



December 26, 2014

Ms. Jennifer Henderson  
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Anchorage, AK 99503

**RE: LONS 14-006, Repsol 2014-2015 Winter Drilling Program  
Lease Plan of Operations Approval, Exploration Phase**

## **I. INTRODUCTION**

On October 1, 2014 Repsol E&P USA, Inc. (Repsol) submitted a request to the Division of Oil and Gas (Division) for approval of a Lease Plan of Operations (Plan) to carry out drilling of three exploration wells in the Colville River area of the North Slope, Alaska. The Colville River is approximately 50 miles west of Deadhorse and approximately 20 miles southwest of Oliktok Point. Approval of this Plan, along with approvals from other state and federal agencies (Agencies), is necessary for Repsol to carry out the 2014-2015 exploration drilling program.

After state land is leased for oil and gas development, projects currently follow a phased progression. These phases may include exploration, development, and transportation, depending on the project. Before the next phase of a project may proceed, the Division provides public notice and an opportunity to comment on a plan of operations for that phase and considers the potential impacts of the phase, including both proposed and anticipated activities. Every plan of operations decision, regardless of whether it is for the beginning of a phase or for a phased project, considers whether a proposed plan protects the State's interests (11 AAC 83.158(e)). Repsol's proposed operations would begin the exploration phase for the leases included in this review.

## **II. SCOPE OF DECISION**

The Commissioner for the Alaska Department of Natural Resources (DNR) has delegated authority for approval of Lease Plan of Operations activities to the Division under Department Order: 003 in accordance with Alaska Statute (AS) 38.05 and 11 Alaska Administrative Code (AAC) 83.158. As set forth below, the Division has evaluated the proposed Plan to determine if sufficient information as required by 11 AAC 83.158 is provided. The Division also considers the State's interest and, in approving a Plan, may require amendments that it determines are necessary to protect the State's interests (11 AAC 83.158(e)).

Repsol has identified five potential drilling locations for the 2014-2015 exploration program and plans to select three of the potential leases for drilling based on results from ongoing seismic/geophysical studies. The Division considered each of the five potential locations. Four proposed drill pad locations are within State of Alaska and ASRC jointly-managed oil and gas leases and Kuukpik Corporation as the surface land owner. Qugruk No. 9 is within a State of Alaska oil and gas lease with the State of Alaska as the surface land owner.

Data from recent investigations is pending; therefore, Repsol is requesting approval for five potential drill sites with the intention of selecting three drill sites as data becomes available. Drill sites will be accessed by ice roads that connect to an existing gravel road. Two options are proposed for ice road construction to maintain operational flexibility (Figures 1 and 2); however, only one ice road route will be constructed.

The following Plan elements require authorization through other Agencies:

- Alaska Oil and Gas Conservation Commission (AOGCC): Permit to drill;
- DNR Division of Mining, Land and Water (DMLW): A land use permit for winter off-road tundra travel and ice road/pad construction on all State owned lands outside the leases using State approved vehicles, and Temporary Water Use Permits (TWUPs) for water withdrawal to support several project components;
- Alaska Department of Fish and Game (ADF&G): Fish habitat permits for fish stream crossings and water withdrawals, and public safety permits for hazing brown bears, red foxes, and arctic foxes;
- Alaska Department of Environmental Conservation (ADEC): Approval of a Minor General Air Quality Permit, Oil Discharge Prevention and Contingency Plan (C-Plan), authorization for temporary storage of drilling waste, and certificate of financial responsibility;
- DNR Office of History and Archaeology (OHA): Letter of concurrence that no historic properties are affected by the proposed activities; and
- U.S. Environmental Protection Agency (EPA): Spill Prevention and Countermeasure Plan (SPCC) Plan.

### **III. LAND STATUS**

The 2014-2015 winter exploration project area is comprised of state and native owned lands.

#### **A. Division's Leased Lands:**

Qugruk No. 101

ADL: 31450

Lessee: Repsol E&P USA, Inc

Jointly Managed Lands: Arctic Slope Regional Corporation (ASRC)

- Meridian: Umiat Township: 12N Range: 06E Section(s): 03, 04, 09
- Proposed well site location(s): 70.420561, 150.594364 Decimal Degrees, NAD 83

Qugruk No. 301

ADL: 391445

Lessee: Repsol E&P USA, Inc.

Jointly Managed Lands: ASRC

- Meridian: Umiat Township: 11N Range: 06E Section(s): 05-08
- Proposed well site location(s): 70.33385, 150.709297 Decimal Degrees, NAD 83

Qugruk No. 8

ADL: 391320

Lessee: Repsol E&P USA, Inc.

Jointly Managed Lands: ASRC

- Meridian: Umiat Township: 11N Range: 06E Section(s): 17-20
- Proposed well site location(s): 70.312753, 150.723864 Decimal Degrees, NAD 83

Qugruk No. 801

ADL: 391022

Lessee: Repsol E&P USA, Inc.

Jointly Managed Lands: ASRC

- Meridian: Umiat Township: 11N Range: 05E Section(s): 25, 26, 35, 36
- Proposed well site location(s): 70.269089, 150.792992 Decimal Degrees, NAD 83

Qugruk No. 9

ADL: 391451

Lessee: Repsol E&P USA, Inc.

Jointly Managed Lands: ASRC, Sections 05, 07-08

- Meridian: Umiat Township: 12N Range: 06E Section(s): 05-08
- Proposed well site location(s): 70.416542, 150.710544 Decimal Degrees, NAD 83

## **B. State of Alaska Surface Lands:**

A winter mobilization will be undertaken to reach the Colville River area well site locations as described in the Plan. There are two route options which are both outside of the leases and thus require a Land Use Permit from DMLW under 11 AAC 96.

11 AAC 96.014(b)(1) designates all lands in townships within the Umiat Meridian on the North Slope as Special Use Land, and requires that any vehicle use that is not on a gravel road or for subsistence purposes obtain a tundra travel permit through the DNR DMLW. DMLW issued land use permit LAS 28269 to Repsol for ice road pad construction and use related to winter exploration programs on all State owned surface lands using State approved vehicles. The permit is effective from November 23, 2011 to November 22, 2016. DMLW issued an amendment to LAS 28269 on October 3, 2014 for activities included in the 2014-2015 exploration drilling program.

Although the winter mobilization routes are not part of this Plan, they are part of Repsol's project and thus the Division has considered these activities, and DMLW's approval of the activities when looking at Repsol's exploration phase as a whole.

### Surface Access to Repsol Leases

The surface landowner of the five proposed drill sites is Kuukpik Corporation. Repsol has executed a Surface Access Agreement (SAA) with Kuukpik for access across their lands to support access to the subsurface leases.

## **IV. PROPOSED OPERATIONS**

The Plan describes the proposed operations in full detail. Set forth below is a summary of the key details.

### **A. Sequence and Schedule of Events**

Table 1 displays Repsol's proposed schedule for the 2014-2015 drilling season. All dates are approximate and may be altered by weather or logistic requirements. The dates will also change because some of them precede this decision. The schedule nonetheless provides the Division with an overall idea of the sequence and schedule of events. The Division reviewed this schedule with the expectation that dates early in the sequence would move back, but that later dates for finishing drilling, demobilization, and clean up would remain the same.

To support winter drilling activities, a summer field studies program was conducted from June through September 2014 to gather information. The program is designed to obtain engineering and environmental data to define ice road routes and ice pad locations. Specific activities include ground surveys to support location of ice roads and pads, stream crossing surveys to locate ice road crossings, lake surveys to determine locations and availability of water for ice road and pad construction, and archaeological and cultural resource investigations.

**Table 1. Schedule of Activities**

<b>Date</b>	<b>Activity</b>	<b>Description</b>
September 2014	Installation of Thermistors	Thermistor strings will be placed along ice road routes and at proposed ice pad locations and will be used to monitor ground temperatures. This information is used to identify when the proposed routes and pad locations meet DNR DMLW requirements for tundra opening
October 2014-January 2015	Pre-packing of ice roads and pads	The ice road routes will be pre-packed prior to tundra opening using tundra-approved vehicles. These activities will be authorized by the DNR DMLW and the North Slope Borough (NSB).
November 2014-February 2015	Construction of ice roads, pads, and ice airstrip	Upon tundra opening, personnel and materials will be staged at the existing Brooks Range Petroleum Corporation (BRPC) Mustang gravel pad.  Ice roads will be constructed to allow transportation of drilling rigs and equipment to support drilling operations. There are two options for ice road routes, both of which include an ice airstrip to support personnel transfers and limited resupply operations. Up to two ice pads will be constructed to allow the stationing of drilling camps along the Colville River Area ice road. Three ice pads will be constructed to support drilling operations.
January-April 2015	Exploration drilling	Perform exploration drilling. Note: five well locations will be permitted, but only three well sites will be drilled. Upon completion of exploration drilling pads and roads, an ice pad will be constructed near Drill Site 2M (DS-2M) and the existing ice road will be extended to the DS-2M ice pad to provide access to exploration activities. The camp will be moved from Mustang Pad to the DS-2M ice pad.
April-May 2015	Demobilization	Demobilize equipment and materials from the drill sites and camp pads. Perform cleanup operations at all locations (ice pads and ice roads) in accordance with permit requirements.
July-September 2015	Summer activities	Conduct summer activities including cleanup operations to remove any remaining debris not identified and removed during demobilization activities, summer

		studies, and agency visits.
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## B. Well Sites/Drilling

Repsol’s Plan states that drilling operations will be conducted at three separate locations using three different drilling rigs. A pilot hole will be drilled at each location. One or two sidetrack wells may also be drilled at each location depending on time availability. Table 2 provides the drill site locations. Although five drill sites are proposed, only three will be selected for drilling. Typical drill site layouts are provided on Figures 3 through 7.

**Table 2. Drill Site Locations**

Drill Site	Lease Number	Location		
		MTRS	Latitude	Longitude
Qugruk No. 101	ADL391450	U012N006E03	70° 25’ 14.02’’ N	150° 35’ 39.71’’ W
Qugruk No. 301	ADL391445	U011N006E06	70° 20’ 01.86’’ N	150° 42’ 33.47’’ W
Qugruk No. 8	ADL391320	U011N006E18	70° 18’ 45.91’’ N	150° 43’ 25.91’’ W
Qugruk No. 801	ADL391022	U011N005E35	70° 16’ 08.72’’ N	150° 47’ 34.77’’ W
Qugruk No. 9	ADL391451	U012N006E06	70° 24’ 59.55’’ N	150° 42’ 37.96’’ W

Note: Coordinates are provided in NAD 83 ASP Zone 4

Repsol’s proposed well design will be similar to that employed in previous North Slope exploration wells and in accordance with a Permit to Drill from the Alaska Oil and Gas Conservation Commission (AOGCC). Repsol will have a designated representative onsite during operations.

The proposed drilling activities will be conducted using drilling rigs suitable for arctic operations as identified in Table 3. Equipment types will be typical of that used for North Slope oil and gas operations and will be obtained from existing North Slope contractors.

**Table 3. Rig Assignments**

Drill Site	Rig Assignment
Qugruk Nos. 301 or 101	Nabors Rig 105AC
Qugruk No. 9	Nabors Rig 99E
Qugruk Nos. 801 or 8	Nabors Rig 2ES

### Testing and Surveys

Repsol may perform production tests as needed. Testing may include extended flow periods to determine the productivity of the well. Testing will be accomplished in accordance with AOGCC approved techniques. Vertical seismic profiles (VSPs) may be acquired using off road capable vibroseis trucks. These operations will generally occur within a 2-mile radius of the surface location of the well.

Repsol’s Plan proposes micro-seismic fracture mapping on two wells this season, Q-301 and Q-8, in conjunction with well stimulation and flowback activities. Micro-seismic fracture mapping is done by setting an array of surface geophones on the tundra/ice around the wellsite by personnel who access the

area with a Tucker Sno-cat (or similar). The geophones will record the micro-seismic waves that occur from subsurface well work and the micro-seismic fracture mapping will allow Repsol to understand specific reservoir characteristics to optimize potential reservoir production.

### C. Buildings

Repsol’s will place a 120-bed camp on the existing BRPC Mustang Pad to support ice road construction activities. Once the DS-2M ice pad is constructed, the camp and associated equipment, including fuel storage, will be relocated from the Mustang Pad to the DS-2M ice pad.

Each drilling pad location will include the following support facilities: a satellite office camp; storage areas (e.g., fuel storage, drilling waste storage); and maintenance buildings (Figures 4-7).

### D. Fuel and Hazardous Substances

Fuel storage capacity totaling approximately 130,000 gallons is proposed as part of the 2014-2015 exploration drilling program as shown in Table 4. Fuel will be stored in lined, bermed fuel storage areas or appropriate secondary containment such as double-walled tanks. Fuel storage, handling, transfers, and spill reporting will be conducted in accordance with Repsol’s C-Plan (11-CP-5194), North Slope Environmental Field Handbook, and Alaska Safety Handbook. All bulk fuel and fluid transfers in excess of 500 gallons will be monitored by the Alaska Clean Seas (ACS) Spill Technician. Fuel will be re-supplied to the site from existing North Slope oil and gas operations.

**Table 4. Expected Fuel Storage**

Location	Number of Tanks		Quantity Per Tank (Gal)	Total Amount (Gal)
	Gasoline	Diesel Fuel		
Mustang Gravel Pad	1	2	9,999	29,997
DS-2M Ice Pad	1	2	9,999	29,997
Ice Camp Pad 1 (1A, 1B, or 1C)	1	6	9,999	69,993
Ice Camp Pad 2	1	6	9,999	69,993
Qugruk Nos. 301 or 101 Drill Site Pad	--	1	9,999	9,999
Qugruk Nos. 801 or 8 Drill Site Pad	--	1	9,999	9,999
Qugruk No. 9 Drill Site Pad	--	1	9,999	9,999

Notes: Fuel stored will include unleaded gasoline and ultra low sulfur diesel  
 Fuel tanks located on Mustang Pad will be moved to the DS-2M ice pad on or around February 1.  
 Up to two camp ice pads will be used to support drilling activities, based upon ice road route.

A variety of commonly used water-based and mineral oil based drilling fluid additives will be used to provide and maintain the correct drilling mud formulation for the conditions being drilled. The various additives are either dry-bulk packaged in sacks contained in lined mud boxes or shrink wrapped pallets. Dry-bulk cement for the various casing strings are typically stored in “pneumatic-feed” silos, located adjacent to the rig. Other liquid drill fluid chemicals are provided in 55-gallon drums or a variety of different sized (250-400 gal) “chem-totes”. All drill fluid additives are stored in a secure fashion, in

secondary containment, where applicable, with the inventory constantly monitored for use. The secure storage and chemical containment is inspected daily by the on-site ACS spill technician.

Other drill fluid chemicals that may be brought on site include specialty products required for the well stimulation and completion/flow testing. These materials are stored in a similarly secure fashion and utilized in a relatively short timeframe.

All unused chemical or specialty products will be returned to the supplier inventory for reuse. All used products are disposed of in accordance with Repsol's Waste Management Plan and other applicable guidance documents.

### Drilling Waste

Waste management activities for Repsol's 2014-2015 exploration drilling program will be conducted in general accordance with the best environmental practices as described in the North Slope Environmental Field Handbook. Attention will be focused on waste minimization, segregation (dumpster management practices), reuse and recycling. All drilling/completion waste, as well as any other waste materials generated at each location, will be manifested and disposed of in accordance with the North Slope Alaska Waste Disposal and Reuse Guide (Red Book, revision 9, Oct 2013) as well as relevant ballot agreements for the PBU and KRU shared services, equipment and facilities.

Repsol's Plan states that waste drilling muds and cuttings will either be hauled to the PBU Grind and Inject Facility for processing and disposal, or disposed of on-site by annular injection as approved by the AOGCC. All drilling and other related wastes will be manifested and disposed of in accordance with the BP-Repsol Waste Analysis Plan. Approximately 100 cubic yards of drill cuttings and 400-500 barrels per day (bpd) of drilling fluid waste may be generated per well depending on the stage of drilling and local downhole conditions.

Solid drilling waste may be placed in open-top metal tanks or shale bins located next to the drilling mud processing units. Waste liquid drilling fluids will be stored in closed tanks. Four to six tanks or shale bins may be used at any one time to provide sufficient volume in the event that adverse weather conditions shut down road operations. The drilling waste can be pumped out of the tanks/bins and hauled directly offsite for disposal, or temporarily stored onsite in shale bins until frozen prior to disposal. Drilling waste will be transported as it is generated to the extent practicable.

After the removal of drilling waste from the storage area, a visual site inspection will be performed to verify that all drilling waste has been removed. A final site inspection report including drilling waste volume and final disposition of waste will be submitted to ADEC as required under 18 AAC 60.430.

All drilling waste will be disposed of prior to completion of winter operations.

### Produced Fluids

Repsol's Plan states that all fluids from production testing will be passed through a test separator system to separate gases and stored in tanks until the testing is completed. After testing, the fluids will either be injected back into the formation from which it was produced, or hauled to North Slope oil and gas production facilities for processing and/or product recovery.

### **E. Solid Waste Sites**

Repsol's Plan states that waste management activities will be conducted in general accordance with the best environmental practices as described in the North Slope Environmental Field Handbook. Attention will be focused on waste minimization, segregation (dumpster management practices), reuse and recycling.

Solid, non-burnable waste will be deposited in dumpsters located at each site. These containers will be back-hauled to the NSB landfill at Prudhoe Bay. The food waste that could attract wildlife will either be stored in enclosed containers for periodic hauling or will be hauled each day to an approved disposal center (such as PBU).

To reduce the amount of trash that must be back-hauled from the drilling location, solid, burnable waste may be incinerated at the location in accordance with 18 AAC 50 and ash back-hauled to the NSB landfill.

Camp wastewater will be hauled to an approved disposal facility on the North Slope. Approximately 14,000 gallons per day of domestic wastewater (sewage) is expected to be generated for all camp facilities.

### **F. Water Supplies**

Repsol proposes water withdrawal from local lakes for the construction and maintenance of ice roads, ice pads, and the ice airstrip. Potable water for camp use and drilling operations may also be withdrawn from local lakes.

Up to an estimated 175 million gallons of fresh water is needed for the construction and maintenance of ice roads and pads, drilling operations, and camp use as outlined in Table 5. The ice roads and pads will be constructed of fresh water snow, ice chips, and water and will have a minimum depth of 0.5 ft.

**Table 5. Estimated Water Needs**

<b>Location</b>	<b>Water Required (Million Gallon)</b>
Mustang Gravel Pad	--
DS-2M Ice Pad	30
Ice Camp Pad 1 (1A, 1B, or 1C)	20
Ice Camp Pad 2	30
Qugruk Nos. 301 or 101	15
Qugruk Nos. 801 or 8	15

Qugruk No. 9	15
Ice Road (Option 1 or Option 2)	55
Ice Airstrip	5
<b>Total Project Needs</b>	<b>185</b>

Note: Estimated water needs include water requirements for construction and maintenance of ice roads and pads including two camp pads, drilling operations, and camp use. It also includes a contingency to address minor route variations.

Water withdrawal required for construction of the ice roads, ice pads, drilling activities, and for potable water use will be authorized under TWUPs from DNR DMLW. Water withdrawal from fish-bearing water bodies will be authorized under Fish Habitat Permits from the ADF&G. Several water sources are expected to be used. Repsol's Plan states that some water sources may be brackish, especially those along the coast. All near shore lakes will be tested prior to use and if they are confirmed to be brackish, they will only be used in offshore applications. Potable water for human use will be hauled from the NSB Service Area 10 facility in stainless steel tanker trucks.

DNR DMLW Water Section issued TWUA A2014-115 and TWUA A2014- 116 on September 26, 2014; TWUA A 2014-117 on October 13, 2014; and TWUA A2014-146 and TWUA A2014-147 on November 25, 2014 for water withdrawal to support the Repsol's exploration drilling program.

In addition, ADF&G issued Fish Habitat Permits FH14-III-0224 through FH14-III-0240, effective October 6, 2014 through June 1, 2019, for water withdrawal from 17 fish bearing lakes in support of construction activities for Repsol's exploration drilling program.

## **G. Utilities**

Repsol proposes to provide 24-hour phone service and internet at the field camps. Operational radio communications will be provided using fixed base stations and truck-mounted, mobile "bread-board" radios. Operational frequencies will be coordinated between the various Repsol field supervisors, ice road and support contractors, and well service providers. Small communications towers will be placed at each pad. A taller 80-foot communications tower may also be required for the project. All communication towers are temporary and will be removed at demobilization.

## **H. Roads**

The Plan states that Repsol will provide access to drill sites by ice roads connected to gravel roads. The DS-2M ice pad will be constructed later in the season used to assist in the management of equipment and materials mobilized to drill sites, backhaul of wastes to existing North Slope infrastructure for disposal, and demobilization of equipment and materials upon completion of drilling operations. Ice pads will be constructed at drill sites and at camp locations to support drilling activities.

## Ice Roads

Approximately 40 miles of ice road will be required to connect gravel roads to the drilling sites and camp ice pads to support drilling operations, and provide access to water sources. Roads will be approximately 35 feet wide and will have a minimum of 0.5 feet of ice cover over the tundra. Ice road routes were identified during summer 2014 based upon topography, and have been designed to minimize impacts to vegetation, identify appropriate stream crossing locations, and avoid polar bear dens. The route will be surveyed to ensure that the approved route is followed during construction activities. Some minor re-routes may be required depending on site specific conditions at the time of construction.

Ice roads will be built using a combination of existing snow along the route, water, and ice chips from approved water sources. Ice road and pad construction will take place from October 2014 through January 2015, including pre-packing of ice road routes and ice pad locations with snow prior to tundra opening. Upon tundra opening, ice chips and water from freshwater lakes will be used to complete construction of ice roads. Ice construction activities, including pre-packing, will be performed in accordance with DNR DMLW approvals. Additional water and ice from permitted sources will be used to maintain ice roads in good condition throughout the 2014-2015 winter drilling season. The Colville River Area ice road will have several major river crossings on the Colville River and a number of unnamed tributaries. Most stream and river crossings will be located in areas sufficiently shallow to allow them to freeze naturally to the bottom during winter.

Some Colville River channel crossings will be in locations where water depth is sufficient to require construction of a floating ice bridge. Water withdrawal from the Colville River for initial construction of the ice bridges is authorized in the relevant fish habitat permits to allow safe transportation of the larger components of a drilling rig. An ice/water monitoring program will be initiated prior to water withdrawal and ice thickening.

The locations of ice roads and ice road stream crossings are provided in Table 6 below, and shown on Figure 1.

**Table 6. Ice Roads**

<b>Road Name</b>	<b>Length (miles)</b>	<b>Origin and Terminus</b>	<b>Location</b>
<b>Ice Road Option 1</b>			
Main Road	37	From existing gravel road to drill sites and camp ice pad	U010N007E U011N005E-U011N008E U012N006E-U012N007E
Lake Access	10	From main ice road to Colville River Area water sources	U010N008E04 U011N005E35 U011N006E05 U011N007E15, 25, 36 U012N006E06, 14, 24 U012N007E30, 32, 33

Ice Road Option 2			
Main Road	38	From existing gravel road to drill sites and camp ice pad	U010N007E U011N005E-U011N008E U012N006E
Lake Access	10	From main ice road to Colville River Area water sources	U010N008E04 U011N005E25, 35 U011N006E05, 30, 31 U011N007E32, 33 U012N006E06

Note: All lengths are approximate

For the proposed drilling activities, Repsol has requested that two ice road options be permitted as described below. Only one of the options will be constructed. Each ice road options includes up to two camp pads, an ice airstrip (total of two locations), and five well locations. Only three wells will be drilled. Table 7 provides locations and dimensions of the pads and airstrips associated with each option.

**Table 7. Pad and Ice Airstrip Locations**

Pad	Approximate Dimensions	Location
<b>Option 1</b>		
Mustang Gravel Pad	200 feet by 700 feet	U010N007E02
DS-2M Ice Pad	1,000 feet by 1,000 feet	U011N008E28
Ice Camp Pad 1A	1,000 feet by 1,000 feet	U011N006E04 U012N006E32, 33
Ice Camp Pad 1B	1,000 feet by 1,000 feet	U012N007E29
Ice Camp Pad 2	1,000 feet by 1,000 feet	U012N006E04
Ice Airstrip	300 feet by 5,000 feet	U012N007E19, 20, 29, 30
<b>Option 2</b>		
Mustang Gravel Pad	200 feet by 700 feet	U010N007E02
DS-2M Ice Pad	1,000 feet by 1,000 feet	U011N008E28
Ice Camp Pad 1C	1,000 feet by 1,000 feet	U011N006E23
Ice Camp Pad 2	1,000 feet by 1,000 feet	U012N006E04
Ice Airstrip	300 feet by 5,000 feet	U011N006E11-14, 23, 24

Notes: Mustang Pad is an existing gravel pad. Dimensions shown is the area used by Repsol.

For option 1, either 1) ice camp pad 1A and ice camp pad 2, or 2) ice camp pad 1B will be constructed.

For option 2, ice camp pad 1C and ice camp pad 2 will be constructed.

Option 1. Ice road option 1 heads northwest from the Mustang Pad toward Lake MC7902; near the lake, it splits into two spur ice roads heading northwest and southwest. An ice airstrip will be located on Lake MC7902. A camp pad to support drilling activities is located on each spur road. Either two ice camp pads (Camp Pad 1A and Camp Pad 2) or a single camp pad (Camp Pad 1B) will be constructed to support drilling operations. Camp Pad 1A is approximately a 240-bed camp located near the Qugruk-301 drilling site. Camp Pad 1B is approximately a 240-bed camp located near the Lake MC7902. Camp Pad 2 is approximately a 120-bed camp located near the Qugruk-9 drill site.

The ice airstrip will be constructed to support crew changes and minor resupply operations. The airstrip will occupy an area up to 300 feet by 5,000 feet and is designed to accommodate 20 to 30 passenger aircraft. The airstrip will have appropriate lighting and control systems.

Option 2. Ice road option 2 heads west from the Mustang Pad and splits into two spur ice roads heading west and north. An ice airstrip with the same capacity as under Option 1 will be located on Lake MC7903. Two camp pads will be used for this option. Camp Pad 1C will be located on the main ice road and will be an approximately 240-bed camp located near Lake MC7903. Camp Pad 2 will be located on the north spur road near the Qugruk-9 drill site and will have an approximately 120-bed capacity.

Repsol ice roads and drill sites are closed to the general public to ensure their safety. Repsol will have security checkpoints at the Colville River Area ice roads. All contractors, well service providers, and project personnel must follow the Repsol Journey Management Plan, observe and comply with the various Road Rules established for the Prudhoe Bay Unit (PBU) and Kuparuk River Unit (KRU) road network, and the Repsol Ice Road rules. Signs will be posted at the well site to alert visitors that they have approached a secure work site. Access to existing fields is controlled at existing Deadhorse/Prudhoe Bay security checkpoints. Access through security is provided for industry personnel sponsored by an operator. Repsol will provide emergency assistance to cross country travelers, including subsistence hunters, and protection from severe weather, as necessary to ensure human safety.

Nuiqsut residents will have access to Repsol ice road once construction has been completed and approved for travel by Repsol management. Discharge of firearms, including hunting, is prohibited within 100-foot safety buffer zone established by Repsol in the vicinity of ice roads, ice pads, and support facilities.

DNR DMLW issued land use permit LAS 28269 to Repsol for ice road pad construction and use related to winter exploration programs on all State owned surface lands using State approved vehicles. The permit is effective from November 23, 2011 to November 22, 2016. DMLW issued an amendment to LAS 28269 on October 3, 2014 for activities included in the 2014-2015 exploration drilling program.

## **I. Airstrips**

An ice airstrip will be constructed on Lake MC7902 or Lake MC7903 to facilitate transportation of materials and personnel crew changes.

## **J. All Other Facilities and Equipment**

In the event of a major medical issue or fire, resources would be mobilized from the KRU to provide additional emergency response, per an existing Ballot Agreement. Medical evacuation, if necessary, will be provided by ambulance, helicopter, or fixed-wing aircraft, directly from the Qugruk Ice Airstrip to the KRU Clinic and Airstrip for patient stabilization and/or transfer to a Med-Evac jet to Anchorage

hospital facilities. If the KRU Clinic and Airstrip are unavailable and weather precludes fixed/rotary medevac the patient will be transported via ambulance to Fairweather DAC. Repsol has prepared a Medical Emergency Evacuation Plan.

## **K. Rehabilitation Plan**

Upon completion of drilling and evaluation operations, Repsol's Plan states that wells will either be plugged and abandoned or suspended in accordance with AOGCC regulations. As part of site closure activities, any remaining debris will be hauled to an approved disposal site. Any spills discovered as part of site closure activities, or ice pads and roads with contaminated ice or snow, will be chipped or scraped to remove the contaminated material. This material will be transported to an appropriate facility for disposal.

Cleanup operations will be conducted the summer after the winter drilling program to remove any remaining debris not identified and removed during demobilization activities and to identify any issues not identified during the winter drilling program. Agency personnel will be invited on site visits to verify that cleanup operations are complete and that any issues identified are addressed.

In the event that tundra damage is discovered at any point during the winter drilling program or during summer cleanup operations, Repsol will notify DNR DMLW and the NSB in accordance with permit requirements. If tundra damage occurs on Kuukpik Corporation lands, they will be notified in accordance with Repsol's existing Surface Access Agreement (SAA). Reports of tundra damage will include the date, time, and location of damage, the size of the impacted area, and cause of damage (if known). Repsol will coordinate with the land owner to identify the level of tundra damage and develop a plan for restoration, rehabilitation, and monitoring. The plan will address the area, type, and extent of damage and will be developed in accordance with the Alaska Coastal Revegetation & Erosion Control Guide developed by the State of Alaska Plant Materials Center, the Streambank Revegetation and Protection Guide developed by the Alaska Department of Fish and Game, and other relevant guidance documents. Repsol will coordinate with the landowner, ADNR, and ADF&G, as relevant.

## **L. Local Hire, Communication and Training**

### Local Hire

Repsol is committed to performing exploration and development activities in accordance with best industry practices and maintaining good relations with local residents. As part of this commitment, Repsol has developed a stakeholder engagement program, a program to mitigate impacts to subsistence activities, and an Economic Opportunity Plan.

Repsol has an ongoing stakeholder engagement program to inform members of the Nuiqsut community, including subsistence users, of proposed activities. Repsol solicits feedback from community members on how the exploration drilling activities can be performed in a manner that minimizes impacts on subsistence activities. Table 8 identifies meetings held with local stakeholders as part of Repsol’s 2014-2015 Winter Drilling Program.

**Table 8. Stakeholder Engagement Meetings**

<b>Type of Meeting</b>	<b>Date</b>	<b>Location</b>
Community meeting	August 22, 2013	Nuiqsut
Community meeting	January 30, 2014	Nuiqsut
Community meeting	June 10, 2014	Nuiqsut
Nalukataq	June 26, 2014	Nuiqsut

Repsol works directly with the Kuukpikmiut Subsistence Oversight Panel to coordinate activities so that subsistence hunters are aware of Repsol’s planned activities. A Community Liaison is employed by Repsol to provide updates of planned and ongoing activities to local residents. Subsistence Representatives will be employed by Repsol during the 2014-2015 Winter Drilling Program to ensure that activities are conducted in a manner to minimize potential impacts to local subsistence activities.

Repsol has also developed a Plan of Cooperation to mitigate potential conflicts between their exploration program and subsistence hunting of Polar Bears. The Plan of Cooperation is included in Repsol’s Bear – Personnel Encounter Plan.

Repsol is committed to local hire and has instituted a program to hire and train residents of Nuiqsut and the NSB. Repsol maintains open communication with the Village of Nuiqsut and Kuukpik Corporation to obtain their assistance in determining if qualified personnel, or local personnel who could be employed for on-the-job training, are available.

Training

The Alaska Safety Handbook (ASH 2014 ed.) the North Slope Environmental Field Handbook (NSEFH 2011 ed.), and the Red Book are adopted as guidance, reference, and standard operating procedures and “best” safety, environmental, and waste management practices for Repsol operations on the North Slope of Alaska. Repsol’s corporate health, safety, and environmental (HSE) plans, procedures, and practices are used to supplement ASH/NSEFH/Red Book procedures where applicable. This policy guidance is passed on as a requirement for all contractors working for Repsol. Additionally, Repsol’s contractors are required to provide trained and qualified workers for each designated job and position. Repsol and contractor training records are reviewed for compliance and subject to audit under Repsol’s Safety & Environmental Management System.

Repsol’s Plan states that they have a comprehensive training program designed to ensure that all personnel, including contractors and subcontractors, understand corporate HSE policies and federal, state, and local safety and environmental requirements and permit stipulations. All personnel are

required to attend North Slope Training Cooperative (NSTC) 8-hour unescorted training course. The NSTC Unescorted Course consists of the following six modules:

- Alaska Safety Handbook
- Camps and Safety Orientation
- Environmental Excellence
- Hazard Communication (HAZCOM)
- HAZWOPER (hazardous waste) Awareness
- Personal Protective Equipment

All trainees will receive the NSEFH, an ASH, and a North Slope Visitor's Guide.

Repsol also requires all project workers to attend a drill and camp site specific HSE orientation at the time of check-in and prior to commencing work. This HSE orientation presents the camp and pad rules for operations and personal safety and hygiene. Additional vehicle safety and the various ice road (PBU, BRPC, KRU, and Repsol) rules are reviewed for conformance and compliance with internal policies, permit stipulations, and the various operational and surface access agreements that are in-place with other operating companies and Kuukpik Corporation, the surface land owner.

As part of the camp orientation, a 15-minute video on Cultural Resource and Awareness is required of all workers and "authorized" visitors to the various Repsol sites.

All workers are issued a Repsol 2014-2015 Project Orientation Card that documents their attendance at the site specific safety briefing and orientation.

Repsol also requires that all company representatives and third party contractors attend rig and location safety meetings (pre-tour, SIMOPS, and weekly), as well as participate in the contractor's safety practices.

On-site training orientation and the required weekly safety meetings are also used to:

- Plan and discuss the various emergency action drills that are required on a weekly / monthly schedule.
- Train and familiarize workers with the Polar Bear Interaction Plan, warnings and hazing methods, and reporting requirements.
- Review spill (and incident) reporting requirements and spill prevention measures, review of fluid transfer procedures, and general hazard identification regarding the various chemicals used in drilling operations and other activities.

- Review cold weather operations and personal protection.
- Review of the Bear-Personnel Encounter Plan, hazing techniques and reinforcement of the “Do Not Feed the Wildlife” policy (under threat of job loss).

## **V. EXPLORATION PHASE AND PROTECTION OF STATE AND PUBLIC INTERESTS**

This Plan begins Repsol’s exploration of the leases described herein. The Plan addresses exploration activities for drilling three wells, but based on the results of this exploration, the Division anticipates that Repsol may submit additional plans of operation for additional exploration wells. Thus in considering the exploration phase, the Division considered both the specific activities proposed under this Plan as well as typical additional exploration activities that Repsol might propose for further exploring the leases.

The Division considered the potential impacts of exploration on public and State interests. In the oil and gas context, the public interest includes maximizing economic and physical recovery of oil and gas resources (AS 38.05.180(a)(1)). The State has an interest in protecting the public interest, and in encouraging assessment of oil and gas resources while minimizing the adverse impacts of exploration, development, production, and transportation activities (AS 38.05.180(a)(2)).

In considering potential impacts, the Division also considered the operating procedures Repsol has designed to minimize adverse effects of the Plan activities. These operating procedures include procedures to comply with the mitigation measures attached to the leases. These measures come from the North Slope Areawide Best Interest Finding (BIF) and include mitigation measures to address potentially negative effects of oil and gas exploration on fish and wildlife species, habitats and their uses, on subsistence uses, and on local communities. Repsol has provided a mitigation measure analysis which is required as part of their Plan of Operations submittal.

### **A. Facilities, Access, and Operations**

All proposed facilities are temporary in nature and include ice pads, an ice airstrip, and the temporary placement of a staging camp, and three drilling camps. Other than requested exceptions (discussed in Section V.F, below) Repsol has designed, sited, and proposes to operate the exploration drilling facilities in accordance with the North Slope mitigation measures and fish habitat permits issued from ADF&G. All activities are proposed to take place during the winter and are intended to avoid and minimize impacts to wetlands. Winter off-road travel will be conducted in accordance with DNR guidelines to further avoid and minimize impacts to wetlands

Although use of existing infrastructure is proposed, no placement of new gravel is proposed for Repsol’s 2014-2015 exploration program. Ice roads and existing gravel roads will be used to transport supplies and equipment from Prudhoe Bay to the project area. Existing permanent gravel roads and ice roads will

be used to the maximum extent possible but no new gravel roads or pads will be constructed. The ice roads will be constructed and maintained using the generally accepted practices for the North Slope, subject to DNR tundra opening criteria. Pre-packing of the trail will be requested prior to the official tundra opening to preserve early snow. Overland travel to the drill site will be via approved low-pressure vehicles from staging areas.

DNR DMLW issued land use permit LAS 28269 to Repsol for ice road pad construction and use related to winter exploration programs on all State owned surface lands using State approved vehicles. The permit is effective from November 23, 2011 to November 22, 2016. DMLW issued an amendment to LAS 28269 on October 3, 2014 for activities included in the 2014-2015 exploration drilling program.

Demobilization of the facilities is expected to occur in April-May 2015 in accordance with North Slope mitigation measure A.1.i. All temporary facilities and waste will be removed and the well will be plugged and abandoned or suspended, per AOGCC regulations. Packed snow roads and ice pads will be allowed to degrade naturally through thawing.

## **B. Fuel, Hazardous Substances, and Waste**

The exploratory drilling proposed under the Plan, as well as other exploratory drilling Repsol might propose during the exploration phase, will result in drilling muds, cuttings, and produced water and pose some risk of a spill. Discharges of drilling muds, cuttings, and produced waters; oil spills; and accidental spills of fuel, lubricants, or chemicals can all have impacts to water, wildlife, and habitats during this exploration program. Impacts from exploration activities, from either disposal activities or a spill, could adversely affect water quality, but impacts are expected to be local and temporary because of dilution, settling, and other natural altering and regenerative processes.

### Drilling Muds and Produced Water

Byproducts of drilling activities include muds and cuttings, produced water, and associated wastes. Produced water contains naturally occurring substances such as clay, sand, oil, water, and gas. Most drilling wastes are disposed of under ADEC's solid waste disposal program. Re-injection is the preferred method for disposal of drilling fluid. Disposal of drilling muds and cuttings requires permit approval. Most oil field wastes are considered non-hazardous and waste fluids are recycled, filtered, and treated before reinjection or disposal. Cuttings and waste fluids must be made non-hazardous before injection. Produced water is treated using heat, gravity settling, and gas flotation devices to remove hydrocarbons. After treatment, produced water is re-injected into either the oil-bearing formation to maintain pressure and enhance recovery or into an approved disposal well. Cuttings disposal is done through grinding and injecting on-site, or cuttings are transported to an approved disposal site. Wastewater, including sanitary and domestic graywater, is also treated to meet effluent guidelines before discharge.

During exploration drilling, muds and cuttings are stored on-site, in holding tanks, or in a temporary reserve pit and then hauled to an approved solid waste disposal site or re-injected into the subsurface at an approved injection well. All production muds and cuttings on the North Slope are re-injected into a Class II injection well. All produced waters are re-injected either into the producing formation or into an injection well. The AOGCC oversees proper and safe handling and disposal of drilling wastes and oversees the underground operation of the Alaska oil industry on private and public lands and waters. The AOGCC administers the UIC Program for oil and gas wells, acts to prevent waste of oil and gas resources and ensure maximum recovery, and protects subsurface property rights. All disposal wells inject fluids deep beneath any drinking water aquifers. North Slope mitigation measure A.4.j states that the preferred method for disposal of muds and cuttings from oil and gas activities is by underground injection.

Repsol's Plan states that waste drilling muds and cuttings will either be hauled to the PBU Grind and Inject Facility for processing and disposal, or disposed of on-site by annular injection as approved by the AOGCC. Approximately 100 cubic yards of drill cuttings and 400-500 barrels per day (bpd) of drilling fluid waste may be generated per well depending on the stage of drilling and local downhole conditions. Solid drilling waste may be placed in open-top metal tanks or shale bins located next to the drilling mud processing units. Waste liquid drilling fluids will be stored in closed tanks. The drilling waste can be pumped out of the tanks/bins and hauled directly offsite for disposal, or temporarily stored onsite in shale bins until frozen prior to disposal. Drilling waste will be transported as it is generated to the extent practicable. After the removal of drilling waste from the storage area, a visual site inspection will be performed to verify that all drilling waste has been removed. A final site inspection report including drilling waste volume and final disposition of waste will be submitted to ADEC as required under 18 AAC 60.430. All drilling waste will be disposed of prior to completion of winter operations.

All fluids from production testing will be passed through a test separator system to separate gases and stored in tanks until the testing is completed. After testing, the fluids will either be injected back into the formation from which it was produced, or hauled to North Slope oil and gas production facilities for processing and/or product recovery.

### Accidental Spills

Impacts resulting from accidental spills would depend on the type of product, the location, volume, season, and duration of the spill or leak, and the effectiveness of the cleanup response. Heavy equipment, such as trucks, tracked vehicles, aircraft, and tank trucks, commonly use diesel fuel, gasoline, jet fuel, motor oil, hydraulic fluid, antifreeze, and other lubricants. Spills or leaks could result from accidents, during refueling, or from corrosion of lines. Under standard DNR DMLW permit conditions for off-road activity, fuel and hazardous substances must have secondary containment apparatuses. A secondary containment or surface liner must be placed under all container or vehicle fuel tank inlet and outlet points, and appropriate spill response equipment must be on hand during any transfer or handling of fuel or hazardous substances.

Repsol's Plan states that fuel will be stored in lined, bermed fuel storage areas or appropriate secondary containment such as double-walled tanks. Fuel storage, handling, transfers, and spill reporting will be conducted in accordance with the requirements described in Repsol's C-Plan (11-CP-5194), North Slope Environmental Field Handbook, and Alaska Safety Handbook. All bulk fuel and fluid transfers in excess of 500 gallons will be monitored by ACS. Fuel will be re-supplied to the site either from the existing North Slope oil and gas operations or from the existing operations on the North Slope.

### Oil Spills

The effects of an oil spill during the winter are limited due to the short season and temporary nature of exploration programs. There are no production activities, permanent facilities, or pipelines proposed. Repsol has proposed temporary activities during winter months, and the Division anticipates any future exploratory drilling would also take place during the winter when the risk from spills is lower.

Mitigation measures include siting facilities away from fish-bearing streams and lakes, development of oil spill contingency plans, and providing adequate spill response training.

North Slope mitigation measures require that sites be protected from leaking or dripping fuel and hazardous substances; secondary containment be placed under all container or vehicle fuel tank inlet and outlet points, hose connections, and hose ends during fuel or hazardous substance transfers; vehicles cannot be refueled within the annual floodplain; containers must be marked with the contents and lessee/contractor name; waste from operations be reduced, reused, or recycled to the maximum extent practicable; muds and cuttings should be disposed of by underground injection, where practicable; and that proper disposal of garbage and putrescible waste be utilized.

Repsol's mitigation measure analysis states that fuel and hazardous substances will be stored at least 100 feet from any water body and no known surface drinking water sources are in the vicinity of proposed project operations (A.4.b); drip pans or liners will be placed under parked vehicles or equipment to capture fluids (A.4.c); surface liners will be used under all potential spill points, Repsol will verify that adequate sorbents are on hand during fuel transfers, and ensure that personnel are properly trained and understand proper procedures for handling flammable and combustible fluids (A.4.d); all containers with fuel or hazardous substances will be labeled with the contents and lessee's/contractor's name (A.4.f); and solid burnable waste may be incinerated in location. All wastes generated as part of operations will be hauled offsite for disposal at an approved facility (A.4.h).

### **C. Habitat, Fish, and Wildlife**

Any exploration activity can impact habitat, fish, and wildlife. The North Slope mitigation measures are designed to minimize these impacts. The Plan activities will take place over a limited time period and involve temporary roads and facilities. The Division anticipates impacts to habitat, fish, and wildlife will also be limited and temporary. The Division also anticipates that any future plans of operation for the exploration phase will involve similarly limited and temporary activities and impacts.

## Fish

The Colville River is an anadromous stream, supporting the spawning and overwintering of several species of fish that then migrate to nearshore coastal waters to feed in the summer. Migration patterns vary by species and within species by life stage. Potential effects of exploration activities include degradation of stream banks and erosion; reduction of or damage to overwintering areas; impediments to migration; and fish kills due to oil spills.

A potential habitat impact at the exploration phase is erosion. Erosion results in siltation and sedimentation, which in turn may result in a reduced or altered stream flow that may affect overwintering habitat availability and the ability of fish to migrate upstream. Protecting the integrity of stream bank vegetation and minimizing erosion are important elements in preserving fish habitat. Streambeds could be affected if stream banks are altered, such as in cases of damage from equipment crossings. Overwintering habitat may be limited; the Colville River provides the most consistently available overwintering habitat for anadromous fish in the North Slope Areawide lease sale area.

Withdrawal of water from lakes and ponds could affect fish overwintering habitat by entraining juvenile fish, lowering water levels, and increasing disturbance. The construction of roads across rivers and streams may also affect the ability of fish to reach overwintering areas by blocking movement and causing direct loss of overwintering habitat. Removal of water from lakes where fish overwinter may affect the viability of overwintering fish, and longer-term effects of lake drawdown may impede the ability of fish to return to the lake in subsequent years. Removal of snow from lakes may increase the freeze depth of the ice, kill overwintering and resident fish, and adversely affect the ability of fish to utilize the lake in future years.

North Slope mitigation measure A.2.b requires that removal of water from fish-bearing rivers, streams, and natural lakes have prior written approval by DMLW and ADF&G. Water intake pipes used to remove water from fish-bearing waterbodies must be surrounded by a screened enclosure to prevent fish entrainment and impingement, with screen mesh size no greater than 1 mm (0.04 inches), unless another size is approved by ADF&G. The maximum water velocity at the surface of the screen enclosure may be no greater than 0.1 foot per second, unless an alternative has been approved by ADF&G. In addition, Beaufort Sea mitigation measure A.2.c states that removal of snow from fish-bearing rivers, streams, and natural lakes require prior written approval from ADF&G. Compaction of snow cover overlying fish-bearing water bodies is prohibited except for approved crossings. Ice or snow bridges may be required if ice thickness is not sufficient to facilitate a crossing. ADF&G issued several fish habitat permits to Repsol, effective October 26, 2014 through June 1, 2019, for water withdrawal from 17 fish-bearing lakes.

DNR DMLW Water Section issued TWUA A2014-115 and TWUA A2014- 116 on September 26, 2014; TWUA A 2014-117 on October 13, 2014; and TWUA A2014-146 and TWUA A2014-147 on November 25, 2014 for water withdrawal to support the Repsol's exploration drilling program. Before a permit to appropriate water is issued, DMLW considers local demand and may require applicants to

conduct aquifer yield studies. Generally, water table declines associated with the upper unconfined aquifer can be best mitigated by industrial users tapping confined (lower) layers or searching for alternate water sources.

### Caribou

Exploration-related disturbance of caribou, particularly by helicopter traffic, is expected to have minor impacts on caribou, particularly large groups, with animals being briefly displaced from feeding and resting areas when aircraft pass nearby. Vehicle traffic associated with transportation corridors has the potential to affect habitat use in intensely developed areas of the Prudhoe Bay and Kuparuk oil fields. Acute disturbance effects may in combination result in a cumulative effect on habitat availability for those individuals with fidelity to the Kuparuk River calving area, but may have little or no effect on the Central Arctic herd population. It is expected these disturbances would be short term.

The North Slope Areawide BIF encourages lessees to maintain aircraft at an altitude greater than 1,500 feet or a lateral distance of one mile, excluding takeoffs and landings, from caribou and muskox concentrations. Seasonal restrictions may be imposed on activities located in, or requiring travel through or overflight of, important caribou calving areas. In addition, pursuant to AS 46.04.030, lessees are required to have an approved oil discharge prevention and contingency plan (C-Plan) prior to commencing operations. Repsol's Plan indicates that the exploration project has an approved C-Plan (11-CP-5194). Containers with an aggregate storage capacity of greater than 55 gallons, which contain fuel or hazardous substances, shall not be stored within 100 feet of a waterbody, or within 1,500 feet of a current surface drinking water source.

### Moose

Moose occur all across the North Slope with the largest concentration along the Colville River and its tributaries. Moose generally remain in the foothill portions of the sale area along river corridors, which is well south of Repsol's proposed exploration activities. Post-lease sale activities are expected to have little effect on the North Slope moose population.

### Bears

*Brown Bears.* Brown bears can be found throughout the Arctic region in varying densities. The lowest densities occur along the coastal plain; brown bears are at the northern limits of their range in the Arctic. The availability of food is limited and their reproductive potential is low.

Brown bears may be subject to disturbance from oil and gas activity. Primary sources of disturbance include seismic activity, vehicle traffic, and aircraft. Seismic activity that occurs in winter may disturb denning bears. During exploration, human activity may attract foraging bears, especially to refuse disposal areas. Omnivores are attracted to food and food odors associated with human activity, and may become conditioned to non-natural food sources. This may pose a threat to human safety and the potential need to shoot "problem" animals. Bears can also be displaced by human land use activities.

*Polar Bears.* In 2008, the USFWS listed the polar bear as a threatened species under the Endangered Species Act. Polar bears may be present in upland and offshore areas year round. Potential impacts to polar bears from exploration activities such as those proposed in the Plan include disruption of denning, attraction to areas of activity, and adverse interaction with humans.

The temporary displacement of some polar bears from preferred habitats is anticipated as a result of routine exploration activities such as the proposed Plan activities and activities Repsol might propose throughout the exploration phase. Females in dens are at risk for disturbance from any vehicular traffic or noise. Exploration is likely to increase temporary displacement and disturbance. Other sources of disturbance include building ice roads, temporary ice islands as drilling platforms, helicopter flights to move crews and lightweight equipment, rollogons, snow machines, vibroseis equipment, and other motorized vehicles.

Polar bears continually search for food. Once bears find a camp or industrial site, they will often enter to explore and search for food. If a bear receives a food reward, it is more likely to return. Polar bears often investigate not only things that smell or act like food, but also novel sights or odors. Subadults are more likely to be food-stressed and attracted to human activity more commonly than well-fed bears. Subadults are also less likely to leave if a potential food source is present. Attractants include kitchen odors, deliberate feeding, accessible garbage, sewage lagoons, carcasses, industrial materials, and alteration of habitat.

There are several regulations imposed by state, federal, and local agencies that are implemented to avoid, minimize, and mitigate these potential effects to bears. In addition to complying with the Endangered Species Act and the Marine Mammal Protection Act, Repsol must comply with mitigation measures to minimize effects of exploration activities on bears.

North Slope mitigation measure A.2.d.i requires lessees to consult with ADF&G to identify the locations of any known brown bear den sites that are occupied in the season of proposed activities. Exploration activities must not be conducted within ½ mile of known occupied bear dens, unless alternate measures are approved by ADF&G. Lessees who encounter occupied brown bear dens not previously identified must report it to ADF&G within 24 hours. Mobile activities must avoid discovered occupied bear dens by ½ mile unless alternate measures are approved by the Division with concurrence from ADF&G. Repsol will consult with ADF&G prior to commencing operations in order to identify locations of brown bear dens. Repsol will follow the guidelines and procedures outlined in their Human-Bear Interaction Plan in order to avoid and mitigate interactions with brown bear dens.

North Slope mitigation measure A.2.d.iii.A-G requires lessees to prepare and implement a human-bear interaction plan. The human-bear interaction plan should include measures to: minimize attraction of bears to facility sites, including food and waste; organize layout of buildings and work areas to minimize interactions between humans and bears, such as including the use of electric fencing; warn personnel of bears near or on facilities and the proper actions to take; if authorized, to deter bears from the drill site; provide contingencies in the event bears do not leave the site; provide for proper storage and disposal of

materials that may be toxic to bears; and document and communicate the sighting of bears onsite or in the immediate area to all shift employees.

Proper disposal of garbage and putrescible waste is essential to minimize attraction of wildlife. The lessee must use the most appropriate and efficient method to achieve this goal. Repsol's mitigation measure analysis state that Solid, non-burnable waste will be deposited in dumpsters located at each site. These containers will be back-hauled to the NSB landfill at Prudhoe Bay. The food waste that could attract wildlife either will be stored in enclosed containers awaiting periodic hauling or such wastes will be hauled each day to an approved disposal center. To reduce the amount of trash that must be back-hauled from the drilling location, solid, burnable waste may be incinerated at the location in accordance with 18 AAC 50 and ash back-hauled to the NSB landfill (A.4.k).

#### **D. Subsistence, Commercial, and Sport Harvest Activities**

Traditional subsistence uses in the area include: bowhead and beluga whaling; walrus, polar bear and seal hunting; brown bear, caribou, musk ox, and moose harvesting; hunting and trapping of furbearers, such as wolf, fox, weasel, wolverine, and squirrel; hunting migratory waterfowl and collecting their eggs; fishing of whitefish, char, salmon, smelt, grayling, trout, and burbot; collecting berries, edible plants, and wood; and producing crafts, clothing, and tools made from these wild resources. Equally important, subsistence also includes social activities of consuming, sharing, trading and giving, cooperating, teaching and celebration among members of the community.

Potential exploration activities that could have effects on subsistence uses in the area include discharges from well drilling, and ongoing disturbances from activities such as vehicle, and aircraft traffic. Noise, traffic disturbance, and oil spills generally produce short-term impacts on subsistence species.

The North Slope Areawide BIF contains several mitigation measures intended to reduce conflicts with subsistence, commercial, and sport harvest activities. Prior to submitting a Plan to the Division, the lessee must consult with affected subsistence communities and the NSB to discuss reasonably foreseeable effects on subsistence during the proposed operations, and methods of proposed operations and safeguards or mitigation measures that can be implemented to prevent unreasonable conflicts. The lessee must make reasonable efforts to assure that the proposed exploration activities are compatible with subsistence hunting and fishing, and will not result in unreasonable interference with subsistence harvests. The Division may implement restrictions, as appropriate, to reduce potential conflicts.

Repsol's mitigation measure analysis states that an ongoing stakeholder engagement program is in place to inform the residents of Nuiqsut, including subsistence users, of proposed activities and to obtain feedback and recommendations on how these activities can be performed and to avoid conflicts with subsistence activities. Repsol presented the proposed 2014-2015 exploration drilling program to the NSB planning commission as part of obtaining NSB Development Permits for these activities. Repsol and Kuukpik Corporation, the surface land owner for a portion of the project area and village Native corporation for Nuiqsut, have entered into a SAA for exploration activities. As per the SAA, exploration

activities will be coordinated with Kuukpik Corporation. A community liaison is employed by Repsol to provide updates of planned and ongoing activities to local residents. Subsistence representatives will be employed by Repsol during the 2013-2014 Winter Drilling Program to ensure that activities are conducted in a manner to minimize potential impacts to local subsistence activities. Records of all concerns expressed by subsistence hunters during Repsol operations will be maintained (A.3.a).

Repsol will need to continue complying with the mitigation measures throughout the exploration phase, and the Division anticipates that any future plans of operations for exploration will include similar measures to address subsistence concerns.

### Access

North Slope mitigation measure A.3.b requires that traditional and customary access to subsistence areas be maintained unless reasonable alternative access is provided. Repsol's Plan states that Nuiqsut residents will have access to Repsol's ice roads once construction has been completed and approved for travel by Repsol management. Discharge of firearms, including hunting, is prohibited within a 100-foot safety buffer zone established by Repsol in the vicinity of ice roads, ice pads, and support facilities.

## **E. Prehistoric, Historic, and Archaeological Sites**

While exploring, Repsol could encounter prehistoric, historic, or archaeological sites.

AS 41.35.200 addresses unlawful acts concerning cultural and historical resources. In addition, all field-based response workers are required to adhere to historic properties protection policies that reinforce that it is unlawful to collect or disturb, remove, or destroy any historic property or suspected historic property and to immediately report any historic property that they see or encounter.

Under North Slope Borough municipal code (NSBMC), proposed development shall not impact any historic, prehistoric, or archaeological resource before the assessment of that resource by a professional archaeologist (NSBMC 19.50.030(F)). NSBMC 19.70.050(F) says, "Development shall not significantly interfere with traditional activities at cultural or historic sites identified in the Coastal Management Program." These provisions give the NSB authority to protect cultural and historic resources and current subsistence uses of these sites.

In addition, North Slope mitigation measures require the lessee to conduct an inventory of prehistoric, historic, and archaeological sites within the area affected by an activity. The inventory must include consideration of literature provided by the NSB, nearby communities, Native organizations, and local residents; documentation of oral history regarding prehistoric and historic uses of such sites; evidence of consultation with the Alaska Heritage Resources Survey and the National Register of Historic Places; and site surveys. The inventory must also include a detailed analysis of the effects that might result from the activity. A cultural resources survey and inventory was conducted in the project area to identify any prehistoric, historic, or archaeological sites. Results of the surveys were submitted to the DNR State

Historic Preservation Officer (SHPO) and on December 9, 2014, the SHPO issued a finding of no historic properties affected for the winter exploration program.

## **F. Mitigation Measure Compliance and Exceptions**

All Plan applicants must complete a mitigation measure analysis demonstrating that each mitigation measure is satisfied or inapplicable to its proposed Plan, or that the applicant is seeking an exception. The North Slope mitigation measures allow for the Division to grant an exception if the applicant shows that compliance with the measure is not practicable or that the applicant will undertake an equal or better alternative to satisfy the intent of the mitigation measure.

Repsol completed the mitigation measure analysis for the North Slope areawide mitigation measures and seeks exceptions to the mitigation measures discussed below. Aside from these exceptions, Repsol's mitigation measure analysis shows that the Plan complies with the applicable mitigation measures.

Repsol seeks an exception to the following mitigation measures:

### **North Slope Mitigation Measure: A.1.c:**

*To the extent practicable, the siting of facilities will be prohibited within 500 feet of all fish-bearing streams and waterbodies and 1,500 feet from all current surface drinking water sources. Additionally, to the extent practicable, the siting of facilities will be prohibited within one-half mile of the banks of the main channel of the Colville, Canning, Sagavanirktok, Kavik, Shaviovik, Kadleroshilik, Echooka, Ivishak, Kuparuk, Toolik, Anaktuvuk and Chandler Rivers. Facilities may be sited within these buffers if the lessee demonstrates to the satisfaction of the Director, in consultation with ADF&G, that site locations outside these buffers are not practicable or that a location inside the buffer is environmentally preferred. Road, utility, and pipeline crossings must be consolidated and aligned perpendicular or near perpendicular to watercourses.*

Repsol provided the request and explanation below for the exception:

Some drill sites are located within 500 feet from the closest fishbearing water body. Qugruk No. 301 is located approximately 180 feet from two water bodies, between the Colville River and Lake L9272; Qugruk No. 8 is located 37 feet east of a small lake. Other facilities are located 500 feet or more from fish bearing water bodies. Several facilities are located within 1,500 feet from the Colville River including Qugruk No. 101 (950 feet); Qugruk No. 301 (180 feet); Qugruk No. 801 (745 feet); Camp Pad 1A (600 feet); and Camp Pad 2 (0.1 to 0.3 miles from Colville River).

Proposed operations are temporary and will be removed prior to tundra closing. No permanent facilities will be constructed as part of this exploration drilling program. Drill sites were sited to avoid water bodies, to the extent practicable, while still meeting geologic targets.

Repsol anticipates crossing a number of streams using ice roads. All stream crossings are aligned perpendicular to the stream and to the extent practicable have been located in areas that ground naturally to avoid impacts to overwintering fish. All stream crossings will be permitted by ADF&G.

The intent of this measure is to protect waterbodies, drinking water, and fish habitats from contamination from a fuel or hazardous substance spill or leak, and to reduce habitat loss through erosion or other disturbances from facility construction and placement. Due to the short length of the exploration drilling season, it is necessary for Repsol to place their facilities in these locations in order to reach the intended drilling target. In addition, exploration programs are temporary in nature, with no permanent infrastructure, and conducted in the winter when most water bodies are frozen and/or protected by snow cover. Thus the risk to fish habitats, waterbodies and drinking water is reduced. Repsol's proposed fuel storage within secondary containment minimizes the risk of contamination to nearby water sources. These fuel storage containers provide added protection not otherwise required by this mitigation measure, which focuses on proximity to water sources rather than the form of storage to address risk of contamination.

The Division finds that Repsol has shown rationale that equally satisfies the intent of this mitigation measure. Therefore, the Division grants an exception to this mitigation measure to allow for Repsol's proposed alternative as set forth in the Plan. This exception does not apply to activities that Repsol may propose in future or amended plans of operations. Should Repsol see promising results from this exploration well and determine that development is feasible in this area, the location of any proposed permanent facilities would be re-evaluated at that time and sited accordingly to minimize future potential impacts of a long-term development site.

**North Slope Mitigation Measure: A.4.e:**

*Vehicle refueling shall not occur within the annual floodplain, except as addressed and approved in the plan of operations. This measure does not apply to water-borne vessels.*

Repsol provided the request and explanation below for the exception:

All of the proposed drilling locations are located in the Colville River floodplain and refueling in the floodplain cannot be avoided. Refueling within the Colville River floodplain will be limited to drill and camp pads and will be conducted in accordance with procedures included in the C-Plan.

The intent of this measure is to protect the floodplain from fuel leaks or spills. Again, due to the short length of the exploration drilling season, it is expected that refueling will occur in the annual flood plain due to the location of the drill sites. Exploration programs are temporary in nature and conducted in the winter when most water bodies are frozen and/or protected by snow cover. The C-Plan provides protections against the risk of spills that otherwise would not apply under the mitigation measure. Thus,

even though Repsol may refuel inside the floodplain, the C-Plan includes measures to avoid and minimize damage from refueling spills.

The Division finds that Repsol has shown rationale that equally satisfies the intent of this mitigation measure. Therefore, the Division grants an exception to this mitigation measure to allow for Repsol's proposed alternative as set forth in the Plan. This exception does not apply to activities that Repsol may propose in future or amended plans of operations. Should permanent facilities be proposed in the future, the location of refueling stations will be re-evaluated at that time and sited accordingly to minimize future potential impacts of a long-term development site.

## **VI. CONSIDERATION OF LEASE PLAN OF OPERATIONS REQUIREMENTS UNDER 11 AAC 83.158 (c-d) and 11 AAC 83.160**

### **A. Full Payment of Damages to the Surface Owner 11 AAC 83.158(c)**

The State does not own the surface estate for the proposed drill sites. Repsol has confirmed that the land owner was contacted and an agreement reached. Thus Repsol has provided for full payment of damages prior to starting operations (11 AAC 83.158(c)). In addition, Repsol continues to maintain liability under the terms of their lease.

### **B. Plan Sufficiency 11 AAC 83.158(d)**

A proposed plan must include statements, maps, or drawings setting forth (1) the sequence and schedule of operations; (2) the projected use requirements directly associated with the proposed operations; (3) plans for rehabilitation; (4) a description of operating procedures to prevent or minimize adverse effects on natural resources and concurrent uses of the area (11 AAC 83.158(d)).

The information contained in Repsol's proposed Plan, summarized above in section IV. Proposed Operations, satisfies the requirements for a plan under 11 AAC 83.158(d) and provide the Director with sufficient information available at this time to determine the surface use requirements and impacts directly associated with the proposed operations.

## **VII. CONSULTATION WITH OTHER GOVERNMENT ENTITIES**

In reviewing the proposed Plan, the Division considered the fact that Repsol may require approvals from different Agencies for other elements of its project. Although mentioned in the Plan and above, these aspects of the project are not operations being approved by this decision and the Division offers no opinion on whether an agency should or should not approve these activities. The Division did, however, consider all potential exploration activities when considering the exploration phase of Repsol's project.

In addition to reviewing the approvals required by different Agencies, as they relate to this decision, 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 October 2, 2014 for comment on the Plan: National Oceanic Atmospheric Administration; U.S. Army Corps of Engineers; NSB; ADF&G; ADEC; and DNR: State Pipeline Coordinator's Office (SPCO), DMLW, Office of History and Archaeology (OHA), Office of Project Management and Permitting (OPMP), and the Division of Oil and Gas. The comment deadline was 4:30 pm Alaska time on October 17, 2014. Comments were received from ADEC, DNR DMLW, DNR OHA, and the NSB Mayor's Office. Agency comments are summarized in Appendix A. The Plan was then publicly noticed.

## **VIII. PUBLIC NOTICE**

Public notice of the Plan and opportunity to comment was published in the Alaska Dispatch News on November 5, 2014 and the Arctic Sounder on November 13, 2014 with a deadline for comments on December 3, 2014 at 4:30 pm Alaska time. Additionally, a copy of the notice was posted on DNR's web site; faxes of the public notice were sent to the Deadhorse, Barrow, and Nuiqsut post offices; and hard copies of the notice were mailed to the City of Barrow, the City of Nuiqsut, Kuukpik Corporation, and Jim and Teena Helmericks. No public comments were received.

## **IX. CONDITIONS OF APPROVAL**

Having considered the proposed project, the Division approves the Plan as amended and modified by this decision and subject to the Conditions of Approval listed below:

To protect the State's interest, the Division finds that it is necessary to amend the Plan to incorporate the following Conditions of Approval:

1. The applicant 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 approval by the applicant, its contractors, subcontractors and their employees.
2. The applicant shall inform and ensure compliance with any and all conditions of this approval by its employees, agents and contractors, including subcontractors at any level.
3. Amendments and modifications to this approval require advance notice and must be approved in writing by the DNR.
4. The Commissioner of the DNR may require that an authorized representative be on-site during any operations conducted under this approval. This stipulation is required to ensure that the Divisions of Oil and Gas and Mining, Land and Water meet their statutory responsibilities for monitoring activities taking place on state-owned lands.
5. Repsol will provide the Division with the exact well locations when they submit their Permit to Drill application to the Alaska Oil and Gas Conservation Commission

(AOGCC.). The well locations will be identified by Township, Range and Section and include the Decimal Degrees in NAD 83.

6. A status report for the activities conducted under this approval must be filed with this office on May 1 and November 1 each year, from the date this approval is issued and until a final completion report is filed with the Division. If a lessee requests an assignment, a status report must also be submitted during the assignment process. Failure to file in a timely manner may result in revocation of this approval.
  - a. Each status report shall include a statement describing, and map(s) depicting, all operations actually conducted on the leased area as of the date the report is prepared including the location, design and completion status of well sites, material sites, water supplies, solid waste lines, buildings, roads, utilities, airstrips, and all other facilities and equipment installed.
  - b. Upon completion of operations, the applicant will submit a completion report that will include all information required of a status report described in (a) above, as well as a statement indicating the date of operations completion, any noncompliance with the terms of this plan approval of which a reasonable lessee would have knowledge of, clean-up activities conducted, the method of debris disposal, and a narrative description of known incidents of surface damage.
7. Notification. The applicant shall notify the DNR of all spills that must be reported under 18 AAC 75.300 under the timelines of 18 AAC 75.300. All fires and explosions must be reported to DNR immediately. The DNR 24 hour spill report number is (907) 451-2678; the fax number is (907) 451-2751. The ADEC oil spill report number is (800) 478-9300. DNR and ADEC shall be supplied with all follow-up incident reports.

## **X. FINDINGS AND DECISION**

Having considered the specific activities proposed, the best interest finding and associated supplements for the lease sale area within which the project is located, and the foregoing discussion of issues and conditions of approval, the Division makes the following findings:

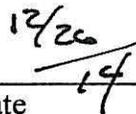
1. The Plan provides sufficient information, based on reasonably available data, for the Division to determine the surface use requirements and impacts directly associated with the proposed operations.
2. The Plan includes statements, maps, or drawings setting forth the sequence and schedule of operations, projected use requirements, a rehabilitation plan, and a description of operating procedures designed to prevent or minimize adverse effects.
3. All oil and gas activities conducted under oil and gas leases are subject to numerous local, state and federal laws and regulations with which Repsol is expected to comply.
4. Repsol has demonstrated that the Plan complies with applicable mitigation measures, aside from measures A.1.c and A.4.e.

5. Repsol has demonstrated that the Plan proposes alternatives to mitigation measures A.1.c and A.4.e. that are equal or better alternatives to satisfy the intent of these mitigation measures.
6. The Plan protects the State's interest, including the State's interest in maximizing economic and physical recovery of oil and gas resources, assessing oil and gas resources while minimizing adverse impacts from exploration, and the utilization, development, and conservation of natural resources for the maximum benefit of the people. The Plan incorporates amendments to protect both the public and State interests. The types of activities and plans of operation that the Division anticipates Repsol might propose throughout the exploration phase should similarly protect these interests.

Based upon the Plan, supporting information provided by the applicant and the Division's review, determination of applicable statutes and regulations, consultation with other Agencies, relevant entities and individuals, public comment, and the above findings related to that Plan, the Division hereby approves the Plan and entry into the exploration phase.



William C. Barron, Director  
Division of Oil and Gas



Date

### **Appeal**

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](mailto:dnr.appeals@alaska.gov). This decision takes effect immediately. 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

Enclosures: Figures 1-7  
Appendix A: Agency Review Comments and Response

Ecc: Teresa Imm, ASRC  
Michelle Turner, SLR Consulting  
Rhoda Ahmaogak, Gordon Brower, Thomas Brower III, Maria Esparza, John Adams; NSB  
Henry Brooks, Jeanne Proulx, Alexander Wait, Melissa Head, Sean Willison, Brian Jackson;  
DMLW  
Jack Winters, Marla Carter, Michael Daigneault, William Morris; ADF&G  
Jodi Delgado-Plikat; SPCO

Fathima Siddeek, dec.water.oilandgas@alaska.gov; ADEC  
regpagemaster@usace.army.mil; USACE  
hcd.anchorage@noaa.gov; NOAA  
Kim Kruse, Nathaniel Emery, Amy Karn, Paul Blanche, Conor Williamson, Jeanne  
Frazier; DOG

## **APPENDIX A      Agency Review Comments**

### **Alaska DNR, Division of Mining, Land and Water, October 8, 2014**

“DNR/DMLW has reviewed the proposed 2014-2015 winter exploration program submitted by Repsol. DNR/DMLW has no objection to the work.

“We have issued off-road travel and ice road construction and use Land Use Permits to the applicant in support of the exploration program. Although not fully permitted at this time, we are currently working with Repsol on securing permitting for camp and storage activities at the Brooks Range Petroleum Mustang Pad.

“DNR/DMLW has no objection to the waivers requested for mitigation measures A.1.c and A.4.e.”

#### **Division Response:**

Comments noted

### **Alaska DNR, Office of History and Archaeology, October 16, 2014**

“I don’t believe our office has yet received or been given an opportunity to comment on a report of the cultural resource investigations conducted for the subject project. Can you please check with Repsol about whether they submitted their cultural resource report to us or to the NSB IHLC for review?”

“We do not believe this requirement has yet been satisfied, specifically noted at:

“A.6.a. Mitigation measure is satisfied. Archaeological and cultural resource surveys were conducted in the project area to identify any prehistoric, historic, or archaeological sites. As part of the survey, Traditional Land Use Inventory (TLUI) data was obtained from NSB Inupiat Heritage and Language Center (IHLC) and data was obtained from the Alaska Heritage Resources Survey from ADNRS, State Historic Preservation Office (SHPO). As part of stakeholder engagement, local residents will be consulted about the presence of historic or cultural resources in the project area. Results of archaeological surveys, including potential impacts, will be submitted to ADNRS-SHPO and NSB as part of the 2014-2015 exploration drilling program authorization process.”

#### **Division Response:**

Comments noted and forwarded to applicant on 10/16/2014. Repsol submitted a request for cultural clearance to OHA on October 22, 2014. OHA issued a finding of no historic properties affected on December 9, 2014.

#### **Repsol Response, October 16, 2014**

“...this will be going in next week. We have been waiting on Rick’s report. This area basically has already been cleared the past two years, we have added a few areas down by Q 8.

**Alaska Department of Environmental Conservation, October 17, 2014**

“Thank you for the opportunity to comment on the Repsol E&P USA Inc., 2014-2015 Winter Drilling Program Plan of Operations (POO). The Department of Environmental Conservation, Wastewater Discharge Authorization Program (WDAP) has reviewed the POO and believes the applicant may not be aware of general permit (GP) AKG331000 – Facilities Related to Oil and Gas Extraction (North Slope GP). This permit authorizes certain discharges within the coverage area, the North Slope Borough, that may pertain to proposed activities in the POO. This comment primarily concerns the discharges from Secondary Containment (Discharge 008) and Gravel Pit Dewatering (Discharge 003). The applicant is expected to obtain authorization and monitor discharges of accumulated rain or snowmelt water from secondary containment areas. In addition, certain mine sites that have not been rehabilitated per Alaska Department of Fish and Game require coverage under AKG331000 when dewatered for gravel extraction or for use in constructing ice roads and pads. For example, on November 22, 2013, WDAP issued authorization AKG331126 – Repsol E&P USA, Mine Site E. The applicant must obtain coverage for other similar mine sites listed in the POO similar to AKG331126.

“Lastly, the applicant should review the North Slope GP to ensure for coverage for other potential discharges including, but may not be limited to, Mobile Spill Response (Discharge 007).”

**Division Response:**

Comments noted and forwarded to applicant on 10/17/2014.

**Repsol Response, October 17, 2014:**

“Repsol is only planning on using water from Mine Site F and Mine Site D. We will submit NOIs to ADEC under AKG331000 later this month for these two water sources.

“Repsol does not discharge rainwater/snowmelt from secondary containment to the tundra. It is collected and disposed of offsite (at a disposal facility).

“We will review the North Slope GP to determine if coverage is required under the GP for other potential discharges.”

**North Slope Borough Mayor’s Office**

The NSB Mayor’s Office provided two letters to the Division, one on October 16, 2014 and a follow up letter on November 5, 2014. Both letters express concerns regarding spills, well control, facility setbacks from waterbodies, subsistence access, water withdrawals, and fish mold. The Division is consolidating the comments in both letters below, by topic to reduce repetition.

Repsol provided a response to the Division on October 27, 2014 for the comments submitted on October 16, 2014. Where applicable, Repsol’s responses are noted.

## Spill Concerns

**Comment 1 (10/6/2014):** “Repsol's Plan of Operations incorporates the Oil Spill Discharge and Contingency Plan (Spill Plan) approved in January 2012 and valid until January 2017, subject to amendment identifying the proposed 2014-2015 drill sites not listed in 2012. Reliance on that Spill Plan raises certain questions in light of Repsol's spills in 2012 and 2013, especially given the waiver which the company now seeks from lease sale mitigation measure A.1.c.”

Two former spill incidents “...raise a number of concerns with respect to the current application for approval of Repsol's proposed 2014-2015 Drilling Program. First and foremost, it seems unreasonable to grant a waiver from waterbody protection buffers and allow drilling as close as 37 feet from a small lake and 180 feet from the Colville River given the acknowledged risks associated with drilling into gas-laden formations in the area and the areal extent of the recent spills.”

**Repsol Response:** “Repsol has chosen the temporary ice pad surface locations in order to reach potential oil/gas reservoirs with the least complex path possible, with vertical or near vertical well bores when possible, or with the lowest well bore deviation angle that is possible to reach the reservoir. In the Colville River area, the majority of the surface area is covered by lakes, rivers, streams, or other areas that do not facilitate the construction of ice pads to support drilling operations. In general, the surface areas that can facilitate the construction of an ice pad may be in close proximity to these same lakes, rivers, and streams. With the short winter-only exploration season, it is prudent to make the well bore as “short” and least complex as possible, to be able to reach and evaluate the target reservoir (longer/extended reach and/or more complex well bores can take significantly more time to drill and evaluate than there are days available for winter exploration). Additionally, the exploratory drilling rigs are not capable of drilling extended reach wells in most instances. If a development program is sanctioned in the future, the timing constraint of winter only exploration will be removed by operating from a gravel pad, and an appropriately sized drilling rig will be utilized that is capable of drilling the long extended reach wells required for the development of the reservoir.

“As noted in the Mitigation Measure Analysis, the operations are temporary and will be concluded and facilities removed prior to tundra closing. The drill sites have been located to meet geologic targets while avoiding waterbodies, to the extent practicable. Q-301 is essentially the same location as Q-3 from the 2013 exploration effort. Other well pads have been located at similar proximity to water bodies in Repsol’s exploration efforts. The discharge history in the ODPCP lists the six spills of petroleum greater than 55 gallons that have occurred in this timeframe. Rapid response and recovery resulted in no impact to the water bodies as the spills occurred during the winter.”

**Comment 2 (11/5/2014):** “The bar for receiving a waiver from established mitigation measures should be high, and the applicant should have the burden of proof to offer specific justification for its request. Our concern is that Repsol’s Plan of Operation provides little detail in support of its requested waiver of Mitigation Measure A.1.c...

“We... appreciate the desire of the company to maximize the length of its winter drilling season by drilling shorter distances, but believe that greater detail should be provided. Specifically, Repsol’s Exploration Plan should explain the differences in projected drilling time between the pad locations sought and pad locations that meet the distances specified by the mitigation measure. It would also be helpful to provide anticipated drilling times for pad locations at intermediate distances from water bodies that would better satisfy the intent of the measure.

“In short, there is not enough detail or explanation in the proposal to adequately evaluate the request for a waiver at each of the locations. We ask that Repsol provide adequate detail so that we may properly evaluate the Exploration Plan.”

**Division Response to Comments 1 and 2:** The Division appreciates the spill concerns expressed by the NSB. While spills will remain a concern for all oil and gas projects, as the NSB noted, Repsol has an approved Oil Spill Discharge and Contingency Plan (ODPCP) in effect until January 2017. Review, approval, and administration of the ODPCP are under the authority of ADEC. The Division recommends that future concerns about the ODPCP be addressed to ADEC for consideration.

Repsol indicated to the Division that, due to the reservoir geology, the drill sites cannot be located further from waterbodies than what is proposed in the Plan. Because geologic, geophysical, and engineering data are confidential under 11 AAC 82.810 the Division is not able to provide specific information regarding the challenges of the drilling distances in this area.

The Division also agrees with Repsol’s statement that, “...exploratory drilling rigs are not capable of drilling extended reach wells in most instances. If a development program is sanctioned in the future, the timing constraint of winter only exploration will be removed by operating from a gravel pad, and an appropriately sized drilling rig will be utilized that is capable of drilling the long extended reach wells required for the development of the reservoir.”

Because exploration projects are temporary in nature with a short drilling season, based on the information provided to the Division, we support the waiver of Mitigation Measure A.1.c for this project. If a development program is proposed in the future, this mitigation measure will be re-evaluated against the proposed development plan.

**Comment 3 (10/6/2014):** “Second, the Spill Plan contains a seasonal drilling restriction requiring that all drilling operations into hydrocarbon-bearing formations must be completed by April 24

of each drilling season. The well that suffered the blowout in February 2012 was not deemed under control for a month. We ask that Repsol and the State justify how well control could be achieved and environmental harm could be avoided before spring breakup if a blowout would occur on or just prior to April 24 should increasingly common severe weather again compromise an effective spill response effort.”

**Repsol Response:** “ADEC regulations do not require the operator to plan for the ‘worst case’ or ‘severe’ environmental conditions. The ODPCP provides 15 days to control the well, as required by 18 AAC 75.425(e)(1)(l) under ‘typical winter conditions’ as required by 18 AAC 75.425(e)(1)(l)(iii).

“Repsol is not aware of the source cited that the well that suffered the blowout was not deemed under control for a month. The well flowed for +/- 18 hours, and had completely stopped all flow signs/bubbling in less than 36 hours and clean-up crews started work in less than 48 hours after the initial incident.”

**Comment 4 (11/5/2014):** “Repsol responds to our request... by simply citing applicable regulations requiring well control within 15 days under typical weather conditions. This response begs the question what the company and the state would consider ‘typical’...

“...we believe that regulations and mitigation measures should be looked at as a unified protective regime. In other words, if operations are allowed to proceed closer to water bodies of water than under Mitigation Measure A.1.c, the operator should undertake greater precautions to ensure no harm is done to bodies of water. Repsol should explain what additional measures will be taken to ensure a level of protection against adjacent water bodies and the tundra comparable to the protections in place under the distances described in A.1.c.”

**Division Response to Comments 3 and 4:** The Division echoes our previous comments regarding ODPCP authority and the mitigation measure waiver. Well control and response is regulated by ADEC and AOGCC, who also issues the permit to drill. The Division recommends that future concerns about the ODPCP or well control be addressed to ADEC and/or the AOGCC for consideration.

Because exploration projects are temporary in nature with a short drilling season and based on the confidential geologic, geophysical and engineering information provided to the Division, we support the waiver of Mitigation Measure A.1.c for this project.

#### Subsistence and Access Concerns

**Comment 5 (10/6/2014):** “Repsol states that Mitigation Measure A.3.b is satisfied and that "traditional and customary access to subsistence areas" will be maintained, ‘unless reasonable alternative access is provided to subsistence users.’ Furthermore, Repsol’s mitigation measure analysis table for Mitigation Measures A.3.b and A.5.b states: ‘Repsol is requesting a 100 ft

safety buffer zone around ice roads and ice pads. Traditional and customary access to subsistence areas will not be interfered with by Repsol.’ However, Section 3 of Repsol’s Plan of Operation proposes a one-mile safety buffer (not 100’) prohibiting hunting in the vicinity of Repsol’s ice roads, pads, and support facilities. While NSB understands the need for a safety buffer near drilling facilities, a one-mile hunting prohibition along either side of a 40 mile long set of ice roads proposed by Repsol, will prohibit traditional and customary access a very large subsistence use area.

“First, the NSB recommends that Repsol clarify the apparent inconsistency in safety buffer distance listed in the Plan of Operations (one-mile) versus the Mitigation Measure Analysis Table (100’). If the 100’ distance is correct, the Plan of Operations should be updated to replace the one-mile distance with 100’.

**Repsol Response:** “The Plan has been revised to reflect that Repsol is requesting a 100-foot safety buffer zone around ice roads and ice pads. Repsol’s safety standards do not allow for firearms to be discharged this close to oil and gas operations.”

**Division Response:** Clarification by Repsol noted. Revised Plan received October 23, 2014.

**Comment 6 (10/6/2014):** “...Section 3 of Repsol’s Plan of Operation proposes to prohibit public access to its ice roads; however, will allow Nuiqsut resident access once the road has been completed and is approved for travel by Repsol management. The NSB recommends access be expanded to include any NSB resident. For example, residents traveling overwinter to Barrow, might opt to access a portion of Repsol’s ice roads.”

**Repsol Response:** “The SAA with Kuukpik Corporation only authorized access to Kuukpik land to Kuukpik shareholders, their families, and permanent Nuiqsut residents to the extent authorized by Kuukpik. Repsol does not have the authority to extend ice road access.

**Division Response:** Ice road construction and use activity on state land is authorized through DNR DMLW, who issued an amendment to LAS 28269 on October 3, 2014 for the ice road activities proposed for Repsol’s 2014-2015 exploration program. Through consultation with DMLW, the following statements were provided in a 10/22/2014 email:

- “We do not believe that ‘reasonable access’ necessarily equates to open access to the ice road system. As defined in Mitigation Measure A.3.b, ‘reasonable access’ is access using means generally available to subsistence users. Neither off-road travel in a truck nor ice road availability would meet this definition.
- “We believe that both parties have legitimate concerns. Local residents should be allowed reasonable access to subsistence harvest lands. Industry should be

allowed to establish minimum safety buffers around certain infrastructure. We support industry working with local municipalities to develop measures that both provide for the safety of workers and the public, as well as allowing for subsistence access.

- “We support Repsol’s plan to prohibit access to all parties until it has been determined that the given ice road corridor has been cleared by the appropriate personnel as construction is complete and ice road is open for access.”

In consideration of Repsol’s SAA with the Kuukpik Corporation and DMLW’s comments and their authority over ice road construction and use, the Division suggests that the NSB’s concerns regarding public access should be addressed to the Kuukpik Corporation and the DMLW.

**Comment 7 (10/6/2014):** “In asserting that Mitigation Measure A.3 .a. is satisfied, Repsol explains that through a variety of mechanisms, the company does, and will continue to, engage with potentially affected subsistence users to prevent conflicts with subsistence activities. The assertion of compliance concludes with the statement that ‘Records of all concerns expressed by subsistence hunters during Repsol operations will be maintained.’ The NSB asks and expects that beyond recording such concerns, Repsol will relay those concerns in a timely manner to the appropriate permitting agencies, including ADNR and the NSB, along with detailed explanations of the manner in which all concerns are to be addressed.”

**Repsol Response:** “Records of all concerns expressed by subsistence hunters during Repsol operations, including actions taken by Repsol to address these concerns will be maintained by Repsol and will be relayed to the NSB and ADNR, DOG in a timely manner. Repsol also provides ADNR and NSB end of the season closeout reports of the season’s activities.”

**Division Response:** NSB comments and Repsol’s response are noted.

**Comment 8 (10/6/2014):** “In addition, the plan does not list specific mitigation agreed upon to minimize impacts on Native Allotments and subsistence use areas during the stakeholder engagement process. The NSB recommends Repsol’s Plan of Operation list the specific agreed upon mitigation it will to ensure Native Allotments and subsistence use impacts are minimized during its 2014-2015 Winter Exploration Drilling Program.”

**Repsol Response:** “Repsol’s 2014-2015 winter exploration activities will not impact Native Allotments. Repsol has met with Kuukpik Corporation, the Kuukpikmuit Subsistence Oversight Panel (KSOP), Native Village, and the city of Nuiqsut to discuss the winter program.”

**Division Response:** NSB comments and Repsol’s response are noted.

## Water Withdrawal and Fish Mold Concerns

**Comment 9 (10/6/2014):** “Since ‘up to an estimated 175 million gallons of fresh water is needed for the construction and maintenance ... ’, and given that fish mold has been found in the Nuiqsut area for a second year in a row now and is of great concern to residents of that community, it should be a requirement that each separate water withdrawal be examined for the presence of this mold. The NSB Department of Wildlife Management can provide the genetic sequence of the identified mold. This monitoring should not be an undue burden since ‘screening and frequent inspections of water intake structures for water withdrawal for fish-bearing water bodies’... is already to occur.”

**Comment 10 (10/6/2014):** “In addition, while ‘ ... mitigation measure A.1.c prohibits facilities within 500 feet of fishbearing water bodies and 1500 feet of the Colville River, one potential drillsite would be 37 feet from a small lake, another would be within 180 feet of the Colville, and others also well within the 1500 feet of the Colville.’ Regardless of whether they are 500 or 37 feet away, these water resources should also be monitored for the presence of mold, presence of mold on fish, and dead or moribund fish throughout the entire period of operation.”

**Repsol Response to Comments 9 and 10:** Water withdrawal from fish-bearing waters is permitted by ADNR & ADF&G and the water testing requirements per those permits are followed by Repsol.

**Comment 11 (10/6/2014):** “Furthermore, The NSB requests that Repsol work with the NSB Department of Wildlife Management to ensure water withdrawal locations are optimized, and withdrawals are minimized from sensitive fish habit.”

**Repsol Response:** “Water withdrawal from fish-bearing waters is permitted by ADNR and ADF&G and for authorized amounts only. Both ADNR and ADF&G permits have specific stipulations and requirements we have to follow to withdraw from the water resources.”

**Comment 12:** “Nuiqsut residents have been troubled by the new appearance of *Saprolegnia* mold on certain community harvested fish... Our request is simply that Repsol collect samples of water withdrawals to help determine the presence of mold. Should the mold problem persist, it may be beneficial for all concerned parties to have each of the companies operating in the Colville Delta to work with DNR, the Borough, and the other agencies to identify the baselines and trends in water quality as much to rule out possible causes of changes as to assign responsibility. Water sampling/testing in the area should be included in the standards associated with Colville Delta activity.”

**Division Response to Comments 9-12:** State authority for water withdrawal from fish bearing waters is through DNR DMLW Water Section and ADF&G. DNR DMLW Water Section issued TWUA A2014-115 and TWUA A2014- 116 on September 26,

2014; TWUA A 2014-117 on October 13, 2014; and TWUA A2014-146 and TWUA A2014-147 on November 25, 2014 for water withdrawal to support the Repsol's exploration drilling program. In addition, ADF&G issued Fish Habitat Permits FH14-III-0224 through FH14-III-0240, effective October 6, 2014 through June 1, 2019, for water withdrawal from 17 fish bearing lakes in support of construction activities for Repsol's exploration drilling program. As stated by Repsol, both agencies include stipulations for water testing and withdrawal amounts.

Regarding the fish mold concerns expressed by the NSB, the Division consulted with ADF&G and received the following feedback in a 10/22/2014 email:

- "...Saprolegnia fungi are found worldwide in fresh water, and all freshwater fish species are susceptible to saprolegniasis. Outbreaks of saprolegniasis occur primarily after a minor injury to the fish (e.g. seal bite, gill net injury) and when environmental quality is suboptimal (e.g. thermal regime). Furthermore, the stress of spawning can lower the body's defenses and leave them vulnerable to infection. Fish infected with saprolegnia were documented on the North Slope 33 years ago. Alaska fish pathology records have documented whitefish infected with saprolegnia from Elim, Koyukuk, and Selawik; sheefish infected with saprolegnia from Kotzebue; chum salmon infected with saprolegnia from Noatak, Nome, and Kotzebue; Dolly Varden infected with saprolegnia from the Wulik River; and Arctic grayling infected with saprolegnia from Nome. Given the presence of this naturally occurring mold in nearly all freshwaters worldwide, we do not believe that requiring testing for this mold is needed.

"We understand the concerns of the NSB, however it is highly unlikely that the water withdrawal can be related to the Saprolegnia outbreaks observed in the fishery. While periodic outbreaks of this fungus pose an interesting research question, a rigorous experimental design would be necessary to start revealing some answers for concerned subsistence fishermen. We are willing to have discussions with industry and NSB representatives to help determine how best to proceed if pursuit of this research is deemed worthy of funding by any interested parties."

The Division considered the NSB's request and the feedback provided by the ADF&G. Based on ADF&G's experience and knowledge, no additional water sampling/testing is required as part of the Plan. The Division recommends that future NSB concerns about fish mold be addressed to ADF&G and the DMLW Water Resources Section.

**Figure 1 Repsol 2014-2015 Ice Road and Exploration Option 1**

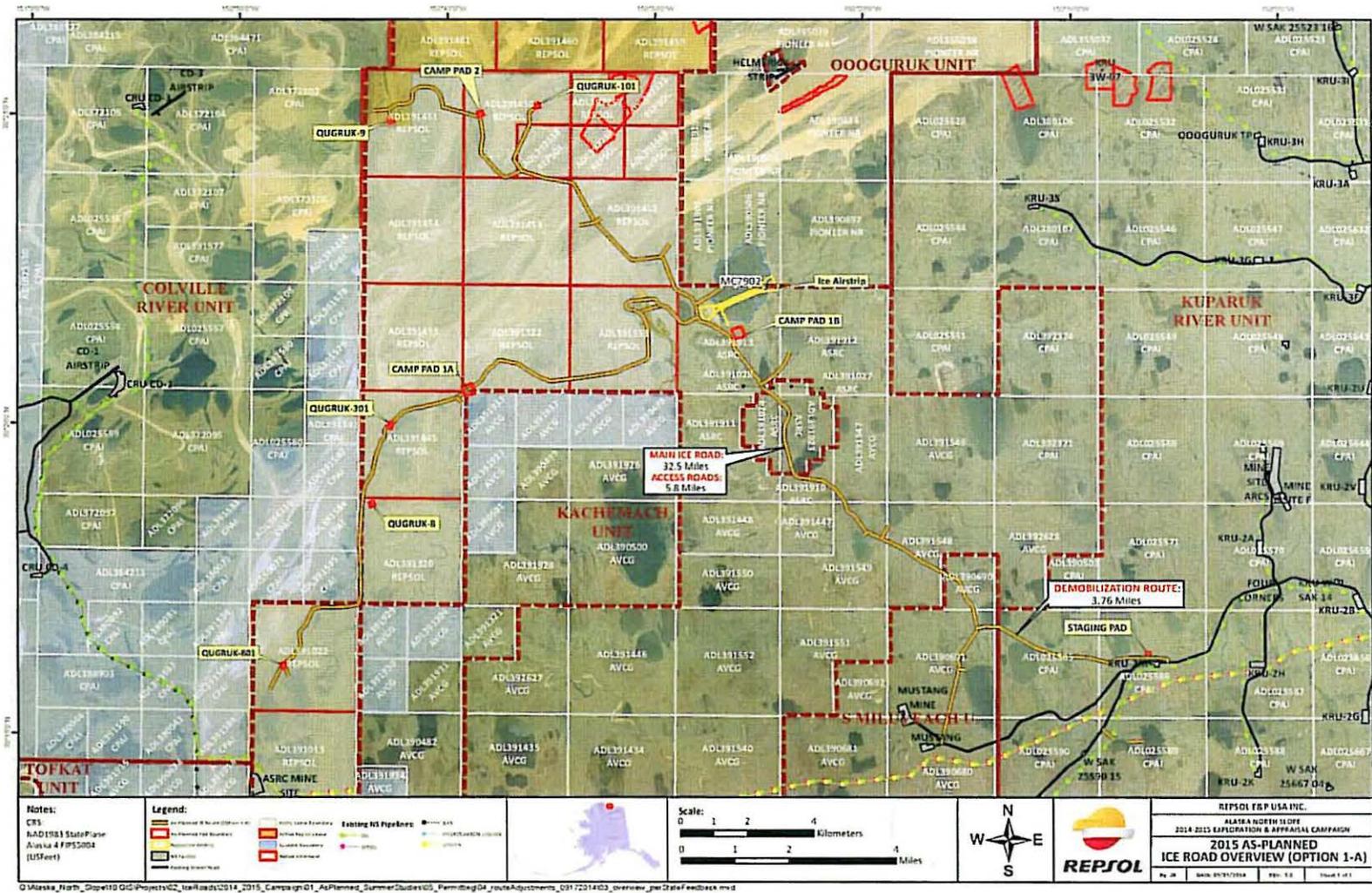


Figure 2 Repsol 2014-2015 Ice Road and Exploration Option 2

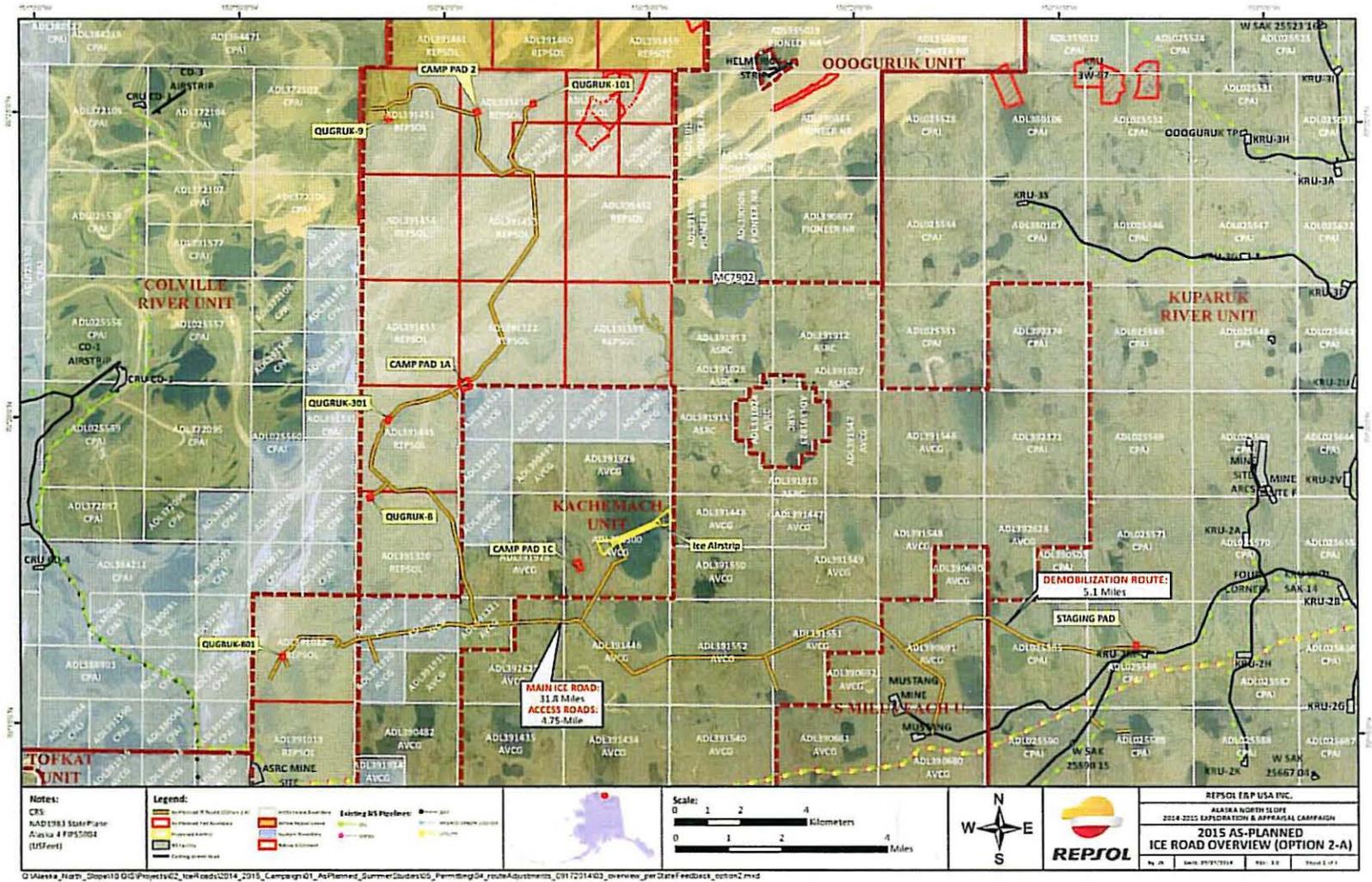


Figure 3 Qugruk No. 101 Drill Site Pad Layout

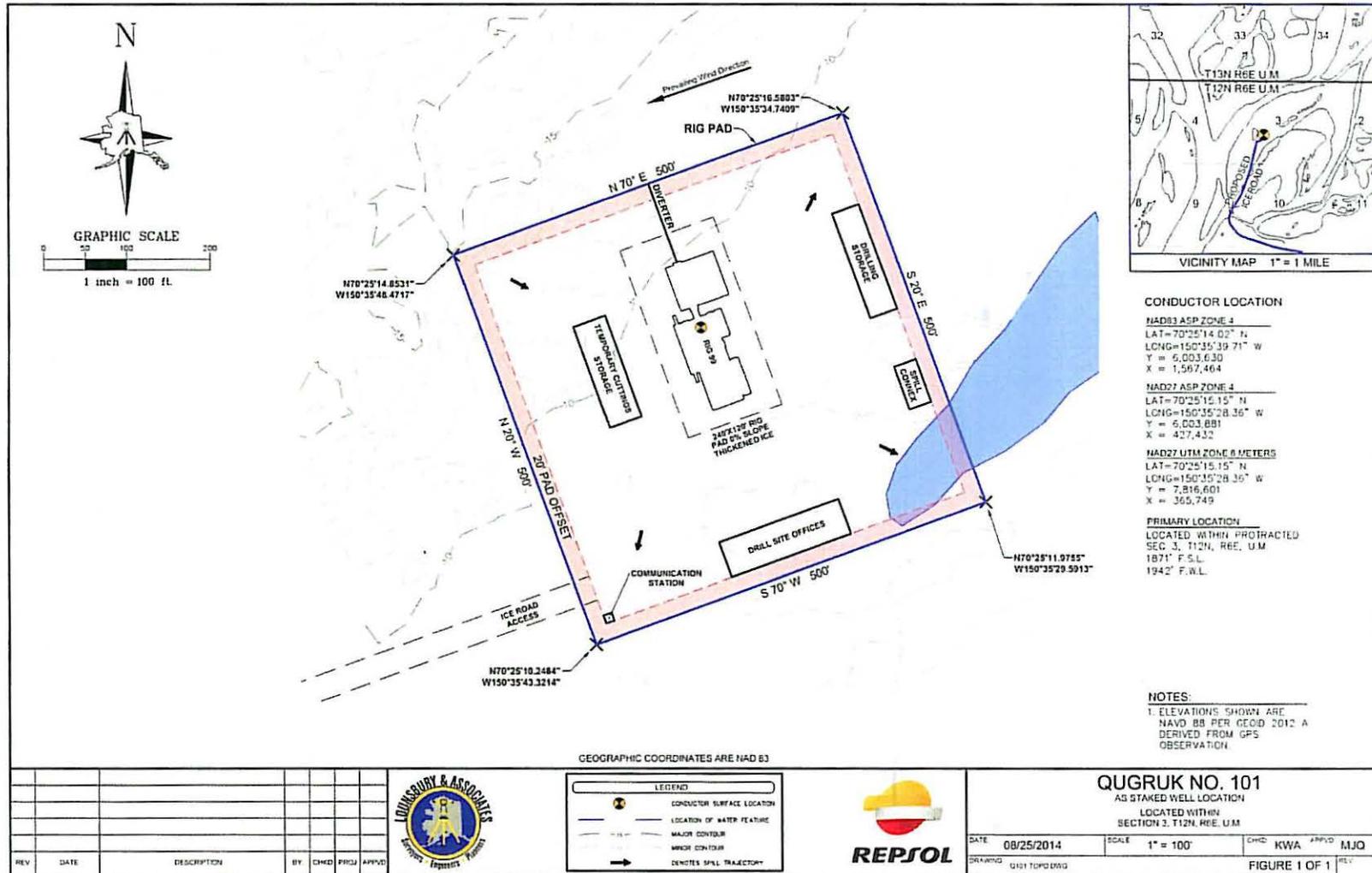


Figure 4 Qugruk No. 301 Drill Site Pad Layout

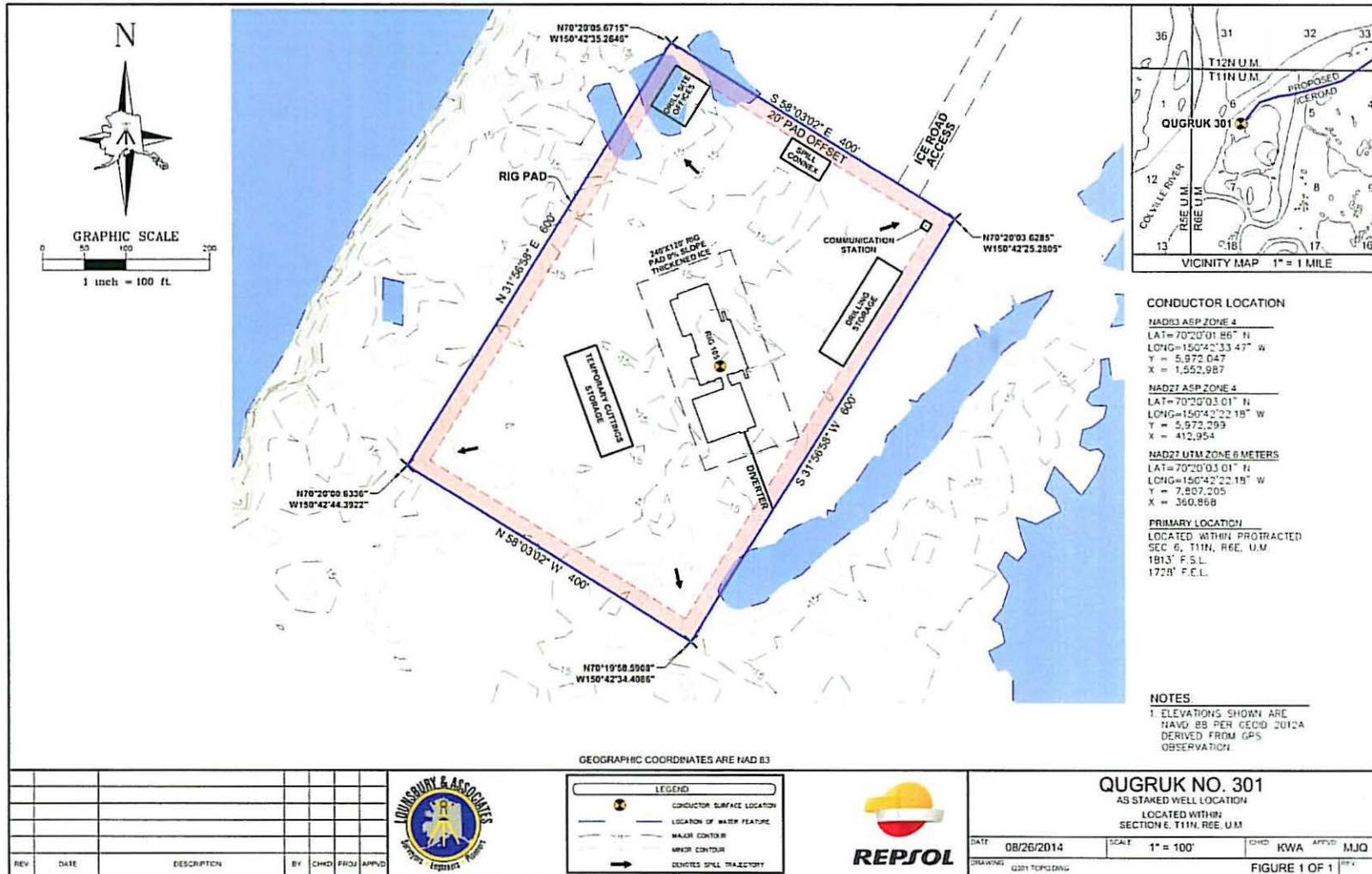


Figure 5 Qugruk No. 8 Drill Site Pad Layout

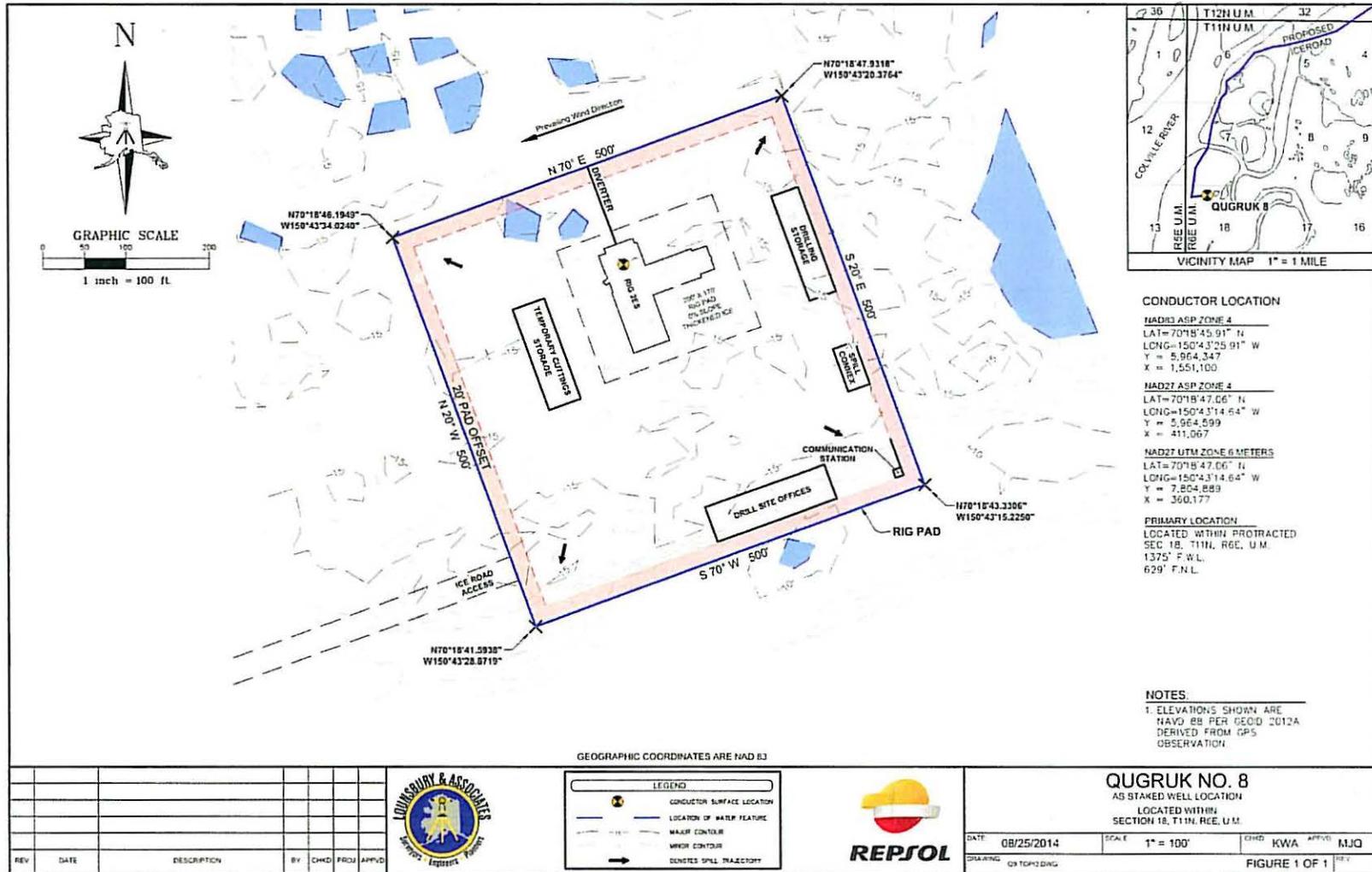


Figure 6 Qugruk No. 801 Drill Site Pad Layout

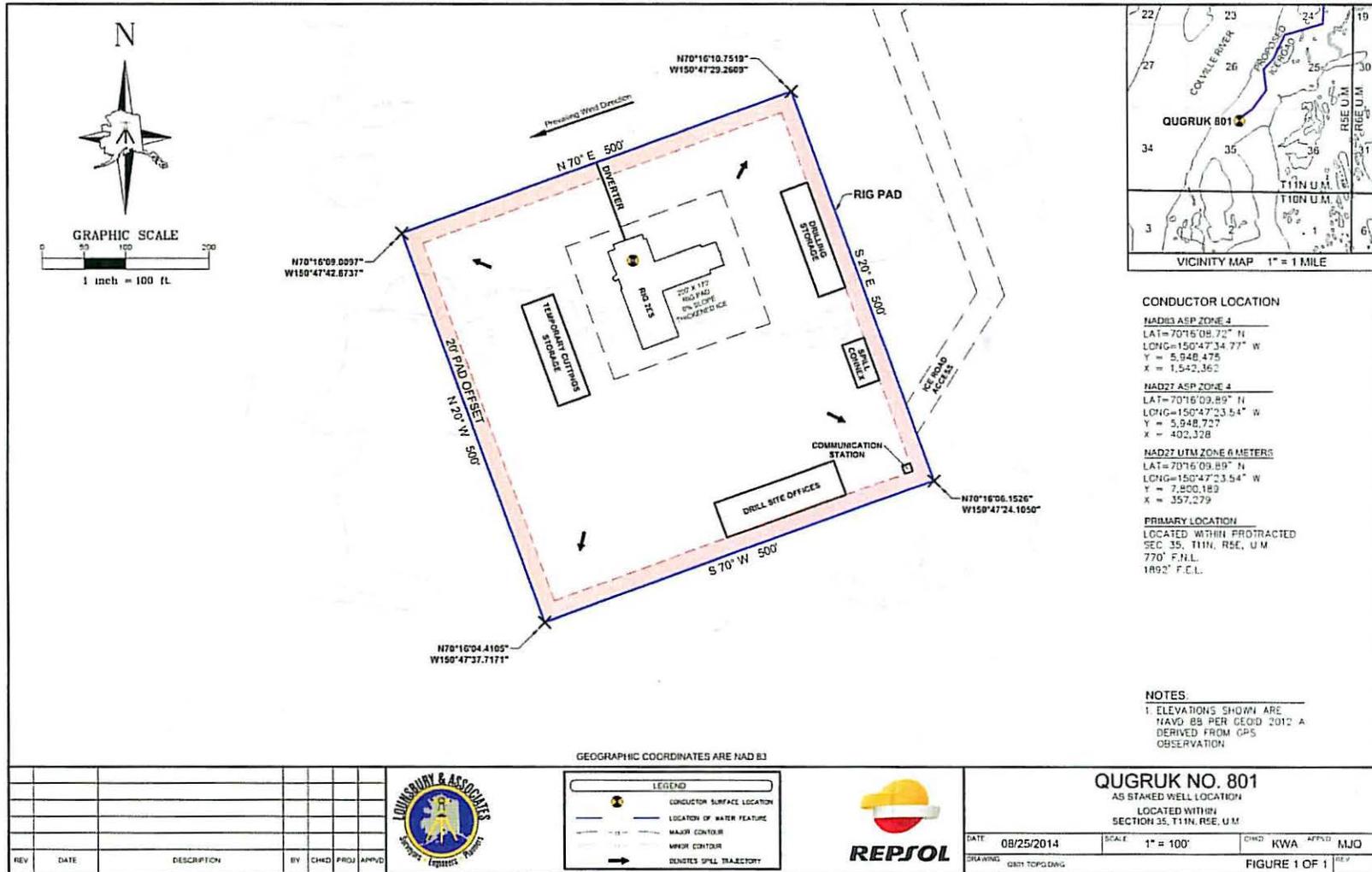


Figure 7 Qugruk No. 9 Drill Site Pad Layout

