

APPROVAL OF THE APPLICATION TO FORM THE GUITAR UNIT

Findings and Decision of the Director
of the Division of Oil and Gas
Under a Delegation of Authority
from the Commissioner of the State of Alaska
Department of Natural Resources

August 23, 2017

TABLE OF CONTENTS

I.	INTRODUCTION AND DECISION SUMMARY	3
II.	APPLICATION AND LEASE SUMMARY	3
III.	DISCUSSION OF DECISION CRITERIA	4
A.	Decision Criteria considered under 11 AAC 83.303(b).....	4
1.	Environmental Costs and Benefits.....	4
2.	Geological and Engineering Characteristics	5
3.	Plans of Exploration.....	12
4.	The Economic Costs and Benefits to the State and Other Relevant Factors.....	13
B.	Decision Criteria considered under 11 AAC 83.303(a)	13
1.	Promote the Conservation of All Natural Resources	13
2.	The Prevention of Economic and Physical Waste	13
3.	The Protection of All Parties of Interest, Including the State	13
IV.	FINDINGS AND DECISION.....	14
A.	The Conservation of All Natural Resources	14
B.	The Prevention of Economic and Physical Waste	14
C.	The Protection of All Parties in Interest, Including the State.....	14
V.	Attachments.....	16
1.	Guitar Unit Proposed Exhibit A.....	17
2.	Guitar Unit Proposed Exhibit B.....	20
3.	Guitar Unit Agreement.....	22
4.	Guitar Unit Approved Plan of Exploration	41

I. INTRODUCTION AND DECISION SUMMARY

The Department of Natural Resources (DNR), Division of Oil and Gas (Division) received the Application to form the Guitar Unit (GU) (Application) on June 2, 2017 from the proposed GU Operator, Alliance Exploration LLC (Alliance). The proposed GU covers approximately 7,573 acres. Attachments 1 and 2 set out the proposed Exhibits A and B.

“A unit must encompass the minimum area required to include all or part of one or more oil or gas reservoirs, or all or part of one or more potential hydrocarbon accumulations.” 11 AAC 83.356(a). Alliance has submitted confidential geological, geophysical, and engineering data which demonstrate that the area proposed for unitization includes all or part of an oil and gas reservoir or potential hydrocarbon accumulations.

The Division finds that the unitization of the GU promotes conservation of all natural resources, promotes the prevention of economic and physical waste and provides for the protection of all parties of interest, including the State. AS 38.05.180(p); 11 AAC 83.303. I approve the Application under the terms and conditions of Section IV. The effective date of the GU is June 12, 2017.

II. APPLICATION AND LEASE SUMMARY

Alliance submitted the Application on June 2, 2017 and simultaneously paid the \$5,000.00 application filing fee, in accordance with 11 AAC 83.306 and 11 AAC 05.010(a)(10)(D). The Application included: the unit operating agreement, the state only unit agreement form; Exhibit A (Attachment 1), legally describing the proposed GU, its leases, and ownership interests; Exhibit B (Attachment 2), a map of the proposed GU; and Exhibit G, Plan of Exploration (POE), for the GU. The Application also included confidential technical data. The Application was later amended on June 14, 2017 and June 22, 2017 with revised Unit Agreement (Attachment 3) and POE (Attachment 4). In an email on June 26, 2017 Alliance requested the name of the unit be changed from the Hemi Springs Unit to the Guitar Unit, as a result some of the application materials reflect the earlier name. The revised Unit Agreement contains several inconsequential statements that the operator wished to include, but that do not alter the meaning of any terms of the model unit agreement.

The Division notified Alliance by email dated June 12, 2017 that the Application was complete.

The Division published a public notice in the *Alaska Dispatch News* on June 20, 2017 and in the *Arctic Sounder* on June 22, 2017, under 11 AAC 83.311. Copies of the Application and the public notice were provided to interested parties. DNR provided public notice to the North Slope Borough, the City of Barrow, the City of Nuiqsut, the Kuukpik Corporation, the Arctic Slope Regional Corporation (ASRC), the Nuiqsut Postmaster, the Barrow Postmaster, the radio station KBRW in Barrow, as well as the Alaska Department of Environmental Conservation, the Alaska Department of Fish and Game, the Alaska Oil and Gas Conservation Commissioner, and the ADF&G Division of Habitat. The public notices invited interested parties and members of the public to submit comments by June 24, 2017.

Three leases are proposed for unitization in the GU. ADL 391544 and ADL 391545 were issued with an effective date of July 1, 2010 and a seven-year primary term. The third lease, ADL 392104, was issued with an effective date of December 12, 2012 with a ten-year primary term. Although two leases are past the primary term at the time of this decision, the Application was received and complete before the expiration date and therefore the unit may be effective as of the date of the application, when the leases were within their primary term.

III. DISCUSSION OF DECISION CRITERIA

A unit may be formed to conserve the natural resources of all or a part of an oil or gas pool, field, or like area when determined and certified to be necessary or advisable in the public interest. AS 38.05.180(p). Conservation of the natural resources of all or part of an oil or gas pool, field or like area means “maximizing the efficient recovery of oil and gas and minimizing the adverse impacts on the surface and other resources.” 11 AAC 83.395(1).

The DNR Commissioner (Commissioner) reviews applications related to units under 11 AAC 83.303–395. By memorandum dated September 30, 1999, the Commissioner approved a revision of Department Order 003 and delegated this authority to the Division Director.

The Commissioner will approve a unit upon a finding that it will (1) promote conservation of all natural resources, including all or part of an oil or gas pool, field, or like area; (2) promote the prevention of economic and physical waste; and (3) provide for the protection of all parties of interest including the state. 11 AAC 83.303(a).

In evaluating these three criteria, the Commissioner will consider (1) the environmental costs and benefits of unitized exploration or development; (2) the geological and engineering characteristics of the potential hydrocarbon accumulation or reservoir proposed for unitization; (3) prior exploration activities in the proposed unit area; (4) the applicant’s plans for exploration or development of the unit area; (5) the economic costs and benefits to the state; and (6) any other relevant factors, including measures to mitigate impacts identified above, the Commissioner determines necessary or advisable to protect the public interest. 11 AAC 83.303(b).

A discussion of the subsection (b) criteria, as they apply to the Application, is set out directly below, followed by a discussion of the subsection (a) criteria.

A. Decision Criteria considered under 11 AAC 83.303(b)

1. Environmental Costs and Benefits

The proposed area is habitat for various mammals, waterfowl, and fish. Area residents may use this area for subsistence hunting and fishing. Oil and gas activity in the proposed unit area may affect some wildlife habitat and some subsistence activity. DNR develops lease stipulations through the lease sale process to mitigate the potential environmental impacts from oil and gas activity.

DNR also considers environmental issues during the lease sale process and the unit plan of operations approval process. Alaska statutes require DNR to give public notice and issue a written finding before disposal of the state's oil and gas resources. AS 38.05.035(e); AS 38.05.945; 11 AAC 82.415. In the written best interest finding, the Commissioner may impose additional conditions or limitations beyond those imposed by law. AS 38.05.035(e). The GU leases are subject to extensive mitigation measures addressing issues such as siting facilities, impacts to fish and wildlife, risk from hazardous substances, fuel, and waste. Alliance will need to comply with these mitigation measures for operations within the unit area.

Approval of the GU formation has no direct environmental impact. This decision is an administrative action and does not authorize any on-the-ground activity. The unit approval does not entail any environmental costs in addition to those that may occur when permits to conduct lease-by-lease exploration or development are issued. The Unit Operator must obtain approval of a plan of operations from the State and permits from various agencies on State leases before drilling a well or wells or initiating development activities to produce reservoirs within the unit area. 11 AAC 83.346. Potential effects on the environment are analyzed when permits to conduct exploration or development in the unit area are reviewed.

2. Geological and Engineering Characteristics

a. Background and Description of the Area Proposed to be Unitized

The State's regulations require that a unit should encompass the minimum area needed to include all or part of one or more oil or gas reservoirs or prospective accumulations. 11 AAC 83.356(a). The Division evaluated the data provided by the Unit Operator and all pertinent data available to determine if the proposed unit area meets those criteria. The confidential data and information supplied by Alliance includes geologic cross sections, structure maps, electric log analyses and interpreted seismic data. The Division's assessment of this data and information supports the approval of the proposed unit area.

The proposed GU is located on Alaska's North Slope, approximately 17.5 miles west-northwest of Deadhorse. The subject area is adjacent to the southwestern boundary of the Prudhoe Bay Unit and ~4.5 miles from the southeastern boundary of the Kuparuk River Unit. The proposed GU contains three state oil and gas lease tracts formerly included in the Hemi Springs Unit, which was formed in 1983 and terminated in 1992. The proposed GU covers approximately 7,573 acres of State of Alaska lands. The three leases form a reversed 'L' shape. The lease that would fill the northwest corner of the Alliance leasehold is held by ConocoPhillips (COP) and partners and would make a square if included in the request. In the southeast corner of the COP lease is the surface location of the ARCO Hemi Springs State 1 well, drilled in 1984. This well was directionally drilled to the southeast and penetrated the Kuparuk C sand in the COP lease before proceeding farther southeast into the adjacent now-Alliance lease (ADL 391544) where it penetrated the Sag River, Shublik and Ivishak formations. A drill stem test (DST) and other data from the Kuparuk C sand supported COP's request to certify the Hemi Springs State 1 well as "capable of producing in paying quantities" in June 1984. This certification has held the lease for COP to date. The penetration of the Ivishak formation by the Hemi Springs State 1 well yielded

some encouragement in the log data but tested wet with a DST. The lower portion of the Hemi Springs State 1 well is the only penetration in the proposed GU. The West Sak formation was also tested in the Hemi Springs State 1 with a DST and produced only water and diesel mud additive.

The findings of the ARCO Hemi Springs State 1 well integrated with interpretations of modern 3D seismic data (Storms Survey) are the core of Alliance's request to unitize their leases and drill Kuparuk C and Ivishak targets under the POE) it submitted with this unit application. Alliance requested that all pertinent geological and geophysical data be held confidential under AS 38.05.035(a)(8)(C). This geological, geophysical and engineering discussion is limited to publicly available well, test, geological, geophysical, and engineering information within and adjacent to the GU. The confidential data further supports this discussion and conclusions.

b. Regional Setting

The GU is situated in an area bounded, in part, by the unit outlines of the two largest fields in Alaska and North America. To the east lies the Prudhoe Bay Unit (PBU) which has produced more than 12.7 billion barrels of oil (BBO), including the main Ivishak formation reservoir at the Prudhoe oil pool, as well as satellite accumulations in the Ugnu, Schrader Bluff, Kuparuk, Sag River, (structurally isolated) Ivishak, and Lisburne intervals. To the west is the Kuparuk River Unit (KRU) which has produced more than 2.6 BBO, mostly from the Kuparuk formation. Additional contributions to KRU oil production come from the Cretaceous-Tertiary Brookian topsets in the Ugnu and West Sak (Schrader Bluff equivalent), as well as Cretaceous turbidites in the Seabee and Torok formations.

Economic basement of the pre-Mississippian Franklinian sequence is overlain by the Mississippian through Triassic Ellesmerian sequence, deposited by shedding of sediment from an orogen located to the north onto a south-facing passive margin. Dominated during much of Carboniferous time by extensive platform carbonates (Lisburne Group), the setting gave way to shallow marine and nonmarine clastic deposition during Permian and Triassic time, represented by the Sadlerochit Group (including the Echooka, Kavik, and Ivishak formations). Late Triassic units include the Shublik formation, an oil source rock deposited on an upwelling-influenced shelf, and the Sag River formation, a fine-grained sandstone deposited in nearshore to shelfal conditions. Opinions vary as to whether these units represent the upper portion of the Ellesmerian sequence or the lower part of the Beaufortian syn-rift sequence, the succession associated with opening of the Canada basin (the modern Beaufort Sea).

Jurassic transgression initiated deposition of the Kingak formation, a thick marine shale. Typically assigned to the Beaufortian sequence, the Kingak records deposition and locally important Late Jurassic erosion along the rift margin in the north, as well as the earliest stages of sediment input from the ancestral Brooks Range orogen in the south. In early Neocomian (earliest Cretaceous) time, Miluvec formation shales and lower Kuparuk formation A and B sands were derived from a subaerially exposed northern provenance area along the rift margin. Lower Kuparuk units comprise cyclic successions of coarsening-upward sandy shoreface deposits and interbedded mudstone-siltstone shelf sediments that were deposited over a large contiguous area. Next, the lower Cretaceous Unconformity (LCU) profoundly reshaped the

stratigraphy of the area, likely renewing and deepening erosion initiated in late Jurassic time. Erosion along the rift margin cut as deep as Pre-Mississippian basement before ending in middle Neocomian time, resulting in angular discordance and re-deposition of eroded substrate in fault-bounded lows and other depressions across the area. The low-filling sediments include the transgressive shallow marine sandstones and shales of the upper Neocomian Kuparuk C interval and later the more shale-rich Kuparuk D interval. Further transgression and considerable sea-level rise drowned the rift margin and led to deposition of the Kalubik formation and pebble shale unit marine mudstones and shales, extinguishing the Beaufortian rift margin as a northerly sediment source.

The shallower Brookian sequence represents west-to-east filling of the Colville foreland basin by sediments shed eastward from the Chukotka orogen and Herald arch and to a lesser extent, northward from the ancestral Brooks Range. These sediments filled the basin in a series of clinoformal wedges comprising extensive shallow marine to nonmarine topsets and equivalent slope foresets and basinal bottomsets. Condensed shale of the highly radioactive zone (HRZ) floors the Brookian sequence across most of the basin, improving eastward as an oil-prone source rock and as a top seal for accumulations in underlying Beaufortian reservoirs. Near the proposed GU in the central North Slope, Brookian strata consist mainly of the Sagavanirktok and Schrader Bluff formation topsets (including the informal Ugnu and West Sak sands), as well their basinward slope and bottomset equivalents, primarily Canning formation and Hue Shale/HRZ.

Thick marine shales of the Kingak formation and HRZ serve as seals in one manner or another for almost all Ellesmerian and Beaufortian accumulations across the PBU/KRU region. The Shublik, Kingak, and HRZ are also rich source rocks for both oil and gas that have migrated and accumulated separately or have been blended by migration or re-migration upon spilling out of accumulations.

Opportunities in the GU area include structural traps in the Sag River and Ivishak formations that are separate from Prudhoe Bay Field and combination structure/stratigraphic traps in the upper Kuparuk (Kuparuk C) that are separate from the Kuparuk River Field. Traps in the younger West Sak/Schrader Bluff sands have long been sought downdip from the KRU West Sak pool in efforts to exploit these otherwise cool, viscous, biodegraded oils at greater depths where higher temperature and lower viscosity would result in more efficient oil recovery. An exploration well history is summarized below.

c. Prior Exploration History

Brief summaries of the exploration wells drilled in the greater GU area are offered below. The wells have variously been drilled to test extensions of Lisburne Group carbonates, the Ivishak formation, and the West Sak/Schrader Bluff topsets. Each was interpreted in the conditions of their time, including the scope and quality of the data acquired, existing infrastructure, evaluation of minimum economic field size, and project economics including competition for capital. Some of the wells were plugged and abandoned despite evidence suggesting potential accumulations of technically recoverable oil. Criteria for exploration success change over time with improvements in exploration techniques, new ideas, and the commercial context of a discovery. Offered in

chronological order, the well summaries below describe the data collected, but mostly avoid speculation about the operator's thinking at the time. Alliance draws key information relevant to the proposed GU from the ARCO Hemi Springs State 1 drilled in 1984. For this reason, there is additional detail from that well discussed later in the Geological and Engineering Characteristics section below.

In 1969, the Mobil Hemi State 03-09-11 well (Sec. 3, T9N, R11E, U.M.), approximately 4.5 miles to the west-southwest of the GU, reached a depth of 6,032' measured depth (MD), penetrating the West Sak/Schrader Bluff topsets before bottoming in mid-Cretaceous Seabee formation (Brookian bottomsets). Multiple unsuccessful attempts were made to recover core from the West Sak. Conventional sidewall cores were taken in the West Sak interval, recovering oil-saturated sands with fair to good shows. The well was plugged and abandoned without testing.

In 1969, the ARCO Toolik Fed 2 well (Sec. 5, T8N, R12E, U.M.), approximately 11 miles south of the GU, reached a depth of 8,700' MD in the Jurassic Kingak formation. The well penetrated approximately 10' of Kuparuk C sandstone. Thirty-one sidewall cores were recovered between the intervals of 2,330' and 7,698'MD. Mud log shows were noted in the Brookian interval. No commercial accumulation of hydrocarbons was determined present in the well. The well was plugged and abandoned.

In 1972, the Ashland West Channel 1-03 (Sec. 3, T9N, R15E, U.M.), approximately 21 miles east-southeast of GU, reached a depth of 9,880' MD in the Ivishak formation. The well encountered gas shows with no visible oil from 9,160' to 9,235' in the Sag River formation. From 9,235' to 9,275' MD the well showed some signs of oil in limestone and sandstone with poor porosity in the Shublik and uppermost Ivishak formations. Deep resistivity log curves indicated low resistivity, particularly at the top of the Ivishak formation, consistent with the presence of high water saturations. The well was plugged and abandoned.

ARCO drilled the West Sak River State 5 (Sec. 11, T10N, R10E) in March of 1975 to a total depth (TD) of 6,702' MD in the Jurassic Kingak Shale. The well is located approximately 6 miles northwest of the proposed GU in the current KRU. Excellent shows were noted in the West Sak interval during drilling. The Kuparuk C sand was cored and tested in the well. The test recovered gas and heavy oil cut mud. The well was plugged and abandoned.

The ARCO West Sak River State 6 (Sec 29, T11N, R11E) was also drilled in 1975, approximately 7.5 miles west-northwest of the proposed GU in the current KRU. The well drilled to TD at 7100' MD in the Jurassic Kingak Shale. There are good mud log shows in the Kuparuk sand section, but the well tested water on DST (stabilized rate 171 barrels of water per day (BWPD), total of 86 barrels of fluid recovered). Additional mud log shows were noted in the West Sak interval. The well was plugged and abandoned.

In 1984, ARCO directionally drilled the Hemi Springs State 1 well (Sec.12, T10N, R11E, U.M.), straddling the boundary of the proposed GU and the COP lease held by being "certified capable of producing in paying quantities". The certified interval is the Kuparuk C while the deeper portion of the well crosses into the proposed GU before penetrating the Ivishak and Lisburne

intervals. The well was drilled to 10,937' MD, reaching TD in the Lisburne Group. The primary exploration objectives of the well were the West Sak and Ivishak intervals with the Lisburne as a secondary objective. The West Sak sands were cored from 4,527' MD to 4,856' MD, and 30 sidewall cores were taken. The West Sak interval had marginal shows with an apparent oil/water contact within one of the upper West Sak/Schrader Bluff sands. DSTs were conducted in the Ivishak, Kuparuk, and West Sak. The well was certified capable of producing in paying quantities based on the Kuparuk DST results. The details are discussed in the section below. The Lisburne is interpreted to be wet with only trace stains of dead oil. The well was plugged and abandoned. This well provides key information for the GU prospects; both the Kuparuk C and Ivishak prospects hinge on an oil-water contact (OWC) being present in this well.

The HG&G Hemi Springs Sag River 1 well (Sec. 14, T9N, R14E, U.M.) was drilled to the Ivishak formation about 18 miles southeast of the GU. Twenty-seven sidewall cores were recovered between the depths of 6,080' MD and 8,760' MD, sampling sections between the West Sak and HRZ intervals. The Kuparuk sandstone was not present and the Ivishak sandstone was wet based on low values on deep resistivity logs. No tests were conducted and no commercial hydrocarbons appeared present based on the well logs. The well was plugged and abandoned in February 1984.

The Burglin 33-1 well (Sec.33, T10N, R14E, U.M.), approximately 15 miles southeast of the GU, was drilled by Alaskan Crude to a total depth of 9,458' MD in the Ivishak formation in 1984. The well was cored, logged, and tested in several formations throughout the well, including sandstone intervals within the West Sak and Ivishak sands. The well test at the West Sak level recovered gas cut formation water and gas cut drilling mud. The test at the Ivishak interval recovered 760' of rat hole fluid and 3,637' of formation water. The well appeared to encounter no commercial hydrocarbons and has remained suspended since 1985.

In 1985, ARCO drilled the Hemi Springs Unit 3 well (Sec 13, T9N, R13E, U.M.), located approximately 13 miles southeast of the proposed GU, to a total depth of 10,059' MD in the Ivishak formation. The Kuparuk formation was the primary objective, but it was not present. The interval from 8,567' MD to 8,833' MD was cored over the interval targeted for Kuparuk C sands but consisted predominantly of mudstone. Well logs indicated low readings for deep resistivity, indicating that the Ivishak interval was wet. The well was plugged and abandoned.

In 1986, ARCO drilled the Winter Trails 1 (Sec 22, T10N, R10E), located about 8.5 miles west-southwest of the proposed GU, about $\frac{3}{4}$ of a mile south of the current KRU boundary, to a total depth of 4,015' MD, just below the base of the West Sak sands. Oil was indicated in the mudlog descriptions within both the Ugnu and West Sak intervals. Good staining, odor, fluorescence, cut, and cut fluorescence was reported throughout the interval with show qualities characterized as fair to excellent. Core chip descriptions from the West Sak interval had sands with fair to excellent oil shows. A repeat formation tester (RFT) was also run with sampling points in the West Sak and Ugnu formations. The well was plugged and abandoned without further testing.

In 1991, ARCO drilled the Rock Flour 1 well (Sec 4, T10NE, R11E, U.M.) approximately four miles northwest of the Hemi Springs State 1 well to a depth of 9,354' MD in the Ivishak formation. The well encountered wet Ivishak sands, as determined from low deep resistivity

values. Rotary sidewall cores taken in the Shublik formation were well below 1.0 millidarcy (mD) except where broken or fractured. The Cretaceous Kuparuk C is 52'-thick (true vertical thickness) and appears wet based on low deep resistivity readings. Rotary sidewall cores were taken across the Kuparuk interval and were described as sandstone and siltstone with measured permeabilities near or below 1.0 mD in 11 samples, greater than 1.0 but less than 10 mD in two samples, and close to or over 200 mD in two samples. The West Sak sands appear to be oil bearing, with deep resistivity logs reading more than 10 Ω -m, exceeding 50 Ω -m in places. The well was plugged and abandoned, suggesting subcommercial results.

In 2006, the Hailstorm 1 was drilled by Pioneer through the upper portion of the Ivishak formation, and achieved TD at 9,840' MD in the Ivishak. The well is located about 10.5 miles southeast of the GU. The Kuparuk C is not present. The Ivishak formation is indicated to be wet by low deep resistivity values over the interval. The well was plugged and abandoned.

The Rock Flour 2 and Rock Flour 3 (5.5 miles northwest and 5 miles southwest of the GU, respectively) wells were drilled by Eni in 2007. Both wells were drilled to Ugnu and Schrader Bluff/West Sak targets hoping for higher reservoir temperatures and less viscous oil. Rock Flower 2 was drilled to 4,332' MD and Rock Flower 3 was drilled to 4,278' MD. Both wells reached TD below the base of the West Sak. Analyses of conventional core plugs taken in the West Sak interval in the Rock Flour 2 well were graded as having "probable production," in most cases as "oi" (and "gas" in fewer cases), where the plugs did not have low permeability. Fluid samples were taken using a modular formation testing and sampling tool (Baker-Atlas RCI). Wireline logs, sidewall cores, and RCI samples were acquired in the Rock Flour 3 well. Both wells were plugged and abandoned in 2007. The Eni-operated Rock Flour unit formed in 2005 was voluntarily terminated in 2010.

In 2014 Repsol drilled the Tuttu 1 well located 5 miles west-northwest of the GU outside the southeast corner of the current KRU boundary. The well targeted the West Sak/Schrader Bluff and the Kuparuk. Repsol cut conventional cores in the West Sak/Schrader Bluff section. Time constraints did not allow drilling to the Kuparuk, and the well reached TD in the HRZ at a depth of 6,388' MD. Repsol acquired logs and a vertical seismic profile throughout the wellbore, and also acquired sidewall cores and fluid and pressure samples from the West Sak/Schrader Bluff interval. The well was plugged and abandoned.

d. Geological and Engineering Characteristics

The GU is located on the southeastern flank of the Colville structural high. Based upon seismic and wells in the area, regional structural dip at LCU level is approximately 75–100 feet per mile (approximately 1 degree) to the southeast. The area encompassing the GU area is covered by a 3D seismic survey shot by COP in 2005 (Storms survey) and made available to the public (including Alliance) by the State of Alaska in late 2016 as one of the initial public releases of qualified tax credit seismic data under AS 43.55.025.

The Storms seismic dataset released in 2016 includes Kirchhof pre-stack time migrated near-, mid-, and far-angle and full stack volumes. The data is of very good quality, achieving 50-fold in some parts of the survey. The Storms 3D was processed using coherent noise suppression (CNS)

and with residual amplitude analysis and compensation, which is important for preserving relative amplitudes and bright spots. The complete processing workflow included other state-of-the-art processing strategies for both pre-and post-stack data. Alliance used the publicly-available post-stack Storms 3D seismic survey volumes for structure and amplitude analyses and interpretations.

Hydrocarbon shows in nearby exploration wells suggest potential for accumulated hydrocarbons in the GU area at multiple stratigraphic horizons. Proposed Alliance targets in the GU include the Kuparuk C and Ivishak Sands. As noted above, oil shows have also been described in the West Sak/Schrader Bluff and Ugnu across the region.

Alliance's Kuparuk C target is based on an amplitude anomaly that extends updip from the Hemi Springs State 1 where it believes an OWC is indicated. The prospect is separate from the Kuparuk accumulation at the Kuparuk Field. Historically, prospecting for Kuparuk C sand often employs the use of seismic amplitude analysis to identify exploration and delineation well targets. Although seismic surveys generally lack the frequency to resolve separate top and base reflections associated with thin transgressive sands, an increase in negative amplitude across the Kuparuk interval may indicate an increase in sand content (and/or secondary siderite cement) caused by acoustic impedance contrast relative to the surrounding shales. Because of the limit of seismic resolution and inability to determine reservoir quality, the seismic data may not reliably define the boundaries of prospective areas and wells must be drilled to confirm and adequately test and define the limits of the reservoir.

The closest well penetration of the Kuparuk C target is the Hemi Springs State No. 1, just outside of the proposed GU in the lease long held by COP. The slightly deviated well drilled 50' MD of Kuparuk C, which equates to 46' of true vertical thickness. This interval is described on the mudlog as being composed primarily of sand, shale, and glauconite with siderite cementation present. Two DSTs were then performed in the Kuparuk C with varying results. The first Kuparuk test (DST 2), sample 1 (7,176' MD) yielded 94–100% water cut and sample 2 (7,176' MD) was 100% water (negligible oil). Nitrogen (N₂) assist was used and the well started flowing oil on its own after the N₂ assist was stopped. Sample 3 measured 89–92% oil (25.5–26.0 °API) and short-term rates of 45–131 barrels of fluid per day (BFPD), flowing up to 182 BFPD in surges. Sampler 3 was summarized as 87% oil (33.3 °API). The interval was then acidized and N₂ lift applied. DST 2A was conducted after a pressure buildup stage. Samples taken with N₂ lift varied from 7.5% to about 45% oil at calculated rates of 46–91 BFPD. Near the end of the test, a production rate of 367 BFPD was achieved with N₂ lift at 1000 standard cubic feet per minute (scf/m). Total fluid recovered in DST 2A was 186 barrels (bbl) (53 bbl diesel, 109 bbl water, and 24 bbl oil, 33.3 °API). Oil samples recovered at various stages of Kuparuk DST 2/2A were analyzed, yielding a range of gravity from 25.5 to 34.5 °API.

The Ivishak is the second and deeper target of interest to Alliance in the proposed GU. A structural trap is interpreted and partially imaged by the Storms 3D seismic data. Additionally, an OWC is interpreted by Alliance from logs in the Hemi Springs State 1 well to provide the downdip limit of this prospect. Alliance's seismic interpretation suggests space updip of the OWC for a potential accumulation. The Ivishak target is not interpreted to be connected to the

Ivishak at Prudhoe Bay Field. Regionally, the Ivishak formation consists of conglomerate and sandstone layers that were deposited by fluvial and shallow marine systems during the late Permian and early Triassic time. Reservoir properties in the Ivishak are generally very good (>15% porosity) across the region. The Hemi Springs State No. 1 well penetrated the Ivishak in the proposed GU. Conventional core plugs from 9,595' to 9,650' MD were described as fine- to coarse-grained sands with varying amounts of siderite, pyrite and tripolitic chert. The permeabilities from Boyles law-Helium porosity analyses were <1 to 342 mD and porosities were measured from 12.9 to 23.5%. Two DSTs were performed in the Ivishak. In the first test (DST 1), there was gassy foam and trace oil recovered with diesel. The second Ivishak test (DST 1A) had a sampler clock problem and did not recover a sample to the surface but circulated out 25 bbls of gas cut mud.

Hemi Springs State 1 cut twelve conventional cores from 4,527' to 4,856' MD over the West Sak interval on COP's lease adjacent to the proposed GU. Recoveries were good to excellent. Core chip descriptions include sandstones, siltstones, and mudstones. Show evaluations based on oil staining, cut, and odor were characterized as ranging from "no show" to "very good show". Most commonly core chips were evaluated as having no show or poor show. Less common fair shows were described throughout the cored intervals. Good and very good shows were recorded but rare. The best shows were described in core samples at 4,795' and 4,847' MD. Core plugs were also collected and analyzed. Oil staining was reported in some samples with trace to 80% stain. Associated shows were rated very poor to good. Permeability measured from Dean-Stark analyses ranged from <1 to 266 mD and porosity ranged from 18 to 30%. Finally, two DST's were performed in the West Sak. Continuous swabbing produced ~81 bbl of water and 3 bbl of diesel (mud additive). Water cut was steady at 99.5% water. The test finished with a flow rate of 164 barrels of water per day (BWPD), consistent with the West Sak shows representing only residual oil saturation.

Based on the data provided by the Unit Operator and all pertinent data available, the Division determined the proposed unit area meets the criteria for unitization.

3. Plans of Exploration

Alliance submitted an initial Unit POE, as part of the Application, and met with the Division for a technical presentation on May 25, 2017. On June 22, 2017 Alliance submitted a revised POE. This POE is approved by this decision and is attached as Attachment 4.

In the POE, Alliance commits to commence drilling one well on or before March 31, 2019. If all necessary permits and governmental authorizations can be secured Alliance may drill the well in early 2018.

The Division approves the revised POE and the two-year term. Division will expect an update to the POE on or before December 31, 2017 and December 31, 2018. The purpose of the update is to keep the Division current on the progress of planning and drilling the well. The initial POE is effective as of this decision through September 1, 2019. A Second POE is due on or before July 1, 2019.

4. The Economic Costs and Benefits to the State and Other Relevant Factors

The GU will provide economic benefits to the State through royalty on production. Unitized development conducted under the GU Agreement provides for development of all the unitized leases as a single lease, rather than development conducted on a lease-by-lease basis, which provides efficiencies that benefit both the operator and the State. Unitized development maximizes oil and gas recovery, promotes conservation, prevents waste, and protects all the parties of interest.

B. Decision Criteria considered under 11 AAC 83.303(a)

1. Promote the Conservation of All Natural Resources

A unit may be formed under AS 38.05.180(p) “[t]o conserve the natural resources of all or a part of an oil or gas pool, field, or like area.” Conservation of the natural resources of all or part of an oil or gas pool, field or like area means “maximizing the efficient recovery of oil and gas and minimizing the adverse impacts on the surface and other resources.” 11 AAC 83.395(9). The unitization of oil and gas reservoirs or accumulations and the formation and expansion of unit areas to develop hydrocarbon-bearing reservoirs or accumulations are well-accepted means of hydrocarbon conservation. Unitization, with development occurring under the terms of a unit agreement, can promote efficient evaluation and development of the State’s resources, and minimize impacts to the area’s cultural, biological, and environmental resources.

2. The Prevention of Economic and Physical Waste

Unitization, as opposed to activity on a lease-by-lease basis, may prevent economic and physical waste. Economic waste is often referred to as the drilling of wells in excess of the number necessary for the efficient recovery or delineation of the oil and gas in place. Physical waste, among other things, includes the inefficient, excessive, or improper use of, or unnecessary dissipation of, reservoir energy.

Unitization may also prevent economic and physical waste by eliminating redundant expenditures for a given level of production, or by avoiding loss of ultimate recovery with the adoption of a unified reservoir management plan. Annual approval of the GU development activities as described in future plans of development must also provide for the prevention of economic and physical waste.

3. The Protection of All Parties of Interest, Including the State

The people of Alaska have an interest in the development of the State’s oil and gas resources to maximize the economic and physical recovery of the resources. AS 38.05.180(a). Management of the unit under future annually approved plans of development will provide for continued review and approval of Alliance plans to develop the GU in a manner which will maximize economic and physical recovery. Combining interests and operating under the terms of the GU Agreement and GU Operating Agreement assures an equitable allocation of costs and revenues commensurate with the resources.

The GU expansion protects the economic interests of the WIO and the State. The formation promotes the State's economic interests because hydrocarbon recovery will be maximized and additional production-based revenue will be derived from the increased production. Diligent exploration and development under a single approved unit plan without the complications of competing leasehold interests promotes the State's interest. Operating under the GU Agreement provides for accurate reporting and record keeping, State approval of plans of exploration and development, plans of operation, production allocation, in-kind taking, and emergency storage of oil and gas, all of which will further the State's interest.

IV. FINDINGS AND DECISION

A. The Conservation of All Natural Resources

1. Expansion of the GU will provide for exploration and development of the unitized area under the GU Agreement and will maximize the efficient recovery of oil and gas and minimize the adverse impacts on the surface and other resources, including hydrocarbons, gravel, sand, water, wetlands, and valuable habitat.
2. The unitized development and operation of the leases in this expansion will reduce the amount of land and fish and wildlife habitat that would otherwise be disrupted by individual lease development. This reduction in environmental impacts and preservation of subsistence access is in the public interest.
3. There is potential for environmental impacts associated with development. All unit development must proceed according to an approved plan of development. Additionally, before undertaking any specific operations, the Unit Operator must submit a unit plan of operations to the Division and other appropriate state and local agencies for review and approval. The lessees may not commence any drilling or development operations until all agencies have granted the required permits. DNR may condition its approval of a unit plan of operations on performance of mitigation measures in addition to those in the modified leases, if necessary or appropriate. Compliance with mitigation measures will minimize, reduce or completely avoid adverse environmental impacts.

B. The Prevention of Economic and Physical Waste

1. Alliance submitted geological, geophysical, and engineering data to the Division in support of the Application. The Division determined that the GU area encompasses all or part of one or more oil and gas reservoir(s) or potential hydrocarbon accumulation(s).
2. The available geological, geophysical and, engineering data justify including in the unit the proposed lands, as described in Attachments 1 and 2 of this decision.

C. The Protection of All Parties in Interest, Including the State

1. The unit protects all parties' interests including the people of Alaska who have an interest in the development of the State's oil and gas resources to maximize the economic and physical recovery of the resources.

2. The geological, geophysical, and engineering data that Alliance provided reasonably justify the inclusion of the GU acreage under the terms of the applicable regulations governing formation, expansion, and operation of oil and gas units and participating areas (11 AAC 83.301–395) and the terms and conditions under which these lands were leased from the State.
3. Alliance provided evidence of reasonable effort to obtain joinder of any proper party to the Agreement.
4. Alliance holds sufficient interest in the unit area to give reasonably effective control of operations.
5. The unit formation meets the requirements of 11 AAC 83.303.
6. The Division complied with the public notice requirements of 11 AAC 83.311.
7. The unit will not diminish access to public and navigable waters beyond those limitations (if any) imposed by law or already contained in the oil and gas leases covered by this decision.
8. The GU Agreement provides for additional expansions and contractions of the unit area in the future, as warranted by data obtained by exploration or otherwise. The GU Agreement thereby protects the public interest, the rights of the parties, and the correlative rights of adjacent landowners.
9. The approved unit is effective June 12, 2017.

For the reasons discussed in this Findings and Decision, I hereby approve the application to form the GU.

A person affected by this decision may appeal it, in accordance with 11 AAC 02. Any appeal must be received within 20 calendar days after the date of “issuance” of this decision, as defined in 11 AAC 02.040(c) and (d) and may be mailed or delivered to Andrew T. Mack, Commissioner, Department of Natural Resources, 550 W. 7th Avenue, Suite 1400, Anchorage, Alaska 99501; faxed to 1-907-269-8918, or sent by electronic mail to dnr.appeals@alaska.gov. This decision takes effect immediately. An eligible person must first appeal this decision in accordance with 11 AAC 02 before appealing this decision to Superior Court. A copy of 11 AAC 02 may be obtained from any regional information office of the Department of Natural Resources.

If you have any questions regarding this decision, contact Kevin Pike with the Division at 907-269-8451, or by email at Kevin.Pike@Alaska.gov.



Chantal Walsh
Director

Date 8/23/17

V. Attachments

1. Guitar Unit Exhibit A: Description of Lands within the Unit
2. Guitar Unit Exhibit B: Map of Unit Area
3. Guitar Unit Agreement
4. Guitar Unit Revised Plan of Exploration

1. Guitar Unit Proposed Exhibit A

Description of Lands within the Proposed Guitar Unit

EXHIBIT A
UNIT AGREEMENT
OWNERSHIP INFORMATION

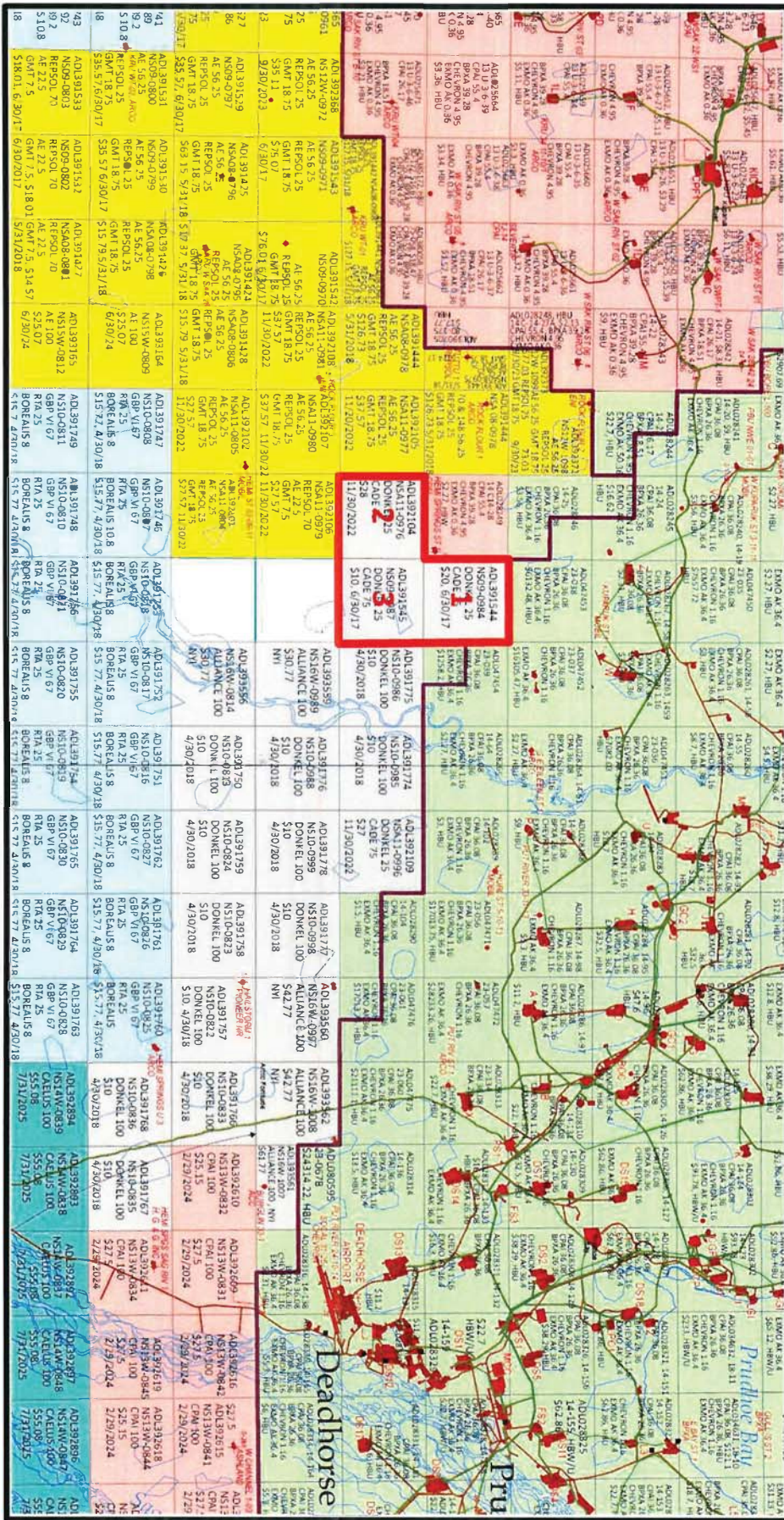
Unit Tract No.	Lease No.	Sale Tract No. & Legal Description	Acreage	Lessee(s) of Record	Share of Production		
					Basic Royalty Owner & Percentage	ORRI Owner & Percentage	Working Interest Owner & Percentage
1	ADL 391544	<u>Tract 984</u> T. 010N., R. 012E., Tract A, Umiat Meridian, Alaska. Section 5, Unsurveyed, All, 640.00 acres; Section 6, Unsurveyed, All, 609.00 acres; Section 7, Unsurveyed, All, including the beds of the unnamed lakes, 612.00 acres; Section 8, Unsurveyed, All, including the beds of the unnamed lakes, 640.00 acres; This Tract (984) contains 2,501.00 acres, more or less.	2,501.00	Alliance Exploration LLC	State of Alaska, DNR DOG 16.6666700%	Samuel H. Cade – 1.125% Daniel K. Donkel - .375%	Alliance Exploration, LLC 100%
2	ADL 392104	<u>Tract 976</u> T. 010N., R. 011E., Umiat Meridian, Alaska. Section 13, Surveyed by Protraction, All, 640.00 acres; Section 14, Surveyed by Protraction, All, 640.00 acres; Section 23, Surveyed by Protraction, All, 640.00 acres; Section 24, Surveyed by Protraction, All, 640.00 acres; This Tract (976) contains 2,560.00 acres, more or less.	2560.00	Alliance Exploration LLC	State of Alaska, DNR DOG 16.6666700%	Samuel H. Cade – 1.125% Daniel K. Donkel - .375%	Alliance Exploration, LLC 100%

Unit Tract No.	Lease No.	Sale Tract No. & Legal Description	Acreage	Lessee(s) of Record	Share of Production		
					Basic Royalty Owner & Percentage	ORRI Owner & Percentage	Working Interest Owner & Percentage
3	ADL 391545	Tract 987 T. 010N., R. 012E., Tract A, Umiat Meridian, Alaska. Section 17, Unsurveyed, All, including the beds of the unnamed lakes, 640.00 acres; Section 18, Unsurveyed, All, including the beds of the unnamed lakes, 615.00 acres; Section 19, Unsurveyed, All, including the beds of the unnamed lakes, 617.00 acres; Section 20, Unsurveyed, All, including the beds of the unnamed lakes, 640.00 acres; This Tract (987) contains 2,512.00 acres, more or less.	2512.00	Alliance Exploration LLC	State of Alaska, DNR DOG 16.666670%	Samuel H. Cade - 1.125% Daniel K. Donkel - .375%	Alliance Exploration, LLC 100%
TOTAL			7,573 acres				

2. Guitar Unit Proposed Exhibit B

Map of Proposed Guitar Unit Area

Exhibit B - Base Map (Red outline proposed unit, red tract numbers, lease designation Mapmakers Alaska)



3. Guitar Unit Agreement

HEMI SPRINGS UNIT AGREEMENT

Table of Contents

RECITALS 2
ARTICLE 1: PURPOSE AND SCOPE OF AGREEMENT 2
ARTICLE 2: DEFINITIONS..... 2
ARTICLE 3: EXHIBITS AND COPIES OF THE AGREEMENT.... 4
ARTICLE 4: CREATION AND EFFECT OF UNIT 5
ARTICLE 5: DESIGNATION OF UNIT OPERATOR 6
ARTICLE 6: RESIGNATION OR REMOVAL OF UNIT OPERATOR 6
ARTICLE 7: SUCCESSOR UNIT OPERATOR 7
ARTICLE 8: UNIT OPERATING AGREEMENT..... 7
ARTICLE 9: PLANS OF EXPLORATION, DEVELOPMENT, AND OPERATIONS..... 7
ARTICLE 10: PARTICIPATING AREAS AND ALLOCATION OF PRODUCTION . . . 9
ARTICLE 11: OFFSET WELLS..... 10
ARTICLE 12: LEASES, RENTALS, AND ROYALTY PAYMENTS..... 10
ARTICLE 13: UNIT EXPANSION AND CONTRACTION..... 13
ARTICLE 14: UNIT AND LEASE TERMINATION..... 14
ARTICLE 15: COUNTERPARTS..... 15
ARTICLE 16: LAWS AND REGULATIONS 15
ARTICLE 17: APPEARANCES AND NOTICES 15
ARTICLE 18: DEFAULT 16

RECITALS

This document is the proposed Hemi Springs Unit Agreement (Agreement), executed by Alliance Exploration, LLC, ("Alliance") who is the sole Working Interest Owner of the leases proposed to be included in the unit.

Alliance submitted an application to the Alaska Department of Natural Resources (DNR) for approval of formation of the Hemi Springs 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 Alliance commits its 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, and insofar as constitutionally permissible, all statutes and regulations 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 as provided in 11 AAC 83.374.
- 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.
- 1.4. Alliance acknowledges 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.
- 2.3. **Effective Date** means 12:01 a.m. on the date identified as the effective date in the Commissioner's approval of the unit, and if no date is specified, the date of the unit approval decision.
- 2.4. **Lease or Leases** means one or more oil and gas leases subject to this Agreement.
- 2.5. **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.
- 2.6. **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.
- 2.7. **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.
- 2.8. **State** means the State of Alaska.
- 2.9. **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.
- 2.10. **Unit Area** means the lands subject to this Agreement, described in Exhibit A and shown in Exhibit B to this Agreement.
- 2.11. **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.
- 2.12. **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.
- 2.13. **Unit Operations** means all operations conducted under this Agreement in accordance with a Unit plan of operations.
- 2.14. **Unit Operator** means the party designated by the Working Interest Owners and approved by the Commissioner to conduct Unit Operations.

- 2.15. **Unit Plan** means a unit plan of exploration or plan of development as described in Article 9 of this Agreement.
- 2.16. **Unit Tract** means each separate parcel of land that is described in Exhibit A and given a Unit Tract number.
- 2.17. **Tract Participation** means the percentage of Unitized Substances and costs allocated to a Unit Tract in a Participating Area.
- 2.18. **Unit Well** means a well drilled within the Unit Area after the effective date of this Agreement unless specifically authorized by the Commissioner.
- 2.19. **Unitized Substances** means all oil, gas, and associated substances produced from the Unit Area.
- 2.20. **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 DNR:
 - 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 DNR.
- 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 DNR.
- 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 DNR to be necessary for the administration of the Unit or for the performance of DNR responsibilities under Alaska law will be submitted to DNR by the Unit Operator or Working Interest Owners, or both, upon DNR written request. Upon request, DNR will keep confidential all such data and information to the extent it is entitled to confidentiality protection under applicable law.

ARTICLE 5: Designation of Unit Operator

- 5.1. Alliance is designated as the Unit Operator until such time, if any, that a successor unit operator is designated and approved by DNR. Alliance 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 and plan of operations, 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 DNR 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 DNR 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 DNR 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 DNR gives the Unit Operator notice and an opportunity to be heard and DNR approves a successor Unit Operator.
- 6.3. The Unit Operator may be removed by a majority vote of the Working Interest Owners in the Unit. The removal is not effective until the Working Interest Owners give DNR, the Unit Operator, and all Parties written notice of the removal and DNR 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 DNR.
- 7.2. If a successor Unit Operator that is satisfactory to DNR has not been proposed within 30 days of notice of the resignation or removal of a Unit Operator, DNR 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 DNR 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 DNR within 30 days of execution and at least 30 days before their effective dates.
- 8.3. Allocations of Unit Expense, Participating Area Expense, and unit production will be consistent with Exhibits C, E, and F of this Agreement including for the purpose of determining, settling, and paying royalties and net profit share payments. Exhibits C, E, and F of this Agreement must be approved by DNR before they take effect. Original or revised conforming Exhibits C, E, and F will be submitted to DNR within 30 days of any change in the division of interest or allocation formula establishing or revising the allocation of production and costs in a Participating Area.

ARTICLE 9: Plans of Exploration, Development, and Operations

- 9.1. A Unit Plan must comply with 11 AAC 83.341 or 11 AAC 83.343, depending on whether it is a plan of exploration or plan of development.

- 9.2. A proposed Unit Plan is not effective until approved by DNR and will remain in effect until the date specified by DNR in the approval.
- 9.3. Approved Unit Plans, including any updates or amendments to Unit Plans, 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 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.
- 9.6. Before beginning operations on or in the Unit Area, the Unit Operator must obtain approval of its Unit Plan, a plan of operations, 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 are 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.
- 9.7. The Unit Operator will give DNR written notice before beginning testing, evaluation, or pilot production from a well in the Unit Area.
- 9.8. After Sustained Unit Production in Paying Quantities begins, the Operator will maintain production with lapses no longer than 90 days. The lapse may be longer if a suspension of operations or production has been ordered or approved by the Commissioner. An unapproved lapse in Sustained Unit Production of more than 90 days is cause for default.
- 9.9. 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.
- 9.10. Unit Production will be maintained. If production should production cease, the Operator will progress diligent operations to restore Unit Production with lapses of no more than 90 days.
- 9.11. After giving written notice to the Unit Operator and an opportunity to be heard, DNR 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 DNR 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 DNR, 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 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 DNR has approved the operation. The State will be paid royalty upon production from the originating Participating Area unless DNR 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 DNR 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 Commissioner 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 will 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 Commissioner may issue a written demand to drill. The Unit Operator will have an opportunity to be heard on the demand. If the Commissioner 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 Commissioner.

ARTICLE 12: Leases, Rentals, and Royalty Payments

- 12.1. The Working Interest Owners will pay rentals, 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. To the extent necessary, 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 and that 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 DNR 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 rentals 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. 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.
- 12.8. If the Unit Operator or Working Interest Owners comingle production from the Unit with production from other sources for processing, the Unit Operator and Working Interest Owners will provide DNR with a monthly statement that identifies the quality of oil or gas produced from the Unit.

- 12.9. Any unpaid, underpaid, or overpaid royalty or net profit share payment from state Leases committed to this Agreement will accrue interest starting from the month of production as provided in AS 38.05.135(d)-(e).
- 12.10. For each Participating Area, the Unit Operator will give DNR notice of the anticipated date for commencement of production at least six months before the commencement of Sustained Unit Production. Each month after the commencement of Sustained Unit Production, the Unit Operator will provide DNR 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. DNR 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, DNR may increase or decrease the amount of its royalty share taken in-kind after DNR gives the Unit Operator 90 days' written notice
- 12.10.1. DNR 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 Commissioner 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.
- 12.10.2. 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. DNR may designate any individual, firm, or corporation to accept delivery.
- 12.10.3. 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, DNR 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.
- 12.10.4. 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.
- 12.11. If a purchaser of the State's royalty taken in-kind does not take delivery, DNR 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. DNR 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.

- 12.12. 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 DNR 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.
- 12.13. 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.
- 12.14. 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 DNR, 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 DNR.
- 13.3. DNR 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 DNR.

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 DNR approval.
- 14.3. This agreement automatically expires and ceases to exist five years from the Effective Date of this Agreement, unless extended pursuant to 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 non-producing Lease committed to this Agreement on the day that this Agreement expires or terminates, will remain in force if there is a well capable of producing oil or gas in paying quantities, or for an extension period of 90 days, or any longer period approved by DNR, and for so long thereafter as the Working Interest Owners are actively drilling or re-drilling 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, insofar as constitutionally permissible, 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 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:

Alliance Exploration LLC
634 Main Street, Suite 300
PO Box 876
East Aurora, NY 14052

Address of the State:

Commissioner, Department of Natural Resources
550 West Seventh Avenue, Suite 1400
Anchorage, Alaska 99501-3554

with a copy to:

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 material term of this Agreement, including Unit Plans, plans of operations, and 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.

[signature page follows]

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

UNIT OPERATOR

By: Samuel Nappi

Date: 06/06/2017

Alliance Exploration LLC

Samuel Nappi, President

(Company Name, signatory's printed name and title)

STATE OF NEW YORK)
)ss.
ONONDAGA COUNTY)

This certifies that on the 6TH of JUNE, 2017, before me, a notary public in and for the State of NEW YORK, duly commissioned and sworn, personally appeared SAMUEL NAPPI, 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.

Jacob A. Grubka
NOTARY PUBLIC in and for NEW YORK

My Commission Expires: 7-27-2021

JACOB A GRUBKA
Notary Public, State of New York
No. 01GR6209573
Qualified in Onondaga County
Commission Expires July 27, ~~2018~~
2021

WORKING INTEREST OWNER

By: Samuel Nappi

Date: 06/06/2017

Alliance Exploration LLC

Samuel Nappi, President

(Company Name, signatory's printed name and title)

STATE OF NEW YORK)
)ss.
ONONDAGA COUNTY)

This certifies that on the 6TH of JUNE, 2017, before me, a notary public in and for the State of NEW YORK, duly commissioned and sworn, personally appeared SAMUEL NAPPI _____, 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.

Jacob A. Grubka
NOTARY PUBLIC in and for NEW YORK

My Commission Expires: 7-27-2021

JACOB A GRUBKA
Notary Public, State of New York
No. 01GR6209573
Qualified in Onondaga County
Commission Expires July 27, ~~2018~~
2021

4. Guitar Unit Approved Plan of Exploration

Hemi Springs Unit Agreement

EXHIBIT “G”

INITIAL PLAN OF EXPLORATION

Based on 3D Seismic and nearby geologic well information, Alliance Exploration, LLC (“Alliance”) has identified two prospective hydrocarbon reservoirs in the Hemi Springs Unit Area. The Primary target is a stratigraphic trap in the Kuparuk C unit as defined by an amplitude anomaly and a secondary target in the Ivishak Formation defined by structural high and fault trapping mechanisms. The proposed unit is composed of three tracts 100% owned by Alliance which comprise a total of 7,573 acres.

Pursuant to 11 AAC 83.341, Alliance seeks approval of an Initial Plan of Exploration with a two-year term. A one well drilling program is proposed for the Initial Plan of Exploration of the Hemi Springs Unit area over a two year period. Alliance endeavors to drill a second delineation well by the 2020 winter season and, depending on well results, move the unit into development shortly thereafter.

Alliance intends to drill the first well in Tract 2 (ADL 392104) on a seismic amplitude anomaly in the Kuparuk C unit during the 2018 winter season if it is able to secure all permits and authorizations. In the event that Alliance cannot secure the necessary permits and authorizations before the 2018 winter season, the first well will be drilled no later than the 2019 winter season. A second well will be drilled the following year depending on the results of the first well. The second well will be drilled on a Structural high in the Ivishak Formation bounded by a fault. The second well will also be in Tract 2.

The Hemi Springs Unit is comprised of three Tracts corresponding to State of Alaska leases shown below:

- a. Tract 1: ADL 391544: 2501 acres
- b. Tract 2: ADL 392104: 2560 acres
- c. Tract 3: ADL 391545: 2512 acres

The Unit Operator will submit to the division a second POE at least 60 days prior to the expiration of the initial POE. Given positive results of the first well, a second POE will be submitted providing a delineation drilling program to determine the extent and commercial viability of the hydrocarbon accumulation(s).

If the commercial viability of the hydrocarbon accumulation is determined, a full development program will be proposed and Alliance will move the reserves into

production. A major part of the commercial viability of the project will hinge on the volume of the reserves and the cost of delivering hydrocarbons to the facilities. Whether Alliance decides to build its own facility or decides to go to another facility (e.g., Kuparuk or Prudhoe) depends on the volume of production, processing fees, reasonable back-out costs, and lifting cost.

During the term of the Initial POE, Alliance will perform the following initial plan of exploration to delineate the resources underlying the proposed Hemi Springs Unit:

1. On or before March 31, 2019, the Unit Operator intends to commence operations to drill the first well in the Proposed Hemi Springs Unit that meets the following minimum requirement:
 - a. Drill a straight pilot hole to the bottom of the Ivishak Formation equivalent to the Ivishak Formation as seen in the interval between 9,534 MD and 10,120 MD in the Hemi Springs State #1. In Tract 2 section 13.
 - b. Log the well with LWD triple combo (Gamma Ray, Resistivity and Neutron/Density). The possibility of running wireline logging tools such as NMR, Sonic, Formation Pressure/Fluid sample and rotary cores will be determined during operations.
 - c. Set a whipstock and drill a lateral to the south west in the Kuparuk C unit equivalent to the section between 7,196 MD and 7,246 MD in the Hemi Springs State #1. In tract 2 section 13.
 - d. Geosteer the lateral with MWD, Gamma Ray, Azimuthal Resistivity and Neutron/Density.
 - e. If log evaluation indicates prospective hydrocarbon zones test and complete zones in the lateral.