

**APPLICATION FOR AUTHORIZATION TO INJECT**

- I. PURPOSE: Secondary Recovery Pressure Maintenance X Disposal Storage  
Application qualifies for administrative approval? X Yes No
- II. OPERATOR: Mesquite SWD, Inc  
ADDRESS: P.O. Box 1478 Carlsbad, NM 88220  
CONTACT PARTY: Kay Havenor PHONE: 575-626-4518
- III. 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. 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:
1. Proposed average and maximum daily rate and volume of fluids to be injected;
  2. Whether the system is open or closed;
  3. Proposed average and maximum injection pressure;
  4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than reinjected produced water; and,
  5. 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: Kay Havenor TITLE: Agent

SIGNATURE: Kay C Havenor DATE: January 15, 2013

E-MAIL ADDRESS: KHavenor@georesources.com

\* If the information required under Sections VI, VIII, X, and XI above has been previously submitted, it need not be resubmitted. Please show the date and circumstances of the earlier submittal: \_\_\_\_\_

DISTRIBUTION: Original and one copy to Santa Fe with one copy to the appropriate District Office

Oil Conservation Division  
Case No. 1  
Exhibit No. 1

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.**

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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.

INJECTION WELL DATA SHEET

OPERATOR: Mesquite SWD, Inc. (OGRJD 161968)

WELL NAME & NUMBER: Paduca Federal SWD #3 30-025-NA (New Drill)

WELL LOCATION: 300' FNL & 1760' FWL C 23 25S 32E  
FOOTAGE LOCATION UNIT LETTER SECTION TOWNSHIP RANGE

WELLBORE SCHEMATIC

See attached diagram

PROPOSED WELL CONSTRUCTION DATA

Surface Casing

Hole Size: 20" Casing Size: 16" Conductor

Cemented with:                    sx. or 144 ft<sup>3</sup>

Top of Cement: Surface Method Determined: Opr

Intermediate Casing

Hole Size: 12-1/4" Casing Size: 9-5/8" 40# K-55

Cemented with: 400 sx. or                    ft<sup>3</sup>

Top of Cement: Surface Method Determined: Opr

Production Casing

Hole Size: 8-5/8" Casing Size: 7" 23# K-55 to 4870'

Cemented with: 500 sx. or                    ft<sup>3</sup>

Top of Cement: Surface Method Determined: Opr

Total Depth: Approx 7,250'

Injection Interval

Approximately 4,870' To Approximately 7,250'

(Perforated or Open Hole; indicate which) Open Hole

4

INJECTION WELL DATA SHEET

Tubing Size: 4-1/2" 12.75# L/N-80 Lining Material: Fiberglass coated

Type of Packer: Lok-Set or equivalent

Packer Setting Depth: Approx 4,820 ft

Other Type of Tubing/Casing Seal (if applicable): \_\_\_\_\_

Additional Data

1. Is this a new well drilled for injection?  X  Yes   No

If no, for what purpose was the well originally drilled? \_\_\_\_\_

\_\_\_\_\_

2. Name of the Injection Formation: Delaware Bell Canyon and Cherry Canyon

3. Name of Field or Pool (if applicable): \_\_\_\_\_

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

\_\_\_\_\_

\_\_\_\_\_

5. Give the name and depths of any oil or gas zones underlying or overlying the proposed injection zone in this area: Ramsey member of Bell Canyon 4,830' - 4,840', Brushy Canyon (sand) 7,335'

\_\_\_\_\_

\_\_\_\_\_

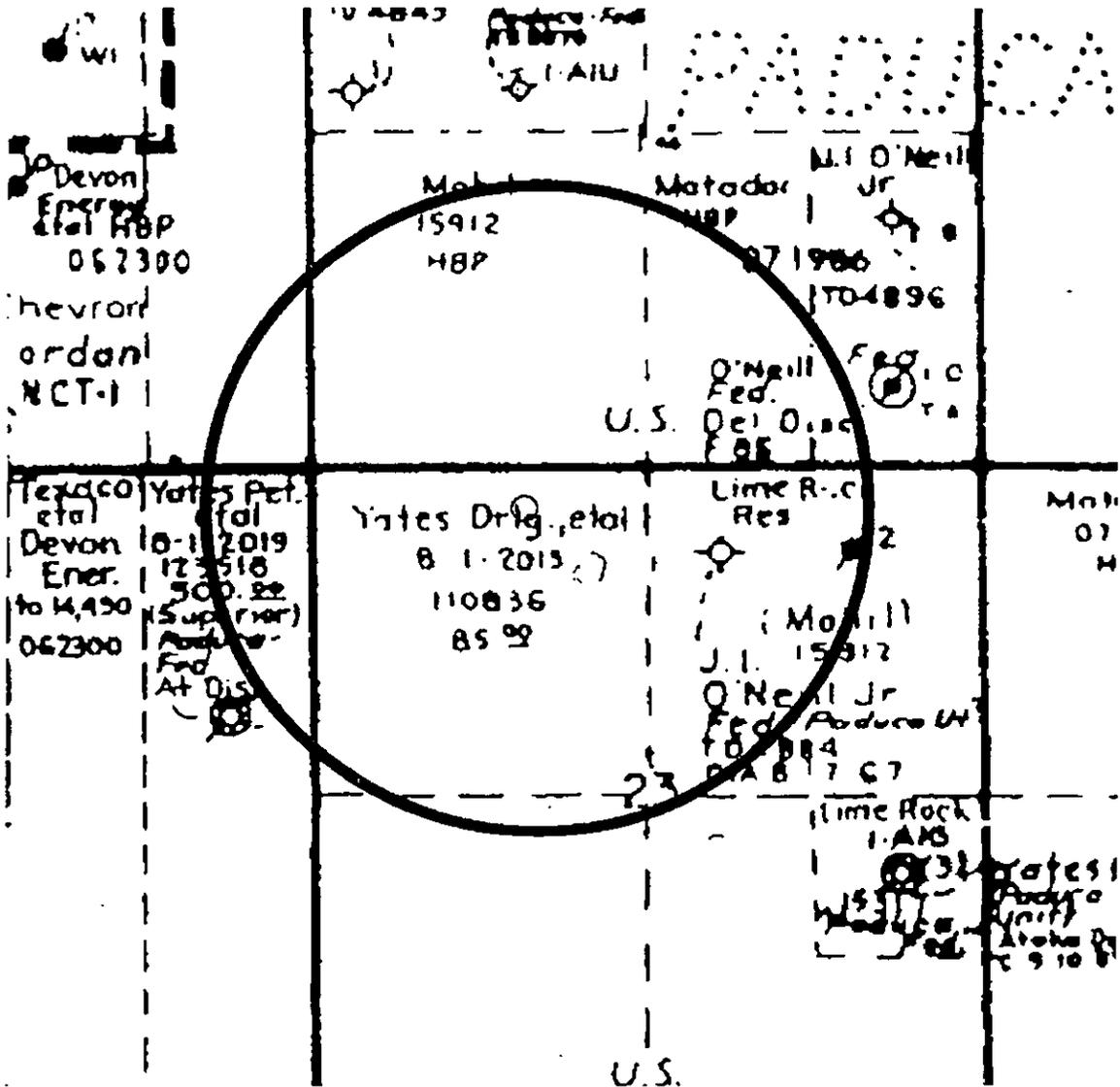


Mesquite SWD, Inc.  
Paduca Federal SWD #3  
300' FNL & 1760' FWL  
Sec. 23, T25S-R32E Lea County, NM

API 30-025-NA

Item V (a):

Area of Review  
1/2 Mile AOR



Mesquite SWD, Inc.

API 30-025-NA

Paduca Federal SWD #3  
 300' FNL & 1760' FWL  
 Sec. 23, T25S-R32E Lea County, NM

**Item VI: Data on wells in AOR:**

API	WELL_NAME	STATUS	SDIV	SEC	TWN	RANGE	FTG	NS	FTG	EW	OPERATOR	WELL	LAND	PLUG_DATE	SPUD_DATE	ELEVGL	TVD_DEPTH
300252892	PADUCA UNIT 002	Plugged	A	23	25S	32E	660	N	990	E	YATES PETROLEUM	O	F	19-Sep-01	14-Sep-01	3441	5000
300252221	FEDERAL P 001	Plugged	B	23	25S	32E	660	N	1980	E	JOSEPH I ONEILL JR	O	F	17-Aug-67	09-Aug-67	3418	4884

1. 30-025-28928 Yates Petroleum Corp. Unit A, Sec. 23, T25S-R32E Lea Co. Elev 3441' GL. Spud 11/19/1984. 12-1/4" hole to 853' set 8-5/8" 24# J-55 csg. Cmt w/370 sx, circ 50 sx to surface. 7-7/8" hole to TD 5,000', set 5-1/2" 14# J-55 4,893' w/250 sx cmt. Perf 4,887'-4,889', acid w/500 gal 7.5%. Sqzd perms w/100 sx. Perf 4,838'-4,850', acid w/3,000 gal 15%. Frac w/20,000 gal gelled KCL plus 40,000# 20/40 sand. Sqzd perms w/50 sx. Re-perf 4,825'-4,852', acid w/500 gal NEFE acid. Well produced 17,021 BO + 275,229 BW through calendar 2000. Set 5-1/2" CIBP @4,788' +35' cmt. Cut 5-1/2" csg @2,929', pulled & layed-down. Tagged cmt @2,842'. Spotted 45 sx cmt @1,892, tag failed. Spot 45 sx @1,892', tagged @765'. Circulated 30 sx cmt 60' to surface. P&A 9/19/2001

2. 3002522215 U.I. O'Neill, Jr. Unit B Sec 23, T25S-R32E Lea Co. Elev 3418' GL. Spud 8/9/1967. 11" hole set 8-5/8" 24#. Cmt w/180 sx, circ 10 sx to surface. Hole size NR (estimate 7-7/8") to TD 4,884. Cut 3 cores 4,772-4,884' all reported "sli spotty shows." W/top Lamar @4,700' Opr set 100' cmt plugs 4,800'-4,700', 800'-700', 425'-325' and 10 sx @surface. P&A 8/17/1967.

**Item VI (a): Data on wells near the AOR:**

1. 30-025-27616 Mesquite SWD, Inc. Unit H, 1980' FNL & 660' FWL Sec. 22, T25S-R32E Lea Co. SWD-1264-A. Disposal interval 4,722'-7,064' into the Bell Canyon and Cherry Canyon formations.

2. 30-025-22137 O'Neil Properties, LTD. Unit P, 660' FSL & 660' FEL Sec. 14, T25S-R32E Lea Co. Elev 3434' GL. Spud 5/24/1967. 12-1/2" hole set 8-5/8" 24# J-55 STC csg. Cmt w/180 sx, circ 8 sx to surface. 7-7/8" hole to 4,904' TD. Set 4-1/2" 9.5/11.6# J-55 STC @4,897', Cmt w/200 sx. TOC 4,300' TS. , Top Lamar @4,772'. Perf 4,851'-4,855'. Frac 1000 gal oil w/1# sand/gal. Well cored 4,814'-4,904' w/no show oil below 4,861'. No historical production is shown on GoTech. Well was TA 11/30/1999.

Mesquite SWD, Inc.  
 Paduca Federal SWD #3  
 300' FNL & 1760' FWL  
 Sec. 23, T25S-R32E Lea County, NM

API 30-025-NA

**Item VII:**

1. The maximum injected volume anticipated is 5,000 BWPD. Average anticipated is 3,500 BWPD.
2. Injection will be through a closed system.
3. Maximum injection pressure is expected to be 974 psi, or as controlled by depth.
4. Sources will be produced water that is compatible with known waters in the disposal zones.
5. Water sample analyses from the OXY Cotton Draw Unit No. 4, Unit D, Sec. 22, T25S-R32E, Lea Co., is shown below, TDS 276,839 mg/l (Source: NM WAIDS):



**Water Samples for Well COTTON DRAW UNIT 004**

API = 3002508221

Formation = DEL

Field = PADUCA

Current Water Production Information

Instructions:

- Click For general information about this sample.
- Click For scale calculation pages (Sluff-Davis or Odde Tomson methods).
- Click To select this water sample for water mixing. It will lead to the main page, and add the sample ID to the mixing table.
- Click 664 Click the hyperlinked sample number to make a .csv for that sample, or select several check boxes and click Submit for multiple samples.  
 The ions are in (mg/L) units.

Sample ID	T	R	S	SO4	Cl	CO3	HCO3	K	Na	Ca	Mg
<input type="checkbox"/> <u>4293</u>	25S	32E	22	552	170500	null	198	null	null	null	null

Before disposal the interval will be evaluated to confirm the projected absence of commercial hydrocarbons.

Mesquite SWD, Inc.  
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**Item VIII:**

Disposal will be into the Delaware Mountain Group (Delaware). The Delaware is comprised of sandstones, dolomites, and shales. The proposed disposal interval is in the Bell Canyon and the Cherry Canyon. All the Delaware members are interbedded sandstones and shales with occasional dolomite horizons. The lateral transmissivities of the sandstone beds are highly variable and often form selective barriers to the movement of hydrocarbons while allowing down-gradient movement of water. The transmissivity variations are fundamentally due to 1) the very-fine grained nature of the sands and 2) the local percentage of silt and clay. The Delaware sandstone members are typically overlain and underlain by bounding shale, dolomite, and/or silty shale horizons. The depth to the Delaware Ramsey sand in this well will be approximately 4,830'. The base of the Delaware (top of Bone Springs Formation) is estimated at approximately 8,750'.

There is no known fresh, potable or stock water within a 2-mile radius. Records from the New Mexico Office of the State Engineer on 1/15/2013 show no known water wells within the 2-mile radius of the proposed Mesquite SWD disposal well.



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*New Mexico Office of the State Engineer*  
**Wells with Well Log Information**

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No wells found.

UTM/NAD83 Radius Search (in meters):

Easting (X): 627625

Northing (Y): 3554616

Radius: 3220

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The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

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1/15/13 8:18 AM

WELLS WITH WELL LOG INFORMATION

The surface geology of the greater area, including the 2-mile radius as shown in Item V above, is Quaternary eolian and piedmont deposits of Holocene to middle Pleistocene age. These are underlain by the Permian Rustler Formation and evaporites. Based upon surface geology and local shallow e-logs the depth to potential potable water, if present, is estimated to be less than 130'.

Mesquite SWD, Inc.  
Paduca Federal SWD #3  
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**Item IX:**

No formation stimulation is currently planned.

**Item X:**

Logs will be filed with the OCD upon completion of the well.

**Item XI:**

No water wells are reported in the 2-mile radius of the proposed SWD. Please note Item VIII discussion above.

**Item XII:**

There is no geological evidence of open faults or hydrologic connection between the disposal zone and any possible underground sources of protectable water.

**Amendment:**

Drilling/evaluation of this Delaware interval in the greater area around the proposed location has demonstrated a lack of reasonable potential for commercial hydrocarbon production by horizontal or conventional vertical drilling beneath the Ramsey member of the Bell Canyon Formation. The proposed interval has been without significant hydrocarbon shows in the disposal target formations south and east of the Cotton Draw Unit area. The proposed interval is currently used for SWD to the southwest in Sec. 22 (Mesquite SWD, Inc. Paduca Federal SWD #1) outside the present AOR (see Item VI (a) 1. above).

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Mesquite SWD, Inc.  
 Paduca Federal SWD #3  
 300' FNL & 1760' FWL  
 Sec. 23, T25S-R32E Lea County, NM

API 30-025-NA

Plug and Abandon Diagram Yates Petroleum Corp. Paduca Unit #2

Well P&A Diagram

API: 3002528928  
 Operator: Yates Petroleum Corp  
 Lease: Paduca Unit  
 Location: Sec 23, T25S-R32E Lea Co., NM  
 Footage: 660 FNL, 990 FEL

Well No: 2

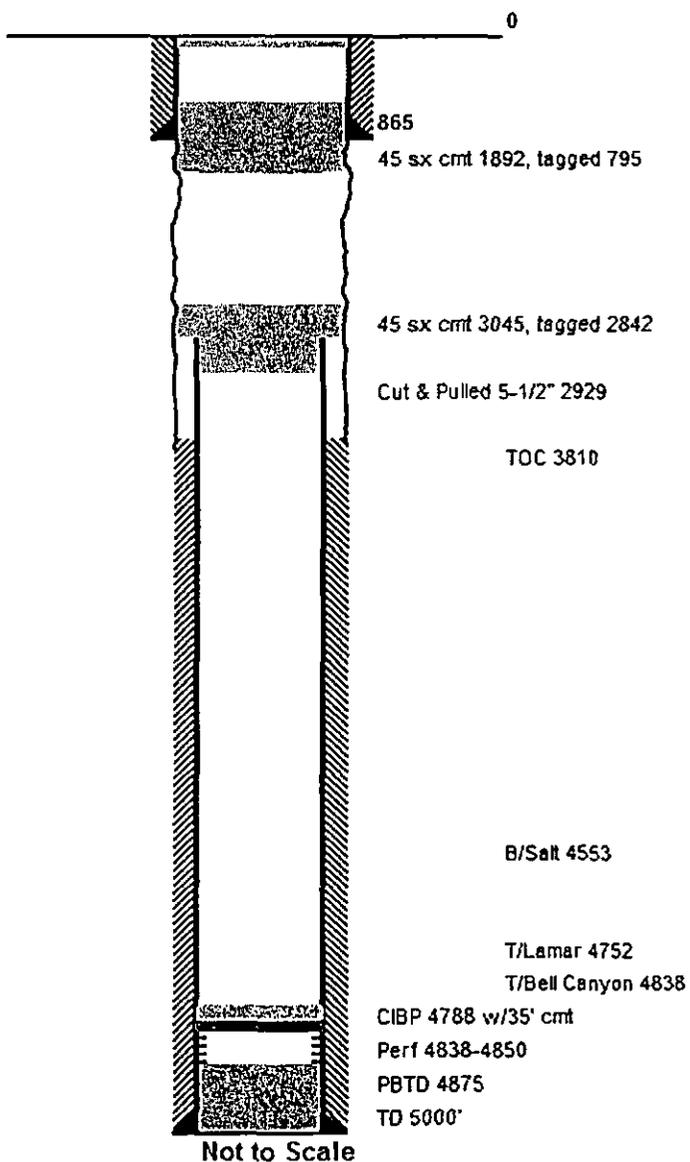
KB: 3451  
 GL: 3441

**Surface Csg**

Size: 8-5/8" 24#  
 Set @: 853  
 Sxs cmt: 370  
 Circ: Yes  
 TOC: Surface  
 Hole Size: 12-1/4"

**Production Csg**

Size: 5-1/2" 14#  
 Set @: 5000  
 Sxs cmt: 250  
 Circ: Circ to Surface  
 TOC: Surface  
 Hole Size: 7-7/8"



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Plug and Abandon Diagram J.I. O'Neill, Jr. Federal "P"

Well P&A Diagram

API: 3002522215  
 Operator: J.I. O'Neill, Jr.  
 Lease: Federal "P"  
 Location: Sec 23, T25S-R32E Lea Co., NM  
 Footage: 660 FNL, 1980 FEL

Well No: 1

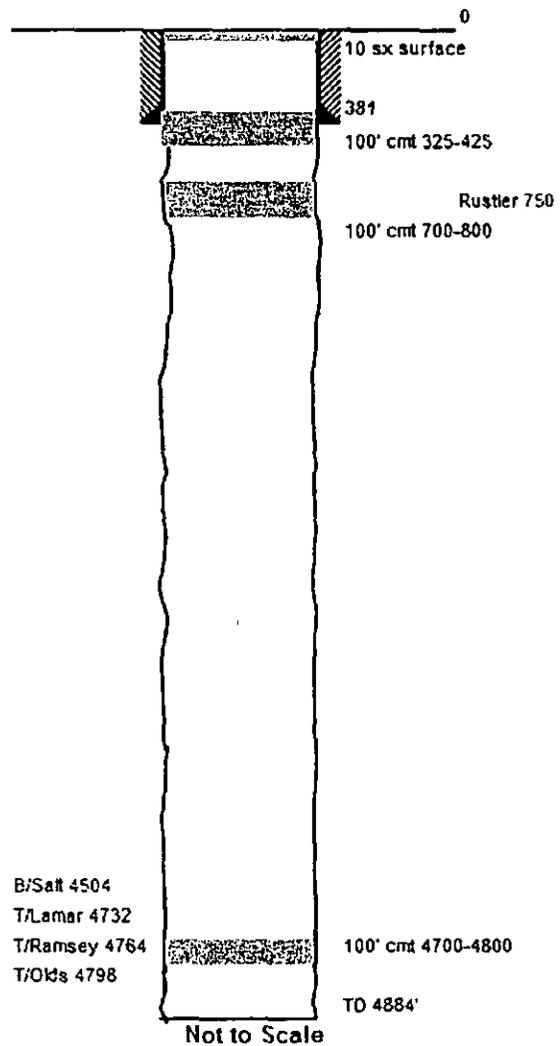
KB: 3429  
 GL: 3418

**Surface Csg**

Size: 8-5/8" 24#  
 Set @: 381  
 Sxs cmt: 180  
 Circ: Yes  
 TOC: Surface  
 Hole Size: 12-1/4"

**Production Csg**

Size: None  
 Set @:  
 Sxs cmt:  
 Circ:  
 TOC:  
 Hole Size:



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Mesquite SWD, Inc.  
 Paduca Federal SWD #3  
 300' FNL & 1760' FWL  
 Sec. 23, T25S-R32E Lea County, NM

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Proposed Drilling/Completion of Paduca Federal SWD #3 Well

Proposed New Well Completion Diagram

API: 30025xxxxx  
 Operator: Mesquite SWD, Inc.  
 Lease: Paduca Federal SWD  
 Location: Sec 23, T25S-R32E Lea Co., NM  
 Footage: 300 FNL, 1760 FWL

Well No: 3

KB: 3436 Est  
 GL: 3418 Est

**Surface Csg**

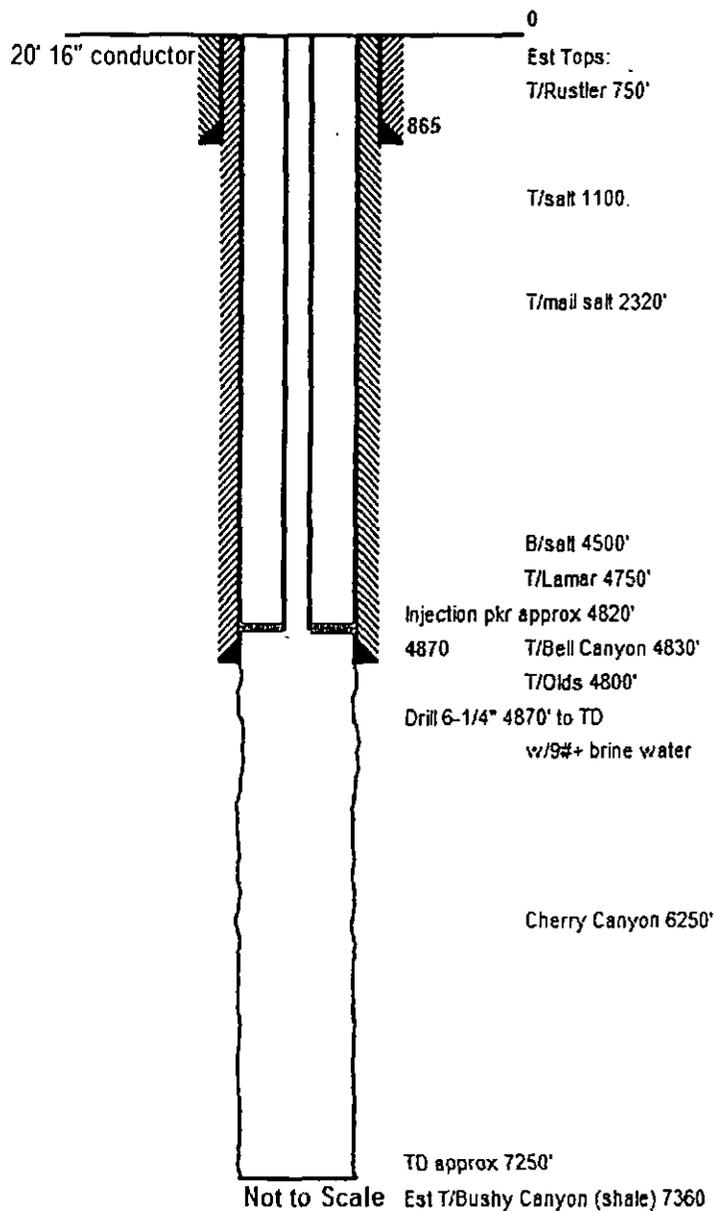
Size: 9-5/8" 36# K-55  
 Set @: 865  
 Sxs cmt: 500  
 Circ: Yes  
 TOC: Surface  
 Hole Size: 12-1/4"

**Production Csg**

Size: 7" 23# K-55  
 Set @: 4870  
 Sxs cmt: 2200  
 Circ: Circ to Surface  
 TOC: Surface  
 Hole Size: 8-5/8"

Tubular requirements (made-up):  
 4820' 4-1/2" LN80 12.75# upset Fiberglass lined  
 Lok-Set (or equivalent) Packer set approx 4820'

Load tubing annulus w/corrosion inhibitor  
 Complete surface head for disposal

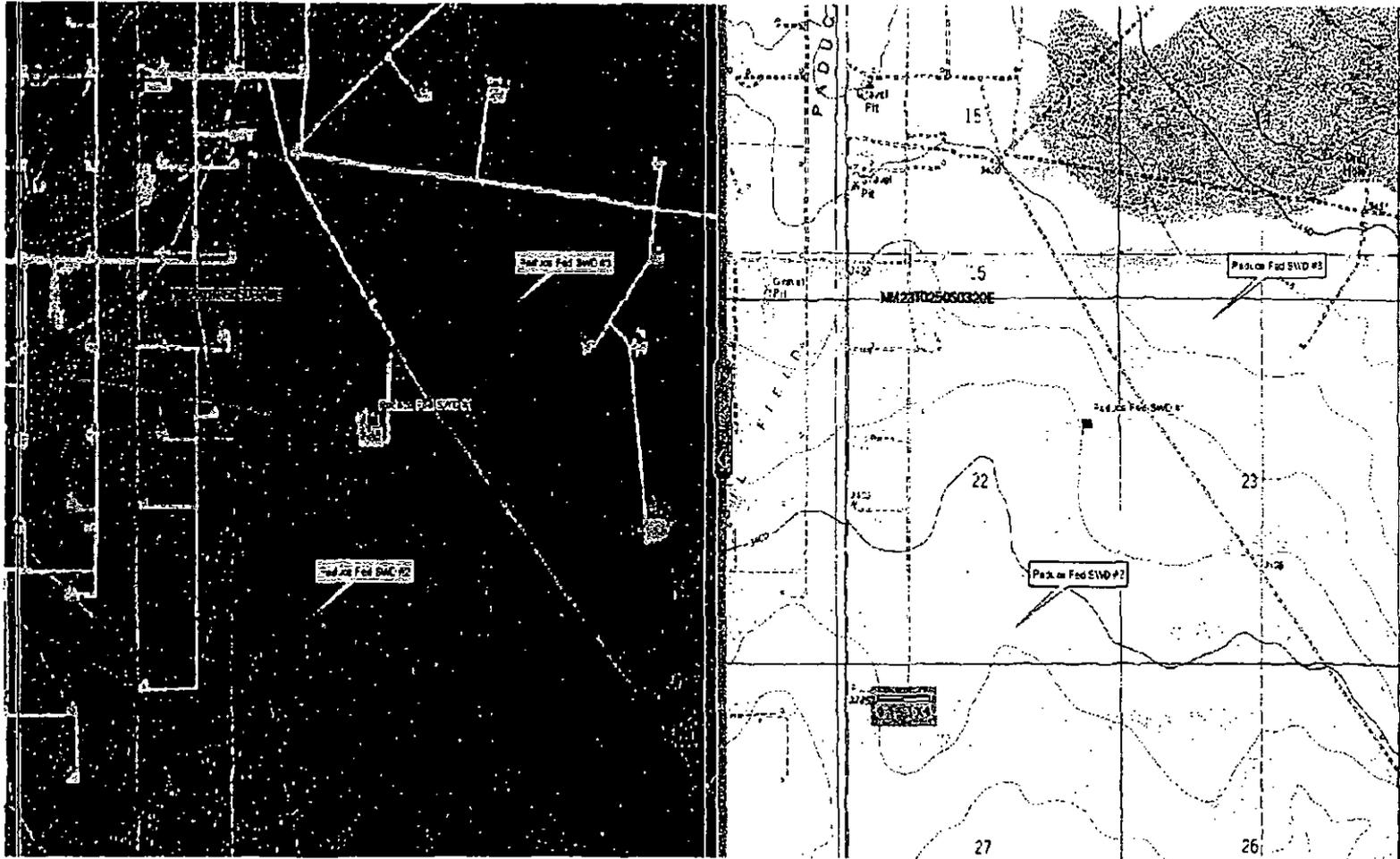


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SPOT10 Satellite and Matching Topographic Map



Delorme Xmap6

Paduca Federal SWD #3 will be located 5.75 miles south of NM-128 and CR-1 (Orla Road) junction then 1.4 miles southeast.

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Mesquite SWD, Inc.  
Paduca Federal SWD #3  
300' FNL & 1760' FWL  
Sec. 23, T25S-R32E Lea County, NM

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**Item XIII: Proof of Notice**

**Minerals Owner:**

Bureau of Land Management  
620 E. Greene St.  
Carlsbad, NM 87220

**Surface BLM Lessee:**

Mr. Jeff Robbins  
301 Orla Rd.  
Jal, NM 88252

**Operators:**

OXY Y-1 Company  
P.O. Box 27570  
Houston, TX 77210

NW/4 Sec. 23  
1/3 Interest

Abo Petroleum Corporation  
105 S. 4<sup>th</sup> St.  
Artesia, NM 88210

NW/4 Sec. 23  
1/3 Interest

MYCO Industries, Inc.  
105 S, 4<sup>th</sup> St.  
Artesia, NM 88210

NW/4 Sec. 23  
1/3 Interest

Matador Resources Company  
5400 LBJ Freeway, Ste 1500

W/2 SE/4 Sec. 14

Dallas, TX 75240

O'Neill Properties, Ltd.  
P.O. Box 2840  
Midland, TX 79702

E/2 SE/4 Sec. 14

Limerock Resources  
1111 Bagby St. Ste. 4600  
Houston, TX 77002

NE/4 Sec. 23

ExxonMobil Corporation  
P.O. Box 2024  
Houston, TX 77252-2024

SW/4 Sec. 14  
NE/4 Sec. 23

BLM - unleased

SW/4, NW/4 SE/4 Sec. 23

