



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



SECTION I: APPLICANT INFORMATION

1. Applicant:

Name: Great Bear Pantheon LLC

Mailing Address: 3705 Arctic Blvd, Suite 2324

City: Anchorage

State: AK Zip Code: 99503

Phone: 907-575-8914 Fax: Enter Fax.

Email: pat@greatbearpetro.com

2. Applicant Contact:

First Name: Pat Last Name: Galvin

Title: Chief Commercial Officer

Is the Mailing Address the same as Applicant's Mailing Address? If "No", please provide information below: ☒ Yes

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.

3. Unit Name

Alkaid Unit

4. Unit Operator Contact:

Is The Unit Operator Contact the same as the Applicant Contact? If "No", please provide information below: ☒ Yes

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 relationship between the Unit Operator and the Applicant:

[Click here to enter text.](#)

SECTION II: THIRD PARTY INFORMATION

(Fill out this section only if you are applying for the Applicant)

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.

SECTION III: APPLICATION DATE AND NUMBER

(FOR OFFICE USE ONLY)

Application Date:

Application Number:

SECTION IV: PROJECT INFORMATION		
1. Project Name:	Alkaid #2 and Alkaid #3 Wells	
2. Proposed Start Date:	5/15/2022	
3. Project Description:		
Is activity discussed in the approved Plan of Development on file with the Division's Units Section? ☒ Yes ☐ No		
Describe what and where: Build the Alkaid #2 gravel pad 1000-feet west of the Dalton Highway approximately 20-miles south of Deadhorse. Drill a well at Alkaid #2, including a long horizontal component. Fracture stimulate the horizontal well and conduct production testing. Separate oil from produced water on-site and truck oil to a facility on the North Slope to be placed in TAPS and sold. Conduct sufficient production testing to determine the long-term production potential of the reservoir, including initial production rate and decline curve profile. Repeat the same sequence for Alkaid #3, located approximately 4-miles further south on the Dalton Highway and 1000-feet west of the highway.		
SECTION V: LAND STATUS		
1. State Mineral Estate:		
Are supplemental pages for land status included in Appendix C? ☐ Yes ☒ No		
Affected ADL: 391706	Date Effective: 5/1/2011	Date Assigned: 4/1/2012
Oil And Gas Lessee(s): Great Bear Petroleum Ventures I, LLC (100%)		
Surface Ownership: State of Alaska		
Do you have, or anticipate having an Access Agreement: ☐ Yes ☒ No		
Special Use Lands: ADL 50666		
Jointly Managed Lands: N/A		
Other Considerations: Click here to enter text.		
Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
Alkaid #2 Well Site and Driveway	U07N014E05	69°59'8.58"N, 148°42'18.89"W
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: 391704 Date Effective: 5/1/2011 Date Assigned: 4/1/2012 Oil And Gas Lessee(s): Great Bear Petroleum Ventures I, LLC (100%) Surface Ownership: State of Alaska Do you have, or anticipate having an Access Agreement: ☐ Yes ☒ No Special Use Lands: ADL 50666 Jointly Managed Lands: N/A Other Considerations: Click here to enter text.		
Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
Alkaid #3 Well Site and Driveway	U07N013E25	69°55'31.06"N, 148°46'52.23"W
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

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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
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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
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2. State of Alaska Surface Lands:		
Are supplemental pages for land status included in Appendix C? ☐ Yes ☒ No		
Oil And Gas Mineral Estate Owner: State of Alaska		
Access Authorization(s): MLW Ice Road Permit (In Process)		
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
Ice Road from Dalton Hwy to Drillsite	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.		
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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
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3. Private Lands:		
Are supplemental pages for land status included in Appendix C? ☐ Yes ☐ No		
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
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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
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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.		
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Project Components	Meridian, Township, Range, And Section(s)	GPS Coordinates
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Click here to enter text.	Click here to enter text.	Click here to enter text.
SECTION VI: BOND INFORMATION		
Bonded Company: U.S. Specialty Insurance Company Type: Statewide Number: B012897 Amount: \$500,000		
Bonding Company: U.S. Specialty Insurance Company		

Mailing Address: 13403 Northwest Freeway

City: Houston

State: TX

Zip Code: 77040

Phone: Enter Phone.

Fax: Enter Fax.

Email: Enter Email.

SECTION VII: SEQUENCE AND SCHEDULE OF OPERATIONS

Project Milestone #	Project Milestone	Proposed Start Date	Proposed End Date
1.	Begin gravel mining and conditioning	5/1/2022	6/1/2022
2.	Construct Alkaid #2 gravel driveway (ingress and egress) and drillpad	5/15/2022	7/1/2022
3.	Construct Alcor Staging Pad using rig mats & begin staging equip	6/1/2022	7/1/2022
4.	Move Rig to Alkaid #2, Rig Up and Spud	7/1/2022	7/15/2022
5.	Alkaid #2 well drilled, cased, and fraced	7/15/2022	10/15/2022
6.	Construct Alkaid #3 gravel driveway (ingress and egress) and drillpad	7/15/2022	8/31/2022
7.	Alkaid #2 flow tested	10/15/2022	5/31/2023
8.	Move Rig to Alkaid #3, Rig Up and Spud	2/1/2023	2/15/2023
9.	Alkaid #3 well drilled and cased	2/15/2023	3/30/2023
10.	Alkaid #3 fraced and flow tested	5/15/2023	2/1/2024

SECTION VIII: PROJECTED USE REQUIREMENTS

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

Each well site will be a gravel pad located approximately 1000-feet to the west of the Dalton Highway, connected to the highway by a driveway that provides both an ingress and egress route from the pad to the highway. The approximate orientation, layout, and design of the each well site and driveway are shown on Attachments A and C (the layout for Alkaid #3 will be identical to the one shown for Alkaid #2). Each gravel drill pad will be approximately 500' x 260' (130,000 sq ft, 2.985 acres) at the working surface, larger at the base (141,625 sq ft, 3.251 acres), and is expected to be approximately 5 feet thick. To minimize the size of the gravel drill pad, a rig mat staging pad will be constructed at the former Alcor #1 site, straight across the Dalton Highway from the ingress driveway to the Alkaid #2 pad. The Alcor Staging Pad will be used for storage of dry materials used in the drilling and completion of each well, such as tubulars and sand. Targeted spud date is 7/15/22 for Alkaid #2, and 2/15/23 for Alkaid #3. Each will include a vertical well drilled to the base of the Alkaid Brookian sand above the HRZ to approximately 8,000', with a total depth of up to 18,000'. The horizontal well at Alkaid #2 will be in a southwestern direction, while the horizontal well for Alkaid #3 will be in a northeastern direction. There are additional targets in the Brookian interval that will also be evaluated as the vertical well is drilled. Each well will be logged, cased, and fracture stimulated with a multi-stage frac in the horizontal well. The log suites are expected to include: Quad Combo, FMI, RFT, rotary sidewall cores, NMRI, Caliper, and possibly others. Each well will be designed to be a long-term producer. Cruz Construction has developed the following gravel mining and placement techniques for summer-placed gravel embankments which are intended for use during the same season. Special care is required to remove moisture during gravel mining and placement, and to protect the existing vegetation to the extent possible. At the fill placement location, a layer of permeable geotextile fabric is installed directly over the organic layer to provide separation and stabilization of the tundra. Due to fill placement early in the spring and careful preservation of the vegetative mat, Cruz expects only 3"-6" of thaw depth in the active layer when the first lift is placed. An initial lift of 2-3 feet of fill will be placed with a dozer and compacted with a vibratory roller to further evacuate water from the fill. Cruz anticipates that soft conditions on the initial lift will be suitable for only off-road equipment, and will use CAT 730 haul trucks to haul stockpiled gravel from the roadside to the dozer for placement. Haul units take care to split tracks and avoid damage to the geotextile and vegetative mat caused by rutting. Successive layers of fill will be placed in lifts of approximately 12" and compacted. As needed, the final lift of fill will be placed loose, and bladed into windrows to further reduce the moisture content. When optimum moisture content has been reached, windrows will be leveled and balanced with a CAT 14H Grader, and compacted to a minimum of 95% of the maximum dry density.

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

Support facilities will include a satellite office camp, with an 11-bed capacity for the Company Man and alternate (sufficient for the entire crew to shelter in place in case of emergency need), storage areas (e.g., fuel storage, drilling waste or fluid components storage), and maintenance buildings. The crew will be housed in Deadhorse at a camp or the Aurora Hotel and shuttled to the well site for their shifts. The anticipated layout of the buildings on each drill pad is shown on Attachment A.

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

Fuel will be stored on each drilling pad, but not at the Alcor Staging Pad. Fuel storage tanks will include secondary containment that will hold a minimum of 110 percent (110%) of the single largest tank or any group of tanks permanently manifold together. Fuel storage, handling, transfers, and spill reporting will be conducted in accordance with the regulatory requirements as described in the Great Bear Exploration Project C-Plan, North Slope Environmental Field Handbook, and Alaska Safety Handbook. All bulk fuel and fluid transfers in excess of 500 gallons will be monitored by an Alaska Clean Seas (ACS) Spill Technician. The size of the day tank on the rig may vary, but it will be less than a 10,000-gallon capacity. The maximum amount of fuel stored at a drill site will be

9,000 gallons. All fuel and hazardous materials stored at the drill site will be kept more than 100 feet from a waterbody. Drip pans will be placed under vehicles and equipment capable of leaking hazardous fluid. No vehicle refueling will take place in an active river floodplain. All independent fuel and hazardous substance containers will be marked with the contents and the lessee's or contractor's name using paint or a permanent label.

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

All waste disposal procedures will conform to local, state and Federal requirements. The general approach to waste management will be to temporarily store wastes and periodically haul waste materials to existing North Slope facilities for proper treatment and disposal. Solid, non-burnable waste will be deposited in dumpsters located at each site. These containers will be hauled to the NSB landfill at Prudhoe Bay. The food waste that could attract wildlife will be stored in enclosed containers pending periodic hauling or such wastes will be hauled each day to an approved disposal center (such as PBU). To reduce the amount of trash that must be hauled from the drilling location, all solid, burnable waste may be incinerated at the location in accordance with 18 AAC 50. The ash will be hauled to the NSB landfill. Camp wastewater will be hauled to an approved disposal facility on the North Slope. The satellite office camp should generate less than 500 gallons per day of domestic wastewater. Drill cuttings will be promptly trucked to an approved G&I facility when generated. Waste drilling fluids and produced reservoir fluids will be processed on-site for reuse where possible, or trucked to an approved facility in Prudhoe Bay for injection. Used oil will be recycled or packaged in drums and hauled to Prudhoe Bay for shipment to an approved recycle facility. A metal temporary drill cuttings storage container will be located on the pad to facilitate backhaul operations and continuity of off-site annular injection, if permitted by AOGCC. Wastewater will be stored in tanks until taken to the Prudhoe Bay Unit (PBU) Grind & Inject (G&I) facility for disposal. The wastewater will be hauled off to G&I as frequently as possible so as not to create build-up at site location. The PBU G&I is a Class II facility. The majority of wastewater will be sent there for disposal. A small amount of wastewater will be Class I and will be sent to a facility at Prudhoe Bay Pad 3. Cuttings will be immediately hauled to G&I for disposal when generated. After the removal of drilling waste from the storage area, a visual site inspection will be performed to verify that all drilling waste has been removed. A final site inspection report including drilling waste volume and final disposition of waste will be submitted to ADEC within seven days of the site inspection as required under 18 AAC 60.430. All drilling waste will be disposed of prior to completion of site operations.

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

Potable water will be obtained from service providers in Deadhorse. The remaining water will be obtained from permitted waterbodies near the drill site. Great Bear has current Temporary Water Use Authorizations for the intended water sources, and will acquire TWUAs for additional sources, as necessary. Title 16 Fish Habitat Permits are in hand for any fish-bearing water sources. In 2012 Great Bear acquired a TWUA allowing for the use of up to 11 million gallons of water from the Sag River to be transferred into the Annie Pit for use on Great Bear wells in the area. In addition, Great Bear's Merak #1 plan of operations provided for a flexible pipe/hose to be placed along the Dalton Highway from Annie Pit down to the Merak #1 drill site. Following this model, Great Bear is in consultations with DNR-Water, as well as ADF&G-Habitat, regarding a plan to again use Sag River water to fill the Annie Pit water source and then placing a flexible pipe/hose from Annie Pit to Alkaid #2 along the ingress driveway to provide the water needed for drilling and completion operations. The crossings of the Dalton Highway and the TAPS right-of-way service road will utilize a "Low Pro Crossing" steel device that allows for unimpeded vehicle traffic at the water crossing location.

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

N/A

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

The gravel for the pad and driveway will be obtained from an existing material site. At this time, it is expected that the material will be taken from an existing material site MS 65-9-099-2. Initially, the gravel will be removed and stored at the material site until site clearance is obtained for Alkaid #2 pad and driveway. MS 65-9-099-2 is a State of Alaska, Department of Natural Resources owned material site. Its access point is located on the west side of the Dalton Highway at milepost 389.7 (within 8-miles from the Alkaid #2 site, and 4-miles from Alkaid #3). Cruz has extensive knowledge of this material site. In 2015, Cruz developed a 60-acre area for the extraction of 750,000 tons of borrow and crushed aggregate on the south side of the access road that divides the material site. Cruz will re-permit and selectively mine the same area to produce the materials required for this project. The anticipated disturbed area in the material site is approximately 4 acres. Development will not require any significant clearing of trees, however the material site will require approximately six feet of overburden removal. Cruz plans on excavating to a depth of approximately 12 feet to obtain 6 feet of usable borrow materials. Within the material site, gravel will be mined in a thawed state with a D10 Dozer. The dozer will make at least one pass over the full mined face during each shift, removing the top 4-8" of thawed gravel and exposing the frozen gravel below. Thawed gravel is pushed into a single stockpile, and further "stacked" with a 365 excavator to create optimal conditions for drainage. With the free draining alluvials encountered on the North Slope's lower Sagavanirktok River sources, a drainage period of 3-7 days is typically sufficient to reduce the moisture condition to a level acceptable for placement and compaction.

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

The ingress portion of the driveway, approximately 2500 feet in length for Alkaid #2 and 1200-feet in length at Alkaid #3, will connect the drill pad to the Dalton Highway. The ingress portion of the driveway at Alkaid #2 will connect to the Dalton Highway directly across from the access road to the Alcor Staging Pad. The egress portion of each driveway, approximately 1000 feet in length, will lead from the drill pad directly to the Dalton Highway. The driveway will be for one-way travel only for safety reasons. Each driveway will be 5 feet thick and tapered on the sides, such that the full footprint will be 40 feet wide. The procedure for gravel placement for the driveways will follow the same methodology described above in the well site section.

9. Describe the proposed operations, including the location and design, of Airstrips :				
N/A				
10. Describe the proposed operations, including the location and design, of All Other Facilities and Equipment :				
Twenty-four hour phone service and internet will be available at each site. Operational radio communications will be provided using fixed base stations and truck-mounted, mobile "bread-board" radios. Operational frequencies will be coordinated between the various Great Bear field supervisors, ice road and support contractors, and well service providers. Small communications towers will be placed at the site. All communication towers are temporary and will be removed at demobilization. In the event of a serious emergency, resources would be mobilized from Deadhorse. Medical evacuation, if necessary, would be provided to the clinic in Deadhorse for patient stabilization and/or transfer to Fairbanks or Anchorage hospital facilities.				
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)
AOGCC	Permits to Drill	TBD	To Be Filed	1
ADF&G	Title 16 Fish Habitat Permits	FH14-III-0298-A1, FH20-III-0140, FH20-III-0141, FH20-III-0142	Some in Hand, Some to be filed	5
ADF&G	Public Safety Permit	TBD	To Be Filed	1, 4, 8, 10
ADEC	Oil Discharge Prevention & Contingency Plan (C-Plan) Amendment	21-CP-5191	Approved	1
ADEC	Minor General Permit MG1	TBD	To Be Filed	1
ADEC	Temporary Storage Approval	TBD	To Be Filed	1, 4
ADEC	Temporary Storage of Non-Drilling Waste Plan	TBD	To Be Filed	1, 4
DNR-MLW	Temporary Water Use Authorizations	A2019-13; A2020-105, A2020-112, and TBD	Some in Hand, Some to be filed	5
DOT-PF	Driveway Permit	TBD	To Be Filed	8
Corps of Engineers	Discharge Permit	TBD	To Be Filed	1, 8
NSB	Development Permit	TBD	To Be Filed	1, 8
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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SECTION IX: REHABILITATION PLAN**1. Proposed Level of Infrastructure, Facilities and Equipment Removal:**

Upon completion of drilling and evaluation operations, each well could either be plugged and abandoned, suspended in accordance with AOGCC regulations, or retained as a producing well. If P & A'd or suspended, all equipment will be removed and the site closed. As part of site closure activities, any remaining debris will be hauled to an approved disposal site. Any spills discovered as part of site closure activities will be chipped or scraped to remove the contaminated material. This material will be transported to an appropriate facility for disposal. If a well is P & A'd, Great Bear will work closely with DNR to determine what level of removal of the gravel pad and driveway is in the State's best interest. If DNR determines that an entire gravel pad and driveway should be removed, then Great Bear will remove the pad and driveway in accordance with DNR specifications.

2. Description of Restoration and Rehabilitation Activities for Vegetation, Habitat, Impacted Wildlife, and Other Applicable Resources:

If DNR determines that a pad and driveway are to be removed, Great Bear will, in coordination with DNR, develop a site restoration and rehabilitation plan. The plan will address the area, type, and extent of damage and will be developed in accordance with the Alaska Coastal Revegetation & Erosion Control Guide developed by the State of Alaska Plant Materials Center, the Streambank Revegetation and Protection Guide developed by the Alaska Department of Fish and Game, and other relevant guidance documents. As part of the Plan of Operations development, Great Bear has engaged an environmental contractor to assist Great Bear in preparing a removal and rehabilitation plan for the Alkaid #2 and Alkaid #3 pads and driveways. The rehabilitation plans will propose that if the project does not move to full production, the goal will be to remove all fill material within three summer growing seasons to allow the native vegetation to regrow naturally. Great Bear anticipates submitting the draft rehabilitation plans to DNR by the end of April.

SECTION X: OPERATING PROCEDURES DESIGNED TO MINIMIZE ADVERSE EFFECTS

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: Great Bear has located both the Alkaid #2 pad and the Alkaid #3 pad as close to the Dalton Highway as permissible in order to keep it within the previously disturbed transportation corridor and minimize impacts beyond that corridor. Each pad is located on the west side of the highway to use the highway as a buffer to the Sag River. The Alcor Staging Area will be constructed and utilized in order to minimize the size of each drilling pad and minimize the amount of wetlands impacted by the project. Based on recommendations from the US Fish and Wildlife, in order to mitigate any potential impact to migratory bird nesting, Great Bear will ensure that a layer of permeable geotextile fabric is placed over the Alkaid #2 pad area and each driveway path prior to June 1. As noted by USFWS, this activity should be sufficient to discourage the nesting of any migratory birds in the project area. In addition, Great Bear will not place any gravel at the Alkaid #3 location until after July 31.

Historic and Archeological Sites: The area impacted by this project, as well as the general Great Bear project area, has been pre-cleared for historic and archeological sites during previous permitting for wells and seismic acquisition projects in 2012-2016.

Public Use Areas: Access to each driveway and drill pad will be restricted to the general public. However, existing access along the Dalton Highway will not be impacted by the project.

Other Uses: Great Bear will obtain a Letter of Non-Objection from Alyeska Pipeline Service Company to cross their fuel gas line for driveway construction, and to cross TAPS for use of the Alcor Staging Area and the Annie Pit water source.

SECTION XI: GLOSSARY OF TERMS

Term #	Term	Term Definition
1	Great Bear	Great Bear Pantheon LLC
2	Enter Term.	Enter Term Definition.
3	Enter Term.	Enter Term Definition.
4	Enter Term.	Enter Term Definition.
5	Enter Term.	Enter Term Definition.
6	Enter Term.	Enter Term Definition.
7	Enter Term.	Enter Term Definition.
8	Enter Term.	Enter Term Definition.
9	Enter Term.	Enter Term Definition.
10	Enter Term.	Enter Term Definition.

SECTION XII: CONFIDENTIALITY

The undersigned hereby requests that each page/section of this application marked confidential be held confidential under AS 38.05.035(a)(8).

APPLICANT CONTACT:

SS//Patrick Galvin

Patrick Galvin

Chief Commercial Officer

4/4/2022

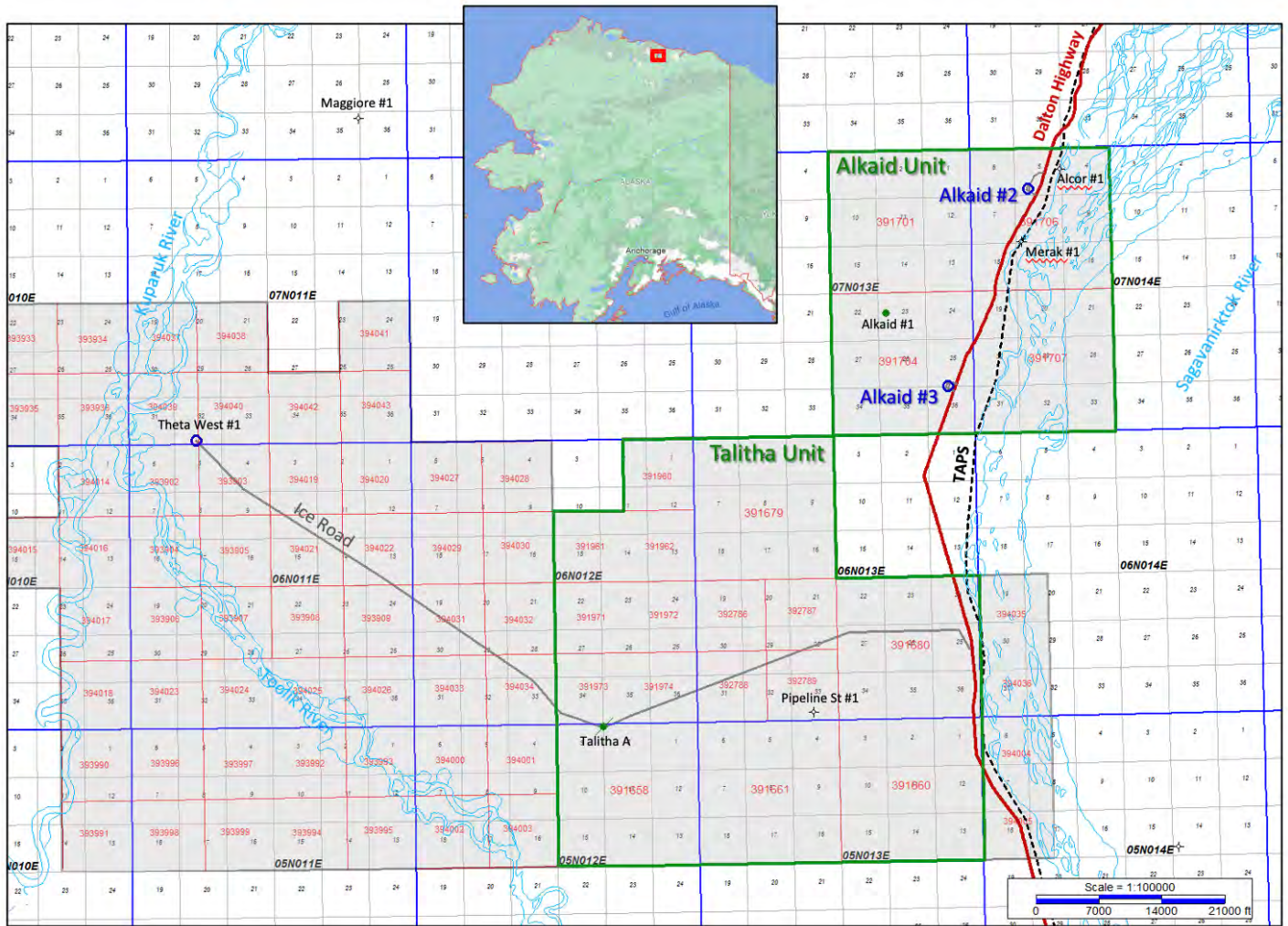
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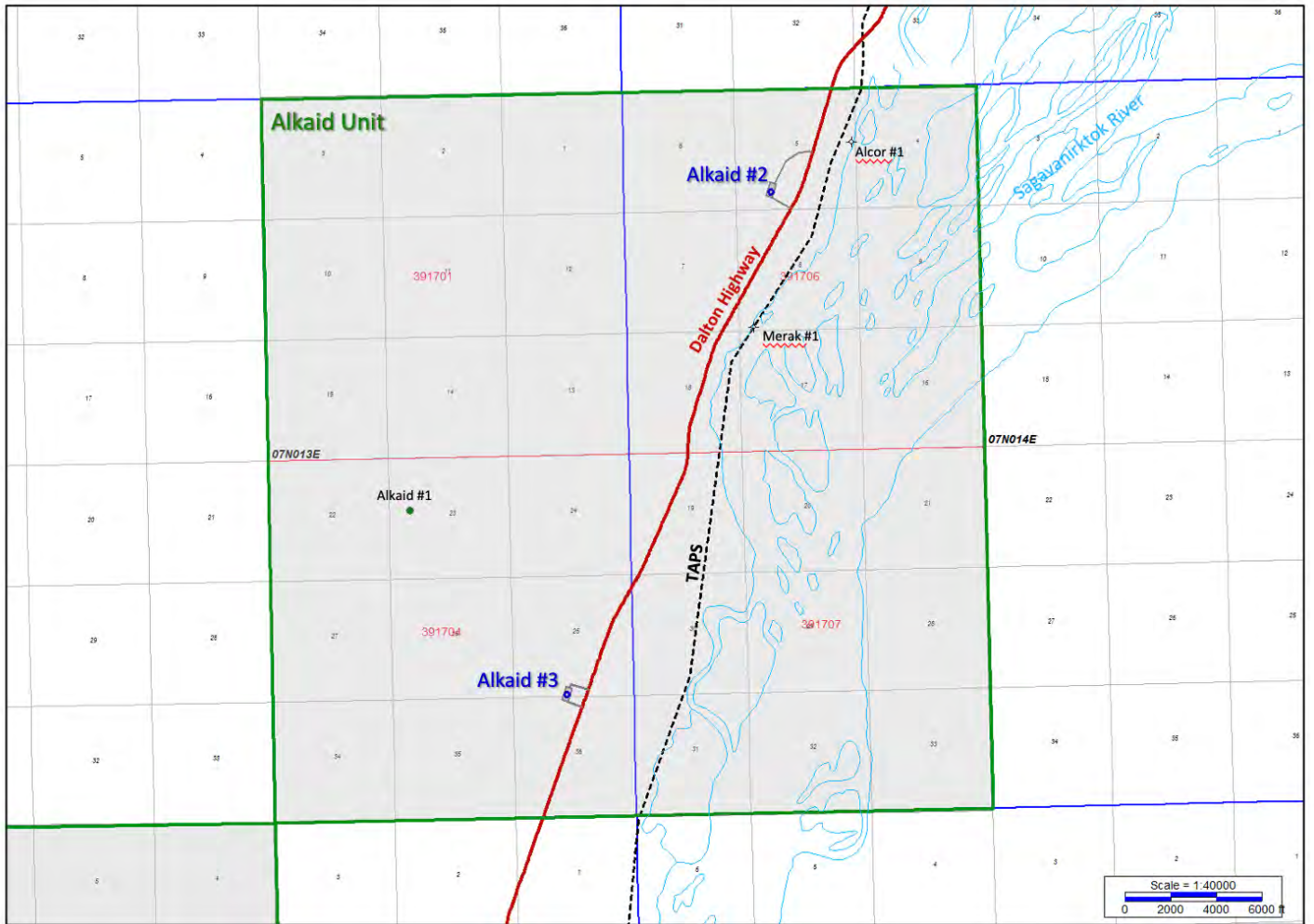
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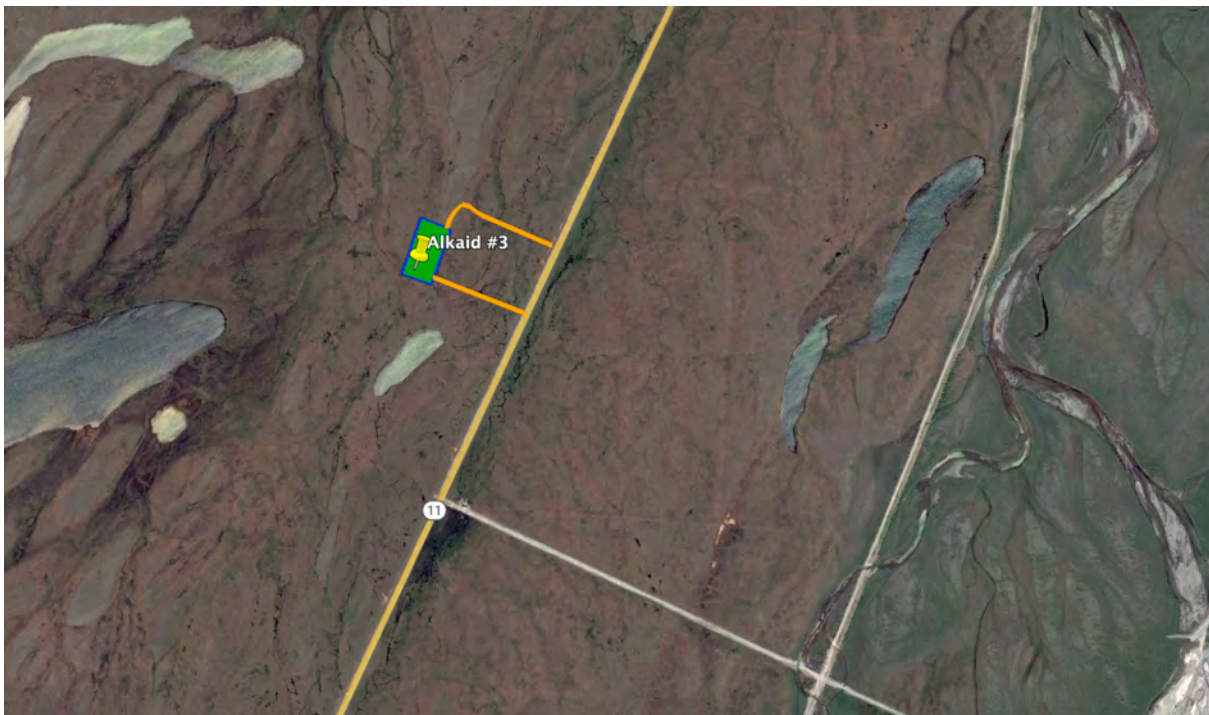
Title

Date

APPENDIX A: MAPS



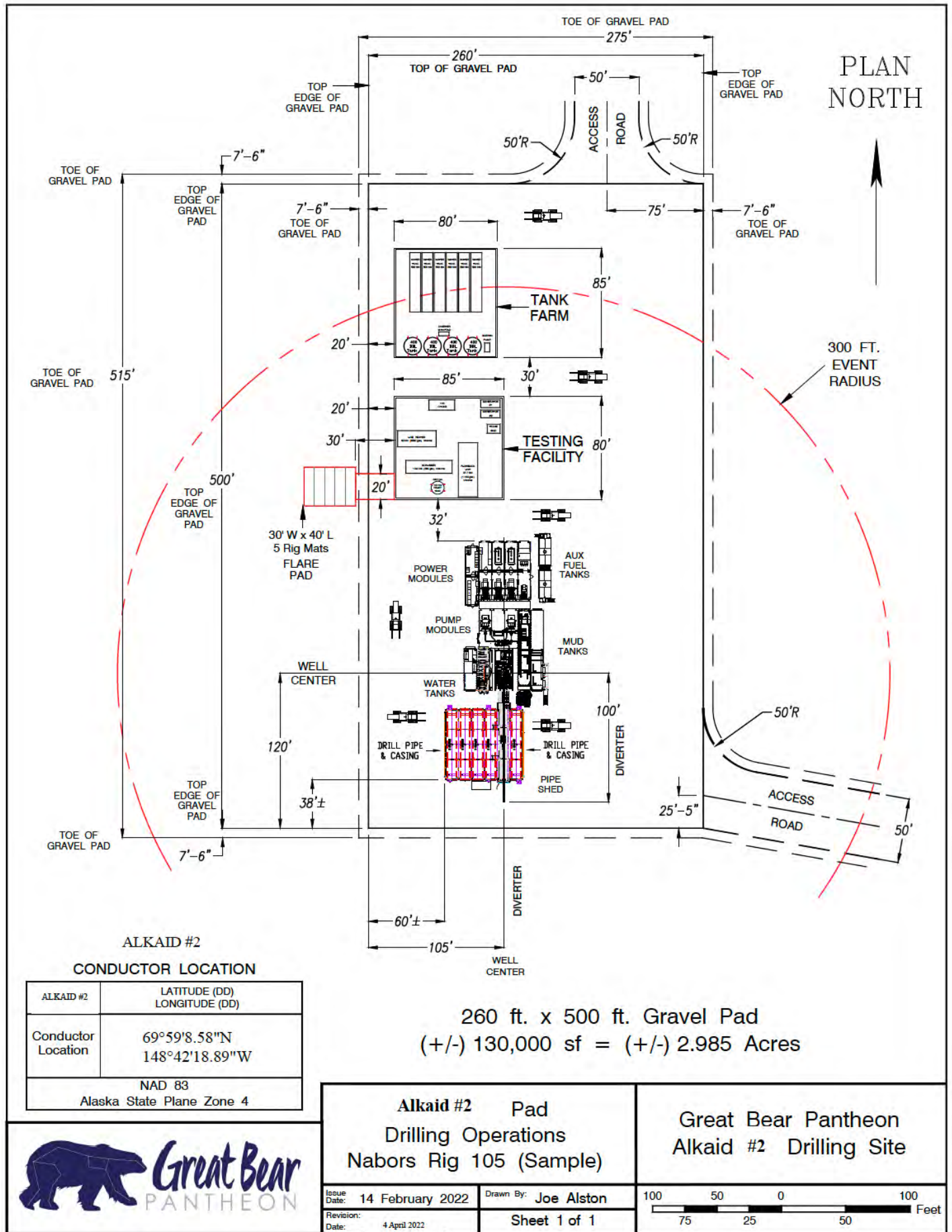


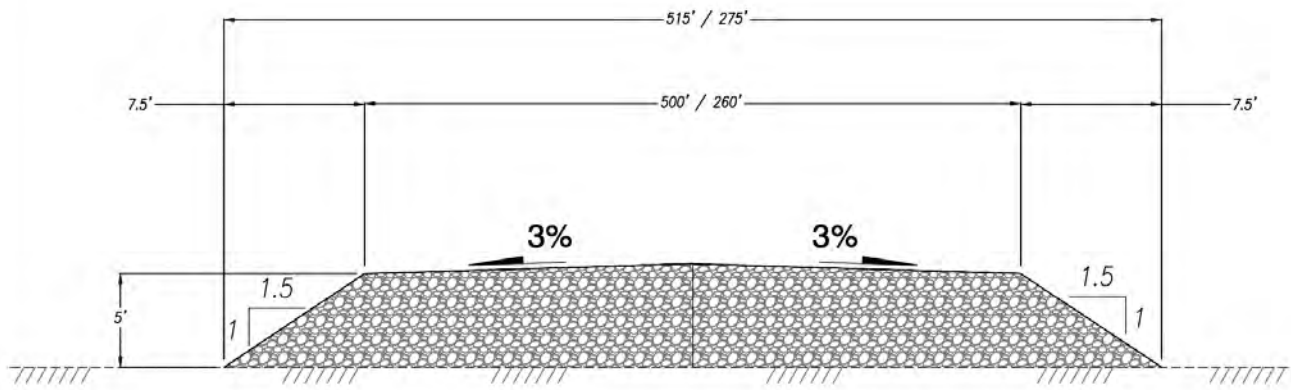


See Attached.

APPENDIX C: OTHER

See Attached Bear Avoidance, Interaction, Mitigation, and Monitoring Plan.





**SINGLE WELL ALKAID #2 PAD
GRAVEL PAD
CROSS SECTION**

Not to Scale

**ALKAID #2
CONDUCTOR LOCATION**

ALKAID #2	LATITUDE (DD) LONGITUDE (DD)
	69°59'8.58"N 148°42'18.89"W
Conductor Location	X = - Y = - Inline : - XLine : -
NAD 83 Alaska State Plane Zone 4	

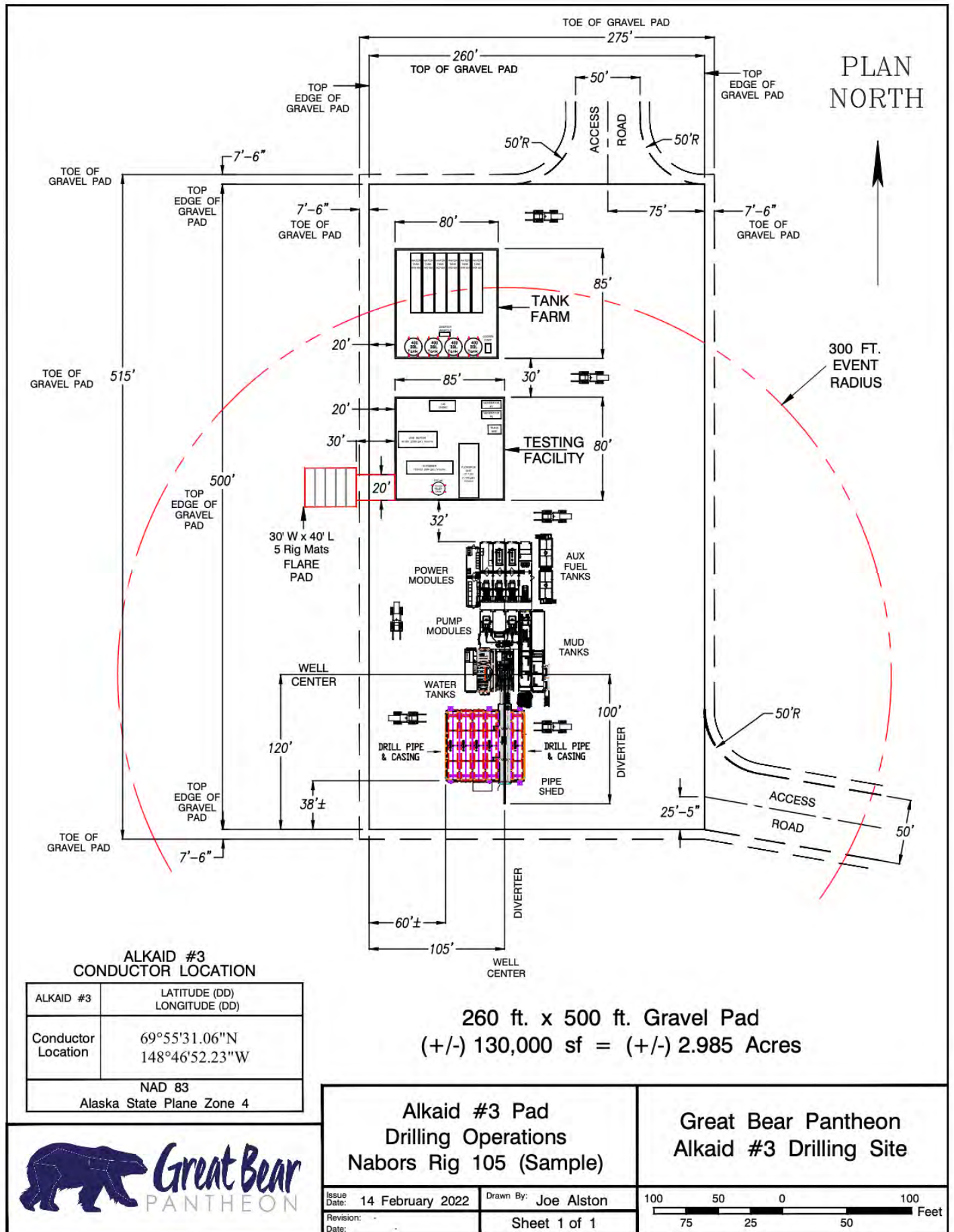


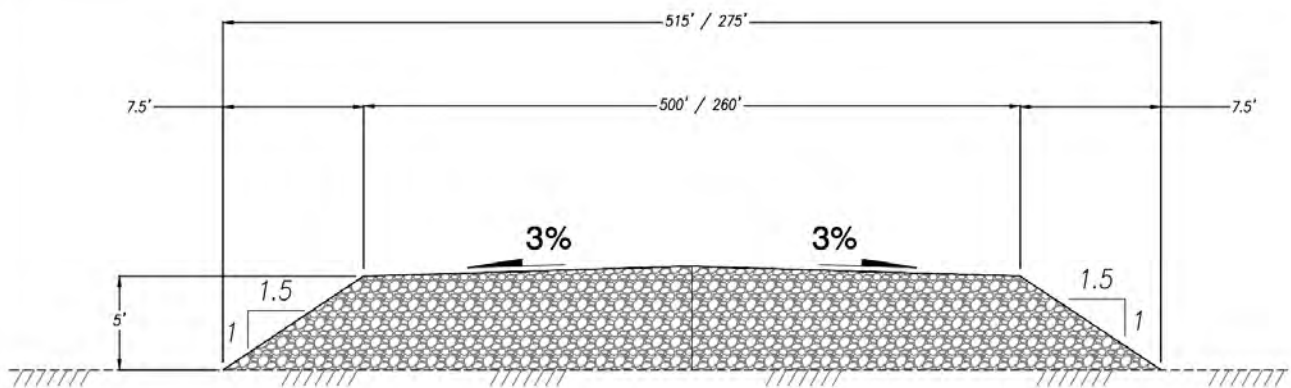
**Single Well Alkaid #2 Pad
Gravel Pad
Cross Section**

**Great Bear PANTHEON
Alkaid #2 Drilling Site**

Issue Date: 28 December 2021 Drawn By: Joe Alston
Revision: 4 April 2022 Sheet 1 of 1

Not to Scale





**SINGLE WELL ALKAID #3 PAD
GRAVEL PAD
CROSS SECTION**

Not to Scale

**ALKAID #3
CONDUCTOR LOCATION**

ALKAID #3	LATITUDE (DD) LONGITUDE (DD)
	69°55'31.06"N 148°46'52.23"W
Conductor Location	X = - Y = - Inline : - XLine : -
NAD 83 Alaska State Plane Zone 4	



**Single Well Alkaid #3 Pad
Gravel Pad
Cross Section**

**Great Bear PANTHEON
Alkaid #3 Drilling Site**

Issue Date: 28 December 2021 Drawn By: Joe Alston
Revision: 4 April 2022 Sheet 1 of 1

Not to Scale

