



United States Department of the Interior



BUREAU OF LAND MANAGEMENT
Alaska State Office
222 West Seventh Avenue, #13
Anchorage, Alaska 99513-7504
<http://www.blm.gov>

NOV 20 2014

Dear Reader:

The enclosed Errata Sheet documents minor changes to the text and figures of the Final Supplemental Environmental Impact Statement (EIS) for the Alpine Satellite Development Plan (ASDP) for the Proposed Greater Mooses Tooth One Development Project that was publicly released in October 2014. These corrections reflect edits that were discovered after the release of the Final Supplemental EIS. We have utilized "tracked changes" (underlined additions and crossed-out deletions) for some of the changes where we felt it would assist the reader to more easily identify the corrections. There are no changes or significant new circumstances or information identified in this Errata Sheet that affect the analysis and conclusions in the Final Supplemental EIS. This Errata Sheet is part of the administrative record for the Supplemental EIS. These corrections will be posted on the BLM-Alaska website at www.blm.gov/ak/GMT.

For additional information or clarification regarding the attached Errata Sheet, please contact Bridget Psarianos, GMT1 Project Lead, at (907) 271-4208.

Sincerely,

Ted Murphy
Acting State Director

Enclosures

Section	Page	Edit or Clarification
2.6	49	"Alternative B GMT1 pad is the same size and configuration as Alternative A, but the pad is flipped, and is located
2.8	63	"...May 2017 and would be supported by a crew based in a 120-200 -man camp (workers to support drilling and well tie-in)..."
2.1.1	20	"Added 3.3 3.1 miles of pipe rack..."
2.4.2	28	" 1.5 15 MVA Transformer platform (1,700-gallon oil-insulated)"
2.4.3	30	"...approximately 3.3 3.1 miles north on a new set of VSMs,..."
2.4.3/Table 4.7-1	31/602	This text appears at the page listed: <i>BLM is considering the requirement of automatic valves, rather than manual valves, at the Ublutuoch River crossing, as a potential new mitigation measure (see Section 4.7, Mitigation Measures and Monitoring).</i> However, it is not mentioned in Section 4.7, it is in Section 4.5.5. Include in table 4.7-1 the mitigation "Located crude oil pipeline under bridge deck for additional protection."
2.4.4	32	Text states that gravel will be transported over ice roads during January-April and June-Aug 2016 . Gravel surface will be worked June –August.
2.5.5.1	45	" Inter-city bus traffic follows a similar pattern with the most trips in January (994) March (1,225),... "
2.6	49	Text says that the pad is flipped from Alt A, but the map has Alt A and B pad with the same orientation.
2.8.1	63	" 120-200 -man drilling (and well tie-in) camp..."
2.9.4.3	82	"Pipeline inspection overflights would occur March January through April during drilling."
3.2.3.1	111, 112	The Fish Creek data as shown in the windrose is not similar to Nuiqsut as suggested by the test. The distribution of wind directions is similar; however, the distributions of speeds is are not. Nuiqsut has only 3% of wind speeds above 11 m/s. and the Fish Creek windrose shows 30% of measurements above 11 m/s and is now corrected to show no more than 2% above 11 m/s. This difference is too large to be real; therefore, it is probable that one of the datasets is being plotted incorrectly and should be revisited . Also, the % difference in calms between the 2 sites can be due to local conditions. However, wind speed sensor sensitivity may also be a factor. The Nuiqsut sensor likely has a lower sensitivity threshold. In other words, the Nuiqsut sensor will begin to accurately record values at a lower wind speeds compared to Fish Creek Please see Attachment 1: a corrected wind rose for the Fish Creek station which used wind speeds in meters per second to match the Nuiqsut wind rose.

3.2.3.1	112	<p>"This wind flow pattern is expected to increase dispersion of air pollutants in the atmosphere. The cool to cold ambient temperatures relative to warm to hot exhaust flows will generally increase exhaust gas momentum flux, which will also increase atmospheric dispersion."</p> <p>The statement is relating wind flow patterns to increased dispersion resulting from momentum flux in the form of thermal buoyancy. First, it is the temperature climatology and not the wind climatology that will relate increased dispersion to momentum. Second, it should be clarified that it is not momentum, but thermal buoyancy that is being discussed. In reality, since this statement is discussing the impact of wind climatology, it should be talking about the generally high winds leading to increased plume dispersion, not concepts related to plume momentum.</p>
3.3-1	127	Last sentence indicates that less than 1% of the study area is upland consisting of sand dunes. As stated in the relevant Table, 4.1% of the study area is upland barrens, as well.
3.3.3.2	140	Current records of CORA nesting population in the oil fields show that recently Ravens have nested at CD2 pad and on the pipeline bridge south of CD3 pad (Seiser and Johnson 2013). Over 86 nests were located in the Kurpark and Prudhoe Bay oilfields (Powell and Brackensto 2009).
3.3.3.4	141	Typo: change 2011-2012 to: 2001-2012 except years 2006, and 2010.
3.3.3.6	149	Peregrine Falcons have been documented nesting on a low bluff on Fish Creek. BLM 2012 page 270 is cited as source for location of closest documented Peregrine Falcon nest and closest Golden Eagle nest, but no such statement occurs in BLM 2012. Peregrine Falcons are also documented to nest on oil-field facilities in Prudhoe Bay. Golden Eagles and Rough-legged Hawks are also known to nest on man-made towers on the ACP.
3.3.3.6	150	BLM 2012 page 334-335 is cited as source of statement that Golden Eagles are considered rare in the ASDP area, but no such statement is made, rather BLM 2012 on page 334 states that Golden Eagles are known to frequent the Arctic Coastal Plain. Golden Eagles are known predators of arctic fox pups at dens and are uncommon but not "rare".
3.3.4.1	154	Discussion of caribou densities ranging from 0.02 to 0.99 has a typo. These data are for 2012 not for 2001-2012 time period, as written.
3.3.4.1	151	Statement that Alaska tiny shrew has not been reported in NPRA is somewhat misleading, as no surveys have been conducted using methods likely to document their occurrence.
3.3.4.1	157	Statement that arctic foxes prefer well-drained soils fails to mention that this preference is for denning habitat only.
3.3.4.2	159	ABR has observed 50-60 spotted seals in one haulout (Lawhead and Prichard 2012)
4.2.3.2	259	The paragraph refers to Total Reduced Sulfides and should instead refer to Total Reduced Sulfur (TRS).
4.2.3.2		These areas were identified by the U.S. Fish and Wildlife Service (USFWS) and the National Park Service (NPS) as Sensitive Class II areas, as defined in the Air Quality MOU...

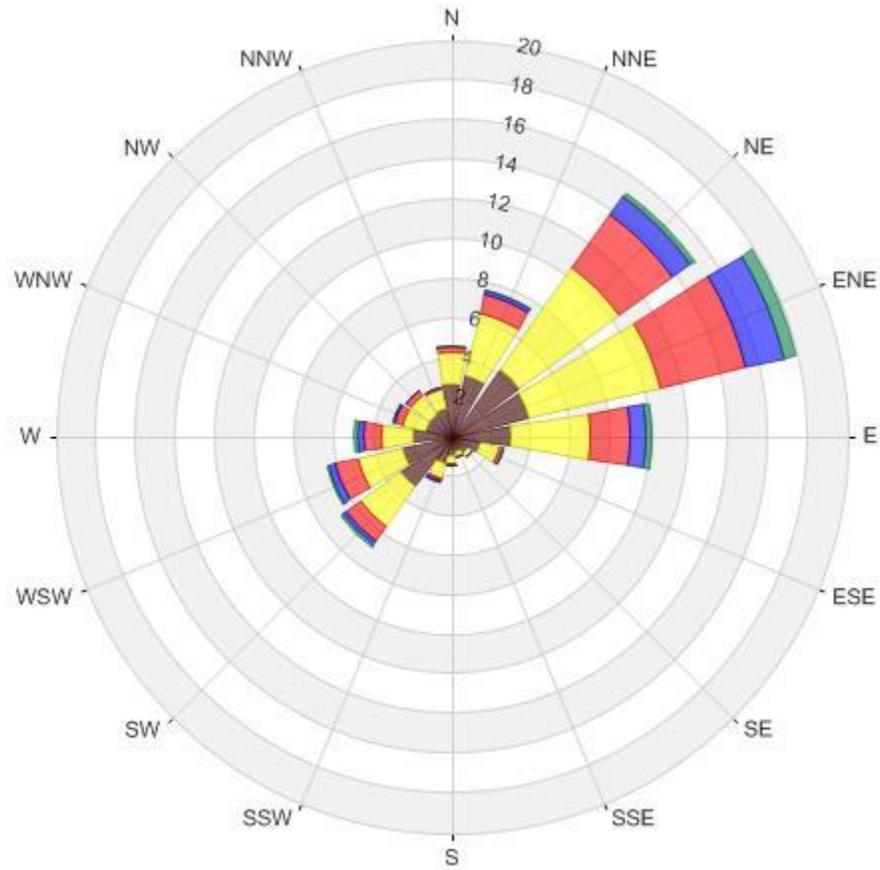
4.6.6	515	This paragraph indicates that a far-field analysis including impacts to air quality and analyzing AQRVs was done at Nuiqsut. This statement should be corrected to indicate that AQRVs were not calculated for Nuiqsut. The following correction should be made in 6 th paragraph: Impacts to air quality and AQRV were predicted for the three areas of special concern identified in Section 3.2.3.2 for Gates of the Arctic National Park, Arctic National Wildlife Refuge
4.6.6	516	This paragraphs says: "For the Draft SEIS, far field modeling included project point and volume source emissions while RFD sources....." It would be more correct to say that "For the Draft SEIS, far-field modeling included simulating facility emissions as both point and volume sources, while RFD sources...."
4.6.6	519	The paragraph says: "Additional model runs with refined GMT1 source data would be expected to show reduced cumulative impacts on visibility." Similar to what was said about the criteria pollutant impacts, this statement should state, more accurately: Because of the close proximity of some of the RFD sources to modeled receptors, and their dominant influence on cumulative impacts, a change in characterization could result in an increase in cumulative results.
2.3-2	25	Alternatives D1 and D2: On-Site Facilities, " 40 <u>70</u> -man drilling camps".
2.3-2	26	Aircraft Flights Annually 2019+ Alternatives D1 and D : 573 flights . From 2019 through the end of the project, the total flights range from 579 to <u>1604</u> for each alternative.
2.5-2	42	The road pullout acreage is being double counted within this table. 0.9 acres is included in the Access Road acreage and in the Road Pullouts/VSM Acreage. However, the total gravel requirement for GMT1 is still correct at 72.7 acres.
2.5-2	42	The gravel volume for the access road is incorrect if the pullouts were included, this volume would be 490,550 cy to include the road pullouts.
	42, 266	The gravel volume for the VSM installation is not included in the Permit drawings total (628,050 cy). The volume listed here us incorrect, it is estimated that this fill would be 4,200 cy
2.5-3	43	Post construction operations total MG: 88.5 MG <u>85.5 MG</u>
2.6-2	52, 59, 66	Post construction operations for both A and B total MG: 88.5 MG <u>85.5 MG</u>
2.6-3	54, 60	Typo: Missing " 1,753 " from Total in 2018, thus the totals for the year are miscalculated. These numbers should be identical to the Alternative A numbers directly below.
2.8-2	64	" 120 <u>200</u> -man drilling and well tie-in support camp"

2.9-1	77	The access road length for Alt A is listed as "7.8 miles" whereas it is listed as 7.6 miles everywhere else in the document. The correct length is 7.7 miles.
2.9-3	80	2018 Alternative A December should have 1,753 , and the Totals should be 26,675
2.9-5	83	2017 Total including baseline for April, October, November, December, and Annual Total should be 201, 229, 234, 217, and 3,388 respectively.
2.9-6	87	D1: Drilling Support Camp: 120 200 -man camp...
2.9-6	88	D1 and D2: The Alt D1/D2 airport access road is 1.25 miles. In the document it was rounded to 1.3 miles. In 3 instances in section 2.9, the number 1.2 miles was used (truncated vs. rounded number). All analyses were performed using the true value (1.253608 miles).
2.10-2	90	Post construction operations total MG for Alt A should be 85.5, not 88.5 MG.
2.10-3	91	2018 Alternative A December should have 1,753, and the Totals should be 26,675
3.2-5	111	Because large differences exist between the Fish Creek and other stations, BLM re-analyzed the Fish Creek data to obtain the Daily Average Max and Min temperatures. This results in less extreme averages which will match up better with the other stations. This table has been revised to include monthly average temperatures in addition to the average maximum and average minimum. See attachment 5.
3.2-6	115	Note: all concentrations in the table are design concentrations.
Table 3.3-2	132	Sockeye salmon have also been caught in the Lower Fish Creek watershed and vicinity
4.2-18	270	REL and RFC values for Ethyl benzene, Formaldehyde, n-Hexane, Toluene, and Xylenes are incorrect. See Table 4.2-17 for correct values. See Attachment 5.
4.2-35	280	PM10 annual concentration should be 36 . PM2.5 annual concentration should be 7 . The table comes from Table A-5 of Revisions to the Air Quality Impact Analysis (AQIA) for Greater Mooses Tooth 1 Alternative D. This revision also applies to the corresponding AQIA on BLM's website. See Attachment 5.
4.2-36	280	Scenario Resulting in Highest Concentration should be "Gravel Mining" for all except PM2.5 annual . The table comes from Table A-5 of Revisions to the Air Quality Impact Analysis (AQIA) for Greater Mooses Tooth 1 Alternative D. This revision also applies to the corresponding AQIA on BLM's website. See Attachment 5.
4.2-38	281	Maximum Modeled Annual Concentration for Xylene should be 3.00E-05 .
Table 4.3-8.	339	Loons should be included in this Table.

4.6-9, 4.6-10, 4.6-	518	All column units should be ($\mu\text{g}/\text{m}^3$). The current text does not include the superscript.
4.6-16	520	In the second footnote, the square meters should contain a superscript "2".
4.6-24	524	In the second footnote, the square meters should contain a superscript "2".
4.7-1	630	The first design feature says: Drill rigs use reduced sulfur diesel-generated power. This should say that drill rigs will use highline power, and that all diesel fuel fired engines will combust Ultra Low Sulfur Diesel.
Ch 8	5	Example Resource Development Council letter was not included in FSEIS. This letter is attached (see Attachment 2)
Ch 8	6	Table number referenced in text should be 8.3-1 (currently is 2-1).
Ch 8	19-21	Number assignment for second half of T01-011 was mistakenly assigned as T01-012; this error carried through the rest of the comments (through T01-016).
Ch 8	63	Some text comments are not identified for Communication 04 (ADNR, ADEC). A copy of the letter with missing text comments identified is attached (Attachment 3).
Ch 8	150	Comments in 06 are incorrectly identified as 06-005, & 06-006 (they were not comments), resulting in following comments being numbered wrong.
Ch 8	191	Number assignment in communication for 08-001 was 01-001.
Ch 8	199	Comment 11-001 was not identified in the communication, resulting in all following comments being numbered wrong. Comment is in 1 st paragraph of communication and states: "Audubon Alaska published an updated <i>Habitat Conservation Strategy for the National Petroleum Reserve – Alaska</i> (Smith, et. Al. 2011) ² . "
Ch 8	355	Responses to CPAI's text comments (communication number 18) were missing from the FSEIS. The responses provided only address those comments captured in the table attachment submitted by the commenter. A copy of the letter with missing text comments identified is attached (Attachment 4).
Ch 8	541	Comment 19-038 in comment responses was mis-numbered as 19-039. No other comments/responses affected.

Attachment 1: Fish Creek Wind Rose

AAA 1/1/2004 1:00 AM - 1/1/2013 12:00 AM Calm: 8.5%



%	Icon	Classes (m/s)
35		0.5-2.8
35		2.8-5.5
15		5.5-8.3
5		8.3-11.0
2		>11.0

Attachment 2: Resource Development Council Letter



RESOURCE DEVELOPMENT COUNCIL
Growing Alaska Through Responsible Resource Development

RDC Action Alert: ***Greater Moose's Tooth Oil and Gas Development in NPR-A***

Comment deadline is April 22, 2014

Overview:

The Bureau of Land Management (BLM) has scheduled public hearings this month to gather comments on the proposed Greater Mooses Tooth Unit 1 (GMT1) oil and gas development project in the National Petroleum Reserve-Alaska (NPR-A). Hearings were held in Anchorage, Fairbanks and in the NPR-A villages between March 10 and March 20.

The BLM released a Draft Supplemental Environmental Impact Statement (DSEIS) for the proposed project, launching a public comment period, which ends on Tuesday, April 22. In July 2013, ConocoPhillips, Alaska, Inc. (CPAI) submitted an application to construct a drill site, pipelines, road and other facilities to support development of petroleum resources within the Greater Mooses Tooth (GMT) Unit.

The project is approximately 14 miles west of the CPAI-operated Alpine field. The GMT1 drill site would be operated and maintained by Alpine staff and supported by existing Alpine infrastructure. The project would include construction of an 11.8-acre drill pad, an 8-mile access road, above-ground elevated pipelines, and an electric power line connecting the GMT1 drill pad to CPAI's CD-5 drill pad currently under development. The GMT1 pad would have a capacity for up to 33 production wells, including several injection wells, and be located on a federal oil and gas lease previously issued by BLM.

The project proposes to access federal oil and gas resources, as well as resources owned by the Arctic Slope Regional Corporation and Kuukpik Corporation. The proposed development was originally analyzed in the BLM's 2004 Alpine Satellite Development Plan (ASDP) (then referred to as CD6), and is also subject to the 2012 NPR-A Integrated Activity Plan (IAP).

The BLM has prepared a draft supplement to the ASDP to evaluate any relevant new circumstances and information which have arisen since 2004. The draft plan is available on the BLM website at <http://www.blm.gov/ak/GMTU1>.

Action Requested:

RDC members are encouraged to submit written comments by April 22nd in support of Alternative A, the CPAI Proposed Project. The public hearings set for Fairbanks and Anchorage were previously held:

March 19: Fairbanks, BLM Fairbanks District Office, 6:00 p.m.

March 20: Anchorage, Campbell Creek Science Center, 6:00 p.m.

Public comments can also be submitted by any of the following methods:

Email: gmt1comments@slrconsulting.com

Fax: (907) 271-3933

Mail: GMT1 Draft SEIS Comments, Attn: Bridget Psarianos, 222 West 7th Avenue, Stop #13, Anchorage, Alaska 99513.

Points to consider in your comments:

Economic Benefits:

- Peak production from GMT1 is estimated at 30,000 barrels of oil per day and would help offset declining North Slope production.
- Development would provide benefits to local, state, and national economies through local hire for jobs created during construction and operations, tax revenues, royalties, and new resources to help meet U.S. domestic energy demand.

- Development will also provide significant economic benefit to Alaska Natives on the North Slope as well as throughout the state through direct payment of royalties and revenue sharing among the Alaska Native Regional Corporations.

Alternative A is the Preferred Alternative

Road Needed for Emergency Spill and Safety Response

- As proposed in Alternative A, GMT1 will include a gravel road connection to the main Alpine facilities. The road is necessary to insure that the operator can respond to any environmental and safety issues in an adequate and timely manner. Alternative D, the aircraft and ice road access alternative, would not allow adequate access (on bad weather days, there would be no access) to emergency response resources and creates significant environmental and safety risk.

Environmental/Subsistence Issues are minimized with a road

- CPAI's proposed project, Alternative A, has been modified to reduce environmental impacts and lower the overall footprint. In support of subsistence resources and access, the proposed project drill site location was moved out of the Fish Creek buffer to provide additional protection to this area. Road access will avoid the need for air traffic to the drill site, which is the number one complaint of subsistence hunters. Additionally, the project will be subject to various lease stipulations and the new Best Management Practices Adopted by BLM in 2013.
- The overall gravel footprint of Alternative A is the smallest of all the options. Alternative D has a larger gravel footprint than Alternative A because of the need to construct an airstrip and a larger gravel pad to accommodate more production equipment and a camp.
- Alternative A has the lowest estimated emissions because it requires the least amount of new infrastructure and eliminates the need for airplane support.

This Project Was Previously Approved

- The currently proposed GMT1 project (formerly CD6) is essentially the same as that approved for permitting in the 2004 ASDP Record of Decision.
- A review of new data and information shows there are no appreciable changes in the physical, biological, or social resources associated with the project study area. New data includes multi-year studies on hydrology, birds, and caribou.

Comment deadline is April 22, 2014

[Return to Action Alerts](#)

Resource Development Council for Alaska, Inc.
121 West Fireweed, Suite 250 Anchorage, AK 99503
resources@akrdc.org Phone: 907.276.0700 Fax: 907.276.3887

Attachment 3: State of Alaska Letter



THE STATE
of **ALASKA**
GOVERNOR SEAN PARNELL

Department of Environmental
Conservation

OFFICE OF THE COMMISSIONER

Post Office Box 111800
410 Willoughby Avenue, Suite 303
Juneau, Alaska 99811-1800
Main: 907.465.5066
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April 22, 2014

Ms. Bridget Psarianos, Project Lead
Bureau of Land Management
222 West 7th Avenue. Stop #13
Anchorage, AK 99513

Re: DRAFT SEIS for GMT-1. Section 4: Impacts of Oil, Saltwater and Hazardous Material Spills

Dear Ms. Psarianos:

The Alaska Department of Environmental Conservation (ADEC) is reviewing the Draft Supplemental Environmental Impact Statement for the Greater Mooses Tooth (GMT-1) proposed development. [04-001] I am concerned that although rigorous oil spill prevention and contingency planning standards already exist in Alaska, there was very little mention of these Alaska standards in the Draft Supplemental Environmental Impact Statement (SEIS) and a casual reader might come away with the wrong impression regarding environmental protection standards in Alaska. The following comments refer to the page numbers, paragraphs and text in Draft SEIS released on February 21, 2014.

[04-002] 1. Page 333, New Potential Mitigation Measure 2, bullet three: "*Equipment must be designed in accordance with standard arctic engineering practices for use in arctic conditions*". Please note that Alaska standards at 18 AAC 75.425(e)(4) address Best Available Technology (BAT) Review. This review requires a plan holder to address items technologies such as leak detection, for tanks and pipelines, maintenance for buried pipelines, and liquid level determination devices for above ground oil storage tanks. The department holds a technology conference every five years as required by 18 AAC 75.447(a)(1). These technology conferences bring together interested parties to discuss the status of existing technologies as well as technologies that are being developed. These BAT standards are in some cases more rigorous than "standard arctic engineering practices".

[04-003] 2. Page 333, New Potential Mitigation Measure 3, bullet two: "*Design criteria must be based on actual measurements of the worst-case data in recorded history for the exploration or development site, or based on conservative estimates (as determined by the authorizing officer)*." This section suggests that the oil spill response planning environmental assessment and cumulative effects analysis should be based upon a "worst-case" scenario.

[04-004] Applicable NEPA case law holds that a "worst-case" scenario is not required, but instead an agency should "in the face of unavailable information concerning a reasonably foreseeable significant environmental consequence, prepare a summary of existing credible scientific evidence which is relevant to evaluating the... adverse impacts and prepare an evaluation of such impacts based upon theoretical approaches or research methods generally accepted in the scientific community."¹ Alaska's oil spill prevention and contingency planning standards take the approach discussed in the case law and require the following:

- 18 AAC 75.425(e)(1)(F) - spill response plans to address strategies to account for variations in the receiving environment and seasonal conditions, address a response scenario that demonstrates a plan holder's ability to respond to a discharge of each applicable response planning standard volume within the required timeframes
- 18 AAC 75.425(e)(3)(D) - discuss the realistic maximum response operating limitations
- AS 46.04.030(r)(3) and 18 AAC 75.434 address specific response planning standard volumes that must be used for calculating response and cleanup actions for exploration or production facilities, rather than basing the cleanup on "conservative estimates" of the BLM authorizing officer, which could be subject to individual interpretation.

[04-005] 3. Page 334, New Potential Mitigation Measure 4, bullet 3: "*An emergency countermeasures plan must include well capping if technically feasible, and a Blowout Prevention (BOP) System capable of handling 150 percent of the maximum anticipated surface pressure. All wells must be secured with at least two independent pressure tested flow barriers prior to removing the BOP. The BOP must have two sets of blind shear rams to prevent failure, and must be tested weekly to ensure proper functioning.*" These systems are subject to detailed regulation under Alaska statutes and regulations. The applicable Alaska standards for blowout preventer systems can be found at the Alaska Oil & Gas Conservation Commission regulations at 20 AAC 25.035-037, 20 AAC 25.286- 286 and 20 AAC 25.527.

[04-006] These regulations specify different standards for exploration wells versus development wells. AOGCC rules require the testing of blowout preventers every seven days on exploration wells or workover wells and every fourteen days on new production wells being drilled to ensure that they are working properly. Additionally, the AOGCC conducts a BOP test and inspection prior to drilling activities beginning. The department also requires that the plan holder certifies that a blowout contingency plan is in place prior to approving an ODPCP. The department retains the authority to inspect the blowout contingency plan as part of the ODPCP.

[04-007] 4. Page 333, New Potential Mitigation Measure 4, bullet two: "*The spill response section must contain: specific response measures which must be immediately taken when a spill is reported or detected; a detailed probabilistic risk assessment of a very large volume spill and a most likely trajectory for various environmental conditions related to a catastrophic spill; a list of response equipment proven in the Arctic; training programs for responders and contractors; and proof of contract(s) with well control experts, personnel and equipment.*" Please note that Alaska Statutes at AS 46.03.740 - 900 and AS 46.04.010 - 900 and regulations at 18 AAC 75 (Articles 1 - 3) provide much more detailed and specific standards for oil spill cleanup than those proposed in these new mitigation measures.

¹ See *Robertson v. Methow Valley Citizens Council* (490 US 332 (1989))

Please consider these clarifications as you revise the draft supplemental environmental impact statement for this project. We believe it is important that requisite "hard look" required by NEPA include a discussion of the regulatory landscape that this project, so that the environmental consequences have been fairly evaluated.

Sincerely,

A handwritten signature in blue ink, appearing to read 'Gary Mendivil', with a long horizontal flourish extending to the right.

Gary Mendivil
Environmental Program Specialist

Attachment 4: ConocoPhillips Alaska, Inc. Comment Letter

Missing comment responses

[18-001]

The impacts of a roadless alternative to spill prevention and response are evaluated in the roadless, seasonal drilling Alternative D2.

[18-002]

The impacts of a roadless alternative to spill prevention and response are evaluated in the roadless, seasonal drilling Alternative D2.

[18-003]

The impacts of a roadless alternative to spill prevention and response are evaluated in the roadless, seasonal drilling Alternative D2.

[18-004]

Comment is noted. This information was included in the DSEIS and FSEIS.

[18-005]

Alternative D2, a winter-only roadless alternative, has been added to the FSEIS.

[18-006]

The DSEIS and FSEIS acknowledge the role a gravel road would play in pipeline monitoring and spill response; the SEIS also acknowledges the increase in aircraft to monitor pipelines without a road in close proximity.

[18-007]

The FSEIS acknowledges the importance of health and safety, and emergency spill response related to this project.

[18-008]

The analysis that GMT1 will have a major impact on subsistence has been reviewed and confirmed by resource experts. The Subsistence section of the FSEIS has been expanded and revised to incorporate other types of data on potential impacts and that data has confirmed the original finding. The Environmental Justice section must disclose if analyses have conclusions of high and disproportionate impacts.

[18-009]

BLM is not using a "worst-case" analysis for subsistence impacts - the Subsistence section in the FSEIS uses data from a wide variety of sources - BLM, state, NSB, and Traditional Knowledge. The analysis considers broad factors such as user avoidance, user access, aircraft, resource availability, and community participation. Impacts metrics were taken from the Point Thompson EIS, and adjusted to GMT1. By this metric, using data discussed in this SEIS, the GMT1 project would have a moderate impact on harvests of caribou for Nuiqsut (38.3% of harvests according to ADF&G (2011), 17-30% of respondents' (not the community's) harvest according to SRB&A, or 43.5% of harvest locations as reported by NSB (1998)).

[18-010]

For this and similar comments, the findings of "major" were based on the criteria/metric that were used in the SEIS and which CPAI used in its own Environmental Evaluation Document.

The purpose of the EIS was to provide an updated analysis (since the 2004 EIS) based on new information. Studies published since the original EIS, and since the 2012 BLM EIS, indicate that impacts have been greater than previously anticipated.

[18-011]

For this and similar comments, the findings of "major" were based on the criteria/metric that were used in the SEIS and which CPAI used in its own Environmental Evaluation Document. The purpose of the EIS was to provide an updated analysis (since the 2004 EIS) based on new information. Studies published since the original EIS, and since the 2012 BLM EIS, indicate that impacts have been greater than previously anticipated.

[18-012]

The revised and expanded subsistence impact analysis incorporates other types of data and uses the Point Thompson metric to evaluate impacts.

[18-013]

The GMT1 drill site is not the only area of new infrastructure that will impact local hunters. The comment addresses caribou only, whereas other subsistence resources (e.g., waterfowl, wolf, and wolverine) may be harvested in closer proximity to the GMT1 drill site. Continued harvests of subsistence resources by Nuiqsut residents do not negate the other impacts experienced by hunters.

[18-014]

The subsistence analysis does not conclude that the project will result in reduced harvests of caribou, but rather that harvesters will experience impacts related to traffic and access. Continued harvests of subsistence resources by Nuiqsut residents do not negate the other impacts experienced by hunters.

[18-015]

The subsistence analysis does not conclude that the project will result in reduced harvests of caribou, but rather that harvesters will experience impacts related to traffic and access. Continued harvests of subsistence resources by Nuiqsut residents do not negate the other impacts experienced by hunters.

[18-016]

The FSEIS has been updated to reflect the suggested edit.

[18-017]

The revised Sociocultural Systems section is expanded in the FSEIS to include a clear break down of differing potential impacts of the various alternatives and explains more clearly how conclusions were reached. A description of the size of the project study area is included with data to support that it is a conservative study area for subsistence impacts.

[18-018]

The revised Subsistence section in the FSEIS expands considerably on the avoidance effect and various estimates of how it should be quantified and described and citations for any conclusions.

[18-019]

While it is possible that residents will use the road for subsistence purposes (and this certainly would be a benefit), and while residents may have voiced support for the road, the extent to which residents will use the road for subsistence is unknown. The Nuiqsut Caribou Subsistence Monitoring Project has not documented regular use of ice roads to hunt for caribou. However, the proposed road will provide access to the west of the community which has been less accessible in the summer months, and therefore may result in additional access and use of the area by local residents.

[18-020]

The section on the Effectiveness of Lease Stipulations and BMPs, which includes several new potential mitigation measures, was accidentally omitted from the printed version of the DSEIS. This section has been revised and expanded in the FSEIS and was submitted to the Applicant.

[18-021]

The subsistence analysis focuses on impacts to subsistence alone, not on the various benefits of the project to the community of Nuiqsut. While it is likely true that the community will benefit in numerous ways, few benefits, with the exception of the possible benefits of a road and Tinmiaqsigvik River (Ublutuoch River) access (which are both addressed in the revised Subsistence Chapter), directly benefit subsistence.

[18-022]

The Executive Order on Environmental Justice was issued in 1994, therefore many large oil and gas projects on the North Slope were permitted before Environmental Justice was analyzed as part of NEPA. CEQ guidance on analyzing Environmental Justice in NEPA is clear: if there is an Environmental Justice population and any negative impact is identified, then BLM must recognize it. Justification for findings of major impacts to subsistence and sociocultural systems are detailed in those sections.

[18-023]

The basis for the finding is explained in detail with references to CEQ guidance in the FSEIS.

[18-024]

Text was added to the FSEIS to include Kuukpik in the list of entities that would benefit from royalty payments.

[18-025]

BLM is not using a "worst-case" analysis for subsistence impacts - the Subsistence section in the FSEIS uses data from a wide variety of sources - BLM, state, NSB, and Traditional Knowledge. The analysis considers broad factors such as user avoidance, user access, aircraft, resource availability, and community participation. Impacts metrics were taken from the Point Thompson EIS, and adjusted to GMT1. By this metric, using data discussed in this SEIS, the GMT1 project would have a moderate impact on harvests of caribou for Nuiqsut (38.3% of harvests according to ADF&G (2011), 17-30% of respondents' (not the community's) harvest according to SRB&A, or 43.5% of harvest locations as reported by NSB (1998)).

The Executive Order on Environmental Justice was issued in 1994, therefore many large oil and gas projects on the North Slope were permitted before Environmental Justice was analyzed as part of NEPA. CEQ guidance on analyzing Environmental Justice in NEPA is clear: if there is an Environmental Justice population and any negative impact is identified, then BLM must recognize it. Justification for findings of major impacts to subsistence and sociocultural systems are detailed in those sections.

[18-026]

Text was revised in the FSEIS to specifically mention royalties to different landowners.

[18-027]

Text was revised in the FSEIS to correct the royalty payment estimates. The revised estimates are based on new information on production volumes as well as a correction in the formula to reflect annual production volumes instead of daily production volumes.

[18-028]

Text was revised in the FSEIS to clarify capital costs: In addition to \$400 million for construction of facilities, \$500 million is estimated to be spent on drilling CAPEX.

[18-029]

Text was revised in the FSEIS to clarify capital costs: In addition to \$400 million for construction of facilities, \$500 million is estimated to be spent on drilling CAPEX.

[18-030]

Text was revised in the FSEIS to note the opportunities that exist for local residents and to cite the CD5 example.

[18-031]

The FSEIS has been updated to reflect the suggested edit. A different approach was used based on total facilities cost of \$400 million.

[18-032]

The revised Sociocultural Systems section analysis clearly differentiates between the impacts expected from the various alternatives.

[18-033]

Comment is noted.

[18-034]

A full economic analysis was performed for seasonal drilling as described in Alternative D2. An independent economic third-party analysis was performed to determine whether such restriction would result in the project being economically infeasible.

[18-035]

The impacts of a roadless alternative to spill prevention and response are evaluated in the roadless, seasonal drilling Alternative D2. The information provided by CPAI was reviewed and included in the FSEIS as appropriate.

[18-036]

The FSEIS has been updated to reflect the suggested edit.

[18-037]

The additional infrastructure needed for a "roadless" development at GMT1 was noted in the DSEIS. The FSEIS includes a discussion of spill response vehicles and timelines, for both a "roaded" (Alternatives A, B, and C) and "roadless" (Alternatives D1 and D2) scenarios. A discussion of spill response vehicles and timelines is also found in the Alpine ODPCP under Oil Spill Scenarios.

[18-038]

The ODPCP should contain detailed information about the training program, training modules, frequency of training, and the number of response ready personnel. The BLM will analyze the response capabilities due to the logistics of the trained responders.

[18-039]

Comment is noted.

[18-040]

The additional infrastructure needed for a "roadless" development at GMT1 was noted in the DSEIS. The FSEIS includes a discussion of spill response vehicles and timelines, for both a "roaded" (Alternatives A, B, and C) and "roadless" (Alternatives D1 and D2) scenarios. A discussion of spill response vehicles and timelines is also found in the Alpine ODPCP under Oil Spill Scenarios.

[18-041]

The additional infrastructure needed for a "roadless" development at GMT1 was noted in the DSEIS. The FSEIS includes a discussion of spill response vehicles and timelines, for both a "roaded" (Alternatives A, B, and C) and "roadless" (Alternatives D1 and D2) scenarios. A discussion of spill response vehicles and timelines is also found in the Alpine ODPCP under Oil Spill Scenarios.

[18-042]

Currently there is minimal off road equipment configured for oil spill response however this is not to say that equipment cannot be developed. The additional infrastructure needed for a "roadless" development at GMT1 was noted in the DSEIS. The FSEIS includes a discussion of spill response vehicles and timelines, for both a "roaded" (Alternatives A, B, and C) and "roadless" (Alternatives D1 and D2) scenarios. Discussion of spill response vehicles and timelines is also found in the Alpine ODPCP under Oil Spill Scenarios.

[18-043]

This information should be included in the ODPCP.

[18-044]

The DSEIS and FSEIS acknowledge the role a gravel road would play in pipeline monitoring and spill response; the SEIS also acknowledges the increase in aircraft to monitor pipelines without a road in close proximity.

[18-045]

The additional infrastructure needed for a "roadless" development at GMT1 was noted in the DSEIS. The FSEIS includes a discussion of spill response vehicles and timelines, for both a "roaded" (Alternatives A, B, and C) and "roadless" (Alternatives D1 and D2) scenarios. A discussion of spill response vehicles and timelines is also found in the Alpine ODPCP under Oil Spill Scenarios.

[18-046]

This information should be included in the ODPCP and other applicable emergency response plans.

[18-047]

The description of the mobilization of equipment and personnel to control a well event is required in the ODPCP, regardless of the selected alternative. The additional infrastructure needed for a "roadless" development at GMT1 is noted in the DSEIS. The FSEIS includes a discussion of spill response vehicles and timelines, for both "roaded" and "roadless" scenarios. A discussion of spill response vehicles and timelines is also found in the Alpine ODPCP under Oil Spill Scenarios.

[18-048]

This review will include the applicable ADEC regulations that require using BAT to respond. The review will also include the accessibility of resources required for a blowout event. The additional infrastructure needed for a "roadless" development at GMT1 is noted in the DSEIS. The FSEIS includes a discussion of spill response vehicles and timelines, for both a "roaded" and "roadless" scenario. A discussion of spill response vehicles and timelines is also found in the Alpine ODPCP under Oil Spill Scenarios.

[18-049]

The BLM includes the review of well capping technology, evacuation of personnel, and deployment of resources in the event of a well control incident (e.g. blowout) for both "roaded" and "roadless" development.

[18-050]

The additional infrastructure needed for a "roadless" development at GMT1 was noted in the DSEIS. The FSEIS includes a discussion of spill response vehicles and timelines, for both a "roaded" (Alternatives A, B, and C) and "roadless" (Alternatives D1 and D2) scenarios.

[18-051]

The additional infrastructure needed for a "roadless" development at GMT1 was noted in the DSEIS. The FSEIS includes a discussion of spill response vehicles and timelines, for both a "roaded" (Alternatives A, B, and C) and "roadless" (Alternatives D1 and D2) scenarios.

[18-052]

This fact is noted in the DSEIS and FSEIS.

[18-053]

The BLM analyzes the impacts to tundra and wildlife due to staging resources near production pipelines.

[18-054]

The Subsistence section has been significantly revised and expanded to differentiate between alternatives and justify conclusions. Overlapping use areas are a key indicator as they provide data on the number/percentage of harvesters using an area, and therefore the percentage of community harvesters who could potentially experience impacts from the proposed project. Overlapping use areas were not the only subsistence indicator used in the impact analysis. The revised Subsistence section includes additional information about subsistence harvests within the project study area. The GMT1 drill site is not the only area of new infrastructure that will affect subsistence use areas and activities.

[18-055]

It was not the intent to use selective information, but instead to provide new information (made available since or not provided in the previous two EISs), incorporation of additional

information into the Subsistence chapter further supports the conclusions regarding potential subsistence impacts.

[18-056]

New information (made available since or not provided in the previous two EISs) and incorporation of additional information into the Subsistence chapter further supports the conclusions regarding potential subsistence and sociocultural impacts.

[18-057]

New information on subsistence (made available since or not provided in the previous two EISs) was one of the reasons that the BLM determined that a SEIS needed to be conducted for GMT1. This new information indicates that impacts are likely to be greater than previously anticipated. Also, the fuller analysis of additional information in the Subsistence chapter supports the conclusions regarding potential subsistence impacts.

[18-058]

The resource experts do not consider there to be a dramatic difference from related analyses. Previous analyses did not utilize impact criteria to come to conclusions of minor, moderate, or major. However, those analyses came to very similar conclusions on impacts.

[18-059]

Information is considered new because it was not included in the analysis for the 2012 NPR-A IAP/EIS. This sentence has been reworded to make it clear that the information was available in 2012.

[18-060]

The analysis recognizes and presents data on the other subsistence resources harvested in the project study area.

[18-061]

BLM has responded to these concerns by expanding on information and data provided in many of the sources that were noted and were included in the appendix on subsistence data (Appendix G of the DSEIS and Appendix C of the FSEIS).

[18-062]

The project study area, which is a very conservative size estimate for impacts to subsistence, is one of the most important caribou hunting areas for Nuiqsut. BLM has responded to these concerns by presenting other types of information on the area and utilizing the Point Thompson metric to summarize impacts. The project study area is intended to evaluate all the direct and indirect impacts associated with the project. This includes increased activity at CD1, which under CPAI's proposed project and action alternatives, would be the source of support for the proposed project.

[18-063]

The revised Subsistence section in the FSEIS expands considerably on literature and data, much of which was mentioned in the DSEIS, to explain conclusions. Different metrics are used to estimate impacts.

[18-064]

All subsistence analyses in recent NPR-A EISs have described hunting practices, noting that the majority of summer and fall caribou and moose hunting occurs along river corridors. Also,

the BLM includes the Colville River within the project study area because of components of GMT1 that would be constructed there in addition to the increased traffic in that area that would be a result of GMT1.

[18-065]

The subsistence analysis does not conclude that the project will result in reduced harvests of caribou, but rather that harvesters will experience impacts related to traffic and access. Continued harvests of subsistence resources by Nuiqsut residents do not negate the other impacts experienced by hunters.

[18-066]

The subsistence analysis does not conclude that the project will result in reduced harvests of caribou, but rather that harvesters will experience impacts related to traffic and access. Continued harvests of subsistence resources by Nuiqsut residents do not negate the other impacts experienced by hunters.

[18-067]

The SEIS considered impacts within the entire project study area, rather than within individual alternative study areas. As the commenter describes, if 26% of caribou are harvested within the project study area, that is over one-quarter of the community's harvest. Local residents would likely consider that a substantial portion of their caribou harvest.

[18-068]

The subsistence analysis does not conclude that the project will result in reduced harvests of caribou, but rather that harvesters will experience impacts related to traffic and access. Continued harvests of subsistence resources by Nuiqsut residents do not negate the other impacts experienced by hunters.

[18-069]

BLM has responded to these concerns by expanding on information and data provided in many of the sources that were noted and were included in the appendix on subsistence data (Appendix G of the DSEIS and Appendix C of the FSEIS). It is true that according to recent data, caribou harvests have remained stable over time. However, while harvest amounts are a key indicator of change in subsistence, they are not the only indicator of change, and continued subsistence harvests do not mean that there are no impacts on subsistence. A community may continue to harvest adequate numbers of subsistence resources while still experiencing impacts through fewer households participating in subsistence, hunters having to spend more time and money searching for resources, and residents no longer hunting in traditional use areas and losing connections to those areas over time.

[18-070]

There is substantial information that, despite the relatively low numbers of caribou in the project study area, the area has traditionally been considered a particularly important caribou hunting area. The low density of caribou in the area is considered to render impacts to resources there of even higher significance.

[18-071]

BLM has responded to these concerns by expanding on information and data provided in many of the sources that were noted and were included in the appendix on subsistence data (Appendix G of the DSEIS and Appendix C of the FSEIS).

[18-072]

The revised subsistence impacts analysis clearly differentiates between the differences in impacts expected from the various alternatives.

[18-073]

The project study area is intended to evaluate all the direct and indirect impacts associated with the project. This includes increased activity at CD1, which under CPAI's proposed project and action alternatives, would be the source of support for the GMT1 project. Flights and vehicles would originate at CD1, and under the alternatives with road access to GMT1, staff would be housed at CD1 and waste trucked there for disposal. Under all action alternatives electricity for the project is being generated at CD1. Further, the ASRC mine site is included in the direct and indirect impacts analysis because of its potential use as a gravel source. Nuiqsut is included in the area due to its role in Alternative C and the increased use of its infrastructure as a result of GMT1.

[18-074]

The project study area consists of the land within 2.5 miles of all components of GMT1, including the pad, the pipeline, the GMT1 road from CD5 (in Alternatives A, B, and C) and the Alpine/CD5 road which be used for GMT1 under all alternatives. Alternative C would include an industrialized Kuukpik Spur Road from Nuiqsut as a GMT1 project component, and the Kuukpik Spur Road as it is currently designed and permitted and the surrounding 2.5 miles, including the community of Nuiqsut, are included in the project study area in analyses for all alternatives.

[18-075]

The project study area is intended to evaluate all the direct and indirect impacts associated with the project. This includes increased activity at CD1, which under CPAI's proposed project and action alternatives, would be the source of support for the GMT1 project. Flights and vehicles would originate at CD1, and under the alternatives with road access to GMT1, staff would be housed at CD1 and waste trucked there for disposal. Under all action alternatives electricity for the project is being generated at CD1. Further, the ASRC mine site is included in the direct and indirect impacts analysis because of its potential use as a gravel source. Nuiqsut is included in the area due to its role in Alternative C and the increased use of its infrastructure as a result of GMT1.

[18-076]

The FSEIS includes additional information on aircraft activity including the different alternatives.

[18-077]

Helicopter traffic is recognized in the analysis as the primary source of disturbance and is one of the reasons that all GMT1 alternatives are estimated to have major impacts.

[18-078]

Comment refers to potential impacts to subsistence users, not to caribou. A revised analysis of impacts to subsistence uses is included in the FSEIS.

[18-079]

The data are based on a household survey which included 82% of all occupied households. Nine percent of participating households reported that they did not experience Alpine-related impacts because they avoid the area altogether. However, the report does note that these

responses were entirely voluntary (not cued by interviewers) and therefore, based on previous research, the actual percentage of households is likely higher than nine percent.

[18-080]

The Year 4 report points out that nearly 10% of households reported not experiencing Alpine-related impacts because they avoid the Alpine area altogether. These responses were volunteered and not cued, and therefore the actual percentage of households avoiding the Alpine area is likely higher than 10%. Thus, the data do seem to support the conclusions related to user avoidance. Reported impacts related to helicopter traffic did in fact decrease over the 4 study years; however, impacts of helicopter traffic (which occurs over a larger area than the project footprint) are unrelated to user avoidance.

[18-081]

Despite the implementation of various mitigation measures since development of Alpine, the community of Nuiqsut still reports experiencing the impacts of development activities. Thus, while the analysis does acknowledge that various mitigation measures will help alleviate some of these impacts, they will not eliminate impacts. Some impacts, such as general avoidance of infrastructure due to not wanting to hunt near industry, are difficult to mitigate. The discussion of mitigation measures was accidentally omitted from the printed version of the DSEIS but was recognized and weighed in the DSEIS analysis before conclusions were reached.

[18-082]

Comment is noted.

[18-083]

Despite the implementation of various mitigation measures since development of Alpine, the community of Nuiqsut still reports experiencing the impacts of development activities. Thus, while the analysis does acknowledge that various mitigation measures will help alleviate some of these impacts, they will not eliminate impacts. Some impacts, such as general avoidance of infrastructure due to not wanting to hunt near industry, are difficult to mitigate. The discussion of mitigation measures was accidentally omitted from the printed version of the DSEIS but was recognized and weighed in the DSEIS analysis before conclusions were reached.

[18-084]

This prohibition is explained in the Effectiveness of Lease Stipulations and BMPs in the FSEIS.

[18-085]

The revised Subsistence section in the FSEIS expands considerably on literature and data that was mentioned in the DSEIS to clearly support conclusions.

[18-086]

The analysis does not suggest that the entire project study area would be lost to subsistence. Rather, the project footprint would be lost to subsistence and user avoidance would likely occur at a greater distance than the project footprint.

[18-087]

The paragraph referred to by the commenter is summarizing, more generally, the potential impacts of reduced participation on subsistence activities on the community as a whole. Because the intent of the paragraph was not to assign these various potential impacts to Alternative A, but instead to describe the importance of maintaining community participation in subsistence activities and the linkages between subsistence participation and community social systems,

we have moved it to the Sociocultural Systems section to address impacts from disturbance to subsistence more generally.

[18-088]

BLM has expanded the analysis of impacts. Data indicates Major direct and indirect impacts to Subsistence for all action alternatives. Revisions to the DSEIS have also indicated possible major impacts to sociocultural systems. Substantial differences in the degree and intensity of these impacts by alternative are more carefully fleshed out in the FSEIS.

[18-089]

The only "Major" direct and indirect impacts were to Petroleum Depletion and Subsistence. Table 4.1.-2, Summary of Impacts indicates Major direct and indirect impacts to subsistence for all action alternatives.

[18-090]

Comment is noted.

[18-091]

The revised Sociocultural Systems section in the FSEIS is expanded to include a clear break down of differing potential impacts of the various alternatives and explains more clearly how conclusions were reached. The criteria used and conclusions have been corroborated by resource experts and the Native Village of Nuiqsut tribal council.

[18-092]

Specific impact criteria and various metrics and types of data are used in the revised Social Systems section of the FSEIS to better explain conclusions.

[18-093]

The impact criteria used are based on criteria used in recent EISs. In response to concerns about the conclusions, BLM expanded the Subsistence section in the FSEIS and used several other metrics to analyze impacts.

[18-094]

The revised FSEIS Subsistence section applies the Point Thomson EIS criteria in the context of GMT1. While the Point Thomson EIS criteria do not allow for an overall finding of major, moderate, or minor impacts, the criteria show that subsistence impacts are the highest under all categories except under one of the two magnitude categories (Magnitude - Harvest Amounts). As discussed in addressing other comments/responses and by the commenter, harvest amounts are not the only type of potential impacts on subsistence uses.

[18-095]

During the impact analysis, the authors analyzed data on subsistence uses specific to the individual alternative footprint buffers. The authors determined that the buffers did not accurately reflect the direct impacts of each alternative on use areas and harvest locations. For example, Alternative C showed substantially higher percentages of use areas and harvest locations compared to other alternatives; however, this was primarily due to the addition of the Nuiqsut Spur Road to the Alternative C buffer, which will be constructed regardless of alternative. In addition, the authors determined that the key differences between the alternatives were not related to project footprints, that were very similar between alternatives, but other factors such as traffic levels and user access.

[18-096]

The revised subsistence impacts analysis clearly differentiates between the differences in impacts expected from the various alternatives.

[18-097]

The analysis clarifies in several places that many residents, particularly lower income residents, who are not able to participate in what are considered more elite hunting activities such as fur-bearer hunting, are more dependent on the "bread and butter" of the Nuiqsut subsistence economy: the ability to harvest caribou near town.

[18-098]

Sociocultural and subsistence experts, based on fieldwork in the Nuiqsut area and on similar studies done regarding Alaska Native subsistence culture, believe that the words used more accurately disclose the impacts. Potential benefits of the road are described in detail but cannot be used to preclude disclosure of impacts.

[18-099]

Comment is noted.

[18-100]

BLM agrees. The term "statewide" should be replaced with "North Slope wide", unless a particular resource does in fact affect the entire state. The regional scale seems large, but given that it includes Nuiqsut. BLM feels this is an appropriate context for "regional impacts." BLM agrees that "local" should be a smaller scale, and has adjusted this geographic area to be the project footprint and extending 300 feet from project comments, to capture dust shadow impacts.

[18-101]

The language describing the conclusion (in Section 4.4.5) explains the use of the term regional: "While the spatial extent of impacts during construction and certain operational impacts (e.g., direct loss of subsistence use areas) would be localized, the indirect effects of operation (e.g., increased cost, time, effort) could extend beyond the local area and affect the whole of Nuiqsut's subsistence activities (i.e., regional) in addition to introducing disruptions to caribou availability and other resources that could extend outside of the project study area and to a broader area-wide level."

[18-102]

The Effectiveness of Lease Stipulations and BMPs (and potential mitigation measures) section was accidentally omitted from the DSEIS. It has been submitted to the applicant. However, that section explains that existing mitigation will most likely not be adequate to mitigate impacts/ reduce them below the level of severity discussed in the analysis.

[18-103]

The ANILCA 810 analysis is usually based on the impact analysis in the EIS. Response to comments on the problems in that analysis have been provided.

[18-104]

The analysis does not claim that a reduction in population numbers is expected. Significant impacts are found due to impacts that include but are not limited to obstructed access, disturbance from aircraft, and potentially diverted resources. The revised Subsistence section in

the FSEIS expands considerably on literature and data that was mentioned in the DSEIS to clearly support conclusions.

[18-105]

The references to the CD5 legal challenges in the ANILCA 810 have been removed.

[18-106]

Both the Sociocultural Systems and Subsistence sections in Chapter 4 have been revised in and expanded in the FSEIS so that any inconsistencies are corrected and conclusions are clearly justified.

[18-107]

Although the cultural landscape incorporates subsistence information as relevant, the cultural resources analysis of impacts does not rely on the subsistence analysis and does not refer to the Subsistence sections of the SEIS.

The phrase "detectable alteration" was taken from ConocoPhillips' GMT1 Development Project Environmental Evaluation Document. The authors of the SEIS were directed to use the EED as the foundation for the SEIS. This phrase is found in section 4.1.1 Impact Criteria to describe a medium intensity impact on a resource.

The authors of this section reviewed relevant documents including the 1998 Corps Alpine EA (Corps, 1998), the 1998 NE NPR-A IAP/EIS (USDOI, BLM 1998), the 2004 Alpine Satellites Development Plan EIS (USDOI, BLM 2004b), the 2008 NE NPR-A IAP/EIS (USDOI, BLM 2008), the 2009 cultural resources survey report of GMT1 (Reanier, 2009), the 2012 NPR-A IAP/EIS (USDOI, BLM 2012), and the 2013 CPAI Environmental Evaluation Document (CPAI, 2013) and found the Nuiqsut Paisanich Cultural Landscape was not mentioned in the cultural resources discussion in any of the above documents associated with Alpine and NE NPR-A development. As the commenter acknowledges, the Nuiqsut Paisanich is a cultural landscape, which is a type of cultural resource.

[18-108]

The finding of a moderate impact was based on the impact criteria contained in the CPAI GMT1 Development Project Environmental Evaluation Document (Section 4.1.1: Impact Criteria). Based on previous research (SRB&A 2009, Pedersen et al., 2000) the authors of this section determined that local residents would detect alterations to the Nuiqsut Cultural Landscape. These sources, which present the results of public testimony at public hearings and interviews with North Slope residents, report that development in the North Slope Region has had a detectable effect on cultural resources and traditional uses of the area. The authors' findings that the project would have a detectable alteration on the Nuiqsut Cultural Landscape is based on residents' past experiences with development in the area.

[18-109]

BLM recognizes that the location of the project was not selected based on the local population. After careful review of the CEQ guidance, BLM has concluded that this does not remove BLM's requirement to do an Environmental Justice analysis.

[18-110]

The widespread support for and expected economic benefits of the GMT1 project are clearly described in the social systems analysis. This does not affect BLM's responsibility to disclose, describe, and work with the population to mitigate negative impacts.

[18-111]

The analysis found that the size, location, and other aspects of the GMT1 project will likely result in major impacts to subsistence and sociocultural systems. These impacts must be considered as Environmental Justice issues.

[18-112]

Benefits of and public support for the GMT1 project are described in detail. The Environmental Justice analysis is required to disclose any findings of negative impacts.

[18-113]

The FSEIS has been updated to reflect the suggested edit.

[18-114]

The FSEIS has been updated to reflect the suggested edit.

[18-115]

In terms of context, the impacts may be major in the immediate vicinity of GMT1, but in the larger watershed-level scale, these impacts could be minor. See Table 4.1-2, summary of impacts, which indicates Major direct and indirect impacts to Environmental Justice for all action alternatives.

[18-116]

The data provided in these maps are relevant for comparing the alternatives to one another, but do not provide any additional data that change the findings of the subsistence analysis.

[18-117]

The data provided in these maps are relevant for comparing the alternatives to one another, but do not provide any additional data that change the findings of the subsistence analysis.

[18-118]

The data provided in these maps are relevant for comparing the alternatives to one another, but do not provide any additional data that change the findings of the subsistence analysis.

[18-119]

The data provided in these maps are relevant for comparing the alternatives to one another, but do not provide any additional data that change the findings of the subsistence analysis.

[18-120]

The data provided in these maps are relevant for comparing the alternatives to one another, but do not provide any additional data that change the findings of the subsistence analysis.

[18-121]

The data provided in these maps are relevant for comparing the alternatives to one another, but do not provide any additional data that change the findings of the subsistence analysis.

[18-122]

The data provided in these maps are relevant for comparing the alternatives to one another, but do not provide any additional data that change the findings of the subsistence analysis.

[18-123]

The data provided in these maps are relevant for comparing the alternatives to one another, but do not provide any additional data that change the findings of the subsistence analysis.

[18-124]

The Effectiveness of Lease Stipulations and BMPs (and potential mitigation measures) section was accidentally omitted from the DSEIS. This have been provided to the applicant for their review and it has been included in the FSEIS.

[18-125]

The Effectiveness of Lease Stipulations and BMPs (and potential mitigation measures) section was accidentally omitted from the DSEIS. This have been provided to the applicant for their review and it has been included in the FSEIS.

[18-126]

This benefit has been described in detail in the revised Sociocultural Systems section.

[18-127]

This mitigation measure is included in Section 4.7, Mitigation Measures.

[18-128]

This mitigation measure is included in Section 4.7, Mitigation Measures.

[18-129]

Comment is noted. This information is included in Section 4.7, Mitigation Measures.

[18-130]

Comment is noted. This information is included in Section 4.7, Mitigation Measures.

[18-131]

The benefits of local Subsistence Representatives are described in the analyses.

[18-132]

The benefits of ongoing notification systems and other efforts the Applicant has made regarding aircraft traffic are described in the Effectiveness of Stipulations and BMPs subsection of Subsistence (4.4.3). That subsection was accidentally omitted from the printed version of the DSEIS.

[18-133]

The community does wish to remain informed about development plans and is well represented at the meetings. The sociocultural impacts of the process of permitting development, which includes industry meetings, is described in the Sociocultural Systems section.

[18-134]

The Effectiveness of Lease Stipulations and BMPs (and potential mitigation measures) section was accidentally omitted from the printed version of the DSEIS, but it was considered as an important aspect of the analysis. It has since been submitted to the applicant and is included in the FSEIS.

[18-135]

These beneficial programs and efforts made by industry to coordinate are explained in the Effectiveness of Lease Stipulations and BMPs (and potential mitigation measures) section.

[18-136]

These compensation programs are described in the FSEIS.

[18-137]

Comment is noted. This information is included in Section 4.7, Mitigation Measures.

[18-138]

Comment is noted. This information is included in Section 4.7, Mitigation Measures.

[18-139]

Comment is noted.

[18-140]

Comment is noted. This information is included in the seasonal drilling (Alternative D2) analysis of the FSEIS.

[18-141]

Comment is noted. This information is included in the seasonal drilling (Alternative D2) analysis of the FSEIS.

[18-142]

Comment is noted. This information is included in the seasonal drilling (Alternative D2) analysis of the FSEIS.

[18-143]

Health and safety concerns associated with lack of road access between GMT1 and CD5 is included in the Alternative D2 analysis of the FSEIS.

[18-144]

Comment is noted. The seasonal drilling (Alternative D2) analysis will include data on the last 10 years of ice road starts and closures in the project area.

[18-145]

While the size of the airstrip and apron are not expected to change, the pad size of D2 would be smaller than that of a year-round drilled site.

Attachment 6: Air Quality and Atmospheric Environment Tables

Fish Creek Daily Average Maximum and Minimum Temperatures

	January	February	March	April	May	June	July	August	September	October	November	December	Ann
Avg Max	-6.2	-8.4	-9.9	15.1	32.9	48.9	53.8	51.1	41.0	27.0	9.1	-0.6	21.1
Avg Min	-26.4	-35.7	-24.6	-8.6	10.2	33.4	45.3	38.0	27.0	9.2	-9.1	-17.5	3.4

Source: UAF WERC Fish Creek data (1/2004 – 10/2013).

Table 4.2-17 Air Toxics Acute Exposure Assessment and Long-term Non-carcinogenic Exposure Assessment

This table has the correct REL values

Pollutant	REL (1-hour) ($\mu\text{g}/\text{m}^3$)	Maximum Modeled 1-hour Concentration ($\mu\text{g}/\text{m}^3$)	Non-carcinogenic RfC ₃ (Annual) ($\mu\text{g}/\text{m}^3$)	Maximum Modeled Annual Concentration
Benzene	1,300 b	3.3	30	0.060
Ethyl benzene	350,000 c	0.5	1,000	0.0017
Formaldehyde	55 b	1.8	9.8	0.050
n-Hexane	390,000 c	68.9	700	0.49
Toluene	37,000 b	2.6	5,000	0.031
Xylenes	22,000 c	1.1	100	0.016

Table 4.2-18 Air Toxics Acute Exposure Assessment and Long-term Non-carcinogenic Exposure Assessment for Nuiqsut Community Receptor

Corrected values are shown in blue

Pollutant	REL (1-hour) (µg/m³)	Maximum Modeled 1-hour Concentration (µg/m³)	Non-carcinogenic RfC ₃ (Annual) (µg/m³)	Maximum Modeled Annual Concentration
Benzene	1,300 b-1300	0.19	30	3.80E-05
Ethyl benzene	37,000 b-350,000	0.029	5,000	1.05E-06
Formaldehyde	350,000 c-55	0.10	1,000	3.15E-05
n-Hexane	22,000 b-390,000	3.89	100	3.11E-04
Toluene	390,000 c-37,000	0.15	700	1.98E-05
Xylenes	55 b-22,000	0.061	10	1.01E-05

Table 4.2-36: Alternative D GMT1 Cumulative Impacts Compared to Established Ambient Criteria for Infill Drilling Scenario *

Pollutant	Averaging Period	Rank ₁	Maximum AERMOD Predicted Concentration (mg/m³)	Class II PSD Increments (mg/m³)
SO ₂	3-hour	H2H	3.84	512
	24-hour	H2H	3.23	91
	Annual	Max	0.47	20
NO ₂	Annual	Max	39.6	100
PM ₁₀	24-hour	H2H	112.4	30
	Annual	Max	36.4	17
PM _{2.5}	24-hour	H2H	73.2	9
	Annual	Max	6.89	4

+

Table 4.2-34. Alternative D1 Impacts Compared to Established Ambient Criteria*

Pollutant	Averaging Period	Rank ¹	Maximum AERMOD Predicted Concentration (mg/m³)	Ambient Background (mg/m³)	Total (mg/m³)	Ambient Criteria (mg/m³)	% of Criteria
CO	1-hour	H2H	861	1488	2349	40,000	6%
	8-hour	H2H	420	1259	1680	10,000	17%
SO ₂	1-hour	99th	3.87	7.7	11.55	196	6%
	3-hour	H2H	3.84	18	21.38	1,300	2%
	24-hour	H2H	3.23	6.8	10.00	365	3%
	Annual	Max	0.47	0.3	0.81	80	1%
NO ₂	1-hour	98th	117.6	38	155.3	188	83%
	Annual	Max	39.6	2.9	42.5	100	42%
PM ₁₀	24-hour	H6H	104.3	48	152.5	150	102%
PM _{2.5}	24-hour	H8H	27.5	7.1	34.5	35	99%
	Annual	Max	6.9	2.2	9.10	12	76%

Table 4.2-36

Alternative D1 Impacts Compared to Established Ambient Criteria at the Community of Nuiqsut *

Pollutant	Averaging Period	Rank	Maximum AERMOD Predicted Concentrations (mg/m ³)					Ambient Background (mg/m ³)	Total (mg/m ³)	Ambient Criteria (mg/m ³)	% of Criteria	REVISIED Scenario Resulting in Highest Concentration
			Infill Drilling	Well Intervention	Pad & Access Road Construction	Clover Material Source	Max					
CO	1-hour	H2H	26.72	23.99	81.47	175.57	175.6	1488	1664	40,000	4%	Gravel Mining
	8-hour	H2H	4.34	3.54	10.40	26.21	26.2	1259	1286	10,000	13%	Gravel Mining
SO ₂	1-hour	99th	0.07	0.05	0.06	1.40	1.40	7.7	9.1	196	5%	Gravel Mining
	3-hour	H2H	0.04	0.04	0.08	1.08	1.08	18	19	1,300	1%	Gravel Mining
	24-hour	H2H	0.01	0.01	0.01	0.19	0.19	6.8	7.0	365	2%	Gravel Mining
	Annual	Max	0.00038	0.00021	0.00009	0.0011	0.0011	0.3	0.34	80	0%	Gravel Mining
NO ₂	1-hour	98th	7.10	9.13	28.32	42.50	42.5	38	80.17	188	43%	Gravel Mining
	Annual	Max	0.06	0.01	0.03	0.11	0.11	2.9	3.0	100	3%	Gravel Mining
PM ₁₀	24-hour	H2H	0.56	0.53	0.64	1.12	1.12	48	49.3	150	33%	Gravel Mining
PM _{2.5}	24-hour	H1H	0.23	0.21	0.53	0.74	0.74	7.1	7.8	35	22%	Gravel Mining
	Annual	Max	0.011	0.007	0.008	0.006	0.01	2.2	2.2	12	18%	Infill Drilling

The results table is not being updated as a result of revised model runs. The table requires updating because the wrong values were associated with the scenarios in the original table transmitted to ConocoPhillips Alaska, Inc. by AECOM.