AGREEMENT FOR IMPLEMENTATION OF AN OPTIMIZED WATERFLOOD PROGRAM FOR THE WEST WILMINGTON OIL FIELD

32774

THIS AGREEMENT FOR IMPLEMENTATION OF AN OPTIMIZED WATERFLOOD PROGRAM FOR THE WEST WILMINGTON OIL FIELD – State of California (this "Agreement") is made and entered into as of this 15th day of 1, 2012 (the "Effective Date"), by and among the State of California (the "State"), by and through the State Lands Commission (the "SLC"), City of Long Beach, a municipal corporation ("City"), and Tidelands Oil Production Company, a Texas partnership ("Tidelands" or "Oxy"). The State, by and through the SLC, the City and Oxy may be individually referred to as the "Party" or collectively referred to as the "Parties."

RECITALS

- A. Oxy believes that, if given the opportunity, it can design and, in conjunction with the City, implement an optimized waterflood program, or other enhanced oil recovery techniques (the "Program"), that would result in the production of a substantial volume of oil from the West Wilmington oil field over and above the volume of oil that would be produced from continuation of the development program employed historically. If realized, the increased production would benefit all of the Parties to this Agreement.
- B. Implementation of the Program will involve substantial additional investment. Under the existing contractor's agreement for the State's operations, the State would bear more than 95% of the additional costs out for revenues otherwise payable to the State.
- C. Accordingly, in order to allow Oxy to design and, in conjunction with the City, to implement an optimized waterflood program for the West Wilmington oil field, it is necessary for Oxy to bear these additional investment costs, and in connection therewith Oxy will agree to make a minimum commitment of \$50,000,000 to design and implement the Program. The State, in turn, will grant to Oxy 49% of the net profits from the incremental production that may result from the Program, reserving to itself the remaining 51% of the net profits from that production.
- D. To accomplish these objectives, it is also necessary and appropriate that this Agreement continue for the economic life of the West Wilmington oil field and that the existing contractor's agreement for the Long Beach Harbor Tidelands Parcel and Parcel "A" be extended through the economic life of the West Wilmington oil field.
- E. The California Legislature has enacted enabling legislation to authorize this Agreement on behalf of the State, to extend the terms of the existing

contractor's agreement and to give Oxy and the City the powers to accomplish the objectives of the optimized waterflood program.

NOW, THEREFORE, in consideration of the mutual promises set forth herein, the Parties agree as follows:

ARTICLE 1 DEFINITIONS

1.01 <u>Terms Defined in the West Wilmington Agreements</u>. Except as otherwise provided in this Agreement, or unless the specific context in which any such term is used in this Agreement indicates a contrary intention of the Parties, all terms defined in the West Wilmington Agreements shall have the same meanings when used in this Agreement.

- (a) <u>W. Wilmington Agreements</u>. "W. Wilmington Agreements" shall mean the Harbor Contractor Agreement, Field Contractor Agreement, Tidelands Parcel and Parcel A Contract, Unit Agreements, and Unit Operating Agreements.
- (b) <u>Harbor Contractor Agreement</u>. "Harbor Contractor Agreement" shall mean the Amended and Restated Field Contractor Agreement (Harbor Department Segment II), effective as of September 1, 1994, between the City and Tidelands relating to the operation of Fault Block I Non Unit, Ford Lease Non Unit, other non Unitized Wells, Unit Segment II of Fault Block II Unit, Fault Block III Unit, Fault Block IV Unit and Fault Block V Ranger Zone Unit and all amendments thereto.
- (c) Field Contractor Agreement. "Field Contractor Agreement" shall mean the Amended and Restated Field Contractor Agreement effective as of July 1, 1991 between the City and Tidelands relating to Unit Segment II of Fault Block IV and Fault Block V Ranger Zone and all amendments thereto.
- (d) <u>Unit Agreements</u>. "Unit Agreements" shall mean the Unit Agreement Fault Block II, Wilmington Oil Field, dated December 15, 1959; Unit Agreement Fault Block III, Wilmington Oil Field, dated December 15, 1959; Unit Agreement, Fault Block IV Wilmington Oil Field, dated August 1, 1961; and Unit Agreement, Fault Block V Ranger Zone Unit, Wilmington Oil Field, dated August 1, 1963.
- (e) <u>Unit Operating Agreements</u>. "Unit Operating Agreements" shall mean the Unit Operating Agreement Fault Block II, Wilmington Oil Field, dated December 15, 1959; Unit Operating Agreement Fault Block III, Wilmington Field, dated December 15, 1959; Unit Operating Agreement Fault Block IV, Wilmington Field, dated August 1, 1961; and Unit

- Operating Agreement Fault Block V Ranger Zone, Wilmington Field, dated August 1, 1963.
- (f) <u>Tidelands Parcel and Parcel A Contract</u>. "Tidelands Parcel and Parcel A Contract" shall mean the Long Beach Harbor Tidelands Parcel and Parcel "A" Oil Contract, dated January 18, 1989, between the City and Neste Holding (U.S.A.), Inc., Chanse Energy Corporation and Tidelands and all amendments thereto.
- (g) <u>Nineteenth Accessory Agreement</u>. "Nineteenth Accessory Agreement" shall mean the Nineteenth Accessory Agreement (Long Beach Harbor Department Tidelands Parcel), dated July 2, 1979, between the Board of Harbor Commissioners of the City of Long Beach, for and on behalf of the City of Long Beach, and Long Beach Oil Development Company.

1.02 Other Defined Terms.

- (a) <u>Actual Revenues</u>. "Actual Revenues" for any period shall mean the sum of all West Wilmington oil field oil revenues for such period that are allocated to the City's tidelands working interest under the applicable W. Wilmington Agreements. The oil revenues shall be calculated by using the monthly arithmetic average of the prices posted as set forth in Exhibit "A".
- (b) <u>Actual Costs</u>. "Actual Costs" for any period shall mean the sum of all West Wilmington oil field costs incurred for such period that are allocated to the City's tidelands working interest under the applicable W. Wilmington Agreements, excluding the costs of all Accessory Agreement Activities. Accessory Agreement Activities will be accounted for separately as set forth in the Nineteenth Accessory Agreement.
- (c) <u>Actual Net Profits</u>. "Actual Net Profits" for any period shall mean Actual Revenues less Actual Costs for such period.
- (d) <u>Actual Oil Volume</u>. "Actual Oil Volume" for any period shall mean the volume of oil produced during such period that is allocated to the City's tidelands working interest under the applicable W. Wilmington Agreements.
- (e) <u>Base Revenues.</u> "Base Revenues" for any period shall mean, except as set forth in Section 1.02(n), the lesser of (i) Actual Revenues for such period and (ii) Actual Revenues for such period multiplied by the quotient of Base Oil Volume for such period divided by Actual Oil Volume for such period.
- (f) <u>State's Base Revenues</u>. "State's Base Revenues" for any period shall mean, except as set forth in Section 1.02 (n), the Base Revenues for such period multiplied by the State's Net Profits Percentage Interest.

- (g) <u>Base Oil Volume</u>. "Base Oil Volume" for any period shall mean the oil volume described in Exhibit "B" and as adjusted pursuant to Section 2.12 for such period, except as set forth in Section 1.02(n).
- (h) <u>Base Ordinary Costs</u>. "Base Ordinary Costs" are defined in Exhibit "C", except as set forth in Section 1.02(n).
- (i) <u>Incremental Ordinary Costs</u>. "Incremental Ordinary Costs" for any period shall mean Actual Ordinary Costs minus the Base Ordinary Costs, except as set forth in Section 1.02(n).
- (j) <u>Base Costs</u>. "Base Costs" for any period shall mean, except as set forth in Section 1.02(n), the sum of (i) Base Ordinary Costs for such period, and (ii) Extraordinary Costs for such period, provided the Base Oil Volume is less than the Actual Oil Volume. In the event that the Base Oil Volume is greater than or equal to the Actual Oil Volume, the "Base Costs" for such period shall mean, except as set forth in Section 1.02(n), the sum of (i) Actual Ordinary Costs for such period.
- (k) <u>State's Base Costs</u>. "State's Base Costs" for any period shall mean, except as set forth in Section 1.02 (n), the Base Costs for such period multiplied by the State's Net Profits Percentage Interest.
- (l) Extraordinary Costs. "Extraordinary Costs" for any period shall mean those costs allocated to the City's tidelands working interest under the applicable W. Wilmington Agreements that relate to extraordinary events that have a material financial impact on operations, including for illustrative purposes only, but not limited to, litigation and third party waste disposal sites, that occurred wholly before the Effective Date of this Agreement.
- (m) <u>Actual Ordinary Costs</u>. "Actual Ordinary Costs" for any period shall mean Actual Costs for such period minus the sum of (i) Abandonment Costs, (ii) Development Costs, and (iii) Extraordinary Costs.
- (n) State's Base Net Profits. "State's Base Net Profits" for any month shall mean the difference between State's Base Revenues and State's Base Costs for that month; provided however, that (i) for any month in which State's Base Costs exceed State's Base Revenues, State's Base Net Profits shall be zero and the amount by which State's Base Costs exceeds State's Base Revenues shall be added to Incremental Costs for such month, and (ii) if any future accounting reflects that for any period there exists a positive amount of State's Base Net Profits, State's Base Net Profits for such period shall be reduced (but not below zero) to the extent of the cumulative amount added to Incremental Costs pursuant to (i) above, and Incremental Costs for such month shall be reduced (but not below zero) by an equal amount. If at any

time after the Effective Date, the aggregate State's Base Costs for any period of 24 consecutive months commencing on or after the Effective Date are equal to or exceed the aggregate State's Base Revenues for such period, at such time ("Base Cessation Date"): (i) the State's Base Net Profits shall be set equal to zero through the duration of Article 2, (ii) there shall be no further obligation to calculate the State's Base Net Profits, State's Base Costs, Base Costs, State's Base Revenues, Base Revenues, Incremental Revenues, Base Ordinary Costs, Base Oil Volume, Incremental Oil Volume and Incremental Ordinary Costs and (iii) for each period through the duration of Article 2: (A) the Incremental Net Profits shall equal the sum of Actual Net Profits, Extraordinary Costs related to events that occurred wholly before the Effective Date and Abandonment Costs, (B) Incremental Costs shall equal Actual Costs minus Extraordinary Costs related to events that occurred wholly before the Effective Date and minus Abandonment Costs, and (C) Incremental Revenues shall be equal to Actual Revenues.

- (o) <u>State's Net Profits Percentage Interest</u>. "State's Net Profits Percentage Interest" means the percentage of net profits payable to the City under the Tidelands Parcel and Parcel A Contract, which is 95%.
- (p) <u>Incremental Revenues</u>. "Incremental Revenues" for any period shall mean Actual Revenues for such period less Base Revenues for such period, except as set fourth in Section 1.02(n).
- (q) <u>Incremental Costs</u>. "Incremental Costs" for any period shall mean, except as set forth in Section 1.02(n), Actual Costs for such period less the sum of (i) Base Costs for such period and (ii) Abandonment Costs for such period.
- (r) Incremental Net Profits. "Incremental Net Profits" for any month shall mean, except as set forth in Section 1.02(n), the difference between (i) Incremental Revenues for that month and (ii) Incremental Costs for that month; provided however, that for any month in which Incremental Costs exceed Incremental Revenues, Incremental Net Profits shall be zero and the amount by which Incremental Costs exceeds Incremental Revenues shall be added to a "Negative Incremental Net Profits Balance." For any month that there exists a Negative Incremental Net Profits Balance, Incremental Net Profits, if any, as calculated in the preceding sentence shall be reduced (but not below zero) to the extent of the existing Negative Incremental Net Profits Balance, which Balance shall be reduced (but not below zero) by an equal amount.
- (s) <u>Incremental Oil Volume</u>. "Incremental Oil Volume" for any period shall mean, except as provided in Section 1.02 (n), the Actual Oil Volume for such period less the Base Oil Volume for such period, except as set forth in Section 1.02(n).
- (t) <u>Development Costs.</u> "Development Costs" for any period shall mean the City's tidelands working interest share under the applicable W. Wilmington

Agreements of the aggregate amount of all the costs related to (1) engineering studies, data acquisition and analysis intended to increase production, (2) new wells drilled, (3) existing wells redrilled, (4) investment wellwork jobs involving recompletions, fracture stimulation, profile control, producer conversions to injectors, and other jobs intended to increase oil recovery, but not considered to be repair or maintenance, and (5) such other items as shall be necessary to increase production and allocated to the City for such period under the applicable W. Wilmington Agreements. The Development Costs shall not include well replacement or redrill costs that are Accessory Agreement Activities.

- (u) <u>Calendar Year</u>. "Calendar Year" means a calendar year commencing on January 1 and ending on the following December 31.
- (v) <u>Abandonment Costs</u>. "Abandonment Costs" for any period shall mean the City's tidelands working interest share under the applicable W. Wilmington Agreements of all costs related to the abandonment of wells, removal of associated facilities, and remediation of soil and groundwater impacted by the wells, facilities or other operations in conformance with all appropriate rules and regulations; provided however, that any costs shall be excluded to the extent that they relate to the abandonment of a well required by the City that is subsequently replaced by the City as part of an Accessory Agreement Activity.
- (w) <u>State Abandonment Obligation</u>. "State Abandonment Obligation" for any period shall mean the State's allocated share of Abandonment Costs as set forth in 2.12 (b).
- (x) <u>Accessory Agreement Activity</u>. "Accessory Agreement Activity" shall mean any activities requested by the City pursuant to the Nineteenth Accessory Agreement.
- (y) <u>Investment Trigger Date</u>. "Investment Trigger Date" shall mean the first day of the month following the first 6-month period commencing on or after the Effective Date during which the arithmetic average of the prices posted as set forth in Exhibit "A" exceeds \$65 per barrel.
- (z) <u>Base Cessation Date</u>. "Base Cessation Date" shall have the meaning set forth in Section 1.02(n).

ARTICLE 2 OPTIMIZED WATERFLOOD PROGRAM

2.01 <u>Agreement to Implement the Program</u>. The City, the State and Oxy agree to implement and to cause the implementation of the Program in accordance with good engineering practices. The scope of the Program shall include, but not be limited to,

operational initiatives to increase production and reduce costs. The Program will not include the drilling of a deep exploration well.

2.02 Services to be Provided By Oxy and Commitment of Oxy.

- (a) Oxy agrees to use its reasonable best efforts to increase production above the Base Oil Volume over the economic life of the West Wilmington oil field to the greatest extent feasible using the Program. Oxy's efforts shall be reflected in its design of the Program, its proposal from time to time of such modifications to the Program as it shall deem appropriate and its implementation, in conjunction with the City, of the Program as provided more fully below. Within 90 days of executing this Agreement, Oxy will initiate a comprehensive technical evaluation to identify potential development opportunities.
- (b) If the Investment Trigger Date occurs, Oxy also agrees that it will make a minimum Development Cost commitment of \$50,000,000 to design and implement the Program. Such cost commitment shall be met in full, with the intent that at least \$40,000,000 will be spent on wellwork, no later than 2 years after the Investment Trigger Date. Notwithstanding the foregoing, if the Investment Trigger Date does not occur within 5 years of the execution of this Agreement, the Parties agree to negotiate in good faith a reasonable extension and revision of the terms of this Agreement. The minimum Development Cost commitment shall include such costs that are incurred after the Effective Date including the comprehensive technical evaluation set forth in Section 2.02 (a). Nothing in this Agreement shall prevent Oxy from commencing development activities prior to the Investment Trigger Date.
- (c) Within 60 days after the end of each Calendar Year, Oxy shall deliver to the State and the City a report specifying the Development Costs incurred by or on behalf of Oxy under this Section 2.02 during the preceding Calendar Year. Such costs may include, without limitation, expenditures for engineering studies and work performed by or on behalf of Oxy by independent third party contractors or consultants as well as Development Costs incurred prior to the Investment Trigger Date, such as costs related to the comprehensive technical evaluation set forth in Section 2.02 (a). Development Costs that are incurred internally by Oxy or by one of its affiliated companies shall be accounted for on the basis of actual direct costs (including without limitation salaries, employee benefits and associated wage burdens such as social security and payroll taxes) and indirect costs chargeable under the applicable W. Wilmington Agreements as field supervision and administrative overhead. Development Costs performed by independent third party contractors or consultants shall be accounted for on the basis of Oxy's actual direct costs and indirect costs chargeable under the applicable W. Wilmington Agreements as field supervision and administrative overhead.
- (d) The Parties understand and agree that the Program shall include expenditures for engineering studies, data acquisition and analysis, drilling new wells and redrilling existing wells and such other items as described in Section 1.02(t). If Oxy does not complete initial development activities in the amount of \$50,000,000 or greater within 2 years of the Investment Trigger Date, then (i) the State may terminate this Article 2 with 90-day written notice; provided however, such termination shall not take effect if Oxy proposes a plan to cure the breach that is acceptable to the State, which acceptance shall

not be unreasonably withheld; or (ii) the Parties may agree to an extension of time in which Oxy may complete the initial development activities.

- (e) After Oxy has met the minimum Development Cost commitment, Oxy will continue in good faith to make Section 2.02 (b) expenditures and to propose and implement, in conjunction with the City, budgets including State Incremental Costs. Oxy shall submit budgets to the State and the City for review annually. Additionally, Oxy shall provide the State annually an overview of the previous year's performance, including a statement of expenditures and revenues.
- (f) Oxy shall be relieved of its commitments set forth in this Section if and to the extent that the expenditure of such funds has been prevented, in whole or in material part, by strikes, lockouts, fire, war, civil disturbances, acts of God, terrorist attack, federal, state, county or municipal laws, orders or regulations, inability to secure materials, accidents or other causes beyond the reasonable control of either or all of Oxy, the City and the State, in which case such commitments shall be deferred and extended for as long as such circumstances prevent the expenditures; or if the State determines that good cause exists for the failure to make such expenditures.
- (g) The State's sole remedy against Oxy for any failure by Oxy to meet commitments set forth in Section 2.01 and 2.02 is to terminate this Agreement by giving 90-day written notice, after giving Oxy a reasonable opportunity to cure the failure. Upon termination pursuant to this Section 2.02 (g), the State shall retain all of the benefits previously granted the State under this Agreement. Any such termination shall be effective upon the expiration of the 90-day written notice period. Any termination pursuant to Section 2.02 (g) shall not be subject to Section 2.14.
- 2.03 Implementation of the Program. Each Party agrees to do all things and to take all actions as shall be reasonably necessary, appropriate or convenient to formulate, adopt, modify and implement the Program in a timely manner. The Parties shall meet and consult with one another on an informal basis as shall be necessary, appropriate or convenient, at the request of the State, but no more than quarterly including the annual review, in connection with the implementation of the Program and the performance of this Article. At these meetings, Oxy shall provide, among other pertinent matters, updated presentations of the accounting and engineering aspects of the Program's implementation. Oxy shall pay a management fee, not to exceed \$200,000 per year, for the costs of the staff of the State Lands Commission incurred in connection with the implementation of the Program. The State shall invoice Oxy on a quarterly basis for these costs and shall provide to Oxy, at Oxy's request, documentation supporting the charges in the invoices. The management fee shall be charged as an operating expense to the non-unit and shall be treated for accounting purposes as an Actual Ordinary Cost and allocated accordingly. The State shall be permitted access to portions of Unit Facilities to observe sampling, testing, run tickets, gauging, measuring, meter calibrations and the taking of gravities by and in the presence of the City or Oxy or their representatives in order to ascertain the quantity, quality or gravity of Unitized Substances produced from the Unitized Formations.

- 2.04 <u>Standard of Care</u>. In any claim, action or proceeding by one or more of the Parties against any other Party or its directors, officers, employees, agents or independent contractors arising out of the design, formulation, proposal, adoption, amendment, supplementation, modification or implementation of the Program, such other Party or person shall be held to the same standard of care as set forth for the Unit Operator in Section 7.7 of the Unit Operating Agreements. This Agreement, however, shall not affect the standard of care or other liability standard set forth in any of the W. Wilmington Agreements with respect to any conduct to which such W. Wilmington Agreement applies.
- 2.05 <u>Profit Share</u>. The State shall grant to Oxy 49% of Incremental Net Profits that may result from the Program, reserving to the State the remaining 51% of the Incremental Net Profits. In addition, the State shall grant to the City 2% of Incremental Net Profits payable from the State's 51% share. Payment to the City of its share of the Incremental Net Profits shall be made after Oxy has been compensated for its share of the Incremental Net Profits.

Oxy shall pay the marketing bonus provided for in the second paragraph of Section 18.3 of the Tidelands Parcel and Parcel A Contract for Incremental Oil Volume, which shall not be used in computing the Incremental Net Profits, when a payment to the State of Incremental Net Profits becomes due.

- 2.06 Monthly Accountings. For so long as this Article 2 remains in effect, the City shall receive total revenue from the applicable W. Wilmington Agreements for any period as follows: the sum of the State's Base Net Profits, plus 51% of Incremental Net Profits, minus the State's Abandonment Cost Obligation, minus Extraordinary Costs related to those events occurring wholly before the Effective Date that are paid after the Base Cessation Date (such sum shall constitute the "State Allocation"). An accounting of the State's Base Net Profits, the State's 51% share of Incremental Net Profits, Development Costs, the State's Abandonment Cost Obligation, and Extraordinary Costs shall be made on a monthly basis commencing as of the Effective Date. The accounting shall be made by Oxy in addition to the other accountings it performs under the W. Wilmington Agreements. Each such monthly accounting shall be completed and reported to the State and the City on or before the last working day of the following month. Each accounting shall provide sufficient detail to permit the verification of the accounting by the State and the City.
- 2.07 <u>Payments from Oxy to City</u>. If any monthly accounting pursuant to Section 2.06 reflects a value greater than zero, Oxy shall pay the City, on or before the 35th day following the end of the month to which the accounting relates, an amount equal to this value.
- 2.08 <u>Payments from City to Oxy</u>. If any monthly accounting pursuant to Section 2.06 reflects a value less than zero, the City shall pay to Oxy, on behalf of the State, on or before the 35th day following the end of the month to which the accounting relates, an amount equal to this value. Nothing in this Agreement shall require the City to make any

payment to Oxy for which the City has no tidelands oil revenue from which to make the payment, except for payment of the State's Abandonment Cost Obligation.

2.09 <u>No Late Payment Charges</u>. There shall be no late penalties or interest assessed or payable in respect to any payments required under this Section 2.

2.10 Accounting Disputes.

- (a) In order to permit verification of the written reports pursuant to Section 2.02 (c) and the accountings made by Oxy pursuant to Section 2.06, authorized representatives of the State and the City may, with respect to any such report or accounting, as applicable, (i) inspect the supporting records of Oxy and (ii) obtain additional relevant information from Oxy within two years after such report has been delivered by Oxy. Notwithstanding the foregoing, (A) the two-year time limitation provided for in this Section shall be extended to five years with respect to any inspection or inquiry made for the purpose of determining where one or more accounting errors have been made on a repetitive and recurrent basis and (B) in the event that any Party formally disputes an accounting pursuant to Section 2.10 (c) and (d) or 2.11, the rights provided for in this Section shall continue with respect to such accounting for the duration of the dispute.
- (b) For purposes of inspections and inquiries under Section 2.10 (a), the authorized representatives of the State and the City may include accounting, legal and engineering personnel of or retained by the State or the City. The State or the City shall give Oxy a notice requesting access for such purpose. The Parties shall agree upon a reasonable time and place for the inspection to be made. It shall be presumed to be reasonable if Oxy offers to permit the inspection to be made at the location where such records are regularly maintained within 10 business days after it receives the inspection request. For purposes of this Section 2.10, the term "inspection" shall include the right to take notes of, make extracts from and make photocopies of the accounting records being inspected. Any accounting records made available for inspection shall be held in confidence and shall not be disclosed to any third party except in connection with any disputes under Section 2.10 (c) and (d) or 2.11. Oxy shall not dispose of any accounting records subject to inspection under this Section 2.10 until after the maximum five-year period for inspection has expired.
- (c) In the event that the State, the City or Oxy disputes any accounting made under this Section 2, it shall give written notice to the other Party, specifying with particularity the errors it alleges in such accounting. Such notice must be given within two years after the accounting was delivered by Oxy; provided however, that the foregoing two-year time limitation shall be extended to five years with respect to any dispute alleging that one or more accounting errors have been made on a repetitive and recurrent basis. Promptly after such notice has been given, the involved Parties shall in good faith attempt to resolve the dispute on a fair and equitable basis.
- (d) If the Parties are not able to resolve the dispute within 60 days after the initial written notice has been given under Section 2.10 (c), the dispute shall be submitted to binding arbitration pursuant to Section 2.11.

- 2.11 <u>Dispute Resolution</u>. Disputes arising under this Article 2 shall be resolved by a general reference conducted in Los Angeles County, California, by a retired judge from the panel of the Judicial Arbitration & Mediation Services, Inc. ("JAMS"), appointed pursuant to the provisions of California Code of Civil Procedure Sections 638 et seq. The Parties intend this general reference agreement to be specifically enforceable. If the Parties cannot agree upon a member of the JAMS panel, one shall be appointed by the Presiding Judge of Los Angeles County Superior Court.
- 2.12 (a) Abandonment Scope. This Agreement shall not in any way affect the responsibility for abandoning any West Wilmington wells or facilities, which responsibility shall remain with the State as set forth in the applicable W. Wilmington Agreements and under existing law. Notwithstanding anything herein to the contrary, nothing in this Agreement shall change the State's obligation under the applicable W. Wilmington Agreements to pay for the abandonment of a well or facility, whether occurring before or after the Effective Date, if it is required by the Harbor Department.
- (b) <u>Allocation of State's Abandonment Costs.</u> This Agreement shall allocate Abandonment Costs between the State and Oxy as follows:
 - (i) The State shall bear all of the Abandonment Costs related to wells and facilities existing as of the Effective Date ("Existing Wells" and "Existing Facilities") and any facilities that exclusively replace Existing Facilities or that otherwise would have been built even if the Program had not been implemented ("Replacement Facilities"). The Existing Wells and Existing Facilities shall be identified on a written inventory to be provided by Oxy within 60 days of the Effective Date. For purposes of this Section, if an Existing Well is redrilled, it will no longer be considered an Existing Well after redrill operations have been completed. A redrilled well is any well that has had its original well path intentionally altered for development purposes by drilling from a point within the well casing to a point in the formation rock outside of the original well casing string(s).
 - (ii) The State shall bear 51%, and Oxy shall bear 49% of the State's Abandonment Costs related to any wells or facilities that are not considered Existing Wells, Existing Facilities or Replacement Facilities, as defined in Section 2.12(b)(i).
 - (iii) Abandonment Costs are neither Base Costs nor Incremental Costs. The allocations in subsections (i) and (ii) above are and shall be independent of Base Costs and Incremental Costs. Notwithstanding the foregoing, the accountings to be made under Sections 2.06, 2.07 and 2.08 shall be adjusted, as provided therein, to give effect to the allocation of Abandonment Costs.
- (c) <u>Accounting Adjustments for Accessory Agreement Activities Involving Well Abandonments.</u>
 - (i) If a well is abandoned, but not replaced, as a result of an Accessory Agreement Activity, and the well was drilled prior to the Effective Date and abandoned before the Base Cessation Date, the Base Activity Projection Table, attached as Exhibit "B," shall

be adjusted using the methodology described in Exhibit "B" to reflect the removal of the abandoned well.

- (ii) If a well is abandoned, but not replaced, as a result of an Accessory Agreement Activity, and the well was either drilled after the Effective Date or abandoned after the Base Cessation Date, the City shall pay to Oxy, on behalf of the State, 49% of the Net Present Value (NPV) of the State's working interest share of the abandoned well. The NPV shall be calculated based on the projected oil and gas profit that will be lost due to the abandonment of the well, using the net present value calculation methodology set forth in the applicable Unit Agreements and Exhibit B of the Memorandum of Understanding Between the City of Long Beach, Department of Oil Properties and the City of Long Beach, Harbor Department, dated Oct 1, 2004 or any amendments or successor agreements. The projected production decline used in the NPV calculation shall be the decline assumptions used for the State's Base Oil Volume projections as set forth in Exhibit "B".
- (iii) If an Accessory Agreement Activity involves a well abandonment where the well is replaced, the City Harbor Department shall bear all costs related to the well abandonment as well as replacing the well and associated facilities.
- 2.13 <u>Termination of the Program</u>. The obligations of the Parties under this Article 2 shall terminate upon the first to occur of the following:
 - (a) The written agreement of Oxy and the State to terminate such provisions.
 - (b) Upon 60 days prior written notice from Oxy to the State in the event that Oxy, in its sole discretion, determines that continuation of the Program is not in the economic interest of Oxy.
 - (c) Sixty days after the last day of any full Calendar Year after the Trigger Date for which there were no Incremental Costs but only if there are no Incremental Revenues for that Calendar Year and for the immediately preceding Calendar Year, upon written notice that the State elects to terminate delivered by the State to Oxy within such 60 day period.
 - (d) Termination by the State pursuant to Section 2.02(g).

2.14 Effect of Termination.

(a) The termination of this Article 2 shall not affect the rights and liabilities of the Parties to one another with respect to the performance of this Article 2 during the period prior to such termination, which rights and liabilities shall survive such termination. Any such termination shall have no effect on any provisions of this Agreement other than this Article 2 or on any provisions of any W. Wilmington Agreement.

(b) It shall be a condition of termination of this Article 2 by the State pursuant to Section 2.13 (c) only that the State shall pay to Oxy an amount equal to the Negative Incremental Net Profits Balance as of the effective date of the termination and after giving effect to the final accounting pursuant to Section 2.06. Any such payment shall be made within 35 days of the effective date of the termination, with an adjusted payment, if necessary, made by the appropriate Party within 30 days after the final accounting.

ARTICLE 3 EXTENSION OF TIDELANDS PARCEL AND PARCEL "A" CONTRACT

3.01 Extension of Tidelands Parcel and Parcel "A" Contract. The term of the Tidelands Parcel and Parcel "A" Contract shall be extended to the time when oil, gas or other hydrocarbons from the zones beneath the tide and submerged lands covered by this contract no longer can be produced in paying quantities. The extension of the Tidelands Parcel and Parcel A Oil Contract shall be evidenced by an amendment substantially in the form of Exhibit "D" attached (the "Eleventh Amendment"), with only such changes that are ministerial in nature or have been approved in writing by Oxy, the City and the State.

ARTICLE 4 ENABLING LEGISLATION

4.01 Enabling Legislation. The legislation attached hereto as Exhibit "E" (the "Enabling Legislation") adopted by the California Legislature and approved by the Governor of the State of California authorizes the State to enter into this Agreement. The Enabling Legislation shall be deemed to be a part of this Agreement and is incorporated by reference. The Parties agree not to challenge the validity of the Enabling Legislation at any time, which agreement shall survive any termination of this Agreement pursuant to any of subsections (a) through (d) of Section 2.13. In the event that the Enabling Legislation is finally determined by the courts to be void or unconstitutional in any material respect, which determination has an adverse effect on the rights or obligations of Oxy provided for or contemplated by this Agreement, Oxy shall have the right to terminate this Agreement by written notice given to the other Parties within 60 days after such final determination. Any such termination shall not affect the rights and liabilities of the Parties to one another with respect to this Agreement during the period prior to such termination or pursuant to this Section, which rights and liabilities shall survive such termination.

ARTICLE 5 REPRESENTATIONS AND WARRANTIES

5.01 <u>Representations and Warranties of the State</u>. The State represents and warrants to Oxy that:

- (a) It has the power and authority to enter into this Agreement and the Exhibits to be executed and delivered by it and to perform its obligations under this Agreement and the Exhibits.
- (b) It has taken all action and has secured the consents of all persons necessary to authorize the execution, delivery and performance of this Agreement and the Exhibits to be executed and delivered.
- (c) This Agreement has been duly executed and delivered by it and constitutes a valid and binding obligation of it, enforceable against it in accordance with its terms.
- (d) Each Exhibit to be executed and delivered by it, when so delivered, will have been duly executed and delivered by it and will constitute a valid and binding obligation of it, enforceable against it in accordance with its terms.
- 5.02 <u>Representations and Warranties of the City</u>. The City represents and warrants to Oxy that:
- (a) It has the power and authority to enter into this Agreement and the Exhibits to be executed by it and to perform its obligations under this Agreement and the Exhibits.
- (b) It has taken all action and has secured the consents of all persons necessary to authorize the execution, delivery and performance of this Agreement and the Exhibits to be executed and delivered by it.
- (c) This Agreement has been duly executed and delivered by it and constitutes a valid and binding obligation of it, enforceable against it in accordance with its terms.
- (d) Each Exhibit to be executed and delivered by it, when so delivered, will have been duly executed and delivered by it and will constitute a valid and binding obligation of it, enforceable against it in accordance with its terms.
- 5.03 <u>Representations and Warranties of Oxy</u>. Oxy represents and warrants to the State and the City that:
- (a) It has the corporate power and authority to enter into this Agreement and the Exhibits to be executed and delivered by it and to perform its obligations under this Agreement and the Exhibits.
- (b) It has taken all action and has secured the consents of all persons necessary to authorize the execution, delivery and performance of this Agreement and the Exhibits to be executed and delivered by it.
- (c) This Agreement has been duly executed and delivered by it and constitutes a valid and binding obligation of it, enforceable against it in accordance with its terms.
- (d) Each Exhibit to be executed and delivered by it, when so delivered, will have been duly executed and delivered by it and will constitute a valid and binding obligation of it, enforceable against it in accordance with its terms.

ARTICLE 6

MISCELLANEOUS PROVISIONS

- 6.01 Entire Agreement. This Agreement, the Exhibits and the other agreements, documents and instruments delivered or to be delivered pursuant to or contemplated by this Agreement, set forth the entire understanding of the Parties with respect to the subject matter of this Agreement, and may be modified only by a written instrument duly executed by each Party affected by any such modification. The Exhibits attached to this Agreement shall be deemed to be a part of this Agreement and are incorporated by this reference.
- No breach of any covenant, condition, 6.02 Waivers: Accord and Satisfaction. agreement, warranty or representation made in this Agreement or in any Exhibit or the other agreements, documents or instruments delivered pursuant to or contemplated by this Agreement, shall be deemed waived unless expressly waived in writing by the Party who might assert such breach. Any such waiver by or on behalf of Oxy shall be effective only if it is signed by an officer of Oxy. Any such waiver by or on behalf of the City shall be effective only if it is signed by the city manager or the acting city manager of the City. Any such waiver by or on behalf of the State shall be effective only if it is signed by the executive officer of the California State Lands Commission. Any such waiver may be made in advance or after the right waived has arisen or the breach or default waived has occurred. Any such waiver shall not be deemed to be a waiver of any other matter, whenever occurring and whether identical, similar or dissimilar to the matter waived. No receipt or acceptance by any Party of any payment of any amount made pursuant to the payment obligation set forth in this Agreement which is less than the amount due shall be deemed to be other than on account of the amount due before such receipt, acceptance or payment, and no endorsement or statement accompanying or in respect of any receipt, acceptance or payment shall be deemed an accord and satisfaction.
- 6.03 <u>Counterparts</u>. This Agreement may be executed in one or more counterparts, all of which shall be considered one and the same agreement and each of which shall be deemed to constitute an original.
- 6.04 <u>Governing Law</u>. This Agreement shall be governed by and construed in accordance with the laws of the State of California without giving effect to conflicts-of-laws rules and laws.
- 6.05 <u>Notices</u>. Any notice or other communication required or permitted to be given under this Agreement shall be in writing and shall be mailed by registered or certified mail, postage prepaid, return receipt requested, or delivered by commercial courier against receipt or in person, as follows:

If to the State:

Executive Officer
California State Lands Commission

100 Howe Avenue, Suite 100 South Sacramento, CA 95825-8202

With a copy to:
Chief, Mineral Resources Management
California State Lands Commission
200 Oceangate, 12th Floor
Long Beach, CA 90802-4331

If to the City:

City Manager 333 W. Ocean Blvd., 13th Floor Long Beach, CA 90802

With a copy to:
Director, Long Beach Gas and Oil Department
2400 E. Spring Street
Long Beach, CA 90806

If to Oxy:

General Manager Tidelands Oil Production Company 111 W. Ocean Blvd. #800 Long Beach, CA 90802

With a copy to: Managing Counsel Oxy Long Beach, Inc. 111 W. Ocean Blvd # 800 Long Beach, CA 90802

or to such other address as such Party shall have furnished in writing in accordance with the provisions of this Section. Any notice or other communication mailed by registered or certified mail shall be deemed given at the earlier of the time of its receipt by the addressee or seven days after the time of mailing. Any notice given in any other fashion shall be deemed to have been given when actually received by the addressee. Payments required to be made under Article 2 of this Agreement shall be made by wire transfer of immediately available funds to the account of the proper Party as such Party shall from time to time specify by written notice or by such other means as shall be agreed upon from time to time between the paying and receiving Parties.

6.06 <u>Successors and Assigns</u>. This Agreement shall be binding upon and inure to the benefit of the Parties and their respective successors, legal representatives and assigns. Oxy shall be permitted to assign (i) to an affiliated company any or all of its respective rights and obligations under this Agreement and/or (ii) to any one or more other persons

Oxy's rights to make or receive up to and including 45% of the remaining payments to Oxy called for in Article 2 of this Agreement; provided however, that any such assignment and assumption shall not relieve Oxy from liability with respect to any obligations or payments. Except as provided in the preceding sentence, Oxy shall not be permitted to assign pledge, hypothecate, encumber or otherwise transfer to any other person any of its respective obligations under or in respect of Article 2 of this Agreement without the prior written consent of the State. For purposes of this Section, the sale by Oxy of any of the stock of a wholly owned subsidiary to which it has made an assignment pursuant to this Section shall constitute an assignment to another person, requiring the prior written consent of the State.

- 6.07 <u>Headings</u>. The headings of the Sections are inserted for convenience of reference only and are not intended to be a part of, or to affect the meaning or interpretation of, this Agreement.
- 6.08 Severability; Waiver of Applicable Laws. If any one or more of the provisions of this Agreement shall be held to be invalid, illegal or unenforceable, the validity, legality or enforceability of the remaining provisions of this Agreement shall not be affected. To the extent permitted by applicable law, each Party waives any provision of law which renders any provision of this Agreement invalid, illegal or unenforceable in any respect.
- 6.09 <u>Construction</u>. The language in all parts of this Agreement shall in all cases be construed according to its fair meaning and not strictly for or against any of the Parties.
- 6.10 Remedies Cumulative. Except as otherwise specifically provided, the remedies provided in this Agreement are cumulative with one another and with any other remedies which any Party may have at law, in equity, under any agreements of any type or otherwise, and the exercise or failure to exercise any remedy shall not preclude the exercise of that remedy at another time or of any other remedy at any time.
- 6.11 <u>Equitable Remedies</u>. In addition to legal remedies to the extent allowed under this Agreement or by law, in recognition of the fact that remedies at law may not be sufficient, the Parties shall be entitled to equitable remedies, including without limitation specific performance and injunction.
- 6.12 <u>Time of the Essence</u>. Time is of the essence in the performance of this Agreement.
- 6.13 Attorneys' Fees and Costs. If any litigation, reference or other proceeding between the Parties is commenced in connection with or related to this Agreement, the losing party shall pay the costs and expenses of the prevailing party. Each Party shall bear its own attorneys' fees.
- 6.14 <u>Relationship of Parties</u>. Nothing set forth in this Agreement shall ever be construed to create an association, trust or partnership or impose a trust or partnership duty, obligation or liability on or with regard to any one or more of the Parties. Nothing herein grants, conveys, gives, alienates or vests in any Party for any purpose whatsoever any

title, interest or estate in or to any land whatsoever, or any title, interest or estate in or to any oil, gas and/or hydrocarbons and/or minerals.

6.15 <u>Further Assurances</u>. Each Party agrees promptly to execute and deliver such documents and to do such acts as are requested by another Party and are in the reasonable judgment of the requesting Party necessary or appropriate to effectuate the purposes of this Agreement.

IN WITNESS WHEREOF, the Parties have caused this Agreement to be duly executed, effective as of the day and year first written above.

Dated: JVNE 8, 2012

The State of California by the State Lands Commission

By: Curtis L. Fossum

Executive Officer

CITY OF LONG BEACH, a municipal corporation,

Assistant City Manager

City Manager

EXECUTED PURSUANT TO SECTION 301 OF THE CITY CHARTER.

DEPUTY CITY ACTORNEY

APPROVED AS TO FORM

19

TIDELANDS OIL PRODUCTION COMPANY, a Texas partnership, by its general partners,

Dated: +) we , 2012

OXY TIDELANDS, INC.

Зу: 📐

Todd Stevens Vice President

Dated: 7 June, 2012

OXY WILMINGTON, LLC

Todd Stevens

Vice President

Exhibit A Oil Revenue Calculation



301 East Ocean Boulevard, Suite 300 P.O. Box 1330 Long Beach, California 90801 Main: 562-436-9918 Fax: 562-495-1950

August 6, 2009

Curtis Henderson
Long Beach Gas and Oil Department
Oil Properties Bureau
211 East Ocean Boulevard
Suite 500
Long Beach, CA 90802

Dear Curtis:

RE: Ninth Amendment to the Long Beach Harbor Tidelands Parcel and Parcel "A" Oil Contract

This letter is to clarify the Section 18.3 being amended in the above-mentioned Amendment.

The wording is from Section 18.3 in the Eighth Amendment when Paramount Petroleum Corporation was part owner of Tidelands Oil Production Company. In January 2006, Paramount Petroleum Corporation sold their ownership to OXY.

Therefore, certain references contained in Section 18.3 would pertain to Paramount Petroleum instead of OXY.

However, Paramount Petroleum Corporation continues to have an annual election option to acquire all or part of the oil under the Contractor's Agreement and the Harbor Agreement. If Paramount Petroleum Corporation exercises this election, they will provide a list of purchases and other acquisitions as set out in Section 18.3.

Also, the use of the term "the Field" pertains to the Midway Sunset Oil Field.

Yours truly,

Karen L. Newitt

Supervisor of Oil and Gas Accounting

Loven L. Newitt

NINTH AMENDMENT TO THE LONG BEACH HARBOR TIDELANDS PARCEL AND PARCEL "A" OIL CONTRACT 20596

Effective March 1, 1989, the City of Long Beach entered into the Long Beach

Harbor Tidelands Parcel and Parcel "A" Oil Contract ("Tidelands Contract") with several entities that comprised the Contractor. As a result of several assignments, the current Contractor is Tidelands Oil Production Company, a general partnership, 75% of which is owned by OXY Tidelands, Inc. and 25% of which is owned by OXY Wilmington, LLC. OXY Tidelands' and OXY Wilmington's performance under the Tidelands Contract is guaranteed by Occidental Oil and Gas Holding Corporation. The Tidelands Contract has been amended eight times since its inception.

Section 18.3 of the Tidelands Contract provides the method for valuing for the purpose of computing net profits the crude oil that the Contractor is required to take and account for. The oil is valued currently by using the daily average of the prices posted in five California oil fields, the Wilmington, Huntington Beach, Long Beach, Inglewood and Midway Sunset oil fields, by companies either named or meeting specified qualifications. The number of price postings in the Wilmington, Huntington Beach, Long Beach and Inglewood oil fields has decreased significantly. More companies post in the Midway-Sunset oil field, indicating more competition in Midway Sunset than in the other fields. In addition, replacing the use of daily average posted prices with monthly average posted prices will provide more stability to the valuation by reducing short term price fluctuations.

Therefore, in order to provide for the use of the monthly average of the prices posted in the Midway Sunset oil field by the named companies or companies meeting specified

qualifications, the City and the Contractor agree to amend Section 18.3 of the Tidelands Contract to read:

"18.3. All oil shall be valued, accounted for and paid for at the arithmetic average of the prices posted in the Midway Sunset oil fields by Union 76, Chevron,

ExxonMobil Corporation, Shell Trading US and any other person, firm or corporation operating a refinery in California with a throughput capacity of at least thirty thousand (30,000) barrels per day, for oil of like gravity during the month the oil is run into the Contractor's tanks and/or pipelines. The value shall be computed to the closest tenth of each degree of API gravity and the closest tenth of a cent per barrel.

"If the Contractor or any person, firm or corporation comprising the Contractor sells, exchanges or otherwise disposes of any of the oil taken by it under this agreement to a third party at a price or other consideration that is more than the average of the prices posted in the Midway Sunset oil field by the posters named above, it shall add to its next monthly payment to the City fifty percent (50%) of the difference between this greater amount and the average of the prices posted in the Midway Sunset oil field by the posters named above for the oil so sold, exchanged or otherwise disposed of. This difference shall not be used in computing Net Profits.

"If the Contractor or any person, firm or corporation comprising the Contractor sells, exchanges or otherwise disposes of any of the oil taken by it under this agreement to any person, firm or corporation other than a person, firm or corporation comprising the Contractor, at a price or other consideration that is less than the average of the prices posted in the Midway Sunset oil field by the posters named above, it shall

deduct from its monthly payment to the City fifty percent (50%) of the difference between this lesser amount and the average of prices posted the Midway Sunset oil field by the posters named above, for the oil so sold, exchanged or otherwise disposed of. This difference shall not be used in computed Net Profits. In the event that a Net Profits payment is not due in the following month, these deductions may accumulate and be deducted when a net profits payment is due.

"Whenever there are not at least two (2) different posters among all the companies posting in the Midway Sunset oil field, the Contractor, the City and the Commission may renegotiate this subsection 18.3 to provide another method of valuating the oil in light of these changed circumstances.

"All agreements made by the Contractor or any person, firm or corporation comprising the Contractor for the sale, exchange or other disposition of the oil taken under this agreement shall be in good faith, arm's length agreements. Copies of all such agreements shall be furnished to the City when they are made. The agreements shall reflect the total understanding of the parties, shall show the entire consideration passing among the parties and their affiliates and shall be unrelated to any other agreements among the parties and their affiliates. The City or its authorized representatives shall be permitted at all reasonable times to examine the records of the Contractor and any person, firm or corporation comprising the Contractor for the purpose of verifying that the agreement is a good faith, arm's length agreement and fully discloses the understanding of and consideration passing among the parties and their affiliates.

Notwithstanding any other provision of this agreement, the failure of the Contractor or any person, firm or corporation comprising the Contractor to disclose fully to the City all

delivery for not less than twelve (12) consecutive months and in effect in the month in which the election to take all of the oil is made or (c) the arithmetical average of the prices posted in the Midway Sunset oil fields by Union 76, Chevron, Exxon Mobil Corporation, Shell Trading US and any other person, firm or corporation operating a refinery in California with a throughput capacity of at least thirty thousand (30,000) barrels per day, for oil like gravity during the month the oil is run into the Contractor's tanks and/or pipelines. (a) and (b) shall be referred to as the City sales and (c) shall be referred to as the Midway Sunset field average. The value of the oil shall be computed to the closest tenth of each degree of API gravity and the closest tenth of a cent per barrel. The Contractor, however, shall pay to the City a price for the oil equal to the value of the City sales less (50%) of the difference between the value of the City sales and the Midway Sunset field average or the Midway Sunset field average, whichever is higher. This difference, if any, shall not be used in computing Net Profits.

"All assigned oil shall be taken in the manner prescribed in the provision of the applicable Unit Agreement and/or Unit Operating Agreement."

This Ninth Amendment shall be effective July 1, 2008.

This Ninth Amendment may be executed in counterpart copies, and each executed counterpart copy shall have the same force and effect as an original and shall be enforceable to the same extent as if all parties had executed the same.

	•
Dated: 8.17.09	THE CITY OF LONG BEACH, a municipal corporation
AMPROWED AS TO FORM 8-6, 20 09 ROBERT E. SHANNON, CHY Attorney Charle tark: PRINCIPAL DEPUTY CITY ATTORNEY	By Assistant City Manager EXECUTED PURSUANT TO SECTION 301 OF THE CITY CHARTER.
Dated: 8/5/09	OXY TIDELANDS, INC., a Delaware corporation
	By .
Dated: 8/5/09	OXY WILMINGTON, LLC, a Delaware limited liability company
Dated: 8/5/09	OCCIDENTAL OIL AND GAS HOLDING CORPORATION, a Delaware corporation

This Ninth Amendment to the Long Beach Harbor Tidelands Parcel and Parcel "A" Oil Contract was approved by the California State Lands Commission at its meeting of

December 3, ,2008.

Dated: 9/15/09

EXECUTIVE OFFICER

Exhibit B Base Volumes and Base Well Count

Section 1 Introduction

- 1.1 <u>Purpose.</u> The purpose of this Exhibit B is to provide the methods, formulae and procedures to calculate the Base Volumes and Base Well Count, collectively referred to as the Base Activity Set, for purposes of Section 1.02 and Exhibit C of this Agreement.
- 1.2 <u>Definitions.</u> Unless defined herein, all initially capitalized terms shall have the meaning set forth in the Agreement.
 - (a) Base Oil Volume is the State's working interest (WI) share of total oil production, reported in either barrels or average barrels per day, for the relevant period that theoretically would have been realized if the Program were not implemented.
 - (b) Base Water Volume is the State's WI share of total water production, reported in either barrels or average barrels per day, for the relevant period that theoretically would have been realized if the Program were not implemented.
 - (c) Base Gross Volume is the State's WI share of total fluids production (oil and water), reported in either barrels or average barrels per day, for the relevant period that theoretically would have been realized if the Program were not implemented.
 - (d) Base Injection Volume is the State's WI share of total water injection, reported in either barrels or average barrels per day, for the relevant period that theoretically would have been realized if the Program were not implemented.
 - (e) Base Volume means one or more of the following volume-related parameters, depending on the context: Base Oil Volume, Base Water Volume, Base Gross Volume, and Base Injection Volume.
 - (f) Base Well Count is the State's WI share of the average total active well count for the relevant period that theoretically would have been realized if the Program were not implemented.
 - (g) Base Activity Set is the following set of parameters for a given time period: Base Oil Volume, Base Water Volume, Base Gross Volume, Base Injection Volume, and Base Well Count.
 - (h) Total Actual Oil Volume is the total (100% WI) oil production, reported in either barrels or average barrels per day, that was actually realized for the relevant period.
 - (i) Total Actual Water Volume is the total (100% WI) water production, reported in either barrels or average barrels per day, that was actually realized for the relevant period.
 - (j) Total Actual Gross Volume is the total (100% WI) fluids production (oil and water), reported in either barrels or average barrels per day, that was actually realized for the relevant period.

- (k) Total Actual Injection Volume is the total (100% WI) water injection, reported in either barrels or average barrels per day, that was actually realized for the relevant period.
- (1) Total Actual Volume means one or more of the following volume-related parameters, depending on the context: Total Actual Oil Volume, Total Actual Water Volume, Total Actual Gross Volume, and Total Actual Injection Volume.
- (m) Total Actual Well Count is the average total (100% WI) active well count that was actually realized during the relevant period.
- (n) Existing Wells means all producers (Existing Producers) and injectors (Existing Injectors) that existed as of the Effective Date.

Section 2 Technical Basis for Base Activity Set Projection

- 2.1 <u>Background.</u> The Base Oil Volume and other Base Activity Set parameter projections are intended to reflect the future performance of Existing Wells in the absence of the Program. The Program will include a variety of development activities that will result in new production and injection from new development wells as well as Existing Wells. An approach based on standard industry practices was employed to estimate the future values for these parameters.
- 2.2 <u>Assumptions</u>. The Base Activity Set parameter projections are based on the following assumptions:
 - Existing Wells will be operated in a "status quo" manner. They will be maintained and repaired based on economic viability.
 - No new wells will be drilled.
 - No major investment wellwork will be performed with the intent to increase production and overall oil recovery.
 - No significant changes in injection rate will occur.
 - No significant opportunities relating to water injection management will be identified or implemented.
 - Wells that experience mechanical failure will not be redrilled.
 - Field value is maximized by shutting wells in when they reach a WOR of 100. Although an optimum WOR cutoff threshold theoretically varies with oil price, adjusting the WOR cutoff for price results in minimal value benefit in practice.
- 2.3 <u>Initial Base Activity Set Projection Table.</u> The Initial Base Activity Set Projection Table is provided in Attachment 1 of this Exhibit. The projection was based on the following technical approach:
 - (a) WOR versus cumulative oil extrapolation was used for producers located in active waterflood areas where sufficient historic production data was available. This was the most widely used technique for oil rate projections.

- (b) Hyperbolic oil decline (b factor = 0.5) was used for producers located in active waterflood areas where insufficient historic production data was available. This is consistent with historic reservoir performance in active waterflood areas.
- (c) Exponential oil decline was used for poor quality producers that were returned to production in the 2001 to 2006 timeframe as a result of the improved oil price environment compared to earlier years.
- (d) Constant gross rates were estimated for all producers.
- (e) Wells were estimated to mechanically fail at a rate of 1.8% per year, based on a field-wide study of mechanical failure rate.
- (f) A WOR cut-off of 100 was used to approximate the economic limit for operating individual wells.
- (g) A constant rate factor was applied to each activity parameter projection derived from (a) through (f) above to "snap-fit" the projection to the current level experienced on the Effective Date. This was necessary to account for Existing Wells that were not captured in the estimations made in (a) through (f).
- (h) The activity parameter projections derived in (g) above were adjusted upwards by applying a factor of 1.05 (except 1.00 for the well count parameter) to account for potential increases in production related to the 2011 to 2013 replacement well program funded under the Nineteenth Accessory Agreement. The activity parameter projections from this section (h) are provided in Attachment 1 of this Exhibit.

Section 3 Adjustments for Well Abandonments

- 3.1 <u>Background.</u> The Initial Base Activity Set Projection Table described in Section 2 is based on the assumption that each Existing Producer will remain on production until such time that the well either fails mechanically or is shut in at its economic limit. If an Existing Producer is abandoned, but not replaced, as a result of work required under the Nineteenth Accessory Agreement, and the abandonment occurred before the Base Cessation Date, the Base Activity Set Projection Table shall be adjusted to reflect the removal of the abandoned well.
- 3.2 <u>Adjustment Procedure.</u> Abandonment-related adjustments shall be made by subtracting projected values from the Base Activity Set Projection Table that reflect the contribution to field performance that would have been realized if the well abandonment was not done. The adjustment procedure is outlined in Section 3.2(a) through 3.2 (h) below. An example adjustment calculation is provided in Attachment 2.
- (a) Base Oil Volume Reduction. The Base Oil Volume shall be reduced by projected values obtained by multiplying the appropriate factors for each forecast year as provided in the Normalized Oil Rate Profile Tables (Attachment 3A to 3E) by the most recent and representative Total Actual Oil Volume from the well. Each profile in the Normalized

Oil Rate Profile Table reflects the decline of a typical producer well in the respective Fault Block. The Base Oil Volume reduction shall cover the time period defined in Section 3.2(f) below.

- (b) Base Gross Volume Reduction. The Base Gross Volume shall be reduced by a constant rate obtained by multiplying the most recent and representative Total Actual Gross Volume from the well by the State's Fault Block Equity Factor, as defined in Section 3.2(g) below. The Base Gross Volume reduction shall cover the time period defined in Section 3.2(f) below.
- (c) <u>Base Water Volume Reduction</u>. The Base Water Volume shall be reduced by an amount equal to the difference between the Base Gross Volume reduction, per Section 3.2(b), and the Base Oil Volume reduction, per Section 3.2(a), for each calendar year quarter that a reduction is made for these parameters.
- (d) <u>Base Injection Volume Reduction</u>. The Base Injection Volume shall be reduced by an amount obtained by multiplying the Base Gross Volume reduction, per Section 3.2(b), by 1.05 for each calendar year quarter that a reduction is made to the Base Gross Volume.
- (e) <u>Base Well Count Reduction</u>. The Base Well Count shall be reduced by the equity share fraction as defined in Section 3.2(g) below. The Base Active Well Count reduction shall cover the time period defined in Section 3.2(f) below.
- (f) <u>Time Period for Base Activity Set Reductions</u>. Base Activity Set parameter reductions will begin in the first calendar quarter that is impacted by shutting in the well for abandonment purposes. A WOR limit of 100 shall be used to define the ending calendar quarter for the Base Activity Set parameter reductions. This quarter shall be defined as the first quarter in the year after the WOR of the abandoned well would have reached 100 if the well were not abandoned. The annual WOR values related to the abandoned well shall be calculated by dividing the Base Water Volume reduction, per Section 3.2(c), by the Base Oil Volume reduction, per Section 3.2(a), for each year.
- (g) <u>State's Equity Factor</u>. The State's Equity Factor for each Fault Block is provided in the table below. Equity Factor has the same meaning as working interest and may also be referred to as Equity Share.

State Equity Factors

Fault Block	Equity Factor
1	0.0%
2 3	10.0% 17.7%
4	55.1%
5 Unit 5 & 6 Nonunit	72.9% 100.0%

(h) <u>Revised Table</u>. Oxy shall adjust the Base Activity Set Projection Table to reflect all adjustments outlined in this Section 3. The revised table shall be submitted within 30 days of the well abandonment date and shall be titled "Base Activity Set Projection Table, Revised mm/dd/yyyy".

Section 4 Adjustments for Temporary Well Shut-ins

- 4.1 <u>Background.</u> The Initial Base Activity Set Projection Table does not contemplate temporary well shut-ins related to Accessory Agreement Activities. In the event that an Accessory Agreement Activity requires a well (either Existing Well or a new well drilled after the effective date) to be temporarily shut-in, the Base Activity Set Projection Table shall be adjusted on a monthly basis to reflect the temporary loss of production related to the well.
- 4.2 <u>Adjustment Procedure</u>. Adjustments related to the temporary shut-in of a well shall be made by reducing the parameters in the Base Activity Set Projection Table to reflect the loss of production related to the well. The parameter reductions shall be consistent with the table below.

Activity Set Adjustment for Shut-in Wells

Activity Set Parameter to be Reduced	Reduction Amount
Base Well Count	Equity factor as fraction of one well
Base Oil Volume	(Equity Factor) x (Shut-in Total Actual Oil Volume)
Base Water Volume	(Equity Factor) x (Shut-in Total Actual Water Volume)
Base Gross Volume	(Equity Factor) x (Shut-in Total Actual Gross Volume)
Base Injection Volume	1.05 x (Equity Factor) x (Shut-in Total Actual Gross Volume)

For a shut-in producer well, the Total Actual Volumes shall represent the most recent and representative well tests for the well. For a shut-in injection well, the Total Actual Volumes shall represent lost production response, if any, from nearby producer response wells. The activity set reduction shall be made for each calendar year quarter that is impacted by the shut-in well. If the well is not shut-in for the entire calendar quarter, the reduction shall be adjusted to reflect the actual number of days the well was shut in for the quarter.

Section 5 Determination of Base Activity Sets for Monthly Accounting

The Base Activity Sets for monthly accounting as required in Section 1.02 and Exhibit C shall be derived using the most recent Base Activity Set Projection Table and appropriate adjustments as described in this Exhibit B. The Base Activity Set for the relevant month shall be selected from the Base Activity Set Projection Table based on the corresponding calendar quarter. The Base Volume parameter values from the Base Activity Set Projection Table, reported in barrels per day, shall be multiplied by the corresponding number of days in the relevant month to determine the total barrels for each parameter for the relevant month.

Attachment 1
Initial Base Activity Set Projection Table
By Quarter for Wells Completed Prior to the Contract Effective Date

Calendar	Quarter	Activity Set Parameters				
Pasinning	Endina	¹ Oil	² Water	3Gross	⁴ Injection	⁵ Well Count
Beginning	Ending	b/d	b/d	b/d	b/d	##
2010.00	2010.25	_	. -	_	_	
2010.25	2010.50			_	parts.	
2010.50	2010.75			_		
2010.75	2011.00	_	_	_		
2011.00	2011.25		_		_	_
2011.25	2011.50		_		_	_
2011.50	2011.75	_			_	_
2011.75	2012.00		_		_	_
2012.00	2012.25	-	_		-	_
2012.25	2012.50	3,566	149,074	152,640	152,845	339
2012.50	2012.75	3,468	147,498	150,966	151,161	335
2012.75	2013.00	3,424	146,611	150,035	150,224	333
2013.00	2013.25	3,379	145,724	149,103	149,287	331
2013.25	2013.50	3,334	144,837	148,171	148,349	329
2013.50	2013.75	3,246	142,860	146,105	146,270	325
2013.75	2014.00	3,202	141,769	144,971	145,128	324
2014.00	2014.25	3,159	140,678	143,837	143,986	322
2014.25	2014.50	3,116	139,587	142,702	142,844	320
2014.50	2014.75	3,034	137,530	140,564	140,692	316
2014.75	2015.00	2,995	136,564	139,560	139,682	314
2015.00	2015.25	2,957	135,599	138,556	138,671	312
2015.25	2015.50	2,919	134,633	137,552	137,661	310
2015.50	2015.75	2,846	132,928	135,774	135,874	306
2015.75	2016.00	2,813	132,188	135,000	135,097	304
2016.00	2016.25	2,779	131,448	134,227	134,319	302
2016.25	2016.50	2,745	130,708	133,453	133,542	301
2016.50	2016.75	2,657	127,003	129,660	129,720	295
2016.75	2017.00	2,603	124,037	126,640	126,675	291
2017.00	2017.25	2,549	121,072	123,620	123,631	287
2017.25	2017.50	2,495	118,106	120,601	120,586	282
2017.50	2017.75	2,411	114,115	116,526	116,480	276
2017.75	2018.00	2,382	113,089	115,471	115,419	273
2018.00	2018.25	2,353	112,063	114,416	114,358	271
2018.25	2018.50	2,324	111,037	113,361	113,297	268
2018.50	2018.75	2,265	108,736	111,001	110,923	263
2018.75	2019.00	2,235	107,462	109,696	109,610	260

¹ Base Oil Volume

² Base Water Volume

³ Base Gross Volume

⁴ Base Injection Volume

⁵ Base Well Count

Attachment 1 Continued

Calendar	Quarter	Activity Set Parameters					
Do alamia a	En din n	¹OiI	² Water	³ Gross	⁴ Injection	⁵ Well Count	
Beginning	Ending	b/d	b/d	b/d	b/d	#	
2019.00	2019.25	2,205	106,187	108,392	108,298	257	
2019.25	2019.50	2,175	104,912	107,087	106,985	255	
2019.50	2019.75	2,124	103,115	105,238	105,133	250	
2019.75	2020.00	2,102	102,591	104,694	104,594	248	
2020.00	2020.25	2,081	102,068	104,149	104,055	246	
2020.25	2020.50	2,059	101,545	103,605	103,517	245	
2020.50	2020.75	2,021	100,596	102,617	102,535	242	
2020.75	2021.00	2,003	100,170	102,174	102,092	241	
2021.00	2021.25	1,986	99,744	101,731	101,649	239	
2021.25	2021.50	1,969	99,319	101,287	101,206	238	
2021.50	2021.75	1,934	98,466	100,400	100,320	236	
2021.75	2022.00	1,917	98,039	99,956	99,876	235	
2022.00	2022.25	1,900	97,612	99,512	99,432	234	
2022,25	2022.50	1,882	97,186	99,068	98,989	233	
2022.50	2022.75	1,849	96,331	98,180	98,101	230	
2022.75	2023.00	1,833	95,903	97,736	97,658	229	
2023.00	2023.25	1,816	95,476	97,292	97,214	228	
2023.25	2023.50	1,800	95,048	96,848	96,770	227	
2023.50	2023.75	1,767	94,158	95,925	95,848	224	
2023.75	2024.00	1,750	93,696	95,446	95,369	223	
2024.00	2024.25	1,733	93,234	94,968	94,891	222	
2024.25	2024.50	1,716	92,773	94,489	94,412	221	
2024.50	2024.75	1,686	91,881	93,567	93,491	218	
2024.75	2025.00	1,672	91,452	93,124	93,048	217	
2025.00	2025.25	1,658	91,022	92,680	92,605	216	
2025.25	2025.50	1,644	90,593	92,237	92,162	215	
2025.50	2025.75	1,616	89,680	91,296	91,222	213	
2025.75	2026.00	1,602	89,197	90,799	90,725	211	
2026.00	2026.25	1,588	88,714	90,301	90,228	210	
2026.25	2026.50	1,574	88,231	89,804	89,730	209	
2026.50	2026.75	1,546	87,287	88,833	88,759	206	
2026.75	2027.00	1,532	86,826	88,358	88,285	205	
2027.00	2027.25	1,519	86,365	87,884	87,811	204	
2027.25	2027.50	1,506	85,905	87,410	87,337	202	
2027.50	2027.75	1,463	83,552	85,015	84,928	197	
2027.75	2028.00	1,434	81,659	83,093	82,993	192	
2028.00	2028.25	1,405	79,767	81,172	81,057	188	
2028.25	2028.50	1,376	77,875	79,251	79,121	184	
2028.50	2028.75	1,337	75,595	76,932	76,789	178	
2028.75	2029.00	1,326	75,208	76,534	76,393	177	

Base Oil Volume
 Base Water Volume
 Base Gross Volume
 Base Injection Volume
 Base Well Count

Attachment 1 Continued

Calendar	Calendar Quarter ———————————————————————————————————			neters ———		
Beginning	En alima	¹ Oil	² Water	³ Gross	⁴ Injection	⁵ Well Count
beginning	Ending	b/d	b/d	b/d	b/d	#
2029.00	2029.25	1,315	74,821	76,136	75,996	176
2029.25	2029.50	1,305	74,434	75,738	75,599	175
2029.50	2029.75	1,272	72,306	73,578	73,428	172
2029.75	2030.00	1,251	70,565	71,815	71,653	169
2030.00	2030.25	1,229	68,824	70,053	69,878	167
2030.25	2030.50	1,208	67,083	68,290	68,104	164
2030.50	2030.75	1,176	64,937	66,113	65,915	161
2030.75	2031.00	1,166	64,532	65,698	65,501	160
2031.00	2031.25	1,155	64,128	65,283	65,087	158
2031.25	2031.50	1,145	63,723	64,868	64,673	157
2031.50	2031.75	1,123	62,818	63,941	63,752	155
2031.75	2032.00	1,111	62,319	63,430	63,245	153
2032.00	2032.25	1,100	61,819	62,919	62,738	152
2032.25	2032.50	1,088	61,319	62,407	62,231	151
2032.50	2032.75	1,068	60,434	61,502	61,332	148
2032.75	2033.00	1,059	60,049	61,109	60,939	147
2033.00	2033.25	1,050	59,665	60,715	60,547	146
2033.25	2033.50	1,041	59,280	60,321	60,154	145
2033.50	2033.75	1,020	58,228	59,249	59,081	143
2033.75	2034.00	1,008	57,561	58,570	58,401	141
2034.00	2034.25	996	56,895	57,891	57,720	140
2034.25	2034.50	984	56,228	57,212	57,040	138
2034.50	2034.75	959	54,809	55,767	55,591	134
2034.75	2035.00	946	54,056	55,002	54,824	132
2035.00	2035.25	933	53,304	54,237	54,056	130
2035.25	2035.50	920	52,551	53,472	53,288	128
2035.50	2035.75	897	51,250	52,147	51,960	125
2035.75	2036.00	886	50,701	51,587	51,400	124
2036.00	2036.25	875	50,151	51,027	50,840	123
2036.25	2036.50	865	49,602	50,467	50,279	122
2036.50	2036.75	846	48,691	49,537	49,351	120
2036.75	2037.00	839	48,329	49,168	48,983	119
2037.00	2037.25	831	47,967	48,798	48,614	118
2037.25	2037.50	824	47,605	48,428	48,246	117
2037.50	2037.75	808	46,880	47,689	47,509	115
2037.75	2038.00	801	46,518	47,318	47,141	114
2038.00	2038.25	793	46,156	46,948	46,772	113
2038.25	2038.50	785	45,793	46,578	46,404	113
2038.50	2038.75	770	45,069	45,838	45,666	111
2038.75	2039.00	762	44,706	45,468	45,298	110

Base Oil Volume
 Base Water Volume
 Base Gross Volume
 Base Injection Volume
 Base Well Count

Attachment 1 Continued

Calenda	r Quarter			ity Set Param	eters	
Beginning	Ending	¹ Oil	² Water	³ Gross	⁴ Injection	⁵Well Count
Dognining	Litating	b/d	b/d	b/d	b/d	#
2039.00	2039.25	754	44,344	45,098	44,929	109
2039.25	2039.50	747	43,981	44,728	44,561	108
2039.50	2039.75	731	43,256	43,988	43,823	106
2039.75	2040.00	723	42,894	43,617	43,454	105
2040.00	2040.25	716	42,531	43,247	43,085	104
2040.25	2040.50	708	42,169	42,876	42,716	103
2040.50	2040.75	693	41,443	42,136	41,979	102
2040.75	2041.00	686	41,080	41,767	41,611	101
2041.00	2041.25	679	40,717	41,397	41,243	100
2041.25	2041.50	673	40,354	41,027	40,874	99
2041.50	2041.75	659	39,629	40,287	40,138	97
2041.75	2042.00	651	39,266	39,917	39,769	96
2042.00	2042.25	644	38,903	39,547	39,400	95
2042.25	2042.50	637	38,540	39,177	39,032	94
2042.50	2042.75	610	36,634	37,244	37,090	90
2042.75	2043.00	591	35,091	35,681	35,518	86
2043.00	2043.25	571	33,547	34,118	33,945	82
2043.25	2043.50	551	32,004	32,556	32,372	79
2043.50	2043.75	513	29,295	29,808	29,607	73
2043.75	2044.00	495	28,128	28,623	28,416	71
2044.00	2044.25	477	26,962	27,439	27,224	69
2044.25	2044.50	458	25,796	26,254	26,032	67
2044.50	2044.75	435	24,365	24,800	24,574	65
2044.75	2045.00	430	24,101	24,530	24,307	64
2045.00	2045.25	424	23,836	24,261	24,040	63
2045.25	2045.50	419	23,572	23,991	23,773	63
2045.50	2045.75	409	23,054	23,463	23,773	61
2045.75	2046.00	404	22,799	23,203	22,993	60
2046.00	2046.25	399	22,545	22,944	22,736	60
2046.25	2046.50	394	22,291	22,685	22,730	59
2046.50	2046.75	384	21,783	22,166	21,966	58
2046.75	2047.00	379	21,703	21,907	21,710	56 57
2047.00	2047.25	374	21,274	21,647	21,710	56
2047.25	2047.50	369	21:020	21,388	21,433	55
2047.50	2047.75	358	20,511	20,869	20,683	54
2047.75	2048.00	353	20,257	20,609	20,426	53
2048.00	2048.25	348	20,003	20,351	20,420	53
2048.25	2048.50	343	19,748	20,331	•	
			•	•	19,912	52
2048.50 2048.75	2048.75 2049.00	333 328	19,240	19,572	19,399	50
2048.75	2049.00	328	18,985	19,313	19,143	50 40
			18,731	19,054	18,886	49
2049.25	2049.50	319	18,476	18,795	18,630	48
2049.50	2049.75	306	17,607	17,913	17,749	46 45
2049.75	2050.00	298	16,992	17,289	17,125	45
2050.00	⁶ End of Life	289	16,377	16,666	16,501	43

¹ Base Oil Volume ² Base Water Volume

³ Base Gross Volume

⁴ Base Injection Volume

⁵ Base Well Count

⁶ Base Activity Set Parameters to be held constant from 2050 to End of Life

Attachment 2
Example Adjustment to Base Activity Set Projection Table for Well Abandonment Related to Accessory Agreement Activities

Example Case
Abandonment Date: 2012
Fault Block: FB4
Total Oil Rate on Shut-in Date: 23 BOPD
Total Gross Rate on Shut-in Date: 1,500 BGPD

Subtract these values from the Base Activity Set Projection Table

																					Fliminate	production	> exceeding	100 WOR	_
			WOR		¥	=J/E		49	29	2	23	11	80	84	87	6	35	25	96	86 86	101	103	105	188	91
→		Water	Rate	p/q	7	= G-E		814	814	815	815	816	816	817	817	817	818	818	818	818	818	819	819	819	819
\rightarrow		Injection	Rate	p/q	_	#CXH		868	868	868	898	868	868	868	868	868	868	868	868	898	898	868	898	898	898
		Injection	Factor		I			1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	1.05	4.06	1.05
\rightarrow		Gross	Rate	p/q	g	=AXF		827	827	827	827	827	827	827	827	827	827	827	827	827	827	827	827	827	827
	Total	Gross	Rate	- 1	u.			1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	1,500	4500	1,500	1,500
→		ö	Rate	p/q	ш	=CXD		13	12	12	11	=	9	9	თ	თ	თ	ග	თ	00	œ	80	18	œ	7
	Beginning	Total	Oil Rate	p/q	۵			23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
		ō	Factor		ပ	-	- >	0.55	0.53	0.50	0.48	0.46	0. 44	0.42	0.41	0.40	0.39	0.38	0.37	98.0	0.35	0.35	0.34	8:8	0,32
<u>_</u>		Active	Wells	#	m	Y =		0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55	0.55
		Equity	Factor	%	∢			55.1%	55.1%	55.1%	55.1%	55.1%	55.1%	55.1%	55.1%	55.1%	55.1%	55.1%	55.1%	55.1%	55,1%	55.1%	55.1%	55.1%	-55.1%
			Year					2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
				2015		; } } }				İ	0.55	0.53	0.50	0.48	0.47	0.45	0.44	0.43	0.42	0.41	0.40	0.39	0.39	0.38	0.37
<u> </u>				2014		1 1 1 1 1				0.55				0.46	0.45		0.42	0.41	0.40	0.40	0.39		0.37	0.36	0.35
Audulinen 30 Normalized Oil Rate Profile Table			Oil Rate Forecast as Fraction of Beginning Total Oil Rate	2013					0.55	0.53	0.50	0.48	0.46	0.44	0.43	0.41	0.41	0.40	0.39	0.38	0.37	0.36	0.35	0.35	0.34
tate Pro	3lock 4		nning Tot	2012		i		0.55	0.53	0.50	0.48	0.46	0.44	0.42	0.41	0.40	0.39	0.38	0.37	0.36	0.35	0.35	0.34	0.33	0.32
Altacilitation oc ed Oil Rate Pro	Fault Block		in of Begi	2011			0.55	0.53	0.50	0.48	0.46	44.0	0.42	0.41	0.39	0.38	0.37	0.36	0.35	0.35	0.34	0.33	0.32	0.32	0.31
3maliz			as Fractic	2010		0.55	0.53	0.50	0.48	0.46	44	0.42	0.41	0.39	0.37	0.36	0.36	0.35	0.34	0.33	0.32	0.32	0.31	0.30	0.30
ž			Forecast	2009	0.55	0.53	0.50	0.48		+-					+					0.32					0.28
			Oil Rate		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029

Attachment 3A Normalized Oil Rate Profile Table Fault Block 2

18					Г					П					- 1					- 1					- 1				1					- 1					- 1	
2048 2050																																								0.10
2048										7					†					+				_	T	-			1					1					- 1	0.10
2047																									١												:	0.10	0.0	0.10
2046										i																										:	0.10	0.10	0.10	0.10
2045																																				0.10	0.10	0.10	0.10	0.03
2044																																			0.10	0.10	0.10	0.10	8	60.0
2043				_	T										7					1					T									0.10	0.0	0.10	0.10	0.03	8	0.09
2042																																	0.10	0.10	0.10	0.10	0.0	90.0	8	90.0
202															-																	0.10	0.10	0.10	0.10	0.03	60.0	900	60.0	60.0
2040															ĺ																0.10	0.10	0.10	0.10	90.0	0.09	0.09	0.09	60.0	0.09
2039																														0.10	0.10	0.10	0.10	60.0	90.0	60.0	0.00	0.09	8	0.09
2038							_					_								1					T				0.10	0.10	0.10	0.10	8	0.09	0.09	90.0	90	0.09	8	0.08
2021 2022 2023 2024 2025 2025 2029 2029 2030 2031 2022 2033 2034 2035 2036 2037 2										١																		0.10	0.10	0.10	0.10	0.09	60.0	0.09	0.09	60.0	0.09	0.09	0.08	0.08
2036																											0.10	0.10	0.10	0.10	9	60.0	0.0	0.09	0.09	90.0	0.09	0.08	0.08	0.08
2035																										0.10	0.10	0.10	0.10	0.08	0.09	0.09	60.0	0.09	0.09	0.09	0.08	0.08	80	0.08
2034					ĺ					ĺ										İ					5	5 5	0.10	0.10	60.0	0.09	90.0	68	60.0	800	900	90.0	90.0	0.08	- 1	0.08
2033			_		Ī	_	_																		0.10	2 0	0.10	0.09	0.0	0.0	0.09	0.00	60.0	0.03	0.08	0.08	0.08	0.08	- 1	90.0
2002										İ														0.10	0.0	2 0	0.09	0.09	0.0	60.0	0.09	0.09	0.09	0.08	0.08	0.08	0.08	90.0	- 1	0.08
2031																							0.10	0.10	0.10	3 6	0.09	0.09	60.0	0.09	90.0	0.08	0.08	0.08	0.08	0.08	0.08	0.08	0.08	70.0
2030																				İ			0.10	0.10	0.08	9 6	900	0.09	0.09	60.0	0.08	90.0	0.08	0.08	90.0	0.08	0.08	9.08	- 1	70.0
203																					0.10	0.10	0.09	0.09	0.09	2 6	0.09	0.09	90.0	80.0	80.0	0.08	0.08	0.08	0.08	0.08	0.07	0.07	0.07	70.0
2028	ļ				Ì															0.10	0.10				8	3 8		_	0.08	90.0	8	80.0	90.0	90.0	0.07					200
202																				0.10	8			000	- 1	9 6			0.08	0.08	0.08	90.0	0.07	0.07	0.07				- 1	500
2026																			0.10	- 1						3 6			0.08	90.0			0.07	0.07	0.07				1	ě
325																	0.10		0.09	60'0	0.09	0.08		90.0	90.0	9 6			0.07				0.07						- 1	8
2024		•														0.10	0.10	0.09	0.09	0.03	0.08	0.08			80.0	000			0.07	20:0	0.07	0.07	0.07	- 1					- 1	900
2023					T										0,10	0.10	0.09	0.03	0.08	900	0.08	0.08		0.07	- 1	3 6			0.07	0.07	0.07	90.0			90.0				- 1	8
302														0.10	0.10	90.0	900	0.08		0.08	0.08	0.07	0.07	0.07	0.07	0.07			0.06	0.0	90.0	90.0	90.0	0.06	0.06					200
202					-								0.10	0.10	90.0	0.09	0.08		0.08	0.07	0.07				- 1	9 6			0.06	0.08	90.0	90.0		90.0	90.0				0.05	20.0
2020												0.10	0.10	8		1	900			70.0					90.0					i					0.05				90.0	ŧ
2019											0.10			0.09	90.0		90.0	0.07							90.0					0.05		0.05		9.05					90.0	1
2018											l														90.0					l				- 1						ı
2017											l					1									0.05															1
2016											Į.					İ									0.05															
2015											1					l									0.05										ı		0.0		9	1
2014					-																				9.0					1					ì			0.03		ı
2013					- [1					1					1				3					1					l			0.03		1
2012				0.0	1																l									1					ļ.					П
2011				80.0	- 1																1				1					i										1
2010				0.08	Ţ						1					ı									- 1					1										П
2008	0.10	0.09	0.08	0.07	1						┺					L									_					<u> </u>					<u> </u>					1.
	8	010	1102	2012	3 [2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025	2026	027	970	620	2030	931	88	2033	2034	200	2037	2038	2039	2040	2041	2042	2043	2044	2045	2046	2047	2048	1

Attachment 3B Normalized Oil Rate Profile Table Fault Block 3

Oil Rate Forecast as Fraction of Beginning Total Oil Rate

_						_		_	_		_									_					_	—,-	_			_							_						=
	2049 2050																																									0.18	0.17 0.18
-	2048					+				_	1					-									-	1					+					+				-			0.17
	2047															-																								0.18	0.17	0.17	0.17
	2046										İ										İ															-					- 1		0.16
	2045																																								- 1		0.16
	204																																			- 1					Į		0.16
	2043										İ																									- 1					- 1		5 0.16
	1 2042																																								- 1		5 0.15
	10 2041					-																				İ					-					- 1					- 1		0.15 0.15
	2039 2040																																								- 1		0.15 0.
ŀ	2038 20					+					-			_	_	-					-		_			-										0.16 0							0,14 0
	2037 20																																		0.16 0	0.16 0							0.14 0
	2036 2																												0.18		- 1					0.16							0.14 (
	2035					-																						91.0			- 1					0.15					- 1		0.14
	2034																										0.18			0.17	0.16	91.0	0.16	0.16	0.15	0.15	0.15				- 1		0.13
	2023					†					1														_	0.18	0.17	0.17	0.17	0.16	0.16	91.0	0.16	0.15	0.15	0.15	0.15	41.0	0.14	0 4	0.14	0.13	0.13
-	2032			-		ļ																			0.18	0.17	0.17	0.17	91.0	0.16	0.16	0.16	0.15	0.15	0.15	0.15	0.14	0.14	0.14	0.14			0.13
ecas	2031																								0.17		0.17				- 1					0,14	0.14						0.13
For	2030																								0.17		0.16	0.16			- 1					0.14	ı						0,12
ear	2023																					Ļ.			0.17	- 1	3 0.16	3 0.16			- [0.14	0.14	1				- !		21.0
First Year of Forecast	7 2028																			80	7 0.18	7 0.17		6 0.17	6 0.16	6 0.16	6 0.16	5 0.16	5 0.15	5 0.15	5 0.15			4 0.14	4 0.14	3 0.14	3 0.13	3 0.13	3 0.13		1		21.0
٠	72027																		89	17 0.18	71.0 7	7 C.17	0.16 0,17	0.16 0.16	0.16 0.16	16 0.16	0.15 0,16	0.15 0.15	0,15 0,15	0.15 0.15				0.14 0.14		13 0.13	0.13 0.13	13 0.13	0,12 0,13		12 0.12	12 0.12	0.12 0.1
	25 2026																	0.18	0.17 0.18	71.0 71.0	71.0 71.0	0.16 0.17		0.16 0.1	0.16 0.1	0.15 0.16	0.15 0.	0.15 0.1						0.13 0.7	0.13 0.13	0.13 0.13	0.13 0.1	0.12 0.13			0.12 0.12	0.12 0.12	
	2024 2025																0.18	0.17 0.	0,17 0,	0.17 0.	0.16 0.	0.16 0.		0.15 0.	0.15 0.	0.15 0.	0.15 0.	0.14 0.			0,14 0.			0.13 0.	0.13 0.	0.12 0.	ì	0.12 0.			,		0.11 0.
	2023 20					+						_				0.18	0,17 0	0.17 0	0.16	0.16 0	0.16 0	0.15 0	0.15 0	0.15 0	0,15 0	0.14	0.14 0	0.14	0.14	0.13	0.13 0	0.13 0	0.13 0	0.13 0	0.12 0	0.12 0	0.12	0.12 0	0.11 0		- 1	0,11	0.11
	2022 2														0.18	0.17 (0.17	0.16	0.16	0.15	0.15	0.15	0.15	0.14 (0.14	0.14	0.14	0.13	0.13	0.13	0.13		0.12	0.12	55	0.12	11.0	11.0					0.10
	2021													0.18	0.17	91.0	0.16	0.16	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.13	0.13	0,13	0.13		0.12		0.12	0.12	0.1	0.1	0.1	0.11	0.11		0.10		0.10
	2020												0.18	0.17	91.0	0.16	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.13	0.13	0.13	0.13	0.12	0.12	0.12	0,12	0.12	0.11	0.11	0.11	0.11	11.0	0.10	0.10	0.10	0.10	0.10	0.10
	2019											0.18	0.17	0.16	91.0	0.15	0.15	41.0	41.0	0.14	0.14	0.13	0.13	0.13	0.13	0.12	0.12	0.12	0.12	0.12	0.11	0.11	0.11	0.11	0.11	0.10	5.70	0.10	0.10	0.10	0.10	0.09	0.09
	2018										0.18	71.0	0.16	0.16	0.15	0.15	0.14	0.14	0.14	0.13	0.13	0.13	0.13	0.12	0.12	0.12	0.12	0.12	11.0	0.11	0.11	0.11	0.11	0.10	0.10	0.10	0.10	0.10	0.10	0.09	0.09	0.0	0.00
	2017									0.18		l				0.14		0.13	0.13	0.13	0.13			0.12		0.11	1	0.11		0.11				0.10	0.10			0.09				600	
	2016								0.18	0.17		0.15		0.14							0.12		0.11				ı					ļ					0.09				0.08		
	2015							5 0.18	5 0.16	0.16		0.14	0.14		0.13	0.12		0.12		0.11		0.11		0.10			ı	0.10				0.08					3 0.08					90.0	
	3 2014	_				_		5 0.16				2 0.13			1 0.12		ı	0.11	0.10			1					1	8 0.09				8 0.08					7 0.08				0.07		
	2 2013						4 0.16		2 0.14	2 0.13	1 0.12	1 0.12	0 0.11	0 0.11	0 0.11	9 0.10	1	9 0.10	80.00 ea	8 0.09		1		60.0			17 0.08					80.0 7		70.07	20.0 9		1	70.0 24	70.0 %		90:0	90.0	
	11 2012				0.16 0.18	- 1			11 0.12	10 0.12	10 0,11	11.0 60				90.0	1	90.00				1										70:0 90			90:0		90'0 50'0				0.05 0.06		
	2010 2011		8		0.14 0.7					0.09		0.08 0.0					1					ĺ										l					0.05 0.0					0.04	
	2009 20	3.18		0,14 0.		0.11 0.	0.10 0.		0.08 0.			0 20.0				0.06 0.						1					i .	0.05				l					90				0.04	1	
<u>_</u>	<u> </u>	2009				_				2017 0		2019 0					Ļ.		_			1					┺					ļ					4_				2048	┡	
		ন	ត	ĸ	ñ	Ñ	Ř	<u>ۃ</u>		<u>بر</u>			<u>بر</u>	Ň		<u>ۃ</u>	<u> </u>	×			У в	_		_			%	<u>ب</u>				~	7		či		Τü	~	ñ	ñ	~	Ä	~
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Attachment 3C Normalized Oil Rate Profile Table Fault Block 4

Oil Rate Forecast as Fraction of Beginning Total Oil Rate

1	-											l	,	-	First Year of Forecast			1	- Firs	t Yea	r of F	oreca	1st										1						
	1	2009	3 2010	2011	2012	2013	2014	2015	2016	2017	2018	2019 2	2020 20	2021 20	2022 2023	23 2024	4 2025	2028	2027	2028	2029 20	2030 2031	1 2032	2 2033	2034	2035	2026	2037 20	2038 2039	39 2040	2041	2042	282	2044	2045	2046 2047	47 2048	8 2048	2050
Γ	2009	0.55	2																										_										
	2010	0.53																											_										
	2011	0.50																						-															
	2012	94.0	3 0.50	0.53	90.55	Ç																																	
-	2	2	-	- 1	- 1	3					+					1		Ì		l									-										
	2014	0.44				0.53	0.55																																
	2015	0.42				0.50	0.53	0.55																	_														
	2016	0.41				0.48	0.50	0.53	0.55																														
	2017	0.39				0.46	0.48	0.50	0.53	0.55																													
	2018	0,37				0.44	0.46	0.48	0.50		0.55									+							-		1				1						T
	2019	0.36		i		0.43	0.45	0.47	0.49	15.0	0.53	0.55				_																							
	2020	0.35				0.41	0.43	0.45	0.47				0.55																										
	2021	933				0.41	0.42	44.0	0.46			0.52	0.54	0.55																									
	2022	0.33					0.41	0.43	0.45			15.0	0.53	0.54	0.55														_										
	2023	0.33				0.39	0.40	0.42	0.44				0.51	0.53		0.55																					Ì	-	
	2024	0.32	1	1	90.36	1	0.40	0.41	0.43	l	0.47	0.49	0.50	0.51	0,53 0.	0.54 0.55	10																						
	2025	- 63				0.37	0.39	0.40	0.42			0.48	0.49	0.50	0.51 0.	0.53	4 0.55			_																			
	2026	030					0.38	0,39	0.41					0.49	0.50	0.51 0.53	3 0.54	0.55																					
16	2002	2						0.39	0.40	0.42						0,50 0,51		0.5	0.55																				
9	1 000	3 8				100		92.0	95.0										0.54	0.55																			
۲.	8707	200			Ţ		1	200	650			1		1	1			ł	0.53	1	0.55								-									L	
SI	6707	870						6	60.0										9			9																	
e o	2030	0,28						0.36	0.38										75.0				,						_										
ə J	2031	0.27				0.32	0.34	0.35	0.37	0.39					-				0.51														_						
0 1	2032	0.27					0.33	0.35	0.36	0.38		0.41	0.42		0.44	0.45 0.46	6 0.47		0.50																				
١ -	2033	0.26					0.33	0.34	0.36	0.37		0.40	0.41	0.42	0.43 0.	0.44 0.45	5 0.45	0.48	0,49	0.50	0.51		ļ	l				أ	-				1			1000		_	
	2034	0.28	1	1	Į.	ı	ı	0.33	0.35	0.36	0.38	0.39	0.41	0.42	0,43	0,44 0.45	5 0.46	0.47	0.48	0.49				3 0.54															
	2035	0.25						0.33	0.34	96.0		0.39	0.40	0.41	0.42 0.	0.43 0.44	4 0.45	0.46	0.47	0.48		0.50	0.51 0.52	2 0.53															
	2036	0.25				0,30	0.31	0.32	0.34				0.39	0.40	0.41 0.	0.42 0.43	3 0.44	0.45	0.46	0.47	0.48 0	0.49 0.9	0.50 0.51				0.55												
	2037	0.24						0.32	0.33	0.35		0.37	0.39	0.39	0.40 0.	0.41 0.42	2 0.43	0.44	0.45	0.46			0.49 0.50				0.54												
	2038	0.24						0.31	0.33	0.34				0.39	0,40 0.	0.41 0.42	2 0.43	0.44	0.45	0.46	0.47 0	0,48 0,	0.49 0.49	9 0.50		0.52	0.53	- 1	_1	ļ		1	1					_	Ĭ
	2039	024	1	1	1			0.31	0.32	0.33		9.36	0.37 (0.38 (0.39 0.	0.40 0.41	1 0.42	0.43	0.44	0.45		0.47 0.	0.48 0.49	9 0.50			0.52												
	2040	0,23						0.30	0.32	0.33	0.34	0.36		0.38	0.39 0.	0.39 0.40	0.41	0.42	54.0	14.0		0.46 0.		8 0.49			0.52												
	200	0.23						0.30	0.31	0.32	3,50	0.35	0.36	0.37	0.38 0.	0.39 0.40	10 D.41	0.42	0.43	0.44	0.44	0.45	0.46 0.47	7 0.48	0.49		0,51												
	2042	0.23					0.28	0.29	0.31	0.32	0.33				0.37 0.	0.38 0.39	0.40	0.41	0.42	0.43	0.44 0	0.45 0.	0.46 0.47	7 0.48	0.48		0.50												
	2	2 6					0.28	0.29	0.30	0.32						0.38		0.40	0.41	0.42	0.43 0	0.44.0	0.45 0.46	5 0.47	0.48	0.43	0.50	0.50	0,51				0.55						
	1	3	1	-	1		72.0	0,0	0.30	0.31		1		1		0.37 0.38	İ	0.40	0.41	0.42	0.43	0,44	0.44 0.45	5 0.46	0.47	0.48	0.48	0.50	0.50	0.51 0.52	2 0.53	0.54	0.54	0.55				_	
	ž,	2 5				0.26	027	0.28	0.29	0.31	0.32								0,40				0.44 0.45	5 0,46	0.46	0.47	0.48	0.49	0.50	0.51 0.51	1 0.52	0.53	Ą	0.54	0.55				
-	2046	1 6						0.28	0.29	0,30	0,32				_	0.36 0.37	92.0 7	0.39	0.40	0.41	0.41	0.42 0.	0.43 0.44	4 0.45	0.46	0.47	0.47	0.48	0.49	0.50 0.51				5.0				_	
	7067						0.26	0.27	1 0	030	0.31				-				0.39	94			0.43 0.44	4 0.44		0.46	0.47	0.48	0.48 0.	0.49 0.50				0.53					
	1 8						900	0.27	0.28	0.29									0.39	0.39	0.40		0.42 0.43	3 0.44	0.45	0.45	0.46	0.47	0.48	0.49 0.49	05.0	0.51	0.51	0.52	0.53	0.54 0	0.54 0.55	10	
	300	023		3 8	023		0.26	0.27	979	0.29	1	1							0.38	1	1	1	0,41 0.42	2 0.43	1	ł	0.46	l	0.47 0.	i				15.0					
	1 6					920		0.26	0.27	0.29	030		0.32						0.38			0.40 0.41	41 0.42	2 0.43	0.43	4	0.45	0,46	0,46 0.	0.47 0.48	8 0.49	0.49	0.50	0.51	0.51	0.52	0,53 0,54	3,00	88
	200	3	-	- 1	- 1		- 1	7.0	4	3	- 1	1	- 1	- 1	ı	П	1	1		1	ı	ı	ı	ļ															

Attachment 3D Normalized Oil Rate Profile Table Fault Block 5, Ranger Zone

Oil Rate Forecast as Fraction of Beginning Total Oil Rate

													1				First Year of Forecast		First	Year	H.	oreca	st ::						}				Ì						٦
	8	2009 20	2010 2011	11 2012	2 2013	3 2014	4 2015	2016	2017	7 2018	2019	2020	2021	2022	2023	2024	2025	2026	2027 2	2028 20	2029 2030	30 2031	1 2022	20033	2034	2035	2036	2037 20	2038 2039	39 2040	2041	2042	2043	204	2045 2	2046 2047	47 2048	2048	2050
200		1.73																																					
201			E.																					-															
2011		0.69 0	0.71 0.73	g																									_										
201.					p																																		
201		0.64 0.	9.0 99.0		-	!								Ì						+		İ						Ì					1						
8	_					1 0.73																																	
201							0.73	_																															
20.					39.0				~																														
201										er.																													
201					31 0.62					1 0.73										-									-			İ	1						
2		1	0.55 0.5	0.57 0.59	i	1 0.62	2 0.54	\$ 0.65	\$ 0.69																														
202													_	•																									
202														_																									
202			0.50 0.5				0.59			2 0.64	99'0		9 0.71																										
202							- 1								1				ļ	-						1			-									1	T
202	_		1		51 0.52								5 0.67		0.77	0.73																							
202				48 0.50								990	99.0		0.70	0.72	0.73																						
505				47 0.49	09'0 6	0.52	2 0.54	\$ 0.55		7 0.59		8	3 0.65		0.69	0.70	0.72	0.73																					
a 202				46 0.48	18 0.49							0.61	0.63		0.67	0.69	0.70	0.72	27.0										_										
702 704 704				46 0.47	17 0.49			2 0.53		5 0.57	0.59	0.60	0.62		0.66	0.68	99'0	0.70	- 1	57.0									-				1						
202	<u> </u>	ļ	l	45 0.46	6 0.48				1			0.59	9 0.61	1 0.63	0.65	0.67	0.68	0.69	0.70		67.0																		
203		0.41 0.	0.43 0.4	0.44 0.45	15 0.47	7 0.48	9 0.50		1 0.53	3 0.55	95.0	3 0.58	3 0.60		9.0	99.0	0.67			0.70		0.73																	
203				43 0.45	5 0.46										8	0.64	99.0																						
- 203 203		0.40 0.			H 0.45							95.0	85.0		29	9.63	0.65			0.68	0.69 0.																		
203				42 0.43	13 0.45	5 0.46	5 0.48							- 1			0.64		ı	. 1	- [ĺ		- 1				4				1			į			1
203		0.39 0.			13 0.44	l		7 0.49		0 0.52							0.63			80																			
53				41 0.42	12 0.44		5 0.46					9.054	0.56		0.60	0.61	0.62			99.0						6.73												<u>-</u>	
203									7 0.49		0.52						0.61									0.72													
503				40 0.41		3 0.44		5 0.47									0.61									2													
- 583 			0.38 0.4							8 0.49	1	- 1		- 1			0.60	- 1	ļ			- 1		Ų		6		1										_	T
8		0.37 0.		0.39 0.40								0.52					0.59									0.69													
 8					10 0.41	0.42					0.43						0.58									89.0													
, k		0.36 0.	0.37 0.3	0.38 0.39	39 0.40		2 0.43	3 0.44							0.55		0.58									0.68													
200		0.35 0.		0.38 0.39	29 0.40	0.41			4 0.45								0.57									0.67													
200		0.35 0.		0.37 0.38	38 0.39		1 0.42	2 0.43		5 0.46		3 0.49				0.55	0.56			1	0.60		1		ļ	99.0	- 1		.	ı		- !	67.0						T
24	Ļ.,	1	0.35 0.3		28 0.39	l	l			4 0.46		0.48	3 0.50	0.52	0.53	0.54	0.55			0.58	0.60					0.65							0.72						
26		0.34 0.		0.36 0.37	37 0.38			1 0.42	2 0.44	4 0.45		0.48	9.49		0.52	0.54	0.55	0.56								35							7.						
202		0,34 0.	0.35 0.3	0.36 0.37	37 0.38		9 0.40	0.42		3 0.44		5 0.47	7 0.49	9 0.50	0.52	0.53	0.54	0.55	0.56	0.57	0.58 0.	0.59 0.60	0 0.61	0.62	8	963	0.64		0.66 0.67				0.70	0.71					
204				35 0.36	96 0.38			0.41	1 0.42	2 0.44		5 0.47	7 0.48	3 0.50	0.51	0.52	0.53	43.0	0,55	0.56	0.57 0.	0.58 0.59				8							0.69						
204					36 0.37							0.46	5 0.47	7 0.49	0.51	0.52	0.53	1	95.0	0.56		1	09'0 6			0.62			3				999		- 1	- 1		1	
2049	<u>_</u>	0.32 0.	0.33 0.3	0.34 0.35	i	7 0.38	8 0.39	9 0.40	0.41	1 0.43	3 0.44						0.52									0.61							99.0						
205		- 1	- 1				- 1	- 1			- 1	0.45	5 0.46	5 0.48	0.49	0.50	0.51	0.52	0.53	0.54	0.55 0.	0.56 0.57	7 0.58	0.59	8.0	0.60	19.0	0.62	0.63	63 0.64	4 0.65	990	0.67	88	88	0.69	0.70	1 0.72	0.73

Attachment 3E Normalized Oil Rate Profile Table Fault Block 5&6, NonUnit

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18 2049																							_					_					_					- 1	3	
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2045 20																																						80 80		0.92
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2043				ļ									-					-					-					+				-						0.92		0.89
2042 2																																						0.91		0.88
2041																																						58.0		0.87
2040																													;	8	0.98	0.97	96.0	0.94	0,92	16.0	0.89	689	78.0	982
2038								İ																					3 5	86.0	0.97	98	8	0.92	0.91	0.89	88.0	0.87	8	0.84
2038				-													_						1					3	5 6	0.97	98	46.0	0.92	0.91	0.89	0.88	78.0	0.85	5 5	0.83
2037																											8	86.0	/s: 0	0.95	2	0.92	0.91	0.89	0.86	98.0	0.85	8 8	0.82	0.81
2036																										8.	86.0	9	S	0.93	0.92	0.90	689	0.88	0.86	0.85	0.84	282	8.0	0.80
2035																		İ											0.33	60	0.90	0.83	0.87	0.86	0.85	0.83		0.81		0.78
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2026 20																8																	- 1							630
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2024 21														1.00	0.97			0.00		0.85	0.83		0.80										- 1							
2023				-									8	. 76.0	98.0	0.92		98'0	0.85	0.83	0.81		0.78	97.0									_							000
2022												1.00	0.97	980	0.92	0.30	0.88	98.0	0.83	0.81	0.79	0.77	0.76	0.74	0.72	17.0	0.70	0.69	0.67	99.0	0.65	0.64	0.63	0.62	0.61	0.60		1	0.57	
2021											8.	76'0	0.95	0.92	0.30	0.88	0.85	0.83	18.0	0.79	0.77	0.75	0.74	0.72	0.71	0.69	0.68	0.67	99.0	9.0	9.6	9.63	0.62	0.61	0.60	0,59	0.58	0.57	0.56	500
2020										8:	26.0	98	0.92	0.90	0.88	0.85	0.83	0,81	6.0	0.77	0.75	5	0.72	0.70	0.69	0.67			35	9.63	0.62					0.57	0.56	55.0	83	č
2019									1.00	0.97	0.94	0.92	0.89	0.87	0.85	0.83	0.80	0.78	0.76	0.74	0.73	0.71	0.69	0.68	0.66	9.65	9.	9. 13.	0.62	0.61	0.60	0.59	0.58	0.57	0.56	0.55	0.54	35	23	0.63
2018								9.	96.0	0.93	0.90	0.88	0.86	48.	0.81	0.79	0.77	0.75	0.73	0.71	0.70	0.68	0.67	0.65	3	0.63	0.61	0.60	93.0	0.58	0.57	0.57	95.0	0.55	2.	0.53	0.52	150	0.51	02.0
2017							1,00	0.95	16,0	0.88	0.86	98.	0.82	0.80	0.78	0.76	0.74	0.72	0.70	0.68	0.66	0.65	0.63					- 1				25.0			0.51	0.51				0.47
2016						1.00	0.95		0.87	9.0	0.81	0.79	0.77	0.75	0.73	0.73		0.68	0.68	0.6	0.63	0.61	0.60	0.59				- 1			0.52	0.51			0.49	0.48				,
2015						9.0	0.89	0.85	0.81	0.79	0.76	0.74	0.73	0.71	0.69	0.67		8.0	0.62	0.60	0.59	0.53	950	95.0				- 1			0.49	0.48			0.46	0.45				3
3 2014				100.	95.	3 0.88	0.83	67.0	97.0	0.74	7 0.72	0.70	0.68	99.0	1 0.65	9 0.63	0.61	0.60	0.58	3 0.57	2 0.55	924	0.53	9 0.52		0.50	0.49	1			9 0.46	2 0.45	0.44	1 0.44	0.43	0.42				-
2 2013			. 5		3 0.88	8 0.83	3 0.78	0 0.75	7 0.72	5 0.69	3 0.67	2 0.66	0.64	8 0.62	7 0.61	5 0.59		3 0.56	1 0.55	0.53	9 0.52	8 0.51	050 /	6 0.49		4 0.47	3 0.46			1 0.44	0.43	0 0.42	9 0.41	8 0.41	9 0.40	7 0.40				-
1 2012		2 2		1		3 0.78	67.0	6 0.70	79.0 5	1 0.65	69.0	8 0.62	09.0	5 0.58	3 0.57	22 0.55		9 0.53	18 0.51	05.0 71	6 0.49	5 0.48	4 0.47	3 0.46							8 0.40							1		
10 2011	,	100		1		58 0.73	55 0.69	32 0.66		57 0.61	56 0.59	54 0.58	53 0.56	52 0.55	50 0.53	49 0.52	48 0.51	46 0.49	45 0.48	44 0.47	43 0.46	42 0.45	41 0.44	40 0.43														- 1		
2009 2010	1.00			1		0.64 0.68	0.61 0.65	0.58 0.62	0.56 0.59	0.54 0.57	0.52 0.56	0.51 0.54	0.50 0.53	0.48 0.52	47 0.50	0.46 0.49	0.45 0.48	0.44 0.46	0.42 0.45	41 0.44	0.40 0.43	0.39 0.42	0.39 0.41	0.38 0.40		0.36 0.39	0.36 0.38	- 1		0.34 0.36	0.33 0.35	0.33 0.35	32 0.34	0.32 0.34				- 1	0.29 0.31	****
Ñ	1.00			\perp	2015 0.68	2016 0.6	2017 0.6		_	2020 0.5	2021 0.5				2025 0.47	2026 0.4		2028 0.4	2029 0.4	2030 0.41	2031 0.4		2033 0.:	_	2035 0.37			_					2043 0.32	<u></u>	2045 0.31					_
-	2009	2011									- 24	- 24	- 64							127						12		100		- 34								A L	6	2050

Exhibit C Base Ordinary Costs

Section 1 Introduction

- 1.1 <u>Purpose.</u> The purpose of this Exhibit C is to provide the methods, formulae and procedures to calculate Base Ordinary Costs.
- 1.2 <u>Definition.</u> Base Ordinary Costs are the State's working interest share of the theoretical ordinary costs that would have been incurred by the State if the Program were not implemented. Ordinary costs include all costs other than (1) Development Costs, (2) Extraordinary Costs, (3) Abandonment Costs, and (4) costs related to Accessory Agreement Activities.

Section 2 Methodology

- 2.1 <u>Background</u>. An evaluation of historic operating costs indicates there are five principal cost drivers (or activity levels) that influence overall oil production operating costs. These cost drivers are (1) produced oil volume (2) produced water volume, (3) produced gross volume, (4) injected water volume, and (5) number of active wells. The relationship of the cost drivers and operating costs forms the basis for estimating the Base Ordinary Costs.
- 2.2 <u>Procedure.</u> The procedure to be used for determining Base Ordinary Costs for an accounting period is as follows:
- A. Actual Ordinary Costs for the accounting period, as defined in Section 1.02 (m), shall be segregated into five cost categories based on common cost drivers, as described in Table 1 below.

Table 1

Cost Category	Cost Driver/Activity Parameter	Cost Components
1. Oil-related Costs	Produced Oil Volume	Oil shipping, legal, taxes
2. Water-related Costs	Produced Water Volume	Waste water disposal
3. Gross-related Costs	Produced Gross Volume	Routine well work (including lift electricity), dehydration, power oil systems / gas compression
4. Injection-related Costs	Injected Water Volume	Water purchases
5, Well-related Costs	No. of Active Wells	Insurance, pipelines, W.O.G. meter stations, roads and fences, construction and maintenance yard, change rooms, production yard, material reclamation, maintenance shop, operating supplies, lease cleanup, well service tools and supplies.

The ordinary "Cost Component" values will be calculated in accordance with the methods of allocation provided in the Unit Agreements. In the event that an ordinary cost is not specified in the Table 1 "Cost Components" column, the cost will be assigned to the "gross-related costs" category. Field supervision, electricity, and administrative overhead costs shall be included in the appropriate "Cost Component" item, consistent with the cost allocation methods outlined in the Unit Agreements. For example, the "dehydration" cost component will include electricity, field supervision, and administrative overhead costs, as well as other costs related to operating the dehydration facilities.

B. Cost driver activity sets for base and actual costs will be determined for the accounting period. These are referred to as the Base Activity Set and Actual Activity Set. Each Activity Set includes values for the following five activity parameters: produced oil volume, produced water volume, produced gross volume, injected water volume, and number of active wells.

The Base Activity Set is derived in Exhibit B and represents the theoretical performance that would have been realized for the State's working interest share of W. Wilmington operations if the Program were not implemented. The Actual Activity Set is determined by calculating the State's working interest share of the W. Wilmington actual value for each activity parameter, based on the applicable W. Wilmington Agreements.

C. Base Ordinary Costs shall be calculated for the accounting period as provided in Table 2 below. The Base Activity Set is represented by items a through e in Table 2. The Actual Activity Set is represented by items f through j in Table 2. The Actual Ordinary Costs for each cost category are represented by k through o in Table 2. The Base Ordinary Costs are equal to the sum of the following:

- 1. Lesser of [(a/f)*k] or k, plus;
- 2. Lesser of [(b/g)*1] or l, plus;
- 3. Lesser of [(c/h) * m] or m, plus;
- 4. Lesser of [(d/i)*n] or n, plus;
- 5. Lesser of [(e/j)*o] or o.

Table 2

		Ва	se		Actual
Cost Driver/Activity Parameter					
Produced Oil Volume	bbls	a	3		f
Produced Water Volume	bbls	b)		g
Produced Gross Volume	bbls	c			ĥ
Injected Water Volume	bbls	c	t		i
No. of Active Wells	#	€	•		j
Ordinary Costs		Lesse	er of:		
Oil-related	\$	(a/f)*k	or	k	k
Water-related	\$	(b/g)*l	or	I	1
Gross-related	\$	(c/h)*m	or	m	m
Injection-related	\$	(d/i)*n	or	n	n
Well-related	\$	(e/j)*o	or	0	0

Eleventh Amendment to Long Beach Harbor Tidelands Parcel and Parcel "A" Oil Contract

This Eleventh Amendment to the Long Beach Harbor Tidelands Parcel and Parcel "A" Oil Contract ("Eleventh Amendment") is made and entered into by and between the City of Long Beach, a municipal corporation ("City") and Tidelands Oil Production Company, a Texas general partnership, by it partners, OXY Wilmington, LLC, a Delaware corporation and OXY Tidelands, Inc., a Delaware corporation ("Contractor").

RECITALS

- A. Effective March 1, 1989, the City entered into the Long Beach Harbor Tidelands Parcel and Parcel "A" Oil Contract ("Contract") with several entities that comprised the Contractor. Through a series of assignments, the current Contractor is Tidelands Oil Production Company, which is owned by OXY Wilmington, LLC and OXY Tidelands, Inc.
- B. Acting pursuant to Chapter 1163 of the Statutes of 1991 (AB 2249), the City and the Contractor, with the approval of the California State Lands Commission (State), extended the term of the Contract to March 1, 2024, so that it would have a total term of thirty-five (35) years.
- C. Chapter 446 of the Statutes of 2008 (AB 2165) authorized a further extension of the Contract to the time when oil, gas, or other hydrocarbons from the zones beneath the tide and submerged lands covered by the Contract no longer can be produced in paying quantities.
- D. AB 2165 made the further extension of the term of the Contract contingent upon the City, the State and the Contractor entering into an agreement that provides financial incentives for the Contractor to explore for and develop additional oil reserves beneath the tidelands and submerged lands covered by the Contract.
- E. Concurrent with the execution of this Eleventh Amendment, the City, the State and the Contractor will be executing the Agreement for Implementation of an Optimized Waterflood Program for the West Wilmington Oil Field ("OWPA").

NOW, THEREFORE, in consideration of the mutual promises set forth herein, it is agreed as follows:

Section 4 of the Contract (Term- Terfollows:	rmination) shall be replaced in its entirety to read as
March 1, 1989 and ending when	this agreement shall be for the period beginning oil, gas or other hydrocarbons from the zones lands covered by this agreement no longer can be
2. This Eleventh Amendment shall is	be effective on the effective date of the OWPA which
Except as expressly set forth her shall remain in full force and eff	rein, all of the terms and conditions of the Contract Pect.
IN WITNESS WHEREOF, the Parti- be duly executed as of the day and y	ies hereto have caused this Eleventh Amendment to vear first above written,
Dated:, 2012	THE STATE OF CALIFORNIA by the State Lands Commission
	By: Curtis L. Fossum Executive Officer

Dated:	, 2012	CITY OF LONG BEACH, a municipal corporation,	
		By:	
		Patrick H. West City Manager	_

	TIDELANDS OIL PRODUCTION COMPANY, a Texas partnership, by its general partners,
Dated:, 2012	OXY TIDELANDS, INC.
	By: Todd Stevens Vice President
Dated:, 2012	OXY WILMINGTON, LLC
	By: Todd Stevens Vice President