



**Alaska Department of Natural Resources  
Division of Oil and Gas  
Public Notice of Application to Form Proposed Alkaid Unit**

The Department of Natural Resources (Department) gives notice under 11 AAC 83.311 of an application to form the Alkaid Unit. The proposed Alkaid Unit is located onshore on the North Slope. It is situated approximately 20 miles south-southwest of Deadhorse. On August 26, 2020, Great Bear Petroleum Ventures I, LLC, (Great Bear) the sole working interest owner, filed an application to form the proposed Alkaid Unit with the Division of Oil and Gas (Division). The proposed Unit Operator is Great Bear Pantheon, LLC. Great Bear's address is 3705 Arctic Blvd, Suite 2324, Anchorage, Alaska 99503.

The Alkaid Unit includes all or portions of the following lands:

Umiat Meridian, Alaska

T. 07 N. R. 13 E., secs. 1 thru 3; secs. 10 thru 15; secs. 22 thru 27; and secs. 34 thru 36.

T. 07 N. R. 14 E., secs. 4 thru 9; secs. 16 thru 18; secs. 19 thru 21; and secs. 28 thru 33.

You may review the non-confidential portions of the application on the Division's website at <http://dog.dnr.alaska.gov/Library/>, in-person at the Division's office, or by writing to Division of Oil & Gas, Units Section, 550 West 7th Avenue, Suite 1100, Anchorage, Alaska 99501-3560. The Division charges a photocopy fee of \$.25 per sheet, per 11 AAC 05.030(a)(3)(A).

Any person may file written comments on the application. Comments must be received by 4:30 p.m., Alaska Time, October 1, 2020, and should be mailed to the Division of Oil and Gas, attention Aaron O'Quinn, Unit Manager, at the above address, or emailed to [DOG.Units@alaska.gov](mailto:DOG.Units@alaska.gov). The Department will consider all timely written comments and evaluate the application based on the criteria in 11 AAC 83.303 and 83.336(a)(2). After the close of the comment period, the Department will issue a written decision to approve or deny the unit formation application. Individuals or groups of people with disabilities, who require special accommodations, auxiliary aids or services, or alternative communication formats, please contact Lorence Williams at (907) 269-8507, or TDD (907) 269-8411 (5 days before end of comment period).

This notice also appears on the State of Alaska website at <http://dnr.alaska.gov/commis/pic/pubnotfrm>.

Published: September 1, 2020

# ALKAID UNIT AGREEMENT

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## **RECITALS**

This document is the proposed Alkaid Unit Agreement (“Agreement”), executed by Great Bear Petroleum Ventures I, LLC who is the Working Interest Owner of the leases proposed to be included in the unit (“Party” or “Parties”).

Great Bear Petroleum Ventures I, LLC submitted an application to the Alaska Department of Natural Resources (“DNR”) for approval of formation of the Alkaid Unit (“Unit”) out of state oil and gas leases.

DNR may approve unitization of state oil and gas leases when it is necessary or advisable in the public interest.

DNR’s decision on whether to approve formation of the Unit will be set forth in a separate appealable DNR decision.

## **ARTICLE 1: Purpose and Scope of Agreement**

- 1.1. In consideration of the mutual promises in this Agreement, the Parties commit their respective interests in the Unit Area defined in Exhibit A and depicted in Exhibit B to this Agreement, subject to (1) all state statutes and regulations currently in effect or enacted or promulgated after the effective date of this Agreement; (2) the terms of this Agreement; and (3) DNR’s authority to manage state oil and gas resources and to resolve disputes by administrative decision and appeal.
- 1.2. The purpose of this Agreement is to conserve natural resources by maximizing the efficient and timely production of oil and gas resources from the leases and working interests committed to the Unit and minimizing the adverse impacts to the surface estate and other resources from development.
- 1.3. This Agreement is effective as of the Effective Date and automatically expires five years from the Effective Date as provided in 11 AAC 83.336, unless otherwise extended pursuant to 11 AAC 83.336(a)(1) or 11 AAC 83.336 (a)(2).
- 1.4. The Parties acknowledge that DNR is not a Party to this agreement but is instead the agency authorized by Alaska law to approve formation of a unit including state oil and gas leases when it is necessary and advisable in the public interest to explore, develop, and produce state oil and gas resources.

## ARTICLE 2: Definitions

- 2.1. **Alaska Oil and Gas Conservation Commission** (“AOGCC”) means the independent quasi-judicial agency of the State of Alaska established by the Alaska Oil and Gas Conservation Act, Alaska Statute 31.05.
- 2.2. **Commissioner** means the Commissioner of the Department of Natural Resources, State of Alaska, or the Commissioner's authorized representative, including but not limited to the Director.
- 2.3. **Director** means the Director of the Department of Natural Resources, Division of Oil and Gas or the Director's authorized representative.
- 2.4. **Effective Date** means 12:01 a.m. on the date identified as the effective date in the Director's approval of the unit, and if no date is specified, the date of the unit approval decision.
- 2.5. **Lease or Leases** means one or more oil and gas leases subject to this Agreement.
- 2.6. **Operations** means physical activities in or on an oil and gas lease that a lessee or unit operator may not conduct without an approved plan of operations under 11 AAC 83.158 or 11 AAC 83.346; activities conducted in support of, in anticipation of, or in conjunction with physical activities in or on an oil and gas lease (including but not limited to analyses, review, negotiations, or other work more accurately described as administrative, technical, or commercial activity) do not constitute Operations.
- 2.7. **Participating Area** means all Unit Tracts and parts of Unit Tracts established under the provisions of Article 10 of this Agreement to allocate Unitized Substances produced from a reservoir.
- 2.8. **Participating Area Expense** means all costs, expenses, or indebtedness incurred by the Unit Operator under this Agreement for or on account of production from or Operations in a Participating Area and allocated solely to the Unit Tracts in that Participating Area.
- 2.9. **Royalty Interest** means the State's right to a share of production from the Unitized Area. It does not include an overriding royalty interest, which is a nonpossessory interest in oil and gas produced at the surface, free of the expense of production, that is derived from a Working Interest, but is not connected to ownership of the land or minerals. Overriding Royalty Interest owners are not proper parties to this Unit Agreement, nor do they have any rights to enforce the terms of this Unit Agreement.
- 2.10. **State** means the State of Alaska.
- 2.11. **Sustained Unit Production** means continuing production of Unitized Substances from a Unit Well in the Unit Area into production facilities and transportation from the unit Area

to market, excluding temporary production for initial testing, evaluation, or pilot production purposes.

- 2.12. **Unit Area** means the lands subject to this Agreement, described in Exhibit A and shown in Exhibit B to this Agreement.
- 2.13. **Unit Expense** means all costs, expenses, or indebtedness incurred by the Unit Operator under this Agreement for or on account of production from or Operations in the Unit.
- 2.14. **Unit Operating Agreement** means any and all agreements entered into by the Unit Operator and the Working Interest Owners, as described in Article 8 of this Agreement.
- 2.15. **Unit Operations** means all Operations conducted under this Agreement in accordance with a Unit plan of operations.
- 2.16. **Unit Operator** means the party designated by the Working Interest Owners and approved by the Director to conduct Unit Operations.
- 2.17. **Unit Plan** means a unit plan of exploration, plan of operations or plan of development as described in Article 9 of this Agreement.
- 2.18. **Unit Tract** means each separate parcel of land that is described in Exhibit A and given a Unit Tract number.
- 2.19. **Tract Participation** means the percentage of Unitized Substances and costs allocated to a Unit Tract in a Participating Area.
- 2.20. **Unit Well** means a well drilled within the Unit Area after the effective date of this Agreement unless specifically authorized by the Director.
- 2.21. **Unitized Substances** means all oil, gas, and associated substances produced from the Unit Area.
- 2.22. **Working Interest** means the interest held in lands by virtue of a Lease under which the owner of the interest is vested with the right to explore for, develop, and produce minerals. The right delegated to a Unit Operator by a Unit Agreement is not a working interest.

### **ARTICLE 3: Exhibits and copies of the agreement**

- 3.1. The Unit Operator will provide the following exhibits to the Director:
  - 3.1.1. Exhibits A, B, and G as part of the Unit Agreement when the unit formation application is filed and whenever there is a change to the Unit Area or in interests committed to the unit.

- 3.1.2. Exhibit F as part of the Unit Agreement if the Unit Area includes or is proposed to include one or more net profit share leases.
- 3.1.3. Exhibits C, D, E, and F when a Participating Area application is submitted for approval, and upon approval of the Participating Area, they become part of this Agreement.
- 3.1.4. Revised Exhibits within 30 days of the information in an Exhibit no longer being accurate, a DNR decision affecting the information in an Exhibit, or a request from DNR for revised Exhibits. Events requiring revised Exhibits include, but are not limited to, expansion or contraction of the Unit Area, expansion or contraction of a Participating Area, changes to Tract Participation, and changes to working interest in Leases.
- 3.2. Exhibit A is a table that identifies and describes each Unit Tract, and displays the Unit Tract numbers, legal descriptions, lease numbers, Working Interest ownership, Royalty Interest ownership, and the applicable royalty and net profit share rates applicable to each Unit Tract.
- 3.3. Exhibit B is a map that shows the boundary lines of the Unit Area and of each Unit Tract, identified by Unit Tract number and lease number.
- 3.4. Exhibit C is comprised of a table for each Participating Area that displays the Unit Tract numbers, legal descriptions, lease numbers, Working Interest ownership, Royalty Interest ownership, and the percentage of Unitized Substances allocated to each ("Tract Participation"). Exhibit C must include a separate table for each Participating Area. Exhibit C and any revisions to Exhibit C are not effective until approved by the Director.
- 3.5. Exhibit D is comprised of a map for each Participating Area. Each Exhibit D map must show the boundary lines of the Unit Area, the Participating Area, and the Unit Tracts in that Participating Area identified by Unit Tract number and lease number.
- 3.6. Exhibit E is comprised of a table for each Participating Area that displays the allocation of Participating Area Expense to each Unit Tract in the Participating Area, identified by Unit Tract number and Lease number. Exhibits must include a separate table for each Participating Area in the Unit Area.
- 3.7. Exhibit F is a table that displays the allocation of Unit Expense to each Unit Tract in the Unit Area, identified by Unit Tract number and lease number. Exhibit F and any revisions to Exhibit F are not effective until approved by the Director.
- 3.8. Exhibit G is a Unit Plan for the Unit. Subsequent Unit Plans are part of this Agreement, but do not need to be labelled as a revised Exhibit G.
- 3.9. At least one copy of this Agreement will be filed with DNR, Division of Oil and Gas in Anchorage, Alaska and one copy will be filed with the AOGCC.

#### **ARTICLE 4: Creation and Effect of Unit**

- 4.1. All working interests in and to the lands described in Exhibit A and shown in Exhibit B are subject to this Agreement.
- 4.2. The provisions of a Lease committed to this Agreement and of any other agreement regarding that Lease are modified to conform to the provisions of this Agreement and to statutes and regulations regarding oil and gas leases and units existing on the Effective Date of this Agreement or enacted thereafter.
- 4.3. This Agreement does not transfer title to any Lease.
- 4.4. All data, information, and interpretations determined by the Director to be necessary for the administration of the Unit or for the performance of DNR responsibilities under Alaska law will be submitted to the Director by the Unit Operator or Working Interest Owners, or both, upon DNR written request. Upon request, DNR will keep records confidential to the extent allowed under applicable law.
- 4.5. When the Commissioner or Director makes a decision related to the administration of the Unit or Unit Leases in reliance on confidential information, and there is an appeal or request for reconsideration of that decision in which the confidential information is materially relevant to the issues on appeal, the Working Interest Owners agree to enter reasonable confidentiality agreement(s), as necessary, to provide parties to the appeal or reconsideration with access to the relevant confidential information.

#### **ARTICLE 5: Designation of Unit Operator**

- 5.1. Great Bear Pantheon LLC is designated as the Unit Operator until such time, if any, that a successor unit operator is designated and approved by the Director. Great Bear Pantheon LLC accepts the rights, duties, and obligations of the Unit Operator including to diligently conduct Unit Operations and to explore, develop, and produce the Unit Area.
- 5.2. Except as otherwise provided in this Agreement, and subject to the terms and conditions of an approved Unit Plan, the rights and obligations of the Working Interest Owners to conduct Operations to explore for, develop, and produce the Unit Area are delegated to and will be exercised by the Unit Operator. This delegation does not relieve a Working Interest Owner of the obligation to comply with all Lease terms. The Unit Operator will comply with all notification requirements of the Leases, this Agreement, the Unit Operating Agreement, and applicable statutes or regulations.
- 5.3. The Unit Operator will minimize and consolidate surface facilities to minimize surface impacts.
- 5.4. With the approval of the Director and the AOGCC, any Working Interest Owner is entitled to drill and operate a well on its Lease when the Unit Operator declines to drill



that well. The Working Interest Owner must comply with all applicable statutory, regulatory, and contractual obligations for drilling or operating a well.

- 5.5. A Working Interest Owner who assigns a working interest in a Lease that is subject to this Agreement is responsible for notifying the Unit Operator of Director approval of the assignment within 15 days of the approval.

#### **ARTICLE 6: Resignation or Removal of Unit Operator**

- 6.1. The Unit Operator may resign at any time, but the resignation is not effective until the Director approves a successor Unit Operator.
- 6.2. The Unit Operator may be removed by DNR for failure to perform the required duties and obligations set forth in the Agreement. The removal will not be effective until the Director gives the Unit Operator notice and an opportunity to be heard and DNR approves a successor Unit Operator.
- 6.3. Unless specified otherwise in the Unit Operating Agreement, the Unit Operator may be removed by an affirmative vote of the Working Interest owners owning a majority interest in the Unit. The removal is not effective until the Working Interest owners give the Director, the Unit Operator, and all Parties written notice of the removal and the Director approves a successor Unit Operator.
- 6.4. The resignation or removal of the Unit Operator will not release it from liability for any failure to meet obligations that accrued before the effective date of the resignation or removal.
- 6.5. When the resignation or removal of the Unit Operator becomes effective, the Unit Operator will relinquish possession of all unit equipment, artificial islands, wells, installations, devices, records, and any other assets used for conducting Unit Operations, whether or not located in the Unit Area, to the successor Unit Operator.
- 6.6. If the Unit Operator has a Working Interest in one or more leases committed to the unit, its obligations as a Working Interest Owner continue notwithstanding resignation or removal as Unit Operator.

#### **ARTICLE 7: Successor Unit Operator**

- 7.1. A proposed successor Unit Operator will accept all rights, duties, and obligations of a Unit Operator in writing before it will be considered for approval by the Director.
- 7.2. If a successor Unit Operator that is satisfactory to the Director has not been proposed within 30 days of notice of the resignation or removal of a Unit Operator, the Director may declare this Agreement terminated.

## **ARTICLE 8: Unit Operating Agreement**

- 8.1. The Unit Operating Agreement is an agreement between the unit Working Interest Owners regarding voting mechanisms, operational details, and non-Participating Area unit cost allocations for implementation of the Unit Agreement. It is not binding on DNR. The Unit Agreement, lease terms, statutes, and regulations control in the event of a conflict with the Unit Operating Agreement.
- 8.2. The unit applicant will file an executed copy of the Unit Operating Agreement with the Director as part of the application to form a unit. Amendments to the Unit Operating Agreement, and all other agreements between the Working Interest Owners that affect the rights, duties, and obligations of some or all of the Parties to this Agreement, must also be filed with the Director within 30 days of execution.

## **ARTICLE 9: Plans of Exploration, Development, and Operations; Bonding**

- 9.1. A Unit Plan must comply with 11 AAC 83.341, 11 AAC 83.343 or 11 AAC 83.346 depending on whether it is a plan of exploration, plan of development or plan of operations.
- 9.2. A proposed Unit Plan is not effective until approved by the Director and will remain in effect until the date specified by the Director in the approval.
- 9.3. Approved Unit Plans, including any updates or amendments, are part of this Agreement.
- 9.4. The Unit Operator will maintain an approved Unit Plan at all times. Failure to do so is cause for default.
- 9.5. The Director, at the time a Unit Plan is approved, may, where facts and circumstances necessitate, require that the Unit Operator provide performance guarantee surety bonds or other mechanisms approved by the Director, which are adequate in the determination of the Director to protect the Unit Area and the State's interest.
- 9.6. The Unit Operator may explore, develop, or produce in the Unit Area only in accordance with an approved Unit Plan. Failure to comply with an approved Unit Plan is cause for default.
- 9.7. The Unit Plan may, in the Director's sole discretion, include a commitment to drill a well unless the Unit Operator: (a) begins within five years from the effective date of this Unit Agreement either Sustained Unit Production or Unit Operations to install permanent infrastructure; or (b) demonstrates to the Director's satisfaction that the Unit Operator has drilled a well capable of producing in paying quantities, and a prudent operator would not continue drilling additional wells.

- 9.8. Before beginning Operations on or in the Unit Area, the Unit Operator must obtain approval of its Unit Plan and any other required state, federal, or local permits and approvals. A plan of operations must be consistent with the mitigation measures set forth in the most recent state areawide lease sale best interest finding for the region that includes the Unit Area as of the time the plan of operations is submitted. An amendment to a plan of operations must be consistent with the mitigation measures in the most recent state areawide lease sale best interest finding as of the time of the amendment submittal.
- 9.9. The Unit Operator will give the Director written notice before beginning testing, evaluation, or pilot production from a well in the Unit Area.
- 9.10. If production from a Participating Area, but not the Unit as a whole, ceases and is not resumed within 90 days, then within 120 days of ceasing production from that Participating Area, the Operator will submit a plan of operations amendment that sets forth a rehabilitation plan for that Participating Area. The rehabilitation plan may address any continued use of improvements in the Participating Area for Unit Operations.
- 9.11. Sustained Unit Production will be maintained. If production should cease, the Operator will progress diligent Operations to restore Sustained Unit Production with lapses of no more than 90 days. The lapse may be longer if a suspension of Operations or production has been ordered or approved by the Director. An unapproved lapse in Sustained Unit Production of more than 90 days is cause for default.
- 9.12. After giving written notice to the Unit Operator and an opportunity to be heard, the Director may require the Unit Operator to modify from time-to-time, the rate of prospecting and development and the quantity and rate of production.

#### **ARTICLE 10: Participating Areas and allocation of production**

- 10.1. The Unit Operator will submit a request for approval of a proposed Participating Area to the Director for approval 90 days before the commencement of Sustained Unit Production from the proposed Participating Area.
- 10.2. A proposed Participating Area must be supported by an approved Unit Plan committing to Sustained Unit Production.
- 10.3. Unless another date is established by the Director, the effective date of a Participating Area will be no later than the date of first Sustained Unit Production.
- 10.4. Unitized Substance produced from one unit Participating Area ("originating Participating Area") may be injected into another unit Participating Area ("receiving Participating Area") for repressuring, recycling, storage, enhanced recovery, or other purposes only if the Director has approved the operation. The State will be paid royalty upon production from the originating Participating Area unless the Director approves payment of royalties

when the Unitized Substances injected are produced and sold from the receiving Participating Area under the following conditions:

- 10.4.1. The first Unitized Substances produced and sold from the receiving Participating Area will be considered to have been the injected Unitized Substances until a volume of Unitized Substances equal to the volume of injected Unitized Substances is produced and sold from the receiving Participating Area.
- 10.4.2. All Unitized Substances produced and sold from the receiving Participating Area that is considered to have been injected will be allocated back to the originating Participating Area.
- 10.4.3. The Unit Operator will provide monthly reports to the Director of the volumes transferred during the preceding month; and
- 10.4.4. The Working Interest Owners will pay royalties on injected substances produced and sold from a receiving Participating Area as if those injected substances were produced and sold from the originating Participating Area when they were produced from the receiving Participating Area.
- 10.5. The Commissioner's approval must be obtained for the proposed recovery rate and commencement date for recovery before any substance is injected within the Unit Area.
- 10.6. Production and costs will be allocated under 11 AAC 83.371 and any successor regulation. The Unit Operator will submit a proposed allocation plan, with supporting data, with the application to form a Participating Area. The allocation plan must be revised whenever a Participating Area is expanded or contracted.
- 10.7. The Working Interest Owners will pay royalties for each Unit Tract in proportion to each Working Interest Owner's ownership in that Unit Tract. The amount of Unitized Substances allocated to each Unit Tract will be deemed to have been produced from that Unit Tract.
- 10.8. If the Working Interest Owners allocate Unitized Substances, Participating Area Expense, or Unit Expense differently than described in Exhibits C, E, and F, that allocation will not be binding on the State or effective for determining royalty or net profit share payments. The Unit Operator will submit any allocation that is different than the allocations required in Exhibits C, E, or F to the Director under 11 AAC 83.371(b) for the State's information within 10 days of its effective date with a statement explaining the reason for the different allocation.
- 10.9. Royalties will not be due or payable to the State for the portion of Unitized Substances unavoidably lost or used in the Unit Area for development and production in accordance with prudent industry practices. Gas that is flared for any reason other than safety purposes as allowed by the AOGCC will not be deemed to be unavoidably lost and the Working Interest Owners will pay royalties for such flared gas as if it had been produced.

This exemption does not apply to Unitized Substances that are sold, traded, or assigned, including sales, transactions, or assignments among the Working Interest Owners.

#### **ARTICLE 11: Offset Wells**

- 11.1. Whenever there is a risk of drainage from production Operations on property outside the Unit Area, the Unit Operator shall drill wells to protect the State from loss by reason of drainage. If oil or gas is produced in Paying Quantities, as defined in 11 AAC 83.105, for 30 consecutive days from a gas well within 1,500 feet of the Unit or an oil well within 500 feet of the Unit, the Director may issue a written demand to drill. The Unit Operator will have an opportunity to be heard on the demand. If the Director then finds that production from a well outside the Unit is draining the Unit Area, the Unit Operator will begin drilling Operations for an offset well in the Unit Area within 30 days. In lieu of drilling a well required by this paragraph, the Working Interest Owners may compensate the State in full each month for the estimated loss of royalty through drainage in the amount determined by the Director.

#### **ARTICLE 12: Leases, Rentals, and Royalty Payments**

- 12.1. The Working Interest Owners will pay rent, royalty, and net profit share payments due under the Leases. Payments to the State must be made under 11 AAC 04.010 *et seq.*, 11 AAC 83.110, and 11 AAC 83.201 *et seq.*, and any successor regulations or statutes.
- 12.2. The royalty value, royalty in value, and royalty in kind provisions of state Leases committed to this agreement are amended to conform to the royalty value, royalty in value, and royalty in kind provisions of the lease attached to the state areawide lease sale best interest finding for the region that includes the Unit Area that is most recent as of the effective date of this Agreement.
- 12.3. If a state Lease committed to this Agreement provides for a discovery royalty rate reduction for the first discovery of oil or gas, that lease is amended to state that this Lease provision will not apply to a well spudded after the Effective Date.
- 12.4. Each month, the Unit Operator will furnish a schedule to the Director specifying for the previous month the amount of Unitized and Non Unitized Substances: 1) produced; 2) consumed in development and production Operations or unavoidably lost; 3) allocated to each unit tract; 4) allocated to each unit tract and delivered in-kind as royalty to the State; and 5) allocated to each Unit Tract for which royalty must be paid. The Unit Operator and Working Interest Owners will file all royalty and net profit share reports per 11 AAC 04.010 *et seq.* If any of the leases subject to this Agreement require net profit share payments, the operator will also provide an updated schedule of development costs and file net profit share reports in accordance with 11 AAC 83.201 *et seq.*

- 12.5. Each Working Interest Owner will pay royalties and net profit share payments to the State as provided in the Lease and based on the production allocated to the Unit Tract and in accordance with 11 AAC 04.010 *et seq.* and 11 AAC 83.201 *et seq.*
- 12.6. Royalties, whether paid in-kind or in-value, must be free and clear of all Lease expenses, unit expenses, and Participating Area Expenses including, but not limited to, separating, cleaning, dehydration, saltwater removal, processing, compression, pumping, manufacturing, preparing production for transportation off the Unit Area, and gathering and transportation costs incurred before the Unitized Substances are delivered to a common carrier. No lien for any expenses will attach to rent or royalty or net profit share payments due on produced Unitized Substances. But royalty and net profit share will bear a proportionate part of any gas shrinkage that occurs during gas processing and blending.
- 12.7. Parties acknowledge that sales information, including but not limited to confidential sales pricing terms, of the Parties for the production and sale of hydrocarbons from the Unit may be used by the DNR to administer the Unit, and other leases or Units in the area, including valuation for royalty purposes and DNR may disclose such confidential sales information to other producer/lessees in the same area in the administration, collection, and/or audit of royalties and net profit share payments. DNR also reserves the right to utilize information filed by the Parties with the Department of Revenue in the administration, collection, and/or audit of royalties and net profit share payments.
- 12.8. Notwithstanding any contrary Lease term or regulation, all royalty deductions for transportation, including, but not limited to, marine, truck, and pipeline transportation, from the Unit Area to the point of sale are limited to the actual and reasonable costs incurred by the Working Interest Owners. Transportation deductions are only allowed for sales quality oil and after the oil has passed through a custody transfer meter approved by the AOGCC. The State reserves the right to audit these transportation deductions. These transportation costs must be determined by taking into account all tax benefits applicable to the transportation.
- 12.9. If the Unit Operator or Working Interest Owners commingle production from the Unit with production from other sources for processing, the Unit Operator and Working Interest Owners will provide the Director with a monthly statement that identifies the quality and volume of oil or gas produced from the Unit.
- 12.10. Any unpaid, underpaid, or overpaid royalty or net profit share payment from state Leases committed to this Agreement will accrue interest as provided in AS 38.05.135(d)-(e).
- 12.11. For each Participating Area, the Unit Operator will give the Director notice of the anticipated date for commencement of production at least ninety (90) days before the commencement of Sustained Unit Production. Each month after the commencement of Sustained Unit Production, the Unit Operator will provide the Director a written estimate of unit production for the following ninety (90) days. DNR may take the State's royalty share of unit production in-kind. The Director will give the Unit Operator 90 days'

written notice of the State's initial election to take all or a portion of its share of unit production in-kind. After taking has commenced, the Director may increase or decrease the amount of its royalty share taken in-kind.

- 12.11.1. The Director may elect to specify the Unit Tracts from which the State's royalty share of Unitized Substances taken in-kind are to be allocated. If the Director does not specify any Unit Tracts in the written notice to the Unit Operator, the Unitized Substances taken in-kind will be allocated to all Unit Tracts in accordance with the Tract Participation shown on Exhibit C to this Agreement.
- 12.11.2. The Unit Operator will deliver the State's in-kind royalty to the custody transfer meter at a common carrier pipeline capable of carrying those substances, or at any other mutually agreeable place. The Director may designate any individual, firm, or corporation to accept delivery.
- 12.11.3. The State's share of Unitized Substances taken in-kind will be delivered to the point of sale in sales and common carrier pipeline quality condition. If a Working Interest Owner processes its share of the Unitized Substances to separate, extract, or remove liquids, the Director may require the Working Interest Owner to also process the State's share of Unitized Substances being taken in-kind in the same manner without cost to the State. The State, or its buyer, will only pay tariffed transportation costs and shrinkage of the volume of gas resulting from processing.
- 12.11.4. Each Working Interest Owner will furnish storage in or near the Unit Area for the State's royalty share of Unitized Substances to the same extent that the Working Interest Owner provides storage for its own share of Unitized Substances.
- 12.12. If a purchaser of the State's royalty taken in-kind does not take delivery, the Director may elect, without penalty, to underlift for up to six months following the failed delivery. The State may underlift all or a portion of its royalty share. The State's right to underlift is limited to the portion of its royalty share taken in-kind that the purchaser did not take delivery of or what is necessary to meet an emergency condition. The Director will give the unit operator written notice 30 days before the first day of the month in which the State will accept the underlifted royalty share of Unitized Substances. The State may correct an underlift of its royalty share at a daily rate not exceeding 25 percent of its royalty share of daily production, unless otherwise agreed.
- 12.13. The Unit Operator will maintain records, and will keep and have in its possession, books and records including expense records, of all exploration, development, production, and disposition of all Unitized Substances and substances from outside the Unit Area that are injected into the unit, Unitized Substances that are injected outside the unit, and substances injected into a Participating Area that were produced outside the Participating Area. Each Working Interest Owner will maintain records of the disposition of its portion

of the Unitized Substances, substances produced from outside the unit that are injected into the Unit Area, and substances produced from outside a participating area that were injected into the Participating Area including sales prices, volumes, and purchasers. The Unit Operator or Working Interest Owner must provide the Director with copies of the records upon request. The books and records may be provided in a mutually agreeable electronic format. The books and records must employ methods and techniques that will ensure the most accurate figures reasonably available. The Unit Operator and the Working Interest Owners will use generally accepted and internally consistent accounting procedures, except when it would be inconsistent with net profit share lease regulations.

- 12.14. The Working Interest Owners acknowledge that when they provide records for DNR, either directly to DNR or indirectly through another State agency, DNR may disclose those records in an official investigation or proceeding, including an audit to which the records are relevant, in accordance with AS 38.05.036.
- 12.15. If a Lease requires payment of minimum royalty, the Lease is amended to delete that minimum royalty obligation.

#### **ARTICLE 13: Unit Expansion and Contraction**

- 13.1. Upon its own election or at the direction of the Director, the Unit Operator may apply to expand the Unit Area to include additional lands that include all or part of a reservoir or potential hydrocarbon accumulation or that facilitate production.
- 13.2. A Unit expansion is not effective until approved by the Director.
- 13.3. The Director will contract the Unit as provided in 11 AAC 83.356.
- 13.4. Within 30 days after approval by DNR of any expansion or contraction of the Unit Area, the Unit Operator will submit revised Exhibits A and B to the Director.

#### **ARTICLE 14: Unit and Lease Termination**

- 14.1. A Lease or portion of a Lease contracted out of the Unit Area may be maintained only in accordance with state law, the Lease, and this Agreement.
- 14.2. This Agreement may be terminated by an affirmative vote of the Working Interest Owners, subject to Director approval.
- 14.3. This agreement automatically expires and ceases to exist five years from the Effective Date of this Agreement as provided in 11 AAC 83.336. The Effective Date is not subject to change, regardless of any change to the Unit Area or amendment to this Agreement.
- 14.4. Each Lease committed to this Agreement is extended as provided in the Lease.



- 14.5. Each Lease committed to this Agreement on the day that this Agreement expires or terminates, will remain in force for an extension period of 90 days, or any longer period approved by the Director, and for so long thereafter as the Working Interest Owners are actively drilling or redrilling or producing from the Lease in paying quantities.
- 14.6. Upon the expiration or termination of state Leases committed to this Agreement, the Working Interest Owners will continue to have rights as set forth in the Lease, including rights to access the Lease area for purposes of well abandonment and dismantlement, removal, and restoration. Notwithstanding any contrary Lease terms, within 120 days after expiration or termination of this Agreement, the Working Interest Owners will provide DNR with a proposed rehabilitation plan for any Unit Area Leases that are no longer in force, including (a) the location of all improvements; (b) plans for dismantling and removing each improvement and rehabilitating the area of the improvement; and (c) any requests to leave an improvement in place. To ensure that the Working Interest Owners return the land in good condition, DNR will approve or disapprove the rehabilitation plan and determine which, if any, improvements, such as roads, pads, and wells, may be left intact and the Working Interest Owners relieved of further responsibility for its maintenance, repair, abandonment, and rehabilitation. Returning the land in good condition includes, but is not limited to, compliance with an approved rehabilitation plan. The Working Interest Owners, or the Unit Operator on behalf of the Working Interest Owners, may at any time within a period of one year after the termination of Unit Area Leases, or any extension of that period as may be granted by DNR, remove from the Unit Area all machinery, equipment, tools, and materials. Upon the expiration of that period and at the option of DNR, any machinery, equipment, tools, materials, and improvements that the Unit Operator or Working Interest Owners have not removed from the Unit Area may, at the election of the State, become the property of the State, or be removed by the State at the expense of the Working Interest Owners, or DNR may issue an order requiring the Working Interest Owners to remove any machinery, equipment, tools, materials, and improvements within 90 days.

#### **ARTICLE 15: Counterparts**

- 15.1. The signing of counterparts of this Agreement will have the same effect as if all parties had signed a single original of this Agreement.

#### **ARTICLE 16: Laws and Regulations**

- 16.1. This Agreement and all state Leases subject to this Agreement are subject to all applicable state and federal statutes and regulations in effect on the Effective Date of this Agreement, and to all statutes and regulations or amendments to statutes and regulations placed in effect after the Effective Date of this Agreement, without regard to whether this Agreement references a particular statute or regulation. A reference to a statute or regulation in this Agreement includes any change in that statute or regulation whether by

amendment, repeal and replacement, or other means. This Agreement does not limit the power of the State of Alaska or the United States of America to enact and enforce legislation or to promulgate and enforce regulations affecting, directly or indirectly, the activities of the parties to this Agreement or the value of interests held under this Agreement. In case of conflicting provisions, statutes and regulations take precedence over this Agreement.

## **ARTICLE 17: Appearances and Notices**

- 17.1. If the State gives the Unit Operator a notice or order relating to this Agreement, it will be deemed given to all Working Interest Owners. All notices required by this Agreement will be given in writing and delivered electronically, personally, or by United States mail to the Unit Operator at the address listed below. All notices actually received will also be deemed properly given. The Unit Operator will give 30 days' written notice to the State and the other Working Interest Owners of any change in its notice address. The State will give 30 days' written notice to the Unit Operator of any change in its notice address.

### **Address of the Unit Operator:**

Great Bear Pantheon, LLC  
3705 Arctic Blvd, Suite 2324  
Anchorage, Alaska 99503

### **Address of the State:**

Director, Division of Oil and Gas  
550 West Seventh Avenue, Suite 1100  
Anchorage, Alaska 99501-3560

## **ARTICLE 18: Default**

- 18.1. Failure to comply with any term of this Agreement, including Unit Plans or applicable statutes and regulations, is a default of this Agreement, without regard to any specific references to default in this Agreement.
- 18.2. The failure to comply with a Unit Plan or other aspect of this Agreement because of force majeure, as defined in 11 AAC 83.395, is not a default, so long as the Unit Operator is working diligently to overcome the force majeure condition. Failure to obtain a permit or other approval from a state, federal, or local agency or a landowner is not force majeure.
- 18.3. A seasonal restriction on Operations or production or other condition required in the Lease is not a suspension of Operations or production required by law or force majeure.

## **ARTICLE 19: Preservation of Rights**

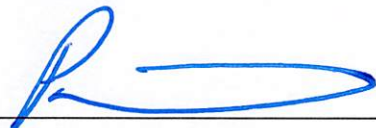
- 19.1. Nothing in this Agreement shall diminish a Party's right to appeal a decision of the Director, in accordance with 11 AAC 02.

[signature page follows]

IN WITNESS OF THE FOREGOING, the parties have executed this Unit Agreement on the dates opposite their respective signatures.

**WORKING INTEREST OWNER(S)**

**GREAT BEAR PETROLEUM VENTURES II, LLC**

By:   
Patrick S. Galvin  
Chief Commercial Officer

Date: 8/26/2020

STATE OF ALASKA                     )  
  )ss.  
THIRD JUDICIAL DISTRICT         )

This certifies that on the 26th of August, 2020, before me, a notary public in and for the State of Alaska, duly commissioned and sworn, personally appeared Patrick S. Galvin, known to me to be the person described in, and who executed the foregoing agreement, who then after being duly sworn according to law, acknowledged to me under oath that he executed same freely and voluntarily for the uses and purposes therein mentioned.

WITNESS my hand and official seal the day and year in this certificate first above written.

..... 

NOTARY PUBLIC in and for Alaska

My Commission Expires: 2/27/2024



## Exhibit A

## ALKAID UNIT TRACT TABLE

Unit Tract Number	ADL	Legal Descriptions	Unitized Acres	Royalty Rate	ORRI Owners and Interests	Working Interest Owners and Interests	Lease Primary Expiration Date
1	391701	<u>T 7N, R 13E, Umiat Meridian, Alaska.</u> Section 1, Surveyed by Protraction, All; Section 2, Surveyed by Protraction, All; Section 3, Surveyed by Protraction, All; Section 10, Surveyed by Protraction, All; Section 11, Surveyed by Protraction, All; Section 12, Surveyed by Protraction, All; Section 13, Surveyed by Protraction, All, including the bed of the unnamed lake; Section 14, Surveyed by Protraction, All; Section 15, Surveyed by Protraction, All;	640.00 640.00 640.00 640.00 640.00 640.00 640.00 640.00 640.00 <u>640.00</u> <b>5760.00</b>	16.66667%	Geokinetics USA, Inc.: 1.61%	Great Bear Petroleum Ventures I, LLC: 100.00%	4/30/2021
2	391704	<u>T 7N, R 13E, Umiat Meridian, Alaska.</u> Section 22, Surveyed by Protraction, All; Section 23, Surveyed by Protraction, All; Section 24, Surveyed by Protraction, All including the bed of the unnamed lake; Section 25, Surveyed by Protraction, All; Section 26, Surveyed by Protraction, All; Section 27, Surveyed by Protraction, All; Section 34, Surveyed by Protraction, All; Section 35, Surveyed by Protraction, All including the bed of the unnamed lake; Section 36, Surveyed by Protraction, All including the bed of the unnamed lake;	640.00 640.00 640.00 640.00 640.00 640.00 640.00 640.00 640.00 <u>640.00</u> <b>5760.00</b>	16.66667%	Geokinetics USA, Inc.: 1.61%	Great Bear Petroleum Ventures I, LLC: 100.00%	4/30/2021

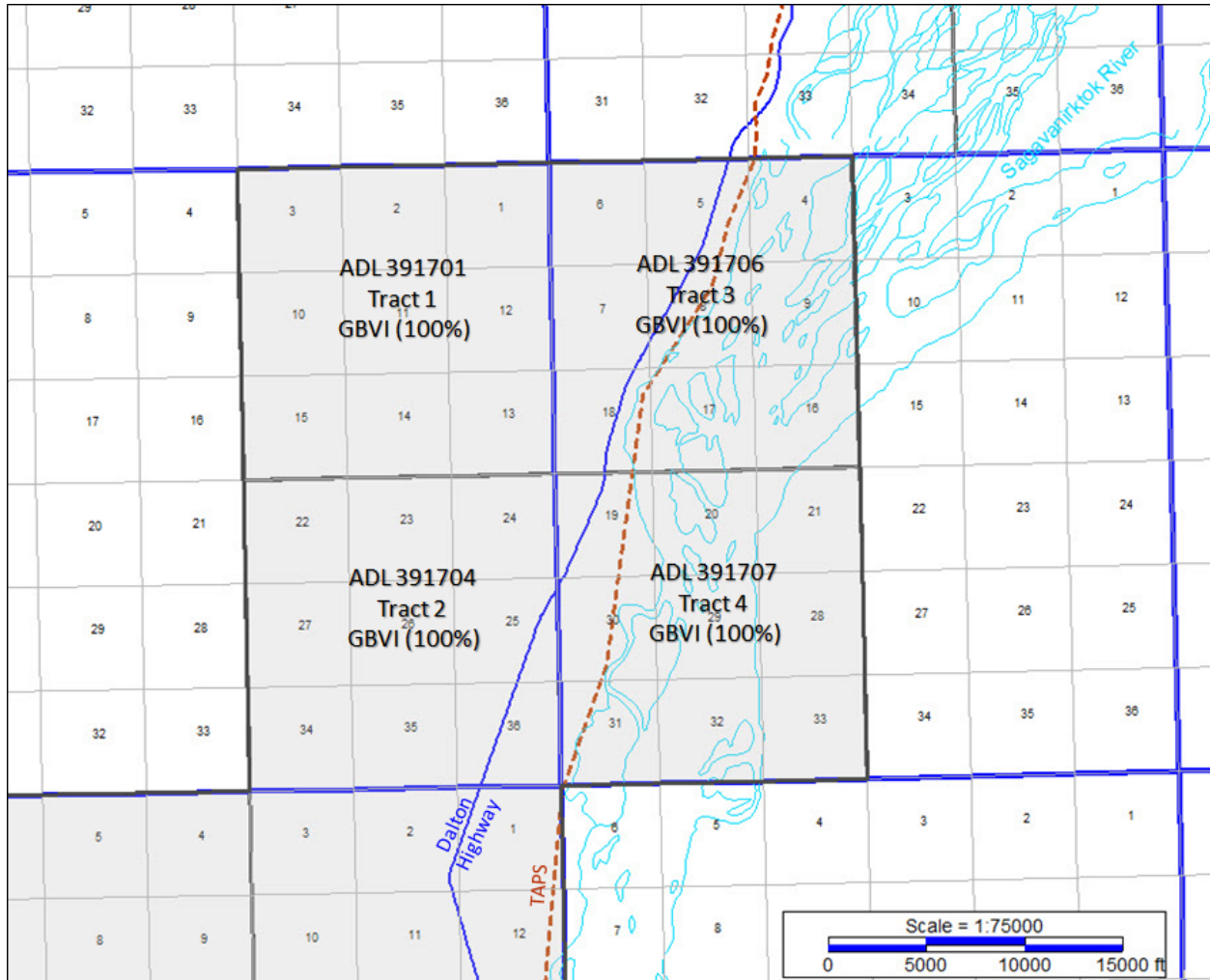
## Exhibit A

### ALKAID UNIT TRACT TABLE

3	391706	<u>T 7N, R 14E, Umiat Meridian, Alaska.</u> Section 4, Surveyed by Protraction, All including the bed of the Sagavanirktok River; Section 5, Surveyed by Protraction, All including the bed of the Sagavanirktok River; Section 6, Surveyed by Protraction, All; Section 7, Surveyed by Protraction, All; Section 8, Surveyed by Protraction, All including the bed of the Sagavanirktok River; Section 9, Surveyed by Protraction, All including the bed of the Sagavanirktok River; Section 16, Surveyed by Protraction, All including the bed of the Sagavanirktok River; Section 17, Surveyed by Protraction, All including the bed of the Sagavanirktok River; Section 18, Surveyed by Protraction, All including the bed of the unnamed lake;	640.00 640.00 594.00 597.00 640.00 640.00 640.00 640.00 <u>599.00</u> <b>5630.00</b>	16.66667%	Geokinetics USA, Inc.: 1.61%	Great Bear Petroleum Ventures I, LLC: 100.00%	4/30/2021
4	391707	<u>T 7N, R 14E, Umiat Meridian, Alaska.</u> Section 19, Surveyed by Protraction, All including the bed of the Sagavanirktok River; Section 20, Surveyed by Protraction, All including the bed of the Sagavanirktok River; Section 21, Surveyed by Protraction, All including the bed of the Sagavanirktok River; Section 28, Surveyed by Protraction, All; Section 29, Surveyed by Protraction, All including the bed of the Sagavanirktok River; Section 30, Surveyed by Protraction, All including the bed of the Sagavanirktok River; Section 31, Surveyed by Protraction, All including the bed of the Sagavanirktok River; Section 32, Surveyed by Protraction, All including the bed of the Sagavanirktok River; Section 33, Surveyed by Protraction, All including the bed of the Sagavanirktok River;	602.00 640.00 640.00 640.00 640.00 605.00 607.00 640.00 <u>640.00</u> <b>5654.00</b>	16.66667%	Geokinetics USA, Inc.: 1.61%	Great Bear Petroleum Ventures I, LLC: 100.00%	4/30/2021

## Exhibit B

### UNIT MAP



## **Exhibit C**

### **TABLE OF PARTICIPATING AREAS**

[No Participating Areas at this time.]



**Exhibit D**  
**PARTICIPATING AREA MAP**

[No Participating Areas at this time.]

## **Exhibit E**

### **ALLOCATION OF PARTICIPATING AREA EXPENSES**

<b>Unit Tract Number</b>	<b>ADL</b>	<b>Participating Area Expense Percentage</b>

[No Participating Areas at this time.]

## **Exhibit F**

### **ALLOCATION OF UNIT EXPENSES**

<b>Unit Tract Number</b>	<b>ADL</b>	<b>Unit Expense Percentage</b>

[No Unit Expenses at this time

## Exhibit G



# FIRST PLAN OF EXPLORATION

## ALKAID UNIT

### AREA EXPLORATION HISTORY: PRE-UNIT ACTIVITIES

The area around and including the proposed Alkaid and Talitha Units has seen sparse exploration drilling activity over the last 50+ years with a total of less than 10 wells in the adjacent area penetrating the primary zones of interest at Alkaid and Talitha. The exploration activity can be divided into three distinct phases: 1) early post Prudhoe discovery stepout drilling from 1969 – 1974; 2) focused exploration tests from 1980 – mid 90's driven by increased 2D seismic data coverage; and 3) post 2010 Great Bear Petroleum entrance driving regional 3D seismic coverage across the initial vast leasehold. ARCO dominated Phase 1 with tests that focused on expanding the Kuparuk River Unit play to the south and east. Various operators drilled wells in Phase 2 with continued focus on the Kuparuk and emerging interest in Brookian reservoirs. Phase 3 has been dominated by Great Bear Petroleum 3D seismic acquisition and drilling of 2 stratigraphic test wells at Alcor (2012) and Merak (2012) and a focused exploration test at Alkaid (2015, flow test in 2019).

#### Phase 1 Activity:

ARCO drilled 2 wells proximal to the Alkaid and Talitha projects. The Toolik #1 (TD 10814') and #2 (TD 8700') were drilled in 1969. Both were plugged and abandoned having drilled to the targeted Kuparuk equivalent depth. Mudlog shows in the Brookian section were noted with Kuparuk sands penetrated but not tested.

ARCO drilled the North Franklin Bluffs test in 1973 (TD 3500') penetrating shallow Brookian aquifers and no hydrocarbons. Mobil drilled West Kadleroshilik #1 (TD 4566') in 1974 on the east side of the Sagavanirktok River southeast of the Talitha project. The well penetrated shallow Brookian aquifer with no hydrocarbons.

### Phase 2 Activity:

Significant increases in 2D seismic data acquisition in the late 70's – early 1990's in the Central North Slope area south of the Kuparuk River Unit and Prudhoe Bay Unit led to focused exploration tests by various operators. ARCO drilled the Pipeline State #1 well in 1988. Originally planned to TD at approximately 13,000', the well was drilled to 10,460' into the Miluveal Formation. Significant oil shows were encountered through the Brookian Campanian strata and in the Kuparuk sands with 4 zones of interest cored. The well was plugged and abandoned with no tests. Conoco drilled Sequoia #1 in 1992 with a TD at 8910' in the Jurassic Kingak Formation. Significant oil shows were recorded in the lower Brookian Torok and Seabee equivalent strata and the Kuparuk Formation. The well was plugged and abandoned with no tests. Publicly available well files through 2013 did not include logs across the Kuparuk interval for either well. Great Bear found reference to an LWD across the Kuparuk intervals at Pipeline State #1 and Sequoia #1. After a request to AOGCC to follow up with Conoco (then holding ARCO's legacy data), LWD data was delivered.

ENI drilled the Magiorre #1 well in 2007 with a TD of 9500'. The well was highly deviated through Brookian strata and recorded modest oil shows. The well was plugged and abandoned with no tests.

### Phase 3 Activity:

Great Bear Petroleum's entry into North Alaska in October 2010 brought renewed focus to the Central North Slope area. Great Bear's technical focus investigating the potential for source rock resource play development and more traditional conventional plays was coupled with a regional 3D acquisition plan that spanned 5 successive years of acquisition beginning in 2012. Great Bear drilled two stratigraphic test wells in 2012, Alcor #1 (TD 10,812') and Merak #1 (TD 11,094'). Both wells were drilled into the Ivishak Formation with whole core samples taken in the Hue shale, GRZ/HRZ, Kingak, Shublik and Ivishak Formations. Oil shows were recorded in Campanian and Kuparuk strata correlative to the reservoir zones at Alkaid and Talitha.

Three modern 3D datasets had been acquired, merged and uniformly processed by mid 2014. The significant seismic anomalies were observed throughout the Campanian section over much of the Great Bear lease position. RSI (global high tech geophysical contractor) was engaged to model the seismic responses that were observed. AVO and detailed calibrated Inversion methods were employed to derisk and rank the portfolio of seismically defined prospects.

Alkaid #1 (TD 8,595') was drilled during the 2014-2015 Winter drilling season. The well targeted a conventional reservoir of Campanian age and was planned to TD through the Kuparuk Formation. The primary zone of interest in the Campanian exhibited a strong geophysical response modeled to be light oil. Operational challenges and the historic Sag River aufeis triggered flooding of the Dalton Highway forced an early TD call and cessation of operations and suspension of the well.

Great Bear continued expanding the 3D seismic database through 2015 and 2016. In February 2019, Alkaid was re-entered and flow tested. A limited zone was perfed and stimulated achieving sustained flow of 35api oil (typed to Cretaceous source). Following the successful flow test in 2019, the Campanian play was proven productive and also proved that reservoired, light oil could be resolved with modern 3D analytical methods. In mid 2019, eSeis (Houston based petrophysical and geophysical experts with deep Alaska experience) were engaged to further resolve and quantify the growing potential within the Campanian and Kuparuk intervals with a heavy focus on Talitha and Alkaid charged reservoir mapping aimed at optimizing development planning.

## **ALKAID UNIT EXPLORATION PROGRAM**

The Unit Operator intends to undertake the following activities:

### **A. Non-Drilling Activities**

- Reprocessing approximately 50 square miles of merged 2012 - 2016 3D datasets, which will include Pre-Stack Depth Migration (PSDM) for the Alkaid Unit area. PSDM has not previously been applied to any of our 3D dataset. This methodology, when combined with the logging while drilling data will reveal areas of better reservoir quality and assist in selecting the interval for the lateral drilling.
  - This work will be completed prior to spudding of Alkaid #2 in order to inform decision associated with the target interval for the lateral. It is highly unlikely that this review will result in the relocation of the drillsite or tophole location of Alkaid #2, but it could result in slight deviation from a true vertical well before hitting TVD. Upon completion of reprocessing, Unit Operator shall deliver a complete copy to the Director.
- Expanded review of Campanian reservoir characterization and productivity potential within the Alkaid Unit area.
- Update our gas to oil ratio (GOR) model for Alkaid and develop a gas handling strategy for future Alkaid Unit development within a range of oil production estimates.
- Engage an outside engineering firm to produce an engineering study on a conceptual “hot tap” of TAPS within or near the Alkaid and Talitha Units, working in close consultation with Alyeska Pipeline Service Company.

### **B. Drilling Activities**

The initial Alkaid wells have been located to accomplish four purposes, 1) Reach with the drill bit portions of the Greater Alkaid hydrocarbon accumulation predicted to contain the most attractive reservoir qualities; 2) Delineate the lateral extent of the producible reservoir; 3) Maximize the potential that these initial wells will become long-term producing wells; 4) Minimize the environmental impacts by placing the gravel pads within the Dalton Highway/TAPS transportation corridor.

These wells and production tests will provide the following information: A) Whether we've properly mapped the northern extent of the reservoir (Alkaid #2) and the eastern extent (Alkaid #3); B) The initial production rate, decline curve, and production profile from a long horizontal well that is multi-stage fracture stimulated, C) Greater confidence in our estimate of EUR from these wells.

**Alkaid #2** – The drillsite will be located on ADL 391704; U07N014E05; the tophole location will be approximately 69 deg 58 min 56.42 sec, -148 deg 42 min 7.89 sec. These are generally vertical wells with long laterals kicking off approximately 500' above TVD into the target zone.

Total vertical depth will be approximately 8000' to the basin floor of the Brookian, a level not reached with the Alkaid #1 well. Measurement while drilling (MWD) will be used to evaluate the entirety of the intermediate hole from approximately 3500' to TVD. Multiple interesting zones may be encountered throughout the drilling. The well will penetrate the entirety of the Brookian section. This will include an evaluation of the deltaic interval of the Brookian progradation. The log suites are expected to include: Quad Combo, FMI, RFT, rotary sidewall cores, NMRI, Caliper, and possibly others.

The laterals will be approximately 10,000'. The lateral for Alkaid #2 will run toward the southwest. The lateral will be fracture stimulated, with 12,000,000 lbs of proppant planned at this time. This will be placed through 30 stages of approximately 400,000 lbs per stage.

A long-term production test will be conducted to determine the decline curve and production profile from the well. The production test must be of sufficient duration to establish the initial production rate, the slope of the decline curve, and the production rate at which the decline curve levels off to accurately predict the production "tail". We currently estimate that the production test will be six to nine months in duration.

Drilling operations are scheduled to take place in Summer 2021 from a gravel pad just west of the Dalton Highway. A currently estimated project timeline is as follows:

DATE	ACTIVITY	DESCRIPTION
June 2021	Construction of gravel driveway and pad for Alkaid #2	The first drill pad is constructed along with the driveway connecting it to the Dalton Highway
July 2021	Mobilize Rig to Alkaid #2 Well Site	Drilling rig is mobilized (likely from Deadhorse) to the Alkaid #2 Roadside Pad
July-Aug 2021	Drill Alkaid #2 well	Drilling operations are conducted on the Alkaid #2 well
Aug 2021	Mobilize Frac Equipment to Alkaid #2	Rig is removed and hydraulic fracturing equipment is moved to the Alkaid #2 drill site

Aug-Sept 2021	Fracture Stimulate Alkaid #2 Well	Hydraulic fracture stimulation operations take place at Alkaid #2 drill site
Sept 2021 – Mid-2022	Pilot Production Test at Alkaid #2 Well	Production test to determine the nature of production decline curve from the Alkaid #2 well

**Alkaid #3** – There are many factors that will determine whether the results at Alkaid #2 support the drilling of Alkaid #3. Those factors will even shift between now and the drilling of Alkaid #2 as Pantheon continues to refine the pre-drill assessment of the Greater Alkaid hydrocarbon accumulation. The MWD data and logging data acquired while drilling Alkaid #2 will also be relevant to the decision whether to drill Alkaid #3. External factors, such as oil price expectations and anticipated fiscal and commercial terms, will also play a role. Finally, the initial production rate, and subsequently the overall production profile from Alkaid #2 will be very influential. There is no hard and fast threshold for the initial production level necessary to support drilling Alkaid #3, it will depend on a large number of factors.

The Alkaid #3 drillsite will be located on ADL 391704; U07N014E19; the tophole will be at approximately 69 deg 56 min 23.17 sec, -148 deg 45 min 24.56 sec. These are generally vertical wells with long laterals kicking off approximately 500' above TVD into the target zone.

Total vertical depth will be approximately 8000' to the basin floor of the Brookian, a level not reached with the Alkaid #1 well. Measurement while drilling (MWD) will be used to evaluate the entirety of the intermediate hole from approximately 3500' to TVD. Multiple interesting zones may be encountered throughout the drilling. The well will penetrate the entirety of the Brookian section. This will include an evaluation of the deltaic interval of the Brookian progradation. The log suites are expected to include: Quad Combo, FMI, RFT, rotary sidewall cores, NMRI, Caliper, and possibly others.

The laterals will be approximately 10,000'. The lateral for Alkaid #3 will run toward the northeast. The lateral will be fracture stimulated, with 12,000,000 lbs of proppant planned at this time. This will be placed through 30 stages of approximately 400,000 lbs per stage.

A long-term production test will be conducted to determine the decline curve and production profile from the well. The production test must be of sufficient duration to establish the initial production rate, the slope of the decline curve, and the production rate at which the decline curve levels off to accurately predict the production "tail". We currently estimate that the production test will be six to nine months in duration.

Drilling operations are scheduled to take place in Winter/Spring 2021 from a gravel pad just west of the Dalton Highway. A currently estimated project timeline is as follows:



<b>DATE</b>	<b>ACTIVITY</b>	<b>DESCRIPTION</b>
Feb – March 2022	Construction of gravel driveway and pad for Alkaid #3	The second drill pad is constructed along with the driveway connecting it to the Dalton Highway
March-April 2022	Mobilize Rig to Alkaid #3 Well Site	Drilling rig is mobilized to the Alkaid #3 Roadside Pad
April-May 2022	Drill Alkaid #3 Well	Drilling operations are conducted at Alkaid #3 drill site
May-June 2022	Mobilize Frac Equipment to Alkaid #3	Rig is removed and hydraulic fracturing equipment is moved to the Alkaid #3 drill site
May-June 2022	Fracture Stimulate Alkaid #3 Well	Hydraulic fracture stimulation operations take place at Alkaid #3 drill site
June 2022 – Late 2022	Pilot Production Test at Alkaid #3 Well	Production test to determine the nature of production decline curve from the Alkaid #3 well

### **Development Plan**

The final development plan will be determined following results of the Alkaid #2 and #3 wells. At this time, the expectation is that Alkaid will be developed by primary depletion.