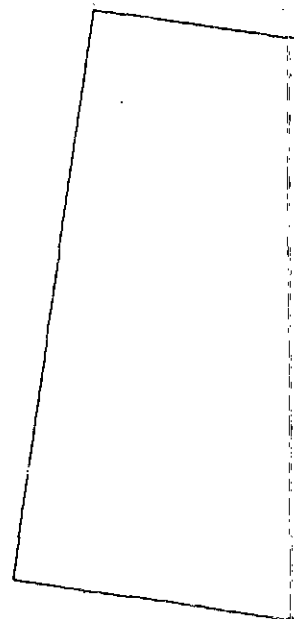


KUPARUK RIVER UNIT

APPLICATION FOR THE
SEVENTH EXPANSION OF THE KUPARUK
PARTICIPATING AREA



FINDINGS AND DECISION OF THE COMMISSIONER
ALASKA DEPARTMENT OF NATURAL RESOURCES

NOVEMBER 22, 1999

KUPARUK RIVER UNIT
SEVENTH EXPANSION OF THE KUPARUK
PARTICIPATING AREA

I. INTRODUCTION AND BACKGROUND

ARCO Alaska, Inc. (ARCO), as Kuparuk River Unit Operator, and on behalf of the Working Interest Owners (WIOs) in the Kuparuk River Unit (KRU), applied to expand the Kuparuk Participating Area (KPA) within the current boundary of the KRU. ARCO's application, if approved, would result in the seventh revision to the KPA, and add approximately 160 acres around a Kuparuk water injection well. ARCO submitted geologic and well data that justifies the expansion of the KPA. The data indicate that the proposed expansion acreage is capable of producing or contributing to the production of hydrocarbons in paying quantities.

The State of Alaska Department of Natural Resources, Division of Oil and Gas ("division") approves ARCO's application to revise the KPA. The KPA revision should be limited to the area proposed by ARCO because that area has been shown to be "reasonably known to be underlain by hydrocarbons and known or reasonably estimated...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, Exhibit C to the KRU Agreement, for the revised KPA. The tract allocation schedule "equitably allocates production and costs among the leases" in the KPA. The effective date of the seventh revision to the KPA and the revised Exhibit C is June 1, 1998, the first day of the month in which the 2T-36 tract operation commenced.

II. APPLICATION FOR THE SEVENTH REVISION OF THE KUPARUK PARTICIPATING AREA

ARCO submitted the seventh KPA expansion application, dated July 31, 1998, under 11 AAC 83.351 and Section 6.2 of the KRU Agreement. ARCO applied to add a portion of one state oil and gas lease, ADL 25568 (Tract 45), totaling approximately 160 acres, to the KPA. The WIOs in ADL 25568 are ARCO, BP, UNOCAL, Mobil, and Chevron.

The proposed KPA expansion acreage encompasses the Kuparuk reservoir within the Kuparuk Formation, which is capable of producing or contributing to the production of hydrocarbons in paying quantities. The legal description of the portion of the lease proposed for the seventh KPA expansion, the revised tract participation schedule for the leases in the KPA, and a map depicting the proposed seventh KPA expansion area are Attachment A, Exhibit C, and Attachment B, respectively, to the application.

There is geologic and engineering evidence to support the expansion of the KPA to develop the

Kuparuk Reservoir within the KRU under a unified plan of development. The expansion acreage is within the KRU, but currently outside of the KPA. ARCO drilled and completed Well 2T-36 as a Kuparuk oil pool water injection well in the second half of 1995. Well 2T-36 was intended to provide pressure support and sweep Kuparuk Reservoir reserves to surrounding KPA production wells.

On May 1, 1998, ARCO requested division approval to operate 2T-36 as a water injection well. The division approved the 2T-36 tract operation on May 22, 1998 and continuous water injection started on June 2, 1998. As part of the tract operation approval and within 60 days from the start of water injection, ARCO was to request an expansion of the KPA that would include the location of the 2T-36 well. The production and injection data from the 2T-36 tract operation demonstrate that the proposed seventh KPA expansion acreage is capable of producing or contributing to production in paying quantities.

ARCO and the division agree that the effective date for the proposed seventh KPA expansion and the revised tract participation schedule for the KPA, Exhibit C to the KRU Agreement, will be June 1, 1998. This is the first day of the month when water injection commenced with 2T-36 tract operation.

III. DISCUSSION OF THE PARTICIPATING AREA DECISION CRITERIA

The commissioner may approve expansion of a participating area (PA) if it is determined that expansion is "necessary or advisable to protect the public interest." AS 38.05.180(p), 11 AAC 83.303(c) and 11 AAC 83.351(c). Approval of ARCO's application must be based on the criteria in 11 AAC 83.303(a) and the factors enumerated in 11 AAC 83.303(b).

Under 11 AAC 83.303(a), an expansion of a PA will be approved if the commissioner finds that the expansion is necessary or advisable to protect the public interest. To make such a finding, the commissioner must determine that the proposed PA expansion will: (1) conserve natural resources; (2) prevent economic and physical waste; and (3) protect all parties of interest, including the state.

In evaluating these criteria, the commissioner must consider: (1) the environmental costs and benefits; (2) the geological and engineering characteristics of the potential hydrocarbon accumulation or reservoir proposed for inclusion in the PA; (3) prior exploration activities in the proposed expansion area; (4) the applicant's plans for exploration or development of the proposed expansion area; (5) the economic costs and benefits to the state; and (6) any other relevant factors (including mitigation measures) the commissioner determines necessary or advisable to protect the public interest. 11 AAC 83.303(b).

A PA 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) Conservation of Natural Resources

The formation of oil and gas units, as well as the creation and expansion of PAs within units, generally conserves hydrocarbons; coordinated development of leases held by diverse parties maximizes total hydrocarbon recovery and minimizes waste. Expansion of the existing KPA to include the new acreage will provide for more efficient, integrated development of the Kuparuk reservoir within the KRU. A comprehensive operating agreement and plan of development governing the expanded area will help avoid duplicative development efforts on and beneath the surface.

Producing hydrocarbon liquids from the expansion area through the existing KRU production and processing facilities reduces the incremental environmental impact of the additional production. The hydrocarbon resources of the expansion area can be accessed from preexisting drill pads, and processed through preexisting facilities and infrastructure. Expanding the KPA will maximize oil and gas recovery, while minimizing negative impacts on all other natural resources.

(B) Prevention of Economic and Physical Waste

Generally, the formation and expansion of a PA facilitates the equitable division of costs and allocation of hydrocarbon shares, and provides for a diligent development plan, which maximizes hydrocarbon recovery from a reservoir. Further, the creation and subsequent expansion of a PA which enables both facility sharing opportunities and adoption of a unified reservoir management strategy may allow economically marginal hydrocarbon accumulations to be developed that otherwise might not be.

Expanding the KPA improves the likelihood of more complete development of a reservoir with variable productivity across adjoining leases. Using the existing KPA infrastructure and facilities eliminates the need to construct stand-alone facilities to process the additional volume of recoverable hydrocarbons from the expansion area. The division encourages the shared use of major processing facilities to minimize any additional surface impacts and costs. The Division allows commingled production through the existing KRU facilities and approved a well test-based production allocation methodology for current and future reservoirs sharing those facilities. The methodology is subject to periodic review and reconsideration to assure that the state's royalty, tax, and other interests are protected.

Further, facility consolidation saves capital and promotes better reservoir management through pressure maintenance and enhanced recovery procedures. In combination, these factors allow the Kuparuk Reservoir to be developed and produced in the interest of all parties, including the State. Expanding the KPA to include the leases that contain productive Kuparuk Formation reservoirs allows these expansion areas to access existing drill pads and unit facilities and prevents economic and physical waste.

(C) Protection of All Parties

Because hydrocarbon recovery will be maximized and additional production-based revenue will be earned from the additional KPA production, the state's economic interest is promoted. Diligent exploration and development under a single approved unit plan without the complications of competing leasehold interests promote the state's interest. The expansion 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 KRU Agreement provides for accurate reporting and record keeping, royalty settlement, in kind taking, and emergency storage of oil. These all protect the state's interest.

The proposed expansion of the KPA protects the economic interests of all working interest owners and the royalty owner. Combining interests and operating under the terms of a unit agreement and unit operating agreement assures each individual working interest owner an equitable allocation of costs and revenues commensurate with the resources of its lease(s).

In reviewing the above criteria, the following factors were considered:

(1) The Environmental Costs and Benefits

As discussed above in section III (A), the sharing of the existing facilities eliminates duplication and minimizes the surface area affected by additional development. All wells in the proposed expansion area have been developed from existing drill pads and KRU infrastructure. All future development of the expansion area will take place from existing drill pads and infrastructure. No significant additional impacts to nearshore and onshore habitat or biological resources are anticipated because of the additional Kuparuk production from an expanded KPA.

(2) The Geological and Engineering Characteristics, and Previous Exploration of the Proposed Expansion Area

KRU Well 2T-36 was drilled within the proposed 160-acre expansion area. ARCO provided confidential and non-confidential technical data in support of the proposed expansion. ARCO submitted the following geological, geophysical, and engineering data in support of the KPA expansion application:

- 1) Stratigraphic column and composite gamma ray/resistivity log.

- 2) Generalized NW-SE stratigraphic cross-section of Kuparuk A intervals from W Sak #16 to KRU #1E-03.
- 3) Generalized map view of Kuparuk A sand bodies.
- 4) Isopach map of Kuparuk A-2 net pay in the 2T drill site area.
- 5) Isopach map of Kuparuk A-3 net pay in the 2T drill site area.
- 6) Isopach map of Kuparuk C-4 net pay in the 2T drill site area.
- 7) Structure map of top Kuparuk A-3 in the 2T drill site area.
- 8) Structure map of top Kuparuk C in the 2T drill site area.
- 9) Well log of KRU #2T-36 annotated with formation tops.
- 10) Stratigraphic cross-section illustrating KRU #2T-36 injection well support of KRU #2A-22 and KRU #2T-38 production wells.
- 11) Well log of KRU #2T-36 showing TVD reservoir pay intervals.
- 12) Well log of KRU #2T-38A showing TVD reservoir pay intervals.
- 13) Well log of KRU #2T-21 showing TVD reservoir pay intervals.
- 14) Well log of KRU #2A-22 showing TVD reservoir pay intervals.
- 15) Well test histories for KRU #2A-22, KRU #2T-21, and KRU #2T-38A.

More than 850 production and injection wells have been drilled in this field. The field has no natural gas cap, and solution gas drive is the primary recovery mechanism. Water and gas injection programs have been implemented to enhance recovery. The west margin of the oil accumulation is controlled by truncation that is not easily defined by seismic and therefore is not definitively established.

KRU 2T-36 well was completed on November 20, 1995 as a water injection well in the western part of the Kuparuk River reservoir. Its bottomhole location on Tract 45, while inside the KRU, is outside the existing KPA. The proposed KPA expansion would incorporate this well's bottomhole location. By use of log analysis and standard net pay parameters for the Kuparuk reservoir, ARCO determined that 2T-36 contained significant net pay in the Kuparuk Formation to operate the well as a water injector. Currently the well is injecting approximately 6000 bwpd into the surrounding Kuparuk reservoir. The offset producer, KRU #2A-22, has reported an incremental oil production increase of 350 bopd. For another offset producer, KRU #2T-38A, post-injection production is unknown compared to its pre-injection rates.

The geologic and engineering data submitted with the application along with the incremental contribution to production after water injection startup reasonably demonstrates that the proposed KPA expansion area is capable of producing or contributing to the production of hydrocarbons in paying quantities.

(3) The Applicant's Plan for Exploration or Development of the Expanded Participating Area

The proposed expansion area is only 160 acres. No additional wells are planned for this area. However, the expansion area will be included in the KPA plan of development.

(4) The Economic Costs and Benefits to the State

Approval of the proposed KPA expansion will provide economic benefits to the state by including the area in the Kuparuk plan of development, which proposes to maximize the physical and economic recovery of hydrocarbons from the Kuparuk reservoir. Maximum hydrocarbon recovery will enhance the state's long-term royalty and tax revenues.

Any additional administrative burdens associated with the proposed revised KPA are far outweighed by the additional royalty and tax benefits derived from the expansion area production.

(5) Any Other Relevant Factors

Pursuant to 11 AAC 83.351 and 11 AAC 83.371, ARCO submitted with the application an allocation of production and cost for the leases in the proposed KPA expansion area (Attachment 3 to this Findings and Decision and revised Exhibit C to the KRU Agreement). The proposed tract allocation schedule distributes working interest equity among the leases according to recoverable reserves. The basis of the tract allocation schedule--recoverable reserves--is consistent with previous revisions of the KPA. The division finds ARCO's revised tract allocation schedule acceptable for allocating production and costs among the leases in the expanded KPA.

Per correspondence regarding the proposed seventh KPA expansion, dated June 2, 1999, ARCO and the division agree that the effective date of the seventh KPA revision and the revised Exhibit C to the KRU Agreement will be retroactive to June 1, 1998, the first day of the month in which injection commenced in KRU Well 2T-36 Tract Operation.

IV. FINDINGS AND DECISION


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

1. The proposed expansion 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 expansion of the KPA within the KRU.
2. The geological and engineering data justify the inclusion of the proposed tract within the KPA. Under the terms of the applicable regulations governing formation and operation of oil and gas units (11 AAC 83.301 - 11 AAC 83.395) and the terms and conditions under which these lands were leased from the state, the following lands are to be included in the KPA:

T11N, R8E, UM, Sec. 9: SE/4
(ADL 25568 (KRU Tract 45)).

3. The KPA expansion provides for the equitable division of costs and an equitable allocation of produced hydrocarbons, and sets forth a development plan designed to maximize physical and economic recovery from the reservoirs within the expanded and approved participating areas. The allocations of production and costs for the tracts within the KPA (revised Exhibit C), Attachment 3 to this Findings and Decision, are approved.
4. The production of KPA hydrocarbon liquids through the existing production and processing facilities within the KRU reduces the environmental impact of the additional production. Using existing facilities will avoid unnecessary duplication of development efforts on and beneath the surface.
5. The KRU Owners plan diligent exploration and delineation of the reservoirs underlying the KRU under approved plans of development and operation.
6. Approval of the expansion of the KPA, and the revised Exhibit C to the KRU Agreement (Attachment 3 to this Findings and Decision), are effective retroactive to June 1, 1998.

For these reasons and subject to the conditions and limitations noted, I hereby approve the Seventh Revision of the Kuparuk Participating Area within the Kuparuk River Unit.

For/ 
Kenneth A. Boyd, Director
Division of Oil and Gas

11/22/99
Date

For: John Shively, Commissioner
Alaska Department of Natural Resources

Attachments: Attachment 1: Seventh KPA Revision Tracts
Attachment 2: KRU proposed 7th KPA expansion map
Attachment 3: Revised Exhibit C to the KRU Agreement (KPA Tract Allocation Schedule)

KRU.7thKPA.Rev.doc

**7TH KPA Expansion Acreage
Legal Description**

<u>Tract</u>	<u>ADL No.</u>	<u>Description</u>	<u>Owners</u>	<u>WI</u>
45	25568	SE ¼ of Section 9 T11N, R8E, UM	ARCO BP UNOCAL MOBIL CHEVRON	55.293767% 39.282233% 04.95060% 00.364800% 00.108600%

Kuparuk River Unit Proposed 7th KPA Expansion

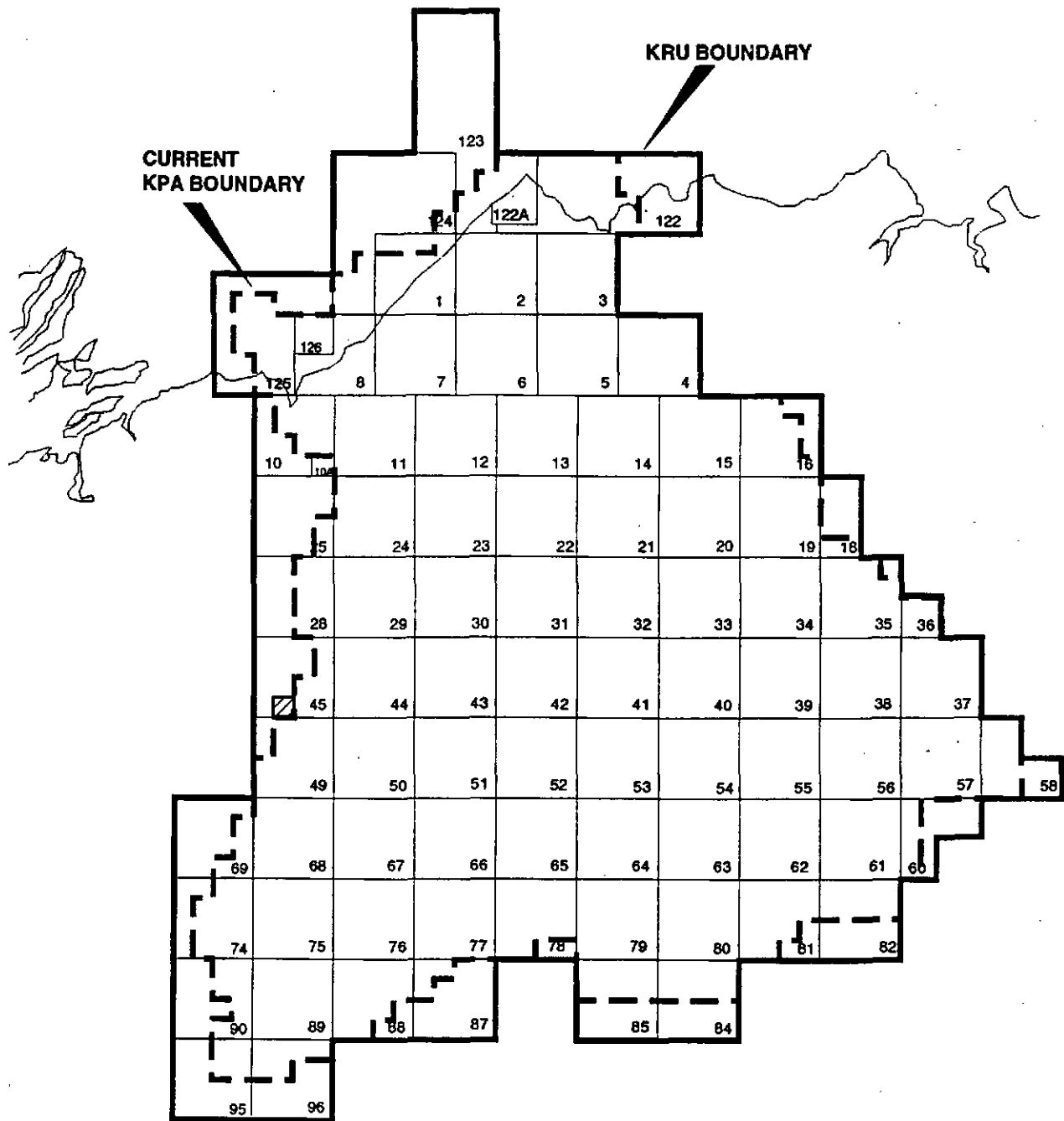


EXHIBIT C

Tract No.	Legal Description	ADL No.	Tract Participation	Cost I Participation	Cost II Participation
1	T13N-R8E-UM Sec. 13: NE 1/4, S 1/2 Sec. 14: S 1/2 Sec. 23: All Sec. 24: All	25522	0.470776	0.972216	0.975200
2	T13N-R9E-UM Sec. 17: All Sec. 18: All Sec. 19: All Sec. 20: All	25512	1.476456	1.674521	1.679660
3	T13N-R9E-UM Sec. 15: All Sec. 16: All Sec. 21: All Sec. 22: All	25513	1.526604	1.699329	1.704544
4	T13N-R9E-UM Sec. 25: All Sec. 26: All Sec. 35: All Sec. 36: All	25519	1.193974	1.557099	1.561877
5	T13N-R9E-UM Sec. 27: All Sec. 28: All Sec. 33: All Sec. 34: All	25520	1.463555	1.677637	1.682786
6	T13N-R9E-UM Sec. 29: All Sec. 30: All Sec. 31: All Sec. 32: All	25521	1.337885	1.631720	1.636728
7	T13N-R8E-UM Sec. 25: All Sec. 26: All Sec. 35: All Sec. 36: All	25523	1.284674	1.615823	1.620781
8	T13N-R8E-UM Sec. 27: All Sec. 33: All Sec. 34: All	25524	0.607308	1.082264	1.085586

EXHIBIT C

Tract No.	Legal Description	ADL No.	Tract Participation	Cost I Participation	Cost II Participation
10	T12N-R8E-UM Sec. 3: All Sec. 4: E 1/2 Sec. 10: N 1/2	25532	0.367720	0.441706	0.441706
11	T12N-R8E-UM Sec. 1: All Sec. 2: All Sec. 11: All Sec. 12: All	25531	1.386069	1.283697	1.283697
12	T12N-R9E-UM Sec. 5: All Sec. 6: All Sec. 7: All Sec. 8: All	25631	1.203256	1.531288	1.535987
13	T12N-R9E-UM Sec. 3: All Sec. 4: All Sec. 9: All Sec. 10: All	25630	1.651790	1.742472	1.747820
14	T12N-R9E-UM Sec. 1: All Sec. 2: All Sec. 11: All Sec. 12: All	25629	1.493288	1.687698	1.692877
15	T12N-R10E-UM Sec. 5: All Sec. 6: All Sec. 7: All Sec. 8: All	25628	0.810681	1.395655	1.399938
16	T12N-R10E-UM Sec. 3: SW 1/4 Sec. 4: All Sec. 9: All Sec. 10: NW 1/4, S 1/2	25627	0.118633	0.630402	0.632336
18	T12N-R10E-UM Sec. 23: S 1/2	25637	0.000009	0.111853	0.112196
19	T12N-R10E-UM Sec. 15: All Sec. 16: All	25636	0.365131	1.290652	1.294613

EXHIBIT C

Tract No.	Legal Description	ADL No.	Tract Participation	Cost I Participation	Cost II Participation
	Sec. 21: All Sec. 22: All				
20	T12N-R10E-UM Sec. 17: All Sec. 18: All Sec. 19: All Sec. 20: All	25635	1.688929	1.704100	1.709330
21	T12N-R9E-UM Sec. 13: All Sec. 14: All Sec. 23: All Sec. 24: All	25634	1.719121	1.765844	1.771263
22	T12N-R9E-UM Sec. 15: All Sec. 16: All Sec. 21: All Sec. 22: All	25633	1.919050	1.834936	1.840567
23	T12N-R9E-UM Sec. 17: All Sec. 18: All Sec. 19: All Sec. 20: All	25632	2.764792	2.075834	2.082204
24	T12N-R8E-UM Sec. 13: All Sec. 14: All Sec. 23: All Sec. 24: All	25547	1.132757	1.202064	1.202064
25	T12N-R8E-UM Sec. 22: E 1/2	25546	0.009602	0.104304	0.104304
28	T12N-R8E-UM Sec. 27: All Sec. 34: All	25549	0.021639	0.400078	0.400078
29	T12N-R8E-UM Sec. 25: All Sec. 26: All Sec. 35: All Sec. 36: All	25548	0.676205	1.054694	1.054694
30	T12N-R9E-UM	25643	3.040031	2.175827	2.182505

EXHIBIT C

Tract No.	Legal Description	ADL No.	Tract Participation	Cost I Participation	Cost II Participation
	Sec. 29: All Sec. 30: All Sec. 31: All Sec. 32: All				
31	T12N-R9E-UM Sec. 27: All Sec. 28: all Sec. 33: All Sec. 34: All	25642	3.581172	2.409242	2.416635
32	T12N-R9E-UM Sec. 25: All Sec. 26: All Sec. 35: All Sec. 36: All	25641	3.131753	2.253950	2.260867
33	T12N-R10E-UM Sec. 29: All Sec. 30: All Sec. 31: All Sec. 32: All	25640	2.962487	2.149045	2.155640
34	T12N-R10E-UM Sec. 27: All Sec. 28: All Sec. 33: All Sec. 34: All	25639	1.143568	1.292794	1.300001
35	T12N-R10E-UM Sec. 25: NW 1/4, S 1/2 Sec. 26: All Sec. 35: All Sec. 36: All	25638	0.292207	0.869753	0.874601
36	T12N-R11E-UM Sec. 31: All	47449	0.217200	0.325800	0.271500
37	T11N-R11E-UM Sec. 5: All Sec. 6: All Sec. 7: All Sec. 8: All	28242	0.122672	0.184007	0.153340
38	T11N-R10E-UM Sec. 1: All Sec. 2: All	25649	1.119856	1.284389	1.291549

EXHIBIT C

Tract No.	Legal Description	ADL No.	Tract Participation	Cost I Participation	Cost II Participation
	Sec. 11: All Sec. 12: All				
39	T11N-R10E-UM Sec. 3: All Sec. 4: All Sec. 9: All Sec. 10: All	25648	1.526809	1.428805	1.436770
40	T11N-R10E-UM Sec. 5: All Sec. 6: All Sec. 7: All Sec. 8: All	25647	2.456238	1.727212	1.736841
41	T11N-R9E-UM Sec. 1: All Sec. 2: All Sec. 11: All Sec. 12: All	25646	3.844910	2.500372	2.508046
42	T11N-R9E-UM Sec. 3: All Sec. 4: All Sec. 9: All Sec. 10: All	25645	4.367190	2.680842	2.689069
43	T11N-R9E-UM Sec. 5: All Sec. 6: All Sec. 7: All Sec. 8: All	25644	2.878339	2.124850	2.131371
44	T11N-R8E-UM Sec. 1: All Sec. 2: All Sec. 11: All Sec. 12: All	25569	1.298430	1.255490	1.255490
45	T11N-R8E-UM Sec. 3: E 1/2 Sec. 9: SE 1/4 Sec. 10: All	25568	0.602381	0.560466	0.560466
49	T11N-R8E-UM Sec. 15: All Sec. 16: E 1/2	25571	1.091847	1.077285	1.077285

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Tract No.	Legal Description	ADL No.	Tract Participation	Cost I Participation	Cost II Participation
	Sec. 21: All Sec. 22: All				
50	T11N-R8E-UM Sec. 13: All Sec. 14: All Sec. 23: All Sec. 24: All	25570	2.327747	1.587654	1.587654
51	T11N-R9E-UM Sec. 17: All Sec. 18: All Sec. 19: All Sec. 20: All	25655	2.931542	2.148121	2.154713
52	T11N-R9E-UM Sec. 15: All Sec. 16: All Sec. 21: All Sec. 22: All	25654	2.242395	1.946658	1.952632
53	T11N-R9E-UM Sec. 13: All Sec. 14: All Sec. 23: All Sec. 24: All	25653	2.829789	2.149620	2.156217
54	T11N-R10E-UM Sec. 17: All Sec. 18: All Sec. 19: All Sec. 20: All	25652	2.853282	2.121089	2.127598
55	T11N-R10E-UM Sec. 15: All Sec. 16: All Sec. 21: All Sec. 22: All	25651	2.391370	1.735627	1.745303
56	T11N-R10E-UM Sec. 13: All Sec. 14: All Sec. 23: All Sec. 24: All	25650	1.392035	1.380982	1.388680
57	T11N-R11E-UM Sec. 17: All	28243	0.512400	0.768600	0.640500

EXHIBIT C

Tract No.	Legal Description	ADL No.	Tract Participation	Cost I Participation	Cost II Participation
	Sec. 18: All Sec. 19: All Sec. 20: All				
58	T11N-R11E-UM Sec. 16: All Sec. 21: All	28244	0.031632	0.047448	0.039540
60	T11N-R11E-UM Sec. 30: W 1/2 Sec. 31: W 1/2	28248	0.138617	0.266412	0.267898
61	T11N-R10E-UM Sec. 25: All Sec. 26: All Sec. 35: All Sec. 36: All	25661	0.931868	1.217669	1.224457
62	T11N-R10E-UM Sec. 27: All Sec. 28: All Sec. 33: All Sec. 34: All	25660	1.651062	1.472898	1.481109
63	T11N-R10E-UM Sec. 29: All Sec. 30: All Sec. 31: All Sec. 32: All	25659	2.051105	1.848797	1.854471
64	T11N-R9E-UM Sec. 25: All Sec. 26: All Sec. 35: All Sec. 36: All	25658	1.718476	1.765621	1.771040
65	T11N-R9E-UM Sec. 27: All Sec. 28: All Sec. 33: All Sec. 34: All	25657	1.976913	1.854917	1.860609
66	T11N-R9E-UM Sec. 29: All Sec. 30: All Sec. 31: All Sec. 32: All	25656	1.770338	1.751776	1.757151

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Tract No.	Legal Description	ADL No.	Tract Participation	Cost I Participation	Cost II Participation
67	T11N-R8E-UM Sec. 25: All Sec. 26: All Sec. 35: All Sec. 36: All	25587	1.412952	1.292443	1.292443
68	T11N-R8E-UM Sec. 27: All Sec. 28: All Sec. 33: All Sec. 34: All	25586	1.199917	1.223697	1.223697
69	T11N-R8E-UM Sec. 29: SE 1/4 Sec. 32: NE 1/4, S 1/2	25585	0.127373	0.245730	0.245730
74	T10N-R8E-UM Sec. 5: All Sec. 6: SE 1/4 Sec. 7: E 1/2 Sec. 8: All	25590	0.298996	0.600960	0.600960
75	T10N-R8E-UM Sec. 3: All Sec. 4: All Sec. 9: All Sec. 10: All	25589	0.902884	1.127851	1.127851
76	T10N-R8E-UM Sec. 1: All Sec. 2: All Sec. 11: All Sec. 12: All	25588	1.085673	1.186838	1.186838
77	T10N-R9E-UM Sec. 5: All Sec. 6: All Sec. 7: All Sec. 8: All	25667	1.102862	1.526038	1.530721
78	T10N-R9E-UM Sec. 3: All Sec. 4: All Sec. 9: All Sec. 10: N 1/2	25666	0.653721	1.252949	1.256794

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Tract No.	Legal Description	ADL No.	Tract Participation	Cost I Participation	Cost II Participation
79	T10N-R9E-UM Sec. 1: All Sec. 2: All Sec. 11: All Sec. 12: All	25665	0.858626	1.468525	1.473032
80	T10N-R10E-UM Sec. 5: All Sec. 6: All Sec. 7: All Sec. 8: All	25664	1.127633	1.266807	1.273870
81	T10N-R10E-UM Sec. 3: All Sec. 4: All Sec. 9: All Sec. 10: NW 1/4	25663	0.689456	0.968801	0.974201
82	T10N-R10E-UM Sec. 1: All Sec. 2: All	25662	0.034135	0.051202	0.042668
84	T10N-R10E-UM Sec. 17: All Sec. 18: All	25671	0.142498	0.213748	0.178123
85	T10N-R9E-UM Sec. 13: All Sec. 14: All	25670	0.103663	0.155494	0.129579
87	T10N-R9E-UM Sec. 18: N 1/2. SW 1/4	25668	0.184224	0.279059	0.279915
88	T10N-R8E-UM Sec. 13: All Sec. 14: All Sec. 23: All Sec. 24: NW 1/4	25605	0.332575	0.787100	0.787100
89	T10N-R8E-UM Sec. 15: All Sec. 16: All Sec. 21: All Sec. 22: All	25604	0.321650	0.913525	0.913525
90	T10N-R8E-UM Sec. 17: All	25603	0.059126	0.377826	0.377826

EXHIBIT C

Tract No.	Legal Description	ADL No.	Tract Participation	Cost I Participation	Cost II Participation
Sec. 20: NE 1/4, S 1/2					
95	T10N-R8E-UM Sec. 29: All	25608	0.088482	0.131192	0.131192
96	T10N-R8E-UM Sec. 27: N 1/2 Sec. 28: All	25607	0.107775	0.192256	0.192256
122	T13N-R9E-UM Sec. 3: All Sec. 4: All Sec. 8: All, excluding T&S lands and USS 4275 Sec. 9: All Sec. 10: All Sec. 11: W 1/2	355023	0.527384	0.755078	0.759287
122A	T13N-R9E-UM USS 4275 Include Tract C, ATS 1259 Exclude Tract B, ATS 1259 Exclude Tract A, ATS 1289	373301	0.247918	0.422047	0.423342
123	T13N-R9E-UM Sec. 5: All, excluding USS 4275 Sec. 6: SE 1/4 Sec. 7: All, excluding USS 4275 Sec. 8: T&S lands	355024	0.072557	0.300585	0.302261
124	T13N-R8E-UM Sec. 12: SE 1/4 Sec. 15: SE 1/4	355030	0.000732	0.010504	0.010563
125	T13N-R8E-UM Sec. 19: SE 1/4 Sec. 20: SW 1/4 Sec. 22: All Sec. 29: All Sec. 30: E 1/2 Sec. 32: All	355032	0.175956	0.593593	0.596902
126	T13N-R8E-UM Sec. 28: All	365501	0.023669	0.124249	0.124942