

KASILOF UNIT

FORMATION OF THE KASILOF
PARTICIPATING AREA

FINDINGS AND DECISION OF THE DIRECTOR,
DIVISION OF OIL AND GAS,
UNDER DELEGATION OF AUTHORITY FROM THE COMMISSIONER
STATE OF ALASKA
DEPARTMENT OF NATURAL RESOURCES

April 21, 2008

I. INTRODUCTION, BACKGROUND AND DECISION SUMMARY

The Alaska Department of Natural Resources, Division of Oil and Gas (Division) approved the Kasilof Unit (KU) on October 25, 2002. The original KU, containing 13,289 acres, is comprised of three State of Alaska Leases, ADL 384529 (3,772 acres), ADL 384534 (5,760 acres) and ADL 389502 (3,757 acres). In a December 14, 2007, letter Marathon Oil Company (Marathon), as unit operator and sole working interest owner (WIO) in the Kasilof Unit (KU), applied to the Division to contract the KU and form the Kasilof Participating Area (KPA) within the contracted KU (Application). The contracted KU and proposed KPA include 379.63 acres within ADL 384534 (260 acres) and ADL 384529 (119.63 acres).

The proposed KPA surrounds three wells, the SOCAL Cape Kasilof 1, Marathon Kasilof South #1 and Marathon Kasilof #1RD (MKS1RD), drilled into the Tyonek Formation. Marathon built the Kasilof Pad Production Facility and the Kasilof Extension pipeline connection to the Kenai-Kachemak Pipeline (KKPL) in 2006, and is currently producing the MKS1RD as a Tract Operation on a seasonal basis from the Tyonek Formation.

Marathon provided geological, geophysical, and engineering data supporting the proposed KU contraction and formation of the KPA within the contracted KU. The submitted data justifies the contraction and participating area formation and indicates that the Tyonek Formation within the contracted area is capable of producing or contributing to the production of hydrocarbons in paying quantities.

Under a separate decision letter, the Division approved the KU contraction on January 2, 2008, effective retroactive to December 31, 2007. For the reasons set out in this Findings and Decision, the Division approves the KPA. The KPA conforms with the contracted KU because that acreage is “reasonably known to be underlain by hydrocarbons and known or reasonably estimated through use of geological, geophysical, or engineering data to be capable of producing or contributing to production of hydrocarbons in paying quantities.” 11 AAC 83.351(a). The Division also approves the tract allocation schedule for the KPA, Attachment 1 to this Findings and Decision. The tract allocation schedule adequately allocates production and costs among the leases in the participating area.

Under Article 9.5 of the Kasilof Unit Agreement (KUA), the effective date of the KPA and its tract allocation schedule is November 1, 2006, the first day of production from the MKS1RD Tract Operation.

II. APPLICATION FOR THE CONTRACTION OF THE UNIT AREA AND FORMATION OF THE KASILOF PARTICIPATING AREA WITHIN THE CONTRACTED UNIT AREA

On December 14, 2007, Marathon applied to the Division to contract the KU and form the KPA. The original KU, containing 13,289 acres, is comprised of three State of Alaska Leases, ADL

384529 (3,772 acres), ADL 384534 (5,760 acres) and ADL 389502 (3,757 acres). The contracted KU and proposed KPA encompass 379.63 acres within ADL 384534 (260 acres) and ADL 384529 (119.63 acres).

Marathon submitted revised Exhibits A and B to the KUA for the contracted unit area, and requested that the Division approve the proposed contraction as described in the Exhibits, effective December 31, 2007. In addition to the contraction request, and in accordance with 11 AAC 83.351 and Article 9 of the KUA, Marathon submitted Exhibits C, D, E, F and G to the KUA to form the KPA. Exhibit C, the description of the tracts proposed for the KPA and the proposed tract participation factors for the KPA tracts, and Exhibit D, a map depicting the proposed KPA, are included as Attachments 1 and 2, respectively, to this Findings and Decision. Marathon proposed surface acreage as the basis for the proposed KPA tract allocation schedule. Each proposed KPA tract must have allocated to it the percentage of its acreage relative to the total KPA acreage. Exhibit G is the First Plan of Development for the contracted KU and proposed KPA.

The vertical definition of the KPA includes the reservoir portions of the Tyonek Formation, and the type log for the KPA is the MKS1RD well.

In addition to the above Exhibits to the KUA submitted with the Application, Marathon provided the Division with geological, geophysical and engineering data supporting the proposed contraction and participating area formation. The State of Alaska is the sole royalty owner and there are no overriding royalty interests in the KPA leases.

The Division approved the KU contraction on January 2, 2008, effective retroactive to December 31, 2007. This Findings and Decision addresses the KPA formation.

III. DISCUSSION OF THE DECISION CRITERIA

The Commissioner of the Department of Natural Resources (Commissioner) reviews unit-related applications, including applications to form participating areas, under 11 AAC 83.303--11 AAC 83.395. By memorandum dated September 30, 1999, the Commissioner approved a revision of Department Order 003 and delegated this authority to the Director of the Division of Oil and Gas (Director). The Division's review of the Application is based on the criteria set out in 11 AAC 83.303 (a) and (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) The Environmental Costs and Benefits of Unitized Exploration and Development

The unit operator is required to obtain DNR's approval of a unit plan of operations and permits from various state and federal agencies before beginning operations, including exploratory wells, development wells and surface pad construction, within the unit area. State unitization regulations

require the Commissioner to approve a Plan of Operations before the unit operator performs any field operations on the surface. 11 AAC 83.346. A proposed Plan of Operations must describe the operating procedures designed to prevent or minimize adverse effects on natural resources. When reviewing a proposed unit plan of operations, the Division considers whether the project complies with the mitigation measures contained in the most recent Cook Inlet Areawide oil and gas lease sale, site specific conditions, uses, or resources, and the rights of the surface owner if the state does not own the surface. If the operator and the surface owner have not come to an agreement for the payment of damages the operator may be required to post a bond. The Division, the Department of Environmental Conservation (DEC), and the Alaska Oil and Gas Conservation Commission (AOGCC) have bonding and financial responsibility requirements to ensure performance by the operator and reclamation of the area. 11 AAC 96.060; 18 AAC 75; 20 AAC 25.025.

The approval of the KPA itself has no environmental impact. The participating area creation 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 Commissioner's approval of a participating area is an administrative action that does not convey any authority to conduct any operations on the surface within the unit area. The Division's approval of the Unit Plan of Exploration (POE) or Plan of Development (POD) is only one step in the process of obtaining permission to drill a well or wells or develop the known reservoirs within the unit area. The Unit Operator must still 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 known reservoirs within the unit area.

Development of the KPA will take place from the existing KU drill sites and infrastructure, in particular, the Kasilof Production Pad. KPA fluids will be produced into the existing facilities, and transported via the Kasilof Extension pipeline connection to the KKPL. Existing KU infrastructure, roads, pipelines and processing facilities, will support KPA drilling and production operations. No significant additional impacts to habitat or biological resources are anticipated because of the formation of the KPA. Marathon is currently operating these facilities as a Tract Operation under an approved Plan of Operations.

(2) The Geological and Engineering Characteristics, Prior Exploration Activities, and Further Plans of Exploration or Development of the Unit Area and Kasilof Participating Area

A participating area may include only land reasonably known to be underlain by hydrocarbons and known or reasonably estimated through use of geological, geophysical, or engineering data to be capable of producing or contributing to the production of hydrocarbons in paying quantities. 11 AAC 83.351(a). "Paying quantities" means:

quantities sufficient to yield a return in excess of operating costs, even if drilling and equipment costs may never be repaid and the undertaking as a whole may ultimately result in a loss; quantities are insufficient to yield a return in excess of operating

costs unless those quantities, not considering the costs of transportation and marketing, will produce sufficient revenue to induce a prudent operator to produce those quantities.

11 AAC 83.395(4).

A participation area application must be evaluated under these standards, as well as under 11 AAC 83.303.

The Division approved the KU on October 25, 2002. Under the Initial Unit POE, Marathon drilled two wells in 2003-2004. The MKS1RD was drilled to a measured depth of 17,545 feet and completed in the Tyonek Formation, testing at over 11 MMSCFD. The Kasilof South #1-L1 was drilled to a measured depth of 17,665 feet and was temporarily abandoned following an unsuccessful test.

Under the Second Unit POE (Second POE), Marathon was required to commence production from the MKS1RD by December 31, 2006, and commence operations to acquire 3D seismic data over the unit area by December 31, 2007. Failure to commence production by December 31, 2006, would result in the immediate termination of the KU, and failure to commence operations to acquire the 3D seismic data would result, among other things, in the contraction of the KU by December 31, 2007, to the area defined by the then available information and the proposed further unit exploration, delineation or production activities.

Marathon installed production facilities for the MKS1RD and constructed a lateral pipeline connection to the KKPL in 2006. Production commenced November 1, 2006, and the well is currently producing on a seasonal basis as a Division approved Tract Operation. However, Marathon did not acquire the 3D data or propose any further unit exploration or delineation activities. Given the subsurface geological data within the proposed participating and surrounding lands and well results to date, Marathon's plans to continue gas production from the existing Tyonek Formation reservoirs on a seasonal basis from the MKS1RD well, that is, produce the well in the winter and shut-in the well in the summer.

Marathon submitted geological, geophysical and engineering data for the contracted unit area and proposed participating area. These data included: structure maps on three horizons, structural and stratigraphic well-log cross section through the Tyonek Formation, seismic lines, and well test results from the MKS1RD.

The Division's evaluation of the subsurface geology supports the configuration of the proposed KPA. The technical data and Marathon's production plans also support the proposed KPA.

(3) The Economic Costs and Benefits to the State and Other Relevant Factors

Approval of the KPA will provide near-term economic benefits to the state by creating or

maintaining the jobs associated with the construction or maintenance of the KU facilities and operation of the KPA. The state will also benefit from the KU/KPA POD, which proposes to maximize the physical recovery of hydrocarbons from the KPA and unit area. Maximum hydrocarbon production will enhance the state's long-term royalty and tax revenues.

Marathon submitted an allocation of production and cost schedule for the individual tracts/leases in the KPA (Attachment 1 to this Findings and Decision) as required by 11 AAC 83.371. The proposed allocation methodology distributes expenses and production among the tracts/leases in the participating area on a surface acreage basis. The participating area is defined by the surface acreage covering the anticipated productive area.

Marathon's tract allocation schedule is acceptable for allocating production and costs among the leases within the proposed KPA. Surface acreage as the basis for tract participation for the tracts within the participating area is a long-established allocation methodology for gas reservoirs.

First gas sales from the MKS1RD well commenced on November 1, 2006, and the well has been producing seasonally as a Division approved Tract Operation. As part of the KPA and KPA tract allocation schedule approval, Marathon, as the Unit Operator, shall (1) resubmit to the Division all the Operator Reports (Form O1) for the KPA retroactive to November 1, 2006; and (2) close-out the Operator Reports for the MKS1RD Tract Operation Accounting Unit Code **KS01**. In addition, Marathon shall (1) resubmit revised Royalty Reports (Form A1) for the KPA retroactive to November 1, 2006 using Accounting Unit Code **KSKA**; and (2) close-out all volumes associated with the Accounting Unit Code **KS01** and include those volumes for the KPA.

(b) Decision Criteria considered under 11 AAC 83.303(a)

(1) Promote the Conservation of All Natural Resources

The formation of oil and gas units, as well as the creation of PAs within units, generally conserves hydrocarbons. Coordinated development of leases held by diverse parties maximizes total hydrocarbon recovery and minimizes waste. The concern of lessees competing for the reservoir is less evident here because Marathon is the sole WIO in the KU. However, even with only one WIO, formation of the KPA will provide a comprehensive plan for exploring and developing all the reservoirs within the KPA and the KU. The KU POD provides for an efficient, integrated approach to development of the reservoir within the unit area.

The number of facilities required to develop the resource and the area of land that may be required to accommodate those facilities is reduced when resources on several leases are developed as one PA. Facilities can be located to maximize recovery and to minimize environmental impacts. Producing hydrocarbons from the KPA through the existing KU production and processing facilities will reduce the incremental environmental impact of the additional production.

(2) Prevention of Economic and Physical Waste

Generally, the formation of a PA facilitates the equitable division of costs and allocation of hydrocarbon shares, and provides for a diligent development plan that maximizes physical and economic benefit from a reservoir's production. The creation of the KPA prevents economic and physical waste by eliminating redundant expenditures for a given level of production, and avoids the loss of ultimate recovery by adopting a unified reservoir management strategy. Oil and gas resources can be produced through a single facility infrastructure system. The KPA will improve the efficiency of developing the Tyonek Formation, which has different producing characteristics between reservoir intervals.

Further, facility consolidation saves capital and promotes better reservoir management strategies. In combination, these factors allow the Tyonek Formation reservoirs to be developed and produced in the interest of all parties, including the State, while preventing economic and physical waste.

(3) Protection of All Parties in Interest, Including the State

Because hydrocarbon recovery will be maximized and additional production-based revenue will be derived from the KPA production, the State's economic interest is promoted. Diligent exploration and development under a single approved unit plan promotes the State's interest. The formation of the KPA promotes efficient evaluation and development of the State's resources, yet minimizes impacts to the area's cultural, biological, and environmental resources. Operating under the KU Agreement provides for accurate reporting and record keeping, state concurrence with operating procedures, royalty settlement, in-kind taking, and emergency storage of oil or gas. These all protect the state's interest.

IV. FINDINGS AND DECISION

Considering the facts discussed in this document and the administrative record, I hereby make findings and impose conditions as follows:

1. The proposed KPA promotes the conservation of natural resources, promotes the prevention of economic and physical waste, protects all parties of interest, and is necessary and advisable to protect the public interest. AS 38.05.180(p); 11 AAC 83.303.
2. The available geological and engineering data demonstrate that a paying quantities certification is appropriate for the lands proposed for the KPA. The data also suggest that the acreage is underlain by hydrocarbons and known and reasonably estimated to be capable of production or contributing to production in sufficient quantities to justify the formation KPA.
3. The available geological, geophysical, and engineering data, and development plans for the KU justify the inclusion of the proposed tracts within the KPA. Under the regulations governing

formation and operation of oil and gas units (11 AAC 83.301 - 11 AAC 83.395), the KU Agreement, and the terms and conditions under which these lands were leased from the state, the lands described in Attachment 1 to this Findings and Decision are included in the KPA.

4. The formation of the KPA provides for the equitable allocation of produced hydrocarbons and costs, and sets forth a management plan designed to maximize physical and economic recovery from the Tyonek Formation reservoirs within the approved KPA. Under 11 AAC 83.351(a) and 11 AAC 83.371(a), the Division approves the allocations of production and costs for the tracts within the KPA under the terms and conditions set out in Section III.A.3 of this Findings and Decision.
5. Diligent exploration and delineation of the Tyonek Formation reservoir underlying the approved participating area is to be conducted by the unit operator under the plans of development and operation approved by the state. Before undertaking any specific surface operations, the unit operator must submit a Plan of Operations to the DNR and other appropriate state and local agencies for review and approval. All agencies must grant the required permits before drilling or development operations may commence. DNR may condition its approval of a unit Plan of Operations and other permits on performance of mitigating measures in addition to those in the leases if necessary or appropriate. Requiring strict adherence to the mitigation measures will minimize adverse environmental impacts.
6. The KPA First Plan of Development (First POD) meets the requirements of 11 AAC 83.303 and 11 AAC 83.343. The First POD is approved for the period January 1, 2008, through December 31, 2008, to synchronize it with the Second POE for the KU. A revised participating area POD that describes the status of projects undertaken, drilling results, and the work completed, any changes or expected changes to the plan, and a further plan of development, must be submitted in accordance with 11 AAC 83.343. The Second POD will be due at least 90 days before the expiration date of the First POD, that is, on or before October 3, 2008.

For the reasons discussed in this Findings and Decision, I hereby approve the KPA and its tract allocation schedule subject to the conditions specified herein. These approvals are effective retroactive to November 1, 2006, the first day of production from the MKS1SD Tract Operation.

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 Tom Irwin, 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.



Kevin R. Banks, Acting Director
Division of Oil and Gas



Date

Attachments: 1) KPA Tract Participation Schedule
2) Map of the KPA

KU.Kasilof-PA-formation.doc

EXHIBIT "C"
 CONTRACTED KASILOF UNIT
 KASILOF PARTICIPATING AREA
 DECEMBER 2007

Schedule of Leases
 State: Alaska

TRACT NO.	DESCRIPTION OF PROPERTY	GROSS ACRES	TRACT PARTICIPATION FACTOR	LESSOR/ ROYALTY OWNERS	ROYALTY	ORRIS	LESSEE/ WI OWNER	WI %
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STATE OF ALASKA LANDS

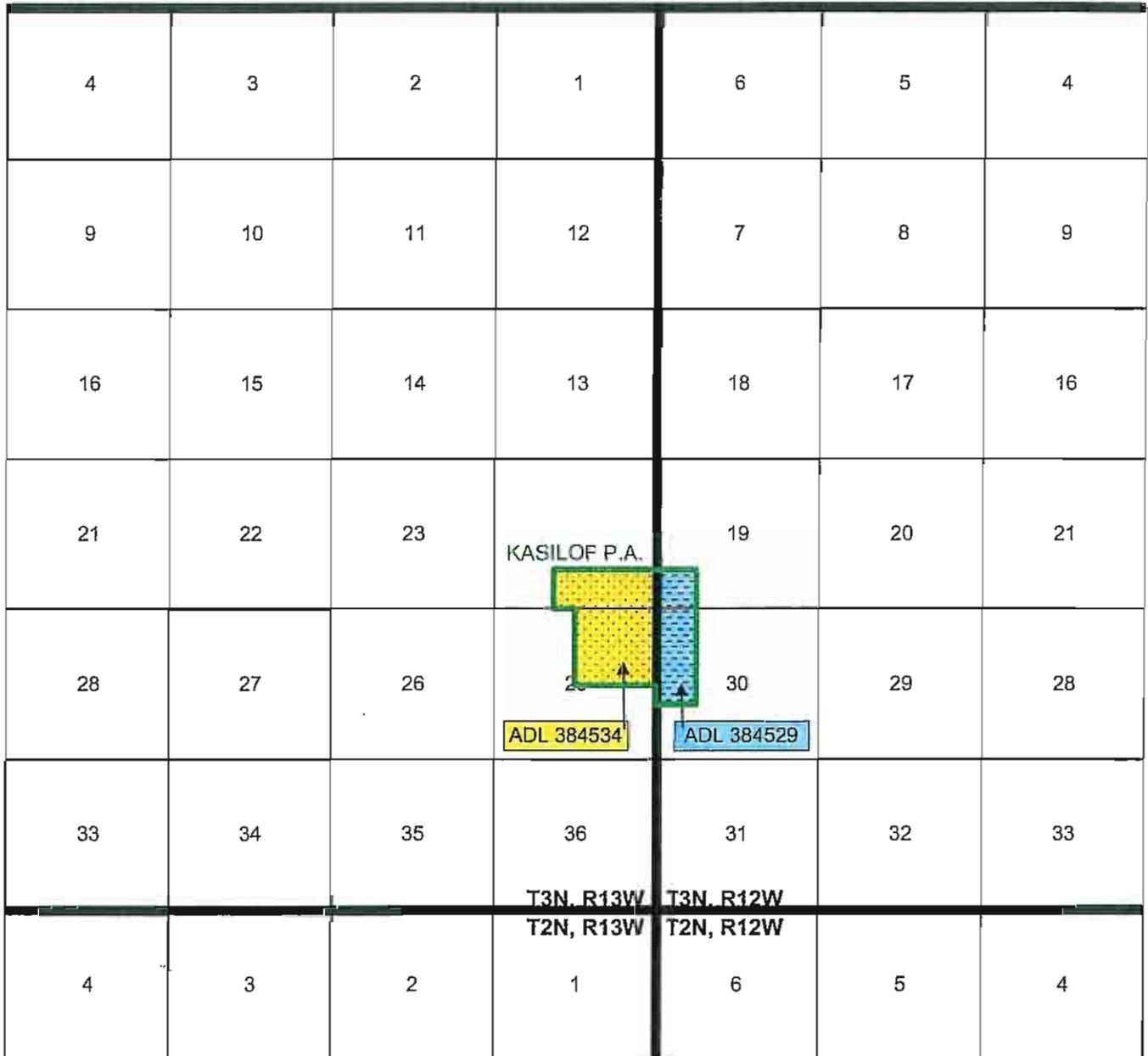
1	TOWNSHIP 3N, RANGE 13 W Section 24: S/2 SE/4; E2 SE/4 SW/4 (100.00) Section 25: NE/4 (160.00)	260.00	68.4877381%	State of Alaska ADL # 384534	12.50%	None	Marathon Oil Company	100%
2	TOWNSHIP 3N, RANGE 12 W Section 19: SW/4 SW/4 (34.00) Section 30: W/2 NW/4; N/2 NW/4 SW/4 (85.63)	119.63	31.5122619%	State of Alaska ADL # 384529	12.50%	None	Marathon Oil Company	100%

TOTAL:

379.63

100%

EXHIBIT "D"
Kasilof Participation Area
December 2007



ADL 384534 T3N, R13W, S.M.,	Section 24: S/2 SE4	80.00 acres	
	E/2 SE/4 SW/4	20.00 acres	
T3N, R13W, S.M.,	Section 25: NE/4	160.00 acres	
		<hr/> 260.00 acres	
ADL 384529 T3N, R12W, S.M.,	Section 19: SW/4 SW/4	34.00 acres	
	T3N, R12W, S.M.,	Section 30: W/2 NW/4	68.50 acres
	N/2 NW/4 SW/4	17.13 acres	
		<hr/> 119.63 acres	
	Grand Total:	379.63 acres	