THE STATE of ALASKA
GOVERNOR SEAN PARNELL

Department of Natural Resources
Division of Oil & Gas
550 W. 7th Avenue Suite 1100
Anchorage, Alaska 99501-3560
Main: 907.269.8800
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September 23, 2014

Mr. James Mery
Sr. V.P. Lands and Natural Resources
Doyon, Limited
1 Doyon Place, Suite 300
Fairbanks, AK 99701-2941

RE: MLUPAK 14-003, Miscellaneous Land Use Permit for Geophysical Exploration, Nenana Basin 3D and 2D Permit Approval

Dear Mr. Mery:

The Division of Oil and Gas (Division) approves the Doyon, Limited (Doyon) Nenana Basin 3D and 2D Miscellaneous Land Use Permit (MLUP) application, dated July 10, 2014, to conduct geophysical exploration on State of Alaska lands in the central area of the Nenana Basin. The enclosed permit, MLUPAK 14-003, authorizes Doyon to conduct a land seismic survey on State of Alaska land within the Nenana Basin approximately 5 miles to the west and north of Nenana subject to the conditions of the permit.

This permit is effective September 22, 2014 to April 1, 2015.

Issuance of a permit under 11 AAC 96 is not a disposal of an interest in land and does not grant a preference right to a lease or other disposal. The permit is revocable for cause for violation of a permit stipulation of this chapter, and is revocable at will if the department determines that the revocation is in the state's interest. Each permit issued is subject to any stipulations the department determines necessary to assure compliance with this chapter, to minimize conflicts with other uses, to minimize environmental impacts, or otherwise to be in the interests of the state. Public notice of any miscellaneous land use application is discretionary under 11 AAC 96.030(c). The Director of the Division has the right at any time to amend or modify any provisions of this permit, or revoke this permit.

Project Description Proposed Activity, Associated Structures, Type of Equipment:

Doyon submitted a request to conduct a seismic program in the central area of the Nenana Basin beginning in August 2014 and finishing by April 1, 2015. The proposed program may be conducted on state, University of Alaska, or private lands. All state lands fall within Doyon's Nenana Basin Lease area. The program will also extend outside of the lease area onto

Toghotthele lands where Doyon holds the subsurface rights. Land use agreements are being established with all landowners.

The staging area and camp location will be located off site on selected Toghotthele or City of Nenana land on the east side of the Nenana River.

The survey area will only be accessible by helicopter from the city of Nenana. There are no new roads being constructed in association with this seismic exploration program.

Fuel for the project will be stored off site near the Nenana airport.

Work crews will stay off site at local accommodations in Nenana. If additional space will be needed for housing Doyon may contract the Notti Camp from Toghotthele Corporation, or a similar camp to be located in the City of Nenana or Toghotthele land.

All employees and subcontractors are required by Doyon to abide by regulatory health and safety requirements, company health and safety plans and policies and Doyon's health and safety operating procedures.

Exploration activities will be conducted in a manner that minimizes impacts to wildlife and subsistence hunting. All activities will be conducted in accordance with the best management practices contained within Doyon's Alaska Department of Fish and Game (ADFG)-approved Wildlife Interaction Plan presented in Appendix B. Additional specific wildlife considerations are listed in the sections below.

Explosives will not be detonated within, beneath, or in close proximity to fish bearing streams in accordance with the requirements of ADFG blasting standards.

Scope of Decision:

This permit would authorize Doyon to conduct geophysical exploration on State of Alaska lands in the Nenana Basin.

This permit does not authorize access or activities on non-state lands.

Project Location:

The Nenana Basin 3D seismic survey will be conducted in an approximate 30 square mile area with an additional buffer zone for receivers that extend approximately 1½ miles to each side. The program area is approximately 3 miles west of the town of Nenana, approximately 2.5 miles west of the Nenana River, and approximately 1.6 miles west of the Tanana River. The proposed 3D Seismic Survey Legal Description will be in the following areas:

M: Fairbanks	T: 3 South	R: 8 West	Section(s): 7-9, 16-21, 28-33
M: Fairbanks	T: 3 South	R: 9 West	Section(s): 10-36
M: Fairbanks	T: 4 South	R: 8 West	Section(s): 4-9, 16-21, 30
M: Fairbanks	T: 4 South	R: 9 West	Section(s): 1-5, 8-17, 20-29

The Nenana Basin 2D surveys will consist of two transects. Transect #1 will extend approximately 3 miles to the northeast of the 3D survey area. Transect #2 will extend

approximately 2.8 miles to the north of the 3D survey area. The proposed 2D Seismic Survey Legal Description will be in the following areas:

M: Fairbanks	T: 3 South	R: 8 West	Section(s): 3-5, 7-9, 16-20, 29-30
M: Fairbanks	T: 3 South	R: 9 West	Section(s): 24
M: Fairbanks	T: 2 South	R: 8 West	Section(s): 28, 33

Agency Review:

The Division provided an Agency review and comment opportunity for the activities considered for authorization under this decision. The following government entities were notified on July 24, 2014 for comment on the Plan: Toghotthele Corporation, ADFG, Alaska Department of Environmental Conservation (DEC), Alaska Oil and Gas Conservation Commission (AOGCC) and DNR: State Pipeline Coordinator's Office, Division of Mining Land and Water (DMLW), Office of Project Management and Permitting, and Division of Oil and Gas. The comment deadline was 4:30 pm Alaska time on August 7, 2014. On August 7, 2014, ADFG requested an extension and the comment period was extended one day ending 4:30 pm Alaska time on August 8, 2014. Comments were received by ADFG. The Division, Doyon, and commenting agencies modified the Plan to the satisfaction of the commenting agencies; Agency comments and Doyon's responses are summarized in Appendix A. The Plan was modified to incorporate the Agency comments. The modified Plan was then publicly noticed.

Public Review:

Public notice of the Plan and opportunity to comment was published in the Alaska Dispatch News and Fairbanks Daily News-Miner on August 14, 2014 with a deadline for comments of September 13, 2014 at 4:30 pm Alaska time. Additionally, a copy of the notice was posted on DNR's web site and faxes of the public notice were sent to the Barnette Street Fairbanks, Ester Fairbanks, Geist Fairbanks, North Pole Fairbanks, University of Alaska Fairbanks (UAF), Fort Wainwright and Nenana post offices. No public comments were received

Performance Guarantee:

The permittee has provided the Division with a performance guarantee under 11 AAC 96.060 in the amount of $100,000.

Application Approved:

Should any unforeseen issues arise, the Division has authority to revoke and amend this permit. As detailed in this authorization, the Division shall be notified if, during the conduct of operations, a surface use conflict occurs. All operations conducted under this permit are subject to inspection by the Division, and if damage occurs, appropriate interest holders will be engaged, and corrective action will be prescribed. The Division will impose additional provisions as necessary under 11 AAC 96.040 at any time during the activity approved under this authorization to minimize impacts and conflicts.

The Division considered all facts material to this application including the permit provisions contained in this authorization per 11 AAC 96.040(b). The Division has determined that this permit and attached provisions for this non-permanent activity as conditioned is in the state's

interest. Stipulations in this permit authorization are necessary to protect the state's interest and the public interest.

An eligible person affected by this decision may appeal it, in accordance with 11 AAC 02. Any appeal must be received within 20 calendar days after the date of issuance of this decision, as defined in 11 AAC 02.040(c) and (d), and may be mailed or delivered to the Commissioner, Department of Natural Resources, 550 W. 7th Avenue, Suite 1400, Anchorage, Alaska 99501; faxed to 1-907-269-8918; or sent by electronic mail to dnr.appeals@alaska.gov. This decision takes effect immediately. If no appeal is filed by the appeal deadline, this decision becomes a final administrative order and decision of the department on the 31st day after issuance. An eligible person must first appeal this decision in accordance with 11 AAC 02 before appealing this decision to Superior Court. A copy of 11 AAC 02 may be obtained from any regional information office of the Department of Natural Resources.

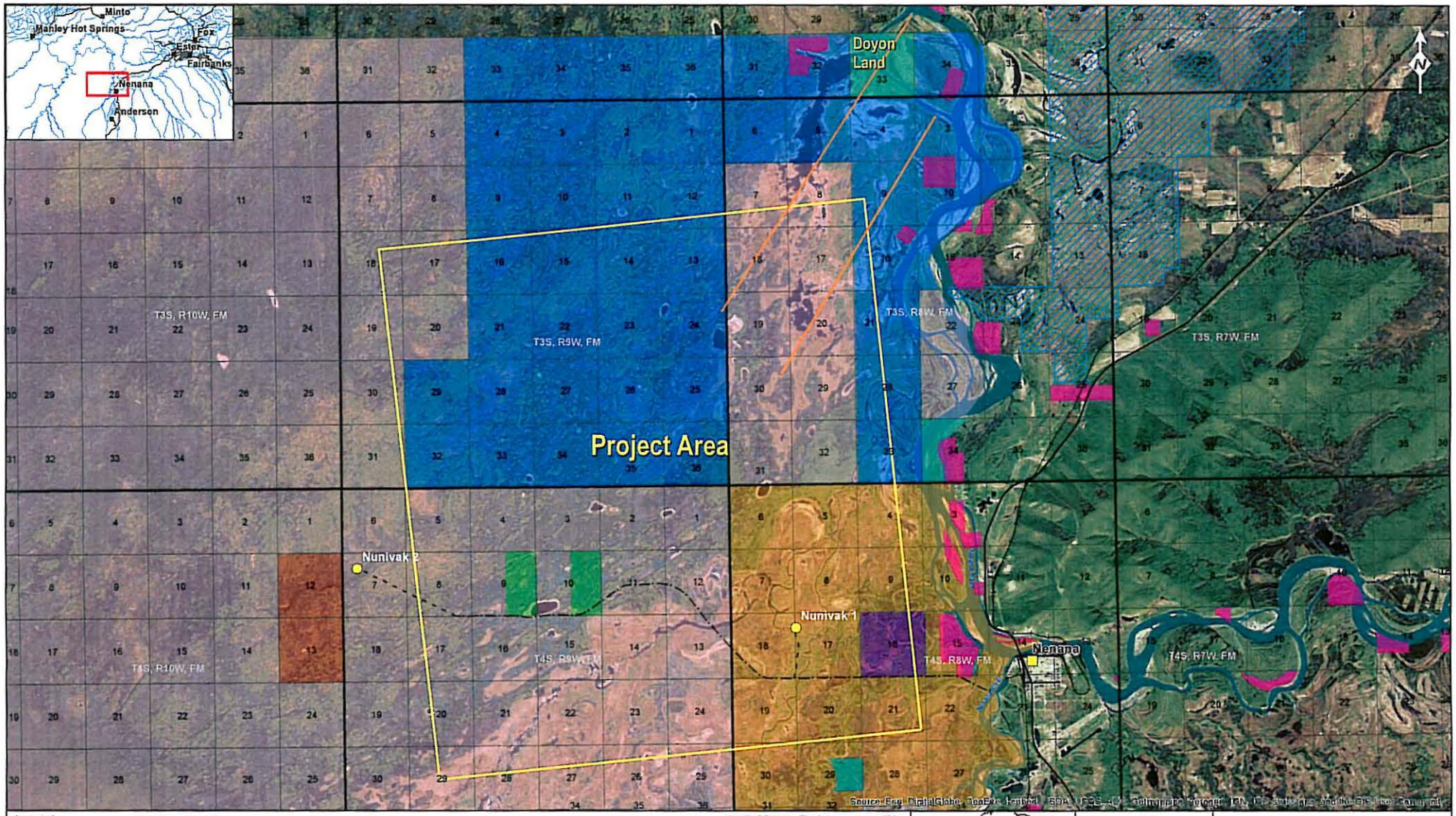
Sincerely,

Kim Kruse

Kim Kruse
Petroleum Land Manager
Division of Oil and Gas

Attachments: Location Map
Geophysical Permit Conditions
Appendix A – Agency Comments
Appendix B – Wildlife Interaction Plan

ecc: Owl Ridge Natural Resource Consultants, Inc.: Amber Allen, Charlotte MacCay, Glenn Ruckhaus, Chelsea Vanzant
Toghotthele Corporation: Jim Sackett
ADFG: William Morris, James Durst, Bonnie Borba, Alvin Ott, Audra Brase, James Simon, Donald Young
DEC: Lori Aldrich, Timothy Pilon, Tim Law
DMLW: Jeanne Proulx, William Cole
Division: Kim Kruse, Thomas Barrett, John Easton, Corazon Manaois, Jeanne Frazier



Legend

- Wells
- Spur Roads
- Tochaket Access Road
- Railroad
- Major Roads
- Minto Flats SGR

Surface Lands

- Nenana 2D Transect
- Project Area
- Native Allotments
- Mental Health Trust Land
- Private Land
- State Agricultural Project Land
- State of Alaska
- State of Alaska Division of Mining Land and Water Land
- Toghotthele Corporation Land
- University of Alaska Land

NOTE: DRAFT - Final survey area will be determined by contractor.

DOYON Limited

Doyon Limited

DRAFT

Nenana Basin 3-D Seismic Survey

0 0.5 1 2 Miles
0 0.75 1.5 3 Kilometers

Figure #: 1

DOYON10: DOY023, 07/21/14, R00

State of Alaska
Department of Natural Resources
Division of Oil and Gas

MISCELLANEOUS LAND USE PERMIT FOR GEOPHYSICAL/SEISMIC EXPLORATION STIPULATIONS

Date Issued:	September 23, 2014
MLUP:	14-003
Project Name:	Nenana Basin
Type:	Geophysical Exploration 3D and 2D
Permittee:	Doyon, Limited

Geophysical and Seismic activities are subject to the following permit stipulations:

Standard Stipulations:

1. The permittee shall defend, indemnify and hold the State of Alaska harmless from and against any and all claims, damages, suits, losses, liabilities and expenses for injury to or death of persons and damage to or loss of property arising out of or in connection with the entry on and use of State lands authorized under this permit by the permittee, its contractors, subcontractors and their employees.

2. A copy of the permit and stipulations must be posted in a prominent location where other permits and safety information are displayed for crew members. The permittee shall make available a copy of the application, all subsequent modifications, and a copy of this permit and all its attachments to any interested party upon request and in a reasonable time.

3. The permittee shall notify and obtain a modification from the Division of Oil and Gas (Division) in advance of any activities which deviate from the approved permit. Any action taken by the permittee or his agent which increases the overall scope of the project or which negates, alters, or minimizes the implied intent of any stipulation contained in this permit will be considered a significant deviation from the approved permit.

4. The permittee and its contractors shall not begin any seismic operations until receiving all necessary local, state and federal permits and approvals.

5. The permittee shall inform and ensure compliance with all conditions of this permit by its employees, agents and contractors, including subcontractors at any level.

6. The Division reserves the right to grant additional authorizations to third parties for compatible uses on or adjacent to the land under this authorization.

7. This authorization is subject to all valid existing rights and to the land. The State of Alaska makes no representations or warranties whatsoever, either expressed or implied, as to the existence, number, or nature of such valid existing rights.

8. The Commissioner of the Department of Natural Resources (DNR) may require that an authorized state representative be present during any geophysical/seismic exploration activities described in or conducted under this permit.

9. The Alaska Historic Preservation Act (AS 41.35.200) prohibits the appropriation, excavation, removal, injury, or destruction of any state-owned historic, prehistoric (paleontological) or archaeological site without a permit from the commissioner. All state permits require consultation with the State Historic Preservation Office (SHPO) (907-269-8722) so that consultation per section 106 of the National Historic Preservation Act may proceed. Should any sites be discovered during the course of field operations, activities that may damage the site will cease and the Office of History and Archaeology in the Division of Parks and Outdoor Recreation (907-269-8721) shall be notified immediately.

10. The permittee shall make available, to the Division, all records relating to the geophysical/seismic exploration operations and landowner approvals upon request.

11. The permittee shall apply the International Association of Geophysical Contractors Setback Guidelines to activities approved under this authorization. Alternative setback distances may be employed to protect coastal uses and resources, water wells, structures, private property including livestock, and other resources if it is determined that a particular guideline is insufficient.

12. Trails, campsites and work areas must be kept clean. Trash, survey lath, markers, and other debris that accumulates in camps, along seismic lines, and travel routes, that are not recovered during the initial cleanup, shall be picked up and properly disposed of within one calendar year.

13. The Director has the right at any time to modify or revoke this permit.

14. All wastewater must be disposed of in a manner acceptable to Department of Environmental Conservation (DEC) and drinking water must meet Alaska drinking water standards.

15. The permittee shall be responsible for all equipment used in association with the seismic survey. Equipment lost or abandoned during operations shall be recovered and reported. If the lost equipment is not recovered, the report will include a detailed explanation of the circumstances of the loss and the recovery effort that includes Global Positioning System (GPS) location coordinates.

Land and Access Stipulations:

1. The permit authorizes the permittee to conduct geophysical/seismic exploration activity on lands owned by the State of Alaska. No person may engage in mineral exploratory activity on land, the surface of which has been granted or leased by the State of Alaska, or on land for which the state has received the reserved interest of the United States.

2. Approval of this permit does not constitute the approval required for surface entry on non-state land without an agreement with the surface owner. This permit does not approve entry on private land.

3. This approval does not authorize activity on Mental Health Trust Lands, School Trust Lands, Park Lands, or Lands of the University of Alaska.

4. The seismic exploration activities granted under this permit must not diminish the use and enjoyment of lands encompassed within a Native Allotment. Before entering a pending or approved Native Allotment, the permittee shall contact the Bureau of Indian Affairs and Bureau of Land Management and comply with applicable federal law.

Public Safety and Program Outreach Stipulations:

1. Public safety: Appropriate signage will be deployed on all access routes and roadways in the project area. The Department of Transportation or Right of Way Lessee may advise permittee on appropriate measures to maintain safe conditions where appropriate. The permittee must watch for, provide verbal warning to and document people or vehicles entering potentially dangerous areas of the project. Lighting and marking with lath or fluorescent tape of some project work areas is advised for operations that occur during periods of sustained darkness or where conditions are unsafe for humans or animals.

2. Notices: To avoid unintended conflicts with other users, the permittee shall post a Notice of this project at conspicuous locations including key travel intersection crossings, areas of public use and in a prominent location in any operators or contractors staging area or camp. The Notice shall include the Division's contact number (907-269-8800), project title and permit number, names and contact telephone numbers of the permittee and all operators. The permittee shall provide notices on behalf of the Division to all upland owners involving shoreland, tideland, or submerged land adjacent to the upland owner's property if no notice or agreement is made with the owner by the permittee as required under 11 AAC 96.030(c). All forms of public outreach must be documented and reported to the Division as they occur.

3. In areas of subsistence and personal use harvesting, the permittee will coordinate survey activity with local users to prevent unnecessary conflicts. The permittee shall make a good faith attempt to coordinate survey activities with the owners of trap lines if known. Existing snowmachine, dogsled, or other trails, should be marked with survey lath where they intersect receiver and source lines. The permittee is required to post notice of potentially dangerous or hazardous project activities at these locations.

4. If operations approved by this permit have not commenced within 6 months of issuance of this permit, the permittee must provide notice and/or public outreach at least 30 days prior to commencing operations. Proof of notice and/or public outreach must be submitted to the Division by the applicant in hard copy format. In this stipulation, operations is defined to mean placing signage, mobilizing crews to the project area, placing sources and receivers, conducting the seismic shoot.

Fuel and Hazardous Substances Stipulations:

1. Fuel and hazardous substances. Secondary containment shall be provided for fuel or hazardous substances, as defined under AS 46.03.826 (5) or under 42 U.S.C. 9601(14)F.
   a. Fuel or hazardous substance transfers. Secondary containment or a surface liner must be placed under all container or vehicle fuel tank inlet and outlet points, hose connections, and hose ends during fuel or hazardous substance transfers. Appropriate spill response equipment to respond to a spill of up to five gallons must be on hand during any transfer or handling of fuel or hazardous substances. Transfer operations shall be attended by trained personnel at all times.
   b. Fuel or hazardous substances container(s) with a total combined capacity larger than 55 gallons shall not be stored within 100 feet of a waterbody.
2. Sorbent material in sufficient quantity to handle operation spills must be on hand at all times for use in the event of an oil or fuel spill.
3. Explosives shall not be detonated within, beneath, or adjacent to marine, estuarine, or fresh waters that support fish and wildlife during periods when fish or marine mammals are present unless the detonation of the explosive produces an instantaneous pressure rise in the water body of no more than 2.5 psi or unless the water body, including its substrate, is frozen. Explosives must not produce a peak particle velocity greater than 0.5 inches per second in a spawning bed during the early stages of egg incubation.
   a. For the shallow hole explosive technique the minimum offset from fish-bearing stream and lakes is:

Minimum Charge Offset

1 lb.	37 feet	(11.2 meters)
2 lbs.	52 feet	(15.84 meters)
5 lbs.	82 feet	(24.99 meters)
10 lbs.	116 feet	(35.35 meters)
25 lbs.	184 feet	(50.08 meters)
50 lbs.	200 feet	(64.10 meters)(unconsolidated substrate)
50 lbs.	250 feet	(80.13 meters)(bedrock)
100 lbs.	368 feet	(112.16 meters)

   b. For quantities (lbs.) of charge between the categories, use the minimum offset for the next higher category. Exceptions to this setback, or new categories, may be approved by the DNR, Division in consultation with Alaska Department of Fish and Game (ADFG).

c. Minimum offsets for shallow hole explosives are based upon the use of explosives with detonation delays of 8 milliseconds or greater occurring between each charge such that no explosion or combination of explosions will produce an instantaneous pressure in fish bearing waters which exceeds 2.5 psi.)

4. Stationary fuel storage facilities must not be placed within the annual floodplain of a watercourse or closer than 100 ft. to a waterbody. There shall be no fueling, servicing or repair of vehicles or equipment, and no vehicles shall be left unattended within the floodplain or below the ordinary high water line of any river, lake or stream or closer than 100 ft. to a waterbody or wetland.

Wildlife Stipulations:

1. All activities shall be conducted in a manner to minimize or avoid disturbance to wildlife and their habitat. Hazing of wildlife is prohibited unless a Health Safety and Environment concern is present.

2. Operations must avoid occupied grizzly bear dens and black bear dens, by one-half mile unless alternative mitigation measures to minimize disturbance are authorized by the Division after consultation with ADFG. Known den locations shall be obtained from the ADFG Division of Wildlife Conservation, (Fairbanks 907-459-7313; Palmer (907) 861-3200; Anchorage 907-267-2179 Anchorage (907) 267-2342; Soldotna; (907) 714-2475) prior to starting operations. Occupied dens encountered in the field must be reported to the above, and subsequently avoided.

3. The permittee shall abide by the provisions of Alaska's wildlife feeding regulation, 5 AAC 92.230. This regulation provides that it is unlawful to negligently or intentionally feed moose, deer, elk sheep, bear, wolf, coyote, fox, wolverine or deleterious exotic wildlife human food, animal food, mineral supplements or garbage in such a manner that it attracts such animals. Intentional harassment, disturbance or displacement of wildlife (including winter concentrations of moose and denning bears) is prohibited.

Interior Stipulations:

1. Road and Trail Use and Maintenance: Rutting, pumping, or damage to the unpaved portion of trails or roadways that is attributable to the permittee's use shall be repaired no later than June 31, of the following year in which such damage occurs. All activities must be conducted in accordance with road use permits and regulations which may apply. Existing seismic lines and established trails shall be used to access the program area where it is reasonable and prudent to do so without interfering with existing use of those trails and lines.

2. The clearing of lines and trails must be completely mulched. Brush/tree trunks must not be pushed to the side of the line or trail unless they are harvested and removed from the area before ceasing seismic operations. If trees are to be harvested and removed, contact

the Division of Forestry at (907) 451-2600 for instructions for brush and slash will be spread or scattered without damaging other trees, or chipped and scattered in such a way as to preclude being washed into any watercourse.

3. The use of ground contact vehicles for off-road travel must be authorized by DNR, DMLW, Northern Region Office.

4. Unattended vehicles and equipment will not be parked or left on the traveled surface of off- line trails or access routes.

5. Except at approved crossing locations, riparian vegetation shall not be cleared within 100 feet of fish bearing water bodies.

6. To the extent feasible and prudent new access routes and seismic lines must cross water bodies perpendicular or near perpendicular to the watercourse to minimize crossing length and potential bank disturbance. Clearings at water body crossings should include a jogged approach along both sides to obstruct line of sight down the access route or seismic line.

7. Domestic garbage and putricibles may be incinerated in compliance with the air quality regulations in 18 AAC 50 and the ashes backhauled to a DEC approved disposal facility; stored frozen on-site in animal-proof containers with periodic backhaul to an approved waste disposal facility; or stored non-frozen on-site in animal-proof containers with daily backhaul to an approved waste disposal facility.

Project Specific Stipulations:

1. Not applicable.

Reporting Stipulations:

1. Spill Notifications: The permittee shall comply with the DEC requirements for reporting the unauthorized discharge, leak, or spill of hydrocarbons or toxic or hazardous substances. The permittee shall notify the DNR of all spills that must be reported under 18 AAC 75.300 under timelines of 18 AAC 75.300. All unintentional fires and explosions must be reported to DNR immediately. The DNR 24 hour spill number is (907) 451-2678; the fax number is (907) 451-2751. DNR and DEC shall be supplied with all follow-up incident reports.

2. Blowouts, as defined as the detonation of source points that caused surface damaged, are reportable if the surface damaged is larger than 36 inches. The report must include the location (Lat./Long. in WGS 84) and pictures of the blowout. All blowouts will need to be reclaimed or rehabilitated to the satisfaction of the Alaska DNR.

3. As a stipulation of the issuance of this Miscellaneous Land Use Permit (MLUP) for Geophysical Exploration, the permittee acknowledges the requirements of 11 AAC 96.210 (1) and agrees to notify the Director of the Division and submit seismic exploration data. The Geophysical Data Submission Requirements can be found on the DNR Division's Website http://dog.dnr.alaska.gov/Permitting/permittingForms.htm. Your signature acknowledges your obligation to fulfill the Data Submittal requirements.

4. The permittee must complete and return a Geophysical Activity Completion Report form for each set of 3D data acquired. Please submit a separate form for each sub-program data submittal. A non-confidential public completion report will be placed into the permit file each time a sub-program is completed. Completion reports must be submitted to our office by July 1, 2015. For in depth instruction on how to complete the form please refer to the Division's permitting website http://dog.dnr.alaska.gov/Permitting/permittingForms.htm

5. A summary record of all surface impacts, lost equipment, spills, fires, and unintended explosions, shall be included in the completion report. Rehabilitation, if required, shall be completed to the satisfaction of the DNR.

6. All fires and explosions that require a response to protect life and property must be reported to DNR and DEC immediately and shall be supplied with all follow-up incident reports.

7. The Division's Permitting Section shall be notified in Anchorage by telephone at 907-269-8800 and by email at dog.permitting@alaska.gov if, during the conduct of operations, state resources are damaged or a conflict occurs.

8. Annual Reports: If the term of the MLUP exceeds on calendar year from the date of approval an annual report must be submitted and discuss the project timeline, progress, project work and continued public outreach.

9. Completion Statement: Upon expiration of the MLUP or completing all operations authorized under the MLUP, whichever occurs first, a completion report must be submitted and discuss a summary of operations, equipment trails, camps and staging areas, damages to State lands, spills, land-use conflicts and work completed.

10. The permittee shall make available a copy of the seismic plan of operations, all subsequent modifications, and a copy of this permit and all its attachments to any interested party upon request and in a reasonable time.

I acknowledge and agree to these Permit terms, conditions and stipulations.

Jim Mery — Sept 23, 2014

Authorized Representative — Date

James Mery, Sr. VP Lands & Natural Resources, Doyon, Limited

Appendix A

Agency Comments:
The ADFG, Division of Habitat has completed a review of the referenced application from Doyon, Limited for a 2D/3D winter seismic program in the Nenana Basin, including coordination with other ADFG divisions. ADFG offers the following comments.

PLAN OF OPERATIONS
ADFG has no objection to the general plan and approach of the proposed activities. ADFG acknowledges measures taken by Doyon to minimize potential effects on fish and wildlife resources in the project area.

Page 6, Section 7.2.4: Doyon describes measures to assure that ADFG blasting standards are met in fishbearing water bodies. Based on the project area and transects shown in Figure 1, such water bodies could include the Tanana River (anadromous and resident fish), and the East Middle River and West Middle River (resident fish), and Long Lake (Fivemile Slough) and Basket Lake (believed to contain resident fish).

Page 8, Section 11.1: The project area is within Game Management Unit 20C. ADFG is not aware of a December moose hunting season in Unit 20C. However, the planned helicopter activity could be a significant disturbance during the general moose hunt in Unit 20C during September 1-25 and the federal subsistence moose hunt September 1-30 in this portion of 20C. ADFG recommends the project schedule be adjusted to avoid helicopter activity during the month of September.

Page 9, Section 11.2: Note that the ADFG Division of Wildlife Conservation is sometimes mislabeled in the text as the Wildlife Conservation Unit.

APPENDIX B WILDLIFE INTERACTION PLAN
There are some errors and updates needed in the application's Wildlife Interaction Plan. The most efficient way to address these would be for the applicant to supply a Word version that ADFG can edit in track changes mode.

Page 7, Attachment A: ADFG recommends renaming this section Attachment A – Wildlife Encounter Form. ADFG has enclosed the current ADFG Wildlife Encounter Form for bears, wolves, and moose with these comments.

Applicant's Response:
The applicant revised the Plan of Operations and accepted all of the ADFG's recommended edits to the Wildlife Interaction Plan.

Division's Response:
On August 12, 2014, the Division received confirmation from ADFG that Doyon had satisfactorily addressed ADFG's concerns.

APPENDIX B

Wildlife Interaction Plan

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Nunivak 3-D Seismic Program

Wildlife Interaction Plan

Revised August 2014

Prepared for:

Doyon, Limited
1 Doyon Place, Suite 300
Fairbanks, Alaska 99701

Prepared by:

Owl Ridge Natural Resource Consultants, Inc.
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Anchorage, Alaska 99507
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Attachments

A: Wildlife Encounter Form

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1. INTRODUCTION

Doyon, Limited (Doyon) is conducting a seismic program in the Nunivak area, north the Nenana-Totchaket Road. This Wildlife Interaction Plan has been developed, in accordance with permit requirements, to provide guidance to Doyon employees and contractors for the protection of wildlife and worker safety during the Nunivak 3-D Seismic Program.

The seismic survey area is approximately 3 miles west of the City of Nenana, on the west side of the Nenana and Tanana Rivers. The camp facility will be located in town in close proximity to the airport.

This Wildlife Interaction Plan has been developed to facilitate compliance with wildlife regulations and permit conditions, as well as the protection of wildlife and worker safety during the project. The plan is intended to provide guidance for all Doyon employees and contractors.

Species that inhabit the Nenana Basin are important wildlife resources that also present a serious risk of injury to field personnel. This plan serves to minimize impacts to both wildlife and humans during encounters between the two. As a general rule, wildlife species, regardless of their perceived threat, are to be avoided at all times by field personnel.

2. WILDLIFE

2.1. Brown and Black Bears

Doyon recognizes that the Nenana Basin is a historical area for both brown and black bear inhabitance. During the project, it is anticipated that direct interactions will be minimal. However, since the majority of the program occurs in vegetated habitat, encounters could occur, especially when visibility is diminished reducing the ability to identify animals and avoid encounters. The highest potential for interaction will be in the forested, high shrub and alder/willow thickets along streams and rivers.

Brown bears generally emerge from their dens between the first of April and mid-May. Boars emerge about a week prior to sows and cubs. Black bears emerge from their dens beginning in late April, although females with newborn cubs may not emerge until late May. The bears will reenter their dens in the late fall when persistent freezing conditions exist, typically in October. During the summer operations, bears in the Nenana Basin will be active. Brown and black bears could be encountered at any time or any place in the project area.

2.2. Birds

Several bird species could be present at the project site. These birds can easily become accustomed to humans and could carry lice or other disease. It is important for Doyon employees and contractors to not intentionally feed birds. Artificially feeding these birds can disrupt their behavioral patterns and put them at increased risk from various mortality factors in addition to the attracting larger predators.

2.3. Moose

Moose are large ungulates that usually have very limited energy reserves during winter and may move quite slowly. They are likely to seek hard surfaces such as prepared roadways for travel. These conditions coupled with winter darkness increase the likelihood of animal-vehicle collisions.

In the spring and summer months, cows with their young are easily agitated and have been known to charge persons considered to be a threat such as persons who get too close.

In the fall, bulls are particularly aggressive, especially when in rut and should be avoided. Doyon will be conducting exploration in August and September of 2014, as well as undetermined times during the summer and fall of 2015. The potential for encountering a bull moose in rut will be at its highest in late September.

2.4. Furbearing Mammals

Other potentially dangerous mammals include coyote, red fox, wolf and wolverine. These animals should also be avoided. The best way to avoid contact with these animals is to never feed them or allow them access to food or trash. Rabies may be present in almost any furbearer, most commonly occurring in fox and wolves.

3. TRAINING

3.1. Training/Permits

While human safety is the top priority, it is important to emphasize that early detection and avoidance measures are equally designed to prevent encounters that might result in harm to humans and wildlife.

Training provided for workers will include:

- A review of this Wildlife Interaction Plan.
- Environmental orientation before beginning work tasks in the project area.
- General awareness training to field personnel through regular meetings, alerts, and other methods as appropriate.
- Recommend viewing the Staying Safe in Bear Country and Working in Bear Country videos.
- Establish an audible warning system (such as siren or air horn) for presence of bears that is different than signals used for fires or other emergencies.
- The project manager will provide a daily update of any wildlife sightings.
- Hazing (nonlethal methods) requires a Public Safety Permit from ADF&G.

4. PRECAUTIONS

Doyon staff and contractors should always take the following precautions when performing duties in any of the work areas:

4.1. Human/Wildlife Interactions

Doyon staff and contractors should always take the following precautions when performing duties in any of the work areas:

4.1.1. When on foot

- Never approach a bear, moose, or other wildlife, approaching wildlife even for a photograph, is prohibited.
- Never feed wildlife; feeding wildlife (regardless of species) is prohibited both by the State of Alaska (5 Alaska Administrative Code 92.230) and Doyon policy. Feeding wildlife can also put a person at risk for contracting rabies. Rabies is a virus spread through the saliva of infected animals, even a small bite or allowing an infected animal to lick you could result in transmission of the disease.
- Do not handle dead or wounded wildlife to avoid exposure to rabies.
- Report any animals suspected of having rabies to the nearest ADF&G biologist or the
    - Virology/Rabies Unit in Fairbanks (907-474-7017).
- Designate someone to regularly inspect the work area and scan for bears and other wildlife, and to pick up garbage, food scraps, and other possible animal attractants.
- Stay in radio contact and use the buddy system.
- Make loud noises before walking into any areas with poor visibility.
- Never separate or come in between a mother and her offspring, such as bear sow and her cubs, or a moose cow and her calf.
- Being Aware of "At-Risk" Locations and Activities
- At-Risk Locations:
    - Remote work sites such as surveying locations and water withdrawal locations
    - Areas that have low activity levels, particularly those bordering shrubby or riparian areas.
- At-Risk Activities:
    - All nighttime activities
    - Surveying
    - Leaving break shacks
    - Work that supports gravel road maintenance
    - Clean-up activities

4.1.2. When in vehicles

- All vehicles must follow posted speed limits and remain on established trails/roads.

- Workers will take care to drive slowly to avoid hitting wildlife.
- Watch for moose and other wildlife on the roadways especially during the dark hours in the fall and winter.

4.2. Site Design

The area between a large drill rig and the ground is an attractive place to bears to hide. Measures will be taken to secure this area, possible means include: portable electric fencing surrounding the drill rig or installation of flashing below the rig to create a barrier to animal access. For a small drill rig, this is not a significant issue as the clearance below the rig is too low for bears to access. Lighting an extended perimeter can be helpful during seasons with darkness.

4.3. Food and Food Wastes

- Proper food and waste management are critical to prevent wildlife attraction to work areas. Doyon will not have a camp facility in the field which will help minimize wildlife attraction, but care must still be taken with lunches and snack foods brought to the site.
- Lunches must be stored appropriately during shift. A large sealed bin(s), either heavy duty plastic with a tight fitting lid or a metal bear-proof lock box, will be supplied for storing lunches and snacks.
- Eliminate associations of food sources with the work site; use sealed food containers like zip lock bags and plastic containers to reduce odor, which can be an attractant.
- Lunches must be stored appropriately during shift. A large sealed bin(s), either heavy duty plastic with a tight fitting lid or a metal bear-proof lock box, will be supplied for storing lunches and snacks. Food waste is to be removed after each shift.
- Survey work area following lunch and after shifts or when moving to new work areas to pick up any garbage, food scraps, or any other possible animal attractants.

4.4. Other Wastes

- Never dispose of waste of any kind in the field.
- Store hazardous materials such as batteries, antifreeze, methanol, petroleum, oils, lubricants, and any other hazardous or toxic materials in secure containers to prevent impact to the bears.

5. RESPONSE ACTIONS DURING AN ENCOUNTER

5.1. Response to a Bear Encounter

Many people have become accustomed to seeing bears while working in Alaska, and it is important to remember that they are wild animals. They are capable of seriously injuring people, especially if they are approached, cornered, or threatened. When any bear is seen near your work area:

- Immediately move to a safe place.

- Notify other workers and the Bear Guard (if applicable).
- If you are at a safe distance, make your presence known to the bear by loud noises or talking and waving your arms.
- Look for safe haven if available.
- Continue vigilance after the bear has moved away or is no longer visible.
- Report encounter or observation to the site supervisor who will relay information to the appropriate people, and complete a Wildlife Encounter Form.

Bear and den sightings will be monitored on a daily log. The Wildlife Encounter Form is attached (Attachment A). Observers will complete and submit a bear sighting form to the project manager responsible for maintaining a log when a bear enters the active work area. To the extent that safe observation permits, behavioral data should be collected. To the extent available, the activity log will record observations such as location, conditions (weather), habitat (forested/open), and unique marking of the bear and nature of encounter. Data acquired will be made available to the ADF&G if necessary. Reporting of sightings and casual uneventful encounters are not required by any agency.

If the effort to deter or intentionally harass/haze a bear results in a lethal take of any bear, the action must be reported to the ADF&G Division of Wildlife Conservation immediately, and a Defense of Life or Property Game Animal Kill Report completed within 15 days. Contact information regarding all bear encounters is provided below.

- ADF&G – Division of Wildlife Conservation
  1300 College Road
  Fairbanks, Alaska 99701
  Telephone: (907) 459-7283
  Fax: (907) 456-3091

5.2. Moose Encounters

Alaska Department of Fish and Game (ADF&G) states that most moose charges are bluffs to warn you to get back. If a moose does charge you, ADF&G suggests that you do not wait to determine if it is bluffing. Run or walk quickly and get behind something solid like a tree or vehicle. If there is a helicopter nearby you may retreat and take refuge there. Complete a Wildlife Encounter Form once the situation is safe.

5.3. Wolf Encounters

ADF&G provides the following recommendations for wolf encounters: If you encounter a wolf or pack of wolves at close range do not run or turn away. If you are approached, act aggressively and maintain eye contact if the wolf is looking at you. Aggressively use poles, pepper spray, rocks, limbs, noisemakers or other handy items to discourage wolves. In the rare event that you do have an encounter with an aggressive wolf:

- Do not run, but act aggressively, step toward the wolf and yell or clap your hands if it tries to approach.

- Do not turn your back toward an aggressive wolf, but continue to stare directly at it. If you are with a companion and more than one wolf is present, place yourselves back to back and slowly move away from the wolves.
- Retreat slowly while facing the wolf and act aggressively.
- Stand your ground if a wolf attacks you and fight with any means possible (use sticks, rocks, or whatever you can find).
- Use air horns or other noisemakers.
- Use bear spray if necessary.
- Climb a tree if necessary; wolves cannot climb trees.
- Complete a Wildlife Encounter Form once the situation is safe.

5.4. Bird Encounters

During spring and early summer, some birds will swoop down upon other wildlife and people. This indicates that you are near the birds' nest.

- Determine where the nest is and move your activity away from the nest. If this is not feasible report the issue to the project manager. The project manager will consult with ADF&G or U.S. Fish and Wildlife Service as appropriate.
- Wear your hard hat if you must frequent the area. Birds usually strike from behind. Drawing eyes on the back of your hardhat may discourage the birds from diving at your head.

ATTACHMENT A

Wildlife Encounter Form

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Animal ID# (ADF&G use)_____ 7/2014 rev.

WILDLIFE ENCOUNTER FORM
Black bear/Grizzly bear/Wolf/Moose (circle one)

OBSERVER_____ **COMPANY/AGENCY**_____

OBSERVATION DATE_____ **TIME**: Start_____ Stop_____

OBSERVATION FROM: Vehicle_____ Ground_____ Building_____ Other_____

OBSERVER DISTANCE FROM ANIMAL _____meters

GENERAL LOCATION: [e.g., drainage]

_____

SPECIFIC LOCATION: [e.g., facility or latitude/longitude, if known]:

_____

_____

DUMPSTER PRESENT? Yes_____ No_____ Unknown_____

WEATHER: _____°F Clear/partly cloudy_____ rain_____ fog_____ snow_____

ANIMAL IDENTIFICATION/DESCRIPTION:

[Size, color, markings, ear flags, etc.]_____

OTHERS PRESENT? None_____ No. of new young_____ No. of yearlings_____

No. of 2 year olds_____ Number of other adults_____ No. unknown_____

ANIMAL'S ACTIVITY WHEN FIRST SEEN: Resting____ Feeding (natural food) _____

Feeding (garbage)_____ Traveling_____ Traveling/feeding____ At den site_____

Other [describe]:_____

ANIMAL'S REACTION TO OBSERVER: Ignore_____ Approach_____ Avoid_____

Were other people in area (not with observer)? Yes_____ No_____ Unknown_____

ANIMAL'S REACTION TO OTHER PEOPLE: Ignore_____ Approach_____ Avoid_____

REACTION COMMENTS_____

_____

DETERRENCE ACTION TAKEN? Yes_____ No_____

If yes, did you use: Horn_____ Siren_____ Rubber slug_____ Bean bag_____

Cracker shell_____ Other [describe] _____

ANIMAL'S REACTION TO DETERRENT: Ignore____ Approach_____ Withdraw_____

ADDITIONAL REMARKS_____

_____

Don Young (don.young@alaska.gov) or Tony Hollis (tony.hollis@alaska.gov)

Alaska Dept. Fish & Game, 1300 College Road, Fairbanks, AK 99701 (FAX 907-459-7332)