STUMP LAKE UNIT

APPLICATION FOR REVISION OF STUMP LAKE GAS POOL #1 PARTICIPATING AREA AND CONTRACTION OF THE STUMP LAKE UNIT AREA EFFECTIVE APRIL 1, 2008

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

January 27, 2009

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I. DECISION SUMMARY

On March 17, 2008, Union Oil Company of California (Union Oil), as operator of the Stump Lake Unit (SLU), submitted an Application for Revision of Stump Lake Gas Pool #1 Participating Area and Contraction of the Stump Lake Unit Area Effective April 1, 2008 (Application) to the Department of Natural Resources (DNR), Division of Oil and Gas (Division). Union Oil proposes to contract the Stump Lake Gas Pool #1 Participating Area (PA) from its current size of approximately 4,880 acres to 1,280 acres and contract the Stump Lake Unit Area to align to the revised boundaries of the contracted Stump Lake Gas Pool #1 PA.

Based on all the data provided, the Division approves the partial contraction of the Stump Lake Gas Pool #1 PA as to the Sterling and Beluga formations, to create the Stump Lake Sterling and Beluga Gas PA comprising approximately 1,280 acres. However, the Division defers the decision to contract that portion of the Stump Lake Gas Pool #1 PA that covers the Tyonek formation until after the results of the Stump Lake Unit (SLU) 41-33 sidetrack have been evaluated. Until such time, the current Stump Lake Gas Pool #1 PA is redefined and renamed the Stump Lake Tyonek Gas PA.

II. HISTORY

On September 6, 1977, the DNR Commissioner (Commissioner) approved Chevron U.S.A., Inc's (Chevron) request to unitize 13,640 acres of land owned by the State of Alaska on the West Side of Cook Inlet. 1,810 of those acres were unleased at the time of unitization. Chevron subsequently acquired the acreage (ADLs 326059 and 326060) in a competitive lease sale on July 1, 1981, with a variable bid royalty of 64.1 percent.

On May 14, 1978, drilling operations for the Stump Lake Unit 41-33 well were completed. And on August 2, 1978, the Division determined that the Stump Lake Unit 41-33 well was capable of producing in paying quantities.

The Division approved the Stump Lake Gas Pool #1 Initial PA effective May 14, 1978, which consisted of approximately 600 acres. Based on confidential seismic data regarding the Tyonek formation, the Division approved a revised Stump Lake Gas Pool #1 PA expanding the PA to 4,880 acres effective July 1, 1982. The Stump Lake Gas Pool #1 PA contains the Sterling, Beluga, and Tyonek sands. However, because of infrastructure and marketing issues, the SLU 41-33 well did not produce until 1990. Under the unit agreement, the Stump Lake Unit contracted to the PA boundary effective June 2, 1983.

Union Oil became the successor unit operator of the SLU effective October 1, 1988, and production from SLU 41-33 was initiated July 1990. The SLU 41-33 well produced on a regular basis until the fall of 2000. On November 15, 2000, Union Oil advised the Division that after perforating 166 feet of "behind pipe pay on October 8-9th, 2000" the SLU well 41-33 was unable to flow. Unocal requested, and the Division granted, a suspension of production and operations. Unocal was unsuccessful in its efforts to return the well to sustained unit production.

When Chevron acquired Union Oil in August 2005, Union Oil became the beneficiary of expanded seismic data originally used by Chevron, but previously unavailable to Union Oil. Based on an evaluation of all relevant data, Union Oil submitted this Application to the Division.

III. APPLICATION

Union Oil requests contraction of the Stump Lake Gas Pool #1 PA from its current size of approximately 4,880 acres to 1,280 acres and contraction of the Stump Lake Unit Area to the revised boundaries of the proposed contracted PA. On March 24, 2008, the Division notified Union Oil that its Application was

incomplete and requested additional technical information in order to evaluate the geologic and engineering interpretation of the proposed revised PA and SLU boundaries. Union Oil provided additional confidential and non-confidential information on April 7, 9, 25, May 9, July 21 and September 17, 2008.

In an April 16, 2008, letter the Division further required that Union Oil provide a copy of the Application by certified mail to all owners of overriding royalty interest in the SLU. The Division mistakenly required that Union Oil provide notice of the Application to overriding royalty interest owners under 11 AAC 83.328(a). This regulation does not impose a requirement on the unit operator to notify overriding royalty interest owners in connection with an application to revise a PA. On October 2, 2008, the Division provided, by certified mail, copies of the Application to all overriding royalty interest owners and provided them an opportunity to comment. No comments were received.

IV. DISCUSSION OF DECISION CRITERIA

The Commissioner reviews applications related to units, including unit and PA contractions, under AS 38.05.180(p) and 11 AAC 83.303 – 11 AAC 83.395. By memorandum dated September 2, 2004, the Commissioner approved a revision of Department Order 003 and delegated this authority to the Division Director (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 it applies to this 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

Approval of a PA or unit contraction has no direct environmental impact. This Decision is an administrative action and does not authorize any on-the-ground activity. Potential effects on the environment are analyzed when permits to conduct exploration or development in the unit area are reviewed. Approval of this PA contraction does not convey any authority to conduct any operations on the surface within the unit area. The Unit Operator must still obtain approval of a Plan of Operations from the State, and other permits from various agencies before drilling a well or wells or initiating additional development activities.

2. Prior Exploration and Development Activities and the Geological and Engineering Characteristics of the Proposed contracted PA

2.1. Introduction and Summary

The SLU is located 25-miles west of Anchorage, Alaska in the northwest quadrant of the Cook Inlet Basin. The SLU is bordered to the west by the Ivan River Unit and to the east by the Susitna River. The Ivan River Unit is operated by Union Oil and produces from the Beluga and Tyonek formations. The SLU has one well--Stump Lake 41-33. All production has come from the Beluga formation. During initial testing of Stump Lake 41-33, gas flowed to surface from the Beluga and Tyonek formations.

In support of the Application, Union Oil submitted data including: structure maps of key stratigraphic horizons within the Beluga and Tyonek formations; a map showing extents of the expected hydrocarbon bearing sands that are likely to be economic with estimates of hydrocarbon contacts in relation to PA and unit boundaries; production information from the Stump Lake 41-33 well; proposed location for the Stump Lake 41-33 sidetrack; and reserves estimates for each mapped sand. The geological, geophysical, and engineering data submitted justifies the partial contraction of the Stump Lake Gas Pool #1 PA as to the Sterling and Beluga formations. However, there is insufficient data at this time to contract the Stump Lake Gas Pool #1 PA as to the Tyonek formation.

2.2. Exploration History of the Area

Early exploration in the northwest quadrant of the Cook Inlet basin began in 1962 when gas was discovered in the Sterling and Beluga formations at the Beluga River Field. In 1966, gas was discovered in the Tyonek formation at Ivan River. In the mid-to-late 1970s, gas was found in the Beluga formation at Lewis River (1975), Stump Lake (1978), and Pretty Creek (1979). Each discovery was found within a structural closure.

2.3. Geologic Setting

The Tertiary Cook Inlet basin is an elongate, northeast trending, fault bounded forearc basin. The Castle Mountain and Bruin Bay fault zones make up the northern and northwestern boundaries and separate the uplifted volcanic arc complex from the Tertiary depocenter. Extensive right lateral and dip slip motion has occurred along these two fault zones that has resulted in structural traps for hydrocarbon accumulation. The Border Ranges fault zone delineates the southern and southeastern boundaries of the Cook Inlet Basin and separates the accretionary prism from the continental crust that underlies the basin.

Two major non-marine depositional systems comprise the Tertiary basin fill in the Cook Inlet basin, alluvial fan systems at the base overlain by axial fluvial systems. The West Foreland and Hemlock formations were deposited by alluvial fan systems that developed along the arc and accretionary margins of the basin and carried sediment out into the actively subsiding basin. The Tyonek, Beluga, and Sterling formations were deposited by axial fluvial systems that flowed perpendicular to the alluvial fan systems and migrated across the basin floor in relation to sediment input and topography.

The West Foreland formation is Eocene in age and is composed of tuffaceous sandstones and conglomerates. When present, the Oligocene aged Hemlock formation overlies the West Foreland and consists of clean, porous sandstones and conglomerates. The Tyonek formation is composed of abundant coal, siltstone, and massively bedded fine to conglomerate sandstone of Oligocene to Middle Miocene age. In the northern portion of the basin, porous sandstone called the Bell Island Sandstone is found at the base of the Tyonek formation. Overlying the Tyonek is the Beluga formation, a thick silt rich unit with inter-beds of channelized muddy sandstone, coal, and tuff of Middle to Late Miocene age. Sandstones within the Beluga formation are often discontinuous due to their thin and lenticular nature. The Sterling formation is the youngest non-glacial unit in the Cook Inlet basin and consists largely of laterally continuous stacked porous sandstones with inter-bedded mudstones and thin coals. The Sterling ranges in age from Latest Miocene to Pliocene. Coals are thinner and less abundant than in the underlying Beluga Formation.

2.4. Drilling and Production History

The Stump Lake Unit well #41-33 (SLU #41-33) was spud on February 10, 1978. Pay sands were encountered from 6,636 feet to 8,180 feet measured depth in the Beluga and Tyonek formations. Drill stem tests were run on five intervals. The best sands were in the Beluga formation. After testing, and a total depth of 11,650 feet measure depth was reached, a bridge plug was set at 5,960 feet. The SLU #41-33 well was completed on March 13, 1990. Six perforated zones within the Beluga formation were open to production. The first production began in July 1990, and the well produced on a regular basis until October, 2000. On October 9, 2000, eleven additional zones in the Beluga formation were perforated, but there was no added production from these perforations. In the fall of 2000, Union Oil requested, and the Division granted, a suspension of production and operations at the SLU #41-33 well. Unocal was unsuccessful in its efforts to return the well to sustained production. Attempts to restore production in 2001 yielded about six days of production and in 2003 yielded one day of production. However, rates were less than 10 mcf per day.

3. The Applicant's Plan of Development for the SLU

The State will benefit from the 31st Plan of Development (POD) because the sidetrack of this well will provide test data and may provide production that will maximize the physical recovery of hydrocarbons from the PA. The SLU has not produced any gas since 2003. The Division approved Union Oil's proposed SLU 31st POD for the period of June 18, 2008 through June 17, 2009, based on Union Oil's commitment to sidetrack a well, test the Tyonek formation and restore production.

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

It is in the State's interest to have a well drilled, tested and brought into production. Although partial contraction of the Stump Lake Gas Pool #1 PA to create the Stump Lake Sterling and Beluga Gas PA will result in the exclusion of ADLs 326059 and 326060, which are 64.1 percent state royalty rate leases, the geological, engineering and production data submitted to the Division demonstrates that the SLU 41-33 well has not produced from those two leases. Even though prior SLU production was allocated to those two leases, Section 11 of the SLU Unit Agreement provides that there is no "retroactive adjustment for production obtained prior to the effective date of the revision of the participating area."

Union Oil's proposed tract participation schedules are acceptable for allocating production and costs among the leases in the approved Stump Lake Sterling and Beluga Gas PA.

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

1. Promote Conservation of All Natural Resources

Reducing the PA acreage does not alter the benefits of unitized management and continues to promote hydrocarbon conservation. The unitization of oil and gas reservoirs and the management of PA size to efficiently develop hydrocarbon-bearing reservoirs are well accepted means of hydrocarbon conservation. It is important to allocate production according to geological, engineering and production data even though the contraction of the Stump Lake Gas Pool #1 PA to create the Stump Lake Sterling and Beluga Gas PA results in a smaller PA.

2. Promote Prevention of Economic and Physical Waste

The 31st POD for the proposed Stump Lake Sterling and Beluga Gas PA promotes the prevention of economic and physical waste. Union Oil is the 100 percent working interest owner in the Stump Lake Sterling and Beluga Gas PA. Unitization prevents economic and physical waste by eliminating redundant expenditures for a given level of production and by avoiding loss of ultimate recovery by adopting a unified reservoir management plan. Union Oil completed an evaluation of the Union Oil and Chevron seismic data and integrated the reinterpretations with the production data and well logs. As a result, Union Oil has committed to drilling a side-track of SLU #41-33 well to maximize the physical and economic recovery of hydrocarbons from each productive reservoir.

3. Provide for the Protection of All Parties, Including the State

The proposed contraction of the Stump Lake Gas Pool #1 PA to create the Stump Lake Sterling and Beluga Gas PA protects the working interest owner and the royalty owner. It is in the State's interest to have a well drilled, tested and brought into production. Maximizing hydrocarbon recovery will enhance the state's long-term royalty and tax revenue stream.

By certified mail, the Division provided overriding royalty interest owners a copy of Union Oil's Application, and offered them an opportunity to comment. No comments were received.

V. 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 Stump Lake Gas Pool #1 PA included the Sterling, Beluga and Tyonek formations. The only well in the SLU is the SLU #41-33 well that produced from the Beluga formation.

2. The geological and engineering data provided with the Application reasonably justify the partial contraction of the Stump Lake Gas Pool #1 PA for the Sterling and Beluga formations only and creation of the Stump Lake Sterling and Beluga Gas PA under the terms of the unit agreement and the applicable regulations (11 AAC 83.303 – 11 AAC 83.395).

3. The following lands are included in the Stump Lake Sterling and Beluga Gas PA:

   Tract 11, ADL 58789
   T. 14N, R. 8W, SM
   Section 27: SW1/4NW1/4, SW1/4
   Section 34: N1/2NW1/4, SW1/4NW1/4, NW1/4SW1/4
   Containing approximately 360 acres, more or less.

   Tract 12, ADL 58790
   T. 14N, R. 8W, SM
   Section 28: S1/2N1/2, S1/2
   Section 33: NE1/4, N1/2NW1/4, SE1/4NW1/4, N1/2SE1/4
   Containing approximately 840 acres, more or less.

   Tract 13, ADL 58791
   T. 14N, R. 8W, SM
   Section 29: E1/2SE1/4
   Containing approximately 80 acres, more or less

4. The Stump Lake Sterling and Beluga Gas PA is stratigraphically limited to the producing and productive intervals of the Sterling and Beluga formations occurring between 3,692 feet measure depth and 7,710 feet measure depth in the SLU #41-33 well.

5. Production from the Stump Lake Sterling and Beluga Gas PA must be reported to the "STMP" production Accounting Unit Code.

6. The creation of the Stump Lake Sterling and Beluga Gas PA provides for the equitable division of costs and an equitable allocation of produced hydrocarbons under a POD designed to maximize physical and economic recovery from the reservoirs within the approved PA.

7. The allocations of production and costs for the tracts within the Stump Lake Sterling and Beluga Gas PA, as submitted on December 3, 2008, are approved.

8. There is insufficient data regarding the Tyonek formation to contract the redefined and renamed Stump Lake Tyonek Gas PA and the SLU boundary to the Stump Lake Sterling and Beluga Gas PA boundary.

9. The decision to contract the Stump Lake Tyonek Gas PA and the SLU boundary to the Stump Lake Sterling and Beluga Gas PA boundary is deferred until after the results of the SLU #41-33 sidetrack have been evaluated and a determination made by the Division about the extent of the Tyonek Formation.

10. The Stump Lake Gas Pool #1 PA is redefined and renamed the Stump Lake Tyonek Gas PA. The Stump Lake Tyonek Gas PA is stratigraphically limited to the producing and productive intervals of the Tyonek formation occurring between 7,710 feet measured depth to 11,650 feet measured depth in the SLU #41-33 well.

11. The following lands are included in the Stump Lake Tyonek Gas PA:

Tract 1, ADL 17600
All tide and submerged land within:
T. 14N, R. 8W, SM
Section 33: S1/2SE1/4
T. 13N, R. 8W, SM
Section 4: N1/2N1/2
Section 5: NE1/4NE1/4
Containing approximately 119.19 acres, more or less.

Tract 11, ADL 58789
T. 14N, R. 8W, SM
Section 27: S1/2N1/2, S1/2
Section 34: NE1/4,W1/2, W1/2SE1/4
Containing approximately 1,040 acres, more or less.

Tract 12, ADL 58790
T. 14N, R. 8W, SM
Section 28: S1/2N1/2, S1/2
Section 33: All Uplands
Containing approximately 1,105.04 acres, more or less.

Tract 13, ADL 58791
T. 14N, R. 8W, SM
Section 29: SE1/4NE1/4, N1/2SE1/4, S1/2S1/2
Section 32: All
Containing approximately 920 acres, more or less.

Tract 14, ADL 58792
T. 14N, R. 8W, SM
Section 31: E1/2E1/2
Containing approximately 160 acres, more or less.

Tract 15, ADL 58794
T. 13N, R. 8W, SM
Section 3: NW1/4NE1/4, NW1/4
Containing approximately 200 acres, more or less.

Tract 16, ADL 58795
T. 13N, R. 8W, SM

Section 4: All Uplands in N1/2N1/2
Section 5: All Uplands in N1/2NE1/4, NE1/4NW1/4, and USS 3927
Containing approximately 175.77 acres

Tract 17a, ADL 326059
T. 14N, R. 8W, SM
Section 21: SE1/4NE1/4, SE1/4, SE1/4SW1/4
Section 28: N1/2N1/2
Containing approximately 400 acres, more or less.

Tract 17b, ADL 326060
T. 14N, R. 8W, SM
Section 22: E1/2, E1/2W1/2, SW1/4NW1/4, W1/2SW1/4
Section 27: N1/2N1/2
Containing approximately 760 acres, more or less.

12. Production from the Stump Lake Tyonek Gas PA, must be reported to the "SLTG" production Accounting Unit Code

For the reasons discussed in this Finding and Decision, I hereby approve the partial contraction of the Stump Lake Gas Pool #1 PA to create the Stump Lake Sterling and Beluga Gas PA, and redefine and rename the Stump Lake Gas Pool #1 PA as the Stump Lake Tyonek Gas PA, effective April 1, 2008. I defer the decision to contract the Stump Lake Tyonek Gas PA and the SLU until after further results from the sidetrack of the SLU #41-33 well have been evaluated. Within 30 days of this decision, Union Oil must file updated Exhibits A and B for the Stump Lake Unit and Schedules 1 and 2 for the redefined and renamed Stump Lake Tyonek Gas PA.

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 Thomas E. Irwin, Commissioner, DNR, 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.

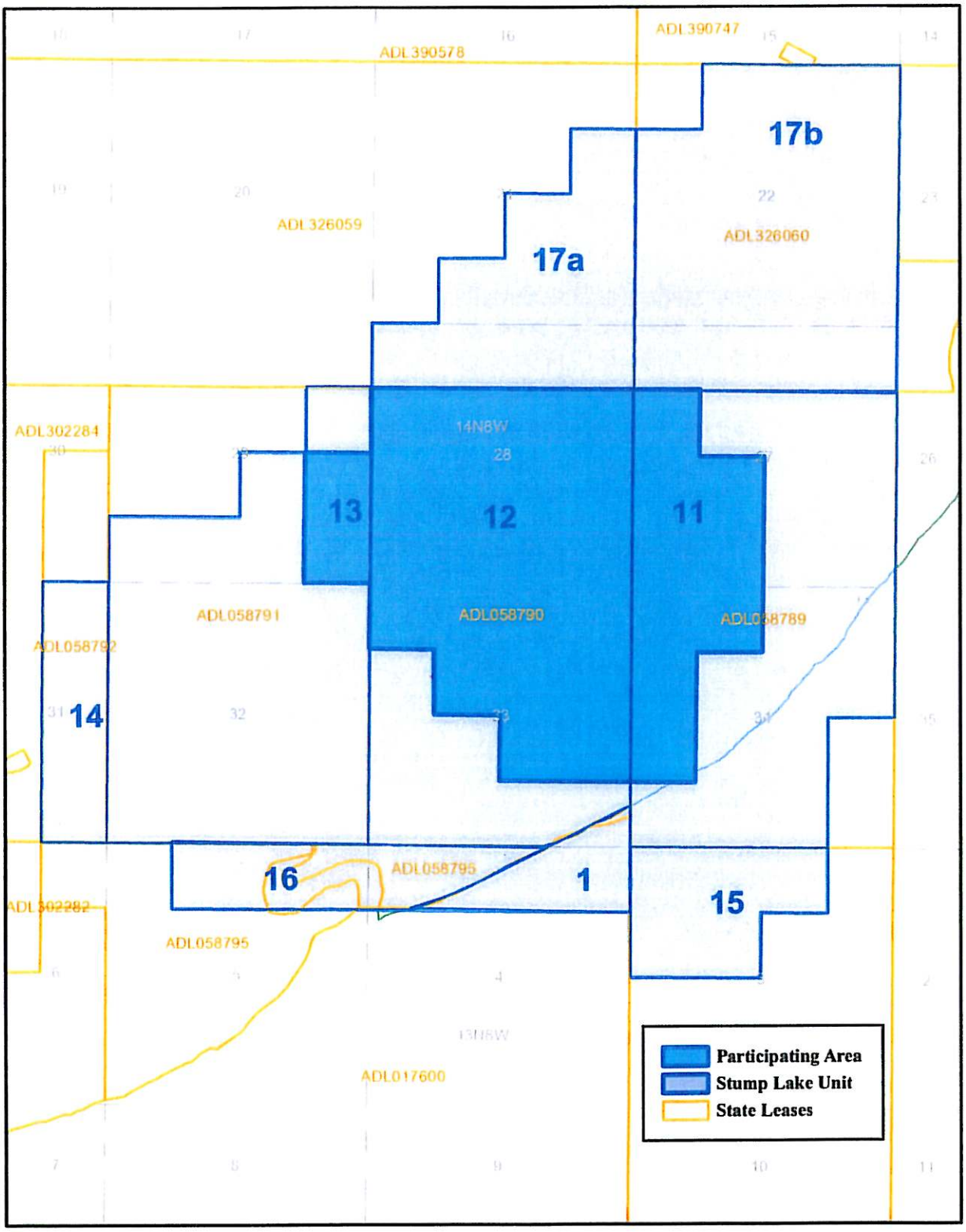
If you have any questions regarding this decision, contact Cammy Taylor with the Division at 907-269-8817.

for Kevin R. Banks,
Director

1-27-9
Date

Attachments: Schedule 1 – ownership map depicting the Stump Lake Sterling and Beluga Gas PA
Schedule 2 – description of tracts and ownership within the Stump Lake Sterling and Beluga Gas PA

Cook Inlet
Stump Lake Unit
Stump Lake Sterling and Beluga Gas Participating Area
Schedule 1



Chevron

Union Oil Company
of California

April 1,2008
Scale: 1:35,000

Stump Lake Unit

Stump Lake Sterling and Beluga Gas Participating Area

Schedule 2

Effective 4/1/2008

Tract	Tract Legal Description	Tract Acreage	Lease #	Tract Percentage	Mineral Owner	Mineral Interest	Royalty Percent	ORRI Owner	ORRI Percent	Working Interest Ownership	Working Interest Owner %
11	T14N, R8W, SM, AK Section 27: SW1/4NW1/4, SW1/4, 200 acres; Section 34: N1/2NW1/4, SW1/4NW1/4, NW1/4SW1/4, 160 acres	360.00	UOC # 605521 ADL # 58789	28.125000%	State of Alaska, Department of Natural Resources	100.00%	12.5000%	Cook Inlet Region Inc.	0.62232%	Union Oil Company of California	100.00%
12	T14N, R8W, SM, AK Section 28: S1/2N1/2, S1/2, 480 acres; Section 33: NE1/4, N1/2NW1/4, SE1/4NW1/4, N1/2SE1/4, 360 acres	840.00	UOC # 605522 ADL # 58790	65.625000%	State of Alaska, Department of Natural Resources	100.00%	12.5000%	Cook Inlet Region Inc.	0.62232%	Union Oil Company of California	100.00%
13	T. 14 N., R. 8 W., S.M. Section 29: E1/2SE1/4, 80 acres	80.00	UOC # 605523 ADL # 58791	6.250000%	State of Alaska, Department of Natural Resources	100.00%	12.5000%	Cook Inlet Region Inc.	0.62232%	Union Oil Company of California	100.00%
		Total PA Acreage		**Total Tract Percentage**						**Working Interest Owners**	**PA %**
		1,280.00		100.000000%						Uncommitted	#Name?
										Union Oil Company of California	100.0000%

In future wells, TGX has a .56% ORRI in ADL's 58789, 58790, 58791 (above 11,750 ft.).
See paragraph 3 of the Unocal/TGX Settlement Compromise Agreement, dated 7/27/92 and assignments effective 8/18/92.