

State of Alaska
Department of Natural Resources
Division of Mining, Land and Water
Northern Regional Office

Preliminary Finding and Decision

ADL 416074 Designated Material Site—Mine Site E Expansion
ADL 420862 Material Sale Contract

Proposed Action

Hilcorp Alaska, LLC (Hilcorp), has applied to the Department of Natural Resources (DNR), Division of Mining, Land and Water (DMLW), Northern Regional Office (NRO) to purchase 500,000 cubic yards (cy) of material from a designated material site located within the Milne Point Unit (MPU) on the North Slope, approximately 2 miles east of the Oliktok Road, which is commonly referred to as Mine Site E, also known as Designated Material Site ADL 416074. Hilcorp requests the purchase of this material to support upcoming projects at its MPU, including pad expansions and new pad development. The requested term of the material sale is 5 years. Hilcorp also requests to expand the boundary of Mine Site E with two new gravel extraction cells. Cell 5 is located on the north side of the mine site and to the east of Cell 4A, adding 16.6 acres. Cell 6 is to the east side of the mine site and to the east of Cell 1, adding 50.5 acres (see Attachment A).

DNR proposes to approve the expansion and amend the boundaries and size of the designated site which will allow for subsequent issuance of material sale contracts under AS 38.05.550-565, including a 5-year material sale contract to Hilcorp from this site for 500,000 cy.

This document serves as a preliminary State's best interest finding regarding the designation of the material site with expanded boundaries.

Scope of Review and Proposed Finding

The scope of this Preliminary Finding and Decision (PD) is to determine whether it is appropriate to designate the expanded area as a material site and what, if any, additional operating requirement should be implemented specific to the expanded site. The scope is based on the statutes, regulations and other facts contained in case files ADLs 416074 and 420862 and the body of this decision.

Authority

The file is being adjudicated pursuant Alaska Statutes AS 38.05.035(e) (written decision for a best interest finding), AS 38.05.550-565 (disposal of materials), AS 38.05.945 (notice), AS 27.19 (reclamation), Alaska Administrative Code 11 AAC 71 (timber and material sale procedures), and 11 AAC 97 (mining reclamation). The Director, DMLW, is authorized by AS 38.05.035(a)(6) to act on behalf of the State in this matter. The Director has subsequently delegated his authority under AS 38.05.035(b)(1) and Department Order 3 to the Regional Manager, NRO.

Administrative Record

The administrative record for this case is comprised of material sale file ADL 420862 and designated material site file ADL 416074.

Location and Legal Description

Location: approximately 2 miles east of the Oliktok Road, approximately 5 miles southeast of Oliktok Point, and 2 miles south of Simpson Lagoon within the Milne Point Unit on the North Slope, USGS Topographic Map 1:63,360, Beechey Point (B-5), as shown on Attachment A.

Legal Description: That portion within the S1/2 Section 24, Township 13 North, Range 9 East, Umiat Meridian, currently containing approximately 157.0 acres, more or less. The proposed Cell 6 is within the SE1/4 Section 19, Township 13 North, Range 10 East, Umiat Meridian.

Borough/Municipality: The site is located within the North Slope Borough. No borough lands are impacted.

Regional/Village Corp: Arctic Slope Regional Corporation (ASRC) is the regional corporation. No corporation lands are impacted.

Adjacent Landowner: The material site is surrounded by state land.

Title

The State received title to U013N009E24 under Patent 50-91-0136 under General Grant 1302 on January 29, 1991. The State received title to U013N010E19 under Patent 50-91-0136 under General Grant 1304 on January 29, 1991.

Third Party Interests

No encumbrances or third party interests exist for the authorization area that would prevent the issuance of this authorization.

This site is an active, existing material site used by many operators. Current material sale contracts at Mine Site E include the following:

ADL 420036 to Alaska Frontier Constructors (AFC), which expires on 07-08-2019,
ADL420182 to Nanuq, Inc. (Nanuq), which expires on 09-10-2019,
ADL 420186 to BP Exploration (Alaska) Inc. (BPBX), which expires on 08-24-2020,
ADL 420284 to Caelus Natural Resources Alaska, LLC (Caelus), which expires on 12-02-2019, and
ADL 420329 to ConococPhillips Alaska, Inc. (CPAI), which expires on 11-10-2019.

Eni Petroleum Exploration Co. Inc. (Eni) has a permit to conduct erosion repair and tundra restoration at Mine Site E (Cell 4) under LAS 29827.

CPAI has a permit authorizing use of Mine Site E (Cell 1) for shooting range under LAS 29969.

Mine Site E is used as a water source for oil and gas operations in the area, and a number of temporary water use permits are issued from Mine Site E, including CPAI (TWUP A2014-40,

TWUA A2016-55), Caelus (TWUA A2015-28), Hilcorp (TWUA A2014-125, TWUA A2016-111), Eni (TWUP A2012-186), and Armstrong (TWUP A2013-170).

Existing oil and gas leases issued to Hilcorp encumber the subsurface including ADL 25514 (U013N009E24) and ADL 25515 (U013N010E19).

Planning and Classification

The site is not covered under an area plan. The land is classified Resource Management, under CL 618. Material sales are allowed under this classification. This site is located within the North Slope Area Special Use Lands (ADL 50666).

Traditional Use Finding

The subject material site and area of expansion are all located within the North Slope Borough. A traditional use finding is not formally required for sites located within a borough.

Waterbodies

The Ugnuravik River is less than a half mile to the east of the existing boundary. A number of ponds also surround the mine site. Adequate berms will be required around the edges of new mine to ensure that adjacent ponds are not able to drain into the mine site and to maintain permafrost stability.

Access

Legal access is via the existing oil field road system, established under oil and gas lease operation permits held by Hilcorp and other leaseholders. Access to the oilfield area is regulated by a checkpoint in Deadhorse.

Environmental Risk

Hilcorp submitted an Environmental Risk Questionnaire with its application. There are no known environmental contaminants within the proposed material site. Other than fuels, coolant, lubricants and hydraulic fluids normally contained in a piece of equipment for its basic operation, the applicant will not generate, use, store, transport, dispose of or otherwise come in contact with any materials considered toxic or hazardous. Compliance with standard material sale contract operating requirements regarding environmental operations and procedures will minimize environmental risks.

Survey and Appraisal

A survey for this material site is not required as the site is surrounded entirely by state land and surveying the boundaries would not provide any benefit to material site management, though the State reserves the right to require a survey in the future if needed. The price for this sale will be \$3.00/cy, which is DNR's representative sales price, established per 11 AAC 71.090(c).

Deposit and Performance Guaranty

Per 11 AAC 71.045(d) a 10% deposit of the negotiated price is required prior to issuance of the contract. DNR will retain the deposit to cover administrative costs incurred in offering the material

sale, except that if the purchaser removes and pays for at least 75% of the material volume covered by the contract, the deposit may be applied, in whole or in part, to the final payment that becomes due under the contract. The deposit for this material sale will be **\$150,000**.

Per 11 AAC 71.095(b)(3) and (d), DNR requires the purchaser to provide a performance bond to guarantee performance of the terms of the contract. If the total value of the sale is \$100,000 or more, the bond amount will be at least five percent of the total value of the sale, but will not exceed \$200,000, and if the value of the sale is more than \$10,000, the bond amount will be rounded to the nearest \$1,000. The performance bond must remain in effect for the duration of the contract or until released in writing by the director. The performance bond will be **\$75,000**. The performance bond must be in place at the time of contract issuance. Since Hilcorp will be primary operator for new cells in this mine site, the performance bond will remain in place until final mine site reclamation.

Agency Comments and Public Notice

The DNR conducted an agency review from June 7 through June 21, 2017.

The following agencies were solicited for comments regarding this proposed material sale:

DNR, DMLW Water Section,
DNR Division of Oil and Gas (DOG),
DNR Division of Geological & Geophysical Surveys (DGGS)
DNR Office of Project Management and Permitting,
DNR State Historic Preservation Office,
DNR State Pipeline Coordinator's Section (SPCS),
Alaska Department of Fish and Game (ADF&G),
Alaska Department of Environmental Conservation (ADEC),
US Army Corp of Engineers (USACE), and
US Fish and Wildlife Service (USFWS).

The North Slope Borough was also provided notice, though they will receive additional notice under AS 38.05.945.

The following comments were received:

ADEC notes that the material site is not near a registered active Public Water System source. However, ADEC requests that the applicant adheres to the recommendations and requirements provided in the ADEC User's Manual of Best Management Practices (BMPs) for Gravel/Rock Extraction (Sept. 2012).

DNR response: The Manual of BMPs for Gravel/Rock Extraction will be provided to Hilcorp. It is also available at:

http://dec.alaska.gov/water/wnpspc/protection_restoration/bestmgmtpractices/Docs/GravelRockExtractionBMPManual.pdf.

ADF&G provided no objection to the expansion of the boundaries of the site or to the sale of 500,000 cubic yards of material from the site. ADF&G noted that should the site be expanded farther east of Cell 6, Phase 2, that upon site closure and rehabilitation, a connection to the Ugnuravik River at the southeast corner of the site would allow the site to flood and provide fish habitat. This rehabilitation option should be addressed as rehabilitation of the site approaches

implementation. Elevation surveys will need to be conducted prior to any stream connection to ensure the connection point is upstream of any area of potential salt water intrusion. The potential for saltwater intrusion would determine if a stream connection is a viable rehabilitation option.

DNR response: Expanding the mine site boundaries beyond is the currently proposed Cell 6 would require a future adjudication process. DNR recognizes the value of creating additional fish habitat however, connecting the mine site to the Ugnuravik River is outside of the scope of this adjudication process. DNR is documenting the comment within this Preliminary Decision so that it may be carried forward in the event that the mine site is expanded further east in the future.

No additional comments were received.

Public Notice

Pursuant to AS 38.05.945(b)(3), public notice describing this proposed action will be posted on the Alaska Online Public Notice System for 30 days. Notice will be sent to the Barrow, Nuiqsut, and Prudhoe Bay postmasters for posting in a conspicuous location for public viewing.

Pursuant to AS 38.05.945(c)(1), the North Slope Borough will be given notice for 30 days. Per 38.05.946, Hearings, the North Slope Borough will also be notified that they may hold a hearing within 30 days after receipt of the notice.

Notice will also be sent to other users of the area, including AFC, Armstrong Oil and Gas, Inc., BPXA, Caelus, CPAI, Eni, and Nanuq.

The public is invited to comment on this proposed action. Comments should be submitted to DNR, DMLW, Northern Regional Office (NRO), at 3700 Airport Way, Fairbanks, Alaska 99709. Kimberley Maher can be contacted for further information at 907-451-2737 or at kimberley.maher@alaska.gov. Additional copies of the decision and copies of the standard material sale contract may be obtained from the NRO. Interested parties have the right to comment during the public notice period and the commenters who are aggrieved by the final finding and decision will have the right to appeal it. It should be noted that in order to be able to appeal the final finding and decision, a person must provide written comments during this comment period. A copy of the final decision will be sent to any person who comments during the comment period, and will include an explanation of the appeal process.

The State is prepared to accommodate individuals with disabilities by providing auxiliary aids, services, or special modifications in order to participate in this review. Individuals who may need such assistance should contact the Department's Public Information Center in Anchorage between the hours of 10:00 am and 5:00 pm, Monday through Friday, at 907-269-8400 by telephone or by TDD at 907-269-8411.

Reclamation Plan

There are a few mining and reclamation plans on file for Mine Site E since different cells have been developed and operated by different companies. The two new proposed cells will have their own mining a reclamation plan (Attachment B), which will be specific to Cells 5 and 6.

Currently, Cells 1, 3, and 4 are fully mined out. The reclamation of Cells 3 and 4 is complete and being monitored for its efficacy. Cells 2 and 4A still are active cells, with CPAI operating Cell 2 and Caelus operating Cell 4A.

A Mining and Rehabilitation Plan (Attachment B) has been submitted, though it notes that final site configuration is dependent results from geotechnical investigations. Additionally, a permit is needed from USACE which may also impact the final site configuration. To maximize the amount of gravel removed from the site, berms between new cells and existing cells may later be required to be mined to gravel depletion, such as the area between Cell 6 and Cell 1. No mining in the new cells will take place until a mining and reclamation plan is approved by DNR.

Discussion

The first material sale from Mine Site E was issued in 1978 to Sohio AK Petroleum Co. for 6,200,000 cy from Cell 1, originally known as Ugnuravik #1 Gravel Pit. The site has been extensively used in the past, and over thirty material sale contracts have been issued from Mine Site E over the years, though many of the contracts allow for gravel extraction from multiple mine sites to CPAI, BPXA, and AFC. The proposed expansion would allow for continued use of the mine site for upcoming projects within the MPU, including new pad development and additional pad expansions for drilling new wells. Hilcorp assumed ownership and operations of the MPU on November 18, 2014.

The current Mine Site E permitted area is approximately 157 acres. Hilcorp proposes the addition of two cells to expand the permitted Material Sale Site Designation by 67.1 acres as shown on the attached figures (Attachment A). Figure 2 provides the location of the mine site and identifies the previously permitted existing pit. Cell 5 is 16.6 acres and to the east of Cell 4A. Cell 6 is to the east of Cell 1 and is approximately 50.5 acres in size. The area to be mined in Cell 5 is approximately 850 feet long and 850 feet wide. The area to be mined in Cell 6 is between 1700 feet to 2000 feet long and 1000 to 1050 feet wide. Cell 5 would produce approximately 600,000 cubic yards and Cell 6 would produce up to 2,000,000 cubic yards. Final site configuration is dependent on geotechnical investigations and gravel requirements.

A site visit was conducted to Mine Site E on June 14, 2017. Participants included representatives for Caelus, DNR, Eni, and Hilcorp. Conversation addressed previous use of the mine site, challenges in reclamation, current use, and future intentions for the mine site. During the site visit, it became apparent that berms were necessary to both the northern and eastern edge of Cell 5 to prevent seasonal ponding from draining into the cell from the tundra.

Hilcorp has requested expansion of the site to support its future pad expansion and development projects within the MPU to enable drilling of new wells. By expanding the existing material site, material extraction activities will be consolidated to an already impacted area.

If, in the future, an additional expansion is warranted to the east of Cell 6, DNR should consider a connection to the Ugnuravik River at the southeast corner of the site upon site closure and rehabilitation that would allow the site to flood and provide fish habitat, as recommended by ADF&G during agency review.

The designation of the expanded area, if deemed appropriate, will allow for the use and operation of the material site for the long-term sale and extraction of materials until closed by the DNR. Contracts for the sale of material may be issued by DNR either by negotiated, competitive, limited, or public and charitable material sale methods. Contracts issued under AS 38.05.550-565, Material Sales, will be issued at a representative sale price per cubic yard determined by the DNR Commissioner or at fair market value determined by appraisal. Some sales under AS 38.05.565, Sale or Disposal of Materials for Special Purposes, may be without cost. Contracts issued under

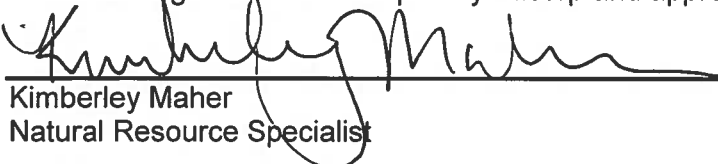
the authority of AS 38.05.810(a) Public and Charitable Use will be issued at less than fair market value.

The North Slope oil production region is an important component of the State of Alaska's economy, providing both jobs and revenue for the State. Gravel is a necessary resource for additional pad development and expansion projects in the MPU, in addition to infrastructure maintenance. Mine Site E also serves other operators and projects in the western reaches of the oil fields. Generally, DNR prefers to expand existing mine sites to consolidate impacts in areas already impacted instead of establishing new mine site in new areas. This material site expansion furthers the State's objectives to provide natural resources to support the State's economy and minimize proposed impacts.

Although DNR may continuously sell materials without further finding or notice once the site is designated, the DNR must also ensure that state land and natural resources be available for the maximum use consistent with the public interest. To that end, the DNR will continue to carefully review individual sale requests and operation plans once sites have been designated, to ensure resource consideration and multiple use issues are appropriately evaluated.

Recommendation

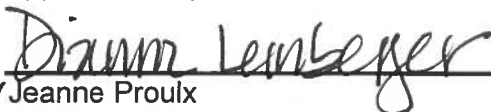
DNR has completed a review of the information provided by the applicant and an examination of the documents and associated information related to the proposed action and has completed the Preliminary Finding and Decision process at this time. This decision considers ownership of the site, the need for reasonable access to material sources in the region and the project site, agency concerns, and project-specific needs. The use of this material from this site will assist with the State's objectives to provide natural resources to support the State's economy. Further, the sale of this material would be consistent with the original decision that established the original material site. It is recommended to designate the expanded areas, including Cell 5 and Cell 6, adding a total of 67.1 acres as a material site. Operations in the site will be consistent with the mining and reclamation guidelines developed by Hilcorp and approved by DNR.


Kimberley Maher
Natural Resource Specialist

7/10/17
Date

Preliminary Decision

I find the proposed action as recommended above may be in the best interest of the State and approve it for public notice.


for Jeanne Proulx
Northern Region Manager

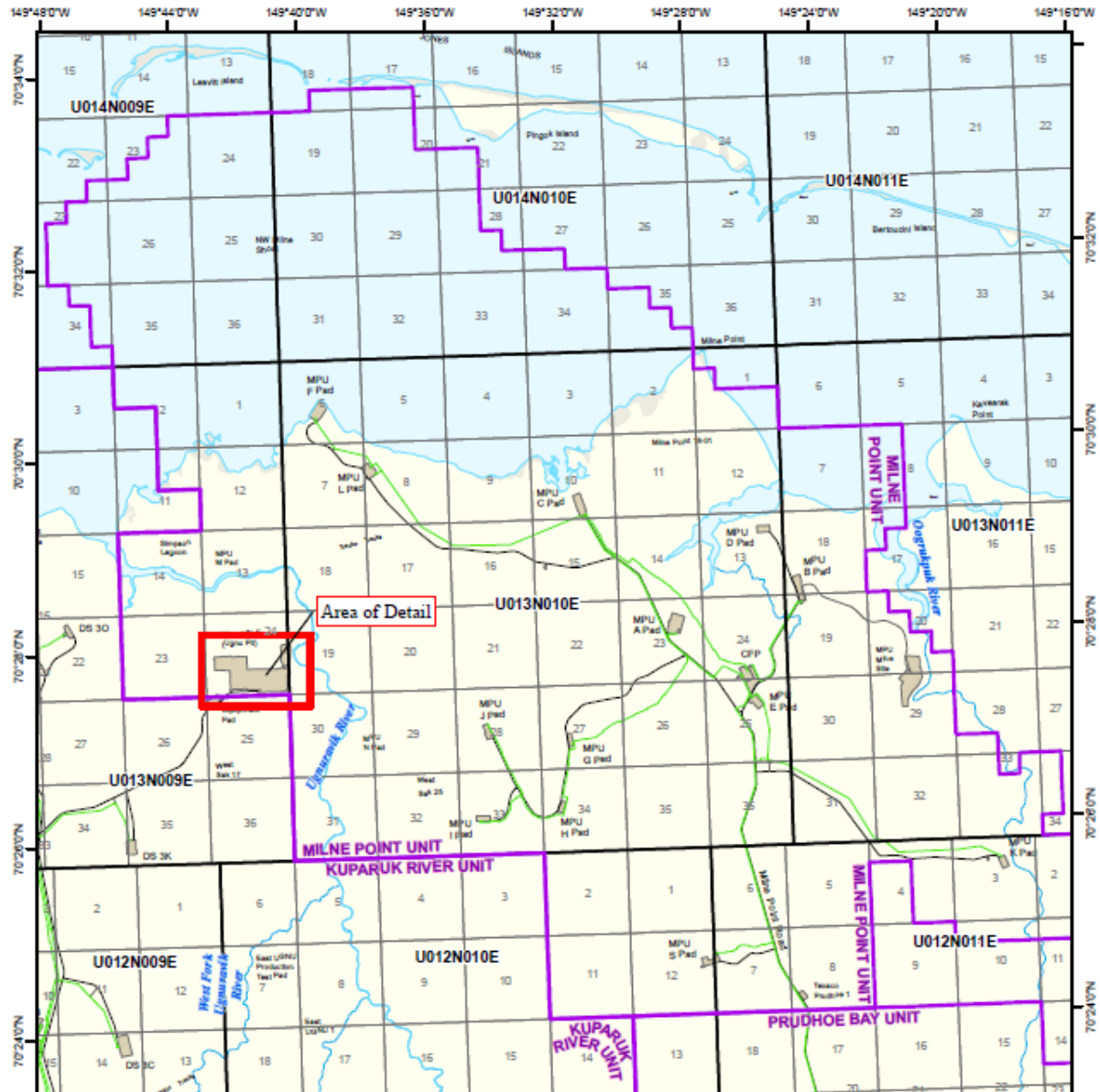
7/10/17
Date

Attachments

Attachment A—Site Maps

Attachment B—Mining and Reclamation Plan

Attachment A



Project Location:

Milne Point Unit
Ugnuravik Mine Site / Mine Site E

Latitude (Decimal Degrees): 70.461513, NAD 1983
Longitude (Decimal Degrees): -149.895938, NAD 1983

Alaska State Plane Zone 4, NAD 1983
X = 1877883.24
Y = 6018354.96

Sec. 24, T13N, R09E, Umiat Meridian

ADL#: 025514, 025515

Adjacent Property Owner: State of Alaska

Legend

- Existing Gravel Footprints
- Existing Pipeline (Above Ground)
- Oil and Gas Unit Boundary



Milne Point Unit Ugnuravik Mine Site / Mine Site E Vicinity Map - Figure 1

Alaska State Plane Zone 4 NAD 1983 (Feet)



**MINING AND REHABILITATION PLAN FOR E PIT/MINE SITE E
MILNE POINT UNIT, NORTH SLOPE BOROUGH, ALASKA**

as required by
Material Sale Contract ADL
USACE Permit No. , Beaufort Sea 342

Hilcorp Alaska, LLC
June 4, 2017

INTRODUCTION

Hilcorp Alaska (Hilcorp) submits this mining and rehabilitation plan for the operation of Mine Site E in the Milne Point Unit (MPU). The mining and rehabilitation plan was developed to fulfill requirements of the federal permit issued for the mine. The State Material Sale Contract also requires an Alaska Department of Natural Resources (ADNR) Division of Mining Land and Water (DMLW) approved Mining and Reclamation Plan.

HISTORY

Mine Site E is located approximately 2 miles east of the Oliktok Road, approximately 5 miles southeast of the Oliktok Point and 2 miles southeast of Simpson Lagoon within the Milne Point Unit (Figure 1). The Ugnuravik River is situated approximately ½ mile to the east of the mine site. Immediately west and adjacent to Mine Site E is the Ugnuravik #1 pit. The Ugnuravik #1 pit and Mine Site E are separated by a 50-foot wide dike. Mine Site E currently consists of five cells (Cells 1, 2, 3, 4 and 4A) with a combined area of approximately 157 acres. The Ugnuravik #1 pit is also known as Cell #3.

Sohio Alaska Petroleum Company (Sohio) submitted an application to the agencies on December 3, 1982 for the proposed Ugnuravik #1 Gravel Pit for the construction of an offshore Mukluk Island exploration project, and future expansion for offshore drilling and development in the Kuparuk River Unit. The U.S. Corps of Engineers (USACE) issued Department of Army (DA) Permit #4-820630 on January 31, 1983.

On June 22, 1983, the USACE issued a public notice for an expansion of the Ugnuravik #1 Gravel Pit operated by Sohio. Texaco Inc. had applied to expand the Ugnuravik #1 Pit easterly. ARCO Alaska, Inc. (AAI) first obtained the required permits to extract gravel from this site in early 1984. The permits allowed ARCO to construct an access road to the mine site and to open a new pit located 1200 feet east of the existing Ugnuravik #1 pit (also known as the Sohio mine site). The original Sohio and AAI pits constitute the west and east thirds of the present site (Cell #1, Cell #2 and Cell #3). AAI obtained the required permits for a site

expansion into the central third of the present site in early 1985. Overburden from the expansion area was placed into the east aliquot of the site.

On September 1, 1994, BP Exploration (Alaska) Inc. (BP) submitted an application to extend DA Permit No. 4-820630 for Ugnuravik #1 for a period of ten years and modify the permit to include excavation activities, which were now regulated under Section 404 of the Clean Water Act. BP planned to continue mining operations excavating within the existing pit with no footprint expansion to mine up to 700,000 cubic yards. BP included the current mine site rehabilitation plan approved by the State of Alaska for the Mine Site E area, which included Ugnuravik Pit #1 in their application. Since Mine Site E was operated by AAI, the mine site Rehabilitation Plan was prepared by AAI. The Mine Site E Rehabilitation Plan assumes that Mine Site E would not be expanded beyond the currently permitted boundaries, which were Cell #1, Cell #2 and Cell #3. If the site would be expanded or used differently, a revised rehabilitation plan would be submitted to the agencies. The Mine Site E Rehabilitation Plan also assumed that the most suitable rehabilitated use of Mine Site E would be as habitat.

A Conclusive Consistency Determination (State I.D. NO. AK9410-01OG) was issued on October 31, 1994. The USACE issued DA permit No. M-820630 on November 16, 1994 to continue mining within the existing pit with no footprint expansion. BP submitted a request for renewal on September 16, 2004 for another term of 10 years as the USACE permit was scheduled to expire on October 31, 2004. BP indicated that they were no longer mining from the Ugnuravik #1 pit, but the rehabilitation of the site was intended to occur in conjunction with ConocoPhillips (CPAI)'s Mine Site E. The rehabilitation plan for the Ugnuravik #1 Gravel mine site is included in CPAI's Mine Site E Rehabilitation Plan, approved by the State of Alaska. BP's current approved rehabilitation plan for Kubaruk Mine Site E is the mine site rehabilitation plan prepared by AAI, which was submitted with BP's previous application on September 1, 1994.

The Alaska Department of Natural Resources (ADNR) Division of Mining Land and Water (DMLW) Material Sale Contract, ADL 80500 for mining at Ugnuravik Pit #1 was granted to Sohio on January 11, 1978. Ownership was transferred from Sohio to BP in February 1978. ADL 80500 was closed on January 11, 1984. Material Sale Contract, ADL 409442 was issued July 17, 1983 and Material Sale Contract, ADL 413724 was issued November 25, 1988 for Ugnuravik Pit #1. Inactive Master Material Sale Site ADL 419307 was issued for the Ugnuravik Mine Site on November 22, 2011. Master Material Sale Site ADL 416074 for Mine Site E (containing approximately 157 acres) was issued on November 9, 2011.

On December 29, 1989, Al Ott with the Alaska Department of Fish and Game (ADF&G) commented on the Rehabilitation Plan for the Ugnuravik #1 pit. He indicated that he understood that the rehabilitation of the Ugnuravik #1 pit will be linked to plans for the adjacent Mine Site E. He recommended that AAI and BP work together on the development of a rehabilitation plan for the Ugnu/Mine Site E area.

Development and rehabilitation of Cells 3, 4, and 4A of Mine Site E were initially approved by USACE in DA permit number POA-2005-1295 for Pioneer for the Oooguruk development project. Pioneer was subsequently sold to Caelus Natural Resources Alaska, LLC (Caelus). The cells were also approved by the USACE DA Permit number POA-2005-1243 for Kerr-McGee Oil and Gas Corporation. The DA permit number POA-2005-1243 was subsequently transferred to ENI. Development plans for Mine Site E have been modified routinely since the projects began. Excavation and Rehabilitation Plans for Mine Site E – Cells 3, 4 and 4A were prepared by PND Engineers, Inc. for Caelus Natural Resources Alaska, LLC. The plans were intended to provide an update for the excavation of material from Cell 4A and the restoration of Cells 3 and 4.

The North Slope Borough's original Interim Zoning Ordinance permit for ice road construction and camp to open a new gravel pit, Ugnuravik Pit # 1 was granted to Sohio on February 2, 1983.

The Alaska Department of Environmental Conservation (ADEC) authorized discharge under the Alaska Pollutant Discharge Elimination System (APDES) for facilities related to oil and gas extraction under General Permit number AKG-33-2000 effective March 1, 2017.

2017 MINING AND REHABILITATION PLAN

This Mining and Rehabilitation Plan reflects proposed future gravel extraction operations and re-vegetation techniques consistent with proven success and other recently approved rehabilitation plans.

The mine site plan meets the following objectives:

- maximize gravel recovery at an existing site while considering habitat in order to minimize the area disturbed,
- segregate the mine site expansion from Ugnuravik River to avoid a potential breach between the mine and the river at high flow periods,
- conserve stockpiled, segregated organic overburden for use in potential site reclamation and restoration projects.

The existing gravel mine site configuration is shown on Figure 2. Figure 2 provides the location of the mine site and identifies the previously permitted existing pit. The current Mine Site E permitted area is approximately 157 acres, more or less. Hilcorp proposes an expansion to the permitted area of approximately 67.1 acres in two different cells. Final site configuration is dependent on geotechnical investigations and gravel requirements. Cell 5 is approximately 16.6 acres and to the east of Cell 4A. Cell 6 is to the east of Cell 1 and is approximately 50.5 acres in size. The approximate area of the expansion area that will be impacted by gravel mining activities is 67.1 acres. The area to be mined in Cell 5 is approximately 850 feet long and 850 feet wide. The area to be mined in Cell 6 is between

1700 feet to 2000 feet long and 1000 to 1050 feet wide. Cell 5 would produce approximately 600,000 cubic yards and Cell 6 would produce up to 2,000,000 cubic yards.

The expansion area to the east will follow approximately the 16 foot contour along its eastern boundary. Preserving this topography along the eastern boundary will provide a natural flood-prevention barrier. An overburden stockpile along the northern boundary will also provide additional protection between the mine site and the Ugnuravik River. The mining and rehabilitation plan assumes that the entire expansion area will be worked prior to final closure. The final area impacted by mining will be reduced if a lesser volume of gravel is required than is potentially extractable.

EXISTING CONDITION

The mine site is located west of Ugnuravik River, a tidally-influenced river flowing into Simpson Lagoon. The Ugnuravik has been specified as being important for the spawning, rearing, or migration of anadromous fishes as broad whitefish and least cisco. Resident fish species such as Arctic grayling also occur in this river. The mine site is located within Section 19 of Township 13 North, Range 10 East, and Section 24 of Township 13 North, Range 9 East, Umiat Meridian (see Figure 1), approximately 2 miles east of the Oliktok Road and can only be accessed in the winter by ice road from Milne Point.

The Mine Site E expansion area occupies a wetland area that is classified as Tussock Tundra and Moist Sedge-Shrub Tundra¹. The proposed Mine Site E expansion area will consist of multiple connected phases forming a single large borrow site. The final site configuration will be dependent on the geotechnical results and gravel needs. Cell 5 occupies an area that contains small ponds.

Mining will only be done in the winter from an ice road constructed across the Ugnuravik River. Lakes and adjacent areas around the mine site are used by shorebirds such as plovers, sandpipers, and phalaropes, and by waterfowl such as black brant, Canada goose, pintail, oldsquaw, king eider, and pacific loon. Most avifauna in the area are migratory and will not be affected by the mining operations in the expansion area, which will only occur in the winter months.

Use of the area by mammals is expected to be minimal in the winter. Caribou may be present during the summer, and arctic fox and small mammals such as shrews and microtines may be present in the mine site vicinity throughout the year.

Overburden material is currently stored in three areas. A rectangular overburden pile was created to the north of Cell #1. This overburden pile will be removed to within 1 foot of the

¹ Roth, J.E., K.L. Beattie, and A.F. Wells. 2009. An Ecological Land Survey in the Milne Point Area, 2008. Final Report prepared for BP Exploration (Alaska), Inc., Anchorage, AK by ABR, Inc., Fairbanks, AK. 79 pp.

existing grade and placed in Cell #1, when the site is rehabilitated. Overburden material from the surface stockpile located at Cell 4A was placed within Cell 3 to create shallow water habitat and islands within the northern portion of the cell. Cell 3 has not yet filled to expected final water surface elevation and has been periodically utilized as a water source for construction activities. All usable gravel fill has been excavated from within Cell 4 to an approximate depth of -50 feet British Petroleum Mean Sea Level (BPMSL). The perimeter side slopes within the cell were excavated at 1:1 during mine development and later constructed flatter (minimum 3H:1V) with overburden as part of Cell 4 rehabilitation activities.

All overburden material previously stockpiled on the surface of Cell 4A was removed down to the original tundra substrate. The stockpiled material was used for rehabilitation of Cell 3 and flattening of side slopes within Cell 4. Overburden material is also stockpiled on an east stockpile north of Cell #1. Upon closure of Cell #1, existing overburden will be removed to within 1 foot of the existing grade and place in Cell #1.

As some measure of flexibility is required in mining and rehabilitation, the plans and figures presented in this document are provided as guidance, and not as a precise description of final configuration. However, the outer permit boundary and size of the mine site and the re-vegetation performance standards listed in Table 1 are considered compliance requirements under the permits that regulate this project.

Permits authorizing the current mining and rehabilitation plan are listed in the “History” section of this plan.

MINING PLAN

General Information

1. The Mine Site E expansion cell will be separated from the existing Mine Site E by a dike of native soil.
2. Proposed Mine Site E Expansion to consist of multiple connected phases forming single large borrow site.
3. Cell #5 is to the east of Cell 4A and is approximately 16.6 acres. Cell 5 is estimated to produce approximately 600,000 cubic yards of gravel extraction.
4. Cell #6 is to the east of Cell #1 and is approximately 50.5 acres in size. Cell 6 is estimated to produce up to 2,000,000 cubic yards of gravel in two phases.
5. Final Site configuration will be dependent on geotechnical results and gravel needs. The estimated gravel amounts are pending geotechnical investigations. Pit depth and size will be dependent on what is actually out there. We require enough gravel for 2 to 3 pads initially, which could be adequately covered with Phase 1 and Phase 2 of Cell 6. However, Hilcorp is requesting flexibility, if in the future; more gravel is required for additional pads and future field development.
6. All pit slopes will be at 1.5:1 to maximize gravel extraction and minimize footprint.

7. Once initial phases have been mined, overburden will be placed back into the pit to reduce and buttress side slopes and limit area required for storage.
8. All slopes will be reduced to 3:1 or flatter at closure.
9. A thermal barrier berm constructed from native overburden will be placed around each phase as they are opened.
10. The attached conceptual drawing is dependent on geotechnical investigations.
11. The proposed Mine Site E Expansion (Cell 5) is to the east of Cell 4A
12. The proposed Mine Site E Expansion (Cell 6) is to the east of the existing Mine Site E as the expansion will be accessed by an ice road from the Milne Point F Pad area into the northeast corner of the Mine Site E expansion
13. Final Site configuration will be dependent on geotechnical investigations and gravel needs. Cell 6 is the shortest distance possible between the Milne Point Unit Development Projects and the Mine Site E Expansion area.
14. The proposed Mine Site E expansion must be excavated to meet the gravel needs for planned Milne Point Unit Development Projects, including R Pad Development south of F Pad and additional pad expansions required for drilling new wells to increase production within the MPU.
15. The 67.1 acre new permitted expansion boundary which includes an overburden storage area and buffer is identified in Figure 2. The overburden of peat and organic silt from the proposed excavation area will be suitable for site restoration work. Approximately 16 to 20 feet of overburden will be removed. The segregated overburden will be stockpiled to the north of the new pit expansion area (Phase I). Inorganic overburden can be used for restoration and erosion control projects.
16. The expansion will produce approximately 600,000 to 2,000,000 cubic yards of gravel obtained in standard 20-foot lifts. Gravel extracted may be stockpiled at various locations within the permitted footprint.
17. Although most of the mining will be done in the winter, we could continue mining during periods of thaw if required and, if necessary, de-water the new expansion pit.

Summer Mining Plan

1. Summer mining will consist of mining gravel vertically to a depth of between 6 and 8 feet below the existing depth.
2. Gravel will be mined below the static water elevation, if it is practical to do so and assumes continued authorization to discharge accumulated gravel mine water under the provisions of an Alaska Pollutant Discharge Elimination Systems (APDES) permit issued by the Alaska Department of Environmental Conservation. Mining below the static water table will be conducted so as to create a benched or shelved final configuration. Generally, the shelf will extend laterally for a distance of approximately 100 feet. Beyond the shelf area, mining will continue vertically until it is determined to be no longer practical for reasons of safety, gravel quality, or operational efficiency. Side slopes of the cut will be contoured to a 1:1.5 side slope as mining progresses (Fig 4).

Winter Mining Plan

1. Mining during the winter months will consist of deep mining, to a depth of approximately 40 to 60 feet MSL. A sloped access ramp will be constructed into the pit as mining progresses deeper into the pit. This deep mining will accomplish two important goals: the disturbance of surface area will be reduced through greater recovery of the natural resource gravel within a specific area and the mined material can be stockpiled within the perimeter of the expanded extraction site, if not immediately transported offsite for construction.
2. Side slopes in Mine Site E expansion during winter mining will be contoured to a 1:1.5 side slope in those areas not already contoured during the summer. Some contouring may have to be performed during the following summer season.
3. Most of the overburden removal in the new expansion area will be conducted in the winter months to avoid any potential disruption of nesting birds.
4. Mining and overburden removal would extend from the existing mine pit into the proposed new pit expansion area in Cell 5.

REHABILITATION PLAN

INTRODUCTION

This plan describes procedures to be used for rehabilitating the Mine Site E Expansion located in the Milne Point Unit on the North Slope of Alaska.

Because flexibility is needed in rehabilitation, most of this plan is provided for information purposes only, with the understanding that some changes may be needed as rehabilitation progresses. Flexibility in the rehabilitation plan allows information from this site and other rehabilitation sites to be considered in the future; however, the monitoring requirements (see Table 1) and the Performance Standards (see Table 2) should be considered compliance requirements.

Surrounding Vegetation: The vegetation surrounding the Mine Site E Expansion has a rolling to flat landscape with minimal topographic relief. The wetland habitats of the Ugnuravik River consist mostly of moist upland communities and wet meadow communities which are typical of the North Slope coastal plain. The moist upland vegetation occurs on the lowland areas that are well drained. The plant species of this vegetation type are primarily influenced by the moisture content of the soil and vary as moisture decreases from solely cottongrass to areas dominated by dwarf shrubs. The major species of the cottongrass tussock communities include: cottongrass (*Eriophorum vaginatum*), Bigelow's sedge (*Carex bielowii*) and dwarf birch (*Betula nana*). The dwarf shrub-heath communities are characterized by: dwarf birch (*Betula nana*), heather (*Cassiope tetragona*), Labrador tea (*Ledum palustre*), and netted willow (*Salix reticulata*). The wet meadow vegetation type is typical of the wetter areas with seasonally saturated soils which typically occur near the edges of ponds and streams. Depressed center polygons also typically include this plant community type. The dominant plant species of the wet meadow communities include: water sedge (*Carex aquatilis*), cottongrass (*Eriophorum* spp.), tundra grass (*Dupontia fisheri*),

Bigelow's sedge (*Carex Bigelowii*), and other sedges (*Carex* spp.), rushes (*Juncus* spp.), horsetail (*Equisetum* spp.). Other grasses, mosses, lichens, and algae are also found in this vegetation type.

Rehabilitation Approach: Areas of stockpiled overburden will have elevations similar to the naturally occurring adjacent elevations so that the natural topography of the area is preserved as closely as possible. These areas of overburden will be fertilized and monitored to achieve site conditions similar to the surrounding area.

Goals and Objectives: The goal of the Milne Point Mining and Rehabilitation Plan for the Ugnuravik Mine Site expansion is to establish productive, diverse, and self-sustaining plant communities on terrestrial areas and a diversity of wildlife habitat upon final mine site abandonment. The plan also describes the creation of shallow littoral habitat and optimization of shoreline length and diversity.

SITE PREPARATION

1. The mine site will be left intact upon abandonment for possible future purposes such as stockpiling of reclaimed gravel, material staging areas, etc. As the mine pit is naturally filled by runoff and melt water, a freshwater reservoir will develop. This will be a valuable fresh water source that will prevent other natural lakes from being drained and it will also provide bird habitat. The freshwater reservoir could remain a valuable freshwater source isolated from the Ugnuravik River.

We do not expect flooding from the Ugnuravik River due to its size and the nature of the coastal plain, but if severe flooding were to occur, overflowing the dike, breaching could be conducted to the extent practicable to allow flow through the mine-site created lake. In the event that severe flooding occurs, the goal is to construct a downstream connection that would allow flow through the mine-site created lake. As it is necessary to be time and situation specific, proposed plans for the breach will not be presented in this document.

2. The majority of the overburden placed in the original pit will be used for the construction of littoral benches on the west side. Overburden will also be utilized to create shallow littoral habitat and nesting islands along the northern and southern sides where overburden can be removed to minimize effects on surface drainage.

3. Unused overburden will be stockpiled on existing overburden piles to the west of Cell 5 and in the area to the north of Cell #1. The overburden stockpile will be graded to 3:1 or flatter. Overburden may also be placed to the north of Phase 1 and 2 of Cell #6. Overburden will be placed in the winter along the top edge of the north side of Phase 5 in the area closest to the Ugnuravik River to prevent any erosion.

4. The winter ice road will be constructed to access the northeast corner of the Mine Site E expansion leading into Phase 2 to access Phase 1 of Cell #6.

5. The final grade around the mine pit relative to final water level will be no more than 3:1 out to 5 or 6 feet of water depth.

REHABILITATION TREATMENTS

Areas excavated to tundra grade or backfilled areas may be seeded with *Puccinellia borealis*, a native grass that is short-lived and non-competitive to invasion by indigenous tundra plant species. An application of approximately 3-5 lb. /acre of *Puccinellia borealis* would be adequate (BP Exploration (Alaska), Inc. et al. 2004). *P. borealis* seed is available in limited quantities, and this seeding plan (either the species or the year of planting) may need to be revised if adequate seed is not available.

Based on past experience, applying phosphorus fertilizer will greatly benefit establishment of the seeded grass and encourage the invasion of the site by indigenous graminoids. A fertilizer application to deliver 20:20:10 NPK at 400 lbs. /acre is recommended as specified in the North Slope Plant Establishment Guidelines Table dated May 11, 2004. The year following Mine Site E expansion close-out, seed and fertilizer will be applied during the growing season, after breakup and before freeze up in autumn, when the soil surface has thawed and drained of excess moisture. The seeded grass is expected to reach maturity by the third growing season following seeding and to begin declining after four to five growing seasons, allowing natural colonizers to occupy the site.

PERFORMANCE STANDARDS

By the tenth year following gravel removal, the mine site overburden will support 10% total live vascular plant cover, excluding seed grass cultivars. At least five species of naturally colonizing plants will be present, with at least 0.2% cover by each. These performance standards, intended to lead to a stabilizing plant cover on the site while also promoting eventual replacement of seeded grasses with naturally colonizing species, apply to areas that are not ponded for more than four weeks during the growing season.

MONITORING FOR PERFORMANCE STANDARDS

Monitoring will be used to evaluate the progress of vegetation relative to performance standards. The final monitoring will establish whether the re-vegetation performance standards have been met.

REPORTING

A short letter report summarizing the qualitative assessment of previous rehabilitation work will be submitted by 1 February of the year following the site visit scheduled in Table 1. The report will be provided to State of Alaska Department of Natural Resources, State of Alaska Department of Fish and Game, North Slope Borough, U. S. Army Corp of Engineers, and the U. S. Fish and Wildlife Service.

REMEDIAL ACTION

If monitoring suggests that performance standards may not be met by year 10, additional seeding, fertilizing, and/or other planting approaches will be considered in consultation with agency representatives.

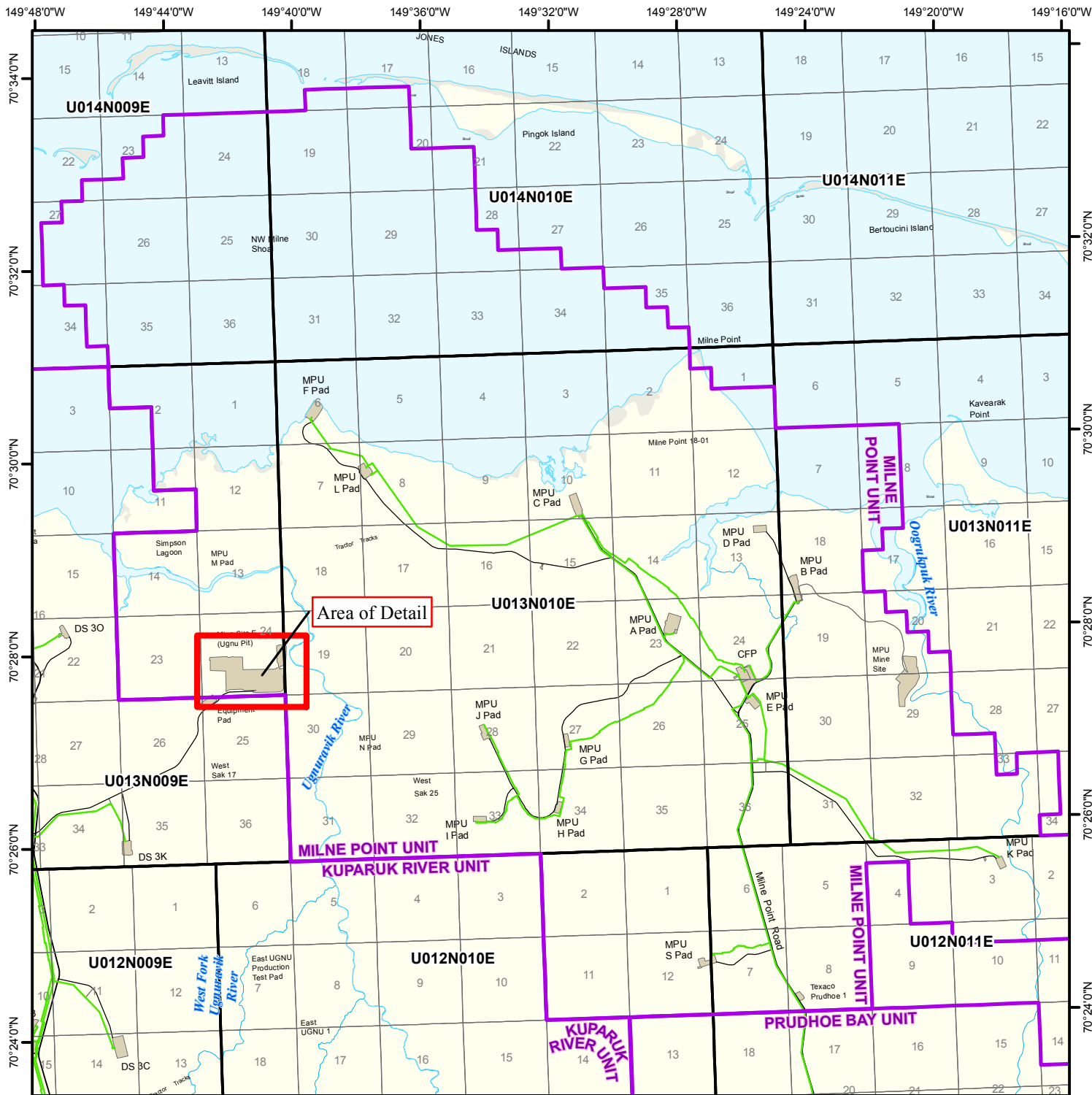
1. Table 1. Proposed schedule for application of rehabilitation treatments, monitoring, reporting.		
Year	Treatment & Monitoring	Reporting
Year 1	Sample soil and have it tested for fertility and other features	Progress report.
Year 2	Apply seed if available and fertilizer.	Progress report.
Year 6	Measure vegetation cover and species composition, and compile a species list, using a standard method. Sample soil where revegetation success appears lacking. Observe surface stability qualitatively. Measure relative elevations.	Progress report.
Year 10	Measure vegetation cover and species composition, and compile a species list, using a standard method. Observe surface stability qualitatively.	Final report.

Table 2. Goals, objectives, performance standards, and monitoring methods.	
Goals	Establish diverse and productive wetland and upland plant communities on the site similar to those of the surrounding area, thereby improving the appearance of the site and improving its suitability for some wildlife species.
Objectives	Short-term establishment of seeded grass that will not persist, allowing natural tundra plant species to invade the site over time.

Performance Standard	By year 10, 10% cover by live vascular plants, including seeded grasses, with at least 1% cover of naturally colonizing species. Species composition consisting of at least 5 naturally colonizing species with 0.2% canopy cover each, on the overburden area.
Monitoring Methods	For vegetation cover, use a standard method for measuring plant cover.

REFERENCES

- BP Exploration (Alaska), Inc, Conoco Phillips Alaska, Inc., ABR, Inc., and Lazy Mountain Research. 2004. North Slope Plant Establishment Guidelines Table. May 11, 2004. Prepared by Oasis Environmental, Inc. 10 pp.
- Kidd, J.G. and B. Streever. In preparation. Consistency of plant cover estimation using two vegetation sampling devices, Prudhoe Bay Oilfield, Alaska. Proceedings of the Arctic Science Conference, September 24-26, 2007, Anchorage, AK.



Project Location:
 Milne Point Unit
 Ugnuravik Mine Site / Mine Site E

Latitude (Decimal Degrees): 70.461513 , NAD 1983
 Longitude (Decimal Degrees): -149.695938 , NAD 1983

Alaska State Plane Zone 4, NAD 1983
 X = 1677663.24
 Y = 6018354.96

Sec. 24, T13N, R09E, Umiat Meridian

ADL#: 025514, 025515
 Adjacent Property Owner: State of Alaska

Legend

- Existing Gravel Footprints
- Existing Pipeline (Above Ground)
- Oil and Gas Unit Boundary

Alaska State Plane Zone 4 NAD 1983 (Feet)

0 1 2 Kilometers

0 1 2 Miles





NOTES:

1. NEW SITE BOUNDARIES REQUESTED AS SHOWN.
2. PIT SIZE AND LOCATION ARE CONCEPTUAL. NOT FOR CONSTRUCTION.
3. CELL 5 CONSISTS OF 16.6 ACRES AND WOULD PRODUCE APPROX. 600,000 YDS
4. CELL 6 CONSISTS OF 50.5 ACRES AND WOULD PRODUCE UP TO 2.0M YDS
5. FINAL SITE CONFIGURATION TO BE DEPENDENT ON GEOTECHNICAL RESULTS AND GRAVEL NEEDS.
6. ALL PIT SIDE SLOPES TO BE MINED AT 1.5:1 TO MAXIMIZE GRAVEL EXTRACTION AND MINIMIZE FOOTPRINT.
7. ONCE INITIAL PHASES HAVE BEEN MINED, OVERBURDEN WILL BE PLACED BACK INTO PIT TO REDUCE AND BUTTRESS SIDE SLOPES AND LIMIT AREA REQUIRED FOR STORAGE.
8. ALL SLOPES REDUCED TO 3:1 OR FLATTER AT CLOSURE.
9. A THERMAL BARRIER BERM OF NATIVE OVERBURDEN WILL BE CONSTRUCTED AROUND EACH PHASE AS THEY ARE OPENED.
10. SITE COORDINATES ARE SHOWN IN NAD83 (SPSC) AKZ4N FT



E PIT MULTI-PHASE EXPANSION PROPOSED NEW SITE BOUNDARY DESIGNATION

6/1/2017

SCALE 1"=250'

24" x 36"

REVISIONS

NO.	BY	DATE	DESCRIPTION

ADDRESS: RECON LLC, 481 W. RECON CIRCLE, PALMER AK 99645

ENGINEER: ISAAC ROWLAND, PE

CONTACT: (907) 322-5545, isaac@reconllc.net

DRAWN BY: ISAAC ROWLAND, PE

Figure 2