures the BLM "lacks the authority to require implementation of", should be removed from the document.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | CEQ NEPA regulations and BLM's NEPA guidance requires that : In an EIS, all "relevant, reasonable mitigation measures that could improve the project are to be identified," even if they are outside the jurisdiction of the agency (see Question 19b, CEQ, Forty Most Asked Questions Concerning CEQ's NEPA Regulations, March 23, 1981). |
| L88-42 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Reference to GMT1 should be changed to GMT2. GMT1 is already rezoned.   | 3.17 Land Use   | Corrected.   |
| L88-43 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. In the first paragraph under Comparison of Alternatives there is a reference to "Arctic Slope Regional Corporation-selected" land. Should this read Kuukpik-selected land instead?  | 3.17 Land Use   | Corrected.   |

| Comm # | Commenter Name              | Comments   | Comment Category Code   | Comment Response  |
|--------|-----------------------------|--|---|---|
| L88-44 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Detailing this review process is unnecessary and confusing. ConocoPhillips commissions work to produce scientific information among many contractors, including others who contributed to the DSEIS (e.g., ambient air quality data), but those data review processes aren't detailed. We are not sure why it is in this case and believe the information should be removed. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | A complete explanation of the methodology for the Nuiqsut Caribou Subsistence Monitoring Reports was requested by internal DOI reviewers of the preliminary Draft SEIS. The review process is a critical aspect of any study's methodology. Other stakeholders have also commented on it, and BLM has added language to the mitigation measure that requires continued monitoring of subsistence harvests (established with GMT1 ROD and carried over for GMT2) to clarify that BLM and Nuiqsut stakeholders will approve of the methodology of the monitoring studies. |
| L88-45 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Mistake - In the first sentence Figure 3.4-6 is cited, but reference should be to Figure 3.4-7   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Figure reference has been corrected.  |
| L88-46 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Reference to table 2.9-1 should be 2.9-3   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Table reference has been corrected.   |
| L88-47 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. First sentence "The amount of aircraft activity in the Nuiqsut area far exceeds amounts in other communities." We believe a statement this declarative requires a citation.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The text states "The amount of aircraft activity in the Nuiqsut area far exceeds amounts in <i>these</i> other communities" (emphasis added), and is comparing Nuiqsut to three other communities on the North Slope. Citation has been added to reference BLM's permitted activities spreadsheet that is posted online and details aircraft use in the NPR-A.  |
| L88-48 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Last bullet- 270 new fixed-wing flights is the annual number. Text should be added to make this clear.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been revised to include 270 annual fixed wings flights to the Air Traffic discussion.  |

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| L88-49 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Under Stipulations and Best Management Practices on Avoiding Conflict, there is a reference to an Integrated Activity Plan best management practice (BMP) regarding setbacks. The reference states, "these stipulations are intended to prohibit permanent oil and gas facilities...within the buffer zone." This language does not reflect the full text of the referenced BMP (K-1) which allows for a process to approve essential pipeline and road crossings through the setbacks. The language should be updated to capture the full text of the BMP. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been revised to include the full text of the BMP.  |
| L88-50 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. This misleading statement is in the text: "In the past few years, relatively minor blowouts have occurred at oil exploration and development sites on the North Slope, including one fairly close to Nuiqsut." The text should be modified to hew more closely to the fact that there has been one blowout at an exploration site that we are aware of in the history of Western North Slope oil and gas industry operations.   | 3.18 Public Health  | Addressed: text edited to "In 2012, one minor blowout occurred at an oil exploration site on the North Slope, approximately 18 miles northeast of Nuiqsut." |



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|--------|-----------------------------|--|---|--|
| L88-51 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. The DSEIS text includes this statement: "A frequent public health concern raised by local residents associated with the drilling and operations phase, other than impacts to air quality, is the possibility of an industrial disaster, such as a blowout, a fire, or a large-scale spill. An example of this occurred during the spring of 2015 when high water on the Colville River during break-up threatened development sites in the Colville Delta, resulting in the temporary evacuation of staff from the CD4 satellite site to the Alpine Central Processing Facility." The example cited is not an example of an industrial disaster. The CD4 road was overtopped and the crew on the pad needed to get to CD5 so they could perform work onsite at CD5. They were thus merely relocated to the Alpine camp to effect this. | 3.18 Public Health  | Reference to tocover is omitted.   |
| L88-52 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. The Kuukpik pad should also be listed as a location where construction crews will be housed.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been revised to include Kuukpik Pad.  |
| L88-53 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. There is no reference for "Alaska Clean Seas 2015", cited on page 56. This should refer to the Alaska Clean Seas Technical Manual.   | 6.1 References  | Reference has been added.  |
| L88-54 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Page 483 Section 4.5.2.2 refers to the "ConocoPhillips Oil Discharge Prevention and Contingency Plan for the Alpine Development Area (ConocoPhillips 2013). There is not a reference provided for this citation.   | 6.1 References  | This reference has been updated to reflect the most recent plan "ConocoPhillips Alpine Field and Satellites and Alpine Pipeline System Oil Discharge Prevention and Contingency Plan (ODPCP)" (ConocoPhillips 2018). |

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| L88-55 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. The reference "ConocoPhillips 2014d" does not seem to appear in the document.   | 6.1 References                     | Reference has been deleted.   |
| L88-56 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. We could not locate a Map 4.3-1 which is referenced at the top of page 315 of Volume 1  | 5.1 Maps and GIS Data              | Omission of the map from the DEIS was an oversight. Thank you for alerting us that the map was missing, it is included in the FEIS. |
| L88-57 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Under "Otter/CASA Flights into CD1/APF" there appears to be a numerical error. Construction (Year 1-2) flights should be 1,981. "Total Flights" for this row should be 3,112.   | 2.1 Proposed Action & Alternatives | Accepted, changed in document.  |
| L88-58 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. The entries on this table do not appear consistent with the entries in Appendix b so should be checked.   | 2.1 Proposed Action & Alternatives | Accepted, changed in document.  |
| L88-59 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Drilling for Alternative C is listed to begin in May of year 2 with first oil expected at the end of year two. To be consistent with section 2.4.1 and Table 2-9.1, this should state drilling will begin in May of year 3 with first oil expected at the end of year 3. Delete references to 2020. | 2.1 Proposed Action & Alternatives | Accepted, changed in document.  |
| L88-60 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Drilling for Alternative C is listed to begin in May of year 2 with first oil expected at the end of year two. To be consistent with section 2.4.1 and Table 2-9.1, this should state drilling will begin in May of year 3 with first oil expected at the end of year 3. Delete references to 2020. | 2.1 Proposed Action & Alternatives | Accepted, changed in document.  |
| L88-61 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. should say "construction, fixed-wing aircraft trips..."   | 2.1 Proposed Action & Alternatives | Accepted, changed in document.  |

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|--------|-----------------------------|--|------------------------------------|--------------------------------|
| L88-62 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Clarify that "Year 1-2" refers to Nov of Year 1 through Oct of Year 2. Clarify that "Year 2-3" refers to Nov of year 2 through Dec of year 3 (a 14-month period) Clarify that "Drilling (Years 4-10)" represents Jan of Year 4 through April of Year 10. Clarify that "Annual Operations/Post Drilling" represents May of year 10 through Dec of year 32. This information, with the monthly totals, will allow reader to understand the calculations, otherwise, the calculations are very confusing. | 2.1 Proposed Action & Alternatives | Accepted, changed in document. |
| L88-63 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. should say "construction, fixed-wing aircraft trips are limited to between 5 and 15..."  | 2.1 Proposed Action & Alternatives | Accepted, changed in document. |
| L88-64 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. The 2-acre operations ice pad to be constructed each year until the end of the 30-year design life of the project, as described in the Section 404 permit application, is not described in description of ice roads and pads for Alternative A. Water use to support ice pad construction is included in the water use tables provided in Appendix B. Recommend clarifying use of 2-acre operations ice pad for all action alternatives. See MNAD, March 2016, Appendix C.                             | 2.1 Proposed Action & Alternatives | Accepted, changed in document. |
| L88-65 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. "Construction is expected to take 2 years..." should be changed to "Construction will take either two or three years..."   | 2.1 Proposed Action & Alternatives | Accepted, changed in document. |

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| L88-66 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. The pipeline-road crossing for pipelines is not "underground", which implies the pipeline is buried below-grade. The pipeline is coated and carried in casing beneath the raised road surface, but above the tundra/soil. This design significantly reduces risk of external corrosion that is common with buried steel piping that is in contact with soil. | 2.1 Proposed Action & Alternatives | Text now reads "There is potential for pipeline spills where the pipeline crosses under the road, due to corrosion of the buried portion of the pipe (i.e., GMT1 to CD1/Alpine Central Processing Facility pipeline segments). The likelihood of corrosion occurring is reduced through pipeline design and monitoring. The pipeline is coated and carried in casing beneath the raised road surface, but above the tundra/soil. This design significantly reduces risk of external corrosion that is common with buried steel piping that is in contact with soil. In addition, ConocoPhillips maintains a corrosion control program and an inspection program that includes ultrasonic inspection, radiographic inspection, coupon monitoring, metal loss detection pigs and geometry pigs, and forward-looking-infrared technology." |
| L88-67 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Alaska Clean Seas provides spill response training to the North Slope Spill Response Team weekly, not just "annually"; weekly is significantly more frequent than "annual".  | 2.1 Proposed Action & Alternatives | Accepted, changed in document.  |
| L88-68 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Incorrect regulatory reference: an oil discharge prevention and contingency plan complies with State of Alaska requirements in AS 46.04.030(b) [not "46.04.030(10)(A)", which is a non-existent regulation].   | 2.1 Proposed Action & Alternatives | Accepted, changed in document.  |
| L88-69 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Gravel for GMT1 came from a 25-acre parcel in phase 3 of the ASRC mine site. It was permitted for 45.  | 2.1 Proposed Action & Alternatives | Accepted, changed in document.  |
| L88-70 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Ice roads will be used to support every year of construction, whether two years or three years. This section should make that clear.   | 2.1 Proposed Action & Alternatives | Accepted, changed in document.  |

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| <b>L88-71</b> | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. We appreciate that BLM included both construction schedules in these sections (two-year construction schedule and three-year construction schedule). We request that the schedules be presented as options that, at the discretion of ConocoPhillips, are available as a result of the analyses performed in the DSEIS. To this end, we also request that the resource impact analyses include reference to each schedule and that, where they exist, differing impacts because of construction schedule (whether two-year or three-year) be disclosed. | 2.1 Proposed Action & Alternatives   | Text has been added to those resource sections where a potential effect difference due to the 2- or 3-year schedule could occur.   |
| <b>L88-72</b> | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. "extended-reach drilling is still not technically feasible for the GMT2 Project." This appears to be a holdover from the GMT1 DSEIS. Since COPA is now building an extendable reach drilling (ERD) rig, this is not an entirely accurate statement. ERD is still evolving and allows reaching more from single pad but ERD would not be used to determine pad location.   | 2.1 Proposed Action & Alternatives   | Text was reviewed and updated to provide clarification with regard to the alternative that was eliminated from further review due to the technical infeasibility of extended reach drilling. |
| <b>L88-73</b> | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. There are three 0.4 acre pull-outs for a total of 1.2 acres. Table 2.1-1 incorrectly states there are three 1.2 acre pull-outs in the column titled "2015 GMT2 Project Proposed by ConocoPhillips".   | 2.1 Proposed Action & Alternatives   | Accepted, changed in document.   |
| <b>L88-74</b> | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. No off-lease disposal of produced water will be sought. Produced water is injected back into reservoirs for secondary recovery, not into disposal wells.  | 1.1 Executive Summary & Introduction | Reference to off-lease disposal of produced water has been removed.  |

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| L88-75 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. the term should be "spill prevention, control, and countermeasure plan" ("control" not "containment") and the regulations have been amended to apply to "oil storage containers with capacity 55 gallons or greater for facilities with over 1,320 gallons in aggregate oil storage container capacity". Reference to "660 gallons" is outdated and the requirement applies to all petroleum hydrocarbons (oils) not just fuel. | 1.1 Executive Summary & Introduction                                | Text has been revised to update regulatory language.   |
| L88-76 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. Mineral Leasing Act...there is no ROW required for GMT2   | 1.1 Executive Summary & Introduction                                | Text has been revised to remove reference to a MLA Right-of-Way.   |
| L88-77 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. "National"...misspelled word. Should be "notional participation areas". Also, there are no notional PA's noted on Map 1.1-1   | 1.1 Executive Summary & Introduction                                | Text has been revised to "notional." The legend in Map 1.1-1 for the FEIS will be updated and incorporate notional participation areas to be consistent with text in the document. |
| L88-78 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment A. AA-081798 is the GMT1 lease location, not GMT2. GMT2 pad is on AA-081800. This is evident on Map 1.1-1.   | 1.1 Executive Summary & Introduction                                | Reference to the lease on which GMT2 is located has been corrected.  |
| L88-79 | ConocoPhillips Alaska, Inc. | See ConocoPhillips Attachment B. Update Sheet 22 of Appendix A  | 2.1 Proposed Action & Alternatives                                  | Accepted, changed in document.   |
| L88-80 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment C, Additional Subsistence Information  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been revised to include information from Attachment C of ConocoPhillips Comment Letter.   |
| L88-81 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment D, Updated Alt A and B Inundation Analysis   | 3.4 Water Resources   | Edits were made to Tables 4.2-4 to 4.2-7 and all referrals to this table and the snowmelt runoff periods.  |
| L88-85 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment F, NPR-A Impact Mitigation Program Annual Report   | 3.16 Economy  | Revised to reflect changing conditions since the development of the draft SEIS   |

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| L88-86 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment B-0. Map 1.1-1 update to include new unit boundaries  | 5.1 Maps and GIS Data                | Map 1.1-1 was updated for the FEIS to include recent boundary changes to the Greater Mooses Tooth Oil & Gas Unit. |
| L88-87 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment B-0. third line - remove "In the GMT Unit" and replace with "For the GMT2 Project" since development drilling is occurring at the GMT1 pad.   | 1.1 Executive Summary & Introduction | The text has been revised as suggested.   |
| L88-88 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment B-0. Alternative A & B designs have been updated. The latest design now includes a sand handling module.  | 2.1 Proposed Action & Alternatives   | Accepted, changed in document.  |
| L88-89 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment B-0. Chemical storage with containment and truck loading will be included at GMT1 & GMT2 (document shows only GMT1)   | 2.1 Proposed Action & Alternatives   | Accepted, changed in document.  |
| L88-90 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment B-0. The exact number of VSMS will be established based on final road alignment so it is more accurate to state "800 to 1,000 vertical support members will be required between GMT1 and GMT2, depending on final road alignment,..." rather than just 800. | 2.1 Proposed Action & Alternatives   | Accepted, changed in document.  |
| L88-91 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment B-0. The latest design now includes a sand handling module. Chemical and weathered crude storage with containment and truck loading will be included at GMT1 & GMT2 (document shows only GMT1)  | 2.1 Proposed Action & Alternatives   | Accepted, changed in document.  |
| L88-92 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment B-0. 4th bullet: 6" miscible injection should be 8". Also, later in the sentence, it will connect to an 8" gas line (not 6").   | 2.1 Proposed Action & Alternatives   | Accepted, changed in document.  |

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| L88-93 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment B-0. First sentence: the state approved oil discharge prevention and contingency plan was re-approved by the state for another 5 years, approved February 16, 2018. The title was updated to "Alpine Field and Satellites and Alpine Pipeline System Oil Discharge Prevention and Contingency Plan".   | 2.1 Proposed Action & Alternatives | Accepted, changed in document. |
| L88-94 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment B-0. Second sentence: Please include weathered crude in the list of fluids that may be stored on site at GMT2. Weathered crude may be used to freeze-protect the wells.  | 2.1 Proposed Action & Alternatives | Accepted, changed in document. |
| L88-95 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment B-0. The state approved oil discharge prevention and contingency plan was re-approved by the state for another 5 years, approved February 16, 2018. The title was updated to "Alpine Field and Satellites and Alpine Pipeline System Oil Discharge Prevention and Contingency Plan". The word should be "Countermeasure", without an "s" at the end.   | 2.1 Proposed Action & Alternatives | Accepted, changed in document. |
| L88-96 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment B-0. The second two bullets in this section related to camps should be replaced with: Nuiqsut Hotel - The Project will utilize existing beds at the commercial hotel as available to support the project.<br>Kuukpik Pad Camp –It would supply 370 -456 beds for 120 days to support winter construction work (Year 1 to Year 3) and 175 beds for 245 days to support summer activities in Year 1 to Year 3. | 2.1 Proposed Action & Alternatives | Accepted, changed in document. |



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| L88-97 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment B-0. Lodging Requirements, Construction: update as described above.  | 2.1 Proposed Action & Alternatives | Accepted, changed in document.   |
| L88-98 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment B-0. The 2017 photocensus results are now available for all arctic herds and this should be cited as all of the herds saw a growth in numbers.   | 3.11 Caribou                       | Thank you for your comment. The BLM has updated the section 3.3.4, Population Dynamics section to showing results of the 2017 photocensus for TCH and CAH . The BLM updated figure 3.3-3 and requested permission from ADGF to add a figure showing TCH abundance estimates. |
| L88-99 | ConocoPhillips Alaska, Inc. | See ConocoPhillips comment letter Attachment B-0. The Alpine Field and Satellites and Alpine Pipeline System Oil Discharge Prevention and Contingency Plan was re-approved by the state on February 16, 2018. The re-approved plan has updated spill summary information. | 3.19 Hazardous Materials Spills    | Updated document name in text.   |

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| L89-1  | Wilderness Society, et.al. | <p>BLM has failed to adequately analyze and quantify the potential impacts to subsistence and sociocultural systems. The dSEIS fails to include impact criteria and overall rankings that show the level of impact by alternative for the social system impacts, including impacts to subsistence. BLM provides no explanation for the arbitrary absence of impact criteria or analysis of the level of impacts by alternative for social impacts, which is concerning for several reasons.*2 As an initial matter, BLM has already developed specific impact criteria for nearly every social systems resource, and these criteria were well-vetted and subject to public comment in the GMT1 Final SEIS.*3 Given the similarities between GMT1 and GMT2, and the close timeframes for drafting the EIS's, there is seemingly no reason that BLM should refuse to use these specific and relevant impact criteria in the dSEIS.</p> <p>*2The dSEIS makes statements which are, in fact, contrary to the approach BLM adopts in the social systems impacts analysis. "A resource specific description of the impact criteria is included in each section of this chapter." Alpine Satellite Development Plan for the Proposed Greater Mooses Tooth 2 Development Project: Draft Supplemental Environmental Impact Statement 235 (2018) [hereinafter GMT2 Draft SEIS] (emphasis added). BLM entirely fails to explain its reasoning for abandoning this resource-specific approach for an approach that favors no impact determinations whatsoever.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>According to BLM's NEPA guidance, the effects analysis must demonstrate that the BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and the alternatives. NEPA does not require the agency to classify impacts to each resource as minor, moderate or major. The BLM found that the use of GMT2 Impact Criteria did not contribute to meaningfully distinguish the alternatives from each other, and instead detracted from the impact analysis due to confusion and differences of opinion regarding the criteria being applied over focusing on the identified impacts.</p> |

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| <p><b>L89-1</b><br/><i>Continued</i></p> | <p>Wilderness Society, et.al.</p> | <p>*3 See GMT1 Final EIS, Table 4.4-1 [Cultural Resources]; Table 4.4-3 [Economy]; Table 4.4-8 [Land Use and Ownership]; Table 4.4-10 [Local Transportation]; Table 4.4-11 [Recreation]; Table 4.4-12 [Visual Resources]; Table 4.4-13 [Subsistence].</p> <p>Further, BLM does not even apply the “general” impact criteria described in the GMT2 dSEIS Sections 4.1.2 and 4.1.3 to its conclusions for social system impacts. Absent resource- specific criteria, BLM should have referred to these sections to characterize what constitutes a significant impact for each resource. BLM’s failure to characterize impacts for social systems makes it difficult to compare impacts between alternatives or synthesize information in a manner that is easy for the public to understand. It is particularly troubling that the analysis of impacts to social systems was singled out for such vague treatment in the dSEIS, given the proximity of the GMT2 project to the community of Nuiqsut. Impacts to subsistence, cultural resources, health, and the economy, are of the highest importance and interest to community members and other stakeholders. It is critical that BLM provide a meaningful analysis, conclusions for the levels of impacts, and a comparison between alternatives for social systems.</p> | <p>3.15 Socio-cultural Systems, Subsistence, and Environmental Justice</p> | <p><i>See above for BLM response</i></p> |

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| L89-10 | Wilderness Society, et.al. | <p>The mapping and other information included as part of the Section 810 analysis is also based on outdated information about subsistence use areas. The GMT2 project is laid out on top of subsistence data from 1995–2006. Elsewhere in the dSEIS, BLM states that “[f]uture research will reveal how harvesters respond when infrastructure is established closer to town or in their core hunting areas” and provides that “[a]voidance may be less of an option as fewer areas without development are present.” BLM already has information from existing studies and from the community showing that subsistence users have had to shift their activities in light of existing developments. It is not acceptable for BLM to state that avoidance problems will decrease in the future since the community will have no choice other than to hunt and fish around the infrastructure if they are surrounded by it. The Section 810 mapping and BLM’s overall analysis fail to account for shifts that have occurred to Nuiqsut’s subsistence use areas over time in light of development activities and infrastructure. As a result, these maps and BLM’s analysis do not adequately take into consideration how traditional subsistence use areas have been lost and how the GMT-2 project is likely to further deprive the community of access to traditional subsistence use areas.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>The Draft SEIS discloses both potential benefits and potential negative impacts of infrastructure and attempts to be succinct. Recent data on use of roads, gathered since the Draft SEIS was published, and verbatim testimony from hunters, has been included in the Final SEIS. The Draft SEIS did include updated discussions on avoidance, noting that much of the research and conclusions related to harvester avoidance are based on pre-Alpine hunting patterns. While avoidance has continued to occur, and has been documented in the Caribou Subsistence Monitoring Project, it is important to note that as industry has moved closer to Nuiqsut, it has become more difficult for residents to avoid industry.</p> |

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| L89-11 | Wilderness Society, et.al. | <p>BLM states in its assessment of the potential mitigation measures that federal agencies are not generally required to adopt mitigation measures. The dSEIS also states that BLM lacks the ability to eliminate negative sociocultural impacts for Nuiqsut residents through mitigation. However, BLM has broad authority to impose mitigation measures, including the authority to require compensatory mitigation, to address the impacts from this project. BLM also has an obligation under Section 810 of ANILCA to take reasonable steps to minimize and address the potential impacts to subsistence from the project. Moreover, the U.S. Army Corps of Engineers ("Corps"), as a cooperating agency, will use this SEIS to base its analysis for its Clean Water Act 404 process. The Corps has broad mitigation authority under 404, and the dSEIS should consider a suite of mitigation measures which may be implemented as part of this process. BLM's responsibilities in the Reserve include the protection of the Reserve's exceptional ecological and other values. BLM has broad authority to use mitigation tools to protect the subsistence and other surface values in the Reserve, including ecological values.</p> | 4.2 Mitigation        | <p>BLM NEPA Guidance and CEQ regulations for EIS analyses require that all relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the agency [40 CFR 1502.14(f), 40 CFR 1502.16(h)]. The Supplemental EIS analyzes a broad range of potential new mitigation measures, including some that are compensatory in nature and some that are outside the jurisdiction of BLM to adopt. However, the decision to adopt mitigation is not required, and is at the discretion of the decision-maker. The record of decision will determine which if any potential new mitigation measures to adopt, including those that may be compensatory in nature. BLM Instructional Memorandum 2018-093 Compensatory Mitigation issued July 24, 2018 supersedes all previous policies regarding compensatory mitigation, and generally precludes the BLM from requiring compensatory mitigation from public land users.</p> |

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| L89-12 | Wilderness Society, et.al. | <p>BLM should not authorize GMT-2 until after the completion of the Regional Mitigation Strategy (RMS) and until BLM has a better understanding of the potential cumulative and other impacts of development in the region.</p> <p>The RMS is intended to serve as a roadmap for mitigating impacts from both GMT1 and future projects in the northeastern region of the Reserve — including GMT2. BLM has not finalized the RMS. The RMS will help inform the locations where mitigation actions could take place in the northeastern region of the NPR-A and is intended to develop potential mitigation measures to better address the unmitigated and substantial impacts to subsistence, sociocultural systems, and other values. This may include decisions about areas that need additional protections or how to more effectively mitigate against the impacts from developments like GMT2.</p> <p>...BLM has yet to determine how it will adequately address and mitigate against the serious impacts of development on subsistence and other values. BLM should respect the wishes of the Native Village of Nuiqsut and postpone authorizing GMT2 until the potential impacts and the effectiveness of any mitigation measures to address those impacts are better understood.</p> | 4.2 Mitigation        | <p>The Regional Mitigation Strategy pursuant to Supplemental BMP 1 in the Greater Mooses Tooth One Record of Decision has been completed. However, in the interim, many of the policies under which the RMS was envisioned and authorized have been rescinded, including BLM's Mitigation Handbook and Manual. BLM NEPA Guidance and CEQ regulations for EIS analyses require that all relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the agency [40 CFR 1502.14(f), 40 CFR 1502.16(h)]. The Supplemental EIS analyzes a broad range of potential new mitigation measures, including some that are compensatory in nature and some that are outside the jurisdiction of BLM to adopt. However, the decision to adopt mitigation is not required, and is at the discretion of the decision-maker. The record of decision will determine which if any potential new mitigation measures to adopt, including those that may be compensatory in nature. BLM Instructional Memorandum 2018-093 Compensatory Mitigation issued July 24, 2018 supersedes all previous policies regarding compensatory mitigation, and generally precludes the BLM from requiring compensatory mitigation from public land users.</p> |

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| <b>L89-12</b><br><i>Continued</i> | Wilderness Society, et.al. | This includes holding off on making any additional authorizations in the NPR-A until after the completion of a robust mitigation plan to address those impacts. In addition to its broader mitigation obligations, BLM is also required to take reasonable steps under ANILCA to address the impacts to subsistence; without an adequate analysis of the potential steps and options for addressing those impacts, BLM will not meet this obligation under ANILCA. BLM needs to finalize the RMS prior to making a decision on GMT2 so there is a plan in place to address impacts to subsistence and other values.  | 4.2 Mitigation        | <i>See above BLM response</i>  |
| <b>L89-13</b>                     | Wilderness Society, et.al. | The mitigation measures that are discussed in the dSEIS do not go far enough to address the significant impacts to subsistence users and the community of Nuiqsut. Given that impacts to subsistence and sociocultural systems are one of the most significant impacts likely to stem from this project and other developments in the region, the dSEIS proposes shockingly little in the way of mitigation measures or analysis of potential measures to address such impacts. There is no indication that the proposed avoidance and minimization measures will be sufficient to address or offset those impacts. Monitoring studies, while important, are unlikely to result in on-the-ground changes to the project or mitigation measures without more (e.g., clear adaptive management provisions that will actually lead to changes or necessary adjustments to the project). | 4.2 Mitigation        | BLM NEPA Guidance and CEQ regulations for EIS analyses require that all relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the agency [40 CFR 1502.14(f), 40 CFR 1502.16(h)]. The Supplemental EIS analyzes a broad range of potential new mitigation measures, including some that are compensatory in nature and some that are outside the jurisdiction of BLM to adopt. However, the decision to adopt mitigation is not required, and is at the discretion of the decision-maker. The record of decision will determine which if any potential new mitigation measures to adopt, including those that may be compensatory in nature. BLM Instructional Memorandum 2018-093 Compensatory Mitigation issued July 24, 2018 supersedes all previous policies regarding compensatory mitigation, and generally precludes the BLM from requiring compensatory mitigation from public land users. |

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| L89-13<br><i>Continued</i> | Wilderness Society, et.al. | <p>Even where the dSEIS states there will be mitigation measures, such as the pullouts and access ramps, it is unclear whether they have been sited or designed in a way that is culturally appropriate or will actually address the adverse impacts to subsistence users. BLM notes that mitigation measures like the ramps will only "likely" be designed in a way that fixes some of the access problems that occurred in the context of the CD-5 road. This is insufficient. If BLM is going to rely on and incorporate such measures into the project for the benefit of the community, it should ensure that they are designed and sited in a way that incorporates feedback from the community. BLM should also address the safety concerns associated with use of such access points by community members to ensure crossings provide safe and effective access points.</p> <p>BLM should also consider requiring compensatory mitigation for this project, relying on its broad authority under the NPRPA and FLPMA. In the GMT1 context, BLM required compensatory mitigation from ConocoPhillips because the existing avoidance and minimization measures were insufficient to address the subsistence and sociocultural impacts from the project. The existing avoidance and minimization measures for GMT2 are similarly not going to be adequate to fully address the anticipated impacts to subsistence and sociocultural systems from this project.</p> | 4.2 Mitigation        | <i>See above BLM response</i> |



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| L89-14 | Wilderness Society, et.al. | <p>There are a number of foreseeable developments and decisions that could further exacerbate the cumulative impacts to the region that BLM failed to consider in the dSEIS. BLM failed to include a potential full-field development scenario as part of the dSEIS. BLM's current development scenario in the dSEIS and Map 4.6-1 only accounts for a limited range of activities and developments and does not adequately encompass the full range of developments that are likely to occur in the region under a full-field development scenario. As a result, BLM has failed to fully address and account for the full range of significant, cumulative impacts. BLM needs to account for the wide range of foreseeable projects and developments that will potentially occur in the region in the foreseeable future.</p> <p>BLM's full-field development scenario and cumulative impacts assessment should also account for the release of the U.S. Geological Survey's (USGS) updated estimates of oil and gas resources in the Reserve. USGS updated its estimate of the mean undiscovered, technically recoverable onshore resources, revising the estimate from 1.5 billion barrels of oil in 2010 up to 8.7 billion barrels of oil.</p> | 4.0 Cumulative Effects Projects and Methodology | GMT2 was originally approved for development as CD-7 in 2004 under the Alpine Satellite Development Plan EIS. The purpose of the SEIS is to supplement the 2004 analysis and to include new information relevant to environmental concerns that have bearing on the proposed action or its effects. The GMT2 SEIS tiers to and incorporates by reference previous NEPA analysis including the full-field development scenarios analyses found in the ASDP EIS (2004), and the cumulative effects analysis in the NPR-A IAP (2012) and GMT1 SEIS (2014). |

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| L89-15 | Wilderness Society, et.al. | <p>BLM has failed to account for and assess the potential cumulative impacts from activities on newly leased acreage in the NPRA. At the 2016 lease sale, ConocoPhillips acquired an additional 594,972 acres in the Reserve — nearly doubling the 895,000 total acres already leased in the Reserve. A significant portion of this new acreage is within the Teshekpuk Lake Special Area, and will push development activities even closer to the most sensitive areas around Teshekpuk Lake. In a state area wide lease sale held the same day, ConocoPhillips also acquired 142,280 acres of land just outside the Reserve on the edge of the Colville River Special Area. All of this newly acquired acreage is in the vicinity of ConocoPhillips' existing developments and acreage around Nuiqsut and extends out from the existing lease areas. It is reasonably foreseeable that there will not only be additional exploration activities on these lease tracts, but that there will potentially be development and production pads that move forward in these areas as well. BLM should account for these potential developments and activities in its assessment of the cumulative impacts analysis and its assessment of a potential full-field development scenario. These areas are located to the south and southwest of Nuiqsut, so any activities and developments in this region are likely to further exacerbate the impacts to subsistence and other resources already being experienced by the community. These developments will effectively encircle the community of Nuiqsut with oil activities and infrastructure and choke the community out of the remaining subsistence use areas west and south of the community that are currently free of oil infrastructure.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>Section 4.6.8 Cumulative Impacts to Social Systems, Sub-section 4.6.8.9 Subsistence includes a long list of existing and currently proposed oil exploration and development projects within 40 miles of Nuiqsut. Text has been revised to include the reasonably foreseeable future development at Willow. The SEIS discloses the anticipated over-arching impacts of additional exploration and development and attempts to be succinct.</p> |

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| L89-16 | Wilderness Society, et.al. | <p>BLM also identified that it plans to revise the IAP. Secretarial Order 3352 called for the potential revision to the IAP. The dSEIS states, "Current anticipated direction is that BLM Alaska will issue a [determination of NEPA adequacy] based on an alternative analyzed but not implemented in the 2012 Final IAP/EIS." Despite this acknowledgement, BLM never assesses the cumulative effects or potential ramifications from reopening the IAP and opening additional areas to development. The primary target of any such effort would potentially be the Teshekpuk Lake Special Area. The Teshekpuk Lake Special Area was first established in 1977 and is an area of international conservation importance. The 2013 IAP safeguards much of the Teshekpuk Lake Special Area from leasing and non-subsistence permanent infrastructure because of its high conservation and subsistence values. The Teshekpuk Lake Special Area includes important calving and insect-relief areas for the Teshekpuk Caribou Herd, an important subsistence resource. It supports a variety of fish, including lake trout, whitefish, Bering cisco, and rainbow smelt, among other species. It also contains globally important habitat for waterbird and shorebird breeding, molting, staging, and migration. Any efforts to expand industrial activity into these areas would have far-reaching direct, indirect, and cumulative impacts across the region. Despite the fact that BLM identified in the GMT2 dSEIS that a revision to the IAP is foreseeable, BLM has completely failed to consider the potentially huge ramifications such a decision is likely to have on the entire region.</p> | 4.0 Cumulative Effects Projects and Methodology | <p>While SO 3352 did require the ASLM to submit a schedule to effectuate a revision of the NPR-A IAP, it is uncertain whether or not a revision will occur. The GMT2 SEIS tiers to and incorporates by reference previous NEPA analysis including the ASDP EIS (2004), NPR-A IAP (2012) and GMT1 SEIS (2014). Leasing within the TLSA was analyzed in detail under Alternative D in the 2012 NPR-A IAP Final EIS.</p> |

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| L89-17 | Wilderness Society, et.al. | <p>BLM has also failed to adequately account for the full scope of the Willow project and its potential direct, indirect, and cumulative impacts to subsistence and other resources in the region. The dSEIS contains outdated information about the scope and potential plans for the Willow project. The dSEIS describes the Willow project as “2 exploratory wells in 2016, 4 exploratory wells planned for 2018 and may do additional appraisal wells in 2019. Unspecified development plans, including whether or not to have a production facility. Estimated 300M barrel oil find.” ConocoPhillips has stated that it anticipates that the Willow development will produce 100,000 barrels per day and anticipates starting production in 2023. Willow is likely to be another Alpine-sized development in the region and is likely to require a new stand-alone oil processing facility. BLM has failed to account for the significant size of this project and the far-reaching impacts such a project is likely to have on subsistence and other resources in the region, particularly since ConocoPhillips is likely to propose connecting any infrastructure back to the existing GMT and Alpine developments. BLM needs to fully account for this development in the assessment of the cumulative impacts of GMT2.</p> <p>Relatedly, BLM failed to analyze a new central processing facility (CPF), which will be necessary for any future projects within the GMT Unit or beyond. The Alpine Satellites field was constructed and has been maintained under the premise that the Alpine CPF would process oil resources produced from the Alpine field, which includes GMT-2.</p> | 4.0 Cumulative Effects Projects and Methodology | <p>The BLM received a request from ConocoPhillips Alaska, Inc., to conduct a Master Development Plan EIS to evaluate the Willow development in May 2018. The most current information from that request letter has been incorporated into the cumulative effects analysis. Although the Willow development would use GMT2 and Alpine infrastructure to the maximum extent possible, this project has independent utility from GMT2 and is not considered a connected action under NEPA. The Willow find is sufficiently large that even in the absence of a road connection between GMT2 and GMT1, the Willow project could be developed roadlessly similar to the Alpine field. The direct and indirect impacts of Willow will be analyzed pursuant to NEPA as part of the Willow MDP EIS, which includes a central processing facility as part of the project proposal.</p> |

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| L89-17<br><i>Continued</i> | Wilderness Society, et.al. | <p>However, no other sites were intended to be developed by relying on CPF's capacity, because of their distance and Alpine CPF's limited processing capacity. Future development beyond GMT-2, therefore, will require construction of a new CPF. The original Alpine facility was planned as a 97-acre surface development that included stand-alone processing facilities, and an airstrip. Building a new CPF further west will require vast amounts of gravel to construct a large pad to house the myriad infrastructure needed to process oil and gas resources. A new CPF will bring with it a new airstrip, longer gravel roads, more ice roads, changing traffic patterns, and will greatly impact noise, air quality, water, wildlife, and the community of Nuiqsut. The failure of the dSEIS to analyze a new CPF as part of the reasonably foreseeable future development scenario is unacceptable.</p> | 4.0 Cumulative Effects Projects and Methodology | See above BLM response |

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| L89-18 | Wilderness Society, et.al. | <p>The dSEIS also fails to account for the full range of impacts from the studies and other activities likely to occur from ConocoPhillips trying to permit and bring additional developments online, particularly with regard to the number of flights and other activities likely to disturb wildlife and further limit subsistence activities. For example, ConocoPhillips recently applied for a five-year authorization to conduct summer work in the Reserve in the Greater Mooses Tooth, Bear Tooth, and Colville Units, Nuiqsut, Inigok, and surrounding areas. In this permit application, ConocoPhillips predicts that they will conduct 7,844 helicopter takeoffs and landings in the summer of 2018 alone. This is an unbelievable number of flights, none of which has been accounted for in the dSEIS. Helicopter traffic is one of the most commonly reported disturbances to subsistence hunting and is a significant concern for the community of Nuiqsut. This makes it even more important for BLM to fully assess the total number of flights occurring in the region. The application also states that personnel will be housed in both Alpine and Nuiqsut, which means more traffic in and out of Nuiqsut, and increasing the interaction between the community and industrial workers. The dSEIS fails to account for the cumulative number of flights and level of industrial activity likely to occur from the large number of developments occurring across the region.</p> | 4.0 Cumulative Effects Projects and Methodology | <p>GMT2 was originally approved for development as CD-7 in 2004 under the Alpine Satellite Development Plan EIS. The purpose of the SEIS is to supplement the 2004 analysis and to include new information relevant to environmental concerns that have bearing on the proposed action or its effects. The GMT2 SEIS tiers to and incorporates by reference previous NEPA analysis including the cumulative effects analysis in the ASDP EIS (2004), NPR-A IAP (2012) and GMT1 SEIS (2014). The estimated number of flights for the 5-year authorization requested by CPAI in the summer of 2018 were analyzed in in both the IAP and GMT1. CPAI reports the total combined numbers in association with the summer activities authorization pursuant to the ESA consultation requirements in determining level of take.</p> |

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| L89-19 | Wilderness Society, et.al. | The dSEIS references outdated information regarding Putu, Stony Hill, and ConocoPhillips' plans to develop additional production pads in the Colville River Unit. The dSEIS only references the delayed exploratory activities at Putu and notes that there will potentially be a 32-well and 5.8-acre expansion of CD-2.73 ConocoPhillips has already completed its exploration activities at Putu and Stony Hill and has stated that the company is planning to turn those prospects into tieback developments. Putu is only around two miles away from the community of Nuiqsut, which would make this the closest oil and gas infrastructure to the community to date. This will have serious cumulative impacts on the community of Nuiqsut and other resources in the region that have not been adequately assessed in the dSEIS. | 4.0 Cumulative Effects Projects and Methodology                     | Text has been revised to reflect updated information regarding recently-drilled exploration wells within the cumulative effects analysis geographic area. GMT2 was originally approved for development as CD-7 in 2004 under the Alpine Satellite Development Plan EIS. The purpose of the SEIS is to supplement the 2004 analysis and to include new information relevant to environmental concerns that have bearing on the proposed action or its effects. The GMT2 SEIS tiers to and incorporates by reference previous NEPA analysis including the cumulative effects analysis from ASDP EIS (2004), NPR-A IAP (2012) and GMT1 SEIS (2014).   |
| L89-2  | Wilderness Society, et.al. | Table 4.1-2 provides a helpful summary of the level of impacts for each resource considered in the dSEIS except social systems. BLM must include impact criteria and accurately determine level of impact by alternative for social system impacts, and include a similar summary in Table 4.1-2.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | According to BLM's NEPA guidance, the effects analysis must demonstrate that the BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and the alternatives. NEPA does not require the agency to classify impacts to each resource as minor, moderate or major. The BLM found that the use of GMT2 Impact Criteria did not contribute to meaningfully distinguish the alternatives from each other, and instead detracted from the impact analysis due to confusion and differences of opinion regarding the criteria being applied over focusing on the identified impacts. |

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| L89-20 | Wilderness Society, et.al. | <p>BLM did not analyze impacts from the proposed Arctic Strategic Transportation and Resources (ASTAR) project. As currently proposed by the State of Alaska, ASTAR plans to construct a series of interconnected gravel roads or rights-of-way spanning portions of the North Slope Borough, predominantly between villages and Prudhoe Bay, with most of the focus on connecting the Colville Delta to Barrow. The construction of this proposed project would directly impact Nuiqsut and the broader geographic area impacted by GMT1, and would likely lead to increased development of oil and gas sites in the western NPR-A. Moreover, this proposed project would cause synergistic impacts on subsistence, environmental justice, and sociocultural systems due to increased road access to NPR-A villages, particularly Nuiqsut. These impacts must be analyzed as cumulative effects.</p> | 4.0 Cumulative Effects Projects and Methodology | <p>ASTAR is in the early stages of planning. No specific projects are reasonably foreseeable at this time. A discussion of ASTAR was added to section 4.2.2.2</p> |



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| L89-21 | Wilderness Society, et.al. | <p>The dSEIS also fails to address the full range of cumulative impacts from the Smith Bay development. The dSEIS only accounts for a potential pipeline from the Smith Bay development, without accounting for the potential impacts of an actual development at Smith Bay. Caelus Energy announced a large discovery of roughly 1.8 to 2.4 billion barrels of oil in Smith Bay in 2016. Caelus' proposed development would require extensive infrastructure and industrial activity in and around the ecologically rich Smith Bay, which is located at the western edge of the Teshekpuk Lake Special Area. The area around Teshekpuk Lake supports the highest density of shorebirds in the circumpolar Arctic. More than a dozen of the National Audubon Society's Alaska WatchList species nest, molt, or rest near Teshekpuk Lake, including threatened spectacled eiders, Steller's eiders, yellow-billed loons, dunlins and American golden-plovers. The region also provides important habitat for the Teshekpuk Lake Caribou Herd. Development in this region could place additional pressure on the Teshekpuk herd, further exacerbating the impacts to the herd and subsistence users occurring as a result of the GMT2 and other developments at the northeastern edge of the Reserve. Oil development of this scale could potentially have huge impacts on the Reserve's wildlife, the surrounding marine habitat, and the traditional subsistence practices of local residents. The dSEIS should account for the full scope of potential cumulative impacts from Caelus' development and not just the potential for a pipeline.</p> | 4.0 Cumulative Effects Projects and Methodology | <p>The FEIS defines the geographic area of relevant past and reasonably foreseeable future actions as limited to Harrison Bay and Lower Colville River watersheds. Smith Bay is outside of the cumulative effects analysis area thus it is not included in the cumulative effects analysis. The potential pipeline from Smith Bay crosses the analysis area and is included.</p> |

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| L89-22 | Wilderness Society, et.al. | BLM has not considered a reasonable range of alternatives to the proposed project. BLM ruled out use of a seasonal roadless alternative for economic purposes. However, BLM has failed to consider other alternatives that would minimize the potential use of the road. For example, BLM should consider a roaded alternative that would limit industrial activities during times of the year when particularly sensitive subsistence use activities (e.g., caribou hunting) are likely to occur in the vicinity of the project. | 2.1 Proposed Action & Alternatives | Section 5.3 of the BLM NEPA Handbook and CEQ regulations describe the conditions under which supplementation must occur. The Handbook provides that supplementation to the current (draft or final) EIS is necessary only in the case of: (1) substantial changes to the proposed action that are relevant to environmental concerns; (2) addition of a new alternative beyond the scope of analyzed alternatives; or (3) significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its effects. A seasonal restriction limiting industrial activity on the GMT2 road is qualitatively within the range of alternatives analyzed in the Draft SEIS. A seasonal restriction is a variation of the timing of activity on the road, however, the nature and context of the impacts of use of the GMT2 road remain the same. BLM has included Potential Mitigation Measures 2 and 8 that serves to minimize the impacts of the GMT2 during sensitive time of the year as part of the impact analysis for Subsistence in Section 4.4.5.6. |

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| L89-23 | Wilderness Society, et.al. | <p>BLM should also consider a deferred-approval alternative where the agencies do not issue permits until a Willow application is submitted to ensure that BLM understands the impacts from both projects and can impose any necessary protective measures to address impacts from the projects together. In January 2017, ConocoPhillips announced a significant new discovery within the Greater Mooses Tooth Unit at Willow, which is located just west of the GMT-2 project. ConocoPhillips anticipates that the Willow development will produce 100,000 barrels per day. ConocoPhillips is aiming to permit the project and begin production by 2023. Willow is likely to be another Alpine-sized development in the region and is likely to require a new stand-alone oil processing facility. Given the proximity of Willow to GMT2, ConocoPhillips is likely to propose connecting any infrastructure back to the existing GMT and Alpine developments. Piecemeal permitting of the GMT2 project at this time, when there is an additional and massive project that will be moving toward permitting in the near future, is inappropriate and inconsistent with the BLM's obligations under NEPA. Permitting the GMT2 project at this time is premature and will foreclose the possibility for the BLM to consider meaningful and less damaging alternatives to the proposal in light of the broader development scheme moving forward in the region. The community of Nuiqsut is only beginning to experience and fully understand the impacts from the expanded Alpine satellite developments, but those impacts are already significant.</p> | 2.1 Proposed Action & Alternatives | <p>The BLM received a request from ConocoPhillips Alaska, Inc., to conduct a Master Development Plan EIS to evaluate the Willow development in May 2018. The most current information from that request letter has been incorporated into the cumulative effects analysis. Although the Willow development would use GMT2 and Alpine infrastructure to the maximum extent possible, this project has independent utility from GMT2 and is not considered a connected action under NEPA. The Willow find is sufficiently large that even in the absence of a road connection between GMT2 and GMT1, the Willow project could be developed roadlessly similar to the Alpine field. Deferral of a project authorization would be inconsistent with the directive in the Naval Petroleum Reserves Production Act to expeditiously carry out an oil and gas leasing program and the rights ConocoPhillips acquired with the subject leases to reasonably develop the oil and gas within those lease tracts.</p> |

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| <p><b>L89-23</b><br/><i>Continued</i></p> | <p>Wilderness Society, et.al.</p> | <p>ConocoPhillips only constructed and started production at CD5 within the past few years, but it is already having a significant effect on the community and has caused problems with things like access to subsistence resources. GMT-1, which is permitted, but has yet to be fully constructed, will only magnify these impacts. Despite this, BLM has yet to determine how it will adequately address and mitigate against the serious impacts of development on subsistence and other values. BLM should respect the wishes of the Native Village of Nuiqsut and postpone authorizing GMT2 until the potential impacts and the effectiveness of any mitigation measures to address those impacts are better understood.</p>  | <p>2.1 Proposed Action &amp; Alternatives</p> | <p><i>See above BLM response</i></p>  |
| <p><b>L89-24</b></p>                      | <p>Wilderness Society, et.al.</p> | <p>BLM should also consider other alternatives to reduce the size of the road and its potential impacts on subsistence. One of the main concerns about the road cited by the community is its height, which has the potential to deflect caribou movements and create access issues for the community. As a result, one of the primary mitigation measures supported by Nuiqsut hunters is for BLM to lower the height of the GMT-2 access road. However, BLM has stated that the design of the road is required to support heavy industrial traffic with the smallest possible footprint. BLM should consider an alternative that would limit the timing and type of industrial traffic and activity on the road to minimize the need for the road to be built to height and size specifications capable of supporting such a significant amount of industrial activity.</p> | <p>2.1 Proposed Action &amp; Alternatives</p> | <p>Section 5.3 of the BLM NEPA Handbook and CEQ regulations describe the conditions under which supplementation must occur. The Handbook provides that supplementation to the current (draft or final) EIS is necessary only in the case of: (1) substantial changes to the proposed action that are relevant to environmental concerns; (2) addition of a new alternative beyond the scope of analyzed alternatives; or (3) significant new circumstances or information relevant to environmental concerns and bearing on the proposed action or its effects. A seasonal restriction limiting industrial activity on the GMT2 road is qualitatively within the range of alternatives analyzed in the Draft SEIS. A seasonal restriction is a variation of the timing of activity on the road, however, the nature and context of the impacts of use of the GMT2 road remain the same. BLM has included Potential Mitigation Measures 2 and 8 that serves to minimize the impacts of the GMT2 during sensitive time of the year as part of the impact analysis for Subsistence in Section 4.4.5.6.</p> |

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| L89-25 | Wilderness Society, et.al. | <p>We believe that the air quality modeling analyses performed by the BLM for the dSEIS for the proposed development of petroleum resources in the Greater Mooses Tooth Unit – at the proposed GMT2 drilling and production pad – are deficient and likely underestimate impacts. As a result, it is likely that air quality impacts would be predicted to be more extensive than what is presented in the dSEIS. In addition, all of the alternatives fall short of establishing enforceable mitigation measures that reflect assumptions that were made in the analysis to ensure that no significant air quality impacts will occur. More detailed comments on the areas of greatest concern are provided below.</p> | 3.5 Air Quality & Meteorology | <p>The modeling analysis is comprehensive and includes assumptions that provide conservatively high estimates of impacts. In multiple steps of the air quality impact assessment, model inputs and the approach were selected to develop a conservatively high estimate of potential air impacts. As documented on page 7 of the far-field modeling report: “the far-field modeling conservatively (i.e., to be protective of the environment) used the maximum of the short-term and long-term emission rates for each pollutant.” Similarly: “For the Class II PSD increment analysis (i.e. for concentrations) years/scenarios were mixed, and the scenario with the highest (worst-case) emissions for each pollutant was selected. “ Also on page 12 of the far-field modeling report, it is stated: “Similarly, a release height of 12 feet was used as a conservative estimate of a typical height of a 1-story structure.” Lastly, on page 25 of the far-field modeling report it is stated: “ Model predicted highest first-high (H1H) concentrations were compared with the Class II PSD increments. Using the H1H instead of the highest second-high (H2H) values will conservatively over-predict the values to be compared to the PSD increments.”</p> |

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| L89-26 | Wilderness Society, et.al. | <p>BLM has Failed to Rigorously Assess Impacts from Each of the Proposed Alternatives in the dSEIS. BLM only conducted an air quality impact analysis for the Draft Preferred Alternative (A – CPAI Proposed Project) and for Alternative C (Roadless Development). No independent impact assessment was completed for Alternatives B (Alternate Alignment of GMT1 – GMT2 Access Road) and D (No Action Alternative).</p> <p>A direct comparison of the emissions inventories for Alternatives A and B shows that: (1) NOx emissions in years one through three are higher for the Alternative B development scenario by almost 5%; (2) PM10 and PM2.5 emissions in all years are higher by as much as 10%; (3) hazardous air pollutant (HAP) emissions are also higher for Alternative B (e.g., formaldehyde emissions are 10% higher for Alternative B); and (4) even VOC emissions are slightly higher under Alternative B.</p> <p>The BLM should consider whether increased emissions associated with the changes in road alignment and length (e.g., increased truck traffic and fugitive dust emissions related to travel and construction) under Alternative B would result in significant air quality impacts. This would be especially important to consider with regard to the 24-hour average PM10 National Ambient Air Quality Standards (NAAQS).</p> | 3.5 Air Quality & Meteorology | <p>The determination to not exclusively model Alternative B was made due to the following similarities to Alternative A, resulting in the conclusion that the impacts from Alternative A are representative of Alternative B:</p> <ol style="list-style-type: none"> <li>1. The pad size and road alignment nearest the GMT2 Pad is the same.</li> <li>2. The emissions per constructed road segment, constructed pipeline segment, and mile travelled for both Alternatives are the same.</li> <li>3. The difference between Alternative A's and B's road and pipeline alignment is farthest from the GMT2 Pad and where the predicted maximum impacts occurred. Alternative D was not modeled as there are no proposed project emissions under that alternative.</li> </ol> <p>To additionally address this comment, a linear correlation was created to conservatively estimate Alternative B impacts based on Alternative A modeled results and the ratio of Alternatives B and A emissions. With this conservative linear analysis, the modeled impacts for Alternative B are still below the respective NAAQS/AAQS.</p> <p>For the assessment of far-field impacts, the impacts assessed for Alternatives A and C were well below the air quality standards and the 5-10% difference in the emissions between the Alternative B and Alternative A would not change this conclusion. Therefore, it is reasonable to assess potential impacts for Alternative B qualitatively without explicitly modeling the alternative.</p> |

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| L89-26<br><i>Continued</i> | Wilderness Society, et.al. | A quantitative assessment of the air quality impacts from the Alternative B development scenario, based on modeling of emissions associated with the alternate alignment of the GMT1 to GMT2 access road would be needed in order to understand whether or not impacts would be greater than Alternative A for some pollutants, in some locations. | 3.5 Air Quality & Meteorology | <i>See above BLM response</i>   |
| L89-27                     | Wilderness Society, et.al. | Cumulative air quality impacts are only presented in the dSEIS for Alternative A. Emission rates for Alternatives A and C are presented in the underlying far-field air quality report, with Alternative C emission rates higher than Alternative A for all pollutants except PM10.  | 3.5 Air Quality & Meteorology | Cumulative air quality impacts are quantitatively assessed for Alternative A. A qualitative assessment of the cumulative far-field impacts from Alternative C is conducted based on project-alone impacts. Project-alone impacts from Alternative A (shown in Tables 4.2-20 and 4.2-21) contribute less than 1 percent to the total estimated air quality concentrations. Comparing Project-alone impacts from Alternative A to Alternative C (shown in Tables 4.2-29 and 4.2-30) indicates that the increased emissions under Alternative C would not affect the total estimated air quality concentrations. Therefore, the cumulative far-field impacts for Alternative C would be almost identical to those predicted for Alternative A as shown in Tables 4.6-5 through 4.6-8 and is not quantitatively assessed. |
| L89-28                     | Wilderness Society, et.al. | Section 3.2.3.2 states that there are “minimal man-made and natural emission sources that negatively affect air quality in the NPR-A.” In this context, “minimal” is an over-generalization of air quality in the NPR-A. Also, BLM should add gravel mining to list of emission sources in the text.   | 3.5 Air Quality & Meteorology | Based on the reviewer comment, the text was modified to state that man-made and natural emission sources affect air quality. Also, gravel mining was added as a man-made source of emissions.   |

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| L89-29 | Wilderness Society, et.al. | <p>BLM's Modeling Analysis is Deficient and Likely Underestimates Impacts. BLM relies on outdated modeling for the far field air quality analysis. As acknowledged by BLM, EPA removed CALPUFF as a preferred model in its recent update to its Guideline on Air Quality Models (40 C.F.R. Part 51, Appendix W). And while BLM notes that EPA's removal of CALPUFF as a preferred model, "does not affect its use under the FLM's guidance regarding AQRV assessments (FLAG, 2010)" it fails to address the use of a photochemical grid model (e.g., CAMx) to assess source impacts on ozone and secondary PM levels. BLM should assess regional impacts using a photochemical grid model. Specifically, EPA describes such models, in its preamble to the Guideline of Air Quality Models update, as follows: Publicly available and documented Eulerian photochemical grid models such as the Comprehensive Air Quality Model with Extensions (CAMx) and the Community Multiscale Air Quality (CMAQ) model treat emissions, chemical transformation, transport, and deposition using time and space variant meteorology. These modeling systems include primarily emitted species and secondarily formed pollutants such as ozone and PM2.5. In addition, these models have been used extensively to support ozone and PM2.5 SIPs and to explore relationships between inputs and air quality impacts in the United States and elsewhere.</p> <p>In addition, BLM uses an older version of CALPUFF for the far-field air quality impact analysis ("Although more recent versions of CALPUFF are available, CALPUFF version 5.8.5 was used for the far field analysis.").</p> | 3.5 Air Quality & Meteorology | <p>The modeling analysis is comprehensive and includes assumptions that provide conservatively high estimates of impacts. First, as stated in the Far-field modeling report: "In the preamble to the updated rule (Federal Register Vol. 82, No. 10, January 17, 2017) USEPA clearly stated that their action to remove CALPUFF from Appendix A 'does not affect its use under the FLM's guidance regarding AQRV assessments (FLAG, 2010).'" CALPUFF version 5.8.5 was the regulatory-approved version of the model when CALPUFF was listed as a preferred model by USEPA. More recent versions of CALPUFF were not approved by EPA and so were not deemed to be appropriate for the analysis of GMT2 impacts. As stated in the far-field modeling report: "Although more recent versions of CALPUFF are available, CALPUFF version 5.8.5 was used for the far field analysis. This was the most recent USEPA-recommended and FLM-approved regulatory version of CALPUFF before the recent rulemaking became effective."</p> <p>Recent photochemical grid modeling analyses conducted by the Bureau of Ocean and Energy Management (BOEM) included an assessment of ozone and secondarily formed PM2.5 in the Alaska North Slope and found no issues of concern (see BOEM (2017) report titled "Arctic Air Quality Modeling Study Photochemical Modeling Report." BEOM Arctic Air Quality Impact Assessment Modeling Study. By Ramboll Environ, Novato, CA. Available at: <a href="https://www.boem.gov/2016-076/">https://www.boem.gov/2016-076/</a>). Generally, the findings of the BOEM study are consistent with available measurements and that no notable changes to air quality or AQRVs are predicted to occur under future development scenarios analyzed by BOEM.</p> |



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| L89-29 | Wilderness Society, et.al. | See comment above | 3.5 Air Quality & Meteorology | <p>The regional modeling analysis predicts both current and future ozone and total PM2.5 concentrations are well below the NAAQS in the Alaska North Slope and analyzed Class I and sensitive Class II areas. (Note to BLM: BLM advised us that a Photochemical Grid Modeling study was going to be conducted for the Alaska North Slope for resource management planning and therefore it wouldn't be required for this project.)</p> <p>Furthermore, in multiple steps of the air quality impact assessment, model inputs and the approach were selected to develop a conservatively high estimate of potential air impacts. As documented on page 7 of the far-field modeling report: "the far-field modeling conservatively (i.e., to be protective of the environment) used the maximum of the short-term and long-term emission rates for each pollutant." Similarly: "For the Class II PSD increment analysis (i.e. for concentrations) years/scenarios were mixed, and the scenario with the highest (worst-case) emissions for each pollutant was selected." Also on page 12 of the far-field modeling report, it is stated: "Similarly, a release height of 12 feet was used as a conservative estimate of a typical height of a 1-story structure." Lastly, on page 25 of the far-field modeling report it is stated: " Model predicted highest first-high (H1H) concentrations were compared with the Class II PSD increments. Using the H1H instead of the highest second-high (H2H) values will conservatively over-predict the values to be compared to the PSD increments."</p> |

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| L89-3  | Wilderness Society, et.al. | <p>The analysis of economic impacts is also deficient. The economics section of the dSEIS only touts the potential economic benefits to the community. It does not quantify or discuss the potential economic harms given the reality of the subsistence economy in Nuiqsut. The dSEIS also acknowledges elsewhere that GMT2 will potentially impact community members by causing them to travel further for subsistence activities, which will make it harder for individuals to afford to engage in traditional subsistence activities and may limit the ability of individuals with fewer financial means to engage in those activities. BLM has failed to account for these economic harms in its analysis of the potential economic impacts of the project.</p> | 3.16 Economy          | <p>Section 3.4.4 recognizes that the economy in the region is mixed, relying on both subsistence and cash. Section 3.4.4 and 4.4.3 focus on the conditions and effects on the cash economy as it relates to oil and gas activity. The baseline characterization and potential effects to subsistence are comprehensively addressed in standalone Sections 3.4.6 and 4.4.5</p> |

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| L89-30 | Wilderness Society, et.al. | <p>It appears that the near-field modeled scenarios do not account for concurrent construction, drilling, and well intervention activities in Year 3 and therefore may underestimate potential air quality impacts in Year 3. The dSEIS indicates the following: Drilling would commence in May of Year 3 of the project and occur year-round for each alternative until all planned wells are drilled. The date of first production is expected in December of Year 3. Construction would take place from late Year 1 through Year 3 of the project during Construction Schedule 1. ... Developmental drilling would take place during Year 3, and infill drilling would take place from Years 4 through 10 of the GMT2 Project.<sup>98</sup></p> <p>The dSEIS states that, “[m]aximum annual emissions would occur during the construction and drilling phases (Years 2 and 3).” And the modeling report includes detailed emissions summaries showing Year 3 emissions from construction, developmental drilling, and well intervention activities occurring at the same time. BLM should ensure that the modeling fully accounts for all emissions sources in Year 3, when construction, drilling, and well intervention activities will be occurring in parallel. In particular, for NO<sub>x</sub>, VOC, SO<sub>2</sub>, and CO<sub>2e</sub> emissions, it is possible that impacts in Year 3 would be higher than modeled impacts presented in the dSEIS since combined emissions in Year 3 (e.g., in Year 3 Month 6) exceed those modeled for the dSEIS (i.e., Year 2 Month 2).</p> | 3.5 Air Quality & Meteorology | Thank you for the comment. The modeling in the SEIS does account for concurrent activities including drilling, well interventions, operations, and construction. A schedule of when these activities may overlap is included in the AQIA emissions summaries found in Appendix B. As pointed out by the reviewer, Year 3 has the potential for drilling, well intervention, routine operations, and construction emissions. The model accounts for the expected operation of each activity during Year 3 including simultaneous activity. |

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| L89-31 | Wilderness Society, et.al. | <p>The cumulative impact analysis is tiered off of the analysis completed for GMT1. It's not entirely clear, however, if the maximum emissions were considered in the development scenario that were assumed for the far-field modeling. The far-field modeling report indicates that, "[f]or the Class II PSD increment analysis (i.e. for concentrations) years/scenarios were mixed, and the scenario with the highest (worst case) emissions for each pollutant was selected." Specifically: For the Alternative A Class II PSD increment analysis, the PM2.5 emissions were taken from the Construction year, while the rest were taken from the Developmental Drilling year. Similarly for Alternative C, the PM10 emissions were taken from the Infill Drilling year, while the rest were taken from the Developmental Drilling year.</p> <p>As with the near-field analysis, however, BLM should also ensure it is accounting for all emissions sources that would reasonably occur at the same time (e.g., construction, drilling, and well intervention activities that are projected to all occur in Year 3). And BLM should ensure that the emissions from reasonably foreseeable development (RFD) sources also reflect the maximum emissions scenario for each pollutant.</p> | 3.5 Air Quality & Meteorology | <p>The far-field analysis analyzes the maximum emissions sources by including multiple types of activities that would reasonably occur at the same time. As stated in the far-field modeling report on page 7: "The years/scenarios [in Table 3-1] are named for the primary activity occurring during that year, but include other activities as well. For example, some construction emissions will occur during the year labeled Developmental Drilling. During the year labeled Infill Drilling, some Routine Operations emissions will also occur." Thus, for the example selected by the commenter, for the Alternative A Class II PSD increment analysis, while the PM2.5 emissions were taken from the Construction year and the NOx, SO2, and PM10 emissions were taken from the Developmental Drilling year, the modeled emissions for a given pollutant include both drilling and construction activities and these worst-case emissions years/scenarios are used in the air quality impact analysis. The inclusion of construction and drilling equipment in the Alternative A scenario is shown explicitly in Table 4-1 of the far-field modeling report which lists all equipment and emissions modeled for Alternative A. Table 4-2 of the far-field modeling report lists all equipment and emissions modeled for Alternative C. The SEIS has been revised to clarify this.</p> |

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| <p><b>L89-31</b><br/><i>Continued</i></p> | <p>Wilderness Society, et.al.</p> | <p><i>See comment above</i></p> | <p>3.5 Air Quality &amp; Meteorology</p> | <p>For the cumulative analysis that included RFD sources, a tiering approach was used to estimate impacts. The tiering approach is based on a ratio of total modeled emissions for GMT1 to a revised estimate of RFD emissions for this project (see Table 4-15 of the far-field modeling report). As discussed below, the emissions rates used for RFD sources in the cumulative analysis represent worst-case and worst-case allowable emissions based on available information. Table 4.6-3 of the SEIS includes the RFD sources included in the cumulative analysis and sources to their emissions data are included in the near-field and far-field AQIAs.</p> <p>For six of the eleven RFD sources, emissions rates are based on the modeled emissions rates presented in the Revised RFD Source Far-Field AQIA for the GMT1 Alternative A project. As described in Section 2.2 of the report, "Modeled emission rates now closely match what was previously used for modeling in support of air quality permit applications submitted to the State of Alaska. This is a change from relying on the annual permitted allowable documented in AECOM 2013 a, b. In most cases, this resulted in an emission rate increase since the modeling submitted to the State of Alaska relied on worst-case emissions scenarios that are not reflected in the source allowable."</p> <p>Emissions rates for the Brooks Range Petroleum Mustang RFD source are based on the permitted emissions presented in the Technical Analysis Report (TAR) that accompanied the issued minor source permit. The modeled emissions rates are based on potential to emit (PTE) rates which in general do not always represent the worst case short term emissions allowed.</p> |

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| L89-31<br>Continued | Wilderness Society, et.al. | See comment above | 3.5 Air Quality & Meteorology | <p>However, as discussed on Page 7 of the TAR, for those units where the PTE did not represent the maximum short term emissions, Alaska DEC imposed permit conditions that limited operations such that the short term ambient air standards were protected:</p> <p>“The modeled emission rates should generally reflect the maximum emissions allowed during a given averaging period. However, an applicant may use the annualized emission rate for intermittent EUs For the probabilistic one-hour NO<sub>2</sub> and SO<sub>2</sub> standards. BRPC assumed a shared 28 hours-per-day for EUs 06A and 06B in their modeling analysis. Therefore, the Department will impose permit conditions that limit the combined operation of these EUs, as modeled, to protect the one-hour NO<sub>2</sub>, the 24-hour, three-hour, and one-hour SO<sub>2</sub>, and the 24-hour PM-10 AAAQS. BRPC also assumed a liquid fuel operational regime of 500 hour-per year each for the dual-fuel turbine EUs, 01A and 01B. Therefore, the Department will impose permit conditions that limit the liquid-fueled operational regime of these EUs, as modeled, to protect the one-hour NO<sub>2</sub>, the 24-hour, three-hour, and one-hour SO<sub>2</sub>, and the 24-hour PM-10 AAAQS.”</p> <p>Emissions rates for the four Nanushuk RFD sources are based on the modeled emissions rates presented in the 2017 draft SEIS AQIA. As discussed in Section 5.2 of the AQIA, the “modeled EU [emission unit] locations, physical parameters, and emission rates, respectively, of each modeled EU are based upon “worst-case” emission scenarios for the Construction and Drilling and Drilling and Operations scenarios, respectively.” Table 5-2 presents the worst-case modeled emissions rates for Construction, Drilling, and Operations scenarios.</p> |

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| L89-32 | Wilderness Society, et.al. | <p>The dSEIS assumes annualized hourly emissions from the following intermittent sources: drill rig cement pumps; the drilling backup power generator; well intervention coil tubing equipment; well intervention non-mobile support equipment; tailpipe emissions from well intervention mobile equipment; fugitive dust from well intervention; GMT2 pad emergency generator; and pigging venting. When determining short-term air quality impacts, this method will likely underestimate impacts. For example, if the drilling backup power generator is only estimated to operate 4 days per month and the emissions from those 48 days are spread out over the entire year, the 1-hour average NO2 impacts are likely grossly underestimated. Maximum hourly emissions from the generator would need to be modeled in order to ensure that hourly impacts do not exceed the hourly NAAQS. Annualizing emissions is only appropriate when looking at annual standards and will underestimate impacts from these sources when comparing impacts to short-term standards, such as the hourly NO2 NAAQS and daily average PM10 and PM2.5 NAAQS.</p> | 3.5 Air Quality & Meteorology | <p>The modeling of intermittent sources such as generators, drill rig cement pumps and well intervention sources, was conducted per the Appendix W Modeling Guidance memo issued by the U.S. Environmental Protection Agency in March of 2011 (see draft SEIS references). The reasoning as to why the annualization of the hourly rates is an appropriate modeling procedure is detailed in the memo. Following guidance procedures, using short-term emission values, the NO2 results are not expected to be underestimated. Pigging venting was not treated as an intermittent source in the modeling.</p> |

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| L89-33 | Wilderness Society, et.al. | <p>The dSEIS relies on monitoring data collected in Nuiqsut by CPAI to represent background concentrations for the air quality analysis. BLM should consult with EPA, the State, and the North Slope Borough regarding the appropriate representative background concentrations to be used for the dSEIS. Any data used in the analysis should be reviewed and approved by EPA or the State to ensure the data have been properly collected and quality-assured. In 2011, EPA issued a determination of appropriate background values for the North Slope, for use in Outer Continental Shelf (OCS) permitting. At the time, EPA did not consider the CPAI data collected in Nuiqsut, providing the following reasoning: [EPA] Region 10 is aware that air quality monitoring data has been collected at Nuiqsut and at the Endicott MPI air monitoring site but we have decided not to consider these data sets for determining background levels for the current modeling analyses being conducted. The data for these two monitoring sites have not been submitted to Region 10 for OCS permitting purposes therefore a review has not been performed by Region 10 to determine whether either data set is appropriate for PSD modeling. In 2011, EPA established the following appropriate representative background concentrations for the village of Nuiqsut, which are significantly higher than what is used in the dSEIS for GMT2: (1) a 24-hour average PM2.5 concentration of 17 µg/m<sup>3</sup> compared with 7.3 µg/m<sup>3</sup> in the dSEIS; (2) a 24-hour average PM10 concentration of 53 µg/m<sup>3</sup> compared with monthly values presented in the dSEIS ranging from 10-40 µg/m<sup>3</sup>; and (3) a 1-hour average NO<sub>2</sub> concentration of 50 ppb compared with hourly values presented in the dSEIS</p> | 3.5 Air Quality & Meteorology | <p>Thank you for the comment. The background data used at Nuiqsut was reviewed by EPA for 2014 where they issued a memo (included as a reference to the AQIA) detailing their review of the data and the procedures for which to calculate background concentrations. This memo was followed carefully for years 2015 and 2016. Also, EPA along with other members of the air quality practice working group reviewed the modeling protocol and draft reports for both the near-field and far-field analyses which included the background data for all pollutants.</p> |



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| L89-33<br><i>Continued</i> | Wilderness Society, et.al. | ranging from 3-25. In addition to CPAI-collected data, BLM should consider data from the same monitors EPA relied on in determining background values for Nuiqsut.   | 3.5 Air Quality & Meteorology | <i>See above BLM response</i>   |
| L89-34                     | Wilderness Society, et.al. | <p>Of concern, BLM has removed data from the monitoring dataset, as follows:<br/>After review of the background PM10 values, there were a number of hours within 2014, 2015, 2016 where high wind events caused unrepresentative hourly and daily readings. Furthermore, the Nuiqsut Monitoring station is known to capture PM10 from the Nigliq Channel during such high wind events (AECOM, 2013b) and there will not be a similar channel with sediment near the proposed GMT2 Drill Pad, substantiating their removal from the background value analysis for PM10. The days along with their daily average speed that were removed from the PM10 background analysis are listed in Table 4-23.</p> <p>EPA has established rigorous criteria and procedures for determining whether data are considered and treated as exceptional events and BLM must make a determination based on similar criteria and procedures prior to removing any data from the dataset used in determining representative background concentrations for the dSEIS. If high wind events are occurring year after year it would seem unlikely that the resulting pollutant concentrations would be considered to be exceptional. And if the analysis intends to assess impacts in Nuiqsut then it should consider these high wind events as representative of conditions there.</p> | 3.5 Air Quality & Meteorology | Thank you for the comment. The removal of a few background PM10 values from the Nuiqsut Monitoring station was done following a procedure evaluating the daily wind speed and annual average wind speed of the years where the exceptional events occurred. In addition, the location of the monitoring station must be considered as the pollutant concentrations during these high wind events are impacted primarily by the Nigliq Channel. No similar structure or landscape will be near the proposed GMT2 Pad, further substantiating the removal of the data from high wind events at the Nuiqsut Monitoring Station, as the concentrations are not representative of Nuiqsut nor the proposed project area. |

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| L89-35 | Wilderness Society, et.al. | Given that the near-field modeling analysis presented in the dSEIS predicts NOx and PM impacts that are approaching levels of the NAAQS (e.g., 1-hour NO2 concentrations are 88% of the NAAQS for Alternative A and 24-hour PM10 concentrations are 81% of the NAAQS for Alternative A), it is imperative that BLM fully account for all sources of background air quality in order to ensure that additional impacts from the proposed GMT2 development will not cause or contribute to exceedances of the NAAQS.   | 3.5 Air Quality & Meteorology | The near-field modeling included background data from the closest, most representative monitoring station (Nuiqsut Monitoring Station). That data is meant to account for existing nearby sources to combine with and determine potential impacts from GMT2 development. Furthermore, reasonably foreseeable developments that are expected to impact ambient air that would not be included in existing background data such as GMT1, Nanushuk, and Mustang developments were included as cumulative sources to assess cumulative impacts to the GMT2 Project.                |
| L89-36 | Wilderness Society, et.al. | BLM's impact analysis relies on seasonally-varying hourly background concentrations for NO2. Specifically, instead of adding a single representative background concentration to the modeled design value concentration, the dSEIS relies on a different background concentration for each hour of the day, by season. According to the near-field modeling report, the seasonally varying hourly NO2 background values are based on air monitoring data from Nuiqsut for calendar years 2014, 2015 and 2016. For each of four 3-month seasons (e.g., Season 1 = December, January, February, etc.) each hour of the day is represented by the 3-year average of the 98th percentile value of all valid observations for that hour during the season. While not explicitly described in the dSEIS, it appears that this analysis method pairs the 3-year average of 98th percentile monitored NO2 concentrations by hour, in a given season, with corresponding modeled concentrations for that hour. This method of pairing data, in time, likely underestimates impacts by overlooking hours when higher background concentrations coincide with the highest modeled concentrations. | 3.5 Air Quality & Meteorology | A less conservative approach was used for the NO2 modeling as the level of conservatism was resulting in over predictions of potential impacts of the GMT2 Project. The analysis and procedures for use of the seasonal and hourly refinement of background NO2 used for the dispersion modeling was proposed to the air quality working group members, including the EPA, and was approved. To ensure that the data were valid, only valid hourly observations were included. A detailed account of the refinement procedure is included in the near-field modeling protocol. |

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| <p><b>L89-36</b><br/><i>Continued</i></p> | <p>Wilderness Society, et.al.</p> | <p>And while EPA guidance discusses cases where this type of methodology might be used, EPA admits that these alternative analyses result in “a less conservative” estimate of impacts. This type of analysis could be considered appropriate if, for example, there is a concern about double-counting of monitored and modeled contributions but this does not seem likely for GMT2. BLM must justify why this less conservative analysis is warranted. The near-field modeling report briefly mentions seasonal variance and describes consistency with the GMT1 analysis as potential reasons for this type of refined analysis but fails to provide any evidence for why, in addition to a seasonal variation, the modeling should consider diurnal variations in its analysis for GMT2. And even if this type of analysis is justifiable, EPA guidance indicates that background values should be based on the 3rd highest value for each season and hour-of-the-day combination (as opposed to the 98th percentile, or 8th highest value).</p> | <p>3.5 Air Quality &amp; Meteorology</p> | <p>See above BLM response</p> |

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| L89-37 | Wilderness Society, et.al. | <p>Fundamentally, the modeling for GMT2 should be used as a tool to ensure that adverse impacts will not occur in the future, not simply to determine whether or not an adverse impact occurs over the period of time modeled. The most protective approach, and one presented by EPA without need for further justification, would be to add the overall highest hourly background NO2 concentration (across the three year monitoring record) to the modeled design value based on the maximum emissions scenario. A less conservative approach outlined by EPA, but one that still would not need further justification, would be to combine the modeled design value based on the maximum emissions scenario to the monitored NO2 design value, i.e., the 98th-percentile of the annual distribution of daily maximum 1-hour values averaged across the three years of monitored data (irrespective of the meteorological data period used in the dispersion modeling). The method of varying background concentrations seasonally and by hour-of-day likely results in a less conservative analysis and, given that the modeling shows impacts close to the NAAQS (i.e., 88% of the 1-hour NO2 NAAQS for Alternative A and 95% of the 1-hour NO2 NAAQS for Alternative C), BLM should consider adopting mitigation measures aimed at minimizing NOx emissions from the GMT2 development.</p> | 3.5 Air Quality & Meteorology | <p>Thank you for the comment. The methodology used to model potential 1-hour NO2 impacts used a refined approach, but one that is still conservative. The conservative assumptions that were included in the near-field modeling analysis are detailed in the AQIA. See Section 4.2.3.2, Potential Mitigation Measures 4, 6 and 9 for proposed mitigation to reduce the emissions of NOx</p> |

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| L89-38 | Wilderness Society, et.al. | <p>In addition to potential underestimates of NO2 impacts from the use of varying background concentrations in the modeling, NO2 impacts may be further under-predicted by the use of source-specific in-stack NO2/NOx ratios in the modeling analysis. The dSEIS uses ratios based on source test data for all sources except for flares (for which the analysis uses the EPA-approved default value of 0.5). These in-stack ratios can be important parameters in the modeling and, therefore, BLM must ensure the ratios used are reasonably conservative since small changes to the ratios used could have a measurable impact on predicted concentrations. If BLM wants to rely on source-specific data it should ensure it is basing source-specific data on a reasonable sample size representing a wide load range for these sources. In the absence of sufficient data points, BLM should consider using the EPA-approved value of 0.5 for these sources.</p> | 3.5 Air Quality & Meteorology | <p>The U.S. EPA in-stack ratio (ISR) database for NO2 sources was used in order to determine in-stack ratios for all applicable sources, except where the default ratio was used, namely for the flares or where other approved and highly referenced data was available (i.e., Nanushuk Project AQIA). The EPA NO2 ISR database contains extensive data for natural gas-fired and diesel-fired engines, heaters, and incinerators. The ISR used for the GMT2 modeling was specific to tested sources in Region 10, and specifically Alaska. In many instances, the ISR was rounded up to the nearest tenth, so as to be conservative.</p> |

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| L89-39 | Wilderness Society, et.al. | <p>Similar to the NO2 impact analysis, BLM's PM10 analysis relies on monthly-varying background concentrations. Specifically, instead of adding a single representative background concentration to the modeled design value concentration, the dSEIS relies on a different background concentration for each month. Absent any EPA guidance on the use of varying background concentrations for assessing PM10 impacts on compliance with the NAAQS, BLM must provide clear and convincing justification for why this type of variation – which would likely result in a less conservative analysis of PM10 impacts – is warranted and protective of the NAAQS. Given that the modeling shows impacts close to the NAAQS (i.e., 81% of the 24-hour PM10 NAAQS for Alternative A and 87% of the 24-hour PM10 NAAQS for Alternative C), BLM should consider adopting additional mitigation measures aimed at further minimizing fugitive dust from the GMT2 development.</p> | 3.5 Air Quality & Meteorology | <p>Thank you for the comment. A monthly PM10 background value was used for the near-field modeling analysis as a refined, yet still conservative, approach to estimate potential PM10 impacts. The use of one maximum background value across all days of a year over estimates the varying meteorological conditions of the year. Namely, the maximum background value likely to occur in the summer with dry land cover and higher wind speeds would over estimate impacts during the winter when the ground would be frozen and background values for particulate matter would be lower.</p>   |
| L89-40 | Wilderness Society, et.al. | <p>The dSEIS includes a list of 12 RFD sources and their estimated SO2, NOx, PM10 and PM2.5 modeled emission rates. BLM should ensure the cumulative source inventory includes all existing and reasonably foreseeable air pollution sources impacting the same areas impacted by emissions from the proposed GMT2 project. The assumption that existing sources are accounted for in the background concentrations may not fully account for the cumulative impact from these sources. Background air monitoring data is generally added to the results of a cumulative source modeling analysis in determining compliance with the NAAQS.</p>   | 3.5 Air Quality & Meteorology | <p>The far-field air quality cumulative effects analysis was conducted at two sensitive Class II areas - Arctic National Wildlife Refuge and Gates of the Arctic National Park and Preserve using conservatively high emissions for Project and other reasonably foreseeable sources. Existing sources in the vicinity of the GMT2 project area are located 200 kilometers (125 miles) or more from these two areas. The relative proximity of the existing sources to Nuiqsut as compared to the large distance of these existing sources to the Class II areas analyzes justifies the selection of the ambient air monitoring data from Nuiqsut to represent potential impacts of existing sources to air quality at these two areas.</p> |

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| L89-40<br><i>Continued</i> | Wilderness Society, et.al. | <p>However, as discussed in EPA's Guideline on Air Quality Models, if the source being modeled is not isolated, as is the case in this modeling assessment, then modeling of existing sources is necessary for sources that are not adequately represented by ambient monitoring data (e.g., "sources that cause a significant concentration gradient ... are not likely to be adequately characterized by monitored data due to the high variability of the source's impact."). See Section 8.3.3 of 40 C.F.R. Part 51, Appendix W. Background monitoring data is limited to providing a historical account of concentrations observed at a fixed location. Whereas, modeling shows potential concentrations from all sources under maximum operating scenarios at a grid of receptors across the area of impact. So, it's likely that monitoring data from one location at one point in time may not reflect what could potentially occur at another location under maximum operating scenarios and under different meteorological conditions. Thus, unless the BLM can demonstrate that the impacts of all existing sources are reflected in the monitoring data, and show that the monitoring data are reflective of maximum concentrations in the area and have been properly collected and quality-assured, the BLM cannot use the background monitoring data to reflect all existing sources in or affecting the region.</p> | 3.5 Air Quality & Meteorology | See above BLM response |

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| L89-41 | Wilderness Society, et.al. | <p>Examples of existing reasonably foreseeable future development sources that BLM should consider including in the cumulative modeling analysis that may not be reflected in the background monitoring data include the following sources identified by Trustees for Alaska: ...potential emissions were not included for Willow, Bear Tooth, Kuparuk, Putu, and Horseshoe. Kuparuk is an existing source of emissions, with some new development projects already under permitting, and Willow is widely considered to be reasonably foreseeable for purposes of future BLM permitting.</p>  | 3.5 Air Quality & Meteorology | <p>For the purposes of quantitatively assessing cumulative air quality impacts from reasonably foreseeable future developments, the BLM was only able to include developments for which there was an existing emissions inventory. For example, the Nanushuk development was included in the near field modeling because it was far enough along in the permitting process to have an emissions inventory, but the Willow development was not included because there was not enough information available about the development to develop an emissions inventory.</p>  |
| L89-42 | Wilderness Society, et.al. | <p>The near-field cumulative analysis includes some existing sources (e.g., GMT1, Mustang Pad, Nanushuk) but does not include construction impacts from these sources. BLM must include construction emissions from these sources unless it will be imposing a requirement that GMT2 development will not occur until after construction is completed for GMT1 and Nanushuk. BLM should also consider including other sources listed in Table 3-13 of the near-field modeling report. Again, unless BLM can demonstrate that the cumulative impacts from these existing sources are reflected in the monitoring data, and show that the monitoring data are reflective of maximum concentrations in the area (i.e., operating and meteorological conditions that result in maximum concentrations in the impacted area) the BLM should model all nearby sources that impact the same area impacted by the proposed GMT2 development.</p> | 3.5 Air Quality & Meteorology | <p>Based on the timelines for the GMT1 and Nanushuk Projects, the construction phases are expected to be complete by the time the GMT2 Project begins construction. Therefore, the emissions from the operational phases were used for these cumulative sources in the models. Furthermore, it is important to note that the emissions from the operational phase of the Nanushuk Project, as presented in their SEIS, are a magnitude larger than during the construction phase, therefore the emissions for that Project are conservatively included.</p> <p>As reasoned in the near-field modeling report, the cumulative sources included in Table 3-13 of the report that were not exclusively modeled were determined to be accounted for in the background data based on their proximity and location to the Nuiqsut Monitoring Station and the years of background data chosen.</p> |



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| L89-43 | Wilderness Society, et.al. | The near-field cumulative analysis did not include an analysis of cumulative hazardous air pollutant (HAP) impacts. Specifically, the near-field modeling report states: HAPs were not modeled for cumulative sources because potential health effects from HAPs are assessed as an incremental increase due to the proposed GMT2 project, not cumulative. BLM should assess and disclose the cumulative HAP impacts to the exposed population. In order to determine if the proposed development will adversely impact public health, BLM's HAP assessment must be a cumulative one, not just an analysis of the incremental risk associated with the proposed GMT2 development, which would be imposed on top of existing health risks in the area. | 3.5 Air Quality & Meteorology | Thank you for the comment. Health risk assessments are conducted for project-specific emission sources and are not evaluated on a cumulative basis. The conservative nature of the HAPs near field models and cancer risk assessment at the maximum impacts (near the GMT2 Pad) and lower at Nuiqsut support the minimal potential for negative health effects. |
| L89-44 | Wilderness Society, et.al. | The DEIS only discusses quantitative analyses for the cumulative far-field impacts, but no similar analysis for near-field impacts. Thus, there is no analysis of cumulative impacts to air quality in Nuiqsut in the dSEIS. This oversight is troubling considering the concerns of residents of Nuiqsut over air quality impacts. The Final EIS must contain a thorough analysis of near-field cumulative impacts.  | 3.5 Air Quality & Meteorology | Cumulative sources were included in all near-field and far-field models as presented in the AQIA. The AQIA mentions the impacts at Nuiqsut are a fraction lower than the maximum impacts presented in both the AQIA and SEIS. To address the reviewer's comment, tables specific to the impacts at the Nuiqsut community have been added to Section 4.2.3.2.    |

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| L89-45 | Wilderness Society, et.al. | <p>BLM's far-field analysis for the dSEIS shows adverse cumulative impacts to visibility at locations in the Arctic National Wildlife Refuge and Gates of the Arctic National Park. BLM's modeling is tiered off of the modeling for GMT1 and does not provide a complete assessment of the scope and magnitude of visibility impacts from the GMT2 development. Figure 2 of the far-field modeling report shows the general locations of the sensitive Class II receptors for the far-field modeling domain. The receptors are located along the western border of the Arctic National Wildlife Refuge up to the Beaufort Sea and west of the Village of Kaktovik and all along the northern border of the Gates of the Arctic National Park. The dSEIS states: The [ ] tiering ratio was used to scale the visibility impacts from the GMT1 far-field cumulative analysis to get an approximate measure of the GMT2 cumulative visibility impacts. The scaled 98th percentile <math>\Delta</math>dv for each year is presented in Table 4.6-7. Cumulative visibility impacts are small. Because a tiering analysis was performed, the total number of days where the change in visibility is above the any ddv threshold cannot be determined.</p> | 3.5 Air Quality & Meteorology | <p>In the Federal Land Managers' (FLMs) Air Quality Related Values Work Group (FLAG) 2010 guidance, the FLMs have defined visibility thresholds as the project's 98th percentile change in light extinction (expressed as delta deciview [<math>\Delta</math>dv]) evaluated relative to 0.5 <math>\Delta</math>dv and 1.0 <math>\Delta</math>dv to determine when the project contributes to or causes visibility impairment, respectively. However, the FLMs have not established haze index thresholds for cumulative visibility impacts (FLAG 2010). Specifically, FLAG (2010) guidance indicates "FLMs recognize the need to assess cumulative impacts and the difficulties associated with this process...The agencies will evaluate a proposed new source within the context of the total impacts that are occurring or that potentially could occur from permitted/existing sources on the AQRVs of the area and should consider the effects of both emission increases and decreases." The FLAG (2010) guidance further states "When reviewing modeling and impact analysis result, all FLMs consider frequency, magnitude, duration, location of impacts and other factors in determining whether impacts are adverse."</p> |

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| <p><b>L89-45</b><br/><i>Continued</i></p> | <p>Wilderness Society, et.al.</p> | <p>Even without a specific GMT2 analysis to assess the number of days where the change in visibility is above haze index thresholds (i.e., the maximum number of days that the modeled change in deciview (<math>\Delta dv</math>) exceeds 0.5 and 1.0), the reported 98th percentile <math>\Delta dv</math> exceeds haze index thresholds for all three years modeled at both the Arctic National Wildlife Refuge and Gates of the Arctic, with <math>\Delta dv</math> as high as 1.05 in Gates of the Arctic and as high as 4.66 in the Arctic National Wildlife Refuge. In order to assess the scope and magnitude of the visibility impacts BLM would need to evaluate the number of days that exceed haze index thresholds and where these exceedances occur.</p> <p>These visibility impacts would appear to fall under the definition of "significant" defined in the dSEIS: Modeled project impacts exceeded visibility thresholds listed in National Park Service Federal Land Managers' Workgroup guidance, perceptible visibility impacts will occur and be visible from many areas, occur many days over the course of a year, or be visible to a majority of people on the days they occur; For reference, BLM's far-field modeling for GMT1 (Alternative A) indicates that impacts greater than the 0.5 deciview haze index is exceeded on 103 days at the receptors located in the Arctic National Wildlife Refuge and on 18 days at the receptors located in the Gates of the Arctic National Park.</p> | <p>3.5 Air Quality &amp; Meteorology</p> | <p>The analyses suggested by the FLMs were conducted during the Greater Mooses Tooth Unit 1 (GMT1) project for both the project impacts and cumulative impacts to visibility. Given that the GMT2 project impacts are lower than (or comparable to) GMT1 and the GMT2 cumulative impacts are derived from tiering, the analysis of potential cumulative source contributions conducted for GMT1 is applicable for GMT2. The GMT1 analysis included an assessment of the magnitude of impacts from both the project and cumulative sources assessing both maximum visibility impacts and the 98th percentile impacts, as well as the number of days exceeding 0.5 <math>\Delta dv</math> and 1.0 <math>\Delta dv</math>, and the source locations relative to the Class II area boundaries and receptor locations. The model-predicted visibility impacts from the GMT2 project are lower than the GMT1 project and the estimated cumulative impacts are similar for the two projects.</p> |

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| L89-46 | Wilderness Society, et.al. | <p>The dSEIS directly compares modeled project impacts to Class II PSD increments for the Infill Drilling modeling scenario under Alternatives A and C. According to these comparisons, predicted modeled concentrations from project development alone consume as much as one third of some of the PSD Class II increments (e.g., for NO<sub>2</sub> and PM<sub>2.5</sub>). BLM should complete a proper PSD increment analysis to determine how much of the available increments have already been consumed in the affected area (e.g., by GMT1 and other sources) and how much additional increment is available for consumption from the proposed GMT2 development. Without this level of analysis, BLM is not adequately ensuring that air quality will not deteriorate more than allowed under the CAA. Specifically, BLM should complete an analysis of all increment consuming and increment expanding sources that impact the same area impacted by the proposed action, including an inventory of increment-affecting emissions (i.e., emissions from major stationary sources which commenced construction or modification after the applicable "major source baseline date" and emissions increases from minor, area and mobile sources that occurred after the relevant "minor source baseline date").</p> | 3.5 Air Quality & Meteorology | <p>Formal cumulative increment PSD increment consumption analyses are the jurisdiction of the States. Formal project increment consumption analyses for GMT2 will be conducted if required as part of the ADEC's permitting process. It is not appropriate to conduct a formal PSD increment assessment as part of an EIS because under the National Environmental Policy Act all emissions sources are considered and assessed to disclose potential impacts; however, consumption of PSD increments only apply to a subset of applicable emissions sources. Therefore, an assessment of air quality impacts from all project emissions sources, as required by NEPA, compared to PSD increments results in a conservatively high estimate of the potential project impacts to PSD increments and is not a method that is sufficiently accurate to be a formal increment consumption analysis.</p> |

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| L89-47 | Wilderness Society, et.al. | <p>The dSEIS includes an inventory of emissions which relies on certain emissions controls and operating assumptions that may not be representative of actual operating scenarios and that are not reflected in the proposed mitigation measures for the dSEIS. For example, BLM makes the following statements:</p> <p>As detailed in the near-field air quality impacts analysis (Kleinfelder and Ramboll Environ 2017d), a number of conservative assumptions were used in these models including a dust control efficiency of 50 percent for watering of gravel pads and roads ...</p> | 3.5 Air Quality & Meteorology | <p>Thank you for the comment. The assumptions and methodologies for each of the Alternative's emissions inventory are detailed in a report (references included in the Reference Section of the SEIS) including the justification and reasoning behind control efficiencies, load factors, vehicle speeds, and engine technologies. Furthermore, the inventories and corresponding reports were completed with collaboration with the proponent in order to accurately reflect their proposed construction, drilling, and operational practices.</p> <p>The list of best management practices and best available control technology options presented in Section 4.2.3 will be considered for inclusion in the GMT2 Record of Decision.</p> |

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| <p><b>L89-47</b><br/><i>Continued</i></p> | <p>Wilderness Society, et.al.</p> | <p>Based on the schedules detailed in the emission inventories in Appendix B for Alternative A and Alternative C, sources were “turned on” in the model when there was a potential for emissions. For example, fugitive dust would not occur during the winter months, so in that case, the modeling for PM10 and PM2.5 only included June through September. Appropriate adjustments to the gram per second (g/s) modeled emission rates were made to ensure that, for those sources that do not operate continuously, emissions are not over- or under-stated in the AERMOD model.</p> <p>BLM does not reference many of the underlying assumptions used in developing the emissions inventories. For example, the near-field modeling report does not include information on assumed engine load factors, drilling and completion times, drilling engine technologies (e.g., whether engines meet Tier II or better engine standards), traffic estimates (e.g., speeds, VMT, etc.), flare gas volumes and destruction efficiencies, fugitive emission capture / destruction efficiencies, etc. BLM must ensure that all assumptions regarding operation and control effectiveness which are the basis for the modeling analysis are established as enforceable mitigation measures and implemented through permit stipulations. Otherwise, BLM should model emission sources under maximum possible operating conditions and assuming no controls.</p> | <p>3.5 Air Quality &amp; Meteorology</p> | <p><i>See above BLM response</i></p> |

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| L89-48 | Wilderness Society, et.al. | <p>The dSEIS includes a list of Best Management Practices and Best Available Control Technology but fails to commit to implementation of these measures. The compulsory air quality mitigations found in the dSEIS include the need for an approved dust control plan and the use of reduced-sulfur fuel in diesel-fueled equipment. There are many other practices and control technologies included in the dSEIS that are discretionary measures and, therefore, do not assure measurable impact reduction. Specifically, in reference to the Best Management Practices and Best Available Control Technology, the dSEIS states: Best management practices and best available control technology will be implemented by ConocoPhillips for GMT2 construction, drilling, and routine operations in order to reduce project-related emissions and therefore impacts on the GMT2 Project area. Below are a list of best management practices and best available control technology that are proven emission reduction strategies and technologies that should be evaluated by ConocoPhillips.</p> <p>BLM must identify the specific Best Management Practices and Best Available Control Technology that CPAI will implement. The dSEIS must include a more comprehensive set of required, measurable and enforceable mitigations to ensure there will be no significant impacts to air quality from the proposed GMT2 development. A diligent approach to future development in the area is critical given the significant air quality concerns in the nearby Nuiqsut community.</p> | 3.5 Air Quality & Meteorology | <p>Decisions on which mitigation measures are appropriate to implement are made when an agency issues a Record of Decision. All reasonable mitigation measures have been included in the Final SEIS for consideration in the Record of Decision.</p> |

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| L89-49 | Wilderness Society, et.al. | <p>Significant NOx reductions could be achieved through field electrification and the requirement of Tier 4 drill rigs and Tier 2 or better construction equipment. Potential fugitive dust impacts would be also be reduced through field electrification, as well as steps to minimize traffic (e.g., through continuous monitoring systems) and the use of Tier 2 or better construction equipment. Concerns about climate change warrant addressing fugitive methane emissions through implementation of readily-available and cost-effective technologies and practices to reduce fugitive emissions. In particular, BLM should require advanced leak detection and repair protocols, the use of plunger lifts and “smart” well monitoring, high-efficiency (i.e., minimum of 98% VOC destruction efficiency) flares coupled with auto-igniters and surveillance systems, the use of “green completion” practices that provide for the capture rather than combustion of saleable or otherwise usable gas, and the use of pump-down techniques during pipeline maintenance activities.</p> | 3.5 Air Quality & Meteorology | See section 4.2.3, Potential Mitigation Measure 6, 7, 9, 11, and 12. These mitigation measures will be considered for adoption in the ROD. |



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| L89-50 | Wilderness Society, et.al. | <p>BLM should also make clear whether GMT1 AQ New Mitigation measures have been effective thus far. They are relevant to the area's air quality, and reliability of background concentration modeling, as well as BLM's assumptions in its EIS about the effectiveness of mitigation measures. BLM should include, if known, to what extent CPAI has used natural gas or electric powered vehicles for construction at GMT1. More importantly, Nuiqsut's air quality monitoring station, run by CPAI, is relied on specifically for modeling background values. The DEIS states that: "The measurements in Table 3.2-6 are based on data collected from 2014 through 2016 at the Nuiqsut Monitoring Station." BLM should clarify in the Final EIS whether the reports from the monitoring station have been provided to BLM, the State, NSB, and the local community and tribal government, and whether the technical reviews have affirmed the reliability of the monitoring station data.</p> | 3.5 Air Quality & Meteorology | <p>BLM did not require CPAI to report data regarding emission reductions due to mitigation measures; therefore BLM is not able to provide a quantitative evaluation of the effectiveness of these measures. For GMT2, BLM will require CPAI to track emission reductions as a result of any mitigation measures adopted in the ROD and report these to BLM annually beginning 1 year after the ROD is signed, see Potential Mitigation Measure 3.</p> <p>Regarding the monitoring data: The GMT1 ROD did not specify a timeframe on air quality data review and reporting to BLM, North Slope Borough and State, local and tribal governments. BLM will propose an additional mitigation measure for GMT2 requiring CPAI to provide the monitoring data from their Nuiqsut site quarterly beginning with the quarter after the ROD is signed.</p> |

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| L89-51 | Wilderness Society, et.al. | <p>Section 1.4.5 states “there are no appreciable changes in the physical, biological, or social resources associated with the project study area since BLM (2004).” This statement ignores population-level changes for multiple species, including caribou, which may affect the impacts of development and other human activities, as well as having implications for subsistence. Additionally, in Table 1.4-2 it is noted that site-specific information on caribou migration patterns and habitat use have been collected, but no mention is made of population trends or of other scientific information, such as studies of caribou response to roads conducted in Alaska (e.g., Wilson et al. 2016) and elsewhere (e.g., Leblond et al. 2013, Panzacchi et al. 2013). Population fluctuations are later noted in Section 3.3.4.1, but presence of the data should be noted in the earlier table as well. Similarly, Wilson et al. (2016) is mentioned in Section 4.3.4.1, but it would be good to also reference such information in this table.</p> | 3.11 Caribou          | <p>Thank you for your comment. To clarify the statement in Section 1.4.5 should state " other than natural cycles and perturbations, there are no appreciable changes in the physical, biological or social resources associated with the project study area since BLM (2004).</p> |

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| L89-52 | Wilderness Society, et.al. | <p>The Teshekpuk Caribou Herd (TCH) range map in Figure 3.3-1 appears to under-represent the herd range on the eastern edge. This figure presents a misleading picture of range use by the TCH, which does not seem to correspond to the telemetry-based figures of seasonal use in Map 3.3-10 or with other previously published maps (e.g., Person et al. 2007, Wilson et al. 2012). Such a distribution may be accurate at certain seasons of the year, but not as a “total range” map, which the legend claims for this figure. This information is important to allow all readers to assess the degree to which project activities may affect the TCH. Furthermore, the source of data for this figure is not clearly indicated, making it difficult for readers to evaluate the quality of the claimed information. Figure 3.3-1 should be replaced with a better-supported range map, such as Figure 1 in Wilson et al. (2012).</p> | 3.11 Caribou          | <p>Thank you for your comment. In Section 3.3.4.1 the DEIS states that the GMT2 Project area is located at the interface between the Teshekpuk Caribou Herd and Central Arctic Herd ranges, with the Teshekpuk caribou Herd generally ranging west of the Coleville River delta and the Central Arctic Herd ranging east of the delta. The title for Figure 3.3-1 has been reworded to depict this generalization.</p> |

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| L89-53 | Wilderness Society, et.al. | <p>When discussing use of the project study area by caribou, it would be helpful to distinguish absolute and relative use. In the Caribou Density and Distribution portion of Section 3.3.4.1 it is pointed out that the TCH "inhabits the project area throughout the year, although usually at low densities." Absolute densities of caribou often are fairly low, as caribou herds in northern Alaska cover vast areas. However, it would be worth pointing out that, according to Map 3.3-10, the project area occurs within the high use contour of collared females in three out of the eight displayed periods of the year, and in the medium use contour during another three periods. It only occurs in a low use contour for two out of eight periods. These differences are especially notable because the three periods of overlap with the high use contour (fall migration, winter, and spring migration) cover the majority of the year, spanning about 7-8 months, and because of the recognition that some years winter and fall densities can be high in absolute, as well as relative, terms (Figure 3.3-3). Thus, it should be made clear that the project area falls within locations of relatively high overall use by the TCH, even if absolute densities are low.</p> | 3.11 Caribou          | <p>Thank you for your comments. a discussion of relative and absolute densities has been added to section 3.3.4.1 Density and Distribution. The following text has been added: "Absolute densities of caribou often are fairly low, as caribou herds in northern Alaska cover vast areas. Map 3.3-10 indicates that the project area occurs within the high use contour of collared females in three out of the eight displayed periods of the year, and in the medium use contour during another three periods. The three periods of overlap with the high use contour (fall migration, winter, and spring migration) cover the majority of the year, spanning about 7-8 months of the year. In some years winter and fall densities can be high in absolute, as well as relative, terms (Figure 3.3-3)."</p> |

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| L89-54 | Wilderness Society, et.al. | Consideration of potential impacts of project infrastructure and activity to caribou used a 2.5-mile (approximately 4 km) buffer distance. This is likely a reasonable distance for such an analysis based on observational studies of displacements covering about that distance in the nearby Central Arctic Herd (e.g., Cameron et al. 2005 and references therein). However, it should also be noted in the SEIS that some studies have reported responses to infrastructure and activity in caribou that cover greater distances (e.g., up to 14 km, Boulanger et al. 2012), so it is possible that caribou could exhibit behavioral or distributional responses that extend beyond the analyzed area. | 3.11 Caribou          | Added citation the commenter recommended. Added text describing maximum distance at which disturbance has been documented. Made minor changes to paragraph discussing 2.5 mile buffer.  |
| L89-55 | Wilderness Society, et.al. | Wilson et al. (2012) is given as a reference for studies of behavioral response to disturbance, however this was not studied in that paper. Perhaps the reference should have been given to Wilson et al. (2016).   | 3.11 Caribou          | Thank you for your comment. The citation for Wilson et al. (2012) on in 4.3.4.1 has been corrected. The citation was changed to Wilson et al (2016).  |
| L89-56 | Wilderness Society, et.al. | Dust deposition as a result of road construction and vehicle activity is mentioned, but the effects discussed are limited to snow-melt and timing of green-up. Further discussion is needed of the potential for changes in vegetation composition (not just phenology) due to dust effects (e.g., Myers-Smith et al. 2006) and its potential influence on caribou forage, such as reductions in lichen cover (e.g., Chen et al 2017) – a key winter food source – and habitat use (e.g., Boulanger et al. 2012). This is important to address both in the Construction and Drilling & Operation sections of the final SEIS.  | 3.11 Caribou          | Added the Myers-Smith et al. (2006) reference and added associated discussion. While the Chen et al. (2017) citation does contain valid discussion regarding the relationship between dust, soil pH, and lichen cover, the magnitude of dust impacts associated with a large diamond mine vs. the GMT2 project area and associated gravel roads are not synonymous (most notably the 1 km zone of influence for the diamond mine vs. the 300' zone of influence for gravel roads). Therefore, the citation was included but discussion was brief. |

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| L89-57 | Wilderness Society, et.al. | <p>Point 2 in the Roads and Vehicle Traffic section is overstated and contains errors. The dSEIS claims that "Wolfe et al. (2000) reported that, once caribou were initially exposed to infrastructure, crossing transportation corridors occurred more often than expected." Wolfe et al. (2000)'s statement was actually in the context of comparing different mitigation measures – elevated pipelines, buried pipelines, sag bends, etc. Wolfe et al. (2000) said that "caribou selected buried sections of pipeline as crossings more often than expected." This distinction is important. The key observation is that buried pipeline sections facilitated caribou crossing compared to other mitigation approaches. This is not what the dSEIS statement seems to indicate. It also is an odd point to make to support a discussion of roads, since it deals with pipelines, not roads, and since there is no proposal of buried pipelines or roads associated with GMT2. The dSEIS statement that "roads did not have an observable effect on animal distribution or individual energetic cost" also does not seem to align with the conclusions of Wolfe et al. (2000). Rather, it takes portions of sentences in Wolfe et al. (2000) out of context and presents them together. An extensive paragraph on p.65 of Wolfe et al. (2000) describes altered caribou distribution, presumably in response to roads, other infrastructure, and related activity. Wolfe et al. (2000) do state that "infrequently travelled transportation corridors resulted in low numbers of road-kills, did not deter road crossing by caribou, and had no observable effect on traditional migration routes, annual distribution or energetic costs" (p.65).</p> | 3.11 Caribou          | <p>Revised(ing) the paragraph and text discussing vehicle traffic. Reexamining the literature to present a more concise narrative of the past and current findings related to caribou and roads. The commenter makes valid points and points out contradictions that should be rectified, however the literature is often conflicting itself.</p> |

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| <p><b>L89-57</b><br/><i>Continued</i></p> | <p>Wilderness Society, et.al.</p> | <p>The context of “infrequently travelled transportation corridors” is very important and is excluded from the dSEIS statement. Use of roads associated with GMT2 is not likely to be “infrequent” and thus the claim in the dSEIS is misleading at best. While Wolfe et al. (2000) mention that during periods of insect activity one study (Cronin et al. 1998) found no relationship between caribou distribution and infrastructure, they also point out that Cameron et al. (1995) found decreasing movements of caribou through the most intensively developed areas for the same herd. Again, even if the Cronin et al. (1998) study is taken as evidence of a lack of effect (which the Cameron et al. 1995 study presumably challenges, though the reference for this and for Cronin et al. 1998 are not included at the end of the dSEIS, making it difficult to verify), the context must be specified. These details are very important for the resulting effects on caribou and to omit them is not acceptable.</p> <p>In summary, the claims of the dSEIS with regards to road habituation do not seem supported by the associated references and must be clarified. It does not seem sufficiently established that “habituation to the GMT1-GMT2 Access Road is likely, but will take time” according to the best available science. This also calls into question the assertion on that “it is likely that some habituation of the TCH to the GMT1-GMT2 Access Road will have occurred during the 2-3 year construction period.”</p> | <p>3.11 Caribou</p>   | <p><i>See above BLM response</i></p> |

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| L89-58 | Wilderness Society, et.al. | <p>Although the polar bear interaction plan mentioned above is approved by the U.S. Fish and Wildlife Service rather than BLM, the Record of Decision should require the use of USGS den habitat maps and den surveys to remove any doubt about the applicability of these mitigation measures. The FEIS should disclose whether operators and FWS have complied with these required mitigation measures in previous projects and set forth any relevant information about their effectiveness. The FEIS and ROD should also clarify that the bear interaction plan and all mitigation measures are required notwithstanding the project location being more than five miles from the coast; one recent FWS publication implies that bear interaction plans are not required for projects beyond the five-mile boundary.</p> | 3.13 Threatened and Endangered Species | <p>Thank you for your comment. The polar bear interaction plan is a FWS requirement and requires FWS review and approval. Once FWS approves the plan BLM adopts it as is. The FWS requires use of the most up to date den habitat maps for all interaction plans and LOA applications, it is not BLM role to redo what FWS is required to do.</p> |



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| L89-59 | Wilderness Society, et.al. | <p>The draft SEIS's discussion and analysis of the gravel source and related impacts for the GMT2 project is insufficient. The dSEIS contains numerous conflicting statements about the exact status of the Arctic Slope Regional Corporation (ASRC) gravel mine and its associated impacts. The dSEIS also downplays the potential impacts that might occur from additional gravel mining by seemingly indicating that any such impacts are existing, will not be new, or are likely to be minor. For example, in Table 2.1-1, BLM states that the "[g]eographic location of impacts would be confined to previously disturbed areas." Elsewhere, the draft SEIS acknowledges that "Phase 3 is only partially permitted" and that "authorization would have to be obtained from the U.S. Army Corps of Engineers prior to gravel extraction for the construction of GMT2." Nevertheless, the dSEIS states that the impacts from the mine have already been considered by the Corps in issuing permits for the mine. The dSEIS assumes that some impacts, such as disturbance of vegetation and habitat associated with removal of overburden and the creation of ramps would be less than for development of a mine in an undisturbed location. The dSEIS also notes that a reclamation plan is in place for Phase 1 &amp; 2 of the mine, but does not address any of the reclamation concerns associated with Phase 3.</p> | 2.1 Proposed Action & Alternatives | <p>The gravel to be utilized for the GMT2 project will be authorized by the U.S. Army Corps of Engineers for the Phase 3 expansion currently under environmental review. BLM has considered the impacts of the Phase 3 gravel mine expansion as indirect effects of a connected action. Additional expansion at the ASRC Gravel Mine Site is also included as part of the cumulative effects scenario as listed in Table 4.6-2, and was considered for all resources.</p> |

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| <b>L89-59</b><br><i>Continued</i> | Wilderness Society, et.al. | The public notice for the Corps of Engineers' permit indicates that the anticipated gravel material source for GMT2 is Phase III of the ASRC mine site. The Corps is "currently evaluating a proposal to open Phase III in the near future, which would provide [ConocoPhillips] with their gravel needs for the GMT2 proposed project." As recently as 2014, Phase III of the ASRC mine site was characterized by BLM as being an unproven resource, which may not have had sufficient gravel to support development at GMT1, let alone GMT2.  | 2.1 Proposed Action & Alternatives | <i>See above BLM response</i>   |
| <b>L89-60</b>                     | Wilderness Society, et.al. | BLM is also required to consider the cumulative impacts of the gravel mine... The expansion of ASRC's gravel mine is a connected action that BLM should fully evaluate as part of the dSEIS. Based on past information about gravel needs, BLM estimated that twenty-three acres of the ASRC mine site would be disturbed to provide gravel for GMT2. Twenty-three acres is a substantial area. This additional twenty-three acres of disturbance will occur as a direct result of this project and its gravel needs. BLM cannot simply assume for purposes of its NEPA analysis that any such impacts have already been considered and addressed elsewhere. An expansion of the mine will be necessary to obtain sufficient gravel for the GMT2 project, and that expansion has yet to be permitted. | 2.1 Proposed Action & Alternatives | Mining the gravel to be utilized for the GMT2 project from the ASRC Mine Site is considered a connected action in the SEIS. That is why the mine site is included within the boundary of the project study area, and why applicable resource sections identified direct and indirect impacts to the resource resulting from gravel mining at the site. Additional expansion at the ASRC Gravel Mine Site is included as part of the cumulative effects scenario as listed in Table 4.6-2, and was also considered in the impact analysis for all resources. |

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| L89-61 | Wilderness Society, et.al. | BLM should not assume that simply because the ASRC mine is already in existence, that mining gravel will be less impactful than at another location. Indeed, the Clover material site is located closer to the proposed GMT2 pad, potentially decreasing some aspects of construction impacts (e.g., noise, dust, traffic, emissions). Further, Clover is located in a less environmentally sensitive area outside the Colville River Delta. BLM should evaluate and compare potential impacts from both mine sites as part of this analysis.  | 2.1 Proposed Action & Alternatives | While the BLM recognizes that some impacts associated with utilizing the ASRC mine site are potentially less than developing a new mine in an undisturbed location, it is not for this reason that other gravel sources were not considered in the action alternatives. Instead, the reason why the ASRC mine site was considered for all alternatives is because it was in the process of being authorized by the U.S. Army Corps of Engineers, a cooperating agency to the GMT2 SEIS. BLM NEPA guidance states that "when working with cooperating agencies, your range of alternatives may need to reflect the decision space and authority of other agencies, if decisions are being made by more than one agency." Through our cooperating agency process, the BLM determined that use of the ASRC Mine Site was appropriate for all alternatives, and best meets the purpose and need of the proposed action. |
| L89-62 | Wilderness Society, et.al. | Gravel mining has very serious impacts that should be fully considered in the SEIS. Open pit mines require extensive overburden removal — for example, a large amount of vegetation and soil needed to be excavated to reach suitable gravel in the mines created for Kuparuk. The resulting overburden stockpile disturbs tundra, and the gravel pit itself causes permanent changes to the area's thermal regime due to "thaw bulbs" forming in the permafrost around the unfrozen water during flooding. Indirect effects such as these have led some researchers to approximate that a one acre (0.4 ha) gravel pit may impact as much as 25 acres surrounding the site. | 3.2 Soils & Permafrost             | The gravel pit is on land owned by ASRC. They have decided to expand the pit into Phase 3 to continue to provide gravel for many projects, and while this expansion would occur regardless of the construction of GMT2, GMT2 cannot go forward without the expansion of the gravel pit. The gravel pit is therefore considered a connected action to GMT2 and is analyzed in the GMT2 SEIS. The expansion of the pit was analyzed by the Corps of Engineers in a separate EA and is incorporated by reference. The effects of expanding the pit have also been analyzed as part of GMT2 as required by NEPA for connected actions.  |

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| L89-63 | Wilderness Society, et.al. | <p>There are also likely to be other significant impacts to the community and surrounding area, such as noise impacts, that have not been fully accounted for in the draft SEIS. The draft SEIS states that there is no noise data for the gravel mine available and only provides estimates of the potential noise levels. The estimated noise level in Nuiqsut from mine blasting is anticipated to be around 112.8 decibels and, closer to the source, could be closer to 140.3 decibels. A level of 110 decibels is at the average human pain threshold and is equivalent to industrial noises such as a riveting machine, steel mill, or turbo-fan aircraft taking off from approximately 200 feet away. A decibel level of 140 is equivalent to the noise on an aircraft carrier deck. This level of industrial noise has the potential to cause significant disturbances to Nuiqsut and wildlife across a vast area. The dSEIS notes the presence of these noises from the gravel mine, but fails to analyze the potential direct, indirect, and cumulative effects they might have on people and wildlife in the surrounding area.</p> | 3.6 Acoustical Environment | Noise impacts from blasting and other project-related sources are evaluated in EIS Sections 4.4.2 Sociocultural systems and 4.3.4 Mammals. |

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| L89-64 | Wilderness Society, et.al. | <p>Aircraft activity is a significant concern, particularly to North Slope communities, and this topic needs significantly greater analysis and discussion in the final GMT2 SEIS. BLM should do a better job of quantifying and assessing the total number of flights occurring in the region as part of its cumulative impacts analysis. A starting point would be to summarize aircraft activity collected by BLM (and required from all NPRA permittees reliant on aircraft) by: 1) user group (e.g. basic science research (non-industry), agency monitoring, industry ecological baseline/monitoring, pipeline inspection, exploration and development access (e.g. staking, stick-picking) site access, etc., agency administrative flights, permitted visitors and other significant users; 2) month and 3) aircraft type. These data should be evaluated for the periods of construction, drilling, and production operations. BLM then should use this information to evaluate the cumulative effects of all aircraft use (i.e., for development and non-development purposes).</p> | 4.0 Cumulative Effects Projects and Methodology | Discussion of the impacts of aircraft is covered in detail in Section 4.4.5 Subsistence. |
| L89-65 | Wilderness Society, et.al. | <p>Finally, BLM should use this information to develop an aircraft transportation plan for northeast NPRA that reduces aircraft activity and increases flight sharing among agencies, industry, and others.</p>   | 4.2 Mitigation                                  | See Section 4.4.6, Subsistence, Potential Mitigation Measures 2, 3, 4, and 5.            |

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| L89-66 | Wilderness Society, et.al. | BLM also needs to clarify its analysis of the potential number of flights and flight impacts. The dSEIS's estimates of the number and types of flights under each alternative over time are confusing. For example, in Table 2.5-4, it is unclear why the construction years overlap between years 1-2 and 2-3. This makes it unclear which flights are associated with the overlapping year, Year 2. It is also unclear whether the number of flights listed is for the total number of years or are per year. BLM should also clarify why it does not estimate there will be any DC-6 flights from Deadhorse to Alpine. | 2.1 Proposed Action & Alternatives                                  | The reference to years and specific timing has been addressed and will be reflected in the final document. Those clarifications are also reflected in a revised version of Appendix B.  |
| L89-67 | Wilderness Society, et.al. | The dSEIS should do more than just tally the number of flights associated with each alternative. BLM should consider the flight routes, whether repeated take offs and landings occur in concentrated locations, and the time of year when they take place to evaluate the impact on subsistence ...  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | At this time, the BLM and the applicant can only estimate the number of flights by fixed-wing and rotor-wing aircraft. Flight routes are extremely variable, are dependent on the weather, and environmental or monitoring studies required. More specific flight estimates are provided to the BLM before every summer season, and actual flights that occurred are reported at the end of the season. |

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| L89-68 | Wilderness Society, et.al. | The dSEIS should do more than just tally the number of flights associated with each alternative. BLM should consider the flight routes, whether repeated take offs and landings occur in concentrated locations, and the time of year when they take place to evaluate the impact on subsistence as well as migration, calving, and other sensitive life phases. BLM also should consider the ecological sensitivity of the location of landings and takeoffs. | 3.11 Caribou                       | Thank you for your comment. The BLM requires authorization for all aircraft take off and landings in the NPRA. Along with the authorization is a list of stipulations that the permittee is required to follow. A list of permittees include Federal and State agencies, North Slope Borough Dept. of Wildlife, industry, companies working on infrastructure, Legacy well clean up, research, recreation etc. BLM also conducts Section 7 consultation due to 3 ESA threatened species. BLM requires permittees to estimate the number of take off and landings prior to authorization and record the actual number during activity. Flight data collected by the BLM includes location, dates, and timing of take off and landings. Part 1. Take off and landing numbers given in the EIS represent the applicants best estimate of those flights needed and as such they are concentrated in the area of proposed development. Part 2. The seasonality is documented in the authorization. Public meetings, Resource Advisory Council, Subsistence advisor program call in program during summer to notify residents of daily air traffic are used in the evaluations. Part 3. Caribou monitoring studies are being conducted by Industry, the NSB, ADGF, and BLM to monitor herds during different times of the year to help monitor the health of the herd. All of this information was considered in the analysis in the environmental consequences chapter of the DSEIS. It is important to note that the BLM does not tract the route, altitude or speed of aircraft. |
| L89-69 | Wilderness Society, et.al. | The dSEIS should also do a better job of quantifying the number of flights associated with studies, both for the GMT2 project and overall in the region. It is unclear if the totals related to helicopter landings include the number of landings required to support environmental studies.  | 2.1 Proposed Action & Alternatives | The number of flights detailed in Appendix B are directly related to the applicant's activity. They are not separated by activity as some landings may cover operation mission as well as carry personal that conduct the related studies. These charts do not contain additional information or other flight operations not relative to the proposed project. The DEIS does address the number of flights in Section 4.4.4.2   |

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| L89-7  | Wilderness Society, et.al. | BLM also acknowledges that there are potential concerns related to thermokarst and use of the ramps that are likely to create problems with overuse, but has failed to analyze whether there are additional ramp locations, designs, or other mitigation measures that could address such problems. BLM cannot tout the ramps and pullouts as providing benefits to the community, while at the same time acknowledging the significant problems and uncertainty around whether such mitigation measures are likely to be effective. BLM also acknowledges that there are likely to be lingering concerns with public safety and traffic on the road. BLM should require that ConocoPhillips adopt further mitigation and design measures to address the significant safety concerns likely to result from both heavy industrial use and community use of the road. | 4.2 Mitigation                                  | See Section 4.4.5 Subsistence, Potential Mitigation Measure 7: Road Pullouts and Access Ramps along the GMT2 Road.   |
| L89-70 | Wilderness Society, et.al. | As discussed in the cumulative impacts section, BLM needs to quantify the total number of flights occurring related to special studies to assess the cumulative impacts on the region. For example, ConocoPhillips' latest application for studies in the Reserve estimates that it will conduct 7,844 helicopter takeoffs and landings in summer 2018 alone. BLM should better quantify the number of flights and potential impacts from the flights associated with these studies in the Reserve.   | 4.0 Cumulative Effects Projects and Methodology | GMT2 was originally approved for development as CD-7 in 2004 under the Alpine Satellite Development Plan EIS. The purpose of the SEIS is to supplement the 2004 analysis and to include new information relevant to environmental concerns that have bearing on the proposed action or its effects. The GMT2 SEIS tiers to and incorporates by reference previous NEPA analysis including the cumulative effects analysis in the ASDP EIS (2004), NPR-A IAP (2012) and GMT1 SEIS (2014). The estimated number of flights for the 5-year authorization requested by CPAI in the summer of 2018 were analyzed in in both the IAP and GMT1. CPAI reports the total combined numbers in association with the summer activities authorization pursuant to the ESA consultation requirements in determining level of take. |



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| L89-71                  | Wilderness Society, et.al. | BLM should also assess whether all of those activities actually require aircraft access or if there are other practical and less impactful alternatives such as boat or foot access, even if such alternatives are less convenient. | 4.2 Mitigation Change   | The project proponent is aware of the impacts of aviation use, and has worked closely with Nuiqsut to reduce the number of flights in the general vicinity of the community. The number of flights estimated for the various alternatives in the SEIS reflect the amount anticipated as necessary to carry out the actions as proposed within that alternative. The BLM has included three potential mitigation measures that would additionally serve to assist in minimizing the impacts of helicopter use to residents of Nuiqsut. See Section 4.4.5 Subsistence, Potential Mitigation Measures 2, 3 and 5. |
| L89-74                  | Wilderness Society, et al. | [Faint, illegible text]   | 3.15 Socio-cultural Resources, Subsistence, and Environment Action Change | [Faint, illegible text]  |
| L89-13                  | [Faint, illegible text]    | [Faint, illegible text]   | 3.1 Change  | [Faint, illegible text]  |
| [Faint, illegible text] | [Faint, illegible text]    | [Faint, illegible text]   | [Faint, illegible text]   | [Faint, illegible text]  |

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| L89-72 | Wilderness Society, et.al. | <p>BLM has also failed to adequately account for and address the potential impacts of climate change on the region and on the proposed project. The dSEIS provides almost no analysis of the potential impacts of climate change on the project and the need for additional mitigation measures or design features to address those vulnerabilities. This is particularly important for a project like this, which is located in the Arctic and is likely to be susceptible to the effects of climate change. Although the current administration repealed the Council on Environmental Quality's guidance on how agencies should consider greenhouse gas emissions and the effects of climate change in environmental impact statements, that in no way excuses agencies from continuing to meet their statutory obligations to consider these impacts and effects for purposes of the National Environmental Policy Act.</p> <p>The dSEIS provides only a bare-bones overview of the potential impacts climate change might have on the region and project area and no analysis of whether additional measures are necessary to account for likely changes. For example, the dSEIS notes that permafrost extent is predicted to decrease significantly by 2100 and the increase in the depth of the active layer in the permafrost is expected to have a negative effect on the ability of the soils to carry loads. However, there is no analysis of whether the project is designed in a way that will appropriately address and mitigate against permafrost degradation issues.</p> | 3.7 Climate Change    | <p>In the GMT2 Supplemental EIS, the BLM tiers to and incorporates by reference previous NEPA analysis including the ASDP EIS (2004), NPR-A IAP (2012) and GMT1 SEIS (2014). The impacts of climate change on the resources in the Arctic is analyzed in section 3.2.4, Climate Change. CEQ regulations direct that: <i>Agencies shall incorporate material into an environmental impact statement by reference when the effect will be to cut down on bulk without impeding agency and public review of the action. The incorporated material shall be cited in the statement and its content briefly described. No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested parties within the time allowed for comment. (40 CFR 1502.21).</i> The text provided in the GMT2 SEIS incorporates by reference and summarizes the text from the GMT1 SEIS and includes updated information where such information was available (i.e., most up to date information on minimum sea ice extent). Our understanding of climate change and its effects on the Arctic are not significantly different than what is stated in the GMT1 SEIS. Regarding project infrastructure design, the project applicant has adjusted design standards over the years to ensure a conservative safety margin. One example of this is changing road thickness from an average 5-foot thickness to a minimum 5-foot thickness.</p> |

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| L89-73 | Wilderness Society, et.al. | The dSEIS is also completely lacking the level of site-specificity necessary to understand and assess the potential impacts of climate change on this project and each of the alternatives. The generalized statements about potential impacts that might occur across a broad region are not sufficient to fully understand the likely impacts from and to this project, and how those impacts might be exacerbated by climate change. | 3.7 Climate Change  | In the GMT2 Supplemental EIS, the BLM tiers to and incorporates by reference previous NEPA analysis including the ASDP EIS (2004), NPR-A IAP (2012) and GMT1 SEIS (2014). The impacts of climate change on the resources in the Arctic is analyzed in section 3.2.4, Climate Change. CEQ regulations direct that: <i>Agencies shall incorporate material into an environmental impact statement by reference when the effect will be to cut down on bulk without impeding agency and public review of the action. The incorporated material shall be cited in the statement and its content briefly described. No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested parties within the time allowed for comment. (40 CFR 1502.21).</i> The text provided in the GMT2 SEIS incorporates by reference and summarizes the text from the GMT1 SEIS and includes updated information where such information was available (i.e., most up to date information on minimum sea ice extent). Our understanding of climate change and its effects on the Arctic are not significantly different than what is stated in the GMT1 SEIS. Regarding project infrastructure design, the project applicant has adjusted design standards over the years to ensure a conservative safety margin. One example of this is changing road thickness from an average 5-foot thickness to a minimum 5-foot thickness. |
| L89-74 | Wilderness Society, et.al. | Further, BLM must take into account the impacts of the project on local subsistence hunters in light of the fact that communities are already being heavily impacted by climate change.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been added to discuss the impacts of Climate Change to Section 4.6.8 Cumulative Impacts to Social Systems, Sub-section 4.6.8.2 Sociocultural Systems and Sub-section 4.6.8.9 Subsistence.  |

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| L89-75 | Wilderness Society, et.al. | BLM should analyze the potential impacts of climate change on each of the alternatives to determine how that alternative should be designed or how mitigation measures should be incorporated into that alternative to address the potential impacts from climate change in a region that is experiencing the effects of climate change first-hand. BLM should also assess, based on things like the permafrost conditions and hydrology in the vicinity of the specific alternatives, how these impacts are likely to play out over time in the project area. BLM has tools, such as the Rapid Ecoregional Assessment for the North Slope, that it should use to forecast potential changes that could impact each of the alternatives and the region. | 3.7 Climate Change    | In the GMT2 Supplemental EIS, the BLM tiers to and incorporates by reference previous NEPA analysis including the ASDP EIS (2004), NPR-A IAP (2012) and GMT1 SEIS (2014). The impacts of climate change on the resources in the Arctic is analyzed in section 3.2.4, Climate Change. CEQ regulations direct that: <i>Agencies shall incorporate material into an environmental impact statement by reference when the effect will be to cut down on bulk without impeding agency and public review of the action. The incorporated material shall be cited in the statement and its content briefly described. No material may be incorporated by reference unless it is reasonably available for inspection by potentially interested parties within the time allowed for comment. (40 CFR 1502.21).</i> The text provided in the GMT2 SEIS incorporates by reference and summarizes the text from the GMT1 SEIS and includes updated information where such information was available (i.e., most up to date information on minimum sea ice extent). Our understanding of climate change and its effects on the Arctic are not significantly different than what is stated in the GMT1 SEIS. Regarding project infrastructure design, the project applicant has adjusted design standards over the years to ensure a conservative safety margin. One example of this is changing road thickness from an average 5-foot thickness to a minimum 5-foot thickness. |

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| L89-76 | Wilderness Society, et.al. | <p>The dSEIS includes a discussion of impacts to climate and quantifies greenhouse gas (GHG) emissions from the proposed GMT2 development but fails to seriously consider any potential climate change mitigation. Methane is a prime contributor to short-term climate change over the next few decades and a prime target for near-term GHG reductions. And, in fact, there are many proven technologies and practices already available to reduce significantly the methane emissions from oil and gas operations. These technologies also offer opportunities for significant cost-savings from recovered methane gas. Indeed, reducing methane emissions is important to not only reduce potential impacts to the climate, but to prevent waste of the oil and gas resource itself and the potential loss of economic value, including royalties.</p> <p>There is a large body of scientific work documenting the adverse impacts to public health and welfare from climate change caused by greenhouse emissions, such as methane. In addition, many of the proven methane emission controls for the oil and gas sector also reduce VOCs and HAPs, as noted above in the air quality section. The associated air quality benefits that result from reductions in VOC and HAP emissions are a huge co-benefit of methane reduction technologies.</p> | 3.7 Climate Change    | BLM has included two potential mitigation measures related to preventing unnecessary emissions of methane, see Section 4.2.3.2. All reasonable mitigation measures have been included in the Final SEIS for consideration in the ROD. |

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| L89-77 | Wilderness Society, et.al. | <p>The dSEIS notes that approval of a permit to drill at GMT2 would likely result in the transfer of selected land within the GMT2 project area to the Kuukpik Corporation, and that this conveyance of surface ownership would also result in the transfer of associated mineral resources to ASRC. BLM states that once this likely transfer occurs, ASRC (as the new lessor) may enforce, or adopt similar, lease stipulations and Best Management Practices on the conveyed lands. This assessment of ASRC's obligations is inconsistent with the plain language of BLM's NPR-A leasing regulations, which state "If the regional corporation assumes administration of a lease under paragraph (a) or (b) of this section, all lease terms, BLM regulations, and BLM orders in effect on the date of the assumption continue to apply to the lessee under the lease. All such obligations will be enforceable by the regional corporation as the lessor until the lease terminates." There is nothing in these regulations indicating that ASRC has the option to follow, or not follow, all of the applicable lease stipulations if such a conveyance takes place. Further, the dSEIS environmental impacts analysis assumes that all of these existing protections are in place for the life of the GMT2 development project. Therefore, BLM must ensure through its conveyance process that ASRC expressly assumes all of these stipulations and BMPs.</p> | 3.17 Land Use         | <p>Changed the wording, however note that BLM has no authority to ensure that the lease requirements are followed. The BLM cannot dictate how a private landowner manages their land once it is conveyed.</p> |

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| L89-78 | Wilderness Society, et.al. | BLM should explain the final SEIS what infrastructure will be needed on the GMT2 pad, or if any additional equipment will need to be added to the GMT-1 pad, for purposes of separating and measuring mineral interests. As exploration wells are drilled, BLM will establish the participating area boundaries to allocate production for royalties between federal and private leases. Rather than install additional metering equipment at GMT-2, BLM may require three-phase hydrocarbon to be separated and measured at the GMT-1 pad, which may increase the level of activity, and therefore power needs, at GMT-1. The additional processing and equipment needed for royalty measurement should be explained, and any impacts analyzed, in the dSEIS. | 2.1 Proposed Action & Alternatives | Section 2.4.3 in Features Common to All Alternatives describes all on-pad facilities anticipated for work on the GMT2 pad. No additional metering equipment beyond what is described in this section is required at GMT2. All required metering of fluids from GMT2 will occur at GMT1 or CD5, both of which are currently engineered to handle the volume anticipated from GMT2. |
| L89-79 | Wilderness Society, et.al. | The presence of roads has a significant impact on caribou, especially in combination with pipelines. Habitat fragmentation from roads can impede caribou migratory patterns, foraging options, access to calving grounds, and ultimately lead to herd decline. For these reasons, roads can reduce the number of caribou accessible to Arctic communities. BLM should utilize fragmentation metrics and assess road-related indirect impact areas in acres in tables for all alternatives in addition to footprint estimates in acres.   | 3.11 Caribou                       | The DSEIS relies on existing literature to explore and discuss the implications of habitat fragmentation.   |

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| L89-8  | Wilderness Society, et.al. | BLM has also not adequately addressed the potential health concerns should there be some sort of disaster, such as a blowout, fire, or large spill. BLM simply notes in the dSEIS they are a possibility, but provides no analysis of how such a disaster might impact public health, particularly given the close proximity of the community to development. Community members have significant concerns about the potential health impacts from such a disaster. BLM should fully assess the potential ramifications to human health and the environment that would occur if there were such a disaster.                             | 3.18 Public Health    | The risk of a catastrophic event such as a blowout is evaluated in Section 4.5. Such an event is extremely unlikely, and the impact analysis for public health focuses on the <i>likely</i> impacts resulting from the planned GMT2 development.  |
| L89-80 | Wilderness Society, et.al. | roads can have long-term impacts on bird habitat. Several studies have concluded that populations of bird species decrease along roads due to noise disrupting the communications key to mating and warning, as well as general disturbances. This impact should be further analyzed within the SEIS.  | 3.10 Birds            | Thank you for your comment. Text has been added in Chapter 4 of the bird section to address your comment  |
| L89-81 | Wilderness Society, et.al. | In correspondence on the CD5 Alpine Satellite expansion project, the U.S. Fish and Wildlife Service expressed its concerns regarding road development in the Colville Delta. The letter explained that the hydrology and geomorphology of the Colville Delta is driven by sediment deposition and erosion, and a road would decrease the flow of water moving downstream during flood events. This would result in the deposition of sediment upstream of the road and, even with water moving through culverts, habitats on the downstream side could become sediment starved. This issue also must be examined for the GMT2 project. | 3.9 Fish              | No other streams within the GMT2 project area are similar to the hydrology, geomorphology, and sediment regime of the vast Colville River and its delta (the largest river system in the AK Arctic), which is dynamic due to sediment deposition and erosion. The GMT2 gravel road may cross one stream (under Alternative A only), which is a small tundra stream outlet to Lake M9925. This and other tundra streams in the area do not have notable sediment loads, even during the highest flows at spring breakup. |



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| L89-82 | Wilderness Society, et.al. | To protect the underlying permafrost, the proposed gravel road to GMT2 "would be a minimum of 5-feet high with side slopes of 2:1...[and] 32-feet wide." Such a high road with steep slopes has posed challenges for local hunters seeking to cross the road via snowmachines and sleds even with the construction of ramps. This problem should be further analyzed and addressed in the final SEIS.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM has included a potential mitigation measure requiring ConocoPhillips to work with the community of Nuiqsut to identify the location and design specification for the access ramps and pull outs along the GMT2 road. See Section 4.4.6, Potential Mitigation Measure 7  |
| L89-83 | Wilderness Society, et.al. | <p>In a conversation with Dr. Tom Ravens, Professor of Civil Engineer and Associate Dean for Research at the University of Alaska Anchorage (UAA), engineer Lois Epstein of The Wilderness Society learned that there are potentially three alternative road designs that might reduce the adverse impacts of road height and side slopes on both caribou reluctant to cross and hunters:</p> <p>1. Thermal insulation to protect permafrost: If insulation significantly lowered the height of roads, hunter crossings would not be as problematic and much less gravel would be required which would have economic and environmental benefits. Such insulation would need to be biodegradable and non-spreading so it would not harm the tundra if portions of it were scattered either during installation or removal. UAA staff have a patent-pending prototype for such insulation made of fungi.</p> | 4.2 Mitigation  | BLM discussed your suggestions with CPAI. With regard to using fungus-based insulation, CPAI is aware of the research, and has contributed funds to support the project. They believe that an effective insulation could reduce project impacts and project costs. However, the insulation needs to be something that is commercially available. While the idea of an insulation other than Styrofoam merits research and development, the fungus-based material being explored by UAA is not a viable option for GMT2 which is scheduled to begin construction in January 2019. Caribou are not known to prefer existing bridges on the North Slope as road crossings, so the benefit of adding more is questionable. Construction of additional bridges would increase the overall project footprint and would increase the cost of the project. Bridges and underpasses are ill-suited to the large, heavy equipment and drill rigs that will travel the road to GMT2. For these reasons, it is impractical to add such structures at this stage, which would result in project delays. Placement of thermosyphons would need to be within the toe of the road side-slope to ensure proper function. This would make the road impassable for large loads, including drill rigs and other camps. This, as well as the impact of thermosyphons on drifting snow and performing maintenance on the road, make it not a viable option for the GMT2 road. |

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| L89-83<br><i>Continued</i> | Wilderness Society, et.al. | <p>2. Constructing bridge/underpass structures for caribou and hunters: These types of structures have been effective in lower latitude regions to facilitate ungulate passage under roads.</p> <p>3. Passive or active thermosyphons to protect permafrost: "A thermosyphon (or thermosiphon) is a device that transfers heat via natural convection in a fluid. The natural convection is driven by gravity with the colder, denser fluid flowing downhill and the warmer, less dense fluid flowing back up." Because the vertical thermosyphons would have to be relatively close together, however, this approach might pose sight-line problems for caribou.</p> <p>We recommend that BLM work with ConocoPhillips to evaluate these options, including trying to implement one or more of them on a portion of any new road that is built to GMT2. If successful, these strategies might greatly reduce the impacts on caribou and hunters for future roads in the Arctic.</p> | 4.2 Mitigation        | <p>Thermosyphons are used on the pad near heated buildings and well houses. BLM discussed your suggestions with CPAI. With regard to using fungus-based insulation, CPAI is aware of the research, and has contributed funds to support the project. They believe that an effective insulation could reduce project impacts and project costs. However, the insulation needs to be something that is commercially available. While the idea of an insulation other than Styrofoam merits research and development, the fungus-based material being explored by UAA is not a viable option for GMT2 which is scheduled to begin construction in January 2019. Caribou are not known to prefer existing bridges on the North Slope as road crossings, so the benefit of adding more is questionable. Construction of additional bridges would increase the overall project footprint and would increase the cost of the project. Bridges and underpasses are ill-suited to the large, heavy equipment and drill rigs that will travel the road to GMT2. For these reasons, it is impractical to add such structures at this stage, which would result in project delays. Placement of thermosyphons would need to be within the toe of the road side-slope to ensure proper function. This would make the road impassable for large loads, including drill rigs and other camps. This, as well as the impact of thermosyphons on drifting snow and performing maintenance on the road, make it not a viable option for the GMT2 road. Thermosyphons are used on the pad near heated buildings and well houses..</p> |

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| L89-84 | Wilderness Society, et.al. | <p>The dSEIS states that “No Class I disposal well and injection facility would be located on the GMT2 pad due to lack of an acceptable disposal horizon at this location; therefore, Class I wastes would be transported offsite for disposal at CD1/Alpine Central Processing Facility, Prudhoe Bay drill site 4 grind and inject, or another appropriate facility.” This means that many truck trips which are disruptive to caribou and other wildlife would occur without GMT2 pad injection. It is unclear to us how carefully ConocoPhillips and BLM have looked for an “acceptable disposal horizon.” Because on-site injection would be preferable environmentally, this option needs to be thoroughly examined before granting a GMT2 authorization to drill.</p>   | 2.1 Proposed Action & Alternatives | <p>No Class I disposal well and injection facility would be located on the GMT2 pad due to lack of an acceptable disposal horizon at this location. The Ivishak is the preferred disposal horizon for the Class I wells. Well data indicate that the Ivishak degrades in quality from Alpine towards the GMT2 Project location. A review of seismic and well data conducted by the project proponent in 2016 revealed no indication of reservoir quality suitable for injection at the GMT2 pad and confirmed what the surrounding wells show. Class I wastes generated by the GMT2 Project would be transported offsite via truck for disposal at CD1/Alpine Central Processing Facility, Prudhoe Bay drill site 4 grind and inject, or another appropriate facility. Vehicle trips to transport hazardous waste for disposal are estimated to be between 1 and 4 trips per day. SEIS text has been updated to address this comment.</p> |
| L89-85 | Wilderness Society, et.al. | <p>The field office should require Conoco to measure and report natural gas waste from venting, flaring and leaks and require methane waste capture technologies with the approval of any APD associated with this GMT2 project area. In the absence of the protections established by the 2016 methane rule such steps are necessary in order to ensure the agency fulfills its federal obligation to reduce waste of natural gas.</p> <p>...</p> <p>The revision of the 2016 waste rule along with the deficient Alaska state regulations means inadequate measures are in place to ensure the BLM meets its waste prevention mandate. The field office should seize the opportunity to reduce waste and increase federal revenues by ensuring adequate waste minimization measures are required for all oil and gas development associated with the GMT2 project area.</p> | 4.2 Mitigation                     | <p>See Section 4.2.3 Atmospheric Environment, Potential Mitigation Measure 3: Minimize Methane Waste.</p>   |

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| L89-86 | Wilderness Society, et.al. | Inexplicably, the draft SEIS ignores two significant and recent blowouts – also known as losses of well control – on the North Slope. One of these blowouts occurred 18 miles northeast of Nuiqsut in 2012 from a Repsol exploration well and the other occurred in 2016 from a BP production well. Blowouts need to be addressed in the SEIS as they pose significant safety and environmental concerns... BLM should include documentation of the cause and effects of these two important incidents in chapter 4 of the final SEIS. BLM's analysis should include discussions with the Alaska Oil and Gas Conservation Commission on the agency's latest efforts to prevent blowouts and how they will apply to GMT2. | 3.19 Hazardous Materials Spills | Added discussion of past blowouts and summary of blowout response plan to section 4.5. |
| L89-87 | Wilderness Society, et.al. | Although it is unlikely, a worst-case blowout could require weeks or even months to bring under control, requiring mobilization of a large quantity of specialized equipment and personnel to the well site and potentially requiring one or more relief wells to be drilled. Relief wells are a costly, time-, labor- and support-services-intensive process. While these efforts are underway, the total area contaminated and heavily impacted could expand. The final SEIS needs to consider the potential effects of a worse-case scenario blowout to workers and the surrounding environment.  | 3.19 Hazardous Materials Spills | Added discussion of past blowouts and summary of blowout response plan to section 4.5  |

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| L89-88 | Wilderness Society, et.al. | The state of Alaska has both leak detection and leak shut-down requirements for crude oil transmission pipelines in its regulations, however, the pipeline carrying crude oil from GMT1 to GMT2 is not considered a "crude oil" pipeline since it also carries gas and produced water. We urge BLM to require ConocoPhillips to meet the requirements of 18 AAC 75.055 (see footnote below) including prompt leak detection, e.g., using external leak detection for these types of multi-phase pipelines, daily flow verification, weekly aerial surveillance (ConocoPhillips currently is performing visual surveillance only "at least monthly," p. 39 of the draft SEIS), and the ability to stop flow within one hour of release detection. | 4.2 Mitigation        | See Section 4.5 Impacts of Oil, Saltwater and Hazardous Materials Spills, Potential Mitigation Measure 2: Leak Detection and Leak Shut Down Requirements. |

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| L89-9  | Wilderness Society, et.al. | <p>BLM's analysis under Section 810 of the Alaska National Interest Lands Conservation Act (ANILCA) is deeply flawed and fails to account for the full scope of potential impacts to subsistence users and the community of Nuiqsut.</p> <p>BLM found that the GMT2 project may significantly restrict subsistence based on the redistribution of resources, but completely failed to address the potential impacts on access to subsistence resources. Significant restrictions to access have consistently been identified as one of the primary concerns related to development projects in the region. BLM's failure to find there would be a significant restriction on access to subsistence resources — and complete failure to address why there is no significant restriction to subsistence access — is completely at odds with the discussion in the dSEIS and with previous determinations related to subsistence impacts.</p> <p>BLM has previously identified access impacts and the overall reduction in Nuiqsut's subsistence use areas as one of the most significant impacts from development in the region. In the GMT1 decision, BLM found there would be a significant restriction to subsistence for the village of Nuiqsut based on the reduced access to subsistence use areas, reduced availability of subsistence resources, and hunter avoidance of industrial areas.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM's ANILCA 810 guidance, derived from case law, specifies that the evaluation must address a limitation on the access of subsistence users to harvestable resources, and that the evaluation includes only physical or legal barriers. While the access road, pad, and pipeline are potentially all physical barriers, the ability for subsistence users to utilize the road itself, utilize ramps across the road, and travel underneath the pipeline all contribute to finding that the infrastructure does not constitute a physical barrier or a legal barrier to access for subsistence uses. This and other input received on the draft evaluation have been considered in the final ANILCA 810 determinations. |

| Comm #                                   | Commenter Name                    | Comments   | Comment Category Code  | Comment Response              |
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| <p><b>L89-9</b><br/><i>Continued</i></p> | <p>Wilderness Society, et.al.</p> | <p>Some of the specific concerns included hunter avoidance of infrastructure that would extend well beyond the direct GMT1 project area; noise, traffic, and infrastructure that could impact the availability of key resources such as caribou, wolves, and wolverine; the number of caribou use areas in the GMT1 project area; the diversion of caribou from the road and traffic; increased helicopter impacts on caribou hunting; increased risks to hunters and increased investments in time, money, fuel, equipment, and hunting success; and numerous sociocultural and socioeconomic impacts. These concerns are identical to and will be magnified by the GMT2 project. The GMT1 project acknowledged that these impacts would only increase in light of GMT2 and other developments in the region.</p> <p>BLM also recognized the potential circling effect of development for purposes of the cumulative impacts analysis under Section 810:<br/>                 “Development of GMT2 would, with the combined footprint of existing development in the Colville Delta, west of the Colville (CD5 and GMT1), and the reasonably foreseeable development in the Bear Tooth Unit/Willow area, encircle Nuiqsut with development to the north, northwest, west, and southwest.” These same impacts to subsistence will occur in light of GMT-2 — and not just in the cumulative case. These impacts should have been fully considered in the Section 810 analysis. Impacts to access and the loss of traditional subsistence areas are repeatedly identified as one of the primary unavoidable adverse impacts to subsistence in the dSEIS.</p> | <p>3.15 Socio-cultural Systems, Subsistence, and Environmental Justice</p> | <p>See above BLM response</p> |

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| <p><b>L89-9</b><br/><i>Continued</i></p> | <p>Wilderness Society, et.al.</p> | <p>Despite the repeated acknowledgement in the dSEIS and previous decision documents that impacts to subsistence access and reduced availability of hunting grounds are some of the most significant impacts from development in the region, BLM completely failed to make any sort of finding related to the impacts of GMT2 on access. BLM needs to explain its findings as to the potential impacts of the project on subsistence access. BLM's failure to address the impacts to subsistence access and to make a positive finding as to the potential for the GMT2 project to restrict subsistence access is inconsistent with BLM guidance related to Section 810... BLM failed to make a finding as to whether GMT2 would significantly restrict access.</p> <p>BLM's failure to find that there may be a significant restriction to subsistence from the GMT2 project is inconsistent with the standards in its guidance on when it should make a positive finding. It would be contrary to the overwhelming weight of the evidence, acknowledged through the GMT2 dSEIS, for the agency to make a negative finding as to subsistence access. BLM also failed to evaluate the significance of the impact or to articulate its findings as to the factors outlined in the instruction memorandum. As noted earlier in the comments, BLM completely failed to include impact criteria and overall rankings assessing the potential impacts of the project in the dSEIS. The Section 810 analysis similarly does not include any sort of analysis of those criteria with regard to the potential impacts to access.</p> | <p>3.15 Socio-cultural Systems, Subsistence, and Environmental Justice</p> | <p><i>See above BLM response</i></p> |



| Comm # | Commenter Name            | Comments   | Comment Category Code              | Comment Response  |
|--------|---------------------------|--|------------------------------------|---|
| L90-1  | Native Village of Nuiqsut | <p>NVN asks that BLM not permit the GMT2 project at this time. Development is happening too fast and the full effects of the Alpine Satellite Field, including the Greater Mooses Tooth One (GMTI) project have not been fully felt or understood by the community. While predicted within the final GMTI SEIS, the impacts of this project are still not actually known. We suggest that any permitting for GMT2 be delayed for five years, starting when all of GMTI's construction is complete.</p> | 2.1 Proposed Action & Alternatives | <p>As stated in Sections 1.3 and 1.4, the BLM is unable to postpone processing the GMT2 Application for Permit to Drill based on regulatory requirements in NPR-A found at 42 USC Section 6506(a). Deferral of a project authorization would be inconsistent with the directive in the Naval Petroleum Reserves Production Act to expeditiously carry out an oil and gas leasing program and the rights ConocoPhillips acquired with the subject leases to reasonably develop the oil and gas within those lease tracts. GMT2 was originally approved for development as CD-7 in 2004 under the Alpine Satellite Development Plan EIS. The purpose of the SEIS is to supplement the 2004 analysis and to include new information relevant to environmental concerns that have bearing on the proposed action or its effects. EIS's are inherently speculative documents, because their purpose is to identify potential impacts that could occur from a proposed action using the best available information at the time of the analysis, so that an informed decision can be made. This information includes scientific studies, input from stakeholders, as well as identified impacts that have resulted from similar actions that could be reasonably inferred to occur from the proposed action. The BLM believes that we have accurately described the comprehensive suite of potential impacts that could occur from the proposed action, and alternatives to that action, sufficient to make a reasoned decision.</p> |

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| L90-11 | Native Village of Nuiqsut | As exploration and development activities continue to inundate the community, residents are forced to travel greater distances for subsistence purposes. In addition to being costlier, this additional travel presents increased risks to hunters' safety. We request that search and rescue resources, such as radio communications, be made available to help ensure hunters ability to travel safely across the landscape.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The following new potential mitigation measure has been added to Section 4.4.2.8. Search and Rescue Assistance: Local residents of Nuiqsut have expressed concern regarding the ability of current Search and Rescue capabilities within the community given that local hunters are traveling farther away to harvest resources, leading to safety concerns both in terms of increased potential for local residents to need assistance, and increased capacity for Search and Rescue response. Specific Requests include: <ul style="list-style-type: none"> <li>• Upgrades for Search and Rescue Equipment</li> <li>• Upgrades for Search and Rescue communications, radio and satellite</li> <li>• Additional training for Search and Rescue Responders</li> </ul> Also, the Subsistence Mitigation section (4.1.2.6) describes the State of Alaska NPR-A Impact Mitigation Program; Nuiqsut is able to submit applications to that for increased funding for Search and Rescue to respond to these impacts. |
| L90-12 | Native Village of Nuiqsut | A comprehensive Health Impact Assessment (HIA) should be completed for our community. This HIA should analyze the cumulative health impacts of oil development within the region. This analysis, among other topics, should include such topics as the impacts of development on subsistence, and how the health benefits of subsistence resources and practices has been compromised by development. This analysis should be carried out by a trusted independent party. | 3.18 Public Health  | A Health Impact Analysis was done for GMT2, the results of which are in Appendix G. Appendix G provides the Baseline Human Health Summary for the North Slope, including a description of current subsistence practices and summarizes Areas of Vulnerability as well as Areas of Resilience/Success. Cumulative effects for Public Health are found in Section 4.6.8.  |

| Comm # | Commenter Name            | Comments   | Comment Category Code   | Comment Response  |
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| L90-13 | Native Village of Nuiqsut | Nuiqsut's traditional subsistence use areas are places of great traditional importance where abundant resources can be harvested. These places are culturally irreplaceable and are incrementally (but consistently) being changed by oil exploration activities and outright lost to development projects. As we have advocated for in the past, we want remaining, high-value subsistence use areas to be protected for future generations.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The BLM strives to find the balance between fulfilling the legislative mandate of allowing oil and gas leasing, exploration and development within the National Petroleum Reserve in Alaska, while at the same time protecting other resources and uses to the maximum extent possible. As a petroleum reserve, oil and gas leasing is the primary allowable use of the area, and other resource uses or protections must be consistent with the ability for oil and gas activity to occur. Existing protections for high-valued subsistence use areas include: Lease Stipulation/BMP K-1, which includes set-backs along rivers, including a 2-mile setback on the western shore of the Colville River, a 3 mile setback on both shores of Fish Creek, and 1/2 to 1 mile setbacks along most other major rivers utilized for subsistence purposes; various restrictions in the established special areas, including the Teshekpuk Lake Special Area; and restrictions and protections in major coastal waterbodies managed by the BLM. |
| L90-14 | Native Village of Nuiqsut | A particular area of importance, among others, is the Colville (Kuukpik) River. This river not only provides numerous subsistence resources, but it is also a major transportation route for our hunters to access resources across the landscape. With progress towards the finalization of the Colville River access road, which has taken decades to advance and will be completed at great cost, we believe that protecting the Colville is particularly important. As we have stated before, if the Colville River access road and boat ramp is going to be meaningful into the future, the areas it enables access to must be protected. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The BLM management of the Colville River is limited to the western bank of the river, which is the boundary of the NPR-A. Lease Stipulation/BMP K-1 (a) specifies a 2-mile setback from the boundary. Within this setback, permanent oil and gas facilities, including gravel pads, roads, airstrips, and pipelines are prohibited, with the exception of essential road or pipeline crossings perpendicular to the river, and roads that are constructed for public transportation systems (i.e., such as the Colville Access Road mentioned by the commenter).  |

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| L90-15 | Native Village of Nuiqsut | NVN would like a meaningful role in the stewardship of these protected subsistence use areas. This role can involve both management and monitoring efforts that provide employment opportunities for residents of the community. These jobs can be paid for by a compensatory mitigation fund.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The Subsistence Mitigation section (4.1.2.6) describes the State of Alaska NPR-A Impact Mitigation Program; the City of Nuiqsut is able to submit applications for this and could partner with NVN.   |
| L90-2  | Native Village of Nuiqsut | Moreover, and as NVN has recently shared with the Army Corps of Engineers (ACOE), we are inundated with development proposals and planning exercises. The Nanushuk and Liberty projects NEPA processes are both underway, BLM's regional mitigation strategy for the northeastern NPR-A has yet to be finalized, ConocoPhillips is moving forward with developing the Willow prospect, and the ACOE also recently sought comments on the dSEIS for GMT2. NVN strives to be an active and engaged entity in these review processes, but the amount of planning currently underway in the region presents serious capacity challenges in our ability to have constructive and meaningful involvement. By delaying GMT2, the true impacts of development will be more understood and NVN will have greater time to consider the risks of development and rigorously engage in this proposed project. | 4.1 Stakeholder involvement and tribal engagement                   | GMT2 was originally approved for development as CD-7 in 2004 under the Alpine Satellite Development Plan EIS, as was GMT1 (as CD-6). As described in Section 1.4 Purpose and Need for Federal Action, under federal statutes the BLM is required to issue the GMT2 permit for oil development in the NPR-A and cannot choose the No-Action alternative. |

| Comm # | Commenter Name            | Comments  | Comment Category Code   | Comment Response  |
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| L90-3  | Native Village of Nuiqsut | <p>Exploration and development activities within the region continue to compromise our irreplaceable subsistence use areas. Currently, within just the boundaries of the NPR-A, more than 1.4 million acres of our communities' traditional subsistence use area has been leased to oil companies. Several hundred thousand more acres have been leased on adjacent state lands. With active exploratory drilling to the east, west, and south, our community is on the verge of being surrounded by oil and gas development. BLM has taken no actions to meaningfully protect subsistence resources and our remaining subsistence use areas from the impacts of oil development within the region.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>The BLM strives to find the balance between fulfilling the legislative mandate of allowing oil and gas leasing, exploration and development within the National Petroleum Reserve in Alaska, while at the same time protecting other resources and uses to the maximum extent possible. As a petroleum reserve, oil and gas leasing is the primary allowable use of the area, and other resource uses or protections must be consistent with the ability for oil and gas activity to occur. Under the NPR-A IAP, 11 million acres within the reserve are unavailable for oil and gas leasing. These areas comprise those lands that support and sustain the most vulnerable resources utilized for subsistence, namely the core calving areas for the Teshekpuk Lake and Western Arctic caribou herds. In addition, there are numerous protections that apply to rivers, lakes, and coastal waterbodies, all of which support and sustain fish, waterfowl, and subsistence use and transportation.</p> |
| L90-4  | Native Village of Nuiqsut | <p>We have significant concerns about how the GMT2 project will further compromise subsistence practices within the community. The development of the GMT2 project will reduce our subsistence use area and permanently impact where and how we hunt. This project will further deter resources like caribou and wolverine from coming close to the community, and force hunters to travel further to avoid infrastructure and the associated activities of development.</p>  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>Under Section 4.4.5 Subsistence, Sub-Sections 4.4.5.4 and 4.4.5.5 contain detailed descriptions of impacts related to oil and gas activity and infrastructure derived from recent subsistence studies and communicated to the BLM by Nuiqsut subsistence users.</p>  |

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| L90-5  | Native Village of Nuiqsut | As you know, BLM's ANILCA 810 Analysis is required to review how a development could reduce the abundance of subsistence resources, reduce the availability of resources because of changes to use areas and distribution patterns, and limit access to subsistence resources. We are particularly concerned that BLM's analysis did not find that GMT2 will impact access to subsistence resources. This is particularly troubling as this was a finding of the GMTI project, and GMT2 will only compound impacts to subsistence. We request that BLM more rigorously analyze the impacts of GMT2 by comprehensively building on the GMTI findings. Within the SEIS, BLM should describe in greater detail and clarity how this project impacts subsistence, sociocultural systems, and our community's environmental justice. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM's ANILCA 810 guidance, derived from case law, specifies that the evaluation must address a limitation on the access of subsistence users to harvestable resources, and that the evaluation includes only physical or legal barriers. While the access road, pad and pipeline are potentially all physical barriers, the ability for subsistence users to utilize the road itself, utilize ramps across the road, and travel underneath the pipeline all contribute to finding that the infrastructure does not constitute a physical barrier or a legal barrier to access for subsistence uses. |
| L90-6  | Native Village of Nuiqsut | We do not feel that the human health impacts of GMT2 are accurately and comprehensively captured within the DSEIS. Consideration is lacking on the various social and environmental systems that contribute to our community's health and wellness. For example, how exploration and development activities impact resident's mental health should be considered in greater detail.   | 3.18 Public Health  | Appendix G provides the Baseline Human Health Summary for the North Slope, including a description of mental health and summarizes Areas of Vulnerability as well as Areas of Resilience/Success  |
| L90-7  | Native Village of Nuiqsut | Furthermore, how impacts to subsistence practices alter food security and nutrition should be examined more thoroughly.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been added to the discussion regarding concerns about food security and the importance of the Fish Creek area to Section 4.4.5.2 Summary of Nuiqsut Subsistence Uses.  |

| Comm # | Commenter Name            | Comments  | Comment Category Code         | Comment Response   |
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| L90-8  | Native Village of Nuiqsut | <p>We also continue to have serious concerns about air quality. As residents, we have personally experienced and observed the impacts of oil development on air quality within our region; and we do not believe that BLM is doing enough to ensure that our community's air is safe. Independent outside experts should design and conduct the necessary analysis to study the air quality of our community and the surrounding region. This analysis will take time and is another reason why we believe GMT2 should be delayed.</p>  | 3.5 Air Quality & Meteorology | <p>BLM is aware of the air quality concerns in the community. The federal and State air permitting process is designed to prohibit any significant deterioration of air quality. As part of the GMT2 NEPA analysis, the projected air quality impacts for GMT-2 sources have been assessed and been found to be minimal. Nonetheless, BLM is considering mitigation measures to guarantee continued air quality monitoring to alleviate concerns, see Section 4.2.3.2, Potential Mitigation Measures 1-11</p>  |
| L90-9  | Native Village of Nuiqsut | <p>As we stated above, we firmly believe that GMT2 should not be permitted at this time. However, we also believe that meaningful actions to lessen and offset the impacts of development should be considered within the SEIS.</p> <p>Throughout this process, BLM has failed to meaningfully engage NVN and the larger-Nuiqsut community about employing the full mitigation hierarchy (avoidance, minimization, and compensatory offsets) for the purposes of this project. BLM efforts to minimize the impacts of this project are often too simplistic and fail to meaningfully address the actual impacts of development. While the proposed project's impacts should always be minimized to the greatest extent possible, oil projects around our community and within the Arctic always have unavoidable impacts. These unavoidable impacts must be offset with meaningful and lasting compensatory mitigation actions.</p> | 4.2 Mitigation                | <p>The Native Village of Nuiqsut is a cooperating agency to the SEIS. As such, they have been involved in all phases of the preparation of the SEIS, including reviews afforded to cooperating agencies. In addition, the BLM has conducted numerous GMT2 meetings and teleconferences with NVN pursuant to USDOJ and BLM tribal consultation policy. NEPA Guidance and CEQ regulations for EIS analyses require that all relevant, reasonable mitigation measures that could improve the project are to be identified, even if they are outside the jurisdiction of the agency [40 CFR 1502.14(f), 40 CFR 1502.16(h)]. However, the decision to adopt mitigation is not required, and is at the discretion of the decision-maker. BLM Instructional Memorandum 2018-093 Compensatory Mitigation issued July 24, 2018 supersedes all previous policies regarding compensatory mitigation, and forbids the BLM from requiring compensatory mitigation from public land users.</p> |

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| L91-1  | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 7, second full paragraph: "The Secretarial Order further directed the BLM Draft Regional Mitigation Strategy for the NPR-A to be revised and to include public comment where necessary; and it directed the BLM to henceforth revise the IM No. 2008-204, which outlines the policy for the use of offsite mitigation for authorizations issued by the BLM. The 2008 is to be used as guidance on mitigation for the foreseeable future." It is not clear if this last sentence is meant to read "The revised Instructional Memorandum 2008-204 is to be used as guidance..." Also, Secretarial Order 3360 called for IM No. 2008-204 to be revised by late January 2018, but this agency is not aware of its availability. Please clarify. | 1.1 Executive Summary & Introduction                                | Text has been revised for clarity.                         |
| L91-10 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Pages 14 and 15: "Depending on the resulting migration patterns for the Teshekpuk Lake Herd, and the areas of relocation for other subsistence species, the communities of Barrow ..." Reviewers familiar with the area may understand that references to Barrow in earlier analyses refer to the recently renamed community of Utqiagvik. Recommend including a footnote or other clarifying feature to clarify the relationship and in what context one name is used instead of the other throughout the document.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been revised to address Barrow renamed Utqiagvik. |



| Comm # | Commenter Name  | Comments  | Comment Category Code              | Comment Response   |
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| L91-11 | State of Alaska, Division of Mining, Land, and Water (DMLW) | Page 32: Has an analysis been done regarding wellhead spacing and gravel pad subsidence? The smaller the spacing, the greater the likelihood for accelerated subsidence do to the warmer oil traveling through the permafrost at the wellheads. This in turn leads to potential issues with wellhead instability, increased gravel resource needs for maintenance, and higher oil spill potential. While smaller wellhead spacing reduces localized wetland impacts, it may not be beneficial in the long term. The section mentions the use of thermosyphons at infrastructure to maintain thermal stability, but these are not depicted on the Appendix A, Sheet 21 drawing and most likely these would not be located at the wellheads due to their high cost. Please clarify. | 2.1 Proposed Action & Alternatives | Text has been revised to clarify that the proposed action includes the use of insulated conductors and thermosiphons on the well pad to reduce subsidence and protect structural components from freeze-thaw damage. The proposed well spacing and use of insulation has been engineered to avoid wellbore-generated subsidence, and this spacing has been used successfully at other Alpine satellite pads. |
| L91-12 | State of Alaska, Division of Mining, Land, and Water (DMLW) | Page 34 and Appendix A Sheet 23: The pipeline set up appears to be slightly off balance, but the weight of each pipeline on the HSM is not detailed. There are a few examples of where an imbalance in HSM weight relative to the VSM have caused HSMs to break from their VSMs, particularly during winter months with high snow loads. Weight and balance on the HSMs should be taken into consideration as necessary to protect the structural integrity of the pipeline system.   | 2.1 Proposed Action & Alternatives | The horizontal support members (HSM) proposed between GMT1 to GMT2, and currently existing between GMT1, CD5, and CD4N have been engineered to ensure balance is maintained and the HSMs can withstand a wide variety of ice conditions and snow loads, including unusually heavy and/or wet snow loads.   |

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| L91-13 | State of Alaska, Division of Mining, Land, and Water (DMLW)             | Page 34: What criteria are being used to determine when ice road construction may begin on BLM-managed land?  | 2.1 Proposed Action & Alternatives   | The 2013 NPR-A IAP Record of Decision adopted a suite of performance-based best management practices that specify the objective to be achieved, and the requirement/standard that an operator must demonstrate in conjunction with an authorization for activity. Best Management Practice C-2(a) requires that ground operation shall be allowed only when frost and snow cover are at sufficient depths to protect the tundra. An operator wanting to obtain an authorization for access to public lands must demonstrate to the BLM how they will satisfy these requirements. This has taken multiple forms. Some operators have installed thermistors to monitor frost depth, some monitor on-the-ground conditions. In general, the BLM uses the industry standard of 12 inches of frost depth and 6 inches of snow, which research has shown is sufficient to protect the tundra in coastal areas of the North Slope. However, the performance-based nature of the BMP allows for operators to propose a start date based on the nature of their project, technology and equipment employed, and by explaining how they will meet the requirement of the BMP. |
| L91-14 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 40, first paragraph: The reference to ADPDES General Permit AKG332000 for domestic wastewater discharges is incorrect. The correct general permit is AKG572000 - Small Publicly-Owned Treatment Works and Other Small Treatment Works. | 1.1 Executive Summary & Introduction | Correction was made as suggested.   |
| L91-14 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 40, first paragraph: The reference to ADPDES General Permit AKG332000 for domestic wastewater discharges is incorrect. The correct general permit is AKG572000 - Small Publicly-Owned Treatment Works and Other Small Treatment Works. | 2.1 Proposed Action & Alternatives   | Changed in document.  |

| Comm # | Commenter Name                                      | Comments   | Comment Category Code                  | Comment Response  |
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| L91-16 | State of Alaska, Department of Fish and Game (ADFG) | Population dynamics: The Draft SEIS indicates that the most data shows the Teshekpuk Caribou Herd (TCH) population declining; however, the 2017 TCH photocensus illustrates that the population has increased since 2015. It is apparent that the herd increased between 2015 and 2017, which conclusion is corroborated by the Alaska Department of Fish and Game (DFG) survey and inventory program for this herd. The gap between photocensuses included one of the lowest overwinter mortality rates of adult cows measured in this herd. Additionally, both parturition and short-yearling recruitment rates were above average both years. These factors are likely a result of many variables, which may include milder winters, cooler summers, and an age-class structure that was weighted with more reproductively prime animals. | 3.11 Caribou                           | Thank you for your comment. 2017 caribou photocensus data for the TCH and CAH has been incorporated into the SEIS. Fig. 3.3-1 has been updated to include 2017 data and a new figure depicting TCH abundance from 1990 through 2017 be added. |
| L91-17 | State of Alaska, Department of Fish and Game (ADFG) | Page 148, paragraph 3: "...but it is rare east of Point Utqiagvik (formerly Barrow)..." The community of Barrow was renamed Utqiagvik; the landform, Point Barrow, was not part of the renaming. This issue is also present in Table 3.4-2 Regional history synopsis in the first row, under Synopsis.   | 3.13 Threatened and Endangered Species | Thank you for your comment. The place name error has been corrected in the T&E section as indicated.  |

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| L91-18 | State of Alaska, Office of Project Management and Permitting | Page 176, second paragraph: It is unclear why the in-depth discussion of the NPR-A Impact Mitigation Grant Program is reserved to 3.4.4.2 Regional Economy: North Slope Borough (p 173, last paragraph). As described in that section, the program serves as an important source of funding for Nuiqsut's local economy; however, this section fails to describe the substantial amount of funds awarded to date or the projected increase in funds that will be available for the express purpose of mitigating impacts associated with oil and gas development in NPR-A. The program is implemented by the State of Alaska, Department of Commerce, Community, and Economic Development (DCCED), which can provide both historical and current information regarding the eligibility of the City of Nuiqsut to receive funds. DCEED reports awarding grants directly to the City of Nuiqsut from 2005-2017, with three applications recommended for funding in 2018, and awarding grants to the North Slope Borough for projects that benefit(ted) Nuiqsut during the same period, including five applications recommended for funding in 2018. Recommend revising this section to reflect the most current information available. | 3.16 Economy  | Revised and incorporated updated information for section on "Local Economy: Community of Nuiqsut" and oil and gas operations impacts. |
| L91-19 | State of Alaska, Department of Fish and Game (ADFG)          | Page 190: Table 3.4-8. Nuiqsut annual cycle of subsistence activities. The table draws from a number of different sources, including ADFG subsistence reports. While the seasonal round of subsistence activities is accurately represented, what method was used to characterize activities into high, moderate, and low categories? Please clarify.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | SRB&A added a footnote explaining the methods used to develop this table.   |

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| L91-2  | Department of Natural Resources Division of Oil & Gas (DOG)             | Page 9: The Alaska Department of Natural Resources must also authorize transportation of hydrocarbons from a federal unit into a state unit, a likely scenario if a processing facility is not constructed near GMT2   | 1.1 Executive Summary & Introduction                                | Updated text in Introduction to reflect this requirement.   |
| L91-20 | State of Alaska, Department of Fish and Game (ADFG)                     | Page 192, first paragraph: "In 2014, the most recent comprehensive study year for Nuiqsut, the highest rates of harvest participation were for caribou (66 percent of households), geese (66 percent), broad whitefish (60 percent), cloudberries (aqpik) (55 percent), and Arctic cisco (52 percent)." There appears to be some inconsistency in comparing resource general categories (geese) and specific species. It is unclear how the 66% household harvest participation for geese in general was calculated as it was not published in the final report. White-fronted geese were among the highest harvested species (60% of HH). Please clarify. Page  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | It is true that these data (household participation for geese or for white-fronted geese) are not available in the referenced table; however, they are available on the ADF&G's Community Subsistence Information System (CSIS). SRB&A has revised the text by citing the CSIS which contains the data, and to change "geese" to "white-fronted geese" for consistency. |
| L91-22 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 228, eighth paragraph: "Furthermore, recent research into the transportation of pollution nanoparticles (not regulated by EPA) from oil and gas activities in Prudhoe Bay (Kolesar et al. 2017) indicates that there are potentially forms of pollution that are not currently monitored in Nuiqsut." This statement could be misleading because the EPA regulates particulate matter (PM), commonly referred to as PM 10 and PM 2.5. The numbers following the PM refers to the size of the particles in micrometers. The EPA regulates PM 2.5 pollution, which consists of particles 2.5 micrometers and smaller, which includes ultrafine and nanoparticles. The existing monitoring site in Nuiqsut does monitor for PM 2.5. Please revise accordingly. | 3.18 Public Health  | Omitted. See also response to L88-15  |

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| L91-23 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 243, fifth paragraph: Proposed New Mitigation Measure 1: Alaska Natural Resources Conservation Service Level II Soil Survey. It is not clear how a soil survey can be considered a mitigation measure for the proposed activity. As indicated in the objective, the survey would establish baseline conditions; however, to effectively mitigate impacts, the measure should identify what action(s) would be taken when subsequent surveys reveal an XX% departure from baseline conditions. Please provide additional detail on how this monitoring effort addresses specific impacts associated with the proposed GMT2 development. | 3.2 Soils & Permafrost | This data will help delineate changes based on development activities from general changes from natural conditions because there is presently no way to quantify impacts or current conditions. The data will help improve future engineering, design and permitting decisions, thus mitigating future impacts. Until we know the magnitude of the changes it is difficult to set trigger points for adaptive management actions |
| L91-24 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 250, first paragraph: "In addition to the BLM stipulations and best management practices, project activities that could impact water resources will be subject to federal, state, and local permit requirements." This sentence implies that BLM stipulations and BMPs are more stringent than federal and state permit requirements. The order of the regulatory authorities should be reversed in this sentence so that the reader knows that federal and state requirements exist to avoid or reduce the potential impacts and that BLM stipulations and BMPs are also an important part of this protections scheme.                | 3.4 Water Resources    | The sentence was modified as suggested.  |
| L91-25 | State of Alaska, Division of Mining, Land, and Water (DMLW)             | Page 264: Limiting GMT2 acreage, while a worthwhile goal, should be balanced against the predicted wellhead subsidence with 20-foot wellhead spacing.   | 4.2 Mitigation         | The wellhead spacing of 20 feet has been used effectively by CPAI on other development pads on the North Slope. CPAI will use thermosyphons and insulated conductors to reduce the potential for subsidence and protect structural components from freeze-thaw damage.   |

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| L91-26 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 265: The table entry for mitigation under the topic "Lakes and Ponds" notes that "Traffic and dust control measure for roads and construction areas to avoid the impact on nearby water bodies." Please identify if a Dust Control Plan will be required, and which agency will be responsible for compliance and enforcement of this mitigation measure. | 3.4 Water Resources           | The Dust Control Plan is part of the Alpine Erosion Control Plan - Greater Mooses Tooth. This plan, as part of CPAI's approved application, will be incorporated into future BLM monitoring inspections.   |
| L91-27 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 272: This table and the accompanying text do not tell the non-technical reader what the calculated cancer risk is for Nuiqsut residents for these hazardous air pollutants. At a minimum, please explain the use of numbers expressed in scientific notation for the non-technical reader.  | 3.5 Air Quality & Meteorology | Per the reviewer's comment, the range of 1 to 100 in 1 million was explained in scientific notation along with an explanation as to what the risk threshold translates to. Also, the calculation methodology for the potential cancer risk is included in the GMT2 AQIA.   |
| L91-28 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 276: This table provides an impact summary for criteria pollutants at the "Nuiqsut Community Receptor", but does not disclose the exact location or the boundaries used for the impact model. Please clarify and present in a manner that would be easily understood by the community members in Nuiqsut.   | 3.5 Air Quality & Meteorology | A single receptor was placed in the model to represent the Nuiqsut Community as described in Section 4.2.6 of the GMT2 AQIA. The relevant sections have been updated to explain the Nuiqsut Community Receptor is a single receptor at coordinates 70.21720, -150.99556.   |
| L91-29 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 276: It would be helpful if tables 4.2-17 a & b included columns with the background concentrations, similar to tables 4.2-20 and 4.2-21. That way it is easier to see the project impacts to the near-field as well as the impacts to the community of Nuiqsut.  | 3.5 Air Quality & Meteorology | Each of the tables includes background concentration, project impacts, and cumulative source impacts as detailed before Table 4.2-17a. For ease of reading and to compare total potential impacts to the NAAQS/AAQS, we did not include background concentrations in this table. A detailed calculation of background values, project impacts, and cumulative source impacts is included in the GMT2 AQIA. In addition, model runs for 1-hour NO2 and 24-hour PM10 had background values worked into the model and were not a single value added to the project impacts as was done in the far-field analysis. Therefore, including background values in these tables may have the opposite intent the commenter suggests. |

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| L91-3  | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 9, second bullet: Correctly states that the Division of Water can issue a CWA 401 certification of reasonable assurance, and that an NPDES permit issued by EPA under CWA Section 402 would comply with the State's water quality standards. For completeness, recommending adding here or in a separate bullet that the Water Division also issues CWA 401 certifications for Corps wetland permits under CWA Section 404. | 1.1 Executive Summary & Introduction | Correction was made as suggested.  |
| L91-30 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 277: The implications of the information in Table 4.2-18 is unclear because PSD increments are explained on page 271, but no reference to that explanation has been provided for this table. Please add an explanation adjacent to this table for non-technical readers.  | 3.5 Air Quality & Meteorology        | A sentence following the PSD increment analysis was added to say that project impacts are below their respective increments therefore no potential air quality degradation is expected at the Nuiqsut community.   |
| L91-31 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 278: This table and the accompanying text do not tell the non-technical reader what the hazardous air pollutant impact is for Nuiqsut residents. The table does not disclose the exact location or the boundaries used for the impact model. Please clarify and present in a manner that would be easily understood by the community members in Nuiqsut.  | 3.5 Air Quality & Meteorology        | A sentence following the results summary of the HAPs impacts table was added to say that the maximum scenario potential impacts are below their respective thresholds. The same model used for the criteria pollutants was used to estimate potential HAPs impacts.  |
| L91-32 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Section 4.2.3 does not contain any discussion of Arctic haze. Arctic haze has been mentioned by local residents and should be addressed in this section.   | 3.5 Air Quality & Meteorology        | The following text has been added to Section 3.2.3 "ADEC has indicated that Alaska is affected by international long-range transport of pollutants that affect visibility conditions: "International transport of pollutants into Alaska has been documented through a variety of research studies. In particular, the research has focused on Arctic haze and Asian dust" (ADEC 2011). Arctic haze is attributed to anthropogenic aerosols from Northern Europe and Russia that reach Alaska in the winter and early spring." |



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| L91-33 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 289, sixth and seventh paragraphs: Please identify what agency will be responsible for compliance and enforcement of the Fugitive Dust plan and/or the best management practices for fugitive dust control identified.  | 3.5 Air Quality & Meteorology | The BLM Arctic District Office is responsible for fugitive dust plan and BMP enforcement. This potential mitigation measure was removed from the Draft SEIS  |
| L91-34 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Revegetation is most successful when gravel infrastructure is trimmed down to 1 - 2 feet above tundra grade, covered with overburden, and then seeded and fertilized. This should be included as a potential reclamation process.  | 3.8 Vegetation and Wetlands   | Although it is mentioned that post development some areas would be restored there is no in-depth discussion on restoration techniques or methods. Since the life of this project is to be approximately 30 years research will provide new and likely improved methods for restoration at that time. |
| L91-35 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 344: The first bullet on this page describes monitoring water withdrawal volumes and water body discharge. Monitoring should not be characterized as mitigation unless corrective actions are identified that will be taken when a specific threshold or percentage change is identified. | 4.2 Mitigation                | Bullet has been removed from the discussion of mitigation.   |
| L91-36 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 448, fifth paragraph: This paragraph discusses other mitigation but fails to provide an update on the air quality monitoring mitigation that was discussed on pages 8 and 41 of the GMT-1 Record of Decision. Please address.   | 4.2 Mitigation                | The section being referenced is Subsistence. Please see Section 4.2.3 Atmospheric Environment for a discussion of potential mitigation measures related to Air Quality.  |

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| L91-37 | State of Alaska, Department of Fish and Game (ADFG) | Potential Mitigation Measure 2: Suspend Non-essential Helicopter Traffic during Peak Caribou Hunting Season. The Division of Wildlife Conservation (DWC) avoids using helicopters in caribou hunting areas in general, and specifically during peak hunting times. Because this mitigation measure would not be expected to affect other operators, including DWC, it would not be effective in addressing cumulative impacts of flight activity from other sources. Identifying how this proposed mitigation measure would affect the project proponent's operations is important to assessing its effectiveness. Defining "non-essential" operations may prove difficult in some cases. How helicopter activities affect caribou distribution, and wariness, is an open area for research. | 4.2 Mitigation        | This mitigation measure is applicable to the applicant, ConocoPhillips, in response to their projected number of flights within the project area. If adopted, this potential mitigation measure would be included in the terms and conditions of their permit to drill. Any effort to reduce the number of flights during this key time period will serve to reduce cumulative impacts. |
| L91-38 | State of Alaska, Department of Fish and Game (ADFG) | Potential Mitigation Measure 3: Consultation Regarding Aircraft Communication Protocols. Improving communication and making consultation procedures more robust could have positive impacts on people's perceptions of aircraft in the area.   | 4.2 Mitigation        | Thank you for your comment.   |

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| L91-39 | State of Alaska, Department of Fish and Game (ADFG)                     | Potential Mitigation Measure 4: Aircraft Monitoring Data Requirements: Improving aircraft activities monitoring could have positive benefits. Currently, quantification of aircraft activity is limited to a few basic metrics that may not be meaningful for drawing conclusions about the effects of aircraft activities. Comprehensive data from a wide range of operators could support quantitative analyses of the relationships between aircraft activity and caribou movements; however, without a corresponding comprehensive plan for collection, dissemination, and evaluation of the data from BLM, this proposed mitigation measure would likely increase cost/effort for the operator without meeting the requirement/standard for "meaningful analysis" even if the project proponent is fully compliant with providing the data. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Agree, and BLM supported the UAF research quantifying aircraft noise in the Nuiqsut area that is described in Appendix C. The BLM aircraft monitoring data currently collected is used to compare the number of projected versus actual flights, and could be used to inform a number of potential future analyses. The BLM will continue to partner with researchers from other agencies on projects or studies that can utilize this data, including the application of the data to resource understanding and management. |
| L91-4  | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 10, first bullet: The list of statutory authorities for public drinking water systems should be revised to delete the reference to AS 46.03.070 and include a reference to AS 46.03.710. Please remove the reference to 18 AAC 80.005 and replace it with a reference to the entire chapter of 18 AAC 80.   | 1.1 Executive Summary & Introduction                                | Correction was made as suggested.  |
| L91-4  | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 10, first bullet: The list of statutory authorities for public drinking water systems should be revised to delete the reference to AS 46.03.070 and include a reference to AS 46.03.710. Please remove the reference to 18 AAC 80.005 and replace it with a reference to the entire chapter of 18 AAC 80.   | 1.1 Executive Summary & Introduction                                | The text has been revised as suggested.  |

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| L91-40 | State of Alaska, Department of Fish and Game (ADFG) | Potential Mitigation Measure 5: Reduce Flights by Utilizing Unmanned Aerial Vehicles (UAVs). DFG cannot comment on the potential for UAV-based operations to replace activities that currently require helicopter support beyond its own use/requirements, but it may be valuable for BLM to be aware that the existing technology is inadequate for most of DWC's own fieldwork, which includes but is not limited to netgunning, picking up collars, investigating mortalities, and composition counts over large geographic areas. The same constraints may or may not be true for the project proponent's monitoring activities. | 4.2 Mitigation        | The BLM recognizes that this is currently an infeasible use of UAV technology, but recognizes that the technology is improving rapidly. The mitigation measure includes the requirement that the permittee will consult with the BLM every 3 years to determine feasibility of this technology and appropriate monitoring activities for its use. |
| L91-41 | State of Alaska, Department of Fish and Game (ADFG) | Potential Mitigation Measure 6: Subsistence Monitoring Studies. The BLM's ANILCA Section 810 analysis finds that there may be a significant impact to subsistence activities, partly because of uncertainty in the existing literature. Therefore, continued subsistence monitoring at the level that has been conducted over the past 10 years is vital to understanding the impacts of new development(s). Research fatigue is a serious issue that needs to be contended with during the planning and implementation of monitoring studies.   | 4.2 Mitigation        | The BLM agrees. Please also see Section 4.4.5 Subsistence, Potential Mitigation Measure 8: Subsistence User Monitoring and Adaptive Management  |

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| L91-42 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 457, eighth paragraph: The last sentence on this page notes that "Emissions associated with GMT2, including vehicle exhaust emissions, are within the range of Alaska Department of Environmental Conservation air quality regulations and are subject to Alaska Department of Environmental Conservation permitting regulations." This sentence is in error. Vehicle exhaust emissions are not subject to Alaska Department of Environmental Conservation permitting regulations. Rather, vehicle exhaust emissions are subject to the regulatory oversight of the Environmental Protection Agency through emission standards for engines and vehicles. | 3.18 Public Health                 | Text updated to correct error.                |
| L91-43 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 465, first and second paragraphs: This section discusses spill history on the North Slope; however, the February 15, 2012 drilling mud spill at the Q2-Pad appears to be missing. Because the spill was located 18 miles northeast of Nuiqsut, and there were concerns of emissions from the shallow well blowout impacting Nuiqsut, recommend including in this section.  | 3.19 Hazardous Materials Spills    | Added discussion of this spill to section 4.5 |
| L91-44 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 472:<br>The listing for the Nanushuk project notes that "Proposed project scheduled to begin construction in 2018." The EIS process has not been completed for the Nanushuk project, and construction is not anticipated to begin in 2018 as previously anticipated. Please update accordingly.  | 2.1 Proposed Action & Alternatives | Changed in document.                          |

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| L91-45 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 474: The final listing in this table for Utilities in the community of Nuiqsut should also include planned facility upgrades for the Nuiqsut Natural Gas Pipeline (NNGP). The North Slope Borough has plans for the installation of equipment for removal of hydrogen sulfide from the gas stream. The proposed project will require 1.5 acres of land to be added to the NNGP right-of-way lease.              | 4.0 Cumulative Effects Projects and Methodology                     | Edits have been made to Table 4.6-2.   |
| L91-46 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 477: This section describes cumulative impacts to water resources through 2011 or 2012, but there is no reference to more recent information. Is this because more recent information is not available? Please clarify and/or update to include most recent data.   | 3.4 Water Resources   | There has been little change in development since 2012, however, impacts from GMT1, GMT2 and Willow were considered in the future impacts section. |
| L91-47 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 510, fifth paragraph: "New development, research or recreational activity in conjunction with the proposed GMT2 Project increases the likelihood of future identification, disruption, or destruction of cultural resources." It is not clear why there would be any recreational activity associated with the GMT2 Project. Please explain or remove the reference to recreational activity from the sentence. | 3.14 Cultural and Paleontological Resources                         | This has been modified to reflect "other activities that may result from the project" and the bit about recreation has been removed.               |
| L91-48 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 516, eighth paragraph: "With the Nuiqsut Spur Road and upcoming completion of the GMT1 road and Colville River Access Road, resident of Nuiqsut will have facilitated to subsistence areas and will be able to commute to work in the Alpine field." Recommend editing to reflect, "Nuiqsut residents will have access to subsistence areas...."  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been revised to correct sentence.   |

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| L91-49 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 523, first paragraph: "The BLM (2004a) predicted that short-term impacts, such as green trails and disturbances from noise and other activities, would not accumulate." It is not clear what the inclusion of "green trails" in this sentence means. This issue was not discussed in earlier sections regarding recreation. Please clarify.  | 3.17 Land Use   | Added a description of green trails to 4.4.4 Recreation   |
| L91-5  | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 10th, sixth bullet: Please remove the reference to 18 AAC 60.005 and .200 and replace it with a reference to the entire chapter of 18 AAC 60. Doing this would include references to Article 6 - User fees, Article 7 - Monitoring and Corrective action requirements, and Article 8 - General Provisions which are important parts of the regulations.  | 1.1 Executive Summary & Introduction                                | The text has been revised as suggested.   |
| L91-50 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 530, second bullet: This bullet mentions that the Putu exploratory well is located approximately three miles east of Nuiqsut. The text on page 473 notes that the well is located five miles from Nuiqsut. Please resolve this conflict.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The text has been revised to indicate the correct distance to Putu from Nuiqsut.  |
| L91-51 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 532, first paragraph: his paragraph discusses impact to public health under the GMT2 action alternatives and notes "medium impacts as a result of exposure to hazardous materials (i.e. air quality emissions)....." It is not clear how this determination was reached. Section 4.2.3.2 and 4.6.5 discuss air quality and the cumulative impacts to air quality and neither section appears to support this conclusion. Please explain. | 3.18 Public Health  | Thank you for your comment. Public health section information came from Section 4.6.8.10, which also references BLM 2012 Section 4.8.7.21 where methodologies are described. Section 3.1.3 describe Hazardous and Solid Waste |

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| L91-52 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 535, first paragraph: Sentence three in this paragraph notes that "Additionally, the increase in development could result in a cumulative negative impact to human health resulting from impacts to air quality, water quality, or spills, and the general overall effect of increasing stress and anxiety within the community as a result of the rapid changes that are taking place." It is not clear how the conclusion of cumulative negative impact to human health was reached. Please explain by citing support from other sections within this document. It might also be worthwhile to separate the human health impacts that are regulated by government agencies from the human health impacts of stress and anxiety into two separate sentences for clarity. | 3.18 Public Health  | Thank you for your comment. SEIS text is omitted, leaving the specific impacts as described.   |
| L91-53 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 537, fifth paragraph: This paragraph discusses climate change in the context of environmental justice. It is not clear in this discussion what the connection is between climate change and the proposed action. Is this section implying that the proposed project will increase climate change or that multiple actions, including climate change and the proposed development will have impacts on Nuiqsut residents and their subsistence activities? Please clarify what is the proposed injury and the proposed remedy that can be addressed in the record of decision.   | 3.7 Climate Change  | The section referred to is the cumulative effects analysis for Section 4.6.8.11 Environmental Justice-Conclusion. The intent of referring to climate change within this section is to acknowledge that issues surrounding climate change constitute part of the suite of cumulative effects for environmental justice. Analysis of the proposed action's impacts to subsistence are found in Section 4.4.5, including several potential mitigation measures that could serve to minimize identified impacts. |
| L91-54 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 538, first sentence: "Alternative E would have incremental adverse cumulative impact to environmental justice on the North Slope." It should be noted that there is no "Alternative E" addressed in this EIS and whatever alternative is being discussed would probably have adverse cumulative impacts (plural).   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The sentence referring to Alternative E has been deleted.  |



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| L91-55 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Pages 539-540: This section discusses the mitigation measures and monitoring required through the most recent BLM environmental impact statements. It is not clear why the air quality monitoring site in Nuiqsut that was mentioned on pages 8 and 41 of the GMT-1 Record of Decision (ROD) is not discussed here. Please clarify.   | 4.2 Mitigation                  | Because construction of GMT1 began in early 2017, air quality monitoring data and reports required by the GMT1 ROD are just now being distributed. |
| L91-56 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 548: The ADEC Water Quality Standards at 18 AAC 70 are referenced here, but the version referenced is out of date. The most recent version of ADEC regulations can be found here at <a href="http://dec.alaska.gov/commish/regulations.aspx">http://dec.alaska.gov/commish/regulations.aspx</a> . Please update accordingly.   | 3.4 Water Resources             | Fixed in document  |
| L91-57 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 549: The ADEC Spills Database was referenced here, but the version and web address are outdated. The Spills Database can be found here <a href="http://dec.alaska.gov/Applications/SPAR/PublicMVC/PERP/SpillSearch">http://dec.alaska.gov/Applications/SPAR/PublicMVC/PERP/SpillSearch</a>   | 3.19 Hazardous Materials Spills | Fixed in document  |
| L91-58 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 575: The reference to Kolesar, K.R. et al. (2017), "Effect of Prudhoe Bay emissions on atmospheric aerosol growth events observed in Utqiagvik (Barrow), Alaska" was cited in section 3.4.7, page 228 regarding pollution nanoparticles, with the conclusion that there are potentially forms of pollution that are not regulated or monitored. It should be noted that the paper cited addressed oil field emissions and sea spray aerosols (SSA) and how those components would affect aerosol and secondary aerosol precursors in the context of Arctic atmospheric composition and climate simulations and did not address air pollution from nanoparticles. | 3.5 Air Quality & Meteorology   | Citation removed.  |

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| L91-59 | State of Alaska, Department of Fish and Game (ADFG)                     | While it is appropriate given the body of literature available to suggest that changes in caribou movement behavior are possible, and even likely at some level, moving from that to the conclusion that there will be significant reductions in the availability of caribou is not supportable, particularly with respect to this development alone (i.e. the cumulative case may be somewhat different). | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Please see responses to Comments L91-60, L91-61, and L91-68. Based on case law (e.g. Kunaknana et al. vs. Clark) pursuant to ANILCA Section 810 analysis, the BLM determines whether or not a proposed action may result in a significant restriction to subsistence use in order to apply the two-part process required by Section 810. We contend that there is enough evidence in the literature and based on input from subsistence users to reasonably claim that the various factors described, including the range of reactions by caribou to roads, satisfy the finding that the effects "may reach a level of significant restriction." |
| L91-6  | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 10, seventh bullet: This bullet regarding solid waste processing and temporary storage facilities could be combined with the bullet above that just references the entire chapter of 18 AAC 60, since much of the other information is duplicative.   | 1.1 Executive Summary & Introduction                                | The text has been revised as suggested.  |

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| L91-60 | State of Alaska, Department of Fish and Game (ADFG) | Page 9, paragraph 2: The documentation that local hunters report reduced availability over the course of a single year following the most recent road construction could be well within the range of natural variation in caribou availability | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The complete sentence acknowledges the uncertainty in the information by stating "While construction of the road is too recent to document changes in caribou movements via multi-year collar or harvest data, Nuiqsut hunters and Native Village of Nuiqsut Tribal Council Members reported reduced availability of caribou south of the CD5 road." The analysis in the Draft was based on data collected in 2015, before the GMT1 road was built and during the second year that hunters reported on effects from the Spur Road and CD5 road. See Final SEIS Section 3.4.6.4: some data from Year 9 (2016 ) and a preliminary review data from Year 10, showing use of the newly constructed GMT1 road, is now available. Recent data: some hunters use the roads out of necessity because the caribou have been diverted away from areas closer to the community, either as a result of the roads themselves acting as barriers or due to the presence of hunters along the roads. The GMT1 road was not constructed in the migration corridor of the TCH: it is reasonable to predict that 2-3 years of construction and 30 years of operational use of an industrial road in the eastern edge of the migration corridor that runs mainly north-south and is located to the west of the Spur Road, the Colville River, and Nuiqsut will deflect animals from those areas outside the range of natural variation in availability in those areas. |

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| Comm # | Commenter Name                                      | Comments  | Comment Category Code   | Comment Response  |
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| L91-61 | State of Alaska, Department of Fish and Game (ADFG) | Page 9, paragraph 3: Localized displacement may be possible, but stating that Nuiqsut is vulnerable to even minor changes in TCH distribution is not established, and the scale of evaluation is critical to this finding. The statement itself is not completely accurate, given the literature. More common is the finding of a delay rather than spatial displacement, particularly in seasons outside of calving. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | ADF&G spatial analysis shows GMT infrastructure in the TCH migration corridor. If GMT shifts any TH movement further west or south, it could put TH animals out of reach of many Nuiqsut hunters. BLM has established (GMT1 SEIS 2015 Section 4.3.4.1: Terrestrial Mammals) that traffic and increased access may lead to an increased avoidance response for caribou, that caribou from the TH are less likely to be tolerant of disturbance than those in the Prudhoe Bay field, that gravel roads (or berms over 4 feet high) would potentially deflect or delay the movement of caribou, and that although these impacts were expected to be of low intensity, long-term duration, and local extent for the caribou herd itself, this resource fills a distinctive ecosystem and ecological service role within the locality, and that non-calving caribou could be disturbed at moderate levels of intensity for a long term duration from drilling and vehicle disturbances at the local level. Based on that analysis and other sources on Nuiqsut's subsistence patterns, the Subsistence section (GMT1 2015 4.4.5.3) found that "Even localized or "limited" changes in caribou distribution resulting from displacement can affect the availability of caribou at different times of the year and the fact that caribou are not always available near Nuiqsut," and "as noted in SRB&A (2013b), because the Colville River delta is in the peripheral range of both the TH and the CAH, Nuiqsut harvesters are particularly vulnerable to changes in the distribution and/or behavior of caribou in these herds." |

| Comm #                            | Commenter Name   | Comments   | Comment Category Code   | Comment Response  |
|-----------------------------------|--|--|---|---|
| <b>L91-61</b><br><i>Continued</i> | State of Alaska,<br>Department of Fish and Game (ADFG) | <i>See above comment</i>   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | This was re-established in the 2017 Update to the Nuiqsut Paisangich (SRB&A 2017f page 60: "The Colville Delta is situated on the easternmost and westernmost ranges of the two herds, and therefore Nuiqsut hunters are particularly vulnerable to any changes in herd distribution or migration." Based on case law (e.g. Kunaknana et al. vs. Clark) pursuant to ANILCA Section 810 analysis, the BLM determines whether or not a proposed action may result in a significant restriction to subsistence use in order to apply the two-part process required by Section 810. We contend that there is enough evidence in the literature and based on input from subsistence users to reasonably claim that the various factors described, including the range of reactions by caribou to roads, satisfy the finding that the effects "may reach a level of significant restriction." |
| <b>L91-62</b>                     | State of Alaska,<br>Department of Fish and Game (ADFG) | Page 12, paragraph 5: The authors find that the combined effects of roads, pads and aircraft "would alter traditional movements of TCH caribou in the vicinity of Nuiqsut." As the authors state later in the paragraph, a wide variety of reactions are possible. It may well be the case that some alterations in movement are possible, but alteration of traditional movements is not necessarily a foregone conclusion. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Please see response to Comment L91-61. Based on case law (e.g. Kunaknana et al. vs. Clark) pursuant to ANILCA Section 810 analysis, the BLM determines whether or not a proposed action may result in a significant restriction to subsistence use in order to apply the two-part process required by Section 810. We agree that alteration of traditional movements of TCH caribou is not necessarily a foregone conclusion, but contend that there is enough evidence in the literature and based on input from subsistence users to reasonably claim that the various factors described, including the range of reactions by caribou to roads, satisfy the finding that the effects "may reach a level of significant restriction."  |

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| Comm # | Commenter Name                                      | Comments   | Comment Category Code   | Comment Response  |
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| L91-63 | State of Alaska, Department of Fish and Game (ADFG) | Page 13, paragraph 1: The authors find that caribou availability has already changed as a result of the CD5 – GMT1 road, which is a tenuous conclusion based on the short time span of inference, and that a “similar response to the GMT1-GMT2 access road would be likely.” These conclusions seem too strong based on the available data. They later conclude that reduced availability would affect a significant portion of hunters, and would constitute a significant reduction in availability of caribou. Several issues exist with these conclusions; among the variety of responses caribou could have, delays are as possible as deflections, and the few examples we have appear to effect only portions of the population, and only in some years. The scale issue comes up again here; even if some low level of change in movement patterns were to occur, it is important to consider the scale of change. Outside of dramatic, large-scale change in distribution that effects multiple seasons, it might be hard to argue that caribou access will go from excellent to poor. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Please see responses to Comments L91-60 and L91-61. Based on case law (e.g. Kunaknana et al. vs. Clark) pursuant to ANILCA Section 810 analysis, the BLM determines whether or not a proposed action may result in a significant restriction to subsistence use in order to apply the two-part process required by Section 810. There is enough evidence in the literature (including the interpretation presented by the commenter), and based on input from subsistence users, to reasonably claim that the various factors described, including the range of reactions by caribou to roads, satisfy the finding that the effects “may reach a level of significant restriction.” |

| Comm # | Commenter Name                                      | Comments  | Comment Category Code   | Comment Response  |
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| L91-64 | State of Alaska, Department of Fish and Game (ADFG) | <p>Page 13, paragraph 2: The authors conclude that given the importance of caribou, and uncertainty regarding extent and duration or altered caribou availability, that they cannot preclude a finding that the effects of Alternative A will not cause a major redistribution of caribou. Considering the scale of the analysis, a major distribution that might prove meaningful to harvest levels is unlikely, even with the uncertainty that exists. The authors do well here to point out a potential magnitude of effect, 1 day using 4 gallons and 2 days using 8 gallons of fuel, but what this hypothetical change means in terms of significant restriction is unclear.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>Please see responses to Comments L91-60 and L91-61. Also, the comment omits the subsequent sentence, which addresses the question posed in the comment: "[ ] a successful harvest that involves 1 day-long trip and 4 gallons of fuel cannot be equated with a successful harvest that requires 2 day-long trips and 8 gallons of fuel. If this occurs over the course of 32-33 years, Nuiqsut hunters lacking adequate time, income, or equipment would experience a significant restriction due to the reduced local availability of caribou to meet their subsistence needs." Also please note that the scale of the analysis for subsistence (and the ANILCA 810) is based on hunter use areas, not the caribou herd's overall range and health. The analysis finds that the likely redistribution would be significant for Nuiqsut hunters, not for the caribou. Harvest levels do not always reflect the amount of time, money, risk, and effort hunters must spend. Based on case law (e.g. Kunaknana et al. vs. Clark) pursuant to ANILCA Section 810 analysis, the BLM determines whether or not a proposed action may result in a significant restriction to subsistence use in order to apply the two-part process required by Section 810. We agree that alteration of traditional movements of TCH caribou is not necessarily a foregone conclusion, but contend that there is enough evidence in the literature and based on input from subsistence users to reasonably claim that the various factors described, including the range of reactions by caribou to roads, satisfy the finding that the effects "may reach a level of significant restriction."</p> |

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| Comm # | Commenter Name                                      | Comments  | Comment Category Code   | Comment Response   |
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| L91-65 | State of Alaska, Department of Fish and Game (ADFG) | <p>Page 14, first paragraph: "Under Alternative B, the road and pipeline would be slightly closer to Nuiqsut than under Alternative A. Some residents perceive an advantage in keeping industrial activities as close as possible to town, thereby leaving the more remote hunting areas less affected." Based on the description of the road and pad alignment in Alternative B, GMT2 pad is in the same location as in Alternative A.</p> <p>Therefore, it is the same distance from Nuiqsut to the GMT2 pad for both alternatives.</p>   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The text has been corrected to note that only the road would be closer to Nuiqsut under Alternative B.   |
| L91-67 | State of Alaska, Department of Fish and Game (ADFG) | <p>Page 20: The comments above, about the magnitude of any potential adverse effects on subsistence activities, are limited to the scale of the new GMT1-GMT2 road. When discussing the cumulative effect of multiple additional developments, the scale at which any minor changes in movements and distribution becomes much larger, and evaluating likely effects on subsistence, and where a person might begin to conclude that activities have been significantly impacted, becomes even challenging even for an experienced researcher. This is both due to compounding uncertainty regarding what developments are likely, their potential effects on caribou, as well as the much larger scale of development. The suggestion that the cumulative case begins to have significant impacts on subsistence resources in the communities of Atqasuk, Anaktuvuk Pass, and Utqiagvik is not as well-supported (regardless of the accuracy in assessment of the significance or magnitude of impacts) as previous arguments about the findings related to the GMT2 analyses.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>The developments described are reasonably foreseeable and several have become more likely since the Draft SEIS was written. The cumulative scenario includes likely effects from all reasonably foreseeable future development, which includes infrastructure that would likely affect resources and access for hunters from those communities. Based on case law (e.g. Kunaknana et al. vs. Clark) pursuant to ANILCA Section 810 analysis, the BLM determines whether or not a proposed action may result in a significant restriction to subsistence use in order to apply the two-part process required by Section 810. There is enough evidence in the literature and based on input from subsistence users, to reasonably claim that the various factors described satisfy the finding that the effects "may reach a level of significant restriction."</p> |



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| <b>L91-68</b> | State of Alaska, Department of Fish and Game (ADFG)                     | Page 21, paragraph 4: The authors state that the distribution and local availability of caribou populations have been affected by oil development; this is a broad statement, and the only information supporting this statement are changes in distribution that are specific to the Central Arctic Herd, during calving, and have no impact on hunting or harvest.                    | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | There is no indication that harvest levels have decreased to date, but there is substantial data that oil development has affected hunting patterns (especially changed and restricted use areas) and resulted in disturbance to hunters (see Section 3.4.6.4 and Section 4.4.5.4). It is explicitly not a broad statement; it specifies "local availability" which could be justified solely on direct loss of habitat from the footprint of infrastructure. Based on case law (e.g. Kunaknana et al. vs. Clark) pursuant to ANILCA Section 810 analysis, the BLM determines whether or not a proposed action may result in a significant restriction to subsistence use in order to apply the two-part process required by Section 810. There is enough evidence in the literature and based on input from subsistence users, to reasonably claim that the various factors described satisfy the finding that the effects "may reach a level of significant restriction." |
| <b>L91-69</b> | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | This document tends to rely heavily on information or studies that were presented in earlier environmental documents; however, none of these documents are easily available or linked on the project page. This makes it difficult for reviewers and interested stakeholders to access and provide meaningful comments. Please provide links to relevant documents on the project page. | 1.1 Executive Summary & Introduction                                | Non-substantive to the SEIS.  |
| <b>L91-7</b>  | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 10, seventh bullet: This bullet regarding the siting of hazardous waste management facilities could be combined with the bullet above.   | 3.19 Hazardous Materials Spills                                     | Left bullets separate, and added reference to 18 AAC 63, Siting of Hazardous Waste Management Facilities  |

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| L91-70 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | There is inconsistent spelling/use of "water body" versus "waterbody". Please use one spelling consistently throughout the document.   | 3.4 Water Resources                  | Text revised to use the term waterbody and waterbodies consistently throughout. |
| L91-71 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Pages xv and xvi: There are many acronyms used throughout this document that are not included on the acronyms pages, such as IAP, DNA, RMP or NOI. Undefined acronyms make the documents difficult to interpret. Please address during technical writing review.   | 1.1 Executive Summary & Introduction | The acronym list has been reviewed and revised as needed.                       |
| L91-72 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 41: Spelling error, line 18: "conducting" should be "conducting"  | 3.17 Land Use                        | Corrected spelling.   |
| L91-73 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 254, fourth paragraph: Sentence two in the paragraph notes that "Fugitive dust which enters surface water bodies can also increase turbidity." This information is duplicated in the last sentence in the sixth paragraph six (at the end of the page). Please eliminate one of these duplicate statements. | 3.4 Water Resources                  | The last line on the page was deleted.  |
| L91-74 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 346: Line 5: "Error! Reference source not found."   | 3.12 Mammals                         | Text has been corrected.  |

| Comm # | Commenter Name  | Comments  | Comment Category Code   | Comment Response                                   |
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| L91-75 | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 415, first paragraph: "Chapter 3 (§ 3.4.5 Subsistence)" Should be (3.4.6 Subsistence). Please address during technical writing review.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been revised.                             |
| L91-76 | State of Alaska, Division of Mining, Land, and Water (DMLW)             | Page 416, last paragraph: "the affected environment "Subsistence" section (section 3.4.5.3)" - this is a Visual Resources section. Please address during technical writing review.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Callout has been revised to reflect Section 3.4.6. |
| L91-77 | State of Alaska, Department of Fish and Game (ADFG)                     | Page 419, third paragraph: "overlaps with many of Nuiqsut most concentrated subsistence use areas (see Figure 3.4-6)". It is unclear whether this is the correct figure, appears to be 3.4-2. Please address during technical writing review. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been revised.                             |
| L91-78 | State of Alaska, Department of Fish and Game (ADFG)                     | Page 419, third paragraph: "Project area are described in detail in Section 3.4.5.3, "Overview of Subsistence Use Areas." " - 3.4.5.3 is Visual Resources. Please address during technical writing review.                                    | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Callout has been revised to reflect Section 3.4.6. |
| L91-79 | State of Alaska, Department of Fish and Game (ADFG)                     | Page 420, second paragraph: "The monitoring report has also documented a general decrease in the percentage of harvests along the Nigliq Channel. Figure 4.4-1." - Should be 4.4-2. Please address during technical writing review.           | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been revised.                             |
| L91-8  | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 10, new bullet:<br>A new bullet should be added to this list to read " Reviews and approves food service facilities for c amps serving 25 persons or more."  | 1.1 Executive Summary & Introduction                                | The text has been revised as suggested.            |

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| L91-80 | State of Alaska, Department of Fish and Game (ADFG) | Page 266, first paragraph: "The likelihood of impacts to the water resources identified in this analysis can be separated into reasonably foreseeable and potential (Table 4.2-11). No evaluated effects were determined to have impacts." - There were both reasonably foreseeable and potential/speculative impacts - the column in the table of "Impact Anticipated" seems to have been erroneously inserted. Please address during technical writing review. | 3.4 Water Resources   | 3rd column was removed.                    |
| L91-81 | State of Alaska, Department of Fish and Game (ADFG) | Page 420, third paragraph: "shows the GMT2 Project area overlain on Nuiqsut subsistence use areas for all resources documented by Pederson from 1973–1986, by BLM in 2004, by SRB&A for 1995-2006, and by Alaska Department of Fish and Game in 2014." - Looks like the "Note" was incorrectly inserted in the middle of this sentence. Please address during technical writing review.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been revised.                     |
| L91-82 | State of Alaska, Department of Fish and Game (ADFG) | Overall, there are numerous incorrect figure references, or text references, or cut and paste errors within the GMT2 DSEIS. This complicated content review for substantive issues within this document. Please address during technical writing review.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been revised.                     |
| L91-83 | State of Alaska, Department of Fish and Game (ADFG) | Page 547: The list of References could use additional editing for style, format, capitalization, spelling, and consistency to improve the quality of this section of the document. Please address during technical writing review.   | 1.1 Executive Summary & Introduction                                | References have been reviewed and revised. |

| Comm # | Commenter Name                                      | Comments  | Comment Category Code   | Comment Response                         |
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| L91-84 | State of Alaska, Department of Fish and Game (ADFG) | Page 556: "Blank, J. 2013. Remote Identification of Maternal Polar Bear (Ursus maritimus) Denning Habitat on the Colville River Delta, Alaska. University of Alaska-Anchorage." Change to: Blank, J. 2013. Remote Identification of Maternal Polar Bear (Ursus maritimus) Denning Habitat on the Colville River Delta, Alaska. M.S. Thesis. University of Alaska-Anchorage. Please address during technical writing review. | 3.13 Threatened and Endangered Species                              | Chapter 6, References, has been updated. |
| L91-85 | State of Alaska, Department of Fish and Game (ADFG) | Page 559: Brown, W.E. 1979. Nuiqsut Paisanich-Nuiqsut Heritage ... Multiple entries of this one reference. Please address during technical writing review.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Duplicate entries have been deleted.     |
| L91-86 | State of Alaska, Department of Fish and Game (ADFG) | Page 563: Dale Guthrie R. 2006. The reference should begin Guthrie, R.D. 2006. Please address during technical writing review.  | 3.7 Climate Change  | Edit has been made to text.              |

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| L91-87 | State of Alaska, Department of Fish and Game (ADFG) | <p>Page 568: "George, J.C., J. Zeh, R. Suydam, and C. Clark. 2004. Abundance and Population Trend (1978-2001) of Western Arctic Bowhead Whales Surveyed Near Utqiagvik (formerly Barrow), Alaska. Marine Mammal Science 20: 755–773. In: USDO I BLM. 2012. National Petroleum Reserve-Alaska (NPR-A) Final Integrated Activity Plan (IAP)/Environmental Impact Statement (EIS)."</p> <p>The global search and replacement of "Barrow" with "Utqiagvik (formerly Barrow)" should be re-examined throughout this document, particularly within References. In this instance (and others), the original title of the reference should be used as it pre-dates the community name change and Barrow was used in the original document. For this citation use: George, J.C., J. Zeh, R. Suydam, and C. Clark. 2004. Abundance and Population Trend (1978-2001) of Western Arctic Bowhead Whales Surveyed Near Barrow, Alaska. Marine Mammal Science 20: 755–773. In: USDO I BLM. 2012. National Petroleum Reserve-Alaska (NPR-A) Final Integrated Activity Plan (IAP)/Environmental Impact Statement (EIS). Please address during technical writing review.</p> | 3.13 Threatened and Endangered Species | Chapter 6, References, has been updated.                   |
| L91-88 | State of Alaska, Department of Fish and Game (ADFG) | <p>Page 579: McIntyre, C. L., D. C. Douglas, and M. W. Collopy. 2008. Reference duplicated. Please address during technical writing review.</p>  | 3.13 Threatened and Endangered Species | Chapter 6, References, has been updated.                   |
| L91-89 | State of Alaska, Department of Fish and Game (ADFG) | <p>Page 612: Wolfe, S. A., et al. (2000). Reference duplicated. Please address during technical writing review.</p>  | 3.11 Caribou                           | Thank you for your comment. This correction has been made. |

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| L91-9  | State of Alaska, Alaska Department of Environmental Conservation (ADEC) | Page 12: The text box for ADEC should also include "Plan Approvals for Drinking Water and Wastewater Treatment Systems." There are three essential APDES general permits to note: AKG332000 - Facilities Related to Oil and Gas Exploration, Development, and Production in the North Slope Borough (addresses graywater for mobile camps, gravel pit dewatering, excavation dewatering, hydrostatic test water disposal, mobile spill response, secondary containment, and operational storm water); AR100000 - Construction Storm Water; AKG320000 - Statewide Oil and Gas Pipelines (horizontal directional drilling for pipeline construction); AKG572000 - Small POTW and other Small Treatment Word (domestic wastewater); and AKG380000 - Wastewater Discharges from Drinking Water Treatment Facilities. | 1.1 Executive Summary & Introduction | Correction was made as suggested.  |
| L92-10 | Environmental Protection Agency (EPA), Region 10                        | Section 3.2.3.2: We recommend this section include discussion regarding ozone and background concentrations of ozone ( ozone data were collected at the Nuiqsut monitor also). The discussion should note that background ozone on the North Slope is quite high due to natural processes. Stratospheric ozone intrusion is mostly responsible for the higher background ozone episodes at the surface.  | 3.5 Air Quality & Meteorology        | Section 4.2.3.2 contains a discussion of the ozone concentrations monitored at Nuiqsut and the maximum concentrations were well below the NAAQS. The SEIS has been modified to note that stratospheric ozone intrusion could contribute to higher concentrations of ozone observed in the North Slope of Alaska. |

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|--------|--|--|-------------------------------|--|
| L92-11 | Environmental Protection Agency (EPA), Region 10 | Table 3.2-6 and Table 3.2-7, page 89: We recommend the Final SEIS account for the criteria air pollutant ozone in these two tables. Please consider changing the column header in Table 3.2-6, "Final Background Value", to "Background Design Concentration". We also recommend including a "Form of Standard" column in Table 3.2-6 that explains how the design concentration is calculated (e.g., "3-year average of 98th percentile daily max", "3-year average of annual arithmetic mean", etc.). Finally, please include the measured background ozone in the table as well. For Table 3.2-7, we recommend including a "Form of Standard" column as well as the national ambient air quality standard for ozone in the table. | 3.5 Air Quality & Meteorology | Per the reviewer's comment ozone has been added to Tables 3.2-6 and 3.2-7. The header to Table 3.2-6 and the text following the table have revised "final background value" to read as "background design concentration". Lastly, the form of standard for all pollutants in Tables 3.2-6 and 3.2-7 have been added. |
| L92-12 | Environmental Protection Agency (EPA), Region 10 | Section 3.2.3.2, page 89, 1st paragraph: The phrase "... the existing background air quality are below the national and state of Alaska standards," could be misinterpreted. We recommend stating, "... the existing background air pollutant concentrations do not exceed the national and state of Alaska ambient air quality standards."  | 3.5 Air Quality & Meteorology | Thank you for the comment. The wording of this sentence has been changed to the reviewer's recommendation.   |
| L92-13 | Environmental Protection Agency (EPA), Region 10 | Section 3.2.3.3, page 90: We note that the phrase "Haze is a form of pollution that occurs from refraction of sunlight on particles in the atmosphere," is not accurate. We suggest stating, "Atmospheric visibility degradation, or atmospheric haze, is a result of air pollution and is caused by the scattering of sunlight by particles suspended in the atmosphere."   | 3.5 Air Quality & Meteorology | Thank you for the comment. The wording of this sentence has been changed to the reviewer's recommendation.   |
| L92-14 | Environmental Protection Agency (EPA), Region 10 | Section 4.2.3.2, page 271, paragraph 2: We note that a more accurate description of the background values used for the "final background concentration" column header may be "background design concentration."  | 3.5 Air Quality & Meteorology | Thank you for the comment. The wording of this sentence and the table heading in Table 3.2-6 has been changed to the reviewer's recommendation.  |



| Comm # | Commenter Name                                   | Comments   | Comment Category Code         | Comment Response   |
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| L92-15 | Environmental Protection Agency (EPA), Region 10 | Section 4.2.3 .2, page 271, paragraph 3: We note that the statement "A prevention of significant deterioration analysis is most appropriate at sensitive receptors such as the town of Nuiqsut, when there are no Class I or Class II areas in the near field," seems erroneous and suggest that this may be intended to read," ... Sensitive Class II areas ... ". We recommend clarifying in the Final SEIS.   | 3.5 Air Quality & Meteorology | Per the reviewer's comment, this sentence was reworded to note that the town of Nuiqsut is a sensitive Class II area.  |
| L92-16 | Environmental Protection Agency (EPA), Region 10 | Section 4.2.3.2, pg. 276-277 and Table 4.2-18: We note that the PSD increment analysis discussion is limited on page 276 and incorrectly refers to Table 4.2-17b (as the results are in Table 4.2-18). It is important to note the results are indicative of the maximum increment consumption expected in the community of Nuiqsut due to the project. We recommend that the Final SEIS describe what emissions were used in the PSD increment analysis (project-only versus cumulative emissions) as well as the results of the analysis. Given these values are well below the PSD increment, the modeling demonstrates the project will not contribute significantly to the deterioration of air quality in Nuiqsut. We also recommend additional discussion regarding the Table 4.2-27 results (alternative C PSD increment consumption). | 3.5 Air Quality & Meteorology | Per the reviewer's comment, additional detail was given regarding the PSD increment analysis including which modeling scenario was used, which impact values were used, and whether background values were included. For additional detail on the methodology for this analysis, please refer to the AQIA. |

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| L92-17 | Environmental Protection Agency (EPA), Region 10 | Section 4.2.3.2: The EPA recommends either the Final SEIS or the accompanying modeling report included as an appendix show the concentration isopleth plots that demonstrate the spatial distribution of pollutant impacts in cases where the maximum concentrations are near the NAAQS, particularly 1-hour NO2 and 24-hour PM10 standards. These plots help provide agency decision-makers a tool to understand the extent of impacts and help gauge the need for mitigation.   | 3.5 Air Quality & Meteorology | Figures including isopleths for all modeled alternatives and scenarios have been added as an appendix to the AQIA for the 1-hour NO2 and 24-hour PM10 model results in the near-field analysis. The far-field modeling results are well below all NAAQS/AAQS and therefore isopleths were not created.       |
| L92-18 | Environmental Protection Agency (EPA), Region 10 | Section 3.4.7.1, page 228, the first full paragraph states that cancer was the leading cause of death among North Slope Borough residents. Based on Table 9 in Appendix G, the statistics for lung, cervical and ovarian cancer are for the NSB, although not clearly conveyed as written. We recommend including a reference to the table in the text of Section 3.4.7.1 and clarifying what is meant. We also recommend clarifying the second paragraph, under Tobacco, to convey that " ... smoking among adults is high (62 percent). Smoking among teens (as reported by the household) was notably and significantly more common (43 percent) than the rest of the North Slope Borough communities overall (16 percent)." | 3.18 Public Health            | Appendix G and SEIS text has been updated as suggested.  |
| L92-19 | Environmental Protection Agency (EPA), Region 10 | Section 3.4.7.1, page 228, 3rd and 4th paragraphs state that air monitoring data do not support the perception that oil and gas development is the source of air pollution. Most of the air quality data for Nuiqsut, however, are for criteria pollutants. We recommend that the inclusion of hazardous air pollutants data and discussion of these data in the Final SEIS may be helpful in understanding what sources contribute most to health risk and what HAPs may be present.   | 3.18 Public Health            | Section 3.4.7.1 has been updated to clarify that <i>monitoring</i> data is only available for criteria pollutants. Data on air quality <i>modeling</i> for hazardous air pollutants has been included to bolster the argument that there are no anticipated public health impacts from industrial emissions. |

| Comm # | Commenter Name                                   | Comments   | Comment Category Code         | Comment Response  |
|--------|--|--|-------------------------------|---|
| L92-20 | Environmental Protection Agency (EPA), Region 10 | Table 4.2-14, page 272: We recommend defining the footnotes included in this table. We also recommend that the toxicity values for formaldehyde be included: REL= 55 ug/m3, RfC = 9.8 ug/m3, IUR = 1.3E-05 per ug/m3.                            | 3.5 Air Quality & Meteorology | Thank you for the comment. The footnotes are not required here as the source for the RELs, RfCs, and cancer unit factors can be retrieved from the AQIA, therefore they were removed. Also, the REL, RfC, and cancer unit risk factor for formaldehyde was added. |
| L92-21 | Environmental Protection Agency (EPA), Region 10 | Section 4.2.3.2, page 275: We recommend that the text acknowledge that the list of BTEX, n-hexane, and formaldehyde included here is an abbreviated list of the possible HAPs associated with oil and gas development activities.                | 3.5 Air Quality & Meteorology | Per the reviewer's comment, it was specified that selected HAPs were presented and analyzed for the GMT2 Project.   |
| L92-22 | Environmental Protection Agency (EPA), Region 10 | Table 4.2-17a, page 276: We note that NO2 (1-hour) and PM10 (24-hour) are close to standards and we highly recommend and support a robust air quality monitoring program for the project to determine if standards for these NAAQS are exceeded. | 3.5 Air Quality & Meteorology | Noted.  |

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| L92-23 | Environmental Protection Agency (EPA), Region 10 | Section 4.2.3.2, page 277, first paragraph, and Page 284: We note that vehicle traffic is higher at certain times of the year, when maximums occur. The average is based on one year, and therefore, we recommend that the Final SEIS provide justification for this assumption as well as discuss that maximums will happen at certain times and when they typically occur. | 3.5 Air Quality & Meteorology | Thank you for the comment. It is not certain that the maximum impacts would occur at the same time as higher vehicle traffic. For example, the majority of construction traffic is expected to occur during the winter months based on the schedule detailed in each of the emissions inventories and maximum PM10 impacts would likely occur during the summer months (June through September) when the ground isn't frozen. The assumption for monthly average traffic was based on the best available data provided by the Proponent. It is important to note that the average is not based on one year, but instead on the length of activity. For example, the monthly trips for construction are based on a three or four month period and not divided by a 12 month period. Details about data sources are found in the reports for the various emission inventories and AQIA. For the last suggestion from the commenter to discuss that maximums will occur during certain times and when they typically occur, the SEIS does that in detailing the methodology for near-field modeling. Sources were turned on and off depending on when they were expected to have a potential to emit. Again, we direct the commenter to the AQIA where that level of detail regarding expected impacts is analyzed. |
| L92-24 | Environmental Protection Agency (EPA), Region 10 | Section 4.2.3.2, page 277: Although inferred, we recommend that the meaning of the results be included, given the modeling results are significantly below the NAAQS, and project criteria pollutant emissions are not expected to affect the health of even the most sensitive individuals in the community.  | 3.5 Air Quality & Meteorology | Based on the commenter's suggestion, a sentence was added to both sections to state the model results demonstrate that the potential for the health of the most sensitive individuals to be negatively affected by the GMT2 Project is low.  |

| Comm # | Commenter Name                                   | Comments  | Comment Category Code         | Comment Response   |
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| L92-25 | Environmental Protection Agency (EPA), Region 10 | Table 4.2-19a, page 277: We recommend the cancer risks be presented by chemical, and then summarized, so the reader can see whether and how each chemical contributes to the cancer risk calculation.   | 3.5 Air Quality & Meteorology | Based on the commenter's suggestion, the tables for Alternative A and C cancer risk results have added rows to break out benzene cancer risk, ethylbenzene cancer risk, and formaldehyde cancer risk.  |
| L92-26 | Environmental Protection Agency (EPA), Region 10 | Page 278 and Page 286: The Draft SEIS states that for all HAPs, except formaldehyde, a conservative unitized run was conducted. We recommend that the Final SEIS provide discussion regarding what was done differently for formaldehyde.   | 3.5 Air Quality & Meteorology | A sentence was added in the Alternative A and Alternative C sections stating "Formaldehyde was modeled using actual emission for each individual source so as to demonstrate that the unitized emission methodology over-estimated impacts."   |
| L92-27 | Environmental Protection Agency (EPA), Region 10 | Page 283: If additional HAPs could be associated with airstrip activities, such as fueling, we recommend that the Final SEIS include these emissions in the Alternative C assessment.   | 3.5 Air Quality & Meteorology | Only benzene, toluene, ethylbenzene, xylenes (BTEX), n-Hexane, and formaldehyde were chosen to be analyzed for all sources associated with the GMT2 Project as they are the most predominant HAP emissions associated with oil and gas activity. Though there are many listed HAPs by the EPA, BTEX, n-hexane, and formaldehyde, are consistently the majority of total HAP emissions for oil and gas sources. |
| L92-28 | Environmental Protection Agency (EPA), Region 10 | Table 4.2-28a, page 285: We note that formaldehyde and benzene comprise a high percentage of the 1-hour REL. If actual concentrations are higher than what was modeled, there is the potential for acute health effects, and we recommend that this should be discussed in the Final SEIS. Also, we recommend that cancer risk be presented by chemical, so each chemical's contribution to the total cancer risk can be evaluated. | 3.5 Air Quality & Meteorology | The estimated maximum impacts for 1-hour formaldehyde and benzene are below 50% of the REL. Discussion regarding the conservative nature of the unitized model run used for benzene can be found in the GMT2 AQIA. Rows have been added to speciate benzene, ethylbenzene, and formaldehyde cancer risk at the Nuiqsut receptor.   |
| L92-29 | Environmental Protection Agency (EPA), Region 10 | Appendix G, Table 9: We recommend that the age-adjusted rates for cervical and ovarian cancer be provided, as more than six cases were reported. If there is a reason these rates are not appropriate to report, then we recommend that the Final SEIS include that discussion as well.   | 3.18 Public Health            | Community-level data are limited due to the restrictions in place for privacy concerns. Privacy concerns are explained in the Introduction to Appendix G.  |

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| L92-30 | Environmental Protection Agency (EPA), Region 10 | Section 3.2.3.2, page 87: We recommend replacing "Alaska belongs to Region 10 Pacific Northwest of the United States Environmental Protection Agency ... " to "Alaska is one of four Pacific Northwest states regulated under Region 10 of the U.S. Environmental Protection Agency ... "   | 3.5 Air Quality & Meteorology                                       | The wording of this sentence has been changed to the reviewer's suggestion. |
| L92-31 | Environmental Protection Agency (EPA), Region 10 | Page 185, 2nd paragraph: We recommend changing the labels on Figures A-2 to A-9 to F-2 to F-9.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been revised to correct Figure number reference.                   |
| L92-32 | Environmental Protection Agency (EPA), Region 10 | Page 229, 2nd paragraph: We recommend adding a table number for food insecurity data (Table 3.4-18).  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been revised to reference Table 3.4-18                             |
| L92-4  | Environmental Protection Agency (EPA), Region 10 | In working with the BLM and the Corps on the Greater Mooses Tooth-I project, we identified concerns with the wetland functional assessment and the impact criteria used to compare impacts to vegetation and wetlands between alternatives. We believe the analysis done for GMT-2 largely addressed our concerns and that the resulting impacts analysis is appropriate. | 3.8 Vegetation and Wetlands   | No Change, supportive statement.  |

| Comm # | Commenter Name                                   | Comments   | Comment Category Code   | Comment Response   |
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| L92-6  | Environmental Protection Agency (EPA), Region 10 | We note the Draft SEIS concludes the preferred alternative may significantly restrict subsistence, primarily due to impacts to caribou. While we recognize the past and on-going work by the BLM and applicant to address impacts to subsistence, we encourage additional coordination with the community of Nuiqsut and other subsistence practitioners in the project area. We also recommend continuing to identify any additional mitigation opportunities for these impacts that could be incorporated to the extent possible into the preferred alternative.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Several new potential mitigation measures have been added to Chapter 4 to address recommendations made during the comment process to minimize identified impacts. See Sections 4.4.2.8 and 4.4.5.6.  |
| L92-7  | Environmental Protection Agency (EPA), Region 10 | We recommend the development and inclusion of a comprehensive monitoring program plan in the Final SEIS. This plan should be developed in consultation with the applicable resource agencies and local stakeholders, and be included as an appendix to the Final SEIS. We recommend the plan include appropriate adaptive management strategies should actual impacts differ from what was anticipated in the Final SEIS. This monitoring should occur in all phases of the project (construction and operation) and focus on air quality, hydrology and subsistence. As with the monitoring program for GMT-1, we believe this information will be helpful not only for the understanding of this project, but also for other upcoming projects within the NPR-A. | 4.2 Mitigation  | According to the BLM's NEPA Handbook, CEQ Regulations (40 CFR 1505.2), and as required by the NPR-A IAP ROD, monitoring is required to ensure the effectiveness of mitigation measures. BLM has an existing monitoring program that has been established through its previous Records of Decision. See Section 4.2.3.2, Air Quality and Section 4.4.6, Subsistence, for a list of specific proposed mitigation measures for GMT2 that require additional monitoring. |

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| L92-8  | Environmental Protection Agency (EPA), Region 10 | Section 3.2.3.1, page 85: We recommend revising the statement, "Conversely, during unstable conditions, upward and downward movement in the atmosphere exists, and dispersion of pollutants in the atmosphere is enhanced," to "Conversely, during unstable conditions, vertical motions in the atmosphere are prevalent, and dispersion of pollutants in the atmosphere is enhanced". We also recommend revising the statement, "The GMI'2 Project area will typically have more large-scale temperature inversions in the winter ... " to "The GMT2 Project area will typically have more severe inversions in the winter ... ". | 3.5 Air Quality & Meteorology | The wording of both sentences in Section 3.2.3.1 have been revised to the reviewer's suggestion.  |
| L92-9  | Environmental Protection Agency (EPA), Region 10 | Table 3.2-4, page 86: Under the "Weather Data" column, we recommend revising the "daily max temperature" and "daily min temperature" headings to "daily average max temperature" and "daily average min temperature", respectively.  | 3.5 Air Quality & Meteorology | "Avg" was added to each of the rows depicting average maximum and average minimum daily temperatures per the reviewer's comment.                  |
| NQT1-1 | Mamie Pardue                                     | Stick picking crews in summer are lax in performance of duties, longer road will make this worse. Want to see more collaboration between local crews and Alpine crews to clean up after winter activities. KSOP? Hire local youth to help?   | 4.2 Mitigation                | See Section 4.5 Impacts of Oil, Water and Hazardous Materials Spills, Potential Mitigation Measure 1: Trash Removal and Anti -Littering Campaign. |
| NQT2-2 | Frederick Tukie Sr                               | Delineators aren't removed after ice road season at Nigliq Channel and ice road to ASRC gravel mine.   | 4.2 Mitigation                | See Section 4.5 Impacts of Oil, Water and Hazardous Materials Spills, Potential Mitigation Measure 1: Trash Removal and Anti -Littering Campaign. |



| Comm # | Commenter Name                           | Comments  | Comment Category Code   | Comment Response   |
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| NQT3-1 | Peter Kosbruk, Native Village of Nuiqsut | Activities are allowing hunters to travel further and further, causing more stress to our search and rescue during harvest seasons. Our subsistence activities are already stressed. Animals and hunters are 2 different factors.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>The following new potential mitigation measure has been added to Section 4.4.2.8. Search and Rescue Assistance: Local residents of Nuiqsut have expressed concern regarding the ability of current Search and Rescue capabilities within the community given that local hunters are traveling farther away to harvest resources, leading to safety concerns both in terms of increased potential for local residents to need assistance, and increased capacity for Search and Rescue response. Specific Requests include:</p> <ul style="list-style-type: none"> <li>• Upgrades for Search and Rescue Equipment</li> <li>• Upgrades for Search and Rescue communications, radio and satellite</li> <li>• Additional training for Search and Rescue Responders</li> </ul> |
| NQT4-1 | Dora Leavitt                             | At the Trilateral meeting last week, the public told Kuukpik that they need to remove the restriction on ATV access on the Spur Road - lots of interpretation on that, people are worried it will be enforced and or be extended to other sections of road. When that Spur Road went up it restricted our access - already 20-30 years of ATV access. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM has included a potential mitigation measure requiring a road access agreement by ConocoPhillips for use of the GMT2 Road by the community of Nuiqsut that specifies the rules for utilizing the road, and guarantees continued access. See Section 4.4.6, Subsistence, Potential Mitigation Measure 1  |

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| NQT4-2 | Dora Leavitt   | <p>CD5 – GMT1 Roads are Restricting hunters: too steep = they got to go all the way around – CD5 at the mouth of Tingmiaqsigvik – those ramps are not going to be that – no snowmachine is going to cross the road, it is too steep and this time of the year it is all gravel</p> <p>THIS TIME OF YEAR – people are still traveling by snow machine because there is snow on the tundra but they can't cross the road because it is gravel – right now they are going around the GMT1 road to go to those cabins – mouth of Ting/Fish Creek – because usually straight from Nui to those cabins – they stay on this side of the river (Nigliq) – when you should go right side of GMT1 where natignak (flat) we go through there to get there but now they are having to go way around or go through – we don't travel that way – everybody likes to stay on the natignak esp. this time – that is the trail – straight shot – trail is on the east side of CD5 between CD5 and Nigliq about an eight of a mile – from the dump there is a visible trail through lakes straight to CD5 when get to the mouth little bit northwest turn and that is the smoothest</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM has included a potential mitigation measure requiring ConocoPhillips to work with the community of Nuiqsut to identify the location and design specification for the access ramps and pull outs along the GMT2 road. See Section 4.4.6, Subsistence, Potential Mitigation Measure 7 |
| NQT4-3 | Dora Leavitt   | Ramps are not in the right place and even if they are no one is going to use it when they have a load (loaded sled being towed by snowmachine) they are not going to make it up the ramp, they are not going to block traffic, they are already all gravel and so steep - towards GMT with those little creeks very deep makes it dangerous travel – creeks are deep when covered in snow , you don't see the danger  | 4.2 Mitigation  | See Section 4.4.5 Subsistence, Potential Mitigation Measure 7: Road Pullouts and Access Ramps along the GMT2 Road.  |

| Comm # | Commenter Name               | Comments   | Comment Category Code   | Comment Response   |
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| NQT4-4 | Dora Leavitt                 | People are heading out that way for Fish Creek geese hunting, they love Fish Creek for that so this is a big impact. When they don't have the ice road anymore people are going to access the spur road and walk away and going to access the GMT1 road – no restrictions – when no ice road, they will use the gravel road, the ice road become like a highway  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The SEIS discloses both potential benefits and potential negative impacts of the road and attempts to be succinct. Recent data on use of roads, gathered since the Draft SEIS was published, and verbatim testimony from hunters, has been included in the Final SEIS. |
| NQT4-5 | Dora Leavitt                 | What I don't see CPAI doing anymore when they cut the creek now they don't mark it with orange crosses – food coloring on what they cut big pile of cuttings both side – safety issue – big ditch in the middle – no communication   | 4.2 Mitigation  | See Section 4.4.6 Public Health, Potential Mitigation Measure 4 regarding the additional requirement to mark trails at ice bridges to indicate they have been slotted and are closed to travel.  |
| NQT6-1 | Dave Arnold, City of Nuiqsut | <p>After reviewing the content of page 176 of the Draft SEIS for GMT2, the Nuiqsut City Council feels that given the delays in moving through this SEIS process, that the information which describes the state of the City is quite outdated given the number of changes that have occurred since it was first provided.</p> <p>As a result the Mayor has asked me to provide the following narrative to replace that currently found on page 176.</p> <p>Please let me know what else you may need to incorporate these changes.</p> | 3.16 Economy  | Revised and incorporated updated information for section on "Local Economy: Community of Nuiqsut" and oil and gas operations impacts.  |

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| NQT6-2   | Dave Arnold,<br>City of Nuiqsut | Following notification by the State of Alaska DCCED of NPR-A Impact Mitigation Program awards to the City of Nuiqsut totaling \$1,409,064 for Fiscal Year 2019, the City has begun to move forward in improving administrative and financial management capacity, in developing recreation and enrichment opportunities for the community's youth, and in renovating Kisik Community Center (City Hall) mechanical systems. After a long period of NPR-A Impact Mitigation Program underfunding relative to the rapidly increasing impacts of oil and gas exploration and development within the Nuiqsut area, which had not allowed the City to grow its capacity to sufficiently address associated issues, the City has recently moved forward with a planning initiative to develop the administrative systems necessary to manage these impacts. Although there is quite a bit of work yet to be done, especially given the extremely limited financial resources available over the prior ten years, progress is beginning to made and will continue as long as NPR-A Impact Mitigation Program grant awards are sufficient to address very rapidly changing physical, cultural and social environments. | 3.16 Economy  | Revised and incorporated updated information for section on "Local Economy: Community of Nuiqsut" and oil and gas operations impacts.   |
| NQT7- 1  | Native Village of Nuiqsut       | Need to say that hunters have a right to use the land, and have road usage posted.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM has included a potential mitigation measure requiring a road access agreement by ConocoPhillips for use of the GMT2 Road by the community of Nuiqsut that specifies the rules for utilizing the road, and guarantees continued access. See Section 4.4.6, Subsistence, Potential Mitigation Measure 1 |
| NQT7- 10 | Sam Kunaknana                   | Continue caribou subsistence monitoring report, and year 9-10 needs to go into the Final EIS. There should be no publication of a Final without Year 9-10.   | 3.11 Caribou  | Information from years 9-10 was being finalized and is included in the DSEIS where appropriate.   |

| Comm #   | Commenter Name                           | Comments   | Comment Category Code   | Comment Response  |
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| NQT7- 10 | Sam Kunaknana                            | Continue caribou subsistence monitoring report, and year 9-10 needs to go into the Final EIS. There should be no publication of a Final without Year 9-10. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The analysis for Subsistence presented in section 4.4.5 of the Final SEIS includes the most up-to-date data regarding subsistence harvest and use for the project area. The analysis utilizes data through year 9 of the SRB&A study referenced by the commenter. Each year SRB&A produces a detailed report that not only describes the data collected for that study year, but also the contribution of the data to the totality of data collected during the study period. In this way, each annual report provides the best available data overall on the subject of caribou use by the community of Nuiqsut. While the study referenced was envisioned as a 10-year effort it will continue to collect annual data pursuant to the GMT1 Record of Decision beyond year 10. |
| NQT7- 2  | Native Village of Nuiqsut                | Pipeline should be dark colored and higher   | 2.1 Proposed Action & Alternatives                                  | The NPR-A IAP ROD BMP E-7 currently contains the requirement that pipeline be at least 7 feet above the ground surface, which has been found to be adequate for travel beneath by both subsistence hunters and animals such as caribou. It is currently industry standard that pipelines are matte, meaning not shiny, in order to match the natural background, and is included by the applicant as a design detail for their proposed action.   |
| NQT7- 3  | Native Village of Nuiqsut                | Put signs about road usages, and rules for using the different roads.  | 2.1 Proposed Action & Alternatives                                  | Proposed Mitigation Measure 1: GMT2 Road Right of Access Agreement includes the requirement for adequate signage and communicating community information regarding rules for access.  |
| NQT7- 4  | Peter Kosbruk, Native Village of Nuiqsut | September or October, have a public meeting with Nanuq and CPAI where they explain all ice road activity to the community.                                 | 4.1 Stakeholder involvement and tribal engagement                   | See Section 4.4.6, Subsistence, Potential Mitigation Measure 10.  |

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| NQT7- 5 | Eli Nukapigak, Native Village of Nuiqsut   | NS Wildlife Department Studies, from 1975 to 2000, from UAF's Gary Cofina, put these studies in 810 analysis. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | North Slope Borough studies regarding wildlife and subsistence use are included in the SEIS (e.g., Bacon et al; Brower and Hepa; Brower and Opie) in Section 4.4.5 Subsistence. The ANILCA 810 uses information from the SEIS.  |
| NQT7- 6 | Jonah Nukapigak, Native Village of Nuiqsut | 3rd party contractor to look at links between air quality and human health in winter during construction.     | 3.5 Air Quality & Meteorology                                       | The near-field analysis evaluated human health risk during all phases of the GMT2 Project, including construction, through the modeling of hazardous air pollutants (HAPs) and comparing the potential impacts to the acute reference exposure levels (RELs), immediately danger to life or health values (IDLH/10), non-cancer reference concentrations for chronic inhalation (RfC), and cancer risk thresholds. The modeling results for all phases of the GMT2 Project under all proposed alternatives were lower than the respective thresholds used to determine the potential for negative health effects. |

| Comm #  | Commenter Name                             | Comments   | Comment Category Code                             | Comment Response   |
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| NQT7- 6 | Jonah Nukapigak, Native Village of Nuiqsut | Need a fish study to examine impacts to fish and subsistence harvest of fish. Jason Libby at UAF has a study out. Especially look at Fish Creek, fish with fungi in Nigliq and Kuukpik, so they move to Fish Creek. Why are fish sick and dying? | 3.9 Fish  | <p>Jason Leppi (sic) is conducting a broad whitefish study targeting the movement and habitat use of adult fish in the Colville River. The BLM is not aware that he has documented fish moving from the Colville to Fish Creek, although in 2003 the State did document broad whitefish moving between these two drainages (Morris, W. 2003. Seasonal Movements and Habitat Use of Arctic Grayling (<i>Thymallus arcticus</i>), Burbot (<i>Lota lota</i>), and Broad Whitefish (<i>Coregonus nasus</i>) within the Fish Creek Drainage of the National Petroleum Reserve – Alaska, 2001-2002. Alaska Department of Natural Resources, Office of Habitat Management and Permitting, Technical Report No. 03-02).</p> <p>Broad whitefish (and subsequently humpback whitefish) have been observed with a water mold (<i>Saprolegnia</i>) in the Colville River in 2013-2016. While this mold exists worldwide, these are the first instances (excluding a single fish in 1980) documented on the North Slope. The North Slope Borough is spearheading a collaborative investigation into the extent of observations, possible drivers of the disease, and future implications for the fish. They have published one paper/report to date (Sformo, T.L. and 9 others. 2017. Observations and first reports of saprolegniosis in Aanaakliq, broad whitefish (<i>Coregonus nasus</i>), from the Colville River near Nuiqsut, Alaska. Polar Science, Volume 14: 78-82.</p> |
| NQT7- 7 | Peter Kosbruk, Native Village of Nuiqsut   | Inspection process for plugging and abandonment needs to be more transparent. Train KSOP personnel or send a trained 3rd party with KSOP to inspect well closure.  | 3.18 Public Health                                | See Section 4.4.2, Locally Requested Mitigation Measures, Establish a BLM Field Office in Nuiqsut  |
| NQT7- 8 | Hazel Kanaknana, Native Village of Nuiqsut | Hire local liaison for CPAI to communicate.  | 4.1 Stakeholder involvement and tribal engagement | See Section 4.4.6, Subsistence, Potential Mitigation Measure 10.   |

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| NQT8- 1  | Sam Kunaknana                              | Native Village of Nuiqsut needs to approve Final Caribou Subsistence Monitoring Report (CSMR) before publication and also approve study methodology. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The methodology used for the Nuiqsut Caribou Subsistence Monitoring Report is described in Section 4.1.2.1. The continuation of caribou monitoring was established by a BLM Supplemental BMP for GMT1 and the BLM has included a Potential Mitigation Measure for GMT2 specifying that that BLM and NVN must approve of the methodology and review process.   |
| NQT8- 1  | Sam Kunaknana                              | Native Village of Nuiqsut needs to approve Final Caribou Subsistence Monitoring Report (CSMR) before publication and also approve study methodology. | 4.2 Mitigation  | See Section 4.4.5 Subsistence, Potential Mitigation Measure 6: Subsistence Monitoring Studies.  |
| NQT8- 10 | Margaret Pardue, Native Village of Nuiqsut | When the community found out burbot was contaminated by heavy metals, people stopped eating it. This is an impact of development.                    | 3.9 Fish  | Out of concern for potential subsistence food contamination, the Agency for Toxic Substances and Disease Registry (ATSDR) reviewed and evaluated four potential exposure scenarios for eating burbot from the Colville River (USDHHS 2003). 1) Eating fish from the Colville River every day for 70 years; 2) Eating whole burbot in high quantities four months of the year; 3) Eating burbot livers four months of the year; 4) Eating several burbot livers in one sitting. While polychlorinated biphenyls (PCBs), dichlorodiphenyltrichloroethane (DDT), and DDT derivatives were detected in fish collected from multiple areas of the Colville River, the levels were very low and exposures to them are not expected to cause harmful health effects. Thus, ATSDR determined that it is safe to eat the fish. Additionally, burbot should be included in future subsistence foods contaminants monitoring required of CPAI. |
| NQT8- 12 | Hazel Kunaknana, Native Village of Nuiqsut | BLM should train students to understand what's going on with industry.   | 4.2 Mitigation  | See Section 4.4.2 Sociocultural Systems for a discussion of community-requested potential mitigation measures that address social impacts.  |



| Comm #  | Commenter Name                             | Comments   | Comment Category Code              | Comment Response   |
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| NQT8- 2 | Sam Kunaknana                              | Want to see data from air quality monitoring, and see a Native Village of Nuiqsut air quality monitoring station.                          | 3.5 Air Quality & Meteorology      | The data currently collected at the air monitoring site in Nuiqsut is property of CPAI. BLM is considering a requirement to expedite the timeframe for data review and dissemination of the Nuiqsut monitoring data in the GMT2 ROD, see Section 4.2.3 Atmospheric Environment, Potential Mitigation Measure 4.  |
| NQT8- 3 | Native Village of Nuiqsut                  | Native Village of Nuiqsut and Nuiqsut do not want to see GMT2 go forward until GMT1 is done being constructed.                             | 2.1 Proposed Action & Alternatives | The BLM takes your suggestion seriously, but it is impossible for the BLM to suspend or set aside GMT2. As stated in Sections 1.3 and 1.4, the BLM is unable to postpone processing the GMT2 Application for Permit to Drill based on regulatory requirements in NPR-A found at 42 USC Section 6506(a). Deferral of a project authorization would be inconsistent with the directive in the Naval Petroleum Reserves Production Act to expeditiously carry out an oil and gas leasing program and the rights ConocoPhillips acquired with the subject leases to reasonably develop the oil and gas within those lease tracts. GMT2 was originally approved for development as CD-7 in 2004 under the Alpine Satellite Development Plan EIS. ConocoPhillips anticipates that the earliest that construction on GMT2 could begin is the winter operational season of 2018-2019. Construction at GMT1 was completed in July 2018, and first production is anticipated in October-December 2018. |
| NQT8- 4 | Peter Kosbruk, Native Village of Nuiqsut   | Wants to see emergency supplies like masks/respirators in community. Also have HEPA filters in schools to have clean space for evacuation. | 3.18 Public Health                 | See Section 4.5, Potential Mitigation Measure 8: Creation of Emergency Respice Zone  |
| NQT8- 5 | Margaret Pardue, Native Village of Nuiqsut | Evacuation plan for villages in EIS.   | 3.18 Public Health                 | Please see Section 4.5, Potential Mitigation Measure 7 - GMT2 Industrial Disaster Response Plan for Nuiqsut  |

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| NQT8- 6 | Sam Kunaknana                              | Nuiqsut needs to have a role in enforcement of trash pickup and environmental violations.                                     | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM has included a potential mitigation measure regarding trash removal and an anti-littering campaign. See Section 4.5, Potential Mitigation Measure 1   |
| NQT8- 7 | Sam Kunaknana                              | Broad whitefish die while overwintering, and there should be no action on further development until root cause is determined. | 3.9 Fish  | There is currently no scientific evidence that broad whitefish are dying while overwintering in this region due to anything beyond naturally occurring conditions. Some individual fish of any species may select an overwintering area that is not adequate to support their needs (typically due to dissolved oxygen depletion, freeze down of ice, and/or depletion of energy reserves) which can lead to mortalities. |
| NQT8- 9 | Margaret Pardue, Native Village of Nuiqsut | Chemicals used in fracking need to be tested for in the water.  | 3.18 Public Health  | See Section 4.4.6, Potential Mitigation Measure 3, Water Quality Monitoring Program.  |

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| NQT9-1 | George Sielak,<br>Unknown<br>Speaker,<br>Eunice Brower,<br>Roy Nageak | <p>The yellow haze is real. It has not been thoroughly looked into whether it's toxic or air pollution to the community. You get a southwest wind. When you build GMT2, we have a strong southwest blizzards exactly coming towards from GMT2 unit. And that's going to form yellow haze. And the more you build drill sites and start developing, these yellow haze will not go away. This is the time of the year they start appearing. And it goes directly towards Barrow also. They always feel it. So these are the pollutants that have not been thoroughly studied whether they're not toxic or toxic to our people, our infants and our elders. So those need to be considered as a thorough study if BLM is going to go ahead and pursue GMT2.</p> <p>We deal with that every season. Every spring we deal with yellow haze. And all those are coming from Prudhoe Bay working which way. We can see Alpine yellow haze covering, and it goes further northwest. And that's how far it goes from this industry and from the drill sites. It's a combination of numerous -- all companies that have drilled up and start producing. That's when this yellow haze starts forming.</p> <p>It happens every -- every spring. You look at the north side of the -- of the shore line of Beaufort Sea. It's like a mound of yellow that will hover. It's a smoke that just hovers and stays there. And at some point when you have a wind direction, it will be blown away.</p> | 3.5 Air Quality & Meteorology | The air quality impacts of all known GMT2 sources have been assessed as part of the impact assessment. Effects were determined to be minimal. Arctic Haze is currently understood to be from transported air pollution from Northern Europe and Russia that reach Alaska in the winter and early spring and is not anticipated to be affected by emissions from equipment at GMT2. The SEIS has been revised to include information about Arctic Haze. |

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| <p><b>NQT9-1</b><br/><i>Continued</i></p> | <p>George Sielak,<br/>Unknown<br/>Speaker,<br/>Eunice Brower,<br/>Roy Nageak</p> | <p>Yeah, because some days when it's stagnant, the wind -- when it's stagnant, you can clearly see it out there. You can see it because it's so clear, the white -- the whiteness of the snow just brings it out. You can clearly see it visible.</p> <p>We're starting to see that in Barrow too. And I think because of our -- more vehicles and more heavy equipment, we're starting to see that yellow haze around Barrow too. It's mostly from possibly the running equipment, because we're not (indiscernible) in Barrow. That yellow haze kind of drifts away from Barrow right in front, and when it's not blowing, it just sits there.</p> <p>I know. When the ice road season closes, that's when it starts hovering. That's when all the equipment all cease during -- when the ice flow seasons. When the ice road closes, that's when it starts hovering. It's not just from all vehicles or equipment, it's all coming directly from -- from all those facilities that are -- that are transporting oil. So that's something that's not just directly from any kind of vehicles that they have in town. If it did, we probably will see it here hovering in our Village.</p> | <p>3.5 Air Quality &amp; Meteorology</p> | <p>See above BLM response</p> |

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| NQT9-10 | Eunice Brower  | <p>Because every piece of equipment that is used is diesel equipment. And all those diesel equipment put out nitrogen oxides. Nitrogen oxides are actually what make people more susceptible to sicknesses, and illnesses, respiratory especially. And they put or a fine particulate matter, so ultra fine it's smaller than that PM 2.5. And according to the American Lung Association, those ultra fine particulate matter are more extremely dangerous to human health and -- and wildlife that are in the vicinity and breathing in all of that. And can be endocrine destructors.</p> <p>All of these pollutants that are coming from these diesel emissions, especially, really affect people's health. And you guys are not even addressing that. You guys say, "Well, there's no" this and that in here. It doesn't say it doesn't affect people's health. The chances of you guys have blowouts and then not even mitigating for that, for people getting sick, and then people having to get medevac'd out of this Village because of them getting sick. You guys don't even mitigate for that.</p> <p>How can they say there's not enough nitrogen oxides in the air to make people sick from all these vehicles, all these diesel emissions, from every diesel equipment that's being run 24/7 for all I know? They might say they're putting -- plugging them into wall rails and this and that when they can easily build some big warm storage building for all their vehicles to park them in and not run them 24/7 and say, "Well, we have wall rails to plug them in."</p> <p>All these diesel emissions are at a ground level. They're at a ground level. They're not -- they don't have smoke stacks way up high into the atmosphere where they can be safely emitted.</p> | 3.18 Public Health    | Air quality modeling conducted for the GMT2 Project found that all action alternatives were below applicable air quality standards for all project phases. No adverse impacts to human health are expected as a result of air pollutants emitted from GMT2 or surrounding development. |

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| NQT9-11 | Rosemary Ahtuangularuk | <p>When you put a project together and you say that you're going to look at emissions, but then you don't even enforce some of the process of development, like when we expanded Alpine. In your documents you said you're going to shut down the flare every few hours to allow the particulates to disburse. When you don't enforce that and allow it to be flaring for 23 days straight, those are very different modeling questions that are put out there.</p> <p>When you're looking at the document, you can put your model together and say that "every couple hours the flare is shut off and those emissions are calculated at such." But if you're not enforcing it and showing that those emissions are being reduced by making sure those flares are shut off, that model is a very different model.</p> <p>When industry is allowed to give exemptions so that they can allow 30 flares in one night around us in our community, that's a very impactful emission that isn't always calculated in your variables that can be controlled to say that we're not being exposed. When you don't calculate in the emissions that occur with the Repsol blowout and our Village only takes two hours to have respiratory distress, these are very serious concerns that can affect a modeling discussion that are not incorporated into what you're presenting to us.</p> | 3.18 Public Health    | <p>Thank you for articulating these social impacts (i.e., distrust, lack of power, concern over lack of enforcement of regulations) and concerns regarding the cumulative impacts being faced by Nuiqsut. BLM recognizes, documents, and tries to analyze with transparency, the impacts many residents of Nuiqsut experience as required by NEPA. The BLM manages the NPR-A pursuant to the requirements of the NPRPA of 1976 and the DOI Appropriations Act FY 1981 implemented at 43 CFR 2360, and 43 CFR 3130. Many of the actions that you describe are for activities that occur outside the NPR-A, and are therefore, not under BLM's regulatory control or management. We recognize that it is frustrating to have so many different regulatory agencies--federal and state--that play different roles in terms of managing things such as emissions, erosion, and whether or not to permit oil and gas activity. We encourage local and regional stakeholders to utilize the avenues afforded them through State and Municipal law, and through the federal political process to identify and implement solutions that are beyond the management authority of the BLM to address.</p> |

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| NQT9-11<br><i>Continued</i> | Rosemary Ahtuangularuk | So we've already been exposed to these concerns, and your modeling didn't help us to prevent our exposure. So you're coming back to us and showing a piece of paper, which you're in control of all of the numbers that go into that document. That doesn't reassure us at all. We need to make sure we have those numbers and we're incorporating that information, not be misled like you did with our monitoring station and didn't give us all the variables that we wanted in that station. So we don't have that data from 20 years ago.  | 3.18 Public Health            | <i>See above BLM response</i>  |
| NQT9-12                     | Rosemary Ahtuangularuk | <p>These are important discussions when you manipulate what's being presented to us. You guys are in control of this process. You're not looking at our temperatures that we're being exposed. You're not looking at our inversions and how many days we're having that. You're not calculating the severity of the exposures that we've already been through to add into this discussion and the hypersensitivity that some of these people are getting already related to these exposures.</p> <p>These are all serious discussions that can affect your modeling, but you're in control of that. That's not very reassuring when we're the ones that are suffering the decrease in air quality and go decade after decade after decade to meetings to say, "We're very concerned about our air quality."</p> | 3.5 Air Quality & Meteorology | The GMT2 SEIS air quality modeling uses the most recent meteorological data from Nuiqsut available and accounts for local weather patterns when evaluating the dispersion of air pollutants from GMT2 and other existing and planned development. Estimated pollutant concentrations are evaluated against federal and state ambient air quality standards, which are designed to protect the health of sensitive populations with a margin of safety. |

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| NQT9-13 | Rosemary Ahtuangularuk | <p>We talked about how your data could be manipulated because a spigot isn't appropriately monitored and maintained. And when you have ice accumulations, your data is decreased and you're not getting particulates that could otherwise be monitored.</p> <p>But when you're not enforcing and making sure those maintenance efforts to allow us to have appropriate numbers, you can really change what occurs on your modeling. That's what we brought to the discussion decades ago, and that's what we're bringing back to this discussion, because we had this process to look at some of these concerns. But when you put a model together, you can manipulate what goes into that model.</p> | 3.5 Air Quality & Meteorology                                       | BLM follows strict EPA and ADEC data review protocols. Most deviations from monitoring protocols will be caught in the data validation review.   |
| NQT9-14 | Unidentified resident  | You know you got a store over here that cost hundreds of dollars for a loaf of bread, eggs to feed your children. You know, you guys don't look at those kind of situation we go through on a daily basis. You know?  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Section 4.4.2.1 Sociocultural - Impacts Common Under All Alternatives, subsection Economic Disparity discusses the high cost of groceries in Nuiqsut. The text has been revised to include recent updates on the cost of living in Alaskan communities from the Alaska Department of Labor and Workforce Development.  |
| NQT9-15 | James Taalak           | Yeah, I don't like that phrase "hunter avoidance." If there's any way you can change that, if you please. I think that would be -- make more sense to me. Because we're displaced by all that out there.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM identifies the loss of subsistence use areas as the primary adverse impact attributable to the presence of oil infrastructure, which is comparable to hunter displacement. The use of the phrase "hunter avoidance" is meant to characterize the decision that hunters make to not harvest near infrastructure, which is an impact separate from displacement. |



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| NQT9-16 | Rosemary Ahtuangularuk | <p>We've had workers from the fields comes to us while we're out hunting. I've had my son catch his first (indiscernible) when we only had Alpine, the first development, and it was right outside our cabin. He's never gone there to catch geese again because of all the increased changes around that area. These are real serious issues. It's not -- when you put words that decrease the severity of our impact, it really facilitates industry from allowing these impacts to continue. It doesn't prevent us from enforcing the hardship that is put upon our community.</p> <p>We walked through this for decades, and we told you before when you changed the '90 -- '89 EIS and changed all of our prescriptive measures to be very protective of us. And then you went through and changed it with '97, and you took out all of the enforcement words in this process.</p> <p>That's not helping us. And then you coming to us and wanting us to work with you in this discussion, we know we don't have goodness coming from working with you. We lose more and more.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>Thank you for articulating these social impacts (i.e., distrust, lack of power, concern over lack of enforcement of regulations, tensions related to the permitting process). BLM recognizes, documents, and tries to analyze with transparency, the social impacts many residents of Nuiqsut experience as required by NEPA. The GMT2 DSEIS document (Section 4.4.21) cites recent Alaska Native studies that corroborate your comments: outreach to solicit insights and concerns on negative impacts are antithetical to positive inter-cultural interactions. However, BLM cannot (legally or ethically) proceed with permitting that is required by law/legislation without notifying residents and soliciting their input. Nor do residents want permitting to occur without outreach and consultation. BLM regrets that the pace of development and the permitting processes themselves can result in these impacts, but neglecting to consult with residents and document their concerns would be unacceptable.</p> |
| NQT9-17 | Eunice Brower          | <p>We're losing our hunting areas, our land that we normally use to go hunt these animals that we eat throughout the whole year. And it's getting decreased. We have to go further and further to go hunt them. And then sometimes we can't even afford it because it costs so much. And then we have to end up paying more at the store for very little of what we could even afford, which isn't even in the same value of what we catch out there that's fresh and more healthier.</p>   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>BLM identifies the loss of subsistence use areas as the primary adverse impact attributable to the presence of oil infrastructure in Section 4.4.5 Subsistence.</p>   |

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| NQT9-18 | Unidentified resident | <p>Right now the impact is on the road. The height of the road is too high, blocking the caribou from the northwest, Teshekpuk Herd, (indiscernible) herd that migrate through during summer, and migrate and back fall time, making these hunters to go further out.</p>  | 3.11 Caribou          | <p>Gravel roads constructed in the plan area present an obstacle to caribou movements. The roads themselves and human activity may obstruct movement of caribou, particularly during migrations. Roads are constructed to accommodate traffic and wide load moves. Roads are engineered to maintain permafrost conditions by insulating the tundra and offsetting the loss of insulating effect caused by compression below the gravel and heat transmitted to the ground. Therefore a minimum depth of gravel laid for a new road is on average 5- 7 feet above the tundra. The impact analyses discuss adverse effects from gravel access roads. For example, snow can pile up along side of these gravel roads an obstruct caribou movements.</p> |
| NQT9-19 | Unidentified          | <p>Over -- over two years Teshekpuk Herd has never come, spring, summer, fall, winter, for past two years since CD5 was built. They wintered in Wainwright, summered in Wainwright. Not even those big herd of Teshekpuk that comes through and goes to Teshekpuk Lake for their calving. And they're in separate areas, or pretty much empty. Why? You allowed these companies to build a five-foot height. And that five-foot hasn't even gone down yet. And those roads have already been built. They say by the time it settles down, it should -- supposed to be down to four-foot. It's still the same.</p> <p>So we've been mislead by the agencies, misled this community, and misled the hunters. And it should, by all means, listen to these people. Listen to the community. Migration of the caribous are getting harder to come through. They come -- it's okay when they come summertime, but on the west side, no, it's not.</p> | 3.11 Caribou          | <p>Discussion of road bed height and its impact on caribou movement is discussed in the DEIS. No text changes made.</p>  |

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| NQT9-19 | Unidentified resident | <p>In order for that to reduce the impact, you need to have a minimum lift, a four-foot road, with a four-to-one slope so that the snowmachines and ATVs can have access crossing. And the ramps that they have set on right now are still too steep.</p> <p>And the majority of our hunters don't know where those ramps are. Not because impact. It's the height of the road that diverts the caribou away from this Village. And the more you go towards the cliffs, pretty soon this road is going to be right on the edge of them cliffs toward the southwest.</p> <p>So the biggest impact that needs to be reduced by BLM and Army Corps of Engineers, lower that road down. Not like from CD5 all the way to GMT1, not like (indiscernible). That's what we got out there.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | BLM has included a potential mitigation measure requiring ConocoPhillips to work with the community of Nuiqsut to identify the location and design specification for the access ramps and pull outs along the GMT2 road. See Section 4.4.6, Subsistence, Potential Mitigation Measure 7 |
| NQT9-2  | Unknown Speaker       | <p>Have you taken the existing structures into consideration? Because there's processing facilities to our west which they wouldn't normally come from. And surely that pipeline was going all the way to the west, you know? It's going to be carrying all those oil and all them chemicals all the way down the pipeline. You know, they might have vents to exhaust some of that material and whatnot down the way. So that might be inaccurate by a long shot, you know. Because i just makes a little bit of sense, they're pumping it from out over here, and they're trying -- moving it down the pipeline to the west and there's processing for these (indiscernible), which, you know, this oil is going to pass through.</p>  | 3.5 Air Quality & Meteorology                                       | Both existing sources of air emissions and potential sources of future emissions were included in the analysis of air quality impacts and impacts were found to be minimal.   |

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| NQT9-20 | Unidentified   | The further we go, 40 miles or so, to see at least one or two caribous out there. And none of our people here are being compensated for the loss of our caribous.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The most recent harvest amount data for Nuiqsut (discussed in both Chapter 3: Subsistence: Affected Environment and in Appendix F: Overview of Nuiqsut Subsistence Uses) indicates stable harvest of caribou by community residents to date, with an annual harvest that ranges between 363 (2005-2006) to 774 (2014) individual caribou. In 2016, the last year for which there is harvest data, the total number of caribou harvested by Nuiqsut was 481.  |
| NQT9-21 | Unidentified   | <p>Whose fault is it? ConocoPhillips? BLM? Army Corps of Engineers? It's all your fault, every one of them, because you folks didn't listen to this community how the road should be built. Because these roads are well away from the flood plains.</p> <p>You are just allowing CD5 south. When it starts melting, it makes a big massive big one lake down there blocking the drainage, natural drainage. That's what we see now. Never have we seen that before when there was no roads being built yet. Now we're seeing that.</p> | 3.4 Water Resources   | In order to minimize ponding of water, 2 foot diameter culverts will be placed every 1,000 foot along the road route. An inundation analysis has been performed which can predict where ponding is likely to occur and larger or additional culverts will be installed at those locations. All roads would be designed and constructed to provide adequate cross flow to prevent raising the water level on the upstream side of roads by more than 6 inches compared to that for the downstream side for more than 1 week after peak discharge. Discussions of the inundation calculations can be found in section 4.1.1.2 Construction under the Water Resources chapter. Impacts are discussed in 4.1.1.5 Mitigation. Sufficient culverts and proper placement should prevent issues with ponded water. |

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| NQT9-22 | Unidentified   | We've asked for a four-foot lift, but they keep finger pointing at Corps of Engineers. They say this is Army Corps of Engineers, not BLM. BLM is here tonight to make this presentation and public hearing on GMT2 and your alternatives. If you're going to use an alternative, keep that road at a four-foot level.   | 2.1 Proposed Action & Alternatives | The GMT2 Access Road has been designed to be a minimum of 5 feet high above the ground surface once settling has occurred. This design is based on Arctic engineering intended to maintain the existing thermal regime of the tundra on which it is construction, thereby alleviating the potential for road subsidence and additional tundra damage. Roads in the existing oil field that are currently at a much lower final height above the ground surface, are so due to various possible reasons, including differing surface conditions, age and long-term settling. It has been found that for the conditions that exist along the road routes between GMT1 and GMT2, a 5 foot minimum thickness is needed to keep the thermal regime intact. |
| NQT9-23 | Unidentified   | And the road is so -- so high, way up high, not low. They're near -- I know they're near -- near CD -- CD1, GMT1, GMT2 pollution. I go out to Fish Creek, and the wind change is shifting from southwest. More pollution is going to head into Big Creek. Caribou eat grass, and we eat fish. The river that the fish -- the fish that was in the river, and that's more pollution going in the river, in the water. Then we eat that fish, and we get that disease. More pollution coming from that side. More, more, and more, so either way. | 3.9 Fish                           | BMP A-11 requires CPAI to conduct a monitoring study of contaminants in locally-used subsistence foods. This BMP was added to the 2012 NPR-A EIS/IAP in response to concerns voiced by local residents.   |

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| NQT9-24 | Unidentified   | <p>The ramps are too high, like a V shape. You said the road is low. No.</p> <p>When you're going on and off when you're loaded with -- can't get up.</p> <p>It's added risk. It's a little more tipsy and -- Yeah, they're hard to get up.</p> <p>[The ramps need to be] wider and longer</p> <p>I think some of the hunters have tried to use those ramps towing a sled. And they couldn't. It won't work.</p> <p>But they -- they weren't able to go over.</p> <p>Nope. Too narrow.</p> <p>So they have to go all the way around.</p> <p>Their tracks are just spinning.</p> <p>The ramps are too steep and the road is too high and it's straight down.</p> <p>The ramps are kind of narrow, too.</p> | 4.2 Mitigation        | See Section 4.4.5 Subsistence, Potential Mitigation Measure 7: Road Pullouts and Access Ramps along the GMT2 Road.  |
| NQT9-25 | Unidentified   | Go low, the road is too high. The caribous can't - - you know, can't go up high.  | 4.2 Mitigation        | The GMT2 Access Road has been designed to be a minimum of 5 feet high above the ground surface once settling has occurred. This design is based on Arctic engineering intended to maintain the existing thermal regime of the tundra on which it is construction, thereby alleviating the potential for road subsidence and additional tundra damage. |
| NQT9-26 | Eunice Brower  | If they built pads for these staging workmen and building, how come they can't build us one? Why are we just getting little ramps?  | 4.2 Mitigation        | See Section 4.4.5 Subsistence, Potential Mitigation Measure 7: Road Pullouts and Access Ramps along the GMT2 Road.  |

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| NQT9-27 | Rosemary Ahtuangularuk | I know I talked about if we were to put the road, she wanted it away from the ridge because the caribou go up there for wind relief. And she didn't want the road near those high points where we know caribou are going to be easy to spot when we're out subsistence. That's what she was asking about the alternative, the variable on a lower elevation on the Nuna versus a higher elevation on the ridge   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The GMT2 Access Road route has been selected to be the least impactful to hydrological systems, thereby alleviating the potential for road subsidence, additional tundra damage, pooling and flooding. As such, the route chosen is located on higher ground to the extent possible, as this will result in less potential impacts to existing hydrology.  |
| NQT9-28 | Unidentified           | And then the hunters who are to go look for a ramp, they have to go further out to look for a ramp. Wasting a lot of gas. And gas is so much here.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Having to travel further to hunt is recognized as an impact to subsistence. BLM has included a potential mitigation measure requiring ConocoPhillips to work with the community of Nuiqsut to identify the locations and design specification for the access ramps and pull outs along the GMT2 road. See Section 4.4.6, Subsistence, Potential Mitigation Measure 7.  |
| NQT9-29 | Unidentified           | They're both the same. If the road is higher or lower, it will be the same, because the caribous have -- are -- are first experiencing these kind of roads in our region. When the road was built at CD5, the majority of the caribous go on the north side, weren't able to cross the road, and they just stayed on the north side of CD5 road. At a later time -- at a later time they start crossing, but not the major ones. We saw just a small herd I'm talking about, a handful. But major caribou migration have not come and crossed these roads yet. They avoid that regardless of that lower elevation, the higher road is in a higher elevation it's still the same. | 3.11 Caribou  | The Teshekpuk Lake Caribou have not been exposed to new roads and development so it is reasonable to expect that roads and traffic may be disruptive and cause displacement in some cases. Other studies have document caribou habituation to roads. Other Studies have shown impacts from roads and traffic during calving season. Research shows that the roads and traffic could displace caribou from preferred habitats. It is important to note that disturbance reactions may vary and caribou may habituate over time. |

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| NQT9-3 | Eunice Brower  | <p>Especially I want to reference the Repsol blowout of 2012. I don't care if they want to say it could have been from natural gas from wherever, but there's pollutants in the air, especially when they have a blowout. And from these drilling muds, there's crystalline silica in them. That's even another dangerous chemical. And it's such a fine particulate matter it's easy to get swept up into the air. And all these fine particulate matters take longer to fall down than a bigger 2.5 or 10.0, bigger than those PM 10. They fall quicker because they're bigger, but these ultra fine particulate matter stay in the air much more longer, and yet carried much more further. Wherever the source is coming from, it's still there. It's going to be there. These winds are carrying it. You guys can say there's no impact, but there are. You guys are just not looking at it. You're not educating the people enough to let them understand those impacts. You guys might be putting out this and that and saying this and that but...</p> <p>How can they say there's not enough nitrogen oxides in the air to make people sick from all these vehicles, all these diesel emissions, from every diesel equipment that's being run 24/7 for all I know? They might say they're putting -- plugging them into wall rails and this and that when they can easily build some big warm storage building for all their vehicles to park them in and not run them 24/7 and say, "Well, we have wall rails to plug them in."</p> <p>All these diesel emissions are at a ground level. They're at a ground level. They're not -- they don't have smoke stacks way up high into the atmosphere where they can be safely emitted.</p> | 3.5 Air Quality & Meteorology | <p>Thank you for the comment. Blowouts are not planned operations rather they are accidents that the industry works actively to prevent. The air quality impact analysis in the SEIS considers activities known to occur under each alternative to enable an informed selection of an alternative based on relative differences between impacts. Drilling mud and other fluids used during the hydraulic fracturing process are not sources of air emissions and thus are not entrained in the air nor transported by winds or atmospheric processes.</p> <p>The near-field and far-field analyses modeled particulate matter and NO<sub>2</sub> for all sources that had the potential to emit those pollutants during the construction, drilling, well intervention, and routine operations phases. These sources were assumed to operate for 24 hours per day, 7 days per week, unless otherwise stated to not occur during certain times (e.g., fugitive dust only expected from June through September).</p> <p>The stack parameters or fugitive release parameters used in the dispersion modeling were used based on the expected release heights of each source. Therefore, the dispersion modeling results take into account the expected operation and equipment for the proposed GMT2 Project.</p> |



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| NQT9-30 | Unidentified   | That's why we're asking for a four-foot lift.   | 2.1 Proposed Action & Alternatives | <p>The GMT2 Access Road has been designed to be a minimum of 5 feet high above the ground surface once settling has occurred. This design is based on Arctic engineering intended to maintain the existing thermal regime of the tundra on which it is construction, thereby alleviating the potential for road subsidence and additional tundra damage. Roads in the existing oil field that are currently at a much lower final height above the ground surface, are so due to various possible reasons, including differing surface conditions, age and long-term settling. It has been found that for the conditions that exist along the road routes between GMT1 and GMT2, a 5 foot minimum thickness is needed to keep the thermal regime intact.</p>  |
| NQT9-31 | Unidentified   | <p>Now you -- I see a picture of the caribou up there. These two Conoco characters right here, they know, and I know that where the caribous used to roam right here are now roaming upriver because of these activities. And it's -- I thought this meeting was going to be last week, but then I realized -- I was walking by, I realized it was today. Now I pressed Conoco, too, as a result of the caribou migration deflecting to the north of us -- I mean, to the south of us. I asked for -- about gasoline help for us when we go hunting.</p> <p>Well, we used to go hunting this way for the caribous, now we're going hunting this way for the caribous. Directly related to this activity you're talking about. And that is very concerning to me right now that this -- these facilities are about to be set up. Major facilities that will not only impact the caribou, but every wildlife that's in that area is going to be deflected. And that's something that I look at.</p> | 3.11 Caribou                       | <p>Discussion of roads, road characteristics, and their impact on caribou movement and distribution is discussed in the DEIS.</p> <p>Thank you for your comments. Development is anticipated to continue to impact caribou behavior and distribution on the north slope, particularly during calving seasons. Human activity and development can displace caribou which can impact caribou hunting opportunities. This is likely to continue into the future, particularly in the area west of Nuiqsut. The GMT2 SEIS will include a cumulative impact analysis (past, present and reasonably foreseeable future impacts) including impacts from the Willow project. These impacts will include direct habitat loss, alteration of habitat, obstruction of movement, disturbance and displacement, and mortality. These impacts will encompass the construction and operation phases and full-field development. It is critical that all of the potential impacts to caribou are disclosed in the SEIS.</p> |

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| NQT9-32 | Unidentified   | I asked for -- about gasoline help for us when we go hunting. It's -- we're starting to get all -- trying to seek some kind of assistance with our animals being deflected from these activities.  | 4.2 Mitigation  | See Section 4.4.2 Sociocultural Systems for a discussion of community-requested potential mitigation measures that address social impacts.   |
| NQT9-33 | Unidentified   | We used to have major area right here, but we can't anymore. So we're -- as a result, we don't find the animals we're looking for here, we're supposed to go to this store here. But a piece of meat like that costs 30-something dollars. So that's something you guys need to think about as you go back to your homes where your meat is \$11, where it's \$30 for us here. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Section 4.4.2.1 Sociocultural - Impacts Common Under All Alternatives, subsection Economic Disparity discusses the high cost of groceries in Nuiqsut.  |
| NQT9-34 | Eunice Brower  | What about the ice roads? How much of impact is that to the vegetation to deterring these animals?   | 3.11 Caribou  | Thank you for your comment. Ice roads can cause long term damage to certain types of vegetation. Ice roads crush standing dead vegetation, damage dwarf shrubs and tussock tundra. Nonetheless the impact of ice roads on vegetation and caribou habitat is relatively minor compared to new gravel access road. |
| NQT9-35 | Eunice Brower  | Does that include where our drinking water lake is on that map? Does it show where's our drinking water lake source? Well, it should, because we should be looking at it.  | 5.1 Maps and GIS Data   | A label identifying Nuiqsut's drinking water lake was added to the Project Area map for the FEIS (Map 3.1-1)   |
| NQT9-36 | Eunice Brower  | We should be protecting our only drinking water source. And part of our subsistence is living off of -- you know, we get this water that we drink. You guys use a lot of these water all over then place, and you guys put it them the map, but what about our drinking water source? Is it not that important to know where it is or how much it's being impacted as well?    | 3.4 Water Resources   | A label identifying the lake used for Nuiqsut drinking water has been added to both Project Area (Map 3.1-1) and Surface Waterbodies (Map 3.2-3) maps in the FEIS.   |

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| NQT9-37 | Eunice Brower  | <p>I'd like to know to protect it because that's what I drink. Every one of us here drinks that water. And what happens if there's something that gets into our only drinking water lake source? What are you guys -- what are you guys going to do about it? Are you guys going to provide us a distillery so we could make distilled water? How much are we going to pay for water? Is it going to cost more? Because I used to go to -- when I used to go camping and get water, we used to go ahead and get water from these lakes that are easy to access, and it would be even cleaner. We can't even -- we have to worry about where our water is coming from. How much -- how much of it is actually contaminated? How much of it is being protected? What's getting into our water source?</p> | 4.2 Mitigation        | <p>See Section 4.4.6 Public Health, Potential Mitigation Measure 4 regarding the additional requirement to mark trails at ice bridges to indicate they have been slotted and are closed to travel.</p> |

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| NQT9-38 | Unidentified   | <p>I wanted to make a comment regarding the -- how the impact (indiscernible) we stand over here in Nuiqsut. When we're talking about subsistence, the caribous, fish, the geese that we're trying to hunt, Conoco knows we are trying to get assistance with regards to these subsistence activities, but they go behind closed doors with the leadership of Nuiqsut, taking all our concerns we're voicing now, water it down, and then these directors folks are off center while our subsistence concerns are kind of washed away to the side. That is very concerning, and I see that pattern now the last few years, especially with this -- try to have a little committee. Without question they're going to take what we're saying today and they're going to start picking up that phone and calling you guys and start watering down our concerns we have we're voicing today. And they're going to sit with these Conoco characters and then begin to shape how they're going to receive impact funds and how these funds are going to be used. That's something you guys have to think about -- that's you -- when you go home from here.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>Section 4.4.2.1 Sociocultural Systems - - Impacts Common to All Alternatives describes impacts related to economic disparity described by community residents regarding the non-equitable distribution of impact funds or other monetary benefits resulting from oil development and infrastructure. That section also documents the prevalence of testimony on distrust, including district that conflicts of interest are influencing decisions. BLM is committed to working with the community to establish any mitigation measures that are within BLM's authority to establish. BLM encourages Nuiqsut to submit applications to the State of Alaska NPR-A Impact Mitigation Grant Program for funds to address subsistence impacts.</p> |
| NQT9-39 | Unidentified   | <p>Your pipeline is cutting off the view of the horizon to see -- and I don't know if they're coming or going. Now you've got to go climb something higher or go down below and see about walking (indiscernible) area on that GMT1 road. And A lot of the pull-offs are split apart. And if you want to stop on the road to look for some animals, you can't really see because the pipeline is in your way, the way the elevation is at the road and the pipeline. So you don't have no view of the horizon.</p>   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>BLM has included a potential mitigation measure requiring ConocoPhillips to work with the community of Nuiqsut to identify the location and design specification for the access ramps and pull outs along the GMT2 road. See Section 4.4.6, Subsistence, Potential Mitigation Measure 7</p>   |

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| NQT9-4 | Unknown Speaker | <p>And earlier I mentioned about the yellow haze. Back in them days, we have never seen those hovering nearby. Only towards the east. Our air quality was good. Never have we had any kind of pollutant until they started coming west. The farther they explore westward, that's when they start showing up. Our air quality right now is poor. You go to another Village, you go to a town, you're going to breathe better, healthy air away from industry. When you come back home, you feel the difference. Our air quality is very poor. And you do your modeling. When you say you do your monitoring, we are being put in a class, too, and monitoring the whole Village by putting so many people in there.</p> <p>You haven't done your scientific study thoroughly. The majority of our wind comes through at the southwest, exactly where GMT2 is going to be at. Blizzards, high winds, those are unaccounted for on your model. What are the wind speeds? What direction? Downwind? Upwind? What are the others that might cause more pollutant that this Village has already been experiencing and have already been polluted?</p> <p>...</p> <p>Of all eight Villages in the whole North Slope, this Village is the worst air pollutant.</p> | 3.5 Air Quality & Meteorology | <p>Thank you for the comment. The modeling conducted for the GMT2 Project was done accounting for the wind directions and speeds of the North Slope. Wind speed and direction data used in the modeling were retrieved from the Nuiqsut Monitoring Station near the proposed GMT2 Project Area. Upper air data were retrieved from Barrow, Alaska, the closest available station to the proposed GMT2 Project Area with upper air data. The meteorological data were processed using recommended procedures from ADEC and default values so as to ensure the model properly accounted for local meteorology.</p> |

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| NQT9-40 | Unidentified   | Over there in Prudhoe Bay, I don't see roads that high. I see -- they haul in all kinds of loads on those lower -- lower roads like that.   | 2.1 Proposed Action & Alternatives                                  | The GMT2 Access Road has been designed to be a minimum of 5 feet high above the ground surface once settling has occurred. This design is based on Arctic engineering intended to maintain the existing thermal regime of the tundra on which it is construction, thereby alleviating the potential for road subsidence and additional tundra damage. Roads in the existing oil field that are currently at a much lower final height above the ground surface, are so due to various possible reasons, including differing surface conditions, age and long-term settling. It has been found that for the conditions that exist along the road routes between GMT1 and GMT2, a 5 foot minimum thickness is needed to keep the thermal regime intact. |
| NQT9-41 | Unidentified   | when you're driving down the road and you want to stop and look for game, your pipeline is in the way of the horizon. Either build the pipeline higher, or build your roads lower. That way you can have a view of the horizon.   | 4.2 Mitigation  | The GMT2 Access Road has been designed to be a minimum of 5 feet high above the ground surface once settling has occurred. This design is based on Arctic engineering intended to maintain the existing thermal regime of the tundra on which it is construction, thereby alleviating the potential for road subsidence and additional tundra damage. NPR-A ROD BMP E-7(a) requires that all pipelines be elevated a minimum of 7 ft. from the ground surface to allow for the free movement of caribou.  |
| NQT9-42 | Unidentified   | But majority of our caribous we depend on is all Teshekpuk Herd. No other herds. When those are gone, our hunters have to travel further and further. And what they do, they come home empty handed. The majority of the caribous are 200-some miles away from us. And those happens when there's a lot of activities going on. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Section 4.4.5.2 Summary of Nuiqsut Subsistence Uses discusses in detail recent information regarding changes in caribou harvests, use areas, and hunting trips.   |

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| NQT9-43 | Unidentified   | <p>When everything is on full bore. So many ice roads crisscross. So much of those seismic activities going on are diverting and back the other way around. Because I told you two years we've never had Teshekpuk Herd stay in Colville Delta region. Fish Creek area, that's where they hover the most, that's where they feed and graze around at Fish Creek area before calving season (indiscernible) leave areas at Teshekpuk Lake area. So when you say -- when you put all those accumulated impacts, including all the other Villages that are 2-, 300 miles away from us, how are they being impacted when they have caribou year round when we don't. It seems like you're putting it opposite.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Section 4.4.5.2 Summary of Nuiqsut Subsistence Uses discusses in detail recent information regarding changes in caribou harvests, use areas, and hunting trips.  |
| NQT9-44 | Unidentified   | <p>And there's less impact on the other Villages, because they're harvesting caribou almost daily. Caribou recently I've seen in Barrow, right behind the hospital. Nunavak Road, that's where the caribous were in Barrow, downtown Barrow. -- like we used to see them here in town, but we used to see them here in town before these roads were built. Since the roads were being built, they don't come closer to town.</p>   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The SEIS discloses both potential benefits and potential negative impacts of the road and attempts to be succinct. Recent data on use of roads, gathered since the Draft SEIS was published, and verbatim testimony from hunters, has been included in the Final SEIS (section 4.1.2.5). |

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| NQT9-45 | Unidentified   | <p>You know, back to what you're saying about the impacts to the environment, for the caribou and the wildlife, and, you know, when you talk about GMT2 human impact area, you know, we haven't even seen what GMT1 is doing. So I don't understand why</p> <p>you guys are talking about the impacts for GMT2 when we haven't even felt the impacts of GMT1 yet. Because, you know, we've lost a lot on the Colville River Delta area, the Alpine satellite development area. East side we lost of subsistence usage, and now that we're on the west side, you know, you guys are -- there is data that shows that we've lost a lot of subsistence usage area because of development. When you talk about ConocoPhillips saying, "We're building a small footprint," you know, that small footprint impacts us greatly, not moderately but greatly.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | GMT2 was originally approved for development as CD-7 in 2004 under the Alpine Satellite Development Plan EIS, as was GMT1 (as CD-6). As described in Section 1.4 Purpose and Need for Federal Action, under federal statutes the BLM is required to issue the GMT2 permit for oil development in the NPR-A and cannot choose the No-Action alternative. BLM identifies the loss of subsistence use areas as the primary adverse impact attributable to the presence of oil infrastructure in Section 4.4.5 Subsistence, and has included potential mitigation measures specific to monitoring subsistence harvest and subsistence use. |
| NQT9-46 | Unidentified   | There's a lot more in the SEIS that we really need to talk about when it comes to the HIA and about what -- and what we're saying about the winter exploration. You know, it's not just that one little small footprint you guys are talking about that's going to, you know, impact this small area right here. That small area impacts the whole -- the whole ecosystem.   | 3.18 Public Health  | A Health Impact Analysis was done for GMT2, the results of which are in Appendix G. Appendix G provides the Baseline Human Health Summary for the North Slope, including a description of current subsistence practices and summarizes Areas of Vulnerability as well as Areas of Resilience/Success. Cumulative effects for Public Health are found in Section 4.6.8.   |



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| NQT9-47 | Unidentified   | <p>You guys -- they've been saying that since Alpine satellite development area, CD5, and GMT1. Now GMT2. So, you know, if we can get a third party to analyze the studies that have been done from Stephan (indiscernible) &amp; Associates to come over here through BLM, through ConocoPhillips to come and read the reports that are sent over here, the -- I'm talking about the rough drafts that come over here for us to approve. And when it gets approved over here, another report goes out there to ConocoPhillips and to another -- to another entity, BLM, where that report changes. We -- you know, it would be good to get somebody to come over here and get a third-party consultant to analyze what's been going on over here to help Nuiqsut out when it comes to you talking about minimization of impacts.</p> <p>Question from BLM: And so you would like to see a third party working on behalf of Nuiqsut to do quality control of the data?</p> <p>Yes, quality control. And to analyze the impacts, to compare the reports that are going out to these different entities.</p> | 4.2 Mitigation        | See Section 4.4.2 Sociocultural Systems, Potential Mitigation Measure 1: Nuiqsut Area Environmental Data Review and Information Dissemination. |

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| NQT9-48 | Unidentified   | <p>This summer we need gas help from Conoco, maybe 10, 20 gallons for the hunter, and at the same time we need -- I think we need a (indiscernible) store (indiscernible) for the women of Nuiqsut, so they could have a place with their kids where we can't hunt in these areas anymore. This -- what we're talking about needs to be separate from the trilateral committee.</p> <p>The trilateral committee is going to take control of what we're talking about here and use their governing powers to take what we're saying tonight, wash it all away and say "This is what Nuiqsut wants." And I see that a lot. So we're talking about our ability to feed our family now. This is what we're talking about. We need the gas. And if we can't catch these animals, if we have a hard time, then some help for the women of Nuiqsut, even a \$100 gift card so they could go to the store and get their kids something to eat. It might offset these impacts a little bit.</p> | 4.2 Mitigation        | See Section 4.4.2 Sociocultural Systems for a discussion of community-requested potential mitigation measures that address social impacts.   |
| NQT9-49 | Eunice Brower  | <p>You're changing the ecosystem around the Arctic where it usually defrays -- it reflects all this sunlight on the snow. But when you put these roads and infrastructure on our snow, on our -- how our climate is in the Arctic, it dramatically changes the climate around here. These dusts from the roads and particulate matter gets scattered from these roads, and I don't know how far it goes off from the roads, but that's affecting all the snow that's usually accumulated on the North Slope. It affects the permafrost. All this dust that's coming from these roads changes the snow. It melts it faster.</p>   | 3.7 Climate Change    | Dust deposition along roads can increase turbidity of adjacent water bodies, increase the rate of thermokarst, and affect the vegetation, soils and permafrost at distances of 600 to 1000 meters from the road. These affects are most pronounced within 200 meters of the road and increase logarithmically as distance to the road decreases. These impacts and how they interact synergistically with climate change impacts are examined in Section 4.6.3, Terrestrial Environment. |

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| NQT9-5  | George Sielak  | <p>one of the things that we always have fought about is the regulations to be stringent, more stricter, starting from Alpine. And to make sure that if they built these facilities, that they provide more stricter guidelines because of the Village. People live here. Just right here. I don't know if there's any place up here because it's really just up to Nuiqsut, Nuiqsut being the closest that you need to show us that you have put up more guidelines for the oil industry to have more cleaner emissions coming out from their facilities and to show our community that we have a facility here.</p> <p>...</p> <p>And that's what we want to see to make sure that our -- not just for our community, but for the wildlife and the subsistence that live within our area have safer area to breathe. So I think that that's one of the things that I want to see if the agents is -- they work very hard. And I know we have brought this to the borough, too, and I don't know if it has been brought up to BLM too.</p> | 3.5 Air Quality & Meteorology | <p>BLM takes its responsibility seriously and is working with various subject matter experts within other agencies to ensure that air quality is protected. The NEPA analysis is intended to gauge the impact from planned activity. Once the facility is in operation, they work under a permit from the State of Alaska. The Alaska Department of Environmental Conservation (ADEC) Air Compliance program is charged with enforcing compliance with the state permit. If deviations of operations are brought to BLM's attention, we will notify ADEC to correct the issue.</p> |
| NQT9-50 | Eunice Brower  | <p>And what about the underlying permafrost that's under these roads? Do you guys even insulate these roads? Do you protect the permafrost from melting? Especially when you do all this drilling, where all these sites are at. How much changes are going to the permafrost? How much is it going to affect our Village?</p>  | 3.7 Climate Change            | <p>The GMT2 road will not include insulation, such as Styrofoam or other man-made materials, as part of the construction. Instead, it has been engineered to ensure that the gravel roadbed will not affect the underlying tundra through the transference of heat. Constructing the road in winter also assists with maintaining the thermal regime. On the drill site itself, thermosiphons and insulated conductors are used to ensure that the wells do not result in thawing the permafrost.</p>  |

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| NQT9-51 | Eunice Brower  | <p>Some of our sigiuq are already melting. That's changing them. That's changing how we store our food. We have to buy these walk-in freezers now to help protect our food. You guys don't even put that in there. With the amount of methane that you guys are</p> <p>Yeah, it's impacting our subsistence lifestyle because, first of all, some of our sigiuq are melting, our ice cellars. We store our food in there, our whale, our caribou, our geese that we hunt all year long to store in our ice cellars. They're melting. That affects how we store our food and how we're going to store our foods in our future. And how are you going to mitigate all that once we have no more permafrost underlying our Village from a lot of this development?</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been added to discuss the impacts of Climate Change to Section 4.6.8 Cumulative Impacts to Social Systems, Sub-section 4.6.8.2 Sociocultural Systems, and Sub-section 4.6.8.9 Subsistence.   |
| NQT9-52 | Eunice Brower  | <p>All this methane that's being released from these flares are very potent. It's a potent greenhouse gas. It's 80 times more potent than carbon dioxide. Methane. It's heavy. The life -- the lifespan of that greenhouse gas is 12 years. It's going to stay in the air for 12 years, the lifespan of it. With the amount of methane that you guys are emitting, it's changing the climate more faster than we could even know. We can't even understand it.</p>  | 3.7 Climate Change  | Greenhouse gas emissions projected from the GMT2 project are discussed in Section 4.3.2.1 Climate and Meteorology. Estimates of downstream greenhouse gas emissions are provided in the DSEIS to facilitate comparison of impacts associated with various alternatives and support analyses of cumulative impacts. The DSEIS indicates that emissions from anthropogenic activities such as production and combustion of fossil fuels do contribute to ongoing climate change processes, but existing models and tools are not sufficient to quantify specific impacts upon local resources. Climate change is by nature a cumulative global issue and no single action contributes an amount of greenhouse gases that can significantly impact global systems. Specific regulatory thresholds for greenhouse gas emissions have not been promulgated and there is no means to quantitatively assess major, moderate, or minor impacts to local resources. It is recognized in the DEIS that there is inherent uncertainty in these estimates (from market influences and other factors). |

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| NQT9-53 | Eunice Brower  | <p>Are you going to buy all of us freezers for our food, for our whale? Are you going to pay for the electric -- electrical costs to generate for that walk-in freezer now that we have to get one and pay for electrical just to keep it running when we could have it -- a natural ice cellar underground?</p>  | 4.2 Mitigation                | <p>See Section 4.4.2 Sociocultural Systems for a discussion of community-requested potential mitigation measures that address social impacts.</p>  |
| NQT9-54 | Sam Kunaknana  | <p>The data that -- I don't know who got the data. ConocoPhillips or somebody did some tests on the air, and it said we can -- they can't produce this data because it's temporary. And for the first four to eight years it said that the emissions were going to be really high. Eight to twelve years it's going to go lower. And once -- once they get into the production phase, this is what -- this is what we're looking at. We're looking at what this little footprint will emit. So, you know, my -- my concern is that, you know, since 2000, since Alpine got started building ice roads year in, year out, and building roads from CD1, 2, and 3 -- actually CD1, 2. CD3 doesn't have a road. It's a roadless pad.</p> <p>You know, for the -- during the construction phase, you have -- the emissions really, really high. And it says that you can't use that data because it's temporary. To me, you know, for the past 18 years, they've been building ice roads in this area, and that data should be used. All the data from all the tests that they've been doing since the building of the ice roads in this area should be used to see how much emissions comes to our Village during the winter months, because that -- that statement says that, "Okay. We're building the roads."</p> <p>What he's saying is the word "temporary" has never quit being temporary. It's always temporary.</p> | 3.5 Air Quality & Meteorology | <p>Thank you for the comment. The near-field modeling included ice road construction along with other construction sources that are considered temporary, as they are planned for the proposed GMT2 Project. Therefore, the results presented in the SEIS do account for construction and other temporary activities in order to comprehensively evaluate proposed GMT2 Project impacts.</p> |

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| NQT9-55 | Sam Kunaknana  | We're at the lowest spot. All the emissions are going to come to us because we're at the -- we're on the low end of the bowl.   | 3.5 Air Quality & Meteorology                                       | Thank you for the comment. The modeling conducted for the GMT2 Project was done accounting for the wind directions and speeds of the North Slope. Wind speed and direction data used in the modeling were retrieved from the Nuiqsut Monitoring Station near the proposed GMT2 Project Area. Upper air data were retrieved from Barrow, Alaska, the closest available station to the proposed GMT2 Project Area with upper air data. The meteorological data were processed using recommended procedures from ADEC and conservative default values so as to ensure the model properly accounted for local meteorology. The location for sources of pollutants including the proposed GMT2 Project and other reasonably foreseeable developments such as GMT1 and Nanushuk were accurately input to the model as well. Therefore, the trajectory of emissions were modeled in order to accurately account for existing meteorology to determine pollutant dispersion. |
| NQT9-56 | Unidentified   | There's already literature right there. And that literature right now, from my understanding, is being summarized in this SEIS. And there's just -- the only things in there that are being put to make it look like Nuiqsut isn't being impacted greatly. That's my understanding from the ten-year project. They just got done with Year 9. Year 10 this year. And they're just finally finishing Year 9 rough draft report. They haven't finished Year 10. Yet, you guys are still moving forward without even trying to analyze the ten-year project that Stephan (indiscernible) & Associates was supposed to do to see what the impacts were going to be from development for this community. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The analysis for Subsistence presented in section 4.4.5 of the Final SEIS includes the most up-to-date data regarding subsistence harvest and use for the project area. The analysis utilizes data through year 9 of the SRB&A study referenced by the commenter. Each year SRB&A produces a detailed report that not only describes the data collected for that study year, but also the contribution of the data to the totality of data collected during the study period. In this way, each annual report provides the best available data overall on the subject of caribou use by the community of Nuiqsut. While the study referenced was envisioned as a 10-year effort it will continue to collect annual data pursuant to the GMT1 Record of Decision beyond year 10.  |

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| NQT9-58 | Unidentified   | So legally can we ask someone to, like, get a third party to come and analyze the HIA during the winter months on that document that (indiscernible) and use this data because it's temporary? When, in fact, you know -- when, in fact, we do have a lot of issues on handling this Village when it comes to the winter month exploration, ice roads, and road construction, to compare the data and do an HIA from Nuiqsut. Because I know State of Alaska came over here at one point and went straight to the clinic, (indiscernible) the North Slope Borough. But to me, you know, the borough, ADEC, they're for development, and maybe all you guys are working together in unison to move forward with development. | 3.18 Public Health    | Appendix G is an HIA and establishes baseline conditions for the health of Nuiqsut residents. Cumulative effects of existing and planned development, including temporary ice infrastructure in the winter months are addressed in Section 4.6.8. |
| NQT9-59 | Unidentified   | But my -- my concern is that, you know, I would like to see a third party not affiliated with the State of Alaska or with the borough -- or with ConocoPhillips. A different entity that's not affiliated with industry in any way to come and analyze the air data and the HIA. I want a third party, not BLM.   | 4.2 Mitigation        | See Section 4.4.2 Sociocultural Systems, Potential Mitigation Measure 1: Nuiqsut Area Environmental Data Review and Information Dissemination.  |

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| NQT9-6 | Eunice Brower  | <p>But the Arctic is more different. It's not like the Lower 48. Okay? The Arctic is special. We shouldn't even follow the national ambient air quality standards. They're insufficient enough for the vegetation here in the Arctic. According to the National Academies of Press, the national ambient air quality standards are insufficient for protection for vegetation. All the lichen suck up all those pollutants. And then what, our caribou eat those lichen. They're impacted by what they eat.</p> | 3.5 Air Quality & Meteorology | <p>At this time, the National Ambient Air Quality Standards and Alaska Ambient Air Quality Standards are the standards to protect public health and welfare. Where there are no NAAQS published (i.e., 24-hour and annual SO<sub>2</sub>), the analysis included evaluation of modeling results against the AAAQS in order to ensure GMT2 Project impacts are below the more stringent thresholds Alaska regulates.</p> <p>For far-field impacts, critical loads are thresholds designed to assess the cumulative effects of atmospheric deposition on vegetation including lichen. The estimated cumulative impacts for nitrogen deposition including the existing (measured) nitrogen deposition at the Arctic National Wildlife Refuge and the Gates of the Arctic National Park and Preserve (Table 3.2-10) are below the range of critical loads.</p> |



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| Comm #  | Commenter Name        | Comments  | Comment Category Code   | Comment Response   |
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| NQT9-60 | Rosemary Ahtuanagaruk | <p>There's a lot of concern over all these different ways. We've tried to work in many different ways, but the reality is that the state and federal government had broken many promises to this community over ways that the planning activities on the development in this area was to occur. You gave us promises that you were going to protect our subsistence. We worked out a subsistence calendar. We told you times when things should not occur and when you should decrease activities. You never honored those promises. You never restricted flights during our increased subsistence harvest. We talked to you about that. We told you over flights were going to cause us a lot of problems. You didn't honor those discussions. We had 1,200 flights in six weeks when you started constructing Alpine. So when you put some planning efforts into the process and say you're going to do this one thing, like restrict flights during June and July where we're only supposed to have 20 in a month, then there's no way that we can try to prepare to respond to this process. We put in very prescriptive methods of ways that we could try to protect subsistence, pushed industry back from our tributaries where we're boating and hunting and trying to harvest our caribou. What did you do? Turn around and put CD4 right up on the riverbank where we told you it shouldn't happen.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>While the BLM did not have a role in the approval of permits for the Alpine Development infrastructure mentioned in the comment (which are located on State of Alaska lands east of the Colville River), the BLM understands the intent of the comment is to communicate the level of frustration that is felt by residents of Nuiqsut regarding agreements or decisions by government in general that they believe have not been upheld or that were changed by later decisions, and the general sense of mistrust in government. Section 4.4.2 Sociocultural Systems, <i>Tensions Related to Permitting Processes for Development</i> describes these social impacts. The BLM acknowledges that these are legitimate concerns resulting from oil and gas development on State and Federal lands near Nuiqsut. The BLM also acknowledges that as the agency responsible for management of the National Petroleum Reserve in Alaska, we have very little regulatory authority to address these issues to the satisfaction of Nuiqsut residents.</p> |

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| NQT9-60<br><i>Continued</i> | Rosemary Ahtuanagaruk | <p>So any way that we have tried to protect subsistence, you've broken every promise that you've given us to try to help us protect it. It's not just about caribou harvesting. It's about the birds migrating in. Ever since the activity prior to alpine being constructed, that's when I was always having enough food on my table. That's when I had the most to share with the extended family members in every other Village that live around us, as well as extended family members in their hubs and going to college. But after construction, that's when we started having not enough. We told you we weren't going to have enough caribou. When you constructed Alpine, it went from 120 houses harvesting caribou to absolutely only 3 hung caribou to dry during that construction time. We didn't get any help to try to help some of those things. Still to this day we have houses in this Village that do not get caribou every summer to dry to give us the foods that we need. That's the amount of change that we're going through. Still to this day we've had people that have put fish nets in the water that are impacted because we've got changes to the way that you're putting the migration to come through to our area. There's a lot of infrastructure that's been developed, failures to maintain those infrastructures of fish passages. It prevented us from harvesting the Arctic cisco. We talked through many different meetings to try to get that return of that harvest, and trying to protect who and what we are.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <i>See above BLM response</i> |

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| NQT9-61 | Rosemary Ahtuangularuk | <p>We put in recommendations to not allow seismic activity to happen in Camden Bay. What did you do? Go out and do seismic activity in Camden Bay. What happened to us? Our whale strikes went off 20 miles off across (indiscernible). Every time we try to put in protective measures, you fail to enforce anything that we put for it. Now you put a document in that prevents us from even trying to enforce any of the recommendations that we put in because it's so industry friendly. Everything that we wanted to try to protect, industry gets to choose whether or not they're going to protect it. ASRC can choose whether or not they're going to support our Village when we opposed to put a project three miles from our Village. And we had over 200 people, 200 adults, stomping their feet like this saying, "No, no, no." But yet we have teachers at our schools saying, "Oh, we work together. We get to avoid some of these impacts." Ah, baloney. We work together to come to this process and try to protect subsistence. You haven't protected us in any way. Every time we put a concern through, you mitigate it into a model that says, "Oh, it's great and fine and dandy. Don't worry you don't have any emissions." Then why do we have xylene in our fresh water lake? Why do we have hydrology issues that are impacting our fresh water source so that we have erosion that's going to jeopardize whether or not we're going to have that lake for fresh water? Why do we have erosion that is impacting our water tanks right over here with the increased development that you've done in the Delta that has changed the hydrology? Is that impacting why we're having the erosion that's going to give our brand new water tanks just two years' life?</p> | 4.2 Mitigation        | <p>Thank you for articulating these social impacts (i.e., distrust, lack of power, concern over lack of enforcement of regulations, tensions related to the permitting process) and concerns regarding the cumulative impacts being faced by Nuiqsut. BLM recognizes, documents, and tries to analyze with transparency, the impacts many residents of Nuiqsut experience as required by NEPA. The BLM manages the NPR-A pursuant to the requirements of the NPRPA of 1976 and the DOI Appropriations Act FY 1981 implemented at 43 CFR 2360, and 43 CFR 3130. Many of the actions that you describe are for activities that occur outside the NPR-A, and are therefore, not under BLM's regulatory control or management. We recognize that it is frustrating to have so many different regulatory agencies--federal and state--that play different roles in terms of managing things such as emissions, erosion, and whether or not to permit oil and gas activity. We encourage local and regional stakeholders to utilize the avenues afforded them through State and Municipal law, and through the federal political process to identify and implement solutions that are beyond the management authority of the BLM to address.</p> |

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| NQT9-61<br><i>Continued</i> | Rosemary Ahtuangularuk | These are serious impacts, and yet we're here talking on this, "Oh, maybe they're moderate impacts, maybe they're just maybe not so significant." Ah, baloney. It's very significant every step of this way. When we started these discussions, our whole Village was united in the way that these activities were going to occur. But you came to us and said it was only going to be 14 acres. Yeah, 400 acres within the first year. That's not what happened. These were lies that were given to us so that once you got in there, now you get to choose that piecemeal. You want to these activities to occur, nothing should happen to the south side. You're going to develop this, the road is over there, go north, don't go south.  | 4.2 Mitigation  | <i>See above BLM response</i>   |
| NQT9-62                     | Rosemary Ahtuangaauruk | We have hopes that we're going to have caribou that come to us from the south. You've already impacted caribou coming from the east. You're impacting caribou coming from the west. You're impacting caribou coming from the north. The only hope we have is from the south. I can't stand the thought of what's going to happen to my Village if you disrupt their migration to come into this Village. I've already seen it, the domestic violence increase, the alcohol and drug uses, the conflicts in our Village, the unwillingness to work and come to our local community meetings. How many hunters are missing from this meeting because they're so tired of coming here for decades and having all of these promises broken? Every one of my kids, all four of my sons, have bad backs because they try so hard to go out and subsist. I have a son who's traveled from Barrow to Nuiqsut subsisting. He had to come all the way over here hoping that they would get something. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Thank you for articulating these social impacts (i.e., distrust, lack of power, concern over lack of enforcement of regulations, tensions related to the permitting process). BLM recognizes, documents, and tries to analyze with transparency, the social impacts many residents of Nuiqsut experience as required by NEPA. The GMT2 DSEIS document (Section 4.4.21) cites recent Alaska Native studies that corroborate your comments: outreach to solicit insights and concerns on negative impacts are antithetical to positive inter-cultural interactions. However, BLM cannot (legally or ethically) proceed with permitting that is required by law/legislation without notifying residents and soliciting their input. Nor do residents want permitting to occur without outreach and consultation. BLM regrets that the pace of development and the permitting processes themselves can result in these impacts, but neglecting to consult with residents and document their concerns would be unacceptable. |

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| <p><b>NQT9-62</b><br/><i>Continued</i></p> | <p>Rosemary Ahtuangauruk</p> | <p>They didn't get anything around us. They went over to Atqasuk, they went over to Wainwright. They went all the way to Point Lay. They're trying to harvest because it's important to us to feed our families.</p> <p>But he shared it with families. That's the complexity of our sharing systems. Six caribou. He would be illegal with the recommendations that were put in to restrict caribou hunting and reduce our harvest to five in a day. That would have been illegal if that goes through. These are serious complaints that we're going through. But it's the heart and soul that you're breaking down with every one of these processes. And that's what you're -- caused the most damage in all of our local community meetings. You get the anger and frustration from all of our people coming into this process because we have tried. We've worked with you. We've read thousands and thousands and thousands of pages.</p> | <p>3.15 Socio-cultural Systems, Subsistence, and Environmental Justice</p> | <p><i>See above BLM reponse</i></p> |

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| NQT9-63 | Rosemary Ahtuangaauruk | <p>We have over a thousand development sites. We have contaminants in our fish from the historical development process. We have no assessments that know where the development activities occur and where you've been putting reinjection and what's still coming out into that water. We have no assessments of any of that concerns. We know your developments are eroding and causing more leakage and concerns to the Colville River. Umiat is a big concern. We asked that you go out there and clean up any of these activities prior to coming out here and doing more development. What's happening? We're still waiting for it. Umiat hasn't been cleaned up properly. You put a cap on it, watched it erode into the river. What good did it do? You did the same thing at Oliktok, in which we were assaulted because ASRC's lawyers got involved and worked with one of the board members, but our other community member that had a Native allotment in that same area, we didn't get any help from that. We were ignored in that process. So ASRC is a great thing? No, ASRC cost us that reaction and that mitigation that could have been a resource for us to help clean up that area and some of the other areas of concern. All of these various factors are really concerning. I really hate that you've come through this process and put this through to us, and yet you're just coming through just to approve the project.</p> | 4.2 Mitigation        | <p>GMT2 was originally approved for development as CD-7 in 2004 under the Alpine Satellite Development Plan EIS, as was GMT1 (as CD-6). As described in Section 1.4 Purpose and Need for Federal Action, under federal statutes the BLM is required to issue the GMT2 permit for oil development in the NPR-A and cannot choose the No-Action alternative. The clean-up at Umiat is under the auspices of another federal agency, and is moving forward as federal funding allows. The BLM also continues to move forward with it's Legacy Wells Program as federal funding allows, performing surface clean-up and plugging wells at sites from the 1940-1980's.</p> |

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| NQT9-64 | Rosemary Ahtuangauruk | <p>How much more do we have to go without? How many more tables are not going to have the caribou? How many more tables are not going to have the fish? How many tables are not going to have the whale? Because we've had enough tables without them. That's what we're talking about. We don't want to continue to go without it. It's not about trying to come back and talk to us about more and more documents about why you want to continue, it's about us wanting to be who we are into the future. I want my grandkids to be able to harvest, but none of them want to go to our cabin because it's already impacted with the oil and gas development. When I took my grandson out to go to that same area where his grandfather and his great-grandfather harvested caribou, we saw no caribou in the short time that he was able to come here to visit with us. He couldn't harvest in the same lands and waters as his elders had. That's the devastation we don't want to continue to happen.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>Although Nuiqsut's subsistence harvest amounts have remained stable to date, documentation of residents' testimony shows that concerns about food security, the ability of future generations to hunt and fish in traditional areas, Inupiaq culture, and issues concerning access/land loss/ and avoidance are prevalent and consistent. These social impacts, including the most recent testimony, are discussed in 4.4.2.1 of the SEIS. BLM is committed to working with the community to establish any mitigation measures that are within BLM's authority to establish.</p> |

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| NQT9-65 | Peter Kosbruk  | <p>Yeah, just GMT1 and GMT2 now coming into reality and the other prospects further west, you're using the road and the structure of the road to benefit the ability of the hunter. You know, they're getting further and further, and you know it's got a lot more wear and tear on the vehicles and on the hunters too. You know? So there's a greater potential for hunters breaking down, you know, safety issues for the hunter, you know. So that put a lot more stress on our local search-and-rescue team and their efforts. And, you know, they're hurting in some areas. I know they could use some -- a little bit of help. I'd like to see the search-and-rescue property mitigated as well to respond to these further and further searches (indiscernible) in order to be -- they should be able to get out there with no problem. Just I'd like to see the search-and-rescue upgraded to handle the level of capacity of the lives and, you know, missions and safety issues that are going to come about with further distance the hunters are traveling, and, you know, the -- for the cause of things that search-and-rescue might have taken into consideration go out there and, you know, safely return these individuals home.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>Impacts such as those described by the commenter (e.g., traveling farther, more wear-and-tear on vehicles) are presented in Section 4.4.5.4 Subsistence - Resource Avoidance. A Potential Mitigation Measure (Section 4.4.2 Sociocultural) in the Final GMT2 SEIS identifies the request for additional Search and Rescue resources, however this is not a requirement that BLM has the regulatory authority to impose on the applicant. BLM encourages Nuiqsut to submit applications to the State of Alaska NPR-A Impact Mitigation Grant Program for funds for Search and Rescue.</p> |
| NQT9-66 | Eunice Brower  | <p>I'd like to see some real baseline data. Why don't you do your air monitoring or water sampling or whatever, soil sampling, before these projects are developed? You can't just -- you can't just, "Oh, we're modeling this.<br/>                     We're just going to model it." Where's the actual data? Can we request some actual real data and not modeling?</p>  | 4.2 Mitigation  | <p>See Section 4.4.2 Sociocultural Systems, Potential Mitigation Measure 1: Nuiqsut Area Environmental Data Review and Information Dissemination.</p>   |



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| NQT9-67 | Unidentified           | <p>There's no infrastructure at GMT1, just the road and the pad itself. Let's do this GMT1 first before we can pursue GMT2 road. See what kind of -- what kind of impacts we're going to be feeling besides CD5. What kind of impacts are we going to feel once GMT1 starts running and starts going on production line before you pursue GMT2? GMT2 should be tabled or suspended until GMT1 is completely set in place. BLM, ConocoPhillips are on the fast track before they decided building infrastructure for one that's already been -- already set in place, which is completely empty, just gravel pad. Let's see what GMT1 is going to do compared to CD5 before we pursue CD -- GMT2 for the road and pad and possible pipeline route.</p> | 2.1 Proposed Action & Alternatives | <p>As stated in Sections 1.3 and 1.4, the BLM is unable to postpone processing the GMT2 Application for Permit to Drill based on regulatory requirements in NPR-A found at 42 USC Section 6506(a). Deferral of a project authorization would be inconsistent with the directive in the Naval Petroleum Reserves Production Act to expeditiously carry out an oil and gas leasing program and the rights ConocoPhillips acquired with the subject leases to reasonably develop the oil and gas within those lease tracts. GMT2 was originally approved for development as CD-7 in 2004 under the Alpine Satellite Development Plan EIS. The purpose of the SEIS is to supplement the 2004 analysis and to include new information relevant to environmental concerns that have bearing on the proposed action or its effects. EIS's are inherently speculative documents, because their purpose is to identify potential impacts that could occur from a proposed action using the best available information at the time of the analysis, so that an informed decision can be made. This information includes scientific studies, input from stakeholders, as well as identified impacts that have resulted from similar actions that could be reasonably inferred to occur from the proposed action. The BLM believes that we have accurately described the comprehensive suite of potential impacts that could occur from the proposed action, and alternatives to that action, sufficient to make a reasoned decision.</p> |
| NQT9-68 | Rosemary Ahtuangularuk | <p>Also I wanted to put in that there's a lot of concern about the river usage. There's a lot of conflict that's occurring on the river. We talked about fan boats before. That's a really big impact that extends a lot of concern with the noise that they bring in.</p>  | 3.6 Acoustical Environment         | <p>No fan boat operations are proposed in association with the GMT2 project.</p>  |

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| NQT9-69 | Rosemary Ahtuangularuk | <p>There's also a lot of concern around the airports. Airports can reduce the long-term impacts on development with roads. There's impacts with roads, there's impacts with airplanes. Both are very impactful. If you had supported some of our concerns to restricting activities during subsistence, maybe our discussions would have been different as to whether or not we want to think about roads or if we want to think about planes. But we were manipulated in this process by failing to effectively give us information to respond to the process, and led along claiming that protections would be given to us that were never honored.</p> | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>Thank you for articulating these impacts regarding airports and flights. BLM recognizes, documents, and tries to analyze with transparency, the impacts many residents of Nuiqsut experience as required by NEPA. The GMT2 DSEIS document (Sections 4.4.2.1 and 4.4.5.5) cites recent reports that corroborate your comments regarding airports, aircraft and roads. However, BLM cannot (legally or ethically) proceed with permitting that is required by law/legislation without notifying residents and soliciting their input. Nor do residents want permitting to occur without outreach and consultation. BLM regrets that the pace of development, the permitting process, and the type and amount of information that is shared in conjunction with the NEPA analysis can be confusing, but neglecting to consult with residents and document their concerns would be unacceptable.</p> |
| NQT9-7  | Eunice Brower          | <p>the lichen absorbs all those toxins, and then they're getting sick. Some of these caribou are getting sick. They -- they're growing up in these areas where there's all this development going on. So more people are concerned because of the caribou are being sick. And they're scared to eat them because they're different.</p>   | 3.11 Caribou  | <p>This comment is not supported by the literature, nor do harvest surveys indicate that incidence of sick caribou harvested has increased. No text changes made.</p>   |
| NQT9-70 | Rosemary Ahtuangularuk | <p>The Nuiqsut paisainich has the highest local control. Right now that document is still in effect and that is what should be used to guide the planning process, the highest, strongest protective mechanisms with the local control is with the Nuiqsut paisainich</p>   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>The Nuiqsut Paisangich-Cultural Plan is discussed in detail in Section 4.4.2 Sociocultural Systems.</p>  |

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| NQT9-71 | Unidentified           | Before you say it, I'd like you to take into serious consideration, deal with GMT1 first. Deal with it first, set aside GMT2 now -- for now. Build those infrastructures that Conoco has started. Let them finish it with all this indiscernible) mounts the rig and the (indiscernible) down there before you pursue GMT2 road. Let's see what GMT1 is going to do to this community. And I want you folks to understand that should be taken under serious consideration. Table GMT2, suspend GMT2 for now. | 2.1 Proposed Action & Alternatives | The BLM takes your suggestion seriously, but it is impossible for the BLM to suspend or set aside GMT2. As stated in Sections 1.3 and 1.4, the BLM is unable to postpone processing the GMT2 Application for Permit to Drill based on regulatory requirements in NPR-A found at 42 USC Section 6506(a). GMT2 was originally approved for development as CD-7 in 2004 under the Alpine Satellite Development Plan EIS. |
| NQT9-72 | Rosemary Ahtuangularuk | Five years, [in reference to suspending GMT2, in order to understand impacts from GMT1] and come back and talk about it and say what we can do to address some of the concerns that we've already identified and get those mitigations in place. And see if they're responding and helping us in some of our concerns, and then come back and talk with us about coming back to the table for this project.   | 4.2 Mitigation                     | GMT2 was originally approved for development as CD-7 in 2004 under the Alpine Satellite Development Plan EIS, as was GMT1 (as CD-6). As described in Section 1.4 Purpose and Need for Federal Action, under federal statutes the BLM is required to issue the GMT2 permit for oil development in the NPR-A and cannot choose the No-Action alternative.   |
| NQT9-73 | Rosemary Ahtuangularuk | California can only allow for ten flares in their state related to oil and gas development. We deal with over 30 in a night. We need to change that enforcement. We're not being under the same enforcement as it is in other areas. We also request that the flaring is not possible during inversions. We know that flaring has a large emission that occurs with that. We know we are at greatest risk. We've asked this for over five years that in -- that during inversions that flaring is limited.    | 4.2 Mitigation                     | See Section 4.2.3 Atmospheric Environment, Potential Mitigation Measure 3: Minimize Methane Waste.  |

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| NQT9-74 | Rosemary Ahtuangularuk | We asked that we have an independent assessment industry reports most every one of their flares as an emergency. We want to make sure that what they're reporting is not reality for their profitability, and why they're causing the flaring because they're keeping production rates up very high to allow for their profitability. And that's why they're fighting. These kind of issues are really important.                          | 4.2 Mitigation        | See Section 4.4.2 Sociocultural Systems, Potential Mitigation Measure #1: Nuiqsut Area Environmental Data Review and Information Dissemination.  |
| NQT9-75 | Rosemary Ahtuangularuk | We also ask that vehicle shutdowns occur so that we're reducing their emissions all around our community with these concerns so that we can try to get some reduction in the amount of emissions.  | 4.2 Mitigation        | See Section 4.4.6 Public Health, Potential Mitigation Measure 2: Minimize Undue Idling of all Vehicles.  |
| NQT9-76 | Rosemary Ahtuangularuk | We want to make sure that there's an enforcement to all the recommendations of the environmental recommendations for improvements that are made. And we want to increase the penalties for the process. We went through your process where we looked and did an assessment over at Alpine. We identified that there were more wells drilled than was permitted. We also identified that were a failure to enforce some containment issues. | 4.2 Mitigation        | Thank you for articulating these social impacts (i.e., distrust, lack of power, concern over lack of enforcement of regulations, tensions related to the permitting process). The BLM manages the NPR-A pursuant to the requirements of the NPRPA of 1976 and the DOI Appropriations Act FY 1981 implemented at 43 CFR 2360, and 43 CFR 3130. Many of the actions that you describe are for activities that occur outside the NPR-A, such as at Alpine, and are therefore, not under BLM's regulatory control or management. The BLM is committed to operational inspections and enforcement of our regulations, BMPs and federal law. |
| NQT9-77 | Rosemary Ahtuangularuk | We really wanted our air quality monitoring station to be a high-level, quality monitoring station. We didn't get all the factors identified to properly assess. We know a lot more information after what happened in other areas of oil and gas development.   | 4.2 Mitigation        | See Section 4.4.2 Sociocultural Systems, Potential Mitigation Measure #1: Nuiqsut Area Environmental Data Review and Information Dissemination.  |

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|---------|----------------------|---|-------------------------------|---|
| NQT9-78 | Rosemary Ahtuengaruk | The Children's Environmental Health Textbook has recommendations for 69 different criteria to be assessed. That's the level of air quality monitoring that we want to have, and we want to have some improvements into why industry gets a say.   | 3.5 Air Quality & Meteorology | BLM is aware of the air quality concerns in the community. The federal NEPA and State air permitting process is designed to prohibit any air quality impacts. As part of the Environmental Impact Analysis, the projected air quality impacts for GMT-2 sources have been assessed and been found to be minimal. Nonetheless, BLM is considering mitigation measures to guarantee continued air quality monitoring to alleviate concerns, see Section 4.2.3.2, Potential Mitigation Measures 1-11 |
| NQT9-79 | Peter Kosbruk        | Just random trash around the construction pads, you know? Stricter policies and stricter regulations. I recommended that they had put company names and vehicle numbers to -- you know, to identify where the containments are coming from because, you know, we find all these containers and containments and liners and trash out all these pads and scattered throughout the tundra, and nobody is having to, you know, pay the consequences for littering in the State of Alaska. And, you know, stricter policies and, you know, the duck pond thing and writing the vehicle numbers on the duck pond liners will help identify where these trashes are coming from some of the ice road construction. And, you know, for one company to have a section of the ice road and have, you know, the pad -- operation of the pad and everything around the pad, they should have a big area around that pad where they are obligated to clean up and overseeing it. And if there's something left behind, there should be some sort of enforcement that should be able to take place. Yes, for the specific company and everything, so that when they do bring these duck ponds and everything back, that company can comply with a stipulation that was agreed upon way in the beginning. | 4.2 Mitigation                | See Section 4.5 Impacts of Oil, Water and Hazardous Materials Spills, Potential Mitigation Measure 1: Trash Removal and Anti -Littering Campaign.   |

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| NQT9-8  | Eunice Brower          | That's one of the subsistence impacts from all this development that's been occurring since Deadhorse, all the way coming here to Alpine. You see all that infrastructure right there, that's the Central Arctic Herd's calving ground. They grow and they develop in that area. And then they end up, some of them, getting sick. People don't know why. Maybe they don't understand it could be the toxins in the air or what they're eating. The lichen absorbs all those toxins. That's the first thing that happens to the caribou is they get sick and they start to get -- develop differently. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Concern by local residents that subsistence resources may be contaminated by oil and gas development is recognized by the BLM. NPR-A IAP BMP A-11 required ConocoPhillips to implement a monitoring study on contaminants in locally-used subsistence foods. The intent of this monitoring is to establish pre-infrastructure baseline condition of subsistence resources, and to then monitor those same resources to identify whether or not there is any increase in contaminants. |
| NQT9-80 | Peter Kosbruk          | And we need local -- a local enforcement agency, other than a case office, because the case office out there only recording and collecting data. We need some enforcement from our local community out there to identify and follow the proper enforcement procedures to, you know, better protect our land.   | 4.2 Mitigation  | See Section 4.4.2 Sociocultural Systems for a discussion of community-requested potential mitigation measures that address social impacts.  |
| NQT9-81 | Rosemary Ahtuangularuk | As well some kind of reward system for our local hunters. Because our hunters are coming across these duck ponds, but we've had difficult in getting them reclaimed by the oil and gas companies. And so we find all sorts of stuff. Maybe if we can try to incorporate a rewards system so if they do bring something back, they're rewarded for the effort to help and maintaining and protecting our environment. Because industry is not doing enough to try to go back and recover what they've already lost in the environment from their activities.  | 4.2 Mitigation  | See Section 4.5 Impacts of Oil, Water and Hazardous Materials Spills, Potential Mitigation Measure 1: Trash Removal and Anti-Littering Campaign.  |

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| NQT9-82 | Unidentified   | And having a company name and vehicle identification number on all these, you know, tools and necessities for each vehicle that are required out there, having a specific vehicle number and everything pertaining to that piece of equipment, I mean, it will easily identify exactly where these things are coming from, you know. Better the future, really.   | 4.2 Mitigation  | See Section 4.5 Impacts of Oil, Water and Hazardous Materials Spills, Potential Mitigation Measure 1: Trash Removal and Anti -Littering Campaign.                              |
| NQT9-83 | Unidentified   | Rock coy fish are starting to be common as one of unedible that we harvest during fall time. There are a lot that has to be done early. For five years now, close to five years since we had the harvest fall rock coy fish. why Alaska coming down on new shore. And I believe this gentleman knows from North Slope Borough why. In the past, they were all healthy. Coming here during summer, coming down fall time after freeze-up. These are what we're experiencing after 40 years of (indiscernible). What's causing those is still unknown. So how can you best protect our food security when it's becoming so insecure? Merely that we have to rely on which food are -- are edible, which are not. Same thing with the animals that are eating the plants, lichens for the caribous, berries for (indiscernible) and(indiscernible). Those are the things that hasn't been studied. Because I've gone to one ICC Alaska Food Security Workshop in Barrow. And of all eight Villages, when this lady was asked that she wanted to go to Point Lay, the other Village, she said, "No, Point Lay is not impacted. You need to go to this man's Village." That's me. "You need to go to Nuiqsut first." And she (indiscernible) their feeling, their food security. Every year, every season, our food security is depleting, becoming more unedible. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Text has been added to the discussion regarding concerns about food security and the importance of the Fish Creek area to Section 4.4.5.2 Summary of Nuiqsut Subsistence Uses. |

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| NQT9-84 | Unidentified         | How much more of those fish are going to be unedible without coming and going during summer and fall time? And who's going to monitor them during the duration of all of this?  | 4.2 Mitigation        | Impacts to Fish are described in Section 4.3.2 , including existing Best Management Practices that describe monitoring requirements.  |
| NQT9-85 | Unidentified         | All these lakes to the west in NPRA, those are the lakes that have underground stream connected, spawning lakes. That is one thing that has really been talked of, is underground stream from lake to lake. And they say that this lake or that lake doesn't have any fish. How do they know? They don't know there's an underground stream.  | 3.9 Fish              | There is currently no scientific data providing evidence of underground connectivity of lakes. Recent and ongoing research in this region of the Arctic Coastal Plain includes assessments of lake/stream connectivity. Fish sampling is conducted in lakes by methodology approved by ADF&G for the purpose of water use under Fish Habitat Permits.   |
| NQT9-86 | Rosemary Ahtuangeruk | Yeah, when the sampling in July, there's other times when sampling can occur that may identify there are fish in that water-bearing area that are not being identified and can mislead what's being interpreted.  | 3.9 Fish              | Sampling of fish in lakes and streams for water-use permitting and land-use management typically occurs between early June and early September - not all water bodies can be practically sampled during all timeframes. It is accurate to note that some species may be missed with this approach, but this is not expected to lead to widespread mis-interpretation of fish communities on the landscape and many BMPs intend to broadly protect aquatic habitat, regardless of fish species present. Furthermore, CPAI's current sampling of stream systems includes 3 different sampling events - early, mid, and late summer, in order to account for variability in fish species presence. |
| NQT9-87 | Rosemary Ahtuangeruk | I also wanted to put in an opinion for restoration has not been occurring in a good way. It needs to be done in a really good way. That's another reason to push back on this activity. We really should have had a lot more restoration and recovery and restoring of areas that have already been impacted by oil and gas to try to improve some of the subsistence impacts that we've already been facing. | 4.2 Mitigation        | NPR-A ROD Lease Stipulation G-1 requires that land used for oil and gas infrastructure--including but not limited to well pads, production facilities, access roads and airstrips--shall be reclaimed to ensure eventual restoration for ecological function, in order to achieve the stated objective of the stipulation of reclamation of the land to its previous condition and use.   |



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| NQT9-88 | Rosemary Ahtuangularuk | So we really want to see some of that happen, as well as if we have to development on the south side of us, you have to come back here and talk to our Village. There has to be a better process of discussing ways that we may have hopes of protecting subsistence. I do not feel that activities in the south side will give our Village hope of having subsistence. The impacts that are already felt on the east side, the north side, and the west side of us are already tremendous. If you add the impacts from the south side to our Village, we're very concerned. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Section 4.6.8.9 Cumulative Impacts to Subsistence documents the presence of existing oil infrastructure to the east, north, and northwest of Nuiqsut. GMT2 would result in infrastructure to the west of Nuiqsut. The Cumulative section (4.6.8.9) discusses reasonably foreseeable future exploration to the south of Nuiqsut that may lead to development and infrastructure and anticipates additional impacts on subsistence use patterns, including the need to travel further and the reduced ability to avoid hunting near infrastructure. BLM encourages Nuiqsut to submit applications to the State of Alaska NPR-A Impact Mitigation Grant Program for funds to address subsistence impacts. |
| NQT9-89 | Rosemary Ahtuangularuk | But we also have a lot of concern for the migration for the caribou to our sister Village, Anaktuvuk Pass, and we have worked really hard to try to support their concerns and protecting their migration routes that have been tremendously with the amount of change around between the two Villages.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Section 4.6.8.9 Cumulative Impacts to Subsistence includes all reasonably foreseeable future development and anticipates that if those developments occur, combined with impacts from climate change, potential impacts to Anaktuvuk Pass could result. AKP is eligible to apply for funding from the State of Alaska NPR-A Impact Mitigation Grant Program for funds to address subsistence impacts.  |

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| NQT9-9  | Rosemary Ahtuangularuk | <p>When you put a project together and you say that you're going to look at emissions, but then you don't even enforce some of the process of development, like when we expanded Alpine. In your documents you said you're going to shut down the flare every few hours to allow the particulates to disburse. When you don't enforce that and allow it to be flaring for 23 days straight, those are very different modeling questions that are put out there. When you're looking at the document, you can put your model together and say that "every couple hours the flare is shut off and those emissions are calculated at such." But if you're not enforcing it and showing that those emissions are being reduced by making sure those flares are shut off, that model is a very different model.</p> | 3.5 Air Quality & Meteorology                                       | <p>The NEPA analysis is intended to gauge the impact from planned activity. Once the facility is in operation, they work under a permit from the State of Alaska. The Alaska Department of Environmental Conservation (ADEC) Air Compliance program is charged with enforcing compliance with the state permit. If deviations of operations are brought to BLM's attention, we will notify ADEC to correct the issue.</p>   |
| UTQ1- 1 | Brian Person           | <p>Comment regarding that major impacts to subsistence activities were analyzed in GMT1, but the impact criteria for GMT2 is being done differently, i.e. major impacts are not being included.</p>  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | <p>According to BLM's NEPA guidance, the effects analysis must demonstrate that the BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and the alternatives. NEPA does not require the agency to classify impacts to each resource as minor, moderate or major. The BLM found that the use of GMT2 Impact Criteria did not contribute to meaningfully distinguish the alternatives from each other, and instead detracted from the impact analysis due to confusion and differences of opinion regarding the criteria being applied over focusing on the identified impacts.</p> |

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| UTQ1- 10 | Todd Sformo    | Comment that the BLM should use a more objective, independent strategy of using a quantitative approach to determine cumulative impacts.   | 4.0 Cumulative Effects Projects and Methodology                     | The current cumulative effects analysis supplements the analysis presented in the Alpine Satellite Development Plan EIS (BLM 2004), updating that analysis to include the current list of reasonable foreseeable future developments on the North Slope. Following NEPA guidance, this analysis also tiers to the cumulative effects analysis presented in the NPRA IAP EIS and the GMT1 EIS.   |
| UTQ1- 11 | Lars Pears     | Comment that significant findings on subsistence need to be stated earlier in the main volume of the document. Seeing subsistence impacts and findings in Appendix L solely seems to minimize the emphasis and importance of the issue.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | Significant restrictions of subsistence uses is specific terminology required by ANILCA Section 810. The ANILCA Section 810 criteria is specific to answering a single question: whether or not there may be a significant restriction to subsistence use, and our guidance is based on case law regarding that overriding factor. Reference to the ANILCA 810 evaluation has been added to the Executive Summary in the beginning of the document. |
| UTQ1- 12 | Robert Suydam  | The BLM should continue to do caribou monitoring. While Conoco Phillips has some responsibility for monitoring caribou populations, the BLM should be the lead party for doing so, and also look at both the impacts to caribou populations from both GMT2 and other developments. | 3.11 Caribou  | Thank you for your comment. The NSB, AGFD, and BLM will continue to collaborate on caribou monitoring efforts in the NPRA.  |

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| UTQ1- 2 | Robert Suydam  | Comment that it doesn't make sense to have impact measures for all resource areas except for social issues. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | According to BLM's NEPA guidance, the effects analysis must demonstrate that the BLM took a "hard look" at the impacts of the action. The level of detail must be sufficient to support reasoned conclusions by comparing the amount and the degree of change (impact) caused by the proposed action and the alternatives. NEPA does not require the agency to classify impacts to each resource as minor, moderate or major. The BLM found that the use of GMT2 Impact Criteria did not contribute to meaningfully distinguish the alternatives from each other, and instead detracted from the impact analysis due to confusion and differences of opinion regarding the criteria being applied over focusing on the identified impacts. |
| UTQ1- 3 | Taquik Hepa, North Slope Borough Department of Wildlife Management | Comment that North Slope Borough and Conoco Phillips should continue caribou monitoring.                    | 3.11 Caribou  | CPAI has stated their commitment to continue caribou monitoring. No in-text changes made.  |
| UTQ1- 3 | Taquik Hepa, North Slope Borough Department of Wildlife Management | Comment that North Slope Borough and Conoco Phillips should continue caribou monitoring.                    | 4.2 Mitigation  | See Section 4.4.5 Subsistence, Potential Mitigation Measure 6: Subsistence Monitoring Studies.   |
| UTQ1- 4 | Brian Person   | The BLM should put more financial resources towards studying wildlife.                                      | 3.12 Mammals  | The BLM Wildlife Management Program total budget is not under the control of BLM Alaska. BLM Alaska does receive funds for labor, operations, and projects under the program, which are primarily allocated at the state level. Most projects are ranked and funded on a statewide basis. The Arctic does receive more than a proportional share of BLM Alaska wildlife project dollars.   |

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| UTQ1- 5 | Robert Suydam                   | Comment that if a hunter does not prefer to go within 10 miles of development, that choice does represent a safety issue and a restriction.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The SEIS discloses both potential benefits and potential negative impacts of development and attempts to be succinct. Recent data on use of roads, gathered since the Draft SEIS was published, and verbatim testimony from hunters, has been included in the Final SEIS.   |
| UTQ1- 6 | John Hopson, City of Wainwright | Comment that communities only have a 3 mile buffer for firearms being discharged, whereas development areas have a 10 mile buffer. Question on why there is a 7 mile additional buffer for development. | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | It is unclear what the commenter is referring to. The BLM has no knowledge of either the 3 mile or a 10 mile buffer that is described.  |
| UTQ1- 7 | Lars Pears                      | Question regarding who manages the denial of access on road surfaces.   | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The Nuiqsut Spur Road is a private road located on Kuukpik Corporation land. Access to this road is managed by the Kuukpik Corporation, and users are required to have a valid drivers license and are expected to sign a road-access agreement, in part to understand the rules for road use. The GMT1 Road is a private road operated by ConocoPhillips, and residents of the community of Nuiqsut have free access and use of the road under general safety guidelines. However, all access to drill pads located along the road requires a ConocoPhillips escort. Alpine Security is the point of contact regarding use of the GMT1 Road. The GMT2 Road is expected to be managed under the same conditions as the GMT1 Road. |

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| UTQ1- 8 | Todd Sformo  | Comment that the restrictions on subsistence needs to be stated more clearly earlier in the document, outside of Appendix L. It is difficult to determine restrictions to subsistence earlier in the document without going to Appendix L.  | 3.15 Socio-cultural Systems, Subsistence, and Environmental Justice | The Executive Summary has been updated to identify the results of the ANILCA 810 analysis. "Significant restrictions of subsistence uses" is specific terminology required by ANILCA Section 810, and that is why it is found in Appendix L. The ANILCA Section 810 criteria is specific to answering a single question: whether or not there may be a significant restriction to subsistence use, and our guidance is based on case law regarding that overriding factor. A detailed description of impacts is located in Section 4.34.5 Subsistence, identifies a host of positive and negative impacts to subsistence use beyond the criteria used in Appendix L. It is therefore more comprehensive. The current effects analysis supplements the analysis presented in the Alpine Satellite Development Plan EIS (BLM 2004), updating that analysis to include the current data. Following NEPA guidance, this analysis tiers to the effects analysis presented in the NPRA IAP EIS and the GMT1 EIS. |
| UTQ1- 9 | Taquilik Hepa, North Slope Borough Department of Wildlife Management | Comment that the areas of subsistence for fur bearers (in Slide 21 of the ANILCA hearing presentation) has been getting gradually smaller over the last 27 years, and that something needs to be done soon in terms of mitigation to help Nuiqsut and local hunters find animal populations as the animals move further west. | 4.2 Mitigation  | While use of an observer to communicate the presence and location of game species is not specifically addressed in the Federal Subsistence Hunting Regulations, taking wildlife with the aid of "radio communication" is prohibited under both Federal and State regulations. The BLM lacks the regulatory authority to create a program by which observers assist local hunters with locating the presence of game animals for harvest.   |

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