



BP Exploration (Alaska) Inc.  
900 East Benson Boulevard  
P.O. Box 196612  
Anchorage, Alaska 99519-6612

April 11, 2019

DOG Permitting  
Alaska Department of Natural Resources  
Division of Oil and Gas  
550 W. 7th Ave., Suite 800  
Anchorage, Alaska 99501-3577

Unit Plan of Operations Application  
Class I Waste Disposal Facility and Gravel Pad Expansion  
Prudhoe Bay Unit

DOG Permitting:

BP Exploration (Alaska) Inc. (BPXA) proposes to build a 2.58-acre gravel pad near Drill Site 4 (DS4) and the Fire Training Area in the Prudhoe Bay Unit (PBU). The gravel pad expansion is necessary to accommodate an updated Class I waste disposal facility that will replace two existing Class I waste disposal facilities: Grind and Inject (G&I) and Pad 3. The purpose of this project is to construct a gravel pad and to update the PBU Class I waste disposal facility (WDF).

In support of our request, attached is a completed Unit Plan of Operations Application. The \$750 application fee will be paid through the Public Information Center.

If you have any questions or require additional information, please contact Jennifer Collins at [Jennifer.Collins@bp.com](mailto:Jennifer.Collins@bp.com) or (907) 564-5524.

Sincerely,

DocuSigned by:  
*Amanda King*

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D25776A8BB1A4A1...  
Amanda King,  
BPXA Project Engineer

Attachments

# UNIT PLAN OF OPERATIONS APPLICATION



State of Alaska  
 Department of Natural Resources, Division of Oil & Gas  
 550 W. 7th Ave, Suite 1100, Anchorage, AK 99501-3563  
 Phone: 907-269-8800 Fax: 907-269-8943  
 Permitting Email: [dog.permitting@alaska.gov](mailto:dog.permitting@alaska.gov)



SECTION I: APPLICANT INFORMATION	
<b>1. Applicant:</b>	<b>2. Applicant Contact:</b>
Name: BP Exploration (Alaska) Inc.  Mailing Address: PO Box 196612  City: Anchorage  State: Alaska                      Zip Code: 99519  Phone: 907-564-5524      Fax: Enter Fax. Email: Jennifer.Collins@bp.com	First Name: Jennifer                      Last Name: Collins  Title: Regulations and Permitting Lead Advisor <i>Is the Mailing Address the same as Applicant's Mailing Address? If "No", please provide information below:</i> <input checked="" type="checkbox"/> Yes  Mailing Address: Enter Mailing Address.  City: Enter City.                      State: Enter State.      Zip Code: Enter Zip Code.  Phone: 907-564-5524                      Fax: Enter Fax. Email: Jennifer.Collins@bp.com
<b>3. Unit Name</b> Prudhoe Bay Unit	
<b>4. Unit Operator Contact:</b>	
<i>Is The Unit Operator Contact the same as the Applicant Contact? If "No", please provide information below:</i> <input checked="" type="checkbox"/> Yes	
First Name: Amanda                      Last Name: King                      Title: Project Engineer  Mailing Address: PO Box 196612  City: Anchorage                      State: Alaska                      Zip Code: 99519  Phone: 907-564-5737      Fax: Enter Fax.                      Email: Amanda.King@bp.com  Describe the relationship between the Unit Operator and the Applicant: The Applicant provides regulatory guidance and support for the Unit Operator.	
SECTION II: THIRD PARTY INFORMATION (Fill out this section only if you are applying for the Applicant)	SECTION III: APPLICATION DATE AND NUMBER (FOR OFFICE USE ONLY)
Third Party Company Name: Enter 3rd Party Company Name.  First Name: Enter First Name.      Last Name: Enter Last Name. Title: Enter Title. Mailing Address: Enter Mailing Address.  City: Enter City.  State: Enter State.                      Zip Code: Enter Zip Code. Phone: Enter Phone.      Fax: Enter Fax. Email: Enter Email.  Describe the affiliation to the Applicant: Describe your affiliation to the Applicant.	Application Date:          Application Number:

**SECTION IV: PROJECT INFORMATION**

<b>1. Project Name:</b>	Class I Waste Disposal Facility and Gravel Pad Expansion
<b>2. Proposed Start Date:</b>	7/10/2019
<b>3. Project Description:</b>	
Is activity discussed in the approved Plan of Development on file with the Division's Units Section? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Describe what and where: <b>See attached Project Description.</b>	

**SECTION V: LAND STATUS**

<b>1. State Mineral Estate:</b>	
Are supplemental pages for land status included in Appendix C? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Affected ADL: 028324	Date Effective: 10/1/1965
Oil And Gas Lessee(s): BPXA	Date Assigned: Enter Date.
Surface Ownership: State of Alaska	
Do you have, or anticipate having an Access Agreement: <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	
Special Use Lands: none	
Jointly Managed Lands: none	
Other Considerations: none	

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
Install gravel pad and culverts	Umiat, T11N, R15E, Section 26	Lat. 70.2769; Long. -148.2754
Install VSMs	Umiat, T11N, R15E, Section 26	Lat. 70.2769; Long. -148.2754
Install topside buildings/modules	Umiat, T11N, R15E, Section 26	Lat. 70.2769; Long. -148.2754

Affected ADL: Enter ADL.	Date Effective: Enter Date.	Date Assigned: Enter Date.
Oil And Gas Lessee(s): Click here to enter text.		
Surface Ownership: Click here to enter text.		
Do you have, or anticipate having an Access Agreement: <input type="checkbox"/> Yes <input type="checkbox"/> No		
Special Use Lands: Click here to enter text.		
Jointly Managed Lands: Click here to enter text.		
Other Considerations: Click here to enter text.		

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.

Affected ADL: Enter ADL.	Date Effective: Enter Date.	Date Assigned: Enter Date.
Oil And Gas Lessee(s): Click here to enter text.		
Surface Ownership: Click here to enter text.		
Do you have, or anticipate having an Access Agreement: <input type="checkbox"/> Yes <input type="checkbox"/> No		
Special Use Lands: Click here to enter text.		
Jointly Managed Lands: Click here to enter text.		
Other Considerations: Click here to enter text.		

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.

Affected ADL: Enter ADL. Date Effective: Enter Date. Date Assigned: Enter Date.

Oil And Gas Lessee(s): Click here to enter text.

Surface Ownership: Click here to enter text.

Do you have, or anticipate having an Access Agreement:  Yes  No

Special Use Lands: Click here to enter text.

Jointly Managed Lands: Click here to enter text.

Other Considerations: Click here to enter text.

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.

Affected ADL: Enter ADL. Date Effective: Enter Date. Date Assigned: Enter Date.

Oil And Gas Lessee(s): Click here to enter text.

Surface Ownership: Click here to enter text.

Do you have, or anticipate having an Access Agreement:  Yes  No

Special Use Lands: Click here to enter text.

Jointly Managed Lands: Click here to enter text.

Other Considerations: Click here to enter text.

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.

**2. State of Alaska Surface Lands:**

Are supplemental pages for land status included in Appendix C?  Yes  No

Oil And Gas Mineral Estate Owner: Click here to enter text.

Access Authorization(s): Click here to enter text.

Special Use Lands: Click here to enter text.

Jointly Managed Lands: Click here to enter text.

Other Considerations: Click here to enter text.

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.

Oil And Gas Mineral Estate Owner: Click here to enter text.

Access Authorization(s): Click here to enter text.

Special Use Lands: Click here to enter text.

Jointly Managed Lands: Click here to enter text.

Other Considerations: Click here to enter text.

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.

Oil And Gas Mineral Estate Owner: Click here to enter text.

Access Authorization(s): Click here to enter text.

Special Use Lands: Click here to enter text.

Jointly Managed Lands: Click here to enter text.

Other Considerations: Click here to enter text.

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.

**3. Private Lands:**

Are supplemental pages for land status included in Appendix C?  Yes  No

Oil And Gas Mineral Estate Owner: State of Alaska

Surface Ownership And Access Agreement(s): North Slope Borough; will acquire Letter of Non-Objection

Special Use Lands: none

Jointly Managed Lands: none

Other Considerations: none

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
Install gravel turnout pad	Umiat, T11N, R15E, Section 26	Lat. 70.2774; Long. -148.2761
Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.

Oil And Gas Mineral Estate Owner: Click here to enter text.

Surface Ownership And Access Agreement(s): Click here to enter text.

Special Use Lands: Click here to enter text.

Jointly Managed Lands: Click here to enter text.

Other Considerations: Click here to enter text.

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.

Oil And Gas Mineral Estate Owner: Click here to enter text.

Surface Ownership And Access Agreement(s): Click here to enter text.

Special Use Lands: Click here to enter text.

Jointly Managed Lands: Click here to enter text.

Other Considerations: Click here to enter text.

Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.
Click here to enter text.	Click here to enter text.	Click here to enter text.

**SECTION VI: BOND INFORMATION**

Bonded Company: BPXA

Type: Statewide Oil & Gas Bond Number: 6184193 Amount: \$500,000

Bonding Company: Safeco Insurance Company of America

Mailing Address: 10 S. Riverside Plaza, Suite 1650

City: Chicago State: IL Zip Code: 60606

Phone: Enter Phone. Fax: Enter Fax. Email: Enter Email.

**SECTION VII: SEQUENCE AND SCHEDULE OF OPERATIONS**

<b>Project Milestone #</b>	<b>Project Milestone</b>	<b>Proposed Start Date</b>	<b>Proposed End Date</b>
1.	Staging of project materials on pad	7/10/2019	11/30/2019
2.	Install the gravel pad and culverts	8/1/2019	10/15/2019
3.	Install VSMS	8/15/2019	11/1/2019
4.	Construct within gravel pad infrastructure - containment areas, pre-cast trench, solids storage tank, and electrical cable utilidor	9/1/2019	11/1/2019
5.	Install modular infrastructure over Containment Areas 1, 2 and 3; intall tent structure over solids storage tank	11/1/2019	11/30/2019
6.	Enter Milestone.	Enter Date.	Enter Date.
7.	Enter Milestone.	Enter Date.	Enter Date.
8.	Enter Milestone.	Enter Date.	Enter Date.
9.	Enter Milestone.	Enter Date.	Enter Date.
10.	Enter Milestone.	Enter Date.	Enter Date.

**SECTION VIII: PROJECTED USE REQUIREMENTS**

1. Describe the proposed operations, including the location and design, of **Well Sites**:

Not applicable.

2. Describe the proposed operations, including the location and design, of **Buildings**:

See the attached project description and location figures.

3. Describe the proposed operations, including the location and design, of **Fuel and Hazardous Substances**:

A 1,000 gallon diesel fuel tank will be stored in a double-walled skid, adjacent to a generator, on the south side of Containment 3A. See the attached location figures.

4. Describe the proposed operations, including the location and design, of **Solid Waste Sites**:

A buried tank, situated under the tent structure, will accept solid waste. This solid waste will later be processed to a slurry in the waste disposal facility to be injected underground. See the attached project description and location figures.

5. Describe the proposed operations, including the location and design, of **Water Supplies**:

Seawater will be piped into the waste disposal facility. The seawater line will be buried within the precast trench. See the attached project description and location figures.

6. Describe the proposed operations, including the location and design, of **Utilities**:

Electrical cables will be installed from the Transformer Platform through the electrical cable run to the ball mill (grinding facility). See the attached project description and location figures.

7. Describe the proposed operations, including the location and design, of **Material Sites**:

Not applicable.

8. Describe the proposed operations, including the location and design, of **Roads**:

Roads to the north and southwest of the proposed gravel pad will be widened to accommodate the large trucks that will access the waste disposal facility. See the attached project description and location figures.

**9. Describe the proposed operations, including the location and design, of Airstrips:**

Not applicable.

**10. Describe the proposed operations, including the location and design, of All Other Facilities and Equipment:**

See the attached project description and location figures for all facilities and equipment that will support this project.

**11. If another permit(s) is required for the above described Projected Use Requirements, provide the following information:**

Are supplemental pages for land status included in Appendix C?  Yes  No

Agency	Permit Type	Permit Number	Application Status	Projected Use Requirement(s)
USACE	Section 404 - Individual Permit	POA-2019-00131	Submitted 2/28/19 - In review	Installation of gravel on wetlands
NSB	TLUI Clearance	TBD	Submitted 4/5/19 - In review	Gravel Pad and Facility installation
NSB	Development Permit	TBD	To be submitted concurrent with this application	Enter Projected Use Requirement(s).
ADEC	Solid Waste Treatment Permit	TBD	Not yet submitted	For storage and treatment of waste
EPA	UIC Permit	AK11008-B	Being revised	For underground disposal of waste
Enter Agency.	Enter Permit Type.	Enter Permit Number.	Enter Application Status.	Enter Projected Use Requirement(s).
Enter Agency.	Enter Permit Type.	Enter Permit Number.	Enter Application Status.	Enter Projected Use Requirement(s).
Enter Agency.	Enter Permit Type.	Enter Permit Number.	Enter Application Status.	Enter Projected Use Requirement(s).
Enter Agency.	Enter Permit Type.	Enter Permit Number.	Enter Application Status.	Enter Projected Use Requirement(s).
Enter Agency.	Enter Permit Type.	Enter Permit Number.	Enter Application Status.	Enter Projected Use Requirement(s).
Enter Agency.	Enter Permit Type.	Enter Permit Number.	Enter Application Status.	Enter Projected Use Requirement(s).
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Enter Agency.	Enter Permit Type.	Enter Permit Number.	Enter Application Status.	Enter Projected Use Requirement(s).
Enter Agency.	Enter Permit Type.	Enter Permit Number.	Enter Application Status.	Enter Projected Use Requirement(s).

Enter Agency.	Enter Permit Type.	Enter Permit Number.	Enter Application Status.	Enter Projected Use Requirement(s).
<b>SECTION IX: REHABILITATION PLAN</b>				
1. Proposed Level of Infrastructure, Facilities and Equipment Removal:				
This project involves the installation of a gravel pad to support waste disposal infrastructure. All installations will be permanent for the life of the Prudhoe Bay Unit.				
2. Description of Restoration and Rehabilitation Activities for Vegetation, Habitat, Impacted Wildlife, and Other Applicable Resources:				
No restoration or rehabilitation activities are planned. Attached is a Site Restoration Statement for when this activity will occur (Appendix C).				
<b>SECTION X: OPERATING PROCEDURES DESIGNED TO MINIMIZE ADVERSE EFFECTS</b>				
Describe operating procedures designed to prevent or minimize adverse effects on other natural resources and other uses of the Unit area and adjacent areas including:				
Fish and Wildlife Habitats: There is no fish or fish habitat in the project area. The gravel pad will cover 2.58 acres of tundra within a larger industrialized area. Potential impacts to wildlife are none to negligible.				
Historic and Archeological Sites: This project will not affect historic or archaeological sites. A cultural resource survey was completed during the summer of 2019 and no sites were found. BPXA has submitted an application to the North Slope Borough for Traditional Land Use Inventory clearance. BPXA, through, consultation between the US Army Corps of Engineers and the Alaska Department of Natural Resources, Office of History and Archaeology, expects a finding of No Historic Properties Affected.				
Public Use Areas: This project will not affect public use areas.				
Other Uses: There are no known other uses in the project area.				
<b>SECTION XI: GLOSSARY OF TERMS</b>				
Term #	Term	Term Definition		
1	BPXA	BP Exploration (Alaska) Inc.		
2	NSB	North Slope Borough		
3	EPA	Environmental Protection Agency		
4	UIC	Underground Injection Control		
5	ADEC	Alaska Department of Environmental Conservation		
6	USACE	US Army Corps of Engineers		
7	Enter Term.	Enter Term Definition.		
8	Enter Term.	Enter Term Definition.		
9	Enter Term.	Enter Term Definition.		
10	Enter Term.	Enter Term Definition.		
<b>SECTION XII: CONFIDENTIALITY</b>				
The undersigned hereby requests that each page/section of this application <u>marked</u> confidential be held confidential under AS 38.05.035(a)(8).				
APPLICANT CONTACT:				
Sign here.	Enter Name.	Enter Title.	Enter Date.	
Signature	Name	Title	Date	

APPENDIX A: MAPS

Include maps here.



This map is based on U.S.G.S quad Beechey Point (B-3)  
and on the Unit Operator's Facility Maps.



**PROJECT LOCATION:**

PRUDHOE BAY UNIT - WASTE DISPOSAL FACILITY (WDF)

NAD83

LAT. = 70° 16' 36.980" / DD 70.276939

LONG. = -148° 16' 31.404" / DD -148.27539

ALASKA STATE PLANE ZONE 4, NAD83

X = 1,853,566.36 FEET

Y = 5,953,728.76 FEET

ADL 028324 SEC. 26 T11N, R15E UMIAT M.

DATUM: MEAN SEA LEVEL

PURPOSE: WDF GRAVEL PAD AND FACILITY

ADJACENT PROPERTY OWNER:

STATE OF ALASKA & NORTH SLOPE BOROUGH

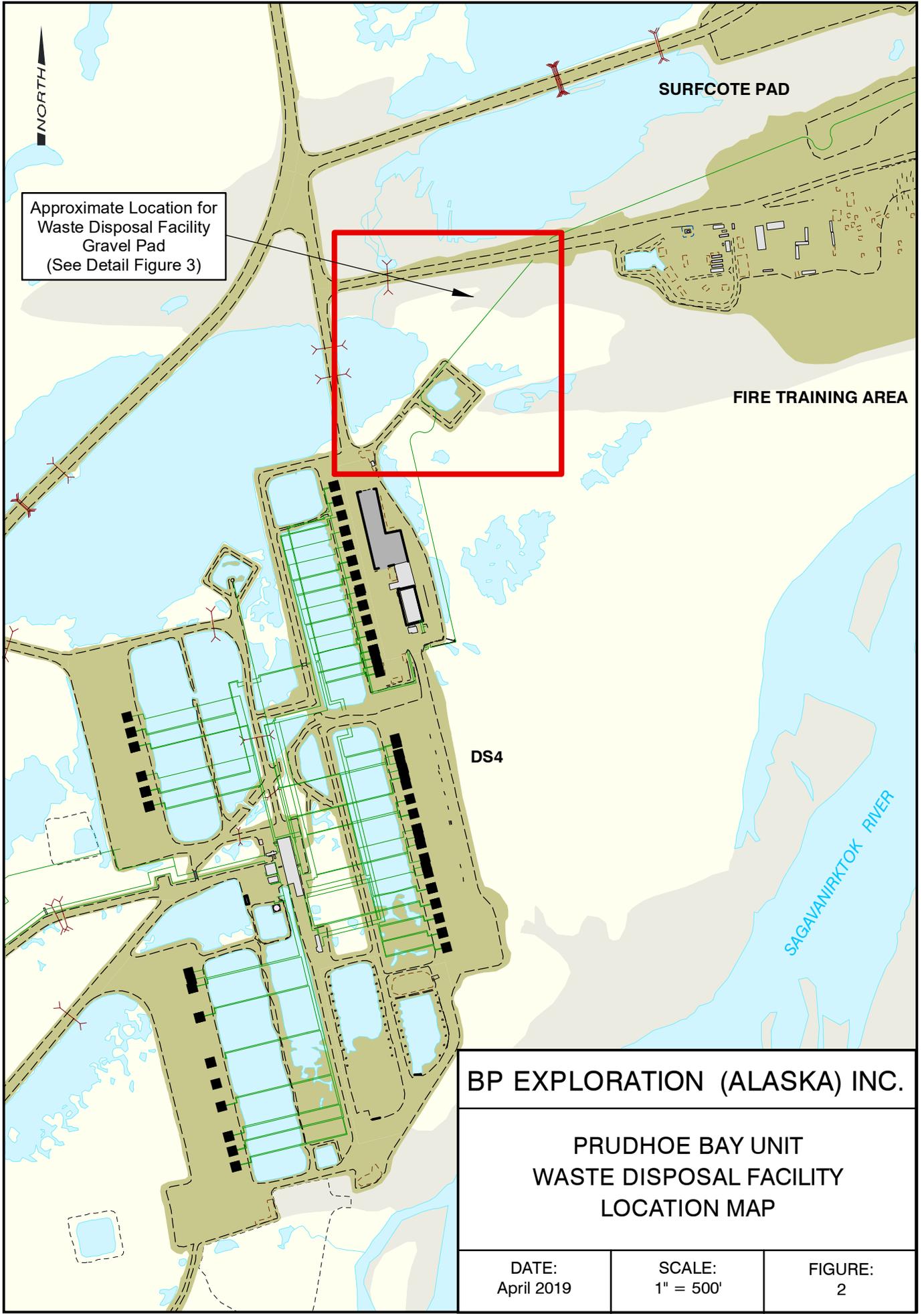
**BP EXPLORATION (ALASKA) INC.**

**PRUDHOE BAY UNIT  
WASTE DISPOSAL FACILITY  
VICINITY MAP**

DATE:  
April 2019

SCALE:  
1" = 1 Mile

FIGURE:  
1



Approximate Location for  
Waste Disposal Facility  
Gravel Pad  
(See Detail Figure 3)

SURFCOTE PAD

FIRE TRAINING AREA

DS4

SAGAVANIRKTOK RIVER

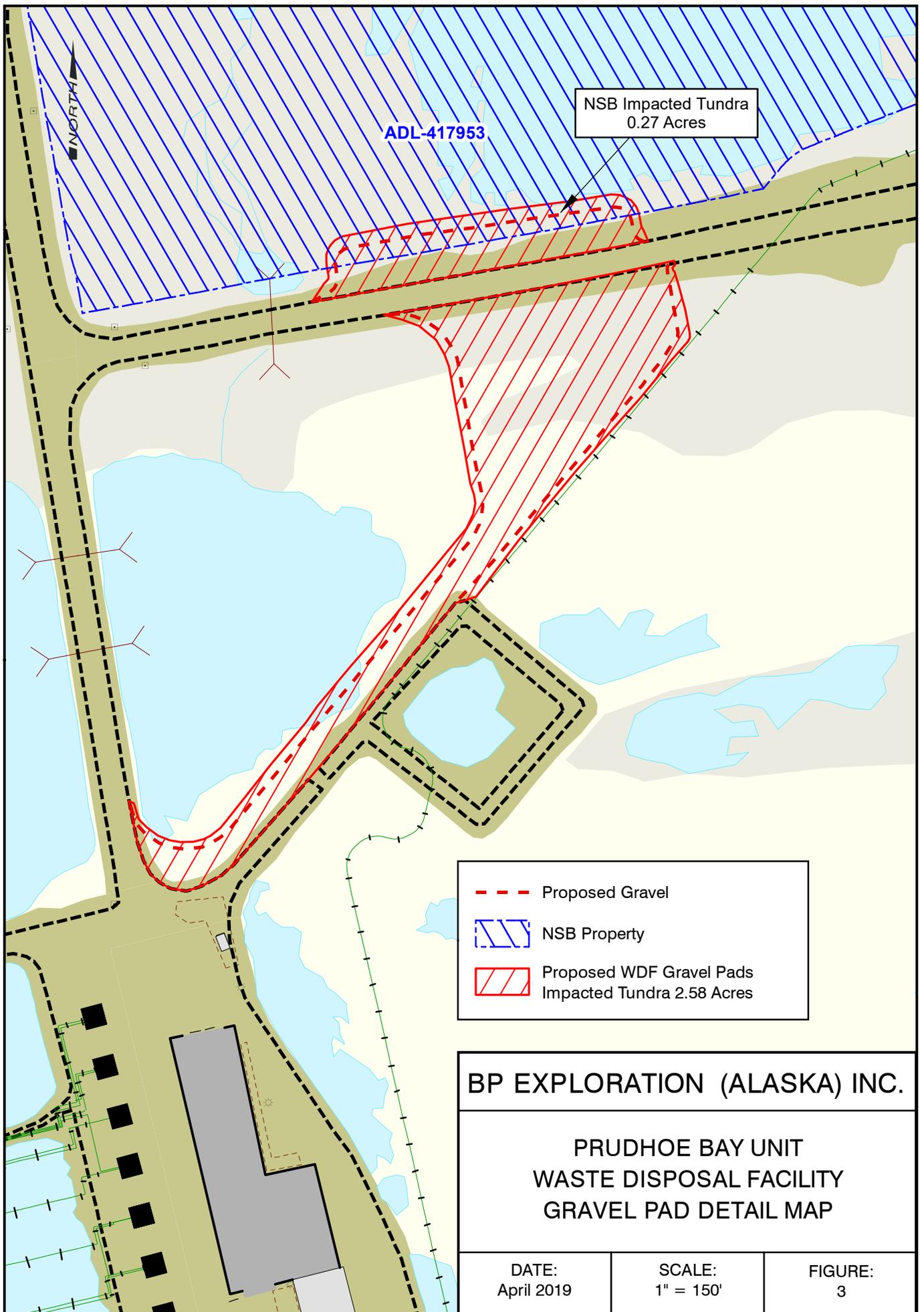
BP EXPLORATION (ALASKA) INC.

PRUDHOE BAY UNIT  
WASTE DISPOSAL FACILITY  
LOCATION MAP

DATE:  
April 2019

SCALE:  
1" = 500'

FIGURE:  
2



ADL-417953

NSB Impacted Tundra  
0.27 Acres

- Proposed Gravel
- NSB Property
- Proposed WDF Gravel Pads  
Impacted Tundra 2.58 Acres

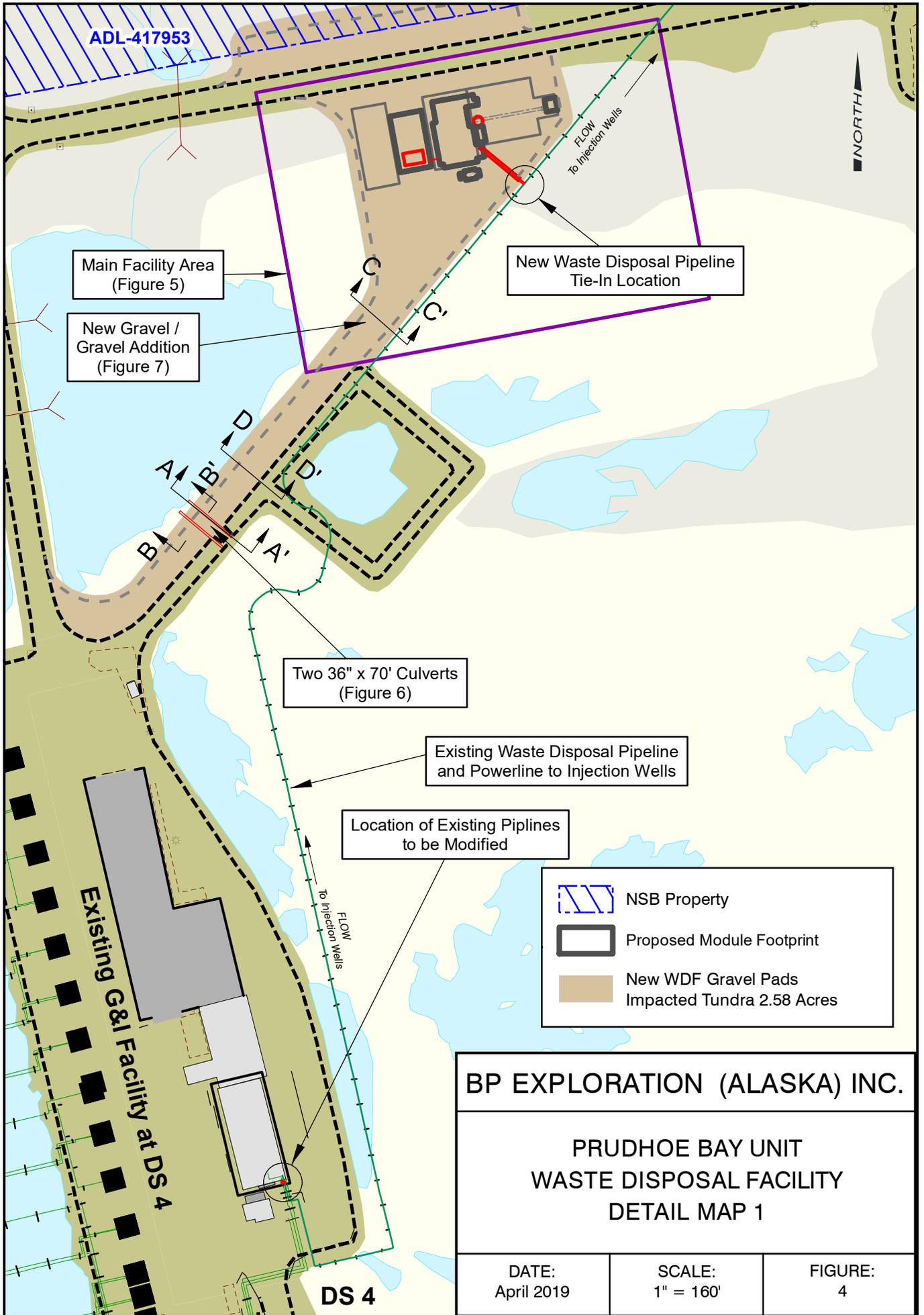
**BP EXPLORATION (ALASKA) INC.**

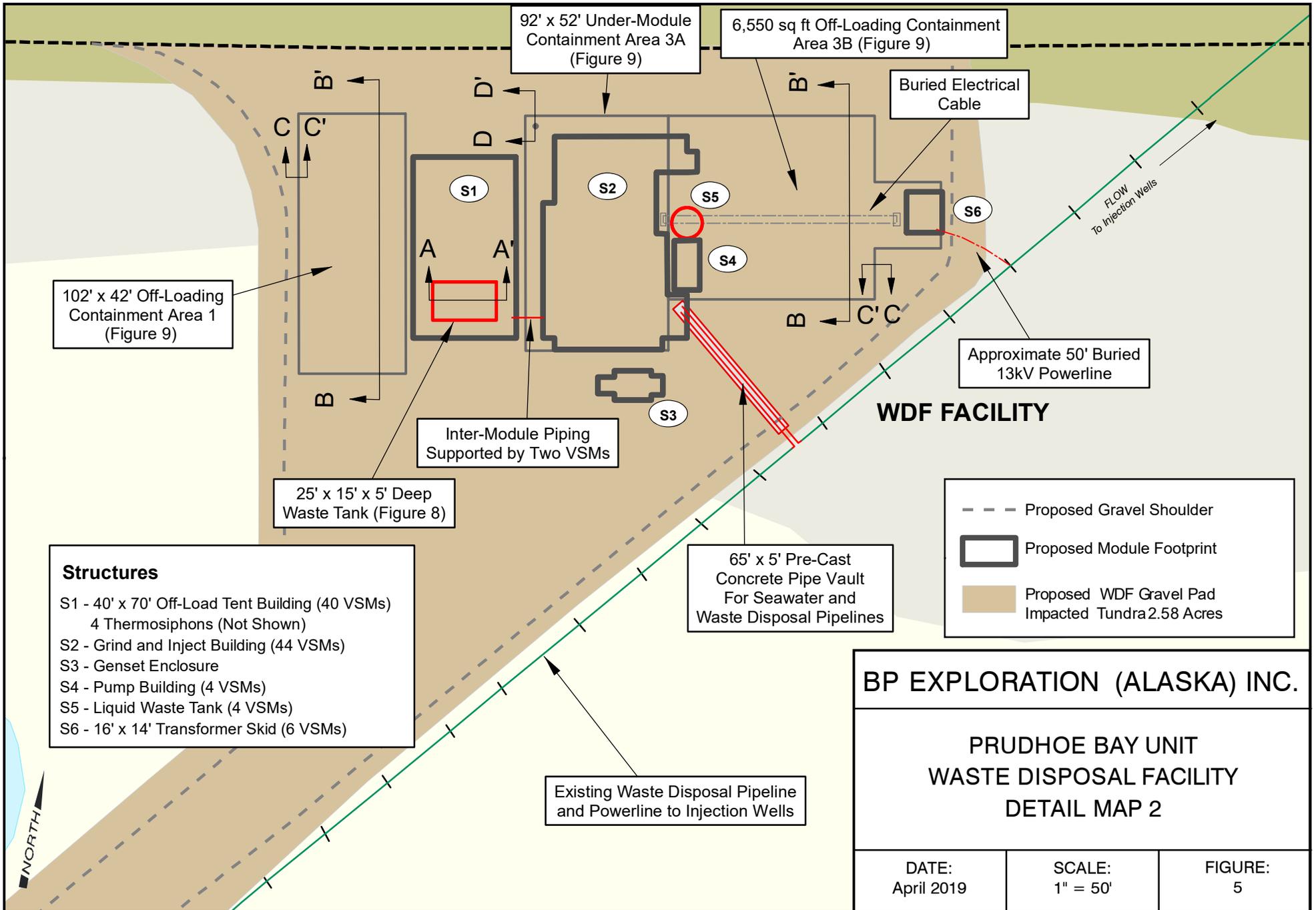
**PRUDHOE BAY UNIT  
WASTE DISPOSAL FACILITY  
GRAVEL PAD DETAIL MAP**

DATE:  
April 2019

SCALE:  
1" = 150'

FIGURE:  
3





102' x 42' Off-Loading Containment Area 1 (Figure 9)

92' x 52' Under-Module Containment Area 3A (Figure 9)

6,550 sq ft Off-Loading Containment Area 3B (Figure 9)

Buried Electrical Cable

FLOW To Injection Wells

Approximate 50' Buried 13kV Powerline

**WDF FACILITY**

Inter-Module Piping Supported by Two VSMs

25' x 15' x 5' Deep Waste Tank (Figure 8)

--- Proposed Gravel Shoulder

▭ Proposed Module Footprint

■ Proposed WDF Gravel Pad Impacted Tundra 2.58 Acres

- Structures**
- S1 - 40' x 70' Off-Load Tent Building (40 VSMs)  
4 Thermosiphons (Not Shown)
  - S2 - Grind and Inject Building (44 VSMs)
  - S3 - Genset Enclosure
  - S4 - Pump Building (4 VSMs)
  - S5 - Liquid Waste Tank (4 VSMs)
  - S6 - 16' x 14' Transformer Skid (6 VSMs)

65' x 5' Pre-Cast Concrete Pipe Vault For Seawater and Waste Disposal Pipelines

Existing Waste Disposal Pipeline and Powerline to Injection Wells

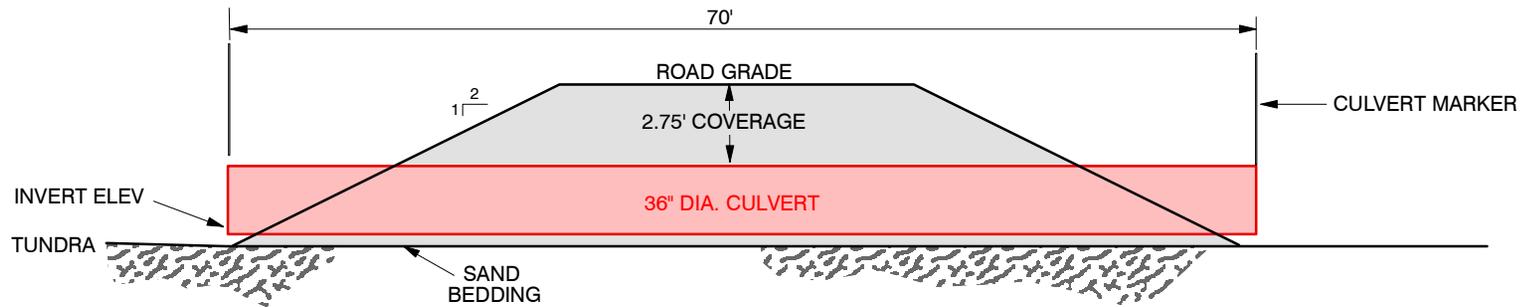
**BP EXPLORATION (ALASKA) INC.**

**PRUDHOE BAY UNIT  
WASTE DISPOSAL FACILITY  
DETAIL MAP 2**

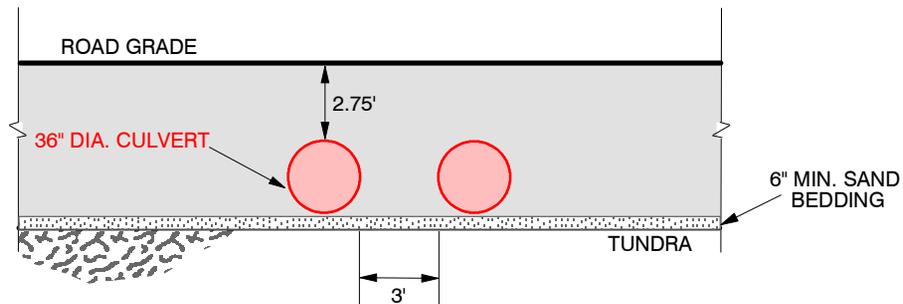
DATE:  
April 2019

SCALE:  
1" = 50'

FIGURE:  
5



**CULVERT CROSS SECTION A-A' (Fig 4)**



**CULVERT CROSS SECTION B-B' (Fig 4)**

**BP EXPLORATION (ALASKA) INC.**

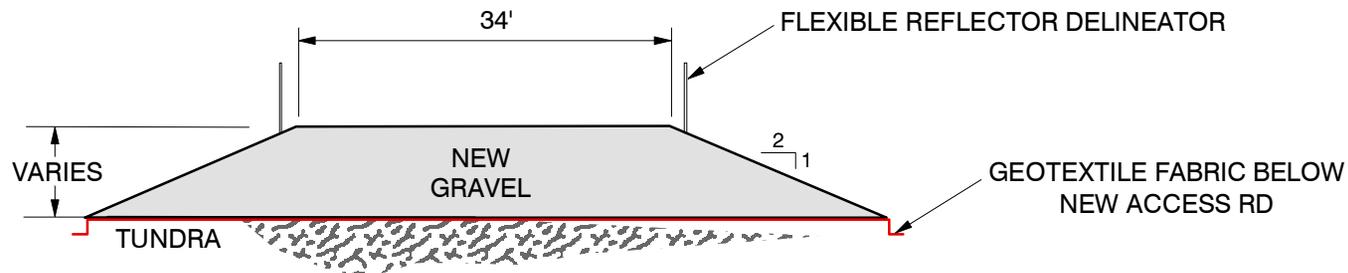
**PRUDHOE BAY UNIT  
WASTE DISPOSAL FACILITY  
CULVERT REPLACEMENT  
CROSS SECTIONS**

DATE:  
April 2019

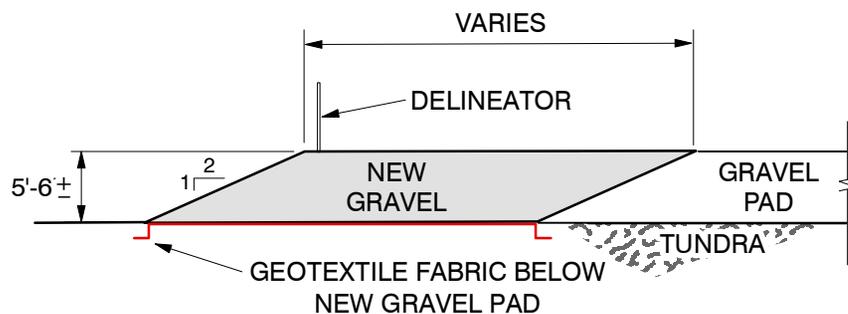
SCALE:  
NOT TO SCALE

FIGURE:  
6

**NOT TO SCALE  
ALL DIMENSIONS ARE APPROXIMATE**



CROSS SECTION C - C' (Fig 4)



GRAVEL EXPANSION D-D' (Fig 4)

**BP EXPLORATION (ALASKA) INC.**

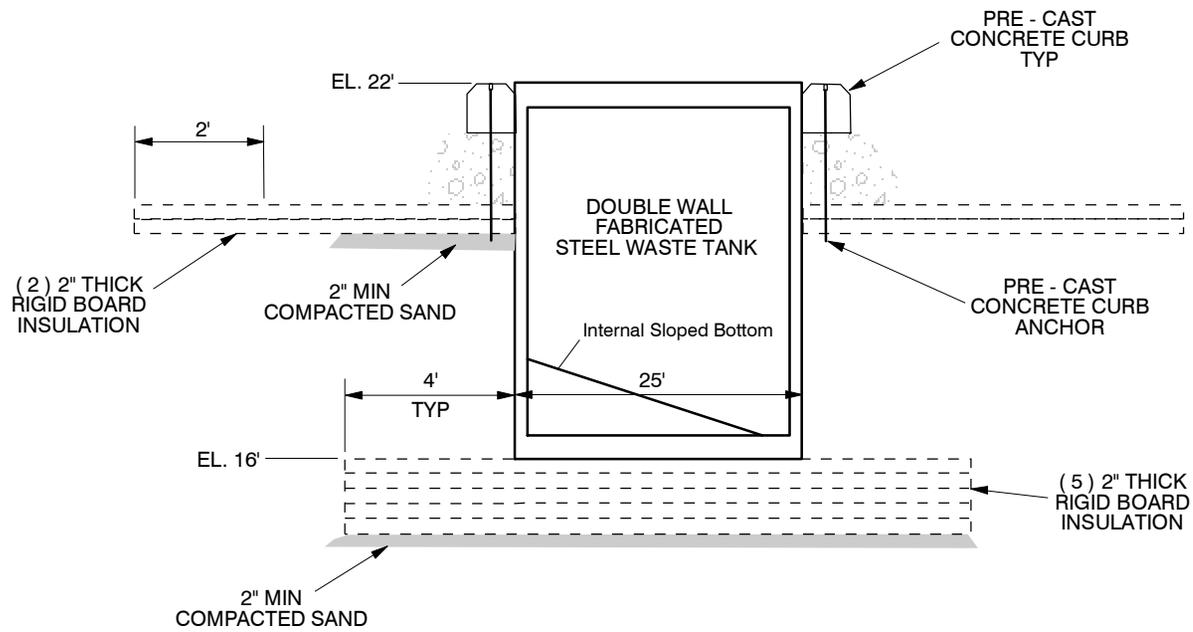
**PRUDHOE BAY UNIT  
WASTE DISPOSAL FACILITY  
GRAVEL PAD CROSS SECTION**

DATE:  
April 2019

SCALE:  
NOT TO SCALE

FIGURE:  
7

**NOT TO SCALE  
ALL DIMENSIONS ARE APPROXIMATE**



CROSS SECTION A-A' (Fig 5)

BP EXPLORATION (ALASKA) INC.

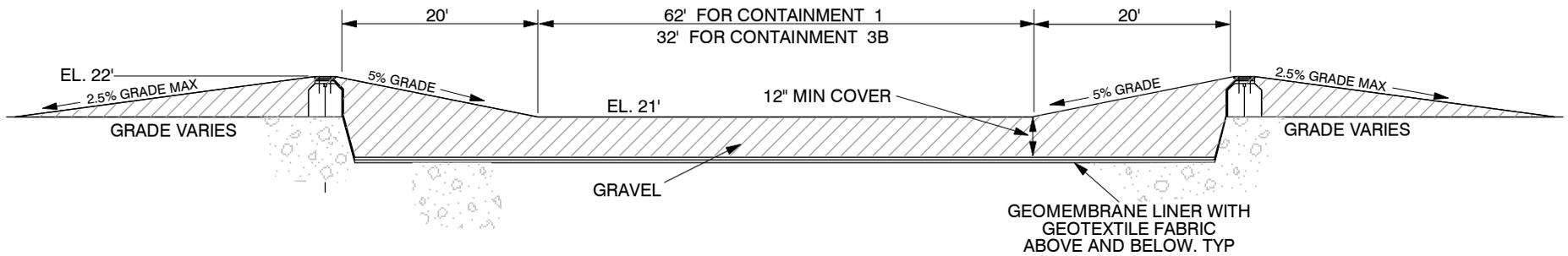
PRUDHOE BAY UNIT  
WASTE DISPOSAL FACILITY  
WASTE TANK CROSS SECTION

DATE:  
April 2019

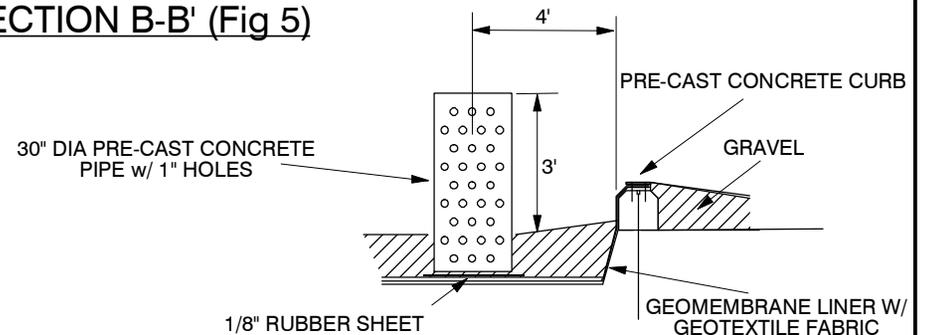
SCALE:  
NOT TO SCALE

FIGURE:  
8

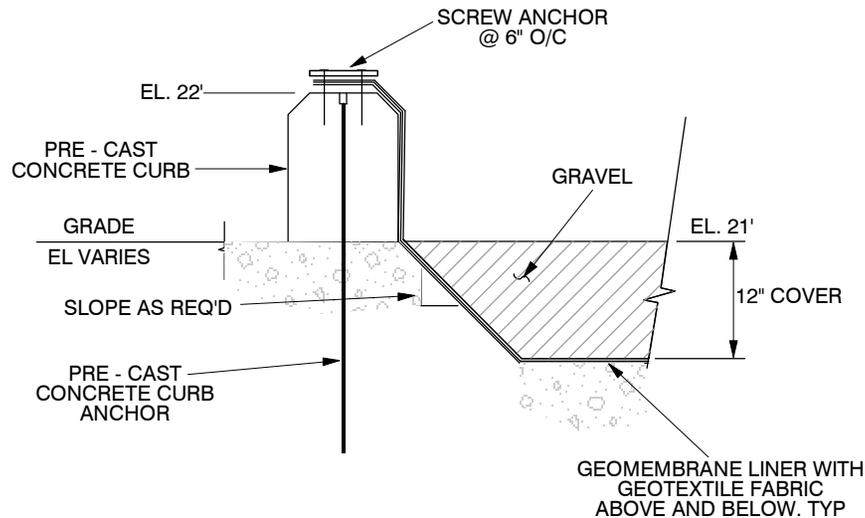
**NOT TO SCALE**  
**ALL DIMENSIONS ARE APPROXIMATE**



**CONTAINMENT CROSS SECTION B-B' (Fig 5)**



**CONTAINMENT CROSS SECTION D-D' (Fig 5)  
CATCHMENT PIPE**



**CONTAINMENT CROSS SECTION C-C' (Fig 5)**

**NOT TO SCALE  
ALL DIMENSIONS ARE APPROXIMATE**

**BP EXPLORATION (ALASKA) INC.**

**PRUDHOE BAY UNIT  
WASTE DISPOSAL FACILITY  
CONTAINMENT  
CROSS SECTIONS**

DATE:  
April 2019

SCALE:  
NOT TO SCALE

FIGURE:  
9

**APPENDIX B: MITIGATION MEASURES**

Include mitigation measures here.

## MITIGATION MEASURE ANALYSIS: NORTH SLOPE

The following instructions are provided for guidance to adequately complete the Mitigation Measure Analysis form.

1. The applicant shall respond to each Mitigation Measure, and all subsets of mitigation measures; i.e. A.2.d.i should be addressed and A.2.d.ii, and so forth.
2. The applicant's response shall begin by clearly indicating if the **mitigation measure is satisfied**, an **exception is requested**, or if the mitigation measure is **not applicable**.
3. The applicants' response shall then address how the proposed project clearly satisfies the mitigation measure, meets the intent of the mitigation measure, is not practicable, or is not applicable.
4. The applicant shall verify working 'in consultation with' parties other than Department of Natural Resources (DNR), Division of Oil and Gas (DO&G) by reporting meeting dates and parties present for Mitigation Measures which require consultation with parties other than DNR, DO&G; i.e. Mitigation Measure 1.b.

Please note that this form, along with the Plan of Operations Application form and the Plan of Operations, must be adequately completed before DNR DO&G will review an application for potential approval.

NORTH SLOPE	Company Response
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<b>A. Mitigation Measures</b>	
<b>1. Facilities and Operations</b>	
a. Oil and gas facilities, including pipelines, shall be designed using industry-accepted engineering codes and standards. Technical submittals to the Division of Oil and Gas (DO&G) that reflect the “practice of engineering,” as defined by AS 08.48.341, must be sealed by a professional engineer registered in the State of Alaska.	A.1.a. satisfied – BPXA operates under industry accepted codes and practices
b. A plan of operations shall be submitted and approved before conducting exploration, development, or production activities in accordance with 11 AAC 83.	A.1.b. satisfied – unit plan of operations has previously been submitted for the existing Prudhoe Bay Unit, and a new Unit Plan of Operations is being submitted for this Waste Disposal Facility.
c. Facilities shall be designed and operated to minimize sight and sound impacts in areas of high residential, recreational, and subsistence use and important wildlife habitat.	A.1.c. not applicable – the project does not take place in residential or recreational areas and the installation of a gravel pad and waste disposal facilities will not affect subsistence use or wildlife habitat.
d. The siting of facilities, including roads, airstrips, and pipelines, is prohibited within one-half mile of the coast as measured from the mean high water mark and 500 feet of all fish bearing waterbodies.	A.1.d. satisfied – see unit plan location map
e. Notwithstanding (d) above, the siting of facilities is prohibited within one-half mile of the banks of the Colville, Canning, Sagavanirktok, Kavik, Shaviovik, Kadleroshilik, Echooka, Ivishak, Kuparuk, Toolik, Anaktuvuk and Chandler Rivers as measured from the ordinary high water mark. Facilities may be sited, on a case-by-case basis, within the one-half mile buffer if the lessee demonstrates that siting of such facilities outside this buffer zone is not feasible or prudent, or that a location within the buffer is environmentally preferable.	<p>A.1.e. exception is requested – BPXA has reviewed all options to avoid discharging gravel onto tundra to expand roads and construct a gravel pad to accommodate an updated Class I Waste Disposal Facility (WDF). The gravel pad expansion located approximately 1,600 feet from the western bank of the Sagavanirktok River is necessary to accommodate the WDF and provide ample turnaround area for large trucks while keeping the WDF a safe distance from DS4.</p> <p>Due to the characteristics of Class I waste, disposal at the Oxbow landfill is not an option due to regulatory requirements. Examples of injectable wastes are drilling fluids, non-exempt spill clean-up waste, snow-melt, surface water, and soil from non-exempt contaminated sites.</p>

	<p>Several measures were implemented to avoid impacts to waters and wetlands. The WDF location has been selected because of its proximity to PBU field infrastructure and the existing underground injection control (UIC) disposal wells and waste disposal slurry pipeline, which will avoid construction of new pipeline access roads.</p> <p>Existing gravel pad options near the project area were considered but not suitable due to challenges with infrastructure, power generation, and adequate vehicle turnaround area. Specifically, other than the pads where the current waste injection facilities are located (G&amp;I and Pad 3), there are no existing uplands or gravel pads in the proximity of the Class I disposal wells that would provide adequate spacing for placement of the WDF. BP intends to retain G&amp;I for possible future use should there be an increased need for processing solid waste for injection (e.g., at end of field life). The permit for the injection wells at Pad 3 is expiring in December 2019 and will not be renewed.</p>
<p>f. No facilities will be sited within one-half mile of identified Dolly Varden overwintering and/or spawning areas on the Canning, Shaviovik, and Kavik rivers. Notwithstanding the previous sentence, road and pipeline crossings may only be sited within these buffers if the lessee demonstrates to the satisfaction of the Director and Alaska Department of Fish and Game (ADF&amp;G) in the course of obtaining their respective permits, that either (1) the scientific data indicate the proposed crossing is not within an overwintering or spawning area; or (2) the proposed road or pipeline crossing will have no significant adverse impact to Dolly Varden overwintering or spawning habitat.</p>	<p>A.1.f. satisfied – The WDF is not sited with 0.5 mile of the Canning, Shaviovik, or Kavik River.</p>
<p>g. Impacts to important wetlands shall be minimized to the satisfaction of the Director, in consultation with ADF&amp;G and Alaska Department of Environmental Conservation (ADEC). The Director will consider whether facilities are sited in the least sensitive areas.</p>	<p>A.1.g. satisfied – Several measures were implemented to avoid impacts to waters and wetlands.</p> <p>The WDF location has been selected because of its proximity to PBU field infrastructure and the existing underground injection control (UIC) disposal wells and waste disposal slurry pipeline, which will avoid construction of new pipeline access roads. Discharging gravel will be avoided in an aquatic area to the south of the project area due to the presence of a lake.</p> <p>Existing gravel pad options near the project area were considered but not suitable due to challenges with infrastructure, power generation,</p>

	<p>and adequate vehicle turnaround area. Specifically, other than the pads where the current waste injection facilities are located (G&amp;I and Pad 3), there are no existing uplands or gravel pads in the proximity of the Class I disposal wells that would provide adequate spacing for placement of the WDF. BP intends to retain G&amp;I for possible future use should there be an increased need for processing solid waste for injection (e.g., at end of field life). The permit for the injection wells at Pad 3 is expiring in December 2019 and will not be renewed.</p>
<p>h. Exploration roads, pads, and airstrips shall be temporary and constructed of ice. Use of gravel roads, pads, and airstrips may be permitted on a case-by-case basis by the Director, in consultation with Division of Mining, Land, and Water (DMLW) and ADF&amp;G.</p>	<p>A.1.h. satisfied – The WDF is not for exploration purposes, and as a permanent facility the pad will be built from gravel.</p>
<p>i. Road and pipeline crossings shall be aligned perpendicular or near perpendicular to watercourses.</p>	<p>A.1.i. satisfied – The WDF gravel pad will include the widening of road segments leading in and out of the facility to accommodate large vehicles. No new roads will be built.</p>
<p>j. Pipelines</p> <p>i. Shall use existing transportation corridors and be buried where soil and geophysical conditions permit.</p> <p>ii. In areas with above ground placement, pipelines shall be designed, sited, and constructed to allow for the free movement of wildlife and to avoid significant alteration of caribou and other large ungulate movement and migration patterns.</p> <p>iii. At a minimum, above ground pipelines shall be elevated seven feet, as measured from the ground to the bottom of the pipeline, except where the pipeline intersects a road, pad, or a ramp installed to facilitate wildlife passage. A lessee shall consider snow depth in relation to pipe elevation to ensure adequate clearance for wildlife.</p> <p>iv. Pipelines and gravel pads shall facilitate the containment and cleanup of spilled fluids.</p>	<p>A.1.j.i. satisfied – Two 8” pipelines will be buried within the WDF pad, each approximately 88 feet in length. One will carry seawater into the facility and the other will carry waste slurry out and will tie into the existing seawater/waste slurry pipeline.</p> <p>A.1.h ii, iii. not applicable – Two 8” pipelines will be buried within the WDF pad</p> <p>A.1.j.iv satisfied – The WDF will have containment in each area where waste is handled.</p>
<p>k. Causeways and docks shall not be located in river mouths or deltas. Approved causeways shall be designed, sited, and constructed to prevent significant changes to nearshore oceanographic circulation patterns and water quality characteristics (e.g.,</p>	<p>A.1.k. not applicable – No causeways or docks will be built.</p>

<p>salinity, temperature, suspended sediments) that result in exceedances of water quality criteria, and must maintain free passage of marine and anadromous fish.</p>	
<p>l. Artificial gravel islands and bottom founded structures shall not be located in river mouths or active stream channels on river deltas, except as provided for in (m) below.</p>	<p>A.1.l. not applicable – No gravel islands or bottom founded structures will be built.</p>
<p>m. Each proposed structure will be reviewed on a case-by-case basis. Causeways, docks, artificial gravel islands and bottom founded structures may be permitted if the Director, in consultation with ADF&amp;G and ADEC, determines that a causeway or other structures are necessary for field development and that no practicable alternatives exist. A monitoring program may be required to address the objectives of water quality and free passage of fish, and mitigation shall be required where significant deviation from objectives occurs.</p>	<p>A.1.m. not applicable – No causeways, docks, artificial gravel islands, or bottom founded structures will be built.</p>
<p>n. Upon abandonment of material sites, drilling sites, roads, buildings or other facilities, such facilities must be removed and the site rehabilitated to the satisfaction of the Director, unless the Director and any non-state surface owner, determines that such removal and rehabilitation is not in the state's interest.</p>	<p>A.1.n. satisfied</p>
<p>o. Material sites required for exploration and development activities shall be:</p> <ul style="list-style-type: none"> <li>i. restricted to the minimum necessary to develop the field efficiently and with minimal environmental damage,</li> <li>ii. where practicable, designed and constructed to function as water reservoirs for future use, and</li> <li>iii. located outside active floodplains of a watercourse unless the Director DMLW, after consultation with ADF&amp;G, determines that there is no practicable alternative, or that a floodplain site would enhance fish and wildlife habitat after mining operations are completed and the site is closed.</li> </ul>	<p>A.1.o.i, ii, iii. not applicable – A new material site will not be developed. Gravel will be taken from the existing Put 23 material site.</p>
<p>p. The Director may include plan stipulations if necessary to reduce or eliminate adverse impacts to fish and wildlife or to protect the environment.</p>	<p>A.1.p. satisfied – BPXA has sited and designed the WDF to minimize impacts to the environment.</p>

<p><b>2. Fish and Wildlife Habitat</b></p>	
<p>a. The lessee shall consult with the North Slope Borough (NSB) before proposing the use of explosives for seismic surveys. The Director may approve the use of explosives for seismic surveys after consultation with the NSB.</p>	<p>A.2.a. not applicable – No explosives will be used.</p>
<p>b. Any water intake structures in fish bearing or non-fish bearing waters shall be designed, operated, and maintained to prevent fish entrapment, entrainment, or injury. All water withdrawal equipment must be equipped and must use fish screening devices approved by ADF&amp;G.</p>	<p>A.2.b. not applicable – Seawater will be supplied to the WDF through the existing seawater/waste slurry pipeline. Seawater is supplied from the Seawater Treatment Plant.</p>
<p>c. Removal of snow from fish-bearing rivers, streams, and natural lakes shall be subject to prior written approval by ADF&amp;G. Compaction of snow cover overlying fish-bearing waterbodies is prohibited except for approved crossings. If ice thickness is not sufficient to facilitate a crossing, then ice or snow bridges may be required.</p>	<p>A.2.c. not applicable – No snow removal from rivers, streams or natural lakes is required.</p>
<p>d. Bears:</p> <ul style="list-style-type: none"> <li>i. Brown bears       <ul style="list-style-type: none"> <li>A. A lessee must consult with ADF&amp;G before commencing any activities to identify the locations of known brown bear den sites that are occupied in the season of proposed activities.</li> <li>B. Exploration and production activities shall not be conducted within one-half mile of occupied brown bear dens unless alternative mitigation measures are approved by ADF&amp;G.</li> <li>C. A lessee who encounters an occupied brown bear den not previously identified by ADF&amp;G shall report it to the Division of Wildlife Conservation, ADF&amp;G, within 24 hours. The lessee will avoid conducting mobile activities one-half mile from discovered occupied dens unless alternative mitigation measures are approved by the Director, with concurrence from ADF&amp;G. Non-mobile facilities will not be required to relocate.</li> </ul> </li> </ul>	<p>A.2.d.i.A-C. satisfied – The WDF project will be subject to the BPXA wildlife documents - Grizzly Bear Avoidance and Interaction Plan and What Do I Do With This Animal procedure.</p>

<p>ii. Polar bears</p> <p>A. Consultation with the US Fish and Wildlife Service (USFWS) is required prior to commencement of any activities as required by the Endangered Species Act, and also to identify the locations of known polar bear den sites.</p> <p>B. Operations shall avoid known polar bear dens by at least one mile.</p> <p>C. A lessee who encounters an occupied polar bear den not previously identified by USFWS shall report it to the USFWS within 24 hours and subsequently avoid the new den by at least one mile.</p> <p>D. If a polar bear should den within an existing development, off-site activities shall be restricted to minimize disturbance.</p> <p>iii. For projects in proximity to areas frequented by bears, the lessee is required to prepare and implement a human-bear interaction plan designed to minimize conflicts between bears and humans. The plan shall include measures to:</p> <p>A. minimize attraction of bears to facility sites;</p> <p>B. organize layout of buildings and work areas to minimize interactions between humans and bears;</p> <p>C. warn personnel of bears near or on facilities and the proper actions to take;</p> <p>D. if authorized, deter bears from the drill site;</p> <p>E. provide contingencies in the event bears do not leave the site;</p> <p>F. discuss proper storage and disposal of materials that may be toxic to bears; and</p>	<p>A.2.d.ii. A. satisfied – BPXA has submitted an application for an Individual Permit from the US Army Corps of Engineers which includes consultation with the USFWS.</p> <p>A.2.d.ii. B-D satisfied – The WDF project will be subject to the following wildlife documents – BPXA Grizzly Bear Avoidance and Interaction Plan, BPXA What Do I Do With This Animal procedure, USFWS Incidental Take LOA, and ADFG Public Safety Permit. BPXA’s procedures include protocols for identifying bear dens and/or working with agencies to determine and mitigate known den locations.</p> <p>A.2.d.iii. A-G satisfied – The WDF project will be subject to the following wildlife documents – BPXA Grizzly Bear Avoidance and Interaction Plan, BPXA What Do I Do With This Animal procedure, the Alaska Waste, Disposal and Reuse Guide (Redbook), and USFWS Incidental Take LOA.</p>
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<p>G. provide a systematic record of bears on the site and in the immediate area.</p>	
<p>e. Permanent, staffed facilities shall be sited to the extent practicable outside identified brant, white-fronted goose, snow goose, tundra swan, king eider, common eider, Steller's eider, spectacled eider, and yellow-billed loon nesting and brood rearing areas.</p>	<p>A.2.e. satisfied – BPXA has sited and designed the WDF to minimize impacts to wildlife and environment. Gravel pad construction will take place outside of bird nesting season.</p>
<p>f. The Director, in consultation with ADF&amp;G, may impose additional and seasonal restrictions on activities located in, or requiring travel through or overflight of, important caribou or other large ungulate calving and wintering areas during the plan of operations approval stage.</p>	<p>A.2.f. satisfied</p>
<p><b>3. Subsistence, Commercial and Sport Harvest Activities</b></p>	
<p>a. Lease-related use will be restricted if necessary to prevent unreasonable conflicts with subsistence, commercial, or sport fish and wildlife harvest activities. Traditional and customary access to subsistence areas will be maintained unless reasonable alternative access is provided to subsistence users. "Reasonable access" is access using means generally available to subsistence users. Lessees will consult the NSB, nearby communities, and native organizations for assistance in identifying and contacting local subsistence users.</p>	<p>A.3.a. satisfied – BPXA will apply for a Development Permit and Traditional Land Use clearance from the NSB. The application will be subject to a public comment period, during which BPXA will work with the NSB to address any subsistence concerns. Commercial or sport fishing does not occur in the area.</p>
<p>b. Before submitting a plan of operations that has the potential to disrupt subsistence activities, the lessee will consult with the potentially affected subsistence communities and the NSB (collectively "parties") to discuss the siting, timing, and methods of proposed operations and safeguards or mitigating measures that could be implemented by the operator to prevent unreasonable conflicts. The parties will also discuss the reasonably foreseeable effect on subsistence activities of any other operations in the area that they know will occur during the lessee's proposed operations. Through this consultation, the lessee will make reasonable efforts to ensure that exploration, development, and production activities are compatible with subsistence hunting and fishing activities and will not result in unreasonable interference with subsistence harvests.</p>	<p>A.3.b. satisfied – BPXA will apply for a Development Permit and Traditional Land Use clearance from the NSB. The application will be subject to a public comment period, during which BPXA will work with the NSB to address any subsistence concerns.</p>
<p><b>4. Fuel, Hazardous Substances and Waste</b></p>	

<p>a. The lessee will ensure that secondary containment is provided for the storage of fuel or hazardous substances and sized as appropriate to container type and according to governing regulatory requirements in 18 AAC 75 and 40 CFR 112. Containers with an aggregate storage capacity of greater than 55 gallons that contain fuel or hazardous substances will not be stored within 100 feet of a waterbody, or within 1,500 feet of a current surface drinking water source.</p>	<p>A.4.a. satisfied – BPXA will operate in accordance with the State Oil Discharge Prevention and Contingency Plan (ODPCC) and the Federal Spill Prevention Control and Countermeasures Plan (SPCC).</p>
<p>b. During equipment storage or maintenance, the site must be protected from leaking or dripping fuel and hazardous substances by the placement of drip pans or other surface liners designed to catch and hold fluids under the equipment, or by creating an area for storage or maintenance using an impermeable liner or other suitable containment mechanism.</p>	<p>A.4.b. satisfied – BPXA will operate according to its SPCC Plan, Surface Liner and Drip Pan Use Procedure, and Fluid Transfer Plan.</p>
<p>c. During fuel or hazardous substance transfer, secondary containment or a surface liner must be placed under all container or vehicle fuel tank inlet and outlet points, hose connections, and hose ends. Appropriate spill response equipment, sufficient to respond to a spill of up to five gallons, must be on hand during any transfer or handling of fuel or hazardous substances.</p>	<p>A.4.c. satisfied – BPXA will operate according to its SPCC Plan, Surface Liner and Drip Pan Use Procedure, and Fluid Transfer Plan.</p>
<p>d. Vehicle refueling will 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.</p>	<p>A.4.d. satisfied – BPXA will operate in accordance with its State Oil Discharge Prevention and Contingency Plan (ODPCC) and its Federal Spill Prevention Control and Countermeasures Plan (SPCC).</p>
<p>e. All independent fuel and hazardous substance containers must be marked with the contents and the lessee's or contractor's name using paint or a permanent label.</p>	<p>A.4.e. satisfied – BPXA will operate in accordance with its State Oil Discharge Prevention and Contingency Plan (ODPCC) and its Federal Spill Prevention Control and Countermeasures Plan (SPCC).</p>
<p>f. A fresh water aquifer monitoring well, and quarterly water quality monitoring, is required down gradient of a permanent storage facility, unless alternative acceptable technology is approved by ADEC.</p>	<p>A.4.f. not applicable – Waste will not be stored permanently at the WDF. At the WDF, waste will be processed and transported via an existing pipeline to underground injection wells for disposal. All areas where wastes are temporarily stored will either have an impermeable liner (Containment Areas 1, 3a, 3b) or will be stored in a double-walled tank (Containment 2). On August 18, 2006, the US EPA provided BPXA a "No Underground Sources of Drinking Water (USDW) Ruling". There are no underground sources of drinking water</p>

	in the project area therefore a fresh water aquifer monitoring well is not applicable.
g. Waste from operations must be reduced, reused, or recycled to the maximum extent practicable. Garbage and domestic combustibles must be incinerated whenever possible or disposed of at an approved site in accordance with 18 AAC 60.	A.4.g. satisfied – BPXA will operate according to several BPXA Waste Management Plans
h. 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. The primary method of garbage and putrescible waste is prompt, on-site incineration in compliance with State of Alaska air quality regulations. The secondary method of disposal is on-site frozen storage in animal-proof containers with backhaul to an approved waste disposal facility. The tertiary method of disposal is on-site non-frozen storage in animal proof containers with backhaul to an approved waste disposal facility. Daily backhauling of non-frozen waste is required unless safety considerations prevent it.	A.4.h. satisfied – BPXA will operate according to several BPXA Waste Management Plans, the Grizzly Bear Avoidance and Interaction Plan, and the Polar Bear and Walrus Interaction Plan. All food waste will be disposed of in bear-proof dumpsters.
i. New solid waste disposal sites, other than for drilling waste, will not be approved or located on state property for exploration.	A.4.i. Satisfied – The WDF is a replacement for an existing waste disposal facility, including drilling waste. The WDF will use the existing underground injection wells to dispose of waste. In addition, this facility is not exclusively for exploration purposes as the PBU is an active, producing field.
j. The preferred method for disposal of muds and cuttings from oil and gas activities is by underground injection. Drilling mud and cuttings will not be discharged into lakes, streams, rivers, or wetlands. On-pad temporary cuttings storage may be allowed as necessary to facilitate annular injection and backhaul operations. Injection of non-hazardous oilfield wastes is regulated by Alaska Oil and Gas Conservation Commission through its Underground Injection Control Program for oil and gas wells.	A.4.j. satisfied – Drilling muds will be disposed of by underground injection as per the Alaska Waste Disposal and Reuse Guide (Redbook).
<b>5. Access</b>	
a. Exploration activities must be supported only by ice roads, winter trails, existing road systems, or air service. Wintertime off-road travel across tundra and wetlands may be	A.5.a. not applicable – Exploration activities are not part of this project.

<p>approved in areas where snow and frost depths are sufficient to protect the ground surface</p>	
<p>b. Summertime off-road travel across tundra and wetlands may be authorized subject to time periods and vehicle types approved by DMLW.</p>	<p>A.5.b. not applicable – Summertime off-road travel will not occur during this project.</p>
<p>c. Emergency exceptions may be granted by the Director of DMLW, and the Director, if it is determined that travel can be accomplished without damaging vegetation or the ground surface on a site-specific basis.</p>	<p>A.5.c. not applicable</p>
<p>d. Gravel use may be authorized on a site-specific basis if it is determined, after consulting with ADF&amp;G and DMLW, that no practicable alternatives exist for constructing an exploration road or pad in the area south of the boundary described below and depicted in the map below:</p> <p>Beginning at the NPR-A boundary, from the northeast corner of T 1N, R 2E, then east to the northwest corner of T 1N, R 9E, then north to the northwest corner of T 4N, R 9E, then east to the northwest corner of T 4N, R 23E, then south to the southwest corner of T 4N, R 23E, and then east along the top of T 3N to the ANWR boundary.</p>	<p>A.5.d. not applicable – Exploration activities are not part of this project.</p>



<p>a. Before the construction or placement of any structure, road, or facility supporting exploration, development, or production activities, the lessee must conduct an inventory of prehistoric, historic, and archeological sites within the area, including a detailed analysis of the effects that might result from that construction or placement.</p>	<p>A.6.a. satisfied – BPXA, through its contractor Northern Land Use Research Alaska LLC., performed a ground survey of the area affected by placement of WDF gravel pad. No cultural sites, features or artifacts were found. BPXA will submit applications to the North Slope Borough for Traditional land Use Inventory clearance, and the State Office of History and Archaeology for a finding of No Historic Properties Affected.</p>
<p>b. The inventory of prehistoric, historic, and archeological sites must be submitted to the Director and the Office of History and Archeology (OHA) who will coordinate with the NSB for review and comment. If a prehistoric, historic, or archeological site or area could be adversely affected by a lease activity, the Director, after consultation with OHA and the NSB, will direct the lessee as to the course of action to take to avoid or minimize adverse effects.</p>	<p>A.6.b. satisfied – BPXA, through its contractor Northern Land Use Research Alaska LLC., performed a ground survey of the area affected by placement of WDF gravel pad. No cultural sites, features or artifacts were found. BPXA will submit applications to the North Slope Borough for Traditional land Use Inventory clearance, and the State Office of History and Archaeology for a finding of No Historic Properties Affected.</p>
<p>c. If a site, structure, or object of prehistoric, historic, or archaeological significance is discovered during lease operations, the lessee shall report the discovery to the Director as soon as possible. The lessee shall make all reasonable efforts to preserve and protect the discovered site, structure, or object from damage until the Director, after consultation with the State Historic Preservation Office and the NSB, has directed the lessee on the course of action to take for its preservation.</p>	<p>A.6.c. satisfied – BPXA, through its contractor Northern Land Use Research Alaska LLC., performed a ground survey of the area affected by placement of WDF gravel pad. No cultural sites, features or artifacts were found. BPXA will submit applications to the North Slope Borough for Traditional land Use Inventory clearance, and the State Office of History and Archaeology for a finding of No Historic Properties Affected.</p>
<p><b>7. Hiring Practices</b></p>	
<p>a. The lessee is encouraged to employ local and Alaska residents and contractors, to the extent they are available and qualified, for work performed in the lease area. Lessees shall submit, as part of the plan of operations, a hiring plan that shall include a description of the operator's plans for partnering with local communities to recruit, hire, and train local and Alaska residents and contractors. As a part of this plan, the lessee is encouraged to coordinate with employment and training services offered by the State of Alaska and local communities to train and recruit employees from local communities.</p>	<p>A.7.a. satisfied – BPXA's hiring preference is initially through the Alaska Process Industry Career Consortium (APICC), followed by local hire candidates, then out of state potential hires. Out of state hires are confirmed individually by the VP of Operations.</p>

<p>b. In accordance with Administrative Order 278, the lessee is encouraged to employ apprentice labor to perform at least 15 percent of total work hours, to the extent they are available and qualified, for work performed in the lease area. Lessees shall submit, as part of the plan of operations, a hiring plan detailing the means by which the lessee might incorporate apprentice labor.</p>	<p>A.7.b. satisfied – BPXA has an established relationship with the University of Alaska Anchorage and University of Alaska Fairbanks Alaska. This relationship employs summer interns for roles in Anchorage and at Prudhoe Bay. BP also works through the APICC program to employ new technician apprentices.</p> <p>APICC administers the Alaska BPXA Process Technology Scholarship Program. Each year, BPXA awards scholarships for students enrolled in or intending to register in one of the PTEC Degree programs through the University of Alaska. Degree programs are offered through three UA campuses, including: Kenai Peninsula College (KPC) in Soldotna; KPC Anchorage Extension Site at the University Center in Anchorage; and at UAF Community and Technical College located at the Pipeline Training Center in Fairbanks.</p> <p>BPXA also offers the Challenger Program. This is a development program for full-time college graduate hires in engineering, science and business. Challengers participate in a wide range of professional development, teamwork and mentoring opportunities in their first few years as a BP employee.</p>
<p>c. A plan of operations application must describe the lessee's past and prospective efforts to communicate with local communities and interested local community groups.</p>	<p>A.7.c. satisfied – BPXA ensures that any community affected by specific projects are notified and the concerns are addressed. The WDF project will require a Development Permit from the North Slope Borough. During the review phase of the Development Permit application, the application will be sent to villages for comments. BPXA will work with the North Slope Borough to address any concerns.</p>
<p>d. A plan of operations application must include a training program</p> <ul style="list-style-type: none"> <li>i. for all personnel including contractors and subcontractors;</li> <li>ii. designed to inform each person working on the project of environmental, social, and cultural concerns that relate to that person's job;</li> </ul>	<p>A.7.d.i through iv. satisfied – All BPXA and contractor personnel are required to attend a 6hr workshop entitled "How I Show Up". The course covers the BP Values and Behaviors and Safety culture expectations for everyone working on BPXA Lease.</p>

<p>iii. using methods to ensure personnel understand and use techniques necessary to preserve geological, archeological, and biological resources; and</p> <p>iv. designed to help personnel increase their sensitivity and understanding of community values, customs, and lifestyles in areas where they will be operating.</p>	<p>In addition, overarching training site/job specific trainings are provided that cover environmental, safety, and other policy requirements</p>
<p><b>8. Definitions</b></p>	
<p>a. In this document:</p> <p>i. <b>Facilities</b> – Any structure, equipment, or improvement to the surface, whether temporary or permanent, including, but not limited to, roads, pads, pits, pipelines, power lines, generators, utilities, airstrips, wells, compressors, drill rigs, camps, and buildings.</p> <p>ii. <b>Hazardous substance</b> – As defined under 42 USC 9601 – 9675 (Comprehensive Environmental Response, Compensation, and Liability Act of 1980).</p> <p>iii. <b>Important wetlands</b> – Those wetlands that are of high value to fish, waterfowl, and shorebirds because of their unique characteristics or scarcity in the region or that have been determined to function at a high level using the hydrogeomorphic approach.</p> <p>iv. <b>Minimize</b> – To reduce adverse impacts to the smallest amount, extent, duration, size, or degree reasonable in light of the environmental, social, or economic costs of further reduction.</p> <p>v. <b>Plan of operations</b> – A lease plan of operations under 11 AAC 83.158 and a unit plan of operations under 11 AAC 83.346.</p> <p>vi. <b>Practicable</b> – Feasible in light of overall project purposes after considering cost, existing technology, and logistics of compliance with the mitigation measure.</p> <p>vi. <b>Secondary containment</b> – An impermeable diked area, portable impermeable containment structure, or integral containment space capable of containing the volume of the largest independent container. The containment shall, in the case of external containment, have enough additional capacity to allow for local precipitation.</p>	

vii. <b>Temporary</b> – No more than 12 months.	
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Project Description

Site Restoration Statement

**Project Description**  
**Class I Waste Disposal Facility and Gravel Pad Expansion**  
**Prudhoe Bay Unit**

BP Exploration (Alaska) Inc. (BPXA) proposes to build a 2.58-acre gravel pad near Drill Site 4 (DS4) and the Fire Training Area in the Prudhoe Bay Unit. The gravel pad expansion is necessary to accommodate an updated Class I waste disposal facility that will replace two existing Class I waste disposal facilities: Grind and Inject (G&I) and Pad 3.

**Purpose**

The purpose of this project is to construct a gravel pad and to update the PBU Class I waste disposal facility (WDF).

**Introduction**

Pad 3, located south of Drill Site 6, and G&I, located on DS4, together handle waste processing for wastes eligible for injection into existing permitted Class I and Class II UIC injection wells. These existing processing facilities are no longer providing adequate disposal operations. BP has reviewed all alternatives and has determined this is the most appropriate option that meets regulatory and BP conformance requirements for Class I waste disposal operations. Therefore, BP is commissioning the construction of an updated facility to allow for a single, appropriately-sized modern facility to safely process and inject Class I waste. Vehicle access to the WDF will be one-way. Vehicles offloading waste will access the facility via a one-way drive. Once at the facility, vehicles will transfer waste from the vehicle to an enclosed system entirely within a sealed containment.

Wastes generated outside of BPXA operating areas, or wastes generated by non-BPXA activities within the PBU are considered “third-party wastes.” Third-party generators may include other oil and gas producers, Alyeska Pipeline Service Company, oilfield service companies based in Deadhorse, government agencies, etc. The third-party wastes must meet all regulatory and operational criteria. Third-party wastes are currently injected at Pad 3/G&I under the terms of written agreements with the GPB owners. These same procedures will continue to be followed for third-party wastes delivered to the WDF.

Operations at the current waste injection facilities in the Prudhoe Bay Unit (G&I and Pad 3) will be suspended after the commissioning of the WDF. At that time, both facilities will be safely and appropriately isolated from process capabilities. If these facilities are needed in the future due to increased need for waste injection, additional permits, if needed, will be requested to re-commission the facilities and restore connections to the waste pipelines and power grid.

## Scope of Proposed Activities

### **Gravel Pad and Road**

- Construct a gravel pad and widen existing roads for a total expansion area of 2.58 acres using approximately 20,000 cubic yards of gravel (see figures 3, 6 and 7)
  - Geotextile fabric will be placed below gravel pad
  - Side slopes will be 2:1
  - Existing access road will be expanded to 34' wide
  - Gravel will be sourced from existing permitted mine sites
  - Equipment will include: excavator, compactor, loaders, material haul trucks, pick-up trucks, and other equipment as needed
  
- Install two new culverts in road expansion area (see figures 4 and 6)
  - Each culvert is proposed to be 36" in diameter and 70' in length

### **Waste Disposal Facility and Supporting Infrastructure**

- Install 16,000 square feet of secondary containment liner under all liquid off-loading areas (Containment Areas 1, 3A and 3B) and the transformer platform. (see figures 5 and 9)
  - Containment area 1: 102' L x 42' W
  - Containment area 3A: 92' L x 52' W
  - Containment area 3B: 6,550 square feet
  
- Install approximately 100 vertical support members (VSMs) on the gravel pad to support the Class I WDF processing module, the offloading tent, the transformer platform, and associated infrastructure (see figure 5)
  
- Install an approximately 92' L x 52' W WDF processing steel module supported by VSMs (see figure 5)
  
- Install a 40' L x 70' W x 27.5' H fabric tented structure to support truck offloading of solids (see figure 5)
  - Install a flat loop thermosiphon system under the tented structure (see figure 5)
  - Install a 25' W x 15' L x 5' D double walled solids-storage tank under the tented structure (see figures 5 and 8)
  
- Install a 14' L x 16' W transformer platform skid (see figure 5)
  - Install approximately 110' of buried electrical cable from the transformer platform to the WDF through the pre-cast concrete electrical utilidor (see figure 5)
  - Tie-into existing 13.8kv cable to the new transformer including approximately 50' of buried cable
  
- Install a Genset enclosure that will be utilized to supply the WDF with heat and minimal power in the event of emergency failure

### **Piping Modifications**

- Modify seawater and waste slurry pipelines to isolate the existing Grind and Inject (G&I) facility on Drill Site 4 Pad (see figure 4)
  - Remove valves on the existing 6" seawater line entering the G&I facility and the 8" waste slurry line exiting the G&I facility
  - Install a "U" shaped piping spool to connect the two pipelines and bypass the current facility
  - The line will transport only seawater and continue to the tie-in location at the new waste disposal facility since the existing G&I facility will no longer be operating
  
- Install a pre-cast concrete trench, approximately 65' in length and 5' wide, which will house the pipeline tie-in segment. (see figures 4 and 5)
  
- Install new, 8-inch diameter piping within the pre-cast concrete trench, consisting of:
  - 88' of carbon steel pipe transporting seawater into the WDF (see figure 5)
  - 88' of HDPE-lined carbon steel pipe transporting waste slurry out to the existing waste slurry pipeline for routing to existing Underground Injection Control (UIC) injection wells GNI 01, 02/02A, 03, and 04 (see figure 5)
  - Modifications to tie piping into existing waste slurry disposal pipeline

### **Chronology and Schedule**

In September 2018, an Archaeological/Cultural Resources survey was completed with a finding of "No Historic Properties Affected". Project activities are scheduled to begin on July 10, 2019 with gravel placement commencing on August 1, 2019. Project is expected to be complete by December 2020.

**Class I Waste Disposal Facility and Gravel Pad Expansion**  
**Prudhoe Bay Unit**

**Site Restoration Statement for Projects with Ground Disturbing Activities**

At such time that infrastructure is placed, altered, or removed requiring ground disturbance, BP Exploration (Alaska) Inc. (BPXA) proposes the following measures for typical site restoration of projects with ground disturbing activities. The area around the excavated trench will be monitored and if the area does not revegetate naturally, manual site restoration activities will be initiated.

Revegetation on the North Slope requires adaptive management, or the flexible application of various techniques, including seeding, plugging, sodding, fertilization, occasional application of soil supplements, occasional irrigation, and other approaches. Different growing conditions between sites, between locations on individual sites, and between years must be addressed.

Seeds may include wild harvested sedges (predominantly *Carex* spp. and *Eriophorum* spp.), wild harvested forbs (predominantly *Oxytropis* spp. and *Artemisia* spp.), and, in some circumstances, native grass cultivars—that is, seeds from grasses native to Alaska and the North Slope but from stock commercially grown off site, predominantly including *Poa glauca*, *Festuca rubra*, *Arctagrostis latifolia*, and *Puccinellia borealis*. Sprigging, plugging, and or transplanting relies on sprigs of *Arctophila fulva*, cuttings of *Salix* spp., and plugs or blocks of mixed locally collected tundra vegetation.

Sodding relies on collection and transplanting of tundra sod from North Slope donor sites slated for excavation, typically for mining. Fertilization relies on commercially available nitrogen-phosphorous-potassium fertilizers. Soil supplements, typically mineral overburden soils collected from North Slope donor sites, are occasionally mixed with gravel to improve soil texture. Additional techniques that show promise under some circumstances include irrigation using locally available water from North Slope lakes and ponds and exclusion of grazers (mainly geese and swans) using temporary fences.