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## SECTION 6 RESPONSE TO PUBLIC COMMENTS

### 6.1 SUMMARY OF COMMENTS ON THE DRAFT EIS

Approximately 40,000 individual comments on the Draft EIS were received during the public comment period of January 16, 2004 through March 8, 2004 via letters, e-mails, faxes, website forms, and formal public hearings.

Approximately 39,700 comments were received in response to solicitations from advocacy groups, and many of those were identical statements or slight variations thereof. Each of the form letters was read and substantive issues were identified.

Six public meetings/subsistence hearings were held during February 2004 in Anaktuvuk Pass, Anchorage, Atkasuk, Barrow, Fairbanks, and Nuiqsut, Alaska. A more detailed list of public hearing participation is provided in Section 6.2.

#### 6.1.1 Response-to-Comment Process

Comment letters and hearing transcripts were assigned tracking numbers, entered into a database, and entered into the Administrative Record. Individual tracking numbers were assigned to only one representative letter for identical or nearly identical form letters.

A team of BLM specialists reviewed all comment letters and hearing transcripts and substantive comments (as defined in H-1790-1 BLM NEPA Handbook) requiring specific responses were identified. A comment received a specific response if it 1) was substantive and related to inadequacies or inaccuracies in the analysis or methodologies used; and/or 2) identified new impacts or recommended reasonable new alternatives or mitigation measures; and/or 3) involved “substantive disagreements on interpretation of significance”. After comment letters were reviewed, each substantive comment was assigned a comment issue code and letters were annotated to identify each coded substantive comment. The original and annotated letters have been entered into the Administrative Record.

Specific comments and responses are provided in Section 6.3. The text of the FEIS has been revised where appropriate to address the comments. Additional information, either requested or provided by public input, has been incorporated into the FEIS. Information on how specific comments were addressed and where they are addressed within the FEIS is detailed in the response to each issue statement in Section 6.3.

The approximately 40,000 comments received and the transcripts of the six public hearings have not been reproduced in this FEIS document. The issue statements presented in Section 6.3 summarize the substantive comments received. The comment letters are part of the Administrative Record and can be inspected upon request to the BLM, the lead federal agency for this EIS.

### 6.2 COMMENTING AGENCIES, ORGANIZATIONS, AND INDIVIDUALS

#### 6.2.1 Written Comments

Written comments on the DEIS were received from the agencies, organizations, and individuals listed in Table 6.2-1. The document identification number and a list of codes for substantive issues that have been identified and annotated within the letter or transcript follow the Name/Organization. A definition of each Issue Code is provided in Section 6.3, Table 6.3-1. The number following the name of the organization or individual(s) in

Table 6.3-1 is an identification number that was used in the Response-to-Comments process (as described in Section 6.1.1). The specific comments and responses are presented in Section 6.3. As noted previously, all comment letters received are part of the Administrative Record and can be inspected upon request to the BLM.

**TABLE 6.2.1-1 LIST OF COMMENTORS ON THE ASDP DRAFT EIS  
(ALPHABETICALLY BY NAME)**

NAME/ORGANIZATION	DOCUMENT NUMBER	LIST OF ISSUE CODES <sup>1</sup>
Addison, David	DEIS0256	—
Ahkiviana, Dorcas	DEIS0215	FS-2, SH-1
Ahmaogak, George N. Sr. (North Slope Borough)	DEIS0236	See North Slope Borough (DEIS0236)
Ahnupkana, Marjorie	DEIS0234	BC-2, SH-1, SH-5
Ahtuanguaruak, Johnny	DEIS0210	FS-3, MM-2, RI-1
Ahtuanguaruak, Rosemary (City of Nuiqsut)	DEIS0237	See Nuiqsut, City of (DEIS0237)
Akpik, Joseph K	DEIS0204	AQ-26, PP-1
Alaska Coalition	DEIS0240	AA-4, AA-5, AA-9, AA-10, AA-11, AQ-1, AQ-2, AQ-3, AQ-4, AQ-5, AQ-21, AQ-22, AQ-23, AQ-24, AQ-27, BC-6, BD-35, BD-36, BD-37, BD-38, BD-39, BD-40, BD-41, BD-42, BD-43, BD-44, BD-45, BD-46, BD-72, BD-73, BD-74, BD-75, BD-76, BD-77, BD-78, BD-79, BD-103, BD-104, CM-1, CM-2, CZ-2, EI-1, EJ-4, FG-2, FG-3, FG-12, FG-13, FG-16, FS-1, FS-11, FS-12, FS-13, FS-14, FS-15, IC-2, IC-13, IS-6, IS-19, IS-20, IS-21, IS-22, IS-23, IS-24, IS-25, IS-26, IS-27, IS-28, LA-9, LA-10, LA-11, LA-12, LA-28, LA-38, MM-14, MM-17, MM-18, MM-19, MM-20, MM-26, MS-29, MS-30, MS-31, MS-32, MS-33, MS-34, MS-35, MS-43, MS-44, MS-52, MS-53, NZ-2, NZ-3, NZ-7, PL-14, PN-1, PN-3, PN-10, PN-13, PP-13, PS-1, RD-1, RD-6, RD-16, RI-1, RI-14, RI-21, SC-1, SC-15, SG-2, SG-3, TE-14, TE-15, TE-16, TE-17, TE-18, TE-19, TE-20, TE-21, TE-22, TE-23, TE-24, TF-6, VS-2, VS-3, VS-4, VS-5, VS-6, VW-1, VW-5, VW-6, WR-17, WR-18, WR-19
Alaska Coalition	DEIS0257	AA-12, AA-13, AB-4, BD-94, IC-2, IC-4, IS-6, IS-20, LA-17, MS-6, PN-10, SC-1, SH-4
Anadarko Petroleum Corporation	DEIS0113	—
Anchorage Chamber of Commerce	DEIS0124	—
Anchorage Economic Development Corporation	DEIS0130	—
Arctic Connections	DEIS0239	AA-6, AA-7, BD-4, CO-2, EP-1, IC-3, IS-13, IS-14, IS-15, IS-16, LA-13, LA-14, LA-20, LA-21, LA-24, MM-21, MM-22, MM-23, MS-46, OS-11, PN-13, PN-15, PN-16, RI-9, SH-77, SP-5, WR-20, WR-21, WR-22, WR-49
Arctic Slope Regional Corporation	DEIS0261	BC-3, BC-18, IS-3, PL-1, PL-13, RD-15, UT-7
Arendell, Randy (AT&S, Inc.)	DEIS0007	See AT&S Inc. (DEIS0007)
ASRC Energy Services	DEIS0133	—

**TABLE 6.2.1-1 LIST OF COMMENTORS ON THE ASDP DRAFT EIS  
(ALPHABETICALLY BY NAME) (CONT'D)**

NAME/ORGANIZATION	DOCUMENT NUMBER	LIST OF ISSUE CODES <sup>1</sup>
ASTAC	DEIS0219	—
AT&S Inc.	DEIS0007	—
AT&S Inc.	DEIS0008	—
AT&S Inc.	DEIS0009	—
Beck, Peter	DEIS0245	—
Benoit, John	DEIS0168	—
Bier, Jeff	DEIS0183	—
Blankenship, Darren	DEIS0156	—
Bowling-Schaff, Kristin	DEIS0157	—
Boyd, Brian Carter (Community of Nuiqsut)	DEIS0082	See Nuiqsut, Community of (DEIS0082)
Boyd, Brian Carter (Kuukpik Corporation, Kuukpikmiut Subsistence Oversight Panel, City of Nuiqsut, Native Village of Nuiqsut)	DEIS0081	See Kuukpik Corporation (DEIS0081)
Britt, Edith	DEIS0178	RI-1
Brower, Carl S.	DEIS0209	PL-12
Brown, Rodney (UA Local Union 375)	DEIS0109	See UA Local Union 375 (DEIS0109)
Cabinboy, Olivia	DEIS0226	MM-3
Casady, Bruce (AT&S, Inc.)	DEIS0009	See AT&S Inc. (DEIS0009)
Cascadia Wildlands Project	DEIS0233	AQ-19, IS-6, LA-3, LA-4, MS-7, MS-40, NZ-1, OS-2, OS-3, RA-1, TE-3, VW-2, VW-16, WR-4
Catherine Lambath	DEIS0162	RI-1, RI-3
Chaput, Dave	DEIS0160	—
Christensen, Reed	DEIS0174	—
Conam Construction Co.	DEIS0004	—
confidential	DEIS0161	—
confidential	DEIS0172	—
Cosgriff, Mark	DEIS0141	—

**TABLE 6.2.1-1 LIST OF COMMENTORS ON THE ASDP DRAFT EIS  
(ALPHABETICALLY BY NAME) (CONT'D)**

NAME/ORGANIZATION	DOCUMENT NUMBER	LIST OF ISSUE CODES <sup>1</sup>
CPAI	DEIS0238	AA-2, AQ-15, AS-3, AS-5, AS-6, BB-1, BD-82, BD-83, BD-84, BD-85, BD-86, BD-87, BD-88, BD-89, BD-90, BD-91, BD-92, BD-93, BD-106, CO-4, CR-1, CZ-3, CZ-4, EJ-2, FG-18, FG-19, FG-20, FG-21, FG-22, FG-23, FG-24, FG-25, FG-26, FG-27, FG-28, FG-29, FG-30, FG-31, FG-32, FG-33, FG-34, FG-35, FG-36, FG-37, FG-39, FG-63, FG-64, FS-18, FS-19, FS-20, FS-21, FS-22, FS-23, FS-24, FS-25, IC-10, IC-11, IS-31, LA-7, LA-25, LA-29, MM-6, MM-7, MM-32, MM-33, MS-38, MS-39, MS-40, MS-54, NZ-1, NZ-5, NZ-6, OS-35, OS-36, OS-37, OS-38, OS-39, PF-4, PF-6, PF-7, PL-9, PL-10, PL-11, PN-21, PP-2, PP-3, PP-9, PP-10, PP-11, PP-12, PP-19, RD-2, RD-8, RD-9, RD-10, RD-11, RD-12, RD-13, RD-21, RD-22, RE-1, RE-17, RE-18, RE-19, RI-6, RI-19, RI-20, RR-4, SC-11, SC-12, SC-13, SC-14, SH-12, SH-13, SH-14, SH-40, SH-41, SH-42, SH-43, SH-44, SH-45, SH-46, SH-47, SH-48, SH-49, SH-50, SH-51, SH-52, SH-53, SH-54, SH-55, SH-66, SH-67, SH-68, SH-69, SH-70, SH-71, SH-72, SH-73, SH-79, SH-80, SH-83, TF-10, TF-11, TP-3, TP-4, UT-6, VS-9, VS-10, VS-11, VS-12, VW-9, VW-10, VW-11, VW-12, VW-14, VW-15, WQ-4, WQ-5, WQ-6, WQ-7, WR-46
Crawford, Larry (Anchorage Economic Development Corporation)	DEIS0130	See Anchorage Economic Development Corporation (DEIS0130)
Dalton, David	DEIS0253	RI-1, RR-2
Denison, Mr & Mrs James	DEIS0013	RI-1
Denton, Steve W. (Usibelli Coal Mine, Inc.)	DEIS0224	See Usibelli Coal Mine, Inc. (DEIS0224)
Dexter, Diana	DEIS0151	—
Dittrich, John	DEIS0132	—
Dittrich, John (ASRC Energy Services)	DEIS0133	See ASRC Energy Services (DEIS0133)
Doyon Drilling, Inc.	DEIS0118	—
Edelson, Jim	DEIS0221	RI-1
Eng, Ron (The Mountaineers)	DEIS0260	See Mountaineers, The (DEIS0221)
Fagnani, Matthew (NANA Oilfield Service Company)	DEIS0191	See NANA Oilfield Service Company (DEIS0191)
Fairbanks Chamber of Commerce	DEIS0125	—
Fairbanks Economic Development Corporation	DEIS0011	—
Fields, Mary	DEIS0184	—
Ford, Merritt	DEIS0149	—
Freeman, Samuel	DEIS0243	RI-1
Garvin, James	DEIS0147	—
Garvin, James (AT&S, Inc.)	DEIS0008	See AT&S Inc. (DEIS0008)
Gil, Steve	DEIS0232	RI-1



**TABLE 6.2.1-1 LIST OF COMMENTORS ON THE ASDP DRAFT EIS  
(ALPHABETICALLY BY NAME) (CONT'D)**

NAME/ORGANIZATION	DOCUMENT NUMBER	LIST OF ISSUE CODES <sup>1</sup>
Gregory, Jeff (Sourdough Express, Inc.)	DEIS0003	See Sourdough Express, Inc. (DEIS0003)
Grimm, Ronald	DEIS0153	—
Gulik, Amy	DEIS0190	RI-1
H.C. Price Co.	DEIS0005	—
Harcourt, Alexander	DEIS0170	—
Harris, Scott	DEIS0265	—
Harrison, Deborah (Annie)	DEIS0218	RI-1
Haugen, David W. (Lynden, Inc.)	DEIS0006	See Lynden, Inc. (DEIS0006)
Hebert, David M. (Nabors Alaska Drilling, Inc.)	DEIS0055	See Nabors Alaska Drilling, Inc. (DEIS0055)
Helmericks, James	DEIS0198	BD-2, BD-3, FS-7, FS-8, MM-10, MS-9, MS-10, MS-11, PL-12, SH-16, SH-62, SH-63, TE-3, TE-4, TE-5, TP-1, VS-1, VW-3
Helmericks, Teena	DEIS0263	BD-1, IS-8, PL-1, SH-61, VS-1
Hickey, Joe	DEIS0159	—
Higgins, William	DEIS0146	—
Hoffman, David	DEIS0247	RI-1
Holden, Grace	DEIS0246	RI-1
Hudgens, Patric	DEIS0136	—
Huggins, William	DEIS0269	RI-1
Humowiecki, Jennifer	DEIS0180	RI-1
Humowiecki, Jennifer	DEIS0267	—
Imm, Teresa (Arctic Slope Regional Corp.)	DEIS0261	See Arctic Slope Regional Corp. (DEIS0261)
James, Rachel (Alaska Coalition)	DEIS0240	See Alaska Coalition (DEIS0240)
James, Rachel (Alaska Coalition)	DEIS0257	See Alaska Coalition (DEIS0257)
Jones, Andrew	DEIS0152	—
Jouthas, Lori	DEIS0169	RI-1
Kaigelak, Bernice	DEIS0207	PL-12, RE-21, RI-1
Kaigelak, Isaac	DEIS0213	—
Karnos, Nick	DEIS0258	—
Kasak, David, Sr.	DEIS0214	SH-9
Keifer, Daniel	DEIS0259	—
Kennedy, Susan (NOAA)	DEIS0270	See NOAA (DEIS0270)
Kokjohn, Tyler	DEIS0264	AB-6

**TABLE 6.2.1-1 LIST OF COMMENTORS ON THE ASDP DRAFT EIS  
(ALPHABETICALLY BY NAME) (CONT'D)**

NAME/ORGANIZATION	DOCUMENT NUMBER	LIST OF ISSUE CODES <sup>1</sup>
Kostival, Ben	DEIS0187	RI-1
Kreig, Ray	DEIS0173	—
Kroehler, Corbett	DEIS0227	RI-1
Kuehne, Glenn	DEIS0255	—
Kuukpik Corporation	DEIS0081	SH-15, SH-15, WR-3, WR-5
Kuukpik Corporation	DEIS0083	BC-6, BC-7, LA-27, MS-36, PL-1, RI-4, SH-1, SH-3, SH-15, TF-1, UT-7, WR-3, WR-5
Kuukpik Corporation	DEIS0230	AQ-6, AQ-7, AQ-16, AQ-17, BC-6, BC-13, BC-17, BC-20, FS-6, FS-17, GG-1, IC-4, LA-1, LA-16, LA-27, MM-27, MS-2, MS-4, MS-36, MS-46, PL-8, PN-17, PN-18, PN-19, PN-20, PP-16, RE-1, RI-1, RI-4, RI-11, RI-12, RI-15, RI-16, SC-10, SC-15, SG-3, SH-12, SH-60, SH-78, TF-7, TF-8, VW-7, WR-3, WR-5, WR-32, WR-33, WR-48
Kuukpikmiut Subsistence Oversight Panel (Kuukpik Corporation)	DEIS0081	See Kuukpik Corporation (DEIS0081)
Laiti, J.A. (UA Local Union 375)	DEIS0080	See UA Local Union 375 (DEIS0080)
Lam, Sunny	DEIS0201	CO-1, RR-2
Lamb, Alexandra	DEIS0175	RI-1
Lambeth, Catherine	DEIS0268	—
Lambeth, Larry	DEIS0155	RI-1
Lampe, Doreen	DEIS0262	IS-6, LA-27
Lampe, Leonard (Native Village of Nuiqsut)	DEIS0229	See Nuiqsut, Native Village of (DEIS0229)
Lampe, Norman and Annie	DEIS0217	MM-2, PL-12, RE-21
Landmann, Eric	DEIS0182	—
leaveitwild.org form letter (Farrand, Jim)	DEIS0001	RI-1
Leavitt, Steve E.	DEIS0206	RI-1, SH-3
Ledgerwood, Chris	DEIS0165	—
Lenahan, David	DEIS0186	RI-1
Light, Ted	DEIS0145	—
Lincoln, Tom	DEIS0176	—
Lively, Brit	DEIS0138	—
Londe, Susan	DEIS0194	RI-1
Lynden, Inc.	DEIS0006	—
Lyons, Laura	DEIS0249	RI-1
Martens, Christine, Ph.D.	DEIS0203	—
Masuleak, Mae	DEIS0225	IS-2
Matthews, David L. (H.C. Price Co.)	DEIS0005	See H.C. Price Co. (DEIS0005)

**TABLE 6.2.1-1 LIST OF COMMENTORS ON THE ASDP DRAFT EIS  
(ALPHABETICALLY BY NAME) (CONT'D)**

NAME/ORGANIZATION	DOCUMENT NUMBER	LIST OF ISSUE CODES <sup>1</sup>
May, Donald F (ASTAC)	DEIS0219	See ASTAC (DEIS0219)
McCanless, Sean	DEIS0251	—
McClymont, Ashley	DEIS0248	—
McIntyre, Gilbert	DEIS0018	—
Meyer, Tony (Anadarko Petroleum Corporation)	DEIS0113	See Anadarko Petroleum Corporation (DEIS0113)
Miller, Brenda	DEIS0250	RI-1
Miller, Pamela A. (Arctic Connections)	DEIS0239	See Arctic Connections (DEIS0239)
Minerals Management Service	DEIS0200	AQ-20, BD-32, BD-33, BD-34, EJ-3, EJ-6, EJ-7, FG-5, FG-6, FG-7, FG-8, FG-9, FG-10, FG-11, IC-5, IC-6, IC-7, IS-10, IS-11, IS-12, IS-17, IS-18, LA-19, LA-22, LA-23, LA-35, MM-5, OS-4, OS-12, OS-13, OS-14, OS-15, OS-16, OS-17, OS-18, OS-19, OS-20, OS-21, OS-22, OS-23, PN-6, PN-7, PN-8, PN-9, PN-10, PY-1, PY-2, RE-2, RE-2, RE-3, RE-8, RE-9, RE-10, RE-11, RE-12, RE-13, RE-14, RE-15, RE-20, SC-4, SG-4, SH-58, SH-59, TF-4, WR-23, WR-24
Mitchell, Michael	DEIS0139	—
Morgan, Kevin D, Chief (USACE)	DEIS0241	See USACE (DEIS0241)
Mountaineers, The	DEIS0260	RI-1
Nabors Alaska Drilling, Inc.	DEIS0055	—
NANA Oilfield Service Company	DEIS0191	—
NOAA	DEIS0270	BC-4, BC-5, FS-5, FS-6, IS-6, LA-1, MM-5, MS-6
North Slope Borough	DEIS0236	AA-2, AA-3, AB-5, AQ-26, BC-6, BC-7, BC-11, BC-12, BC-19, BD-47, BD-48, BD-49, BD-50, BD-51, BD-52, BD-53, BD-54, BD-55, BD-56, BD-57, BD-58, BD-59, BD-60, BD-61, BD-62, BD-63, BD-64, BD-65, BD-66, BD-67, BD-68, BD-69, BD-70, BD-71, BD-95, BD-96, BD-97, BD-98, BD-99, BD-100, BD-101, BD-102, CZ-1, EI-3, EI-4, EJ-1, FG-4, FG-15, FS-16, GM-1, IC-1, IS-4, IS-5, IS-6, LA-31, MM-11, MM-12, MM-13, MM-14, MM-25, MS-17, MS-18, MS-19, MS-20, MS-21, MS-22, MS-23, MS-24, MS-25, MS-26, MS-27, MS-28, MS-42, MS-45, OS-10, OS-33, OS-34, PL-15, PN-11, RD-19, RE-5, RE-6, RE-7, RI-1, RI-3, RI-5, RI-7, RI-23, RI-24, SC-6, SC-7, SC-8, SC-9, SG-1, SG-5, SH-22, SH-23, SH-24, SH-25, SH-26, SH-27, SH-28, SH-29, SH-30, SH-31, SH-32, SH-33, SH-34, SH-35, SH-36, SH-37, SH-38, SH-57, SH-74, SH-81, TE-12, TE-13, TF-5, WR-5, WR-7, WR-8, WR-31
Northern Alaska Environmental Center	DEIS0110	IS-1, IS-2, RI-1, SH-3, SH-4
Northwest Technical Services	DEIS0131	—
NRDC.org form letter (McLeod, Lewis A.)	DEIS0002	RI-1
Nuiqsut (City of)	DEIS0017	AQ-26, EJ-1, RE-21, SH-1, SH-2

**TABLE 6.2.1-1 LIST OF COMMENTORS ON THE ASDP DRAFT EIS  
(ALPHABETICALLY BY NAME) (CONT'D)**

<b>NAME/ORGANIZATION</b>	<b>DOCUMENT NUMBER</b>	<b>LIST OF ISSUE CODES<sup>1</sup></b>
Nuiqsut (City of)	DEIS0237	IS-2, IS-9, MM-8, SH-1, SH-8
Nuiqsut, City of (Kuukpik Corporation)	DEIS0081	See Kuukpik Corporation (DEIS0081)
Nuiqsut, Community of	DEIS0082	BC-6, BC-7, MM-9, MS-36, PL-1, RI-4, SH-1
Nuiqsut, Native Village of	DEIS0229	PL-2, RI-1, SH-1, SP-2
Nuiqsut, Native Village of (Kuukpik Corporation)	DEIS0081	See Kuukpik Corporation (DEIS0081)
Nuiqsut, Native Village of (Kuukpik Corporation)	DEIS0230	See Kuukpik Corporation (DEIS0230)
Nukapigak, Ruth	DEIS0212	FS-2, RE-21, RI-1, SH-1, WR-2
O'dea, Jennifer	DEIS0185	—
Ogroogak, Paul	DEIS0208	FS-2, PL-12, RE-21, SH-9
Olsen, Susan	DEIS0120	RI-2
Onstad, Julianna	DEIS0252	—
Owens, Tadd (Resource Development Council for Alaska)	DEIS0111	See Resource Development Council for Alaska (DEIS0111)
Patwari, Neal	DEIS0144	—
Peak Oilfield Service Co.	DEIS0127	—
Perry, George	DEIS0143	—
Pierce, Melinda	DEIS0135	RI-1
Poinsette, Derek	DEIS0231	—
Postema, Albert	DEIS0128	—
<b>Public Hearing – Atqasuk</b>	DEIS0202	FS-4, MS-1, MS-3, SH-6, SH-7, SH-8
<b>Public Hearing – Barrow</b>	DEIS0116	LA-5, LA-6, MS-8, PN-5, RI-2, RI-5, SC-3, SH-10, SH-11
<b>Public Hearing – Nuiqsut</b>	DEIS0114	AQ-18, AS-1, BC-1, BC-2, BC-3, BC-19, IS-4, LA-27, MM-4, MS-4, MS-46, OS-1, PL-1, RE-21, RI-4, RI-23, SC-2, SH-1, SH-56, SH-61, SP-2, TF-1, TF-2, TP-2, UT-7, WR-3, WR-47
<b>Public Hearing – Anaktuvuk Pass</b>	DEIS0115	RD-1, SH-5, SP-1
<b>Public Hearing – Anchorage</b>	DEIS0195	AB-1, BC-18, BD-1, BD-94, IC-12, IS-1, IS-4, IS-5, IS-6, IS-7, MS-5, PL-12, PL-13, RI-1, SC-1, SH-3, SH-4
<b>Public Hearing – Fairbanks</b>	DEIS0117	AB-1, IS-1, IS-3, IS-4, RI-1, SC-1, SH-1, SH-4
Rankin, Billy	DEIS0148	—
Rechel, Eric	DEIS0228	RI-1
Reinbold, Gary	DEIS0142	—
Resource Development Council for Alaska	DEIS0111	—
Santucci, Melissa	DEIS0171	—

**TABLE 6.2.1-1 LIST OF COMMENTORS ON THE ASDP DRAFT EIS  
(ALPHABETICALLY BY NAME) (CONT'D)**

NAME/ORGANIZATION	DOCUMENT NUMBER	LIST OF ISSUE CODES <sup>1</sup>
Scanlon, Kelly Hill (Northern Alaska Environmental Center)	DEIS0110	See Northern Alaska Environmental Center (DEIS0110)
Schok, Daniel	DEIS0166	—
Schulbert, Stacy (Anchorage Chamber of Commerce)	DEIS0124	See Anchorage Chamber of Commerce (DEIS0124)
Scott, Gabriel (Cascadia Wildlands Project)	DEIS0233	See Cascadia Wildlands Project (DEIS0233)
Senior, Mr.	DEIS0254	—
Seyfried, William M., Jr.	DEIS0054	—
Seyfried, William M., Jr.	DEIS0158	—
Sharp, Catherine	DEIS0220	—
Shields, Mary (Northwest Technical Services)	DEIS0131	See Northwest Technical Services (DEIS0131)
Shuttles, Robert	DEIS0244	—
Sourdough Express, Inc.	DEIS0003	—
Stagman, Robert G., M.D.	DEIS0010	RI-1
Stamps, Bill (Peak Oilfield Service Co.)	DEIS0127	See Peak Oilfield Service Co. (DEIS0127)
Stanley, Patricia	DEIS0177	RI-1
State of Alaska DNR	DEIS0242	AA-8, AB-2, AB-3, AQ-25, AS-3, BC-8, BC-9, BC-10, CZ-5, EI-2, FG-1, FG-14, FG-38, FG-40, FG-41, FG-42, FG-43, FG-44, FG-45, FG-46, FG-47, FG-48, FG-49, FG-50, FG-51, FG-52, FG-53, FG-54, FG-55, FG-56, FG-57, FG-58, FG-59, FG-60, FS-10, FS-26, FS-27, FS-28, IC-8, IC-9, IC-14, LA-30, LA-34, LA-36, LA-37, MM-15, MM-16, MM-24, MS-12, MS-13, MS-14, MS-15, MS-16, MS-41, MS-47, MS-48, MS-49, MS-50, MS-51, OR-1, OR-2, OS-5, OS-6, OS-7, OS-8, OS-9, OS-10, OS-24, OS-25, OS-26, OS-27, OS-28, OS-29, OS-30, OS-31, OS-32, OS-40, OS-41, PF-1, PF-2, PF-3, PF-4, PF-8, PF-9, PL-3, PL-4, PL-5, PL-6, PL-7, PL-16, PN-2, PN-12, PN-14, PN-22, PP-4, PP-5, PP-6, PP-7, PP-8, PP-14, PP-15, PP-16, PP-17, PP-18, PY-3, RD-2, RD-3, RD-4, RD-5, RD-14, RD-17, RD-18, RD-23, RE-1, RE-15, RI-2, RI-8, RI-10, SC-1, SH-17, SH-18, SH-19, SH-20, SH-21, SH-64, SH-65, SH-75, SH-76, SL-1, SP-3, SP-4, SP-6, SP-7, WQ-1, WR-9, WR-10, WR-11, WR-12, WR-13, WR-14, WR-15, WR-16, WR-25, WR-26, WR-27, WR-28, WR-29, WR-30, WR-50, WR-51
Stein, Seth	DEIS0266	—
Stewart, Scott	DEIS0137	—
Stinson, Robert W. (Conam Construction Co.)	DEIS0004	See Conam Construction Co. (DEIS0004)
Stokes, Pete	DEIS0134	—
Stuart, Julie	DEIS0140	—

**TABLE 6.2.1-1 LIST OF COMMENTORS ON THE ASDP DRAFT EIS  
(ALPHABETICALLY BY NAME) (CONT'D)**

NAME/ORGANIZATION	DOCUMENT NUMBER	LIST OF ISSUE CODES <sup>1</sup>
Taylor, Kenton (State of Alaska DNR)	DEIS0242	See State of Alaska DNR (DEIS0242)
Theodoru, Corrinne	DEIS0179	—
Tukle, Frederick and Della	DEIS0205	—
UA Local Union 375	DEIS0080	
UA Local Union 375	DEIS0109	—
USACE	DEIS0241	AA-1, AB-7, AS-4, AS-7, AS-8, BC-1, BC-14, BD-80, BD-81, CR-2, FG-61, FG-62, GM-2, GY-1, IS-29, LA-1, LA-26, LA-32, LA-33, MM-28, NZ-4, NZ-8, PF-5, PL-16, RA-3, RA-4, RD-7, RD-20, RE-4, RI-17, RI-22, SC-5, SP-8, TF-9, UT-1, UT-2, UT-3, VS-7, VS-8, VW-4, VW-8, VW-13, WQ-2, WQ-3, WR-6, WR-34, WR-35, WR-36, WR-37, WR-38, WR-39, WR-40, WR-41
USEPA	DEIS0271	AA-14, AB-1, AQ-8, AQ-9, AQ-10, AQ-11, AQ-12, AQ-13, AQ-14, BC-1, BC-15, BC-16, CO-3, EJ-5, FG-17, GM-3, GM-4, GM-5, GY-2, IS-30, LA-1, LA-2, LA-18, LA-21, LA-33, MM-1, MM-29, MM-30, MM-31, MS-37, OR-3, PN-4, RE-16, RI-13, RI-18, SH-39, SH-82, UT-4, UT-5, UT-8, WR-5, WR-41, WR-42, WR-43, WR-44, WR-45
USFWS	DEIS0216	AA-4, AS-2, BC-1, BC-19, BD-5, BD-6, BD-7, BD-8, BD-9, BD-10, BD-11, BD-12, BD-13, BD-14, BD-15, BD-16, BD-17, BD-18, BD-19, BD-20, BD-21, BD-22, BD-23, BD-24, BD-25, BD-26, BD-27, BD-28, BD-29, BD-30, BD-31, BD-105, FG-4, FS-9, GM-1, IS-5, IS-6, LA-8, LA-15, PL-16, RA-2, SH-10, TE-6, TE-7, TE-8, TE-9, TE-10, TE-11, TF-3, WR-5, WR-6, WR-7, WR-8
Usibelli Coal Mine, Inc.	DEIS0224	—
Vallone, Cheryl	DEIS0154	—
Voorhies, Bill & Marilyn	DEIS0012	RI-1
Walker, Charlie K., CecD (Fairbanks Economic Development Corporation)	DEIS0011	See Fairbanks Economic Development Corporation (DEIS0011)
Whitehead, John (CPAI)	DEIS0238	See CPAI (DEIS0238)
Whitmore, Susan	DEIS0167	RI-1
Whitmore, Susan	DEIS0192	RI-1
Wilmarth, David	DEIS0150	—
Wilson, Ron (Doyon Drilling, Inc.)	DEIS0118	See Doyon Drilling, Inc. (DEIS0118)
Woods, Joeb, Sr.	DEIS0211	PL-12, RI-1, WR-1
Wyberg, Kenneth and Sharon	DEIS0235	RI-1, RI-3
Yockey, Ken	DEIS0164	—
Zukoski, E.B.	DEIS0163	RR-1, TE-1, TE-2

Notes:

<sup>1</sup>A definition of each Issue Code Prefix is provided in Table 6.3.1-1.

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## **6.2.2 Public Meeting Testimony**

Substantive comments received during the six public hearings have been addressed in the same manner as written comments. The public hearing written transcripts have been assigned document numbers, and are listed in the Name/Organization column in Table 6.2.1-1 by the location of the Public Hearing (e.g. Public Hearing – Barrow). The list of Issue Codes identified from the transcript of each meeting is also indicated in the table. A summary of each public hearing, including a table listing individuals who provided oral testimony (see Table 6.2.2-1) at each hearing follows.

### **6.2.2.1 Anaktuvuk Pass, AK**

The public hearing in Anaktuvuk Pass was held on February 17, 2004 in the Village Council Hall at 7:00 o'clock p.m. Approximately 20 people attended this hearing and 2 attendees provided comments for the record.

### **6.2.2.2 Anchorage, AK**

The public hearing in Anchorage was held on February 23, 2004 in the Z. J. Loussac Library at 7:00 o'clock p.m. Approximately 60 people attended this hearing and 20 attendees provided comments for the record.

### **6.2.2.3 Atkasuk, AK**

The public hearing in Atkasuk was held on February 24, 2004 in the Village Community Center at 7:00 o'clock p.m. Approximately 25 people attended this hearing and 4 attendees provided comments for the record.

### **6.2.2.4 Barrow, AK**

The public hearing in Barrow was held on February 19, 2004 in the NSB Assembly Chambers at 7:00 o'clock p.m. Approximately 25 people attended this hearing and 5 attendees provided comment for the record.

### **6.2.2.5 Fairbanks, AK**

The public hearing in Fairbanks was held on February 18, 2004 in the Noel Wien Public Library at 7:00 o'clock p.m. Approximately 60 people attended this hearing and 30 attendees provided comments for the record.

### **6.2.2.6 Nuiqsut, AK**

The public hearing in Nuiqsut was held on February 10, 2004 in the Village Council Hall at 7:00 o'clock p.m. Approximately 40 people attended this hearing and 11 attendees provided comments for the record. The commentors are listed in Table 6.6.2-1.

### 6.2.3 Public Hearings Oral Testimony

**TABLE 6.2.2-1 LIST OF INDIVIDUALS WHO PROVIDED ORAL TESTIMONY  
AT PUBLIC HEARINGS**

<b>ANAKTUVUK PASS 02/17/04</b>	<b>ANCHORAGE 02/23/04</b>	<b>ATQASUK 02/24/04</b>	<b>BARROW 02/09/04</b>	<b>FAIRBANKS 02/18/04</b>	<b>NUIQSUT 02/10/04</b>
Raymond Paneak	Tom Maloney	Doreen Simmons	Mark Ireland	John Whitehead	Isaak Nukapigak
Sollie Hugo	Bob Elder	Virginia Brower	Geoff Carroll	John Binkley	Joe Nukapigak
	John Whitehead	Kate Aiken	George Oemaun	Steve Thompson	Leonard Lampe
	Tadd Owens	Tom Brower, Jr.	Marie Carroll	Steve Frank	Rosemary Ahtuangularuk
	Maynard Tapp		Charles Hopson	Mark Hanley	Isaac Nukapigak
	Lynn Johnson			Ken Martin	Dora Nukapigak
	Deborah Williams			Don Lowry	Ruth Nukapigak
	Rachel James			Tim Sharp	Sarah Kunaknana
	Larry Houle			Loretta Lolnitz	Mark Ireland
	Jack Laasch			Sean Rice	Annie Lampe
	John Minier			Cathy Miller	
	Jim Gilbert			Paul Metz	
	Lee Smith			Kimberly Cordes	
	Michael O'Connor			John E Swortfiguer	
	Pamela A. Miller			Norm Phillips	
	Mark Huber			Lucy Beach	
	George Veralis			Terry Wornath	
	Joe Nakapigak			Jennifer Flower	
	Theresa Imm			Chris Johansen	
	James Udelhoven			Randall Frank	
				Dale D. Riley	
				Garry Hutchinson	
				Jeanine St. John	
				Howard Maillard	
				Franz Mueter	
				Don Shannon	
				Nick Turenne	
				Brian Maher	
				Erving Anderson	
				Buzz Otis	

**Notes:**

Oral testimony from Draft EIS public hearings and meetings is provided in the Administrative Record and can be inspected upon request to the BLM.



## 6.3 SPECIFIC ISSUES AND RESPONSES

### 6.3.1 Comment Categories and Issue Statements

Table 6.3.1-1 provides a list of 51 Comment Categories by which approximately 921 issues raised by substantive public comments have been organized. The number of coded issue statements included in each category is listed in the table. Each of the Issue Statements reflects one (or several similar) substantive comments identified through review of letters and transcripts during the Response-to-Comments process. Following Table 6.3-1, each issue statement is provided, as well as a response to each.

**TABLE 6.3.1-1 ISSUE STATEMENTS BY COMMENT CATEGORY**

COMMENT CATEGORY (ALPHABETICAL ORDER)	ISSUE CODE PREFIX	TOTAL NUMBER OF ISSUES
Abandonment and Reclamation	AB	7
Agency Policies and Authorities	AA	14
Air Quality	AQ	27
Airstrips	AS	8
Alternatives	LA	38
Bibliography	BB	1
Birds	BD	106
Boat Ramps and River Access	RA	4
Bridges and Culverts	BC	20
Climate and Meteorology	CM	2
Cultural Resources	CR	2
Cumulative Impacts Structure, Methodology and Scope	IS	31
Endangered and Threatened Species	TE	24
Environmental Justice	EJ	7
Existing Infrastructure in the Plan Area	EI	4
Figures	FG	64
Fish	FS	28
Formal Scoping	CO	4
General Impact Concerns	IC	14
Geology	GY	2
Government-to-Government Consultation	GG	1
Gravel Mines	GM	5
Intent of this Environmental Impact Statement (EIS)	RI	24
Land Uses and Coastal Management	CZ	5
List of Preparers	PS	1
Mammals	MS	54
Mitigation and Monitoring	MM	33
Noise	NZ	8
Off-Road Travel	OR	3
Oil Spill Prevention, Detection and Response	SP	8
Oil, Seawater, and Hazardous Materials Spills	OS	41
Permafrost	EP	1
Physiography	PY	3
Pipelines	PL	16
Processing Facilities	PF	9
Production Pads	PP	19
Purpose and Need	PN	22

**TABLE 6.3.1-1 ISSUE STATEMENTS BY COMMENT CATEGORY (CONT'D)**

<b>COMMENT CATEGORY (ALPHABETICAL ORDER)</b>	<b>ISSUE CODE PREFIX</b>	<b>TOTAL NUMBER OF ISSUES</b>
Recreation Resources	RR	4
Regional Economy	RE	21
Roads	RD	23
Sand and Gravel	SG	5
Socio-Cultural Resources	SC	15
Soils	SL	1
Subsistence Harvest and Uses	SH	83
Surface Water Quality	WQ	7
Traffic	TF	11
Transportation	TP	4
Utilities	UT	8
Vegetation and Wetlands	VW	16
Visual Resources	VS	12
Water Resources	WR	51

### **6.3.2 Issue Statements and Responses by Comment Category**

#### **6.3.2.1 Abandonment and Reclamation**

##### **AB-1**

This issue was raised in the following letters: DEIS0117, DEIS0195, and DEIS0271.

##### **ISSUE**

Stipulation 58 requires that all facilities shall be removed and sites rehabilitated. The Final EIS should discuss this requirement under Features Common to Alternatives for abandonment of gravel roads, airstrips, production pads, etc.

##### **RESPONSE**

Stipulation 58 actually allows much flexibility to the AO in regards to abandonment and reclamation by saying that the AO may determine that it is in the best interest of the public to retain some or all of the facilities. Wording very similar to Stipulation 58 does appear in Section 2.3.

##### **AB-2**

This issue was raised in the following letter: DEIS0242.

##### **ISSUE**

The DEIS (Section 2) assumes that gravel roads will be left in place upon abandonment. It is certain that some sections of road will be required to be removed by permit stipulation. Potential impacts associated with gravel removal also may be worth discussion.

---

**RESPONSE**

Sections 2 and 4 have been modified to address the impacts of both removing gravel roads and pads and retaining them.

**AB-3**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

In terms of rehabilitation/reclamation, a plan (not specific, but general) to reclaim the Clover gravel mine site concurrent with construction should be addressed.

**RESPONSE**

A proposed plan for mining and reclamation of Clover has been included as Appendix O. Concurrent reclamation is the preferred method.

**AB-4**

This issue was raised in the following letter: DEIS0257.

**ISSUE**

The DEIS did not fully address the Dismantling Removal and Reclamation requirements.

**RESPONSE**

Abandonment (which includes dismantling, removal, and reclamation) is discussed in Section 2.3 (see Sections 2.3.1.4, 2.3.2.4, 2.3.3.5, 2.3.6, and 2.3.9.3). A more specific plan would be developed by the holder of the permit prior to abandonment activities and would be approved by the AO after additional NEPA analysis.

Additionally, Sections 2 and 4 have been modified to address the impacts of both removing gravel roads and pads and retaining them.

**AB-5**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

The EIS should include analysis of impacts of leaving roads/pads/airstrips in place versus gravel removal and potential re-use.

**RESPONSE**

Section 4 was modified to analyze the impacts of both removing gravel roads and pads and retaining them.

**AB-6**

This issue was raised in the following letter: DEIS0264.

**ISSUE**

All the action alternatives state that sand and gravel could be re-used on abandonment, although it also states there is no such plan. A portion of the sand and gravel is likely to be contaminated and it may not be feasible for re-use.

**RESPONSE**

Contaminated materials would be removed and treated in the prescribed manner before disposal or re-use.

**AB-7**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

A mining and rehabilitation/reclamation plan must be included in the FEIS and analysis of mining impacts must be completed.

**RESPONSE**

A proposed mining and reclamation plan for Clover is included as Appendix O and additional impact analysis reflecting the plan has been added to the EIS.

**6.3.2.2 Agency Policies and Authorities**

**AA-1**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

Coordination for endangered species and the Stevens-Magnuson Act is necessary before the Corps can complete their permit evaluation process. The biological assessment should be included in the FEIS.

**RESPONSE**

The Biological Assessment was filed with the USFWS in May 2004 and is currently available on the Alpine Satellite Development Plan website: [www.alpine-satellite.com](http://www.alpine-satellite.com).

**AA-2**

This issue was raised in the following letters: DEIS0236 and DEIS0238.

**ISSUE**

The EIS should include local zoning and permitting authority in the Table of Authorities at 1.1.4-1 and Appendix C.

**RESPONSE**

Table 1.1.4-1 and Appendix C have been edited to address this concern.

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**AA-3**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

The EIS fails to provide any analysis to support the implied statement that the North Slope Borough has no authority to place conditions on the development of the National Petroleum Reserve-Alaska .

**RESPONSE**

The EIS has been modified to explain that application of the NSB's land management regulations to oil and gas exploration and development activities on federal land within the National Petroleum Reserve-Alaska is subject to significant legal constraints, and therefore must be evaluated on a case-by-case basis as particular activities are proposed.

**AA-4**

This issue was raised in the following letters: DEIS0216 and DEIS0240.

**ISSUE**

Special Condition 10 of the 1998 permit issued by the Corps of Engineers to ARCO Alaska, Inc. specified that further satellite field development within the Delta would be roadless.

**RESPONSE**

At the request of the permittee, ARCO Alaska Inc., Special Condition 10 (SC10) was included in the USACE permit which authorized the placement of fill associated with the construction of the Alpine Development Project facilities. The position of the USACE was that the condition was not directly related to the impacts of the proposal (since it related to potential future proposals) and therefore, did not meet the requirements for conditioning permits under 33 CFR 325.4(a). However, in accordance with the latter code, the District Engineer is authorized to add special conditions at the applicant's request. Consequently, the condition was added pursuant to ARCO Alaska Inc.'s February 6, 1998, written request. Since CPAI assumed the responsibility for complying with the terms and conditions of the Alpine Development Project permit, they would be required to comply with the intent of SC10. Information submitted by ARCO Alaska Inc. for the development established a clear presumption that roadless satellite production facilities would be practicable. Therefore, this presumption would have to be overcome before a Section 404 permit could be issued for any such future development with a gravel road, i.e., the proposed road to CD-4. Section 2 has been modified to reflect this.

**AA-5**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Section 12 of the Federal Oil and Gas leases for the Reserve requires removal of any improvement "not deemed necessary by lessor for preservation of producible wells." Leaving roads and pads in place upon abandonment also is inconsistent with Stipulation 58 of the 1998 ROD and may also be inconsistent with state leases for the Colville River Delta lands. The DEIS should discuss the provisions of all these potentially applicable legal requirements.

---

**RESPONSE**

Federal and state leases provide that removal and rehabilitation are the responsibilities of the lessee and that they must be accomplished to the satisfaction of the BLM's AO for federal leases and to the satisfaction of the Commissioner of Natural Resources for state leases. Section 12 of the Federal Leases state that "lessee shall place affected wells in condition for suspension or abandonment, reclaim the land as specified by the lessor and, within a reasonable period of time, remove equipment and improvements not deemed necessary by the lessor for preservation of producible wells." The Federal Leases also require that, "Upon field abandonment or expiration of a lease or oil- and gas-related permit, all facilities shall be removed and sites rehabilitated to the satisfaction of the AO, in consultation with appropriate Federal, State, and NSB regulatory and resource agencies. The AO may determine that it is in the best interest of the public to retain some or all of the facilities. Lessees shall comply with all exploration and development bonding required by law and regulation (43 CFR 3154.1 and 3134.1). No exceptions shall be granted to this provision." Similar requirements apply to state leases. The EIS describes that abandonment requirements will not be finalized until an abandonment plan has been developed and approved by the responsible state or federal agencies (see Sec. 2.3.1.4).

**AA-6**

This issue was raised in the following letter: DEIS0239.

**ISSUE**

If the planned Alpine capacity expansion modifications are needed to accommodate the Alpine satellites, this EIS process must be completed first. Otherwise, that construction might prejudice the outcome of the permitting process for which NEPA analysis has not yet been completed.

**RESPONSE**

There are three aspects of ACX—ACX-1, ACX-2, and ACX-3. ACX-1 and ACX-2 support the existing APF-1 and are independent of the ASDP. ACX-3 is necessary for the operation of the production pads and was analyzed as part of the EIS. ACX-1 and ACX-2 were considered in this EIS as part of the cumulative case. See the discussion in Section 2.3.12.2.

**AA-7**

This issue was raised in the following letter: DEIS0239.

**ISSUE**

The FEIS should not be completed until contingency plans are released for public review for all the proposed satellites, not just CD-3 and CD-4 as indicated in the state's public notice for ACMP review.

**RESPONSE**

State and federal laws and regulations require contingency plans. State ODPCPs are reviewed for consistency with state laws, including the Alaska Coastal Management Act, and are approved prior to the issuance of any permits for project construction. The FEIS discusses spill prevention and response in Section 2.3.4.

**AA-8**

This issue was raised in the following letter: DEIS0242.

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**ISSUE**

Table 1.1.4-1, Page 1-17. In the AOGCC section, move the last paragraph in the Regulatory Intent column to the top. That is essentially the AOGCC mission statement. In addition to the drilling permits, AOGCC also issues sundry notices that are authorizations to perform work on existing wells.

**RESPONSE**

The table has been edited as suggested.

**AA-9**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Page 1-20: indicates that should transfer of lease administration occur, ASRC “must” administer the lease in accordance with the same laws that would be applicable to BLM. DEIS does not cite to any case or legal opinion supporting the statement.

**RESPONSE**

The EIS has been modified to explain that ASRC would become the successor to the interests of the United States in any leases that ASRC assumes as a consequence of the conveyance of leased land within the National Petroleum Reserve-Alaska to Kuukpik Corporation and ASRC under ANCSA. Waiver of federal administration of a lease is not permitted if only a portion of the leasehold interest is conveyed. Even if the entire land area of a particular federal lease is conveyed, however, ensuring the continuation of adequate environmental protection measures would be one of the important interests of the United States that must be considered before any decision would be made by the BLM to waive lease administration on the conveyed lands. If lease administration were ever waived based on the BLM’s determination that the interests of the United States would be protected by such a waiver, the laws generally applicable to oil and gas leases on private lands would then apply. At a minimum, changes to any lease stipulations at that point would still require a renegotiation of the lease by all the parties in interest. Given all the contingencies that would have to occur for the situation to arise, specific changes to individual lease stipulations that might occur in the future if lease administration is ever waived are too remote and speculative to predict with any reasonable accuracy at this time. In any event, adequate environmental safeguards would continue to apply through the terms and conditions of permits and other approvals issued by federal, state, and local government agencies under numerous environmental laws. These environmental requirements would continue to ensure that any significant harm to the environment is avoided and that the levels and types of development impacts remain similar to those predicted in the EIS.

**AA-10**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS must discuss the possibility that ASRC may waive Stipulations and otherwise agreed to changes that may adversely impact the environment, and make an “informed judgement” about what ASRC may do with its lands and the leases on them.

**RESPONSE**

The EIS has been modified to explain that ASRC would become the successor to the interests of the United States in any leases that ASRC assumes as a consequence of the conveyance of leased land within the National

Petroleum Reserve-Alaska to Kuukpik Corporation and ASRC under ANCSA. Waiver of federal administration of a lease is not permitted if only a portion of the leasehold interest is conveyed. Even if the entire land area of a particular federal lease is conveyed, however, ensuring the continuation of adequate environmental protection measures would be one of the important interests of the United States that must be considered before any decision would be made by the BLM to waive lease administration on the conveyed lands. If lease administration were ever waived based on the BLM's determination that the interests of the United States would be protected by such a waiver, the laws generally applicable to oil and gas leases on private lands would then apply. At a minimum, changes to any lease stipulations at that point would still require a renegotiation of the lease by all the parties in interest. Given all the contingencies that would have to occur for the situation to arise, specific changes to individual lease stipulations that might occur in the future if lease administration is ever waived are too remote and speculative to predict with any reasonable accuracy at this time. In any event, adequate environmental safeguards would continue to apply through the terms and conditions of permits and other approvals issued by federal, state, and local government agencies under numerous environmental laws. These environmental requirements would continue to ensure that any significant harm to the environment is avoided and that the levels and types of development impacts remain similar to those predicted in the EIS.

#### **AA-11**

This issue was raised in the following letter: DEIS0240.

##### **ISSUE**

The DEIS must discuss what remedies third parties who might object to the administration of a lease have after the waiver of administration to ASRC occurs.

##### **RESPONSE**

If administration of any existing oil and gas lease issued by the BLM were waived in the future, the BLM would no longer have administrative responsibility for that particular lease. The successor in interest, ASRC, would succeed and become entitled to all the interests of the United States in the lease. Discussion of legal remedies that third parties might have against ASRC in the event of a future dispute is beyond the scope of this EIS.

#### **AA-12**

This issue was raised in the following letter: DEIS0257.

##### **ISSUE**

Site restoration may be economically or technically impossible. It should be made clear who is ultimately responsible.

##### **RESPONSE**

Leaseholders are required to restore lands they use to the satisfaction of the authorizing agency. The discussions of abandonment in Section 2 have been edited to clarify the lessees' financial responsibility for restoration.

#### **AA-13**

This issue was raised in the following letter: DEIS0257.

##### **ISSUE**

The BLM must describe how they intend to conduct long-term monitoring that includes biological control areas within the ASDP Area.



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**RESPONSE**

The BLM intends to develop a resource-monitoring plan using a Research and Monitoring Team established pursuant to the ROD for the Northeast National Petroleum Reserve-Alaska IAP/EIS. The team is in the initial stages of developing that plan.

**AA-14**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

To meet EPA's NEPA compliance requirements, the FEIS should include a copy of the applicant's NOI, topographic or aerial photographs showing the general location of the facility, and expected flow of NPDES discharge.

**RESPONSE**

This information is provided in Appendix M.

**6.3.2.3 Air Quality****AQ-1**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS should not claim that road dust would be kept down by winter use of roads, when it claims that CD-4 would be built in the summer and there is no proposal that would restrict the use of permanent gravel roads to winter-only traffic. The DEIS admits that Alternative A does not lend itself to quantification of traffic impact (example p. 4A4-52).

**RESPONSE**

Section 3.2.3.1, Section 4A.2.3, and Section 4A.2.3.2 have been amended in the FEIS to indicate that construction is not limited to winter months. Section 4F.2.3.2 has been written to indicate the same.

**AQ-2**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS only provides a quantitative estimate of air pollutant emissions from estimated aircraft use. It needs to also provide an estimate of emission from other equipment, and correlated all the emissions estimates to potential impacts, including those impacts to Nuiqsut residents whose children already suffer high rates of asthma.

**RESPONSE**

Section 4A.2.3 includes air pollutant emissions for proposed construction, drilling, and operation activities, and Section 4A.2.3.2 includes estimated air pollutant emissions from aircraft operations. New Sections 4F.2.3 and 4F.2.3.2 have been written to indicate the same information. State and federal air quality regulations are in place

to minimize potential air impacts, and all pollutant emissions, including fugitive dust, expelled during construction and operation, will be subject to permit regulations of state and federal air quality regulations.

**AQ-3**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS erroneously claims that because construction would not occur at a single location for any “significant length of time,” there would be no significant impact from construction emissions. The NAAQS and corresponding State air quality regulatory standards are hourly, daily and annual standards (example: p. 4A.2-42).

**RESPONSE**

Section 4A.2.3.2 has been amended for the FEIS to indicate that the ADEC requires construction emissions to comply with NAAQS. Alternative F – Preferred Alternative (Section 4F.2.3.2) has been written to indicate the same information.

**AQ-4**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS must undertake a facility, equipment, and site-specific analysis of emissions to determine the true impacts from the alternatives on air quality and other resources.

**RESPONSE**

The FEIS provides an analysis in Sections 4A.2.3.2 and 4F.2.3.2, which utilized the results of the air quality impact analyses for CD-3 and CD-4 to define the impacts of the proposed sites.

**AQ-5**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

BLM has the first obligation to identify and discuss all possible and reasonable mitigation measures to air quality, even if it has no intention of requiring their adoption. The EIS suggest no mitigation measures to reduce the impacts on air quality (example: p. 4A.2-46).

**RESPONSE**

Mitigation measures would be included to reduce or eliminate potential impacts identified in the impact analysis. Upon further review, and in response to comments received, mitigation measures have been added to Section 4A.2.3.2, Air Quality. New Section 4F.2.3.2 has been written to indicate the same.

**AQ-6**

This issue was raised in the following letter: DEIS0230.

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**ISSUE**

S.4.2.3 Should state that there is a particular concern by the local population on the number and frequency of flights, both during construction and production.

**RESPONSE**

This concern was acknowledged in Section 3.2.3.3 of the FEIS.

**AQ-7**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

Impacts to air quality cannot be analyzed without first conducting dispersion modeling. How can the DEIS purport to analyze impacts of a CPF in the sensitive area between Fish and Judy Creek without first knowing the impacts that each new pad will have on air quality?

**RESPONSE**

Dispersion modeling, as discussed in Section 4A.2.3.2, Air Quality, and new Section 4F.2.3.2, Air Quality, was conducted for the Alpine Development Project, including APF-1. The results of the modeling were used to evaluate impacts to air quality as required under the construction permit application.

**AQ-8**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The FEIS should provide quantitative estimates of non-criteria pollutants (188 HAPS listed under Section 112 of the CAA) emissions such as volatile organic chemicals (VOCs) from drilling or operational phases. In addition, this information should be incorporated as part of the Ambient Air Quality Analysis for each proposed production satellite.

**RESPONSE**

The proposed sites do not qualify as major sources of HAPs based upon the comparable CD-3 and CD-4 emission analysis.

**AQ-9**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The FEIS should provide full disclosure of GHG via a standard emission summary, which may include baseline emissions, project related emissions and emissions from reasonably foreseeable activities. The GHG emission summary should include carbon dioxide, methane, nitrous oxide, ozone, per fluorocarbons, hydrofluorocarbons, and sulfur hexafluoride.

**RESPONSE**

No GHG emission inventory is readily available for the project.

**AQ-10**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The FEIS should include a table similar to Table 4A.2.3-4 for each alternative.

**RESPONSE**

Sections 4B.2.3, Atmospheric Environment, and 4C.2.3, Atmospheric Environment, have been updated for the FEIS to reflect that estimated aircraft traffic emissions are within the ranges of those estimated under Alternative A. New tables depicting aircraft emissions have been added to Sections 4D.2.3 and 4F.2.3.

**AQ-11**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The FEIS should provide additional quantitative data, information, and analysis to ensure that exceedences of PSD are avoided as required by the Clean Air Act.

**RESPONSE**

The FEIS provides an analysis in Sections 4A.2.3.2 and 4F.2.3.2 that utilizes the results of the air quality impact analyses for CD-3 and CD-4 to define the impacts of the proposed sites.

**AQ-12**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The FEIS should include an inventory of potential emission sources and dispersion modeling of predicted impacts from all five satellites. This analysis should be incorporated as an appendix in the FEIS.

**RESPONSE**

The emission inventory for each site is presented in the FEIS in Tables 4A.2.3-2 through 4A.2.3-4. The potential air quality impacts from all sites is discussed in the cumulative impact section of the FEIS, Section 4G.2.3.

**AQ-13**

This issue was raised in the following letter: DEIS0271.

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**ISSUE**

The FEIS should include mitigation measures using Best Available Control Technology and Maximum Available Control Technology standards.

**RESPONSE**

All process equipment is assumed (pursuant to existing operating permit) to be fitted with BACT as required by the air agency of authority under the CAA.

**AQ-14**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The FEIS should include appropriate types of mitigation, control technologies, and level of monitoring required to demonstrate that potentially significant adverse impacts to air quality are adequately minimized.

**RESPONSE**

Specific mitigation measures, control technologies (i.e., BACT) and level of monitoring will be dictated by the ADEC, which is the agency of authority pursuant to the CAA. Such measures are discussed in the FEIS in Sections 4A.2.3.2, Air Quality, and 4F.2.3.2, Air Quality.

**AQ-15**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4A.3-30: 4.3.3.3 Resource Specific Impact Assessment/Air Quality. Recommend addition of a discussion of impacts to air quality if a spill was to occur and was accidentally ignited, or a decision was made to burn it.

**RESPONSE**

Section 4.3, Impacts of Oil, Seawater, and Hazardous Material Spills analyzes such potential impacts. Section 4.3.3.3, Air Quality, specifically discusses potential impacts to air quality from spills. Air quality impacts from ignition of the spilled product are not included, but would depend on the type of product and quantity, location, and meteorological conditions. Overall, spills would be localized, short-term, and have little impact on air quality. The applicant's proposed action does not include any proposal to burn any spilled products.

**AQ-16**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

The EIS is misleading in discussing the impacts of a proposed 1.2 to 2.5 MW power plant at CD-6 at only the 1.2 MW level.

**RESPONSE**

The discussion of air emissions in Section 4 has been modified to fully address air emissions.

**AQ-17**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

If the generator at CD-6 is powered off the test separator, there would be a natural gas flare, which the DEIS does not address.

**RESPONSE**

The applicant has not proposed a gas flare at CD-6.

**AQ-18**

This issue was raised in the following letter: DEIS0114.

**ISSUE**

The DEIS needs to examine flaring natural gas, chemical discharges, greenhouse effect and if any of this is dangerous to humans and animals.

**RESPONSE**

Flaring of natural gas would be conducted at HPF-1 and HPF-2, and would operate under the conditions set forth in the air quality operating permit. Estimated emissions for the HPFs are included in Section 4A.2.3, Atmospheric Environment. Air quality impacts are discussed in Section 4A.2.3.2, Air Quality. Section 4.3, Impacts of Oil, Seawater, and Hazardous Material Spills, analyzes such potential impacts. Section 4.3.3.3, Air Quality, specifically discusses potential impacts to air quality from spills. GHG effects are discussed in Sections 3.2.3.1, Climate and Meteorology, and 4G.5.8, Air Quality [Cumulative Impacts], and 4A.2.3.1, Climate and Meteorology.

**AQ-19**

This issue was raised in the following letter: DEIS0233.

**ISSUE**

The EIS should evaluate the air impacts of burning the fossil fuels that will be recovered, flaring natural gas, and exhaust from generators and pipeline pump stations.

**RESPONSE**

The applicant's proposed action does not include any proposal to burn any products or recovered by-products. Flaring of natural gas would be conducted at HPF-1 and HPF-2, and would operate under the conditions set forth in the air quality operating permit. Estimated emissions for the HPFs are included in Section 4A.2.3, Atmospheric Environment. Emissions from generators proposed are included in Section 4A.2.3, Atmospheric Environment. Air quality impacts are discussed in Section 4A.2.3.2, Air Quality. Pipeline pump stations may emit fugitive emissions, which would not affect air quality, but these are also included in the emission evaluation for the air quality operating permit.

**AQ-20**

This issue was raised in the following letter: DEIS0200.

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**ISSUE**

Section 4F.7.1: Authors of this section are referred to the Global Climate Change section that appears in the subsistence-harvest patterns cumulative effects assessment in the Northwest National Petroleum Reserve-Alaska IAP/EIS. We believe that the increasing body of climate change research can no longer be excluded from any discussion of cumulative effects on subsistence resources, subsistence practices, socio-cultural systems, and environmental justice with regard to North Slope development. Also note that CEQ considers the scientific evidence adequate to indicate that climate change is a “reasonably foreseeable” impact of green house gas emissions (CEQ 1997).

**RESPONSE**

The effects of global climate change are discussed in Section 3.2.3.1, Climate and Meteorology.

In its *Draft Guidance Regarding Consideration of Global Climate Change in Environmental Documents Prepared Pursuant to the National Environmental Policy Act*, October 8, 1997, the CEQ recommends addressing this issue at the program level rather than at the project level, such as the ASDP EIS. Nonetheless, a discussion of impacts from climate change is addressed in the cumulative impacts analysis of the FEIS (Section 4G.4.8).

**AQ-21**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS fails to quantify GHG from the various alternatives as required by NEPA. It cannot accurately assess the cumulative impacts from GHG of the alternatives.

**RESPONSE**

Cumulative impacts of GHG are discussed in Section 4G.5.8, Global Climate Change.

**AQ-22**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Page 4F-26: it is inadequate to state that it expects “higher, localized” air pollutant concentrations in the immediate vicinity of facilities, without specifying locales and projected pollutant concentrations.

**RESPONSE**

The statement referring to higher, localized concentrations of air pollutants has been omitted from Section 4G.5.8, Air Quality.

**AQ-23**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Page 4F-26: indicates “it is not known to what extent local [oil industry] sources in Alaska contribute to Arctic [pollution] haze” without substantiation.

**RESPONSE**

This comment has been removed from Section 4G.5.8.1 and the remaining language has been amended to avoid a generalizing statement.

**AQ-24**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The discussion of the Alternatives does not provide enough detail with respect to GHG emission, and discussion of energy requirements and natural or depletable resource requirements. If the discussion exists, it is not obvious in the text of the EIS.

**RESPONSE**

GHG emissions are discussed in Section 4G.5.8. Global Climate Change. Depletable resource requirements are discussed in Section 4H.

**AQ-25**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

4A.2.2.2. DEC believes the statement that there will be negligible effect of respirable particles (dust) being created because most of the time it is frozen and covered with snow isn't accurate. Sublimation will occur. Track-out from gravel mine site over snow/ice covered haul roads, blasting, and handling of bulk materials will all expose uncovered material. It would be more accurate to say that the frozen soil and snow cover will reduce fugitive dust emissions.

**RESPONSE**

Section 4A.2.3.2, Air Quality has been amended to indicate that frozen soil and snow cover would reduce respirable PM. Section 4F.2.3.2, Air Quality has been written to indicate the same.

**AQ-26**

This issue was raised in the following letters: DEIS0017, DEIS0204 and DEIS0236.

**ISSUE**

An insurance bond and a subsistence conflict avoidance agreement must be developed with Nuiqsut. Existing state and federal bonding requirements are not remotely sufficient to cover the cost of restoration.



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**RESPONSE**

Additional bonding with Nuiqsut, the Kuukpik Corporation, or ASRC may be arranged, though it is not subject to NEPA review. The lease places a legal obligation on the lessee to remove facilities and rehabilitate the land. Federal and state leases provide that removal and rehabilitation are the responsibilities of the lessee and that they must be accomplished to the satisfaction of the BLM's AO for federal leases and to the satisfaction of the Commissioner of Natural Resources for state leases. Section 12 of the Federal Leases state that "lessee shall place affected wells in condition for suspension or abandonment, reclaim the land as specified by the lessor and, within a reasonable period of time, remove equipment and improvements not deemed necessary by the lessor for preservation of producible wells." The Federal Leases also require that, "Upon field abandonment or expiration of a lease or oil- and gas-related permit, all facilities shall be removed and sites rehabilitated to the satisfaction of the AO, in consultation with appropriate Federal, State, and NSB regulatory and resource agencies. The AO may determine that it is in the best interest of the public to retain some or all of the facilities. Lessees shall comply with all exploration and development bonding required by law and regulation (43 CFR 3154.1 and 3134.1). No exceptions shall be granted to this provision." Similar requirements apply to state leases. The DEIS reflects (see Section 2.3.1.4) that abandonment requirements will not be finalized until an abandonment plan has been developed and approved by the responsible state or federal agencies.

Potential mitigation measures discussed under "Subsistence" includes establishment of a committee that would help identify and resolve conflicts between subsistence and development.

**AQ-27**

This issue was raised in DEIS0240.

**ISSUE**

The DEIS relies on Kuparuk River and Alpine data as surrogates of existing air quality in the Plan Area. DEIS p. 3-37. It claims that air quality is good, but in fact Alpine air pollutant numbers in the DEIS shows that ozone concentrations are ½ of the NAAQS, and a higher proportion of the particulate matter NAAQS. Building two new pads and associated components in the Colville River Delta area could will worsen air quality, an impact that the DEIS needs to take into account.

**RESPONSE**

As indicated in the DEIS, ambient levels of both ozone and PM10 are well below the respective NAAQS (with the noted exception of a high PM10 concentration due to a wind-driven fugitive dust event in 1999). The addition of new pads with associated emissions will, indeed, affect air quality. The FEIS has included an air quality impact analysis (Section 4A.2.3.2, Air Quality) that provides a summary of project impacts relative to the NAAQS for all criteria pollutants. In each case, it was shown that project impacts did not approach respective NAAQS and maximum concentration values occur at the facility boundary (i.e., pad edge) and decrease with distance from the facility (Table 4A.2.3-8).

**6.3.2.4 Airstrips****AS-1**

This issue was raised in the following letter: DEIS0114.

**ISSUE**

Nuiqsut's airstrip was to be enlarged so that it could take a bulk of storage pad issues related to the development in the National Petroleum Reserve-Alaska & Alpine sites.

**RESPONSE**

The concept of a Nuiqsut Operations Center is discussed in Section 2.6.8. Enlargement of Nuiqsut's airstrip is not a part of the applicant's proposed action nor action alternatives. Use of the existing Nuiqsut airstrip for the ASDP is a component of Sub-Alternative C-2, as described in Section 2.4.3.1.

**AS-2**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

An airstrip at CD-3 would be vulnerable to erosion during spring breakup flooding and fall storms. The subsequent dispersal of gravel would impact spectacled eider habitat.

**RESPONSE**

All gravel structures would be designed and built to withstand anticipated environmental conditions. Periodic erosion due to significant events could occur and damage would be repaired.

**AS-3**

This issue was raised in the following letters: DEIS0238 and DEIS0242.

**ISSUE**

Page 2-26, 1st paragraph. The reference to HERC helicopters should be modified as there is no such thing.

**RESPONSE**

Text has been changed to Hercules aircraft (or C-130). See Section 2.3.6, Airstrips, for this change.

**AS-4**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

2.3.6 – Airstrips: Last paragraph: “Unscheduled helicopter traffic, overwhelmingly in summer, will likely occur. It is not part of CPAI’s proposal, though. Rather, this traffic will largely be associated with scientific studies and monitoring of development. The frequency of this traffic and the areas in which it will take place are unpredictable.” Define “overwhelmingly.” We disagree that the number of flights and areas of disturbance are totally unpredictable. There are flight logs for all helicopter usage on the North Slope.

**RESPONSE**

Based on previous experience, the number of non-operational helicopter flights is projected to be 2,500 per summer season (1,250 takeoffs from the Alpine Development Project, and 1,250 return landings). There are no non-operational helicopter flights projected for the winter season. This information has been added to Section 2.3.10, Traffic.

**AS-5**

This issue was raised in the following letter: DEIS0238.

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**ISSUE**

Page 2-25: Airstrips. Dimensions would range from a short airstrip of “approximately” 3,400 feet by 100 feet used by a CASA or Otter...” Delete reference to DC 6 aircraft. Although it is possible to land a DC 6, safety concerns would likely disallow it and a 3,400-foot runway is too short for a DC 6 to take-off. DC 6s will not be allowed to land on 3,400-foot runways.

**RESPONSE**

Reference to DC-6 aircraft has been deleted from Section 2.3.6.

**AS-6**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 2-26: Explain why airstrips would be aligned to maximize the distance traveled over marine waters instead of tundra.

**RESPONSE**

The primary airstrip take-off/landing approach concern is disturbance of spectacled eider nesting habitat. This explanation has been added to Section 2.3.6, Airstrips.

**AS-7**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

2.4-1. Air Supported Pads: Last sentence “. . . would access the CD-3 drill site via . . . gravel airstrip” or by ice roads during the winter. This paragraph indicates that year-round access would be by air.

**RESPONSE**

Year-round access could be by air, but access via ice road would also be available in winter. For clarification, Section 2.4.1.1 has been modified.

**AS-8**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

Table 2.4.4-4 – Alternative D-1 – Estimated Traffic: Estimated helicopter traffic (personnel and summer research) needs to be included.

**RESPONSE**

Non-operational helicopter traffic has been estimated. This information has been added to Section 2.3.10, Traffic.

### **6.3.2.5 Alternatives**

#### **LA-1**

This issue was raised in the following letters: DEIS0216, DEIS0230, DEIS0240, DEIS0266, DEIS0270 and DEIS0271.

#### **ISSUE**

The State of Alaska has submitted plans and permit applications to the U.S. Army Corps of Engineers to build the Colville River Road extending to Nuiqsut. This road would be located only a few miles south of ConocoPhillips Proposed road and bridge. The final EIS should consider using the proposed state bridge over the Colville River and delete the Nigliq Channel Bridge. Two larger bridges within 15 miles of each other appears to be redundant and would double the potential impacts to fish habitats. A permanent road would connect CD-1, 2 and 4. An ice road would serve as winter connections to the permanent road. CD-5, 6 and 7 could be connected to the permanent state road. This alternate location should be evaluated for purposes of meeting CWA Section 404 requirements

#### **RESPONSE**

The FEIS introduces Sub-Alternative C-2, which would delete the Nigliq Channel Road Bridge and link CD-5, CD-6, and CD-7 to the proposed state road and bridge across the Colville River.

#### **LA-2**

This issue was raised in the following letter: DEIS0271.

#### **ISSUE**

EPA recommends that the ADOT&PF's proposed Colville River Road and Bridge project and the Nuiqsut Operations Center (NOC) be included in the scope of this EIS and considered within the range of actions, alternatives, and impacts to be evaluated. The State's proposed project appears to be a reasonable alternative to the applicant's Nigliq Channel crossing under Alternatives A and C.

#### **RESPONSE**

The FEIS introduces Sub-Alternative C-2, which would delete the Nigliq Channel Road Bridge and link CD-5, CD-6, and CD-7 to the proposed state road and bridge across the Colville River. Sub-Alternative C-2 would include a 2-acre pad near Nuiqsut to be used primarily as a storage area for vehicles. This includes some of the essential features and provides some of the benefits of a Nuiqsut Operations Center.

#### **LA-3**

This issue was raised in the following letters: DEIS0233 and DEIS0257.

#### **ISSUE**

The EIS should include an additional alternative that invests in renewable energy sources. Such an alternative would have far greater potential benefits to residents of Nuiqsut, would be compatible with subsistence lifestyles, and would move this nation closer to true energy independence.

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**RESPONSE**

An alternative such as that described would not meet the purpose and need as described in Section 1, which is to allow the applicant to produce oil from five oil accumulations the company has leased. Consequently, it is not within the scope of the EIS.

**LA-4**

This issue was raised in the following letter: DEIS0233.

**ISSUE**

The EIS should consider an alternative that evaluates permitting one, two or several of the pads, rather than all five.

**RESPONSE**

The DEIS addressed this alternative in Section 2.6.7. It does not meet the purposes of the proposed project and, therefore, is not a reasonable alternative and is not analyzed in detail.

**LA-5**

This issue was raised in the following letter: DEIS0116.

**ISSUE**

Facilities for CD-1, 2 and 3 are too close to river channels and water bodies; the location should be moved further away to minimize impacts damaging wildlife and subsistence hunting in these areas; especially in the event of an oil spill.

**RESPONSE**

CD-1 and CD-2 are already constructed and their locations are not subjects of this EIS. All three sites are within the Colville River Delta, which offers few locations that are not within a short distance of river channels and lakes. Directional drilling from outside of the Delta would not reach the oil accumulations at CD-3 that the applicant wishes to develop, and, therefore, such relocation would not fulfill the purpose of the proposal.

**LA-6**

This issue was raised in the following letter: DEIS0116.

**ISSUE**

The best alternative would be the following combination of B and D: From Alternative B: does not violate the Fish Creek buffer zone, roads would not extend outside of the National Petroleum Reserve-Alaska (traffic would be reduced, roads would be limited). From Alternative D: support using horizontal directional drilling in lieu of a pipeline bridge - this would eliminate the need for a bridge across the Nigliq Channel (avoid dangerous flooding) and would avoid overhead pipelines. These options would help to minimize impacts on wildlife and subsistence activities due to development.

**RESPONSE**

In developing the Preferred Alternative, combinations of features from the various alternatives in the DEIS were considered. The components of the alternative that is suggested in this comment all fall within the range of the alternatives considered in the DEIS.

**LA-7**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Alternatives B through D are not “practicable” alternatives because costs are too high to support these marginal projects (increases of \$119 million to \$472 million).

**RESPONSE**

The EIS’s role is to identify impacts of a range of alternatives that seek to address issues. The BLM and the cooperating agencies are further evaluating practicability and environmental impacts through the EIS, and their decisions in the permitting process will reflect this consideration.

**LA-8**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Road and field abandonment must be addressed in the FEIS, especially with regard to the comparison of alternatives should economics become a factor. The cost of field abandonment, including the removal of gravel, should be addressed in the development of the Alternatives.

**RESPONSE**

Appendix J provides estimates of the cost of each alternative, including cost estimates for abandonment.

**LA-9**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

BLM must explain why access by non-permanent means (e.g., ice road) to each CD facility is not practical. It is not valid to reject the alternative based on a narrowed definition of purpose and need.

**RESPONSE**

The BLM considered development with access provided by “non-permanent means” such as ice roads, low-pressure vehicles, and boat. Section 2.6.9 explains why these means were not considered feasible.

**LA-10**

This issue was raised in the following letter: DEIS0240.

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**ISSUE**

BLM should frame an alternative(s), which might allow for CPAI's pad development(s) and which also imposed setbacks from waterbodies. FLPMA and NPRPA mandate this kind of alternative in order to avoid unnecessary damage to surface resources.

**RESPONSE**

The BLM's leasing EISs impose setbacks from certain waterbodies. This EIS examines various access routes and locations for the appropriate placement of proposed facilities. The BLM and the cooperating agencies were cognizant of water body and wetlands locations when alternatives to facility placement and access routes were developed. Roads were sited on higher terrain in all alternatives to minimize potential impacts to wetlands and water bodies wherever possible.

**LA-11**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS fails to describe the size or other parameters of the fields that CPAI wants to develop, or explain why alternative pad locations could not be used in lieu of the proposed locations.

**RESPONSE**

Small changes in pad locations may be required by the permit process. These adjustments are common as the USACE processes wetlands permit applications, and will seek to minimize impacts while providing for practicable development. Substantial relocations of pads are discussed at Section 2.6.7.

**LA-12**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS proposes no alternative that would satisfy ANILCA section 810.

**RESPONSE**

ANILCA 810 imposes procedural requirements. The BLM is complying with these procedural requirements in assessing and making findings and determinations. See Appendix B.

**LA-13**

This issue was raised in the following letter: DEIS0239.

**ISSUE**

There should be one alternative analyzed that has no permanent facilities in the buffer zones, including all future field expansions.

**RESPONSE**

Alternative B would authorize no permanent facilities within buffer zones as designated in the Northeast National Petroleum Reserve-Alaska IAP/EIS. Future proposals would be analyzed in future NEPA documents. Alternative B – FFD theorized that a pipeline might cross the setback, consistent with setback Stipulation 39 from the 1998 Northeast National Petroleum Reserve-Alaska IAP/EIS ROD.

**LA-14**

This issue was raised in the following letter: DEIS0239.

**ISSUE**

Most of the proposed access road to CD-4 is in a long, narrow lake. An alternative of extended reach drilling from the existing Alpine production pad needs to be evaluated.

**RESPONSE**

Figure 2.4.1.1-3 (now Figure 2.4.1.1-7) has been corrected to more accurately represent the road route to CD-4 proposed by the applicant. The road is on a slight rise west of the lake. Current drilling technology would not enable the applicant to access most of the oil accumulation at CD-4 from CD-1 nor CD-2.

**LA-15**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Page 2-2, Section 2.2, Development of Alternatives. Additional information regarding the current stipulations of the Northeast National Petroleum Reserve-Alaska lease sale should be included in the Alternatives section. The Service recommends that BLM provide specific explanations of how and when exceptions to these stipulations will be applied, with particular regard to the Preferred Alternative.

**RESPONSE**

The stipulations are listed in their entirety in Appendix D. The discussion of the Preferred Alternative at 2.4.6 includes explanations regarding exceptions relevant to that alternative.

**LA-16**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

The EIS should include an alternative that includes different locations for the CD-6 generator and load capacities/locations for the Nigliq bridge.

**RESPONSE**

Different generator locations are considered in conjunction with the different locations of CD-6. Additionally, different Nigliq bridge locations are analyzed. The EIS considered the heaviest (drill-capable) and lightest (pipeline-only) load bridges.



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**LA-17**

This issue was raised in the following letter: DEIS0257.

**ISSUE**

The DEIS does not provide an adequate range of alternatives; there is no alternative that includes more restrictive and protective measures. The four action alternatives are focused on meeting the economical goals of CPAI.

**RESPONSE**

The purpose and need includes developing the applicant's leases. All the alternatives to the applicant's proposal address concerns raised in scoping and offer protection to address those concerns.

**LA-18**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The FEIS should include additional consideration of alternate technologies for pad construction such as synthetic reinforcement; insulating materials to decrease gravel thickness, and soil stabilizing agents.

**RESPONSE**

Alternate technologies for pad construction are possible and are listed at Section 2.3.3.1 and in an analysis of impacts added in Section 4.

**LA-19**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

The DEIS does not provide the applicant's reasons for requesting exemptions to the 1998 ROD stipulations, other than a comparison of potential impacts under the compliance (Alternative B) and the non-compliance (Alternative A) scenarios.

**RESPONSE**

The applicant's letter requesting exceptions to the stipulations, with their reasons for doing so, is furnished in Appendix I.

**LA-20**

This issue was raised in the following letter: DEIS0239.

**ISSUE**

The oil fields and reservoirs that are proposed for development are not mapped, nor their resources quantified; therefore, the requisite site-specific analysis has not been done.

**RESPONSE**

The specific location and quantities of oil are proprietary and cannot be revealed in a public document. Section 4A.4.2.1, however, does provide the ADR's estimates of oil production from the pads. Impacts on surface resources and uses are based on surface facilities and actions that the applicant proposes to undertake; economic analysis is based upon the best available estimates of production from the proposed facilities.

**LA-21**

This issue was raised in the following letters: DEIS0239 and DEIS0271.

**ISSUE**

No economic analysis or discussion of technological problems is provided to justify why extended-reach drilling is not feasible for moving pads out of the buffer zone.

**RESPONSE**

Extended reach, or directional, drilling would be used from all of the pads under all alternatives. A discussion of the limitations of directional drilling to avoid placing CD-6 within the Fish Creek setback is provided at 2.4.6.

**LA-22**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

The DEIS description of the No-Action Alternative is misleading and incomplete. It suggests that if ASDP does not occur, then there would be no activities or impacts in the foreseeable future in the study area. A more realistic assumption would be that the No-Action Alternative would result in a continuation of the Preferred Alternative as adopted in the 1998 ROD.

**RESPONSE**

Discussion of the No Action Alternative has been revised in Section 2, particularly at 2.4.5. However, any activities that would occur would be encompassed in the cumulative analysis.

**LA-23**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

The No-Action Alternative should briefly describe the negative effect on the balance of trade and negative environmental effects that would occur elsewhere in the world since any oil production foregone under the No-Action Alternative would be replaced by tanking of foreign imports to the U.S.

**RESPONSE**

Section 4E has been modified to acknowledge the impacts to the nation's domestic oil supply and potential impact on the balance of trade.

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**LA-24**

This issue was raised in the following letter: DEIS0239.

**ISSUE**

The EIS does not adequately address an impact analysis for the “no action” alternative. Description of this alternative should include all activities both in the Alpine Plan area and elsewhere in National Petroleum Reserve-Alaska, adjacent state leases both onshore and offshore, Federal OCS lease activities, and planning for ADOT road to Nuiqsut.

**RESPONSE**

Impacts of activities other than the development of the five oil accumulations for which the applicant is requesting authorization are addressed under Cumulative Impacts in Section 4G.

**LA-25**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4E-1: Alternative E – Physical Environment, last paragraph. The natural gas pipeline to Nuiqsut is complete. The village hookups and gas-conditioning skid, being managed by the NSB, are not complete.

**RESPONSE**

Section 4E’s text has been corrected.

**LA-26**

This issue was raised in the following letters: DEIS0230, DEIS0241 and DEIS0266.

**ISSUE**

2.5 Comparison of Features of Alternatives: This section needs a written summary and comparison in paragraph form, not just an 8-page table or a 12-page table (2.7.1 – Comparison of Impacts).

**RESPONSE**

We disagree that a written summary is needed for Tables 2.5-1 or 2.7.1. The features of the alternatives are written in Section 2.3 Features Common to Alternatives and in Section 2.4, Description of Alternatives. Table 2.7.1 provides text side by side in a table format and impact summaries can be found in written form in Section 4.

**LA-27**

This issue was raised in the following letters: DEIS0083, DEIS0114, DEIS0230 and DEIS0262.

**ISSUE**

The state road to Nuiqsut and proposed Colville Bridge are foreseeable impacts, yet there were not included in DEIS. There’s no need for both.

**RESPONSE**

Sub-Alternative C-2 has been added to the FEIS and it addresses the proposed state road and bridge crossing of the Colville River. Under this Sub-alternative the pipeline/vehicle bridge at the Nigliq Channel would be replaced with a pipeline-only bridge. The State's road and proposed Colville River bridge are also considered as part of the cumulative impacts analysis (Section 4G).

**LA-28**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

BLM should not reject required local employment and training as an alternative. See CEQ Forty Questions #2b about the issue of legal authority.

**RESPONSE**

Local employment and training is actually a mitigation measure, not an alternative or component of an alternative. Therefore, local employment and training has been deleted from Section 2.6 of the DEIS and added as a possible mitigation measure in Sections 4A.4.2.5 and 4F.4.2.4, Regional Economy and in Sections 4A.4.1.4 and 4F.4.1.3, Socio-Cultural Resources.

**LA-29**

This issue was raised in the following letter: DEIS02038.

**ISSUE**

The term "alternative" is used incorrectly in some cases. Section 2.6 refers to buried pipelines and employee training as alternatives. It should be clarified that these are component options that have been eliminated.

**RESPONSE**

Section 2.6 includes alternatives and suggested elements of alternatives, as stated. Local employment and training is actually a mitigation measure, not an alternative or component of an alternative. Therefore local employment and training has been deleted from Section 2.6 of the DEIS and added as a possible mitigation measure in Sections 4A.4.2.5 and 4F.4.2.4, Regional Economy and Sections 4A.4.1.4 and 4F.4.1.3, Socio-Cultural Resources.

Buried pipelines are discussed in Section 2.6.1 as a potential element considered but eliminated from detailed analysis. However, pipeline burial has been considered as a potential mitigation measure in Sections 4A.3.4.1 and 4F.3.4.1.

**LA-30**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

2.6.10. The text states that KIC was...“under utilized and dismantled...” It was partially dismantled and is still in use but not in the original manner. ARCO bought it and CPAI is utilizing it. Portions of the sleeping quarters were moved over to KOC.

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**RESPONSE**

The text in Section 2.6 has been revised to reflect the comment.

**LA-31**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 2-90, 2.6.1 This section should include discussion of the findings of the final Buried Pipeline report issued in November 2003 by CPAI. Recent problems with bank erosion at the site of the Colville River crossing of the Alpine pipeline should also be discussed in detail here.

**RESPONSE**

Buried pipelines were considered as a potential mitigation measure for caribou migration under Alternatives A and F. A discussion of buried pipelines is located in Sections 4A.3.4.1 and 4F.3.4.1. The Buried Pipeline Report is cited in the discussions. Bank erosion at the site of the Colville River crossing of the Alpine pipeline has occurred, and could be attributable to the pipeline. This language has been added to Section 2.6.1.

**LA-32**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

2.6.1 - Buried Pipelines: There needs to be a discussion on burying the pipeline within caribou migration routes as a mitigation measure.

**RESPONSE**

The last sentence of Section 2.6.1 states that pipeline burial will be considered as appropriate mitigation for particular site-specific impacts. Mitigation Measure 4 in Sections 4A.3.4.1 and 4F.3.4.1 does specifically discuss burying sections of pipeline for caribou movements.

**LA-33**

This issue was raised in the following letters: DEIS0241 and DEIS0271.

**ISSUE**

The EIS should include additional evaluation to determine if the NOC could reasonably serve as a staging area and transportation hub to support construction, drilling, and operation of CPAI's proposed drill sites at CD-5, CD-6, and CD-7 within the Northeast National Petroleum Reserve-Alaska. NOC may be economically viable after ADOT&PF constructs the Colville River Road and Bridge.

**RESPONSE**

Sub-Alternative C-2 has been added to the FEIS. This Sub-Alternative analyzes a scaled-down version of the Nuiqsut Operations Center and would include warehousing and vehicle operations areas. See also Section 2.6.8.

**LA-34**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

S2.2 1st paragraph. There is an incorrect figure reference in the 2nd line. The correct reference is 1.1.1-1.

**RESPONSE**

The figure reference in question is actually located at S2.3. The text has been changed to show Figure 1.1.1-1.

**LA-35**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section 2.6.8, Page 2-92: This paragraph states “placing production pads at points more distant from the locations proposed by CPAI will make production of the oil economically and technologically infeasible...” Given this statement would the relocation of CD-6 under Alternative B cause development of those resource to become infeasible?

**RESPONSE**

Moving CD-6 as described in Alternative B would not necessarily make it infeasible. As discussed in Section 2, it will, however, raise development costs and make approximately 10 to 30 percent of the product at this site unrecoverable.

**LA-36**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Table 2.1-1, page 2-2, “C”: The last sentence should read, ”...and higher pipelines are included.”

**RESPONSE**

The text has been modified to indicate that higher pipelines are included.

**LA-37**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

2.4.3. It is stated there will be no 2-inch products line (variously called a utility line)--but it doesn't say why not. If highline power is proposed, it should be so stated.

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**RESPONSE**

The product line is discussed in Section 2.3.2.3. It states that the line would distribute product to pads not served by gravel roads. Gravel roads would serve all production pads under Sub-Alternative C-1 and Sub-Alternative C-2. The EIS specifically states at 2.4.3 “powerlines on separate poles rather than VSMs.”

**LA-38**

This issue was raised in the following letter: DEIS0240

**ISSUE**

The DEIS is often inconsistent in its description of its alternatives, with the description varying depending on where in the DEIS an alternative is discussed. For example, in the description of Alternative A at DEIS Section 2.2.2.1, the DEIS does not mention 256 miles of ice roads and insulated ice pads, yet they are mentioned in Section 4’s discussion of this alternative. Off road tundra travel and other operations are also discussed in Section 4 but not in Section 2. The number of bridges is not discussed in Section 2 but seven bridges are discussed on page 4A.3-22.

The description of alternatives in Section 2 must be complete and fully informative, and match those descriptions given in Section 4.

**RESPONSE**

Section 4 used the information provided in Section 2 in order to assess impacts. The 256 miles of ice road noted in Section 4 came directly from Table 2.5.1 in Section 2. The off-road tundra travel in Section 4 came from Section 2.3.7.2, Low-Pressure Vehicle Tundra Traffic. Section 2.3.9 has been changed to reflect the seven bridges anticipated.

**6.3.2.6 Bibliography****BB-1**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

The Bibliography is missing citations for ADNR 1999 and Haskell et al 2002.

**RESPONSE**

The Bibliography has been updated to reflect any changes made within the document, and also to provide full references for every in-text literature reference.

**6.3.2.7 Birds****BD-1**

This issue was raised in the following letters: DEIS0195 and DEIS0263.

**ISSUE**

The EIS should address exceptions to stipulations regarding facilities in the National Petroleum Reserve-Alaska for critical species such as the eider.

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**RESPONSE**

Alternatives which include components that would require relief from existing stipulations are described in the Project Description (Section 2). The Northeast National Petroleum Reserve-Alaska IAP/EIS stipulation that could impact birds is the setback for permanent facilities within the 3-mile Fish Creek Buffer Zone. Habitats and species occurring at locations within the 3-mile buffer were analyzed for alternatives where pads and roads would be within the buffer.

**BD-2**

This issue was raised in the following letter: DEIS0198.

**ISSUE**

Dust fallout from roads and pads can create micro-habitat that can be both beneficial and detrimental to returning waterfowl in the spring.

**RESPONSE**

Table 4A.3.3-1 identifies that habitat alteration due to dust fallout results in habitat loss during nesting and gain during foraging. These detriments and benefits are further described and referenced in Section 4A.3.3.1.

The commentor suggests that the availability of this habitat influences arrival of waterfowl within the Plan Area such that they arrive earlier than they would normally arrive on the Arctic Coastal Plain. While there are indications that migratory birds have initiated migration at earlier dates across North America in recent decades, it is most generally accepted that these earlier migration initiation dates are most directly effected by early warming and spring arrival at wintering habitats, not at breeding habitats or along migration routes.

**BD-3**

This issue was raised in the following letter: DEIS0198.

**ISSUE**

The supporting figures and maps in the EIS underestimate the number of birds that would be displaced through habitat loss or alteration.

**RESPONSE**

The best available site-specific information has been compiled and presented as completely as possible in the figures. Site-specific nesting densities were used to calculate the estimated numbers of nests lost due to gravel placement. The indirect impact area was expanded from 11 to 50 meters and considered as if this area was "lost" to nesting birds. The mine site area was also added as lost habitat. The proportion of nests lost due to air traffic disturbance was increased from 50 to 67 percent within 500 meters of airstrips and helipads. These changes more than tripled the estimated number of nests impacted. The purpose of these nest estimates is to compare alternatives and they are presented as estimates, with descriptions of source data and the calculation methods added to Section 4A.3.3.

**BD-4**

This issue was raised in the following letter: DEIS0239.



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**ISSUE**

The source of mapped data and number of years of data collection should be stated (see Figure 3.3.3.2-2 to 3.3.3.2-5). Was USFWS breeding pair survey information analyzed?

**RESPONSE**

A reference to Johnson et al. (2004) (and references therein) was added to all figures displaying data collected by ABR, Inc. for CPAI, and presented in figures.

USFWS breeding pair survey information is presented for the North Slope context for all applicable species. Estimated densities based on USFWS data were not used for analyses, because site-specific density information was available.

**BD-5**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Page 3-73, Section 3.3.3 paragraph 2. See comments for Table 3.3.3-3 and adjust text in this paragraph accordingly.

**RESPONSE**

Section 3.3.3 was revised to indicate that 1986 to 2002 population trends from Mallek et al. (2003) were used for waterfowl and loons, except for eiders; and the 1992 to 2002 population sizes and trends for eiders seabirds, owls, and common ravens were based on Larned et al. (2003a) surveys.

**BD-6**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

The status of birds listed in Table 3.3.3-1 should be based on recognized regional and national bird lists.

**RESPONSE**

There are many lists prepared by many groups at world, national, regional and sub-regional levels. To address the BLM's conservation issues, sensitive species designation as appears in Appendix E, BLM Sensitive Species List for Alaska was included in Table 3.3.3-1. To address the USFWS Section 7 (ESA) regulatory requirements, federally listed threatened or endangered species are also designated in Table 3.3.3-1. To address this comment USFWS Region 7 (Alaska) Birds of Conservation Concern Status designations were included in Table 3.3.3-1.

**BD-7**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Data for shorebirds listed in Table 3.3.3-2 are lacking.

**RESPONSE**

There are no shorebirds listed in Table 3.3.3-2. To address this issue, we have added categories for representative abundant dry habitat nesting shorebirds (black-bellied plover) and moist-wet habitat nesting shorebirds (semipalmated sandpiper).

**BD-8**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Data incorrectly identified for source of loon population estimates.

**RESPONSE**

Poor word order for a source citation was corrected to identify Mallek et al. (2003) as the source of loon population estimates as footnote “a” of Table 3.3.3-3.

**BD-9**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Table 3.3.3-3 should identify mean values for Arctic Coastal Plain populations in column three as based on 1986-2001 averages.

**RESPONSE**

Table 3.3.3-3 was altered by adding footnote “b” to include the description for population estimate means as based on long-term averages from 1986–2001.

**BD-10**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Incorrect population estimate for common eiders should be 2,580 not 2,500 in Table 3.3.3-3.

**RESPONSE**

The population estimate in column three of Table 3.3.3-3 was corrected for common eiders from 2,500 to 2,580.

**BD-11**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Footnote to Table 3.3.3-3 for common eider population estimate should indicate this is an average for 1999-2002 data.

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**RESPONSE**

The footnote in Table 3.3.3-3 has been re-worded to describe the population mean as from 1999–2003 data and the estimate updated, based on an October 2003 survey report (Larned et al. 2003b).

**BD-12**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Table 3.3.3-3 should identify mean values for Arctic coastal Plain eider, seabird, raptors, owls and common ravens as an average from 1999-2002.

**RESPONSE**

The Table 3.3.3-3 footnote “c” was revised to include the description for population estimate means as based on long-term averages from 1992–2002, as presented in Larned et al. (2003a).

**BD-13**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Table 3.3.3-3 footnote should clarify that estimates for Larned et al. (2003a) are not adjusted for visibility and are minimum population estimates used to track population trend.

**RESPONSE**

The Table 3.3.3-3 footnote “c” was clarified by adding that visibility correction factors not applied, averages are minimum population estimates used to track population trend.

**BD-14**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Clarify the USFWS surveys may not reflect true population size and distribution for snow goose and brant due to clumped distributions for these colonial nesting species.

**RESPONSE**

The suggested clarification was added to footnote “b” in Table 3.3.3-3, “Population estimates for colonial nesting species, snow goose and brant, may not reflect true population size.”

**BD-15**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Add footnote to Table 3.3.3-5 that nest densities for small shorebirds and passerines are presented in Table 3.3.3-7.

**RESPONSE**

The requested footnote was added to Table 3.3.3-5.

**BD-16**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Many species excluded from Table 3.3.3-6 are common in the Plan Area. If this omission is due to the lack of habitat associates data for these other taxa it should be indicated with a footnote.

**RESPONSE**

The reports used to produce Table 3.3.3-6 are clearly identified in footnotes “b,” “c” and “d.” This table is not intended to be comprehensive for all species that occur within the Plan Area. Thus, no change was made.

**BD-17**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Correct date range for mean population size for Canada goose.

**RESPONSE**

The referenced portion of Section 3.3.3.2 was corrected and now indicates that the 2002 population estimate was 52 percent lower than the mean population size calculated from the surveys conducted from 1986 through 2001 (Mallek et al. 2003).

**BD-18**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Provide more detailed clarification for inaccuracy of breeding pair survey population estimate for black brant.

**RESPONSE**

Text in Section 3.3.3.2 has been revised to indicate that due to the clumped distribution of colonial nesting species such as brant and snow geese, population estimates from standard aerial breeding pair surveys may not reflect the true population size and distribution (Mallek et al. 2003).

**BD-19**

This issue was raised in the following letter: DEIS0216.

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**ISSUE**

The discussion should also mention that there are four shorebird species that would be classified as rare breeders.

**RESPONSE**

Section 3.3.3.6 has been revised to indicate that nine shorebird species are common breeders, seven species are uncommon breeders and four species are rare breeders in the Plan Area (see Table 3.3.3-1).

**BD-20**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Black-bellied plovers are indicated as being common in the Plan Area, but they are listed as a U/B in Table 3.3.3-1.

**RESPONSE**

The abundance designation for black-bellied plovers in Table 3.3.3-1 was revised from U/B to C/B.

**BD-21**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Pages 3-93 through 3-94. Plovers and buff-breasted sandpipers are described as species that use dry habitats for nesting. These drier habitats also typically are the areas where roads and runways are built. We recommend that additional analyses be conducted in the EIS to evaluate the impacts on drier habitats, especially relating to the buff-breasted sandpiper, a species of concern. The continued use of drier habitats for construction of pads, roads, and airstrips may eventually impact some species of shorebirds, especially those populations that already number <25,000 birds worldwide.

**RESPONSE**

Footprint and buffer analyses currently quantify direct and indirect impacts to all tundra habitat types, including dry habitats. Site-specific nest densities have been used in estimating impacts to nesting shorebirds. References to specific habitat types used by the “upland” shorebird species guild were added in Sections 4A–F, specifically: “Moist Tussock Tundra, Dryas Dwarf Shrub Tundra, Moist Sedge-shrub Meadow” both as percents of available and total impact areas. A summary was added to cumulative impacts to birds, including a description of a 5 percent reduction/displacement of nesting shorebirds at Prudhoe Bay.

**BD-22**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Page 4A 3-29, Section 4A. This section does not explain how disturbance effects were quantified. The Service recommends that the discussion describe how aircraft and vehicular traffic, and the amount and duration of noise translates into disturbance impacts for each species.

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**RESPONSE**

A paragraph describing source data and the process followed to arrive at disturbance impacts was added to Section 4A.3.3. The air traffic disturbance was quantified as a 67 percent reduction in nesting (based on site-specific nest densities) within a 500-m buffer around the airstrip or helipad for all waterfowl, loons, ptarmigan and seabirds. This disturbance displacement was additive to reductions in nesting due to habitat alteration within 50 meters of the airstrip. No additional disturbance impacts from air traffic were calculated for shorebirds or passerines. Vehicle traffic disturbances were considered to influence nesting for all species within the 50-m buffer used to estimate nests lost due to habitat alteration, and no additional disturbance impacts due to vehicle traffic were quantified. The amount and duration air traffic were considered to be analogous to levels experienced at the Alpine Development Project during construction and thus representative of the 67 percent reduction in nesting with the 500-m buffer of airstrips. Thus, no additional quantitative analyses based on traffic levels or duration were completed.

**BD-23**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Page 4A.3-31, Table 4A.3.3-2. Footnote “a” does not indicate the size of airstrip buffer or how disturbance affects nesting within this area.

**RESPONSE**

Footnote “a” was revised in Tables 4A.3.3-2; 4A.3.3-4; 4A.3.3-5; 4B.3.3-1; 4B.3.3-2; 4B.3.3-3; 4B.3.3-4; 4C.3.3-1; 4C.3.3-2; 4C.3.3-3; 4C.3.3-4; 4D.3.3-5 and 4D.3.3-6 to refer to Section 4A.3.3 for analysis methods. A 500-m airstrip buffer was consistently used to calculate disturbance impacts as a 67 percent reduction in nesting, based on site-specific nest densities.

**BD-24**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Page 4A.3-31. The text mentions that there are disturbance effects proximate to roads; yet this source of disturbance was not accounted for in estimates of nest displacement in any of the tables that present quantitative information (e.g., Table 4A.3.3-2). Analysis of disturbance effects should not be limited to airstrips. The DEIS should account for disturbance within a buffer around proposed roads, drill pads and airstrips. Without this information, it is impossible to compare disturbance effects among alternative that have varying lengths of roads proposed. By failing to address road related disturbances, the document leads to the conclusion that disturbance is greater in Alternatives (D) where road access is replaced with air access. This misrepresentation of disturbance effects is most apparent on page 2-98, Table 2.7-1.

**RESPONSE**

Information on the disturbance impacts due to roadway vehicle traffic does not allow for distinguishing quantitatively between habitat alteration and disturbance effects. Data on effects of air traffic are available for distinguishing these effects. It is unlikely that vehicle traffic would effect nesting beyond the 50-m buffer used to calculate habitat impacts along roadways. An estimate of nests lost within the 50-m buffer was used to represent both habitat loss and disturbance effects. This area was increased from the 11 meter buffer originally used in the DEIS, and should fairly represent predicted impacts from the proposed alternatives. The noted text in Section 4A.3.3 was clarified to indicate that additional loss due to disturbance from vehicle traffic was

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calculated because losses within 50 meters of roads were considered sufficient to account for disturbance as well as habitat alteration impacts.

**BD-25**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Page 4A.3-34. The size of the “airstrip buffer” should be identified in this section. We also recommend that the methodologies involved in developing the buffer and calculating the disturbance analyses within the buffer be explained in the EIS.

**RESPONSE**

A description of how the 67 percent reduction in nesting within the 500 meter buffer figure was derived from Johnson et al. (2003a) was added. Text indicates that waterfowl, loon, ptarmigan, and seabird nests lost due to disturbance by air traffic were estimated using a maximum of a 67 percent reduction in nests within a 500-m buffer around each airstrip or helipad. This percentage was derived from review of Figures 15-17 for greater white-fronted geese in Johnson et al. (2003a).

**BD-26**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Page 4A.3-35, paragraph 2. The text in this section mentions that waterfowl hazing in the vicinity of airstrips may be necessary to reduce likelihood of aircraft/bird strikes. This analysis of disturbances related to airstrips should include hazing.

**RESPONSE**

Section 4A.3.3.1 was clarified to better describe that hazing would cause additional disturbance, but that this disturbance would be limited to areas already considered “disturbed” by air traffic. No details are available on timing, duration, expected intensity, or methods that would potentially be used.

**BD-27**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Yellow-billed loons did not shift nest distribution in response to the construction of Alpine, as described in DEIS, but there is no indication of how far yellow-billed loon nests were from facility.

**RESPONSE**

Revised sentence in Section 4A.3.3.1 was revised to clarify that all yellow-billed loon nests were >700 meters from the airstrip. The sentence indicates that nesting yellow-billed loons also did not exhibit any measurable changes during construction of the Alpine Development, but only a few pairs nested in the area and all nests were more than 700 meters from the airstrip.

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**BD-28**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

While text in Section 4A.3.3.1 indicates that swans nested within 500 meters of the Alpine airstrip during construction, it did not mention that biological studies within existing oilfields showed that nest success is positively related to distance from roads (Ritchie and King 2000).

**RESPONSE**

This reference describes reduced nest success with distance from roads and assumes disturbance due to vehicle traffic, not air traffic. As stated in the DEIS, disturbance from vehicular traffic may affect activity and energy budgets of waterfowl and loons and could have negative impacts on nesting success for some birds by increasing the length of time birds are away from the nest during incubation (Johnson et al. 2003a). A new sentence has been added to clarify that successful tundra swan nests average further from roads than unsuccessful nests (Ritchie and King 2000).

**BD-29**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Page 4A.3-48. The analyses of disturbance impacts within the EIS are inconsistent. For example, Table 4A.3.3-4 contains a footnote indicating that nesting could be reduced 50 percent within 500 meters of an airstrip, Table 4B.3.3-2 has a similar footnote indicating that nesting could be reduced 50 percent within 1 km of an airstrip. By comparison 4A.3.3-2 does not indicate buffer size, or how nesting effort may be affected within the buffer. Airstrip buffer size and the impact on nesting effort within this zone should be clearly and consistently reported and supported by cited data analyses.

**RESPONSE**

Impacts were consistently calculated, however errors were found in the footnotes. Footnote "a" was revised in the following tables: 4A.3.3-2; 4A.3.3-4; 4A.3.3-5; 4B.3.3-1; 4B.3.3-2; 4B.3.3-3; 4B.3.3-4; 4C.3.3-1; 4C.3.3-2; 4C.3.3-3; 4C.3.3-4; 4D.3.3-5 and 4D.3.3-6 to refer to Section 4A.3.3 for analysis methods. Airstrip buffer was 500 meters and impacts represented a 67 percent reduction in nesting based on site-specific nest densities.

**BD-30**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Page 4A.3-25, Mortality. There is no comparison of potential mortality due to bird/aircraft collisions between the two development scenarios under Alternative D (fixed-wing runways versus helipad construction). The likelihood of collisions is higher under D-1 due to the greater overlap of habitat and fixed-wing approach trajectories relative to D-2 (helicopter landings).

**RESPONSE**

Recorded mortality due to airstrikes for operations at Kuparuk and Alpine (both fixed-wing and helicopter) are very low (1 glaucous gull and 5 ptarmigan killed over 16 years of reporting). It is doubtful that there are any



measurable, detectable or defensible differences in mortality due to flight trajectories. The more important differences will be related to disturbance; the main difference in areas impacted along with the reduced amount of traffic lies with the difference between Sub-Alternative D-2, with helicopter access and winter-only drilling and Sub-Alternative D-1, with fixed-wing access and year-round drilling.

### **BD-31**

This issue was raised in the following letter: DEIS0216.

#### **ISSUE**

Page 4A.3-41 and 4.3-33/34 Shorebirds. The DEIS does not adequately analyze impacts of the proposed development on post-breeding shorebirds that stage on the Colville River Delta.

#### **RESPONSE**

Section 3.3.3.6 was revised to indicate that post-breeding shorebirds (150 birds/km<sup>2</sup>) use the lower Colville River Delta, with 6 km of the Delta's northern edge, more heavily than any other North Slope site (Andres 1994). Approximately 41,000 post-breeding shorebirds, assuming a complete turnover every 7 days, use primarily shoreline silt barrens (Tidal Flat) and sparsely vegetated salt marsh (Salt Marsh) in the lower Colville River Delta during July and August (Andres 1994) was added. Andres (1994) found that dunlins (48 percent) dominated post-breeding shorebird use of the lower Colville River Delta followed by semipalmated sandpipers (22 percent), red-necked phalarope (10 percent), western sandpiper (6 percent), pectoral sandpiper (4 percent) and stilt sandpiper (4 percent). This text was added to Section 3.3.3.6.

Section 4A.3.3 was revised with additional quantification of the exposure of 41,000 total or 150 birds/km<sup>2</sup> (Andres 1994) within 500 meters of airstrips at CD sites in the lower Colville River Delta (CD-3, CD-12, CD-14, CD-20, and CD-21), and estimated areas of preferred foraging habitats (Tidal Flats and Salt Marsh) within 500 meters of airstrips.

### **BD-32**

This issue was raised in the following letter: DEIS0200.

#### **ISSUE**

Section Table 4A.3.3-2 quick calculation indicates that 41 column or row totals are incorrect in this table. The right most column should not be included under the Disturbance header and should be labeled as a Grand Total – otherwise it is confusing what total it represents.

#### **RESPONSE**

Table 4A.3.3-2 and analogous tables in Alternatives B through D (4B.3.3-1; 4C.3.3-1; 4D.3.3-1 and 4D.3.3-2) were substantially reorganized. A "Grand Total" header was included which was properly separated from the "Disturbance" header. Footnote "b" was added to all "Group Total" rows, reading: "Totals rounded to include birds with <0.1 nests/km<sup>2</sup>." A review of all revised tables was completed to verify the accuracy of all total figures.

### **BD-33**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section Table 4A.3.3-2. Similar tables for the other Alternative suffer from the same inaccuracies. We recommend all tables that involve totals or other calculations be checked for accuracy.

**RESPONSE**

Table 4A.3.3-2 and analogous tables in Alternatives B through D (4B.3.3-1; 4C.3.3-1; 4D.3.3-1 and 4D.3.3-2) were substantially reorganized. A “Grand Total” header was included which was properly separated from the “Disturbance” header. Footnote “b” was added to all “Group Total” rows, reading: “Totals rounded to include birds with <0.1 nests/km2.” A review of the revised tables was completed, including a verification of the accuracy of all total figures.

**BD-34**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section Table 4A.3.3-5 total for shorebirds in the CPAI portion is 133 rather than 132.

**RESPONSE**

Analyses for all alternatives have been revised due to changes in the gravel footprints and increases in the buffer areas used to calculate habitat alteration/vehicle disturbance areas. The totals figures repeated in Tables 4A.3.3-2 to Table 4A.3.3-5 were reviewed for accuracy and consistency.

**BD-35**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

In habitat destruction or modification and in disturbance discussions, the DEIS makes unsupported blanket statements that certain species will be relocated to other suitable habitat. These findings ignore habitat biodiversity, the different natural histories of species, and removal of birds from preferred breeding habitats that provide optimal nutrient availability. No scientifically defensible sources are offered.

**RESPONSE**

This statement in Section 4A.3.3 cites Troy and Carpenter (1990) and Johnson et al. (2003a) when this topic is first introduced. In subsequent sections, the statements are generally qualified with “if suitable habitat is available.” The commentor is assuming the “suitable habitat” is limiting. While various reviews have attempted to determine specific habitat requirements, none of the reviewed habitat analyses of nesting habitats on the North Slope indicate limiting for any species, although several authors have concluded through inference that nesting habitats may be saturated. These studies documented displacement to adjacent habitats for specific individuals (Troy and Carpenter 1990) and for nests of a given species (Johnson et al. 2003a).

**BD-36**

This issue was raised in the following letter: DEIS0240.

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**ISSUE**

The DEIS limits its analysis by looking at the number of nests potentially lost or changes in nest site selection, overlooking the loss of productivity.

**RESPONSE**

While reductions in nesting success for some species have been documented for areas adjacent to infrastructure (Tundra Swan in Ritchie and King 2000), a more conservative approach was taken which assumed that nests in areas adjacent to infrastructure (50 meters would be lost). There is no accurate quantification of reduced productivity directly associated with distance of a nest from oilfield infrastructure for the range of species analyzed. A quantitative analysis that could be used to objectively compare the proposed alternatives was provided with the understanding that additional, unquantifiable sources of potential impacts, including decreased productivity in relation to increased depredation, may exist (NRC 2003).

**BD-37**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS fails to take a “hard look” at the impacts of increased predation.

**RESPONSE**

While the NRC (2003) concluded that increased predators in the oilfields had created “population sinks” in the Prudhoe Bay Oilfields, they failed to acknowledge that the conditions that lead to this perceived increase in mammalian predators (access to garbage through an open landfill and open dumpsters) have been corrected over the last 4–5 years. Section 4A.3.3 was revised to provide a discussion of predators and impacts to groundnesting birds. The text now indicates that increased numbers of arctic foxes, bears, common ravens and glaucous gulls attracted to developed areas would decrease productivity of nesting birds (see mortality sections for all species groups). Potential mitigation measures, including discouraging nesting and predator control to reduce impacts from common ravens, were also added.

**BD-38**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

In discussing impacts to white-fronted geese, the DEIS fails to recognize this species is particularly sensitive to disturbance during critical pre-nesting and early brooding periods, and therefore fails to analyze impacts from expanded development within the context.

**RESPONSE**

Pre-nesting impacts will be reflected in nesting distributions and are accounted for by the habitat alteration and airstrip disturbance impact area calculations in Sections 4A-F.3.3. Brood-rearing habitat impacts are included for all species with available Plan Area specific data and identification of the specific habitats used for brood-rearing in Table 3.3.3-6 and again in Tables 4A.3.3-3; 4B.3.3-2; 4C.3.3-2 and 4D.3.3-2. The fact that disturbance and mortality for brood-rearing waterfowl and loons could be potentially mitigated by reducing traffic speeds in areas used by brood-rearing waterfowl was indicated in Sections 4A–F.3.3.

**BD-39**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS fails to discuss impacts to brant in any in-depth manner as required by NEPA. The DEIS does not address in detail how industrial disturbance may impact brant and other species, during their sensitive molting period, which may reduce energy intake and lead to the inability to complete molting and migration to the staging area.

**RESPONSE**

A discussion of observed responses of brood-rearing waterfowl to disturbances during construction (Johnson et al. 2003a), and a simulation model of disturbance leading to the potential inability of brant to molt and migrate Miller et al. (1994) was added to Section 4A.3.3. Waterfowl molt during brood-rearing, and distributions of brood-rearing brant, (see Figures 3.3.3.2-4 and 3.3.3.2-5) are representative of molting distributions near proposed facilities within the Plan Area. Air traffic over the Teshekpuk Lake Molting Goose LUEA is not expected to increase with the proposed developments.

**BD-40**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS fails to account for, and discuss the past promises that noise and other disturbance would not impact nesting birds.

**RESPONSE**

This issue cites an estimate of 13 flights per month during the summer nesting season originally developed by ARCO Alaska, Inc. for the Alpine Development Project, and compares this to the measured 1,980 flights reported in 2000. Results of disturbance monitoring and the actual number of landings and takeoffs were used to deduce the level of expected disturbance from air traffic for the proposed alternatives. The purpose of the EIS is to evaluate the disturbances due to air traffic indicated in Table 2.3.10-1.

**BD-41**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Page 4A.3-28: It is unclear as to whether a site-specific census of bird species was undertaken, and it does not indicate what it means by “around the area of each proposed development.”

**RESPONSE**

The sentence in Section 4A.3.3: “To determine the level of effect for each proposed action, we evaluated the densities of bird species and species groups around the area of each proposed development and determined the number of nests or birds potentially exposed to the action.” was revised to indicate that site-specific nest densities for bird species and species groups (see Table 3.3.3-5 and Table 3.3.3-7) were used to estimate the number of nest exposed to each alternative. Footnotes referencing specific data sources, which provide details

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on the extent of survey coverage, were added to Tables 3.3.3-5 and 3.3.3-7. Additional details on the data used and rationales for analyses were added to Section 4A.3.3.

**BD-42**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Table 4A.3.3-2: in effect asserts that only pads, dust, ice roads, and airstrip buffers will have a bird nest displacement impact, but this is inconsistent with the discussion of impacts on nesting on Pages 4A.3-33 through 4A.3-35.

**RESPONSE**

Table 4A.3.3-2's headings were revised to include "Habitat Loss," "Habitat Alteration," "Ice Road Habitat Loss," and "Air Traffic Disturbance." The methods used for analyses in Section 4A.3.3 were clarified and are consistent with the descriptions of impacts presented.

**BD-43**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Page 4A.3-33: the DEIS does not take into account the potential for delays in nesting caused by ice roads that could occur year after year in the same areas, but instead asserts that ice roads would only last one season.

**RESPONSE**

Ice roads are not proposed to occur year after year in the same area. The primary impact of ice roads is considered to be annual displacement of birds due to delayed melt-out. This habitat loss has been calculated as per the average area lost each year to ice roads. Specific ice road impacts to vegetation are further discussed in Section 4A.3.1.

**BD-44**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS should acknowledge the potential unreliability of using single or even multiple sampling and population count years as a basis for the extrapolation of quantitative estimates of nesting and bird population numbers in similar habitats that might be the site of facilities. This is insufficient under NEPA.

**RESPONSE**

Site-specific nest densities were used in analyses and are the best available data for evaluating impacts. Multiple year averages are available for most sites. Clarified methods and data were used in analyses in Sections 4A-F3.3 and clarified that the nest numbers are estimates, as shown in Tables 4A.3.3-2; 4A.3.3-4; 4A.3.3-5; 4B.3.3-1; 4B.3.3-3; 4B.3.3-4; 4C.3.3-1; 4C.3.3-2; 4C.3.3-3; 4C.3.3-4; 4D.3.3-1; 4D.3.3-2; 4D.3.3-3; 4D.3.3-4; 4D.3.3-5 and 4D.3.3-6.

**BD-45**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS fails to adequately address potential impacts of the Alpine expansion on waterbird breeding populations on their ranges outside the North Slope.

**RESPONSE**

Analyses were limited to North Slope breeding populations, but cumulative impacts to these species were considered throughout their migratory ranges.

**BD-46**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS fails to address the impacts of development, including noise disturbance related to overflights and o the associated activities on international wildlife treaties (e.g., Migratory Bird Treaty Act) with Canada, Mexico, Japan and Russia.

**RESPONSE**

No violations of wildlife treaties, including the Migratory Bird Treaty Act, are anticipated because of the protective measures that will be applied. Impacts to birds are described and quantified for nesting birds in Sections 4A–E.3.3. Disturbance due to air traffic is evaluated for migratory waterfowl (including spectacled eiders), loons and seabirds. “Take” would be monitored by the USFWS in response to both the Migratory Bird Treaty Act and Section 7 of the ESA.

**BD-47**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 3-74, Table 3.3.3-1: the scientific name for Snow Geese is incorrect. The genus was changed from Chan to Anser. Also, check the Inupiaq names in this table. Greater White-fronted Goose, Brant, King Eider, Glaucous Gull are wrong and others may be as well.

**RESPONSE**

Authorities for scientific names used in Table 3.3.3-1 are cited. According to the American Ornithologists Union, the genus designation for snow geese is currently “Chen.” Inupiaq names were corrupted with loss of the Inupiaq font; these were corrected following designations received from the NSB.

Document software applications limit use of the Inupiaq font. “Anglicized” versions of Inupiaq words are required, and were used in the FEIS.

**BD-48**

This issue was raised in the following letter: DEIS0236.

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**ISSUE**

Page 3-77, Table 3.3.3-3: the Table heading needs to be clarified. The estimated population sizes are biased downward; they are minimal. The numbers presented by Larned et al. and Mallek et al. do not account for birds that are not seen during the surveys. Thus, the populations are going to be considerably larger than what is presented. Also, the footnotes point out that Steller's Eider population estimate is not accurate when there is no Steller's Eider Population estimate given. An estimate for Steller's Eiders and other species not listed in the Table that are given by Larned et al. and Mallek et al. should be included. The table should be greatly expanded.

**RESPONSE**

The footnote indicating that population numbers are minimal estimates, and annually variable with standard errors ranging from 5 percent to over 75 percent of the estimated population was added to Table 3.3.3-3. The reference to Steller's eider population estimates in the footnote to Table 3.3.3-3 was removed. Spectacled and Steller's eiders are addressed in Sections 3.3.5.2 and 3.3.5.3, respectively. The species listed in Table 3.3.3-3 follow the level of presentation in the Northeast National Petroleum Reserve-Alaska IAP/EIS.

**BD-49**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 3-85, 3.3.3.2 Waterfowl/Geese Section. There is no description of the molt migration made by failed- and non-breeding Black Brant geese from the Yukon-Kuskokwim Delta in SW Alaska to the National Petroleum Reserve-Alaska Teshekpuk Lake Region.

**RESPONSE**

Section 3.3.3.2 currently describes the area north and east of Teshekpuk Lake as being used by large numbers of brant. Text indicates that large numbers of molting and brood-rearing brant use lakes located north and east of Teshekpuk Lake in the National Petroleum Reserve-Alaska (Derksen et al. 1982). The described molting area is outside of the ASDP Plan Area and the origin of these geese has no bearing on the proposed project.

**BD-50**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Text describes king eider populations as increasing, but should also note that migration counts at Barrow showed a 50 percent decrease in numbers from the 1970s to the 1990s (Suydam et al. 2000).

**RESPONSE**

A sentence that indicates fall migration counts at Barrow had decreased by 50 percent between the 1970s and 1990s (Suydam et al. 2000a) was added to Section 3.3.3.2.

**BD-51**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Add sentence that says common eiders migrating past Barrow decreased by 50 percent from 1970s to 1990s (Suydam et al. 2000a).

**RESPONSE**

The suggested sentence was added to Section 3.3.3.2.

**BD-52**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Text says that glaucous gull population has remained stable since 1992, add “however, local residents indicate that glaucous gull numbers have increased markedly on the North Slope in the past 30 years (R. Suydam, NSB, pers. comm).

**RESPONSE**

Without further documentation and descriptions of the scale and location of these observations, they cannot be placed in the proper context. To complicate matters, human developments, including villages, cause gulls to aggregate, especially near open landfills. Additional first-hand information was received noting that glaucous gulls nesting in the area has doubled or tripled over the past 40 years (J. Helmericks 2004). This observation was added to Section, 3.3.3.7. A description of coastal distribution patterns identifying that coastal surveys indicate that many glaucous gulls occur on transects adjacent to coastal villages (Dau and Anderson 2002) was also added Section 3.3.3.7.

**BD-53**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

The number of nests estimated to be affected by gravel placement is too low. More nests will be affected by habitat loss or alteration. The estimated number of nests needs to be modified or qualified in this section and others where appropriate.

**RESPONSE**

A paragraph was added to Section 4A.3.3, describing quantification of the estimated number of nests affected by habitat loss or alteration. Nest estimates due to habitat alteration were calculated with an 11 meter buffer in the DEIS. This area was increased to a 50-meter buffer for calculations in the FEIS. We have used an objective analysis for comparison of alternatives.

**BD-54**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Table 4A.3.3-3 title should read “Loons” rather than “Loonsa”.



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**RESPONSE**

The title of Table 4A.3.3-3 was corrected.

**BD-55**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Effects to tundra by gravel fill due to gravel spray, dust fallout, thermokarst and ponding would not be temporary.

**RESPONSE**

In this Section 4A.3.3, and others (Sections 4B.3.3.1, 4C.3.3.1, and 4D.3.3.1), “temporary” has been removed.

**BD-56**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

While ponding may create new feeding and brood-rearing habitat for waterfowl and loons, nests in these areas suffer higher predation rates (Kertell 1993, 1994).

**RESPONSE**

Section 4A.3.3.1 was revised to acknowledge that ponding may create new feeding and brood-rearing habitat that may be used by some waterfowl and loons, although nests established on impoundments that drain before hatch had higher depredation rates than nests on natural ponds (Kertell 1993, 1994).

**BD-57**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Purpose for culverts mitigating ponding unclear. Besides creation of foraging and brood-rearing habitat, maybe increase depredation. Paragraph should be divided and both benefits and detriments described.

**RESPONSE**

Section 4A.3.3.1 was re-structured for clarity. Text was added to indicate that there might be a chance for increased nest depredation from loon nests on impoundments that drain prior to hatch (Kertell 1993, 1994).

**BD-58**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Ice road or pad will persist into summer regardless of the timing of melt.

**RESPONSE**

A sentence in Section 4A.3.3.1 was added to indicate ice roads and ice pads built during the winter to support construction and drilling activities would affect habitat for nesting waterfowl by delayed melt and altered surface water flow and reducing the availability of tundra nesting habitat.

**BD-59**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Paragraph unclear, expand discussion of impacts of hazing to birds. What will be the duration and hazing techniques.

**RESPONSE**

Section 4A.3.3.1 was revised restructured for clarity. The sentence stating that while some studies have suggested that helicopters may be more disturbing to wildlife than low flying fixed-wing aircraft, others have indicated that both may elicit disturbance reactions (Gollop et al. 1974b, Johnson et al. 2003a), has been relocated. Text has been revised to clarify that hazing would cause additional disturbance, but that this disturbance would be limited to areas already considered “disturbed” by air traffic. No details are available on timing, duration, or expected intensity of the methods that would potentially be used.

**BD-60**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Misleading that pair of ravens nesting at Alpine did not cause an increase in nest depredation.

**RESPONSE**

This issue is contentious, with disagreement over the magnitude of impacts to tundra nesting birds. The interesting point is that this pair did depredate nests, but that the impacts were observed nearly 14 miles away. A description of the USFWS Predator Workshop and NRC (2003) report’s conclusions were added, along with text to clarify depredation effects on nesting waterfowl in the lower Colville River Delta in Section 4A.3.3.

**BD-61**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Garbage handling and worker training would only “partially” mitigate real not potential impacts related to increase depredation.

**RESPONSE**

Section 4A.3.3.1 has been re-worded to indicate that practices would “minimize” impacts.

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**BD-62**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

100-m setbacks not appropriate.

**RESPONSE**

Removed all references to Rodgers and Smith (1994) in all Section 4 alternative descriptions.

**BD-63**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Collisions with power lines would effect more than a few individuals, lines could be marked with bird flight diverters as a mitigation measure.

**RESPONSE**

Revised Section 4A.3.3 to reflect that small flocks would collide with powerlines and that collisions could be minimized by marking powerlines with “bird flight diverters.” Text was also revised to note that over the life of the field, impacts would be greatest during operations.

**BD-64**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Inconsistent acreage estimates among sections.

**RESPONSE**

Acreage estimates were recalculated in response to project description changes and the accuracy and consistency of Bird discussions within Sections 4A–F.3.3 was verified.

**BD-65**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Total number of estimated shorebird nests is a minimal estimate. Types of surveys used to locate shorebird nests are negatively biased and numbers should be qualified as a minimal estimate.

**RESPONSE**

The estimates are based on the best available data, collected using standard methods, and are identified as estimates. Thus, no change was made.

**BD-66**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Numbers of nests not numbers of birds in Table 4A.3.3-4.

**RESPONSE**

Table 4A.3.3-4 and analogous tables in Sections 4B-4D were revised in title to “Alternative A – FFD, Estimated Number of Bird Nests Potentially Displaced by Habitat Loss, Habitat Alteration and Disturbance.”

**BD-67**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Rewording, loons should not require hazing.

**RESPONSE**

Section 4A.3.3.2 has been re-worded as suggested. Removed “loon” from sentence regarding hazing.

**BD-68**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Increased access may lead to decreased subsistence hunting pressure if hunters avoid areas with oil field developments.

**RESPONSE**

Section 4A.3.3.2 was revised to note that subsistence hunting could decrease if hunters avoid developed areas.

**BD-69**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Predator numbers are expected to increase and a resulting increase in depredation of waterfowl and other tundra nesting birds will result.

**RESPONSE**

The Mortality discussion in Section 4A.3.3.2 was clarified to read: “other than ravens.”

**BD-70**

This issue was raised in the following letter: DEIS0236.

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**ISSUE**

Page 4A.3-52, Section 4A.3.3.3, last paragraph third sentence: This sentence states that there will be no adverse effects to bird populations. The sentence is an overstatement. Contrary to the first sentence in the paragraph, certain effects are not potential, but certain. If gravel is placed on the tundra, habitat will be lost and the density of nesting birds in the project area will be decreased, as affected birds would move out of the area. Also, an increase in predators, such as ravens, will occur and they will feed on something, most likely to include nesting birds. This predation could easily affect local populations of birds, and certainly more than a few individuals would be impacted. The analysis appears flawed because an increase in predators does not seem to have been appropriately evaluated. The current techniques used to evaluate impacts might not be sufficiently robust to detect declines in bird populations from an increase in predators. This summary paragraph needs to be modified to reflect the shortcomings of the data.

**RESPONSE**

Section 4A.3.3.3 was revised to indicate that in most cases, effects would be localized, and no adverse effects to North Slope populations would be expected. Sections 4A–F.3.3.3 were revised to express estimated nests lost due to habitat losses to Plan Area populations (based on Table 3.3.3-3) and the extrapolated totals of 178,100 shorebird nests and 109,100 passerine nests.

Section 4A.3.3.3: “Alternative A – CPAI Development Plan would reduce nesting by 2 percent or less for Plan Area waterfowl, loon and seabird populations and less than 1 percent for Plan Area shorebird and passerine populations. Alternative A – FFD Scenario would reduce nesting by 3 to 6 percent for Plan Area waterfowl, loon and seabird populations and 1 percent for Plan Area shorebird and passerine populations.” The habitat basis for analysis was clarified by adding a concluding sentence (and reference) to the summary table, stating that the results of effects of these activities on estimated bird production due to loss, alteration or disturbance of nesting habitat for Alternative A – CPAI Development Plan and Alternative A – FFD Scenario are presented in Table 4A.3.3-5.

Sections 4A–F.3.3.3 were revised to indicate that impacts to birds associated with construction and operation of the proposed development include habitat loss, alteration, or enhancement; disturbance and displacement; obstructions to movement; and mortality. The text also states that additional impacts due to lost productivity are not quantified in this analysis, including impacts due to increased nest depredation caused by increased predator populations.

**BD-71**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Impacts from increased predator numbers have not been quantified.

**RESPONSE**

This issue is contentious. Studies show jaegers are the most abundant and prevalent nest predators in the Plan Area. There is no clear indication that developments increase the number of predators, and if they did, that tundra nesting birds would be impacted at the population level. While local populations may be impacted, it does not appear reasonable that these local effects would result in measurable North Slope population effects. There is not sufficient data to quantify impacts due to the suspected increase in “predators” attracted to the development area.

**BD-72**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Yellow-billed loons do not breed across the North Slope.

**RESPONSE**

Re-worded “across” to “on”. Breeding concentrations and distributions for yellow-billed loons are further illustrated and described in the Loons discussion in Section 3.3.3.3, and in Figure 3.3.3-3.

**BD-73**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS fails to take the following differences into account when discussing impacts to yellow-billed loons: unlike many species of waterfowl, they have much lower population numbers, different distributions, and much different natural histories.

**RESPONSE**

The level of presentation is consistent with that of the red-throated loon, also a species with low total population numbers on the Arctic Coastal Plain (see Table 3.3.3-3), restricted breeding distributions, and a much different natural history than that of other waterfowl. The yellow-billed loon is not currently a federally listed threatened or endangered species, nor a candidate species.

**BD-74**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Page 4F-33: DEIS admits that water withdraw could affect nesting but then incorrectly suggest this does not matter since all species are “not limited by habitat”. The statement is untrue for yellow-billed loons and possibly other species.

**RESPONSE**

Section 4F.6.3.1 was revised to indicate that water withdrawn from lakes during winter for construction of ice roads and pads is replaced rapidly by snowmelt runoff in spring. Water withdrawal could potentially affect nesting, brood-rearing or foraging habitats for waterbirds by altering surface water elevations or water quality resulting in nest sites left far from the water’s edge, reduced invertebrate populations due to changes in bottom saturation, or reduced fish populations due to changes in water quality. Water withdrawal has not been shown to result in lowered spring surface water elevations, or significant changes in water quality parameters (Michael Baker Jr. 2002e) which could impact invertebrate or fish populations.

**BD-75**

This issue was raised in the following letter: DEIS0240.

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**ISSUE**

By failing to consider the specific impacts of water draw-down on the yellow-billed loon, the BLM has eliminated an important factor in terms of identifying and evaluating potential mitigation restrictions.

**RESPONSE**

Water withdrawal is currently permitted and regulated by the State of Alaska. Under current regulations, studies have shown that no additional mitigation would be required. The Waterfowl and Loons discussions within Sections 4A–D.3.3 were revised to clarify as follows:

Water withdrawal from permitted water sources for the construction of ice roads could affect nesting, brood-rearing or foraging habitats for waterfowl and loons, by altering surface water elevations or water quality which could result in nest sites being left far from the water’s edge, in reduced invertebrate populations due to changes in bottom saturation, or in reduced fish populations due to changes in water quality. Water surface elevations increased to above pre-pump levels in all studied lakes as a result of snowmelt runoff in spring (Michael Baker Jr. 2002e). Water withdrawal has not been shown to result in lower spring surface water elevations, nor in significant changes to water quality parameters (Michael Baker Jr. 2002e) that potentially impact invertebrate or fish populations. State of Alaska permitting restrictions regulate the volume of water that may be withdrawn from each lake, and recharge of ponds and wetlands, by snowmelt runoff in spring, has been shown to more than replenish surface water elevations (Rovansek et al. 1996, Burgess et al. 2003b, Michael Baker Jr. 2002e).

**BD-76**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS fails to present adequate information on the size of the yellow billed loon nesting population in the Fish/Judy Creek Area.

**RESPONSE**

The estimated population of yellow-billed loons within the Plan Area (including the Fish/Judy Creek Area) is 296 birds (see Table 3.3.3-3). Distributions and associated densities across the North Slope are illustrated in Figure 3.3.3.3-3 and within the Plan Area in Figure 3.3.3-4 and Figure 3.3.3-5. These are the best available data on yellow-billed loons for these areas at this time.

**BD-77**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS dismisses impacts to the yellow-billed loon, but fails to recognize that a number of experts suggest that its population is limited by available habitat, such that any habitat loss would result in population reduction to an already perilously small population.

**RESPONSE**

Impacts to yellow-billed loons are described, as well as quantified in Sections 4A–D.3.3. No habitat-based studies were used in drawing the conclusion of nesting “habitat limitation,” rather this was inferred from observations of adult birds in nearby marine environments (Fair 2002, Center for Biological Diversity 2004).

**BD-78**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Page 4A.3-41: the DEIS makes the vague statement that “the alteration of habitats could be detrimental to some shorebird species, but beneficial to others,” but does not identify which species these are.

**RESPONSE**

The following paragraph in Sections 4A–D.3.3 was removed: “Removal of gravel from the ASRC and Clover gravel sites would result in a temporary loss of habitat while the mine sites are active and an alteration in habitat types when the gravel sites are reclaimed. The alteration of habitats could be detrimental to some shorebird species but beneficial to others.”

Gravel extraction at Clover was quantified as a permanent loss of tundra habitat. Clover will become aquatic habitat with a goal of creating waterbird resting, feeding, and nesting habitat.

**BD-79**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

An information void exists regarding how brooding or incubating birds may react to aircraft noise from fixed-winged aircraft or helicopter noise.

**RESPONSE**

Actual documented responses of incubating birds are summarized in Section 4A.3.3 as presented below. Detailed descriptions of responses of incubating waterfowl are presented in Johnson et al. (2003a).

Responses of birds to aircraft include alert and concealment postures, interruption of foraging behavior, flight, and decreases in nest attendance (Johnson et al. 2003a). While some studies have suggested that helicopters may be more disturbing to wildlife than low-flying fixed-wing aircraft, others have indicated that both may elicit disturbance reactions (Gollop et al. 1974b; Johnson et al. 2003a). Nesting greater white-fronted geese took more and longer recesses from incubation as the number of airplanes increased and at nest sites closer to the airstrip (Johnson et al. 2003a). Of the various disturbance types, helicopters were the least predictable because they did not have a restricted flight pattern. Incubating greater white-fronted geese and tundra swans reacted more often to fixed-wing aircraft than to helicopters, although monitored nests were closer to the airstrip than to the helipad. Airplanes and pedestrians elicited the highest rates of response from incubating geese and vehicles the lowest. These behavioral responses to disturbances did not appear to affect nest outcomes (Johnson et al. 2003a). Greater white-fronted geese shifted nests from areas within 1 km of the airstrip at the Alpine Development to areas within 1 to 1.5 km during a period of heavy construction activity (Johnson et al. 2003a).

Language indicating that 1) because brood-rearing birds can move away from disturbances, disturbance may cause further displacement of brood-rearing flocks, and 2) analysis of 15 years of tundra swan nest and brood distributions in the Kuparuk Oilfield indicate that there was no significant relationship between the intensity of disturbance and nest or brood densities within 1 km of roads (Anderson and Stickney 2004) was added to Section 4A.3.3:



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**BD-80**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

Unclear use of location “Alpine site”.

**RESPONSE**

Throughout the document, references to “Alpine”, “Alpine Development Project” (original CD-1 and CD-2 development) and “Alpine Field” (oilfield from which CD-1 and CD-2 draw oil) were changed to APF-1, as appropriate.

**BD-81**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

Buff-breasted sandpiper is the only section to include a discussion that cross-references use with habitat type.

**RESPONSE**

This statement is incorrect. Table 3.3.3-6, Habitat Use and Selection for Ground-based Nest Searches and Aerial Surveys in the Plan Area presents habitat selection and use by for waterfowl, loons and seabirds. Habitat use information is presented for each bird species discussed.

**BD-82**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

Need to describe methods for determining the number of nests effected.

**RESPONSE**

A paragraph was added to Section 4A.3.3 that describes data and methods used to estimate the number of bird nests potentially affected by gravel cover, habitat alteration, ice roads and disturbance due to air traffic. GIS overlays were not used in analyses. Nest densities by species used in analyses are presented in Tables 3.3.3-5 and 3.3.3-7. Area-wide densities for the Colville River Delta or Plan Area were used for all FFD-related calculations.

**BD-83**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Mitigation to reduce traffic levels by limiting access to industry only is against CPAI agreement with Kuukpiik Corporation, which requires access by Nuiqsut residents.

**RESPONSE**

In Sections 4A–D, access limitation as a potential mitigation for obstructions of bird movements was removed. Alternative B reviews industry and government-only access.

**BD-84**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Bird Figure: all Plan Area bird figures using ABR data need to examine if data points can be separated to show seasonal distribution – pre-nesting, nesting, breeding, brood-rearing, molt or fall staging.

**RESPONSE**

All Plan Area bird figures have been revised to indicate pre-nesting, nesting, brood, and molt period distributions. Specific information on years of data collection is included in legend notes.

**BD-85**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Table 3.3.3-3 footnote “d”. These population estimates are based on waterfowl breeding pair surveys not ABR data – Estimates for non-waterfowl species should be dropped.

**RESPONSE**

This footnote in Table 3.3.3-3 is correct. Plan Area population estimates based on USFWS breeding pair survey data were not available. In addition, the sampling intensity of USFWS data is insufficient to accurately estimate numbers of breeding pairs within the Plan Area. Population estimates were calculated for the Plan Area by extrapolating densities recorded during 2002 surveys for the Colville River Delta and for the National Petroleum Reserve-Alaska area. These estimates were derived by multiplying densities by species for the Colville River Delta and the National Petroleum Reserve-Alaska area by the Plan Area size.

**BD-86**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Table 3.3.3-5 footnotes need correction. CD South source is Burgess et al. 2003a. Table 3.3.3-7 add 2003 data especially for red polls. Table 3.3.3-8 correct footnote sources of this information not Burgess et al.

**RESPONSE**

The source information used to compile Table 3.3.3-5 were reviewed and verified as correct. Data from Burgess et al. 2003a and b; Johnson et al. 2003a and b; and Johnson et al. 2004 were used to produce averages for CD-3, CD-4, CD-5, CD-6 and CD-7. All densities were updated with results of 2003 surveys (Johnson et al. 2004). Source data in Table 3.3.3-7 for all species, not just red polls as suggested, were reviewed and all densities updated. The references to Burgess et al. (2002a, 2002b, 2003a, 2003b) in the footnote of Table 3.3.3-8 were removed.

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**BD-87**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Table 3.3.3-6 Retitle: Habitat Use or Selection for Ground-Based Nest Searches or Aerial Surveys in the Plan Area. (Important to note that data type and source are not combined.) Set order of seasonal use as pre-nesting, nesting, brood-rearing, and fall staging. Reformat column width and number to match column header. There are only 26 data columns for 30 header columns. Selection data requires a third code – “N=use not significantly different from availability”. Add this code to footnote and “N” should replace blanks for species with selection analyses. Selection data is available for GWFG nesting Brant nesting, TUSW nesting and brood-rearing King Eider pre-nesting, Spectacled Eider pre-nesting (only National Petroleum Reserve-Alaska 2003), YBLO nesting and brood-rearing, Change habitat use footnote: Habitat Use codes U=use designated by occurrence >10 percent of all nests or broods, blank = occurrence of <10 percent of all nest or broods.

**RESPONSE**

Table 3.3.3-6 was revised to correct formatting errors (headers not matching columns) and additional data for 2003 were added. Replaced “and” with “or” in the table title. Selection or use abbreviations are identified in both the title and footnotes. The suggested “N” code was not added because the table is already too complex. It is also possible that readers would interpret this designation as “Non-Use.”

**BD-88**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Table 4A.3.3-2 this is an important table need to explain how these numbers were generated. Impossible to verify numbers. What about disturbance from traffic around roads. Are ice roads considered permanent or ongoing habitat alteration.

**RESPONSE**

A paragraph describing the calculation methods and source data was added to Section 4A.3.3. Disturbance from vehicle traffic was considered to be most important within the 164 feet of roadways used to calculate indirect vegetation impacts. Nest impacts within this area are considered to be caused by a combination of habitat alteration and disturbance. Ice roads are considered temporary habitat loss, but because ice road construction would continue under all alternatives for 5 or more years, nest impacts were calculated assuming that the average area per year covered by ice was “lost” as nesting habitat.

**BD-89**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Table 4A.3.3-4 what are the units, birds or nests? What is the source data? Citation for Johnson et al. 2003b for lack of effects on shorebirds/passerines is incorrect.

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**RESPONSE**

Nests are the units for Table 4A.3.3-4; the heading was revised accordingly. . A description of the source data and analysis method was added to Section 4A.3.3. The Johnson et al. (2003a) citation was re-checked, and is correct.

**BD-90**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Note source of nest data in Table 4A.3.3-5 citation of Johnson et al. (2003b) incorrect.

**RESPONSE**

A description of the source data and calculation methods was added to Section 4A.3.3. The citation for Johnson et al. (2003b) was corrected to Johnson et al. (2003a) in Table 4A.3.3-5.

**BD-91**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Table 4A.3.5-1 data requires a third code – “N=use not significantly different from availability”. Add this code to footnote and “N” should replace blanks for species with detection analyses. Change habitat use footnote: Habitat Use codes: U=use designated by occurrence >10 percent of all nests or broods, blank = occurrence of <10 percent of all nest or broods. Notes on habitat selection and use should be the same as Table 3.3.3-6. See more comments in text. Table 4A.3.5-2 same as Table 4A.3.5-1.

**RESPONSE**

Tables 4A.3.5-1 and 4A.3.5-2 were revised in the following manner: replaced “and” with “or” in table titles. The selection or use abbreviations are now identified in both the title and footnotes. However, the “N” codes were not added, as the tables are already too complex. It is possible that readers would interpret this designation as “Non-Use”.

**BD-92**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Table 4A.3.5-3. It seems unlikely that more nests would be displaced than pre-nesting birds. Birds are more than 2x as abundant and more mobile. If 4 nests were displaced would not 8 birds be displaced during pre-nesting? The density estimates for nests and pre-nesting birds were calculated over 2 very different areas (18 km<sup>2</sup> and 520 km<sup>2</sup>) and are not comparable. I would just report nests. However, how are nests being estimated for areas where there are no surveys? I would expect more nests and birds to be displaced given the number of pads and locations near the coast in the CRD, Fish, and Kogru areas.

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**RESPONSE**

Pre-nesting bird disturbances were removed from Table 4A.3.5-3. FFD impacts were recalculated based on mean densities for ground search areas in the Colville River Delta and in the National Petroleum Reserve-Alaska. Habitat alteration area was increased from an 11 meter buffer in the DEIS to a 50 meter buffer in the FEIS.

**BD-93**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Table 4B.3.3-1 correct footnotes, source of data? Table 4B.3.3-3 units birds or nests? Source data for Table 4D.3.3-2. What is disturbance zone for helipads? Is this stated somewhere? Provide footnote.

**RESPONSE**

The citation in Table 4B.3.3-1 (Johnson et al. (2003a)) is correct for the source of the disturbance information used to calculate disturbance due to air traffic. This is clarified in Section 4A.3.3, Birds. Source data used in calculations are presented in Section 3.3 Birds, Sections 4A to D.3.1, Vegetation and Wetlands, and methods for calculations were added to Section 4A.3.3, Birds. Disturbance areas for airstrips and helipads were 500 meter buffers around the gravel footprint, as described in Section 4A.3.3, Birds.

**BD-94**

This issue was raised in the following letter: DEIS0257.

**ISSUE**

The DEIS does not address the wildlife and social impacts of increased aircraft access.

**RESPONSE**

Disturbance due to air traffic is calculated and discussed in relation to birds in Sections 4A–D.3.3 and 4A–D.3.5 for eiders. Private aircraft will not be allowed to use the airstrips developed to support the proposed oil and gas facilities, so increased access would only be in relation to the proposed development which has already been analyzed.

**BD-95**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Section 4F: The analysis of cumulative effects on birds requires major revisions. Not cited is the NRC report that spent a significant amount of effort to evaluate the cumulative effects from oil and gas activities on birds. The DEIS does provide some analysis of potential impacts to birds from the ASDP alone. These same analyses could and should be applied to the cumulative case. Without justification, the section states that subsistence hunting will be the most significant cumulative impact. The discussion regarding cumulative impacts on declining populations reaches an unjustified conclusion. Added impacts will cause the declining populations to decline more rapidly and not “slow recovery.” See below for more detailed comments.

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**RESPONSE**

Section 4G.6.3 Birds has been substantially revised to include a summary of NRC findings for birds. Habitat loss and alteration numbers (extrapolated to estimates of birds lost based on nesting densities) in the Prudhoe Bay area were added. Total habitat loss due to gravel fill and mining in the NRC report was 17,769 acres and habitat alteration affects were 10,500 acres (see Table 4F.5.1-1, NRC 2003). These cumulative impacts would affect an estimated 4 to 5 percent of waterfowl, shorebird and passerine nests in the unitized area between the Colville River and Sagavanirktok Rivers, and less than 1 percent of the Arctic Coastal Plain waterfowl population (see Table 3.3.3-3) based on nesting densities of 5.7 nests/km<sup>2</sup> for waterfowl, 43 nests/km<sup>2</sup> for shorebirds, and 17 nests/km<sup>2</sup> for passerines (TERA 1993b). A clarification was added noting that impacts related to “reasonably foreseeable” future development are quantified under the FFD discussions.

A quantification of subsistence impacts in the Plan Area, based on reported 79 percent Plan Area harvest (see Figure 3.4.3.2-15) and a total subsistence take for Nuiqsut of 3,558 birds and eggs in 1993 (of which 1,459 or 41 percent were geese and 2,099 or 59 percent were other waterfowl and eggs), was added (see Table 3.4.3-2 and 3.4.3-3). Based on the reported subsistence harvests applied to Plan Area populations (see Table 3.3.3-3), subsistence mortality affects 22 percent of goose resources in the Plan Area and 29 percent of other waterfowl resources in the Plan Area. Note although these population estimates probably under represent the total number of birds in the Plan Area, this is the same context as presented for habitat related impacts due to development. This compares to maximums of 2 percent of waterfowl resources affected by CPAI development alternatives and 8 percent of waterfowl resources affected by FFD alternatives. A justification for noting subsistence hunting as the most significant cumulative impact was added to Section 4G.6.3, Birds. The discussion of cumulative impacts was revised to indicate that added impacts will cause declining populations to decline more rapidly. It was further clarified that the threatened spectacled eider population on the North Slope is not currently in decline, and that in this instance cumulative habitat related impacts are most likely to affect the North Slope population by slowing recovery.

**BD-96**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 4F-32, Section 4F.6.3.1 Evaluation, second paragraph first sentence: this sentence is confusing. Section 4F is about cumulative effects. The sentence states that the cumulative effects would be the same as the effects from Alternative A.

**RESPONSE**

This sentence should have more accurately described that the mechanisms for impacts on birds would be similar to those described under Alternative A – CPAI Development Plan. The text was revised by deleting this sentence and clarifying the second sentence to indicate that cumulative actions that could affect birds include habitat loss, alteration or enhancement; disturbance or displacement; mortality; obstruction to movement; and hazardous material spills. The mechanisms for impacts would be similar to those described in detail for Alternative A – CPAI Development Plan in Section 4A.3.3.

**BD-97**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 4F-32, Section 4F.6.3.1 Evaluation, second paragraph third sentence: the sentence references Calef et al. The cited article relates to caribou. While the concepts about cumulative effects may be similar, there are

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important response and biological differences between mammals and birds. This section is about birds. Certainly there are more pertinent articles about cumulative impacts that relate to birds. Perhaps the NRC report would be a good starting point.

**RESPONSE**

Revised this sentence in Section 4G.6.3.1 to indicate that the effects of development may cause mortality; increased depredation or reduced reproduction; and increased energy expenditures or changes in physiological conditions that may reduce survival or reproduction (NRC 2003, Miller et al. 1994).

**BD-98**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 4F-33, Habitat Loss, alteration, or Enhancement, second paragraph, first sentence: This sentence needs to be revised or have a reference included. One possible alternative would be: "Overall, fragmentation of the tundra by oil facilities has not been a measurable factor affecting bird use of the Prudhoe Bay oilfield, but effects may be occurring." This version assumes there has been a study that has looked at habitat fragmentation but the study did not have statistical power to detect an impact.

**RESPONSE**

Revised this sentence in Section 4G.6.3.1 to indicate that reduction in the quality of available habitat may occur from fragmentation of large tracts of undisturbed tundra. Evaluation of fragmentation of tundra habitats by facilities in the Prudhoe Bay oilfield has not produced consistent results, but may affect shorebirds (Troy 2000).

**BD-99**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 4F-35, Mortality, first paragraph: The first and second sentences state that the construction of roads will increase hunting pressures. No reference or other support is given for this statement. At best, the sentence should be modified to state that there may be added hunting pressure. Alternatively, hunting pressure may decrease, as has happened in Kuparuk. Fewer people are hunting in Kuparuk now than before there was development. Subsistence hunters do not typically like to hunt within industrialized areas. In the previous pages, it is frequently stated that industrial activities may or could result in impacts. Now the DEIS is stating what subsistence hunters will do. There should be a more objective balance in the conclusions reached in this EIS.

**RESPONSE**

Revised the referenced sentence in Section 4G, Mortality and throughout Sections 4A–F.3.3, Birds, where subsistence and access are discussed to indicate mortality to birds, especially waterfowl, from subsistence harvest may be increased if residents use the connected road systems in Sub-Alternatives C-1 and C-2 for access, alternatively, subsistence related mortality may decrease if hunters avoid areas with developments.

**BD-100**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 4F-35, Mortality, fourth paragraph: The last sentence is appropriate and should have been used more frequently in this DEIS. “However, there is little information on which to base a projected mortality estimate (BLM and MMS 2003b).” There are many data gaps that should be acknowledged. In this paragraph it should also be stated that lighted facilities might attract birds. Thus, even though the facilities are relatively small, if they attract birds, the collision footprint becomes significantly larger.

**RESPONSE**

The paragraph in Section 4G.6.3 was revised to acknowledge the following:

Birds might also fly into structures, particularly nearshore structures during periods of darkness or fog and poorly visible obstacles such as powerlines suspended from poles. Because structures cumulatively represent relatively small obstructions on the landscape, and birds encountering them when visibility is good are expected to see and avoid them, bird mortality from collisions is expected to be low (BLM and MMS 2003b). Lighting at facilities may attract birds, especially during periods of poor visibility, incrementally increasing the probability of collisions. However, there is little information on which to base a projected mortality estimate (BLM and MMS 2003b).

**BD-101**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 4F-35, Mortality, fifth paragraph: This paragraph should be expanded. Increased predator numbers are not only related to alternative food sources. Nesting opportunities have also increased within the oilfields, especially for Common Ravens. An increased raven population will result in increased predation. Additionally, this paragraph seems incongruous with the final paragraph in this subsection. The final paragraph implies that some waterfowl and shorebird populations have increased because of oilfield activities. The fifth paragraph states that “predators have adversely affected nesting success of birds that nest on the ground.” The final paragraph of the subsection should be deleted or modified (see comments below).

**RESPONSE**

The final paragraph of this subsection was deleted, and a revised paragraph in Section 4G.6.3.1, was added.

**BD-102**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 4F-3, fifth paragraph, fifth sentence: This sentence is wrong. If currently declining populations of birds experience even small but added mortality or declines in productivity the effect on populations will be more than simply a slowing of recovery. The population decline will be exacerbated. Any increase in mortality or decline in productivity from industrial activity will cause the populations to decline more rapidly. Thus, the sixth sentence is also incorrect. Population effects will be expected for declining populations with increase mortality or decreased productivity associated with the ASDP.



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**RESPONSE**

This paragraph was inserted from the Northwest National Petroleum Reserve-Alaska IAP/EIS (BLM and MMS 2003). The results of additive impacts to fitness, survival or reproduction on declining populations would need to be put into context with population parameters for the species, and the level of effect would be determined by the number of individuals exposed, the stage of exposure, and known reasons for population declines. Although additive impacts to declining populations may exacerbate declines, the level of impacts documented in analyses generally affect less than 1 percent of any North Slope breeding population. In this context, impacts are unlikely to contribute measurably to declines at the level of North Slope populations.

**BD-103**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Page 4F-37: there is mention of the risk of a marine oil spill but the DEIS does not point out the risk this poses to Yellow-billed loons, such as those in Harrison Bay.

**RESPONSE**

This paragraph describes impacts to “loons.” The paragraph in Section 4G.6.3.2 was revised to indicate acknowledge that mortality of yellow-billed loons, red-throated loons, Pacific loons, king and common eiders, scoters and long-tailed ducks is possible in the event of a large oil spill entering the marine environment during high-use periods.

**BD-104**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The cumulative impacts section fails to look at impacts of cumulative development on the buff-breasted sandpiper. Same as issue EBD-22.

**RESPONSE**

Footprint and buffer analyses currently quantify direct and indirect impacts to all tundra habitat types including dry habitats is noted in Sections 4A–F.3.3. Site-specific nest densities have been used in estimating impacts to nesting shorebirds, including buff-breasted sandpipers. References to specific habitat types used by the “upland” shorebird species guild were added to Sections 4A–F (specifically Moist Tussock Tundra, Dryas Dwarf Shrub Tundra, Moist Sedge-shrub Meadow), both as percents of available and percents of total impact area. These findings were also summarized in the Cumulative Impacts portion of Section 4G.6.3.1.

**BD-105**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

The Service recommends that Table 2.7-1 should include a note that nest loss estimates do not include the number of nests potentially lost to predators. Nest loss estimates also do not take into account the propensity of some species to nest further away from human-related activities. While we agree that some species of shorebirds may nest near newly constructed roads, others are less likely to do so. The statement that

“disturbance impacts are not consistently demonstrated for shorebirds” (Table 2.7-1) lacks any citation for support, either in the Table or elsewhere in the document.

**RESPONSE**

A reference was added to Section 4A.3.3 to clarify the calculation methods used in Table 2.7-1. Additionally, a discussion of increased depredation due to increased predator populations was added to Section 4A.3.3. Analogous text regarding mortality was added to all alternative discussions. Although some bird species may be more likely to nest further away from human activities than others, an objective quantification by species documented to nest in areas of proposed developments was provided. Further evaluation of differential displacement by individual species would, by lack of clear quantitative response and distribution data, be based on speculation.

**BD-106**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 2-98: Table 2.7-1, Comparison of Impacts among Action Alternatives. Biological: Birds – Ptarmigan, Alternative D. Revise discussion about vehicle collisions – this alternative has no roads.

**RESPONSE**

Text in Table 2.7-1 has been corrected as suggested.

**6.3.2.8 Boat Ramps and River Access**

**RA-1**

This issue was raised in the following letter: DEIS0233.

**ISSUE**

If oilfield workers are allowed to use boats for sport fishing, increased boat traffic would result in large impacts to fish numbers and falcons nesting along the river.

**RESPONSE**

Boat ramps would be used for spill drills and spill response only. Oilfield workers will not be allowed to launch boats for sport fishing.

**RA-2**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Page 2-27, Section 2.3.8, Boat Ramps and River Access. Several of the Alternatives include a floating dock and gangway at CD-3. Skiffs would be deployed from this site for access and oil spill response. The use of skiffs at this site is not always practical because the waterway is not continuously navigable throughout the summer. The level of water within the channel depends upon the direction and speed of the wind and the proximity of the ice-edge to the shoreline of the outer delta. Wind shifts from NE to NW can lower the water to unnavigable levels in the channel within a few hours. Depending upon the use of skiffs, especially for oil spill response, at this site

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is therefore not practical. The Service recommends that alternate methods to deploy spill response equipment such as, pre-deployment and/or airboats, and the associated impacts, be addressed in the EIS for CD-3.

#### **RESPONSE**

Use of the dock at CD-3 may be limited or impractical during some wind events in the open-water season but is anticipated to provide beneficial access through most of the open-water season. In addition to the dock at CD-3, spill response equipment will be pre-deployed at various locations in the Colville River Delta. The CPAI ODPCP will identify specific pre-deployment locations, as well as the dates and conditions for pre-deployment types and amounts of equipment or materials, and procedures for deploying the equipment. The ODPCP will be completed to meet the borough, state and federal oil spill response requirements.

#### **RA-3**

This issue was raised in the following letter: DEIS0241.

#### **ISSUE**

2.3.8.1 Boat Ramp: Last sentence – Figure for CD-4 boat ramp is 2.4.1.1-3 not 2.2.4.1.1-3. However, CPAI's detail boat ramp drawing submitted with the application package should be included in the Final EIS. No details can be seen on the referenced drawing.

#### **RESPONSE**

The revised drawing of the CD-4 boat ramp is presented as Figure 2.3.8.1-2.

#### **RA-4**

This issue was raised in the following letter: DEIS0241.

#### **ISSUE**

2.3.8.2 - Floating Dock: The CPAI application package included a detail drawing for the floating dock, this needs to be included in the Final EIS as no detail can be seen on the referenced drawing.

#### **RESPONSE**

Figure 2.3.8.1-2 was added to depict the floating dock.

### **6.3.2.9 Bridges and Culverts**

#### **BC-1**

This issue was raised in the following letters: DEIS0114, DEIS0216, DEIS0241, and DEIS0271.

#### **ISSUE**

The EIS needs more information about lake fill, bridges and culverts. CPAI's criteria for pad, road, and bridge placement should be included. The EIS should also explain the basis for proposing culverts or culvert batteries rather than using bridge crossings.

**RESPONSE**

Additional information regarding bridges and culverts has been added to Section 2.4.3. Hydraulic criteria has been added to Section 2.4.6, Alternative F – Preferred Alternative.

**BC-2**

This issue was raised in the following letters: DEIS0114 and DEIS0234.

**ISSUE**

Opposes the bridge at Nigliq Channel; it is in the heart of caribou migration; it is where locals use the river to get to the ocean to hunt; and it is where the locals fish in the summer and fall.

**RESPONSE**

These factors that could result from the proposed bridge have been considered in Section 4A, Evaluation of Impacts.

**BC-3**

This issue was raised in the following letters: DEIS0114 and DEIS0261.

**ISSUE**

The bridge at Nigliq Channel is in a low bank area and would not have natural protections from spring break-up. It is also located in an area where seasonal floods are common and high ground is hard to find.

**RESPONSE**

Under Alternative F – Preferred Alternative, the proposed bridge at the Nigliq Channel has been extended to more completely span the floodplain. Alternative F is described in Section 2.4.6.

**BC-4**

This issue was raised in the following letter: DEIS0270.

**ISSUE**

In the final alternative, all bridges should span as much of the floodplain as necessary to maintain existing stream dynamics. Bridges should not cause any constriction that will result in impacts to fish habitats such as stream scouring and bank erosion.

**RESPONSE**

Under Alternative F (Section 2.4.6), the bridges across the Nigliq Channel and Ublutuoch River would be extended to span more of the flood plain. The bridges and the bridge approaches would have to meet established hydraulic design criteria. The hydraulic design criteria are established to be protective of fish and to reduce scour and erosion potential.

**BC-5**

This issue was raised in the following letter: DEIS0270.

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**ISSUE**

In the final alternative, culverts should be designed to an adequate size to maintain proper flows and fish passage. Properly operating culverts will allow fish passage and use of important seasonal habitats.

**RESPONSE**

Under the Preferred Alternative, standards to measure adequate design include the assumption that cross flow will be adequate to prevent raising the water level on the upstream side of culverts by more than 6 inches, compared to that for downstream of the culvert for more than 1 week after peak discharge. Design in compliance with this hydraulic requirement is consistent with maintaining proper flows and fish passage. The stated standards are included in Section 2.4.6.

**BC-6**

This issue was raised in the following letters: DEIS0082, DEIS0083, DEIS0230, DEIS0236 and DEIS0240.

**ISSUE**

The EIS should contain design information for the Nigliq Channel bridge on ramp locations, flooding and erosion protection measures, caribou crossing provisions, etc. The Draft EIS is almost completely inadequate as far as the bridge and its impacts are concerned, and it only vaguely defines the location of proposed bridges and culverts. Exact road bridge crossing lengths require additional hydraulic assessment data.

**RESPONSE**

Section 2.4.1 has been revised to incorporate additional bridge and culvert information contained in CPAI's January 2004 permit application (CPAI 2004a). Section 2.4.6 describes bridges and culverts that would be included under Alternative F – Preferred Alternative.

**BC-7**

This issue was raised in the following letters: DEIS0082, DEIS0083, and DEIS0236.

**ISSUE**

The EIS should include information about alternatives to placing a gravel road and culverts through the lake north of Nanug (CD-4). Proposed locations of culvert placement should also be provided.

**RESPONSE**

Alternatives B and C would include a 40-foot bridge, rather than culverts at the referred location. Alternative F would include a rerouted road east of Lake 9323, and several 40-foot bridges. This new information is described in Section 2.4.6.

**BC-8**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Section 2.3.9 incorrectly states how culverts are installed. If this method or type of pipe were used for culvert installations in fish streams, fish passage would be significantly inhibited project wide.

**RESPONSE**

The installation described is for typical culverts to allow cross flow and prevent ponding, not for crossings of established streams. The text in Section 2.3.9.2 has been modified for clarity.

**BC-9**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

2.3.9.1 Last sentence: "Decking material would be constructed out of timber or pre cast concrete decking. Timber is not used for decking on any North Slope bridges. Additionally, pre cast and poured in place decks are used and all contain reinforced concrete.

**RESPONSE**

"Timber" has been deleted from Section 2.3.9.1.

**BC-10**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Discussion recommends the use of line pipe for culverts but does not address the issue of smooth-wall pipe and fish passage.

**RESPONSE**

Section 2.3.9.1 has been modified to include an acknowledgement that corrugated pipes are preferable for fish passage.

**BC-11**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 2-28, 2.3.9 In the first paragraph, bird strike issues should be added to the list of considerations affecting the decision on a case-by-case basis whether to use culverts or bridges.

**RESPONSE**

The potential for birds to strike bridges is acknowledged as an impact under discussions of Alternatives A, C and F. Project design criteria for stream crossings would prioritize fish passage, water passage, and wetland and floodplain protection.

**BC-12**

This issue was raised in the following letter: DEIS0236.

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**ISSUE**

Page 2-28, 2.3.9.1 Neither the discussion of bridge design, nor Figures 2.3.9.1-1 or -2 indicate proposed bridge heights. In certain locations, the height of a bridge could have serious bird strike implications.

**RESPONSE**

Section 2.3.9.1 indicates a 20-foot vertical clearance for the Nigliq Channel Bridge, and that other drainages could have lower clearances, as determined by hydraulic and navigability factors. The potential for birds to strike bridges is acknowledged as an impact in discussions of Alternatives A, C and F. Project design criteria for stream crossings would prioritize fish passage, water passage, and wetland and floodplain protection.

**BC-13**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

The DEIS project description indicates that piles may be drilled or a piledriver may be used, but later in the analysis of turbidity impacts, it is assumed that the approach with least impact is followed. The NEPA process requires that analysis looks at the method that would result in the greater impact so that impacts are not underestimated.

**RESPONSE**

The turbidity impacts associated with boring holes for placement of piles are discussed in Section 4A.3.2.1, as noted by this commentor. Pile driving would create less turbidity than boring holes.

**BC-14**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

2.3.9 Bridge and Culvert Design: The document stated that decisions would be based on “the best technical and economical way...” When considering economics, the long-term (suggest “life cycle maintenance”) maintenance must be considered and not just the initial cost of a bridge, for example. Also, not addressed is selecting the best environmental design, i.e., placement of bridges and culverts based on sound hydrologic information and modeling. The Draft EIS does not provide any specific bridge design but generic designs and discussions. Additionally, the description of culvert installation needs clarity, i.e. all road construction (which includes culvert installation) normally occurs during the winter unless additional culverts need to be retrofitted due to ponding at the road after a high-water event.

**RESPONSE**

The text in Section 2.3.9 regarding bridges and culverts has been revised based upon additional information from the applicant’s permit applications. Standards to measure adequate design will assume that cross flow will be adequate to prevent raising the water level on the upstream side of structures by more than 6 inches, compared to that for downstream of the structure for more than 1 week after peak discharge, and will assure that the bridge approach will remain sound and not be washed out at all flow levels.

**BC-15**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The FEIS should include additional discussion of design options other than extensive armoring as a stabilization method to protect bridges and crossings from excessive scour.

**RESPONSE**

Standards to measure adequate design will include assuring that bridge approaches will remain sound and not be washed out at any flow levels. Alternative F – Preferred Alternative, includes provisions for larger bridges that would reduce restrictions of the flow way and prevent excessive scour. These larger bridges are discussed in Section 2.4.6.

**BC-16**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The FEIS should include discussion of siting criteria used to identify the proposed locations of the Nigliq Channel Bridge in Alternatives A and C.

**RESPONSE**

Siting criteria for the Nigliq Channel Bridge has been added to Section 2.3.9.

**BC-17**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

Impact analysis of Alternative A is incomplete until design of the Nigliq Channel bridge is sufficient to allow assessment of impacts to the Nigliq channel, its habitat, and Nuiqsut's socio-cultural health and welfare and subsistence practices.

**RESPONSE**

Nigliq Bridge design information has been updated to reflect information provided in the applicant's January 11, 2004 permit application (CPAI 2004a). Section 4A has been updated to consider the revised design in the analysis of impacts.

**BC-18**

This issue was raised in the following letters: DEIS0159 and DEIS0261.

**ISSUE**

The EIS should provide more detail on the engineering and decision process used in siting the Nigliq bridge, as well as impacts including flood events, channel bank stability, and relative extent and proximity of high ground less vulnerable to seasonal flooding.



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**RESPONSE**

Bridge siting criteria have been added to Section 2.3.9. The analysis of water resources in Sections 4A–F consider additional bridge design information that has been made available since the production of the DEIS.

**BC-19**

This issue was raised in the following letters: DEIS0114, DEIS0216, and DEIS0236.

**ISSUE**

DEIS does not give enough information about the design to allow the public to make comments. Deficiencies include lack of information about bridge designs, locations, and lighting; culvert battery numbers, locations, and design; the design and location of roadway, bridge abutment, and any other armoring systems to be employed; and mining/reclamation plans.

**RESPONSE**

Additional information on bridge and culvert design criteria from the applicant's January 11, 2004 permit application (CPAI 2004a) has been added to Section 2.4.1. Additional information on gravel mines has been added to Section 2.3.5 and Appendix O. The applicant would work within the permitted limits of the existing ASRC Mine Site, so associated impacts have previously been analyzed. A proposed mining and reclamation plan for Clover has been included as Appendix O.

**BC-20**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

The greatest beneficial mitigation for effects projected from the Nigliq Channel bridge would be to do away with a rig-capable bridge or relocate the crossing further upstream near CD-4.

**RESPONSE**

A bridge crossing at CD-4 is analyzed under Sub-Alternative C-1. Through the permitting process, the USACE could restrict construction to a bridge that supports a lighter load.

**6.3.2.10 Climate and Meteorology****CM-1**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The discussion of climate and meteorology in the Plan Area does not clearly define what winter and summer means for the purposes of the DEIS. (example: p 3-32)

**RESPONSE**

Section 3.2.3.1, Climate and Meteorology has been amended to define winter and summer for the purposes of the FEIS.

**CM-2**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS fails to assess the effects of climate change from GHG on the proposed project facilities, from sources such as permafrost melt, sea level changes, storm surges, and hydrological changes, and how those effects might be mitigated.

**RESPONSE**

Section 3.2.3.1, Climate and Meteorology has been amended to include the effects of climate change on meteorological events.

**6.3.2.11 Cultural Resources**

**CR-1**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4F-75: Clarify that all exploration and development areas are cleared through archaeological clearances prior to field activities. These clearances have resulted in the identification of additional cultural resources on the North Slope.

**RESPONSE**

Section 4G.7.5.2 (previously 4F) states that it is expected that if current procedures for survey and inventory before exploration and development activities were to be continued, the impact to the resource would be minimal. Text indicating that prior to any ground-disturbing activity, industry would be required to perform an evaluation and assessment of possible cultural resources in the immediate areas of the proposed development was added.

**CR-2**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

SHPO concurrence on sufficiency of cultural resource survey and eligibility of individual sites should be included in the FEIS.

**RESPONSE**

The applicant has completed a cultural resource survey and forwarded it to the SHPO. Additional survey work is being conducted for the Preferred Alternative. The SHPO concurrence letter is not yet available. Agencies cannot issue permits until the requirements of Section 106 have been fulfilled.

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**6.3.2.12 Cumulative Impacts Structure, Methodology and Scope****IS-1**

This issue was raised in the following letters: DEIS0110, DEIS0117, and DEIS0159.

**ISSUE**

Analysis of cumulative impacts on the region must consider each of the three planning processes BLM is currently undertaking.

**RESPONSE**

The cumulative impact analysis acknowledges that additional lease offerings and development will occur in the future, although the timing, extent, and location of development cannot be precisely specified. Future development has been included under the category of “Reasonably Foreseeable Future Development” (see Section 4G.4.4). Potential future development in the ASDP Area has been included and analyzed under FFD alternative discussions (see Section 4A.3.1.2).

**IS-2**

This issue was raised in the following letters: DEIS0110, DEIS0225 and DEIS0237.

**ISSUE**

The cumulative impact analysis should include human health, particularly breathing problems of Nuiqsut residents.

**RESPONSE**

The DEIS includes consideration of health and welfare impacts to the Native population of the North Slope in a number in sections. For example, Section 3.4.1.5 summarizes recent documented trends in community health; Section A.4.4.1 summarizes the findings with respect to community health and welfare impacts under Alternative A – CPAI Development Plan; Section 4A.4.1.4 summarizes proposed mitigation with respect to community health and welfare; Section 4A.4.4.1 summarizes disproportionate impacts to local residents; Section 4F.7.1.1 describes cumulative effects of development on the North Slope population; and Section 4F7.4 describes additional cumulative effects on community health and welfare with respect to the Environmental Justice evaluation.

In addition, citations of health-related studies not initially included have been added to Section 3.4.1.5. These include current information on cancer and asthma rates among Alaska Natives.

**IS-3**

This issue was raised in the following letters: DEIS0117 and DEIS0261.

**ISSUE**

The EIS should address encroachment on the Fish Creek setback and the continual and constant encroachment impacts on the subsistence lifestyle.

**RESPONSE**

Alternative A, Sub-Alternatives C-1 and C-2 and Alternative F include road segments that fall within Stipulation 39[d] setbacks. The environmental impacts and impacts to subsistence use of these roads have been analyzed and reported in Sections 4A, 4C-1, 4C-2 and 4F.

**IS-4**

This issue was raised in the following letters: DEIS0114, DEIS0195 and DEIS0236.

**ISSUE**

The EIS should address long-term changes and permanent impacts and be sensitive to the impact of changes on the people of Nuiqsut.

**RESPONSE**

Long-term, permanent impacts of the applicant's proposed action have been addressed in Section 4A.4.4.1, Impacts, Socio-Cultural Characteristics and are summarized specifically for Nuiqsut in Section 4A.4.1.3.

**IS-5**

This issue was raised in the following letters: DEIS0195, DEIS0216 and DEIS0236.

**ISSUE**

Issues and findings discussed in the NAS report should be addressed in the FEIS.

**RESPONSE**

A list by topic of the findings from the NRC (noted as the National Academies of Science in comment DEIS0236) can be found in Table 4F.2.2-1 with references to those sections of the DEIS where each topic has been addressed. References to two topics found in the NRC report were omitted: Growth in Industrial Activity and Oil Spills. References for these topics have been added to the FEIS.

**IS-6**

This issue was raised in the following letters: DEIS0195, DEIS0216, DEIS0233, DEIS0236, DEIS0240, DEIS0257, DEIS0262 and DEIS0270.

**ISSUE**

The EIS should adequately address the cumulative impacts of the proposed Alaska DOT road to Nuiqsut, use of Camp Lonely as a stage area, and National Petroleum Reserve-Alaska and Colville River bridge crossing which is in the permitting process and is a "proposal for action" and thus the possible impacts from these projects must be considered in the DEIS in order to comply with NEPA.

**RESPONSE**

Text and Figure 4G.4.5-1 have been revised to reflect more current information about the Colville River Road. In addition, a portion of the road has been included as part of Sub-Alternative C-2 (see Section 4C-2). Some North Slope residents believe that use of Camp Lonely as a staging area in 2003-2004, as well as specifically associated barges and helicopter traffic, caused impacts to whales. Disturbance and displacement of whales by vessels and aircraft are discussed in Section 4G.6.4.2.

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**IS-7**

This issue was raised in the following letter: DEIS0195.

**ISSUE**

The EIS cumulative impact analysis should address long-term studies on North Slope habitat, wildlife and health.

**RESPONSE**

The cumulative impact analysis evaluates long-term impacts as they are currently understood. As noted in Section 2.6.5, the BLM and USGS are currently establishing a body to direct and undertake further long-term studies that further evaluate the effects of current and future industrial activity on the North Slope.

**IS-8**

This issue was raised in the following letter: DEIS0263.

**ISSUE**

The cumulative impact of both the oil and gas operators and the growing local population within the Colville Delta area must be assessed together.

**RESPONSE**

Population trends for Nuiqsut are discussed in Section 3.4.1.6. The cumulative impact analysis has included consideration of all projects that are “reasonably foreseeable” over the next 20 years within the region. As “reasonably foreseeable” future projects seek permits and approvals for development, additional NEPA processes for each project will be performed according to federal and state regulations. Section 4G.7.3.1 includes a discussion of subsistence habitat patterns. As indicated, sparse monitoring data limits assessment of changes in hunter access to resources and assessment of increased competition that could occur from population increases.

**IS-9**

This issue was raised in the following letter: DEIS0237.

**ISSUE**

The full evaluation of this document has not occurred by the most impacted community due to the demands placed upon this community with the development activities currently pressed upon us. We have many separated activities that will have a cumulative effect.

**RESPONSE**

The cumulative impact analysis for this project has included consideration of all known projects that are “reasonably foreseeable” over the next 20 years within the region. Section 4G includes a description of reasonably foreseeable actions for the region.

**IS-10**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

In Cumulative Impacts, the DEIS states that information from other documents is incorporated by reference. CEQ (1502.21) requires that this material is cited and its content briefly described. (example: 4F-6)

**RESPONSE**

Appropriate references and summaries of relevant information have been included.

**IS-11**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Definition of “reasonably foreseeable” development is used inconsistently in the DEIS and contradicts language used in other local EISs.

**RESPONSE**

As noted in the commentor’s letter, the assessment of the likelihood of development of future reserves is a function of oil prices, technology and other factors. Thus the classification of future projects in future EIS cumulative impact assessments may change from time to time based on these factors. The primary definition of “reasonably foreseeable” as those projects that would occur in a 20-year time frame is consistent with recent EISs, most notably the recent Northwest National Petroleum Reserve-Alaska IAP/EIS (BLM 2003b).

**IS-12**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

CD-7 is clearly a gas field, yet gas production was relegated to the "speculative" category and not analyzed in the DEIS.

**RESPONSE**

A discussion of the potential for future gas development on the North Slope is included in Section 4G.4.4.2, which notes that no infrastructure for transporting natural gas from the North Slope to domestic or world markets is available. While several pipelines to deliver gas to market have been approved in the last quarter century, they have not been built because of high project development costs and marketing hurdles.

**IS-13**

This issue was raised in the following letter: DEIS0239.

**ISSUE**

The DEIS does not address future landscape fragmentation or destruction of wildland spirit and wilderness of the plan area.

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**RESPONSE**

These topics are addressed in the analyses of Recreation Resources and Visual Resources. See the following sections: Recreation Resources 3.4.7, 4A.4.7 (and analogous sections for other alternatives), and 4G.7.7; Visual Resources 3.4.8, 4A.4.8 (and analogous sections for other alternatives), and 4G.7.8.

**IS-14**

This issue was raised in the following letter: DEIS0239.

**ISSUE**

The DEIS does not include the Fish Creek oil field in the list of reasonably foreseeable future developments.

**RESPONSE**

The Fish Creek Oilfield was included as part of the discussions of FFD Scenarios (see location of HP-18 in Figure 2.4.1.2-1.) To include it again as part of the “Reasonably Foreseeable Future Projects” group listed on Table 4G.4.4-3 would be to count this resource twice.

**IS-15**

This issue was raised in the following letter: DEIS0239.

**ISSUE**

Maps of cumulative development should include other active leased areas within the Northeast Plan Area to show how the Alpine satellites proposed by ConocoPhillips may later be joined up with others.

**RESPONSE**

Figure 4F.4.4-1 includes oil and gas exploration tracts leased in 1999 and 2002.

**IS-16**

This issue was raised in the following letter: DEIS0239.

**ISSUE**

The DEIS fails to address cumulative effects of spills from the Northstar projects, existing Alpine facilities, and other new exploration and development sources on the bowhead whales, fish, birds, and other resources used by Nuiqsut for subsistence.

**RESPONSE**

Analysis of the Northstar, existing Alpine, and other future development activities has been included in the cumulative impact analysis, and discussions of the potential impacts of spills are also included. See specifically Section 4G.6.5.1, Section 4G.6.2.1, and Section 4G.6.3.1.

**IS-17**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section 4F.2.4.3, Page 4F-6, Para. 1st (partial para.), Sent. 1st: "...the spill analysis included in the Northwest National Petroleum Reserve-Alaska EIS is incorporated by reference." For the Reader to understand the discussion, the DEIS needs to include a brief summary of the spill analysis being incorporated by reference.

**RESPONSE**

Text in Section 4G.2.4.3 has been revised to include a synopsis of referenced material.

**IS-18**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Sections 4F.7.1, 4F.7.3, and 4F.7.4: These sections need to cite the Northwest National Petroleum Reserve-Alaska Final IAP/EIS because the text borrows heavily from the cumulative effects sections of that document.

**RESPONSE**

Appropriate references have been incorporated into the text of the FEIS.

**IS-19**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Oversights of activities that are likely to occur in the near future (namely the issuance of exploration leases in the NW and NE Reserve Planning Area) must be accounted for prior to issuing any draft or final EIS.

**RESPONSE**

The cumulative impact discussion of reasonably foreseeable development (see Sections 4G.4.4.1 and 4G.4.6) and their impacts have been revised to better address development in the Northeast and Northwest portions of the National Petroleum Reserve-Alaska.

**IS-20**

This issue was raised in the following letters: DEIS0240 and DEIS0257.

**ISSUE**

The DEIS fails to consider any reasonably foreseeable exploration or development in the NW Reserve leasing area and the rest of the NE Reserve, beyond the section studied for the ASDP.

**RESPONSE**

The cumulative impact discussion of reasonably foreseeable development (see Sections 4G.4.4.1 and 4G.4.6) and their impacts have been revised to better address development in the Northeast and Northwest portions of the National Petroleum Reserve-Alaska.



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**IS-21**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Table 4F.4.4-1 is too general. The DEIS does not specifically identify the actions (past, present and future) that it is considering in its analysis of cumulative impacts.

**RESPONSE**

Section 4G, Cumulative Impacts, has been significantly revised since the DEIS was released. Past, present, and future actions considered in the analysis are clearly described within the FEIS.

**IS-22**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Table 4F.4.4-1 does not include a listing or location of abandoned roads, trails, pads or other facilities, give the location of trails and old seismic liens that crisscross the Plan Area and oil fields to the east, or otherwise give any useful quantitative data about surface impacts.

**RESPONSE**

Additional quantitative information is included in Table 4G.4.4-2 and in Section 4G.4.4.

**IS-23**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The following are mentioned in the EIS, but potential impacts are not evaluated in the cumulative impacts section: the State's Area-wide oil and gas lease sale, CPAI's ACX 1-2 projects at Alpine, and the sealift impacts from ACX 3.

**RESPONSE**

Cumulative impacts that could result from current and future state leases are described as reasonably foreseeable actions in Section 4G.4.4.1. Impacts are described in subsequent sections of 4G.

As noted in Section 2.3.12.2, the applicant's proposed action includes three projects that would support production in the existing Alpine Field or ASDP. All three projects will occur within the confines of the existing APF-1 location, and thus not measurably increase disturbed area. Section 4A.2.3.2 addresses impacts to Air Quality. Sealift of components prefabricated offsite will utilize existing transportation systems and facilities. Potential impacts of sealift activities on bowhead whales are discussed in Sections 4A.3.5.1, and 4G.6.5.1. Section 4G.6.2 includes additional discussions of sealift impacts on marine mammals.

**IS-24**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The cumulative impacts analysis does not consider the possibility that the pipeline from Alpine will be unable to handle the capacity of oil fields developed in the Plan Area and that additional pipeline facilities might be needed.

**RESPONSE**

At this time, no plans have been advanced by the applicant or by others to add pipeline capacity from the Plan Area to processing facilities beyond those included in the applicant's proposed action. If additional pipeline capacity is required, it would likely be placed on the existing VSMs.

**IS-25**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS should consider the potential of permanent roads elsewhere in the Reserve.

**RESPONSE**

An estimate of 147 miles of additional roads associated with future infrastructure and facilities development was assumed in the cumulative impact analysis. See revised text in Section 4G.4.4.1.

**IS-26**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Page 4F-17: without substantiation, the DEIS claims that EIS-related decisions that authorize Stipulation revisions will not create additional impacts.

**RESPONSE**

Section 2 of the Northeast National Petroleum Reserve-Alaska Amended IAP/EIS includes a table comparing the effectiveness of its stipulations on lands available to leasing with those in the 1998 IAP/EIS. It was concluded that there was no difference in impacts.

**IS-27**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Page 4F-17: also asserts that analyzing the impacts from additional leasing in the NE brought on by changes to the 1998 ROD would be "speculative" when reasonable assumptions about impacts is required by NEPA.

**RESPONSE**

The cumulative impact discussion of reasonably foreseeable development (see Sections 4G.4.4.1 and 4G.4.6) and their impacts have been revised to better address development in the Northeast and Northwest portions of the National Petroleum Reserve-Alaska.

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**IS-28**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS fails to identify the relevant actions with specificity, indicate their impacts, and then add them up.

**RESPONSE**

Section 4G, Cumulative Impacts, has been significantly revised since the DEIS was released. Relevant actions and their impacts are clearly stated in the FEIS.

**IS-29**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

4F 2.3 – Region and Time Frame Consideration: There is no explanation of how the region and time frame of consideration was reached. This is the key to the rest of the analysis. We can't understand how the whole North Slope is considered the area of consideration for every impact and resource.

**RESPONSE**

See revised text in Sections 4G.2.3.1 and 4G.2.3.2.

**IS-30**

This issue was raised in the following letters: DEIS0200 and DEIS0271.

**ISSUE**

Significance thresholds should be established for resource categories evaluated in the EIS. These should include NAAQS for air quality and Alaska Water Quality Standards for water quality impacts in the Plan Area.

**RESPONSE**

“Significance” is a NEPA regulatory term used to identify potential impacts that are to be evaluated in an EIS as opposed to an EA. This EIS incorporates quantitative and qualitative analyses to identify a full range of impacts. The method does not establish specific thresholds, above which an impact was significant and below which it was not. Furthermore, where impacts could be avoided, reduced, or eliminated by mitigation, potential measures have been identified. Impacts of the project itself have been measured against NAAQS and Alaska Water Quality Standards.

**IS-31**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Section 4F: Effects of the Cumulative Case: The conclusions of the NRC analysis were omitted from some parts of this section, such as 4F.6.4 Terrestrial Mammals, which fails to cite it at all — such omissions should be identified and corrected throughout section 4F to include relevant conclusions from the NRC report.

Problems with Region and Time Frame of Consideration include: the geographic region of interest does not mirror the distribution of resources affected; for instance, it should include the entire annual range of migratory species such as birds, caribou, and marine mammals; and the time frame is not consistent in this document. There is almost no discussion of additive or synergistic effects for Birds. Need to relate cumulative effects to populations of birds, especially those with small or declining populations.

**RESPONSE**

The comment includes three elements, each of which has been addressed in the FEIS as follows: A discussion of the findings of the NRC report has been added to Section 4G. 2.2, text has been added to Section 4G.2.3 to clarify concerns related to the Region of Consideration, and Section 4G.4.6 has been amended with respect to the comment regarding cumulative impacts to birds.

**6.3.2.13 Endangered and Threatened Species**

**TE-1**

This issue was raised in the following letter: DEIS0163.

**ISSUE**

The EIS should address impacts to polar bear denning.

**RESPONSE**

This issue is discussed in the FEIS. See Sections 4A–F.3.4.

**TE-2**

This issue was raised in the following letter: DEIS0163.

**ISSUE**

The EIS should address impacts to golden eagle and peregrine falcon nesting.

**RESPONSE**

Golden eagles do not nest on the Arctic Coastal Plain. One peregrine falcon nest has been identified in the Plan Area, but it is located 3.5 miles from the nearest proposed facility, is within the protected 3-mile Fish Creek buffer and is unlikely to be disturbed by any proposed project activity. Figure 3.3.3.5-1 was revised to include these nests which are further described in Section 4A.3.3.

**TE-3**

This issue was raised in the following letters: DEIS0198 and DEIS0233.

**ISSUE**

The EIS should include all impacts to spectacled eiders, including habitat loss, disturbance, increased predators, contamination by hazardous materials, and diminished air quality.

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**RESPONSE**

Habitat loss, disturbance and exposure to spills are addressed. There is no indication that diminished air quality will impact spectacled eiders. The discussion of impacts from increased nest depredation was added to Section 4A.3.5. This impact is not quantifiable. Contamination due to spills is addressed in Section 4.3.3.3 and Section 4.3.4.6. Additionally, text was added to indicate that besides mortality due to direct oiling of adult birds (spectacled eiders), mortality of eggs due to secondary exposure by brooding adults, loss of ducklings or goslings due to direct exposure, and/or lethal and sub-lethal effects due to direct ingestion or ingestion of contaminated foods (insect larvae, near shore mollusks and invertebrates or fish) could result.

**TE-4**

This issue was raised in the following letter: DEIS0198.

**ISSUE**

CD-3 is extremely sensitive to oil drilling impacts because it is the last stronghold for breeding spectacled eiders in the Colville Delta. Human activities such as subsistence hunting and boat traffic have been kept at a minimum in this location.

**RESPONSE**

A description of historical use of the east channel of the Colville River by spectacled eiders, and their subsequent decline within this area (that is an eider subsistence hunting area), was added. The CD-3 area has been identified as an area of concentrated use by nesting spectacled eiders and impacts that would result due to the construction of CD-3 have been identified. Section 3.3.5.2 was revised by including the following information:

Similar to the trend on the Arctic Coastal Plain, the numbers of nesting spectacled eiders in the Kuparuk Oilfield area, just east of the Colville River Delta and the National Petroleum Reserve-Alaska, has remained relatively constant from 1993 to 2003 (Anderson et al. 2003). In contrast, numbers of spectacled eiders in the northeastern portion of the Colville River Delta declined by over 90 percent from 1987 to the mid 1990s (Helmericks 2004). Spectacled eiders are found throughout the Colville River Delta from late May to early June (see Figure 3.3.5.2-2), but most nesting and brood-rearing has been concentrated in the northwest portion of the outer Delta in recent years (see Figure 3.3.5.2-4). Studies in Colville River Delta between 1996 and 2003 indicate that spectacled eiders nest primarily on the outer Delta (see Figure 3.3.5.2-2) (PAI 2002a, Johnson et al. 2003a and 2004, Burgess et al. 2003a), although, spectacled eiders nested historically in the Anachlik Colony complex on Dune Island, just east of the mouth of the Miluveach River (Helmericks 2004). Spectacled eider surveys during mid-June 1993 to 2003 in the National Petroleum Reserve-Alaska portion of the Plan Area (see Figure 3.3.5.2-3) indicated that fewer eiders used this area than used the Colville River Delta (see Figure 3.3.5.2-2). Eiders are harvested in the Colville River Delta (28 percent of eider harvest) (see Figure 3.4.3.2-19) during spring subsistence hunting, primarily by boats that access the Delta and Harrison Bay (see Figure 3.4.3.2-17).

**TE-5**

This issue was raised in the following letter: DEIS0198.

**ISSUE**

The EIS analysis of Spectacled Eider impacts relies on nesting data and raven predation from the 2002 ABR report that is not completely accurate.

**RESPONSE**

The site-specific nesting and brood-rearing data for each proposed pad location represents the best available data for these areas, and is presented in Section 3.3.5.2, Spectacled Eiders and is used in analyses presented in Sections 4A–F.3.5.2. Additional information on depredation by common ravens in the lower Colville River Delta was added to Sections 4A.3.3 and 4A.3.5.2.

**TE-6**

This issue was raised in the following letter: DEIS0198.

**ISSUE**

An airstrip at CD-3 would be vulnerable to erosion during spring breakup flooding and fall storms. The subsequent dispersal of gravel would impact spectacled eider habitat.

**RESPONSE**

A 50 meter habitat alteration impact area, which describes the total quantities of impact area by habitat types, and includes gravel washed or spayed from pads or roads, was added. The habitats used by spectacled eiders within this area and the total area of impact were identified. Mitigation measures for slope protection, where necessary, are proposed in Section 4A.3.1, Vegetation and Wetlands.

**TE-7**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Page 3-120, paragraph 3. Information presented on spectacled eider nesting distribution is contradictory. The first sentence of the paragraph identifies the area between Cape Simpson and the Sagavanirktok River as the primary nesting ground for spectacled eiders on the Arctic Coastal Plain. The third sentence then identifies the inland area between Barrow and Wainwright as the highest density nesting area. These areas do not overlap. The breeding eider survey, conducted by Larned et al. provides the most comprehensive and detailed description of North Slope spectacled eider distribution, and should be the primary data source for this section.

**RESPONSE**

Section 3.5.2, Spectacled Eiders was revised to incorporate the following information (extracted from the Northwest National Petroleum Reserve-Alaska IAP/EIS). Currently, primary nesting grounds are the Y-K Delta; the Arctic Coastal Plain (Kasegaluk Lagoon to the Sagavanirktok River) of Alaska; and in the Chaun Gulf and the Kolyma, Indigirka, and Yana River Deltas of Arctic Russia. With the exception of a few scattered areas in the Northwest National Petroleum Reserve-Alaska IAP/EIS area, spectacled eiders occur at low density on the Arctic Coastal Plain (Larned et al. 2001a and b, Ritchie and King 2002). The highest densities determined from USFWS aerial surveys in 1998–2001 were found within 70 km of the coast between Barrow and Wainwright, with smaller areas northeast of Teshekpuk Lake (see Figure 3.3.5.2-1). Larned et al. (2003a and b) data are also presented and described throughout this section.

**TE-8**

This issue was raised in the following letter: DEIS0216.

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**ISSUE**

Page 3-121, paragraph 2. Larned, Balogh, and Petersen 1995 do not appear in the Bibliography.

**RESPONSE**

The citation for this reference was revised to Larned et al. (1995), and this reference was added to the Bibliography.

**TE-9**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Page 3-121, paragraphs 3 and 4. Stehn and Platte 2000 do not appear in the Bibliography.

**RESPONSE**

This reference was added to the Bibliography.

**TE-10**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Page 3-121, paragraph 4. Fischer 2001 and Fischer 2002 do not appear in the Bibliography.

**RESPONSE**

The reference to Fischer (2002) was an error and was corrected to Fischer (2001) and added to the Bibliography.

**TE-11**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Page 3-122, paragraph 1. Dau and Anderson 2001, and Dau and Hodges 2003 do not appear in the Bibliography.

**RESPONSE**

These references were added to the Bibliography.

**TE-12**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 3-119, North Slope, Population Status and Range, first paragraph, third sentence: This sentence discusses the population size on the North Slope. It should be noted that the numbers are minimal because the counts were not corrected for birds that were missed by the observers. It is not know how large this visibility correction factor might be but the actual population could be 2 to 3 times larger than the estimate.

**RESPONSE**

Section 3.3.5.2 was revised to indicate that the USFWS estimates are minimum (uncorrected for detection bias) estimates.

**TE-13**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Various issues dealing with bowhead feeding and activity in the eastern Alaskan Beaufort Sea were raised.

**RESPONSE**

The text was revised to include the suggested references and some of the information provided. However, much of the suggested information is outside the Plan Area, and best incorporated by reference rather than included in the EIS.

**TE-14**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS fails to analyze the increased predation (by foxes, gulls, ravens, etc.) on eiders that may occur from increased human activity. The training of work crews regarding proper waste disposal will not insure that predation will not increase due to human trash and powerlines that may allow perching for predators.

**RESPONSE**

Section 4A.3.5.2 was revised to include the discussion of increased predators in response to human development on the North Slope. Text was also added to Sections 4A–F.3.5 concerning added perching on elevated pipelines or other structures and nest depredation by avian predators.

**TE-15**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS fails to take a “hard look” at the potential impacts to nesting and other eider behavior resulting from hazardous material, fuel spills and solid material removal and remediation.



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**RESPONSE**

Contamination due to spills is addressed in Section 4.3.3.3 and Section 4.3.4.6. Text was added to indicate that besides mortality due to direct oiling of adult birds (spectacled eiders), mortality of eggs due to secondary exposure by brooding adults, loss of ducklings or goslings due to direct exposure, and/or lethal and sub-lethal effects due to direct ingestion or ingestion of contaminated foods (insect larvae, near shore mollusks and invertebrates or fish) could result.

**TE-16**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS points out that endangered spectacled eider has its “highest densities at proposed CD-3 “project area”, but does not define what it means by “project area”, or provide detailed quantitative data for the proposed permanent road and bridge or airport locations.

**RESPONSE**

The project descriptor for CD-3 and CD-4 in Section 3.5.2 was removed. Site-specific quantitative data are included in the descriptions including pre-nesting and nesting densities and offshore observations. Specific references for these quantitative data are included (Helmericks 2004, Johnson et al. 2003a, 2003b, 2004, Burgess et al. 2003a, 2003b, and Fischer et al. 2002) as well as graphic presentation in Figures 3.3.5.2-1, 3.3.5.2-2, 3.3.5.2-3, 3.3.5.2-4 and 3.3.5.2-5.

**TE-17**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS writes off noise disturbance to Endangered species as negligible, but provides no scientific support that the disturbance does not constitute harassment under the ESA.

**RESPONSE**

Disturbance due to noise caused by air traffic was estimated to reduce spectacled eider nest density by 67 percent within 500 meters of airstrips or helipads (see Sections 4A–F.3.5.2). The USFWS is responsible for determining if generated noise is sufficient to constitute harassment under the ESA for spectacled eiders. No additional disturbance due to noise was attributed to vehicle traffic or generators at facilities beyond the 50-meter area used for displacement due to habitat alteration from dust, snowdrifts and/or altered thermal and moisture regimes. The NOAA Fisheries determined that no CPAI project components would impact bowhead whales. However, statements were added about the potential for aircraft noise to disturb whales under the FFD scenarios.

**TE-18**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Increased boat and air traffic may disturb whales.

**RESPONSE**

Text was added to Sections 4A–F3.4.2 to address this comment.

**TE-19**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS fails to take a “hard look” at the potential impacts posed by oil spills in the offshore environment, and the direct impacts from an oil spill to aquatic crustaceans, aquatic insects, plant materials and mollusks which constitute the majority of the eiders diet.

**RESPONSE**

Eider use of the nearshore environment is described in Section 3.3.5.2 and graphics including offshore observations were added to Figure 3.3.5.2-1. Contamination due to spills is addressed in Section 4.3.3.3 and Section 4.3.4.6. Text discussing mortality of eggs due to secondary exposure by brooding adults, loss of ducklings or goslings due to direct exposure, and/or lethal and sub-lethal effects due to direct ingestion or ingestion of contaminated foods (insect larvae, near shore mollusks, invertebrates or fish) could result has been added. Estimated numbers of spectacled eiders in the areas of river discharge will be included and addressed in the cumulative impact discussion of the FEIS. A more detailed analysis of potential impacts to spectacled eiders will be considered by the USFWS in the Biological Assessment.

**TE-20**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS fails to account fully for the cumulative short and long-term impacts to the at-risk eider populations which will result from infrastructure form the proposed action in conjunction with other state, private and federal land activities on the North Slope.

**RESPONSE**

Potential developments within the Plan Area are considered under all FFD scenario discussions, and the broader development impacts from activities on state, federal and private lands are considered in the cumulative impacts analysis (Section 4G). A detailed analysis of potential impacts to spectacled eiders will be considered by the USFWS in the Biological Opinion.

**TE-21**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS fails to account fully for the cumulative impacts of past seismic activities across the eiders’ North Slope habitat, which has altered some undeveloped tundra lands. Surface disturbance caused by industrial activities typically increases surface moisture and plant productivity, which will impact the eiders.

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**RESPONSE**

There is no indication that the habitats preferred by pre-nesting, nesting, and brood-rearing spectacled eiders (aquatic, wet and moist tundra) are significantly impacted by seismic activity. Seismic surveys impact moist and dry tundra types disproportionately. Wet and aquatic tundra types preferred by spectacled eiders have experienced negligible or low disturbance levels (Jorgensen et al. 2003b).

**TE-22**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Further analysis should be done about the impacts that the ASDP will have on the eiders in conjunction with other activities on federal, state and private lands. This analysis must be presented for the local populations, the Alaska breeding population and the species as a whole.

**RESPONSE**

Potential developments within the Plan Area are considered under all FFD scenario discussions, and the broader development impacts from activities on state, federal and private lands are considered in the cumulative impacts analysis (Section 4G). A detailed analysis of potential impacts to spectacled eiders will be considered by the USFWS in the Biological Opinion.

**TE-23**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS fails to analyze impacts of boating and air traffic on bowhead whales.

**RESPONSE**

The potential for vessel traffic and aircraft noise to impact whales has been noted for FFD in the FEIS (see Section 4A.3.5). No vessel traffic or air traffic in the Beaufort Sea are proposed for CPAI alternatives.

**TE-24**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The Sensitive Species List does not show which sensitive species appear in the Plan Area and which do not. BLM must do the studies and surveys to acquire the data for the sites that will be affected by any action alternative.

**RESPONSE**

The BLM's Sensitive Species list is included as Appendix E of the FEIS. Such occurrences within the Plan Area were identified in Section 3, Affected Environment, under their respective headings. Designations for species occurring in the Plan Area were also added to Appendix E. Detailed, site-specific information was obtained by the applicant for all areas proposed for development, including surveys for all federally listed species and rare plants.

### **6.3.2.14 Environmental Justice**

#### **EJ-1**

This issue was raised in the following letters: DEIS0017 and DEIS0236.

##### **ISSUE**

The people of Nuiqsut have experienced a reduced ability to support their families by traditional means and have been overlooked for promised jobs. Additional stresses and displacement are a certainty under all action alternatives and should be dealt with as a reality, not a mere possibility.

##### **RESPONSE**

Both Sections 4A.4.1.1 and 4A.4.3.1 note the impacts to traditional subsistence uses, and recognize their effects on the community. Since the impacts have been described qualitatively and since their degree is dependent on a number of factors, they have been characterized as impacts that “could” occur. Mitigation was identified in the DEIS to reduce the potential for and magnitude of the impacts (see Sections 4A.4.1.4 and 4A.4.3.4). While references to Alternative A – CPAI Development Plan have been cited in this response, the response applies equally to all other alternatives except Alternative E – No Action.

#### **EJ-2**

This issue was raised in the following letter: DEIS0238.

##### **ISSUE**

The analysis of environmental justice in the DEIS is incomplete and legally incorrect as it skips step 2 entirely and fails to identify whether any impacts of the proposed action alternatives are "high and adverse".

##### **RESPONSE**

The Environmental Justice analysis that has been included in the EIS is consistent with Executive Order 12898 and related guidelines including the CEQ NEPA/EJ Guidance (CEQ 1997), USEPA Guidance (USEPA 1998) and the USEPA’s most recent “Toolkit” (USEPA 2003). The guidance does not require that an impact first be determined to be “high and adverse” (or significant) and then tested to determine if the impact disproportionately affects an Environmental Justice population. This would pre-empt consideration of the affect of the impact on the target population as part of the “context” (40 CFR 1508.27) to determine significance. Rather, impacts that may reasonably result from a proposed action are evaluated with respect to the affected Environmental Justice population, and within that context “intensity” (40 CFR 1508.27) of impact is evaluated to determine significance.

#### **EJ-3**

This issue was raised in the following letter: DEIS0240.

##### **ISSUE**

Section 3.4.4, Page 3-166: The text needs to mention that Executive Order 12898 itself (not just EPA guidelines) specifically requires consideration of potential effects to Alaska Native subsistence activities.

##### **RESPONSE**

The text in Section 3.4.4 has been revised to address this comment.

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**EJ-4**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The DEIS erroneously does not take into account potential adverse health and welfare effects in its discussion of Environmental Justice. (example: p.4A.4-26, table 4A.4.4-1)

**RESPONSE**

Table 4A.4.4-1 has been revised to address this comment.

**EJ-5**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The FEIS needs to include a section, appendix, or table that describes mitigation measures to reduce the level of significant adverse impacts to EJ communities.

**RESPONSE**

Table 4A.4.4-2 has been added to the FEIS to address this comment.

**EJ-6**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section 4F.7.4, Page 4F-72 to 73: The discussion on BLM's Research and Monitoring Team (RMT) should be revised, as the RMT has been disbanded. The BLM has funded a number of new studies that should be enumerated here.

**RESPONSE**

The text of the FEIS (Section 4G) has been modified to address this comment.

**EJ-7**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section 4F.7.4, Page 4F-73, Para. 1st: Please rewrite the last sentence to read: "The MMS Study 2001-032 Socio-cultural Consequences of Alaska OCS Activities: Data Analysis and Integration, a cooperative agreement with the State of Alaska, Department of Fish and Game, Subsistence Division, analyzes and integrates subsistence, socioeconomic, and socio-cultural time-series data from previous MMS-sponsored projects to assess the occurrence and implications of socio-cultural change from OCS activities."

**RESPONSE**

The text of the FEIS (Section 4G) has been modified to address this comment.

**6.3.2.15 Existing Infrastructure in the Plan Area**

**EI-1**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

In order to provide an adequate Description of the Affected Environment and cumulative impacts assessment, the DEIS must identify past overland routes used by heavy and light equipment and discuss what impacts they have in each specific area where they have existed.

**RESPONSE**

This level of detail on past overland routes is not necessary for an adequate NEPA analysis, however, the cumulative impacts section of the EIS does note the impacts of past overland travel.

**EI-2**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

The existing infrastructure description is not complete. APF-1 is mentioned, however the airstrip, CD-2 and the connecting road are not mentioned. As described earlier, APF-1 includes the plant and production pad.

**RESPONSE**

Text describing the airstrip, CD-2 and the connecting road is included in Section 3.1.2.2.

**EI-3**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 3-1, 3.1.2.1 Nuiqsut is variously described as being located “approximately 20 miles south of the Beaufort Sea coast” and “some 35 miles upstream from the Beaufort Sea” (Page 3-139). The descriptions throughout the document should be made consistent. We typically describe the community as lying 15 to 18 miles up the Nigliq Channel from the Beaufort Sea.

**RESPONSE**

The text has been edited to correct these distances.

**EI-4**

This issue was raised in the following letter: DEIS0236.

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**ISSUE**

Page 3-2, 3.1.2.2 This section presenting the existing Alpine facilities should include some discussion of the length of the pipeline segment beneath the Colville River, the methods used to place it there, the loss of drilling mud during early operations, and erosion problems that have occurred.

**RESPONSE**

Text has been added to Section 3.1.2.2 describing the Colville River pipeline-crossing length, HDD method, and entry/exit point setbacks. See Section 4.3 for mud loss information.

**6.3.2.16 Figures****FG-1**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Many of the figures (particularly for birds and mammals) show labels for the proposed pad locations, but do not show the proposed infrastructure. The pad labels are significantly to the east of where the pads are proposed which makes it difficult to assess the affect of the facility. Alternatively, an overlay could be included.

**RESPONSE**

Figures in Section 3 do not show proposed infrastructure in a way that would allow underlying resources to be evaluated. Labels on some figures will be removed.

**FG-2**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Figure 3.2.2.1-1 does not show the location of CD-5 through 7 in relation to River Monitoring Sites, so it is impossible to correlate pad sites and makes an accurate impact assessment impossible.

**RESPONSE**

The proposed infrastructure is excluded from figures in Section 3 to facilitate an accurate evaluation of the underlying environmental resources.

**FG-3**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Figure 3.1.2.3-1 shows exploration wells in the Plan Area, but no Figure comprehensively shows past ice roads, seismic trails or other overland routes used by Rolligons and other equipment.

**RESPONSE**

Complete data for ice roads, seismic trails, and other overland routes are not available.

**FG-4**

This issue was raised in the following letters: DEIS0216 and DEIS0236.

**ISSUE**

Figure 3.4.2.4-1. The percentages do not add up to 100 percent.

**RESPONSE**

Numbers have been corrected in Section 3.4.2.4 and Figure 3.4.2.4-1 to address this error.

**FG-5**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Figure 3.3.4.2-1 Marine Mammals in the Plan Area Vicinity: The MMS data set on bowhead whales (USDOJ, MMS, 2002, ESS Map SDT 010, 22 July 2002, Stephen D. Treacy) indicates the relative density of bowhead whales based on the number of whales observed in transect during aerial survey flights (frequency of sightings). MMS acknowledges that this information was incorrectly labeled on Map 64 in the Northwest National Petroleum Reserve-Alaska IAP/EIS; it needs to be correctly characterized now. The implication that density of the bowhead whale population is represented is incorrect use of the data.

**RESPONSE**

MMS has been provided additional information, resulting in a revised Figure 3.3.4.2-1 (renamed Figure 3.3.4.1-10) and a new Figure 3.3.5.1-1.

**FG-6**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Figure 3.3.4.2-1 Marine Mammals in the Plan Area Vicinity: Map coverage should be expanded to include the waters off of the entire NE Plan Area; showing only a small portion of the area presents a deceptive picture of the relative abundance of the bowhead whales in the Beaufort Sea.

**RESPONSE**

MMS has been provided additional information, resulting in a revised Figure 3.3.4.2-1 (renamed Figure 3.3.4.1-10) and a new Figure 3.3.5.1-1.

**FG-7**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Figure 3.3.4.2-1 Marine Mammals in the Plan Area Vicinity: Legend subtitle should be changed to “Relative Abundance of Bowhead Whales on Transect During Fall Aerial Surveys (1982-2000)”



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**RESPONSE**

MMS has been provided additional information, resulting in a revised Figure 3.3.4.2-1 (renamed Figure 3.3.4.1-10) and a new Figure 3.3.5.1-1.

**FG-8**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Figure 3.3.4.2-1 Marine Mammals in the Plan Area Vicinity: Scale bar identifier should be changed to “Number of Whales Sighted per Kilometer of Survey Effort”

**RESPONSE**

MMS has been provided additional information, resulting in a revised Figure 3.3.4.2-1 (renamed Figure 3.3.4.1-10) and a new Figure 3.3.5.1-1.

**FG-9**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Figure 3.3.4.2-1 Marine Mammals in the Plan Area Vicinity: Note 3 should be revised to “Bowhead Whale Relative Abundance: USDOI, MMS, 2002, (ESS Map SDT 010, 22 July 2002, Stephen D. Treacy)”

**RESPONSE**

MMS has been provided additional information, resulting in a revised Figure 3.3.4.2-1 (renamed Figure 3.3.4.1-10) and a new Figure 3.3.5.1-1.

**FG-10**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Figure 3.3.4.2-1 Marine Mammals in the Plan Area Vicinity: Red dots for probable polar bear dens: is 1910 the correct year?

**RESPONSE**

1910 is the correct year.

**FG-11**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Figure 3.3.4.2-1 Marine Mammals in the Plan Area Vicinity: Note 5: USFW, MMM, 1997 does not appear in the bibliography. We believe this should be USFWS.

**RESPONSE**

Figure 3.3.4.2-1 (renamed Figure 3.3.4.1-10) source references and the Bibliography have been corrected.

**FG-12**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Figure 3.3.1.2-1 Vegetation Classes and Ecodistricts: The figure's legend includes a "no data" box, but the figure's map shows the box as three-sided, leaving it unclear where in the Plan Area there is no data.

**RESPONSE**

All areas on Figure 3.3.1.2-1 without color are areas for which there are no vegetation mapping data available.

**FG-13**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS provides no mapping for designated EFH.

**RESPONSE**

EFH is clearly defined in the text and EFH streams are labeled on all figures where these streams appear. No figure is necessary.

**FG-14**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Figure 3.3.1.3-1. It has been suggested that it would be helpful to readers if the proposed facilities were plotted on several of the habitat and wildlife maps.

**RESPONSE**

Figures in the Affected Environment section do not show proposed infrastructure in a way that would allow underlying resources to be evaluated.

**FG-15**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Figures 3.3.4.1-2 through 3.3.4.1-5 should follow those of Prichard et al. 2001, as that is their source. As written it is misleading to say after the color code that '50 percent of the population' or '95 percent of the pop'. It should read 'fixed kernel probability' since it carries with it all the assumptions of the spatial statistics.

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**RESPONSE**

On Figures 3.3.4.1-2, 3.3.4.1-3 (renamed Figure 3.3.4.1-5), 3.3.4.1-4 (renamed Figure 3.3.4.1-3), and 3.3.4.1-5 (renamed Figure 3.3.4.1-4), the legends were revised based on Prichard et al. (2001).

**FG-16**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Figure 3.3.4.1-7 should identify the location of grizzly dens so that it is possible to correlate them to possible locations of development facilities.

**RESPONSE**

Brown bear dens are labeled on Figure 3.3.4.1-10.

**FG-17**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The FEIS should include maps that identify the specific location of subsistence fishing sites, fishnets, and camps for the Nigliq Channel, Fish and Judy Creeks, Ublutuoch River, and the Colville River and Delta. The location of Nuiqsut's major under ice fishing areas should also be included.

**RESPONSE**

Subsistence figures show the range of fishing sites and camp sites for the people of Nuiqsut, rather than individual locations.

**FG-18**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Missing Figures: Plan Area Glaucous Gull Nest Locations at Colville River Delta Sites and Plan Area Glaucous Gull Nest Locations at National Petroleum Reserve-Alaska Sites (ABR provided data files). Missing Data in Figures: Figure 3.3.3.5-1 Plan Area Raptor and Common Raven Nest Locations. Missing Peregrine Falcon nests in plan area. Refer to Ritchie and Wildman 2000 (ABR report for BLM).

**RESPONSE**

Figure 3.3.3.5-1 was revised to include Peregrine Falcon nest locations in the Fish Creek area and the reference was corrected.

Figures 3.3.3.7-2 and 3.3.3.7-3 were added to present Colville River Delta and the National Petroleum Reserve-Alaska area glaucous gull nest locations.

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**FG-19**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page Arctic Coastal Plain Figures: The bird distribution maps produced from USFWS breeding-pair aerial surveys (Mallek et al. 2003), represent the Colville Delta or parts of the delta and adjacent areas as low-density areas for some species that are known to concentrate there. Species that have high densities from site-specific surveys but are represented at low densities in the color distribution maps include Yellow-billed Loons, Pacific Loons, Red-throated Loons, Greater White-fronted Geese, and Long-tailed Ducks. Densities of nests from aerial and ground surveys on the delta by ABR have measured densities that are 1.5 to 10 times higher than the densities of birds shown on the color density maps. The Colville Delta is a documented concentration area for Yellow-billed Loons and the corridor along Fish and Judy Creeks contains comparable nesting densities. See DEIS0238 for additional comments on inaccuracies.

**RESPONSE**

The USFWS' breeding pair surveys for the Arctic Coastal Plain provide the only North Slope-wide distribution data available for these species, and are important for that reason. The USFWS' data are not designed to provide the site-specific nesting data that ABR's data provide. It is important to show the available species data for both slope-wide and site-specific designations.

**FG-20**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Figures 3.3.3.2-4 and 3.3.3.2-5. Change to Brant, not Black Brant. Legend should list what years the red dot represents. Dots indicate single birds while notes state points may represent 1 to 700 birds. Use separate symbols for brood rearing and fall staging dots to represent seasonal distribution of birds.

**RESPONSE**

On Figures 3.3.3.2-4 and 3.3.3.2-5 (and on all similar figures), the legend was revised to read "Bird(s) Observed" to indicate that observations may represent one to many types of birds. The date ranges for survey areas are inconsistent and thus clarification is provided in the table notes. Additionally, seasonal distribution of data points were clarified and all references to Black Brant were changed to Brant.

**FG-21**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Figure 3.3.3.2-6 and all Arctic Coastal Plain Bird Density maps State seasonal timing of survey or list month of surveys. Also label as Relative Bird Densities (to distinguish from nest densities).

**RESPONSE**

The timing of the survey was added to the Arctic Coastal Plain bird density figures (see Section 3.3). The legend was not revised because density units are already provided in the legend.

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**FG-22**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Figure 3.3.3. 2-6 Data points represent single pairs or many birds but legend reads ‘bird observed’. Indicate seasonal distribution on map. Separate nests, brood and fall staging. Does red dot and green square indicate all years??

**RESPONSE**

On this and all similar figures, the legend was edited to read “Bird(s) Observed” to indicate that observations may represent one to many types of birds, the date ranges for the survey areas are inconsistent and thus clarification is provided in table notes, and the seasonal distribution of data points were clarified.

**FG-23**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Figure 3.3.3.3-4 and 3.3.3.3-5. Need to be simplified. Show only nests. (Most broods are found at nest sites, so they are not informative in this figure). Use Loon data files only (not nest data files for ground searched areas, because loon nests are duplicated in those files). Correct legend; circles should represent loon nests, not loons. Make sure yellow-billed loons are on top of other nest symbols. Add survey years to all legend nest symbols. If not 2003 then 2001-2002 for the National Petroleum Reserve-Alaska.

**RESPONSE**

The data presented in figures were evaluated for duplication and years represented, and only nesting data were included in the figure. Yellow-billed loons are presented first in the legend.

**FG-24**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Figures 3.3.3.2-7 and -8 Swans. The present map shows every adult swan seen between 1992-2003 and broods only found on ground searches 2000-2003. It would be more informative to show only nest and brood locations. Incorporate multi-year aerial data submitted in October. Show only nests and broods (nest =1 and brood = 1) in swan aerial data files only (not nest data files for ground searched areas, because swan nests are duplicated in those files). Other locations are non-breeding adults and are not important. Change legend accordingly. Resize brood symbol so it is same size as for nests. Also see Global changes above.

**RESPONSE**

The data presented in Figures 3.3.3.2-7 and 3.3.3.2-8 includes 2003 data submitted in October 2003. The data were evaluated for duplication—only nests and broods are presented. The table notes will be edited for the FEIS as necessary to address this comment.

**FG-25**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Figure 3.3.3.2-12. King Eider. Changes needed besides proofing for typos. Data points need to be separated into pre-nesting groups, nests, and broods (all in same file). Change symbol legend for circles to prenesting King eiders, Common Eider and Unknown Eider. Add years 1996-2002. Show ground search areas for Alpine & CD North and CD South. Add symbol for nests, Nest years 2003 or 2000-2002. See Global change notes. Correct Notes: aerial survey data only for prenesting points, nest and brood data from ground surveys. Nest searches conducted on the ground were not uniform.

**RESPONSE**

All data associated with eider figures were evaluated and revised as necessary.

**FG-26**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Figure 3.3.3.2-13. King eiders National Petroleum Reserve-Alaska. It appears that nesting and pre-nesting locations have switched symbols. However, there are too many symbols of nests and pre-nesting groups to represent nests, so check their designation in the data file.

**RESPONSE**

All data associated with eider figures were evaluated and revised as necessary.

**FG-27**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Figure 3.3.3.5-1 Raptors and Ravens Replace Raptors and Ravens in legend with “Nest Locations”. Also see Ritchie and Wildman 1999 and 2000 (ABR report) for Peregrine Falcon nest on Fish Creek.

**RESPONSE**

Johnson et al. (2004) includes information on the peregrine falcon nest on Fish Creek, as well as all other raptor observations made by ABR staff. This report was referenced in the figure.

**FG-28**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Figure 3.3.4.1-2. Caribou Change legend: circles should be Satellite Collared Female without calf, and Satellite Collared Female with calf

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**RESPONSE**

The legend on the referenced figure was revised.

**FG-29**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Figure 3.3.4.1-3. In legend, location should not be in bold. Enlarge symbols in legend because they are difficult to see.

**RESPONSE**

The legend in Figure 3.3.4.1-3 (renamed Figure 3.3.4.1-5) was revised.

**FG-30**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Figure 3.3.4.1-4. State explicitly that TH data were from satellite telemetry during 1990-1999. Add major drainages and names in Plan Area. Change caption to indicate that the map depicts all collar locations in the mosquito season (defined here as 1–15 July), and not the locations of mosquito-relief habitat (since locations on mosquito-free days are also included). Dot in legend is Telemetry Location, not Mosquito Relief location.

**RESPONSE**

The third table note states that data are from satellite telemetry. Major river drainages are labeled. The legend and Note 4 were edited based on Pritchard et al. (2001).

**FG-31**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Figure 3.3.4.1-5. State explicitly that TH data were from satellite telemetry during 1990-1999. Add major drainages and names in Plan Area. Change caption to indicate that the map depicts all collar locations in the oestrid-fly season (defined here as 15 July–7 Aug.), and not the locations of fly-relief habitat (since locations on fly-free days are also included).

**RESPONSE**

The third table note states that data are from satellite telemetry. Major river drainages are labeled. The legend and Note 4 were edited based on Prichard et al. (2001).

**FG-32**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Figure 3.3.4.1-6. The caption should be modified to note where and who collected the data. The source citation should be changed to Burgess et al. 2003b (ABR 2003 is a report on the 2002 Rolligon-impact study). 2003 data should be added, especially since they include the highest densities yet recorded in the survey area.

**RESPONSE**

The source citation has been corrected, and 2003 caribou density data has been added to Figure 3.3.4.1-6 (renamed Figure 3.3.4.1-7).

**FG-33**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Figure 3.3.4.1-7. This figure still needs a lot of clarification to indicate several relevant points and to avoid the misinterpretation that the Plan Area is used little by the species shown on the map. Changing the coverage of the map to just the plan area would resolve many of these problems: Legend change to Incidental Mammal Observations (1991-2000) and place Brown Bear Den locations under Telemetry Heading because den data is not from ABR.

**RESPONSE**

The referenced figure has been revised to show only the Plan Area. The source of brown bear den information has been clarified. The table notes clarify that data represent multiple years and more data are available for areas east of the Plan Area.

**FG-34**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Changes to notes: (6) Clarify what is meant by “muskox habitat” (yellow shading), especially since more muskoxen occur in the Plan Area than in the shaded area. Note also that ABR has many muskoxen sightings east of the Plan Area boundary that are not depicted on the map. 7) Clarify that ADFG telemetry area was only recently extended to the west; i.e., that the concentration of locations east of the Colville results from the much higher effort expended there. Need to document source of brown bear den data.

**RESPONSE**

The “muskox habitat” layer provided in the DEIS has been removed from the figure. The figure has been revised to focus more closely on the Plan Area, and includes incidental muskox observations provided by ABR and a “muskox habitat” area delineated by the Helmericks’ anecdotal observations. Bear telemetry data provided by the ADF&G have been moved to a separate figure to clarify individual observations of bears and multiple telemetry observations of the same bears over time. The new figure clarifies that observations of bears in the Plan Area are based on more recent expansion of data to the west. The source of brown bear den data has been clarified.

**FG-35**

This issue was raised in the following letter: DEIS0238.



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**ISSUE**

Figure 3.3.5.2-2 Pre-nesting Eiders. (Change note 4) flock up to 9 birds (not 15).

**RESPONSE**

The figure has been corrected.

**FG-36**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Figure 3.3.5.2-4 Eiders Nests CRD Change legend for symbols; circles represent nests not birds observed, resize brood symbols. Change note 3): Point locations are from ground surveys during nesting and ground or aerial surveys during brood rearing. Point locations represent nests or broods. Change note 4: Nest years for red circles are 1992-2003 (but if note 6 is for all 2003 data, then it should be 1992-2002 and aerial survey dates should be the same). Add note: Five brood locations (1983-1984) from M. North, unpubl. data. See Global changes.

**RESPONSE**

All data associated with eider figures have been evaluated and revised as necessary.

**FG-37**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Figure 3.3.5.2-5 Eiders Nests National Petroleum Reserve-Alaska Change Legend for symbols; circles represent nests not birds observed. Nest years for red circles is 2001-2002. Change notes: all data is from ground surveys. Point locations represent nests or broods. Add note: One nest location (1958) on coast from T. Myres unpubl. data. See Global change notes

**RESPONSE**

All data associated with eider figures have been evaluated and revised as necessary.

**FG-38**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Figure 4A.3.1-1. It would be helpful to show buffer boundaries on this series of maps.

**RESPONSE**

The scale of the maps and width of lines used to indicate road locations (road widths are not to scale) preclude showing buffers.

**FG-39**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Figure 4F.4.4-1 Major changes needed. Missing well sites in National Petroleum Reserve-Alaska (lookout) and Meltwater. Add CD-7 to figure to access profile of cumulative development. Color of Wells pre-1975 and post-1980 are too similar. Post 1980 should be blue in color. Existing infrastructure symbol should include road types.

**RESPONSE**

Missing well sites have been evaluated based on data available from the applicant and other sources. The color differentiation of well types has been revised. Pipelines and roads have been distinguished in legend.

**FG-40**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Figure 2.2.3-1 Locations of Proposed Facilities (CPAI and FFD Plans): In the legend, the FFD locations are listed as “Potential Development Area” when in reality they have no more or less potential than any other location.

**RESPONSE**

The FFD locations are the potential development areas assembled under the given FFD alternative for the purposes of evaluation.

**FG-41**

This issue was raised in the following letters: DEIS0242.

**ISSUE**

Figure 2.2.3-1 Locations of Proposed Facilities (CPAI and FFD Plans): The title of the diagram itself is misleading by using the term “Proposed Facilities” There is no proposal by anyone to locate any of the pads in the locations shown except for the Applicants 5 pads.

**RESPONSE**

Proposed facilities include pads, roads, powerlines, pipelines, airstrips and helipads.

**FG-42**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Figure 2.2.3-1 Locations of Proposed Facilities (CPAI and FFD Plans): The text in both cases should be changed to *Hypothetical* (as is used in the Notes section).

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**RESPONSE**

“Full-field” will be replaced with “Hypothetical Field” on all appropriate figures.

**FG-43**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Figure 2.3.3.1-1 Pipeline bridge locations on the CD-3 route should be indicated and labeled where they cross the channels.

**RESPONSE**

Pipeline bridges and bridge lengths have been labeled on the appropriate figures.

**FG-44**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Figure 2.3.1.1-1 Road Diagram. This was commented on in the text. The dimensions need to be clear for whatever thickness is being constructed. See the text comments. Resolve why the 3:1 ratio is used, why it will produce a 62 foot base width and why it shows an 82 foot maximum width in the diagram.

**RESPONSE**

The typical section figures have been evaluated and revised to ensure their conformity with text and the permit application.

**FG-45**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Figure 2.3.3.1-3 CD-2 layout. See the text comment. Dimensions and acres covered should be given. Also the title is missing some letters. Diagram at the top should drop the words “Project Drill Site” OR call them Drill Sites throughout the document. Pad should be labeled CD-2 not “Drill Site”. Square corners on the pad appear to be drafting remnants. Dimensions are not provided for the pad.

**RESPONSE**

The referenced figure has been corrected.

**FG-46**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Figure 2.3-1 Historical Flights. The title is missing some letters. Also, is the figure number correct? 2 point 3 point dash 1?

**RESPONSE**

The referenced figure has been corrected.

**FG-47**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Figure 2.3-2 Flight Patterns. The title is missing some letters. Also is the figure number correct?

**RESPONSE**

The referenced figure has been corrected.

**FG-48**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Figure 2.3-2. Typos in the title at the lower right bottom text need to be fixed.

**RESPONSE**

The referenced figure has been corrected.

**FG-49**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Figure 2.3.8.1-1. The alignment for the pipeline is shown crossing a waterbody Northeast of CD-2. This is a bad practice from several perspectives. The ground is less stable and spills would go directly to a lake used by birds. The location of the pipeline between CD-2 and the Alpine Sales line should be moved to be upstream of the existing pipeline, or constructed directly adjacent to the existing line downstream. There were considerations for the lake involved in the discussions when locating the existing 3-phase line.

**RESPONSE**

The referenced figure depicts the pipelines at the locations proposed by the applicant.

**FG-50**

This issue was raised in the following letter: DEIS0242.

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**ISSUE**

Figure 2.3.8.1-1. A detail of the pipeline crossing for the boat ramp at CD-2 should be provided as well as a typical for other locations in the proposed development.

**RESPONSE**

The referenced boat ramp is no longer being proposed at CD-2.

**FG-51**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Figure 2.3.8.1-1. The bridge location for the pipeline to CD-3 should be shown.

**RESPONSE**

Pipeline bridge locations and lengths have been added to the referenced figure.

**FG-52**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Figure 2.3.8.1-1. The purple line running down the Nigliq channel should be identified in the legend.

**RESPONSE**

The purple line is identified in the legend as the Northeast National Petroleum Reserve-Alaska area boundary.

**FG-53**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Figure 2.3.9.1-2. Some text and detail are not legible because of the scale or hidden in drawing elements (Sheet pile wing wall type.) Elevation should be shown on the water level. Ice breaking cone is inconsistent between the elevation and cross section view. The top of the cone is missing from the elevation view. The piles should be shown going into the riverbed (which should be labeled).

**RESPONSE**

Information in the referenced figure has been clarified. This figure is now Figure 2.3.9.1-8.

**FG-54**

This issue was raised in the following letters: DEIS0242.

**ISSUE**

Figure 2.4.1.1-2. Show and label the pipeline bridges. Provide Boat Ramp details.

**RESPONSE**

Pipeline bridge locations and lengths were added to the referenced figure. Boat ramp details are included in the revised figure, which has been renumbered to Figure 2.4.1.1-6.

**FG-55**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Figure 2.4.1.1-3. Move the 3-phase line between CD-2 and CD-1 as discussed for the CD-2 Site Map. The alignment for the road as it reaches CD-4 is not consistent with proposals discussed. Provide Boat Ramp details.

**RESPONSE**

The 3-phase line between CD-1 and CD-2 is an existing pipeline. Boat ramp details are included in the revised figure (renamed Figure 2.4.1.1-7).

**FG-56**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Figure 2.4.1.1-4. Identify the purple line in the lower right corner. Provide some indication of the size and number of culverts at the culvert battery.

**RESPONSE**

The purple line in Figure 2.4.1.1-4 (renamed Figure 2.4.1.1-8) is already identified in the legend as the Northeast National Petroleum Reserve-Alaska area boundary. Figures regarding culvert batteries have been revised to provide additional details.

**FG-57**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Figure 2.4.1.1-5. There is a missing segment of the road and pipeline between CD-5 and 6.

**RESPONSE**

Figure 2.4.1.1-5 (now Figure 2.4.1.1-9) is accurate.

**FG-58**

This issue was raised in the following letter: DEIS0242.

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**ISSUE**

Figure 2.4.1.1-6. Provide some indication of the size and number of culverts at the culvert battery.

**RESPONSE**

Figures regarding culvert batteries have been revised to provide additional data.

**FG-59**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Figure 2.4.1.1-7. Why is the proposed development NOT shown on this map?

**RESPONSE**

The proposed development has been added to Figure 2.4.1.1-7 (renamed Figure 2.4.1.1-11).

**FG-60**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Figure 2.4.1.2-1. Use “hypothetical” rather than “potential” in the legend. This comment applies to any depiction of the FFD Alternatives.

**RESPONSE**

The legends of the FFD figures have been revised as suggested.

**FG-61**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

Figure 2.3.12.1-1 Existing Alpine Central Processing Facility: CPAI needs to provide an updated plan view for the Final EIS because the area between the airstrip and helipad/turnaround has been filled.

**RESPONSE**

The applicant has indicated that some areas permitted for wetlands fill have not been completed yet, including the apron area indicated in this comment, although one edge was filled in two winters ago. The applicant plans to completely fill this area in 2005/06. The referenced figure will not be edited.

**FG-62**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

Figure 2.4.1.1-2: The drawing for CD-3 needs to be expanded to show the entire route from the pad to the APF. Also, all the streams need to be named on the drawing.

**RESPONSE**

Figure 2.4.1.1-3 (renamed Figure 2.4.1.1-6) has been revised to show the entire pipeline route and to more clearly identify stream names.

**FG-63**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page Figure 2.3.1.1-1: Typical Road Construction Cross Section – dimensions may need to be adjusted to match permit application drawing.

**RESPONSE**

The typical section figures have been evaluated and revised to ensure their conformity with text and the permit application.

**FG-64**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page Figure 2.3.2.1-1: Typical Satellite Production Pad to Processing Pad Pipeline/VSM Cross Section – dimensions may need to be adjusted to match permit application drawing.

**RESPONSE**

The typical section figures have been evaluated and revised to ensure their conformity with text and the permit application.

**6.3.2.17 Fish**

**FS-1**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The Sensitive Species List does not show which sensitive species appear in the Plan Area and which do not. BLM must do the studies and surveys to acquire the data for the sites that will be affected by any action alternative.



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**RESPONSE**

Appendix E has been revised to indicate which of the species may occur in the Plan Area. This list is not a mandate for formal studies; rather it is a management tool to alert the BLM to species that should be considered in planning.

**FS-2**

This issue was raised in the following letter: DEIS0208, DEIS0212, and DEIS0215.

**ISSUE**

The number of Arctic Cisco and other fish in the Nigliq Channel and other water bodies near Nuiqsut has decreased since Alpine was built.

**RESPONSE**

Fish populations are always undergoing regular fluctuations in population size, and these are often difficult to distinguish from anthropogenic impacts. One of the most recently documented was the Sagavanirktok broad whitefish population, which undergoes dramatic changes in abundance from year to year (Gallaway et al. 1997).

Arctic cisco of the Alaskan North Slope originate from spawning stocks in Canada's Mackenzie River (see Section 3.3-2, Fish). Young fish are carried westward to the Colville River by wind-driven coastal currents; here they take up residence and grow until they reach a size at which they are susceptible to the gill net fishery. During summers of weak east winds, few small fish reach the Colville River. Those fish will be absent from the population in future years and will not support the fishery in later years. During summers of strong east winds, many young Arctic cisco reach the Colville River and they eventually contribute to a stronger fishery.

The subsistence fishery for Arctic cisco was poor in the years prior to 2003 largely because of poor recruitment of young fish from Canada in 1993–1996 (Fechhelm et al. 2004). These fish should have been supporting the fishery but there were few in the area. There were good recruitments of fish in 1997, 1998 and 1999, which should have caused the harvest to increase. This, in fact, happened in the fall of 2003 when fishing increased dramatically (MJM Research 2003). Fishing should remain good over the next few years. However, fishing will go down again beginning in about 2006–2007 because there has been no recruitment of young cisco from Canada in the most recent three summers of 2001–2003 (Fechhelm et al. 2004).

In effect, poor fishing for the few years prior to 2003 is a reflection of natural fluctuations in the Arctic cisco stock.

**FS-3**

This issue was raised in the following letter: DEIS0210.

**ISSUE**

The pipeline crossing under the Colville river has changed fish migration routes, affected their food, and made them weaker.

**RESPONSE**

While eyewitness accounts require serious consideration, it is difficult to make a judgment on the effect of the underground pipeline without a rigorous cause-and-effect analysis; none has been undertaken. However, Alternative F – Preferred Alternative does not include any sub-river pipeline, thus the potential for these effects is zero.

**FS-4**

This issue was raised in the following letter: DEIS0202.

**ISSUE**

There is concern that Arctic Cisco have been negatively impacted due to the activity around Nuiqsut (they appear different and are not as fat).

**RESPONSE**

The summer growth rate of Arctic cisco has indeed dropped markedly over the past two summers of 2002 and 2003 (Fechhelm et al. 2004). This decreased growth is likely linked to poorer feeding during the summer feeding season. However, summer feeding grounds for Arctic cisco are in coastal waters and not near Nuiqsut (see Section 3.3-2). Thus, any negative impacts are related to the coastal environment and not the river environment. One line of speculation is that the unusual predominance of west winds during the summers of 2002 and 2003 counteracted the onshore flow of marine invertebrates, upon which the Arctic cisco depend (Fechhelm et al. 2004). In the 28 years in which the National Weather Service has been recording winds data, the summers of 2002 and 2003 have been the strongest west wind years ever recorded.

**FS-5**

This issue was raised in the following letter: DEIS0270.

**ISSUE**

Effects of stream crossings can be mitigated by constructing the bridges so that they span the floodplain terraces and the main channel. The impact of bridges cannot be fully evaluated until the bridge plans are fully developed (example: 4A.3-28)

**RESPONSE**

Alternative F – Preferred Alternative includes redesigned Nigliq Channel and Ublutuoch River bridges with lengthened spans that will cross the main channel and the terraces up to the first cut bank (see Section 2.4.6.).

**FS-6**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

Culvert crossings can be a problem if they are undersized or poorly designed. Mitigating culvert impact is possible but the impact of culverts cannot be fully evaluated until the culvert plans are fully developed. (example: 4A.3-25) The lack of spring break-up data may put fish habitat in the National Petroleum Reserve-Alaska at risk.

**RESPONSE**

A new paragraph has been added to Section 4A.3.2.1 to further address proper culvert design.

**FS-7**

This issue was raised in the following letter: DEIS0198.

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**ISSUE**

It is the causeways jutting out into the ocean east of the Colville, and other factors, causing the decline in winter fish populations and not necessarily the Alpine development.

**RESPONSE**

The effect of causeways on regional fish stocks has been studied for nearly 25 consecutive years. In the early 1990s, research scientists produced an integration, assessment, and synthesis document that addressed the principal environmental issues, including the effects of causeways, associated with Arctic oil development in the Prudhoe Bay region over the previous 15 to 20 years. This effort was conducted under the direction of the NSB and their Scientific Advisory Committee SAC. The committee was made up of a select group of scientists from the University of Alaska Fairbanks who were responsible for reviewing the synthesis and assessment document on behalf of the NSB. The assessment concluded that while causeways did cause localized changes in water quality along the coast, they had no significant detrimental effect on regional fish stocks (NSB). The final assessment document was submitted to and approved by the NSB and its committee.

**FS-8**

This issue was raised in the following letter: DEIS0198.

**ISSUE**

Arctic cisco leave the Delta around late November and perhaps utilize Harrison Bay for the winter. This is why there is no Arctic cisco catch throughout the winter in the Colville River Delta.

**RESPONSE**

Winter surveys in both Canada and Alaska rarely report the presence of Arctic cisco in areas where salinities are low (Kogl and Schell 1974, Percy 1975, Mann 1975, Alt and Furniss 1976, Bendock 1979b, 1981, 1982, Dew 1982, Bendock and Burr 1984a, Adams and Cannon 1987, Schmidt et al. 1989). In contrast, relatively large numbers of Arctic cisco are reported in overwintering areas of moderate to high salinity (Craig and Haldorson 1981, Bond 1982, Adams and Cannon 1987, Schmidt et al. 1989). This has led to the belief that Arctic cisco remain in saline water year-round, except when spawning. One rationale for why Arctic cisco overwinter in the lower reaches of the Colville River is that they are seeking a brackish environment. If they were capable of overwintering at sea under fully saline conditions there would be no reason for them to concentrate in the lower Colville Delta in fall. Their primary feeding area is in coastal waters during summer, and most feeding and growth is completed by late August.

The reason that fish may not be susceptible to fishing efforts as winter deepens may be physiological. Under-ice observations indicate that overwintering fish eventually become very inactive (Martin et al. 1993). Gill nets require that fish be moving. Inactive fish are not susceptible to gill nets.

Nevertheless, there is no absolute proof that Arctic cisco do not overwinter in Harrison Bay, and recent lack of riverine saltwater intrusion gives credence to this possibility. However, literature (see Section 3.3.2.4) indicates that Arctic cisco overwinter in the lower reaches of the Colville River system, and that as a result these relatively limited areas of overwintering habitat are very important habitat for the species.

**FS-9**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

The EIS should consider the Nigliq Channel Bridge in the analysis of impacts to fisheries.

**RESPONSE**

In both the DEIS and FEIS, the Nigliq Channel Bridge was included in the analyses of impacts to fisheries under all alternatives. In the FEIS, the relevant text is under Bridges headings in both the Construction Period and Operation Period subsections in Sections 4A.3.2.1, 4B.3.2.1, 4C1.3.2.1, 4C2.3.2.1, and 4F.3.2.1. This issue is not addressed in Section 4D.3.2.1 as there is no Nigliq Channel Bridge proposed under Alternative D.

**FS-10**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

In Sections 4A-4E we are not concerned with the impacts to the arctic population; we are concerned with the population in the project area. This is especially true for fish where stocks of fish are defined by their spawning grounds.

**RESPONSE**

We have inserted text that more explicitly notes that localized effects may occur (see Sections 4A.3.2.3, 4B.3.2.3, 4C.3.2.3, and 4D.3.2.3, last paragraphs before EFH subsections).

**FS-11**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Permanent roads may lead to greater human access to fishing, potentially increasing harvest pressure on certain species, especially whitefish in the subsistence fishery. BLM needs to assess the effect that increased harvesting would have on fish species in the region, taking into account current subsistence and commercial harvest at all sites that would be impacted, as well as long-term population projections.

**RESPONSE**

Even if local residents take advantage of the new roads, the extent to which subsistence harvests—and thus pressures on certain species, especially whitefish in the subsistence fishery—may increase is uncertain. Additional discussion has been added in Section 4A.3.1.1.

**FS-12**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Page S-8: Unless there is a detailed design and enhancement plan to introduce fish into gravel pits, it is inaccurate to assume that just because a pond is built, the fish will come.

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**RESPONSE**

Text in Sections S.4.2.2 and 4A.3.2.1 has been modified to address this concern.

**FS-13**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Page 3-58: The DEIS fails to identify clearly where these "extremely important (overwintering) fish habitats" are located, and thus fails to provide an adequate site-specific analysis.

**RESPONSE**

We have added information on specific important fish locations to Section 3.3.2.2 (first paragraphs of Colville River Delta and Fish Creek and Associated Drainages subsections).

**FS-14**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Pages 3-59 through 3-60: the DEIS acknowledges data is lacking for salmon species in the Plan Area, but it fails to evaluate the importance of the missing data, or particularize any impact analysis for EFH.

**RESPONSE**

Data is sparse because salmon are only present in very low numbers. Salmon stocks in the region are considered marginal at best. Accordingly, they have received little attention and study over the years. Biologically, North Slope salmon are nothing more than incidental species. However, the Magnuson-Stevens Fishery Conservation and Management Act mandates their consideration, requiring description and identification of EFH in fishery management plans. EFH is specifically addressed in Appendix N. The safeguards being considered for common or commercially significant species will be effective for incidental species as well.

**FS-15**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS must be more explicit about the criteria for deciding between the placement of culverts instead of bridges over fish bearing watercourse crossing, especially in the fish spawning and important rearing habitats.

**RESPONSE**

The criteria for choosing culverts versus bridges are provided in Section 2.3.9.1 under the Culverts subheading. All proposed bridges are indicated in the plan view figure for each alternative. Any additional structures field placed for flow or fish passage would be culverts.

**FS-16**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 3-46. Section 3.3.2 on fish seems fairly thorough and provides a good summary of the various fish species in the area and their life histories. The proposed effects of Alternative A in section 4A 3.2 are reasonable, but may understate the effects of roads on water sheet flow and hence migrations of age-0 to age-1 fish. The EIS notes (page 4A.3-21) that roads and pads are situated to avoid drainages and that ‘state of the art’ bridges and culverts will be used. A statement on page 4A.3-27 suggests that pads, roads and pipelines will have “no measurable effect on fish populations.” This could be due to the lack of statistical power of population estimates to detect changes, though it is not clear why this statement is made or what supports it. In our opinion, development will almost certainly have some population level effect on fish populations (whether ‘measurable’ or not) through disruption of seasonal water flow (at breakup) to seasonally connected water bodies. Simply stating that “state of the art” or “best” design or technology will be employed is not a substitute for analysis of potential impacts.

**RESPONSE**

There are limits to statistical analysis. Biologically, a population effect would be one that artificially decreases the fitness of the population. The difficulty is, how to analytically differentiate small anthropogenic impacts from natural perturbations without a detailed database representing a lengthy period of baseline data. The EIS makes the best projections it can based on all available scientific information and professional judgement. No studies have reached conclusions which counter the information presented in the EIS.

Monitoring requirements will best allow for detecting the impacts of the applicant’s proposed action. This view is reflected in new text inserted in Sections 4A.3.2.3, 4B.3.2.3, 4C.3.2.3, and 4D.3.2.3.

**FS-17**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

The EIS should consider the impacts to fish populations from increased turbidity and salinity when gravel from bridge approaches wash out.

**RESPONSE**

Under the Bridges heading within text under Operation Period in Section 4A.3.2.1, text was added which indicates that sedimentation effects in the event of bridge approach washouts would be similar to those described for pads, roads, and airstrips. Under Alternative F, lengthening the spans of the Nigliq Channel and Ublutuoch River bridges has further lessened the likelihood of such washouts.

With regard to salinity, if bridge approaches were to washout, it would occur during periods of extremely high discharge. Because of the extremely high volumes of water flowing downstream, a bridge approach washout would not likely result in salinity changes.

**FS-18**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 2-97: Table 2.7-1, Comparison of Impacts Among Action Alternatives. Biological: Fish, Alternative C. Clarify statement about total water demands for ice roads being greater for Alternative C than Alternative A.

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This applies only during construction. Alternative C would have fewer ice roads during Operations than would Alternative A.

**RESPONSE**

In fact, the average annual total water demands (i.e., for both construction and operational needs) for ice roads under Alternatives A and C are essentially equal from 2005 through 2009. In 2010 and beyond, the need for ice roads under Alternative C would disappear. To reflect this point, Table 2.7 1 has been corrected, as has text addressing the same issue in Section 4C.3.2.1.

**FS-19**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4A.3-17: Water Withdrawal, Paragraph 2. Construction typically begins in December or January when ice thickness is around 4 ft, with ice growth continuing through the construction period. Thus, lakes that are deeper than 4 ft are often suitable for water withdrawals early in the season, and lakes 5-6 feet can provide substantial volumes of water. Fish other than ninespine stickleback and Alaska blackfish need lake depths of 8 feet or greater to reliably overwinter.

**RESPONSE**

The suggested points have been noted in the appropriate paragraph.

**FS-20**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4A.3-18: Table 4A.3.2-1 shows that lake N77097 (Oil Lake) does support fish – this discrepancy needs to be resolved. The problem arises because the species present, ninespine stickleback, occurs in many lakes less than 7 feet deep and is able to survive under conditions that are unsuitable for other species. Again, Figure 4A.3.2-1 has no fish information.

**RESPONSE**

The text has been modified to resolve the discrepancy. A note has been added to Figures 4A.3.2-1, 4B.3.2-1, 4C.3.2-1, 4D.3.2.1, and 4F.3.2.1 indicating that Tables 4A.3.2-1 and 4C.3.2-1 contain fish information for the numbered lakes.

**FS-21**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Pages 4A.3-28, 4B.3-18, 4C.3-19 and 4D.3-19: Alternative A – Potential Mitigation Measures for Fish. Fourth bullet. Statement that silt fencing or equivalent should be installed at any sites where silt may enter a water body is too broad. This could be interpreted to mean all road sideslopes, if one considers that the entire North Slope is defined as a wetlands. This should be applicable only to river crossings.

**RESPONSE**

The consensus is that silt fencing is not a practical alternative on the North Slope, therefore, it is not being recommended by the applicant. This is addressed in Section 4A.3.2.1 under Operational Period, Pads, Roads, and Airstrips. This potential mitigation measure has been deleted from Sections 4A.3.2.4, 4B.3.2.4, and 4D.3.2.4. No such modification is needed in Section 4C.3.2.4 as this section simply refers back to Section 4A.3.2.4.

**FS-22**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4A.4-16&17: Gravel pits – there is no evidence that noise and vibration from activities at the ASRC pit affect fish, remote from fish bearing waters. There is likely to be an increase in wintering habitat, not decrease, when the pits are reclaimed. The citation to Section 4A.3.2.1 is inappropriate – that section says “If the aforementioned activities occur outside overwintering or spawning areas, little or no adverse effects on fish would be expected.” The two proposed pits are outside wintering and spawning areas. The section continues to state that the Clover pit is too far away from the stream to make connecting the pit to a stream feasible, thus there should be no change to fish habitat.

**RESPONSE**

We have revised Section 4A.3.2.1 to reflect the concerns raised in this comment.

**FS-23**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4A.4-17: Clarify that regulations require the ice roads to be grounded or to allow adequate fish passage where applicable.

**RESPONSE**

To reflect this comment, text has been changed in appropriate portions of Sections 4A.3.2.1, 4A.3.2.3, 4A.3.2.4, 4B.3.2.3, 4B.3.2.4, 4C.3.2.3, 4D.3.2.1, 4D.3.2.3, and 4D.3.2.4.

**FS-24**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4C.3-19: Alternative C – Summary of Impacts on Fish. Paragraph in middle of page starting with “Bridge approaches...” CPAI objects to the alleged severity of impacts as written here. Bridge approaches will only affect water flow in the highest flood stages, not every year as this write-up implies. CPAI suggests changing the portion of the sentence after “floodplain terraces” to “potentially altering flow and temporarily blocking fish passage during rare high flood stages...” Also last sentence in this paragraph regarding low dissolved oxygen should state that this effect could occur and if it did occur it would only be temporary.



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**RESPONSE**

The bridge approaches text has been modified to reflect flow alteration and potential fish passage blockage at high flood stages.

The low dissolved oxygen text has been modified and qualified to reflect the potential impacts of even short periods of excessively low dissolved oxygen.

**FS-25**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4D.3-18: Alternative D - Summary of Impacts on Fish. Last sentence in third paragraph. CPAI disagrees with the statement “Low dissolved oxygen could also result from suspension of oxygen-demanding materials during construction of the Nigliq Channel pipeline bridge.” This Alternative D includes HDD as a method for pipelines crossing the Nigliq Channel. While CPAI disagrees with this method for this project, the relevance to this discussion is that HDD will have no impact to surface waters as the construction occurs well below the river bed.

**RESPONSE**

The subject sentence was incorrect and has been deleted. A reference to HDD has been added to the first paragraph of Section 4D.3.2.3.

**FS-26**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Many issues were simply carried forward into the cumulative assessment, assuming that because there are negligible impacts now, that there will be only negligible impacts with future development. This is too simplistic.

**RESPONSE**

The cumulative impacts assessment made projections based on the best data available, regarding past, present, and reasonably foreseeable future activities.

**FS-27**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Impedance to fish passage due to culverts and bridges as addressed in Section 4F, may not necessarily be fixed quickly. Even short duration impedance to passage can create a significant change in habitat use by local fish. This can happen rapidly and could alter stream productivity for years.

**RESPONSE**

The applicant's proposed action now includes mitigation measures requiring continued monitoring. In particular, Alternative A requires that culverts would be monitored pursuant to an ADF&G-approved schedule, and that any needed repairs be made promptly. Such monitoring is a prudent approach for detecting any adverse effects of project activities.

**FS-28**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

The probability of a widespread effect to fish populations from issues associated with project components is low, the cost, if it were to happen could be great.

**RESPONSE**

The possibility for long-term and widespread impacts to fish and fish habitat is addressed in each of the alternative discussions. There are numerous safeguards designed to limit impacts, which in most cases are expected to be small. Nevertheless, given the overall scope of the development some population effects are likely to occur. Continued monitoring of the system is a prudent approach for detecting any adverse effects of development. Each of the project alternatives contains monitoring requirements among the mitigation measures.

**6.3.2.18 Formal Scoping**

**CO-1**

This issue was raised in the following letters: DEIS0159 and DEIS0201.

**ISSUE**

BLM should consult with people living and working in the area most likely affected by the proposed development.

**RESPONSE**

The BLM and cooperating agencies consulted with the Native village of Nuiqsut, the City of Nuiqsut, the Inupiat Community of the Arctic Slope, and the Native Village of Barrow during development of the DEIS. DEIS hearings were held in Atkasuk, Barrow, Nuiqsut, and Anaktuvuk Pass (as well as in Anchorage and Fairbanks). The consultation efforts are documented in Section 5 of the EIS.

**CO-2**

This issue was raised in the following letter: DEIS0239.

**ISSUE**

Transcripts from public hearings conducted for this EIS process should be included as a separate appendix to show what the government officials recorded.

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**RESPONSE**

The formal transcripts, completed by a court reporter present at all meetings, are available on the Alpine Satellite Development Plan website: [www.alpine-satellites-eis.com](http://www.alpine-satellites-eis.com).

**CO-3**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The DEIS does not include a summary of comments heard from the Native communities during scoping and how the comments were incorporated into the development of alternatives. While the DEIS states that a separate summary document which includes the full content of some comments heard during scoping is available, the Final EIS should include in the appendix the Scoping Summary Report (March 2003), in addition to the written comments received on the Draft EIS. Moreover, the Final EIS should discuss how comments are incorporated in to the decisions made during the EIS process.

**RESPONSE**

The Scoping Summary Report is included in the FEIS as Appendix H.

Section 2 includes references denoting where some comments received during scoping and review of the DEIS have been incorporated into the formulation of alternatives.

The formal transcripts, completed by a court reporter present at the meetings, are available on the Alpine Satellite Development Plan website: [www.alpine-satellites-eis.com](http://www.alpine-satellites-eis.com).

Issues raised in DEIS comments are addressed in Section 6 of the FEIS. Document revisions or corrections required to address DEIS comments are incorporated into the FEIS. The ROD will be based upon the findings of the FEIS.

**CO-4**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

CPAI recommends a discussion of the scoping process is added to the document. At minimum there should be a reference to Section 5.2 in the DEIS.

**RESPONSE**

Section 1.4 references Section 5. The Scoping Summary Report has been added to the FEIS as Appendix H.

**6.3.2.19 General Impact Concerns****IC-1**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Analysis in the EIS placed unjustified focus on population-level effects. The focus should more appropriately be on resource numbers and availability specifically within the project area.

**RESPONSE**

Vegetation analyses were site-specific and put into context with resources available within the Plan Area. Vegetation analyses also were put into context for the specific available habitats within the Colville River Delta, because resources within this area have been identified as unique to the Plan Area. The bases for vegetation and wetland impacts were acres lost or altered due to gravel placement, dust deposition, alteration in moisture and thermal regimes, and alteration due to ice road construction, in context to available vegetation and wildlife habitat types within the Plan Area. A description of impact assumptions and calculation methods was added to Section 4A.3.1.

Bird analyses were based on site-specific nest locations collected at each proposed pad location and along proposed transportation corridors. The bases for analyses were densities of nests within the specific areas proposed for gravel placement, extrapolated to the estimated number of nests affected by areas of habitat loss and alteration. The total numbers of affected nests was then put in context to the total Plan Area populations, as presented in Table 3.3.3-3. A description of impact assumptions and calculation methods was added to Section 4A.3.3.

The analyses of impacts to mammals from existing oilfields under Alternatives A and F was based on review of available literature. From this review, conclusions about the impacts on individuals were drawn (e.g., some obstruction of caribou movement or disturbance during calving has occurred, some mortality of grizzly bears has occurred). Conclusions about the impacts on populations are also inferred (e.g., the caribou herd has grown from <5,000 to 32,000 since the oilfields were built, so impacts at that level are not apparent). In the discussion of the proposed action, both individual and population levels are discussed at a level that reasonable predictability allows. It is stated that certain impacts may occur to individuals (e.g., some deflection of movements or mortality may occur). The number of animals that may be affected by various components of infrastructure or activity cannot be predicted because there is too much variation in time and space regarding the use of habitats by mammals in the Plan Area.

**IC-2**

This issue was raised in the following letter: DEIS0240 and DEIS0257.

**ISSUE**

The DEIS repeatedly and improperly defers site-specific analysis. The DEIS did not include a site-specific analysis of the impacts from the proposed pads and infrastructure for any alternative, including the FFD.

**RESPONSE**

Analyses are site-specific utilizing the best available data allows. Background studies used in DEIS analysis have been conducted mainly in the areas affected by the applicant's five proposed production pads, pipelines, and roads. The hypothetical FFD is used for analytical purposes only; no Preferred Alternative or ROD will be developed for FFD alternatives. The number and location of analysis sites were developed to protect proprietary geologic data, provide for consideration of potential impacts to a broad range of resources, and portray one of an infinite number of potential future development pictures. The BLM does not imply that development will or will not occur at any of these specific locations or on this scale.

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**IC-3**

This issue was raised in the following letter: DEIS0239.

**ISSUE**

The DEIS inaccurately asserts that summer activities will be minimal during construction. The number of vehicle trips and aircraft flights will be major sources of wildlife disturbance during all seasons.

**RESPONSE**

Multiple sections of the DEIS describe year-round displacement and disturbance impacts to wildlife from aircraft and vehicular traffic. Table 4A.3.3-1 provides a summary of potential effects on bird groups during different seasons from air traffic, vehicular traffic, intentional hazing, facility noise, and people on foot. Sections 4A.3.3, 4A.3.5.2, and 4A.3.5.3 include discussion of disturbance and displacement impacts to birds during all seasons, both for construction and operation periods. Section 4A.3.4 describes disturbance and displacement impacts to terrestrial mammals from construction and operation activities and explains vulnerability of wildlife to impacts according to season. FEIS text has been revised in these sections to note that there will be summer construction activity, and potential disturbance impacts have been described accordingly.

**IC-4**

This issue was raised in the following letter: DEIS0257.

**ISSUE**

It is unclear what new scientific evidence has been produced that will show how development can occur around Teshekpuk Lake without seriously harming wildlife and subsistence use. Please present this evidence in detail.

**RESPONSE**

Neither the applicant's proposed action, nor the alternatives would place development in or near Teshekpuk Lake. Through the cumulative impacts analyses, the FEIS presents analysis of impacts that may occur in the future in areas such as Teshekpuk Lake, which are identified as important for caribou and subsistence.

**IC-5**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Many of the conclusions in Table 2.7-1 are too vague. Conclusions need to state whether effects are adverse or beneficial, local or regional, short term or long term, significant or not significant. (example: 2-98, ptarmigan).

**RESPONSE**

Table 2.7-1 has been revised to reflect additional analyses performed using information made available since the DEIS was issued. The table has been updated to better reflect conclusions about type, duration, and intensity of impacts, quantitatively where possible.

**IC-6**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Table 2.7-1, Page 2-98: In many cases the conclusions presented in Table 2.7-1 are too vague. For example, the conclusion for ptarmigan states “Local access to the National Petroleum Reserve-Alaska could affect amount of hunting mortality.” Is the “the amount of hunting mortality” expected to increase or decrease? The conclusion needs to state whether the effects are adverse or beneficial, local or regional, short term or long term, significant or not significant, etc., along with appropriate quantification, if possible.

**RESPONSE**

Table 2.7-1 has been revised. The table has been updated to better reflect conclusions about type, duration, and intensity of impacts, quantitatively where possible.

**IC-7**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Table 2.7-1, 1st column, 2nd row conclusions (shorebirds): The number is missing from the number of nests displaced by habitat loss or alteration for shorebirds under Alternative A.

**RESPONSE**

The omission in the DEIS was a typographical error. The number of nests has been recalculated for all alternatives based on analyses of information obtained since the DEIS was issued. Table 2.7-1 has been updated to reflect the revised nest numbers.

**IC-8**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Table 2.7-1. Subsurface disturbance of Paleontological resources by drilling wells is mentioned. The EIS presumes that Paleontological resources exist. If resources were discovered, they would be preserved, but if they are significantly buried, then it is likely that only in the case of gravel/sand mining would you even know it.

**RESPONSE**

Because route surveys are required for all construction activities, the location of important archaeological and paleontological resources would be known and would be avoided. Table 2.7-1 has been revised to remove references to drilling and installation of VSMS, power poles, and bridge piles. Corresponding revisions have also been made to the text of all Paleontological Resources sections for all alternatives.

**IC-9**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Table 2.7-1. In the water resources section, there is no discussion of injection “disturbing” or affecting subsurface water resources. Since any potential waters are likely saline, they are not a resource. If something is

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not a resource, it is hard to detrimentally affect it. In later sections, there are better discussions about sub-surface water. Under UIC and AOGCC regulations (20 AAC 25.440) when injection is planned, the need for an aquifer exemption would be considered. There are specific criteria that must be satisfied regarding the dissolved solids contained in any sub-surface water.

#### **RESPONSE**

UIC regulations under the SDWA are designed to protect all underground sources of drinking water and/or to ensure that they are considered as potential drinking water resources. The USEPA's regulations partially define an underground source of drinking water as any aquifer which: contains a sufficient quantity of ground water to supply a public water system; contains fewer than 10,000 mg/l total dissolved solids; and is not an exempted aquifer. The USEPA has retained the authority to exempt aquifers from the source definition and has not exempted any of the aquifers in the vicinity of Alpine wells. The USEPA does not have sufficient information at this time to determine whether the aquifers in the vicinity of the production pad wells meet the other elements of the source definition.

The text in Section 4A.2.1.1 has been revised to clarify UIC requirements and the expected impacts to underground drinking water sources.

#### **IC-10**

This issue was raised in the following letter: DEIS0238.

#### **ISSUE**

CPAI disagrees with the statement introducing Table 2.7-1 that "There would be no impacts on subsistence, socio-cultural systems, the economy, recreation, or visual resources" (referring to the No Action alternative). There could be considerable impacts if existing development stopped earlier than anticipated and jobs and royalties ceased to exist. The current condition of the Alaska economy is an example of what happens when production falls. This has a rippling effect that impacts all of Alaska, particularly the NSB.

#### **RESPONSE**

If the project is not built, there will be no economic impacts from the project, i.e., there will be no jobs created or revenues generated by the project. Section 3.4.2 documents the current trends of declining oil production, revenues, and employment. However, the discussion of the cumulative impacts has been edited to reflect that the production from the existing Alpine facilities may be less under the No Action Alternative than under the action alternatives.

#### **IC-11**

This issue was raised in the following letter: DEIS0238.

#### **ISSUE**

The introductory paragraph to Table 2.7-1 should make clear that the table does not include all of the impacts, but only those for the four action alternatives (because the table does not include the spill impacts discussed in Section 4.3).

#### **RESPONSE**

Table 2.7-1 has been revised to include potential impacts from oil spills.

**IC-12**

This issue was raised in the following letter: DEIS0195.

**ISSUE**

BLM should consider CD-6 placement parallel to the Fish Creek buffer and reconsider power generation within the buffer.

**RESPONSE**

The range of alternatives in the DEIS includes an analysis of placing CD-6 outside of the Fish Creek buffer, i.e., Alternative B. In developing Alternative F – Preferred Alternative for the FEIS, the BLM removed substantial infrastructure from the Fish Creek setback, e.g., roads and pipeline were realigned outside of the setback, and power poles were replaced with cable trays mounted on pipeline VSMs.

**IC-13**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

In the context of all development activities and impacts, the DEIS also needs to define clearly what is meant by “winter” and “summer” and whether application of those terms will vary depending on particular seasonal conditions.

**RESPONSE**

Text in Section 3.2.3.1 has been revised to define summer as May through October and winter as November through April. Other sections of the FEIS have slightly different definitions, e.g., Section 2 traffic estimates define summer as May through September, and winter as October through April. These variations derive from the original variations of classifications of summer and winter in the EIS data sources. Discussions of fall and spring are relevant for some resource topics, such as bird migration, while other subject matter only has meaningful distinctions in activities between summer (open water) and winter (frozen) conditions.

**IC-14**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Section 4.1 references the development of predictive models to simulate potential impacts.

Predictive modeling is a significant effort and relies on a significant quantity of quality data.

Descriptions of these models are not found anywhere in the document so it is difficult to assess their applicability or power. We have not seen reference to these models in the remainder of the document so we do not know what impacts were predicted using them.

**RESPONSE**

Two-dimensional hydrologic model results were used to assess potential impacts of bridges and fill in the Colville River channels and floodplains. Text in Section 4A.2.2.1 of the EIS was revised to include a brief description of the model used and the model results. Sections 4A.2.3.2 and 4F.2.3.2 of the EIS include a revised



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description of dispersion modeling of the Alpine Development Project, including APF-1. The results of the modeling were used to evaluate impacts to air quality as required for the project's construction permit application.

### **6.3.2.20 Geology**

#### **GY-1**

This issue was raised in the following letter: DEIS0241.

##### **ISSUE**

4A.2.1.1 – Geology: Define “the target.”

##### **RESPONSE**

Text referencing “the target” has been removed and re-worded.

#### **GY-2**

This issue was raised in the following letter: DEIS0271.

##### **ISSUE**

EPA recommends that both oil production and gas production be analyzed and evaluated as part of the proposed action, the environmental consequences discussed in the EIS, and the FEIS include estimates of projected oil and gas reserves in the ASDP area, project oil and gas production rates for the proposed production pads, and estimates of revenue generated.

##### **RESPONSE**

Oil and gas production and handling is analyzed in the FEIS, but gas sales are not considered part of the proposal or as reasonably foreseeable (see Sections 1.1.1 and 4G.4.4.2). The FEIS provides projected oil production and government revenues generated from the applicant's proposed pads (see Tables 4A.4.2-1 and 4A.4.2-2) but could not estimate the oil and gas reserves of the entire ASDP area, with any degree of accuracy. More general analysis of the oil and gas potential in the National Petroleum Reserve-Alaska is included in this EIS. The ROD for this EIS will not authorize any future proposed oil development in the larger Plan Area. Therefore, the analysis is sufficient for the decisions being made.

### **6.3.2.21 Government-to-Government Consultation**

#### **GG-1**

This issue was raised in the following letter: DEIS0230.

##### **ISSUE**

Due to BLM's failure to include the vast majority of cooperating agency comments on the PDEIS in the DEIS, the Kuukpik Corporation and the public have already been deprived, contrary to federal regulations and BLM's own handbook, of essentially any agency expertise and input into the Draft EIS.

**RESPONSE**

The DEIS provided all the necessary information to inform the public and policy makers adequately of the proposal, alternatives, issues, resources, and potential impacts. Additional information is provided in the FEIS.

**6.3.2.22 Gravel Mines**

**GM-1**

This issue was raised in the following letters: DEIS0216 and DEIS0236.

**ISSUE**

All potential gravel mine sites must be specified in order to fully assess the impacts associated with development.

**RESPONSE**

All potential gravel mine sites associated with CPAI's proposal have been identified in Section 2.3.5. A proposed mining and reclamation plan for Clover has been included as Appendix O. The FFD scenarios are hypothetical; all associated production pad, road, mine sites, processing facilities, and any other facilities associated with FFD are hypothetical.

**GM-2**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

2.3.5 – Gravel Mines: Mine site – Since there is no mining and rehabilitation plan, there is a variety of discussions and often-conflicting information throughout the Draft EIS on mining. Section 2.3.5 states rehabilitation would be performed after closure. Normally phased rehabilitation, as a mitigation measure, begins immediately after a cell has been exhausted (closed). The Draft EIS leads the reader to believe that rehabilitation would wait until the entire mine site closed which could mean a number of decades.

**RESPONSE**

Section 2.3.5 has been modified to indicate that reclamation of mining cells would occur upon their closure.

**GM-3**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The FEIS should include results of testing and characterization of gravel resources from the Clover Potential Gravel site for suitability as fill material in accordance with Section 404(b)(1).

**RESPONSE**

The best available information for Clover is included in Section 2.3.5, and has been evaluated in Sections 4A, 4B, 4C, 4D, and 4F. A proposed mining and reclamation plan for Clover has been included as Appendix O.

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**GM-4**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The FEIS should provide additional details of how gravel would be mined from the Clover Potential Gravel site in order to evaluate the impacts on the environment.

**RESPONSE**

The FEIS assumes typical North Slope gravel extraction operations: winter only, with access via ice road. A proposed mining and reclamation plan for Clover has been included as Appendix O.

**GM-5**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

In order to mitigate for tundra and habitat impacts of gravel mine development, the FEIS should provide details for the rehabilitation of the gravel source site after mining is completed.

**RESPONSE**

The best available information for Clover is included in Section 2.3.5, and has been evaluated in Sections 4A, 4B, 4C, 4D, and 4F. A proposed mining and reclamation plan for Clover has been included as Appendix O.

**6.3.2.23 Intent of this Environmental Impact Statement (EIS)****RI-1**

This issue was raised in the following letters: DEIS0001, DEIS0002, DEIS0010, DEIS0012, DEIS0013, DEIS0058, DEIS0086, DEIS0089, DEIS0099, DEIS0105, DEIS0110, DEIS0112, DEIS0117, DEIS0119, DEIS0121, DEIS0135, DEIS0155, DEIS0159, DEIS0162, DEIS0167, DEIS0169, DEIS0175, DEIS0177, DEIS0178, DEIS0180, DEIS0181, DEIS0186, and DEIS0187.

**ISSUE**

DOI and industry must fulfill promises made in the 1998 Northeast National Petroleum Reserve-Alaska IAP/EIS to protect Fish Creek and Teshekpuk Lake Special Area, prohibit permanent roads, protect subsistence resources, and remove any facilities after oil and gas activity ceases. The DEIS provides no environmental or other justification for weakening these Stipulations.

**RESPONSE**

Section 2.4.6 discusses factors the BLM is considering before it grants exceptions to stipulations of the Northeast National Petroleum Reserve-Alaska IAP/EIS ROD, consistent with the exception clause in that document for Alternative F. The agency will make a decision based on information in the EIS, public comment, and agency analysis.

**RI-2**

This issue was raised in the following letters: DEIS0116, DEIS0120, and DEIS0195.

**ISSUE**

BLM should wait to complete the final EIS for the project until the EIS for the amendment of Northeast National Petroleum Reserve-Alaska stipulations has been completed.

**RESPONSE**

The BLM is responsible for responding in a timely manner on applications for development of existing oil and gas leases within the National Petroleum Reserve-Alaska. The current stipulations which are attached to the applicant's leases will apply to the ASDP, except to the extent that any exceptions are approved at the conclusion of the present EIS process, under the strict criteria set out in the existing leases for the granting of exceptions. Approval or denial of the ASDP project will be based on its own merits and the extensive environmental analyses completed in the FEIS. Any future amendment of the Northeast National Petroleum Reserve-Alaska IAP/EIS would be separate and independent of the ASDP decision, and would be subject to a full NEPA review in another EIS before decisions on the terms and conditions of future leasing in the Northeast National Petroleum Reserve-Alaska planning area could be made. However, the cumulative impacts analysis of this EIS considers the potential additional impacts if the Northeast National Petroleum Reserve-Alaska IAP/EIS is amended in the future.

**RI-3**

This issue was raised in the following letters: DEIS0162, DEIS0235, and DEIS0236.

**ISSUE**

Removal of roads and restoration of land to natural conditions should be at ConocoPhillips' expense, not dumped on taxpayers. Bonds should be posted before development proceeds.

**RESPONSE**

Restoration after completion of use is the responsibility of the applicant. Bonds are required by the BLM (under 43 CFR 3154.1 and 3134.1 and the Northeast National Petroleum Reserve-Alaska IAP/EIS Stipulation 58). The state also requires bonds (under 11 AAC 83.160, 11 AAC 96.060, and 11 AAC 97.400). The USACE has discretionary authority to require bonds as a permit special condition.

**RI-4**

This issue was raised in the following letters: DEIS0082, DEIS0083, DEIS0114, and DEIS0230.

**ISSUE**

Stipulations require roads and pipelines to be separated by 500 feet, the DEIS allows as little as 350 feet. Justification for any true exceptions has to be provided for public comment.

**RESPONSE**

Stipulation 34 of the Northeast National Petroleum Reserve-Alaska IAP/EIS anticipated that separating roads from pipelines may not be feasible within narrow land corridors and where the pipeline and road converge on drill pads. The BLM anticipates that these conditions will require some pipelines and roads to be closer than 500 feet, but this is consistent with the stipulation.

**RI-5**

This issue was raised in the following letters: DEIS0116 and DEIS0236.

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**ISSUE**

Production Pad CD-6 is currently proposed within the Fish Creek Buffer Zone; this pad placement should be avoided because development within the Fish Creek Buffer zone would negatively impact subsistence resources and disturb the people using these areas, as well as set a bad precedence for future development. The area was originally set aside to avoid damage to subsistence resources and minimize disturbance to people using fish camps along Fish Creek. The Fish Creek buffer zone should not be violated.

**RESPONSE**

Alternative B examined development without encroachment on the Fish Creek setback. See Section 2.4.6 for a discussion of factors considered for granting an exception, consistent with the Northeast National Petroleum Reserve-Alaska IAP/EIS ROD, to the setback stipulation under the Preferred Alternative.

**RI-6**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Stipulation 48 from 1998 ROD authorizes the road segment from CD-2 to CD-5, as proposed in Alternative A. Thus, an exception is not necessary. The gravel road to Alpine proposed by CPAI does not connect to a road system. (example: 2-B-4)

**RESPONSE**

The description of exceptions required has been revised in each applicable alternative.

**RI-7**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Lack of discussion in the EIS of the ongoing National Petroleum Reserve-Alaska management plan amendment significantly compromises the Cumulative Effects analysis.

**RESPONSE**

The potential for additional development in the Northeast National Petroleum Reserve-Alaska west of the Plan Area is included among the reasonably foreseeable future developments noted in Section 4G.4.4. Planning currently being conducted for the Northeast National Petroleum Reserve-Alaska is addressed in Section 4G.4.6.

**RI-8**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

The State requests several changes to Appendix D.

**RESPONSE**

Appendix D quotes the Northeast National Petroleum Reserve-Alaska IAP/EIS ROD verbatim. A separate EIS is being conducted to consider changes to that ROD. See the response to comment RI-2.

**RI-9**

This issue was raised in the following letter: DEIS0239.

**ISSUE**

Northeast Plan Stipulation #29 requires a caribou study for three years prior to approval of any development within the Special Caribou Stipulations Area. To comply with this stipulation, no facilities should be considered for the Special caribou area.

**RESPONSE**

None of the facilities proposed by the applicant or in the alternatives are in the Special Caribou Stipulation Area. This stipulation would apply to proposals affecting the far northwest part of the Plan Area.

**RI-10**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Section 1.2.4, page 1-20 Last paragraph. Are the volumes here OOIP, expected recovery, or what? They should be qualified.

**RESPONSE**

The text has been modified for the FEIS to reflect that the provided volumes are for original oil in place.

**RI-11**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

Where the stipulations in the Northeast National Petroleum Reserve-Alaska ROD were based on public comment and findings of fact, the grounds for any exceptions need to be provided for public comment as well.

**RESPONSE**

Section 2.4.6 discusses factors the BLM is considering before it decides whether to grant any exceptions to stipulations of the Northeast National Petroleum Reserve-Alaska IAP/EIS ROD, consistent with the exception clauses in that document.

**RI-12**

This issue was raised in the following letter: DEIS0230.

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**ISSUE**

In the analysis of the FFD, the EIS should assume that future drilling technology will be able to reach pockets of oil beneath the development buffers established in the Northeast National Petroleum Reserve-Alaska ROD or should leave the issue for the future.

**RESPONSE**

FFD decisions will be made in the future. No decisions are being made for any development other than the applicant's current proposal. Any future proposals for development within the Plan Area would be addressed in future NEPA documents.

**RI-13**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The FEIS should provide additional information and discussions to support the findings for exceptions to the Northeast National Petroleum Reserve-Alaska ROD stipulations, such as economic, technical, and environmental information, and how the objectives of the stipulations would be fully met.

**RESPONSE**

Section 2.4.6 discusses factors the BLM is considering before it decides whether to grant any exceptions to stipulations of the Northeast National Petroleum Reserve-Alaska IAP/EIS ROD, consistent with the exception clauses in that document.

**RI-14**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The EIS must explicitly call out the page numbers or sections cited from referenced documents. See, e.g., DEIS pp. 3-43 – 3-44, 3-46, 3-73, 4.3-3 – 4.3-4.

**RESPONSE**

Documents such as those in the list cited by the commentor are further cited later in the text. The sources are adequately cited to allow discovery of the referenced resource and impact descriptions.

**RI-15**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

The gaps, omissions, and erroneous information on the proposed Nigliq bridge are so extensive that the DEIS should be extensively revised and resubmitted as a draft EIS for additional public comment.

**RESPONSE**

The DEIS provided all the necessary information to inform the public and policy makers adequately of the proposal, alternatives, issues, resources, and potential impacts. Additional information is provided in the FEIS.

**RI-16**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

The EIS appears to indicate that this plan fulfills NEPA and ANILCA section 810 requirements for the FFD scenario. If the Northeast National Petroleum Reserve-Alaska ROD is already being revisited after only five years, how can planning decisions be made today for development that may happen in the next 20 years?

**RESPONSE**

Additional language has been added in Sections 1.1.1 and 2.2.3 to clarify that the BLM and the cooperating agencies are making decisions only on the applicant's proposed action as part of this EIS. Additional NEPA and additional ANILCA 810 procedures will be required prior to permitting any other oil development within the National Petroleum Reserve-Alaska.

**RI-17**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

Section 2.9 – Need for further NEPA Analysis: Where is the Final EIS going to mention the Corps Draft 404(b)(1) analysis, which will be attached as an Appendix?

**RESPONSE**

See Section 2.2.1 of the FEIS for the requested information.

**RI-18**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

EPA prefers that BLM analyze FFD in a programmatic EIS separate from the Alpine proposal. If BLM decides not to separate the analysis, then the FEIS should generally describe the intended FFD activities and identify which would require a supplemental EIS vs. an EA and include a commitment to notify and include local residents in future development proposals.

**RESPONSE**

Section 1.1.1 has been modified to describe the types of proposed activities for which the BLM would conduct an EA or EIS and the BLM's position on working with local residents.

**RI-19**

This issue was raised in the following letter: DEIS0238.



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**ISSUE**

The DEIS does not define the threshold for determining when an adverse impact is "significant", though it does identify them. However, when the document is read as a whole, including the cumulative impacts section, it is apparent that impacts from Alternative A are not significantly different than the other alternatives.

**RESPONSE**

Differences in impacts are described for the applicant's proposed action and for the other alternatives. The impacts are small relative to the cumulative impacts of all past, present, and reasonably foreseeable development. Consequently, the differences in cumulative impacts among the alternatives are relatively minor.

**RI-20**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

While the EIS discusses FFD, there is no discussion of the benefits associated with Alternative A in promoting future exploration and development. BLM should evaluate these potential benefits.

**RESPONSE**

The utility of the various alternatives in facilitating future exploration and development is discussed in Section 4G.8.

**RI-21**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

This DEIS covers a vast area (890,000 acres). The DEIS needs to correlate a project component site's resources to potential impacts to those resources from oil and gas activities, as required under NEPA.

**RESPONSE**

The analysis of the potential impacts of the applicant's proposed action is highly site-specific in nature. Prior to making decisions on future development, additional NEPA analyses would occur following any application for such development.

**RI-22**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

Section 1.1.1 – Intent of this EIS - Second paragraph: references Figure 1.1.1-2 in a discussion of ownership within the Plan area. This map doesn't show the land ownership – just the outline of the plan area.

**RESPONSE**

The referenced map has been corrected.

**RI-23**

This issue was raised in the following letters: DEIS0114 and DEIS0236.

**ISSUE**

Comments from agencies will not be incorporated until the FEIS. This denies the public a chance to see and express an opinion until after the EIS is complete.

**RESPONSE**

The DEIS provided all necessary information to inform the public and policy makers adequately of the proposal, alternatives, issues, resources, and potential impacts. Additional information is provided in the FEIS. In addition, the FEIS will be available for a 30-day review period before the agencies issue any decisions.

**RI-24**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

The EIS should acknowledge that failure to provide final project design or modifying the design to a degree that potential impacts have not been fully analyzed in the document may result in a requirement for supplemental EIS analysis.

**RESPONSE**

The FEIS has sufficient design information to analyze impacts and develop mitigating measures to reduce impacts.

**6.3.2.24 Land Uses and Coastal Management**

**CZ-1**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Specifically cited revisions should be made to the EIS to reflect the fact that under NSB regulations, this plan requires applications for activities to be permitted through the approval of a master plan concurrent with a zoning change for each area of development.

**RESPONSE**

The NSB's land management regulations are explained in Section 3.4.6.4 and under the heading "North Slope Borough Land Management Regulations," under Sections 4A.4.6.1 and 4A.4.6.2, and under similar headings for other alternatives.

**CZ-2**

This issue was raised in the following letter: DEIS0240.

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**ISSUE**

The DEIS need to evaluate the impacts to wilderness from any of the alternatives on a site-specific basis much like other categories such as birds or fish.

**RESPONSE**

No wilderness has been designated by Congress within 100 kilometers of the Plan Area, and no impacts to any wilderness areas are anticipated. However, impacts to “wilderness-type” values, such as the experience of naturalness, solitude, quietude, and other wildlife and viewing wildland values are analyzed under various sections of the EIS, including Recreation and Visual Resources.

**CZ-3**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Language describing the 2003 ACMP statute changes should be revised to match DNR’s categorization, which is “routine program change”. Also, a discussion on potential changes to coastal district programs as a result of the 2003 amendments should be included.

**RESPONSE**

The discussion of the recent changes to the ACMP and their potential to affect coastal district programs has been revised to reflect these issues. This discussion can be found in Section 3.4.6.3 of the FEIS.

**CZ-4**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4B.4-12: Alternative B – Summary of Impacts on Land Uses and Coastal Management, partial paragraph at top of page. CPAI questions statement “Unlike Alternative A, all facilities and construction would occur outside the Fish Creek buffer area, thus eliminating possible adverse effects.” This seems to contradict the statement in the previous comment that moving outside of the buffer does not change the type or level of impacts identified.

**RESPONSE**

The language in the cited text has been modified to reflect that impacts to the Fish Creek setback will be essentially eliminated.

**CZ-5**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

The section on land use and coastal management should be retitled to Land and Coastal Uses.

**RESPONSE**

The sections on land use and coastal management have been retitled to: Land Uses and Coastal Management.

**6.3.2.25 List of Preparers**

**PS-1**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The FEIS should include a conflict of interest disclosure for the EIS contractor.

**RESPONSE**

There is a copy of the conflict of interest disclosure for the EIS contractor in the Administrative Record, available for inspection upon request.

**6.3.2.26 Mammals**

**MS-1**

This issue was raised in the following letter: DEIS0202.

**ISSUE**

Caribou are negatively impacted by human activity and infrastructure, and may not cross under low pipelines.

**RESPONSE**

Studies show that caribou have crossed under pipelines elevated to 5 feet, and that they can habituate to human activity. The DEIS noted that caribou may more readily cross under higher pipes and that some displacement or disturbance could occur. An observation noting that aircraft could disturb caribou more than roads might was added for the FEIS. The FEIS also notes that in some places road-pipeline separation may be only 350 feet, but that this may be an adequate distance. Changes were made in Sections 4A.3.4.1 and 4F.3.4.1 for the FEIS.

**MS-2**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

The EIS fails to analyze the impacts to caribou health and reproduction that can be attributed to North Slope development.

**RESPONSE**

Cumulative impacts from North Slope development on caribou are discussed in Section 4G.6.4.

**MS-3**

This issue was raised in the following letter: DEIS0202.

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**ISSUE**

Dead and poisoned caribou have been noted in areas of oil development

**RESPONSE**

The occurrence of many dead caribou could be important, but without additional information and an investigation there is no way to determine what killed them. No changes were incorporated into the FEIS.

**MS-4**

This issue was raised in the following letters: DEIS0114 and DEIS0230.

**ISSUE**

The area around the proposed Nigliq Bridge is a major caribou crossing area and the bridge ramp could obstruct movements and crossing of the channel by caribou.

**RESPONSE**

At this location, presumably, the caribou would walk around the ramp to the bridge and cross over the road and under the pipeline. There are many instances of caribou crossing oilfield infrastructure in the Prudhoe Bay/Kuparuk Oilfields. Changes were incorporated into FEIS Sections 4A.3.4.1 and 4F.3.4.1.

**MS-5**

This issue was raised in the following letter: DEIS0195.

**ISSUE**

The EIS should address exceptions to stipulations for National Petroleum Reserve-Alaska for species such as caribou.

**RESPONSE**

CPAI's proposal would not require exceptions to stipulations specifically drafted to protect caribou. The impacts of granting exceptions are captured through comparison of impacts of Alternative B, which conforms to the Northeast National Petroleum Reserve-Alaska stipulations, with the impacts of the other alternatives.

**MS-6**

This issue was raised in the following letters: DEIS0257 and DEIS0270.

**ISSUE**

Air traffic could impact marine mammals, especially in Alternative D. Control of flight patterns and altitude could mitigate impacts.

**RESPONSE**

An acknowledgement that Alternative D could disturb marine mammals due to noise from air traffic was added to FEIS Sections 4A.3.4.2, 4B.3.4.2, and 4F.3.4.2.

**MS-7**

This issue was raised in the following letter: DEIS0233.

**ISSUE**

The impact of habituation of predators is worse than scaring them away from the development because they may be killed in human/predator encounters. The habituation of bears and foxes was equated with lack of impact.

**RESPONSE**

To reflect that the mortality of food-conditioned bears is higher than other bears, that mortality could result to foxes as well from vehicle collisions, and that there is a potential for mortality from human/predator conflict, changes were incorporate into FEIS Sections 4A.3.4.1, 4B.3.4.1, 4C-1.3.4.1, 4C-2.3.4.1, 4D.3.4.1 and 4F.3.4.1.

**MS-8**

This issue was raised in the following letter: DEIS0116.

**ISSUE**

There were errors in the caribou sections, for example the movement of caribou north of Teshekpuk Lake after calving.

**RESPONSE**

Section 3.3.4.1, Terrestrial Mammals was revised for the FEIS to address this comment.

**MS-9**

This issue was raised in the following letter: DEIS0198.

**ISSUE**

The only caribou injury caused by oil industry activity was to an animal with wire around its feet.

**RESPONSE**

An instance of caribou mortality from seismic wire was incorporated into the FEIS to address this comment (see Sections 4A.3.4.1 and 4F.3.4.1).

**MS-10**

This issue was raised in the following letter: DEIS0198.

**ISSUE**

Caribou may acclimate to industry noise when they learn that facilities pose no danger.

**RESPONSE**

Text was incorporated into the FEIS (see Sections 4A.3.4.1 and 4F.3.4.1) noting that caribou may habituate to the development, but that hunting may decrease the level of habituation.

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**MS-11**

This issue was raised in the following letter: DEIS0198.

**ISSUE**

Wind and weather are the main factors driving caribou movements.

**RESPONSE**

Text was added to the FEIS to indicate that insects and weather (e.g., wind) conditions influence caribou movements (see Section 3.3.4.1).

**MS-12**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

TCH is the proper abbreviation for the Teshekpuk Lake caribou herd.

**RESPONSE**

Text was changed from TLH to TCH throughout the FEIS.

**MS-13**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

The Chapter 3 section on the Teshekpuk caribou herd has inaccuracies. The development will likely have a greater effect on subsistence hunters, than on the wildlife itself. Deflection of movements may effect hunters' access, but not the population itself.

**RESPONSE**

The caribou discussions have been revised in the FEIS in accordance with many comments. In the conclusions for each alternative it is noted that the development would likely not have a negative impact on the caribou population level (see Sections 4A.3.4.1, 4B.3.4.1, 4C-1.3.4.1, 4C-2.3.4.1, 4D.3.4.1, and 4F.3.4.1).

**MS-14**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Regarding a statement in the DEIS that development may allow more control over hunting harvest, it is important to note that the North Slope residents hunt less around development.

**RESPONSE**

The DEIS noted that hunter access could allow control over hunting harvest because hunters could be directed to, or kept from, areas with animals. FEIS text notes that communications, not control, among the applicant,

locals, and agencies would be required. It was noted that the North Slope residents often choose not to hunt around development (see Sections 4A.3.4.1, 4B.3.4.1, 4C-1.3.4.1, 4C-2.3.4.1, 4D.3.4.1 and 4F.3.4.1, Terrestrial Mammals).

**MS-15**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Statements regarding lack of effects are more definitive than warranted. For example, elevating pipes to 5 feet improves crossing success by caribou, but can still interfere with movements and higher elevations may improve crossing.

**RESPONSE**

The DEIS noted that pipes elevated less than 5 feet could still deflect caribou, and that elevating them higher could help. This is particularly the case during periods with snow, and this could be relevant in the Plan Area because caribou occur there in the winter. Text revisions were added to the FEIS in Sections 4A.3.4.1 and 4F.3.4.1.

**MS-16**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Mitigation measures for herbivores should be limited to those that actually minimize adverse impacts to wildlife.

**RESPONSE**

Mitigation measures were revised in the FEIS to reflect the comments about effectiveness of controls on vehicle traffic, as well as to suggest designs to minimize disturbances (see Sections 4A.3.4.1 and 4F.3.4.1).

**MS-17**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Regarding the Teshekpuk caribou herd, the range goes as far east as ANWR, and south to Galena. A population trend figure is warranted, as is a section on insect relief migration patterns.

**RESPONSE**

The FEIS notes the changes to the TCH range in Section 3.3.4.1–Terrestrial Mammals–Caribou–North Slope, Teshekpuk Lake Herd. Readers are also referred to other recent documents that have population trend figures. Additionally, the FEIS notes that the TCH uses summer habitats throughout the Plan Area including the Colville Delta, and statements were added regarding caribou switching between insect-relief habitat and foraging habitat.



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**MS-18**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Wording changes to the section about the Teshekpuk caribou herd migration were suggested.

**RESPONSE**

In the FEIS, this sentence was revised to reflect the movement of most caribou to north of Teshekpuk Lake after calving, through the land corridor east of the lake, and the wording about winter migrations was also changed (see Section 3.3.4.1).

**MS-19**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Regarding the Teshekpuk caribou herd's calving, it should be noted that recent calving has been concentrated on the southeast side of the lake below the Kogru River.

**RESPONSE**

In the FEIS, a change was made in Section 3.3.4.1 to reflect the pattern in the figure, which showed the calving range, with most calving east of Teshekpuk Lake.

**MS-20**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

The citation for Noel and George is now published (2003, vol. 14:153-161).

**RESPONSE**

The FEIS includes the updated citation at all appropriate locations.

**MS-21**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Rewording was suggested to state that summer distribution is related to forage.

**RESPONSE**

The FEIS includes re-wording of text in Section 3.3.4.1 to note that summer distribution of caribou is related to foraging.

**MS-22**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Rewording was suggested to reflect caribou occurring as far east as the Colville River Delta.

**RESPONSE**

The FEIS includes re-wording of text in Section 3.3.4.1 to indicate that caribou occur as far east as the Colville River Delta.

**MS-23**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

The section on fall and winter range of the Teshekpuk caribou herd should reflect use of the Plan Area.

**RESPONSE**

The FEIS includes re-wording of text in Section 3.3.4.1 to reflect TCH range in relation to uses of the Plan Area.

**MS-24**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

It should be noted that all North Slope villages harvest caribou from the Teshekpuk caribou herd, which experiences among the highest harvest rates in Alaska.

**RESPONSE**

Section 3.3.4.1 of the FEIS was revised as suggested by this comment.

**MS-25**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Suggested that the USGS (2002) citation be added regarding the negative effect of oil development on the caribou population trajectory.

**RESPONSE**

Although the USGS report deals with potential impacts, not specifically population trajectory, the requested citation was added to the FEIS as appropriate in Sections 3.3.4.1, 4A.3.4.1 and 4F.3.4.1.

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**MS-26**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Information on the vegetation used by caribou at different times of the year should be included.

**RESPONSE**

Information on the vegetation used by caribou through the year was added to the FEIS in Sections 4A.3.4.1 and 4F.3.4.1.

**MS-27**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

There's no justification that development will allow more control over hunting harvest. North Slope residents hunt less in developed areas.

**RESPONSE**

The view of the commentor was incorporated into the FEIS in Sections 4A.3.4.1 and 4F.3.4.1–Terrestrial Mammals, Potential Mitigation Measures for Terrestrial Mammals.

**MS-28**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

It should be noted that polar bear mortality may occur, particularly from DLP kills. Planning is needed to avoid human/bear conflicts.

**RESPONSE**

The FEIS incorporates the fact that mortality to polar bears could occur, and has occurred due to National Defense (DEW Line Stations) or industry activities (see Sections 4A.3.4.2 and 4F.3.4.2).

**MS-29**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS doesn't address roads as barriers to caribou movement.

**RESPONSE**

There is no evidence that roads present a barrier to caribou. The issue of roads (with traffic and pipelines) as possible obstructions to movements is discussed for each alternative.

**MS-30**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The loss of a few scarce mammals (musk ox, polar bear, grizzly bear, wolf, wolverines) could result in irreversible declines in local populations and loss of hunting opportunity.

**RESPONSE**

The species mentioned in the comment are regularly hunted, move over wide areas, and undergo many natural causes of mortality. Except for possible DLP and vehicle collision kills of bears, mortality from the development is unlikely. In the case of these rare kills, they would likely be infrequent enough to impart less impact on the population than hunting does. The potential for DLP and vehicle collision kills was noted in the FEIS operation period discussions on terrestrial and marine mammal mortality within Sections 4A.3.4.1, 4A.3.4.2, 4F.3.4.1, and 4F.3.4.2.

**MS-31**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Given grizzly bears' low density in the Plan Area, changes to their habitat and population numbers should be determined.

**RESPONSE**

Grizzly bear habitat changes are described in the direct habitat loss, alteration, or enhancement discussions for each alternative. Census numbers are not available, but what is known is described in the grizzly bear discussion within Section 3.3.4.1.

**MS-32**

**ISSUE**

The use of forage areas by caribou, musk oxen, and moose, and impacts to them, are not correlated with the currently unknown forage limitations.

**RESPONSE**

All available information regarding terrestrial mammal forage areas being changed by the development is presented in direct habitat loss, alteration, or enhancement discussions within Sections 4A.3.4.1 and 4F.3.4.1.

**MS-33**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The numbers of small mammals in the Plan Area are not known, but it is claimed they are not abundant. Lack of information also precludes impact assessment.

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**RESPONSE**

The small mammals likely present in the Plan Area are described in Section 3.3.4.1. Small, local impacts are expected and were described in the DEIS.

**MS-34**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Construction is described for winter only, but will also occur in summer.

**RESPONSE**

An acknowledgement that construction will occur in the summer as well as the winter has been included in the FEIS within the Construction Period subsections.

**MS-35**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The EIS should discuss the risk to marine mammals from increased pollution in the Arctic that break down slowly and accumulate in the food chain.

**RESPONSE**

The general issue of pollution contaminants in marine mammals is discussed in the cumulative impacts section. The potential impacts of spills from the applicant's proposed action are addressed in the spill discussion (see Section 4.3).

**MS-36**

This issue was raised in the following letters: DEIS0230, DEIS0082, and DEIS0083.

**ISSUE**

The Western Arctic and Porcupine caribou herds should be discussed. The Alpine structures will deflect the Western Arctic animals away from Kuukpik lands.

**RESPONSE**

The PCH and WAH use the Plan Area as peripheral range, and this was noted along with all appropriate references in the EIS. With regard to potential deflection of caribou by oilfield structures, Chapter 4 discussions addressing obstructions to movement at Prudhoe Bay and Kuparuk Oilfields suggest some local deflection may occur, but not changes to basic movements. Design features to facilitate animal movement were also noted, such as elevating pipelines and separating pipelines and roads.

**MS-37**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

The final EIS should include maps that identify caribou migratory routes and corridors, and where the migratory patterns intersect with the proposed roads and pipelines...and analysis to address the impacts for each alternative.

**RESPONSE**

The location of migratory routes is not precisely known, nor is it necessarily consistent from year to year. There are satellite telemetry tracks for some Teshekpuk herd caribou for some years, and perhaps some inferences from local observations and aerial surveys, but it would be hard to conclude that routes are fixed from year to year. In the DEIS, the general patterns are described in the text, and distributions at several times of the year at different spatial scales are shown in the figures. Some specific movement areas are described in the text as well. Showing migratory routes or corridors could be misleading by implying that they are definitely used yearly. Regardless, the proposed mitigation measures in all alternatives with elevated pipelines (either 5 or 7 feet) and separation of roads and pipelines, are intended to permit caribou crossing anywhere in the Plan Area. In addition, as noted in the EIS, burying pipelines in some areas, and roadless development in some areas under some alternatives, could be considered as extra mitigation.

**MS-38**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Regarding potential mitigation measures, note that CPAI can not regulate hunting.

**RESPONSE**

All appropriate text was revised for the FEIS to suggest that communication among groups (not strict regulation) could help prevent conflicts and/or accidents during local residents' access to the Plan Area.

**MS-39**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Regarding the potential mitigation measures using aircraft altitude restrictions over rivers and the near shore Beaufort Sea when marine mammals is too broad because marine mammals may be present any time. Bowhead whales might not be in the area because they use deeper water.

**RESPONSE**

The EIS discusses restrictions to flight altitudes and paths to best mitigate impacts on marine mammals in general. Section 3.3.5 description of bowhead whales in the Plan Area was revised to describe bowhead distributions in relationship to water depth. No air traffic in the Beaufort Sea is proposed for CPAI alternatives, and no mitigation measures were identified. The FEIS was revised accordingly by deleting the suggested bowhead whale mitigation measure of altitude restrictions for CPAI alternatives. Offshore air traffic may occur under FFD scenarios and has been identified along with the mitigation measure of altitude restriction.

**MS-40**

This issue was raised in the following letters: DEIS0233 and DEIS0238.

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**ISSUE**

It is noted by locals that noise of aircraft may disturb and deflect caribou so Alternatives D1 and D2 may have this impact.

**RESPONSE**

This potential impact has been incorporated into the FEIS Section 4D.3.4.1.

**MS-41**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

There is an inconsistency of subsistence and fish and wildlife sections. The subsistence section notes impacts to wildlife species that are not corroborated in the biology sections. The primary subsistence impact is the choice not to hunt around development. The science indicates that animal populations should not be seriously impacted by the development itself.

**RESPONSE**

Neither the biology nor subsistence sections of the FEIS indicate that the proposed action or alternatives would result in significant impacts to animal populations.

**MS-42**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

It is noted that the NRC found that the existing oil fields caused a decline in the Central Arctic herd caribou, but the EIS discounts it, and ignores NRC asking for more study.

**RESPONSE**

A review of the literature shows that the NRC's findings were inconclusive, as noted in the EIS. The FEIS bases its assessment on the best information available about the CAH.

**MS-43**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

It is claimed that oilfield infrastructure is avoided by caribou during the insect season.

**RESPONSE**

The DEIS gives information and citations documenting use of oilfield infrastructure by caribou during the insect season (see Sections 4A.3.4.1 and 4F.3.4.1).

**MS-44**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Grizzly bear den locations should be shown.

**RESPONSE**

Grizzly bear dens are shown in Figure 3.3.4.1.10 within Section 3.3.4.1.

**MS-45**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

The DEIS has an unjustified focus on population-level effects. The focus should be on resource numbers and availability.

**RESPONSE**

The DEIS analysis of impacts from existing oilfields provided in Alternative A through Alternative F discussions was based on reviews of appropriate literature. Conclusions about the impacts on individuals were drawn (e.g., some obstruction of caribou movement or disturbance during calving has occurred, some mortality of grizzly bears has occurred). Conclusions on the impacts on populations were also inferred (e.g., the caribou herd has grown from less than 5,000 to 32,000 since the oilfields were built so impacts at that level are not apparent). In the discussion of the applicant's proposed action, both individual and population levels are discussed at a level that reasonable predictability allows. It is stated that certain impacts may occur to individuals (e.g. some deflection of movements or mortality may occur). The number of animals that may be affected by various components of infrastructure or activity cannot be predicted precisely because there are too much variations among mammals' habitat use (both in duration and spatial area) within the Plan Area. Habitat resource availability is discussed in Section 4, Alternatives A–F, Subsistence.

**MS-46**

This issue was raised in the following letters: DEIS0114, DEIS0230, and DEIS0239.

**ISSUE**

The Porcupine and Central Arctic caribou herds are not discussed further and there's no hard look at impacts to these herds.

**RESPONSE**

The effects of the development on caribou will basically be the same regardless of which herd enters the Plan Area. The FEIS incorporates the fact that the CAH, TCH, PCH, and WAH may be impacted by cumulative effects (see Section 4G.6.4).

**MS-47**

This issue was raised in the following letter: DEIS0242.



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**ISSUE**

The proposed project is unlikely to have serious impacts on caribou, but effects could increase over time as developed areas increase. Also, the value of mitigation measures is downplayed.

**RESPONSE**

The FEIS notes that there could be impacts over time on caribou, and that mitigation measures can minimize potential future impacts (see Section 4G.6.4).

**MS-48**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Noting potential benefits to foxes by creation of den habitat is short sighted because foxes will be close to people and increased risk of vehicle collisions.

**RESPONSE**

The FEIS incorporates text noting the potential for vehicle collisions to kill foxes, in addition to the potential creation of den habitat (see Section 4G.6.4).

**MS-49**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Foxes that become food-conditioned have higher likelihood of DLP mortality.

**RESPONSE**

The FEIS incorporates statements on the potential for DLP kills of foxes (see Section 4G.6.4).

**MS-50**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Seven grizzly bears have been killed in DLP situations since the year 2000 in the Prudhoe Bay region. There is also increased harvest along the Dalton Highway.

**RESPONSE**

The FEIS incorporates text regarding bear mortality around the Prudhoe Bay Oilfield (see Section 4G.6.4).

**MS-51**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Because the areas around Teshekpuk Lake may now be considered for leasing, the point that the caribou calving areas there will not be impacted in the future may not apply.

**RESPONSE**

The potential for the area around Teshekpuk Lake to be excluded or included in future oil leases/development and the impacts if it does become subject to development is analyzed in the FEIS (see Section 4G.6.4).

**MS-52**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

If there is development near Teshekpuk Lake, calving caribou may be displaced into the Plan Area.

**RESPONSE**

The potential for development near Teshekpuk Lake to displace caribou to the Plan Area is noted in the FEIS (see Section 4G.6.4).

**MS-53**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The impacts of roads into the National Petroleum Reserve-Alaska from existing oil fields need to be evaluated for impacts on caribou habitat.

**RESPONSE**

The potential for roads from existing oilfields to add to impacts on caribou is noted in the FEIS (see Section 4G.6.4).

**MS-54**

This issue was raised in the following letter: DEIS0228.

**ISSUE**

Construction of bridges across rivers is unlikely to disturb seals or whales because construction would be in winter when the animals are not present.

**RESPONSE**

The EIS notes that some construction may occur in summer. This would cause some disturbance, but not necessarily unavoidable adverse impacts.

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**6.3.2.27 Mitigation and Monitoring****MM-1**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The FEIS should include a consolidated list of proposed monitoring that would be required to support agency actions and decisions.

**RESPONSE**

Monitoring is discussed in the EIS and will be identified by the various agencies in their RODs or permits. This monitoring could include effectiveness, compliance, and/or collaborative monitoring elements.

**MM-2**

This issue was raised in the following letters: DEIS0210 and DEIS0217.

**ISSUE**

The proposed bridge crossing the Nigliq Channel must be high enough to allow boat passage and should be connected by road to Nuiqsut to allow use by residents.

**RESPONSE**

The USCG considers bridge height during its permit process to ensure that bridges are designed to accommodate the uses on the river.

The FEIS addresses the Nuiqsut road connection in its Sub-Alternative C-1 discussion.

**MM-3**

This issue was raised in the following letter: DEIS0226.

**ISSUE**

Snow ridges and berms left in the area during winter oil exploration can damage snow machine undercarriages of local residents.

**RESPONSE**

The FEIS acknowledges that snow berms can be an impediment to snow machine travel.

**MM-4**

This issue was raised in the following letter: DEIS0114.

**ISSUE**

The oil companies should form an oil spill response team in our villages, so we wouldn't have to wait 30 to 40 hours like at Exxon. Should employ and educate villagers.

**RESPONSE**

Section 2.3.4.2 of the FEIS specifically identifies the Nuiqsut Village Response Team as a resource that would be utilized for a spill response.

**MM-5**

This issue was raised in the following letters: DEIS0200, DEIS0220, and DEIS0270.

**ISSUE**

The DEIS offers no proposed suite of mitigation measures for each action alternative. The DEIS provides a list of potential mitigation measures, but provides no indication that these measures will be implemented or followed by CPAI as were designed into the project by CPAI.

**RESPONSE**

When the agencies develop their RODs and permits they will select the mitigation they feel is appropriate to the action they are going to permit. Potential mitigation measures presented in the FEIS will be considered.

The agencies will require construction of the facilities in accordance with the agency-approved design.

**MM-6**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

As stated in the cumulative impacts section, the amount of gravel involved and the relative footprint size in Alternative A is not expected to have a more “negligible” effect upon habitat than under Alternatives B - D. The DEIS emphasis on this difference is overstated. Thus the differences among the alternatives are not meaningful. (Example 4F-20, -27, -36)

**RESPONSE**

The DEIS describes differences in impacts among the applicant’s proposed action and the other alternatives. The impacts are small relative to the cumulative impacts of all past, present, and reasonably foreseeable development. Consequently, the differences in the cumulative impacts between the alternatives presented in the EIS are relatively minor.

**MM-7**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

The DEIS references mitigation measures for installing vertical loops in produced fluids pipelines or using HDD to pass pipelines under the Nigliq Channel. CPAI has serious concerns about using either of these methods for 3-phase pipelines due to the potential for slugging and the resultant safety hazards.

**RESPONSE**

Vertical loops and HDD are technically challenging, but not impossible, and as such it was proper to consider them in the DEIS.

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**MM-8**

This issue was raised in the following letter: DEIS0237.

**ISSUE**

BLM should identify soundless generator buildings to prevent noise impacts.

**RESPONSE**

While we know of no “soundless” generator buildings, a design feature to reduce noise has been included in the EIS. Section 2.3.11.1 of the project description indicates that electric power generator sets would be totally enclosed or acoustically packaged to abate noise emissions.

**MM-9**

This issue was raised in the following letter: DEIS0082.

**ISSUE**

It is clear from the Draft EIS that there is so much that is unknown about the impacts of the project that there is no way to decide what impacts need to be mitigated or how best to mitigate.

**RESPONSE**

The DEIS provided all the necessary information to inform the public and policy makers adequately of the proposal, alternatives, issues, resources, and potential impacts. Additional information is provided in the FEIS.

**MM-10**

This issue was raised in the following letter: DEIS0198.

**ISSUE**

Records show that hunters already take over 60% of spring geese from the Fish-Judy Creek area. Concentrated geese along dust-thawed roadsides will increase this number. CPAI should implement measures to control winter dust fallout such as watering the road system during the winter, putting a sealing agent on pads, and chip-sealing runways and heavy-traffic roads.

**RESPONSE**

Road-watering and the use of sealing agents and chip seal are suggested as potential mitigation measures for vegetation and air resources which could reduce fugitive dust in the spring (see Sections 4A–4F).

**MM-11**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

The EIS must clearly identify what mechanisms will be in place to mitigate unforeseen impacts and hold responsible operators accountable to impacted communities. The ability to halt or alter ongoing operations when unforeseen impacts are identified must be part of the mitigation package in this EIS.

**RESPONSE**

The EIS has addressed potential mitigation for all reasonably foreseeable impacts. The leases and agency regulations are other sources of control. The permitting agencies will address this issue when they develop their RODs or as stipulations to the permits that they issue.

**MM-12**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

CPAI should establish an office in Nuiqsut, operate it on a long-term basis, and staff it with a human resources professional who might assist residents with securing available employment.

**RESPONSE**

A potential mitigation measure described under “Socio-Cultural Characteristics” in Sections 4A–4F suggests training and recruitment programs. The commentor’s suggestion could be incorporated as a part of such a mitigation strategy.

**MM-13**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

As potential mitigation measures, the EIS should include completely removing CD-6 from the Fish Creek buffer zone, or alternatively, removing the pipeline between CD-6 and CD-7 from the buffer.

**RESPONSE**

The DEIS analyzed moving CD-6 and the pipeline from CD-6 to CD-7 (out of the buffer zone) as a component of Alternative B. Alternative F – Preferred Alternative removes substantial portions of the pipeline and road from the buffer zone.

**MM-14**

This issue was raised in the following letters: DEIS0236 and DEIS0240.

**ISSUE**

Broader, more comprehensive, long-term planning, study, and impact assessment must be included as project-specific mitigation requirements, particularly if BLM is moving toward a more performance-based, adaptive management approach in the National Petroleum Reserve-Alaska.

**RESPONSE**

Long-term studies were considered as a potential alternative component of this EIS but eliminated from further detailed analysis (see Section 2.6.5).

**MM-15**

This issue was raised in the following letter: DEIS0242.

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**ISSUE**

The mitigation discussion in the DEIS is narrow and does not include the numerous actions taken by state agencies working with the applicant to mitigate many potential environmental effects in the design of the applicant's proposal.

**RESPONSE**

Section 4 describes mitigation as being defined in several ways. The analysis of impacts to resources in the EIS considered the applicant's proposed action, including any design features proposed by the same, to mitigate impacts.

**MM-16**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

The State requests to include as an FEIS Appendix, "National Petroleum Reserve - Alaska Impact Program, Report to the Second Session of the Twenty Third Legislature, State Fiscal Year 2004."

**RESPONSE**

The document, without appendices, has been included as Appendix F.

**MM-17**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The EIS should indicate which, if any, of the mitigation measures incorporated as part of a particular alternative, will be made enforceable by law.

**RESPONSE**

When the agencies develop their RODs and permits they will select the mitigation that they feel is appropriate to the action they are going to permit. Potential mitigation measures presented in the FEIS will be considered. Project plans that are approved by the permitter and mitigation measures included as conditions to a permit are enforceable by law.

**MM-18**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The presentation of mitigation measures in the EIS is confusing because the document does not distinguish between suggested enforceable measures and project features already incorporated in the proposed action alternatives.

**RESPONSE**

Project features that are part of the applicant's proposed action or its alternatives, including those designed to reduce environmental impacts, are described in Section 2. Potential mitigation measures are listed in Section 4. Project plans that are approved by the permitter and mitigation measures included as conditions to a permit are enforceable by law.

**MM-19**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The EIS should identify the probability that mitigation measures will be adopted and the success of the measures in ameliorating impacts.

**RESPONSE**

Several mitigation measures have been incorporated into Alternative F – Preferred Alternative. Additional measures may be included in individual agency permits.

**MM-20**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS needs to discuss whether winter construction and drilling will be required by an enforceable term of a permit or of some other authorization.

**RESPONSE**

RODs and permits will determine what construction and drilling activities will be required to be conducted during the winter.

**MM-21**

This issue was raised in the following letter: DEIS0239.

**ISSUE**

The mitigation measure of burying the powerline cable in the road between CD-6 and CD-7 should be considered to reduce risk to migratory birds.

**RESPONSE**

The EIS included analysis of burying the powerline in the road as a component of Alternative B.

**MM-22**

This issue was raised in the following letter: DEIS0239.



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**ISSUE**

The EIS should include state of the art leak detection systems, monitoring programs for the leak detection systems, corrosion, etc, the highest corrosion resistant materials, increased human surveillance requirements, for pipeline leaks, pre-deployed boom and other response materials, mandatory spill response field drills four times per year, full-time local spill response crews, etc.

**RESPONSE**

The elements identified in this comment are discussed in Section 2 and will be addressed in the State of Alaska's Spill Prevention Preparedness and Response Plan, as required prior to project approval.

**MM-23**

This issue was raised in the following letter: DEIS0239.

**ISSUE**

The EIS should explain ways to reduce aircraft impacts (timing restrictions, etc) and evaluate the feasibility of the suggested mitigation (Appendix B, page 9).

**RESPONSE**

The EIS does introduce mitigation to reduce impacts by aircraft. Hazing waterfowl and seabirds away from active airstrips is discussed as potential mitigation in Section 4A.3.3.4. Aircraft size, flight frequency, and flight paths are discussed in as potential mitigation in Section 4A.3.4.1. In addition to these, Northeast National Petroleum Reserve-Alaska IAP/EIS Stipulations 53, 54, 55, and 56 are provided in Appendix D address potential aircraft impacts.

**MM-24**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

More information should be presented on plans to control vehicle dust from impacting water bodies, especially since the rock source for the area appears to have a high percentage of fine material. Just because a great percent of the time the ground is frozen does not mean there won't be any fugitive dust as indicated in 4A.2.2.

**RESPONSE**

Section 2.3.1.1 describes techniques that might be employed to reduce fugitive dust. Additional mitigation measures are located in the Air Quality, Vegetation, and Birds discussions (see Sections 4A–4F).

**MM-25**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 4A.3-53, Section 4A.3.3.4: The outlined mitigation measure may help to reduce impacts but they will not eliminate them. Additional mitigation measures are needed. Facilities should be designed to prevent predators from nesting or denning on or under them. Additional studies are needed to help develop other measures. These studies should include efforts to determine the magnitude of impacts from collisions with buildings, power

lines, and other facilities, and to evaluate impacts on tundra nesting birds from predators. With these data, more appropriate mitigation measure can be established.

**RESPONSE**

Sections 4A–4F, Birds have been revised in the FEIS to include additional mitigation measures that would help reduce raven nesting.

**MM-26**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Page 4F-6: assumes that mitigation measures will in fact reduce cumulative impacts. This assumption is unwarranted since the DEIS does not discuss the enforceability of mitigation measures, or their likelihood of success.

**RESPONSE**

Laws and regulations, such as those listed in the section referenced by the commentor, are enforceable by law. Project plans that are approved by the permitter and mitigation measures included as conditions to a permit are enforceable by law.

**MM-27**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

Portions of the road between CD-1 and Nanuq should be bridged to avoid impact to movement of broad whitefish and least Cisco. Provision should also be made to reduce to obstacle to caribou movement.

**RESPONSE**

State permits will require a design that allows for fish passage. Caribou passage mitigation measures are included in Section 4A.3.4.1.

**MM-28**

This issue was raised in the following letters: DEIS0230 and DEIS0241.

**ISSUE**

Alternative A – Mitigation measures: Mitigation measures have not been identified. This is a consequence of writing the Draft EIS without a complete project description. We recommend that the Final EIS include an impact analysis and proposed mitigation based on the complete project description. All proposed mitigation would need to be discussed in each section and also as a separate Appendix.

**RESPONSE**

The DEIS does identify potential mitigation measures at the end of each resource discussion in Sections 4A–4F.

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**MM-29**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The requirements for oil field abandonment should be considered and expanded as a mitigation measure and as it relates to reducing the level of cumulative impacts.

**RESPONSE**

Abandonment was discussed in Section 2.3 (2.3.1.4 Roads; 2.3.2.4 Pipelines; 2.3.3.5 Production Pads; 2.3.6 Airstrips; and 2.3.9.3 Bridges and Culverts). A more specific plan would be developed by the holder of the permit prior to abandonment activities and would be approved by the AO after additional NEPA analysis.

**MM-30**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The FEIS should include mitigation to avoid and minimize short and long-term impacts to subsistence fisheries resources of the Plan Area.

**RESPONSE**

The DEIS discusses mitigation for fish in Section 4A.3.2.4. This section provides suggested mitigation to help keep fish populations healthy, which will keep subsistence fisheries viable. One of the most important concerns of local residents regarding subsistence fisheries relates to the Nigliq Channel Bridge. Alternative F – Preferred Alternative would mitigate impacts by requiring the setback of bridge approaches to be outside of the main channel. The same would hold true for the Ublutuoch River.

**MM-31**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The DEIS does not provide adequate discussion of mitigation measures to reduce significant adverse impacts to caribou migration. It is recommended that the pipelines be elevated to a minimum height of 7 feet and a minimum 500 foot separation be maintained between gravel roads and pipelines.

**RESPONSE**

Mitigation is described for herbivores, which includes measures designed to lessen the impacts to caribou. The 7-foot pipeline height was addressed in Section 4A.3.4.1, and the 500-foot separation was discussed in the same section.

**MM-32**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4.2-2: Existing and Potential Additional Mitigation Measures. Insert CPAI's Table 1 from Attachment 5 to this letter.

**RESPONSE**

The FEIS includes more descriptions of the design features incorporated into the design proposal to mitigate environmental effects.

**MM-33**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page S-23: The document should discuss mitigation measures incorporated into the project design and operations methodologies to accurately reflect the true project. See Attachment 5 of this letter.

**RESPONSE**

Section 4.2 has been modified for the FEIS to include more descriptions of the design features incorporated into the design proposal to mitigate environmental effects.

**6.3.2.28 Noise**

**NZ-1**

This issue was raised in the following letters: DEIS0233 and DEIS0238.

**ISSUE**

The noise analyses in the DEIS are largely silent regarding the significance of adverse impacts due to increased aircraft flights which would be required by roadless development. The profound quiet of the North Slope means that noise disturbance impacts are magnified many times over what is typical in other places. The DEIS analysis of noise impacts, especially of airplane and helicopter overflights, should consider that nature of the existing environment.

**RESPONSE**

While the profound quiet typical of some areas of the North Slope may be further impacted by noise, there are several sources contributing to background noise in the Plan Area, as discussed in Section 3.2.3.3, Noise. These sources include vehicles, equipment, watercraft, and aircraft operations, community noise from the village of Nuiqsut, and wind. The noise impacts, as discussed in Section 4A.2.3.3, are based on effects of the construction and operation of the project relative to typical background noise levels.

**NZ-2**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Section 4A.2.2.3: fails to discuss the noise impacts on fish and wildlife as they may relate to subsistence activities in and outside the Plan Area.

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**RESPONSE**

Noise impacts to fish are discussed in Section 4A.3.2, Fish. Noise impacts to wildlife are discussed in Sections 4A.3.3, Birds and 4A.3.4, Mammals. Impacts to subsistence activities are discussed in Section 4A.4.1, Socio-Cultural Characteristics.

**NZ-3**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS fails to discuss the impacts of noise on wilderness resources.

**RESPONSE**

The applicant's proposed action is not in, or adjacent to, a designated wilderness area, or a wilderness study area. However, the impacts of noise on the quietude of the natural environment are discussed in the EIS.

**NZ-4**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

Section 3.2.3.3 – Noise: (Paragraph 4) This paragraph discusses activities/equipment at CD-1 and CD-2 mentioning “[a]t it’s closest, Nuiqsut is approximately 9.5 miles from CD-1 . . .” and goes on to conclude that there would be no additional noise contribution to the community. However, any noise from the construction /operation of proposed CD-4 that is approximately 4 miles from the Village is not addressed. We recommend that the Final EIS address noise from CD-4 as well as CD-1 and the upgrades that are currently being installed at the CPF.

**RESPONSE**

Section 3.2.3.3, Noise has been updated in the FEIS to indicate that it is not anticipated that equipment operating at CD-4 would contribute any noise at approximately 5 miles away from the village of Nuiqsut, (based on Tables 3.2.3-7 and 3.2.3-8 which indicate typical noise sources and typical oilfield noise sources).

**NZ-5**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

The summary section should address noise impacts from helicopters and aircraft.

**RESPONSE**

Impacts from aircraft and helicopters are discussed in Section 3.2.3.3, Noise.

**NZ-6**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page S-10: Noise, Summary of Impacts – the statement “There are no residents within several miles of any production pad proposed by CPAI” is erroneous. The Village of Nuiqsut lies about 4 miles from proposed pad CD-4

**RESPONSE**

Section S.4.2.3, Atmospheric Environment, has been amended in the FEIS to reflect that the village of Nuiqsut is approximately 5 miles away from CD-4.

**NZ-7**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

There is no site-specific analysis for the Clover site, as required by NEPA. Effects of “blasting” loose gravel must be addressed (example: p.2-24).

**RESPONSE**

Section 3.2.3.3, Noise has been amended in the FEIS to reflect that mining operations could contribute noise in the Plan Area. Section 4A2.3.3, Noise has also been amended to include a discussion of blasting from gravel mining operations and Section 4F.2.3.3, Noise has been amended to indicate the same.

**NZ-8**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

Section 2.7.1 – Comparison of Impacts (Summary Chart) - Physical / Noise: This only addresses construction and drilling noises and makes the statement that noise impacts to residents [of Nuiqsut] would be negligible. It appears that noise generated by boats, airplanes, helicopters and trucks were not considered. Using figures from the Draft EIS, how could up to 20,000 vehicles and 2,050 aircraft flights not have any noise effect? (See Table 2.3.10-1) Also, noise from airplanes and helicopters is one of the main concerns of the Village of Nuiqsut. The information provided in the Draft EIS does not demonstrate that the noise levels would be “negligible” to the residents of Nuiqsut. We believe this statement needs to be corrected or eliminated.

**RESPONSE**

Noise impacts are discussed in Section 4A.2.3.3, Noise, and Section 4F.2.3.3, Noise, and are relative to existing background noise levels within the Plan Area. Section 4A.2.3.3 indicates that during peak periods of construction and drilling, noise levels would be considerably higher than during operations, but would be short-term, and would not occur for all proposed production pads at the same time. Nuiqsut is several miles from the nearest proposed development, so noise impacts would be minor unless, under FFD, a development occurred much closer to the village.” Section 3.2.3.3, Noise, identifies background noise sources in the Plan Area which include vehicles, equipment, watercraft, and aircraft operations, community noise from the village of Nuiqsut, and wind.

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**6.3.2.29 Off-Road Travel****OR-1**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Page 2-26, 2.3.7.1. In this section on Ice Roads, it may be appropriate to mention the current tundra season research that may develop techniques for more accurate determinations for tundra opening dates consistent with environmental protection.

**RESPONSE**

Current criteria for tundra opening dates are cited in Section 2.3.7.1.

**OR-2**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Section 2.3.7.2 Nodwells. The listing of Nodwells for tundra travel from July 15 to the following breakup is incorrect. They can and do travel safely when the tundra is opened to winter travel, but it's not what is being conveyed in the text of this section.

**RESPONSE**

In the FEIS, nodwells have been eliminated from the discussion in Section 2.3.7.2.

**OR-3**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The FEIS should include maps depicting the location of proposed ice road routes during each winter construction season for all five satellite production pads and access to gravel resources. The location of freshwater lakes to be used as water sources should also be shown.

**RESPONSE**

Proposed ice roads are depicted in Figures 2.3.7.1-1 through 2.3.7.1-7.

Project water usage for ice roads is presented in Tables for each alternative in Section 2.4. Fresh water sources will be existing or future permitted lakes. Figure 2.4.1.1-11 depicts authorized lakes within the Plan Area. Lakes that may become permitted as fresh water sources are those that are 7 feet or greater in depth. Figure 4A.3.2-1 presents lakes and associated water depths. Construction ice roads would extend to each production pad, and would align near road or pipeline alignments to provide construction access for those facilities.

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**6.3.2.30 Oil Spill Prevention, Detection and Response****SP-1**

This issue was raised in the following letter: DEIS0115.

**ISSUE**

There is concern among Native people (Nunamuit, Nuiqsut, Barrow, etc.) regarding the effect of pollution from the project (such as oil spills, carcinogens in lakes, rivers) that would alter the subsistence resources on which they depend. They would like to know how they will be compensated for the impact of pollution and potential decimation of their subsistence resources.

**RESPONSE**

The facilities would be designed, built, and operated to minimize the exposure of and impact to subsistence resources to spills of oil, saltwater, and/or other hazardous materials. In the unlikely event of a spill large enough to potentially impact subsistence resources, the applicant would implement a containment and cleanup response to minimize the extent and duration of potential impacts. As described in Section 4.3.3.3, impacts to subsistence may result from some large to very large spills, but the impacts to the resources and their habitat would not have population-level consequences.

As described in Section 4.3.3.3, exposure of subsistence resources to oil and/or hazardous material spills may not result in containment levels that exceed any human health risk or toxicity standard. However, the Alaska Native subsistence users, based on Traditional Knowledge, may believe that the resources are contaminated, and not use them. Thus, they may move to other areas for their subsistence harvesting and/or purchase these resources or some alternative(s) from other sources.

To the extent that natural resources (of which subsistence resources are a subset) are impacted by a spill/release of oil or hazardous substances, the federal, state, and Alaska Native Natural Resources Trustees may implement a natural resource damage assessment under the auspices of the Oil Pollution Act of 1990 for oil spills, the Comprehensive Environmental Resource Compensation and Liability Act for hazardous materials releases, and/or the CWA for any regulated material that exceeds federal water quality standards.

In addition, costs incurred by individuals to replace or augment the subsistence resources impacted by a spill, may constitute third-party claims filed with the applicant, other operators and/or their insurers. These procedures will be determined on an incident-specific basis.

**SP-2**

This issue was raised in the following letters: DEIS0114 and DEIS0229.

**ISSUE**

There is no proven method for oil spill cleanup during break up. Activity should not be permitted unless a proven method is produced.

**RESPONSE**

Containment and clean up of oil spilled to flowing waters such as Nigliq Channel, Fish Creek, and Ublutuoch River during break-up would be more difficult than during the rest of the year. Methods continue to be developed and tested, and ACS as well as other operators, including the applicant, continue to test equipment and procedures to improve capabilities. Using previous North Slope experience, the applicant would design, build and operate the facilities to minimize the risk of oil spills. In the very unlikely event of a large oil spill to a



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major flowing water course during break-up, the response crews would utilize their experience and training to mobilize personnel, equipment and materials to contain and clean up as much oil as practical, even after break-up is completed, if necessary.

As described in Sections 4.3.3.3 and 4.3.4, the oil that is not physically cleaned up from the environment would not result in population-level impacts, though there may be impacts to local habitats and resource individuals.

**SP-3**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

In Section 4.3.2, the discussion of drilling mud spills or drilling mud loss, the loss of muds during drilling of the HDD crossing of Colville River should be discussed.

**RESPONSE**

Section 4D.3.2 of the EIS discusses potential inadvertent loss of drilling muds under Construction Period, Pipelines.

**SP-4**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

There should be a reference to the DEC requirement that all crude oil transmission pipelines will have a leak detection system capable of meeting 18 AAC 75.055.

**RESPONSE**

The existing Alpine sales oil pipeline is in compliance with 18 AAC 75.055. The proposed project and alternatives do not add to or modify the existing Alpine sales oil pipeline. FFD alternatives would include extension of the sales oil pipeline to HPFs. Any extension(s) of the sales oil pipeline would be required to comply with 18 AAC 75.055, as is cited in Section 1.1.4.1 of the EIS. The authority for crude oil transmission pipeline leak detection systems has been added to the FEIS.

**SP-5**

This issue was raised in the following letter: DEIS0239.

**ISSUE**

The DEIS fails to analyze reasonable mitigation measures to prevent spills, including leak detection systems, and response measures to contain or clean up spills.

**RESPONSE**

Reasonable mitigation measures such as pre-staging spill materials, FLIR overflights, and automated monitoring systems are included in the EIS. Please refer to Sections 2.3.4.

**SP-6**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

2.3.4 Under the Regulator Requirements, the table lists Seawater lines as “ROW Lease.” This may or may not be true. CD 3 and 4 for example will have seawater lines not approved under ROW lease. They will be approved under a Unit Plan of Operations Approval. Monitoring is not a direct requirement of the Plan of Operations approval or mitigation measures. Monitoring is usually required by DEC as part of their spill plan and prevention approval.

**RESPONSE**

Table 2.3.4.1 has been modified in the FEIS to reflect the information provided in this comment.

**SP-7**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

2.3.4 Under the Pipeline column “Products” is listed. Assuming it’s not a Sales/Common Carrier line listed further below, it could either be 3 phase or the utility “products” line. This needs clarification as do all references to “product” or “drilling product” in this document. It states the regulatory requirements are “ROW lease” and that is not likely true in any case on state land. Again monitoring is not a direct requirement of the Plan of Operations approval or mitigation measures. Monitoring is usually required by DEC as part of their spill plan and prevention approval.

**RESPONSE**

Definitions of “products pipeline,” “subsoil pipelines,” and “product fluids” are presented in DEIS Section 2.3.2.1, Pipeline Design. Table 2.3.4.1 has been modified in the FEIS to clarify the regulatory requirements, as suggested.

**SP-8**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

Section 2.3.4.4 – Spill Detection Methods: Estimated flights – Are spill detection and summer helicopter use factored in the total number of flights?

**RESPONSE**

Non-operational helicopter flights have been added based upon the experience at existing Alpine facilities—about 2,500 flights per summer season. Non-operational helicopter flights include environmental studies, spill training, and agency and other tours. Section 2.3.10 has been updated in the FEIS to include estimates of non-operational helicopter flights.

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**6.3.2.31 Oil, Seawater, and Hazardous Materials Spills****OS-1**

This issue was raised in the following letter: DEIS0114.

**ISSUE**

BLM should conduct long-term studies of the effects of oil spills on North Slope habitat, wildlife and social issues.

**RESPONSE**

In the EIS, long-term studies were considered as a potential component of alternatives but eliminated from further detailed analysis (see Section 2.6).

**OS-2**

This issue was raised in the following letter: DEIS0233.

**ISSUE**

The EIS should include discussion of the probability and impact of spills of petroleum and other hazardous materials. The DEIS falsely claims there is a finite risk of spills.

**RESPONSE**

The DEIS and FEIS discuss frequency of spills in Section 4.3.2.4. The probability of spills is incorporated by reference in several places within Section 4.3.2. Impacts are described in several sections including Sections 4.3.2.5, 4.3.3., 4.3.4.6, and 4.3.4.7. The risk, probability or rate of spills is finite, in that it can be estimated and a finite value assigned to it.

**OS-3**

This issue was raised in the following letter: DEIS0233.

**ISSUE**

Estimates of oil spill risks should consider that reported volumes of past spills are almost always low. Some small spills go unreported.

**RESPONSE**

According to both the ADEC and the USEPA, the volume of oil spills reported in the ADEC's database are the volumes estimated or measured after the cleanup is completed. In addition, their empirical experience with the North Slope oil companies and the oilfield contractors has been that the initial reports are usually close to the final reported volumes. Also, the vast majority of spills are reported promptly and accurately because the consequences of not reporting are too severe. Any larger spill will likely be discovered and reported by someone. The very few spills that may not be reported immediately are probably very small to small (i.e., less than 100 gallons) and are on the pads or roads, thus eliminating or minimizing environmental impacts.

**OS-4**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

The DEIS uses different terminology for spill volumes than those used by other local NEPA documents. The document should use similar terminology to facilitate more meaningful comparisons among NEPA documents, otherwise, there should be a statement as to why similar terminology was not used.

**RESPONSE**

The volumes used in the FEIS are based on the pragmatic “rule of thumb” used by the ADEC in judging their response to spills. The very small (less than 10 gallons) and the very large (more than 100,000 gallons) categories were added to deal with the very likely and very unlikely spills. Factors of 10 are a convenient way to categorize spill volumes. For example, in the USCG’s Oil Spill Compendium (USCG 2003), oil spills are generally catalogued by factors of 10. In spill response, both the USCG and the USEPA use a volume scale based on factors of 10, although the two scales are different.

The spill size categories are defined for this FEIS in Section 4.3.2.3.

**OS-5**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Generally the spill section fails to present realistic potential impacts of the range of spills to the environment and wildlife.

**RESPONSE**

The types of potential impacts that may result from a range of spills of one or more of the variety of substances (described in Sections 4.3.3.2, and 4.3.4.2 through 4.3.4.4) that might be spilled are described in Sections 4.3.2.5, 4.3.3.3, and 4.3.4.5 through 4.3.4.7.

**OS-6**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Oil Spill impacts should be discussed realistically, and described fully. The probability of such spills should also be discussed.

No statistical analysis is presented to allow reviewers a real opportunity to assess the risk, albeit very low.

**RESPONSE**

The FEIS incorporates by reference the information and analyses presented in previous documents to the extent they are relevant. Specific detailed statistical analysis such as that conducted by Maxim and Niebo in the TAPS EA or the NRC Cumulative Effects Report has not been completed for the ASDP. For purposes of this FEIS, the potential rate and volume of spills was used to assess the impacts of a spill when the probability of that spill reached 1.0; i.e., the spill occurred. As described in Section 2.0, the applicant will be required to prepare ODPCPs for the new facilities and operations, and these will provide the methods and equipment needed to respond to spills.

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Throughout Section 4.3, the text refers to the rate or frequency of spills rather than the “probability or risk of spills,” to reflect the way that the ADEC’s data are used in the analyses.

**OS-7**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Lake processes are incorrectly characterized on numerous occasions which results in misinterpretation of the short and long term impacts from spills.

**RESPONSE**

Information about lake hydrology is located in Section 3.2.2.1.

**OS-8**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

The section on seawater spills should go into a bit more detail on how they differ in winter vs. summer and if there is anything that can be done if they impact the tundra (i.e., revegetation, flushing, vacuum truck).

**RESPONSE**

Edits have been made throughout Section 4.3 in response to several comments, including this comment. The response actions are contained in the ODPCPs which are described in Section 2.3.4.

**OS-9**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Transport and impact of spills in strong weather conditions should be discussed. Spills in broken ice conditions present significant problems.

**RESPONSE**

In response to several comments, numerous edits and additions have been made to the DEIS in Sections 4.3.2.5, 4.3.3, and 4.3.4.4.

Containment and clean up of oil spilled to flowing waters such as Nigliq Channel, Fish Creek, and Ublutuoch River during break-up would be more difficult than during the rest of the year. Methods continue to be developed and tested, and the ACS as well as other operators, including CPAI, continue to test equipment and procedures to improve capabilities. Using the previous North Slope experience, the applicant would design, build and operate the facilities to minimize the risk of oil spills. In the very unlikely event of a large oil spill to a major flowing water course during break-up, the response crews would utilize their experience and training to mobilize personnel, equipment and materials to contain and clean up as much oil as practical, even after break-up is completed, if necessary.

As described in Sections 4.3.3.3 and 4.3.4, the oil that is not physically cleaned up from the environment would not result in population-level impacts, though there may be impacts to local habitats and resource individuals.

**OS-10**

This issue was raised in the following letters: DEIS0236 and DEIS0242.

**ISSUE**

Effects of spills to subsistence users likely would be much more long-term than presented. Subsistence users are very sensitive to contamination related to their foods and have shown a propensity to avoid foods with extremely low levels of contamination once it was determined that any contamination was present at all, even at levels acceptable to government agencies.

Page 4.3-37 The effects of large spills to subsistence harvest patterns seems greatly underestimated. The statement is made that traditional practices could be curtailed for “at least an entire season.” Avoidance by users of areas heavily oiled or of fish and other resources that pass through areas heavily oiled would likely be long term. Our people are understandably sensitive to the possibility of contaminants in our food. Some communities have shown a reluctance to utilize traditional foods even after being given assurances of their safety by outside agencies.

**RESPONSE**

For the FEIS, appropriate edits have been made in Sections 4.3.3.3 and 4.3.4.7.

From a technical “protection of human health” perspective, the resources may meet all the government agency regulations regarding safety for ingestion or dermal contact, in a relatively short time after the spill has been cleaned up. Often, one of the end points for determining that the cleanup can be terminated is that the food resources, water quality, and essential habitat variables meet government agency requirements for the protection of human health. These standards are typically based on physiological criteria, and not on cultural perceptions.

Scientifically measurable quantities of contaminants in subsistence species, Traditional Knowledge criteria, and the perception of contamination by subsistence users are independent components contributing to the decision by subsistence users to harvest a resource. Subsequent to harvest, Traditional Knowledge-based criteria are used to determine the fitness of the harvested resource for consumption, and the appropriate or safest method for preparation, consumption, distribution, and storage. In the case of contamination that shows no outward symptom or sign (e.g., PCBs, radioisotopes, and heavy metals), the perception of contamination is the basis for a behavioral response by subsistence users (Usher, Baikie, Demmer, Nakashima, Stevenson, and Stiles 1995). This does not reflect a lack of sophistication on the part of subsistence hunters, rather a lack of the scientific tools and strategies (e.g., field test kits) for addressing a novel risk. Where the contamination event is undeniably evident, as in the Exxon Valdez oil spill, behavioral responses by subsistence users may be dictated by a number of other factors, such as resource availability, resource health, financial resources, and regulatory constraints (Fall and Utermohle 1999, Fall, Miraglia, Simeone, Utermohle, and Wolfe 2001).

An illustrative example is the harvest of caribou, wherein a slow or weak animal, as demonstrated by a failure to try to flee hunters, is considered to be unhealthy, independent of scientifically testable notions of contamination. Contamination by chemicals is only one possibility for this behavior, which may also stem from natural causes such as parasite overload, brucellosis, starvation, or injury (Usher et al. 1995). With no local expertise in environmental toxicology and no means to definitively test subsistence resources, the cumulative experience of generations of subsistence resource users is the final arbiter of the fitness for consumption of a resource. Traditional Knowledge of caribou health would direct the hunter to look for morphological anomalies in the meat and organs of the harvested animal to determine the fitness of the harvested animal for human or domestic animal consumption (Usher et al. 1995, Fall et al. 2001). Inupiat hunters interviewed in 2003 approached these anomalies based on their judgment and experience, with some choosing to discard some or all

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of a caribou found to be sick after harvest while others selectively removed parts deemed unfit for consumption (SRB&A 2003).

For all resources, the perception of contamination in the absence of testing (e.g. abscesses, pus spots, discoloration, anatomical deformity, and taste), or the tested presence of contaminants at levels deemed acceptable by the government, may discourage resource users from harvesting and consuming the resource for multiple harvest seasons. If harvesters perceive the resource habitat or traditional harvest location to be contaminated, they may go further from the community or traditional harvest location to harvest uncontaminated resources (Fall and Utermohle 1999). Ten years after the Exxon Valdez oil spill, a partial harvest recovery has occurred for some species, but a number of important subsistence resources have not recovered in harvestable numbers in traditional harvest areas. The result of this change has been shifts in species emphasis, the need to purchase some formerly subsistence foods to reinforce perceptions of safety, and the need to expend more time, effort, and money pursuing resources at more distant locations with greater commensurate accident risks for some modes of travel (Fall and Utermohle 1999, Fall et al. 2001). One positive response, in the case of the Alutiiq, was a reinforcement of traditional social networks and recognition of traditional cultural values in the face of a catastrophic event.

### **OS-11**

This issue was raised in the following letter: DEIS0239.

#### **ISSUE**

Because of the proximity to the Colville River, as well as tributaries of Fish Creek, it is crucial to address spill prevention and response prior to completing the FEIS.

#### **RESPONSE**

Contingency plans are required by state and federal law. State ODPCPs are reviewed for consistency with state laws including the ACMP, and are approved prior to the issuance of any permits for project construction. The DEIS discusses spill prevention and response in Section 2.3.4.

### **OS-12**

This issue was raised in the following letter: DEIS0200.

#### **ISSUE**

Section 4.3.1, Page 4.3-5, Para. 2nd, Sent. 5th: The probabilities listed for those oil spill size categories were not in the Record of Decision as cited (BLM and MMS 1998b) or supported by the Northeast National Petroleum Reserve-Alaska Final IAP/EIS (BLM and MMS 1998).

#### **RESPONSE**

The reference has been deleted from the FEIS, and the suggested edits have been incorporated into the text.

### **OS-13**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section 4.3.2.1, Page 4.3-5, Para. 3rd bullet: Define the usage of the word “risk.” The typical definition of risk is probability multiplied by consequence. It seems from the context as though the text is discussing the chance of occurrence of a spill rather than the probability of a spill times its consequence.

**RESPONSE**

Except where referring to a risk assessment or risk analysis conducted in another document, risk *sensu stricto* has been deleted in the FEIS. Probability *sensu stricto* has also been deleted, except for where it refers to analyses conducted in other documents. For this FEIS, rate or frequency of occurrence is used to describe the chances of a spill occurring. Section 4.3 has been edited to reflect this comment as well as similar comments garnered during the Preliminary DEIS review.

**OS-14**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section 4.3.2.3 Potential Sources of Spilled Materials, Page 4.3-11: Because this is an analysis of development projects, you should be able to make estimates of the maximum sizes of different sources of spills based on the sizes of tanks (vehicle or production) or the diameter of the pipeline for a guillotine or a leak. The estimates may be different for diesel lines and produced fluids.

**RESPONSE**

In Section 4.3.2.3, under Potential Sources of Spilled Material, Sections 2.3.3.1 and 2.2.12.3 are referenced for the maximum size of storage tanks, which implies the maximum size of a potential spill.

An estimate of maximum sizes of spills from pipelines is provided in Table 4.3.3-1. As shown in Table 4.3.3-1, the maximum size of a diesel spill is substantially less than that of produced fluids or saltwater spills.

**OS-15**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Table 4.3.2-1, Page 4.3-13: What was the relative potential risk for spills from main sources based upon?

**RESPONSE**

The table now displays the “Relative Rate of Occurrence for Spills from Main Sources” rather than relative risk. The relative ranks are based on past experience of several ENTRIX personnel with extensive oil spill experience with spills, peer-reviewed and “gray” literature, the USCG’s spill reports, etc. The assessment is a subjective evaluation and the categories are relative to each other in the North Slope context.

**OS-16**

This issue was raised in the following letter: DEIS0200.



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**ISSUE**

Table 4.3.2-2, Page 4.3-13: The information shown in the right-hand column is the spill rate – not the probability. The spill rate shown is per million gallons oil transported – not billion barrels (Bbbl). Based on the information in the table, the spill rate for crude oil would be approximately 107 spills/Bbbl transported.

**RESPONSE**

The referenced text and table have been revised accordingly for the FEIS.

**OS-17**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section 4.3.2.4 Risk of Various Spills, Page 4.3-14, Para. 1st: The information provided is not the probability of a spill. It is the estimated spill rate. The spill rates in Table 4.3.2.2 are not per Bbbl but rather per million gallons. To estimate the chance of a spill occurring, you would multiply the spill rate times the estimated volume produced to determine a mean spill number and apply a Poisson distribution to estimate the chance of one or more spills occurring.

**RESPONSE**

For the FEIS, the text and table in Section 4.3.2.4 have been revised accordingly.

**OS-18**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section 4.3.2.4 Crude Oil, Page 4.3-14, Para. 2nd, Sent. last: The large pipeline spill of 2,800 bbl was called a “very large” spill and was analyzed in Appendix B of the Northeast National Petroleum Reserve-Alaska IAP/EIS. Please change the wording to reflect the correct spill size categorization.

**RESPONSE**

For the FEIS, the text in Section 4.3.2.4 has been revised accordingly.

**OS-19**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section 4.3.2.4 Crude Oil, Page 4.3-15, Para. 1st Bullet: Risk is not the percentage of records of that size in the ADEC database.

**RESPONSE**

For the FEIS, the text in Section 4.3.2.4 has been revised to reflect that this is a rate of occurrence.

**OS-20**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section 4.3.2.4 Crude Oil, Page 4.3-15, Para. 2nd Bullet: See Hart Crowser Inc. (2000), Estimation of Oil Spill Risk from Alaska North Slope, Trans Alaska Pipeline and Arctic Canada Oil Spill Data Sets for a historical list of large spills on the Alaska North Slope.

**RESPONSE**

The historical record of North Slope large spills is discussed in Section 4.3.2.2 of the DEIS and detailed in several other reports which are incorporated by reference.

**OS-21**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section 4.3.2.4 Crude Oil, Page 4.3-15, Para. 2nd Bullet: Risk is not the percentage of records of that size in the ADEC database.

**RESPONSE**

For the FEIS, the text has been revised to reflect that this is a rate of occurrence.

**OS-22**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section 4.3.2.5, Page 4.3-16: Since oil encountered in the Alpine development fields may be similar to the oils in the rest of the Northeast National Petroleum Reserve-Alaska, the report by Leirvik, F., T.J. Schrader, and M.O. Moldestad, Weathering Properties of Endicott, Milne Point Unit, High Island Composite, the Alpine Composite, the Neptune Composite and Northstar Oil Samples (2002) may be useful to your discussion of the behavior and fate of spilled oil by allowing you to tailor the discussion more specifically to the proposed development projects. We have forwarded the report on CD for your use.

**RESPONSE**

The relevant information has been incorporated into Section 4.3 of the FEIS.

**OS-23**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section 4.3.2.5, Page 4.3-16: Much of this information has been previously presented in other EISs. We suggest you incorporate by reference and summarize.

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**RESPONSE**

This is a summary of many other documents. A previous version was much shorter, but was not deemed adequate even with references to other documents.

**OS-24**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

S4.4.4 Alternative A, page S-19. In the 3rd paragraph the low probability of large spills is stated. This should be mentioned earlier at S.4.1

**RESPONSE**

The suggested edits have been made for the FEIS.

**OS-25**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Remove all references to spilled halon (gas). Freshwater/bentonite is drilling mud.

**RESPONSE**

Edits have been made for the FEIS. These materials are in the ADEC database and do constitute part of the history. BLM did not undertake a detailed revision of the ADEC database to take into account all the changes in operations on the North Slope, changes in reporting compliance, and other inconsistencies in the database. It is noted in the FEIS that these additions and deletions to the database may have changed the details, but not the outcome, of the analyses.

**OS-26**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Page 4.3-8, 1st paragraph. Please clarify what the Alpine incident was. It doesn't make sense as written.

**RESPONSE**

Text in Section 4.3.2.1 has been added to the FEIS to clarify the incident.

**OS-27**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Page 4.3-8, 2nd paragraph. In the 2nd line, I would substitute "a well" for boring.

**RESPONSE**

The suggested revision was made to Section 4.3.2.1 for the FEIS.

**OS-28**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Page 4.3-11, last paragraph. There is a discussion of a new sales oil pipeline from the plan area that may not have been mentioned in Section 2.

**RESPONSE**

Text has been clarified in Section 2.3.2 for the FEIS.

**OS-29**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Page 4.3-18, Fate and Behavior of Spills on Tundra. In this paragraph, the fact that the tundra likely has a standing water column is not considered. If the tussocks are drained, then oil could penetrate into them, However, if there is standing water, then oil would settle on top as it is of lighter density.

**RESPONSE**

For the FEIS, the text has been revised to include the substance of this comment.

**OS-30**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Page 4.3-19, middle of page. Seawater can penetrate the standing water due to density. It is possible to freeze seawater. However, it is not likely to become less mobile quicker than oil. The oil will get viscous as the temperature falls and could be pretty thick before seawater would freeze.

**RESPONSE**

The text has been revised for the FEIS to address this comment.

**OS-31**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Section 4.3.4.1, 2nd paragraph. Is this unknown spill DS4-19? It is stated that there was a 92,400 gallon produced water spill at APF-1 in April 2001 which we believe to actually be a large produced water spill at Kuparuk CPF-1, not at Alpine.

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**RESPONSE**

The VLVS of salt water was at the DS-2 surface broach in March 1997. The ADEC provided a summary of the investigation report and the essential information has been incorporated into the FEIS. The 92,400 gallon spill was at Kuparuk CPF-1. This correction has been incorporated into the FEIS.

**OS-32**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Page 4.3-42, Winter Season. It is important to remember that all fluids are relatively warm/hot. The coolest temperature is likely 80 degrees F.

**RESPONSE**

The text has been revised accordingly for the FEIS.

**OS-33**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 4-3-3. Section 4.3 Impacts of Oil, Seawater and Hazardous Materials Spills: The North Slope Borough Science Advisory Committee (SAC-OR-130) reviewed oil spill probability models for the Beaufort Sea. They found several problems with these, not the least of which was a lack of statistical inference for the estimates. The oil spill estimates in this DEIS (e.g., 4.3.2-2) also do not mention variability or standard error at all. Estimates of spill probabilities without confidence intervals are not very useful. Variability must be included in the input variables. As a basis for a statistical risk assessment of a potential oil development, the EIS is inadequate in its present form. A "bottom line" statement of interest to managers is: What is the probability of a spill equal to or greater than some amount, say 500 barrels for example, and what are its 95% confidence limits? Of most interest to managers and the North Slope residents are the upper limits of such estimates.

**RESPONSE**

The BLM incorporated by reference the several statistical and probabilistic analyses of the risk of spills on the North Slope, rather than repeat them. In the DEIS, the BLM implemented a simplified and practical assessment of the rate and likelihood of spills of various sizes, based on the practical experience of the North Slope oilfields to date.

The impact analysis is based on the premise that the key questions for the environmental managers and agencies are: "How small or big are the most likely and least likely spills?", "What is the potential impact when the probability of a spill reaches 1.0; i.e., it occurs?", and "Are the appropriate preventative, containment and cleanup measures in place to deal with the potential spills?" That is, most environmental management decisions are focused on the prevention or consequences of spills that occur, rather than on probabilities of occurrence.

**OS-34**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

The DEIS does not consider sabotage among the risk factors for oil spills in Alaska. Sabotage is, in fact, responsible for the two largest oil releases from pipelines to date. See DEIS0236 for excerpt from SAC-OR-130 (p.26, Section 6. Additional Concerns. Sabotage as a spill risk factor.) Because the DEIS failed to analyze the known risk of sabotage and appropriate design features to address this risk, it provides inadequate oil spill prevention analysis.

**RESPONSE**

In SAC-OR-130, Maxim and Niebo did describe the characteristics of two “sabotage” events related to the North Slope oil infrastructure. However, they did not attempt to analyze the probability risks of sabotage *sensu lato* because there are inadequate data available to do so, and because a public document is not the appropriate place to describe either sabotage risks nor the measures (e.g., design, operation security, surveillance, etc.) taken to prevent sabotage events (Maxim, pers. comm., April 29, 2004).

The DEIS did not attempt to differentiate among the causes of spills (e.g., equipment failure, truck accidents, human error, overfilling tanks, sabotage) but focused on the potential types, sizes, sources and locations of spills. A spill resulting from sabotage may occur at any of several locations from pads to remote pipelines. The impacts would not likely be different than those from accidental releases, and are thus adequately covered in Section 4.3.

However, text noting that sabotage is a possible cause of spills has been added to the FEIS in Section 4.3.

**OS-35**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4.3-8: The mention of a release of 24,654 gallons in March 1999 was not associated with drilling an oil well. This was a drilling mud spill that occurred while drilling the Horizontal Directional Drilling (HDD) crossing of the Colville River to accommodate a buried section of the cross-country pipelines. The sentence should be removed or revised by adding additional detail so that the reader does not assume this spill was related to oil production.

**RESPONSE**

Appropriate edits have been incorporated into the FEIS.

**OS-36**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4.3-11: Potential Sources of Spilled Material, second bullet: the statement that MI would dissipate as a gas if released is not necessarily true. Fluid characteristics of MI vary depending on the requirements of the reservoir and some may be more liquid than gas.

**RESPONSE**

For the FEIS, the text has been revised to indicate the range of characteristics and consequences.

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**OS-37**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4.3-13: Table 4.3.2-2, units in both footnote "d" and the heading of column #5 may be incorrect making the values in the column incorrect. Footnote "d", states, "...approximately 156,000,000,000 gallons of oil were transported. The probability in column 5 is based on dividing the number of records (column 2) by 156,000". The heading in column 5 is "Probability (per Bbbl oil...)". If the probability was determined based on billion barrels (Bbbl) of oil transported, then the denominator as discussed in the footnote should be "3.7", because 3,714,285,714 bbl of oil were transported. If the footnote is correct, then the heading in column 5 should be "per Million gallons of oil..." Finally, if the table is revised, then the first paragraph on Page 4.3-14 should also be revised to discuss the correct units.

**RESPONSE**

For the FEIS, the suggested edits have been made.

**OS-38**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

On Page 4.3-40, Section 4.3.4.2, in the last paragraph, first sentence, there is reference to "...the ADEC blowout default values of 231,000 gallons per day for 30 days..." There is no "ADEC default" value for the duration of a blowout, as this sentence indicates. The "30 days" is a federal (EPA, MMS) blowout duration value used to calculate the "Worst Case Discharge." The EPA-required WCD value of 228,300 bbl is a combination of the 30-day flow rate of the highest producing well (7,500 bbl x 30 days) at Alpine plus the volume of the largest oil storage tank (3,300 bbl) at Alpine. See DEIS0238 for additional specific revision suggestions.

**RESPONSE**

The appropriate edits have been made in the FEIS in response to this comment.

**OS-39**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4.3-47: Mitigation Measures, first bullet. Vertical loops are not recommended for produced fluid pipeline because these 3-phase fluids can cause slugging.

**RESPONSE**

Vertical loops are appropriate mitigation measures for product and seawater pipelines.

**OS-40**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

S.4.1 1st paragraph. The context here is that the construction and drilling phases are separate, while in fact they may be simultaneous. A qualified statement is made later in the document.

**RESPONSE**

The text has been revised accordingly for the FEIS.

**OS-41**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

S.4.1 3rd paragraph. Later in the document it is stated that a VLVS is highly unlikely. Such a statement should be included here.

**RESPONSE**

The text has been revised accordingly for the FEIS.

**6.3.2.32 Permafrost**

**EP-1**

This issue was raised in the following letter: DEIS0239.

**ISSUE**

The EIS contains virtually no information about existing permafrost characteristics of the tundra, no maps showing ice richness, depth, etc.

**RESPONSE**

Quantification of active layer depth, permafrost thickness, and permafrost temperature and rate of warming due to climate change has been added to the FEIS (see Section 3.2.1.3, Permafrost). Correlation between geomorphologic units and characteristic ice structures, ice volumes and potential for thaw settlement is discussed. A map of geomorphologic units in a section of the Plan Area has also been added.

**6.3.2.33 Physiography**

**PY-1**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section 3.2: The EIS should include a description of the shoreline environmental sensitivity index types along the plan area coast and the Colville Delta.



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**RESPONSE**

Figures were added to the FEIS that show the shoreline environmental sensitivity index, and text was added in Section 3.2 to introduce such figures.

**PY-2**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section 3.2.1.1 Coastal Zones, Page 3-5, Para. 2nd Full, Sent. last: Please clarify if the “extreme tidal fluctuations” referred to are storm surge. If so, please use the term “storm surge.” Tides in the Beaufort Sea are typically small.

**RESPONSE**

The term “extreme” in this section has been deleted for the FEIS, and the text has been revised to indicate that the coastline is subject to minor tidal fluctuations of about 1 foot.

**PY-3**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

S.4.2.1 Physiography. Does the term intrusive used here mean “covered”?

**RESPONSE**

For the FEIS, the term “land-intrusive” has been deleted from Section 4.2.1, and the text has been revised to clarify the meaning.

**6.3.2.34 Pipelines****PL-1**

This issue was raised in the following letters: DEIS0082, DEIS0083, DEIS0114, DEIS0261, and DEIS0263.

**ISSUE**

CPAI stated in meetings in Nuiqsut that pipelines would be at 7ft high, however the DEIS proposes pipelines at 5ft high.

**RESPONSE**

The applicant originally proposed pipelines at 5 feet-high, as presented in Section 2.4.1 (Alternative A). Section 2.4.6 (Alternative F – Preferred Alternative) proposes that pipelines be 7 feet-high (measured at the VSMs).

**PL-2**

This issue was raised in the following letter: DEIS0229.

**ISSUE**

The Preferred Alternative in the EIS should stipulate aboveground pipeline height at a minimum of 10 feet, as measured from the ground to the bottom of the pipe.

**RESPONSE**

Elevating pipelines to greater than 7 feet, including to as much as a 10-foot minimum, is discussed in Section 2.6.2.

**PL-3**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Page 2-6. 2nd paragraph. The potential for gas is discussed and it is stated that “gas impacts” are reasonably within the scope of the analysis. If gas were to be transported a pipeline would be necessary. This would likely be in the FFD case where the need for an additional oil sales line from the area is mentioned.

**RESPONSE**

Sale of gas is speculative and thus excluded from the analyses of the applicant’s proposed action and the other alternatives.

**PL-4**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

2.3.2.2 Saddles are mounted to HSMS not VSMS. Fix at the end of the 3rd sentence, 2nd P.

**RESPONSE**

The reference to VSMS in Section 2.3.2.2 has been changed to HSMS as appropriate for the FEIS.

**PL-5**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

2.3.2.4 First complete sentence. Abandonment would occur when the cost of producing and transporting oil exceeds the market value of the oil.

**RESPONSE**

Production would cease if the costs mentioned exceeded the market value. Abandonment would not necessarily occur. Abandonment decisions are also associated with the anticipated duration of the cost versus market value scenarios. For the FEIS, the text in Section 2.3.2.4 has been modified to indicate that abandonment would occur when the cost of producing and transporting oil exceeds the market value of the oil, and that inequity is projected to persist.

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**PL-6**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

2.3.2.4 First bullet. Removal of VSMs to one foot has no basis. The fact that the active layer can be as deep as 3 feet suggests a deeper standard than even 3 feet. To do otherwise may mean that BLM or the State of AK. would quite possibly be in the business of removing those VSM's that jacked up after field abandonment. Within the State and industry, there are two positions on the issue. Remove the entire VSM or cut them off below the active layer. The bulleted statement should be revised to be more in conformance with the statement in the last sentence of the second paragraph of the same page. It should be up to the managers at the time of abandonment to decide between the various options of cutting them off at different depths vs. complete removal.

**RESPONSE**

For the FEIS, the text has been changed to remove structures to a depth that would prevent frost-heave action, lifting the remnant to the surface.

**PL-7**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

2.3.2.4 Second bullet. Buried pipelines are often filled with a slurry to keep them from collapsing over time and thus creating sink ditches. This could very possibly be a regretful statement. For one, it is possible that the most cost effective and environmentally beneficial thing to do would be to abandon all the fields on one schedule. It could also be true that a company would be willing to produce at a loss to delay cleanup costs until other fields are done as well. This statement could create situations where vital infrastructure in the eastern planning area is committed for removal while fields to the west are still producing.

**RESPONSE**

The timing and precise steps and methods of abandonment and rehabilitation activities will be determined through abandonment planning and does not preclude the actions suggested by the comment.

**PL-8**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

The DEIS should clarify why the VSM size has decreased from 42 inches used for the Alpine Sales pipeline to 10-24 inches for the CD-4 pipeline. Ice jam, flooding, and other environmental risks are identical.

**RESPONSE**

The CD-4 VSM pipelines range in size from 12 to 40 inches in diameter, the same as the existing Alpine pipeline VSMs, since they use the same design criteria. The existing Alpine pipelines do not have any 42-inch diameter VSMs at any point in their entire alignment. Pipeline loads are not the primary factor influencing VSM sizes in the Delta, ice forces are. For the FEIS, the referenced text in Section 2.3.2.2 has been modified to reflect the correct sizes.

**PL-9**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 2-9: Pipeline Design. Revise pipeline sizes to match permit application drawings (decreased lower limit of some ranges).

**RESPONSE**

For the FEIS, pipeline sizes in Section 2.3.2.1 have been changed to 16- to 24- inch diameter for three phase production lines; 6- to 10-inch diameter for MI lines; 8- to 14-inch diameter for seawater injection lines; and 6-inch diameter for lift-gas lines. The changes were based on Section 7.3 of the ASDP's permit applications (CPAI 2004a).

**PL-10**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 2-20: The sentence "This type of pig would be used for maintenance of all pipelines except the products line", is incorrect. Maintenance pigging equipment will be installed on the production pipeline, the water injection pipeline, and the products line; but not on the gas line. Page 2-21: CPAI does not maintenance pig lean gas or miscible injectant (MI) lines at Alpine and does not plan to perform maintenance pigging of gas lines at future developments.

**RESPONSE**

For the FEIS, Section 2.3.4 has been modified to indicate that the gas and MI pipelines would not be cleaned by maintenance pigs.

**PL-11**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 2-22: Maintenance pigging of the product line is performed quarterly. Table 2.3.4-1 indicates the task is performed monthly.

**RESPONSE**

Table 2.3.4-1 (see Section 2.3.4) has been revised for the FEIS to reflect the quarterly maintenance schedule.

**PL-12**

This issue was raised in the following letters: DEIS0159, DEIS0198, DEIS0207, DEIS0208, DEIS0209, DEIS0211, and DEIS0217.

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**ISSUE**

Alternative A should be changed to locate all power cables on VSM-mounted cable trays and the pipelines built 7 feet above ground. Pipelines should be coated to reduce glare from light reflection.

**RESPONSE**

Alternative A (see Section 2.4.1) proposed power poles between CD-6 and CD-7 and pipelines elevations of at least 5 feet. Alternative F (see Section 2.4.6) proposed that all power cables be located on VSM-mounted cable trays and that all pipelines be built at least 7 feet above the ground (measured at the VSM). The use of coated pipelines (non-reflective surface) has been proposed under all alternatives (see Section 2.3.2.1).

**PL-13**

This issue was raised in the following letters: DEIS0159 and DEIS0261.

**ISSUE**

BLM should consider alignment of the pipeline, powerline and roads along a single right-of-way while maintaining adequate separate for caribou migration.

**RESPONSE**

The suggested alignment was considered. Alternative F (Section 2.4.6) combines powerlines on pipeline VSMs. The pipelines would be in alignment with roads, with a separation for caribou migration.

**PL-14**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The EIS must clarify the meaning of “project” in reference to the 5 new pads and FFD.

**RESPONSE**

For the FEIS, the term “project” refers only to the five new production pads proposed by the applicant.

**PL-15**

This issue was raised in the following letter: DEIS0216 and DEIS0236.

**ISSUE**

Roadless alternatives are discussed in the DEIS, however, their design criteria are unnecessarily burdensome. Relief rigs are not necessary for blowout response on the North Slope, so roadless development should not require a 5,000 foot airstrip to support year round drilling.

**RESPONSE**

The EIS describes a range of reasonable alternatives. It incorporated relief rig capability because the BLM prefers not to foreclose possible use of this technology for stopping well blowout. This scenario would also allow analysis of impacts from a larger airstrip footprint, and the associated impacts have been expressed to the

public. This analysis would not preclude adopting a different scenario (and associated shorter airstrips) if the permitting agencies conclude that relief rig capability is not a necessary option.

**PL-16**

This issue was raised in the following letters: DEIS0216, DEIS0241, and DEIS0242.

**ISSUE**

Page 2-68, Section 2.4.4, Alternative D. Alternatives D-1 and D-2 include a HDD pipeline crossing of the Nigliq channel. According to information relayed to us by the applicant, this may not be a practical method from an engineering perspective, due to slugging and pressure differentials associated with 3-phase lines. These concerns should be discussed in these alternatives, or the alternatives modified in the FEIS.

**RESPONSE**

In the DEIS, slugging was viewed as a technical challenge but not as an infeasible barrier. For the FEIS, text that explains how elevation changes in pipelines carrying multiple phase fluids can cause slugging (a phenomena where denser fluid accumulates dense fluid through the low point in a “slug” or surge) was added. It is also noted that during design and installation of the pipeline, elevation changes and pipeline angles would be minimized to reduce slugging potential. The text also identifies that the existence of a low point in the HDD segment cannot be eliminated and thus would present a potential slugging problem.

Due to concerns related to slugging, the use of HDD pipeline-crossing for 3-phase lines was excluded from Alternative F – Preferred Alternative (see Section 2.4.6).

**6.3.2.35 Processing Facilities**

**PF-1**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

2.3.12.1. The correct coverage needs to be confirmed. The Alpine development is composed of CD-1, the airstrip, remaining road to CD-2 and CD-2. As I understand, the total covered area for all 4 components is about 100 acres. I believe the 36.3 acres is correct just for the CD-1 component.

**RESPONSE**

The referenced text was meant to be specific to just CD-1. For the FEIS, the text has been modified to clarify the distinction between all existing Alpine facilities, the existing Alpine pads, and the CD-1 or APF pad.

**PF-2**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Page 2-35, 2.3.12. The acreage of CD-1 is given at 36.3. This same value is used later in the document when the new APFs are mentioned. The airstrip is also mentioned. Wouldn't it be appropriate to give the coverage for it as well?

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**RESPONSE**

The referenced text was meant to be specific to just CD-1. For the FEIS, the text has been modified to clarify the distinction between all existing Alpine facilities, the existing Alpine pads, and the CD-1 or APF pad. The total area permitted by the USACE is 112.302 acres (including the airstrip); of this total, 36.3 acres is for CD-1, and 10.1 acres is for CD-2.

As stated in DEIS Section 2.3.13.3, the BLM has assumed that HPF-1 and HPF-2 would be comparable in size and other design aspects to APF-1.

**PF-3**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Page 2-35, footnote. Is it important to note that there is no Class I hazardous waste well on the North Slope.

**RESPONSE**

For the FEIS, the referenced footnote has been revised to indicate that there are no Class I hazardous wells on the North Slope, and that there are a total of seven Class II non-hazardous waste wells on the North Slope at the present time.

**PF-4**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Page 2-38, top. For the new facility pads Class I and Class II disposal wells may be possible.

**RESPONSE**

For the FEIS, Section 2.3.10.5 has been modified to acknowledge that additional Class I and/or Class II disposal wells could be included under FFD alternatives. The applicant's proposed action would not include any new Class I or Class II disposal wells.

**PF-5**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

2.3.12.1 – Existing Alpine facilities (CD-1 and CD-2): In February 2001, the Corps of Engineers authorized the discharge of fill into 98.4 acres of wetlands for the construction of the Alpine facilities (CD-1, CD-2 and associated features). Subsequent authorizations bring the total authorized fill at Alpine to 112.302 acres. The Draft EIS consistently understates the amount of impacts of this existing project. This section states the “total acreage for CD-1 is 36.3 acres; the total acreage for CD-2 is 10.1 acres.” This is incorrect, totally misleading to the reader, and needs to be corrected in the Final EIS.

**RESPONSE**

The referenced text was meant to be specific to CD-1 and CD-2 only. For the FEIS, the text has been modified to clarify the distinction among all existing Alpine facilities, the existing Alpine pads, and the CD-1 or APF pad and CD-2 pad. The total area permitted by the USACE is 112.302 acres (including the airstrip); of this total, 36.3 acres is for CD-1, and 10.1 acres is for CD-2.

**PF-6**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 2-36 and Table 2.3-12-1. The paragraph starting “ACX Project 3, or ACX 3, is necessary to operate the five production pads proposed in the CPAI development plan” is inaccurate based on continuing engineering studies. See DEIS0238 for specifically suggested replacement text.

**RESPONSE**

The suggested language has been incorporated into the FEIS in Section 2.3.12.2. Table 2.3.12-1 has been modified also.

**PF-7**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 2-38: First full paragraph, second sentence. Discussion about facilities prohibited within 500 feet of water bodies should specify this is a stipulation for BLM lands only.

**RESPONSE**

For the FEIS, the referenced sentence has been modified to indicate that the stipulation applies to the BLM’s land.

**PF-8**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Page 2-48, Table 2.4.1-6. The potential APFs are listed as APF-2 and APF-3 and the gravel coverage is the same as APF-1.

**RESPONSE**

As stated in EIS Section 2.3.13.3, the BLM has assumed that HPF-1 and HPF-2 would be comparable in size and other design aspects to APF-1.

**PF-9**

This issue was raised in the following letter: DEIS0242.



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**ISSUE**

Page 2-36, 1st paragraph. The CPAI Development Plan is mentioned here. The correct reference should be the Alpine Satellite Development Plan or ASDP. There are a number of other places in the document where the same reference is made. It is not appropriate to have multiple references to what seems to be the same plan.

**RESPONSE**

In the FEIS, references to the CPAI Development Plan were kept in the document for the purposes of differentiating CPAI's proposed plan from the FFD Scenario. Alpine Satellite Development Plan (ASDP) is used when referring to the entire project (CPAI and FFD), or referring to the project in general.

**6.3.2.36 Production Pads****PP-1**

This issue was raised in the following letter: DEIS0204.

**ISSUE**

The injection of waste mud and cutting fluids through the annular 13-3/8 casing should be restricted when the possible injection zone varies from 2,500 feet to 5,000 feet. There are abundant abandoned wells to use for waste cutting fluids injection.

**RESPONSE**

Information regarding injection of waste mud and cutting fluids was provided in the DEIS in Section 2.3.3.3.

**PP-2**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Gravel pad sizes are currently being revised due to erroneous assumptions of area and thickness in the DEIS.

**RESPONSE**

For the FEIS, the gravel pad sizes have been revised, based upon additional information received from the applicant (see Section 2).

**PP-3**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Gravel numbers in the DEIS are not consistent throughout the document.

**RESPONSE**

For the FEIS, gravel quantities have been revised throughout the document, based upon additional information received from the applicant.

**PP-4**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Page 2-13, 2.3.3.1. In the end of the 2nd paragraph, the sentence should read, “The existing APF CD-2 production pad is presented in Figure 2.3.3.1-3.” On the figure, it may be appropriate to present some overall dimensions. The figure title is missing some letters.

**RESPONSE**

The word “is” was added to the referenced sentence in Section 2.3.3.1. The referenced figure was replaced with actual proposed pad layouts for CD-3 and CD-4 for the FEIS.

**PP-5**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

2.3.3.1 Bullet discussing permanent radio transmission towers. It states that all permanent towers would be triangular self-supporting towers with 9-foot wide bases. This may be too specific as there are a variety on the slope designed to address several variables.

**RESPONSE**

The referenced text in Section 2.3.3.1 has been modified for the FEIS to indicate that other designs (proven adequate via previous North Slope use) could be chosen.

**PP-6**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Page 2-15. In the “non-road” pad discussion a diesel tank in the rig structure is mentioned. All rigs have a diesel tank within the structure.

**RESPONSE**

Section 2.3.3.1 of the FEIS clarifies that drill rigs with diesel tanks (built as a part of the drill rig structure) would be available at both road-connected and non-roaded pads. Text also notes that in addition to all temporary storage tanks available at road-connected pads, non-roaded pads would be equipped with two 25,200-gallon (600 bbl) brine and one 25,200 gallon (600 bbl) fresh water tanks.

**PP-7**

This issue was raised in the following letter: DEIS0242.

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**ISSUE**

Page 2-17, 2.3.3.3. In the last paragraph, the possibility of a new Class II well at one of the production pads is mentioned. This conflicts with statements made later in the document and is not what CPAI has presented. In the ASDP Alternative A, no new disposal wells are planned.

**RESPONSE**

Section 2.3.3.3 of the FEIS confirms that no new Class II wells are included in the applicant's proposed action. The FEIS notes that FFD alternatives include additional Class II wells at the HPFs.

**PP-8**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

While it is correct that CD-1-19A can accept drill cutting, CPAI only rarely employs the well for this due to significant depth of the injection zone and the potential to plug the well. Drilling mud and cuttings at Alpine are disposed of via annular disposal and that is likely how such wastes would be disposed of at the satellite pads.

**RESPONSE**

Section 2.3.11.5 of the FEIS clarifies that CD-1-19A is permitted for, rather than used for, such disposal.

**PP-9**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 2-1: Footnote. A more accurate definition of a satellite is "a separate hydrocarbon accumulation that shares processing facilities and infrastructure with a nearby established oil and gas development."

**RESPONSE**

The suggested language has been used in the FEIS to replace the DEIS definition in the footnote (see Section 2.1).

**PP-10**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 2-14: First full paragraph. Pads "in the Colville Delta" are designed to accommodate a 200-year flood plus 1-foot. Pads outside of the delta do not need such a stringent requirement, they are designed for thermal protection of permafrost.

**RESPONSE**

The suggested changes were made for the FEIS (see Section 2.3.3.1).

**PP-11**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 2-15: Middle of page, Mud plant tanks and silos, 5 x 25,000-gallon tanks. Tanks listed add up to 6, not 5 tanks.

**RESPONSE**

For the FEIS, the text indicates six tanks (see Section 2.3.3.1).

**PP-12**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 2-20: The sentence “The FLIR system is capable of detecting small temperature differences that result if a leak occurs and can identify areas where the pipeline insulation is damaged or saturated water.” is incorrect. Replace it with the following sentence “The FLIR system is capable of detecting small temperature differences that result if a leak occurs.

**RESPONSE**

Section 2.3.4 of the FEIS includes the suggested change.

**PP-13**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS must be corrected to reflect the fact that CD-4 and perhaps other facilities may be built in summer and that there will be summer activities associated with construction regardless of CD-4s winter schedule.

**RESPONSE**

Table 2.4.1-5, Construction Schedule, shows that both winter and summer construction activities would occur.

**PP-14**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Table 2.2.2-1, 1st footnote. The production zone at Alpine is the Alpine Sand. The Alpine Field reference is not correct. There are several potential pay sands in the Alpine Field with the actual Alpine Sand being one of them.

**RESPONSE**

A revised table footnote has been included in the FEIS.

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**PP-15**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Page 2-41. Beneath the table the winter only drilling season is discussed for CD-3. The schedule should be checked since it shows multiple rigs operating in some winter seasons when drilling at CD-3 is underway.

**RESPONSE**

The construction schedule in Table 2.4.1-5 indicates that drilling would occur at several pads during some winters. This would require additional drill rigs.

**PP-16**

This issue was raised in the following letters: DEIS0230 and DEIS0242.

**ISSUE**

Page 2-41, roaded pads. In the last sentence a 200' setback is given. A distance of 500' is generally stipulated by the state, which is consistent with the 1998 Northeast National Petroleum Reserve-Alaska stipulations. The EIS must include discussion of whether an exception is justified because some lakes are recognized as important fish habitat.

**RESPONSE**

As indicated in the referenced text, Alternative A is proposed by the applicant, and includes exceptions to some of the Northeast National Petroleum Reserve-Alaska IAP/EIS stipulations. Stipulation 41 pertains to setbacks from water bodies. Appendix I includes the applicant's requests for exceptions to stipulations. A discussion of the factors considered by the BLM for exceptions to stipulations was presented in Section 2.4.6 of the DEIS.

**PP-17**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Pages 2-44 to 2-46, Table 2.4.1-5. In this overall schedule, there are several seasons of multiple rigs. The maximum found is 3 with a lot of seasons having 2 rigs. Multiple rigs are likely to be used. However, discussions throughout the DEIS imply only 1 rig will be used for all satellites. This needs to be clarified.

**RESPONSE**

Multiple rigs would be used for those seasons with drilling activity at more than one CD. The project description has been revised accordingly for the FEIS.

**PP-18**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Page 2-53, Table 2.4.2-1. The areas covered for CD-6 and CD-7 differ. Does this presume that material is stored at CD-6 for drilling CD-7?

**RESPONSE**

Yes. Larger pad areas include storage pads.

**PP-19**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 2-70: Table 2.4.4-1. It does not appear that gravel volumes for the road between CD-4 and the Alternative D airstrip are included on this table or anywhere else in the document.

**RESPONSE**

Table 2.4.4-1 includes gravel volumes for the CD-4 airstrip under Sub-Alternative D-1, and the airstrip access road under the heading “airstrips and aprons/taxiways.”

**6.3.2.37 Purpose and Need**

**PN-1**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The EIS must clarify the meaning of “project” in reference to the 5 new pads and FFD.

**RESPONSE**

The term “project” in the EIS refers only to the five new production pads proposed by the applicant.

**PN-2**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Page 2-5, 2nd paragraph. In the latter portions of the paragraph, production volumes for pads and APFs are given. Suggest these be qualified with a time in years.

**RESPONSE**

Table 4A.4.2-1 of the FEIS includes this information.

**PN-3**

This issue was raised in the following letter: DEIS0240.

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**ISSUE**

The EIS does not include the purpose and need for the FFD alternatives that exist separately from CPAI's proposed action.

**RESPONSE**

The purpose and need is limited to the applicant's proposed action. FFD alternatives are not part of the proposed action. The discussion of FFD in Section 1.1.1 has been edited for the FEIS to more clearly express the intent of the FFD analyses.

**PN-4**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

FFD has not been sufficiently analyzed or clearly identified as a proposed action in the Purpose and Need Statement for the EIS.

**RESPONSE**

The purpose and need is limited to the applicant's proposed action. FFD alternatives are not part of the proposed action. The discussion of FFD in Section 1.1.1 has been edited to more clearly express the intent of the FFD analyses.

**PN-5**

This issue was raised in the following letter: DEIS0116.

**ISSUE**

FFD plans for the Colville River Delta should be reduced and production facilities and other developments should be moved away from the Delta and other water bodies. Development would have a negative impact in these areas that are very important to waterfowl, fish and subsistence activities, especially in the event of an oil spill.

**RESPONSE**

The FFD alternatives are not described as plans for future development, but instead provide a basis for analysis of potential impacts of such hypothetical future development.

**PN-6**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

The only identified oil field in the DEIS plan area is not listed as reasonably foreseeable development nor is it chosen as one of the potential future development sites in the FFD scenario. Conversely, 16 new fields and 2 large processing centers are considered reasonably foreseeable despite the fact that (1) none of these sites constitute oil/gas discoveries; (2) the locations are entirely hypothetical; and (3) the estimated pace of development for FFD far exceed any historical experience in the area.

**RESPONSE**

The FFD alternatives are provided to conduct analyses of potential future impacts and to identify very preliminary potential mitigation measures to address those impacts. The FFD alternatives were not designed to identify actual future development sites. The BLM sought to maintain the confidentiality of hydrocarbon potential, as required by law. They selected a variety of sites that, when analyzed, reflect the resources and uses that might be impacted by future development. The FEIS provides text in Section 2.2.3 to clarify this purpose.

**PN-7**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

The totals for expected production from the FFD scenario should be reviewed because they are too high in comparison to the estimated production totals from the entire Northeast National Petroleum Reserve-Alaska.

**RESPONSE**

The FFD scenario alternatives are provided to conduct analyses of potential future impacts and to identify very preliminary potential mitigation measures to address those impacts. FFD production totals are hypothesized, and for purposes of analysis; actual production could be different. The FEIS provides text in Section 2.2.3 to clarify this purpose.

**PN-8**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Completing the development of 22 new fields (16 in Northeast National Petroleum Reserve-Alaska) over the next 20 years is unrealistic when the typical timeframe between discovery and development is usually 6 to 10 years for each new field.

**RESPONSE**

The FFD scenario alternatives are provided to conduct analyses of potential future impacts and to identify very preliminary potential mitigation measures to address those impacts. The FFD alternatives were not designed to identify actual future development sites. The BLM sought to maintain the confidentiality of hydrocarbon potential, as required by law. They selected a variety of sites that, when analyzed, reflect the resources and uses that might be impacted by future development. The FEIS provides text in Section 2.2.3 to clarify this purpose.

**PN-9**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

The DEIS should include the impacts of gas development in the next 20 years and downgrade the status of the admittedly hypothetical pools assumed under the FFD scenario to the "speculative" category.



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**RESPONSE**

Consistent with other BLM leasing EISs, including the recently completed Northwest National Petroleum Reserve-Alaska IAP/EIS and the current Northeast National Petroleum Reserve-Alaska IAP/EIS amendment, commercial sale of National Petroleum Reserve-Alaska gas is not considered reasonably foreseeable. A sales gas pipeline to move gas off the North Slope is considered economically infeasible, and without a pipeline, production of gas from the National Petroleum Reserve-Alaska is deemed speculative.

**PN-10**

This issue was raised in the following letters: DEIS0200, DEIS0240, and DEIS0257.

**ISSUE**

The EIS should include a site-specific discussion of abandonment activities and the impacts (including costs) associated with the removal of 22 pads, 2 processing centers, and hundreds of miles of connecting roads, bridges, culverts and pipelines for all alternatives including FFD. This is insufficient under NEPA.

**RESPONSE**

The EIS considered the impacts from hypothetical future development at the FFD sites. Future NEPA documents for actual proposed new development and NEPA analysis to address the AO's discretionary decision on plans for rehabilitation would address the impacts of abandonment further.

**PN-11**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Regardless of today's plans to operate in small, self-supporting facilities like the Alpine Production Facility, the NSB and the EIS must consider the possibility that extended development of the oil field service sector west of Deadhorse will lead to demand for additional public services. Services separate from any village's existing infrastructure and sanitary facilities will be required.

**RESPONSE**

It is unclear whether this statement refers to concerns with the applicant's proposed action or reasonably foreseeable development. It may refer to both, though the primary concern seems more distant future development. In any case, this seems to be a suggestion for impact analysis to acknowledge the pressure that development would place on NSB infrastructure, such as on landfills and utilities. The Socio-Cultural discussion of impacts notes the potential need for additional services, as does the cumulative impact analysis.

**PN-12**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

The EIS should clearly state that in FFD scenario, it is unlikely that more than 6 or 7 of the hypothetical pads would be developed and possibly one of the hypothetical processing facilities over the next 20 years. Without clarification, the reader assumes development of all pads and facilities, thus overstating potential impacts.

**RESPONSE**

Section 2.2.3 of the DEIS acknowledges that the FFD alternatives, presented to examine a wide range of environmental impacts, are “aggressive” and further notes that the BLM does not imply that development will or will not occur at any of these specific locations or on this scale. It further states that the actual location and number of production pads and HPFs that would be required to accomplish FFD are not known. The conceptual FFD portrayed and evaluated in this EIS is believed to overstate the anticipated FFD. CPAI projects that their leases of the FFD would not support more than a total of 12 production pads within the Plan Area, including existing CD-1 and CD-2 and the five proposed pads. However, the BLM does not have seismic or exploratory drilling results for substantial portions of the Plan Area and there are too many uncertainties (including technological and economic) to state with confidence that development would not exceed the volume suggested in the comment.

**PN-13**

This issue was raised in the following letters: DEIS0239 and DEIS0240.

**ISSUE**

The EIS fails to explain the methodology BLM used in siting the various FFD pad locations. Figures 2.2.3-1 and 3.2.1.2-3 show that the hypothetical pad locations do not match up with known fields in the plan area.

**RESPONSE**

The discussion in Section 2.2.3 has been modified for the FEIS to better explain the siting of the HPs under FFD alternatives.

**PN-14**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

In several sections, the development time frame is stated as 15 to 20 years and as 10 to 20 years. Both references should be replaced with “within the next 20 years.”

**RESPONSE**

The suggested edits have been incorporated into the FEIS.

**PN-15**

This issue was raised in the following letter: DEIS0239.

**ISSUE**

The hypothetical future development map, necessary for cumulative impact analysis, needs to depict all of the known reservoirs reported to the State or BLM.

**RESPONSE**

Seismic and exploratory drilling results provided to the state and the BLM are proprietary and confidential by law.

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**PN-16**

This issue was raised in the following letter: DEIS0239.

**ISSUE**

Siting of FFD oil and gas processing facilities should be considered now. The EIS should explain how many more fields could come on line before an additional facility would be required.

**RESPONSE**

The FFD scenario alternatives analyses consider the impacts of additional processing facilities and hypothetical locations have been identified for analysis purposes. No decisions are appropriate at this time for any development beyond the applicant's proposed action. Without much more oil exploration and knowledge of future oil markets, the number and location of any additional processing facilities is hypothetical. Additional processing facilities would be necessary if additional production pads were developed in the western part of the ASDP because three-phase flow from wells is limited to a maximum distance of approximately 25 to 30 miles without processing and pump station support.

**PN-17**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

The FFD analysis boils down to some bland language that the impacts in the FFD would be more of the same. What good is NEPA planning when it is conducted in a hypothetical realm where both actions and impacts are purely imaginary?

**RESPONSE**

Analyses of the FFD scenario alternatives point to some impacts that would be distinct to specific locations and different from those under the applicant's proposed action. If additional proposals are submitted for development, additional impact analysis will be completed.

**PN-18**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

There is no way that BLM can take a hard look at impacts to our socioculture and subsistence from development at the FFD sites when its analysis is more general than that used for the proposed Alpine satellites.

**RESPONSE**

The BLM agrees that future development would require additional NEPA analyses.

**PN-19**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

FFD impacts to fish depends on precise site decisions of future development and bridge design.

**RESPONSE**

Future NEPA analysis would be necessary to identify impacts of any actual future proposal to fish as well as other resources and uses.

**PN-20**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

FFD in the Plan Area is so far removed from any proposed action that it simply is premature to conduct NEPA planning for such development at this time.

**RESPONSE**

The BLM and the cooperating agencies acknowledge that additional NEPA analyses would be necessary if additional proposals come before them.

**PN-21**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 2-6: The following two statements are not entirely accurate: "Gas separation and handling equipment employed for the scenarios analyzed will be nearly identical to that for sales production of gas." Also "no other stand alone facilities will be needed for gas production." In a gas sales scenario (which is not being addressed in this EIS) there would be a need for compressors and associated facilities at a new gas processing plant.

**RESPONSE**

The referenced text has been modified for the FEIS.

**PN-22**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

S2.2 [sic S2.3] 2nd paragraph. No qualification is made that the hypothetical FFD is based on CPAI like proposal, although that is not necessarily how it would happen if development is by another oil company. Later in the document, a qualified statement is made.

**RESPONSE**

The FFD scenario alternatives are presented to provide analyses of potential future impacts. Although the agency made its best projections of how future development might occur, different impacts could be possible with different development approaches. These would be addressed in future NEPA analyses, which would take into account any variations from the hypothetical analysis presented in the FEIS.

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**6.3.2.38 Recreation Resources****RR-1**

This issue was raised in the following letter: DEIS0163.

**ISSUE**

The EIS should address impacts to commercial guides in the Colville River area.

**RESPONSE**

The FEIS indicates that the assessment used both the results of discussions with outfitter-guides operating in the Plan Area and previous knowledge of the Plan Area's natural resources. Section 4A.4.7 discusses how recreation and outfitter-guides may be impacted by the construction and operation of CPAI's proposed FFD alternatives.

Section 3.4.7.3 includes a description of guided recreational activities in the Plan Area, including the Colville River area. Sections 4A-G.4.7 address impacts to recreation users. Most recreation users are guided. Recreation users and their guides would experience negligible impacts as a result of the proposed action and alternatives.

**RR-2**

This issue was raised in the following letters: DEIS0201 and DEIS0253.

**ISSUE**

BLM should consult locals or use current information sources to evaluate impacts to wilderness tourism.

**RESPONSE**

Documented information on particular elements of recreation and wilderness tourism is limited, for example exact destinations, visitor numbers, origins of visitors, and lengths of stay. Conversations with BLM's staff indicate most recreation use and wilderness tourism is through outfitter-guide services. Outfitter-guide services were contacted and consulted (see Section 3.4.7, Recreation Activities and Use in the Plan Area) regarding impacts resulting from alternatives or FFD alternatives.

Section 4A.4.7.1 of the FEIS has been revised to further clarify the similarity of impacts experienced by outfitter-guides and wilderness tourists. The text indicates that those engaging in wilderness tourism independent of outfitter-guides would likely be subject to similar recreation-related impacts as those described for those traveling with outfitter-guides.

**RR-3**

This issue was raised in the following letter: DEIS0232.

**ISSUE**

The EIS's analysis of recreational impacts should include use of the area by hunters, hikers, and photographers, all of whom rely on the natural wild of this place.

**RESPONSE**

Section 4A.4.7.1 of the FEIS has been revised to further clarify the similarity of impacts experienced by clients of outfitter-guides and hunters (non-subsistence), hikers and photographers. Text indicates that those engaging in non-subsistence hunting, hiking, and photography independent of outfitter-guides would likely be subject to similar recreation-related impacts as outfitter-guides.

**RR-4**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 3-187: Should mention there are also scheduled commercial flights into Nuiqsut, on Cape Smythe and Frontier, not just charter flights.

**RESPONSE**

Commercial air flights are conducted by Cape Smythe Air and Frontier Flying Service, Inc. Both services have one flight per day into and out of Nuiqsut, all days of the week except Sunday. Section 3.4.7.1 of the FEIS has been revised accordingly.

**6.3.2.39 Regional Economy**

**RE-1**

This issue was raised in the following letters: DEIS0230, DEIS0238, and DEIS0242.

**ISSUE**

CPAI and the State disagree with the statement, “Minimal employment of Nuiqsut residents during construction and operation is expected.”

**RESPONSE**

For the FEIS, the referenced text has been modified to clarify that directly related construction and operation jobs are expected. It is clear that Nuiqsut has benefited from increased service-related jobs in recent years and that these benefits would likely continue upon approval of the applicant’s proposed action.

The DEIS utilized several time period sources to portray the employment and income of Nuiqsut residents. Data from the 2000 census show very little oil-related employment of residents of the NSB, as noted in Section 4A.4.2.2. Other sources, including anecdotal sources, were utilized to portray a more comprehensive overview of the economic benefits Nuiqsut residents since the Alpine Development Project began. A summary of these benefits is discussed in Section 3.4.1.7.

An unreleased study of oil and gas development in Nuiqsut (Haley 2004) showed an increase in both household and per capita income over the past several years. This new information has been incorporated into the FEIS.

**RE-2**

This issue was raised in the following letter: DEIS0200.

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**ISSUE**

In the DEIS, Alpine oil reserves are frequently stated as 429 million barrels, whereas Table 4A.4.2.-1 gives the total as 475.4 million barrels. Only one specific volume should be used.

**RESPONSE**

The discrepancy is the result of using two different sources. The AOGCC's Area Injection Order No. 18 states that 429 MMbbl (approximately 45 percent of the estimated 960 MMbbl in place) is the estimated recovery from the Alpine sand. It was considered appropriate to use the projections of oil production and revenues developed from models utilized by the Alaska Department of Revenue for economic impact projections. The total of 475.4 shown in Table 4A.4.2-1 is based on this model.

The projections of 2003–2023 oil production and revenues shown in Table 4A.4.2-1 were also based upon models utilized by the Alaska Department of Revenue, except in the cases of FFD. For FFD alternatives, projections of HP-1 through HP-22 production were made according to the assumptions cited in the text discussion of Table 4A.4.2-1 data. The shown total of 475.4 is the sum of the estimated production using this model.

**RE-3**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

The analysis period for impacts associated with FFD should extend to at least the time when foreseeable oil production tails off and abandonment activities begin. The DEIS states that FFD production cuts off at 2023, but given the steady increase up to that date, it is unlikely.

**RESPONSE**

Section 4A.4.2.1 and Table 4A.4.2-1 provide a description of the methodology utilized for the oil production forecast. The primary source for the projection was a production model utilized by the Alaska Department of Revenue, modified to accommodate the FFD scenario alternatives. The production and price models utilized by the Alaska Department of Labor only extend 20 years into the future. Production resulting from the applicant's proposed action would extend beyond the 2023 time horizon, and this future projection is captured in the last row of Table 4A.4.2-1. Footnote "b" at the bottom of the table indicates that the total shows the total estimated production in thousands of barrels over the life of the production area, including years past 2023. Similarly, the cumulative impact analyses, which include FFD alternatives, also extend beyond 2030.

**RE-4**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

Costs and economic analysis for all alternatives should be included in the FEIS. The Corps cannot complete their 404 permit evaluation without this information.

**RESPONSE**

Additional project cost data are provided in Appendix J.

**RE-5**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Analysis of socioeconomic effects should include review of specifically cited information sources, including references used in the 2003 NRC report and the TAPS Right of Way renewal environmental report, as well as technical reports produced by the Minerals Management Service.

**RESPONSE**

The EIS' economic analyses were completed using the best available data, including the sources cited in the comment. Citations of different sources are also included in the text.

**RE-6**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Analysis of socioeconomic effects should consider exclusion of gravel placements (considered intangible development costs) and government-built roads from tax bases and reduction of royalties in the Federal Energy Bill.

**RESPONSE**

A detailed breakdown of project cost information was not available. General costs are presented in Appendix J. In lieu of more detailed data, an alternate methodology was developed and utilized to estimate property tax impacts (see Section 4A.4.2.2). This method utilized a point estimate of \$0.50/bbl to calculate property taxes. Specific information on the precise costs of gravel placements and/or government-built roads was not part of the data utilized in the property tax analysis because it was not available. Effects of tax structure legislation are uncertain and cannot be considered in this analysis.

**RE-7**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Employment numbers in the EIS for Nuiqsut residents have not been confirmed by the Department of Labor and appear to be too high (page 3-132).

**RESPONSE**

For the FEIS, the referenced text has been modified to clarify that directly related construction and operation jobs are expected. It is clear that Nuiqsut has benefited from increased service-related jobs in recent years and that these benefits would likely continue upon approval of the applicant's proposed action.

The DEIS utilized several time period sources to portray the employment and income of Nuiqsut residents. Data from the 2000 census show very little oil-related employment of residents of the NSB, as noted in Section 4A.4.2.2. Other sources, including anecdotal sources, were utilized to portray a more comprehensive overview of the economic benefits Nuiqsut residents since the Alpine Development Project began. A summary of these benefits is discussed in Section 3.4.1.7.



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An unreleased study of oil and gas development in Nuiqsut (Haley 2004) showed an increase in both household and per capita income over the past several years. This new information has been incorporated into the FEIS.

**RE-8**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section 3.4.2.2, Page 3-136 and 3-137: The NSB revenues listed appear to include those for the NSB School District. The revenues listed are markedly higher than the revenues listed in the Northwest National Petroleum Reserve-Alaska IAP/EIS, Section III.C.1.a., in which NSB School District revenues are explicitly excluded. In any case, the EIS should specify whether NSB School District revenues are included or not.

**RESPONSE**

The discussion of NSB revenues cited in Section 3.4.2.2 includes revenues from all sources as reported by the NSB. School district revenues are included in the "Intragovernmental" category. A clarification of this has been included in the FEIS.

**RE-9**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section 3.4.2.2, Page 3-137: The bullet for 2000 has \$282 million. This does not correspond to any of the NSB Revenues in Table 3.4.2-2.

**RESPONSE**

For the FEIS, Table 3.4.2-2 has been modified according to financial data from the NSB and a State of Alaska tax publication.

**RE-10**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Table 3.4.2-2: It is not clear from the title what year the dollars shown are for. We suggest the title be revised to "North Slope Borough Tax Revenues, Year 2000 (in millions of \$'s)."

**RESPONSE**

The table has been revised for the FEIS and the year has been clearly indicated.

**RE-11**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Table 3.4.2-2: Also there appears to be a mistake in addition ( $\$253 + \$42 = \$295$  not  $\$331$ ).

**RESPONSE**

The table has been revised as suggested for the FEIS.

**RE-12**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section 3.4.2.3 Government Expenditures, Page 3-137, Para. 1st: It is unclear whether this paragraph is about the NSB or the State or both.

**RESPONSE**

The DEIS text referred to North Slope government expenditures. The FEIS includes revisions to properly clarify the subject of the paragraph.

**RE-13**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section 3.4.2.4 Employment and Personal Income and Figure 3.4.2.4-1, Page 3-137: The text correctly refers to Figure 3.4.2.4-1, however data for several sectors in Figure 3.4.2.4-1 do not agree with the data presented in the text (e.g., Government Sector is 2.1% in the Figure vs. 27.1% in the text; Manufacturing and Mining/Oil and Gas also do not match).

**RESPONSE**

For the FEIS, the numbers noted in this comment have been corrected (see Section 3.4.2.4 and Figure 3.4.2.4-1).

**RE-14**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section Table 4A.4.2-1 (Projected Production): The footnote states the projects are "...based on assumptions provided by BLM" yet the text provides an incomplete discussion of the assumptions and timetable leading to the production estimates for the Full Field Development (FFD) scenario. Are these assumptions presented in another document?

**RESPONSE**

These assumptions were discussed in the three paragraphs directly following Table 4A.4.2-1. The text describes how the FFD production estimate of 1.6 Bbbl was calculated.

**RE-15**

This issue was raised in the following letters: DEIS0200 and DEIS0242.

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**ISSUE**

Section Table 4A.4.2-1 (Projected Production): The production units are confusing – yearly production rates are given in thousands of barrel per day, whereas production totals are given in millions of barrels over the life of the fields.

**RESPONSE**

For the FEIS, the total production column has been modified to be in units of thousands of barrels, rather than MMbbl.

**RE-16**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The FEIS should include an economic analysis as an Appendix that compares the applicant's proposed action with the other reasonable alternatives and the environmental consequences to the public and Tribal resources of the National Petroleum Reserve-Alaska. Without this analysis, the EPA cannot determine whether the alternatives evaluated in the ASDP EIS are practicable and in compliance with Section 404(b) Guidelines.

**RESPONSE**

The DEIS provides an analysis of the income and revenue impacts associated with the applicant's proposed action, based on the best available data for each of the different alternatives. For example, the income and revenue impacts associated with Alternative A are presented in the EIS, beginning at Section 4A.4.2.2. Appendix J provides estimates of the costs of constructing, drilling, operating, maintaining, abandoning, and rehabilitating activities for each alternative. Production projects are provided in Table 4A.4.2.1. Section 4 describes the impacts to resources and current uses, including those to the public and tribal resources.

**RE-17**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 3-128: Statement "when North Slope oil production begins to decline..." is inaccurate. Production has been declining since 1988. Also NSB revenues come from property taxes, which are not directly tied to production (although they are indirectly tied).

**RESPONSE**

The statement is incorrect as written in the DEIS. In the FEIS, the paragraph correctly notes that peak production was achieved in 1988, and declined steadily until 2000.

**RE-18**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 3-137: Table 3.4.2-2 appears to have errors in the % shown for the oil and gas share.

**RESPONSE**

Table 3.4.2-2 has been revised for the FEIS using data from the NSB and the Department of Community and Regional Development. The text discussion of the table has been modified to discuss the direct and indirect dependence of the NSB upon oil and gas generated revenues.

**RE-19**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4A.4-13: The capital cost for Alternative A (\$100 million over a 20-year period) in the DEIS is unrealistically low. Upon approval of the project, the capital expenditure could be in the range of \$800 million to \$1.3 billion.

**RESPONSE**

Additional and updated cost information has been included as Appendix J to the FEIS.

**RE-20**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section 4F.2.4.1 Projections of North Slope Oil Production, Page 4F-3, Para. 1st: The DEIS incorrectly uses the information from Table IV-15 of the Northwest National Petroleum Reserve-Alaska IAP/EIS. The reserve and resource estimates in Table IV-15 do not represent three different crude oil price futures as is stated in the text of the DEIS.

**RESPONSE**

The text in Section 4F.2.4.1 has been revised for the FEIS.

**RE-21**

This issue was raised in the following letters: DEIS0017, DEIS0114, DEIS0207, DEIS0212 and DEIS0217.

**ISSUE**

A portion of the funds from the Alpine development sites should be allocated to a compensation fund to provide technical, health service, public service, and legal support to Nuiqsut and other North Slope residents for addressing impacts.

**RESPONSE**

Appendix F summarizes funds allocated to area governments from leases issued in National Petroleum Reserve-Alaska. Revenues accruing to local, state, and federal governments from the development of the proposed production pads are discussed in Section 4, Regional Economy and may be allocated as those governments determine appropriate.

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**6.3.2.40 Roads****RD-1**

This issue was raised in the following letters: DEIS0115 and DEIS0240.

**ISSUE**

The DEIS mentions the need for rip rap for roads, but does not indicate where rip rap would come from, or discuss any impacts associated with its extraction, transportation and placement. (example: p.2-60)

**RESPONSE**

Rock for armor, to the extent available, would come from the ASRC Mine Site or from Clover. Due to the lack of local rock resources, fabricated armor systems, such as concrete mats and gravel filled fabric bags, may be used, as described in Section 2.4.3 of the EIS.

**RD-2**

This issue was raised in the following letters: DEIS0238 and DEIS0242.

**ISSUE**

Section 2.3.1.1 Road Design. In the second paragraph, it is clearly stated that the basis for volumes and coverage was based on 5' average depth, 32' width and 3H:1V: sideslopes that gives a total width of 62'. This basis is not consistently presented in the document. This makes for a lot of confusion. Although the drawing in Figure 2.3.1.1-1 seems to be for the minimum road design which is 4' thick with 2H:1V sideslopes, the overall width is not correct. With 4' depth and the stated slope grade, the coverage is 48' not 52'. If the drawing is to present the minimum it should state that and the numbers must be correct. Other depths and slope grades and coverages can be presented as well in a table. State reviewers were not sure what depth and slope grade would give an 82' width.

**RESPONSE**

For the FEIS, calculations to determine gravel quantities used in roads have been revised to consistently use a 32-foot road top width, a 5-foot depth, and 2H:1V sideslope. The resultant calculated footprint width is 52 feet.

**RD-3**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

2.3.1.1 Second sentence should lead with ...In areas subject to inundation the potential for erosion exists....First Sentence, Second Paragraph should end with ...and heat transmitted by the gravel. Last Sentence of the 2nd P. "Storm Surge" only needs to be mentioned once in the sentence beginning with "In addition to flooding and storm surges...."

**RESPONSE**

The suggested changes have been made to Section 2.3.1.1 for the FEIS.

**RD-4**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Page 2-8, last paragraph. The 46000 cu yd number is for a 5' road with 3:1 sideslopes that is correct. As stated previously, the drawing in the figure is supposed to be for a 4' road with 2:1 slope.

**RESPONSE**

For the FEIS, calculations have been revised to consistently utilize a 32 foot-wide road, a 5-foot depth, and a 2H:1V sideslope. Gravel quantity calculations are also based on these dimensions. The revised gravel quantity per mile, based upon these dimensions, is 41,100 cy.

**RD-5**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Page 2-49, Table 2.4.1-7. Finally there is only reference to the 32' wide, 5' thick, 3:1 slope road. All tables that are related to roads should use these notes. The "covers at least 52' wide" in the notes for Table 2.4.1-3 on page 2-43 should be deleted.

**RESPONSE**

For the FEIS, calculations have been revised to consistently utilize a 32 foot-wide road, a 5-foot depth, and a 2H:1V sideslope. Gravel quantity calculations are also based on these dimensions. The notes in all applicable tables have been modified accordingly for the FEIS.

**RD-6**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Page 2-66: gives no data or adequate explanation for the need for a road width of 32-feet for permanent roads.

**RESPONSE**

As indicated in Section 2.3.1.1, roads are proposed to have a 32 –foot-wide driving surface to accommodate two-lane traffic and wideload moves.

**RD-7**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

2.3.1.1 – Road Design – The road design criteria is a moving target. Road widths are given as 52-feet, 62-feet and 82-feet. Tables in this section often list different standards in the bullet statements. Road side-slopes – are they 2:1 or 3:1. As 2:1 roads always slump after construction, it is more practicable to construct and calculate

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impacts at 3:1. If roads are proposed with 2:1 sideslopes, the EIS should calculate the impacts from roads at 3:1 to allow for side slump.

**RESPONSE**

For the FEIS, calculations have been revised to consistently utilize a 32 foot-wide road, a 5-foot depth, and a 2H:1V sideslope. Ongoing maintenance is proposed to maintain the sideslopes and prevent side slump.

**RD-8**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

CPAI objects to the mitigation measure of reducing traffic levels by limiting field access to industry only. This conflicts with CPAI's agreement with Kuukpik.

**RESPONSE**

For the FEIS, this potential mitigation measure has been deleted from Sections 4A.3.5.2, 4B.3.4.4, 4C.3.3.4, and 4D.3.5.2. Table 2.5-1 has been edited to indicate that Alternative B road use is restricted to industry use only on federal and state lands, and that local residents may use the roads on Kuukpik Corporation lands.

**RD-9**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 2-8: First full paragraph. Revise estimated gravel road thickness of 10 feet for roads in the lower Colville delta – hydrological assumptions were in error. Note CPAI is not proposing roads in this area but they would likely be an average of 5 feet thick with substantial slope stabilization.

**RESPONSE**

For the FEIS, the reference to 10 foot-thick roads has been removed from Section 2.3.1.1.

**RD-10**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 2-9: Road Use During Operations. Revise to round trips twice a day (once per shift) by operators to roaded pads.

**RESPONSE**

Section 2.3.1.3 has been revised for the FEIS to indicate two road trips per day.

**RD-11**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 2-9: First sentence under Sect 2.3.1.3. Insert the words “After completion of drilling operations,”....in front of first sentence starting with “Normal field operations....” While drilling goes on at these pads, there will be many more trips than 1 round trip by truck per 2-3 days.

**RESPONSE**

The suggested change has been made to Section 2.3.1.3 for the FEIS.

**RD-12**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 2-42: Table 2.4.1-2, Alternative A – Annual Projected Water Usage for Ice Roads. Year 2005 total is in error. Also does not appear that annual ice road from Kuparuk to Alpine is included.

**RESPONSE**

Annual construction ice road figures for Alternative A have been incorporated into the FEIS, and associated water usage has been recalculated. Table 2.4.1-2 has been revised accordingly.

**RD-13**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 2-51: Table 2.4.1-9, Alternative A – FFD Ice Road Estimates. This and other FFD Ice Road Estimate tables – footnote says estimates assume gravel supply from the ASRC and Clover mine sites. This is not possible as there are not enough gravel resources in these two mine sites to build the FFD facilities.

**RESPONSE**

Gravel sources beyond the ASRC Mine Site and Clover are hypothetical in nature. The footnote on Table 2.4.1-9 has been changed accordingly for the FEIS.

**RD-14**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

S.2.2.1-S.2.2.3. In the last sentence of each of these sections, who will have access to the roads is mentioned. Government agencies should be included.

**RESPONSE**

Government agencies have broader, non-project-specific authority to access roads and facilities in execution of their prescribed duties; however, the FEIS incorporated text to clarify that government agency personnel would use roads.



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**RD-15**

This issue was raised in the following letter: DEIS0261.

**ISSUE**

Instead of placing the roads, pipelines and powerlines for long distances within the setback area around CD-6, a shorter “spike line” should be run from a location just south of the setback line.

**RESPONSE**

The “spike line” approach has been adopted and is described in the discussion of Alternative F – Preferred Alternative (see Section 2.4.6).

**RD-16**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The EIS must clarify how the estimated 256 miles of ice roads were calculated.

**RESPONSE**

Annual construction ice road figures for Alternative A have been incorporated into the FEIS, and associated water usage has been recalculated, based upon the revised CPAI permit application (CPAI 2004a) received on January 16, 2004.

**RD-17**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

In Section 2.4.1.1, it should be made clear that the “narrow point between two basins” where the CD-4 road would be, is not a minor crossing as it is 350-425ft wide and 8ft deep.

**RESPONSE**

For the FEIS, this description has been added to Section 2.4.1.1

**RD-18**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Page 2-42, Table 2.4.1-2. The total water volume for 2005 is not correct. It should either be 26 or 5 and should be listed in the operations column.

**RESPONSE**

Annual construction ice road figures for Alternative A has been incorporated into the FEIS, and associated water usage has been recalculated, based upon the revised CPAI permit application (CPAI 2004a) received on January 16, 2004. Table 2.4.1-2 has been revised accordingly for the FEIS.

**RD-19**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 2-39, In 2.4.1.1, a description of CPAI's proposed access road to the CD-4 pad it is noted that the road 'bisects a lake at a narrow point between two basins'. This appears inconsistent with Figure 2.4.1.1-3, which appears to show the road crossing the greatest north-south length of the eastern basin of the lake. In any event, this is a significant lake crossing. Far greater engineering detail and analysis must be provided.

**RESPONSE**

Revisions to Figure 2.4.1.1 have been incorporated into the FEIS to more accurately depict the location of the road to CD-4. Text describing the crossing has been added to Section 2.4.1.1 of the FEIS.

**RD-20**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

Table 2.4.1-1: The gravel quantities and fill amounts need to be shown separately for production pads and the access road(s) and not as a total for pads. Also, the linear feet (miles) of road need to be given.

**RESPONSE**

The referenced table (Table 2.4.1-1) excludes gravel quantities associated with pad-to-pad roads. The airstrips and apron/taxiway column includes local access roads from the production pad to the airstrip. Miles of road are included in Table 2.4.1-3.

**RD-21**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 2-55: First full paragraph, last sentence. Reference to stipulation 32 should be 39?

**RESPONSE**

Figure 2.4.2.2 has been corrected for the FEIS to reference Stipulation 39.

**RD-22**

This issue was raised in the following letter: DEIS0238.

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**ISSUE**

Page 2-78: Table 2.4.4-6, Alternative D-2 – Annual Projected Water Usage for Ice Roads. Footnote says annual ice road from Kuparuk to CD-1 is included but mileage on table does not reflect this. Also delete footnote about gravel supply.

**RESPONSE**

For the FEIS, annual ice road miles and associated water usage have been recalculated, and Table 2.4.4-6 has been revised accordingly.

**RD-23**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Page 2-78, Table 2.4.4-10. For the FFD D-1 alternative, how many rigs are projected? If there are only minimal roads, this schedule is pretty optimistic.

**RESPONSE**

The referenced table contains projected water usage for ice roads, and indicates ice roads for FFD would be built from 2011 through 2030. An exact drilling schedule has not been developed for this hypothetical scenario. Multiple rigs could be required for FFD.

**6.3.2.41 Sand and Gravel****SG-1**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

The EIS should consider the need for gravel associated with landfill operations. Existing landfills at Nuiqsut and Prudhoe Bay are not realistic disposition sites for development waste.

**RESPONSE**

A landfill is not part of any development scenario, thus no gravel associated with the applicant's proposed action nor the alternatives would be used for landfill purposes. Solid waste would be handled as discussed in Section 2.3.11.6.

**SG-2**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

There is no site-specific analysis for the Clover site, as required by NEPA. Effects of "blasting" loose gravel must be addressed. (example: p.2-24)

**RESPONSE**

A proposed mining and reclamation plan for the Clover Potential Gravel Source has been included as Appendix O. Noise effects from blasting are considered in Section 4A.2.3.3.

**SG-3**

This issue was raised in the following letters: DEIS0230 and DEIS0240.

**ISSUE**

Clarification is needed in terms of gravel volumes and if they pertain to all hypothetical pads, roads and airports. The DEIS also improperly fails to identify or analyze the impacts from the use of other potential sites. (example: page 3-8)

**RESPONSE**

Gravel quantities by feature (pad, road, and airstrip) were quantified in tables in the appropriate subsections of Section 2 of the DEIS. There has been no application for use of any other gravel source.

**SG-4**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section 3.2.1.5 Sand and Gravel, Page 3-8, Para. 3rd, Sent. last: The last sentence in this paragraph is “West of the Colville River, however, the Plan Area is characterized by an apparent scarcity if suitable gravel...” This statement seems to be contradicted by a statement on page 4F-16 (last para., 2nd sentence) “...gravel is reasonably abundant on the North Slope...” Section IV.A.1.b(4)(c) on page IV-55 and 56 of the Northwest National Petroleum Reserve-Alaska IAP/EIS states that gravel is scarce in the National Petroleum Reserve-Alaska.

**RESPONSE**

Investigations performed thus far in the Plan Area show that gravel is a scarce resource. The statement in the last paragraph of Section 4F.4.4.3 is a part of the cumulative impacts discussion, which is inclusive of the North Slope region as a whole. Gravel as a development resource has been readily available for past projects on the North Slope.

**SG-5**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 3-9, 3.2.1.5 This section should explicitly describe the poor quality of some material taken from the ASRC Mine Site and the consequences of having used that material at the Alpine site.

**RESPONSE**

A statement has been added to Section 3.2.1.5 for the FEIS identifying the ASRC Mine Site pit as having low quality material.

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**6.3.2.42 Socio-Cultural Resources****SC-1**

This issue was raised in the following letters: DEIS0117, DEIS0195, DEIS0240, DEIS0242, and DEIS0257.

**ISSUE**

The DEIS does not examine any aspect of human health, nor does it analyze the health concerns raised by the residents of Nuiqsut.

**RESPONSE**

The DEIS includes consideration of health and welfare impacts to Natives of the North Slope in a number in sections. For example, Section 3.4.1.5 summarizes recent documented trends in community health; Section A.4.4.1 summarizes the findings with respect to community health and welfare impacts under Alternative A; Section 4A.4.1.4 summarizes proposed mitigation with respect to community health and welfare; Section 4A.4.4.1 summarizes disproportionate impacts to local residents; Section 4F.7.1.1 describes cumulative effects of development on the North Slope population; and Section 4G7.4 describes additional cumulative effects on community health and welfare with respect to the Environmental Justice evaluation.

In addition, citation of health-related studies not included in the DEIS have been added to the text of Section 3.4.1.5 of the FEIS. These include current information on cancer and asthma rates among Alaska Natives.

**SC-2**

This issue was raised in the following letter: DEIS0114.

**ISSUE**

There are no studies of the social impacts of Alpine, or any development areas near Nuiqsut. There hasn't been any studies going house-to-house, asking people how they have been impacted from the surrounding oilfields.

**RESPONSE**

As part of the evaluation of subsistence resources (Section 3.4.3) field studies were conducting in which 48 local villagers were interviewed. These interviews focused on subsistence use and use areas, which is a central element of the culture of North Slope villages. The results were used to develop the impact analyses of the applicant's proposed action and the alternatives on each community. The discussion of contemporary subsistence use areas is incorporated in the subsection titled "Subsistence Use Areas" within each community section of Section 3.4.3.2. A corresponding discussion of subsistence impacts can be found in Section 4A.4.3 (and within each of the alternative discussions.) The sociosystems analysis also relied on contemporary literature which includes studies of socio-cultural impacts to North Slope communities, including Nuiqsut.

**SC-3**

This issue was raised in the following letter: DEIS0116.

**ISSUE**

North Slope Borough residents will benefit through part-time seasonal and full-time employment. Opportunities will also be created for Alaska Native corporations, such as ASRC.

**RESPONSE**

A discussion of local participation in oil industry employment and opportunities for Native corporations is included in Section 4A.4.1.1.

**SC-4**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

The DEIS needs to cite the appropriate MMS and BLM EISs when large portions of these analysis are used, or that information from these documents be summarized and incorporated by reference, especially in the Socio-cultural Systems discussion.

**RESPONSE**

The noted references have been incorporated into the FEIS.

**SC-5**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

SHPO concurrence on eligibility of individual cultural resource sites should be included in the FEIS.

**RESPONSE**

The applicant has completed a cultural resource survey and forwarded it to the SHPO. Additional survey work is being conducted for the Preferred Alternative. The SHPO concurrence letter is not yet available. Agencies cannot issue permits until the requirements of Section 106 have been fulfilled.

**SC-6**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

The EIS contains contradictory statements about the effects of oil and gas industry workers on the Nuiqsut economy.

**RESPONSE**

Sections 3.4.1 and 3.4.1.6 have been revised to acknowledge economic activity in Nuiqsut related to Alpine Field operations.

**SC-7**

This issue was raised in the following letter: DEIS0236.

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**ISSUE**

Page 3-128, 3.4.1.3-5: These sections require a significant rewrite. The Borough submitted suggested changes in November.

**RESPONSE**

Sections 3.4.1.3, 3.4.1.4 and 3.4.1.5 have been revised for the FEIS to address this comment.

**SC-8**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 3-129, 3.4.1.5. The reference to drug and alcohol abuse is from 1985. More recent information is available from the North Slope Borough Health Department.

**RESPONSE**

Section 3.4.1.5 has been revised for the FEIS to incorporate additional data.

**SC-9**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 3-132, 3.4.1.7. This section should reference and briefly summarize the “Nuiqsut Paisagnich” document, available from CPAI, for the community’s own description of itself. Note, however, that described subsistence use areas are considerably smaller than they are today. The document was published a short time after the community was resettled in the early 1970s. Hunters have re-established broader hunting range, and the village population has increased in the intervening decades.

**RESPONSE**

Text in Section 3.4.1.6 has been modified accordingly for the FEIS. A comprehensive analysis of current subsistence use areas, including members of the village of Nuiqsut can be found in Section 3.4.3.2.

**SC-10**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

The DEIS, when concluding that Alternative A would not result in an influx of new, non-Native population, ignores evidence of the 2000 census that shows non-Native population has more than doubled in 3 years.

**RESPONSE**

The conclusion as initially stated remains unchanged in the FEIS—no information was found in the reference cited by the commentor related to an increase in non-Native populations.

**SC-11**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Section 4A.4.3.4, page 4A.4-25. A local committee of subsistence users, agency, and CPAI already exists: KSOP, BLM SAP, NS Science Initiative.

**RESPONSE**

Text in Section 4A.4.3.4 has been revised accordingly for the FEIS.

**SC-12**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 3-135: Should add revenues from 2001 and 2003 MMS Beaufort Sea lease sales and 1999 BLM National Petroleum Reserve-Alaska lease sale.

**RESPONSE**

The text in Section 3.4.2.2 has been revised for the FEIS.

**SC-13**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4A.4-3: The evaluation states that there will be “minimal increase in local business income...” This statement does not agree with activity that resulted from past construction effects for the original Alpine project construction. The original construction resulted in approximately \$250 million in construction contracts to the Kuukpik Corporation and its Joint Venture partners and additional income to ASRC and its contracting businesses. The Kuukpik Corporation and their partners currently hold a number of major contracts with Alpine operations and they are currently the second largest non-drilling contractor at Alpine. APC, a subsidiary of ASRC, also holds contracts with Alpine. These contracts provide employment opportunities for local residents, increasing local income, which could similarly increase spending at local businesses.

**RESPONSE**

This statement is related to the provision of goods and services within the local community, not to the oil industry development and production activities, as is suggested by the comment. A discussion of contracting with the oil industry by Native corporations is included in Section 3.4.1.6, which describes the amount of contracting that occurred during the development of the existing Alpine Field facilities. However, this addressed work conducted within the oilfield not as part of goods and services provided in the community.

**SC-14**

This issue was raised in the following letter: DEIS0238.



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**ISSUE**

Page 4A.4-11: Recommend additional discussion of Petroleum Reserve impact funds be added to the document. Nuiqsut has been granted more than \$15 million for community funds. Additional discussion of funding to other North Slope communities and the NSB should be added to the document. The total amount of impact funds provided for grants to the NSB and its communities is greater than \$50 million. These funds have provided various benefits that should be discussed. In addition these funds are a major funding source for the NSB and the communities which will become more important as revenues from other sources (property tax) decrease.

**RESPONSE**

Discussions of the impact funds are in Sections 4A.4.2.2 and 4F.4.2.2, and in Appendix F.

**SC-15**

This issue was raised in the following letters: DEIS0230 and DEIS0240.

**ISSUE**

The EIS is contradictory by indicating the potential for adverse effects to subsistence and yet stating that “No direct impacts to community health and welfare are expected to occur.” (Section 4A.4.1.1 discussion of Community Health and Welfare).

**RESPONSE**

Text in Section 4A.4.1.1 has been clarified to address this comment in the FEIS.

**6.3.2.43 Soils****SL-1**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

S.4.2.1 Soils and PF. In this section it is stated that the effects on soils and permafrost are the same regardless of alternative. If the covered acreage is changed in each alternative, how can the effects be the same? Effects may be similar; however, where roads are reduced or eliminated the effects in total have to be less.

**RESPONSE**

Impacts to soil have been revised for the FEIS to present the surface area of soil affected under each alternative. Greater detail has also been added to the comparisons of soil impacts among alternatives.

**6.3.2.44 Subsistence Harvest and Uses****SH-1**

This issue was raised in the following letters: DEIS0017, DEIS0082, DEIS0083, DEIS0114, DEIS0117, DEIS0212, DEIS0215, DEIS0229, DEIS0234 and DEIS0237.

**ISSUE**

The proposed satellite developments will cause irreversible damage to the people of Nuiqsut. Circumferencing the community with development will change the subsistence culture by changing animal migrations and limiting areas where hunters can shoot firearms.

**RESPONSE**

The effects of the applicant's proposed action on subsistence are addressed in Sections 4A–4G, Subsistence. Text regarding “circumferencing the community with development” has been added to the Subsistence Impacts sections of the FEIS. The new text states that construction and operation of these pads and associated infrastructure will contribute to a perception of being surrounded by development for Nuiqsut residents and subsistence users.

Text from Section 4A.4.3 – Subsistence, Environmental Consequences was moved to Section 4G.7.3, Cumulative Impacts and indicated that the existing effects of oil and gas activity have spread from Prudhoe Bay to an area encompassing the north and west approaches to Nuiqsut. Nuiqsut residents have been concerned for many years that the community would be surrounded by pipelines, pads, and roads, excluding them from important subsistence use areas. This concern has become more immediate with further development being proposed in their traditional subsistence use areas. By 1990, the perception that access to subsistence use areas was already limited arose during scoping as further restrictions became an issue of concern associated with future development.

**SH-2**

This issue was raised in the following letter: DEIS0017.

**ISSUE**

Local knowledge of the health of subsistence animals is ahead of data used in studies; animals in Prudhoe Bay and Kuparuk are less healthy than other animals.

**RESPONSE**

Impacts on subsistence harvests due to perceptions of changes in resource health are discussed in the Subsistence sections and in Appendix A – Traditional Knowledge. Section 4A.4.3 indicates that caribou habituation to gravel pads and other oilfield infrastructure changes the value of the caribou to subsistence users, who view these habituated caribou as contaminated and not behaving correctly.

**SH-3**

This issue was raised in the following letters: DEIS0083, DEIS0110, DEIS0195 and DEIS0206.

**ISSUE**

Construction of permanent roads, bridges, and airstrips at the proposed scale will forever change local subsistence lifestyles. The EIS should analyze the extent of this impact.

**RESPONSE**

The DEIS addressed impacts on subsistence under all alternatives in the Subsistence sections. The FEIS addresses the potential effects to the extent possible based on available data.

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**SH-4**

This issue was raised in the following letters: DEIS0110, DEIS0117, DEIS0195 and DEIS0257.

**ISSUE**

The EIS should include non-market values of wildlife use for subsistence in the cost/benefit analysis and the BLM must quantify the damage to the subsistence economy.

**RESPONSE**

Attempts to quantify subsistence with a cash replacement method minimizes the value of subsistence. There is little in the subsistence literature related to valuing non-market damages to the subsistence economy. This would be a contentious issue, with little agreement on methodology.

**SH-5**

This issue was raised in the following letters: DEIS0115 and DEIS0234.

**ISSUE**

Since the project will impact the subsistence resources the Native people rely heavily on, there is concern over how the project will benefit the people, and how the people will be compensated in the event of pollution to their resources.

**RESPONSE**

There is a mitigation program (National Petroleum Reserve-Alaska Impact Program) in place to provide funding to the North Slope communities directly impacted by oil and gas development (Appendix F). There is no mitigation program in place to compensate affected individuals for the loss of subsistence resources due to a catastrophic oil spill.

**SH-6**

This issue was raised in the following letter: DEIS0202.

**ISSUE**

The project will negatively impact subsistence hunting because caribou and other large animals are impacted by too much human activity, buildings, road and air traffic; and there is concern caribou will not be able to cross under low pipeline heights; movement patterns of caribou will be greatly altered and could be detrimental to subsistence hunting.

**RESPONSE**

The DEIS addressed the impacts of pipelines (and other components) on subsistence in the Subsistence sections. Appendix A also addresses this issue

**SH-7**

This issue was raised in the following letter: DEIS0202.

**ISSUE**

Subsistence resources (such as Arctic Cisco in Nuiqsut) are not as fat and are different, and development in these areas has upset the nutritional and dietary supplement from the Arctic.

**RESPONSE**

Perceptions of animal health were discussed in the Subsistence sections.

**SH-8**

This issue was raised in the following letters: DEIS0202 and DEIS0237.

**ISSUE**

Caribou have been negatively affected in areas of oil development and many dead caribou have been observed in these areas. This greatly affects subsistence harvest.

**RESPONSE**

Impacts on subsistence harvests due to perceptions of changes in resource health were discussed in the Subsistence sections and in Appendix A – Traditional Knowledge.

**SH-9**

This issue was raised in the following letters: DEIS0208 and DEIS0214.

**ISSUE**

The west side of Nuiqsut is a very sensitive spot for hunting of wolverines and wolves; no one should be allowed to empty the lakes in this area.

**RESPONSE**

The DEIS discussed the harvest area for wolves and wolverines and potential impacts in the Subsistence sections. Water withdrawal issues were addressed in Section 4A.2.1.

**SH-10**

This issue was raised in the following letters: DEIS0116 and DEIS0216.

**ISSUE**

Building a bridge across the Nigliq Channel should be avoided because it would interfere with subsistence fishing sites. Impacts to subsistence from the bridge should be included in the EIS.

**RESPONSE**

The DEIS discussed the harvest area for fish, the importance of the Nigliq Channel fishery, and potential impacts in the Subsistence sections.

**SH-11**

This issue was raised in the following letter: DEIS0116.

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**ISSUE**

There is concern regarding fish population problems as well as reduced caribou hunting options since the mid-seventies.

**RESPONSE**

The DEIS addressed impacts on fish population and caribou hunting in the Subsistence sections. Appendix A also addresses such issues.

**SH-12**

This issue was raised in the following letters: DEIS0238 and DEIS0230.

**ISSUE**

In the Subsistence section, statements that indicate effects “would” occur or actions “would” affect resources, should use the word “could” instead to reflect the hypothetical nature of these predictions.

**RESPONSE**

Word choice for the DEIS was not executed carelessly. The use of “would” is meant to express more clearly than “could” can, that an event/effect is likely to occur.

**SH-13**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Quotes in the subsistence section do not appear to be recent in nature.

**RESPONSE**

Quotations utilized within the Subsistence sections include examples from the last 25 years of public testimony (1979–2003).

**SH-14**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Impacts from aircraft flights associated with Alpine, commercial traffic, CPAI specific studies and agency studies and other traffic should be evaluated with respect to subsistence activities. It is an issue the community has consistently raised.

**RESPONSE**

Impacts on subsistence from aircraft are addressed in the Subsistence sections.

**SH-15**

This issue was raised in the following letters: DEIS0081 and DEIS0083.

**ISSUE**

More information is needed about the design of the Nigliq Channel bridge before anyone can be evaluated whether there will be a change in Nuiqsut's ability to use the Nigliq Channel for subsistence harvest and access.

**RESPONSE**

The EIS subsistence analyses relies on the most thorough available project descriptions, including the bridge description, provided in Section 2. The bridge's potential effects on subsistence are discussed in the Subsistence sections.

**SH-16**

This issue was raised in the following letter: DEIS0198.

**ISSUE**

Nuiqsut hunters decimated caribou populations in the 1970's; oil and gas activity has little to do with this population decline.

**RESPONSE**

No biological or subsistence studies addressing this topic have been found.

**SH-17**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

The DEIS states (Section 4A.4.3.1) 'Withdrawal or disturbance could potentially eliminate lake fish populations...would affect availability of fish as a subsistence resource.' Data to make this and other conclusions regarding specific subsistence resources do not exist, and there is no basis for this conclusion. If there are no impacts predicted to the fish and wildlife resources of the plan area or north slope-wide as a result of any of the alternatives, it is difficult to then understand how there will be significant reductions in those same wildlife species when considering subsistence.

**RESPONSE**

Section 4A.3.2.1 of the FEIS notes, "overall effects (of Alternative A on fish) are considered insignificant." Water withdrawal could potentially affect fish populations especially in late winter as deep lakes with overwintering fish populations are used for water withdrawals and dissolved oxygen may be depleted to the extent that fish are not able to survive. However, no impacts to fish availability are expected if the applicant adheres to the water withdrawal permit conditions (see Section 4A.3.2.1).

**SH-18**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

One subsistence user states that deep lakes are more important to their fish resources than shallow lakes. In the previous paragraph the document makes the assertion that fish in lakes may be eliminated through water withdrawal. The traditional knowledge presented by the subsistence user is weakened when associated with

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these statements. Section 4A.4.3 should, therefore, be revised to be objectively analytical in nature by removing these direct quotes from Section 4A.3 and placing them in Appendix A.

**RESPONSE**

Section 4A.4.3 is based on the best available information, which was supplemented with field interviews. Removing the Traditional Knowledge and public testimony quotes from Section 4A.4.3 and placing them in Appendix A is contrary to the scoped issue of including Traditional Knowledge in the EIS. There is a lack of consensus on the issue of water withdrawal volumes as they relate to fish habitat (NRC 2003).

**SH-19**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

The conclusion of Section 4A.4.3.1 with regards to access to subsistence harvest being cut in half is untrue. Extrapolating the 270-acre impact across the entire Colville Delta and Fish/Judy Creek Drainages and implying that half the subsistence harvest would be impacted by the applicant's proposal is a gross misrepresentation of the facts. All subsistence impact analyses which were based upon this misrepresentation originally need to be revised.

**RESPONSE**

Section 4A.4.3.1 has been revised in the FEIS to indicate that industrial development in the Fish and Judy creeks and the Colville River Delta areas would reduce the availability of and access to the area that has supported more than half of the harvest of fish, caribou, wolves, wolverines, geese, and eiders at Nuiqsut. Further, effects would extend beyond the actual footprint of project infrastructure in that hunting would likely not take place near pipelines and pads. Aircraft traffic, noise, human activity and ground vehicles would further divert or deflect several subsistence species, increasing the area of direct effect. Subsistence harvest data, including harvest locations, were compiled from information provided by the NSB and the ADF&G.

**SH-20**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

The EIS should include the conclusive data provided by ADF&G Division of Subsistence, which illustrates how subsistence use areas have changed in response to development.

**RESPONSE**

We requested clarification from the ADF&G, Division of Subsistence (the commentor) on conclusive data that was not included in the DEIS. They did not know either the source of the comment or the material to which it refers.

ADF&G clarified the latter issue as follows: "The comment was aimed specifically at looking at the historical use by Nuiqsut residents (and others) of the region between the east bank of the Colville River to as far east as the Sag River (the oilfield). There is basically no longer use of that area while it was significantly used in the past. It is perhaps the strongest case to back-up some of the final conclusions made regarding the extreme extent of loss of resource availability indicated in the EIS, at the very least it should be referenced when making such statements."

In response to this clarification, the FEIS includes a section on Inupiat subsistence user avoidance of industrial development areas. This is based on published MMS documents as well as Division of Subsistence Open File Reports (Pedersen, Wolfe, Scott, and Caulfield 2000 and Pedersen and Taalak 2001). The new section is included in the FEIS within Section 3.4.3.2.

#### **SH-21**

This issue was raised in the following letter: DEIS0242.

##### **ISSUE**

Impacts to subsistence users largely will be from avoidance of industrial activity in traditionally used areas. This is an important issue and should be completely addressed without confusing the issue by the addition of overly estimated impacts to the actual fish and wildlife resources.

##### **RESPONSE**

By design, the subsistence effects analysis begins with an assessment of what the biology sections conclude about the effects to subsistence resources. That is, the “estimated impacts to the actual fish and wildlife resources” are one of the determinants of effects to subsistence activities and uses.

Impacts on subsistence from avoidance of industrial activity areas is addressed in Section 4A.4.3. An additional section that addresses the issue of subsistence user avoidance of developed areas was also included (see Section 3.4.3.2).

#### **SH-22**

This issue was raised in the following letter: DEIS0236.

##### **ISSUE**

Page 3-146, last paragraph refers to a Table 3.4.4-5 that does not appear to be in the document.

##### **RESPONSE**

The DEIS text did refer to a table that was not in the document. The FEIS refers to the correct table.

#### **SH-23**

This issue was raised in the following letter: DEIS0236.

##### **ISSUE**

Page 3-149, first full paragraph, first sentence: the Inupiaq spelling for wolf is “amaguq” with a dotted g.

Page 3-150, first paragraph under Bowhead Whale Use Area, first sentence: spelling error the Inupiaq spelling for bowhead whale is “agviq” with a dotted g.

##### **RESPONSE**

Document software applications limit use of the Inupiaq font. “Anglicized” versions of Inupiaq words are required, and were used in the FEIS.



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**SH-24**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 3-149, second full paragraph, first sentence: we suggest starting the sentence like this, “A typical furbearer hunt involves one to three hunters who travel this vast area looking for wolf and wolverine tracks and signs.”

**RESPONSE**

The sentence has been changed as suggested for the FEIS.

**SH-25**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 3-150, last paragraph: the word for berries and salmonberries are spelled two different ways in this paragraph. The proper spelling for berry in general is “asiaq”, and salmonberry is “aqpik”.

**RESPONSE**

These spellings reflect spellings pulled from the NSB’s Division of Wildlife Management documents.

**SH-26**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 3-150, last paragraph, last sentence: the term “agutuq” should be “akutuq”.

**RESPONSE**

For the FEIS, the spelling has been changed to “akutuq.”

**SH-27**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 3-151, first paragraph under Contemporary Seasonal Round, second sentence reads “Barrow hunters harvest caribou in April; however, because of calving, hunters usually refrain from taking caribou after May.” It should read something like this, “Barrow hunters harvest caribou in April; however, because of pre-calving and calving, hunters usually refrain from taking caribou until late June.” Caribou calving usually occurs in early June not May. A few male caribou may be taken during this time, but not many due to their poor condition.

**RESPONSE**

For the FEIS, the sentence has been changed as requested.

**SH-28**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 3-151, first paragraph under Contemporary Seasonal Round, fourth sentence, remove “Shooting Station” from sentence. Eider and geese hunting activities during the spring are not concentrated at the Shooting Station. Hunters harvest eiders at the Shooting Station from mid-summer through early fall.

**RESPONSE**

The sentence in the FEIS indicates that the harvest of eiders and geese begins in early to mid-May, weather and ice conditions permitting, and reference to the “shooting station” has been removed.

**SH-29**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 3-151, second paragraph under Contemporary Seasonal Round, second sentence should end “...while others go inland to hunt for waterfowl.” Again, this is referring to hunting activities happening in May and early June. Barrow hunters typically do not fish in May or early June. Fishing may begin as early as mid-June after the rivers break up.

**RESPONSE**

The requested addition was made for the FEIS.

**SH-30**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 3-151, second paragraph under Contemporary Seasonal Round, third to the last sentence should read, “When the weather turns warm, Barrow hunters typically harvest caribou by boat along the coastal areas as the caribou move to the coast to escape the heat and insects.” The next sentence refers to “Pigniq” or “Duck Camp”, and in the paragraph above the “shooting station”, all are basically the same place. One name should be used.

**RESPONSE**

The suggested sentence was added to the FEIS, and “Shooting Station” was deleted.

**SH-31**

This issue was raised in the following letter: DEIS0236.

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**ISSUE**

Page 3-151, last paragraph under Contemporary Seasonal Round, suggest adding after the first sentence, “More recently, Barrow whalers have agreed to start the fall whaling season in early October in order to harvest the smaller preferred whales.”

**RESPONSE**

The suggested sentence has been added to the FEIS.

**SH-32**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 3-151, last paragraph under Contemporary Seasonal Round, the second sentence should read, “...otherwise, they concentrate on fishing for broad whitefish.” Personal communications with several fall fishermen of Barrow indicate that they focus their [sic] on the harvest of broad whitefish and especially the females with eggs.

**RESPONSE**

The suggested text has been added to the noted sentence for the FEIS.

**SH-33**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 3-155, first paragraph under Contemporary Subsistence Use Areas, second sentence, change from “Many residents may” to “Many residents tend to hunt in the areas where they were raised...” The next sentence “Others who no longer hunt can receive...”, should read “Barrow residents may receive subsistence foods from areas outside of Barrow.” Sharing of subsistence resources from outside of Barrow is not only with “others who no longer hunt.”

**RESPONSE**

The requested changes were made to the two sentences for the FEIS.

**SH-34**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 3-157, first paragraph under Atqasuk Subsistence Activities, last sentence add Wainwright, to read, “Some Atqasuk hunters are members of Barrow and Wainwright whaling crews and take part in bowhead whaling and festivities, returning with shares after a successful harvest.”

**RESPONSE**

The requested change was made to the noted sentence for the FEIS.

**SH-35**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 3-157, paragraph under Contemporary Seasonal Round, middle part of paragraph, add Wainwright to this sentence, “Some residents may travel to Barrow or Wainwright to participate in spring whaling.”

**RESPONSE**

The requested change was made to the sentence for the FEIS.

**SH-36**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 3-157, paragraph under Subsistence Harvests, first sentence, again, add Wainwright in references to marine mammal harvests and membership in whaling crews.

**RESPONSE**

The FEIS text indicates that Atqasuk is similar to Nuiqsut in that residents harvest caribou, fish, and birds locally; however, Atqasuk is more connected to Barrow and Wainwright for marine mammal harvests and membership in whaling crews (Hepa et al. 1997). The requested change was made to the sentence in the EIS.

**SH-37**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 3-158, change the first word to “reported” instead of “collected” because the Borough has collected three years of additional harvest data for Atqasuk that have not been published to date. A final report is expected by the spring of 2005.

**RESPONSE**

The test has been revised as requested. For the FEIS, the text indicates that neither the ADF&G nor the MMS have reported these data, and the NSB Department of Wildlife Management has reported only harvest data for one harvest year (1994–1995) (Hepa et al. 1997) and only participation data for 1992 (Fuller and George 1999). The NSB has collected three years of additional harvest data for Atqasuk that have not been published to date. A final report is expected by the spring of 2005.

**SH-38**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 3-158, second paragraph, the second to the last sentence should be clear that 91% of households shared their resources.

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**RESPONSE**

The FEIS text indicates that in 1994–1995, 91 percent of Atqasuk households shared their harvested resources (see Table 3.4.3-9).

**SH-39**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The FEIS should present a consolidated list of proposed mitigation measures that are currently being considered and how they will reduce or minimize adverse impacts to subsistence resources and users below the level of significance.

**RESPONSE**

Table 4A.4.4.1 has been revised for the FEIS to include the requested information.

**SH-40**

This issue was raised in the following letters: DEIS0200 and DEIS0238.

**ISSUE**

Table 4A.4.4-1, page 4A.4-27. A local committee of subsistence users, agency, and CPAI already exists: KSOP, BLM SAP, NS Science Initiative.

**RESPONSE**

The recommended mitigation measure to “Establish community, industry, agency coordination groups to identify and address specific project subsistence effects” has been deleted. As pointed out in this comment, the KSOP, BLM SAP, and NS Science Initiative are in existence, and deal with subsistence issues.

**SH-41**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 2-103: Table 2.7-1, Comparison of Impacts Among Action Alternatives. Social Systems: Subsistence Harvest and Uses, Alternative A. CPAI objects to the statement that facilities would affect availability of key subsistence resources. Caribou are prevalent within the Kuparuk and Prudhoe oil fields and would similarly habituate to the new facilities. Also Nuiqsut hunters would use the road to better access subsistence resources, effectively increasing their availability.

**RESPONSE**

While caribou and other key resources may be found in industrial areas, hunters may avoid harvesting these resources, as they may be perceived as contaminated. Roads accessible to Nuiqsut resource users for subsistence access could also cause unintended consequences in both caribou behavior (Murphy and Lawhead 2000) and subsistence user harvest patterns (IAI 1990a and b). As noted by the NRC (2003), “Even where access is possible, hunters are often reluctant to enter oil fields for personal, aesthetic, or safety reasons. There

is thus a net reduction in the available area, and this reduction continues as the oil fields spread.” This statement is now incorporated into the Subsistence sections for Alternatives A, B, C-1, C-2, D-1, D-2, and F.

**SH-42**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 2-103: Table 2.7-1, Comparison of Impacts Among Action Alternatives. Social Systems: Subsistence Harvest and Uses, Alternative A. CPAI objects to the statement that there is a preference for animals not habituated to industrial development. The statement is made here and numerous other places in the document that subsistence will be impacted because of “a preference for animals not habituated to industrial development”. CPAI strongly disagrees with this statement. It is uncorroborated, based on comments from individuals without peer review, and CPAI has never heard this statement from anyone in Nuiqsut. Villagers reportedly will harvest any caribou regardless of where it has been. It would be difficult to identify a habituated caribou from non-habituated once it leaves a field – it is unclear how a hunter would know if caribou has been habituated or not.”

**RESPONSE**

This issue statement is contrary to statements made during subsistence interviews (SRB&A 2003) and public scoping. (e.g., Frank Long, Jr. 2003 ASDP Nuiqsut “Right now I call our caribou that are existing around here that don’t go nowhere our ‘industrial dope addict caribou.’”), and NRC 2003. Per IAI (MMS Special Report 8 1990:1-41), “Another group of informants maintains that in fact at least the Kuparuk field area is open to hunting, but that the animals in the area are not fit for human consumption. They recognize that the caribou in the oil fields have increased in numbers, and point out that the oil companies have seized on this as a public relations tool. Their own evaluation of the caribou is that they have become lazy and “dazed.” More now stay in the area year-round instead of migrating and many informants say they would not eat these animals because they may be “drugged up” by eating various substances that are by-products of or leaked from oil industry activities.” Collectively, such statements indicate a preference for animals not habituated to industrial development.

**SH-43**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 2-103: Table 2.7-1, Comparison of Impacts Among Action Alternatives. Social Systems: Subsistence Harvest and Uses, Alternative C. Last line: add “may” in front of “increase competition for resources”. Regulatory agencies should manage hunting.

**RESPONSE**

In the FEIS, the text indicates that unrestricted road access to BLM lands would eventually provide increased access to people who do not live in the area and may increase competition for resources. Unrestricted road access to BLM lands may be an issue in terms of management and conflicts between sports hunters and subsistence hunters (e.g., the Dalton corridor as discussed in the TAPS EIS).

**SH-44**

This issue was raised in the following letter: DEIS0238.

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**ISSUE**

Page 2-103: Table 2.7-1, Comparison of Impacts Among Action Alternatives. Social Systems: Subsistence Harvest and Uses, Alternative D. CPAI disagrees that Alternative D would have less impact than Alternative A. Air traffic is a concern to subsistence hunters because of potential disturbance of birds and caribou.

**RESPONSE**

The referenced text has been revised for the FEIS to indicate that Alternative D would result in a similar impact to Alternative A with the exception of less year-round road traffic to affect resource availability and increased air traffic and ice road traffic that could deflect or divert subsistence resources in high traffic areas.

**SH-45**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 3-147: Line 1 states that "There are significant differences in methodology and sampling in the last 3 years of the 17 year Moulton studies (Moulton 2000, 2002)," The methodologies were consistent across all years – as stated later in the text the main change was to restrict the study to the Nigliq Channel since 2000.

**RESPONSE**

The referenced text has been changed for the FEIS to: "There are significant differences in sampling in the last 3 years of the 17-year Moulton studies (Moulton 2000, 2002) and in methodology and sampling between the Moulton studies and the NSB studies."

**SH-46**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4A.4-17: Frank Long, Jr. is not the head of KSOP – Leonard Lampe is.

**RESPONSE**

The referenced text has been changed in the FEIS.

**SH-47**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4A.4-18: Clarify that there should be no summer disturbances at the mine sites.

**RESPONSE**

Text in the FEIS indicates it is not expected that there will be significant use of the mine sites during spring and summer seasons because most construction will be conducted during the winter and there would be no road access to the mine sites when ice roads are not available.

**SH-48**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4A.4 22: The statement “In summary, industrial development in the Fish and Judy creeks and Colville River Delta areas would reduce the availability of and access to more than half of the harvest of fish, caribou, wolves, wolverines, geese and eiders at Nuiqsut.” is misleading and should be clarified. We understand the point of this sentence to be that the identified areas are the sources of half the subsistence harvest of certain animals for Nuiqsut, and that, to an unstated degree, development in these areas would or may reduce availability and access. However, as written, the sentence lends itself to be misinterpreted to mean that development will reduce the subsistence harvest at Nuiqsut by one-half. Recommend revision of the statement to read “Fish and Judy Creeks and Colville River Delta are the sources of more than half of the harvest of fish, caribou, wolves, wolverines, geese and eiders in Nuiqsut. Accordingly, industrial development within these areas could incrementally reduce the availability of and access to these subsistence resources to the extent impacts are not mitigated.” None of the preceding analysis supports the sweeping generalization. Access to fishing areas is not precluded – fishing should be essentially unaffected. Most fishing occurs along the Nigliq Channel, with net sites accessed by boat in the summer and snow machine after ice formation. The traditional fishing sites will still be available. Access to fishing sites within lower Fish Creek will be unaffected. In fact with the addition of roaded areas within these locations, harvest of mammals will actually increase with all season access.

**RESPONSE**

The referenced text was modified for the FEIS for clarity. Access and availability issues were addressed in Section 4A.4.3.1. For resources to be available, they must be present in harvestable quality and quantities at the place and time traditionally expected and where harvests may be safely conducted in the judgment of the user.

**SH-49**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4A.4-23: The text says: “I pull nets for cisco in October north of Nuiqsut on the Nigeluk channel. Fishing has slowed down since Alpine went online. I don’t even bother to fish much unless other people are getting a lot because the effort is not worth the gas money I have to spend.” The testimony is provided with no context. The implication, of course, is that the low catches are a result of the Alpine development. There is no support for such a conclusion – fishing was slow because of the natural cycling of the Arctic cisco population. Catches were very high in 2003, again because of natural population cycles.

**RESPONSE**

The Traditional Knowledge quote noted in the comment was introduced with the following “contextual” statement “Nuiqsut residents associate existing Alpine development with reduced fish harvests in the Colville River Delta,” which is based on public testimony. The issue of oil development generally affecting subsistence fish harvest quantities and quality is a repeated topic during scoping and interviews with Inupiat resource users as noted in Appendix A. Information related to the natural Arctic cisco population cycles is presented in Section 3.3.2, Fish.



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**SH-50**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4A.4-25: Alternative A – Summary of Impacts on Subsistence. Throughout this section there are numerous statements that certain effects “would” occur or actions “would” affect resources. These are strong statements without definitive data to back them up. CPAI requests the “would” statements be replaced with “could”.

**RESPONSE**

Word choice for the EIS was not executed carelessly. The use of “would” is meant to express more clearly than “could” can, that an event/effect is likely to occur.

**SH-51**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Pages 4A.4-25, 4B.4-4, 4C.4-4, and 4D.4-4: Alternative A – Summary of Impacts on Subsistence. First paragraph. CPAI disagrees with the statement that hunters have a preference for animals not habituated to industrial development. This was a statement made by one person and CPAI knows many examples of habituated caribou being utilized by subsistence hunters.

**RESPONSE**

Many statements were collected for the DEIS to confirm the preference for non-habituated animals from Traditional Knowledge, public testimony and subsistence interviews. Subsistence users interviewed for the project stated that caribou that move slowly are perceived to be sick, and that caribou near Nuiqsut and the oil fields moved slowly in response to the approach of hunters. See response to SH-42.

**SH-52**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4A.4-25: Alternative A – Potential Mitigation Measures for Subsistence, mitigation #1. CPAI disagrees with the statement that pipelines should be buried to avoid creating barriers to caribou. Twenty-five years of pipelines on the North Slope and the 800-mile TAPS pipeline would indicate otherwise.

**RESPONSE**

Section 4A.4.3.4 states that to the degree possible pipeline should be buried to avoid creating barriers to caribou and that if pipeline cannot be buried, they should be elevated more than 5 feet. A review of the TAPS EIS does not verify the last statement made by the commentor.

**SH-53**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4A.4-25: Alternative A – Potential Mitigation Measures for Subsistence, mitigation #4. FFD cannot be planned around decommissioning earlier developments. There is too much uncertainty about field lives and future economic conditions to speculate on FFD schedules.

**RESPONSE**

The FFD scenarios are hypothetical, as stated repeatedly in the FEIS.

**SH-54**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4B.4-5: Last sentence in partial paragraph, top of page. This sentence appears to reach a definitive conclusion from speculative information. Change “as” to “if” and “would” to “could” so sentence reads “Competition ...could increase if Nuiqsut hunters avoid traditional subsistence use areas...”.

**RESPONSE**

The statement in the DEIS noted by the commentor has been corroborated by interviews and scoping testimony collected over many years. Interviews conducted in Barrow, Atqasuk and Nuiqsut noted that recent seismic activity in the National Petroleum Reserve-Alaska had shifted animals and that hunters were encountering each other with greater frequency as hunters traveled farther for caribou and furbearers.

**SH-55**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4D.4-3: The document does not adequately address past comments from local residents regarding the noise impacts of air traffic. The increase in aircraft traffic would be significant if Alternative D were adopted as the preferred alternative.

**RESPONSE**

Section 4D.4.3 addresses the impacts of noise from air traffic on subsistence resources and harvests. Additional text has been added to the FEIS to further clarify the issue. Alternative D was not adopted as the preferred alternative.

**SH-56**

This issue was raised in the following letter: DEIS0114.

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**ISSUE**

In 20 years, if someone goes caribou hunting and accidentally shoots a pipeline, will they be punished? Need to look at long-term effects on subsistence.

**RESPONSE**

Impacts on subsistence from avoidance of shooting near pipelines is addressed in Sections 4A.4.3. Whether or not an individual would be punished for accidentally shooting a pipeline is speculative.

**SH-57**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

The EIS analyses should consider information contained in the 1997 National Petroleum Reserve-Alaska Subsistence Impact Analysis Workshop Proceedings and the 2003 NRC Cumulative Environmental Effects of Oil and Gas Activities on Alaska's North Slope.

**RESPONSE**

Text from the Environmental Consequences, Subsistence section along with additional text has been added to the FEIS in the Cumulative Impacts section (Section 4G.7.3). This material includes consideration of and numerous citations of 1997 National Petroleum Reserve-Alaska Subsistence Impact Analysis Workshop Proceedings and the 2003 NRC Cumulative Environmental Effects of Oil and Gas Activities on Alaska's North Slope.

**SH-58**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section 4F.7.3, Page 4F-58, Para. 1st: The end of the first paragraph of this discussion reads "These potential impacts are described in detail in Section 4A.4.3 and generally include the following: . ." No list follows this statement; it seems to have been omitted.

**RESPONSE**

"Following:" refers to the following paragraphs.

**SH-59**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section 4F.7.3, Page 4F-67, Para. 3rd: We suggest the author of the section read and make use of the information in Section IV.K.3 Possible But Unlikely Permanent Roads, in the Northwest National Petroleum Reserve-Alaska Final IAP/EIS. It provides additional discussion on potential long-term impacts associated with road construction.

**RESPONSE**

The Northwest National Petroleum Reserve-Alaska Final IAP/EIS was considered in the Cumulative Effects section, and was properly cited.

**SH-60**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

The EIS should not duck the issue of who is responsible for conducting future subsistence harvest studies. The SAP is a group formed solely to advise BLM and has no staff, no funds, and no scientific expertise.

**RESPONSE**

The recommended mitigation measure to “Establish community, industry, agency coordination groups to identify and address specific project subsistence effects” has been deleted. As pointed out in this comment, the KSOP, BLM SAP, and NS Science Initiative are in existence, and deal with subsistence issues.

**SH-61**

This issue was raised in the following letters: DEIS0114, DEIS0260, and DEIS0263.

**ISSUE**

Our traditional knowledge is not implemented in the EIS.

**RESPONSE**

Traditional Knowledge was incorporated into the Subsistence sections. Additional Traditional Knowledge and public testimony is included in Appendix A.

**SH-62**

This issue was raised in the following letter: DEIS0198.

**ISSUE**

The EIS should acknowledge that oil industry workers and local residents both contribute to trash left along winter ice roads.

**RESPONSE**

The statement in question is referring to roads resulting in garbage, which attracts animals. It does not imply that industry is responsible for the garbage, but states that people and the ice roads themselves result in garbage along the ice roads. This was likely an intentionally vague statement on the part of the interviewee in that he did not specify identify Inupiat residents or industry personnel. Two interviewers were present when this statement was made and both noted the non-specific reference to people.

**SH-63**

This issue was raised in the following letter: DEIS0198.

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**ISSUE**

Field interviews indicating bird eggs and black brant hunting don't occur in spring are inaccurate.

**RESPONSE**

The referenced text is qualified by “According to the 2003 interviews. . .” and “many chose to avoid harvesting black brant.” Not every subsistence user was interviewed, and it was not implied that these activities no longer occur in any form.

The text for the FEIS has been revised to indicate that twenty-one Nuiqsut harvesters interviewed in 2003 stated that they no longer gather eggs, and that they do not harvest certain species of waterfowl for various reasons.

**SH-64**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

There was nothing “technical” in the methodology used to generate this report, and to label it as such implies a scientific rigor beyond that used in the report construction. Please delete the word “technical” from these sections.

**RESPONSE**

We disagree with this comment. Merriam-Webster defines “technical” as “of or relating to a particular subject” or “of or relating to a practical subject organized on scientific principles.” As this appendix outlines and follows a replicable, rigorous methodology, it follows that the term “technical” does apply. The methodology sections of this document includes numerous subsections which describe the collection, extraction and summarizing/organization of data.

**SH-65**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Appendix A would have been far more meaningful and useful if the local and traditional knowledge had been taken from these interviews, peer reviewed and incorporated into the appendix.

**RESPONSE**

As noted in the comment, the issue of using public testimony of a source of Traditional Knowledge is discussed in the Methodology section of Appendix A. Interviews (SRB&A 2003) were not included in this appendix in order to respect the confidentiality of interviewees. Information gained from the 2003 interviews was included in the Subsistence sections. As this document addresses specific resource issues, the positional and issue driven qualities of some of the testimony are an advantage in that the excerpted passages are more concise and specific to the subject at hand. There is no academic peer review process for Traditional Knowledge. Traditional Knowledge, as noted in the methodology, relies on a basic set of possible outcomes: survival or death. Thus, the stakes are quite high for individuals transmitting and using Traditional Knowledge in Inupiat society. Should a person present false information that results in misfortune or death, they would be subject to retribution.

**SH-66**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

ANILCA determinations of significant effects must be explicit and unambiguous; this analysis does not appear to consider mitigation measures incorporated into the design of the ASDP.

**RESPONSE**

An internal review of the ANILCA 810 Evaluation by the BLM Regional Subsistence Coordinator found it to be satisfactory in its evaluations and findings. After distribution of the DEIS, the applicant provided the BLM with list of mitigation measures that they have implemented through the years, so that these standard operating procedures may be taken into consideration when analyzing the ASDP. These mitigation measures are discussed in the Final ANILCA 810 Evaluation, as appropriate (see Appendix B).

**SH-67**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

The ANILCA 810 analysis should address improvements in subsistence activities that may come from increased revenues oil production has brought to the people of the North Slope.

**RESPONSE**

The purpose of the ANILCA 810 Evaluation is to assess the effect of a proposed action on subsistence uses. It must address whether or not there is likely to be: 1) a reduction in harvestable resources; 2) a reduction in the availability of resources caused by an alteration in their distribution, migration or location; or 3) a limitation on access to the resources by subsistence users (BLM Instructional Memorandum No. AK-86-350, Policy for Section 810 Compliance with the Alaska National Interest Lands Conservation Act). Including untenable statements regarding improvements that may occur, but not be documented, is beyond the scope of the ANILCA 810 Evaluation.

**SH-68**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

The ANILCA 810 analysis should discuss adverse impacts associated with Alternative D's increased air traffic.

**RESPONSE**

The Final ANILCA 810 Evaluation provides a more thorough discussion of air traffic and its impacts under Alternative D (see Appendix B).

**SH-69**

This issue was raised in the following letter: DEIS0238.

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**ISSUE**

The ANILCA 810 analysis should include a discussion of the use of gravel roads for subsistence activities that could ease subsistence efforts.

**RESPONSE**

The Final ANILCA 810 analysis provides a more thorough discussion on gravel roads and their use by residents (see Appendix B).

**SH-70**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

The ANILCA 810 analysis should discuss that the majority of Nuiqsut residents want roads connecting their village to hunting areas.

**RESPONSE**

In reviewing the comments received from residents of Nuiqsut during scoping and the ANILCA 810 Subsistence Hearings, it does not appear that this statement is accurate. A total of 26 individual comments were received. Of these 26 comments (both oral and written) only four mentioned that connecting a road to the village was preferable to no road. All of the other comments did not mention a road connection at all. While this may lead some to believe the statement that the majority of the residents do not want a road connection, it is clear that there is not enough evidence to make a statement regarding the “majority” of the village, either pro-road or con.

**SH-71**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

BLM notes in Appendix B, page 5 that a BLM plan cannot consider State and Native Corporation lands when evaluating the availability of other lands for oil and gas exploration, however it fails to distinguish between public lands and State and Native lands when it comes to analyzing the effects on subsistence uses.

**RESPONSE**

Consistent with the statute, the ANILCA 810 Evaluation for the ASDP evaluates each individual alternative with regard to public lands (i.e., federal lands), and evaluates the entire project (state and privately-owned lands), together with other past, present, and reasonably foreseeable activities which may affect subsistence, in the cumulative impacts analysis (see revised Appendix B).

**SH-72**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Appendix B concludes that Alternative A would cause significant subsistence restrictions, pointing to activities on State and Native lands in the Nigliq Channel (CD-3, CD-4, and CD-5). It is impossible to tell from the

analysis whether the same conclusion would have been reached if the DEIS had followed the same language of 810 and looked at subsistence effects on public lands instead of the entire ASDP area.

**RESPONSE**

This issue has undergone much deliberation among the BLM, the DOI Solicitor, and the cooperating agencies. It has been decided that the ANILCA 810 evaluation for the ASDP will only evaluate each individual alternative with regard to public lands (i.e., federal lands), and evaluate the entire project (state and privately-owned lands) in the cumulative impacts analysis (see revised Appendix B).

**SH-73**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

With respect to Alternative D, no mention is made of subsistence hunters avoiding industrial areas because of perceived regulatory and safety concerns, which is important to include because Alternatives D and A are about the same as far as industrial areas are concerned. (example: Appendix B, page 9).

**RESPONSE**

This suggestion has been incorporated into the Final ANILCA 810 Evaluation for the ASDP (see Appendix B).

**SH-74**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

The findings that subsistence harvests may be significantly restricted triggers the requirement under Section 810 that BLM is required to hold hearings in the potentially affected communities.

**RESPONSE**

Subsistence Hearings were held in all potentially affected communities. The ANILCA 810 Subsistence Hearing in Barrow was held on February 9, in the NSB Assembly Chambers; in Nuiqsut on February 10, at the Kisik Community Center; in Anaktuvuk Pass on February 17, in the Community Center; and in Atqasuk on February 24, in the Community Center.

**SH-75**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

The State recommends that BLM hold hearings with the Northeast National Petroleum Reserve-Alaska Subsistence Advisory Panel (SAP) and the Kuukpik Subsistence Oversight Panel (KSOP) similar to those required hearings in the potentially affected communities.

**RESPONSE**

The BLM is required to consult with the Subsistence Advisory Panel concerning activities and operations that take place in the National Petroleum Reserve-Alaska (Stipulation 61 of the Northeast National Petroleum



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Reserve-Alaska IAP/EIS ROD). The Subsistence Advisory Panel has met four times since the NOI for the ASDP was issued, and this topic has been on the agenda at every meeting. Additionally, the BLM's AO (Robert Schneider) has met with the Kuukpik Subsistence Oversight Panel in Nuiqsut to discuss both this plan and the Northeast National Petroleum Reserve-Alaska IAP/EIS amendment.

**SH-76**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

The State requests that BLM, through the mandated ANILCA Section 810 hearings and determinations, carefully review subsistence recommendations made as part of several major efforts to ensure full consideration of subsistence land and resource uses and users in oil/gas leasing, exploration and development planning in the area.

**RESPONSE**

The BLM most certainly reviewed all of the subsistence recommendations made at the ANILCA 810 Subsistence Hearing, at the government-to-government consultation meetings with local tribal governments, and at all public meetings (including scoping). These recommendations were used to formulate Alternative F – Preferred Alternative for the FEIS.

**SH-77**

This issue was raised in the following letter: DEIS0239.

**ISSUE**

The DEIS analysis is incomplete because it does not fully evaluate the effects on Barrow, Atqasuk, and Anaktuvuk Pass from changes in the migration patterns of the Teshekpuk Lake herd and other subsistence resources. It also fails to outline the full range of reasonable steps that could be taken to minimize adverse effects on subsistence uses and resources for each alternative.

**RESPONSE**

The effects of the applicant's proposed action and the alternatives on caribou and other subsistence resources and practices are discussed in Sections 4A–G. With regard to outlining steps to be taken that could minimize impacts to subsistence, these steps (also called mitigation measures) have been identified during the ANILCA 810 Subsistence Hearings, and during other public and/or government-to-government meetings. A determination that “reasonable steps have been taken to minimize impacts to subsistence” has been made. This determination is included in the Final ANILCA 810 Evaluation in Appendix B.

**SH-78**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

The EIS must include information on the size of the area avoided by hunters. The cost of gathering this information is clearly not exorbitant. The ANILCA Section 810 analysis can not be properly conducted without this information on the avoidance issue.

**RESPONSE**

Additional information regarding avoidance of certain areas for subsistence use has been included in the FEIS in Section 3.4.3. Information regarding the size of former subsistence use areas that are now not utilized by hunters is discussed in the Final ANILCA 810 Evaluation in Appendix B.

**SH-79**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Appendix B: The ANILCA Section 810 analysis appears to be based on an unmitigated project design that does not appear to take into account design factors implemented to minimize impacts on fish and wildlife and subsistence activities. The mitigation listed in Table 1 of Attachment 5 to this letter should be considered in the Section 810 analysis. Please refer to our Preliminary DEIS comments on this section of the document.

**RESPONSE**

Many of the “lessons learned” through the years have subsequently been adopted as SOPs by the applicant. These procedures have been considered in the Final ANILCA 810 Evaluation, as appropriate (see Appendix B).

**SH-80**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

App. B: Bridges may alter boat traffic, but they do not impede them – boats can still pass freely as long as they avoid the pilings.

**RESPONSE**

An impediment is defined by Webster’s as “an obstruction, hindrance or obstacle,” and to impede is defined as “to retard in movement or progress by means of obstacles or hindrances.” The sentence in the ANILCA 810 Evaluation states “Bridges across Nigliq Channel or other smaller streams may impede boat travel along these waterways, both due to an increased risk for siltation, as well as the presence of the bridge itself.” What is being noted here is mere semantics—the sentence was in no way implying that boat use would stop, only that there will be more obstacles (such as pilings and possibly shallow areas as a result of siltation). In the Final ANILCA 810 Evaluation, the bridge across the Nigliq Channel has been addressed in the cumulative impacts section, as the bridge is not located on federal public lands.

**SH-81**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

The process for on-going consultation with North Slope communities should be open and transparent, and defined in advance to allow inclusion in the FEIS.

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**RESPONSE**

The BLM agrees that consultation should be open and transparent, and continued consultation throughout the planning process is its policy. Additionally, existing stipulations in the Northeast National Petroleum Reserve-Alaska IAP/EIS require ongoing consultation by the leaseholders and permittees for all planned operations (Stipulation 61) in order to prevent unreasonable conflicts between subsistence use and oil and gas activities.

**SH-82**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The FEIS should include a description of the affirmative steps that will be taken to minimize significant adverse impacts to subsistence resources and uses for each proposed alternative.

**RESPONSE**

With regard to outlining steps to be taken that could minimize impacts to subsistence, these steps (also called mitigation measures) have been identified during the ANILCA 810 Subsistence Hearings, and during other public and/or government-to-government meetings. Adequate mitigation measures have been identified and discussed, and reasonable steps have been taken to minimize impacts to subsistence. The determination is presented in the Final ANILCA 810 Evaluation in Appendix B.

**SH-83**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page S-19: Table, Summary of Impacts on Subsistence Harvest and Uses. Alternative C, FFD – Number should be changed to “5” out of the 5 CPAI drilling and production pads...” All 5 of the pads would be connected by road to Nuiqsut under Alternative C.

**RESPONSE**

The suggested change has been made in the FEIS.

**6.3.2.45 Surface Water Quality****WQ-1**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Section 4.3 of the DEIS should cover sewage spills.

**RESPONSE**

Text to address the comment has been added to the FEIS in the NPDES Discharge subsection of Section 4A.2.2.2.

**WQ-2**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

EIS Section 4A.2.2.1 – Impacts to Surface Water Associated with Water Supply Demands. Monitoring is mentioned here and throughout the document but without any reference as to who is doing the monitoring, for how long, as required by whom, reporting to whom and who is assessing the impacts. To say “monitoring” has happened, or will happen is meaningless without giving the monitoring criteria. Is this a mitigation recommendation?

**RESPONSE**

Monitoring requirements for the proposed action will be described in the various agency decision documents.

**WQ-3**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

4A.2.2.2 – NPDES: The transport of varying materials for disposal at CD-1 is mentioned throughout the document. However, 1) the method of transfer, 2) the route, 3) the probability of spills en-route, 4) the impacts of such spills, 5) the clean-up methods, and 6) the impacts from the clean-up is not addressed. Section 4A.2.2.2 discussion of turbidity only addresses dust fallout. This analysis needs to be broadened to include flooding, erosion, bank failure, etc. Also, impacts from turbidity to streams, rivers, creeks need to be addressed – not just turbidity on ponds and lakes.

**RESPONSE**

As indicated above in the response to comment WQ-2, text pertaining to sewage spills has been added as a second paragraph to the “NPDES Discharge” subsection of Section 4A.2.2.2 under Construction Period. Section 2.3.11 includes information on waste handling and disposal.

The text in Section 4A.2.2.1 has been revised for the FEIS to include additional hydrologic analysis of flooding, erosion, and bank failure. Text in Section 4A.2.2.2, Operation Period, has also been revised to indicate that these events would temporarily increase turbidity, but it is not possible to provide quantitative estimates.

**WQ-4**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

The last sentence of the third paragraph in Section 4A.2.2.2, “Oxygen depletion and oil concentration effects would be expected to disappear after spring recharge and ice melting,” contains a typographical error.

**RESPONSE**

A typographical error showing “oil” instead of “ion” has been corrected for the FEIS.

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**WQ-5**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

In the first paragraph of Section 4B.2.2.2., the statement that the length of ice roads would be higher for Alternative B “compared with Alternative A because no gravel road would be built across Fish Creek” erroneously implies CPAI plans a gravel road across Fish Creek. Such a road is not part of CPAI’s proposed project

**RESPONSE**

The cited comparison of gravel road construction between Alternative A and Alternative B is relevant to the FFD scenario alternatives, not the applicant’s proposed action. The text in Section 4B.2.2.2 has been revised for the FEIS to state that more miles of ice road construction would be expected for Alternative A than for Alternative B because no gravel roads would be built to CD-5 under Alternative B.

**WQ-6**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

In Section 4B.2.2.2, Summary of Impacts on Surface Water Quality, first bullet, all references to “increased” should be to changed to “decreased” in this sentence to reflect that Alternative B has decreased area potentially affected by thermokarst erosion, decreased impacts to water quality, and decreased turbidity compared to Alternative A.

**RESPONSE**

The text has been revised accordingly for the FEIS.

**WQ-7**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

The EIS should not refer solely to Rolligons when describing off-road travel; other tundra-approved, low pressure vehicles besides Rolligons could be used.

**RESPONSE**

The reference to “Rolligons” in Section 4D.2.2.2 has been changed to “low-pressure vehicles.”

**6.3.2.46 Traffic****TF-1**

This issue was raised in the following letters: DEIS0083 and DEIS0114.

**ISSUE**

EIS should include air traffic data from past 2 years

**RESPONSE**

Figure 2.3.6-1 presents 2 years of historical flight data (May 2000–February 2002).

**TF-2**

This issue was raised in the following letter: DEIS0114.

**ISSUE**

Nuiqsut deals with 1,900 flights out of Alpine, when the DEIS only states 20.

**RESPONSE**

Historical flights data are presented in Figure 2.3.6-1. Air traffic estimates for the ASDP are presented in Tables 2.3.10-1, 2.4.4-4 and 2.4.4-7.

**TF-3**

This issue was raised in the following letter: DEIS0216.

**ISSUE**

Page 2-31, Table 2.3.10-1. Estimated vehicle and air traffic levels for Alternative A-C are presented in Table 2.3.10-1. An explanation is needed of how the numbers in the table were derived and what data were used to formulate the estimates.

**RESPONSE**

Aircraft and vehicle traffic estimates for the construction, drilling and operations phases of the applicant's proposed action are presented in Tables 2.3.10-1, 2.4.4-4 and 2.4.4-7. These estimates were generated by the applicant, based upon the scheduled activities that would occur during the winter and summer periods of each year from 2004 to 2011, as detailed in Table 2.4.1.5.

**TF-4**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section Table 2.3.10-1, Page 2-31: Traffic estimates should be calculated over the life of the proposed projects and totaled by year for construction, drilling, and operations phase so that comparisons can be easily made to Figure 2.3-1 Historical Flight Frequency.

**RESPONSE**

The historic flight frequency data presented in Figure 2.3.6-1 is for APF-1 and CD-2 for the period of May 2000 through February 2002.

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The air traffic estimates in Table 2.3.10-1 are for the five proposed production pads (CD-3 through CD-7). There is no basis for comparison.

**TF-5**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 2-31, Table 2.3.10-1. Traffic estimates for CPAI's proposal (Alternative A), also applicable to Alternatives B and C, are presented in Table 2.3.10-1. The methodology used to generate the numbers must be more fully described.

**RESPONSE**

Aircraft and vehicle traffic estimates for the construction, drilling and operations phases of the applicant's proposed action are presented in Tables 2.3.10-1, 2.4.4-4 and 2.4.4-7. These estimates were generated by the applicant, based upon the scheduled activities that would occur during the winter and summer periods of each year from 2004 to 2011, as detailed in Table 2.4.1.5.

**TF-6**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Page 2-9: claims that CPAI road use during operations will be limited to one round trip truck per day from Alpine, but provides no basis for the statement. This estimate conflicts with page 2-18 (2 round trips per day per pad) and Table 2.3.10-1.

**RESPONSE**

Section 2.3.1.3 has been revised for the FEIS to indicate two round trips per day to roaded pads, i.e. one round trip per shift. This is consistent with Table 2.3.10-1.

**TF-7**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

The DEIS does not identify the types of boats that would be used to access CD-3. Purpose of boat use should also be described.

**RESPONSE**

All proposed boat use at CD-3 and CD-4 is related to emergency spill response. Section 2.3.4.2 has been revised for the FEIS to provide additional details regarding the types of boats that would be used. Section 2.4.1.1 has been revised to note that boat use would be for seasonal emergency access.

**TF-8**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

There is no discussion of how CD-3 would be re-supplied during the years when there is no ice road to the pad, but the air traffic numbers should be increased.

**RESPONSE**

The highest use of the CD-3 airstrip would occur during non-ice road months for material re-supply. The aircraft flight numbers presented in Table 4A.2.3-5 are averages of (low–high) monthly estimates that take into account years when there would be no ice road to CD-3.

**TF-9**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

2.3.10 – Traffic: This Table does not include estimated helicopter traffic, which during the summer months is a high number. See comments on 2.3.6 above.

**RESPONSE**

Summer season non-operations related helicopter flights have been estimated and added to the FEIS in Section 2.3.10, Traffic.

**TF-10**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 2-30: Traffic. Last sentence: correct speed limits are 5 mph on process pads, 15 mph on production pads, and up to 45 mph on roads. It should be noted in the document that non-operations traffic will likely occur in the project area by a variety of users besides industry, including federal and state agencies, universities, and local residents.

**RESPONSE**

Section 2.3.10, Traffic, has been revised for the FEIS to include the suggested information.

**TF-11**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Pages 2-31, 2-72, 2-75: Table 2.3.10-1, CPAI Development Project – Traffic Estimates. Footnotes defining summer and winter are in error. For purposes of this table, where winter designates the period of ice road travel, Winter = December through April, and Summer = May through November.



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**RESPONSE**

The purpose of this table is to indicate the estimated range of vehicle trips and aircraft flights expected during the summer season, when wildlife and birds would be more prevalent in the Plan Area, vs. the winter. A footnote clarifying the season designations has been added to the tables.

**6.3.2.47 Transportation****TP-1**

This issue was raised in the following letter: DEIS0198.

**ISSUE**

Power lines on poles cause a safety hazard for aircraft flying in marginal weather.

**RESPONSE**

The potential for powerlines on poles to create a safety hazard for low-level aircraft operations during poor weather conditions has been noted in the FEIS and appropriate mitigation measures have been proposed for those alternatives that propose powerlines on poles. This issue is addressed in Sections 4A.4.9, 4C-1.2.4.9, and 4C-2.4.9.

**TP-2**

This issue was raised in the following letter: DEIS0195.

**ISSUE**

Nuiqsut should have the same entitlement to go over Fish Creek without restrictions.

**RESPONSE**

The BLM has authority to restrict use of facilities built by lessees under oil and gas leases for health and safety purposes. Under the Preferred Alternative, the BLM is proposing to allow residents of Nuiqsut to use roads and bridges constructed within the National Petroleum Reserve-Alaska, including roads to the Fish Creek area.

**TP-3**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

The information on the State road to Nuiqsut should be revised to reflect the current plan to connect it to the Kuparuk road system.

**RESPONSE**

The discussion of the state's proposed Colville River Road has been revised for the FEIS (see Section 3.4.9.1).

**TP-4**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Badami should be listed as having a shallow draft dock.

**RESPONSE**

The discussion of marine facilities has been revised for the FEIS to include the shallow draft dock at Badami (see Section 3.4.9.3).

**6.3.2.48 Utilities**

**UT-1**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

2.3.11.4 – Fresh Water: This section mentions that the “fresh water demands of Alternatives A, B, and C are comparable.” However, it fails to specifically mention that Alternative D is roadless thus would require more water annually for ice road construction. The only total given is for potable water consumption per drilling day. It would be helpful to reference the reader to a Table showing all projected water usage.

**RESPONSE**

The fresh water demand for ice roads under each alternative has been recalculated for the FEIS. A comparison of the volumes of water required for ice roads under each alternative is presented in Table 2.5-1. Section 2.3.11.4 has been revised to recognize the variation in water demands resulting from ice roads under each alternative.

**UT-2**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

Table 2.3.11-1 – Proximity of Productions Pads to Major Streams: The proposed CD-3 pad is <0.25 mile from the Ulamnigiag Channel. The table shows <1.0 from the Tamayayak Channel. This is misleading as the proposed pad location is practically on the riverbank. We recommend that the table be changed to properly reflect the pad location. It would be helpful to include distances from major water bodies, i.e. Harrison Bay. Recommend adding a column.

**RESPONSE**

The noted distances from CD-3 to the Tamayayak Channel has been edited for the FEIS. The table is pertinent to surface water discharges from pads, so the table contents have been kept to the nearest major stream.

**UT-3**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

Class I and Class II Injection Wells: These need to be described and tell what is/can be injected into each.

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**RESPONSE**

Section 2.3.3.3 has been revised for the FEIS to describe criteria for Class I and Class II disposal wells.

**UT-4**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The FEIS should include information regarding type, volume, and toxicity of waste streams for all proposed and hypothetical production and processing satellite pads under the CPAI development plan.

**RESPONSE**

The best available information regarding waste streams is presented in revised Sections 2.3.3.3, 2.3.11.5, and 2.3.11.6 of the FEIS.

**UT-5**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The FEIS must include specific language regarding EPA's NPDES permit.

**RESPONSE**

Specific language regarding the USEPA's NPDES permit has been added to Section 2.3.11.5 of the FEIS.

**UT-6**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 2-32: Sec. 2.3.11.4, Fresh Water. This section states "The fresh water demands of Alternatives A, B, and C are comparable...". It should also state how much more water Alternative D would require for ice roads.

**RESPONSE**

The fresh water demand for ice roads under each alternative has been recalculated for the FEIS. A comparison of the volumes of water required for ice roads under each alternative is presented in Table 2.5-1. Section 2.3.11.4 has been revised to recognize the variation in water demands resulting from ice roads under each alternative.

**UT-7**

This issue was raised in the following letters: DEIS0001, DEIS0083, DEIS0114, and DEIS0261.

**ISSUE**

DEIS should explain why the generator on the lookout pad cannot be put at CD-5 or CD-7, outside the Fish Creek sensitive area buffer zone.

**RESPONSE**

Section 2.4.6.6 of the DEIS included a discussion of the rationale for placing the power generator at CD-6.

**UT-8**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The FEIS should characterize and disclose information on waste management for CPAI's development plans. Information should include identification and estimates of waste streams by type, volume, and toxicity produced during construction and operation for drilling muds and cuttings, reserve pit fluids, other drilling related material, oil, diesel, solvents, glycol, and other chemicals used for machine operation and maintenance.

**RESPONSE**

The best available information regarding waste streams is presented in revised Sections 2.3.3.3, 2.3.11.5, and 2.3.11.6 of the FEIS.

**6.3.2.49 Vegetation and Wetlands**

**VW-1**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS admits that a "habitat map is only available for 171,861 acres in the National Petroleum Reserve-Alaska, but not for the entire area." (p.4A.3-60) Despite this lack of knowledge, it later claims that there will be adequate habitat for animals displaced by industrial activities (p.4A.3-62). This may explain why the DEIS does not identify or explain its methodology, in violation of NEPA, that it uses in deriving its estimates of loss of habitat type for the various alternatives.

**RESPONSE**

Vegetation analyses were site-specific and put in context with available resources within the Plan Area. Habitat mapping is available for the entire footprint of CPAI's proposal and all alternatives (except for a portion of Sub-Alternative C-2). Vegetation analyses also were put in context for the specific available habitats within the Colville River Delta, because resources within this area have been identified as unique to the Plan Area. The basis for vegetation and wetland impacts were acres lost or altered due to gravel placement, dust deposition, alteration in moisture and thermal regimes, and alteration due to ice road construction in context of available vegetation and wildlife habitat types within the Plan Area. For the FEIS, a description of impact assumptions and calculation methods was added to Section 4A.3.1, Vegetation and Wetlands.

Although wildlife habitat mapping was not available for the entire Plan Area, vegetation mapping was available and was used to evaluate potential impacts under the FFD alternatives. Text was added to the FEIS to clarify extent of maps.

**VW-2**

This issue was raised in the following letter: DEIS0233.

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**ISSUE**

The DEIS falsely portrays impacts to vegetation from ice roads as temporary. Old ice roads remain clearly visible for years.

**RESPONSE**

The word “temporary” was removed from the FEIS’ description of ice road impacts in Sections 4A–4F. The description of vegetation impacts in Section 4A.3.1, Vegetation and Wetlands was clarified for the FEIS. The extent of damage to tundra vegetation from ice roads depends on several factors including the vegetation type and the use of the road (single year or multiple years). While old ice roads may remain visible from the air, the level of visibility is not necessarily related to the level of damage. The readily visible “green trails” caused by the compression of dead leaf matter in wet tundra is temporary (lasting into the fall) and has relatively minor ecological impacts. Even “brown trails” associated with moderate damage due to the scuffing and crushing of tussocks, which occur less frequently, are expected to fully recover over time (Pullman et al. 2003). Tundra recovery rates are variable and depend on the initial level of disturbance and vegetation types (Yokel et al. Undated, Jorgenson et al. 2003a); however all impacts from single year ice roads are expected to completely recover over a 20 to 24 year period (Jorgenson et al. 2003b, Payne et al. undated).

**VW-3**

This issue was raised in the following letter: DEIS0198.

**ISSUE**

Vegetation damage will result from snow accumulation on the north side of pads or roads causing thermokarst and water impoundment. The added height of the 14 feet elevation pads in the lower delta gives the potential for the spring-time footprint to be doubled or 80 acres.

**RESPONSE**

The DEIS was incorrect with regard to the proposed pad thickness of 14 feet for CD-3. The proposed thickness is 5 to 8 feet. CD-3 and CD-4 were studied in detail (e.g. flood frequency and pad height) in 2001 and 2002. The information is presented in break-up reports for those years and has been incorporated into Section 3.2.2.1, Surface Water Hydrology. Additional information and analyses obtained since the DEIS was released was used to update the assessment in the FEIS.

**VW-4**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

The EIS should break down wetland impacts between acres covered by pads and acres covered by roads.

**RESPONSE**

Wetland impacts to acres covered by roads and acres covered by pads were presented in the DEIS. For the FEIS, direct impacts to vegetation and habitats have been further broken down by primary roads; spur roads; well pads; airstrip runways and aprons; boat launches and docks; and associated access roads (consistent with the project description in Section 2). Tables 4A.3.1-1; 4A.3.1-2; 4B.3.1-1; 4B.3.1-2; 4C1.3.1-1; 4C1.3.1-2; 4C2.3.1-1, 4D.3.1-1, 4D.3.1-2, 4D.3.1-3, 4D.3.1-4, 4F.3.1-1, and 4F.3.1-2 present the impact acres for these categories. A brief summary of total impacts was added to the text of Section 4, Terrestrial Vegetation and Wetlands for each alternative in the FEIS.

**VW-5**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS lists Executive Order 11988 – Floodplain Management and Executive Order 11990 – Protection of Wetlands, but fails to discuss how each of the alternatives would address the requirements of the Executive Orders.

**RESPONSE**

The EIS does not make the findings for Executive Orders, but is intended to provide environmental and other information for use by federal agencies to address compliance with these orders which will be included in the ROD. FEMA floodplain maps are not available for the North Slope of Alaska—the best available information on floodplain extent for the Colville River was included in the FEIS. Additional information on the rationale for pad and road locations to address avoidance of wetlands is included in Section 4A.3.1, Vegetation and Wetlands. Impact analyses for all wetland habitats and summaries of impacts to key wetlands are included in Sections 4A–F.3.1, Vegetation and Wetlands.

**VW-6**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS fails to clearly identify what are the “key wetlands” generally or at a specific site, or explain how facilities would be situated to minimize impacts to key wetlands.

**RESPONSE**

Key wetland habitats as identified in the Northeast National Petroleum Reserve-Alaska IAP/EIS ROD (BLM and MMS 1998b) were presented in Section 3.3.1.3 of the DEIS. For the FEIS, Tables 3.3.1-3, 4A.3.1-2, 4B.3.1-2, 4C.3.1-2, 4D.3.1-2, 4D.3.1-4, and 4F.3.1-2 were revised to identify key wetland habitats. A sentence was added to the Summary of Impacts sections (Section 4) under each alternative to further summarize impacts to key wetlands. Additional information on the rationale for pad and road locations to address avoidance of wetlands was added to Section 4A.3.1, Vegetation and Wetlands.

**VW-7**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

The DEIS inaccurately dismisses thermokarsting as an issue in floodplains. While the active layer may have less ice, it's all underlain by permafrost, and thermokarsting can certainly affect permafrost ice where floodwaters pond, as well as ice lens in the active layer.

**RESPONSE**

For the FEIS, the cited statement, “Floodplains and terraces are usually unaffected (by thermokarst) because of the low ice content of these areas (Walker et al. 1987b)” was removed from Section 4A.3.1.1, Terrestrial Vegetation and Wetlands. Thermokarst is an important process in bank erosion as indicated. Indirect impacts to tundra vegetation and habitats from dust fallout and changes to moisture or thermal regimes associated with

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roads, pads, and airstrips have been calculated for all alternatives and are presented in Tables 4A.3.1-1; 4A.3.1-2; 4B.3.1-1; 4B.3.1-2; 4C1.3.1-1; 4C1.3.1-2; 4C2.3.1-1, 4D.3.1-1, 4D.3.1-2, 4D.3.1-3, 4D.3.1-4, 4F.3.1-1, and 4F.3.1-2. These impacts were calculated by adding a 164-foot buffer around gravel footprints (including those within floodplains). Thermokarst is discussed in more detail in Sections 3.1.1.2, Permafrost and 4A.1.1.1, Soils and Permafrost.

**VW-8**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

Section 4A.3.a Wetland losses: There is no discussion of wetland functions and values and what functions and values would be impacted or lost as a result of the proposed project. Also, without the pad and road placement criteria, it cannot be determined if higher value areas have been avoided to the greatest extent practicable. 404(b)(1) guidance states that “no discharge of dredge or fill material shall be permitted unless appropriate and practicable steps have been taken which will minimize potential of adverse impacts to the discharge on the aquatic system.”

**RESPONSE**

A discussion of functions and values of Plan Area wetlands was added to Section 3.3.1.2 of the FEIS. The primary function of wetlands in the Plan Area is wildlife habitat and threatened and endangered species habitat. The analyses of impacts in Section 4, Terrestrial Vegetation and Wetlands, focuses on the type of impacts to vegetation and wetlands and provides the quantities of impacts by vegetation type and wildlife habitat. The analyses of impacts to wildlife habitat are also discussed under other Biological Resource sections of the FEIS (Sections 4.A–F.3.3 Birds, Sections 4A–F.3.2 Terrestrial Mammals, and Sections 4A–F.3.5, Threatened and Endangered Species).

A description of the rationale used to avoid high value wetlands was also added to the FEIS in Section 4A.3.1, Vegetation and Wetlands.

**VW-9**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Dust fallout occurs from all gravel surfaces exposed to wind. Air traffic causes a dust shadow. Therefore roadless alternatives need to include an evaluation of dust.

**RESPONSE**

Indirect impacts from dust fallout and changes to moisture or thermal regimes associated with roads, pads, and airstrips have been calculated for all alternatives and are presented in Tables 4A.3.1-1; 4A.3.1-2; 4B.3.1-1; 4B.3.1-2; 4C1.3.1-1; 4C1.3.1-2; 4C2.3.1-1, 4D.3.1-1, 4D.3.1-2, 4D.3.1-3, 4D.3.1-4, 4F.3.1-1, and 4F.3.1-2. The methods used to obtain these calculations are presented at the beginning of Section 4A.3.1.1.

**VW-10**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

The text implies that insulated ice pads will be developed for staging materials and equipment during winter construction. Ice pads used to support construction would not be insulated and would be allowed to melt during the summer.

**RESPONSE**

For the FEIS, text under the heading Ice Roads, Ice Pads, and Snow Stockpiles in Sections 4A–F.3.1.1 was revised to indicate that ice pads [instead of “insulated” ice pads] would be used as staging areas during pipeline construction.

**VW-11**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

There are numerous references to a USFWS study conducted on seismic trails in the Arctic National Wildlife Refuge. The seismic work conducted in the Refuge utilized old technology (tracked vehicles, etc.) that is not in use today. The text needs to include reference to a report recently completed for seismic trails in the Colville delta conducted by Jorgenson et al (2003). To be all inclusive the text should include a discussion about the evolution of technology, especially with respect to seismic equipment where vehicles have been modified over the years to minimize impacts to the tundra. CPAI can provide the BLM with copies of a presentation that discusses the evolution of seismic equipment if requested.

**RESPONSE**

Seismic exploration is not a part of the applicant’s proposed action; thus it is not appropriate to include a discussion on the evolution of seismic equipment. The FWS study was cited because of the limited studies available on the effects of winter tundra travel. For the FEIS, text regarding off-road tundra travel in Section 4.A.3.1.1, Terrestrial Vegetation and Wetlands, was revised to include a summary of the more recent seismic and tundra travel studies available.

**VW-12**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

CPAI objects to the mitigation measure “fill slopes would be stabilized by revetments or soil binders.” This is too broad and could be interpreted to apply to the entire lengths of all roads. Such stabilization is only needed potentially in sensitive areas such as river crossings.

**RESPONSE**

For the FEIS, the text was revised to indicate that fill slopes would be stabilized by revetments or soil binders where necessary.

**VW-13**

This issue was raised in the following letter: DEIS0241.



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**ISSUE**

4F.3.1 - Reliance on Federal and State Programs for Resource Protection (Wetlands): The first sentence should read: Conversion of Impacts to wetlands and floodplains are protected in two ways. Fourth sentence should read: In addition, Section 404 of the Clean Water Act, administered by the U.S. Army Corps of Engineers (USACE), regulates the discharge of any dredge or fill material into waters of the U.S. which includes wetlands. controls any modification to wetlands to minimize the net loss of wetlands. The last sentence is to be deleted. A Memorandum of Agreement . . . minimizing wetland loses is preferable to compensatory mitigation.

**RESPONSE**

For the FEIS, the sentences were revised to reflect the suggestions made in the comment.

**VW-14**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page S-10: 2nd paragraph under Biological Environment – insulated ice pads are not used during pipeline construction. They may be used at a roadless production pad for storage of equipment for summer drilling. See also EVW-12.

**RESPONSE**

For the FEIS, sentences under the heading Terrestrial Vegetation and Wetlands in the Alternative A discussions were revised to indicate that ice pads [instead of “insulated” ice pads] would be used as staging areas during pipeline construction.

**VW-15**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page S-11: Table, Summary of Impacts on Terrestrial Vegetation and Wetlands, Alternative D – Under FFD revise “0 acres would be impacted by dust.” Even if there are no roads, dust shadows could occur from production pads and airstrips.

**RESPONSE**

Section S.4.3.1–Alternative A – Summary of Impacts (CPAI and FFD), Terrestrial Vegetation and Wetlands, was updated for the FEIS with a revised summary table. The table includes impact calculations, including dust impacts under Alternative D. Indirect impacts to tundra vegetation and habitats from dust fallout and changes to moisture or thermal regimes associated with roads, pads, and airstrips were calculated using a 164-foot buffer around all gravel footprints.

**VW-16**

This issue was raised in the following letter: DEIS0233.

**ISSUE**

The EIS analysis of vegetation and wetlands impacts should consider that the development footprint will expand as the project develops.

**RESPONSE**

The DEIS analyzed both alternative-related impacts and cumulative impacts. The analysis of FFD alternatives, which is encompassed by the cumulative analysis, addressed the potential impacts of future development near the Plan Area.

**6.3.2.50 Visual Resources**

**VS-1**

This issue was raised in the following letters: DEIS0198 and DEIS0263.

**ISSUE**

All structures, including pipelines, should be painted earth tones that blend into the landscape, so as to protect visual resources.

**RESPONSE**

Under each Potential Mitigation Measures discussion for each alternative, it indicates that all structures would be painted to blend with the natural environment. All colors would be pre-approved by the AO. This includes emergency spill containers located along watercourses.

The BLM would use computer generated colors to determine the color for structures that blend in best with the background colors of the natural landscape and may do a color test onsite.

**VS-2**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The analysis of view shed impacts claims that the impact area for a pad is only 8,000 acres, but Figures 3.4.5.3-1 and -2 show that Alpine would be visible from 5 and 15 miles, which would makes the viewshed impact larger than 8,000 acres.

**RESPONSE**

The 8,000 acres identified as a viewshed is based on a 2 mile radius from a facility. It was determined that a 2 mile radius was the impact area for the recreational experience. At greater distances, the recreational experience will not necessary be impacted, , even if the facility is visible from up to 5 miles away or more.

The 5-mile distance was used as a foreground-middleground figure for visual resource analysis purposes, and it represents where facilities may be visible with the potential to contrast with the natural landscape.

**VS-3**

This issue was raised in the following letter: DEIS0240.

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**ISSUE**

Page 4A.4-51: “The summer season represents the time of year when viewers would be traveling through the Plan Area.” This statement ignores winter subsistence users, particularly Nuiqsut residents, and recreational snow machines, dog mushers, etc., who visit the area.

**RESPONSE**

The VRM system looks at the impacts of a proposal when most of the users or viewers will view the landscape, and the objects are most visible. Due to low or no light and snow cover during the winter, the primary viewing season is summer. It was decided that the use period for analysis would be the summer, a snow-free timeframe.

**VS-4**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Section 4A.4.8: fails to analyze the visibility of industrial facilities and industrial scarring from the air.

**RESPONSE**

The VRM system looks at the impacts of a proposal from the viewer’s/viewpoint angle of observation. It was determined that most of the views and angles would be from the ground, not from the air, so no analysis of overhead perspective was conducted. While impacts can be viewed from the air, the scale is relatively small and the amount of view time is relatively short. With full reclamation and revegetation, impacts will continue to be visible from the air, but these impacts would be virtually unnoticeable from the ground.

**VS-5**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

Page 4A.4-51: The DEIS fails to estimate how far away the sky glow (due to lighting of facilities at night and flaring gas) would be seen.

**RESPONSE**

It is assumed that the lighting for facilities and production flares would be visible within the foreground-middleground zone, but that they would not, in and of themselves, attract the attention of the casual observer during the primary viewing season. They would represent an element of the totality of visual impacts which together could attract the attention of the casual observer. It was determined that mitigation of lighting impacts would be included in the Preferred Alternative (Alternative F). These measures were described in Section 2.4.6.

**VS-6**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS fails to integrate impacts to Visual Resources with any discussion of wilderness.

**RESPONSE**

The applicant's proposed action would not occur in, nor adjacent to, a designated wilderness area, nor a wilderness study area. Wilderness would not be affected by the proposed action. However, the FEIS does consider the impacts on wilderness-type values, such as naturalness, solitude, quietude, and other wildlife and wildland values.

**VS-7**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

Section 3.1.1.3 - Colville Delta Facility Group KOPs: Existing Conditions at CD-1 and CD-2: In February 2001, the Corps of Engineers authorized the discharge of fill into 98.4 acres of wetlands for the construction of the Alpine facilities (CD-1, CD-2 and associated features). Subsequent authorizations bring the total authorized fill at Alpine to 112.302 acres. The Draft EIS consistently understates the amount of impacts of this existing project. This section states the "total acreage for CD-1 is 36.3 acres; the total acreage for CD-2 is 10.1 acres." This is incorrect, totally misleading to the reader, and needs to be corrected in the Final EIS. This also needs correcting at 2.3.12.1 – Existing Alpine facilities (CD-1 and CD-2).

**RESPONSE**

The total acreage for CD-1 and CD-2 is 112.302. Sections 2.3.12.1 and 3.4.8.3 of the FEIS provide the proper, authorized acreage of the "footprint."

**VS-8**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

The description mentions the height of the drill rig as being 205 feet as being "the tallest structure" at the existing Alpine facilities. This section needs to note that the drill rig is a temporary structure and give an estimate as to how long it will be at existing and proposed pads within the Colville Delta.

**RESPONSE**

For the FEIS, Section 3.4.8.3 was revised to indicate that drill rigs are temporary structures which are active (drilling) during different times of the year. For example, for the sites in the Colville Delta area, as displayed in Table 2.4.1-5, CD-3 would be drilled in winter up to several years, whereas CD-4 would be drilled in summer. As shown in Table 2.4.1-5, CD-3 drilling could occur in winter through 2011 and drilling at CD-4 could occur through 2009 in summer.

**VS-9**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 3-191: Visual Resources section does not state which class is the desired objective.

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**RESPONSE**

Section 3.4.8.2 states that VRM classes were not established by the Northeast National Petroleum Reserve-Alaska IAP/EIS. It is the BLM's policy that interim VRM classes be established when a project is proposed for which no VRM objectives have been approved.

Using scenic quality, sensitivity, and distance zones, as well as other management factors, the Plan Area was assigned three VRM classes.

The Colville River from the southern project boundary to Harrison Bay, including the Delta area, is VRM Class II. Fish Creek, Judy Creek, and the Ublutuooh River are VRM Class III. The rest of the Plan Area is VRM Class IV. This information was displayed in Figure 3.4.8.2-1.

**VS-10**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 3-193: Third and fourth headings, Views Looking South/Northeast from Nechelik Channel, KOP #20 and #21. In titles and following paragraphs change "Nechelik" to "Nigliq".

**RESPONSE**

The suggested changes have been made for the FEIS.

**VS-11**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4A.4-52: Alternative A – Potential Mitigation Measures for Visual Resources. Mitigation #1. The statement "All structures, or all permanent structures, would be painted to blend into the natural environment." may not be practical. Some structures, such as roads and pads, are not amenable to being painted. Also some materials do not hold paint well in the harsh environment, resulting in high maintenance including frequent repainting. Would the color blend in summer or winter?

**RESPONSE**

All structures that can be painted will be. It was never the intent that roads and pads be painted. It is possible that some components of structures may not take paint well and excessive maintenance would be prohibitive. Some facilities may be required to use self-weathering materials, or BMPs, and allowed to self-weather in order to reduce visual contrast for components that may not accept or hold paint. Painting where possible will allow structures to blend into the surrounding environment during summer months when snow is not fully or partially covering structures.

For the FEIS, Section 4A.4.8.5 was revised to indicate that self-weathering steel, or BMPs, will be used on all metal structures not otherwise painted, including but not limited to pipelines, communications towers and drill rigs, thus providing a more natural color of brown.

**VS-12**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 4A.4-52: Visual Resources. CPAI disagrees with the statement that viewer sensitivity is not an issue in winter. Villagers can travel farther in winter than in summer via snowmachine, and lights from production pads can be seen for long distances due to the flat terrain. Lights are often used as navigation aids for travelers in winter in the Arctic. It should be noted that drill rigs would only be present for short amounts of time so they will not create a permanent visual impact.

**RESPONSE**

Even with lighting mitigation, the impacts from lights and production flares will continue. Any visible light can continue to be used as a navigational aid. Drill rigs, while temporary in nature (generally less than 10 years), will cause impacts to visual resources.

For the FEIS, Section 4A.4.8.4 was revised to indicate that under Alternative A and Alternative A – FFD, construction and operation would result in adverse effects to visual resources. Activities such as pad construction and road construction would have a negligible impact because the construction activities would occur in the winter when snow and darkness make viewing activities difficult. The summer season represents the time of year when viewers would be traveling through the Plan Area and facilities are free of snow and there is adequate daylight for viewing. The facilities and structures associated with operation would introduce contrast with the natural landscape. When viewed from the foreground-middle-ground zone, these structures would produce a moderate contrast with the natural landscape.

**6.3.2.51 Water Resources****WR-1**

This issue was raised in the following letter: DEIS0211.

**ISSUE**

Analyzing erosion of the land by the river should also consider ice forces pushing to the shore.

**RESPONSE**

Most of the ice will move down relatively deep channels during break-up events because overland flow of ice is limited by water depth. For example, a 4-foot-thick piece of ice from the main channel cannot float in 2 feet of water on the floodplain; therefore erosion from ice movement will be limited to the channels. Bank erosion associated with ice forces is a natural process on the Delta, however, the rate of erosion associated with ice forces is not expected to increase as a result of the applicant's proposed action. Additional but negligible ice-related erosion will be associated with the proposed bridge. For the FEIS, results from observations and recent analyses have been added in Sections 3.2.2.1, Impact of Ice on Flooding During Breakup, and 4A.2.2.1, Impacts Associated With Ice Conditions.

**WR-2**

This issue was raised in the following letter: DEIS0212.

**ISSUE**

No discharges should be allowed to rivers; even food or soap will cause fish to leave.

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**RESPONSE**

Discharges to rivers are not proposed and the USEPA does not intend to authorize NPDES discharges to rivers. For the FEIS, a clarification of this fact has been added to Section 4A.2.2.2.

**WR-3**

This issue was raised in the following letters: DEIS0081, DEIS0083, DEIS0114, and DEIS0230.

**ISSUE**

In the area of the proposed bridge, the Nigliq Channel is shallow and hard to cross. Bridge supports may cause new sandbars, growth on existing sandbars, silting and sedimentation of the channel, erosions of the riverbanks, and ice jam.

**RESPONSE**

Scour, erosion and sedimentation issues are discussed in detail in Sections 4A.2.2.1 and 4F.2.2.1 in the subsections titled Scour Analyses in Hydrologic Analyses and Modeling to Assess Effects of Roads, Pads and Bridges. In general, various flood frequencies and their effect on depth and velocity of water in the channel, the depth and volume of sediment scour, and the potential for resultant downstream sedimentation in the vicinity of the proposed Nigliq Channel Bridge were examined.

The implication of the phrase “hard to cross” at the proposed bridge site is not clear. According to onsite engineers, this site was chosen as one of the better ones on the channel for a bridge, based on channel width, streambank conditions and floodplain characteristics, and so should be more practical, from an engineering perspective, to cross compared to other sites.

**WR-4**

This issue was raised in the following letter: DEIS0233.

**ISSUE**

The EIS should acknowledge the certainty that placing bridges over rivers will require constant alteration of hydrology in the form of channelizing, dredging, constricting, and otherwise altering the rivers' flow. In terms of the long-term impacts of structures on Colville hydrology – will there be a need for channel maintenance?

**RESPONSE**

The effect of bridges on stream hydrology (i.e., constriction, channelization, flow alteration, etc.) and erosion/sedimentation in the channel is described in detail in Sections 4A.2.2.1 and 4F.2.2.1 in the subsections titled Hydrologic Analyses and Modeling to Assess Effects of Roads, Pads and Bridges. Detailed analyses and discussions are presented for the proposed Nigliq Channel Bridge (i.e., 1,200 and 1,650 ft scenarios) and the proposed Ublutuoch River Bridge (i.e., 120 and 350 ft scenarios). In general, infrequent high flows would be constricted somewhat by bridges if they occupy a portion of the floodplain, thereby slightly increasing velocity at the structure during flood flows. Depending on channel sediment characteristics, localized scour could also occur during these same infrequent flood events (i.e., with recurrence intervals greater than 10 years). During breakup events on the Delta, a large portion of the sediment that is suspended during these scour events will be transported out of the Delta and onto sea ice. Additional channel maintenance (i.e., dredging) once the bridge structure is in place is not anticipated, but pre- and post event channel monitoring could confirm these predictions.

**WR-5**

This issue was raised in the following letters: DEIS0081, DEIS0083, DEIS0216, DEIS0230, DEIS0236, and DEIS0271.

**ISSUE**

The EIS should include site-specific hydrologic information and analysis for the Nigliq Channel. It should state how much sedimentation and erosion is likely to result from the Nigliq Channel bridge. Knowledge of bottom sediments is necessary because scouring of a gravel bottom around bridge piers would be different than if the bottom is sand or silt. Historic flow rates, erosion, flooding, damming, and channel movement should be described. The damming effect caused by the approaches, piers, CD-2 and the road to CD-1 will all effectively reduce the area compared to the flow, turning the bridge into a sluiceway with far higher water velocities during flood stages than at normal summer water levels.

**RESPONSE**

Hydrologic aspects of the Nigliq Channel (e.g., flow rates, flooding) are discussed throughout Section 3.2.2.1 in various subsections (i.e., Colville River Delta, Colville River and Impact of Ice on Flooding During Breakup) within the Stream and River Hydrology section. In this same section, historic records of erosion, deposition, channel migration, sediment load, and sedimentation associated with the Nigliq Channel are also discussed in various subsections (i.e., Colville River Sediment Erosion, Transport and Depositional Processes; and Colville River Delta Coastal Processes). Recent two-dimensional modeling of the Colville River Delta examines the effects caused by the proposed approaches, piers, roads, and pad facilities including in the Nigliq Channel. Sections 4A.2.2.1 and 4F.2.2.1 summarize the results of these studies. In particular, specific impact analyses are in subsections titled Hydrologic Analyses and Modeling to Assess Effects of Roads, Pads and Bridges. Impact analyses related to erosion and sedimentation associated with the proposed bridge are also described in detail in Sections 4A.2.2.1 and 4F.2.2.1 in the subsections titled Scour Analyses.

**WR-6**

This issue was raised in the following letters: DEIS0216 and DEIS0241.

**ISSUE**

The EIS must include hydrologic modeling, impacts to surface water flow from roads, and modeling or bridge/culvert design data.

**RESPONSE**

Engineers developed a site-specific two-dimensional model of the Colville River Delta (i.e., FESWMS or the USGS' Finite Element Surface-Water Modeling System integrated with the pre- and post-processing software program – Surface Water Modeling System - developed by Brigham Young University) and a one-dimensional model of the Ublutuoch River (i.e., HEC-RAS or the Hydrologic Engineering Center's River Analysis System) to evaluate the effect of bridges at various flood frequencies, on water surface elevation and channel velocity. The effects of bridges/culverts on surface water flow are described in detail in Sections 4A.2.2.1 and 4F.2.2.1 in the subsections titled Hydrologic Analyses and Modeling to Assess Effects of Roads, Pads and Bridges.

**WR-7**

This issue was raised in the following letters: DEIS0216 and DEIS0236.



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**ISSUE**

The EIS should include recent monitoring study data for analysis of potential hydrologic impacts on the Colville River Delta.

**RESPONSE**

The DEIS summarized the results of various hydrologic monitoring studies conducted on the Delta over the past 40 years, which included more recently specific assessments during break-up and summaries of flooding observations. Summaries and analyses completed since the DEIS have also been used to update the assessments for the FEIS throughout Sections 3.2.2.1, 4A.2.2.1 and 4F.2.2.1.

**WR-8**

This issue was raised in the following letters: DEIS0216 and DEIS0236.

**ISSUE**

The EIS should include discussion of the erosion problems associated with the existing Alpine facilities and pipeline beneath the Colville River, including a comparison with pre-construction predictions.

**RESPONSE**

A bank stability evaluation on the west bank, at the HDD crossing, is currently in progress. These results are not yet available. Similarly, existing erosion concerns on the Delta have been examined in a recent technical report. The results of this report have been incorporated into the FEIS in Section 4A.2.2.1, Impacts Related to Bridges. Further, operations activities will address any maintenance issues caused by flood erosion following construction.

**WR-9**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Section 2.3.3.1 assumes hydrologic data with enough rigor to allow for ice jam analysis and prediction have been collected to allow such modeling. To date, models predicting water surface elevations within the Colville River do not take into account ice in channels and ice jams.

**RESPONSE**

Extensive modeling has been conducted to evaluate changes to water surface elevations and velocities across the Delta during large, infrequent flood events. Recently, an additional study described ice jamming potential within the Delta has been prepared. This study also presented modeling that incorporated aspects associated with ice jam processes. The impact analyses have been updated to reflect this new data, information and modeling results. The modeling and the effects of ice jams are described in Sections 3.2.2.1 (in subsection titled Impact of Ice on Flooding During Breakup) and 4A.2.2.1 (in subsection titled Ice Effects).

**WR-10**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

The State's concern with the hydrology discussions is that too much is being leveraged on hydrological data that may not be rigorous enough to use for such purposes. There are no measures of error associated with any of the hydrological predictions presented, which unfortunately, makes them much less reliable as a tool for determining pad, road and pipe design elevations.

**RESPONSE**

The FEIS includes a subsection titled Hydrologic Analyses and Modeling to Assess Effects of Roads, Pads and Bridges in Sections 4A.2.2.1 and 4F.2.2.1. Within these sections are detailed discussions of the uncertainty associated with the existing data sets; the discussion includes measurements of error associated with the various hydrological predictions.

**WR-11**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Throughout Section 3 it is stated that, "Some lakes are completely replenished by these processes within 1 year; water volumes in other lakes have much longer residence times, perhaps as long as 25 years". In previous comments made, it was requested that the reference for the 25-year recharge be cited or the statement be eliminated.

**RESPONSE**

For the FEIS, the section was revised to address the comment.

**WR-12**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

There are conflicting statements concerning water volumes in Sections 3 and 4. Recharge of area lakes is an important issue and a consistent concept or opinion needs to be carried throughout the entire EIS.

**RESPONSE**

For the FEIS, the section was revised to address the comment.

**WR-13**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Section 4.1 references the development of predictive models to simulate potential impacts. Descriptions of these models are not found anywhere in the document so it is difficult to assess their applicability or power

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**RESPONSE**

The use of the term “predictive models” was found only in DEIS Section 4.1, and its use was not meant to be specific to water resources (or any other discipline). Section 4.1 has been revised for the FEIS for clarity.

**WR-14**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

“Lakes would supply fresh water for the construction of ice roads and pads during the winter construction seasons, for hydrostatic testing of newly installed pipelines, for potable water at temporary construction or drilling camp facilities and for mud-plant operations during drilling,” is restricting types of use. (State provides alternative text).

**RESPONSE**

For the FEIS, the requested change was made in Section 3.2.2.1, Lakes.

**WR-15**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

An important mitigation measure for pollution is use of lake water for dust abatement during summer months.

**RESPONSE**

The use is possible and was noted in Section 3.2.2.1, Lakes.

**WR-16**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

In reference to monitoring programs to study impacts to surface water, major operations may utilize in one project ninety or more lakes for the building of annual ice roads. State provides alternative text in DEIS0242, p.10.

**RESPONSE**

For the FEIS, the requested change was made in Section 3.2.2.1, Lakes.

**WR-17**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS should contain reliable site-specific flood data information for CD-3 and CD-4, and Fish Creek. On p. 2.28 to 2.29 the discussion of location of bridges and culverts is brief. On page 3.17 to 18, and 3-26 it is

admitted that there is a lack of hydrology data for the Colville River and Fish Creek. Fig 3.2.2.1-1 does not show location of CD 5, 6 and 7 in relation to River Monitoring sites, confirming the lack of data.

**RESPONSE**

Researchers have studied Fish Creek for the last 3 years. CD-3 and CD-4 were studied in detail (e.g. flood frequency and pad height) in 2001 and 2002. This information is presented in break-up reports for those years and has been incorporated into Section 3.2.2.1, Surface Water Hydrology. Additional information and analyses provided since the DEIS was released were used to update the assessment in the FEIS. Nevertheless, both CD-3 and CD-4 pad heights are governed by thermal criteria and not by flood criteria. The Q200 for CD-3 is 8+ feet the pad and runway are at 12.5+ ft. The Q200 for CD-4 is 15.7 ft the pad is at 19.0 ft. These issues are discussed in detail in Section 4A.2.2.1.

**WR-18**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

There is inconsistent statements regarding the supply of fresh water for operational ice roads in Section 4A.2. This inconsistency is repeated in the subsistence summary section. (example: p.4A.2-21, 4A.2-34, S-8, S-9)

**RESPONSE**

The wording has been changed and inconsistencies removed from the EIS in Section 4A.2.2.1, Impacts Associated With Water Supply Demands.

**WR-19**

This issue was raised in the following letter: DEIS0240.

**ISSUE**

The DEIS should analyze the impacts from potential water withdrawals from the Colville River, which the State Department of Natural Resources has authorized in Temporary Water Use Permit #67.

**RESPONSE**

Under-ice discharge in the vicinity of the ice bridge location has never been measured, but based on observations made by the applicant's hydrologists, even in mid-February under-ice flow at the bridge is on the order of 7,000 square feet. Under those conditions, even assuming a flow velocity of 0.1 fps (which is about what was measured this past winter), under-ice discharge is still about 700 cfs (about 5,200 gpm). This discharge is likely well above the rate at which the water would be removed. Significantly more water is flowing than could be withdrawn. Thus, the dynamic equilibrium of the channel is maintained and the depositional regime unchanged. This issue was discussed in Section 4A.2.2.1, Impacts Associated with Water Withdrawals During Construction.

**WR-20**

This issue was raised in the following letter: DEIS0239.

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**ISSUE**

The DEIS incorrectly projects that impacts to water quantity and quality would be the same whether the project is nearly fully supported by ice roads and aircraft (Alt. D) or with permanent gravel roads (p S 7-9).

**RESPONSE**

Impacts to water quantity could be the same if the lakes recharge every year during spring as they have in the past according to studies (Michael Baker, Jr. 2002e). A higher quantity of water would be withdrawn from lakes in the ice road supported case, but more surface water flow could potentially be affected in the permanent road case. Thus, although the types of impacts are different, the overall total effects are similar. This issue was discussed in Section 4D.2.2.1, Impacts Associated With Water Supply Demands During Construction.

Water quality incorporates numerous parameters. Section 4A.2.2.2, Surface Water Quality described parameters affected by gravel and ice roads.

**WR-21**

This issue was raised in the following letter: DEIS0239.

**ISSUE**

The EIS does not contain an analysis of the groundwater resources in the Reserve and under the Colville River Delta, the taliks below the river, and complex features of the hydrology of the river that may be affected by the cumulative effects of water withdrawals, placement of roads and bridge structures, repeated flood events or major flooding, storm surges, and ice dams.

**RESPONSE**

The applicant's engineers presumed groundwater is not a concern because groundwater resources are marginally present and will not be significantly pressured. Groundwater resources will not be relied upon for the applicant's proposed action and groundwater resources are minimal on the slope. This issue was briefly discussed in Sections 3.2.2.1, Subsurface Water and 4A.2.1.1—Construction Period, Impacts to Subsurface Waters.

**WR-22**

This issue was raised in the following letter: DEIS0239.

**ISSUE**

The EIS does not contain any maps showing the effects of flooding on the pipeline, the airstrip, and the other facilities, or any analysis of floodwater, breakup ice jams, and other effects on the integrity of the pipeline.

**RESPONSE**

Recent reports describe two-dimensional modeling of the effects of flooding (for open-water and breakup ice-jam scenarios), including maps showing the effects of flooding on Alpine facilities. Specific maps, figures and tables from these reports are presented in Section 4A.2.2.1 of the FEIS.

**WR-23**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section 3.2.2.1 Storm Surges, Page 3-23, Para. 2nd, Sent. 1st: We suggest you update the references and text on historical storm surges. See for example Lynch, A.H., E.N. Cassano, L. Lestak, and J.J. Cassano, 2003: Case Studies of High Wind Events in Barrow, Alaska: Climatological Context and Development Processes. Mon. Wea. Review, 131, 719-732. Recent changes in the length of the open water season have implications for storm surge frequency.

**RESPONSE**

The intensity of Beaufort-Chukchi Cyclones has increased in the summer over the last 40 years. The findings indicate that retreating sea ice and increased open water have an affect on the frequency and intensity of cyclonic activity in most of the arctic, but not in the Beaufort Sea.

Observed storm surges and hindcast analyses indicate that these big storms occur in late summer and fall rather than in spring, and thus they are unlikely to occur when the Colville River is flooding (i.e., during break-up when sea ice is still intact and shorefast). These late summer/fall storm surges could affect floodwaters around CD-3, but this is a time when streams are at their lowest point and thus it will likely not be an issue.

These issues, including the effect of climate changes over the next 20-40 years, were discussed in Section 3.2.2.1, Storm Surges and in a subsection of Section 4A.2.2.1 titled Impacts to Estuaries and Nearshore Environment During Operation.

**WR-24**

This issue was raised in the following letter: DEIS0200.

**ISSUE**

Section 3.2.2.1 Ice Conditions, Page 3-24, Para. 1st: This paragraph describes the general ice conditions along the Beaufort Sea. The ice conditions most relevant to the proposed projects are specific ice conditions in Harrison Bay. Information on ice overflood in Harrison Bay as well as historical dates of freeze up and break up should be included if it is available from CPAI.

**RESPONSE**

Harrison Bay ice observations were not specifically made. The focus of ice observations was on the rivers and streams as break-up progressed. There was a staff gage on the sea ice approximately 1 mile north of Monument 28 in 2001 and 2002. Due to inclement conditions at the gage location, the period of record was brief.

**WR-25**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

S.4.2.2 Water Resources. The 1st paragraph should be re-worded. Since any potential waters are likely saline, they are not a resource. If something is not a resource, it is hard to detrimentally affect it. In later sections, there are better discussions about sub-surface water. Under UIC and AOGCC regulations (20 AAC 25.440) when injection is planned, the need for an aquifer exemption would be considered. There are specific criteria that must be satisfied regarding the dissolved solids contained in any sub-surface water.

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**RESPONSE**

For the FEIS, the suggested re-word was made, and regulatory considerations were incorporated into the text.

**WR-26**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Page 3-10, Subsurface Water. In the 1st paragraph the reference cited is from 1970. Aren't there more up-to-date references? Significant study has been done with regard to sub-surface water. In 1970, very few wells had been drilled to gather data. Multiple thousands have been drilled since. The statement is correct that any waters found have been brackish and not suitable for consumption.

**RESPONSE**

There is very little published literature regarding groundwater conditions on the slope. Every time a well is drilled, or geotechnical exploration occurs, there is a record of subsurface conditions, however, these records have not been summarized or analyzed, and typically do not get incorporated into summary documents. In any event, other than localized thawing under lakes and streams, there is very little chance of finding subsurface water in a permafrost region. A search for additional groundwater documents was not successful. The lack of groundwater data is reiterated in the FEIS in Section 3.2.2.1, Subsurface Waters.

**WR-27**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Page 4-A.2-9, Impacts to Subsurface Water. In the 3rd paragraph, the word "approved" is used a lot. This paragraph needs some work. Drilling wastes are not likely to be hauled back to CD-1. They would likely be disposed of via annular disposal at the drilling site. The statement is correctly made that there would not be new disposal wells at the drilling sites.

**RESPONSE**

The noted paragraph has been revised for the FEIS, and the issue is discussed in Section 4A.2.1.1—Construction Period, Impacts to Subsurface Waters.

While not proposed at this time, the applicant would like the option to install Class II wells if they are needed. This request was made early on in the EA process so it would be evaluated in the EIS. The DEIS correctly includes this option in the project description. There are no plans for a new Class I well under Alternative A. However, under Alternative A – FFD, it is possible that it will be necessary to install Class II and/or Class I disposal well(s) to manage the disposal of drilling wastes muds and cuttings. In the event of an emergency or a contingency, the operator may choose to utilize the existing Class II (with AOGCC approval) and/or Class I (with USEPA approval) well(s) at APF-1 for the disposal of drilling wastes. The use of annular injection is restricted to a one time disposal of drilling muds and cuttings, only during the drilling phase of the wellfield.

**WR-28**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Page 4A.2-10, Table 4A.2-1 There is an underground injection line in each pad section and the effect “9” is given. This table does not seem to have been changed from the earlier drafts. Based on the statement made on page 4A.2-9, there would not be any deep disposal injection at the new sites so this table conflicts with that statement. There will likely be annular disposal, however it is not clear what effect 9 (Chemical and Petroleum Spills and Cleanup) means.

**RESPONSE**

All potential impact tables in Section 4A.2.1.1 have been updated for the FEIS to address this comment.

It may be beneficial under the FFD alternatives to incorporate into the current design an underground injection line at each pad section, as the potential need for additional Class I and/or Class II well(s) may arise at some future date.

The effect “9” has been changed to include all annular disposals, including non-hazardous ones (e.g., drill cuttings). The potential for chemical and petroleum spills was addressed in Section 4A.2.2.2, Surface Water Quality.

**WR-29**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Page 4A.2-17, Impacts to Subsurface Waters. The FR reference should be 40 CFR 261(b)(5), however the domestic wastewater described must now be injected via a Class I well unless it is beneficially used in a Class II EOR well.

**RESPONSE**

The noted reference was corrected for the FEIS.

Domestic wastewater can only be injected in a Class I well, unless it is beneficially used in a Class II EOR well (with AOGCC approval). In addition the disposal of non-hazardous industrial wastes, storm waters and other non-exploration and production related wastes can only be disposed of in a Class I well (with USEPA approval) and not in a Class II well.

**WR-30**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Page 4A.2-25, Impacts to Subsurface Waters. It is correct that the subsurface water is typically too saline for potable use. However, before any disposal would be allowed, the operator must provide sufficient information to allow AOGCC to make a finding of “No Aquifer” (like Alpine) or to allow an Aquifer Exemption to be granted with EPA approval. Injection does not occur until these findings are made. Once these findings and decisions are made, there is no, de facto, aquifer damage.

**RESPONSE**

The suggested content has been incorporated into Section 4A.2.1.1 of the FEIS.



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**WR-31**

This issue was raised in the following letter: DEIS0236.

**ISSUE**

Page 3-23, 3.2.2.1 In the subsection on Storm Surges on the Fringe of the Colville River following Table 3.2.2-8, given the paucity of data on flood frequency apparent in the preceding section, there should be recognition here that storm surge frequency and intensity have increased in the Arctic and near-arctic regions over past decades. See Walsh, Chapmin & Shy 1996 and Serreze, Maslanik & Key, 1997. It must be acknowledged that if trends continue as expected, storm surge activity will be more probable during the life of the proposed project.

**RESPONSE**

The intensity of Beaufort-Chukchi Cyclones has increased in the summer over the last 40 years. The findings indicate that retreating sea ice and increased open water have an affect on the frequency and intensity of cyclonic activity in most of the arctic, but not in the Beaufort Sea.

Observed storm surges and hindcast analyses indicate that these big storms occur in late summer and fall rather than in spring when the Colville River is flooding (i.e., during break-up when sea ice is still intact and shorefast). These late summer/fall storm surges could affect floodwaters around CD-3, but this is a time when streams are at their lowest point and thus it will likely not be an issue.

These issues, including the effect of climate changes over the next 20-40 years, were discussed in Section 3.2.2.1, Storm Surges and in a subsection of Section 4A.2.2.1, Impacts to Estuaries and Nearshore Environment During Operation.

**WR-32**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

The issues cited in the EIS about Nigliq bridge impacts for Alternative C should also be presented for Alternative A, although perhaps to a slightly lesser degree.

**RESPONSE**

Impacts associated with bridges were addressed in Sections 4A.2.2.1, 4C-1.2.2.1, and 4F.2.2.1, both Alternatives A and F, and Sub-Alternative C-1.

**WR-33**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

Page 4A.2-24. The DEIS indicates that future monitoring of water-level conditions at break-up is needed to assess risks to CD-7. This data should be collected and risks considered in the DEIS before the project is built.

**RESPONSE**

CD-7 is located near an apparently dry lakebed and not near any rivers or streams that would cause an impact from break-up flows. One concern is that during high water years the old lake may fill and overtop and spill

toward Fish Creek. Water level data was collected in the vicinity of CD-7 at Lake M0024 in 2002. Outflow from Lake M0024 towards the dry lakebed was estimated at 45 gpm in September 2002. Water surface elevations suggest that M0024 was recharged to the point of overflow in 2002. This issue was discussed in Section 4A.2.2.1, Impacts Related to Pads.

**WR-34**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

3.2.2.1 – Water Resources: Recent Lake Studies: : (last paragraph - study of the lakes in the National Petroleum Reserve-Alaska and Colville Delta) Did MJM reach any conclusions other than a determination of the maximum extractable volume from the lakes? If so, please state in Final EIS.

**RESPONSE**

In addition to the maximum extractable volume, MJM Research concluded that water withdrawals did not effect fish populations or water quality. This finding was included in Section 3.2.2.1, Lakes.

**WR-35**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

River Discharge Processes: (first paragraph) “Rainstorms can produce increases in stream flow but seldom are sufficient to cause flooding.” This statement does not agree with “On these rivers, rainfall floods are less frequent than snowmelt floods, but could product larger, less frequent floods. In 27 years of data on the Sagavanirktok River near Sagwon, the two largest floods resulted from rainfall.” (Flooding Regime – last 2 sentences).

**RESPONSE**

For the FEIS, the statement has been clarified as suggested.

**WR-36**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

4A.2.2.1 – Water Resources: Discussion on impacts – The absence of a complete construction plan with the details of bridge location, design, culvert location and size makes it impossible to analyze the impacts of the proposed infrastructure. This section doesn’t make it clear to the reader whether “construction” means ice or gravel. So when impacts or mitigation for impacts is being addressed, the reader is unsure which is being discussed.

**RESPONSE**

Two-dimensional modeling results show the effects of 900-, 1,200-, 1,500-, and 1,650-foot bridges on water surface elevation, channel velocity, and depth and volume of sediment scour, for flood frequencies with recurrence intervals of 10, 50, and 200 years. A summary of the modeling results is presented in Section 4A.2.2.1.

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Wording in Section 4A.2.2.1, Impacts to Surface Waters was clarified in the FEIS to note that “construction” refers to ice roads or gravel roads.

The impact of culverts have been addressed qualitatively and conservatively in Section 4A.2.2.1, Impacts Related to Culverts.

**WR-37**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

Surface Water - Lack of any criteria (construction, mining, rehabilitation, mitigation) makes any analysis purely speculative. Construction standards are mentioned but not defined. Pad placement criteria are not given. We recommend the Final EIS incorporate CPAI’s pad and road placement criteria. This could be an Appendix but ideally would be included in the EIS analysis of impacts. These criteria would need to address the vegetation and habitat use, hydrology (modeling to include ice, breakup, high water events, flow, etc). For example, why is CD-7 sited in a drained lake basin? Why is there a causeway with culverts and not a bridge at Lake 9323 on the CD-4 access road? Why is CD-6 within the 3-mile setback when the Northeast National Petroleum Reserve-Alaska stipulations were formulated to best to protect this environment?

**RESPONSE**

A rationale for the locations of pads CD-3 through CD-7 was provided. Pad and road placement would minimize impacts to wildlife, fish, and vegetation, while maintaining a technically and economically feasible project. Section 4A.2.2.1, Impacts Related to Pads includes a discussion of the placement criteria.

**WR-38**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

Impacts to Estuarine and Near Shore: This does not address the impacts from storm surges. In several places, the document mentions drift lines that are miles from the shoreline of Harrison Bay. How could storm surge have no impact on CD-3? In this highly aquatic environment, the structures need to be designed for the infrequent hydrologic events, not for the merely the normal or 5-year events.

**RESPONSE**

Impacts from storm surges on CD-3 are discussed in a subsection of Section 4A.2.2.1 titled Impacts to Estuaries and the Nearshore Environment. Previously permitted design criteria have included structures meant to withstand the 50-year flood interval plus 3 feet within the Delta (bridges and roads); the 200-year plus 1 foot within the Delta (pads); and the 50-year flood outside the Delta. However, in this case pad height criteria are governed more by thermal criteria than water-surface-elevation criteria. Understanding and evaluating the causes of flooding from break-up, storm surges, or rainfall events are intrinsic to analyzing specific flood recurrence criteria. These design criteria would be utilized for future structures—or the design would be based on a balance of hydrology, topography, structural stability, economics and environmental protection—whichever option is more stringent. It is in the applicant’s best interest to design facilities that are not at risk of being damaged during flood events, whether they are in a floodplain or not.

**WR-39**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

Impacts to Ice Conditions: How can these be analyzed without the hydrologic modeling? This uses language “likelihood of failure . . . is minimized by conservative designs” and the “incorporation of design improvements.” What are the conservative designs and what improvements have been incorporated? Without specifics, this proposal cannot be analyzed.

**RESPONSE**

A recent report entitled Ice and Its Effects During Spring Breakup in the Colville River Delta, North Slope, Alaska was completed. A summary and discussion of the findings and conclusions of this report are incorporated into Sections 3.2.2.1, 4A.2.2.1, and 4F.2.2.1. The subsections dealing specifically with ice conditions are titled Impact of Ice on Flooding during Breakup (in 3.2.2.1), and Impacts Associated With Ice Conditions (in 4A.2.2.1 and 4F.2.2.1).

**WR-40**

This issue was raised in the following letter: DEIS0241.

**ISSUE**

Improvements to Subsurface Waters: Language use again. What exactly are “shallow thawed water-bearing zones?” Is this a pond, shallow lake or wet soils? It is impossible to analyze this section when the subject is unknown.

**RESPONSE**

For the FEIS, wording in Section 4A.2.1.1–Construction Period, Impacts to Subsurface Waters has been amended and clarified.

**WR-41**

This issue was raised in the following letters: DEIS0241 and DEIS0271.

**ISSUE**

Impacts to Rivers and Creeks to Road and Pipelines: This section fails to discuss the impact to surface flow by roads – which can cause significant impacts to the hydrologic regime. The impacts from pads to surface flow (CD-7 for example) have not been fully analyzed. Without the design criteria for the pads, roads, bridges, culvert placement, etc. it is impossible to analyze the impacts that structures could have on rivers, creeks, streams and surface flow within the Plan Area.

**RESPONSE**

Two-dimensional hydrologic models of the Delta address the effects of roads on the surface hydrology at various flood frequencies. The results indicate that the road to CD-4 will, during larger flood events, divert some water from passing through the swale bridge and cause it to flow eastward around CD-1, and join back up with the swale bridge flow on the north side of CD-1. The road within the Delta, from CD-2 to CD-6, will channelize the water to flow through both the main Nigliq Bridge and the 80-foot bridge on the west. Further, the CD-3 facilities are basically islands during a large flood event. They do not cut-off any major channels of flow and the water will flow around them and recombine on the downstream side. Modeling results are discussed in Section 4A.2.2.1. Final design of the culverts for the CD-6 and CD-7 road will be based on ice break-up information for those drainages, along with a topographic survey. The issue related to pad CD-7 is discussed in Section 4A.2.2.1, Impacts Related to Pads.

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**WR-42**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The FEIS should include site-specific hydrological information for the Ublutuoch River bridge siting and design.

**RESPONSE**

The DEIS included site-specific information about the Ublutuoch River, however, more detailed information regarding the bridge site was made available in a December 2003 report and a subsequent (July 2004) project note after the DEIS' publication. The FEIS incorporates this information into the site descriptions and impact analyses of the proposed bridge site.

**WR-43**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

See DEIS0271 for specific verbiage change suggestion for page 4A.2-9.

**RESPONSE**

The recommended verbiage was incorporated into the FEIS in Section 4A.2.2.1, Impacts to Subsurface Water During Construction.

**WR-44**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The FEIS should clarify the fact that approved drilling wastes for disposal in a Class II disposal well, as well as annular injection, is restricted to those drilling muds and cuttings that came up to the surface from down hole sources.

**RESPONSE**

These clarifications were made in the FEIS in Section 4A.2.1.1–Construction Period, Impacts to Subsurface Waters.

**WR-45**

This issue was raised in the following letter: DEIS0271.

**ISSUE**

The FEIS should clarify that one step to authorize Class II injection wells includes the determination that the waste is non-hazardous.

**RESPONSE**

These clarifications were made in the FEIS in Section 4A.2.1.1–Construction Period, Impacts to Subsurface Waters.

**WR-46**

This issue was raised in the following letter: DEIS0238.

**ISSUE**

Page 3-21: Flood Frequency Predictions, last sentence on page. Models for estimating peak flow during breakup do account for channel ice as the data used in the models are gathered when channel ice is present.

**RESPONSE**

Channel ice is not considered in the models for estimating peak flow because at the proposed bridge location, the Delta is approximately 10 miles-wide. During a 200-year flood event, most of that area will be under water. Therefore the effect of channel ice in one channel will have very little overall effect on Delta-wide water-surface elevations. This is discussed in Section 4A.2.2.1, Impacts Associated With Ice Conditions.

**WR-47**

This issue was raised in the following letter: DEIS0114.

**ISSUE**

There have been problems with reinjections at other sites, these things may lead to contaminated food.

**RESPONSE**

Permits will designate criteria associated with well re-injection. These criteria would stipulate limits on quantities, rates and constituents as well as monitoring requirements. According to the USEPA (2004), there have been no failures of Class I wells in Alaska for the operational history (over 25 years) of Class I wells in the North Slope of Alaska and very few failures (less than 2 percent) among the Class II wells over an operational history of approximately 30 years. However it is recognized that an injection well can fail if not designed, constructed, operated, and monitored properly with strict regulatory oversight. The potential to contaminate the food chain from deep well injection activities is extremely low as demonstrated from past history. These concepts were presented in Section 4A.2.2.1, Impacts to Subsurface Waters During Construction.

**WR-48**

This issue was raised in the following letter: DEIS0230.

**ISSUE**

Alternative C does have the Nigliq crossing located to the south near CD-4, but there is no comparison or analysis of the respective advantages of the different bridge sites. How can there be a comparison of the impacts of the two different bridge sites if the proposed site is missing most of the critical data and analysis and the alternative has none at all?

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**RESPONSE**

Analyses for the proposed bridge site have been obtained, but no modeling analyses are available for the alternative sites. Impact analyses are qualitative and make conservative assumptions for the alternate sites. The resultant uncertainties are discussed in Sections 4C-1.2.2.1 and 4C-2.2.2.1, Impacts Related to Bridges.

**WR-49**

This issue was raised in the following letter: DEIS0239.

**ISSUE**

The EIS does not indicate how much water will be needed to support ice roads and pads within this area, and cumulatively in the Colville River delta and Reserve.

**RESPONSE**

Ice road details, including water requirements, are included in the project descriptions for each project alternative and for the FFD alternatives. The cumulative impacts analysis relies on more general assumptions about water requirements for ice roads throughout the North Slope.

**WR-50**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Any statement in the DEIS that reads, “Minimum lake water depths required and total permitted volumes for extraction have been established by the Alaska Department of Fish and Game (ADF&G)”, is statutorily inaccurate. The ADNR approves water withdrawals; and there are no established minimum water depths.

**RESPONSE**

Mention of the ADNR’s water withdrawal permitting authority has been made in Sections 4A.2.1.1 and 4A.3.2.1 in text addressing water withdrawals in the Construction Period subsections. Furthermore, the ADNR’s authority is noted in Table 1.1.4-1 of the DEIS and FEIS.

**WR-51**

This issue was raised in the following letter: DEIS0242.

**ISSUE**

Any statement in DEIS that reads, “These programs also should be integrated with assessments of impacts to lake habitat to determine if additional or more frequent monitoring is required and whether various stipulations that would decrease a permitted volume (that is, to a volume less than 15) would be required,” is misleading and inaccurate. (State provides alternative text).

**RESPONSE**

The suggested language has been incorporated into the FEIS in Sections 4A.2.1.1 and 4A.3.2.1 in text addressing water withdrawals in the Construction Period subsections.

