

**UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT**

Anchorage Field Office

4700 BLM Road

Anchorage, AK 99507

Phone: (907)267-1246

Fax: (907)267-1267

DECISION RECORD

Geotechnical Pipeline Evaluation Study

Environmental Assessment No. : DOI-BLM-AK-A010-2010-0028-EA

Case File Nos. : AA-92403-A, AA92403-D

DECISION TO IMPLEMENT ACTION ALTERNATIVE 2:

It is my decision as Manager of the Bureau of Land management (BLM) Anchorage Field Office (AFO) to accept Action Alternative 2 as stated in EA No. DOI-BLM-AK-A010-2010-0028-EA, to authorize two right-of-way (ROW) grants – a temporary one year ROW grant for the geotechnical study involving ground disturbance and a three year ROW grant for the geotechnical ground temperature monitoring study using thermistors, both would be non-renewable. Both ROW grants will be authorized under Section 28 of the Mineral Leasing Act of 1920, as amended (30 U.S.C. 185). The grants would be issued for a geotechnical feasibility study on BLM lands to evaluate the location of a proposed buried natural gas pipeline ROW and for the ground temperature monitoring using thermistors. The geotechnical feasibility study described as Alternative 2 in EA No. DOI-BLM-AK-A010-2010-0028-EA, will be located on portions of the affected public lands described below. Activities shall be subject to terms, conditions, and stipulations attached to the EA and ROW grants.

Seward Meridian, Alaska

- T. 27 N., R. 27 W., Secs. 22, 23, 24, 26-29 (inclusive), 31, 32, and 33;
- T. 27 N., R. 28 W., Secs. 35 and 36;
- T. 26 N., R. 29 W., Secs. 24-27 (inclusive), and 32-35 (inclusive);
- T. 25 N., R. 30 W., Secs. 11-21 (inclusive);
- T. 25 N., R. 31 W., Secs. 13, 21-24 (inclusive), and 27-32 (inclusive);
- T. 25 N., R. 32 W., Secs. 25, 35, and 36;
- T. 24 N., R. 35 W., Secs. 19-22, (inclusive), 25, 26, and 30;
- T. 24 N., R. 36 W., Secs. 25-29, (inclusive), and 31-34 (inclusive);
- T. 24 N., R. 37 W., Secs. 34, 35, and 36;
- T. 23 N., R. 39 W., Secs. 19, 20, and 21;
- T. 23 N., R. 40 W., Secs. 16, 19-24 (inclusive), 28, 29, and 30;
- T. 23 N., R. 41 W., Secs. 24-36 (inclusive);
- T. 22 N., R. 42 W., Secs. 4-7 (inclusive),
- T. 23 N., R. 42 W., Secs. 25, 26, 27 and 33-36 (inclusive);
- T. 22 N., R. 43 W., Secs. 1, 2, 11, and 12;
- T. 23 N., R. 43 W., Secs. 19, 20, 28, 29, 30, 32-35 (inclusive);

T. 23 N., R. 44 W., Secs. 7, 17, 18, 20, 21, 22, 24-28 (inclusive);
T. 23 N., R. 45 W., Secs. 7-15 (inclusive);
T. 23 N., R. 46 W., Secs. 9-12 (inclusive), and 15-20 (inclusive);
T. 23 N., R. 47 W., Secs. 19, 23, 24, 26-30 (inclusive), 32, 33, and 34;
T. 23 N., R. 48 W., Secs. 23-26 (inclusive).

The area described contains approximately 3.9 acres for the short-term ROW grant for geotechnical work and 0.275 acres for the three year short-term ROW grant for temperature monitoring.

RATIONALE FOR THE DECISION

My decision to approve Action Alternative 2 analyzed in EA No. DOI-BLM-AK-A010-2010-0028-EA is based on the following:

No significant impact will occur to resources as a result of implementing Action Alternative 2 of the EA. Action Alternative 2 is not expected to be controversial, does not establish a precedent, or represent a decision in principle about future considerations, nor is it related to any other actions representing cumulatively significant impacts.

Action Alternative 2 is in conformance with the approved BLM Southwest Management Framework Plan (MFP) approved 1981. The project has been considered in the context of public health and safety and consistency with regards to Federal, State, and local laws.

Action Alternative 2 will ensure that BLM provides citizens rights-of-way grants throughout the planning area (See Southwest MFP lands decision L-1.2).

ANILCA SECTION 810 COMPLIANCE

Action Alternative 2 will not significantly restrict Federal subsistence uses, decrease the abundance of federal subsistence resources, alter the distribution of federal subsistence resources, or limit qualified Federal subsistence user access.

ADVERSE ENERGY IMPACT COMPLIANCE

This action has been analyzed as required by Washington Office Instruction Memorandum 2002-053 to determine if it will cause an adverse impact on energy development. The action will not have an adverse direct or indirect impact on energy development, production or distribution. The preparation of a Statement of Adverse Energy Impact is not required.

COMPLIANCE AND MONITORING PLAN

Compliance will be accomplished through a combination of self-compliance monitoring and field visits of BLM Anchorage Field Office staff. Applicant will meet the self-compliance requirements through intermittently photographing geotechnical study sites before, during, and after use to provide a visual record. BLM staff will review self-compliance documentation from grantee and, if necessary, perform field inspections and a final field inspection upon termination of use.

/s/

6/4/10

James M. Fincher
Field Manager

Date

**UNITED STATES DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT**

**Anchorage Field Office
4700 BLM Road
Anchorage, AK 99507
Phone: (907)267-1246
Fax: (907)267-1267**

FINDING OF NO SIGNIFICANT IMPACT

**Geotechnical Pipeline Evaluation Study
Environmental Assessment No. : DOI-BLM-AK-A010-2010-0028-EA
Case File Nos. : AA-92403-A, AA92403-D**

PROJECT NAME:

Geotechnical Pipeline Evaluation Study

PROJECT PROPONENT:

Donlin Creek LLC

PROJECT OVERVIEW AND ALTERNATIVES:

Donlin Creek LLC is currently conducting studies to evaluate the feasibility of developing a large-scale mining operation on lands owned by Calista Corporation and The Kuskokwim Corporation in southwest Alaska. Donlin Creek LLC proposes to supply power to the operation by constructing a buried, 12-inch diameter, steel natural gas pipeline from Cook Inlet to the Project. The project described and analyzed in environmental assessment (DOI-BLM-AK-A010-2010-0028-EA), if approved, would authorize Donlin Creek LLC to conduct a geotechnical feasibility study to evaluate the location of this proposed buried natural gas pipeline.

Three alternatives for a geotechnical feasibility study are briefly described below:

ALTERNATIVES CONSIDERED

ALTERNATIVE 1 (PROPOSED ACTION)

BLM would authorize Donlin Creek LLC to conduct a geotechnical feasibility study to evaluate the proposed location for a buried natural gas pipeline portions of which would be on BLM managed and administered lands.

Design Features

- Approximately 100 miles of BLM managed and administered lands would be studied in this action.

- This action would involve three types of activities – exploratory boreholes, trenching, and ground temperature monitoring.
- This action would take place during the 2010 summer field season (June-September) and ground temperature monitoring would take place annually, as needed.
- Exploratory boreholes would be made where terrain consists of lowlands where trenching is not feasible, primarily in the eastern portion of the proposed pipeline route being studied in 2010.
- Trenching would be done using an excavator to explore the soil conditions along the ridge tops, primarily in the western portion of the proposed pipeline route being studied in 2010.

ALTERNATIVE 2

BLM would authorize Donlin Creek LLC to conduct a geotechnical feasibility study to evaluate the proposed location for a buried natural gas pipeline portions of which would be on BLM managed and administered lands.

Design Features

- Alternative 2 would reroute and shorten a portion of Alternative 1 from approximately 30 to 23 miles.
- Alternative 2 would reroute a portion of Alternative 1 from Alaska Native owned lands to BLM managed and administered lands.
- This action would involve four types of activities – exploratory boreholes, rotary drilling, trenching, and ground temperature monitoring.
- This action would take place during the 2010 summer field season (June-September) and ground temperature monitoring would take place annually, as needed.
- Exploratory boreholes, using a geoprobe, would be made in the eastern portion of the proposed pipeline route being studied in 2010.
- Drill holes, using a rotary drill rig, would be made at three river crossings to study geologic conditions at riverbed depth in the western portion of the proposed pipeline route being studied in 2010.
- Trenching would be done using an excavator to explore the soil conditions along the ridge tops, primarily in the western portion of the proposed pipeline route being studied in 2010.

NO ACTION ALTERNATIVE

Under the No Action Alternative, the BLM would not authorize Donlin Creek LLC to conduct a geotechnical feasibility study to evaluate the location of a proposed buried natural gas pipeline.

FINDING OF NO SIGNIFICANT IMPACT (FONSI):

I have reviewed the EA (DOI-BLM-AK-A010-2010-0028-EA) and other relevant environmental documentation including the discussion of environmental impacts. I have determined that Action Alternative 2 with the mitigation measures attached to this FONSI will not have any significant impacts on the human environment and that an Environmental Impact Statement is not required. I have determined that Action Alternative 2 is in conformance with the approved land use plan.

RATIONALE FOR NO SIGNIFICANT IMPACT FINDING:

Through the analysis conducted in the EA, no significant impacts to human health, safety, or the environment have been identified. Both beneficial and adverse impacts from implementing the proposed action have been considered. The proposed action is consistent with existing national environmental policies and objectives as set forth in Section 101 (a) of the National Environmental Policy Act of 1969. Further and based on the analysis of potential environmental impacts contained in the attached environmental assessment, it is my determination that the proposed action does not constitute a major Federal action significantly affecting the quality of the human environment and that an environmental impact statement is not required.

/s/

6/4/10

James M. Fincher
Field Manager

Date

Exhibit 1

Terms and Stipulations for Rights-of-Way Grant for Proposed Geotechnical Study and Temperature Monitoring for Donlin Creek LLC

A. General Terms: During construction, operation, maintenance, and termination of the project you must:

- (a) Comply with all existing and subsequently enacted, issued, or amended Federal laws and regulations and state laws and regulations applicable to the authorized use;
- (b) Rebuild and repair roads, fences, and established trails destroyed or damaged by the project;
- (c) Build and maintain suitable crossings for existing roads and significant trails that intersect the project;
- (d) Do everything reasonable to prevent and suppress wildfires on or in the immediate vicinity of the right-of-way area;
- (e) If BLM requires, obtain, and/or certify that you have obtained, a surety bond or other acceptable security to cover any losses, damages, or injury to human health, the environment, and property in connection with your use and occupancy of the right-of-way, including terminating the grant, and to secure all obligations imposed by the grant and applicable laws and regulations. If you plan to use hazardous materials in the operation of your grant, you must provide a bond that covers liability for damages or injuries resulting from releases or discharges of hazardous materials. BLM may require a bond, an increase or decrease in the value of an existing bond, or other acceptable security at any time during the term of the grant;
- (f) Assume full liability if third parties are injured or damages occur to property on or near the right-of-way as specified in 43 CFR §2807.12;
- (g) Comply with project-specific terms, conditions, and stipulations, including requirements to:
 - (1) Restore, revegetate, and curtail erosion or conduct any other rehabilitation measure BLM determines necessary;
 - (2) Ensure that activities in connection with the grant comply with air and water quality standards or related facility siting standards contained in applicable Federal or state law or regulations;
 - (3) Control or prevent damage to:
 - (i) Scenic, aesthetic, cultural, and environmental values, including fish and wildlife habitat;
 - (ii) Public and private property; and
 - (iii) Public health and safety;
 - (4) Protect the interests of individuals living in the general area who rely on the area for subsistence uses as that term is used in Title VIII of Alaska National Interest Lands Conservation Act (ANILCA) (16 U.S.C. 3111 *et seq.*);
 - (5) Ensure that you construct, operate, maintain, and terminate the facilities on the lands in the right-of-way in a manner consistent with the grant;
 - (6) When the state standards are more stringent than Federal standards, comply with state standards for public health and safety, environmental protection, and siting, constructing, operating, and maintaining any facilities and improvements on the right-of-way; and
- (h) Immediately notify all Federal, state, tribal and local agencies of any release or discharge of hazardous material reportable to such entity under applicable law. You must also notify BLM at the same time, and send BLM a copy of any written notification you prepared;

- (i) Not dispose of or store hazardous material on your right-of-way, except as provided by the terms, conditions, and stipulations of your grant;
- (j) Certify your compliance with all requirements of the Emergency Planning and Community Right-to-Know Act of 1986, 42 U.S.C. 11001 *et seq.*, when you receive, assign, renew, amend, or terminate your grant;
- (k) Control and remove any release or discharge of hazardous material on or near the right-of-way arising in connection with your use and occupancy of the right-of-way, whether or not the release or discharge is authorized under the grant. You must also remediate and restore lands and resources affected by the release or discharge to BLM's satisfaction and to the satisfaction of any other Federal, state, tribal, or local agency having jurisdiction over the land, resource, or hazardous material;
- (l) Comply with all liability and indemnification provisions and stipulations in the grant;
- (m) As BLM directs, provide diagrams or maps showing the location of any constructed facility; and
- (n) Comply with all other stipulations that BLM may require.

II. Stipulations:

- A. Cutting of live vegetation (trees) shall be limited to that necessary for safe operation of helicopters and drilling equipment;
- B. Wastewater must be managed in accordance with Title 18 Alaska Administrative Code, Chapter 72, (18 AAC 72) Wastewater Disposal. Wastewater is defined as Human Waste (sewage), and Gray Water (water which has been used for personal hygiene, washing clothing or equipment, or sanitizing cooking and eating materials). If the standards for Pit Privies found at 18 AAC 72.030 cannot be met, all wastewater must be collected and transported to a state approved disposal facility. Upon closure of the campsite the Pit Privy must be completely back-filled with the surface area covered and re-graded to approximate original appearance;
- C. Non-Hazardous Solid Waste (trash/refuse) will be back hauled from the area and disposed in an approved waste disposal site;
- D. Fuel Handling and Storage: Fuel shall be stored at least 150 feet from surface waters. Fuel and other petroleum products and hazardous materials shall be stored in containers designed to hold that product, identified with the owner's name, the contents and date of purchase (e.g. Donlin Creek LLC, Coleman Fuel, 2010). All fuel spills will be cleaned up immediately, taking precedence over all other matters, except the health and safety of personnel. Spills will be cleaned up utilizing absorbent pads or other Alaska State DEC approved methods. Fuel storage in excess of 55 gallons and/or fuel storage containers that are situated where a spill may reach a water body or watercourse requires secondary containment. Secondary containment is defined as a diked, impermeable impoundment capable of containing 110

percent of the volume of the largest independent container, or a double walled container. As soon as possible, but not later than 24 hours, notice of any such discharge as defined in Alaska Statute Title 18, Chapter 75, Article 2, will be given to: The Authorized Officer at 1-800-478-1263. Such other Federal and State officials as are required by law to be given such notice including Alaska Department of Environmental Conservation at (907) 478-9300;

- E. All operations shall be conducted in such a manner as to avoid damage or disturbance to any prehistoric or historic sites or modern camp sites. The Archaeological Resource Protection Act prohibits the excavation, removal, damage, or disturbance of any archaeological resource located on public lands. Violation of this law could result in the imposition of both civil and criminal penalties of the violator. Should any historic or prehistoric site be located during the course of operations under this Right-of-Way Grant, the applicant shall immediately cease activities and notify the BLM authorized officer;
- F. All vehicles and transport equipment used in access, construction, maintenance and operations of a project must be thoroughly cleaned **prior to** moving equipment across or onto BLM managed lands. Washing and/or brushing equipment to remove material that can contain weed seeds or other propagates helps to insure equipment that is being transported across or onto BLM managed lands are weed and weed seed free. High pressure washing is recommended to treat the insides of bumpers, wheel wells, undercarriages, inside belly plates, excavating blades, buckets, tracks, rollers, drills, buckets, shovels, any digging tools, etc., to remove potential weeds, seeds, and soil carrying weed propagates, and vegetative material;
- G. Early detection, rapid response mitigates ecological damage from invasive species. Should a development or occupancy and use have invasive plant infestations prior to development or use, proponents must confer with the land administrator to develop an invasive plant treatment plan to eliminate and/or prevent the propagation of the species;
- H. Site reclamation must be implemented as soon as possible after construction using the original duff layer. This original duff layer is to be removed and set aside upon initial site disturbance, and replaced on disturbed areas in lieu of revegetation with non-local materials; and
- I. Certified weed-free mulch, hay or straw is required in areas needing mulch. Sources for weed free mulch can be found by calling the Plant materials Center: 907-745-4469. Revegetation Guidance can be found at: http://www.dnr.state.ak/ag/pmcweb/PMC_reveg.

Supplemental Stipulations

Supplemental Stipulations Specific to the Donlin Creek LLC proposed Geotechnical Study:

1. No mechanized surface access (Nodwell, 4 wheel ATV's etc.) equipment will be used.
2. Avoid equipment operations in areas where nesting birds (no human intrusion within 200 meters, peregrine falcons – 400 meters), or other wildlife, are observed.
3. To the extent feasible, the proposed activities will occur outside of the riparian zone (outer reaches of riparian vegetation) and the floodplain of the Kuskokwim River and will approach rivers perpendicular to their banks.
4. Except when conducting equipment transport operations, helicopter altitude to and from test sites shall be no less than 2000 vertical feet as per US DOT Advisory Circular AC No.: 91-36D. AC 91-36C (8)(d) also states that “This advisory does not apply where” flying at “...an altitude of less than 2000 feet AGL is considered necessary by a pilot to operate safely.” When performing equipment transport operations, 14 CFR 91.119(d) (which outlines Minimum Safe Altitudes for helicopter use) states “Helicopters may be operated at less than the minimums prescribed in paragraph (b) or (c) of this section if the operation is conducted without hazard to persons or property on the surface. In addition, each person operating a helicopter shall comply with any routes or altitudes specifically prescribed for helicopters by the Administrator.” Helicopter activity will define and adhere to flight corridors that avoid to the degree possible moose habitat to and from the proposed sites maintaining flight altitudes of 500 feet AGL for flights not involved with the movement of people and equipment on the test areas as per 14 CFR 91.119(c).
5. All holes with a diameter of 2 inches or greater will be plugged to avoid mid-size and large animals from stepping into holes to avoid injury and broken legs. No casing will be installed and left in any of the holes except for 12 sites which will have PVC pipe installed to contain Thermistors for ground temperature monitoring.
6. Risk of fuel spill is greatly reduced by use of the impact resistant, double walled “flight tanks”. The drilling machine needs to have drip pans or pads placed under them during operations and storage to prevent oil leaks onto the ground. Having on-hand appropriate spill response kits, and employees trained in emergency spill response (HAZWOPER, etc.), will mitigate any damage to the environment caused by accidental releases of oil/fuel. Solid and sanitary waste pollution will be prevented by daily backhaul of all trash, worn equipment parts, and use of a properly maintained toilet facility at the base campsites.

7. Any soil contaminated by leaks or spills will be removed from the site and disposed of appropriately and in accordance with any associated regulations.



U.S. Department of the Interior Bureau of Land Management

Anchorage Field Office
4700 BLM Road
Anchorage, Alaska 99507
(907) 267-1246

<http://www.blm.gov/ak/st/en/fo/ado.html>

**Environmental Assessment
Geotechnical Pipeline Evaluation Study
Applicant: Donlin Creek LLC
Case File Numbers: AA-92403-A, AA-92403-D
DOI-BLM-AK-A010-2010-0028-EA**



Prepared By:
Charles Lovely
NEPA Coordinator
May 2010

ENVIRONMENTAL ASSESSMENT

I. INTRODUCTION

A. Background

Donlin Creek LLC is currently conducting studies to evaluate the feasibility of developing a large-scale mining operation known as the Donlin Creek Project (Project) located on lands owned by Calista Corporation and The Kuskokwim Corporation in southwest Alaska (Figure 1). Donlin Creek LLC proposes to supply power to the Project by constructing a buried 12 inch diameter steel natural gas pipeline from Cook Inlet to the Project. The entire proposed pipeline route is approximately 315 miles. Of the 315 miles, over 100 miles are proposed on Bureau of Land Management (BLM) managed or administered lands (Figure 1).

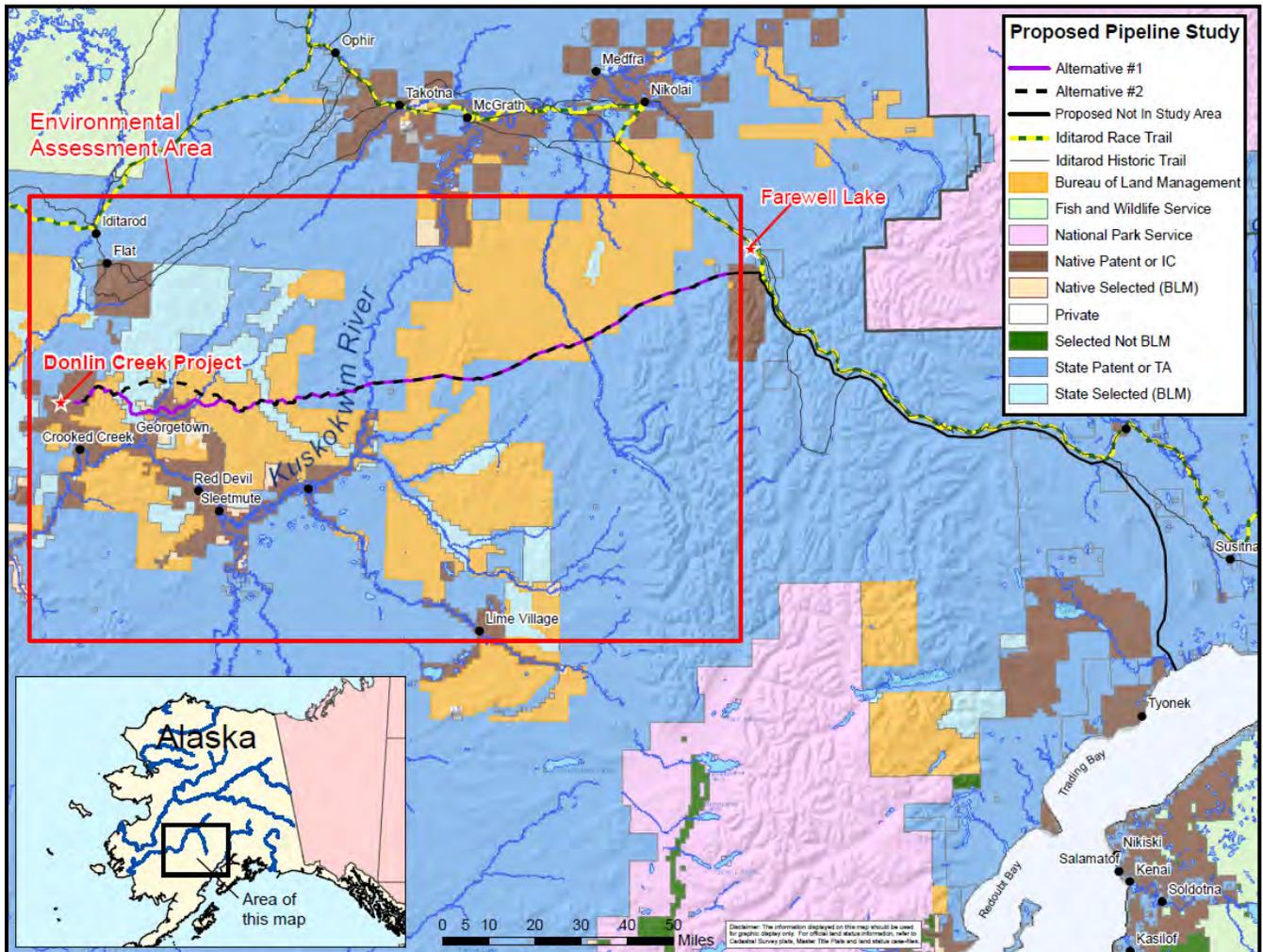


Figure 1

B. Purpose and Need for Action

The purpose of this project is for Donlin Creek LLC to conduct a geotechnical feasibility study to evaluate the proposed location of a buried natural gas pipeline on BLM managed and administered lands. The need is for the BLM to respond to the request and decide whether or not to authorize ROW grants for the geotechnical feasibility study and a ground temperature study as provided under Section 28 of the Mineral Leasing Act of 1920, as amended (30 U.S.C. 185).

C. Decision to be Made

The BLM will decide whether or not to authorize Donlin Creek LLC ROW grants authorized under Section 28 of the Mineral Leasing Act of 1920, as amended (30 U.S.C. 185), and if so, under what conditions and with what stipulations.

II. PROPOSED ACTION AND ALTERNATIVES**A. Alternative 1 – East Fork Route (Proposed Action)**

BLM would authorize Donlin Creek LLC to conduct a geotechnical feasibility study to evaluate the proposed location for a buried natural gas pipeline portions of which would be on BLM managed and administered lands.

Alternative 1 would involve three types of activities – exploratory boreholes, trenching, and ground temperature monitoring. Ground disturbance work – boreholes and trenching would take place during the 2010 summer field season (June-September) and ground temperature monitoring would take place annually over several years. Exploratory boreholes would be made where terrain consists of lowlands where trenching is not feasible, primarily in the eastern portion of the proposed pipeline route being studied in 2010. Trenching would be done using an excavator to explore the soil conditions along the ridge tops, primarily in the western portion of the proposed pipeline route being studied in 2010.

1. Location

Alternative 1 would traverse approximately 100 miles of BLM lands in the vicinity southwest of Farewell Lake to the Donlin Creek Project in southwest Alaska (Appendix 1). Alternative 1 would be located on portions of the following affected public lands:

Seward Meridian, Alaska

Geoprobe Locations:

T. 27 N., R. 27 W., Secs. 22, 23, 24, 26-29 (inclusive), 31, 32, and 33;

T. 27 N., R. 28 W., Secs. 35 and 36;

T. 26 N., R. 29 W., Secs. 24-27 (inclusive), and 32-35 (inclusive);

T. 25 N., R. 30 W., Secs. 11-21 (inclusive);
 T. 25 N., R. 31 W., Secs. 13, 21-24 (inclusive), and 27-32 (inclusive);
 T. 25 N., R. 32 W., Secs. 25, 35, and 36;
 T. 24 N., R. 35 W., Secs. 19-22 (inclusive), 25, 26, and 30;
 T. 24 N., R. 36 W., Secs. 25-29 (inclusive), and 31-34 (inclusive);
 T. 24 N., R. 37 W., Secs. 34, 35, and 36.

Trenching (geoprobe if field conditions allow):

T. 23 N., R. 39 W., Secs. 19, 20, and 21;
 T. 23 N., R. 40 W., Secs. 16, 19-24 (inclusive), 28, 29, and 30;
 T. 23 N., R. 41 W., Secs. 24-36 (inclusive);
 T. 22 N., R. 42 W., Secs. 4-7 (inclusive);
 T. 23 N., R. 42 W., Secs. 25, 26, 27, 33-36 (inclusive);
 T. 22 N., R. 43 W., Secs. 1, 2, 6, 11, and 12;
 T. 23 N., R. 43 W., Secs. 28, 29, 31-35 (inclusive);
 T. 22 N., R. 44 W., Secs. 1, 2, and 3;
 T. 23 N., R. 44 W., Secs. 32, 33, and 34;
 T. 22 N., R. 46 W., Secs. 6, 7, 10, 11, 17-21 (inclusive),
 T. 22 N., R. 47 W., Secs. 1, 2, 12, and 13,
 T. 23 N., R. 47 W., Secs. 19, 27-30 (inclusive) and 32-36 (inclusive);
 T. 23 N., R. 48 W., Secs. 23-26 (inclusive).

2. Land Status

BLM administered lands are lands selected from the Federal public domain for conveyance to either the State of Alaska¹ or the Alaska Native corporations.² BLM managed lands are lands of the Federal public domain that have not been set aside for conservation³ or for conveyance to either the State of Alaska or the Alaska Native corporations.⁴

a. BLM administered lands in Alternative 1 are described follows:

Seward Meridian, Alaska

T. 23 N., R. 41 W., Sec. 31; (State Selected)
 T. 23 N., R. 42 W., Secs. 25, 26, 35, and 36; (State Selected)
 T. 23 N., R. 44 W., Secs. 32 and 33; (Alaska Native selected)
 T. 22 N., R. 46 W., Secs. 6, 7, 17-21 (inclusive); (State Selected)
 T. 22 N., R. 47 W., Secs. 1, 12, and 13; (State Selected)

¹ Alaska Statehood Act, Public Law 85-508, 72 Stat. 339, July 7, 1958.

² Alaska Native Claims Settlement Act, December 18, 1971 (ANCSA).

³ Alaska National Interest Lands Conservation Act, Public Law 96-487, 94 Stat. 2371, December 2, 1980 (ANILCA).

⁴ BLM administered lands require a concurrence from the State of Alaska on proposals to use State selected lands, ANILCA 906(k)(1)(B), and consultation with ANCSA Native Corporations on proposals to use Native selected lands. 43 CFR §2650.1(a)(2)(i).

T. 23 N., R. 47 W., Secs. 27 and 33-36 (inclusive). (State Selected)

b. BLM managed lands in Alternative 1 are described as follows:

Seward Meridian, Alaska

T. 27 N., R. 27 W., Secs. 22, 23, 24, 26-29 (inclusive), 31, 32, and 33;
 T. 27 N., R. 28 W., Secs. 35 and 36;
 T. 26 N., R. 29 W., Secs. 24-27 (inclusive) and 32-35 (inclusive);
 T. 25 N., R. 30 W., Secs. 11-21 (inclusive);
 T. 25 N., R. 31 W., Secs. 13, 21-24 (inclusive) and 27-32 (inclusive);
 T. 25 N., R. 32 W., Secs. 25, 35, and 36;
 T. 24 N., R. 35 W., Secs. 19-22 (inclusive), 25, 26, and 30;
 T. 24 N., R. 36 W., Secs. 25-29 (inclusive), and 31-34 (inclusive);
 T. 24 N., R. 37 W., Secs. 34, 35, and 36;
 T. 23 N., R. 39 W., Secs. 19, 20, and 21;
 T. 23 N., R. 40 W., Secs. 16, 19-24 (inclusive), 28, 29, and 30;
 T. 23 N., R. 41 W., Secs. 24-30 (inclusive) and 32-36 (inclusive);
 T. 22 N., R. 42 W., Secs. 4-7 (inclusive);
 T. 23 N., R. 42 W., Secs. 27, 33, and 34;
 T. 22 N., R. 43 W., Secs. 1, 2, 6, 11, and 12;
 T. 23 N., R. 43 W., Secs. 28, 29, and 31-35 (inclusive);
 T. 22 N., R. 44 W., Secs. 1, 2, and 3;
 T. 23 N., R. 44 W., Sec. 34;
 T. 22 N., R. 46 W., Secs. 10 and 11;
 T. 22 N., R. 47 W., Sec. 2;
 T. 23 N., R. 47 W., Secs. 19, 28, 29, 30, and 32;
 T. 23 N., R. 48 W., Secs. 23-26 (inclusive).

3. Geoprobe Equipment and Use

Geoprobos are portable drilling rigs used to make exploratory boreholes and are specifically designed for transport by helicopter to each work site (Figure 2). The same geoprobes were used for the peat drilling project conducted in 2007 (Environmental Assessment – AK-040-07-EA-011, ROW authorization – AA-86838). Geoprobes are self-contained units and do not require assembly and disassembly during use, thereby minimizing the potential for spills or leaks during operation and transport. The geoprobe footprint is 5 feet by 8 feet with three points of ground contact and supported by three self-leveling hydraulic legs with pads each approximately one square foot. Each hydraulic leg is designed to lower the ground pressure at each point of contact minimizing surface impacts. Based on previous projects, at each drill site, the geoprobe left a 3.5 square inch hole in the vegetative mat from the drill collar. Each geoprobe weighs approximately 2500 pounds and uses a 29 horsepower diesel engine with a 20 gallon per minute hydraulic pump. Each

geoprobe has onboard fuel and hydraulic fluid tanks of 12 gallons each. Each geoprobe is equipped with a fuel spill response kit.



Figure 2

Approximately 110 boreholes would be drilled and spaced one per mile along the proposed pipeline route. Drilling locations would be determined in the field and would be based on terrain, conditions that minimize vegetation impact, and avoidance of cultural resources. Preparation for the geoprobes and drilling would require minimal ground disturbance, requiring some brushing at sites that need safe access for helicopter landing zones. Each geoprobe drills a 2.5 inch diameter borehole into the surface by pushing and hammering hollow rods. No drill cuttings are produced. Borehole depth would vary depending on conditions but would be limited to a maximum of about 30 feet. Drilling is terminated once bedrock is reached. Boreholes would be plugged with surface soil scraped near the borehole location.

4. Trench Equipment and Use

Test trenches would be excavated using a Kubota 4X4 mini-excavator that would be transported by helicopter to each work site (Figure 3).



Figure 3

Approximately 42 shallow trenches (8' long x 2' wide x 6' deep) and 18 deeper trenches (10' long x 3' wide x 10' deep) would be excavated along the proposed pipeline route. Trenching locations would be determined in the field and would also be based on terrain, conditions that minimize vegetation impact, and avoidance of cultural resources.

Where feasible, the excavator would be driven from one site to another where locations are close together, along ridge tops following the proposed pipeline route. When the excavator comes to a stream crossing, the excavator would be moved to the next trench site by helicopter. Minimal brushing would be needed due to the lack of vegetation on ridge tops. During trenching, topsoil would be removed and selectively stockpiled separate from other excavated material, on one side of the trench for replacing in the trench once material is collected for testing. Reclamation of the trenches would be completed to ensure that each site is restored as close as possible to its original condition – trenches would be backfilled and vegetative mat replaced so

that the site is returned as close to its natural condition as possible. No seed mixture of any kind would be used to limit the potential accidental introduction of invasive plants.

5. Ground Temperature Monitoring

Approximately 12 boreholes would be fitted with PVC pipe where ground temperature monitoring instruments (thermistors) would be installed. Thermistors would be installed in boreholes depending upon geological/permafrost conditions. The PVC pipe would extend to the bottom of the borehole and extend above ground approximately one to three feet. A protective cap would be placed over the installation to prevent damage from wildlife. The PVC/thermistor assembly would be left in the ground for approximately three years. Temperature data would be recorded using electric readout devices once thermal equilibrium is established. Data would be collected once ground disturbance work is completed and would continue periodically over the next few years to provide a comprehensive data set. Each thermistor would be accessed by helicopter to collect data manually. Upon removal, each thermistor would be detached, vegetative mat and soil would be removed by hand around the pipe so that the PVC pipe could be cut 12" below surface, capped, backfilled with soil, and the mat replaced.

6. Logistics

Geotechnical work would be done by two crews, each consisting of a geotechnical engineer and two drill operators. Both crews and equipment would be transported and supported by one helicopter. All personnel will be lodged at existing camps or lodges in the area (no camp related infrastructure will be set up at any work sites). Fuel for the operation would be stored off site on BLM managed or administered lands at the Rohn and Tin Creek Airstrips authorized by separate BLM land use authorizations AA-92403-B and AA-92403-C.

B. Alternative 2 – Kuskokwim Hills Route

BLM would authorize Donlin Creek LLC to conduct a geotechnical feasibility study to evaluate the proposed location for a buried natural gas pipeline portions of which would be on BLM managed and administered lands.

Alternative 2 would involve four types of activities – exploratory boreholes, trenching, drilling, and ground temperature monitoring. Like Alternative 1, Alternative 2 would conduct ground disturbance work – boreholes, drilling, and trenching would take place during the 2010 summer field season (June-September) and ground temperature monitoring would take place annually. Exploratory boreholes would be made where terrain consists of lowlands and trenching is not feasible. Unlike Alternative 1, Alternative 2 would include drilling made at three river crossings using an auger type rotary drill rig, as described below in paragraph II.B.4., to study geologic conditions at riverbed depth. Like Alternative 1, Alternative 2 would also concentrate a majority of the

borehole work in the eastern portion with the exception of the three river crossings, which are in the western portion of the proposed pipeline route being studied in 2010. Trenching would be done using an excavator to explore the soil conditions along the ridge tops, primarily in the western portion of the proposed pipeline route being studied in 2010.

1. Location

Alternative 2 would traverse approximately 111 miles of BLM lands in the vicinity southwest of Farewell Lake to the Donlin Creek Project in southwest Alaska (Appendix 1). Alternative 2 would be located on portions of the following affected public lands.

Seward Meridian, Alaska

Geoprobe Locations:

T. 27 N., R. 27 W., Secs. 22, 23, 24, 26-29 (inclusive), 31, 32, and 33;
 T. 27 N., R. 28 W., Secs. 35 and 36;
 T. 26 N., R. 29 W., Secs. 24-27 (inclusive), and 32-35 (inclusive);
 T. 25 N., R. 30 W., Secs. 11-21 (inclusive);
 T. 25 N., R. 31 W., Secs. 13, 21-24 (inclusive), and 27-32 (inclusive);
 T. 25 N., R. 32 W., Secs. 25, 35, and 36;
 T. 24 N., R. 35 W., Secs. 19-22 (inclusive), 25, 26, and 30;
 T. 24 N., R. 36 W., Secs. 25-29 (inclusive), and 31-34 (inclusive);
 T. 24 N., R. 37 W., Secs. 34, 35, and 36;

Trenching (geoprobe at George, North Fork George, and East Fork George Rivers and when field conditions allow):

T. 23 N., R. 39 W., Secs. 19, 20, and 21;
 T. 23 N., R. 40 W., Secs. 16, 19-24 (inclusive), 28, 29, and 30;
 T. 23 N., R. 41 W., Secs. 24-36 (inclusive);
 T. 22 N., R. 42 W., Secs. 4-7 (inclusive),
 T. 23 N., R. 42 W., Secs. 25, 26, 27 and 33-36 (inclusive);
 T. 22 N., R. 43 W., Secs. 1, 2, 11, and 12;
 T. 23 N., R. 43 W., Secs. 19, 20, 28, 29, 30, and 32-35 (inclusive);
 T. 23 N., R. 44 W., Secs. 7, 17, 18, 20, 21, 22, and 24-28 (inclusive);
 T. 23 N., R. 45 W., Secs. 7-15 (inclusive);
 T. 23 N., R. 46 W., Secs. 9-12 (inclusive), and 15-20 (inclusive);
 T. 23 N., R. 47 W., Secs. 19, 23, 24, 26-30 (inclusive), 32, 33, and 34;
 T. 23 N., R. 48 W., Secs. 23-26 (inclusive).

2. Land Status

Defined in paragraph II.A.2..

a. BLM administered lands in Alternative 2 are described follows:

Seward Meridian, Alaska

T. 23 N., R. 41 W., Sec. 31; (State Selected)
 T. 23 N., R. 42 W., Secs. 25, 26, 35, and 36; (State Selected)
 T. 23 N., R. 44 W., Secs. 28; (Alaska Native selected)
 T. 23 N., R. 45 W., Secs. 8 and 9; (State Selected)
 T. 23 N., R. 46 W., Secs. 15-20, inclusive; (State Selected)
 T. 23 N., R. 47 W., Secs. 23, 26, 27, 33, and 34. (State Selected)

b. BLM managed lands in Alternative 2 are described as follows:

Seward Meridian, Alaska

T. 27 N., R. 27 W., Secs. 22, 23, 24, 26-29 (inclusive), 31, 32, and 33;
 T. 27 N., R. 28 W., Secs. 35 and 36;
 T. 26 N., R. 29 W., Secs. 24-27 (inclusive) and 32-35 (inclusive);
 T. 25 N., R. 30 W., Secs. 11-21 (inclusive);
 T. 25 N., R. 31 W., Secs. 13, 21-24 (inclusive) and 27-32 (inclusive);
 T. 25 N., R. 32 W., Secs. 25, 35, and 36;
 T. 24 N., R. 35 W., Secs. 19-22 (inclusive), 25, 26, and 30;
 T. 24 N., R. 36 W., Secs. 25-29 (inclusive) and 31-34 (inclusive);
 T. 24 N., R. 37 W., Secs. 34, 35, and 36;
 T. 23 N., R. 39 W., Secs. 19, 20, and 21;
 T. 23 N., R. 40 W., Secs. 16, 19-24 (inclusive), 28, 29, and 30;
 T. 23 N., R. 41 W., Secs. 24-30 (inclusive) and 32-36 (inclusive);
 T. 22 N., R. 42 W., Secs. 4-7 (inclusive);
 T. 23 N., R. 42 W., Secs. 27, 33, and 34;
 T. 22 N., R. 43 W., Secs. 1, 2, 11, and 12;
 T. 23 N., R. 43 W., Secs. 19, 20, 28, 29, 30, and 32-35 (inclusive);
 T. 23 N., R. 44 W., Secs. 7, 17, 18, 20, 21, 22, and 24-27 (inclusive);
 T. 23 N., R. 45 W., Secs. 7 and 10-15 (inclusive);
 T. 23 N., R. 46 W., Secs. 9-12 (inclusive);
 T. 23 N., R. 47 W., Secs. 19, 24, 28, 29, 30, and 32;
 T. 23 N., R. 48 W., Secs. 23-26 (inclusive).

3. Geoprobe and Trench Equipment and Use

Alternative 2 would use the same equipment as described in paragraph II.A.3. and 4.

4. Rotary Drill Equipment and Use

Alternative 2 evaluates a proposed pipeline study route that traverses the George, North Fork George, and East Fork George Rivers, and would require the need to study the feasibility of installing the proposed pipeline using horizontal directional drilling beneath the beds of each river. The study would involve vertical exploratory

drilling using a Foundex HT 700 rotary drilling rig that would be transported by helicopter to each river crossing (Figure 4). The rotary rig is powered by compressed air that does not use water, drilling muds, or additives. Drill rig components include head assembly, mast, frame, power pack, and base. Additional equipment needed to operate drill rig include compressor, drill pipe, augers, cyclone, tools, and sampling equipment.



Figure 4

The drill rig footprint is 5 feet by 9 feet with four adjustable legs that are supported by wooden blocks. Each block makes contact with the surface and size of each block is dependent on site condition. Other components needed to operate drill rig are a tool fly basket – footprint is 4 feet by 6 feet; Greenlee boxes for tool storage – footprint is 2 feet by 4 feet. Fuel and tank capacity to operate rig: one 40-gallon food grade hydraulic fluid tank attached to rig; no more than two 110- gallon double walled aluminum diesel flight tanks would be at drill site at one time – diesel is fed directly from the flight tanks to the compressor power pack (Figure 5); 5 and 10-gallon

containers of hydraulic and motor oil as needed to operate equipment. Drill rig would be equipped with enough fuel spill response kits capable of containing all fuel on site.



Figure 5

Approximately 18 vertical holes (6 at each river crossing) would be drilled using the rotary drill rig. Each hole would be 6 inches in diameter and drilled to a depth of 100 to 150 feet. Upon completion, drill cuttings would be backfilled into the drill holes to the extent that no holes will be left open on the surface. The location of the holes would be placed immediately outside each river's Ordinary High Water Mark (OHWM) to avoid drilling in the riverbed itself (Figure 6 – OHWM is referenced as "Bankfull Width"). Preparation for the rig and drilling would require minimal ground disturbance, requiring some brushing at sites that need safe access for helicopter landing zones. Personnel are required to follow spill prevention procedures and to ensure that fuel and oils do not leave the drill site and enter the river. Drill cuttings would not be allowed to leave the site or enter the stream.

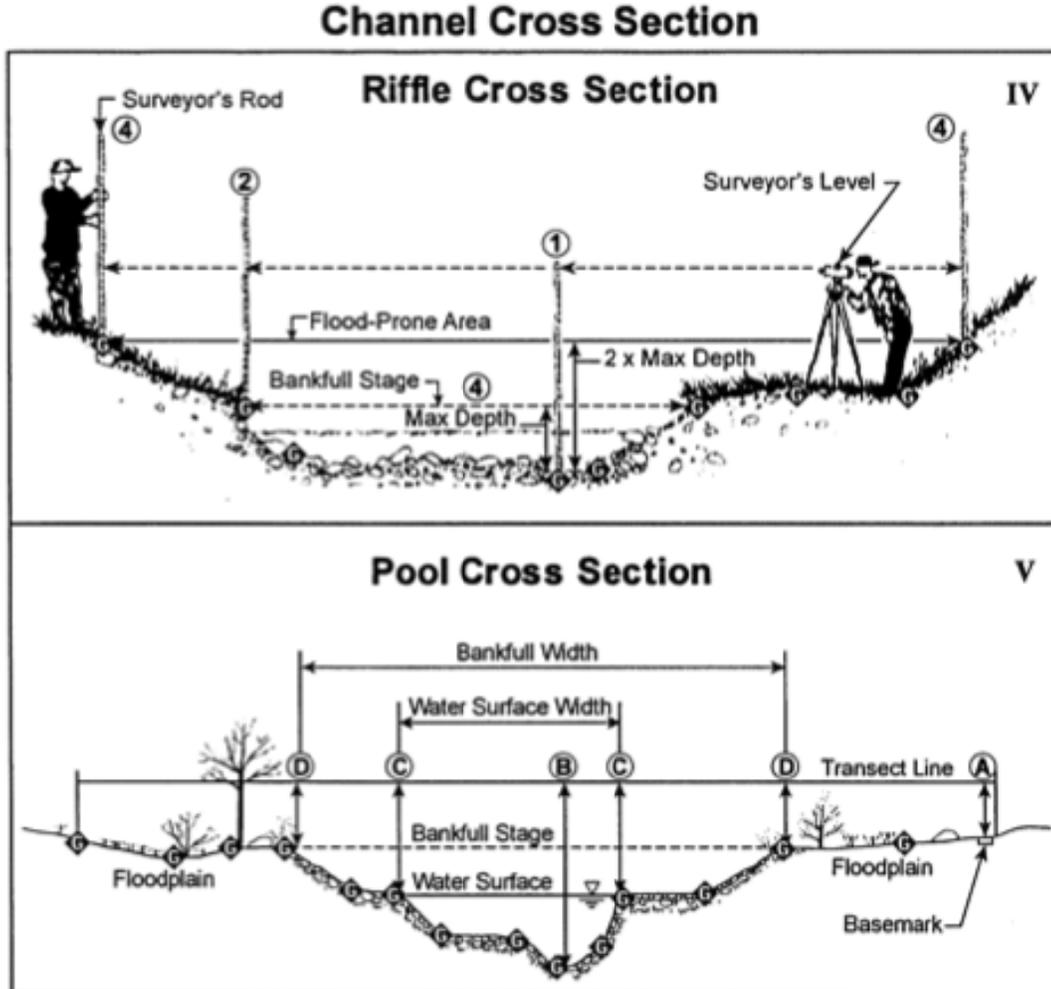


Figure 6

5. Logistics

Geoprobe and trench work would be done as described in paragraph II.A.6. Rotary drill work would be done by one crew, consisting of a drill supervisor, geotechnical engineer, and two drill operators. All crews and equipment would be transported and supported by one helicopter. All personnel will be lodged at existing camps or lodges in the area – no camp related infrastructure will be set up at any work sites. Fuel for the operation would be stored off site on BLM managed or administered lands at the Rohn and Tin Creek Airstrips authorized by separate BLM land use authorizations AA-92403-B and AA-92403-C.

C. No Action Alternative

Under the No Action Alternative, the BLM would not authorize Donlin Creek LLC to conduct a geotechnical feasibility study to evaluate the location of a proposed buried natural gas pipeline. BLM would continue with current land use management practices of the lands and Donlin Creek LLC would need to identify an alternative method of

conducting the study.

D. Conformance with Land Use Plan

The proposed action and alternatives are in conformance with the Southwest Planning Area Management Framework Plan, November 1981, under Lands, L-1.2: Multiple-Use Recommendation states “Allow right-of-way grants throughout the Planning Area on a case by case basis”.

III. AFFECTED ENVIRONMENT

A. Subsistence

A portion of the lands, identified above in paragraphs II.A.2.b. and II.B.2.b., that would be impacted by Alternatives 1 and 2 are BLM managed lands and meet the definition of “public lands” under Section 102 (3)(A) of ANILCA and is subject to the subsistence provisions of Title VIII of that act. A portion of the lands, identified above in paragraphs II.A.2.a. and II.B.2.a., that would be impacted by Alternatives 1 and 2 are BLM administered lands selected by the State of Alaska and Alaska Native corporations and do not meet the definition of “public lands” under Section 102 (3)(A) of the ANILCA and are not subject to the subsistence provisions of Title VIII of that act.

B. Threatened and Endangered Species

There is no reason to believe that:

1. an endangered or a threatened species is present in the area affected by the proposed action;
2. implementation of the proposed action will jeopardize the continued existence of an endangered or threatened species;
3. implementation of the proposed action will result in the destruction or adverse modification of critical habitat of such species;
4. implementation of the proposed action will jeopardize the continued existence of any species proposed to be listed as endangered or threatened;
5. implementation of the proposed action will result in destruction or adverse modification of critical habitat proposed to be designated for such species;

therefore, no consultation with the U.S. Fish and Wildlife Service is considered necessary pursuant to Section 7 of the Endangered Species Act of 1973, 16 U.S.C. §1536.

C. Cultural Resources

At this time there are no known cultural resources within the proposed study routes of Alternatives 1 and 2. No cultural resources surveys have been done in these areas, but a Fieldwork Authorization (AA-92440) has been issued to the archaeological contractor for this project. The contractor would examine medium and high potential areas as well as sample lower probability areas along the proposed routes of Alternatives 1 and 2.

D. Wastes, Hazardous and/or Solid

There are no known solid or hazardous waste sites within the areas of Alternatives 1 and 2 under consideration. The activities proposed would use regulated materials which pose some risk in use, and would generate some solid and sanitary wastes.

E. Migratory Birds

The open forest and shrub habitats of the proposed routes of Alternatives 1 and 2 provide breeding habitat for numerous species of land birds, waterfowl and raptors. These include several species of special management concern and include Grey-cheeked thrush, rusty blackbird, varied thrush, harlequin duck and trumpeter swans.

- 1. The Arctic peregrine falcon** (*Falco peregrinus tundrius*) is one of three subspecies of peregrine falcon. The Arctic peregrine nests in tundra regions of Alaska, Canada (Yukon, Northwest Territories, Quebec, and possibly Labrador), and the ice-free perimeter of Greenland. They use the cliffs along the Kuskokwim River for brooding and nesting (BLM 2000-2004). The bird is a long-distance migrant that winters in Latin America from Cuba and Mexico south through Central and South America. Arctic Peregrines return to the Arctic in mid-May to their nesting ledges where pair bonds are renewed. Nesting usually takes place on ledges, but there are records of nests on high, open ground in some parts of the Arctic. A clutch of 2–4 eggs is usually laid by early June in a simple scrape in the debris on the ledge; the young hatch about 33 days later. Most peregrines return to the same river bluffs and cliffs and re-use the same nest sites. The nest is a scrape or depression dug in gravel on a cliff ledge. Rarely, peregrines will nest in a tree cavity or an old stick nest. The returning young tend to nest within a few miles of their parents on the same river system. Except for the nesting ledges on rocky cliffs, the Arctic Peregrine is a bird of the wide-open tundra. Large rivers, lakes, and estuaries are their favored haunts. Peregrines vigorously defend their nests, although they may abandon them if severely or continuously harassed. Peregrine falcons, a special status species, have been delisted from threatened and endangered status and are currently being monitored. Recovery has been enhanced through careful protection of nest sites.
- 2. Rough-legged hawks** typically nest in forested river-valley tundra, damp flat tundra, dry watershed tundra, and bluffs and precipitous cliff banks of tundra rivers. Their nests are found along forested and cliff habitat of the Kuskokwim River and its tributaries. Earliest arrival dates in Alaska at Seward Peninsula are late April to early May ([Kessel 1989](#)). Nest-building begins soon after arrival ([Bent 1937](#), [McEwen 1957](#)).
- 3. Breeding pairs of harlequin ducks** have been documented by BLM in May 2003 in the small, fast flowing creeks of the area. Because of their preference for nesting on mountain streams, they likely inhabit the upper portions of drainages throughout Interior Alaska. During the breeding season, harlequins seek rapidly flowing streams and rivers for nesting and rearing young. However, the harlequin is also known to

breed along glacial lakes, in tundra ponds, and perhaps rarely on offshore rocks in marine waters. Nesting occurs from early May to late June. Most nests are built very close to water, on the ground in dense vegetation, among tree roots, or in rock crevices, although a nest has been found in a tree cavity. By late September, females and broods have joined other harlequins on coastal staging and wintering areas. Because of their broad range and remote habitat preferences, harlequin ducks are seldom affected by human disturbances, such as industrial activity, urban bustle, or recreation. Much of their habitat remains pristine and they are numerous in Alaska during winter. However, they can be affected by degradation of water quality and encroachment of human development in breeding streams.

F. Noise

The general area Aniak to Crooked Creek to Iditarod has been subjected to mining related disturbance since the turn of the twentieth century. Currently, the sampling area is presumed to be serene.

G. Species of Special Concern

The study areas in Alternatives 1 and 2 offer potential habitat for two bird species listed as Species of Special Concern within the State of Alaska. Blackpoll Warblers, and Olive Sided Flycatchers (Category 2 candidate species under federal ESA) that could potentially utilize various habitats within the proposed project area of Alternatives 1 and 2. No other threatened or endangered species are known to use the proposed project areas of Alternatives 1 and 2.

- 1. Blackpoll Warbler** – The Blackpoll Warbler is listed as a species of concern in Alaska. Although it is thought to breed throughout much of Alaska, it is only listed as common in the western and southwestern regions of the state. Typically their nesting habitat is coniferous forests and low shrub thickets. There is an abundance of this habitat type within the proposed project areas of Alternatives 1 and 2.

- 2. Olive Sided Flycatcher** – Like the Blackpoll Warbler, the Olive Sided Flycatcher is listed as a State of Alaska species of special concern. A steep decline in North American populations, with limited understanding of possible causes, is the basis for this listing. Olive Sided Flycatchers migrate north to breed in the boreal forests. Males return to central Alaska breeding areas in mid- to late May, with most females returning 1-2 weeks later. They remain in central Alaska through late August. Flycatchers feed from prominent perches by aerial hawking large insects, including bees, wasps, ants, and bark beetles. They nest almost exclusively on horizontal limbs of conifers, where they lay clutches of 4 eggs and raise one brood per season. Adults and young remain together for about two weeks after fledging. Very limited marking of adults indicates both breeding (by both sexes) and wintering site fidelity. Large tracts of potential habitat, including coniferous forests and riparian shorelines, occur within the proposed project areas of Alternatives 1 and 2.

H. Vegetation

The proposed project areas of Alternatives 1 and 2 traverses a combination of upland areas dominated by black spruce vegetation, with occasional broad open areas or patches of birch, and swampy lowland areas that are covered in tussocks with scrub black spruce.

I. Wildlife

Wildlife found in the proposed areas of Alternatives 1 and 2 includes, moose, brown and black bear, martin, red fox, wolf, lynx, mink, river otter, weasel, snowshoe hare, beaver, rough-grouse and willow ptarmigan.

The discussion below is drawn from the report “2006 Winter Wildlife Tracking Study,” May 2006; (lead author Roger Post, retired Alaska Department of Fish and Game).

1. Moose – Very few moose tracks were observed in the project area. The moose population appears to be very low in this area. The few tracks observed were in forested areas.
2. Martin – Martin appear to be the most abundant species in the area. Their tracks were observed in most habitat types. They prefer forested areas, particularly old or mature spruce forests, but tracks were also found in wetland areas at moderate frequency. Tracks were least often found in more open habitats.
3. Squirrels and hares – These two species appear to be the second most abundant species based on winter track studies. Tracks were observed almost exclusively in mixed wood forest and broadleaf forest.
4. Fox – Fox tracks were observed at a moderately relative frequency. They were observed in most habitat types, but were observed least in wetland areas.
5. Wolf – Wolf track were rarely observed. Where seen, they were generally in forested areas. They were not observed in wetland areas or other open habitat types.
6. Lynx – Only a very few lynx tracks were observed. These were in black spruce forest.
7. Mink, Otter, and Weasel – Tracks of these species were observed relatively rarely. Mink and otter tracks were seen almost exclusively in mixed deciduous forests that are generally found adjacent to streams. Weasels tended to be in forested areas, but the track frequency was too rare to draw firm conclusions.

8. Grouse and Ptarmigan – Tracks from grouse and ptarmigan were also sparse. As expected they tended to be found in different habitats, with grouse more often in forest areas and ptarmigan in open and brushy areas.
9. Black Bear and Beaver – these species are thought to occur in the project area, but were not observed in winter track studies.

Grizzly bears, wolves, bald eagles, sea otters, caribou, peregrine falcons, [marten](#), [lynx](#), [river otters](#), [wolverines](#), [loons](#), and [trumpeter swans](#) all continue to thrive in Alaska but are uncommon or absent in much of North America.

J. Recreation

Recreation activities in the vicinity of the proposed areas of Alternatives 1 and 2 include highly dispersed, year-round hunting, fishing, and subsistence activities. Summer OHV and winter snow machine use mainly by residents of the area is usually associated with these activities. Infrequent flights in private and transporter aircraft over-fly the areas described in Alternatives 1 and 2.

K. Visual Resources

The proposed study areas of Alternatives 1 and 2 traverses through black spruce forest, upland shrub and tundra vegetation types typical of interior Alaska.

1. Alternative 1

Alternative 1 passes from relatively flat lowland landforms through low hills approaching 1000 feet in the eastern portion of the study area. The route then traverses lands owned by The Kuskokwim Corporation and follows the ridgeline, up to 1600 feet, north of the East Fork George River then crosses north of the confluence with the George River, both determined navigable, then continues on BLM managed and administered lands in the western portion of the study area. On BLM managed and administered lands the visual resources along the study route are essentially un-impacted and pristine.

2. Alternative 2

As with Alternative 1, Alternative 2 passes the same relatively flat lowland landforms through low hills approaching 1000 feet in the eastern portion of the study area. Near where the route reaches and crosses the East Fork George River, determined navigable, it traverses northwest through the Kuskokwim Hills where elevations reach up to 2100 feet. The route then continues east where it crosses the George River, determined navigable, and the North Fork George River, non-navigable, on BLM managed and administered lands. The visual resources along the study route are essentially un-impacted and pristine.

A visual resources inventory has not been conducted for the areas of Alternatives 1 and 2 and VRM management classes have not been assigned. A preliminary inventory of the visual resources in the areas of Alternatives 1 and 2 indicate a VRM inventory class of VRM IV, with a possible VRM III area adjacent to the Kuskokwim Hills. The objective of a VRM III classification is to partially retain the character of the existing landscape, allowing activities that result in moderate change to the characteristic landscape. The objective of a VRM IV classification is to provide for management activities that may require significant modification to the existing landscape.

IV. ENVIRONMENTAL EFFECTS

A. Impacts of Alternatives 1 – East Fork Route (Proposed Action)

By implementing Alternative 1, minimal impact would occur within the project area. Equipment would be lifted and placed by helicopter. Geoprobos would rest on the surface for short periods of time during sampling with negligible impacts to the tundra. The excavator, where possible, would be driven short distances from one site to another, along ridge tops.

1. Subsistence

For the most part, the resources that were utilized by the residents of the Kuskokwim River drainage in the past are still utilized by the residents of today, albeit harvested with modern technology. Migratory waterfowl are still the primary fresh meat of the spring, and fishing occurs year-round. Caribou and moose comprise the primary large land mammals actively hunted in the area. Additionally, small mammals such as ground squirrel, Arctic hare, snowshoe hare, and muskrat are used both for their meat and fur. Other animals presently harvested from the area include porcupine, marten, red fox, white fox, wolverine, weasel, mink, river otter, wolf, lynx, marmot, ground squirrel, hare, and grizzly and black bear.

Although most residents of the area live a sedentary life in organized communities, hunters and fishers still travel great distances to subsist. The incorporation of new technologies such as snow mobiles, ATVs, and gas-powered boats allow hunters access to larger areas of land with less time and effort. In this way, it is possible to work within a wage-based economy, while still practicing a subsistence lifestyle. Likewise, it is still customary for most communities to relocate to seasonal camps for specific activities, such as putting up meat or fish, even if these seasonal camps are only located a short distance from the permanent village. Additionally, under ANCSA, many of the residents of the area have allotments, or small tracts of private land located in their traditional harvest areas within their region. Travel to, and extended stays at family allotments is still a yearly occurrence throughout the area.

The area has within its borders more than six federal qualified subsistence communities, and encompasses wholly or in part two Game Management Units. Each management unit or subunit has multiple species, multiple populations,

allocation claims by commercial, sport and subsistence user groups, and inter and intra community competition for subsistence resources, and multi-cultural user groups.

Title VIII of ANILCA establishes both a conservation mandate (conserve healthy populations), and an allocation mandate (priority for non-wasteful subsistence uses by rural residents) for subsistence on public lands in Alaska. ANILCA Title VIII also ensures reasonable access by rural residents to subsistence resources on public lands, and mandates a priority for subsistence use over the taking of fish and wildlife for other purposes (such as commercial or recreational use).

The BLM is responsible for administering the Federal Subsistence Program on BLM public lands in the area, including data collection and analysis, and implementing and enforcing regulations. The overall objective is to provide for rural subsistence use, while maintaining healthy populations of subsistence resources within the bounds of recognized fish and wildlife management principles.

2. Cultural Resources

Some areas of high to moderate potential for previously undiscovered cultural resources occur within the Area of Potential Effect for Alternative 1. A qualified archaeologist hired by Donlin Creek LLC would evaluate each proposed study site prior to the start of ground disturbance work. If cultural resources are found, study sites would be relocated to another site and area would be flagged and documented to avoid future disturbance.

3. Waste, Hazardous and/or Solid

Alternative 1 has the potential to negatively impact the environment:

Oil Pollution – The equipment would require significant amounts of diesel fuel and lubricating/hydraulic oils. The fuel would be transported to/around the areas via helicopter external/sling-load in 110 gallon “flight tanks”. Fuel spills could occur during transfer into the equipment and by accidental damage caused by the helicopter dropping, and/or other malfunctions of the containers. Oil may spill from the equipment during operation or storage via leaks and/or mechanical breakdown; i.e. rupture of hydraulic lines, failure of engine seals, etc.

Sanitary Waste – Operators would generate human sanitary wastes during their duty day.

Solid Waste – Operators would generate some solid waste as a result of meals, equipment maintenance and repairs.

4. Migratory Birds

The proposed study areas of Alternative 1 would occur in areas some distance from

the Kuskokwim River and should not impact birds nesting in riparian zones along the river. Helicopter activities near the Kuskokwim River should be minimized from April 30th to June 30th, when migratory birds may abandon nest sites as a result of disturbance.

5. Noise

The noise produced by daily helicopter flights would degrade the presumed serenity of the area. It is likely that game animals such as moose would avoid test sites during operations. Work at each location would be limited to one day, disturbance should be limited and the chances of wildlife displacement unlikely.

6. Species of Special Concern

Human intrusion and development may disturb species of special concern and result in the abandonment of nests or the loss of young hatchlings.

Peregrines will return to the area in mid to late April and begin establishing nesting territories. Helicopter activities near the Kuskokwim River should be minimized from April 30th to June 30th, when peregrines may abandon nest sites as a result of disturbance. The Southwest Planning Area Management Framework Plan, November 1981, under Wildlife Habitat, WL-3.1: Multiple-Use Recommendation states "Designate peregrine falcon nesting sites as an Area of Critical Environmental Concern (ACEC)". The applicant would be required to establish a buffer zone around peregrine falcon nests as recommended by U.S. Fish and Wildlife, "a restrictive buffer zone of one-quarter mile be established around active peregrine falcon nests from April 15 to August 15". The ACEC has not been established but to limit potential impacts the recommended buffer zone would be followed.

7. Vegetation

Geoproses would drill a 2.5 inch borehole with no drill cuttings from areas with tundra ground cover. It is anticipated that boreholes made by the geoprobe would fill in with mud and water, and would not be discernable once the drill is removed. The amount of vegetation disturbed by the sampling would be negligible. Excavator trench pits, when reclaimed properly, would cause temporary disturbance to the vegetative resources.

Vegetation impact variability on tundra is great and heavily influenced by the weight of the impact and the environmental conditions. Excavator tire tracks and disturbed sites may be visible for several years in the tundra environment, but will diminish over time, depending on the specific vegetation type and environmental conditions at the time of impact. For example: Tundra with a high lichen component, when driven over by such modes of transportation such as 4-wheelers or excavators, will show impacts for as many as 3-10 years or more, depending on environmental conditions at the time of impact. Dry lichens are very brittle and are crushed into tiny fragments

under such dry conditions. If environmental conditions are very moist at the time of impact, lichens are less likely to break into tiny fragments and site impacts should diminish in three years or less.

The potential for non-native invasive plant introduction exists due to the soil disturbance and potential of weed propagules coming off of the gear and equipment used during this project. This potential is greatly reduced (but not eliminated) with proper invasive plant prevention mitigations as described in the stipulations.

8. Wildlife

Impacts to wildlife would be minimized by the field crews taking care to avoid any wildlife observed during operations.

9. Recreation

Impacts to recreation would be infrequent, temporary and minimal. The greatest impact would be noise associated with delivering equipment by helicopter to and from the test sites, and noise associated with on-site equipment operation and excavator travel.

10. Visual Resources

The impacts of Alternative 1 fall well within the management objectives of both the VRM III and VRM IV classifications. The ground disturbing impacts of the 152 sample sites would be minimal and temporary, resulting in no permanent impact on visual resources. Sample sites would be individually selected to reduce the need to cut vegetation. Crushed vegetation from helicopter landings, equipment staging and use, and crew activities would be temporary and should recover within each growing season. Visual impacts to lichens will vary depending on the environmental conditions at the time of exploratory activities. Dry conditions in tundra environments will take a longer time to recover and will be more visually obvious than exploratory activities during moist environmental conditions.

Equipment storage, camping, or multi-day use is not anticipated at any sample sites. Alternative 1 would produce a 3.5 square inch borehole from the geoprobe drill collar in the vegetative mat after sampling is completed. In addition there would be some slight disturbance at the pressure points where the equipment is placed at the locations.

At the locations where trenching is involved there would be temporary storage during trenching of piles of excavated materials. There would also be some visual differences in ground texture at the excavated sites once back filled but this disturbance would be mitigated naturally over time.

11. Cumulative Impacts

Alternative 1 is a single event and has low levels of human intrusion on the

environment. Overall stress in the project area of Alternative 1 from ground operations would be minimal. The ability of the project area to recover is high. The studies described in Alternative 1 would be performed in such a manner as to minimize impacts. Surface and brush disturbance would be minimal and would occur only if necessary. The overall impact of Alternative 1 to the tundra would be minimal given the vast range of resources in each project area. Impacts from Alternative 1 to wildlife should also be minimal as there would be no more than one day's activity at any given site.

Alternative 1 would evaluate the feasibility of a proposed buried natural gas pipeline. They may or may not result in the development of a pipeline, if so the pipeline would be analyzed in a separate environmental document.

Cumulatively the pipeline, if constructed, would have more impacts on the environment than the proposed actions though most affects would be anticipated to be primarily during construction with the natural environment tending to recover from the human intrusion and ground disturbing activities once the construction was completed. Ongoing impacts, if the pipeline were to be constructed, would potentially include regular inspections of the ROW route and pipeline and potential intermittent repairs and/or modifications of the pipeline.

B. Impacts of Alternative 2 – Kuskokwim Hills Route

By implementing Alternative 2, minimal impact would occur within the project areas. Equipment would be lifted and placed by helicopter. The geoprobe and rotary drill rig and associated equipment would rest on the surface for short periods of time during sampling with negligible impacts to the tundra. The excavator, where possible, would be driven short distances from one site to another, along ridge tops.

1. Subsistence

For the most part, the resources that were utilized by the residents of the Kuskokwim River drainage in the past are still utilized by the residents of today, albeit harvested with modern technology. Migratory waterfowl are still the primary fresh meat of the spring, and fishing occurs year-round. Caribou and moose comprise the primary large land mammals actively hunted in the area. Additionally, small mammals such as ground squirrel, Arctic hare, snowshoe hare, and muskrat are used both for their meat and fur. Other animals presently harvested from the area include porcupine, marten, red fox, white fox, wolverine, weasel, mink, river otter, wolf, lynx, marmot, ground squirrel, hare, and grizzly and black bear.

Although most residents of the area live a sedentary life in organized communities, hunters and fishers still travel great distances to subsist. The incorporation of new technologies such as snow mobiles, ATVs, and gas-powered boats allow hunters access to larger areas of land with less time and effort. In this way, it is possible to work within a wage-based economy, while still practicing a subsistence lifestyle.

Likewise, it is still customary for most communities to relocate to seasonal camps for specific activities, such as putting up meat or fish, even if these seasonal camps are only located a short distance from the permanent village. Additionally, under ANCSA, many of the residents of the area have allotments, or small tracts of private land located in their traditional harvest areas within their region. Travel to, and extended stays at family allotments is still a yearly occurrence throughout the area.

The area has within its borders more than six federal qualified subsistence communities, and encompasses wholly or in part two Game Management Units. Each management unit or subunit has multiple species, multiple populations, allocation claims by commercial, sport and subsistence user groups, and inter and intra community competition for subsistence resources, and multi-cultural user groups.

Title VIII of ANILCA establishes both a conservation mandate (conserve healthy populations), and an allocation mandate (priority for non-wasteful subsistence uses by rural residents) for subsistence on public lands in Alaska. ANILCA Title VIII also ensures reasonable access by rural residents to subsistence resources on public lands, and mandates a priority for subsistence use over the taking of fish and wildlife for other purposes (such as commercial or recreational use).

The BLM is responsible for administering the Federal Subsistence Program on BLM public lands in the area, including data collection and analysis, and implementing and enforcing regulations. The overall objective is to provide for rural subsistence use, while maintaining healthy populations of subsistence resources within the bounds of recognized fish and wildlife management principles.

2. Cultural Resources

Some areas of high to moderate potential for previously undiscovered cultural resources occur within the Area of Potential Effect for Alternative 2. A qualified archaeologist hired by Donlin Creek LLC would evaluate each proposed study site prior to the start of ground disturbance work. If cultural resources are found, study sites would be relocated to another site and area would be flagged and documented to avoid future disturbance.

3. Waste, Hazardous and/or Solid

Alternative 2 has potential to negatively impact the environment:

Oil Pollution – The equipment would require significant amounts of diesel fuel and lubricating/hydraulic oils. The fuel would be transported to/around the areas via helicopter external/sling-load in 110 gallon “flight tanks”. Fuel spills could occur during transfer into the equipment and by accidental damage caused by the helicopter dropping, and/or other malfunctions of the containers. Oil may spill from the equipment during operation or storage via leaks and/or mechanical breakdown; i.e.

rupture of hydraulic lines, failure of engine seals, etc.

Sanitary Waste – Operators would generate human sanitary wastes during their duty day.

Solid Waste – Operators would generate some solid waste as a result of meals, equipment maintenance and repairs.

4. Migratory Birds

The proposed study area of Alternative 2 would occur in areas some distance from the Kuskokwim River and should not impact birds nesting in riparian zones along the river. Helicopter activities near the Kuskokwim River should be minimized from April 30th to June 30th, when migratory birds may abandon nest sites as a result of disturbance.

5. Noise

The noise produced by daily helicopter flights would degrade the presumed serenity of the area. It is likely that game animals such as moose would avoid test sites during operations. Work at each location would be limited to one day; disturbance should be limited and the chances of wildlife displacement unlikely.

6. Species of Special Concern

Human intrusion and development may disturb species of special concern and result in the abandonment of nests or the loss of young hatchlings.

Peregrines will return to the area in mid to late April and begin establishing nesting territories. Helicopter activities near the Kuskokwim River should be minimized from April 30th to June 30th, when peregrines may abandon nest sites as a result of disturbance. The Southwest Planning Area Management Framework Plan, November 1981, under Wildlife Habitat, WL-3.1: Multiple-Use Recommendation states “Designate peregrine falcon nesting sites as an Area of Critical Environmental Concern (ACEC)”. The applicant would be required to establish a buffer zone around peregrine falcon nests as recommended by U.S. Fish and Wildlife, “a restrictive buffer zone of one-quarter mile be established around active peregrine falcon nests from April 15 to August 15”. The ACEC has not been established but to limit potential impacts the recommended buffer zone would be followed.

7. Vegetation

Geoproses would drill a 2.5 inch borehole with no drill cuttings from areas with tundra ground cover. Air powered rotary drills would drill a 6 inch borehole with drill cuttings from areas near three river crossings – immediately outside each river’s OHWM within the riparian zone. It is anticipated that boreholes made by the geoprobe would fill in with mud and water, and would not be discernable once the

drill is removed. The rotary drill boreholes would be backfilled using cuttings produced by the drill. The amount of vegetation disturbed by the sampling would be negligible. Excavator trench pits, when reclaimed properly, would cause temporary disturbance to the vegetative resources.

Vegetation impact variability on tundra is great and heavily influenced by the weight of the impact and the environmental conditions. Excavator tire tracks and disturbed sites may be visible for several years in the tundra environment, but will diminish over time, depending on the specific vegetation type and environmental conditions at the time of impact. For example: Tundra with a high lichen component, when driven over by such modes of transportation such as 4-wheelers or excavators, will show impacts for as many as 3-10 years or more, depending on environmental conditions at the time of impact. Dry lichens are very brittle and are crushed into tiny fragments under such dry conditions. If environmental conditions are very moist at the time of impact, lichens are less likely to break into tiny fragments and site impacts should diminish in three years or less.

The potential for non-native invasive plant introduction exists due to the soil disturbance and potential of weed propagules coming off of the gear and equipment used during this project. This potential is greatly reduced (but not eliminated) with proper invasive plant prevention mitigations as described in the stipulations.

8. Wildlife

Impacts to wildlife would be minimized by the field crews taking care to avoid any wildlife observed during operations.

9. Recreation

Impacts to recreation would be infrequent, temporary and minimal. The greatest impact would be noise associated with delivering equipment by helicopter to and from the test sites, and noise associated with on-site equipment operation and excavator travel.

10. Visual Resources

The impacts of Alternative 2 fall well within the management objectives of both the VRM III and VRM IV classifications. The ground disturbing impacts of the 170 sample sites would be minimal and temporary, resulting in no permanent impact on visual resources. Sample sites would be individually selected to reduce the need to cut vegetation. Crushed vegetation from helicopter landings, equipment staging and use, and crew activities would be temporary and should recover within each growing season. Visual impacts to lichens will vary depending on the environmental conditions at the time of exploratory activities. Dry conditions in tundra environments will take a longer time to recover and will be more visually obvious than exploratory activities during moist environmental conditions.

Equipment storage, camping, or multi-day use is not anticipated at any sample sites. Alternative 2 would produce a 3.5 square inch borehole from the geoprobe drill collar and a 6 inch hole from the rotary drill in the vegetative mat after sampling is completed. In addition there would be some slight disturbance at the pressure points where the equipment is placed at the locations.

At the locations where trenching is involved there would be temporary storage during trenching of piles of excavated materials. There would also be some visual differences in ground texture at the excavated sites once back filled but this disturbance would be mitigated naturally over time.

11. Cumulative Impacts

Alternative 2 is a single event and has low levels of human intrusion on the environment. Overall stress in the project area of Alternative 2 from ground operations would be minimal. The ability of the project area to recover is high. The studies described in Alternative 2 would be performed in such a manner as to minimize impacts. Surface and brush disturbance would be minimal and would occur only if necessary. The overall impact of Alternative 2 to the tundra would be minimal given the vast range of resources in each project area. Impacts from Alternative 2 to wildlife should also be minimal as there would be no more than one day's activity at any given site.

Alternative 2 would evaluate the feasibility of a proposed buried natural gas pipeline. They may or may not result in the development of a pipeline, if so the pipeline would be analyzed in a separate environmental document.

Cumulatively the pipeline, if constructed, would have more impacts on the environment than the proposed actions though most affects would be anticipated to be primarily during construction with the natural environment tending to recover from the human intrusion and ground disturbing activities once the construction was completed. Ongoing impacts, if the pipeline were to be constructed, would potentially include regular inspections of the ROW route and pipeline and potential intermittent repairs and/or modifications of the pipeline.

C. No Action Alternative

Under the No Action Alternative, the geotechnical feasibility study to evaluate the location of a proposed buried natural gas pipeline would not take place and there would be no impacts to the BLM managed or administered lands outlined in this Environmental Assessment. There would be no cumulative impacts resulting from implantation of the No Action Alternative.

V. TRIBES, INDIVIDUALS, ORGANIZATIONS, OR AGENCIES CONSULTED

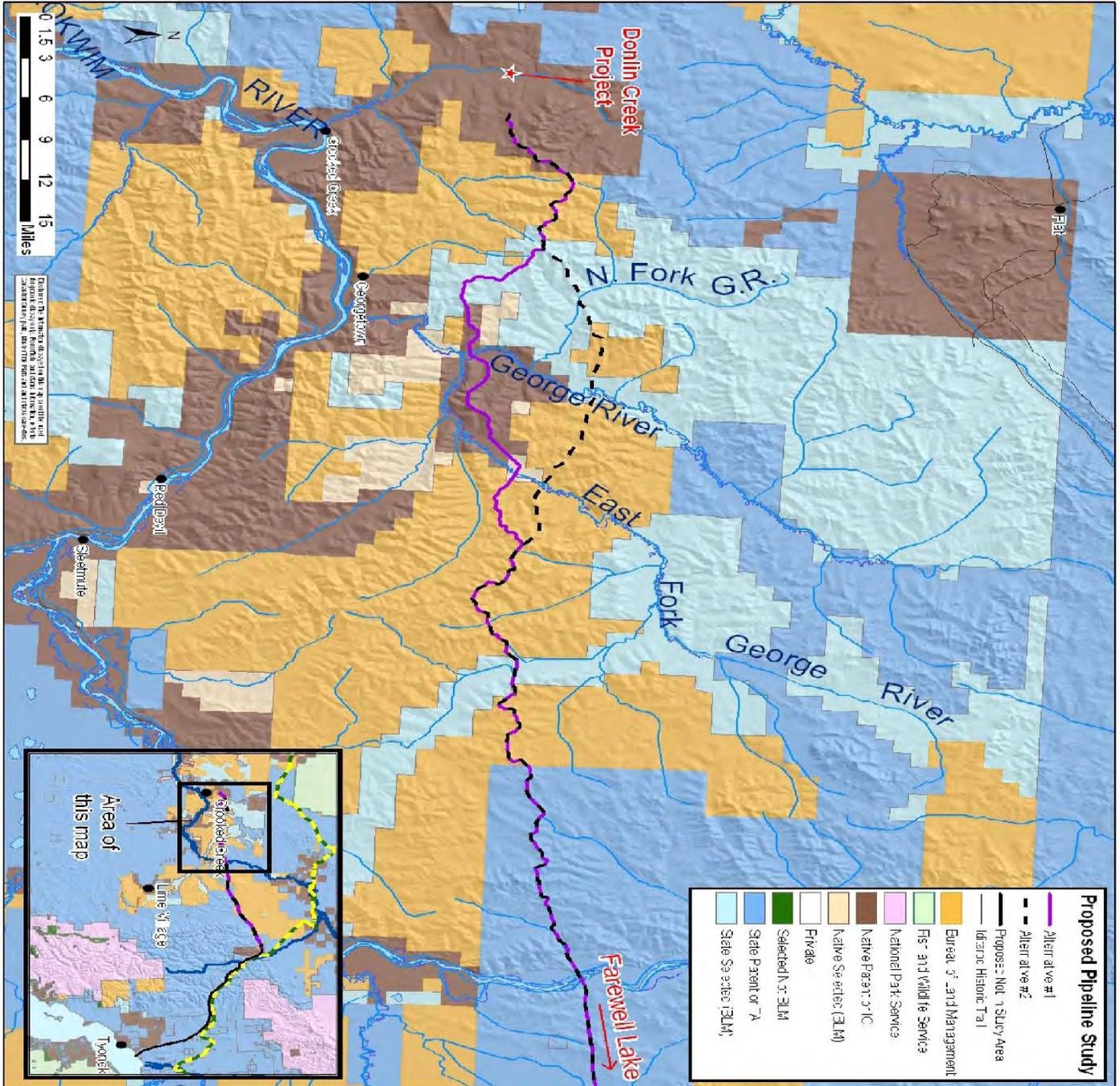
Julia Bosma – Assistant Permitting Manager, Donlin Creek LLC
Dave Manzer – Permitting Manager, Donlin Creek LLC

VI. LIST OF PREPARERS

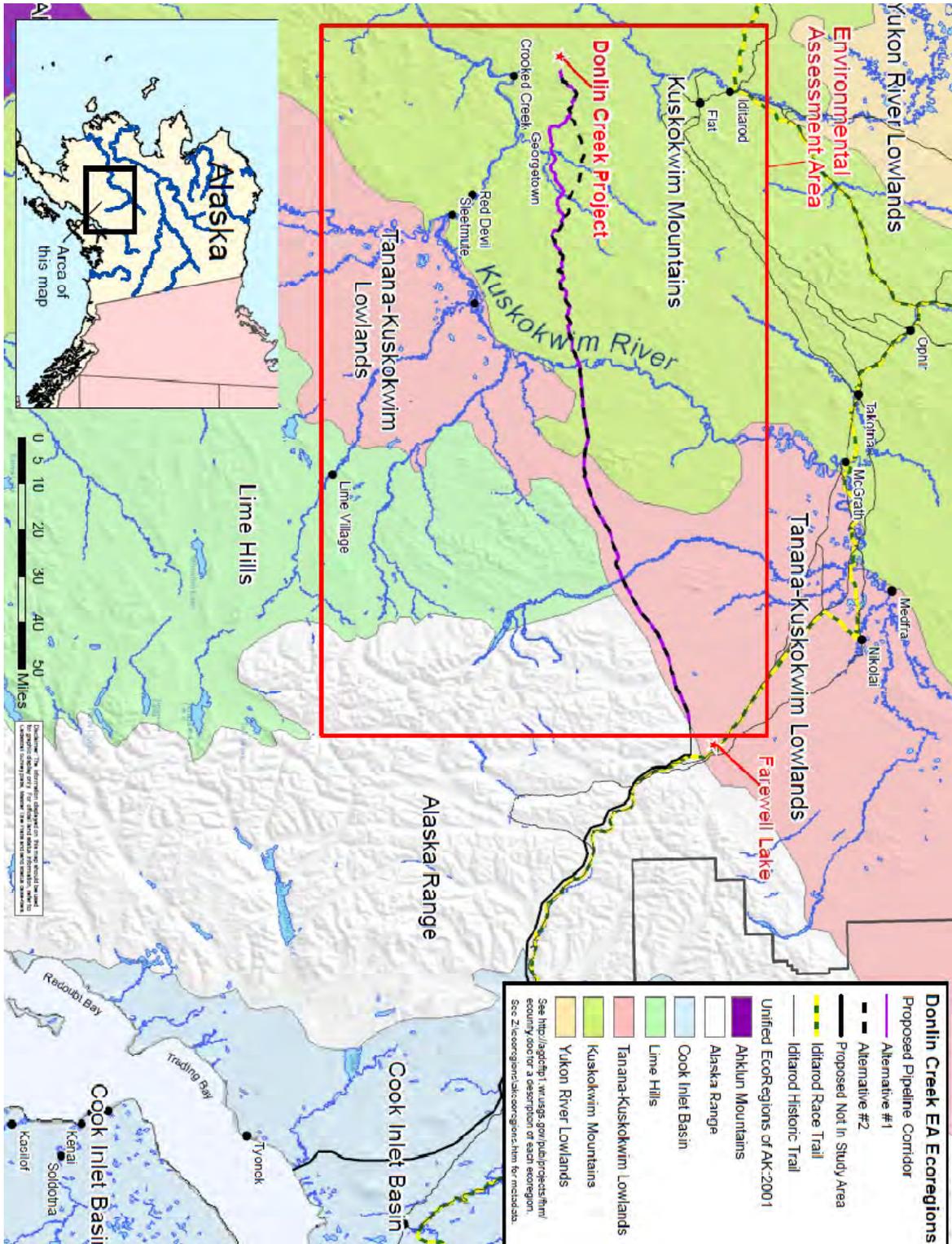
Charles Lovely – Project Coordinator
Stephen L. Fusilier – Lands Branch Manager
Donna Redding – Archaeologist
Geoff Beyersdorf – Natural Resource Specialist (Subsistence)
Laurie Thorpe – Natural Resource Specialist (Vegetation)
Bruce Seppi – Wildlife Biologist
Jorjena Daly – Outdoor Recreation Planner
Larry Beck – Environmental Protection Specialist

VII. APPENDICES

Appendix 1 – Map of Alternatives 1 and 2



Appendix 2 – Ecoregion Map



Appendix 3 – Stipulations

Terms and Stipulations for Right of Way Grant for Proposed Geotechnical Study for Donlin Creek LLC

- A. General Terms: During construction, operation, maintenance, and termination of the project you must:
- (a) Comply with all existing and subsequently enacted, issued, or amended Federal laws and regulations and state laws and regulations applicable to the authorized use;
 - (b) Rebuild and repair roads, fences, and established trails destroyed or damaged by the project;
 - (c) Build and maintain suitable crossings for existing roads and significant trails that intersect the project;
 - (d) Do everything reasonable to prevent and suppress wildfires on or in the immediate vicinity of the right-of-way area;
 - (e) If BLM requires, obtain, and/or certify that you have obtained, a surety bond or other acceptable security to cover any losses, damages, or injury to human health, the environment, and property in connection with your use and occupancy of the right-of-way, including terminating the grant, and to secure all obligations imposed by the grant and applicable laws and regulations. If you plan to use hazardous materials in the operation of your grant, you must provide a bond that covers liability for damages or injuries resulting from releases or discharges of hazardous materials. BLM may require a bond, an increase or decrease in the value of an existing bond, or other acceptable security at any time during the term of the grant;
 - (f) Assume full liability if third parties are injured or damages occur to property on or near the right-of-way as specified in 43 CFR §2807.12;
 - (g) Comply with project-specific terms, conditions, and stipulations, including requirements to:
 - (1) Restore, revegetate, and curtail erosion or conduct any other rehabilitation measure BLM determines necessary;
 - (2) Ensure that activities in connection with the grant comply with air and water quality standards or related facility siting standards contained in applicable Federal or state law or regulations;
 - (3) Control or prevent damage to:

- (i) Scenic, aesthetic, cultural, and environmental values, including fish and wildlife habitat;
- (ii) Public and private property; and
- (iii) Public health and safety;
- (4) Protect the interests of individuals living in the general area who rely on the area for subsistence uses as that term is used in Title VIII of Alaska National Interest Lands Conservation Act (ANILCA) (16 U.S.C. 3111 *et seq.*);
- (5) Ensure that you construct, operate, maintain, and terminate the facilities on the lands in the right-of-way in a manner consistent with the grant;
- (6) When the state standards are more stringent than Federal standards, comply with state standards for public health and safety, environmental protection, and siting, constructing, operating, and maintaining any facilities and improvements on the right-of-way; and
- (h) Immediately notify all Federal, state, tribal, and local agencies of any release or discharge of hazardous material reportable to such entity under applicable law. You must also notify BLM at the same time, and send BLM a copy of any written notification you prepared;
- (i) Not dispose of or store hazardous material on your right-of-way, except as provided by the terms, conditions, and stipulations of your grant;
- (j) Certify your compliance with all requirements of the Emergency Planning and Community Right-to-Know Act of 1986, 42 U.S.C. 11001 *et seq.*, when you receive, assign, renew, amend, or terminate your grant;
- (k) Control and remove any release or discharge of hazardous material on or near the right-of-way arising in connection with your use and occupancy of the right-of-way, whether or not the release or discharge is authorized under the grant. You must also remediate and restore lands and resources affected by the release or discharge to BLM's satisfaction and to the satisfaction of any other Federal, state, tribal, or local agency having jurisdiction over the land, resource, or hazardous material;
- (l) Comply with all liability and indemnification provisions and stipulations in the grant;
- (m) As BLM directs, provide diagrams or maps showing the location of any constructed facility; and
- (n) Comply with all other stipulations that BLM may require.

II. Stipulations:

- A. Cutting of live vegetation (trees) shall be limited to that necessary for safe operation of helicopters and drilling equipment;
- B. Wastewater must be managed in accordance with Title 18 Alaska Administrative Code, Chapter 72, (18 AAC 72) Wastewater Disposal. Wastewater is defined as Human Waste (sewage), and Gray Water (water which has been used for personal hygiene, washing clothing or equipment, or sanitizing cooking and eating materials). If the standards for Pit Privies found at 18 AAC 72.030 cannot be met, all wastewater must be collected and transported to a state approved disposal facility. Upon closure of the campsite the Pit Privy must be completely back-filled with the surface area covered and re-graded to approximate original appearance;
- C. Non-Hazardous Solid Waste (trash/refuse) will be back hauled from the area and disposed in an approved waste disposal site;
- D. Fuel Handling and Storage: Fuel shall be stored at least 150 feet from surface waters. Fuel and other petroleum products and hazardous materials shall be stored in containers designed to hold that product, identified with the owner's name, the contents and date of purchase (e.g. Donlin Creek LLC, Coleman Fuel, 2010). All fuel spills will be cleaned up immediately, taking precedence over all other matters, except the health and safety of personnel. Spills will be cleaned up utilizing absorbent pads or other Alaska State DEC approved methods. Fuel storage in excess of 55 gallons and/or fuel storage containers that are situated where a spill may reach a water body or watercourse requires secondary containment. Secondary containment is defined as a diked, impermeable impoundment capable of containing 110 percent of the volume of the largest independent container or a double walled container. As soon as possible, but not later than 24 hours, notice of any such discharge as defined in Alaska Statute Title 18, Chapter 75, Article 2, will be given to: The Authorized Officer at 1-800-478-1263. Such other Federal and State officials as are required by law to be given such notice including Alaska Department of Environmental Conservation at (907) 478-9300;
- E. All operations shall be conducted in such a manner as to avoid damage or disturbance to any prehistoric or historic sites or modern camp sites. The Archaeological Resource Protection Act prohibits the excavation, removal, damage, or disturbance of any archaeological resource located on public lands. Violation of this law could result in the imposition of both civil and criminal penalties of the violator. Should any historic or prehistoric site be located during the course of operations under this Right-of-Way Grant, the applicant shall immediately cease activities and notify the BLM authorized officer;
- F. All vehicles and transport equipment used in access, construction, maintenance and operations of a project must be thoroughly cleaned **prior to** moving equipment and gear across or onto BLM managed lands. Washing and/or brushing equipment and gear to remove material that can contain weed seeds or other propagates helps to insure equipment

that is being transported across or onto BLM managed lands are weed and weed seed free. High pressure washing is recommended to treat the insides of bumpers, wheel wells, undercarriages, inside belly plates, excavating blades, buckets, tracks, rollers, drills, buckets, shovels, any digging tools, etc., to remove potential weeds, seeds, and soil carrying weed propagules, and vegetative material. All gear, tool bags, and accessories must be free of all plant debris, mud, and materials that can be the source of non-native invasive plants and pathogens;

- G. Felt-soled waders should only be used if brand new and never before used;
- H. Early detection, rapid response mitigates ecological damage from invasive species. Should a development or occupancy and use have invasive plant infestations prior to development or use, proponents must confer with the land administrator to develop an invasive plant treatment plan to eliminate and/or prevent the propagation of the species;
- I. Site reclamation must be implemented as soon as possible after construction using the original duff layer. This original duff layer is to be removed and set aside upon initial site disturbance, and replaced on disturbed areas in lieu of revegetation with non-local materials; and
- J. Certified weed-free mulch, hay or straw is required in areas needing mulch. Sources for weed free mulch can be found by calling the Plant materials Center: 907-745-4469. Revegetation Guidance can be found at: http://www.dnr.state.ak/ag/pmcweb/PMC_reveg.

Appendix 4 – Supplemental Stipulations

Supplemental Stipulations Specific to the Donlin Creek LLC proposed Geotechnical Study:

1. No mechanized surface access (Nodwell, 4 wheel ATV's etc.) equipment will be used.
2. Avoid equipment operations in areas where nesting birds (no human intrusion within 200 meters, peregrine falcons – 400 meters), or other wildlife, are observed.
3. To the extent feasible, activities would occur outside of the riparian zone (outer reaches of riparian vegetation) and the floodplain of the Kuskokwim River and will approach rivers perpendicular to their banks.
4. Except when conducting equipment transport operations, helicopter altitude to and from test sites shall be no less than 2000 vertical feet as per US DOT Advisory Circular AC No.: 91-36D. AC 91-36C (8)(d) also states that “This advisory does not apply where” flying at “...an altitude of less than 2000 feet AGL is considered necessary by a pilot to operate safely.” When performing equipment transport operations, 14 CFR 91.119(d) (which outlines Minimum Safe Altitudes for helicopter use) states “Helicopters may be operated at less than the minimums prescribed in paragraph (b) or (c) of this section if the operation is conducted without hazard to persons or property on the surface. In addition, each person operating a helicopter shall comply with any routes or altitudes specifically prescribed for helicopters by the Administrator.” Helicopter activity will define and adhere to flight corridors that avoid to the degree possible moose habitat to and from the proposed sites maintaining flight altitudes of 500 feet AGL for flights not involved with the movement of people and equipment on the test areas as per 14 CFR 91.119(c).
5. All holes with a diameter of 2 inches or greater will be plugged to avoid mid-size and large animals from stepping into holes to avoid injury and broken legs. No casing will be installed and left in any of the holes except for 12 sites which will have PVC pipe installed to contain Thermistors for ground temperature monitoring.
6. Risk of fuel spill is greatly reduced by use of the impact resistant, double walled “flight tanks”. The drilling machine needs to have drip pans or pads placed under them during operations and storage to prevent oil leaks onto the ground. Having on-hand appropriate spill response kits, and employees trained in emergency spill response (HAZWOPER, etc.), will mitigate any damage to the environment caused by accidental releases of oil/fuel. Solid and sanitary waste pollution will be prevented by daily backhaul of all trash, worn equipment parts, and use of a properly maintained toilet facility at the base camp.
7. Any soil contaminated by leaks or spills will be removed from the site and disposed of appropriately and in accordance with any associated regulations.