

## **COHOE UNIT**

### **DENIAL OF THE APPLICATION TO FORM THE COHOE UNIT**

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

**SEPTEMBER 23, 2011**

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## **I. INTRODUCTION AND DECISION SUMMARY**

The State of Alaska (state), Department of Natural Resources (DNR), Division of Oil and gas (Division) received the Application for the Formation of the Cohoe Unit (Application) on July 21, 2010 from Aurora Gas, LLC (Aurora) as the proposed Cohoe Unit Operator. Aurora submitted confidential and public portions of the Application that meet the requirements for a complete application under 11 AAC 83.306. The Division gave notice of the proposed Cohoe Unit under 11 AAC 83.311 on June 17, 2011. Public comment period closed on July 25, 2011 and DNR received one comment.

The Division finds that the approval of the Application is not necessary or advisable to protect the public interest considering the provisions of AS 38.05.180(p) and 11 AAC 83.303. The Application is denied.

## **II. APPLICATION**

Aurora submitted the Application on July 21, 2010, and simultaneously paid the \$5,000.00 unit application filing fee, in accordance with 11 AAC 83.306 and 11 AAC 05.010(a)(10)(D), respectively. The Application includes: Exhibit A, legally describing the proposed unit area, its leases, and ownership interests; Exhibit B, a map of the proposed unit; and Exhibit G, the Plan of Exploration (POE). The Application also includes confidential technical data. Aurora submitted a revised POE on April 25, 2011.

The lands proposed for inclusion in the Cohoe Unit include two State leases and one CIRI lease. The Division notified Aurora that the Application was incomplete because Aurora had not submitted evidence of inviting CIRI to join the unit. CIRI later informed Aurora and the Division that as a royalty owner, they wished to co-manage the unit. Aurora initially submitted an executed standard state unit agreement form which provides for state only royalty ownership. The Division, CIRI, and Aurora reached agreement on the terms of the multiple royalty ownership unit agreement form and Division deemed the Application complete on June 17, 2011.

The Division published a public notice in the "*Anchorage Daily News*" and in the "*Peninsula Clarion*" on June 23, 2011, under 11 AAC 83.311. Copies of the Application and the public notice were provided to interested parties. The Division provided public notice to, among others, the Alaska Department of Environmental Conservation, the Kenai Peninsula Borough, the City of Kenai, the Village of Tyonek, the Salamatoff Native Association, Cook Inlet Region, Incorporated, the Soldotna Postmaster, and the radio station KDLL in Kenai. The notice was also published on the State of Alaska Public Notice website and the Division's website. The public notices invited interested parties and members of the public to submit comments by July 25, 2011. The Division received one comment regarding the Application from Mr. Rob Massengill, a resident of Kasilof whose property is near to the proposed Cohoe Unit. The Division received the letter, dated July 20, 2011, on July 26, 2011. The Division considered the comment in the evaluation of the Application and the issuance of this decision. Mr. Massengill's

topics of concern related to the impact of exploration and development activities on the character of the land, and the effect on property values. Specifically Mr. Masengill is concerned that brushed out seismic lines will be used extensively as ATV and snowmachine trails resulting in loss of habitat and increased noise in roadless areas. Mr. Massengill also believes “the price of impacting this area is too high to warrant this project.”

### III. LEASE BACKGROUND

Aurora proposes the following two state leases and one Cook Inlet Region, Incorporated (CIRI) lease for inclusion in the Cohoe Unit, comprising approximately 7,707 acres:

ADL	State Royalty Interest %	Lease Effective Date	Lease Primary Term	Lease Form	Working Interest Owners and Percentage	Lease Expiration Date
390364	12.5	10/1/2003	7	DOG 200204	Aurora 100%	9/30/2010
390365	12.5	10/1/2003	7	DOG 200204	Aurora 100%	9/30/2010
C061621	NA	8/17/2006	5	CIRI lease	Aurora 100%	8/17/2011

### IV. 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 - 11 AAC 83.395. By memorandum dated December 21, 1998, the Commissioner delegated this authority to the Division Director.

The Commissioner will approve a proposed 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;

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 Cohoe Unit is located on the Kenai Peninsula near the intersection of the Sterling Highway and Kalifonsky Beach Road near the community of Kasilof. Approval of the formation of the Cohoe Unit does not authorize any on-the-ground activity. A plan of operations must be approved before any operation is conducted on a lease or in a unit. DNR develops lease stipulations through the lease sale process to mitigate the potential environmental impacts from oil and gas activity. Potential effects on the environment are also analyzed when permits to conduct exploration or development in the unit area are reviewed.

The activity proposed in the POE would not be conducted any differently in a unit than in individual leases. As a result, there is no environmental benefit or additional cost to be gained by unitization.

### **2. Geologic and Engineering Characteristics and Prior Exploration Activities**

#### **Regional Geology**

The Cook Inlet basin is part of a northeast-trending collisional forearc setting that contains a thick section of Tertiary non-marine (predominantly fluvial) sediments. Large structural hydrocarbon traps were formed along north-northeast-trending anticlines that were formed as a result of right lateral transpressional deformation on oblique-slip faults. Because the predominant mode of sediment deposition in the Tertiary is the result of fluvial processes, the distribution of reservoir sands is discontinuous and limited in thickness. A typical sand body is only on the order of 50 feet or less and ranges from a foot or two up to thicknesses upwards of 100 feet. The four primary producing formations within the Tertiary section in the Cook Inlet Basin in the vicinity of the proposed Cohoe Unit (in stratigraphic order from oldest to youngest) are the Hemlock, Tyonek, Beluga, and Sterling formations.



Unocal drilled the original Cohoe Unit #1 well in 1973 as a straight hole to a depth of 15,683 feet. The well bottomed in the West Foreland formation. Nine zones were drill stem tested (DST) in the original well as follows:

2 DST's were conducted in the Hemlock formation.

2 DST's were conducted in perforated zones within the Tyonek 'G' sands and Hemlock formation.

1 DST was conducted in the Beluga formation.

4 DST's were conducted in the Sterling formation.

One of the Sterling DST's produced muddy gas cut salt water; another Sterling DST produced slight gas cut water with sand. The Beluga DST produced a small amount of gas along with formation water. The other six DST's Unocal conducted either failed or produced water.

Aurora proposed re-entering the Unocal Cohoe Unit #1 well by December 31, 2011 to perforate selected zones within the Sterling, Beluga, and Tyonek. As of September 9, 2011, Aurora has yet to obtain a drilling permit from the Alaska Oil and Gas conservation Commission (AOGCC) to enable any drilling operations. Because the original Cohoe Unit #1 well was drilled in 1973, it may be technically challenging to re-enter the well. Aurora submitted technical maps of prospective horizons within the Tyonek, Beluga, and Sterling formations, but the distribution of potential reservoirs can only be confirmed by drilling wells. The regional geologic setting of north-northeast- trending anticlinal structures sets up the potential for reservoir success throughout the Cook Inlet basin. Stratigraphic traps off major structures are subtle and difficult to identify especially given the discontinuous and thin beds of the fluvial channels, most of which are below the resolution of 3-D seismic.

Re-entering or twinning the old Unocal Cohoe Unit #1 well and testing prospective sands within the Tyonek, Beluga, and Sterling will provide valuable information about the commerciality of the sands in the area in the lease containing the Cohoe well, but further drilling would be required to delineate any potential reservoirs beyond the drainage area in the surrounding leases. Therefore Aurora could test the commerciality of the intervals of interest within the Tyonek, Beluga, and Sterling in the Cohoe well without the need for unitization. Because Aurora has not yet obtained a drilling permit from AOGCC to either re-enter or twin the Cohoe well, the geological, geophysical, and engineering data does not support unitization.

### **3. Plan of Exploration and Development**

Aurora submitted Exhibit G, POE, Attachment 3, as part of the Application and met with the Division for a technical presentation and discussion, September 2, 2010. Exhibit G as originally submitted proposed either to re-enter the Cohoe Unit #1 to perforate and production test selected horizons, or to conduct 3-D geophysical exploration by September 30, 2011, and by September 30, 2012 to complete the seismic or drilling activity not conducted in 2011. Aurora submitted a

revised POE on April 25, 2011 which proposes to re-enter the Cohoe Unit #1 well for the purpose of perforating selected horizons and performing production tests by December 31, 2011, and by July 31, 2012, complete 3-D geophysical exploration over the Cohoe Unit area. By December 31, 2012, Aurora proposes to drill the Cohoe Unit #2 located on ADL 390365. By May 1, 2013, Aurora proposes to provide a Plan of Development (POD) for the installation of production facilities, pipelines, and future development wells. Aurora has not submitted another revised POE, but has told the Division that it is likely the seismic studies proposed for 2012 will be delayed for possibly two years.

The proposed drilling and 3-D geophysical exploration work do not require unitization and would not be conducted differently if the leases were not unitized. Aurora has not conducted exploration operations on these leases prior to the lease expiry. Aurora has not secured permits to re-enter the Cohoe #1 well.

Unitizing the leases is not necessary to conduct the activities proposed in the POE. The activities proposed in the POE would not be conducted any differently as a unit than as individual leases.

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

The POE does not propose activity that would result in greater economic benefit to the state if the leases were unitized than if the activities were conducted on a lease-by-lease basis. The activities proposed by Aurora would not result in production sooner than if the same activities (seismic and drilling) were conducted on a lease-by-lease basis. Accordingly, unitization in this case offers no benefit to the state. Moreover, the POE does not describe any activity that would result in a benefit to the state which could not be conducted on a lease-by-lease basis during the leases' primary terms.

### **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 and the formation of unit areas to develop hydrocarbon-bearing reservoirs 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.

Unitization is not necessary to conduct the activities proposed in the POE. The activities can be conducted on a lease-by-lease basis without jeopardizing the conservation objectives advanced by unitization. None of the activities proposed by Aurora require unitization to efficiently

recover oil and gas or minimize adverse impacts. There are also no competing interests between the leases since Aurora holds 100% the working interest ownership of the three leases proposed for unitization. Thus there is no impediment to efficient exploration on a lease-by-lease basis.

Nor would unitization promote the conservation of other natural resources. The proposed POE will not lead to a more efficient use of gravel, water and other resources than would the same activities conducted on a lease-by-lease basis. The proposed work would not affect fewer resources if performed in a unit either. In other words, the proposed activities will not differ whether performed in a unit or on individual leases, so the risks and benefits to the environment are the same.

## **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 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.

Here, unitization would not prevent waste any more than conducting these activities on a lease-by-lease basis. The POE submitted April 25, 2011 proposes to re-enter the existing Cohoe #1 well located on ADL 390364 and then to conduct an exploratory geologic program and drill a well on ADL 390364 by the end of 2012. Drilling one well in each lease presents no threat of excessive drilling that makes it necessary to join the leases in a unit to avoid economic waste. Additionally, the use or dissipation of reservoir energy will not differ whether these proposed activities are carried out on individual leases or a unit, so there is no threat of physical waste favoring unitization either.

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. The POE, a unified reservoir management plan, does not propose any activity that would be conducted any differently with unitization, as opposed to individual leases. Thus the Application does not present a potential for reduction of costs and environmental impacts through unitized operations that will expedite development of any reserves, or promote greater ultimate recovery of any oil and gas from the proposed unit area.

For these reasons, the proposed Cohoe Unit would not prevent economic or physical waste.

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

Aurora would benefit from unitization of these leases including extension of the leases beyond their primary terms. Unitization would provide benefit to Aurora in the extension of primary term of the two state leases which would have expired September 30, 2010, and the CIRC lease which would have expired August 17, 2011 if not for this Application.



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

Aurora would benefit from unitization of these leases including extension of the leases beyond their primary terms. Unitization would provide benefit to Aurora in the extension of primary term of the two state leases which would have expired September 30, 2010, and the CIRI lease which would have expired August 17, 2011 if not for this Application.

Unitization would not, however, offer equal benefit or protections to the people of Alaska or the state.

The people of Alaska have an interest in both the conservation of natural resources for human use and development of the State's oil and gas resources to maximize the economic and physical recovery of the resources. AS 38.05.180(a)(1); AS 44.37.020(a). It is further in the state's best interest to encourage assessment of oil and gas resources, recognize the costs of exploring in varied geographic regions, and minimize the adverse impact of exploration, development, production, and transportation activity. AS 38.05.180(a)(2).

Often, unitization increases the likelihood that exploration and development will occur earlier than without unitization as various leaseholders can collaborate on the joint exploration and development of the unit area as if it was a single lease. In that respect, unitization can further the state and people's economic interests.

Here, the Cohoe Unit POE does not demonstrate that unitization will encourage earlier delineation drilling activities upon the subject leases than if these activities were conducted on a lease-by-lease basis, other than to provide Aurora an extension to the leases' primary terms. Drilling operations on any one of these leases would have also extended the drilled lease's primary term.

Considering the proposed activities, unitization will not affect the risks or benefits to natural resources available for public use or minimize adverse impacts when compared to the same activities on individual leases.

## **V. FINDINGS**

### **A. Promote the Conservation of All Natural Resources**

1. State regulations define "conservation" for purposes of oil and gas leasing as "maximizing the efficient recovery of oil and gas and minimizing the adverse impacts on the surface and other resources." 11 AAC 83.395(1). For the reasons discussed above, the proposed Cohoe Unit POE does not propose any activity which would maximize efficient recovery when conducted on unitized lands any more than if the lands were single leases. Therefore, unitization does not promote the conservation of all natural resources.

as individual leases. Thus for this and other reasons discussed above, unitization would not prevent economic or physical waste.

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

The legislature intended that oil and gas leases maximize production, competition amongst producers, and local employment. AS 38.05.180(a). Should the leases proposed for inclusion in the Cohoe Unit expire, not being in production or held by unitization, the area could be re-offered at lease sale by competitive bid thereby enhancing competition amongst parties seeking to develop and produce oil and gas resources. Allowing Aurora to unitize and hold state leases is contrary to the public interest. To provide for unitization in this case would be contrary to the state's interest in promoting diligent exploration by its lessees.

The only interest protected by granting unitization, is the lessees' interest in extending the lease terms to conduct exploration activities that could otherwise be conducted on a lease-by-lease basis.

## **VI. DECISION**

The Application is denied because it is neither necessary nor advisable to protect the public or state's interests. Cohoe Unit formation as proposed by Aurora could deprive the state of the benefits of oil and gas leasing. The Application does not meet the requirements of 11 AAC 83.303 because the proposed activities do not require unitization in order to promote the conservation of all natural resources and prevent economic and physical waste. It is not in the state's interest to allow Aurora to retain the leases and benefit from the lease term extensions provided by unitization without having demonstrated the need for unitization.

For the reasons discussed in this Findings and Decision, I hereby deny the Application.

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 Daniel S. Sullivan, 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](mailto: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 Temple Davidson with the Division at 907-269-8784.



W. C. Barron  
Director  
Division of Oil and Gas

9/23

Date

## VII. ATTACHMENTS

- 1) Exhibit A, Proposed Cohoe Unit Tracts/leases
- 2) Exhibit B, Map of the Proposed Cohoe Unit Boundary
- 3) Exhibit G, Proposed Plan of Exploration, July 21, 2010
- 4) Exhibit G, Proposed Plan of Exploration, April 25, 2011



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Exhibit "A"  
**COHOE UNIT AGREEMENT**  
Unit Area

Cohoe Unit Tract Number	Description of Unitized Lands	Gross Acres	Committed Unit Acreage	Tract Participating Factor	Lessor / Royalty Owner Lease Serial No.	Royalty Interest	ORRI Owners	Overriding Royalty Interest	Working Interest Owners & Percentage Working Interest	Primary Expiration Date	Borough Recording District	Book	Page
1	T. 03 N., R. 11 W., S.M. Section 04: Surveyed, Fractional, GLO Lots 1 thru 4, S1/2N1/2, SE1/4, E1/2SW1/4, and the bed of the unnamed waterbody within the N1/2N1/2 Section 05: Surveyed, Fractional, GLO Lots 1 thru 4, S1/2N1/2, W1/2SE1/4, E1/2SW1/4 Section 06: Surveyed, Fractional, GLO Lots 1 thru 7, S1/2NE1/4, W1/2SE1/4, E1/2SW1/4, SE1/4NW1/4 Section 07: Surveyed, Fractional, GLO Lots 1 thru 6 and 8, NE1/4, N1/2SE1/4, SW1/4SE1/4, NE1/4SW1/4, E1/2NW1/4, SE1/4SW1/4, E1/2NW1/4SW1/4 Section 08: Surveyed, N1/2, E1/2SE1/4, NW1/4SW1/4, E1/2SW1/4SW1/4 Section 09: Surveyed, Fractional, GLO Lots 1 and 2, NE1/4, E1/2SE1/4, SW1/4SE1/4, N1/2SW1/4, W1/2NW1/4, and the bed of the unnamed waterbody within the S1/2SW1/4 Section 16: Surveyed, NE1/4, S1/2 Section 17: Surveyed, S1/2, E1/2NW1/4, E1/2NW1/4NW1/4 Section 18: Surveyed, Fractional, E1/2SW1/4NW1/4, E1/2W1/2SW1/4, SE1/4, E1/2SW1/4, E1/2NW1/4  Comprising a total of approximately 4,347.35 acres.	559.71 478.96 529.44 519.24 460.00 520.00 480.00 420.00 380.00	559.71 478.96 529.44 519.24 460.00 520.00 480.00 420.00 380.00	0.584052	State of Alaska ADL-390364	0.125000	Daniel K. Donkel Kenneth A. Mohaffy Revocable Trust total	0.012500 0.012500 0.025000	Aurora 100%	9/30/2010	Kenai	N/A	N/A
2	T. 04 N., R. 11 W., S.M. Section 21: Surveyed, All Section 28: Surveyed, W1/2, N1/2NE1/4, W1/2SE1/4 Section 29: Surveyed, All Section 32: Surveyed, All Section 33: Surveyed, All  Comprising a total of approximately 3,040.00 acres.	640.00 480.00 640.00 640.00 640.00	640.00 480.00 640.00 640.00 640.00	0.394429	State of Alaska ADL-390365	0.125000	Daniel K. Donkel Douglas Barr The Kasper Family Trust Robert and Martha Bolt Residual Trust total	0.007500 0.007500 0.007500 0.007500 0.030000	Aurora 100%	9/30/2010	Kenai	N/A	N/A
3	T. 03 N., R. 11 W., S.M. Section 08: Surveyed, W1/2SE1/4, E1/2SW1/4 Section 16: Surveyed, Fractional, GLO Lot 1 (NW1/4NW1/4), E1/2NW1/4, SW1/4NW1/4  Comprising a total of approximately 320.00 acres.	160.00 160.00	160.00 160.00	0.041519	Cook Inlet Region Inc. C-091821	none	total	0.000000 0.000000	Aurora 100%	8/17/2011	Kenai	N/A	N/A

1.000000 = tract factor check

Total Unitized Land: 7,707.35 acres

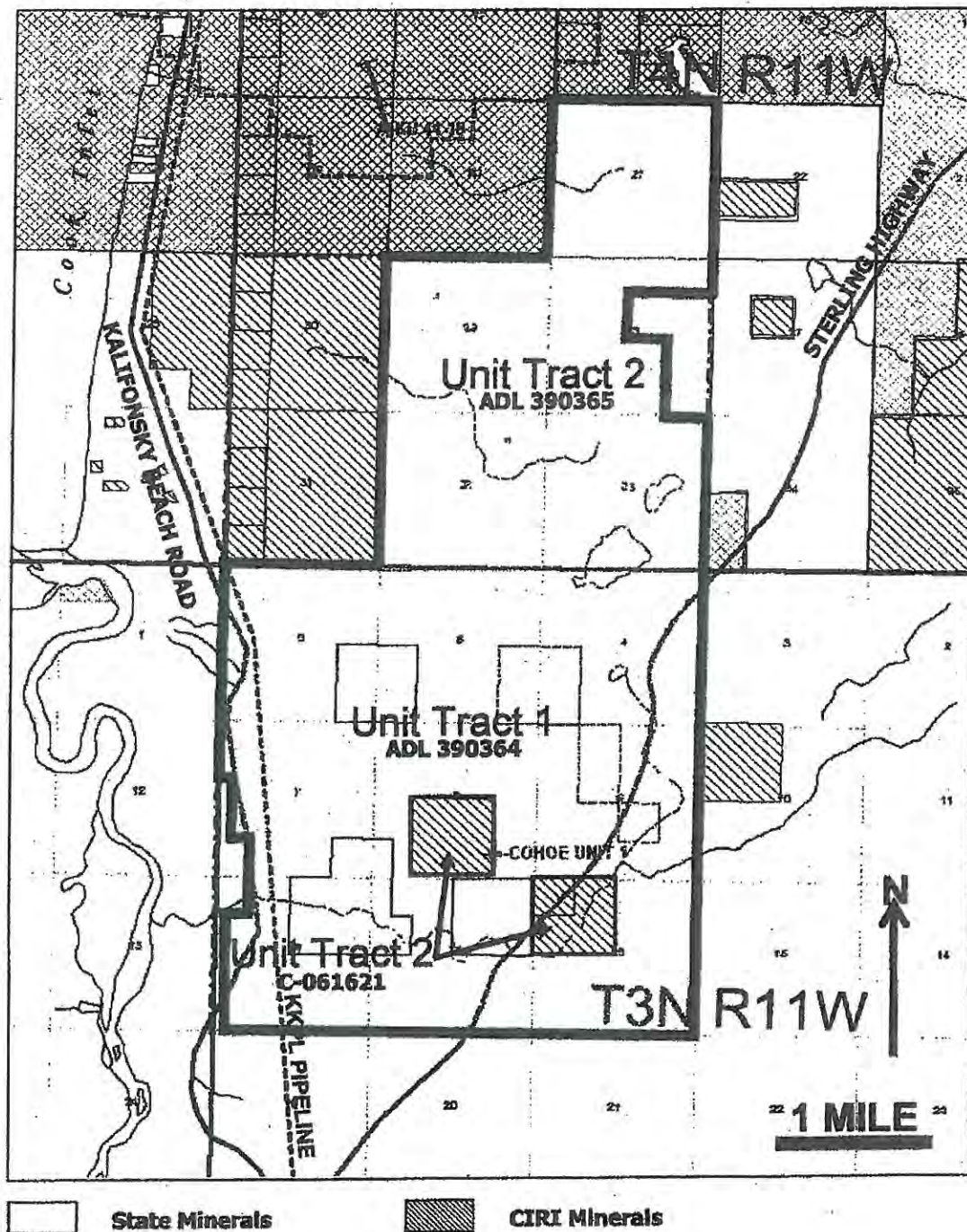
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Exhibit "B"

## COHOE UNIT AGREEMENT





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Exhibit "G"

**COHOE UNIT AGREEMENT**  
**Initial Plan of Exploration**

The Unit Operator, Aurora Gas, LLC ("Aurora"), will complete this Initial Two-Year Plan of Exploration for the Cohoe Unit, effective October 1, 2010 to September 30, 2012.

**Year 2010 to 2011**

1. By September 30, 2011 Aurora shall either:

- a) Re-enter the Unocal Cohoe Unit #1 well, penetrating the Sterling, Beluga and Upper Tyonek formations, to a depth of 10,000' or deeper, for the purpose of perforating selected horizons and performing production tests; or
- b) Perform 3-D geophysical exploration over the minimum area as depicted in Exhibit B for the proposed Cohoe Unit area.

All well data or geophysical information obtained shall be submitted to the Department of Natural Resources and to Cook Inlet Region Incorporated.

If Aurora fails to complete either of the commitments listed in a) or b) above, by September 30, 2011, the Cohoe Unit will automatically terminate, however any lands held by production or undergoing drilling or re-drilling activities shall continue as provided in 11 AAC 83.140.

**Year 2011 to 2012**

1. By September 30, 2012 Aurora shall either:

- a) Re-enter the Unocal Cohoe Unit #1 well if not re-entered in the previous year or drill a new exploration well, penetrating the Sterling, Beluga and Upper Tyonek formations for the purpose of perforating selected horizons and performing production tests; or
- b) Unless completed in the previous year, perform 3-D geophysical exploration over the Cohoe Unit area.

All well data or geophysical information obtained shall be submitted to the Department of Natural Resources and to Cook Inlet Region Incorporated.

If Aurora fails to complete either of the commitments listed in a) or b) above, by September 30, 2012, the Cohoe Unit will automatically terminate, however any lands held by production or undergoing drilling or re-drilling activities shall continue as provided in 11 AAC 83.140.

ATTACHMENT THREE

Exhibit G, Proposed Plan of Exploration, July 21, 2010

In accordance with 11 AAC 83.341, Aurora will submit an annual report to the Department of Natural Resources and to Cook Inlet Region Incorporated that describes the status of projects undertaken and the work completed during the prior year, as well as any proposed changes to the Initial Plan of Exploration.

Aurora will submit a Second Plan of Exploration to the Department of Natural Resources and to Cook Inlet Region Incorporated at least 60 days before the Initial Plan of Exploration for the Cohoe Unit expires. Alternatively, Aurora may submit a request for Approval of the First Plan of Development for the Cohoe Unit to the Department of Natural Resources at least 90 days before the Initial Plan of Exploration for the Cohoe Unit expires.

Aurora will submit an application to form an initial Participating Area within the Cohoe Unit by December 31, 2012.

Exhibit "G"

**COHOE UNIT AGREEMENT**  
**Initial Plan of Exploration**

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The Unit Operator, Aurora Gas, LLC ("Aurora"), will complete this Initial Plan of Exploration for the Cohoe Unit, effective May 1, 2011 to December 31, 2013.

**Year 2011**

1. By December 31, 2011 Aurora shall:

Re-enter the Unocal Cohoe Unit #1 well, located on ADL-390364, penetrating the Sterling, Beluga and Tyonek formations for the purpose of perforating selected horizons and performing production tests.

All well data and geophysical (VSP's, if any) information obtained shall be submitted to the Department of Natural Resources and to Cook Inlet Region Incorporated.

If Aurora fails to complete the commitment above, by December 31, 2011, the Cohoe Unit will automatically terminate, however any lands held by production or undergoing drilling or re-drilling activities shall continue as provided in 11 AAC 83.140.

**Year 2011 to 2012**

1. By July 31, 2012 Aurora shall:

Perform 3-D geophysical exploration over the Cohoe Unit area.

2. By December 31, 2012 Aurora shall:

Drill the Cohoe Unit #2 well, located on ADL-390365, penetrating the Sterling, Beluga and Tyonek formations for the purpose of perforating selected horizons and performing production tests.

All well data or geophysical information (including VSP's, if any) obtained shall be submitted to the Department of Natural Resources and to Cook Inlet Region Incorporated.

If Aurora fails to complete either of the commitments listed in 1. or 2. above, by December 31, 2012, the Cohoe Unit will automatically terminate, however any lands held by production or undergoing drilling or re-drilling activities shall continue as provided in 11 AAC 83.140.



**Year 2012 to 2013**

1. By May 1, 2013 Aurora shall:

Provide a Plan of Development for the installation of production facilities, pipelines and future development wells to the Department of Natural Resources and to Cook Inlet Region Incorporated.

Aurora will submit an application to form an initial Participating Area within the Cohoe Unit by December 31, 2013.

In accordance with 11 AAC 83.341, Aurora will submit an annual report to the Department of Natural Resources and to Cook Inlet Region Incorporated that describes the status of projects undertaken and the work completed during the prior year, as well as any proposed changes to the Initial Plan of Exploration.