



3900 C Street, Ste. 1000 | Anchorage, Alaska 99503

July 2, 2018

Ms. Chantal Walsh, Director
Alaska Department of Natural Resources
Division of Oil and Gas
550 W. 7th. Avenue, Suite 1400
Anchorage, AK 99501

DEPARTMENT OF
NATURAL RESOURCES

JUL 03 2018

COMMISSIONER'S OFFICE
ANCHORAGE

Subject: Placer Unit Proposal for 3rd Plan of Development (Amended)

Dear Ms. Walsh,

In accordance with 11 AAC 83.341(d) and 11 AAC 83.343 and pursuant to the terms of Article 8 of the Placer Unit Agreement (PLU), ASRC Exploration, LLC (AEX), as Operator and on behalf of AEX as the only working interest owner of the Placer Unit, hereby petitions the Department of Natural Resources (the "Department") to acknowledge receipt of the Placer Unit 3rd Plan of Development (3rd POD) and its approval for the Placer Unit.

In accordance with 11 AAC 83.343, and Article 8 of the PLU, AEX proposes the attached 3rd POD for the Placer Unit.

AEX respectfully submits that the proposed 3rd POD is consistent with the provisions of 11 AAC 83.303 because it meets the following criteria:

11 AAC 83.303(a) Criteria

- Promotes the conservation of oil and gas by providing an efficient, integrated approach to development of the Placer reservoirs while reducing the environmental impact by unitized development of these accumulations;
- Promotes the prevention of economic and physical waste by setting forth a development plan that allows maximization of physical and economic recovery as well as efficient use of future facilities; and
- Provides for the protection of the interests of all parties including the State of Alaska.

11 AAC 83.303(b) Criteria

1. Environmental Costs and Benefits of Formation of the Placer Unit (11 AAC 83.303(b)(1)).



During future development operations of the Placer Unit, activities will have the minimum amount of surface impact consistent with the prudent and efficient development practices of the oil and gas resources on the North Slope.

2. Geological and Engineering Characteristics of the Placer reservoirs (11 AAC 83.303(b)(2)).

Geological, Geophysical, Engineering and Well Information previously submitted describe the characteristics of the Placer reservoirs and potential reservoir developments. Additional interpretation of data from Placer #3 and current interpretation of the merged 3D seismic project will be presented in a Progress Report submitted simultaneously to this request.

3. Prior Exploration Activities in the Proposed Unit Area (11 AAC 83.303(b)(3)).

Three wells, the Placer #1, #2, and #3, have been drilled in the Placer Unit area. Placer #3 was drilled by AEX in January 2016 under the Placer Initial Unit Plan of Exploration, as amended.

4. Plans for Development of the Proposed Placer Unit Area (11 AAC 83.303(b)(4)).

The attached 3rd POD for the Placer Unit sets forth the Placer Unit working interest owner's proposed plans.

5. Economic Costs and Benefits to the State (11 AAC 83.303(b)(5)).

The State's economic interest is protected by maximizing the physical recovery of hydrocarbons from the Placer reservoirs. Maximizing hydrocarbon recovery in turn assures that the production-based revenue occurring to the State is also maximized. Future development of the Placer reservoirs will increase the economic well-being of the State and its residents by creating jobs for the construction of facilities and operation of the field. The State's economic interest is maximized by developing the Placer Unit in with the lowest cost of production, therefore maximizing royalties and production taxes. Operations within the proposed Placer Unit Area will allow for minimal impacts to the area's cultural, biological, and environmental resources.

Facility access is an important factor for economic development on the North Slope. However, facility access has traditionally been accomplished by unitizing leases and construction of facilities owned by a single operator or working interest group. As exemplified in the Colville River Unit, an operator and owner of facilities can share those facilities across multiple Participating Area's within the unit providing development efficiencies, reduced environmental footprint caused by multiple developments, and minimize the cost of production while maximizing the State's economic interest. Access into these units is difficult to obtain due to restrictions and backouts of unitized substances for which the facilities were built. For smaller accumulations outside the large units, this



paradigm needs to shift to an innovative and creative approach to facility access. Placer is an ideal candidate to explore alternative facility access approaches; its size does not warrant single owner facilities, however its location with respect to other developments is perfectly situated for a non-traditional facility access approach. AEX is currently investigating ways Placer and nearby developments may benefit from facility access and sharing. Current discussions with adjacent operators indicate that this approach to development is in the public interest, conserves natural resources, and prevents economical, physical and environmental waste.

A Plan of Development (POD) covers activities broader than just construction and drilling. POD activities are defined in the regulations and Unit Agreement. State criteria 11 AAC 83.343 and the Placer Unit Agreement describe operations to include such activities as, evaluation work, design work, contractor selection, procurement and financing. AEX will continue to actively conduct unit operations as described above. Placer #3 is a certified well drilled and suspended in 2016 and is within the unit. Continuation of the Placer Unit is necessary and in the State's best interest given the results of the Placer #3 well, AEX's analysis of the well data, preliminary interpretation of the seismic data and AEX's scope of work for the upcoming year as described in the attached Placer Unit 3rd Plan of Development.

AEX would like to schedule a technical meeting in the near future to present our findings.

Please see attached Progress Report to supplement our Proposal of 3rd Plan of Development.

If you have any questions or require additional information, please contact me at (907) 339-6014 or timm@asrc.com.

Sincerely,

A handwritten signature in blue ink, appearing to read "Teresa Imm", with a long, sweeping underline.

Teresa Imm - President
ASRC Exploration, LLC

cc: Mr. Ken Diemer
Alaska Department of Natural Resources
Division of Oil & Gas
550 W. 7th Ave., Suite 1100
Anchorage, AK 99501-3557

Enclosures: Progress Report (2017-2018) & Proposed Placer Unit 3rd Plan of Development
Placer Unit Progress Report Supplemental to 3rd Plan of Development



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Progress Report for the period of September 9, 2017 to September 8, 2018

Accomplishments during the Placer Unit 2nd Plan of Development (2nd POD) September 9, 2017 through September 8, 2018 were:

1. Complete the merging and reprocessing of the Tabasco 3D data with portions of the WBA and Kookpuk survey data.

Accomplished:

- Merged and currently reprocessing the Tabasco 3D data with portions of the WBA and Kookpuk survey data.
 - The goal throughout this process is to image entire extent of Placer Kuperuk C reservoir with consistent processing flow and bin size and utilize advances in interpolation (5D interpolation) to improve special sampling within Placer Unit
 - The PSTM (time migration) processing was completed in March 2018.
 - The PSDM (depth migration) processing was completed on June 25th, 2018 and AEX has begun work on interpreting this data.
2. Mapping the extent of the Kuperuk C sands within the Placer Unit. Given that the Placer # 3 well was drilled close to the western edge of the Unit, this work will include evaluating extension of reservoir beyond the current Unit boundary.

Accomplished:

- AEX has completed the interpretation of the post-stack time migration data set.
 - AEX is currently interpreting the PSDM data set. AEX estimates that preliminary interpretations from this data set will be completed before the current POD deadline (September 9, 2018).
3. Analysis and interrogation of the test results from the Placer #3 well to determine if seismic faults located close to the Placer #3 location appear to be barriers and influence flow within the Kuperuk C.

Accomplished:

- AEX performed and finalized the Pressure Transient Analysis (PTA) during the 1st POD. Based on the results from this analysis AEX confirmed that the faults were not a barrier to flow within the Kuperuk C. Upon completion of the fault

interpretation from the PSDM data, AEX will tie this information to the results from the PTA.

4. Complete Kuparuk C reservoir studies, including geologic and dynamic reservoir models to determine the number and location of wells needed to efficiently produce the reservoir and avoid economic and physical waste. This will likely extend into the 3rd POD due to the delay in acquiring the Tabasco 3D seismic dataset and initialization of the merging, reprocessing and interpretation of seismic for reservoir continuity and characterization.

Accomplished:

- AEX developed workflows for static & dynamic modeling.
- AEX completed petrographic facies interpretation from the thin section analysis initiated under the 1st POD.
 - Based on the facies interpretation results, AEX is reviewing the potential for implementing hydraulic fracturing within the Kuparuk C.

5. Determine what type and locations of facilities needed for the development of Placer including estimates of cost for development drillings, and costs for construction, and installation of facilities.

Accomplished:

- AEX completed initial surface facility study during the 1st POD. Based on the results from that study, AEX commenced a second surface facility cost study for new routing options.
- AEX identified Nanushuk Central Processing Facility (CPF) Alternative #4 in the Nanushuk EIS is located on Placer leases. AEX completed a cost estimate study of this new pipeline and road routing alternative.
- AEX also identified Nanushuk CPF Alternative #2 (roughly 2 miles west of the Placer Unit) in the Nanushuk EIS as an additional routing option. This routing option includes crossing the Miluveach River. AEX has commissioned a 3rd party cost study to determine the shortest practical route and cost from Placer #3 to Nanushuk CPF Alternative #2 with preliminary design for crossing the Miluveach river. This is an on-going study and is expected to be completed prior to the end of the 2nd POD.

6. Evaluate facility sharing opportunities to process Placer oil through either the Southern Miluveach Unit (SMU) Mustang Operations Center 1 (MOC-1) production facility or through facilities located in the Kuparuk River Unit. AEX currently has an MOU with Brooks Range Petroleum Corporation (BRPC) to evaluate use of the SMU MOC-1



production facility and are in initial discussions with Conoco Philips Alaska, Inc. (CPAI) for a Kuparuk River Unit facility sharing agreement.

Accomplished:

- AEX has entered into a Memorandum of Understanding (MOU) with BRPC and are in continuous discussions with them on the status of SMU MOC.
- AEX advanced KRU facility sharing negotiations with Confidentiality Agreement and meetings with CPAI. Performed and completed economic analysis for this alternative.
- AEX is currently in MOU negotiations with nearby operators regarding facility optimization for Placer development.

-End-



Proposed Placer Unit 3rd Plan of Development for the period of September 9, 2018 through September 8, 2019

ASRC Exploration, LLC. (AEX) proposes the following 3rd Plan of Development (3rd POD) to bring the Placer Unit in to production per 11 ACC 83.343

- 1) The long-range proposed development activities for Placer Unit include plans to delineate all underlying oil or gas reservoirs, bring the reservoirs into production, and maintain and enhance production once established.
 - a. Currently the Kuparuk C is the only productive interval identified within the Placer Unit.
 - b. Analysis of an Early Production Facility (EPF) for potentially early production in 2019/2020.
 - During EPF production, work towards negotiation with adjacent operators.
- 2) The plans for the exploration or delineation of any land in the unit not included in a participating area.
 - a. No Participating Area is currently proposed.
 - b. Plan will be to define the initial participating area through detailed mapping, reservoir analysis and engineering, utilizing the three Placer Unit wells and the merged seismic dataset.
 - c. AEX will continue to evaluate the Moraine interval encountered in the Placer #3 well.
- 3) The proposed operations for the Placer Unit for the 3rd POD for the period September 9, 2018 through September 8, 2019 are detailed as follows:
 - a. Evaluate early production using ice road and SMU EPF starting winter 2019/2020.
 - b. Complete reservoir description utilizing our 3-D interpretations and use the results of the reservoir mapping and seismic data analysis to generate a 3-D Geologic model (static model).
 - c. Construct an integrated reservoir hydraulic fracture model to access the full vertical potential of Kuparuk C.
 - d. Complete full field dynamic reservoir simulation model targeting the entire Kuparuk C accumulation and complete simulations to optimize Development Plan.
 - i. Conduct Development Drilling Cost study.



- ii. Well Design:
 - Evaluate ESP's vs Gas Lift.
 - Model hydraulic fracture stimulation.
 - e. Progress Memorandum of Understanding (MOU) with adjacent operators for joint Kuparuk C development and facility access.
- 4) The surface location of proposed facilities, drill pads, roads, docks, causeways, material sites, base camps, waste disposal sites, water supplies, airstrips, and any other operation or facility necessary for Placer Unit operations will be studied as follows:
- a. Following completion of initial reservoir mapping and reservoir modeling a well plan will be developed to optimally produce the Kuparuk C in the PLU.
 - b. Pending favorable results of facility access/sharing negotiations; finalize review of adjacent facilities access options to determine location of roads and three- phase pipelines to processing facility.

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