KELLAHIN & KELLAHIN Attorney at Law

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April 7, 2006

HAND DELIVERED

2006 Case 13705 APR PM

Mr. Mark E. Fesmire, Director Oil Conservation Division 1220 South Saint Francis Drive Santa Fe, New Mexico 87505

Re:	East Loving-Delaware Leasehold Waterflood Project
	Application of Range Operating New Mexico, Inc.
	for approval of its East Loving-Delaware Leasehold
	waterflood project, including six injection wells and
	unorthodox well locations and qualification
	of the Project Area for the Recovered Oil Tax
	Rate pursuant to the Enhanced Oil Recovery Act
	Lea County, New Mexico
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_	Rate pursuant to the Enhanced Oil Recovery Act Lea County, New Mexico

Dear Mr. Fesmire:

On behalf of Range Operating New Mexico, Inc., find enclosed our referenced application which we request be set for hearing on the Examiner's docket now scheduled for May 11, 2006. Also enclosed is our proposed advertisement of this case for the NMQCD docket in a CD.

Very trul yours. V. Thomas Kellahin

cc: Range Operating New Mexico, Inc. Attn: Bobby Ebeier

ADVERTISEMENT FOR May 11, 2006 DOCKET

CASE: <u>13705</u> Application of Range Operating New Mexico, Inc. for approval of its East Loving-Delaware Leasehold waterflood project including six injection wells to be located at unorthodox well locations and qualification of the Project Area for the Recovered Oil Tax rate pursuant to the Enhanced Oil Recovery Act, Lea County, New Mexico. Applicant seeks approval of its East Blinebry-Drinkard Unit Waterflood Project including the injection of produced water into the following interval:

From an upper limit being the top of the Lower Brushy Canyon formation to a lower limit being the base of the Delaware Mountain Group as found in the South Culebra Buff #4B well, located 560 feet FEL and 660 feet FSL (Unit A) Section 23, T23S, R28E being points at a depth of 5737 feet for so the top marker and 6249 feet for the bottom marker

through 6 injection wells at unorthodox well locations within Section 23 as follows

SCB 23-15 Well	1430 feet FNL and 1150 feet FEL (Unit H)
SCB 23-17 Well	2440 feet FSL and 1500 feet FWL (Unit K)
SCB 23-18 Well	Surface: 1815 feet FNL and 1200 feet FWL (Unit D)
	Bottomhole: 1300 feet FWL and 1000 feet FNL (Thit E)
SCB 23-19 Well	Surface: 1950 feet FNL and 2470 feet FWL (Unit F)
	Bottomhole: 2620 feet FEL and 1300 feet FNL (Unit F)
SCB 23-20 Well	2520 feet FSL and 2460 feet FEL (Unit J)
SCB 23-21 Well	2531 FSL and 1252 FEL (Unit I)

within the following described area:

Township 23 South, Range 28 East, NMPM

Section 23:

Tract 1: W/2NW/4; SE/4NW/4 and SW/4NE/4 (160-acres) Tract 2: NE/4NW/4 and NW/4NE/4 (80-acres) Tract 3: E/2NE/4 (80) acres) Tract 4: N/2SW/4 (80-acres) Tract 5: N/2SE/4 (80-acres) Tract 6: S/2SE/4 (80-acres)

Applicant also requests that the Division, in accordance with Division Rule 701 and pursuant to the New Mexico "Enhanced Oil Recovery Act," approve this project for the recovered oil tax rate for enhanced oil recovery. Applicant requests that the Division establish procedures for the administrative approval of additional injection wells within the unit area without the necessity of further hearings and the adoption of any provisions necessary for such other matters as may be appropriate for the waterflood operations. This Unit is located approximately 2 miles East of Loving, New Mexico.

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:**

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CASE NO. 13705 **APPLICATION RANGE OPERATING NEW MEXICO, INC.** ΡM FOR APPROVAL OF ITS EAST LOVING-DELAWARE LEASEHOLD WATERFLOOD PROJECT INCLUDING ___ SIX INJECTION WELLS TO BE LOCATED AT UNORTHODOX 님 WELL LOCATIONS AND TO QUALIFY THIS PROJECT FOR THE RECOVERED OIL TAX RATE PURSUANT TO THE "NEW MEXICO ENHANCED OIL RECOVERY ACT," LEA COUNTY, NEW MEXICO

APPLICATION

Range Operating New Mexico, Inc. ("Range"), in accordance with Division Rule 701 and pursuant to the New Mexico "Enhanced Oil Recovery Act," applies to the New Mexico Oil Conservation Division for an order approving its East Loving-Delaware Leashold Waterflood Project including six injection wells to be located at unorthodox well locations and for the recovered oil tax rate for enhanced oil recovery and in support states:

(1) Range is the operator of wells within the proposed Project Area that consists of 840 total acre of fee lands, consisting of 6 different oil and gas leases, described as follows:

> Township 23 South, Range 28 East, NMPM Section 23:

> > Tract 1: W/2NW/4; SE/4NW/4 and SW/4NE/4 (160-acres) Tract 2: NE/4NW/4 and NW/4NE/4 (80-acres) Tract 3: E/2NE/4 (80) acres) Tract 4: N/2SW/4 (80-acres) Tract 5: N/2SE/4 (80-acres) Tract 6: S/2SE/4 (80-acres)

See Locator Map attached as Exhibit "A"

NMOCD Application Range Resources New Mexico, Inc. Page 1

(2) Range proposes that this waterflood project will be limited to the following interval:

From an upper limit being the top of the Lower Brushy Canyon formation to a lower limit being the base of the Delaware Mountain Group as found in the South Culebra Buff #4B Well, located 560 feet FEL and 660 feet FSL (Unit A) Section 23, T23S, R28E. NMPM being points at a depth of 5737 feet for the top marker and 6249 feet for the bottom marker

(3) The Project Area is within the boundaries of the East Loving-Brushy Canyon Pool (formerly East Loving-Delaware Pool).

(4) Range proposes to institute a waterflood project by the injection of produced water from the Brushy Canyon formation of the Delware Group in and around the pilot area, and in addition water as needed from a Cherry Canyon formation source well into the Brushy Canyon portions of the East Loving-Brushy Canyon Pool pursuant to a plan of operations that is more completely set forth in Division Form C-108, attached as Exhibit "B"

(5) Applicant requests that the Division establish procedures for the administrative approval of additional injection wells within the Leasehold Project Area without the necessity of further hearings and the adoption of any provisions necessary for such other matters as may be appropriate for the waterflood operations.

(6) The following data is provided in accordance with procedure requirements (Order R-9708) for a Certificate of Qualification for an Enhanced Oil Recovery Project to qualify this project for the recovered oil tax rates pursuant to the "Enhanced Oil Recovery Act," NMSA 1978, Sections 7-29A-1 through 7-29A-5, as amended.

Operators name and address:	Range Operating New Mexico, Inc.
	777 Main Street, Suite 800
	Fort Worth, Texas 76102
	Operators name and address:

b. Description of the project area:

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- 1. Plat outlining the project area: See Exhibit "A" attached
- 2. Description of the project area: <u>Township 21 South, Range 37East, NMPM</u> Section 23: Northern 3/4th (480-acres)

3. Total acres: The current project is flooding approximately 480 acres.

4. Name of subject pool and formation:

The Brushy Canyon formation of the East Loving-Brushy Canyon Pool

- c. Status of operations in the project area:
 - 1. N/A
 - 2. N/A
 - 3. If not unitized:

This is a leasehold waterflood project approved by the two working interest owners being Range Resources Operating Company and Chesapeake Oil Company.

- d. Method of recovery to be used:
 - 1. Fluids to be injected.

Range will inject water and associated fluids produced from the Canyon and Cherry Canyon formations.

- 2. Division Order approving the project: not yet
- 2. If the project has not been approved by the Division, provide the date the application with form C-108 was filed:

April 7, 2006 (date application was filed)

- e. Description of the project:
 - 1. A list of producing wells.

See Exhibit "C" for a list of the 14 producing wells in the project area.

2. A list of injection wells.

See Exhibit "D" for a list of the 6 injection wells, including unorthodox well locations, in the project area.

- 3. Capital cost of additional facilities: estimated \$ 420M
- 4. Estimated total project Costs: estimated \$5.415MM
- 5. Estimated total value of incremental production to be recovered from the project. \$30MM
- 6. Anticipated injection commencement date: July 1, 2006

b. Anticipate injection volumes: not to exceed 5,000 bwpd

f. Production data: Provide graphs, charts and other supporting data to show the production history and production forecast of oil, gas, casinghead gas and water from the project area.

See Exhibit "E" attached

(7) A copy of this application including notice of hearing will be sent to all mineral interest owners, including royalty and overriding royalty owners, within Section 23, as set forth on Exhibit "F" attached.

Wherefore, Applicant requests that this application be set for hearing and that after said hearing, the Division enter its order approving this application.

Respectfully submitted. iomas Kellahin

ellahin & Kellahin P. O. Box 2265 Santa Fe, NM 87504 Attorney for Applicant

VERIFICATION

STATE OF TEXAS)

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COUNTY OF Tassant

Dwayne Bryant, being duly sworn upon his oath, deposes and states: He is a petroleum engineer employed by Range Operating New Mexico, Inc, that he is familiar with the matters set forth in this application and the statements therein are true and

SUBSCRIBED AND SWORN to before me this __day of April 2006, by Dwayne Bryant <u>Man Jerylor</u> Notary Public

My commission expires: 5 - 14 - 08



NMOCD Application Range Operating New Mexico, Inc. Page 4



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STATE OF NEW MEXICO ENERGY, MINERALS AND NATURAL RESOURCES DEPARTMENT

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Oil Conservation Division 1220 South St. Francis Dr. Santa Fe, New Mexico 87505

	APPLICATION FOR AUTHORIZATION TO INJECT
I.	PURPOSE: X Secondary Recovery Pressure Maintenance Disposal Storage Application qualifies for administrative approval? Yes X No
11.	OPERATOR: <u>Range Operating New Mexico, Inc.</u>
	ADDRESS: 777 Main Street Suite 800 Fort Worth TX 76102
	CONTACT PARTY: <u>Andrew Tullis</u> PHONE: <u>817/509-1505</u>
TII.	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 X No If yes, give the Division order number authorizing the project:
V,	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.
VI.	Aπach 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.).
- *VIII. Attach appropriate geologic data on the injection zone including appropriate lithologic detail, geologic 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 sources known to be immediately underlying the injection interval.
- IX. Describe the proposed stimulation program, if any.

- * X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted).
- *XI. Attach a chemical 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 available geologic and engineering data and find no evidence of open faults or any other hydrologic connection between the disposal zone and any underground sources of drinking water.
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form.

XIV. Certification: I hereby certify that the information submitted with this application is true and correct to the best of my knowledge and belief.

	NAME: <u>A</u>	ndrew Tullis	TITLE:Dist	rict Engineer
	SIGNATURE:	the make	DATE:	4-6-2006
	E-MAIL ADDRESS:	atullis@rangeresources.com		
*	If the information require Please show the date an	red under Sections VI, VIII, X, and d circumstances of the earlier subt	d XI above has been previously submittee mittal:	EXHIBIT
DIS	TRIBUTION: Original and	i one copy to Santa Fe with one co	opy to the appropriate District Office	10

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) Lease name: Well No.; Location by Section, Township and Range; and footage 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.

- B. 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 the 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 notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, 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.

Side 2



Proposed Injector Wells

Well Name	Well Type	Construction	Location	Date Drilled Co	mpletion Date	Depth
Caviness-Paine #2	ō	Hole Size-12-1/4* Csg Size-6-58* Weight LB/FT- 24# Depth Set- 52? Cementing Record- 310 sx Class C Hole Size-1-178* Csg Size-6-58* Weight LB/FT- 15.5# Depth Set- 6300* Cementing Record- 1st sig-650 sx 50-50 Poz H+ 200 sx Class C 2nd stg- 4/5 sx lite + 100 sx Class C The Size-2-128* Them Set-State	760 FSL & 630 FEL Sec 15-T23S-28E	9/6/1390	9/21/1990	6300
Danaldson A Comm #1	₹	Hole Size 1:17: C49 Size 16 Weight LB/FT- 65# Depth Set- 466" Cementing Record- 370 ac Class C Hole Size 1:2: 1/4" C49 Size 16" Weight LB/FT- 40.58 Depth Set- 3037" Cementing Record- 1200 ac HLC & Class C Hole Size 1:2: 1/4" C59 Size 7:548" Weight LB/FT- 33.29, & 24# Depth Set- 10800" Cementing Record- 2870 ac HLC & Class C Line: Hole Size 4:17" C99 Size 4:17" Top- 10565" Bottom - 13204" Cementing Record- 2870 ac TLC & Class H Line: Hole Size 4:17" C99 Size 4:17" Top- 10565" Bottom - 13204" Cementing Record- 2870 ac TLC & Class H Line: Hole Size 4:17" C99 Size 4:17" Top- 10565" Bottom - 13204" Cementing Record- 350 ac The Size 2:20" Depth Set - 10204" Depth Set - 10204" Cementing Record- 2870 ac TLC & Class H	1930 FNL & 2303 FWL Sec 23-7235-R28E	1/16/1978	9/6/1978	13213
RGA #2	₹	Page stare - store begiver or the approver or the approxement of Record - 410 sx Class C Hole Star-17-114 Cap Stare - 518* Weight LB/FT- 15.54 Depth Set - 513* Cementing Record - 410 sx Class C The disc Stare - 718* Death Set - 512* Weight LB/FT- 15.54 Depth Set - 8250 Cementing Record - 2260 sx 50-50 Poz	990 FSL & 2080 FWL Sec 14-T23S-R28E	10/15/1989	11/4/1989	6252
RGA #3	ō	Hole Size 1/21/41 Cap Size 9-5/8* Weight LB/FT- 24# Depth Set- 515' Cementing Record- 310 sx C + 2% CaCl Hole Size 1/21/41 Cap Size 9-5/8* Weight LB/FT- 15.5# Depth Set- 6250' Cementing Record- 240; 11s1/755 sx 50-50 Poz H + 150 sx C 2nd stage-550 sx tile C + 50 sx C The Size 2/28* Teehn Set as Entrit	760 FSL & 760 FWL Sec 14-T23S-R28E	0661/6/9	9/3/1880	6250
South Culebra Bluff #23-1	Ō	Hola Size-12-14" Cap Size 8-5/6" Weight LB/FT-24# Depth Set-527.88" Cementing Record- 447 sx Hola Size-12-14" Cap Size 2-12" Weight LB/FT-17# Depth Set-5560" Cementing Record- 1578 sx T	1830 FSL & 1980 FWL Sec 23-T23S-R28E	1/4/1988	3/9/1988	6560
South Culebra Bluff #23-2	8	Tug size - 2-10 . Uppin set evour tracken sone acken moust r ge out.co Hole Size - 12-14. Cog Size - 8-56° Weight LBFT- 244. Depth Set - 552° Cernenting Record- 945 sx Hole Size - 7178. Cog Size - 8-12" Weight LBFT- 15.44. Depth Set - 6310° Cernenting Record- 1400 sx The Size - 7778. "Denth Set: 60118" Parker Set - Armeet Lon 66118"	1920 FSL & 660 FWL Sec 23-T23S-R28E	11/1/1989	11/25/1989	6310
South Culebra Bluff #23-3	ō	Hole Size- 12-11/r ⁻ Cag Size- 8-518 ⁻ Weight LB/FT- 23# Depth Set- 535 ⁻ Cennenting Record- 425 sx Class C Hole Size- 7.718 ⁻ Cag Size- 8-518 ⁻ Weight LB/FT- 15.5# Depth Set- 6330 ⁻ Cennenting Record- 1300 sx °C ⁻ The Size- 7.718 ⁻ Denth Set- 6172 ⁻	510 FSL & 660 FWL Sec 23-T23S-R28E	2/19/1990	3/10/1990	6330
South Culebra Bluff #23-4	īō	Hole Size 12-14. Cos Size 8-5/9. Weight LB/FT- 24# Depth Set- 555' Cementing Record- 450 sx Hole Size -1714' Cos Size -217* Weight LB/FT- 15.5# Depth Set- 6305' Cementing Record- 2000 sx Tog Size -2718'' Depth Set- 6050' Packer Set- 6050'	894 FWL & 1890 FNL Sec 23-T23S-R28E	3/3/1990	3/25/1990	6305
South Culebra Bluff #23-5	ō	Hole Size- 12-1/4" Csg Size- 8-5/8" Weight LB/FT- 24# Depth Set- 545' Cementing Record- 450 sx Hole Size- 7:15" Csg Size- 5:17" Weight LB/FT- 15:2# Depth Set- 6300' Cementing Record- 1700 sx The Size- 2:27" Themin Set- 6:17" Device Set- 6:14"	540 FNL & 611 FWL Sec 23-T23S-R28E	3/15/1990	4/8/1990	6300
South Culebra Bluff #23-6	N	Heie Size - 12-147 Cag Size - 5-587 Weight IBFT - 548 Depth Set - 556' Centerking Record- 350 sx Heie Size - 12-147 Cag Size - 5-177 Weight IBFT - 15.48 Depth Set - 530' Centerking Record- 1700 sx Thoi Size - 7.718' Denth Set - 6165' Packer Set - 6146'	678 FNL & 2170 FWL Sec 23-T23S-R28E	3/28/1990	5/2/1990	6300
South Cułebra Bluff #23-11	ō	Hole Size- 12-14" Csg Size- 8-56" Weight LBrT- 23# Depth Set- 542" Comenting Record- 350 sx Hole Size- 7:15" C sg Size- 8-512" Weight LBrT- 15.5# Depth Set- 6300" Comenting Record- 1950 sx The Size- 2:78" Teents Set- 6000" Pacter Set- 6000"	660 FNL & 2140 FEL Sec 23-T23S-R28E	4/23/1990	5/19/1990	6300
South Culebra Bluff #23-13	ĪŌ	varse strict begin varse stream of the model. Hole Size 111° Cag Size 8-50° Weight LB/FT - 24° Depth Set 550° Cementing Record- 90 sx BJ Lile. 250 dass "C" + 2% CaC/2 Dis Size - 7278° Cag Size - 842° Weight LB/FT - 15.5% Depth Set 6349° Cementing Record-960 sx Class "C" + 5% Satt + 4% FL-52.1200 sx BJ Lile The Size - 7278° Themh satt 6170°	1650 FNL & 1650 FWL Sec 23-T23S-R28E	5/7/1998	6/10/1998	6350
South Culebra Bluff Unit #1	Gas	1 Cas Star 20* Depth Set 34* Cennenting Record-5 cubic yards Hole Size-11-112* Cas Size-13-30* Weight LB/FT-46# Depth Set-418* Cennenting Record-500 sx Hole Size-11-112* Cas Size-35* Weight LB/FT-36,40# Depth Set-6355* Cennenting Record-Stage 1-1065sx Stage 2-1640 sx	····1980 FNL-& 1650 FEL Sec 23-723S-R28E	11/6/1977-	1/27/1978	11769
Queen #1	ē	19 date - Fried Department - Department - Departmenting Record- 300 Class C Hole Size-12-147 Cap Size-8-516" Weight LB/FT - 24# Depth Set- 521" Cementing Record- 300 Class C De Size-2-778" Cap Size-4545" Weight LB/FT - 155# Depth Set- 6290" Cementing Record- 1200 sx Lile + 150 sx Class C	580 FNL & 580 FEL Sec 22-T23S-28E	10/27/1990	11/10/1990	6290
Queen #2	ĨŌ	Hole Store - 12-114° Cag Store - 5.50° Weight LBFT - 24≇ Depth Set- 410' Cementing Record- 265 sx Hole Store - 7-716' Cag Store - 5-112' Weight LBFT - 15.5⊈ Depth Set- 6350' Cementing Record- 685 sx Lite, 350 sx *C* Tbg Store - 2-718' Depth Set- 6045'	1880 FNL & 330 FEL Sec 22-T23S-R28E	9/23/1991	10/9/1991	6350

South Culebra Bluff #23-19

"Wells within area of review

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Vell Name W.	Vell Type	Construction	1 oration	ala Dritlard, Cor	ater Date	Denth
Donaldson A Comm #1	7	Hole Size-16. Vieinth Rift 664. Denth Sei- 466. Cementinn Pacron. 370 ev clase C				
		Hole Size-12-14 ⁴ Cos Size-10-34 ⁴ Weight LBFT-40.58 ⁴ Depth Set-commung Record, 2700 ax HLC & Class C Hele Size-12-14 ⁴ Cos Size-10-34 ⁴ Weight LBFT-40.58 ⁴ Depth Set-10300 ⁴ Cementing Record-7200 ax HLC & Class C Lines Laboratory Cost Size-16 ⁴ Median LBFT-32, 28 284 Depth Set-10800 ⁴ Cementing Record-2870 ax TLC & Class H	1930 FNL & 2303 FWL Sec 23-1235-K28E	8/61/91/	9/6/19/8	61261
		Liner-mere size-ri/z 'osj size-eri/z' lop-1048' bottom-13204' Cementing Record-350 sx Tog Size-2718' Depth Sat-11019' Packer Sat-11204' Tog Size-2348' Depth Sat-11404'				
Reid #1	ō	Hole Size-12-114' Cag Size-8-5/8' Weight LB/FT- 24# Depth Sel-510' Cementing Record- 300 sx Hole Size-12-14'' Cag Size-8-5/8' Weight LB/FT-15.5# Depth Sel- 5300' Cementing Record- 1250 sx The server of the server of	880 FSL & 1980 FEL Sec 14-T23S-R28E	11/6/1990	12/4/1990	6300
RGA #2	ō	rug size- zhrifo rugin uze seuv bazen seu -bedu Hole Size-12-114* Cag Size-556* Weight LB/FT- 7234 Depth Set- 513* Cementing Record- 410 ex Class C Hole Size-12-14* Cag Size-512* Weight LB/FT- 15.54* Depth Set- 6250* Cementing Record- 2260 ex 50-50 Poz	990 FSL & 2080 FWL Sec 14-T23S-R28E	0/15/1989	11/4/1989	6252
South Culebra Bluff #23-1	ē	ries acc. erzt. 44. Cos Ster oster Holis Size - 12:14. Cos Size - 5:1/2. Weight LB/FT - 24# Depth Set- 527.88 'Cementing Record- 447 sx Hole Size - 7:1/8. Cos Size - 5:1/2' Weinht LB/FT - 17# 'Denth Set- 6550'Cementing Record- 4578 sx	1830 FSL & 1980 FWL Sec 23-T23S-R28E	1/4/1988	3/9/1988	6560
South Culebra Bluff #23-3	ĩõ	Tog size- 2-718' Depth Set- 6030' Packer Set- Baker Model R @ 6023' Hole Size- 12-114' Csg Size- 8-516' Weight LBFT- 23# Depth Set- 555' Cementing Record- 425 sx Class C	510 FSL & 660 FWL Sec 23-T23S-R28E	019/1990	3/10/1990	6330
South Culebra Bluff #23-4	ē	Hole Size -7-7/8' Cag Size -5-1/2' Weight LB/FT- 15.54 Depth Set- 63:00' Cementing Record- 1300 sx "C" Tig Size -7:7/4' Depth Size -6:072' Hole Size -12:1/4' Cag Size -6:50' Weight LB/FT- 244 Depth Set- 555' Cementing Record- 450 sx	894 FWI & 1890 FNI See 23-T23S-R28F	0601/0/2	0911940	6305
	į	Hole Size-7-1/8" Cag Size-5-1/2" Weight LB/FT-15.5# Depth Sel- 6305' Cementing Record- 2000 sx Tbg Size-2-1/8" Depth Sel- 6050' Packer Sel-6050'				
2-22-20-00-00-00-00-00-00-00-00-00-00-00	8	Hole Size-12-14* Csg Size-8-5/8* Weight LB/FT-24# Deph Se-545 Cementing Record-450 sx Hole Size-7-7/8* Csg Size-5-1/2* Weight LB/FT-15.54* Deph Se+6.300' Cementing Record-1700 sx	540 FNL & 611 FWL Sec 23-T23S-R28E	3/15/1990	4/8/1990	6300
South Culebra Bluff #23-6	8	Tbg Size-2-7/8* Dopth Set-6017* Packer Set-6017* Hole Size-12-14* Csg Size-8-5/8* Weight LB/FT-24# Depth Set-556' Cementing Record-350 sx	678 FNL & 2170 FWL Sec 23-T23S-R28E	3/28/1990	5/2/1990	6300
iouth Culebra Bluff #23-7	ö	Hole Size-7-7/8° Cag Size-5-1/2* Weight LB/FT-15.54 Depth Set-6300* Cementing Record-1700 sx DB Size-27:47 Depth Ster 6105* Teacher Set-6105* Holle Size-12:144* Con Size A.548* Wonish I. B/FT-244* Demin Record-24:00 second-34:00 sx		000712 71		0000
and Division Division as	i ā	Hole Size - 3-70° Construction for the state of the second region of the state of the second se	1/20 FEL & 1930 FOL 380 23-1233-K20E	06617117	0/6/1 990	6300
	5	ruue suce 12-14 usg size essia weignt Läkr 1-234 Depin Set-342 Cementung Record-350 SK Hole Size-7-718" Csg Size-5-112" Weight LäkrF-15.54 Depin Set-6300' Cementing Record-1950 sx	660 FNL & 2140 FEL Sec 23-T23S-R28E	4/23/1990	5/19/1990	6300
iouth Culebra Bluff #23-12	ō	Tbg Size-2-718* Depth Set-6000' Packer Set-6000' Hole Size-12-114* Csg Size-8-518* Weight LB/FT-24# Depth Set-579' Cementing Record- 350 sx Hole Size-12-118* Cagistic-5-112* Weight LB/FT-15:5# Depth Set-6310' Cementing Record- 1795 sx	2140 FNL & 400 FEL Sec 23-T23S-R28E	0661/6/9	0661/2/2	6350
south Culebra Bluff #23-13	đ	true success the course are exorous the source source and the set of the source of a solution of the source of th	1650 FNL & 1650 FWL Sec 23-T23S-R28E	5/7/1998	6/10/1998	6350
south Culebra Bluff Unit #1	Gas	Csg Size-20" Depth Sel-34" Comenting Record-5 cubic yards Hole Size-17:1/2" Csg Size-15:36" Weight LB/FT-44# Depth Sel-419" Comenting Record-500 sx Hole Size-17:14" Csg Size-56" Weight LB/FT-38,40# Depth Sel-6355" Comenting Record-5lage 1-1065sx Sizge 2-1640 sx	1980 FNL & 1650 FEL Sec 23-T23S-R28E	11/6/1977	1/27/1978	11769
bouth Culebra Bluff Unit #4	ĩ	Hole Size-11:-112' Csg Size-13-318' Weight LB/FT-48# Depth Set-440' Cementing Record-550 sx Hole Size-11:-14' Csg Size-1-38' Weight LB/FT-26.4# Depth Set-6145 Cementing Record-5200 sx Liner-140e Size-112' Csg Size-4-112' Top-5795' Bottom-9800' Cementing Record-475 sx Tbg Size-2:38" Depth Set-7065	660 FNL & 560 FEL Sec 23-T23S-R28E	8/9/1979	9/4/1980	9802

South Culebra Bluff #23-21

		"Wells within area of review				
Well Name	Well Type	construction	Location	Date Drilled Co	mpletion Date	Depth
Donaldson A Comm #1	5	Hole Size-18-1/2 ⁻ Cas Size-16 ⁻ Weight LB/F ⁻ 65# Depth Set-466 ⁺ Cementing Record-370 ax Class C Hele Size-18-14 ⁺ Cas Size-10-24 ⁺ Weight LB/F ⁻ 40.54 Cementing Record-3200 ax HLC & Class C Hole Size-4-12 [°] Cas Size-1-26 [*] Weight LB/F ⁻ 33.29, 264 Depth Set-1080 ⁺ Cementing Record-2200 ax HLC & Class H Liner-Hole Size-6-12 [°] Cas Size-4-12 [°] Top-10585 ⁺ Bottom-13204 ⁺ Cementing Record-350 ax To Size-2748 ⁺ Depth Set-1018 ⁺ Packet Set-1020 ⁴	1930 FNL & 2303 FWL Sec 23-T235-R28E	1/16/1978	9/6/1978	13213
South Culebra Bluff #23-1	ō	Heis Size - 12-14. Costo services - 15-69. Weight LB/FT - 24# Depth Set-527.88* Commenting Record- 447 sk Heis Size - 12-118* Cost Size - 5-112* Weight LB/FT - 17# Depth Set-6560* Commenting Record- 1578 sk	1830 FSI. & 1980 FWL Sec 23-723S-R28E	1/4/1988	3/9/1988	6560
South Culebra Bluff #23-3	ē	Tog size- 2://g* Depth Sei- 60:07 Packet. Sei: Bakter Model R @ 60:23 Hole Size- 12-114* Cag Size- 8:07 Packet. Sei: Bapth Sei: 535 'Camenting Record- 425 sx Class C Hole Size- 7:17* Cag Size- 5:12* Weight LB/FT- 15.5# Depth Sei: 63:07 Camenting Record- 426 sx Class C	510 FSL & 660 FWL Sec 23-T23S-R28E	2/19/1990	3/10/1990	6330
South Culebra Bluff #23-7	5	ug ucce 7-10 bepui ser uotz Hole Size- 12-14° Se Size- 5-12° Weight LBFT - 24# Depth Set- 542° Cementing Record- 350 sx Hole Size- 5-78° Cag Size- 5-12° Weight LBFT - 15.5# Depth Set- 630° Cementing Record- 1600 sx Tog Size- 2-78° Depth Set-6052° Packer Set- 6052°	1750 FEL & 1950 FSL Sec 23-7235-R28E	5/17/1990	6/8/1990	6300
South Culebra Bluff #23-8	ē	Hole Size-12-14" Cag Size-8-5/6" Weight LB/FT- 24# Depth Set- 300" Comenting Record- 350 sx Hole Size- 7718" C3 Size- 5175" Weight LB/FT- 15.5# Depth Set-642# Comenting Record- 1475 sx The size- a new Comb set-state	1650 FSL & 330 FEL Sec 23-T23S-R28E	12/4/2004	1/2/2005	6424
South Culebra Bluff #23-9	0i	try does zwar uster voor soor voor doe	660 FSL & 1980 FEL Sec 23-T23S-R28E	5/28/1990	6/20/1990	6350
South Culebra Bluff #23-10	Ō	rug or a transformer of the former of the Hole Size -12-11/8 Con Size -5-10° Weight Heff-1-54# Depth Set-567° Cementing Record- 650 sx Hole Size -2719° Con Size-5-172° Weight Heff-1-55 # Denth Set-5401° Cementing Record- 1984-714 sx tail-700 sx	330 FSL & 330 FEL Sec 23-T23S-R28E	5/17/2005	7/13/2005	6402
South Culebra Bluff #23-11	10	Hole Size-12-1/4" Cag Size-8-5/8" Weight LB/FT-22# Depth Set-542" Cementing Record-350 sx Hole Size-1719" Cag Size-8-157" Veight LB/FT-15.5# Depth Set-5300" Cementing Record-1950 sx The Size-2 are hown set-strong Devise Set. For the Size Size Size Size Size Size Size Siz	660 FNL & 2140 FEL Sec 23-T235-R28E	4/23/1990	5/19/1990	. 6300
South Culebra Bluff #23-12	<u>D</u>		2140 FNL & 400 FEL Sec 23-1235-R28E	6/9/1990	0661/1/1	6350
South Culebra Bluff #23-13	Ō	Hole Size-11* Cog Size-8-5/8* Weight LB/FT-24# Depth Set-550 Cementing Record-90 x BJ Lite, 250 class "C* + 2% CaCl2 Hole Size-7178" Cog Size-5-12" Weight LB/FT-15.5# Depth Set-6549 Cementing Record-960 xx Class "C* 5# Sait + 4% FL-52 1200 xx BJ Lite Dis Size-2778" Charlo Saits - 5170"	1650 FNL & 1650 FWL Sec 23-723S-R28E	5/7/1998	6/10/1998	6350
South Culebra Bluff Unit #1	Gas	Cag Size-20" Depth Set-34" Cementing Record-5 cubic yards Hole Size-17-1/2" Cag Size-13-30" Weight LB/FT-48# Depth Set-418" Cementing Record-500 sx Hole Size-17-1/2" Cag Size-4528" Weight LB/FT-36,40# Depth Set-6355 Cementing Record-Slage 1-1065sx Slage 2-1640 sx The Size-17-10" Device Size-17-26.	1980 FNL & 1660 FEL Sec 23-T23S-R28E	11/6/1977	1/27/1978	11769
South Culebra Bluff Unit #4	Ö	119 oter Print Day Dave Throught LB/FT- 40# Depth Set- 440* Cementing Record- 550 sx Hele Size- 17-112* Cap Size- 7-5/8* Weight LB/FT- 26.4# Depth Set- 6185* Cementing Record- 5200 sx Line: - Hele Size- 12*-114* Cap Size- 4-112** Top- 5795* Bottom- 9800* Cementing Record- 475 sx Thro: A:re_ a rear Device A:rear A	660 FNL & 560 FEL Sec 23-T23S-R28E	8/9/1979	9/4/1980	9802
South Culebra Bluff Unit #6	Ō	trig are zwar zon zen roue. Hula Size-11-12" Cas Size-1-5-30" Weight LB/FT- 49# Depth Set- 485" Cementing Record- 600 sc Hula Size-41/2" Cas Size-7-60" Weight LB/FT- 26.4# Depth Set- 7005" Cementing Record- 3055 sc Linet Size-41/2" Top-6601 Boltom- 9498" Cement-450 ss. Tug Size-2-718" Depth Set 42/28	1980 FNL & 660 FWL Sec 24-T23S-R28E	7/11/1980	12/19/1980	9096

		"Wells within area of review				
Well Name W	Vell Type	Construction	Location	Date Drilled Co	mpletion Date	Depth
Candelario #1	ō	Hole Size-12-114" Csg Size-8 549" Weight LBIFT- 24# Depth Set-543" Cementing Record-350 sx Hole Size-714" Csg Size-6-112" Veight LBIFT-15:54 Depth Set-6310" Cementing Record-700 sx DV Set-3491" 1000 sx The Size-52-17" Coefficient Cement Set-6400"	660 FNL & 660 FWL Sec 24-T23S-R28E	11/7/1990	12/14/1990	6310
Candelario 24 #2	Ŋ	rus ar or to voice ac e 5:30° Neight LBFT - 24# Depth Set - 297° Cementing Record - 350 as Neie Size - 7:41° Cag Size - 5:41° Veight LBFT - 15:48° Depth Set - 639″ Cementing Record - 1300 as The Size - 2:44° Teath Set - 653″ Percer Set - 6618°	330 FNL & 330 FWL Sec 24-T23S-R28E	10/15/2004	11/21/2004	6400
Candle 13#1	ō	rug and the State for the staff Weight LBFT-24# Depth Set-562" Cementing Record-350 as Hole Size-12414" C Size-5414" Weight LBFT-154# Depth Set-5820" Cementing Record-615 as 1st stage 820 as thru DV tool Hole Size-72414" Depth Seize-5414" Depth Set-62400" Cementing Record-615 as 1st stage 820 as thru DV tool	560 FWL & 660 FSL Sec 13-123S-R28E	4/13/1991	5/1/1991	6300
Donaldson A Comm #1	ō	usy accord and a construction of the construction of the for Cementing Record- 370 sx Class C Hole Size-15/12 Cag Size-16 Weight LBT- 40,54 Depth Set- 466 Cementing Record- 1200 sx HLC & Class C Hole Size-12/14 Cag Size-16 Weight LBT- 30,29, & 264 Depth Set- 10800 Cementing Record- 1200 sx HLC & Class C Hole Hole Size-17 Cag Size-17 Top- 10585 Bottom- 13204 Cementing Record- 2870 sx TLC & Class H Linet- Hole Size-177 Cag Size-172 Top- 10585 Bottom- 13204 Cementing Record- 350 sx TLC & Class H The Size-2.2780 Depth Set 10107 Packer Set - 10204	1930 FNL & 2303 FWL Sec 23-T235-R28E	1/16/1978	9/6/1978	13213
Reid #1	ð	rug var zevo velanja nov rivev. Hola Sizer 12: Hyt Cag Size -518" Weight LB/FT- 24# Depth Set- 510" Cennenting Record- 300 ax Hola Sizer 17: 8" Cag Size -515" Cag Patrol LB/FT- 15.54" Depth Set- 6300" Cennenting Record- 1250 ax	880 FSL & 1980 FEL Sec 14-T23S-R28E	11/6/1990	12/4/1990	6300
Reid #2	ē.	rug atter z zruz volgen dev storen kense verskol Ber 509' Cemenking Record- 310 sx Hole Sister 12-14° Cog Sister 5-59° Weight LB/FT-24# Depth Set 509' Cemenking Record- 18 stage- 550 sx DV 1150 sx Hole Sister 7-78° Cog Records Center Center Center And Set 6500' Cemenking Record-18 stage- 550 sx DV 1150 sx	888 FSL & 925 FEL Sec 14-T23S-R28E	1/24/1991	2/17/1991	6300
South Culebra Bluff #23-3	ō	Hote Size-12-14" Cog Size 5-51" Verlight LBFT- 23# Depth Set-53" Cementing Record-425 sx Class C Hote Size-12-14" Cog Size 5-17" Weight LBFT- 15.5# Depth Set-6330" Cementing Record-425 sx Class C Hote Size-2-17" Cog Size 5-172" Weight LBFT- 15.5# Depth Set-6330" Cementing Record-1300 sx "C"	510 FSL & 660 FWL Sec 23-T23S-R28E	2/19/1990	3/10/1990	6330
South Culebra Bluff #23-6	ō	Hole Size-12-14 Cog Size-5-12" (Weight LB/F"- 24# Depth Set-556 Cententing Record-350 sx Hole Size-174" Cog Size-5-174" Cog Size-5-175" (Weight LB/F"- 24# Depth Set-650 Cententing Record-1700 sx The Size-2-274" Conf. State: Sci. 6115: Set-6115: Set-6115	678 FNL & 2170 FWL Sec 23-T235-R28E	3/28/1990	5/2/1990	6300
South Culebra Bluff #23-7	ō	Hole Size-12:147 Csg Size-8-568" Weight LBiFT- 24# Depth Set-542" Cementing Record-350 st Hole Size-12:147 Csg Size-6-568" Weight LBiFT-54# Depth Set-6300" Cementing Record-1600 st The Size-2-176" Cheath Set-6052" Peaker Set-6052".	1750 FEL & 1950 FSL Sec 23-723S-R28E	5/17/1990	6/8/1990	6300
South Culebra Bluff #23-8	ð	Hole Size-12-114" Cag Size- 8-5/8" Weight LB/FT- 24# Depth Set- 300' Cementing Record- 350 sx Hole Size-718" Cag Size- 51/2" Weight LB/FT- 15.5# Depth Set- 6424" Cementing Record- 1475 sx The Size-2-art Demth Set-E720"	1650 FSL & 330 FEL Sec 23-T23S-R28E	12/4/2004	1/2/2005	6424
South Culebra Bluff #23-11	ō	Hete Sizer F2-14 "Ceg Size F3-6" Weight LB/F7-23# Depth Set 542" Cementing Record-350 sx Hete Sizer F2-14" Ceg Sizer 5-16" Veight LB/F7-23# Depth Set 542" Cementing Record-150 sx Hote Sizer 5-17" Ceg Sizer 5-17" Veight LB/F1" Siz# Depth Set 6300" Cementing Record-1950 sx	660 FNI. & 2140 FEL Sec 23-T235-R28E	4/23/1990	5/19/1990	6300
South Culebra Bluff #23-12	ō	iug care ≠ zero usual ser vour starek ouer neuerator. India Ster - 12-14° Cay Stare - 15-6° Weight LB/T- 24# Depth Set- 519° Cementing Record- 350 sx Hole Ster - 12-14° Cay Stare - 12-14° Cay Star Stare - 12-14° Cay Stare - 12-14° Cay Sta Stare - 12-14° Cay Stare - 12-14° Cay S	2140 FNL & 400 FEL Sec 23-T23S-R28E	6/9/1990	0661/1/1	6350
South Culebra Bluff #23-13	ō	try area - the burgen over even wave net make the path Set. 550° Cementing Record- 90 sx BJ Lille, 250 dass °C* + 2% CaCl2 Hole Size 171° Cap Size 550° Weight LB/FT - 24° Deph Set. 6349° Cementing Record-960 sx Class °C* + 54° Sait + 4% FL-52 1720 sx BJ Lile Hore Size - 7710° Cap Size 5517° Weight LB/FT - 15.54° Deph Set. 6349° Cementing Record-960 sx Class °C* + 54° Sait + 4% FL-52 1720 sx BJ Lile	1650 FNL & 1650 FWL Sec 23-T23S-R28E	5/7/1998	6/10/1998	6350
South Culebra Bluff Unit #1	Gas	org sour 2-file beach Set-34 Cennenting Record-5 cubic yards Hole Size-11-112 ⁻ Cog Size-13-30° Weight LBFT-44# Oepth Set-418 ⁻ Cennenting Record-500 sx Phile Size-12-14 ⁻ Cog Size-13-30° Weight LBFT-36-40# Depth Set-635 ⁻ Cennenting Record-500 sx Phile Size-4-16 ⁻ Thanh Set-11769	1990 FNL & 1650 FEL Sec 23-T235-R28E	11/6/1977	1/27/1978	11769
South Culebra Bluff Unit #4	ĨŌ	Hole Size-17-17: Cisg Size-13-3/8* Weight LB/FT-48# Depth Set-440* Cementing Record-550 sx Hole Size-12-14* Cisg Size-7-5/6* Weight LB/FT-26.4# Depth Set-6185* Cementing Record-6200 sx Liner Hole Size-17: Cisg Size-4-112* Top-5795* Bottom-8800* Cementing Record-475 sx The Size-2-3et* Devils Set-7068*	660 FNL & 560 FEL Sec 23-T23S-R28E	8/9/1979	9/4/1980	9802
South Culebra Bluff Unit #6	ö	try autor ser / 2015 (1917) Hole Size - 17-17: Cag Size - 15-309: Weight LB/FT - 484: Dementing Record- 600 sx Hole Size - 9-1/2' Cag Size - 7-50° Weight LB/FT - 85° 440 Depth Set - 7006' Cementing Record- 3055 sx Line Size - 4-1/2' Tops 501' Bottom - 4488' Cement - 450 sx Tog Size - 2-118' Depth Set - 428'	1980 FNL & 660 FWL Sec 24-7235-R28E	7/11/1980	12/19/1980	9056

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South Culebra Bluff #23-15

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		"Wells within area of review				
Well Name	Well Type	e Construction	Location	le Drilled Com	Metion Date [Depth
Brantley Com #1	ō	Hole Size-11* Cag Size-8-58* Weight LB/FT-24# Depth Set- 500* Cementing Record-550 sx HLC & C Hole Size-3778° Cag Size-5-517* Weight LB/FT-17# Depth Set-7200* Cementing Record-556 sx HLC & C The Size-3778* Cament Sat-7242*	554 FSL & 1874 FWL Sec 23-T235-R28E 9	22/1981 11	/10/1981	7508
Donaldson A Comm #1	Ö	Heie Size-16-1/2" Cisg Size-16" Weight LB/FT- 65# Depth Set- 466" Cementing Record- 370 sx Class C Heie Size-18-1/2" Cisg Size-10:34" Weight LB/FT- 40.54" Depth Set- 3037" Cementing Record- 370 sx HLC & Class C Heie Size-9-1/2" Cisg Size-7-56" Weight LB/FT- 33.29, & Z6# Depth Set- 10800" Cementing Record- 2870 sx TLC & Class H Heie Size-9-1/2" Cisg Size-7-1/2" Top- 10565" Bettom - 13204" Cementing Record- 350 sx Linet- Hole Size-9-1/2" Top- 10565" Bettom - 13204" Cementing Record- 350 sx The Size-3-278" Depth Set- 10197" Packer Set- 10204"	1930 FNL & 2303 FWL Sec 23-1235-R28E 11	16/1978 9	16/1978	13213
South Culebra Bluff #23-1	ö	Hole Steer 2010 Optime 2011 The Year Weight LBFT- 24# Depth Set- 527,88' Cementing Record- 447 sx Hole Stee 7:718' Cas Steare 5-12'' Weight LBFT- 17# Depth Set- 6560' Cementing Record- 1578 sx The strate 2:17" Cases storm Set a prove Model Defension and Second-	1830 FSL & 1980 FWL Sec 23-723S-R28E	/4/1988	19/1988	6560
South Culebra Bluff #23-2	ō	rug sucer 2-1/8 urbent soler extent arer datatin veg ou.co Hole Sizer 12-1/8° Csg Sizer 9-5/8° Weight LB/FT- 244 Depth Set- 552° Cementing Record- 945 sx Hole Sizer 7-1/8° Csg Sizer 5-1/2° Wangin LB/FT- 544 Depth Set- 6310° Cementing Record- 1400 sx The Sizer- 7-178	1920 FSL & 660 FWL Sec 23-T23S-R28E 1	11/1989 11	/25/1989	6310
South Culebra Bluff #23-3	ē	Hole Size-12-14" Cap Size-6-56" Weight LBrFT-23# Depth Set-635" Comenting Record-425 sx Class C Delo Size-7778" Cap Size-6-542" Weight LBrFT-15.5# Depth Set-6330" Cementing Record-425 sx Class C The Size-7778" Cap Size-647"	510 FSL & 660 FWL Sec 23-723S-R28E 2	19/1990 3	10/1990	6330
South Culebra Bluff #23-4	ō	rey date: "You "Dependent of the "Over Weight LBFT- 24# Depth Sel- 555" Cementing Record- 450 as Hele Size-12-149" Cog Size-5-12" Wangint LBFT- 15.4# Depth Sel- 550" Cementing Record- 450 as The Size-2-7719" Cog Size-64 for the Size-15.4# Depth Sel- 530" Cementing Record- 2000 as The Size-2-740" Cog Size-64 for the Size-15.4# Depth Sel- 550" Cementing Record- 2000 as Desting Size-24 for the Size-15.4# Comparison of the Size-15.4# Depth Sel- 550" Cementing Record- 2000 as Desting Size-24 for the Size-15.4# Comparison of the Size-15.4# Depth Sel- 550" Cementing Record- 2000 as Desting Size-15.4# Comparison of the	894 FWL & 1890 FNL Sec 23-T23S-R28E	/3/1990 3	125/1990	6305
South Culebra Bluff #23-6	₹	red user in under the under under under user and the S56' Cententing Record- 350 ax Hole Size-12/14' Cigg Size-5412' Weight LBFT-15.4F Depth Set-556' Cententing Record- 350 ax The Size-27.17' Record State-6451C Provide State Size Size Size Size Size Size Size Siz	678 FNL & 2170 FML Sec 23-1235-R28E 3	28/1990	0861/2/	6300
South Culebra Bluff #23-7	ы	rus, osc. zr.v. ozyan ora oraci erakien ova covarovatelja e 42° Cententing Record- 350 sx Held Size- 17° (48° Cas Size- 5-12° Weight LBFT- 1455 Boein Sat- 6300° Cententing Record- 1600 sx Thos Size- 2710° Deoth Sat- 6022° Pedera Sat- 6022°	1750 FEL & 1950 FSL Sec 23-T23S-R28E 5	11/1990	5/B/1990	6300
South Culebra Bkuff #23-8	ō	Hole Size-12-1/4" Csg Size-8-5/8" Veight LB/FT- 24# Depth Set- 300' Cementing Record- 350 sx Hole Size-12/18" Csg Size-5-1/2" Weight LB/FT- 15.5# Depth Set-6424' Cementing Record-1475 sx The cire- 2-374' Routh Set-Set-5-10"	1650 FSL & 330 FEL Sec 23-T235-R28E	2/4/2004	1/2/2005	6424
South Culebra Bluff #23-9	ð	tug Jac Ano Uneyno 1900 - e coor Hele Size- 17-14F Cas Size-5-12* Vergint LBFT- 24# Depth Set-545* Cementing Record- 350 sx Hele Size- 27187 Cas Size-5-12* Vergint LBFT- 155# Depth Set-6350 Cementing Record- 1700 sx	660 FSL & 1980 FEL Sec 23-7235-R28E	128/1990	120/1990	6350
South Culebra Bluff #23-11	N	Heis Size-12-114 Cas Size-6-5/8' Weight LBFT-23# Depth Set-542' Cennenting Recard-350 sx Heis Size-7-178' Cas Size-5-512' Weight LBFT-155# Depth Set-6300' Cennenting Recard-1950 sx The Size-2-178' The state Set of the Parce Set-6000'	660 FNL & 2140 FEL Sec 23-T23S-R28E 4	/23/1990	/19/1990	6300
South Culebra Bluff #23-12	ō	Hou Size-12-114" Cas Size-6-58" Weight LBFT- 244 Depth Set-579' Camening Record- 350 ax Hold Size-12-116" Cas Size-6-518" Veight LBFT- 15:58 Depth Set-6310' Cementing Record- 1795 ax The Size-2-218" Depth Set-6660" Parter Set-6660"	2140 FNL & 400 FEL Sec 23-T23S-R28E	0661/6/9	0661/1/2	6350
South Culebra Bluff #23-13	ē	Hole Size-11* Csg Size-8-56* Weight LB/FT-24# Depth Set-560 Cementing Record-90 sx BJ Like, 250 class "C* + 2% CaCl2 Hole Size-117* Csg Size-5-12* Weight LB/FT-15.5# Depth Set-6349 Cementing Record-960 sx Class "C* + 5# Satt + 4% FL-52 1200 sx BJ Lite The Size-277# Tench Set-617*	1650 FNL & 1650 FWL Sec 23-T23S-R28E	5/7/1998	V10/1998	6350
South Culebra Bluff #23-14.	8	Hole Size-12-114' Cap Size-8-516' Weight LB/FT-24# Dieph Set-355 Cementing Record-350 sx Hele Size-127' Veight LB/FT-15:58 Deph Set-6419' Cementing Record-1206 sx The Size-2718' Deph Set-6007'	990 FSL & 1650 FWL Sec 23-T23S-R28E	1/1/2004 1	2/16/2004	6419
South Culebra Bluff Unit #1	Gas	Cas Size-20' Depth Set-34' Cementing Record-5 cubic yards Hole Size-10'' Depth Set-31-36' Weight LBFT-448 Depth Set-418" Cementing Record- 500 sx Hole Size-12-14'' Cas Size-556'' Weight LBFT-56,40# Depth Set-835' Cementing Record-Stage 1-1065sx Stage 2-1640 sx Tbg Size-4-112' Depth Set-11769	1980 FML & 1650 FEL Sec 23-723S-R28E	1/6/1977	1/27/1978	11769

South Culebra Bluff #23-20

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		vvolis within area of review				
ame	Nell Type	Construction	Location	Date Drilled (ompletion Date	Depth
y Com #1	Ō	Hole Size-11" Csg Size-8-5/8" Weight LB/FT-24# Depth Set-500" Cementing Record-550 sx HLC & C No bisse-7-12" Csg Size-5-142" Weight LB/FT-11# Depth Set-7200" Cementing Record-5550 sx HLC & C The Size-2-24# Teach Set-7344"	554 FSL & 1874 FWL Sec 23-T23S-R28E	9/22/1981	11/10/1981	7508
son A Comm #1	Ō	Hide Step 1:1/2. Cay Stap-16 Weight LBrFT-65# Depth Set-466 Comenting Record- 370 sx Class C Hele Stap-1:1/2. Cay Stap-16 Weight LBrFT-40.56 Depth Set-3037 Cementing Record- 1200 sx HLC & Class C Hole Stap-1:2:1/4. Cay Stap-1:5/6' Weight LBrFT-40.56 Depth Set-10800 Cementing Record-1200 sx HLC & Class C Hole Stap-1:2: Cay Stap-1:2' Top- 10:55' & 26# Depth Set-10800 Cementing Record-2870 sx TLC & Class H Liner-Hole Stap-6:2' Cay Stap-1:2' Top- 10:55' Rutom-13204' Cementing Record-3:0 sx Depth Stap-5:76' Depth Set-10:17' Packer Set-10204'	1930 FNL & 2303 FWL Sec 23-T23S-R28E	1/16/1978	9/6/1978	13213
Unit #1	NO.	19 20: xer - Store Petri Sei - H. 1444. Hole Ster - 17-114 Cos Store - 8-56° Weight LB/FT - 24# Depth Set - 512' Cementing Record- 550 sx The Store - 27# neuth Set: 6572' Predert BFT - 15 5# Depth Set - 6300' Cementing Record- 2230 sx	1864 FSL & 350 FEL Sec 22-T23S-R28E	1/8/1990	2/1/1990	6300
#2	OI	Hole Ster 12.14 Geg Ster 8-58° Weight LBFT- 24# Depth Set- 410' Cementing Record- 265 st Hole Ster 12.14' Geg Ster 8-512' Weight LBFT- 15.54 Depth Set- 6350' Cementing Record- 685 st Lite, 350 st °C The Ster 27-27 and Cas Ster 8-12'	1880 FNL & 330 FEL Sec 22-723S-R28E	9/23/1991	10/9/1991	6350
Culebra Bluff #23-1	ō	Hole Size-1:14* Cap Size-5:12*Weight LBrF1-24# Depth Set-527.88* Cementing Record-447 ax Hole Size-1:21*Cap Size-5-15* Weight LBrF1-11# Depth Set-6560* Cementing Record-1578 ax To the size To start starts of the starts	1830 FSL & 1980 FWL Sec 23-T23S-R28E	1/4/1988	3/9/1988	6560
Culebra Bluff #23-2	ō	Hug sice: ∠rito Ureptitive: evolve Practical Set: enternation K (20 out.o. Holie Size: 1:2-114* C Sig Size: 8:56* Weight LB/FT- 24# Depth Set: 552* Cennenting Record- 945 sx Holie Size: 7:12* C Sig Size: 5:12* Weight LB/FT- 1:55# Depth Set: 6310* Cennenting Record- 1400 sx	1920 FSL & 660 FWL Sec 23-T23S-R28E	11/1/1989	11/25/1989	6310
Culebra Bluff #23-3	ō	the Size "1:14" Cap Size 5:58" Weight IBFT-23" Depth Set 535" Cementing Record- 425 ax Class C Hole Size 1:21.14" Cap Size 5:58" Weight IBFT-23" Depth Set 535" Cementing Record- 425 ax Class C The Size -2.14" to heals Sate 50.17" Weight IBFT-15.5# Depth Set 6330" Cementing Record- 1300 ax "C"	510 FSL & 660 FWL Sec 23-723S-R28E	2/19/1990	0661/01/C	6330
Culebra Bluff #23-4	õ	Hole Star 12.147 Cap Stare 5.56° Weight LB/FT- 24# Depth Set- 555' Cementing Record- 450 sx Hole Star - 12.147 Cap Stare 5.51° Weight LB/FT- 15.4# Depth Set- 6305' Cementing Record- 450 sx The Stare-271#" Deeth Set- 6060' Paeter Set- 6050'	894 FWL & 1890 FNL Sec 23-T23S-R2BE	3/3/1990	3/25/1990	6305
Culebra Bluff #23-5	ā	Hole Size 12-14" Cag Size 8-5/8" Weight LB/FT- 24# Depth Set- 545 Camenting Record- 450 sx Hole Size 172-14" Cag Size - 5.12" Weight LB/FT - 15.24" Depth Set- 6300 Camenting Record- 450 sx The Size - 7 JP/R Cag Size - 6417" Depth Set- 6418 Set- 6300 Camenting Record- 1700 sx	540 FNL & 611 FWL Sec 23-T23S-R28E	3/15/1990	4/8/1990	6300
Culebra Bluff #23-6	ē	the Stare - Stare Depuy research - Takawa to each Hole Stare 1/2-14* Cas Stare - B5/8* Weight IBFT - 12,# Depth Set- 556* Cementing Record- 350 sx The IS:ser - 1/2-16* Cas Stare - B5/8* Weight IBFT - 15,5# Depth Set- 6300* Cementing Record- 1700 sx	678 FNL & 2170 FWL Sec 23-723S-R28E	3/28/1990	5/2/1990	6300
Culebra Bluff #23-7	Ö	Hele Stare - Stript Stare - Boyn Stare - David - Star Thoo - To - Star - Star - Stare - Staree - Stare - Staree - Stare - Staree - Star	1750 FEL & 1950 FSL Sec 23-T23S-R28E	5/17/1990	6/8/1990	6300
Culebra Bluff #23-9	õ	Hola Star 12.147 Cog Stare 65/87 Weight LDFT- 24# Depth Set-S45 Cementing Record- 350 sx Hola Star - 172/16 Cog Stare 55/87 Weight LDFT- 15/5# Depth Set- 6350 Cementing Record- 1700 sx The Stare - 2736" Denth Set- 60742 peaker Set- 6074	660 FSL & 1990 FEL Sec 23-1235-R28E	5/28/1990	6/20/1990	6350
Culebra Bluff #23-13	ō	Hole Size-11* Cag Size-8-5/8* Weight LB/FT-24# Depth Set-560' Cementing Record-90 ax BJ Lite, 250 class *C* + 2% CaC/2 Hole Size-17* Cag Size-8-5/8* Weight LB/FT-15.5# Depth Set-6549 Cementing Record-960 ax Class *C* + 3# Sati + 4% FL-52 1200 ax BJ Lite The Given Size-17* Co-envector	1650 FNL & 1650 FWL Sec 23-T23S-R28E	5/7/1998	6/10/1998	6350
Culebra Bluff #23-14	Ō	Hole Size 12-147 C59 Size 8-5/8* Weight LB/FT- 24# Depth Sei- 33'S Cementing Record- 350 sx Hole Size 12-147 C59 Size 8-5/12* Weight LB/FT- 15:54 Depth Sei- 6419* Cementing Record- 1206 sx 	990 FSL & 1650 FWL Sec 23-T23S-R28E	11/1/2004	12/16/2004	6419
Culebra Bluff Unit #1	Gas	0 suze -zris Depti sei-zi-4 Cennenting Record-5 autic yards C9 Size-11-112" C 59 Size-13-308" Weight LB/FT-48# Depth Set- 418" Cennenting Record- 500 sx Hole Size-11-114" C 59 Size-549" Weight LB/FT- 36,40# Depth Set- 6355" Cennenting Record-Siage 1-1065sx Stage 2-1640 sx The Size-12-14" C 59 Size-549" Weight LB/FT- 36,40# Depth Set- 6355" Cennenting Record-Siage 1-1065sx Stage 2-1640 sx	1980 FNL & 1650 FEL Sec 23-123S-R28E	11/6/1977	1/27/1978	11769
Culebra Bluff #3B	ĨÖ	vieg store -tritt: Dependent - 13.109 Nobel Size-17.1/2 Cas Size-13.309 Weight LB/FT-48# Depth Set-485" Cementing Record-625 sx Class C Hole Size-11*Cas Size-7.509" Weicht B/FT-25.4# Decht Set-6345" Cementing Record-3890 TLW & 200 Class H	2050 FNL & 1950 FEL Sec 23-723S-R28E	1/21/1979	3/13/1979	8000

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WELL LOCATION: 1430' FNL & 1150' FEL FOOTAGE LOCATION WELLBORE SCHEMATIC				
FOOTAGE LOCATION WELLBORE SCHEMATIC	H	23	23-S	28-E
WELLBORE SCHEMATIC	UNIT LETTER	SECTION	TOWNSHIP	RANGE
10C = JULTOCE		WELL CO Surface C	NSTRUCTION DAT	V
<i>T</i>				
	Hole Size:	12 1/4"	Casing Size:	8 5/8"
	Cemented with:	650 sx.	0r	Â
	Top of Cement:	Surface	Method Determined	I: Calculated
Lake B218		Intermediat	e Casing	
77	Hole Size:		Casing Size:	
NV. tool @ 3934	Cemented with:	sX.	or	ĥ
	Top of Cement:		Method Determined	 Both and the second se Second second s
TOC = 3500'		Production	Casing	
7///	Hole Size	7 /8"	Casino Size	5 1/2"
	Cemented with: cu	age 1- 650	0	Ĵ
	Top of Cement:	age 1- 3500 age 2- 2934-Surfi	acMethod Determined	t Calculated
12% Bryan	Total Depth:			
		Injection I	nterval	
	57.	24 feet	to 6234	

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INJECTION WELL DATA SHEET

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Side 1

Lining Material: Plastic INJECTION WELL DATA SHEET Additional Data Other Type of Tubing/Casing Seal (if applicable): N/A Type of Packer: Baker arrowset permanent pkr Tubing Size: 2 7/8", 65#, J-55 Packer Setting Depth: 5000'

Yes X No	drilled?	Delaware) Producer	
Is this a new well drilled for injection?	If no, for what purpose was the well originally	The well was drilled as a Brushy Canyon (1	

- Deleware Name of the Injection Formation: сi
- 40350 Name of Field or Pool (if applicable): _____ 3.
- Has the well ever been perforated in any other zone(s)? List all such perforated ů intervals and give plugging detail, i.e. sacks of cement or plug(s) used. 4
- Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: ŝ

Above-

Below- Bone Springs

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Side I INJEC	CTION WELL DATA SHEE	F		
OPERATOR: Range Operating NM, Inc				
WELL NAME & NUM BER: <u>South Culebra Bluff 23-17</u>				
WELL LOCATION: 2440' FSI & 1500' FWL FOOTAGE LOCATION	K UNIT LETTER	2.3 SECTION	23-S TOWNSHIP	28-N RANGE
WELLBORE SCHEMATIC		<u>HELL CO</u> Surface C	NSTRUCTION DATA ssing	
	Hole Size:	2 1/4"	Casing Size: 8	5/8"
	Cemented with:	50 sx.	or	ĥ
1000 m	Top of Cement:	ırface	Method Determined:	Calculated
		Intermediate	Casing	
	Hole Size:		Casing Size:	a baala ga ang ang ang ang ang ang ang ang ang
1 DV tool @ ad34	Cemented with:	SX.	or	ĥ
	Top of Cement:		Method Determined:	
ToC = 3500		Production	Casing	
177.	Hole Size: 7	7/8"	Casing Size: 5	, 1/2 ["]
77,	Sta Cemented with: <u>Sta</u>	ge 1- 650 se 2- 625 sX.	0	ų
1//	Top of Cement: <u>Sta</u>	ge 1- 3500 ge 2- 2934-Surfe	iclethod Determined.	Calculated
heha @ 7/s	Total Depth:			
J J J J		Injection J	nterval	
	56	580 feet	to 6205	
		Perforated or Open Ho	le: indicate which)	

Side I

INJECTION WELL DATA SHEET

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	INJECTION WELL DATA SHEET SCB 23-17
Tut	bing Size: 2 7/8", 65#, 1-55 Lining Material: Plastic
Ту	pe of Packer: Baker arrowset permanent pkr
Pac	sker Setting Depth: 5000'
Ott	her Type of Tubing/Casing Seal (if applicable): <u>N/A</u>
	Additional Data
•	Is this a new well drilled for injection? X Yes No
	If no, for what purpose was the well originally drilled? N/A
c,	Name of the Injection Formation: Delaware
ŝ	Name of Field or Pool (if applicable): 40350
जं	Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. $\frac{NO}{NO}$
Ś	Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: Above- Below- Bone Springs

Side 2

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OPERATOR: <u>Range Operating NM, Inc</u> WELL NAME & NUMBER: <u>South Culebra</u> Bluff 23-1	8			
WELL LOCATION: BHL=1300' FWL & 1000' FNL	н	23	2 3–S	28-E
FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE
WELLBORE SCHEMATIC		WELL CO Surface C	NSTRUCTION DAT	τi
	Hole Size:	12 1/4"	Casing Size:	3 5/8"
	Cemented with:	650 sx.	0r	ĥ.
	Top of Cement:	Surface	Method Determined	Calculated
		Intermediate	e Casing	
77	Hole Size:		Casing Size:	
100, tool @ ag34'	Cemented with:	SX.	or	Ĥ
7	Top of Cement:		Method Determined	
ToC = 3500'		Production	Casing	
11	Hole Size: 7	7/8"	Casing Size:	5 1/2"
77)	St Cemented with: <u>St</u>	age 1- 650 age 2- 625 sx.	or	f.
111	St Top of Cement: <u>St</u>	age 1- 3500 age 2- 2934-Surfs	action Determined	Calculated
, he han , is the han ,	Total Depth:	- WARANG STATUTION AND AND AND AND AND AND AND AND AND AN		
7		Injection I	nt er val	
	Ang mang set and set an	5695 feet	to 6215	
· · · · · · · · · · · · · · · · · · ·		(Perforated or Open Ho	ole; indicate which)	

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INJECTION WELL DATA SHEET

Side I

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	INJECTION WELL DATA SHEET SCB 23-18	
Tul	bing Size: 2 7/8", 65#, 1-55 Lining Material: Plastic	
Ty	pe of Packer: Baker arrowset permanent pkr	
Pa(cker Setting Depth: 5000'	
0 II	ter Type of Tubing/Casing Seal (if applicable): <u>N/A</u>	3
	Additional Data	
, 	Is this a new well drilled for injection?	
	If no, for what purpose was the well originally drilled? N/A	•
5	Name of the Injection Formation: Delaware	, i
ć.	Name of Field or Pool (if applicable): 40350	1
भ	Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. No	
5.	Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:	
	Above- Below- Bone Springs	, ,

Side 2

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ide 1 INJECT	10N WELL DATA SHEET	
)PERATOR: <u>Range Operating NM. Inc</u>		
VELL NAME & NUM BER: South Culebra Bluff 23-19		
VELL LOCATION: BHL= 2620' FEL & 1300' FNL	F 73	23-S 28-E
FOOTAGE LOCATION	UNIT LETTER SECTION	TOWNSHIP RANGE
WELLBORE SCHEMATIC	HEIT CO	DNSTRUCTION DATA
1 1 Tgc= surface	Surface (Casing
	Hole Size: 12 1/4"	Casing Size: 8 5/8"
	Cemented with: 650 sx.	or h
-7/	Top of Cement: Surface	Method Determined: Calculated
2 2 2 2 2 18, 2 2 2 18, 2 2 18, 2 3 18,	Intermediat	e Cesing
7		
7	Hole Size:	Casing Size
HEbe @ 1001 D	Cemented with: sx.	or ft
	Top of Cement:	Method Determined
ToC = 3500	Production	L Casing
777		· · · ·
	Hole Size: / //8"	Casing Size: 2 1/2
77,	Stage 1- 650 Cemented with: <u>Stage 2- 625</u> sX.	or
1//	Top of Cement: <u>Stage 1- 3500</u> Top of Cement: <u>Stage 2- 2934-Sur</u> fi	addethod Determined: Calculated
heha @ risi	Total Depth:	
	Injection 1	interval
	5720 feet	to 6235
	(Derforeted of Onen He	ola - indicata which)
	SELECTION POLIDEREN EN	DIC, INULAR WITCH

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	INJECTION WELL DATA SHEET SCB 23-19
Tut	oing Size: 2 7/8", 65#, J-55 Lining Material: Plastic
Ту	pc of Packer: Baker arrowset permanent pkr
Pac	sker Setting Depth: 5000'
O	ner Type of Tubing/Casing Seal (if applicable): <u>N/A</u>
	Additional Data
	Is this a new well drilled for injection? X Yes No
	If no, for what purpose was the well originally drilled? N/A
5	Name of the Injection Formation: Delaware
÷	Name of Field or Pool (if applicable): 40350
4	Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. No
ŝ	Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:
	Aboye-
	Below- Bone Springs

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Side 2

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INJECT	ON WELL DATA SHEET			
RATOR: Range Operating NM, Inc J. NAME & NUMBER: South Culebra Bluff 23-20				
UL L'OCATION: 2520' FSL & 2460' PEL	ŗ	23	23-S	28-E
FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANG
WELLBORE SCHEMATIC		WELL CO Surface C	NSTRUCTION DAT. Bing	T
	Hole Size: 12 1	14 ¹¹	Casing Size:	8 5/8"
	Cemented with: 650	SX.	or	
2 2 4 (10 218'	Top of Cement: <u>Surfa</u> o	.ee Luonnadida	Method Determined	Calculat
-77/	Hole Size:		Casing Size:	
HEDE @ JOOL TOOL	Cemented with:	sX.	or	
7	Top of Cement:		Method Determined	~
ToC = 3500		Production	Casing	
777	Hole Size: 7 7/8"		Casing Size:	5 1/2"
	Cemented with: Stage 1	- 650 - 625 sx.	or	
	Top of Cement: <u>Stage 1</u>	- 3500 - 2 <u>934-Sur</u> fa	dethod Determined	: Calcular
51/2 @ pyay	Total Depth:			
		Injection In	iterval	
	6710	East	6225	

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4 () A

	INJECTION WELL DATA SHEET 5CB 23-20
Tut	oing Size: 2 7/8", 65#, 1-55 Lining Material: Plastic
Ту	ot Packer: Baker arrowset permanent pkr
Pac	ker Setting Depth: 5000'
Oth	ter Type of Tubing/Casing Seat (if applicable): <u>N/A</u>
	Additional Data
	Is this a new well drilled for injection? X Yes No
	If no, for what purpose was the well originally drilled? N/A
લં	Name of the Injection Formation: Delaware
÷.	Name of Field or Pool (if applicable): 40350
य े.	Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. No
Ś	Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:
	Above-
	Below- Bone Springs

Side 2

	A D Intection Interval	5/2 @ by ay Total Depth:		Top of Cement: Stage 1- 3500 Top of Cement: Stage 2- 2934-Surfached Determined: Calculated	we we will stage z = 0.2	$\begin{bmatrix} \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\$		Hole Size: 7 7/8" Casing Size: 5 1/2"		TOC = 3500	Top of Cement: Method Determined:		DV, tool @ 3934 Cemented with:sx. arf			Intermediate Casing		Ton of Cement: Surface Method Determined Calculated	Cemented with: 650 sx. or A	Hole Size: 12 1/4" Casing Size: 8 5/8"		WELLBOKE SCHEMATIC		LOCATION: 25.01 FSU & 1252 FEL I COTACTION: 25.01 FOOTAGE LOCATION UNIT LETTER SECTION TOWNSHIP RANGE	NAME & NUMBER: South Culebra Bluff 23-21	ATOR: Range Operating NM, Inc	INJECTION WELL DATA SHEET
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	INJECTION WELL DATA SHEET SCB 23-21
Tul	oing Size: 2 7/8", 65#, 1-55 Lining Material: Plast1c
Ty	pe of Packer. Baker arrowset permanent pkr
Pa(sker Setting Depth: 5000'
Off	ner Type of Tubing/Casing Scal (if applicable): <u>N/A</u>
	Additional Data
<u> </u>	Is this a new well drilled for injection? X Yes No
	If no, for what purpose was the well originally drilled? N/A
ci	Name of the Injection Formation: Delaware
с. Г	Name of Field or Pool (if applicable): 40350
4	Has the well ever been perforated in any other zone(s)? List all such perforated intervals and give plugging detail, i.e. sacks of cement or plug(s) used. No
è.	Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area:
	Above-
	Below- Bone Springs

Side 2

III. WELL DATA

A. See attached Injection Well Data sheet and schematics.

B. (1). Inject produced and fresh water into the lower Brushy Canyon member of the Delaware formation in the East Loving Delaware Pool.

(2). The approximate injection interval will be perforated from 5700' to 6300' overall. Specific intervals are provided on attached Injection Well Data Sheets for each well.

(3). The wells will be drilled as injectors for waterflood except the SCB 23-15 will be converted from a producer to an injector.

(4). The wells have not been drilled but will contain a permanent packer with 2 7/8", 6.5 lb/ft, plastic lined tubing set approximately 50' above the perforations.

(5). There are no oil or gas producing intervals above the Delaware and the Bone Spring is below the base of the Delaware at $+/-6400^{\circ}$.

VII. Data on Proposed Operation

(1). The proposed average daily injection rate is 500 bwpd per well and 1000 bwpd per well maximum.

(2). The system will be a closed system.

(3). The proposed average and maximum injection pressure is 500 psi and 1000 psi respectively.

(4). The source of the water for injection is produced water from the Brushy Canyon member of the Delaware formation and or fresh water. A water analysis is attached.

(5). The injection is for waterflood and produced water from the Brushy Canyon will be injected back into the Brushy Canyon.

IX. Proposed Stimulation Program

A hydralulic fracture treatment will be performed on each new injection well in the lower "C" section of the Brushy Canyon. Estimated size will be 150,000 lbs of proppant in crosslinked gel.

X. Open-Hole Logs

The open-hole well logs were previously filed for the SCB 23-15 and the other injection wells have yet to be drilled.

XI. Fresh Water Analysis

See Attached.

XII. No Evidence of Hydrologic Connection

Review of the existing geologic and engineering data do not indicate hydrologic connection between the proposed disposal interval and shallow, freshwater aquifers. No available data suggest connection between the two zones by conductive faults. The thick evaporate section between 500 and 2637 ft affords an impervious seal separating the freshwater zones and the disposal zone.



North Permian Basin Region P.O. Box 740 Sundawn, TX 79372-0740 (806) 229-8121 Lab Team Leader - Sheila Hernandez (915) 495-7240

Water Analysis Report by Baker Petrolite

Company:	RBO OPERATING INC	Sales RDT:	33517
Region:	PERMIAN BASIN	Account Manager	CURRY PRUIT (505) 910-9388
Area:	LOVING, NM	Sample #:	35599
Lease/Platform:	SCB UNIT	Analysis ID #:	43324
Entity (or well #):	6 B	Analysis Cost:	\$40.00
Formation:	UNKNOWN - BRUSHY CLNYON	•	
Sample Point:	WATER TANK	~	

Sumau	ary	Analysis of Sample 35595 @ 75 "F						
Sampling Date:	5/20/04	Anions	mg/l	f\pem	Cations	Ngn	meq/l	
Analysia Data:	5/21/04	Chlorida:	187000.0	5274.69	Sodium:	78232.3	3402.91	
		Carbonate:	386.0	6. 0.	Calcium:	4358.0	1477.25	
TDS (mg/l or g/m3): Density (c/cm3, touris	300090.3 (m3): 1.2	Sulfate:	5.0	0,1	Strontium:			
Anion/Cation Retio:	1	Phosphate: Borste:			Barlum: Iron:	25.0	0.9	
		Silicate:			Potassium:			
Carbon Diaxide:	275 PPM	Hydrogen Sullide:		<5 PPM	Chromium:			
Oxygen:		pH at time of sampling	Ţ	5.5	Copper:			
Comments:		pH at time of analysis	:		Manganese:			
		pH used in Calculati	èn;	5,5	Nickat			
				· · · · · · · · · · · · · · · · · · ·			_	

Cond	itions		Values Calculated at the Given Conditions - Amounts of Scale in 10/1000 bbl										
Temp	Gauge Press.	а 0	sicite SeCO ₃	Gyp CaSO	sum 42H20	Ant C	rydrite ±SO ₄	Colo S	ostite 1SO ₄	Ba Bi	ന്ന 180 ₄	CO2 Press	
শ	psi	Index	Amount	index	Amount	Index	Amount	Index	Amount	Index	Amount	psi	
80	0	0.30	19.98	-2.00	0.00	-1.93	0.00	0.00	0.00	0.00	0.00	5.01	
100	0	0.38	24.97	-2.09	0.00	-1.95	0.00	0.00	0.00	0.00	0.00	5.81	
120	0	0.48	29.70	-2,16	0.00	-1.94	0.00	00.0	0.00	0.00	0.00	6.54	
140	0	0.55	34.43	-2.22	0.00	-1.91	0.00	0.00	0.00	0.00	0.00	7.17	

ridte 1: When assessing the enventry of the scale problem, both the estimation index (SI) and emount of scale must be considered. Noto 2: Precipitation of each scale is considered separately. Total scale will be loss than the sum of the emounts of the five scales. Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

PRODUCT WARRANTY, DISCLAIMER AND LIMITATION OF LIABILITY ARE FOUND ON THE BACK OF THIS SHEET



North Permian Basin Region P.O. Box 740 Sundown, TX 79372-0740 (808) 229-8121 Lab Team Leader - Shella Hemendez (915) 495-7240

Water Analysis Report by Baker Petrolite

Company.	RBO OPERATING INC	Sales RDT:	33517
Region:	PERMIAN BASIN	Account Manager:	CURRY PRUIT (505) 910-9388
Area:	LOVING, NM	Sample #:	35600
Lease/Platform:	SCB UNIT	Analysis ID #:	43325
Entity (or wall #):	23 -/2	Analysis Cost	\$40.00
Formation:	UNKNOWN - BRUSHY CANYON		
Sample Point	WELLHEAD		

Summery	Analysis of Sample 38600 @ 75 °F							
Sampling Data: 5/20/04	Anions may	meq/	Cations	mgA	meq/			
Anatysia Date: 5/21/04 Anatysa: CURRY PRUIT	Chlorida: 16100.0 Bicarbonata: 37.0	4841.22 0.81	Sodium: Nagnasium:	678 59.3 4250.0	2957.37 349.82			
1D8 (mgfl or g/m3): 258058.3 Density (g/on3, forms/m3): 1.2 Animational Sector 1	Carbonste: Suitate: 15.0 Phosphate:	0.31	Calcium; Strontism; Barlum;	24720.0	1233.63			
Anoncenes Mine:	Borate: Silicate:		lrom Potassium; Aluminum:	45.0	1.63			
Carbon Dicoide: 600 PPM	Hydriogen Sullide:	<5 PPM	Chromium:					
Oxygen: Comments:	pH at time of sampling: pH at time of snelvels:	5.5	Copper: Lead: Manganase:					
	pH used in Calculation:	5 .5	Niciosi:	·····				

Cond	tions		Values Calculated at the Given Conditions - Amounts of Scale In (b/1000 bb)									
Temp	Gauge Press	C	ucit o aCO ₃	Gyp Ca3C	sum 42H2 0	Anti C	nydrite aSO ₄	Celo	rstite rSO ₄	Ba Ba	rite ISO 4	CO ₂ Press
*	psi	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	psi
80	0	-0.88	0.00	-1.64	0.00	-1.59	0.00	0.00	0.00	0.00	0.00	0.55
100	O	-0.78	0.00	-1.71	0.00	-1.60	0.00	0.00	0:00	0.00	0.00	0.86
120	0	-0.70	0.00	-1.77	0.00	-1.58	0.00	0.00	0.00	0.00	0.00	0.78
140	0	-0.62	0.00	-1.82	0.00	-1.54	0.00	0.00	0.00	0.00	0.00	0.85

Note 1: When excessing the sevenity of the scale problem, both the saturation index (51) and emount of scale must be considered.

Note 2 Practicitation of each scale is considered separately. Total acais will be less than the sum of the amounts of the five acaise,

Note 3: The reported CO2 pressure is actually the calculated CO2 fligscity. It is usually rearty the same as the CO2 partial pressure.

PRODUCT WARRANTY, DISCLAIMER AND LIMITATION OF LIABILITY ARE FOUND ON THE BACK OF THIS SHEET



North Permian Basin Region P.O. Box 740 Sundown, TX 79372-0740 (808) 226-8121 Lab Team Losdar - Shella Hernandez (915) 485-7240

Water Analysis Report by Baker Petrolite

Company:	R. B. OPERATING INCORPORATED	Sales RDT:	33517
Region:	PERMIAN BASIN	Account Manager.	CURRY PRUIT (505) 910-9388
Area:	HOBBS, NM	Sample #;	35632
Lease/Piatform:	SCB UNIT	Analysis ID #:	43582
Entity (or well #):	WATER WELL 1 Reid House	Analysis Cost	\$7.00
Formation:	UNKNOWN - FRESH WATER		
Sample Point	WELLHEAD		

Signer	iety .	Analyzing of Sample 35532 (g 75 TF						
Sampling Oate:	6/1/04	Anions	mg/l	m eq/i	Catlians	mg/l	neqA	
Analysis Osta:	6/2/04	Chiorice:	3218.0	80.71	Sodium:	316.3	13.78	
Analyst	CURRY PRUIT	Bicerbonate:	82.0	1.02	Magneaium:	417.0	34.3	
TDB (mg/l or g/m3):	4009 3	Carbonate;	0.0	0.	Calcium:	908.0	45.31	
		Sulfate:	79.0	1.64	Strontium:			
Anison Catton Dation	1.0000001	Phosphais:			Berlium:			
PRICESS POLICE CERVE.		Borate:			iron:	0:0	0.	
		Silicate:			Potassium:			
Carbon Dioxide: Oxygen: Comments:	0.0 PPM	Hydrogen Sulide: pH at time of sampling: pH at time of analysia: pH used in Calculation:		0.0 PFM 7.1 7.1	Aluminum: Chromlum: Copper: Lead: Manganese: Nicket:			
				:	ſ			

Cond	itions	Values Calculated at the Given Conditions - Amounts of Scale in Ib/1000 bbl										
Temp	Gauge Calcite Gypsum Press, CaCO ₃ CaSO ₄ 2H ₂ 0		Ant G	Anhydrite CaSO 4		Celestite SrSO4		Barite BaSO 4				
*F	pai	Index	Amount	Index	Amount	index	Amount	index	Amount	Index	Amount	psi
80	0	-0.03	00.0	-1.32	0.00	-1.39	0.00	0.00	0.00	0.00	0.00	0.05
100	0	0.08	0.70	-1.33	0.00	-1.33	0.00	0.00	0.00	0.00	0.00	0.07
120	0	0.20	1.74	-1.32	0.00	-1,24	0.00	0.00	0.00	0.00	0.00	0.09
140	O	0,32	2.78	-1,30	0.00	-1.13	0.00	0.00	0,60	0.00	0.00	0.11

Note 1: When assessing the severity of the scale problem, both the seturation index (SI) and ansult of scale must be considered.

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Note 2: Precipitation of each scale is considered separately. Total scale will be lass than the sum of the amounts of the five scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is usually nearly the same as the CO2 partial pressure.

PRODUCT WARRANTY, DISCLARMER AND LIMITATION OF LIABULTY ARE FOUND ON THE BACK OF THIS SHEET



North Permien Besin Region P.O. Box 740 Sundown, TX 79372-0740 (805) 229-8121 Lab Team Lasder - Shelfa Hernandez (915) 485-7240

Water Analysis Report by Baker Petrolite

Company:	R, B, OPERATING	NCORPORATED	Sales RDT:	33517		
Region:	PERMIAN BASIN		Account Manager.	CURRY PRUIT (605) 910-9388		
Area:	HOEBS, NM		Sample #:	35631	6 / 1 Banna - 100	
Lesse/Platform:	SCB UNIT		Analysis ID #:	43583		
Entity (or well #):	WATER WELL 2	WIND MILL NORTH	Analysis Cost:	\$7.00		
Formation:	UNIONOWN	OF RB VAND				
Sample Point:	WELLHEAD	FIZESH WATER				

Summer	187 Y		Analysia of Sample 35831 @ 75 *5						
Sampling Date:	6/1/04	Anions	mg/l	meq/1	Cations	mg/l	neql		
Analysis Date: Analyst:	8/2/04 CURRY PRUIT	Chloride: Bicarbonate:	4579.0 62.0	129.16	Socium: Magnesium:	1145.7 383.0	49.84 31.51		
TDS (mg/l or g/m3): 7 Dansky (g/cm3, tomns/m3): Anion/Cation Ratio: 1.0000		Cerbonate: Sulfata: Phosphate:	0.0 95.0	1.98 1.98	Calcium: Strontium: Bazium:	1018.0	80.5		
		Borste: Sélicato:			Iroin: Potaosium: Akuninum:	0.3	2.01		
Carbon Diodde: 0.0 PPM Oxygen:		Hydrogen Sullide: pH at time of sampling:		0.0 PPM 7	Copper:				
Commente:		pH at time of analysis: pH used in Calculation	:	7	Manganosa; Mickei;				
	Volume Co	Jastand of the Chan							

Continuota		Values calculated at the saval conditions - Amounts of Scale in DY1000 bol										
Төтр	Gauge Press.	Calcite CaCO3		Gypsum Caso 2H2 0		Anhydrita CaSO 4		Calestita SrSQ ₄		Barite 9#904		CO ₂ Prese
٦ŕ	DSI	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	pel
80	0	-0.13	0.00	-1.25	0.00	-1.32	0.00	0.00	0.00	0.00	0.00	0.07
100	0	-0.02	0.00	-1.26	0.00	-1.26	0.00	0.00	0.00	0,00	0.00	0.09
120	0	0,10	6.70	-1.25	0.00	-1.18	0.00	0.00	0.00	0.00	0.00	0.11
140	0	0.22	2.09	-1.24	0.00	-1.07	0.00	0.00	0.00	0.00	0.00	0.14

Note 1: When assessing the seventy of the scale problem, both the estimation index (SI) and smount of scale must be considered.

Note 2: Procipitation of each scale is considered separately. Total scale will be least than the sum of the second scales and the scales.

Note 3: The reported CO2 pressure is actually the calculated CO2 fugacity. It is muchly hearly the same as the CC2 partial pressure.

PRODUCT WARRANTY, DISCLAIMER AND UMITATION OF LIABLITY ARE FOUND ON THE BACK OF THIS SHEET



North Permiten Basin Region P.O. Box 749 Sundown, TX 79372-0740 (806) 229-8121 Leb Team Leader - Shella Hamandez (915) 485-7240

Water Analysis Report by Baker Petrolite

Sales RDT. R. B. OPERATING INCORPORATED Company: Region: PERMIAN BASIN HOBBS, NM Area: SC8 UNIT Lease/Platform: WATER WELL 3 Entity (or well #): NEAR SOB #3B Formation: UNIONOWN FROH WATER Sample Point WELLHEAD

Sales RDT:	33517						
Account Managar.	CURRY PRUIT (505) 910-6388						
Sample #:	35630						
Analysis ID #:	43584						
Analysis Cost:	\$7.00						

Summ	lary	Analysis of Sampie 16238 @ 75 *F							
Sampling Data:	6/1/04	Antons	mg/l	mad\[Cations	mg/i	Noem		
Analysis Date: Analyst:	672/04 CURRY PRUIT	Chioride: Bicschouide:	3542.0 62 ^{.0}	102.73	Socium:	609.1	28.49		
TDS (mgA or g/m3): Density (g/cm3, tours Anion/Cation Ratio: Carbon Dicoide:	5593.1 #m3): \$ 0.9999999 0.0 PPM	Carbonate: Suitate: Phosphate: Borate: Stilicate: Hydrogen Suitide:	82.0 830. 80.0	0. 1.67 0.0 2114	Catelum: Strontium: Baitium: Iron: Potassium: Aluminum: Chromium:	856.0	32.7 43.21 0.		
Coxygen: Comments:		pH at time of sampling: pH at time of analysis: pH used in Calculation:		7.2 7.2	Copper: Lead: Nanganesa: Nickel:				

Conditions			Values Calculated at the Given Conditions - Amounts of Scale in Ib/1900 bbl										
Temp	Gauge Press. pal	Calcite CaCO3		Gypsum CaSO_224_0		Anhydrita CaSO 4		Celestite SrSO ₄		Barite Ba80 4		CO2 Press	
٩F		Index	Amount	Index	Amount	index	Amount	Index	Amount	Index	Amount	(CSI	
80	0	0.03	0.35	-1.35	0.00	-1.41	0.00	0.00	0.00	0.00	0.00	0.04	
100	0	0.14	1.05	-1.35	0.00	-1.35	0.00	0.00	0.00	0.00	0.00	0.06	
120	0	0.25	1.74	-1.35	0.00	-1.27	0.00	0.00	0.00	0.00	0.00	0.07	
140	0	0.37	2,79	-1.33	0.00	-1.16	0.00	0.00	0.00	0.00	0.00	0.09	

Note 1: When assessing the saventy of the scale problem, both the saturation index (SI) and amount of acate must be considered.

Note 2: Procipitation of each scale is ministered populately. Total scale will be less than the sum of the amounts of the five scales.

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EXHIBIT "C" Loving East Delaware Lease Flood Current Producers

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- 1. Donaldson Comm #1
- 2. SCB #3B

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- 3. SCB #4B
- 4. SCB 23-1
- 5. SCB 23-2
- 6. SCB 23-4
- 7. SCB 23-5
- 8. SCB 23-6
- 9. SCB 23-7
- 10. SCB 23-8
- 11. SCB 23-11
- 12. SCB 23-12 13. SCB 23-13
- 14. SCB 23-15 *

* SCB 23-15 to be converted to injection well

EXHIBIT "D" EAST LOVING-DELAWARE LEASEHOLD WATERFLOOD PORJECT PROPOSED INJECTION WELLBORES

1. SCB 23-15 Well	1430 feet FNL and 1150 feet FEL (Unit H) Section 23, T23S, R28E
2. SCB 23-17 Well	2440 feet SL and 1500 feet FWL (Unit K) Section 23, T23S, R28E
3. SCB 23-18 Well	20° Surface: 1815 feet FNL and 1 120 feet FEL (Unit D) Bottomhole: 1300 feet FWL and 1000 feet FNL (Unit E) Section 23, T23S, R28E
4. SCB 23-19 Well	Surface: 1950 feet FNL and 2470 feet FWL (Unit F) Bottomhole: 2620 feet FEL and 1300 feet FNL (Unit F) Section 23, T23S, R28E
5. SCB 23-20 Well	2520 feet FSL and 2460 feet FEL (Unit J) Section 23, T23S, R28E
6. SCB 23-21 Well	2531 FSL and 1252 FEL (Unit I) Section 23, T23S, R28E

Pilot Forecast

Generated from Analog Field Performance



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NOTICE LIST

WORKING INTEREST OWNERS

Range Operating New Mexico Inc. 777 Main Street, Ste #800 Fort Worth, TX 76102

Chesapeake Permian LP P. O. Box 548806 Oklahoma City, OK 73154-8806 Attn: Lynda Townsend

ROYALTY AND SURFACE OWNERS

C.E Estes 221 E. London Loving, NM 88220

6. 1 5 1

Robert H. Nothington 1370 Sagebrook Drive Fairview, TX 75069-1252

Wells Fargo FBO Donald Paape P. O. Box 5629 Portland, OR 97228-5629

Lucille Paape 14911 Wunderlich Drive #1807 Houston, TX 77069

Johnny & Jackie L. Reid 245 E. London Rd. Loving, NM 88250

Stennis Family Trust Maria Stennis, Trustee 200 Michelle Drive Santa Fe, NM 87501

Maria Stennis Revocable Trust 200 Michella Drive Santa Fe, NM 87501



John Draper Brantley 706 West Riverside Drive Carlsbad, NM 88220

A. a b P

OFFSETTING OPERATORS OTHER THAN RANGE AND CHESAPEAKE

Pure Resources, LP 500 W Illinois Midland, Texas 79701

BK Exploration Corporation 810 S. Cincinnati-- Suite 208 Tulsa OK 74119

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