STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT OIL CONSERVATION DIVISION

IN THE MATTER OF THE HEARING CALLED BY THE OIL CONSERVATION DIVISION FOR THE PURPOSE OF CONSIDERING:

Case No. 10619 Order No. R-9822

APPLICATION OF SIETE OIL AND GAS COMPANY FOR APPROVAL OF A WATERFLOOD PROJECT, EDDY COUNTY, NEW MEXICO.

ORDER OF THE DIVISION

BY THE DIVISION:

This cause came on for hearing at 8:15 a.m. on December 3, 1992, at Santa Fe, New Mexico, before Examiner David R. Catanach.

NOW, on this 6th day of January, 1993, the Division Director, having considered the testimony, the record, and the recommendations of the Examiner, and being fully advised in the premises,

FINDS THAT:

- (1) Due public notice having been given as required by law, the Division has jurisdiction of this cause and the subject matter thereof.
- (2) Division Case Nos. 10618 and 10619 were consolidated at the time of the hearing for the purpose of testimony.
- (3) The applicant, Siete Oil and Gas Company (Siete), seeks authority to institute a waterflood project in its Parkway Delaware Unit by the injection of water into the Delaware formation, Parkway-Delaware Pool, Eddy County, New Mexico, through the gross perforated and/or open hole interval from approximately 4,210 feet to a depth of 4,350 feet in five existing wells as shown on Exhibit "A" attached hereto.
- (4) The applicant's Parkway Delaware Unit Area comprises some 920 acres in portions of Sections 26, 35 and 36, Township 19 South, Range 29 East, and portions of Section 2, Township 20 South, Range 29 East, NMPM, Eddy County, New Mexico.

(5) Within the Parkway-Delaware Pool there are three distinct and separate producing intervals identified by the applicant as the "A", "B" and "C" intervals. According to applicant's evidence, the "C" interval is the thickest, most permeable, most lateral continuous, and the most prolific producing interval within the Parkway-Delaware Pool. The applicant intends to initially flood the "C" interval and expand into the "A" and "B" intervals at a later time.

- (6) In addition, in the initial stage of the waterflood project, the applicant intends to convert five wells to injection and drill an additional two injection wells. At a later time, according to testimony, the applicant intends to drill an additional seven injection wells.
- (7) Within the Parkway Delaware Unit Area the applicant will utilize eighteen producing wells. According to evidence, testimony and data obtained from Division records, there are eight producing wells within the unit area which are currently capable of producing at or near top allowable (80 BOPD) for the Parkway-Delaware Pool. The remaining ten producing wells within the unit area currently produce at an average rate (January-October, 1992) of approximately 15 barrels of oil per day.
- (8) The average production (January-October, 1992) from the eighteen producing wells to be utilized in the proposed project is approximately 43 barrels of oil per day.
- (9) The water injection project, as described and proposed by the applicant, more closely resembles at this time a pressure maintenance project.
- (10) The proposed water injection project should be classified as a pressure maintenance project and should be assigned a project allowable based upon a standard formula utilized by the Division.
- (11) The project allowable should be equal to top unit allowable for the Parkway-Delaware Pool times the number of developed (production or injection) proration units within the subject project area.
- (12) In addition, the transfer of allowables between wells within the project area should be permitted.
- (13) The proposed pressure maintenance project should result in the recovery of otherwise unrecoverable oil, thereby preventing waste.

(14) The applicant should take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.

- (15) The injection of water into each of the wells shown on Exhibit "A" should be accomplished through 2 3/8-inch internally plastic-lined tubing installed in a packer set within 100 feet of the uppermost injection perforation; the casing-tubing annulus should be filled with an inert fluid and a gauge or approved leak-detection device should be attached to the annulus in order to determine leakage in the casing, tubing or packer.
- (16) According to applicant's evidence and testimony, there is one well within the "area of review" which may not be cemented adequately so as to confine the injected fluid to the proposed injection zone.
- (17) Prior to commencing injection operations into the Apache "A" Federal Well No. 3, the applicant should be required to cement above, across and below the proposed injection interval in the Strata Production Company Petco State Com Well No. 1 located 760 feet from the South line and 660 feet from the East line (Unit P) of Section 26, Township 19 South, Range 29 East, NMPM, in a manner acceptable to the supervisor of the Division's Artesia District Office.
- (18) Prior to commencing injection operations into the wells shown on Exhibit "A", the casing in each well should be pressure tested throughout the interval from the surface down to the proposed packer setting depth, to assure the integrity of such casing.
- (19) The injection wells or pressurization system should be initially equipped with a pressure control device or acceptable substitute which will limit the surface injection pressure to no more than 842 psi.
- (20) The Division Director should have the authority to administratively authorize a pressure limitation in excess of the pressure limitation described in Finding No. (19) above upon a showing by the operator that such higher pressure will not result in the fracturing of the injection formation or confining strata.
- (21) The operator should give advance notification to the supervisor of the Artesia District Office of the Division of the date and time of the conductance of remedial cement work on the Petco State Com Well No. 1, the installation of injection equipment and of the mechanical integrity pressure tests in order that the same may be witnessed.

- (22) The proposed pressure maintenance project should be approved and the project should be governed by the provisions of Rule Nos. 701 through 708 of the Oil Conservation Division Rules and Regulations.
- (23) At the time of the hearing, the applicant requested that the subject pressure maintenance project be approved by the Division as a qualified "Enhanced Oil Recovery Project" pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).
- (24) The evidence presented indicates that the subject pressure maintenance project meets all the criteria for approval.
- (25) The approved "project area" should initially comprise the area approved for statutory unitization by Division Order No. R-9821, and described as follows:

TOWNSHIP 19 SOUTH, RANGE 29 EAST, NMPM

Section 26: SW/4 SE/4

Section 35: N/2, SE/4, E/2 SW/4 and NW/4 SW/4 Section 36: W/2 W/2, SE/4 NW/4 and NE/4 SW/4

TOWNSHIP 20 SOUTH, RANGE 29 EAST, NMPM

Section 2: NW/4 NE/4

- (26) To be eligible for the EOR credit, prior to commencing injection operations, the operator must request from the Division a Certificate of Qualification, which certificate will specify the proposed project area as described above.
- (27) At such time as a positive production response occurs and within five years from the date of the Certificate of Qualification, the applicant must apply to the Division for certification of positive production response, which application shall identify the area actually benefitting from enhanced recovery operations, and identifying the specific wells which the operator believes are eligible for the credit. The Division may review the application administratively or set it for hearing. Based upon evidence presented, the Division will certify to the Department of Taxation and Revenue those lands and wells which are eligible for the credit.

IT IS THEREFORE ORDERED THAT:

(1) The application of Siete Oil and Gas Company for approval to institute a waterflood project in its Parkway Delaware Unit, Eddy County, New Mexico, is hereby denied.

(2) The application of Siete Oil and Gas Company for authority to institute a pressure maintenance project in its Parkway Delaware Unit by the injection of water into the Delaware formation, Parkway-Delaware Pool, Eddy County, New Mexico, through the gross perforated and/or open hole interval from approximately 4,210 feet to a depth of 4,350 feet in five existing wells as shown on Exhibit "A" attached hereto is hereby approved.

- (3) The applicant shall take all steps necessary to ensure that the injected water enters only the proposed injection interval and is not permitted to escape to other formations or onto the surface from injection, production, or plugged and abandoned wells.
- (4) Injection into the wells shown on Exhibit "A" shall be accomplished through 2 3/8-inch plastic-lined tubing installed in a packer set approximately within 100 feet of the uppermost injection perforation; the casing-tubing annulus in each well shall be filled with an inert fluid and equipped with an approved pressure gauge or attention-attracting leak detection device.
- (5) The injection wells or pressurization system shall be equipped with a pressure control device or acceptable substitute which will limit the surface injection pressure to no more than 842 psi.
- (6) The Division Director shall have the authority to administratively authorize a pressure limitation in excess of the above upon a showing by the operator that such higher pressure will not result in the fracturing of the injection formation or confining strata.
- (7) Prior to commencing injection operations into the wells shown on Exhibit "A", the casing in each well shall be pressure-tested throughout the interval from the surface down to the proposed packer setting depth, to assure the integrity of such casing.
- (8) Prior to commencing injection operations into the Apache "A" Federal Well No. 3, the applicant shall cement above, across and below the proposed injection interval in the Strata Production Company Petco State Com Well No. 1 located 760 feet from the South line and 660 feet from the East line (Unit P) of Section 26, Township 19 South, Range 29 East, NMPM, in a manner acceptable to the supervisor of the Division's Artesia District Office.

- (9) The operator shall give advance notification to the supervisor of the Artesia District Office of the Division of the date and time of the conductance of remedial cement operations on the Petco State Com Well No. 1, the installation of injection equipment and of the mechanical integrity pressure tests in order that the same may be witnessed.
- (10) The applicant shall immediately notify the supervisor of the Artesia District Office of the Division of the failure of the tubing, casing or packer in any of the injection wells shown on Exhibit "A", the leakage of water or oil from or around any producing well, or the leakage of water or oil from any plugged and abandoned well within the project area, and shall take such steps as may be timely and necessary to correct such failure or leakage.
- (11) The project allowable shall be equal to top unit allowable for the Parkway-Delaware Pool times the number of developed (production or injection) proration units within the subject project area.
- (12) In addition, the transfer of allowables between wells within the project area shall be permitted.
- (13) The subject pressure maintenance project is hereby designated the Parkway Delaware Unit Pressure Maintenance Project, and the applicant shall conduct injection operations in accordance with Division Rule Nos. 701 through 708 and shall submit monthly progress reports in accordance with Division Rule Nos. 706 and 1115.
- (14) The subject pressure maintenance project is hereby approved as an "Enhanced Oil Recovery Project" pursuant to the "Enhanced Oil Recovery Act" (Laws 1992, Chapter 38, Sections 1 through 5).
- (15) The approved "project area" shall initially comprise the area approved for statutory unitization by Division Order No. R-9821, and described as follows:

TOWNSHIP 19 SOUTH, RANGE 29 EAST, NMPM

Section 26: SW/4 SE/4

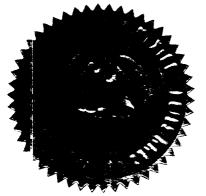
Section 35: N/2, SE/4, E/2 SW/4 and NW/4 SW/4 Section 36: W/2 W/2, SE/4 NW/4 and NE/4 SW/4

TOWNSHIP 20 SOUTH, RANGE 29 EAST, NMPM

Section 2: NW/4 NE/4

- (16) To be eligible for the EOR credit, prior to commencing injection operations, the operator must request from the Division a Certification of EOR Project, which certificate will specify the proposed project area as described above.
- (17) At such time as a positive production response occurs and within five years from the date of the Certification of EOR Project, the applicant must apply to the Division for certification of positive production response, which application shall identify the area actually benefitting from enhanced recovery operations, and identifying the specific wells which the operator believes are eligible for the credit. The Division may review the application administratively or set it for hearing. Based upon evidence presented, the Division will certify to the Department of Taxation and Revenue those lands and wells which are eligible for the credit.
- (18) Jurisdiction of this cause is retained for the entry of such further orders as the Division may deem necessary.

DONE at Santa Fe, New Mexico, on the day and year hereinabove designated.



S E A L

STATE OF NEW MEXICO
OIL CONSERVATION DIVISION

WILLIAM J. Lemay

Director

EXHIBIT "A" DIVISION ORDER NO. R-9822 PARKWAY DELAWARE UNIT APPROVED INJECTION WELLS

Apache "A" rederal No. 5	890" FNL - 990" FEL	>	35-195-29E	4221 - 4239	0/14	2 3/8	2+1
Aracha "A" Faderal No. A	000' ENI 010' ENI	حــــــــــــــــــــــــــــــــــــ	35 106 205	4210' 1216'	4160	7 3/8"	CTX
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	1000 FET 760 FWT	-	75 106 70E		4 17O	3 2 / 2"	013
Osage Federal No. 5	1980 FSL - 760 FWL	L	33-195-29E	4220 - 4300	0/14	23/0	046
Deposed Endoral No. 3	ייט ייט אר דאון איטי דווין		300 301 30		4100	3/2/2"	813
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Flathead State No. 1	330' ENI . 1650' EEI	ಶ	7-205-205	4266' - 4350'	4215	2 3/8"	842
* :	000 1110 1000 1111	t	1 100		t	1 0	i

PADILLA & SNYDER

ATTORNEYS AT LAW
200 W. MARCY, SUITE 216
P.O. BOX 2523

SANTA FE, NEW MEXICO 87504-2523 FACSIMILE: (505) 988-7592

TELEPHONE: (505) 988-7577

November 12, 1992

Case 10619

CERTIFIED MAIL

TO: SURFACE OWNERS AND OPERATORS WITHIN THE WATERFLOOD PROJECT AND OFFSET OPERATORS WITHIN ONE-HALF MILE OF INJECTION WELLS (See attached list)

RE: Application of Siete Oil & Gas Corporation for a Waterflood Project, Eddy County, New Mexico

Pursuant to the Rules and Regulations of the General Rules of the Oil Conservation Division of New Mexico, notice is given of the above-referenced application. You may protest the enclosed application by appearing at the hearing of this application which will be heard on December 3, 1992 beginning at the hour of 8:15 a.m., at the offices of the Oil Conservation Division, State Land Office Building, 310 Old Santa Fe Trail, Santa Fe, New Mexico.

Ernest

L. Padilla

ELP:pmc

Enclosures as stated

xc: Siete Oil & Gas Corporation

STATE OF NEW MEXICO DEPARTMENT OF ENERGY AND MINERALS OIL CONSERVATION DIVISION

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QIL CONSERVATION DIVISION

APPLICATION OF SIETE OIL & GAS CORPORATION FOR WATERFLOOD PROJECT, EDDY COUNTY, NEW MEXICO

CASE	NO.	
	110.	

APPLICATION FOR WATERFLOOD PROJECT

Applicant states:

- 1. That Applicant seeks authority to institute a waterflood project within the Parkway Delaware Pool by the injection of water through the following injection wells:
 - a) Apache A #3, Unit A, 890' FNL 990' FEL Sec. 35, T19S, R29E
 - b) Apache A #4, Unit D, 990' FNL 940' FEL Sec. 35, T19S, R29E
 - c) Osage #5, Unit L, 1980' FSL 760"FWL Sec. 35, T19S, R29E
 - d) Renegade #3, Unit E, 2230' FNL 760' FWL Sec. 35, T19S, R29E
 - e) Flathead #1, Unit B, 330' FNL 1650' FEL Sec. 2, T20S, R29E
- 2. That the horizontal limits of the waterflood project shall include the following described lands in Eddy County, New Mexico:

Township 19 South, Range 29 East,

Section 26: SW/4 SE/4

Section 35: N/2, N/2S/2, SE/4SW/4, S/2SE/4 Section 36: NW/4NW/4, S/2NW/4, N/2SW/4, SW/4SW/4

Township 20 South, Range 29 East,

Section 2: NW/4 NE/4

- The producing formations in the proposed project area are in an advanced stage of depletion and the area is suitable for waterflooding.
- 4. That attached hereto and made a part of this application is a Form C-108, together with its information requirements.
- The proposed waterflood project should result in recovery of otherwise unrecoverable oil, thereby preventing waste and should otherwise protect correlative rights.

WHEREFORE, Applicant requests that the application be granted in its entirety, and for such other and proper relief as the Division deems proper and appropriate.

Respectfully submitted,

PADILLA & SNYDER

O. Box 2523

Santa Fe, New Mexico 87504-2523

(505) 988-7577

ATTORNEYS FOR APPLICANT

OIL CONSERVATION DIVISION POST DIFFICE BUX 2008 STATE LAND DIFFICE BUILDING BANTA PE, NEW MERICO 87501

APPLICATION FOR AUTHORIZATION TO IN	リンさしょ
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DISTRIBUTION. Deletes and one ore

PPLICA	TION FOR AUTHORIZATION TO INJECT .
I.	Purpose: X Secondary Recovery Pressure Maintenance Disnosal Storage Application qualifies for administrative approval? yes X no
II.	Operator: Siete Oil & Gas Corporation
	Address: P.O. BOX 2523
	Contact party: RObert Lee Phone: 505-622-2202
111.	Well data: Complete the data required on the reverse side of this form for each well proposed for injection. Additional sheets may be attached if necessary.
IV.	Is this an expansion of an existing project? yes yes yno If yes, give the Division order number authorizing the project
٧.,	Attach a map that identifies all wells and leases within two miles of any proposed injection well with a one-half mile radius circle drawn around each proposed injection well. This circle identifies the well's area of review.
V1.	Attach a tabulation of data on all wells of public record within the area of review which penetrate the proposed injection zone. Such data shall include a description of each well's type, construction, date drilled, location, depth, record of completion, and a schematic of any plugged well illustrating all plugging detail.
VII.	Attach data on the proposed operation, including:
	 Proposed average and maximum daily rate and volume of fluids to be injected; Whether the system is open or closed; Proposed average and maximum injection pressure; Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and If injection is for disposal purposes into a zone not productive of oil or gas at or within one mile of the proposed well, attach a chemical analysis of the disposal zone formation water (may be measured or inferred from existing literature, studies, nearby wells, etc.).
V111.	Attach appropriate geological data on the injection zone including appropriate lithological detail, geological name, thickness, and depth. Give the geologic name, and depth to bottom of all underground sources of drinking water (aquifers containing waters with total dissolved solids concentrations of 10,000 mg/l or less) overlying the proposed injection zone as well as any such source known to be immediately underlying the injection interval.
IX.	Describe the proposed stimulation program, if any.
х.	Attach appropriate logging and test data on the wall. (If well logs have been filed with the Division they need not be resubmitted.)
х1.	Attach a chomical analysis of fresh water from two or more fresh water wells (if available and producing) within one mile of any injection or disposal well showing location of wells and dates samples were taken.
XII.	Applicants for disposal wells must make an affirmative statement that they have examined evailable geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.
XIII.	Applicants must complete the "Proof of Notice" section on the reverse side of this form.
xīv.	Certification
	I heroby certify that the information submitted with this application is true and correcto the best of my knowledge and belief.
	Name: Robert Lee 1 Title Production Manager
	Signature: Collitel, Dato:
auba	the information required under Sections VI, VIII, X, and XI above has been proviously nitted, it need not be duplicated and resubmitted. Please show the date and circumstance the earlier submittal.

III. WELL DATA

- A. The following well data must be submitted for each injection well covered by this application. The data must be both in tabular and schematic form and shall include:
 - (1) Lense name; Well No.; location by Section, Township, and Range; and Coolage location within the section.
 - (2) Each casing string used with its size, setting depth, sacks of cement used, hole size, top of cement, and how such top was determined.
 - (3) A description of the tubing to be used including its size, lining material, and setting depth.
 - (4). The name, model, and setting depth of the packer used or a description of any other seal system or assembly used.

Division District offices have supplies of Well Data Sheets which may be used or which may be used as models for this purpose. Applicants for several identical wells may submit a "typical data sheet" rather than submitting the data for each well.

- 6. The following must be submitted for each injection well covered by this application. All items must be addressed for the initial well. Responses for additional wells need be shown only when different. Information shown on schematics need not be repeated.
 - (1) The name of the injection formation and, if applicable, the field or pool name.
 - (2) The injection interval and whether it is perforated or open-hole.
 - (3) State if the well was drilled for injection or, if not, the original purpose of the well
 - (4) Give the depths of any other perforated intervals and detail on the sacks of cement or bridge plugs used to seal off such perforations.
 - (5) Give the depth to and name of the next higher and next lower oil or gas zone in the area of the well, if any.

XIV. PROOF OF NOTICE

All applicants must furnish proof that a copy of the application has been furnished, by certified or registered mail, to the owner of the surface of the land on which the well is to be located and to each leasehold operator within one-half mile of the well location.

Where an application is subject to administrative approval, a proof of publication must be submitted. Such proof shall consist of a copy of the legal advertisement which was published in the county in which the well is located. The contents of such advertisement must include:

- (1) The name, address, phone number, and contact party for the applicant;
- (2) the intended purpose of the injection well; with the exact location of single wells or the section, township, and range location of multiple wells;
- (3) the formation name and depth with expected maximum injection rates and pressures; and
- (4) a nutation that interested parties must file objections or requests for hearing with the Oil Conservation Division, P. D. Box 2088, Santa Fe, New Mexico 87501 within 15 days.

NO ACTION WILL BE TAKEN ON THE APPLICATION UNTIL PROPER PROOF OF NOTICE HAS BEEN SUBMITTED.

NOTICE: Surface owners or offset operators must file any objections or requests for hearing of administrative applications within 15 days from the date this application was mailed to them.

WELL: APACHE A-3 CURRENT

FIELD: PARKWAY DELAWARE

INTERVAL: DELAWARE

Comp: 4/21/89

IP: 216 BOPD, 126 MCFGPD, 65 BWPD

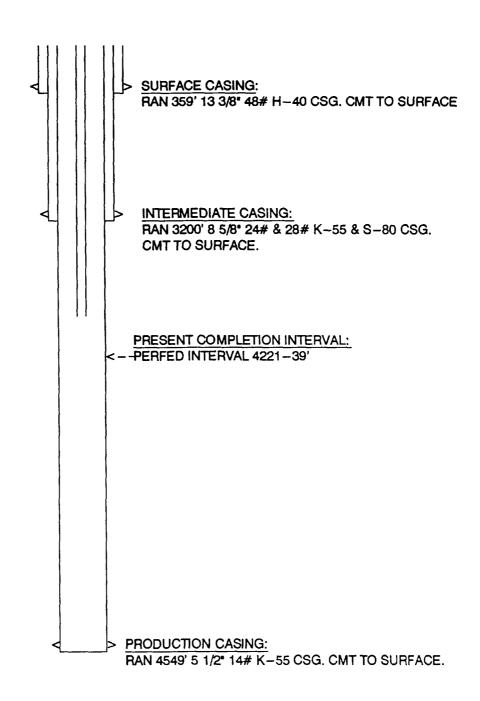
SPUDDED: 3/22/89

LOCATION:

890 FNL & 990 FEL SEC 35 T19S R29E

EDDY COUNTY, NM

API #: 30-15-26079



DRAWN BY: BJG DATE: MARCH 23, 1992 TD: 4550' PBTD: 4501'

WELL: APACHE A-3

FIELD: PARKWAY DELAWARE

INTERVAL: DELAWARE

Comp: 4/21/89

IP: 216 BOPD, 126 MCFGPD, 65 BWPD

SPUDDED: 3/22/89

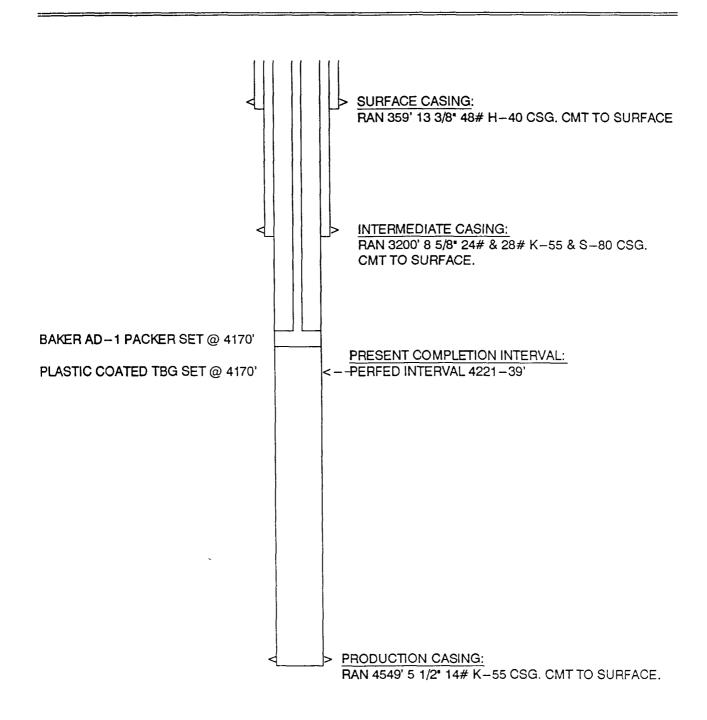
PROPOSED

LOCATION:

890 FNL & 990 FEL SEC 35 T19S R29E

EDDY COUNTY, NM

API #: 30-15-26079



DRAWN BY: BJG DATE: MAY 19, 1992 TD: 4550' PBTD: 4501'

PARKWAY WATERFLOOD UNIT

APACHE A-3 - CONVERT TO INJECTION

NMOCD Form C-108 Section III

- III. Data on injection well(s)
- A. Injection well information (see attached schematic)

Tabular data

1. Lease: Apache A

Well No: #3

Location: 890' FNL & 990' FEL, Sec 35 T19S R29E, Eddy

County, NM

2. Casing: 13 3/8" intermediate @ 359', circ cement to

surface.

8-5/8" intermediate @ 3200', circ cement to

surface.

5-1/2" production @ 4550', circ cmt to surface.

- 3. Injection tubing: + or 130 jts 2-3/8", 4.7 lb/ft, J-55 internally plastic coated tubing.
- 4. Packer: Baker Model AD-1 injection packer set @ 4170'.
- B. Other well information
 - 1. Injection formation: Delaware

Field: Parkway

- 2. Existing perforations 4221-39'.
- 3. This well was originally drilled as an oil producer.
- 4. There are no other zones completed in this wellbore.
- 5. Within the area of this project the Yates formation is marginally productive at a depth of 1440'.

WELL: APACHE A-4

CURRENT

FIELD: PARKWAY DELAWARE

INTERVAL: DELAWARE

Comp: 8/16/89

IP: 93 BOPD, 175 MCFGPD, 420 BWPD

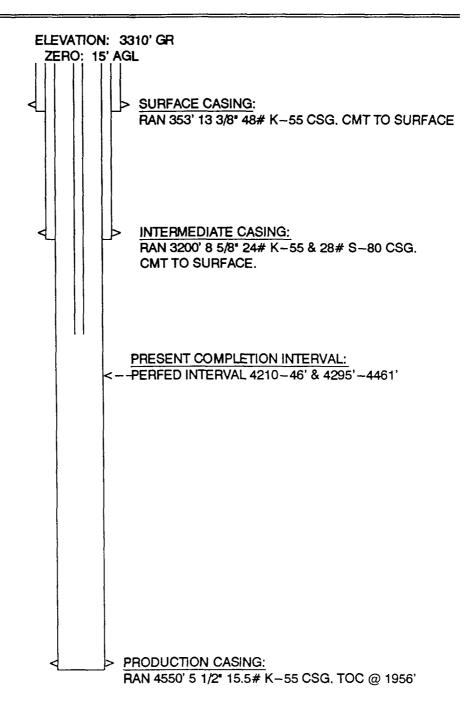
SPUDDED: 7/13/89

LOCATION:

990' FNL & 940' FEL SEC 35 T19S R29E

EDDY COUNTY, NM

API #: 30-15-26143



DRAWN BY: BJG DATE: MARCH 23, 1992 TD: 4550' PBTD: 4500'

WELL: APACHE A-4

FIELD: PARKWAY DELAWARE

INTERVAL: DELAWARE

Comp: 8/16/89

IP: 93 BOPD, 175 MCFGPD, 420 BWPD

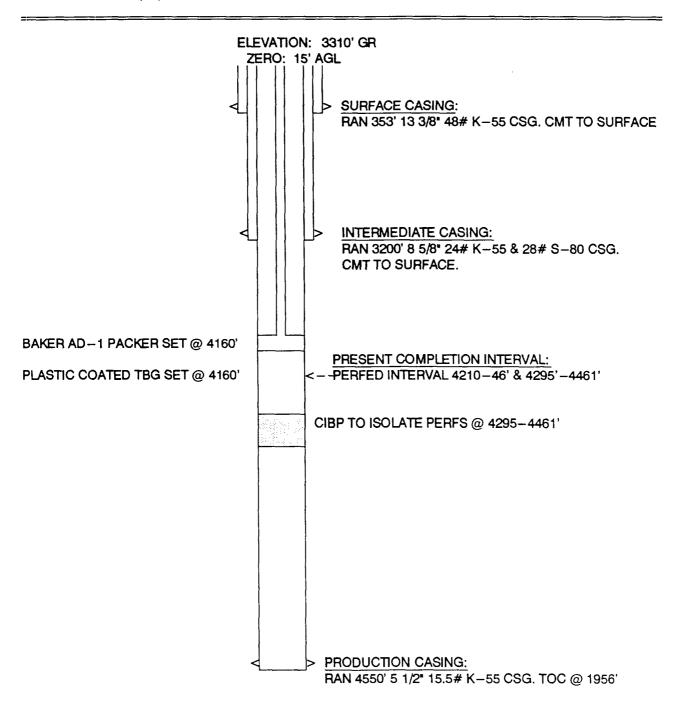
SPUDDED: 7/13/89

PROPOSED LOCATION:

990' FNL & 940' FEL SEC 35 T19S R29E

EDDY COUNTY, NM

API #: 30-15-26143



DRAWN BY: BJG DATE: NOV 2, 1992 TD: 4550' PBTD: 4500'

PARKWAY WATERFLOOD UNIT

APACHE A-4 - CONVERT TO INJECTION

NMOCD Form C-108 Section III

- III. Data on injection well(s)
- A. Injection well information (see attached schematic)

Tabular data

1. Lease: Apache A

Well No: #4

Location: 990' FNL & 940' FEL, Sec 35 T19S R29E, Eddy

County, NM

2. Casing: 13 3/8" intermediate @ 353', circ cement to

surface.

8-5/8" intermediate @ 3200', circ cement to

surface.

5-1/2" production @ 4550', TOC @ 1956' based on

CBL.

- 3. Injection tubing: + or 130 jts 2-3/8", 4.7 lb/ft, J-55 internally plastic coated tubing.
- 4. Packer: Baker Model AD-1 injection packer set @ 4160'.
- B. Other well information
 - 1. Injection formation: Delaware

Field: Parkway

- 2. Existing perforations 4210-46'.
- 3. This well was originally drilled as an oil producer.
- 4. The original completion at 4295-4461' will be isolated w/CIBP.
- 5. Within the area of this project the Yates formation is marginally productive at a depth of 1440'.

WELL: OSAGE FEDERAL #5

FIELD: PARKWAY DELAWARE INTERVAL: DELAWARE

Comp: 1/16/89

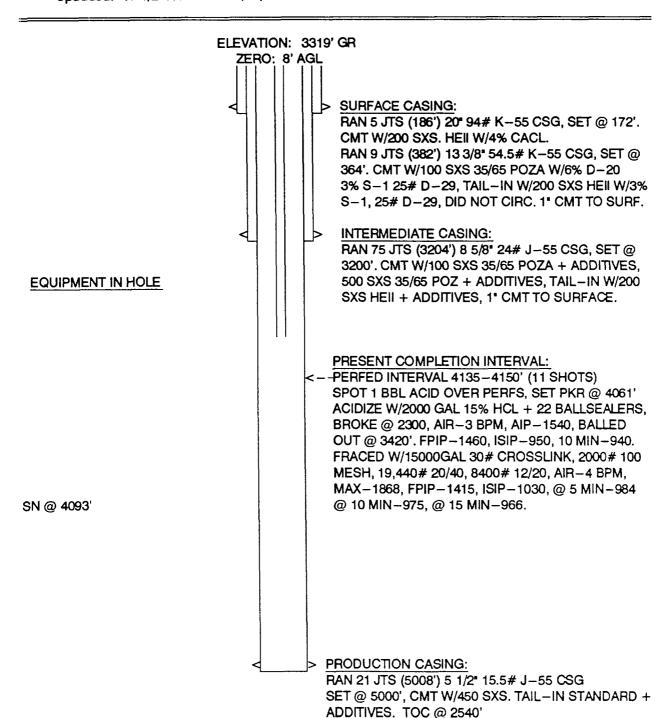
IP: 62 BOPD, 89 MCFGPD, 83 BWPD Spudded: 17 1/2" HOLE ON 11/30/88

CURRENT

LOCATION:

1980' FSL & 760' FWL SEC 35 T19S R29E EDDY COUNTY, NM

API #: 30-15-26029



DRAWN BY: BJG DATE: SEPT. 2, 1992 TD: 5000' PBTD: 4958'

WELL: OSAGE FEDERAL #5 PROPOSED

FIELD: PARKWAY DELAWARE

INTERVAL: DELAWARE

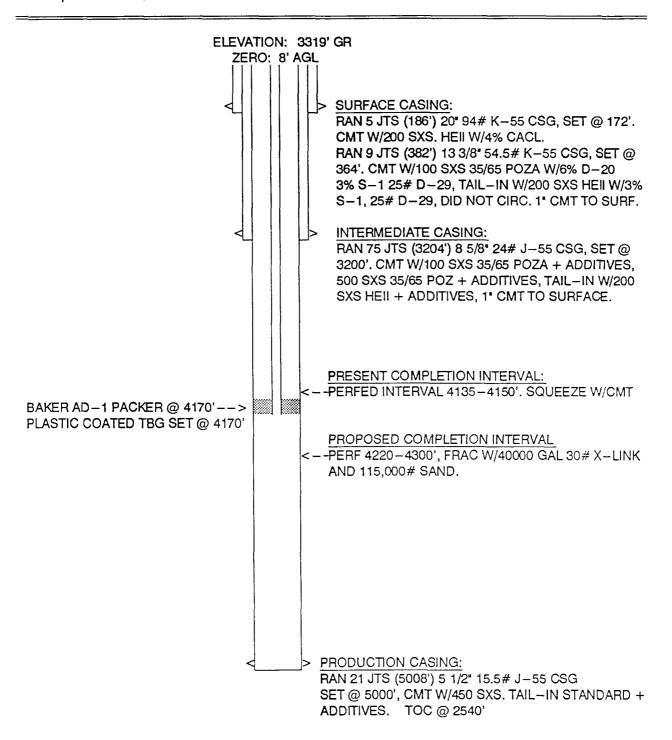
Comp: 1/16/89

IP: 62 BOPD, 89 MCFGPD, 83 BWPD Spudded: 17 1/2" HOLE ON 11/30/88

LOCATION:

1980' FSL & 760' FWL SEC 35 T19S R29E EDDY COUNTY, NM

API #: 30-15-26029



DRAWN BY: BJG DATE: MARCH 6, 1992 TD: 5000' PBTD: 4958'

PARKWAY WATERFLOOD UNIT

OSAGE #5 - CONVERT TO INJECTION

NMOCD Form C-108 Section III

- III. Data on injection well(s)
- A. Injection well information (see attached schematic)

Tabular data

1. Lease: Osage

Well No: #5

Location: 1980' FSL & 760' FWL, Sec 35 T19S R29E, Eddy

County, NM

2. Casing: 20" surface @ 172', circ cement to surface.

13-3/8" intermediate @ 382', circ cement to

surface.

8-5/8" intermediate @ 3204', circ cement to

surface

5-1/2" production @ 5008', TOC @ 2540' based on

CBL.

- 3. Injection tubing: + or 130 jts 2-3/8", 4.7 lb/ft, J-55 internally plastic coated tubing.
- 4. Packer: Baker Model AD-1 injection packer set @ 4170'.
- B. Other well information
 - 1. Injection formation: Delaware

Field: Parkway

- 2. Perforated interval will be between 4220 and 4300'.
- 3. This well was originally drilled as an oil producer.
- 4. The original completion at 4135-4150' will be squeezed with at least 100 sacks of cement.
- 5. Within the area of this project the Yates formation is marginally productive at a depth of 1440'.

WELL: RENEGADE FEDERAL #3

FIELD: PARKWAY DELAWARE INTERVAL: DELAWARE

Comp: 1/27/89

IP: 50 BOPD, 62 MCFGPD, 80 BWPD (GOR 1240) GRAVITY 39.6

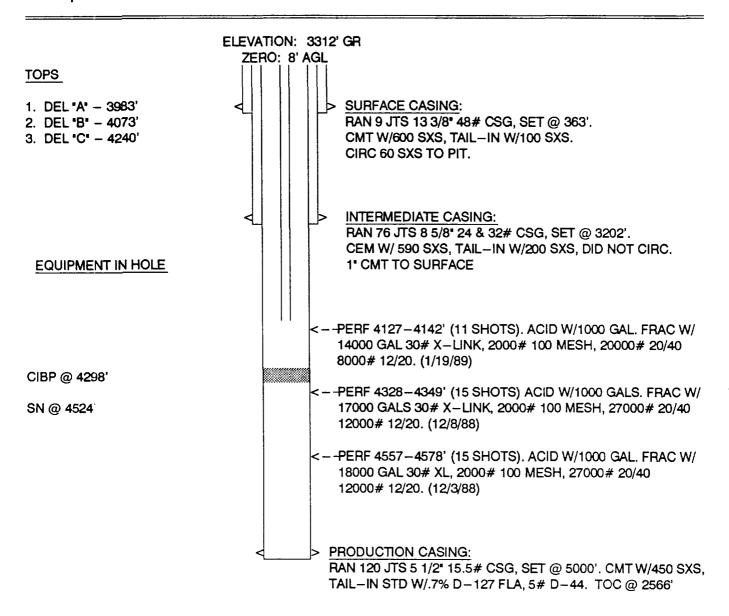
Spudded: 17 1/2" HOLE ON 11/15/88

CURRENT LOCATION:

> 2230' FNL & 760' FWL SEC 35 T19\$ R29E

EDDY COUNTY, NM

API #: 30-015-26006



DRAWN BY: BJG DATE: SEPT. 2, 1992 TD: 5000' PBTD:4298'

WELL: RENEGADE FEDERAL #3 (PROPOSED)

FIELD: PARKWAY DELAWARE

INTERVAL: DELAWARE

Comp: 1/27/89

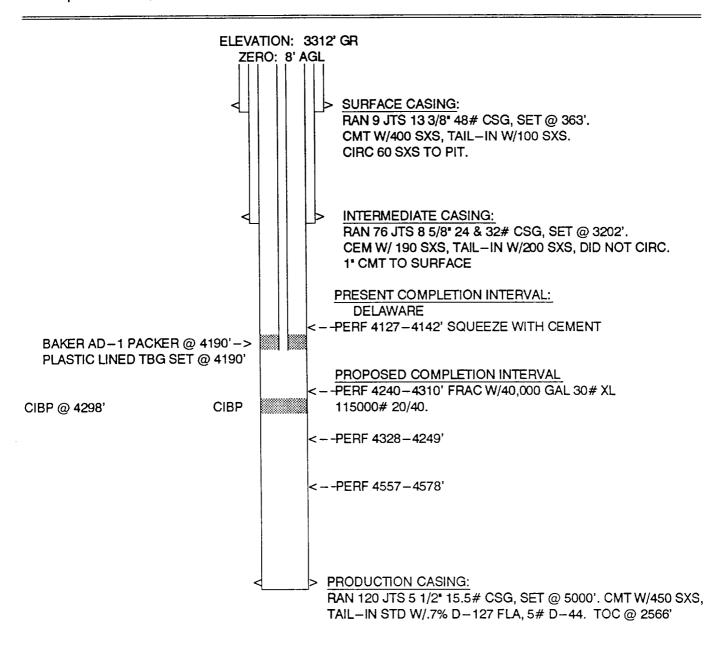
IP: 50 BOPD, 62 MCFGPD, 80 BWPD (GOR 1240) GRAVITY 39.6

Spudded: 17 1/2" HOLE ON 11/15/88

LOCATION:

2230' FNL & 760' FWL SEC 35 T19S R29E EDDY COUNTY, NM

API #: 30-015-26006



DRAWN BY: BJG DATE: AUGUST 2, 1991 TD: 5000' PBTD:4298'

PARKWAY WATERFLOOD UNIT

RENEGADE #3 - CONVERT TO INJECTION

NMOCD Form C-108 Section III

- III. Data on injection well(s)
- A. Injection well information (see attached schematic)

Tabular data

1. Lease: Renegade

Well No: #3

Location: 2230' FNL & 760' FWL, Sec 35 T19S R29E, Eddy

County, NM

2. Casing: 13 3/8" surface @ 363', circ cement to surface.

8-5/8" intermediate @ 3202', cement to

surface

5-1/2" production @ 5000', TOC @ 2566' based on

CBL.

- 3. Injection tubing: + or 131 jts 2-3/8", 4.7 lb/ft, J-55 internally plastic coated tubing.
- 4. Packer: Baker Model AD-1 injection packer set @ 4190'.
- B. Other well information
 - 1. Injection formation: Delaware

Field: Parkway

- 2. Perforated interval will be between 4240 and 4310'.
- 3. This well was originally drilled as an oil producer.
- 4. The original completion at 4127-4142' will be cement squeezed with at least 100 sacks of cement.
- 5. Within the area of this project the Yates formation is marginally productive at a depth of 1440'.

WELL: FLATHEAD STATE #1 (CURRENT)

FIELD: PARKWAY

330' FNL & 1650' FEL SEC 2 T20S R29E

DELAWARE INTERVAL:

LOCATION:

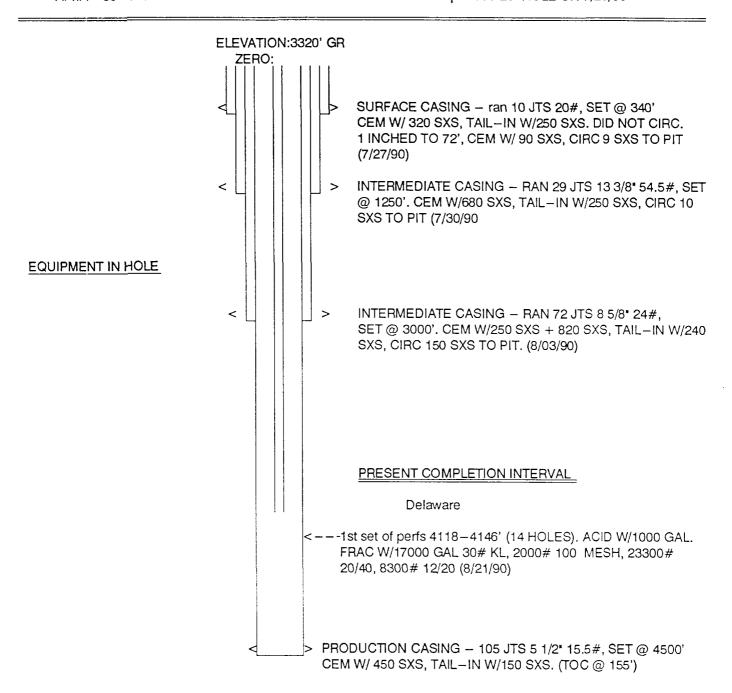
Comp: 8/23/90

Eddy County, N.M.

IP- 52 BOPD, 128 BWPD, 50 MCFGPD (EST)

Spudded 26" HOLE ON 7/26/90

API#: 30-015-26433



DRAWN BY: BJG DATE: JUNE 17, 1991 TD: 4500' PBTD: 4455'

WELL.

FLATHEAD STATE #1

(PROPOSED)

FIELD: PARKWAY

INTERVAL:

DELAWARE

Comp: 8/23/90

IP- 52 BOPD, 128 BWPD, 50 MCFGPD (EST)

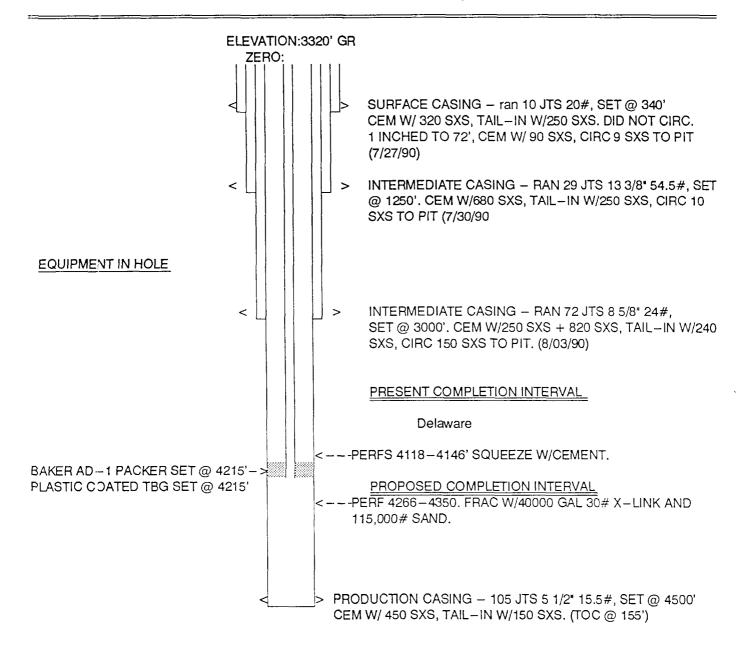
API#: 30-015-26433

LOCATION:

330' FNL & 1650' FEL SEC 2 T20S R29E

Eddy County, N.M.

Spudded 26" HOLE ON 7/26/90



DRAWN BY: BJG DATE: JUNE 17, 1991 TD: 4500' PBTD: 4455'

PARKWAY WATERFLOOD UNIT

FLATHEAD STATE #1 - CONVERT TO INJECTION

NMOCD Form C-108 Section III

- III. Data on injection well(s)
- A. Injection well information (see attached schematic)

Tabular data

1. Lease: Flathead

Well No: #1

Location: 330' FNL & 1650' FEL, Sec 2 T20S R29E, Eddy

County, NM

2. Casing: 20" surface @ 340', circ cement to surface.

13-3/8" intermediate @ 1250', circ cement to

surface

5-1/2" production @ 4500', TOC @ 155' based on

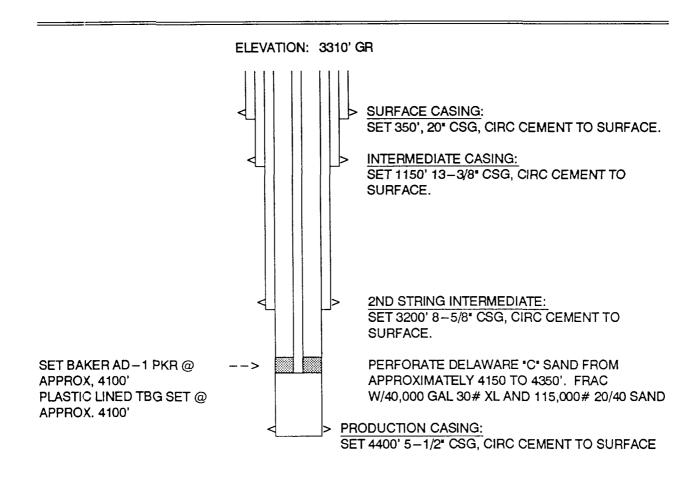
CBL.

- 3. Injection tubing: + or 132 jts 2-3/8", 4.7 lb/ft, J-55 internally plastic coated tubing.
- 4. Packer: Baker Model AD-1 injection packer set @ 4215'.
- B. Other well information
 - 1. Injection formation: Delaware

Field: Parkway

- 2. Perforated interval will be between 4266-4350'.
- 3. This well was originally drilled as an oil producer.
- 4. The original completion at 4118-4146' will be cement squeezed with at least 100 sacks of cement.
- 5. Within the area of this project the Yates formation is marginally productive at a depth of 1440'.

TYPICAL INJECTOR FOR PARKWAY WATERFLOOD



DRAWN BY: BJG

TD: 4400'

PARKWAY WATERFLOOD UNIT

TYPICAL INJECTION WELL

NMOCD Form C-108 Section III

III. Data on injection well(s)

A. Injection well information (see attached schematic)

Tabular data

1. Lease: Parkway Waterflood Unit

Well No: Typical new well.

Location: Various

2. Casing: 20" surface @ 300', circ cement to surface.
13-3/8" intermediate @ 1150', circ cement to

surface.

8-5/8" intermediate @ 3200', circ cement to

surface

5-1/2" production @ 4400', circ cement to

surface.

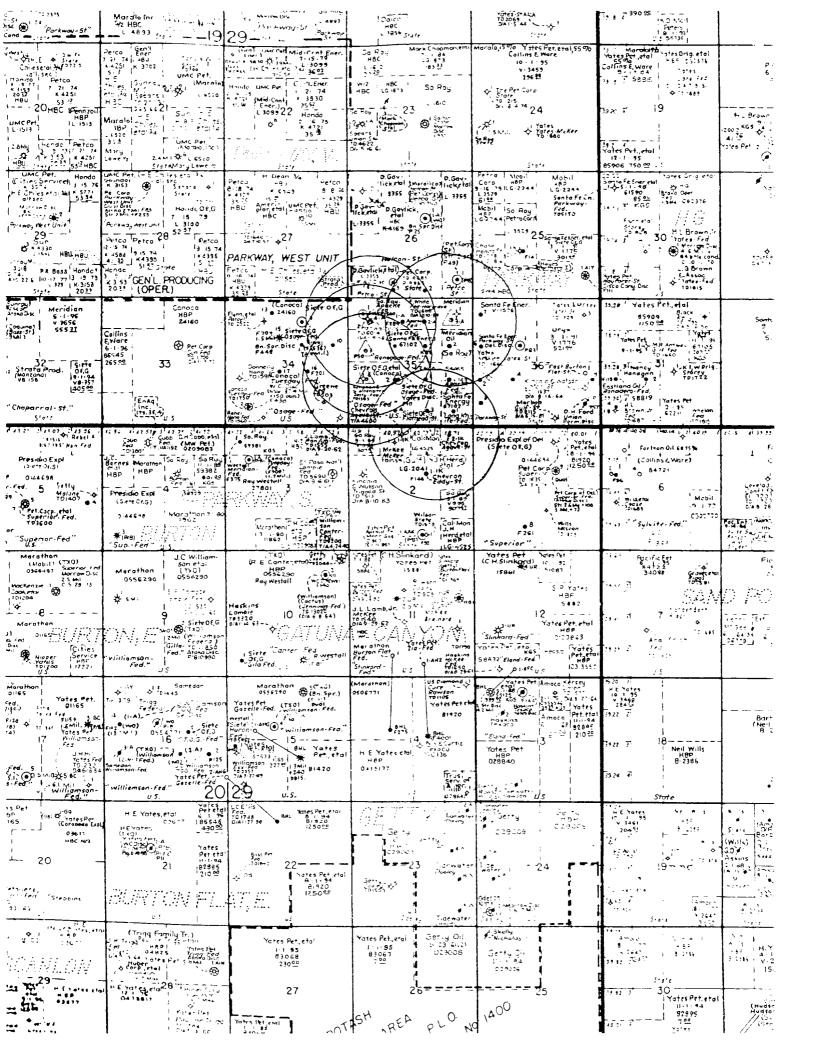
- 3. Injection tubing: + or 128 jts 2-3/8", 4.7 lb/ft, J-55 internally plastic coated tubing.
- 4. Packer: Baker Model AD-1 injection packer set @ 4100'.

B. Other well information

1. Injection formation: Delaware

Field: Parkway

- Perforated interval well be between 4150 and 4350' depending on the well location.
- 3. New injection wells will be drilled for the purpose of injection.
- 4. There will be no other perforated or tested intervals in the new injection wells.
- 5. Within the area of this project the Yates formation is marginally productive at a depth of 1440'. This formation will have 2 strings of casing across it.



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CASING PROGRAM	SXS 002/M 283	8 5/8* @ 3202* W/1790 SXS	5 1/2' @ 5000' W/450 SXS	13 3/8* @ 357' W/665 SXS	5 1/2* @ 5795' W/2915 SXS	13 3/8" @ 365' W/500 SXS	8 5/8" @ 3201' W/790 SXS	5 1/2' @ 5000' W/350 SXS	13 3/8" @ 344' W/625 SXS	8 5/8" @ 3200' W/ 2300 SXS	5 1/2" @ 4500' W/650 SXS	13 3/8" @ 365' W/805 SXS	8 5/8' @ 3200' W/2300 SXS	5 1/2. @ 4500' W/650 SXS	13 3/8° @ 353' W/350 SXS	8 5/8* @ 3193' W/2860 SXS	5 1/2' @ 5908' W/620 SXS	13 3/8' @ 363 W/740 SXS	5 1/2" @ 4993" W/1550 SXS	13 3/8" @ 350' W/400 SXS	5 1/2' @ 1700' W/410 SXS	20' @ 173' W/200 SXS	13 3/8" @ 364' W/500 SXS	8 5/8' @ 3200' W/800 SXS	5 1/2" @ 5000 W/450 SXS	13 3/8* @ 381* W/400 SXS	8 5/8' @ 3200' W/1405 SXS	5 1/2' @ 5000' W/420 SXS	13 3/8" @ 360 W/755 SXS	8 5/8" @ 3218" W/2295 SXS	5 1/2° @ 5000 W/400 SXS	10 3/4" @ 370' W/350 SXS	7. @ 3200' W/100 SXS	4 1/2' @ 4850' W/450 SXS
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ΩĹ		2000		5800		5000'			4549'			4500			5910'			5000		1705		2000,				5000			2000,			,0009		
COMP.	DATE	1/26/89		10/22/88		12/3/88			4/18/89			2/1/89			8/12/88			10/24/88	1	2/18/89		1/10/89				12/30/88			11/22/88			3/1/89		
SPUD	DATE	11/15/88		9/16/88		11/16/88			3/9/89			12/12/88			7/18/88			10/2/88	ì	1/25/89		11/30/88				12/1/88	i		11/2/88	i		12/13/88		
TYPE	OF WELL	OIL		OIL	!	OIL			OIL	!		IIO	!		IIO	<u>;</u>		=) Ī	=) <u>i</u>	Oil	!			OIL	!		IIO	!		IIO	!	
LOCATION		35E 19S 29E	7720 LIN & 100 LIN	25F 19S 29F	1980 FN & 1980 FW	95G 19S 29E	1080 EN & 1980 FF	1 000 N N 1 000 1	25H 19S 29F	HOBO EN & GGO EE	3 - 006	251 19S 29E	1 080 ES & 990 EE	1	35 10S 20F	4 080 ES & 1080 EE	1 000 000	35V 40S 30E	1980 ES & 1980 FW	350 1 0 G 1300 1 11	1980 ES & 2080 FW	351 19S 29F	1980 ES & 760 FW			35N 19S 29F	GEO ES & 1980 FW		250 10S 20F	SEC 132 ESE	000 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	35P 19S 29F	SECTION SECTION OF THE SECTION OF TH	5
OPERATOR		SIETE		SIETE	2 7 1	SIETE			MEDIDIAN			MEDIDIAN			SIETE	31718		1110	31310	CIETE) 1	SIETE	- - - -			ATETE	2 1		SIETE	ָ ר		CANTA EE	1	
WELLNAME		RENEGADE FED #3		** CED TO VOTING	REINEGADE FED # 1	OCALCAN FOR SEN #9	HEINE CANDE I LU #2		C# QUU UNO V	A* U= 1 = U = X		++ Cub 0.0 < 0 ×	Arache reu # 1		10,000	OSAGE FED #1		0: 0:0	OSAGE FED #2	1 10 00	COAGE FED #/	3# 055 50	0 * 0 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	_		* CDD G000	October 150 ##		7 0 0 0 0	CONGE TEL #3		ONOMIEE OF #1	LONGNING BOOK	
STATUS	_	ACTIVE		TA LE	AC IVE	D/AFO V	ACLIVE		Litte	ACIVE:		Listo	ACIIVE		1,1120	ACIIVE			ACLIVE	4	∢ × -	L	ACIIVE	-		Litto	ACIIVE		T) "TO 4	ACTIVE		1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1, 1	ACLIVE	

 -									S 0 S		
CASING PROGRAM	ONO COLIMA CARD CONTRACTOR	71 3/4" (t) 3/10 W/500 5A5 7" (t) 3200' W/2717' SXS 4 1/2" (t) 4850' W/450 SXS	11 3/4* @ 406* W/750 SXS 7* @ 3184* W/2235 SXS 4 1/2* @ 4790* W/580 SXS	13 3/8' w 324' W/575 SXS 8 5/8' @ 3260' W/4935 SXS 5 1/2' @ 3993' W/385 SXS	20° 2 370° W/450 SXS 10 3/4° @ 1332° W/880 SXS 7° @ 3210° W/670 SXS 4 1/2° @ 4660° W/380 SXS	11 3/4' @ 366' W/260 SXS 7' @ 3187' W/4612 SXS 4 1/2' @ 5000' W/580 SXS	11 3/4' @ 415' W/795 SXS 7' @ 3200' W/3835 SXS 4 1/2' @ 4980' W/700 SXS	11 3/4* w 365' W/715 SXS 7* @ 3185' W/2135 SXS 4 1/2* @ 5000 S/580 SXS	20° @ 450° W/1125 SXS 13 3/8° @ 1159° W/1350 SXS 8 5/8° @ 3670° W/1600 SXS LNR 5 1/2° @ 3350 – 4600 W/250 S	30' @ 40' CIRC CM1. 20' @ 450 W/1300 SXS 13 3/8' @ 1165' W/1140 SXS 8 5/8' @ 3510' W/1400 SXS 5 1/2' @ 6250' W/1060 SXS	16. @ 265 2/280 SXS 11 3/4. @ 1454 W/720 SXS 8 5/8. @ 3212 W/1500 SXS 5 1/2. @ 8275 W/728 SXS
FORM	1	4	DELA	CHERRY	DELA	DELA	DELA	DELA	DELA	ଷ	BS
COMP.	INTERVAL	4216-4390	4360-4512'	3649-3661'	3747 – 3875'	4266–4326'	4006-4237	4261 – 4327'	3747-4458'	60586104'	7930-8177'
PBTD		4694.	4464'	3902'	4617'	4403'	4903'	4350'	3665'	6250'	8070'
Ð	ļ	4850'	4790'	12100'	4660'	5000'	5000,	5000	4600'	10850'	9500'
сомР.	DATE	12/1/89	9/4/89	3/7/87	12/31/89	9/22/89	5/3/89	7/17/89	7/18/89	10/29/89	6/2/90
SPUD	DATE	9/14/89	5/11/89	12/3/86	11/16/89	7/26/89	3/10/89	5/2/89	8/29/89	9/17/89	10/31/89
IYPE	OF WELL	OIL	OIL	OIL	OIL	OIL	OIL	OIL	OIL	NO	OIL
LOCATION		36D 19S 29E 660 FN & 330 FW	36E 19S 29E 1980 FN & 330 FW	36F 19S 29E 1980 FN & 1980 FW	36I 19S 29E 1980 FS & 330 FE	36K 19S 29E 1980 FS & 1650 FW	36L 19S 29E 1980 FS & 330 FW	36M 19S 29E 990 FS & 330 FW	2C 20S 29E 330 FN & 2310 FW	2G 20S 29E 1980 FN & 1980 FE	3D 20S 29E 660 FN & 660 FW
OPERATOR		SANTA FE	SANTA FE	SANTA FE	SANTA FE	SANTA FE	SANTA FE	SANTA FE	CHEVRON	CHEVRON	WESTALL
WELL NAME		PARKWAY 36 #7	PARKWAY 36 #6	PARKWAY 36 #1	PARKWAY 36 #9	PARKWAY 36 #4	PARKWAY 36 #2	PARKWAY 36 #3	AGAVE IK ST #1	EDDY IK ST #1	MERIDIAN #1
STATUS	2	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	INACTIVE	ACTIVE	ACTIVE

					0	23.00	۲	CTAC	aMOS	FO BW	CASING PROGRAM
STATUS	WELL NAME	OPERATOR	COCATION	OF WELL	DATE	DATE	2	2	INTERVAL	,	
ACTIVE	STATE 25 COM #1	SOUTHILAND ROYALTY	25K 19S 29E 1980 FS & 2130' FW	OIL	8/21/79	2/11/80	12040	11295	10564 – 732'	STFAWN	11 3/4* (i) 412* W/400 SXS 8 5/8* (ii) 4000* W/1500 SXS 4 1/2* (iii) 12040* W/1085 SXS
ACTIVE	HALCON ST #1	STRATA	26G 19S 29E 1980' FN & 1980' FE	OIL	8/21/88	88/30/88		8372'	8088 – 8248'	BS	11 3/4' @ 365' W/350 SXS 8 5/8' @ 3135' W/3200 SXS 5 1/2' @ 8412' W/500 SXS
ACTIVE	PETCO ST COM #3	STRATA	26N 19S 29E 330 FS & 1980 FW	OIL	12/6/89	1/17/90	4740'	NA	4316-4458'	DELA	13 3/8" @ 358" W/350 SXS 8 5/8" @ 3325" W/2930 SXS 5 1/2" @ 4740" W/300 SXS
P & A	PETCO ST COM #2	PETCO	26N 19S 29E 660 FS & 1980 FW	OIL	5/24/71	7/4/71	10685'	9651	9622 – 9646	WOLF	11 3/4" @ 605 W/600 5X5 8 5/8" @ 3800" W/700 SXS 4 1/2" @ 9779" W/360 SXS
ACTIVE	HALCON ST #2	STRATA	260 19S 29E 330 FS & 1980 FE	OIL	6/27/89	8/12/89	4730	4535'	42444258'	DELA	13 3/8 '@ 357 W/350 SXS 8 5/8 '@ 3285' W/300 SXS 5 1/2 '@ 4730' W/250 SXS
ACTIVE	PETCO ST COM #1	PETCO	26P 19S 29E 760 FS & 660 FE	OIL	8/26/70	2/9/89	11880'	,0006	10655 – 659'	STRAWN	11 3/4 '@ 600' W/500' SXS 8 5/8 '@ 4090 W/600 SXS 5 1/2' @ 10844' W/400 SXS
ACTIVE	OSAGE FED #9	SIETE	34B 19S 29E 990 FS & 1980 FE	OIL	8/3/86	68/6/6	9400,	9358'	9256-9281'	WOLF	20' @ 343' W/615 SXS 13 3/8' @ 1141' W/1000 SXS 8 5/8' @ 3200' W/1050 SXS 5 1/2' @ 9400' W/700 SXS
ACTIVE	OSAGE FED #13	SIETE	34C 19S 29E 660 FN & 1980 FW	OIL	11/3/89	12/20/89	9400'	7200'	5595-5623'	вз	20° @ 344° W/660 SXS 13.3/8° @ 1141° W/1000 SXS 8 5/8° @ 3169° W/650 SXS 5.1/2° @ 9400° W/1685 SXS
ACTIVE	OSAGE FED #15	SIETE	34E 19S 29E 1650 FN & 2310 FW	OIL	1/16/90	2/3/90	8300	8261'	5650 - 5623'	BS	20' @ 360' w 400 SXS 13 3/8' @ 1120' W/1000 SXS 8 5/8' @ 3200' W/750 SXS 5 1/2' @ 8300' W/1120 SXS
ACTIVE	OSAGE FED #8	SIETE	34G 19S 29E 1980 FN & 1980 FE	OIL	4/18/89	6/15/89	11900	11856'	5343-5256	DELA	20° @ 340° W/635 SXS 8 5/8° @ 3200° W/750 SXS 5 1/2° @ 11900 W/2450 SXS

										
CASING PROGRAM	20' (@ 347' W/510 SXS 13 3/8' (@ 1150' W/750 SXS 8 5/8' (@ 3200' W/1175 SXS 5 1/2' (@ 9500' W/1300 SXS	20' @ 358' W/775 SXS 13 3/8' @ 1150' W/800 SXS 8 5/8' @ 3200' W/1350 SXS 5 1/2' @ 8300' W/925 SXS	20' @ 366' W/800 SXS 13 3/8' @ 1120' W/750 SXS 8 5/8' @ 3200' W/1400 SXS 5 1/2' @ 8243' W/990 SXS	13 3/8° @ 359° W/955 SXS 8 5/8° @ 3200° W/1885 SXS 5 1/2° @ 4549° W/400 SXS	13 3/8' @ 365' W/378 SXS 8 5/8' @ 3210' W/2300 SXS 5 1/2' @ 4550' W/500 SXS	13 3/8' @ 372' W/725 SXS 8 5/8' @ 3200' W/2700 SXS 5 1/2' @ 4550' W/540 SXS	13 3/8' @ 353' W/465 SXS 8 5/8' @ 3200' W/4145 SXS 5 1/2' @ 4550' W/425 SXS	16' @ 300' W/505 SXS 9 5/8' @ 3230' W/2365 SXS 7' @ 9613' W/1360 SXS	CISCO 20° @ 370° W/1000 SXS CANYON 13 3/8° @ 1372° W/1400 SXS 8 5/8° @ 3482° W/2250 SXS 5 1/2° @ 12140° W/2125 SXS	11087-11466'MORROW'11 3/4' @ 330' W/350 SXS 8 5/8' @ 3116' W/1960 SXS 4 1/2' @ 11670' W/1020 SXS
FORM.	BS	вз	BS	DELA	DELA	DELA	DELA	BS	CANYON	MORROW
COMP.	7034-7192'	7002–7072'	6974—6991'	4221 4239'	4136-4229'	3949-4264'	4295–4461'	9310-9378'	10387 10394	1108711466
PBTD	7239'	8256'	8200,	4501'	4504'	4546'	4505'	9613'	10640'	11580'
£	9500'	8300,	9500,	4550'	4550'	4550'	4550'	11700	12140'	11670'
COMP.	11/17/89	3/28/90	1/20/91	4/12/89	4/22/89	6/16/89	8/16/89	7/10/86	6/23/91	2/10/82
SPUD	9/15/89	2/10/90	11/12/90	3/22/89	4/3/89	4/13/89	7/13/89	4/28/86	2/28/91	11/23/91
TYPE OF WELL	OIL	OIL	OIL	OIL	OIL	OIL	OIL	OIL	OIL	OIL
LOCATION	34H 19S 29E 1980 FN & 1980 FE	34J 19S 29E 2310' FS & 1750' FE	34K 19S 29E 2310 FS & 2310 FW	35A 19S 29E 890FN & 990 FE	35B 19S 29E 990 FN & 1980 FE	35C 19S 29E 990 FN & 2310 FW	35D 19S 29E 990 FN & 940 FW	3E 20S 29E 1400 FN & 990 FW	25P 19S 29E 990 FS & 660 FE	27G 19S 29E 1980 FN & 1980 FE
OPEHAIÖH	SIETE	SIETE	SIETE	MERIDIAN	MERIDIAN	MERIDIAN	MERIDIAN	WESTALL	YATES	UMC PET
WELL NAME	OSAGE FED #10	OSAGE FED #16	OSAGE FED #17	APACHE A FED #3	APACHE A FED #2	APACHE A FED #1	APACHE A FED #4	TUESDAYA FED #1	WAYFARER AIY ST #1	PARKWAY WEST UNIT #10
STATUS	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE	ACTIVE

PARKWAY WATERFLOOD

								1			Neg Code Chief
STATUS	WELL NAME	OPERATOR	LOCATION	TYPE OF WELL	SPUD DATE	COMP. DATE	<u>a</u>	n n	COMP.	E CHI	
SWD	TUESDAY FED #1	SIETE	34M 19S 29E 810 FS & 990 FW	OIL	1/11/85	5/16/85	12000.	11820	6520-6614'	BS	13 3/8* @ 1120` W/700 SXS 9 5/8* @ 2972` W/775 SXS 7* @ 11908` W/2000 SXS
			100 000 0		12/28/90	4/21/91	12100'	11805	10770-10824	STRAWN	20" @ 467' W/1225 SXS
ACTIVE	SUPERIOR FED #9	PHESIDIO	1 G 20S 29E	 -	12/20/30	16/13/4	2014		,		13 3/8" @ 1162' W/1125 SXS
			1030 FIN & 1300 L						11226-11233	ATOKA	8 5/8" @ 3450' W/1925 SXS
•											5 1/2. @ 11892' W/1700 SXS
Ly make y	0# CD1 GC/G14010	Oldisada	1 N 20S 29E	10	4/5/90	6/29/90	11908,	11050	10755-70770	STRAWN	20° @ 456' W/820 SXS
ACLIVE	SUPERIOR FED #8	ט טטטט	990 FS & 2130 FW	1							13 3/8" @ 1158' W/795 SXS
											8 5/8* @ 3450' W/1560 SXS
											5 1/2. @ 11899' W/1710 SXS
A OTHER	ANTUIL AAK ST #1	VATES	20 20S 29F	OIL	8/31/84	1/17/85	12000	11815	10655-10732 STRAWN	STRAWN	20° @ 40' CIRC CMT.
ACTIVE	AIN LICE AND ST # 1		660 ES & 2150 FE	!							13 3/8* @ 635' W/615 SXS
				-							7 5/8° @ 2662' W/3050 SXS
											4 1/2" @ 12150' W/575 SXS
A OTTINGE	TA TABLEAU #1	SIETE	2B 20S 29F	OIL	7/26/90	06/6/6	4500,	4455'	4118-4146	DELA	20° @ 340' W/570 SXS
ACIIVE N	יייי וובאו או	2	330 EN & 1650 FF	!							13 3/8* @ 1250' W/930 SXS
											8 5/8° @ 3000' W/1100 SXS
											5 1/2. @ 4500' W/600 SXS
D & Q	GETTY #1	LINEHAM &	35L 19S 29E	OIL	5/11/60	2/30/60	1605'	A'A	NA	YATES	10' @ 160'/SET.
ر ع د		STOLTENBERG									8 5/8" @ 260'/SET
2.0	APACHE 'A' FED #5	SOUTHLAND	,,,,	OIL	5/2/91	1/25/91	1600'	1540'	NONE	YATES	13 3/8" @ 220' W/350 SXS
ς 5 Σ		ROYALTY	890' FN & 840' FE								8 5/8 @ 1470' W/425 SXS
P & A	TRIGOOD ST #1	KINCAID &	2E 20S 29E	OIL	7/20/62	8/10/63	1513'	¥ V	NONE	Ø N	8 5/8" @ 357" w100 SXS
		WATSON	1980' FN & 660' FW								4 1/2' @ 1513 W/200 5AS
D & A	#1-35 FFD WA! TER	UNIONOIL	35D 19S 29E	OIL	11/22/55	1/9/56	6014	¥ X	NONE	DELA	11 3/4" @ 153' W/150 SXS
۲ ۲	1	OFCALIF	660' FN & 660' FW						-		8 5/8" @ 1200' W/250 SXS
								•			5/1/2. @ 4700' W/225 SXS
D & A	LAMBIE FED #1	EPNG &	3H 20S 29E	OIL	7/24/91	9/6/61	2690,	Ą	NONE	BS	13 3/8" @ 304' W/400 SXS
5	1	TX CRUDE	1980' FN & 660 FE								
T&A	PARKWAY 36-10	SANTA FE	361 19S 29E	OIL	2/24/91	4/24/91	11354	11260'	10853 - 58°	SHAWN	13 3/6° @ 1348 B 5/8° @ 3198'
			2240' FS & 660' FE						10698-714'		5 1/2' @ 11354'

THE PETROLEUM CORPORATION

WELL: PETCO STATE COM #2

FIELD: PARKWAY INTERVAL: WOLFCAMP

Comp: 7/4/71 IP: N/A

Spudded: 5/24/71

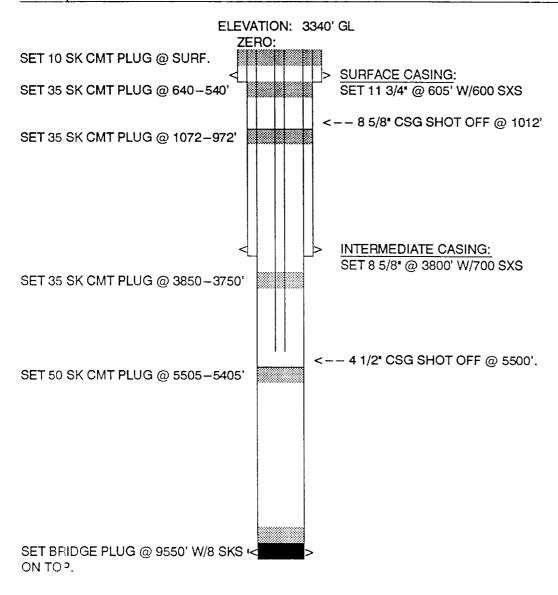
LOCATION:

660' FSL & 1980' FWL

SEC 26 T19 R29

EDDY COUNTY, NM

API #:



DRAWN BY: BJG

TD: 10685 PBTD: 9651'

DISTRIBUTION	NEW MEXICO	REC	EIVED	Supersedes O C-102 and C-	103
SANTA FE	NEW MEXICO	OIL CONSERVATION	COMMISSION	Effective I-I-	65
U.S.G.S.		FES:	2 4 1972	Sa. Indicate Type	of Lease
LAND OFFICE				State A	Fee
OPERATOR		Ε.	5.5.	5. State Oil 6 Go	3355 No.
SUN (DO NOT USE THIS FORM FOR USE "APPLI	DRY NOTICES AND REP	ORTS ON WELLS EN OR PLUG BACK TO A DIF	FERENT RESERVOIR.		
OIL A GAS WELL	OTHER-			7. Unit Agreemer	nt Name
2. Name of Operator	LEUM CORPORAT	ION /		8. Farm or Lease Petco Stat	
3. Address of Operator 3303 Lee Par	rkway, Dallas, Tex	kas 75219		9. Well No.	
4. Location of Wel.	660	South	1980	10. Field and Po	
UNIT LETTER,	FEET FROM THE _	LINE AND	FEET F	ROM TITTE	
THE West LINE, SE	ection townshi	19 RANG	<u>29</u>	PM.	
		how whether DF, RT, GR	, etc.)	12 County Eddy	
	ck Appropriate Box To I				<u> </u>
other 17. Describe Proposed or Complete work) SEE R JLE 1103. Loaded hole w/gel Set bridge plug at 9 Shot 4-1/2" casing Set 35 sack cement Shot 8 5/8" casing Set 35 sack cement Set 36 sack cement Installed 4 inch ma Prepare to cle	mud. 0550' & dump 8 sxs. at 5500' & pulled 5 plug 5505 to 5405 to plug 3850 to 3750 to at 1012 feet and pul prug 1072 to 972 feet plug 640 to 540 feet plug at surface.	pertinent details, and give casing te other pertinent details, and give cement on to 500' of 4-1/2" feet. feet. lled 1012 feet of eet. et.	p. casing. of 8-5/8" casing.	ding estimated date of	starting any propose.
18. I hereby certify that the inform	ation above is true and complete	e to the best of my knowl	edge and belief.		
S ONE Same CS	hamme	Petroleu	ım Engineer	GATE Fe	b. 21, 1972

TITLE ______ JAL AMU SAS INSPECTOR

DATE JUN 14 1972

SIETE OIL & GAS CORPORATION

WELL: #1-35 FEDERAL WALTER

FIELD: WILDCAT

INTERVAL: BONE SPRING

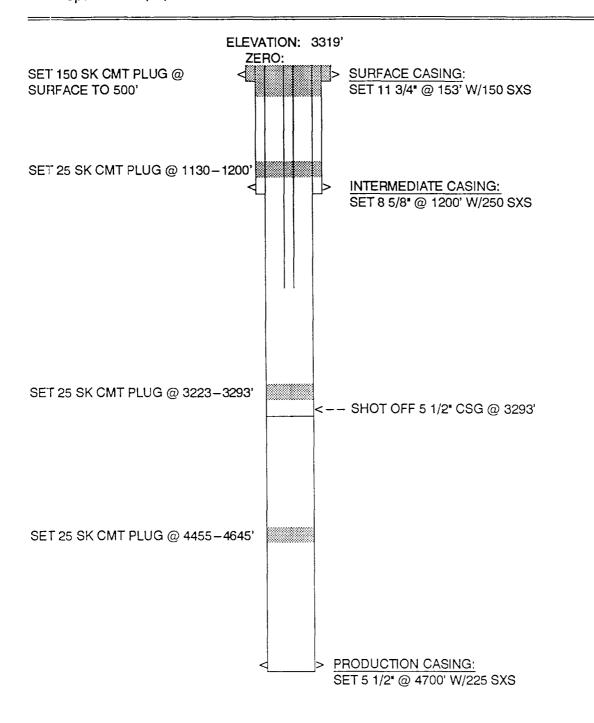
Comp: 1/9/56 IP: NONE

Spudded: 11/22/55

LOCATION:

660' FN & 660' FW SEC 35 20S 29E EDDY COUNTY, NM

API #:



DRAWN BY: BJG

TD: 6014'

Form 9-331 a (Feb. 1951)

(SUBMIT IN TRIPLICATE)

UNITED STATES DEPARTMENT OF THE INTERIOR

Land Office

GEOLOGICAL SURVEYED (C) 10 87 2 20

NOTICE OF INTENTION TO DRILL	: 11			
NOTICE OF INTENTION TO CHANGE PL			TER SHUT-OFF	
NOTICE OF INTENTION TO CHANGE FE			OTING OR ACIDIZING ERING CASING	1007
NOTICE OF INTENTION TO RE-DRILL O				
OTICE OF INTENTION TO SHOOT OR			DRILLING OR REPAIR	-
OTICE OF INTENTION TO PULL OR AL	1 1		RY	!
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TOTAL OF INTERVIOR TO ABANDON I				
(INDICAT	E ABOVE BY CHECK MARK NATU	IRE OF REPORT, NOTICE, OR OT	HER DATA)	
				, 19.5
ell Nois locate	ed 🦛 ft. from	line and ft.	from W line of sec.	33
(b) Sec. and Sec. No.)	(Twp.) (Rang	e) (Meridian	5.)	
(Field)	(County or Sub	Alutalan	Ker Serico	
(Fleid)	(County of end	uivision)	(State or Territory)	
ate names of and expected depths to	objective sands; show sizes, we ing points, and all other	eights, and lengths of propose important proposed work)	d casings; indicate mudding Jo	bs, ceme
		then all 5-1/2" i	retifie of 1201, st	zi.
recovered 355' fo	Sill mains.	•		
recovered 355' fo	5-1/2 engine. Inga at 322-323	•		
recovered 3005' for otted 20 as, emert 3 from surface to 30	5-1/2" eneting. Juga at 3223-3291 0".	· 🗪 1130-1220°	434 150 m. cone	*
recovered 3005' for otted 20 as, emert 3 from surface to 30	5-1/2" energy. Juga et 3223-323 O'. A shundowed Jume	" and 1130-1220"	and 150 m. constr marked with a 4"	*
recovered 355' for otted 25 sa. essent 3 from surface to 35 e well was players as	5-1/2" energy. Juga et 3223-323 O'. A shundowed Jume	" and 1130-1220"	and 150 m. constr marked with a 4"	*
recovered 355' for otted 25 sa. essent 3 from surface to 35 e well was players as	5-1/2" energy. Juga et 3223-323 O'. A shundowed Jume	" and 1130-1220"	and 150 m. constr marked with a 4"	*
recovered 355' for otted 25 se. emert 3 from surface to 50 e well was players as	5-1/2" energy. Juga et 3223-323 O'. A shundowed Jume	" and 1130-1220"	and 150 m. constr marked with a 4"	*
recovered 355' for ottol 25 sa. essent 3 from surface to 35 e well was players as	5-1/2" energy. Juga et 3223-323 O'. A shundowed Jume	" and 1130-1220"	and 150 m. constr marked with a 4"	*
recovered 355' for otted 25 se. emert 3 from surface to 50 e well was players as	5-1/2" energy. Juga et 3223-323 O'. A shundowed Jume	" and 1130-1220"	and 150 m. constr marked with a 4"	*
recovered 355' for otted 25 se. emert 3 from surface to 50 e well was players as	july energy lags at 322-329 o'. d shandowd James my vertically to	" and 1130-1220" my 10, 1936, and above ground law	end 150 am. comes marked with a 4"	C,0.
I understand that this plan of works	must receive approval in writ	ing by the Geological Survey	end 150 am. comes marked with a 4"	C,0.
I understand that this plan of works	must receive approval in writ	ing by the Geological Survey	end 150 am. comes marked with a 4"	C,0.
I understand that this plan of work	must receive approval in write	ing by the Geological Survey	end 150 am. comes marked with a 4"	c,D.
I understand that this plan of work	must receive approval in write	ing by the Geological Survey	end 150 am. comes marked with a 4"	C,0.
I understand that this plan of works ompany	must receive approval in write	ing by the Geological Survey	end 150 am. comes marked with a 4"	c,D.
from surface to X to wail the placest of place of pipe visi	must receive approval in write	ing by the Geological Survey	end 150 am. comes marked with a 4"	C,0.

ILLEGIBLE

EDDY SOME WILDCAT STATEN.M. KROENLEIN 2319-56

Union Oil to. or Calif - #1-35 - Fed. *** 3319* Walter

660 FML & FWL

Sec. 35, T. 198, R. 293

3 3	CARINE RECOGO	Tor	49
	11 3/4- 153-150	Anhy	195
	11 3/4- 153-150 6 5/8-1200-250	2/Salt	257
	5 1/2-4700-225	. / () 44 - 4	~J1
	J 1/2-4100-22J	5/0-34	271 2
		B/Salt	1143
		Yates	1335
		Dela Sd.	394c
11-27-55	1-9-56	Bone Spri	
Pak			
		TP	
<i>i.</i> 100 mg/s	CP	TB 601	Li.
Sw5. 100% SW		PTO	
30 717 1	D. PAGE 2		

K-23 PAGE 2

EDDY, N.M. SEC: 35-19S-29E Union Oil Co. - #1-35 - Fed Walter

Crd. 1527-79 rec. 52'; 10' hard dee dolo, 5-1/2' dolo fxln stn. on vert frace. 16' dolo shale ptgs. 6-1/2' sand grey some fluor por bldg. oil, 4' dolo hard dse NS. 10' lite grey sand, fluor bldg oil.

Ord. 3375-3424 rec. 491 dark grey fx dse, lime sulf.odor no show.

Crd. 3983-4033 rec.50' grey fg. sand w/sho of salt wtr. DST 3952-4033 of 2 hrs. rec. 1150' MCSW w/NS FP 60-595# SIP 1445# 20 mins.

DST 4204-63 op 2 hrs. rec. 100 SO&HGCM, FP 70-80# SIP 95# 20 mins.

Took sidewall cores 3635-4906, SW Cores fgs w/SSG.
4616'fg sd stn, fluor, 4621' fg sd sli stn. 4623 fg sd goo
fluor, 4625' fg. sd SSO. 4627' fg sd stn, fluor
4629' fg sd sli fluor 4635' fg sd no sho. 4638' fg sd

no sho. 4849' fg w/SSG, 4861' fg ad w/SSG, 4867' fg ad shaley NS, 4906' fg ad NS.
CONT'D ON AGE 5

N.M. SEC: 35-195-29E on Oil - #1-35 - Fed. Walter K-2309-86 PAGE 3

DST 4610-32 pkr failed str pkr.

DST 4611-4647 op 1 hr 30 mins rec. 150's oil & GCK 5 to

10% oil FP 50# SIP 1225# 20 mins.

Perf 68/4612-39 A/500 KCA, SF 10,000 4612-29 Swb part of

load swb dry.

SIETE OIL & GAS CORPORATION

WELL: LAMBIE #1
FIELD: WILDCAT

INTERVAL: BONE SPRING

Comp: 9/6/61

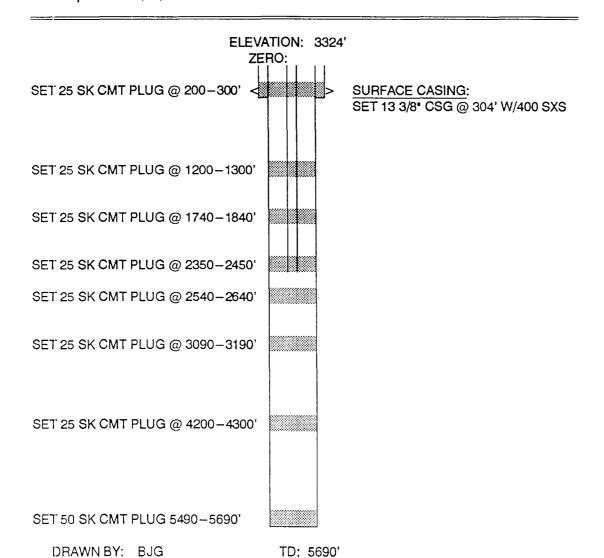
IP:

Spudded: 7/24/61

LOCATION:

1980' FN & 660' FE SEC 3 20S 29E EDDY COUNTY, NM

API #:



ço	UNTY Eddy	Field Wi	ildcac	STA	M, Ker	NO.
J GE	77 77	so Natural Gas	s Co. & Texas	Crude Oi	1 Co.	MAP
NO	1 45					
SEC	з. 3 _{т.}	20S BLK 29	OE _{SUR}		CO-C	DRD_
LC	1980'	fr N Line & 6	660' fr E Lir	ne of Sec.		
	М1,	FROM P&A		CLASS.		EL 33245
SP:	up. 7 - 24-6	1 сомр 9-6-6	l FORMATION	DATUM	FORMATI	ONDATUM
_3	T		LOG:			
			B Sprgs567	72	·	
<u>cs</u>	G. & SX.					
_1	3 3/8" 30	4' 400				
					 	
						<u> </u>
<u> 73</u>	G DEPTH	\$.ZE				1
	DOS EL GR	RA IND HC A		America		1
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	2900 NT.	- DAILY RATE	esaw or	GOR 3	<u> </u>	7. P TES
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		PLUGGED	& ABANDONED			
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		Distribution limited	and publication prenib	ited by supscribe	rs' agreement.	
		Reproduction rights	reserved by Williams	& Lee Scouting	Service, Inc.	
	NT.			PROP DEPT	<u> 14.000</u>	TYPE
CA	TE F.R.	7-27-61			Devoni	.an

```
T-31-61 Drlg. 2145' anhy. & doio.

8-2-61 Amended proposed depth. was 5500 Bone Springs.

8-8-61 Drlg. 2590' dolo.

8-14-61 Drlg. 3750' dolo.

8-21-61 Drlg. 4456' dolo. & sd.

8-28-61 Drlg. 5142' dolo.

9-5-61 TD 5690' dolo., WCO. Ran logs at TD

9-11-61 TD 5690' dolo., PLUGGED & ABANDONED.

No cests.
```

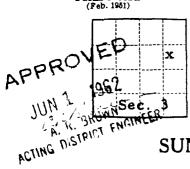
5 1962

Land Office New Mexico Lease No. NM 01062

Lambie Federal

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SEP 1 1 PORT



JAN 3 0 1992

T-20-S

R-29-E

UNITED STATES DEPARTMENT OF THE INTERIOR GEOLOGICAL SURVEY

SUNDRY	NOTICES	AND	REPORTS	ON	WELLS	i		
						, —	::	_

NOTICE OF INTENTION TO DRILL		SUBSEQUENT REPORT OF WATER SHUT-OFF ACTEDIA,	
NOTICE OF INTENTION TO CHANGE PLANS.		SUBSEQUENT REPORT OF SHOOTING OR ACIDIZING	
NOTICE OF INTENTION TO TEST WATER SHUT-OFF.		SUBSEQUENT REPORT OF ALTERING CASING	
NOTICE OF INTENTION TO RE-DRILL OR REPAIR WELL			
NOTICE OF INTENTION TO SHOOT OR ACIDIZE.		SUBSEQUENT REPORT OF ABANDONMENT	X
NOTICE OF INTENTION TO PULL OR ALTER CASING.			1
NOTICE OF INTENTION TO ABANDON WELL			
	!		!

(INDICATE ABOVE BY CHECK MARK NATURE OF REPORT, NOTICE, OR OTHER DATA)

Lambie Federal #1		**	September	r.1, 1901	۰.
Well No. 1 is loca	ted 1980 ft.	from ${N \brace {\bf X}}$ line as	nd 660 ft. fro	om $\left\{ \frac{E}{X} \right\}$ line of sec. 3	
SE/4 NE/4	T-20-S	R-29-E	NMPM		
(% Sec. and Sec. No.)	(Twp.)	(Range)	(Meridian)		
Wildcat (Field)	(0	Eddy County or Subdivision)	/	New Mexico (State or Territory)	

The elevation of the derrick floor above sea level is 3515.1. ft.

DETAILS OF WORK

(State names of and expected depths to objective sands; show sizes, weights, and lengths of proposed casings; indicate mudding jobs, cementing points, and all other important proposed work)

The above-described well was plugged and abandoned on September 6, 1961, setting the following cement plugs: (8 plugs from 5690' to 300')

- 1. 5690' to 5490' w/50 sx
- 2. 4300'to 4200' w/25 sx
- 3. 3190' to 3090' w/25 sx
- 4. 2640' to 2540' w/25 sx
- 5. 2450' to 2350' w/25 sx
- 6. 1840' to 1740' w/25 sx
- 7. 1300' to 1200' w/25 sx
- 8. 300' to 200' w/25 sx

A 3" iron pipe for well identification permanently set in the surface casing. I understand that this plan of work must receive approval in writing by the Geological Survey before operations may be commenced.

Company	El Paso Natural Gas	Company &	Texas Crude	Oil Company	
Address	2005 Wilco Building				
	Midland, Texas		By D	E. Lockett	4
			•	vision Petroleum En	ginee

WRS COMPLETION REPORT COMPLETIONS SEC 2 TWP 20S RGE 29E P1# 30-T-0017 06/21/91 30-015-26170-0000 PAGE 1 NMEX EDDY * 330FNL 990FEL SEC NE NE SPOT D CHEVRON USA WELL CLASS INIT FIN 2 AGAVE "IK" STATE WELL NO. LEASE NAME PARKWAY OPER ELEV API 30-015-26170-0000 LEASE NO. PERMIT OR WELL I.D. NO. 06/19/1991 ROTARY VERT AB-LOC SPUD DATE COMP. DATE TYPE TOOL HOLE TYPE 5300 DELAWARE PROJ. DEPTH PROJ. FORM CONTRACTOR DRILLERS T.D. CONT.D. PLUG BACK TD COLD T.D. FORM T.D. LOCATION DESCRIPTION 16 MI NE CARLSBAD, NM DRILLING PROGRESS DETAILS CHEVRON USA BOX 1150 MIDLAND, TX 79702 915-687-7100 LOC/1989/ 08/18 06/19 ABND LOC

IC# 300157017289

SIETE OIL AND GAS CORPORATION

Parkway Waterflood Project

NMOCD Form C-108 Sections VII - XIII

VII. Injection Data

- 1. Injection Rates
 - a. Proposed average daily water injection is 380 BWPD/Well.
 - b. Maximum rate of daily water injection is 500 BWPD/Well.
- The injection station for the gathering and processing injection water will be a closed system.
- 3. Injection Pressures
 - a. Proposed average daily injection pressure is 700 PSI.
 - b. Maximum daily injection pressure is 800 PSI*.
 - * Note: Maximum injection pressure abides by .2 PSI/Ft maximum injection pressure imposed by the NMOCD.
- 4. Chemical analysis of injection and formation water (see attached water analysis).
 - a. Proposed injection fluid will be produced Delaware water and water from the Tuesday Federal Salt Water Disposal Well. The Martin Water Lab analysis dated 2/12/92, indicates no compatibility problems with mixing these two waters.
- 5. Water injection will be into a zone currently productive of oil and gas.
- VIII. * Geologic Data: See Attached Geologic Description
- IX. The Delaware zones to be completed will be perforated and fracture stimulated similar the existing completions. We anticipate perforating the zones with 1 shot per 1-1/2 feet and fracing with 40,000 gal and 115,000# sand.
- X. Well logs for the wells to be converted have been previously submitted.

Page 2

The well tests as of 1/1/92 are as follows:

PROD. MBO
63
17
55
62
7

- XI. The water analysis for the shallow fresh water zone is shown on the Martin Water Lab analysis dated 2/12/92.
- XII. I, Robert Lee, a Production/Reservoir Engineer for Siete Oil and Gas Corporation and in behalf of, have compiled and examined all available geologic and engineering data and have not found any evidence of hydrologic connections between the proposed Parkway Delaware Waterflood Project injection zone and any source of underground drinking water.
- XIII. Proof of Notice requirements
 - 1. See attached mailing list and registered mail certificates.

GEOLOGY

The Parkway (Delaware) Field produces oil and gas from the sandstones of the Permian age Delaware Mountain Group. In the Parkway Field, the major source area for the Delaware clastics was the Pedernal Massif to the northwest. Delaware sands accumulated on and behind the Capitan, Goat Seep and Getaway carbonate shelves during Guadalupian time. As the sand load increased to the point of being hydrologically and tectonically unstable, it moved as a gravity induced density flow through gaps in the reef, down the reef slope through channels and out into the Delaware Basin depocenter. Subsequently these clastics were reworked by deepwater longshore currents forming elongated sand bodies subparallel to the basin margin.

The Parkway (Delaware) Filed is a combination structural-stratigraphic trap of the upper portion of the Delaware Mountain Group clastics. The areal extent of the oil production portion of the Parkway anticlinal feature is slightly larger than one square mile. Stratigraphy plays an important role in the Parkway Field in that the Delaware sand interval is effectively divided by impermeable dolomitic shale barriers into three major reservoirs, the A, B, and C. The C reservoir is further subdivided by minor dolomitic shale barriers into the C1, C2, and C3. The C1, C2, and C3 reservoirs each have a distinct gas-oil contact. The cross-section is attached illustrating the subdivision of the Parkway (Delaware) field into the A, B, and C Sands.

The correlative well log tops for each of the Delaware A, B, and C sands were chosen by the Parkway Delaware Committee and independently verified by Michael G. Clemenson, Petroleum Geologist, retained by the Engineering Committee. A series of eight structural cross-sections through the Parkway Field were constructed to demonstrate the continuity and lateral thickness variations for each of the reservoirs, as well as to represent each interval where the wells had been perforated.

Delaware C Sand

The Delaware C Sand is a massive sand body with an overall average gross thickness of approximately 120 feet. The C Sand is the primary producing reservoir of the Parkway Field.

The top of the Delaware C Sand occurs at a subsea depth of -793 to -925 feet in the productive wells on the Parkway structure.

Figure 7 is a structure map on top of the C Sand. Seventeen well have been perforated in the Delaware C Sand. As previously noted, the Delaware C interval is subdivided by impermeable dolomitic shale barriers into three separate reservoirs, the C1, C2, and C3.

The need to subdivide the C Sand was recognized by varying gas-oil contacts within wells completed in the C Sand. Evidence that the C1, C2, and C3 are stratigraphically separate reservoirs was based on analysis of neutron-density crossover "gas effect" and production test data provided by the operators. The field wide correlation of dolomitic shale beds within the massive C Sand further confirmed that the C Sand was actually comprised of three separate reservoirs, each with its own distinct gas-oil contact. The subsea depth of the gas-oil contacts for each of the reservoirs are as follow:

C1 - -808 feet C2 - -825 feet C3 - -850 feet

The average gross interval from top to base if each of the reservoirs is as follow:

C1 - 15 feet C2 - 36 feet C3 - 70 feet

Iscpach maps are attached showing gross thickness for the C1, C2, and C3.

Net sand isolith and net pay isopach maps of each of the reservoirs were constructed using data from the results of the well-log analysis generated by Platt, Sparks and Associates, Inc. These net sand isolith maps of the Delaware C1, C2, and C3 are also attached. These maps were constructed using log analysis cutoff parameters of porosity greater than or equal to 16% and shale column less than 50%. The average net thickness for each of the reservoirs is as follows:

C1 - 6 feet C2 - 18 feet C3 - 43 feet

Net gas pay isopach maps of the Delaware C1, C2, and C3 are attached. The net gas pay thickness were determined using log analysis cutoff parameters of porosity greater than 16% shale volume less that 50%, and water saturation less than 55%. The thickness of the gas cap was then mapped for each reservoir using that interval above the subsea depth of the gas-oil contacts listed above for the respective reservoirs.

The average thickness of the net gas pay for each reservoir is as follows:

C1 - 5 feet C2 - 10 feet C3 - 8 feet

Net oil pay isopach maps for the C1, C2, and C3 reservoirs using log analysis cutoff parameters of porosity greater than 16%, shale column less than 50%, and water saturation less than 55% were constructed and are attached. The interval mapped is from the base of the gas cap (gas-oil contact) to the subsea depth where water saturation exceeds 55%. The average thickness of the net oil pay for each reservoir is as follows:

C1 - 5 feet C2 - 16 feet C3 - 41 feet

Isopermeability maps for the C1, C2, and C3 reservoirs, using average permeability data generated by Platt, Sparks and Associates, Inc. were constructed and are presented.

Delaware B Sand

The top of the Delaware B Sand occurs at a subsea depth of approximately -655 to -831 feet in productive wells on the Parkway structure. The average gross thickness of the B Sand is 148 feet. The average net thickness of the B Sand using log analysis cutoff parameters of porosity greater than 15% and shale volume less than 50% os 85 feet. The Delaware B Sand has an average net pay thickness of 50 feet based on log analysis cutoff parameters of 15% porosity, shale volume less than 50%, and water saturations less than 55%. Figure 23 is a structure map on top of the B Sand. The B Sand is separated from the C Sand by 5 to 20 feet of dolomitic shale. Nine wells in the Parkway Field have been perforated in the B interval.

Delaware A Sand

The top of the Delaware A sand occurs at a subsea depth of approximately -590 to -700 feet in productive wells on the Parkway structure. The average gross thickness of the Delaware A Sand id 75 feet. The average net thickness of the A Sand using log analysis cutoff parameters of porosity greater than 15% and shale volume less than 50% is 50% is 40 feet. The Delaware A Sand has an average net pay thickness if 21 feet based on log analysis cutoff parameters of porosity greater than 15%, shale volume less than

50%, and water saturations less than 55%. The A Sand is separated from the B Sand by 5 to 17 feet of shale. Five wells in the Parkway Field have been perforated in the A Sand.

Fresh Water Zones

The Rustler Formation is an overlying fresh water zone that exists from 100-200; in depth. This zone has 767 ppm chlorides and total dissolved solids of 3481 ppm. See the attached Martin Water Lab analysis on 2/12/92. There are no underlying fresh water zones in this area.

Form No. 3

709 W. INDIANA MIDLAND, TEXAS 79701 PHONE 683-4521

RESULT OF WA	IER ANALYSES	
	LABORATORY NO.	29253
To:Mr. Robert Lee	SAMPLE RECEIVED	2-5-92
P. O. Box 2523, Roswell NM 88202	RESULTS REPORTED	2-12-92
COMPANY Siete Oil & Gas Corporation L	EASE Proposed Parkway l	Delaware Waterflood
FIELD OR POOL Parkway (Del	aware)	
SECTION BLOCK SURVEY COUNTY	Eddy STATE	NM
SOURCE OF SAMPLE AND DATE TAKEN:		
No. 1 Raw water - taken from Osage #8 water	r supply well.	· · · · · · · · · · · · · · · · · · ·
NO. 2 Produced water - taken from Osage #1	••	
NO. 3 Disposal water - taken from Tuesday	Federal Salt Water Disp	osal.
NO. 4 Raw water - taken from Amax water we	11.	

CHEM	IICAL A	ND PHYSICAL F	PROPERTIES		
		NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.		1.0045	1.1570	1.1352	1.1396
pH When Sampled					
pH When Received		4.73	6.94	6.96	7.68
Bicarbonate as HCO3		78	66	146	200
Supersaturation as CaCO3			8	12	4
Undersaturation as CaCO3		236			
Total Hardness as CaCO ₃		2,040	59,000	49,000	16,000
Calcium as Ca		656	19,200	15,600	1,920
Magnesium as Mg		97	2,673	2,430	2,722
Sodium and/or Potassium		331	65,293	54.200	74.895
Sulfate as SO4		1,552	589	461	6.169
Chloride as CI		767	142,038	117,892	122,153
Iron as Fe		1.0	10.8	4.1	0.04
Barium as Ba	1. 3. M. 1. 3. M. 1.	reneway te Asia (gayes) i rejes	भिन्नेकर प्रकार प्राप्त हैं पर्यक्त द	المنطبة والمنازية	ないいってなど本を少されない
Turbidity, Electric					
Color as Pt					
Total Solids, Calculated	·	3,481	229,858	190,729	208.059
Temperature °F.					
Carbon Dioxide, Calculated	1. 3. 2. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3. 3.	. <u>, , , , , , , , , , , , , , , , , , ,</u>	14	23	7
Dissolved Oxygen,					
Hydroger Sulfide		0.0	0.0	0.0	0.0
Resistivity, ohms/m at 77° F.		2.01	0.052	0.060	0.05
Suspended Oil					
Filtrable Solids as mg/					
Volume Filtered, ml					
	Results R	eported As Milligram	ns Per Liter		
Additional Determinations And Remarks					
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709 W. INDIANA MIDLAND, TEXAS 79701 PHONE 683-4521

RESULT OF WATER ANALYSES

		BORATORY NO	29253	(Page 2)
o: Mr. Robert Lee		MPLE RECEIVED	2 5 0	
P. O. Box 2523 Roswell, NM 88202		SULTS REPORTED	0 10	92
COMPANY Siete Oil & Gas Corporation	n LEASE -	<u>Proposed Par</u>	kway Delawar	e Waterflood
Par	kway (Delaware	<u> </u>		
ECTION BLOCK SURVEY	COUNTY	Eddy st	ATEN	<u>M</u>
OURCE OF SAMPLE AND DATE TAKEN:				
NO. 1 Raw water - taken from Eddy	,Potash water	well.		
NO. 2 Amax Lake Water.				•
NO. 3				
NO. 4				
REMARKS:Mix	ed Water Syste	m		
CHEMICAL	AND PHYSICAL F	PROPERTIES		
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.1657	1.2273		
pH When Sampled				
pH When Received	7.66	7.82		
Bicarbonate as HCO3	120	102		
Supersaturation as CaCO3	4	0		
Undersaturation as CaCO3				
Total Hardness as CaCO ₃	_17,000	19,500		
Calcium as Ca	2.480	920		
Magnesium as Mg	2.624	4.180		
Sodium and/or Potassium	91.035	129.126		
Sulfate as SO4	4,344	7.428		
Chloride as CI	149,140	207,375		
Iron as Fe	0.54	0.54		
Barium as Ba			N. C.	
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	249,743	349,132		
Temperature *F.				
Carbon Dioxide, Calculated	es established 40 men	. January 14, 14, 14, 14, 14, 14, 14, 14, 14, 14,	e Joseph Medicological Agreement	e and the contraction
Dissolved Oxygen,				
Hydrogen Sulfide	0.0	0.0		
Resistivity, ohms/m at 77° F.	0.051	0.041		
Suspended Oil				
Filtrable Solids as mg/				
Volume Filtered, ml				
	0 A - M:11:		•	
	Reported As Milligram		- 1	
	er of recommen	dation attach	ea.	
		dation attach	ea.	
		dation attach	ed.	
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Form No. 3

भवेदार्थन्त्रकार ।

709 W. INDIANA MIDLAND, TEXAS 79701 PHONE 683-4521

February 12, 1992

Mr. Robert Lee Siete Oil & Gas Corporation P. O. Box 2523 Roswell, NM 88202

Subject: Recommendation relative to Laboratory No. 29253 (2-5-92)

Proposed Parkway Delaware Waterflood.

Dear Mr. Lee:

As per your letter received 2-5-92, the objective of this study is to evaluate the compatibility between the various waters represented in the above listed analysis. Interpretations are made on the basis of water samples submitted and on the assumption that they represent the average characteristics of each water. We feel confident that these waters will likely be similar to this study; therefore, the interpretations herein should be valid. Those aspects of the study regarding the above objectives are as follows:

- 1. The supply water from Osage #8 shows to be compatible with all of the other individual waters. Therefore, we can consider it open regarding which water the supply water is mixed with for the purposed of compatibility. There are two factors to be considered in the supply water as follows:
 - A. Any mixture of the supply water with any of the other waters would result in a relatively low-salinity water (about one-half the salt levels of any water or waters it is to be mixed with). We are not familiar with what level of chloride would be advisable to avoid clay swelling in the area.
 - B. We would strongly consider it advisable to enclose the supply water regardless of which water or waters it is to be combined with. We feel it would be distinctly advantageous to have no oxygen in this water for factors such as preventing bacterial activity and also precipitation of iron that is present in the produced water and the disposal water.
- In this study we have two different types of water on the basis of their calcium and sulfate content. The produced water from Osage #1 and the Tuesday Federal disposal water both have a low sulfate and a high calcium. On the other hand, the waters from Amax and the Eddy potash water well as well as the Amax lake water have a high sulfate-low calcium level. Any combination of the high sulfate-high calcium waters would result in a severe supersaturation to calcium sulfate in the mixture. Therefore, these two types of waters cannot be mixed as the resulting detrimental condition would be serious in regard to potential calcium sulfate precipitation and scaling.

- 3. We have made a hypothetical combination of equal quantities of all the waters represented in the study, and this combination of waters also results in a supersaturation to calcium sulfate.
- 4. As revealed in the above discussion, it will then only be feasible to mix the supply water with one or both of the low-sulfate waters or mix the supply water with one or all of the high-sulfate waters.
- 5. We would clearly not recommend the Amax lake water be used. The reason for this is that the water is at the saturation point to sodium chloride, and it would be expected to cause serious salt deposits on all of the equipment trying to handle this water. The seriousness of the condition would fluctuate substantially with temperature variations both ambient and operational.
- 6. We find no evidence of any incompatibility between the produced water and the Tuesday Federal disposal water; therefore, these can be mixed with one another and also with the supply water from Osage #8 without any problem regarding compatibility if the supply water is kept free of any air contamination.
- 7. It is considered significant that if the high-sulfate waters or any mixture of these waters with supply water is injected, they will be incompatible in situ with the natural connate water in the Delaware interval. This would be expected to be a negative influence as there may be in situ precipitation and/or calcium sulfate scaling at the producing wells.

In the composite evidence, we have attempted to present with reasonable clarification in the above discussions what the potential concerns would be regarding the compatibility of the waters involved. We are not familiar with the overall detailed circumstances and present our recommendations based solely on the least amount of incompatibility in water handling problems. With this understood, we would recommend consideration be given to using the supply water from Osage #8 and mixing it with either the produced water or water from the Tuesday Federal disposal well or both of them. We would conclude that this approach would result in a minimum amount of water handling difficulties as well as minimum incompatibility in the reservoir to be flooded. We would consider this approach sufficiently advantageous to perform tests regarding a hypothetial combination of these waters with the core that is available to see if the salinity would be adequate. If this is not completely clear or not compatible with your operation, please contact us; and we will attempt to clarify any desired points needed.

Very truly yours,

WCM/plm

OPERATORS WITHIN THE WATERFLOOD PROJECT AND OFFSET OPERATORS WITHIN ONE-HALF MILE OF INJECTION WELLS

Meridian Oil, Inc. P. O. Box 51810 Midland, Texas 79710-1810 Attn: Mo Gaddis

Ray Westall P. O. Box 4 Loco Hills, NM 88255

UMC Petroleum

1201 Louisiana, Suite 1400

Houston, TX 77002

Attn: Brian Baer

FOICSON OIL COMPAN,
301 Commerce St, Ste.3301
Fort Worth, TX 76102
Attn: Jack Evecker

Strata Production Company 700 Petroleum Building Roswell, NM 88201 Attn: George L. Scott

Presidio Oil Company P. O. Box 6525 Englewood, Colorado 80155-6525 Attn: Marshall Munsell, Land Manager

Santa Fe Energy Resources, Inc. 550 W. Texas Ave., Suite 1330 Midland, Texas 79701 Attn: Randy Offenberger

Chevron, Inc. P. O. Box 1150 Midland, Texas 79702 Attn: Larry La Fleur

Conoco, Inc. 10 Desta Drive, Suite 100 W. Midland, Texas 79705-4500 Attn: Peggy Sutko

Eastland Oil Company, Inc. Drawer 3488 Midland, Texas 79702 Attn: Travis Reed

Yates Petroleum Corporation 105 South Fourth Street Artesia, New Mexico 88210

Collins & Ware 303 West Wall Avenue Suite 2200 Midland, Texas 79701

Fortson Oil Company

SURFACE OWNERS:

Department of the Interior Bureau of Land Management Post Office Box 1397 Roswell, New Mexico 88201-1397

Commissioner of Public Lands State of New Mexico Post Office Box 1148 Santa Fe, New Mexico 87504-1148

SURFACE OWNERS:

1 ..

Department of the Interior Bureau of Land Management Post Office Box 1397 Roswell, New Mexico 88201-1397

Commissioner of Public Lands State of New Mexico Post Office Box 1148 Santa Fe, New Mexico 87504-1148 September 28, 1992

Mr. Gene Shumate, President Siete Oil and Gas Corporation 200 Petroleum Building Roswell, New Mexico 88201 BEFORE EXAMINER CATANACH
OIL CONSERVATION DIVISION
SIETE OIL & GAS CORP. EXHIBIT NO.
CASE NO. 10618 and 10619

Re: Purchase and Sale Agreement — Strata Production Company Halcon State #2 Well State of New Mexico Lease K-4169 insofar as it covers the SW4SE4 of Section 26, Township 19 South, Range 29 East, N.M.P.M., Eddy County, New Mexico

Dear Gene:

This letter sets forth the terms and conditions of our agreement regarding the purchase and sale of the Halcon State #2 Well. The terms of our agreement are as follows:

1. Ownership: To the best of Strata's knowledge and belief, the working interest in the Halcon State #2 Well is owned as follows:

Parties	Before Payout of Nun-Consent (Leasehold Operating Rights)	Before Payout of Non-Cousent (Net Revenue Interest)	After Payout of Non-Consent (Leasehold Operating Rights)	After Payout of Non-Consent (Net Revenue Interest)
Strata Production Company and Working Interest Participants (other than General Energy Operating, Ltd. and Randolph M. Richardson (interest acquired from Sun only)	83.272887%	70.205141%	76.804431%	64.766453%
Randolph M. Richardson (interest acquired from Sun only)	0.000000%	0.000000%	5.555600%	4.659113%
Widow and/or beins or devisees of EJ. Rousuck	0.000000%	0.000000%	.912856%	.779615%
General Energy Operating, Ltd.	16.727113%	14.285603%	16.727113%	14.285603%
TOTAL	100,000000%	84.490744%	100.000000%	84.490784%

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Payout as used hereinabove refers to the point in time at which the non-consent penalty has been recouped. The non-consent penalty is based on recoupment of 100% of surface equipment and operating costs, and 300% of drilling, reworking and completion costs.

- 2. Payout Status: To date, to the best of Strata's knowledge and belief, approximately 80% of the costs and expenses incurred in connection with the Halcon State #2 Well have been recovered.
- 3. Assignment: For the consideration described hereinbelow, Strata and other participants ("Assignors") in the Halcon State #2 Well shall assign unto Siete all of their right, title and interest in and to the Halcon State #2 Well including all equipment, fixtures and other appurtenances associated with the well. The assignment shall cover the leasehold operating rights in, to and under the SW/4SE/4 of Section 26, Township 19 South, Range 29 East, N.M.P.M., but shall be limited in depth to the interval between 4,000 and 4,400 feet. The assignment shall be in the form attached hereto as Exhibit A.
- 4. Consideration: Siete shall pay to Strata, on behalf of the Assignors, at Closing \$40,000.00 for 100% of the before payout leasehold operating rights in, to and under the Halcon State #2 Well, subject to the depth limitations described above. If a lesser interest is delivered at Closing, then the purchase price shall be proportionately reduced to reflect the before payout leasehold operating rights which are not delivered. The entire amount shall be paid to Strata and Strata shall be responsible for distribution of such amount to the other Assignors.
- 5. Warranties: This Agreement and the assignments contemplated hereby shall be without warranties of any kind, express or implied, except that title shall be warranted by, through and under Assignors. The Halcon State #2 Well and all fixtures, equipment and other appurtenances thereto are sold AS IS AND WHERE IS, WITH ALL FAULTS, AND IN THEIR PRESENT CONDITION AND STATE OF REPAIR WITHOUT WARRANTY OF MERCHANTABILITY, CONDITION OF FITNESS FOR A PARTICULAR PURPOSE AND ANY AND ALL WARRANTIES, WHETHER EXPRESS OR IMPLIED, ARE HEREBY EXPRESSLY DENIED.
- 6. <u>Indemnity</u>: Upon Closing, Siete shall take control of the Halcon State No. 2 Well and assume all obligations that are attributable to the interest to be acquired, and Siete agrees to indemnify, defend and hold harmless Assignors, their agents and representatives from and against any and all claims, liabilities, losses, costs and expenses (including, without limitation, court costs, reasonable expenses of litigation and reasonable attorneys' fees) that are attributable to the interest covered by this Agreement and that arise after the Closing. Assignors agree to indemnify, defend and hold harmless Siete, its agents and

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representatives, from and against any and all claims, liabilities, losses, costs and expenses (including, without limitation, court costs, reasonable expenses of litigation and reasonable attorneys' fees) that are attributable to the interest covered by this Agreement and that arise or are the result of actions occurring before the Closing including, without limitation, damage to property, or injury to or death of persons occurring before the Closing. Siete shall be responsible for the proper plugging and abandonment of the Halcon State No. 2 Well.

7.	Effective Date: Except as otherwise provided herein, the effective date ("Effective Date")
	of this Agreement and the assignment to be made as required at paragraph 3 above shall
	De Nevember 1, 1992.3C
	Thursday (W) January 3 CW
8.	Closing: The Closing shall occur at 10:00 a.m. on November 2, 1992 at the offices of
	Strata. At such time, Strata shall deliver the assignment to Siete, and in return, Siete shall
	make proper payment to Strata.
	If the terms and conditions of this agreement are acceptable to you, please execute one
of the	duplicate originals and return the same to me on or before October 2, 1992. If you have
	uestions or if we can be of further assistance, please call.
	Very truly yours,
	STRATA PRODUCTION COMPANY
	//
	By: 10/1
	Mark B. Murphy, President
MBM,	/jas
	Agreed to and accepted this $\lambda + \frac{1}{2}$ day of November 1992.
	SIETE OIL AND GAS CORPORATION
	Per State State To

Gene Shumate, President

THIS EXHIBIT A IS ATTACHED HERETO AND MADE A PART HEREOF THE PURCHASE AND SALE AGREEMENT BETWEEN STRATA PRODUCTION COMPANY AND SIETE OIL AND GAS CORPORATION DATED SEPTEMBER 28, 1992.

EXHIBIT A

ASSIGNMENT, BILL OF SALE AND CONVEYANCE

This Assignment, Bill of Sale and Conveyance ("Assignment") is made effective November 1, 1992 by the undersigned parties ("Assignors") to Siete Oil and Gas Corporation ("Assignee").

WITNESSETH

WHEREAS, Assignors own certain undivided interest in, to and under State of New Mexico Oil and Gas Lease K-4169 which covers the following lands in Eddy County, New Mexico:

Township 19 South, Range 29 East, N.M.P.M.
Section 26: WYEY, NWYNWY, SEYNWY, NYSWY
Containing 320 acres, more or less.

WHEREAS, Assignors desire to assign certain interest in, to and under the above-described lease and lands, including certain personal property, material and equipment located thereon, and Assignee desires to purchase and acquire such interest.

NOW, THEREFORE, for valuable consideration, the receipt and sufficiency of which is hereby acknowledged, Assignors do hereby grant, assign and convey unto Assignee all of Assignors' right, title and interest in and to the following:

- 1. The Halcon State No. 2 Well and all material, equipment and other appurtenances associated with such well which are described at Exhibit A hereto.
- 2. The leasehold operating rights owned by Assignors in, to and under the SW/SE1/4 of Section 26, Township 19 South, Range 29 East, N.M.P.M., limited in depth to the interval between and including 4,000 feet and 4,400 feet beneath the surface. This shall include specifically the right to produce oil and/or gas from such interval and/or inject fluids and/or gas into such interval in connection with the recovery of oil and/or gas.
- 3. All of Assignors' rights and obligations under any operating agreements to which the above-described interest are subject, and in and to the operating rights and participating interest created and existing under and by virtue of any operating agreements to which the interest assigned hereby are subject, and in and to the operating rights and participating interest created and existing under and by virtue of such operating agreements, participating agreements and other contracts and

agreements to the extent derived from or pertaining to the interest described hereinabove.

The interests herein assigned are subject to the following:

- All royalties, overriding royalty interest and other burdens on production appearing of record as of the effective date, proportionate to the interest assigned hereby.
- The terms, provisions, and obligations of State of New Mexico Oil and Gas 2. Lease K-4169.
- All presently existing agreements and contracts and any easements, rights-of-way, 3. and all oil, casinghead gas and gas sales and purchase agreements relating to the interest hereby assigned.

This Assignment may be executed in any number of counterparts, and each such counterpart hereof shall be deemed to be an original instrument, but all such counterparts together shall constitute for all purposes one Assignment.

This Assignment is executed on the various dates indicated hereinbelow, but effective for

all purposes as of November 1, 1992 at 7:00	a.m. Mountain Standard Time.
JANUARY 1, 1993	ASSIGNORS:
	STRATA PRODUCTION COMPANY
	By: Mark B. Murphy, President
ACKNOW	LEDGMENT
STATE OF NEW MEXICO) > ss. COUNTY OF CHAVES)	
The foregoing instrument was acknown 1992, by Mark B. Murphy, President of Strata on behalf of said corporation.	ledged before me this day of, Production Company, a New Mexico corporation,
My Commission Expires:	Notary Public
EACH OF THE ADDITIONAL ASSIGNO	RS SHALL HAVE THEIR OWN SEPARATE

SIGNATURE PAGE.

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