

10/14/2014 DATE IN	SUSPENSE	PNB ENGINEER	10/10/2014 LOGGED IN	SWD TYPE	PNM 1428359564 APP NO.
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ABOVE THIS LINE FOR DIVISION USE ONLY

**NEW MEXICO OIL CONSERVATION DIVISION**  
**- Engineering Bureau -**  
 1220 South St. Francis Drive, Santa Fe, NM 87505



**ADMINISTRATIVE APPLICATION CHECKLIST**

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

**Application Acronyms:**

**[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]**  
**[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]**  
**[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]**  
**[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]**  
**[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]**  
**[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]**

SWD 1527  
 - COG OPERATING  
 229137

- [1] **TYPE OF APPLICATION - Check Those Which Apply for [A]** Maljamar SWD 30 #2 30-025-40310  
 [A] Location - Spacing Unit - Simultaneous Dedication Amending SWD-1286  
☐ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

- [B] Commingling - Storage - Measurement  
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

- [C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery  
☐ WFX ☐ PMX ☒ SWD ☐ IPI ☐ EOR ☐ PPR

- [D] Other: Specify \_\_\_\_\_

- [2] **NOTIFICATION REQUIRED TO:** - Check Those Which Apply, or ☐ Does Not Apply
- [A] ☐ Working, Royalty or Overriding Royalty Interest Owners
- [B] ☐ Offset Operators, Leaseholders or Surface Owner
- [C] ☐ Application is One Which Requires Published Legal Notice
- [D] ☐ Notification and/or Concurrent Approval by BLM or SLO  
U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office
- [E] ☒ For all of the above, Proof of Notification or Publication is Attached, and/or,
- [F] ☐ Waivers are Attached

- [3] **SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.**

- [4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

**Note: Statement must be completed by an individual with managerial and/or supervisory capacity.**

Kanicia Castillo		Lead Regulatory Analyst	10/07/14
Print or Type Name	Signature	Title	Date
		kc Castillo@concho.com	
		e-mail Address	



Kanicia Castillo  
COG Operating LLC  
One Concho Center  
600 W Illinois Avenue  
Midland, TX 79701

RECEIVED OCD

2014 OCT 10 P 3: 20

October 9, 2014

Phillip Goetze  
New Mexico Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, NM 87505

RE: Amend SWD-1286

Maljamar SWD 30 #2  
API# 30-025-40310  
H-30-17S-32E  
1350 FNL & 770 FEL  
Lea County, New Mexico

Mr. Goetze:

COG Operating LLC respectfully requests administrative approval for authorization to inject the Maljamar SWD 30 #2 for SWD purposes.

The current approval has expired. When we drilled this well we encountered a hydrocarbon flow from the anticipated disposal interval. We would like to approval to inject into the Wolfcamp interval, located between 9,640' – 10,097'.

Attached is one complete C-108 application.

Please contact me at 432-685-4332 or email at [kcastillo@concho.com](mailto:kcastillo@concho.com) if you need additional information.

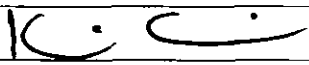
Sincerely,

A handwritten signature in black ink, appearing to be "K. Castillo", written over a horizontal line.

Kanicia Castillo  
Lead Regulatory Analyst  
COG Operating LLC

Cc: NMOCD – District 1 – Hobbs & BLM – Carlsbad, NM Field Office

**APPLICATION FOR AUTHORIZATION TO INJECT**

- I. PURPOSE: Secondary Recovery Pressure Maintenance X Disposal Storage  
Application qualifies for administrative approval? X Yes No
- II. OPERATOR: COG Operating LLC  
ADDRESS: One Concho Center, 600 W Illinois Ave, Midland, TX 79701  
CONTACT PARTY: Kanicia Castillo PHONE: 432-685-4332
- 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: Kanicia Castillo TITLE: Lead Regulatory Analyst  
SIGNATURE:  DATE: 10/7/14  
E-MAIL ADDRESS: kcastillo@concho.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: SWD-1286

### 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.

## Well Information

Name: Maljamar SWD 30 #2

API: 30-025-40310

Location: 1350 FNL; 770 FEL, Sec 30, T17S, R32E, Lea Co. NM

Permit: SWD 1286

Elevation: GR: 3917; KB 3930

BHT: 121°

Base Log: Schlumberger Triple/Combo Log

Current Status: TA

Objective: The objective of this procedure is to complete the Maljamar SWD 30 #2 in the Wolfcamp, run in hole with injection equipment, and put well on injection.

## Well History

11-17-2011: Spud

12-15-2011: Install capping flange, Release Rig, TA well

7-29-2014: Passed MIT Test, witnesses by OCD rep. Mark Whitker

## Procedure

- Please make sure well sign is on location
- Contact OCD/Richard Inge with notice we are performing work on this well
- This well will need a well head. Currently has capping flange only
- PJSM/LOTO
- MIRU WSU & kill truck
- ND well head/capping flange
- NU & function test BOP w/ hydraulic accumulator, pipe rams, & blind rams
- PU 6-1/8" mill tooth bit, 6 x 3-1/2" 27 lb/ft drill collars, & 2-7/8" L-80 work-string
- RU swivel, Drill out DVT @ 8,016'
- Tag float collar @ 10,259'
- Circulate hole clean w/ 2% KCL
- pickle tubing with 250 gal 15% acid, spot acid to btm
- POOH and LD collars and bit
- RU Allied and run GR/CCL/CBL. Use OH SBL Triple/Combo Log to tie in GR. Log to PBTD to surface CSG @ 740'.
- Wolfcamp is from 9,050' - 10,200'
- Acid breakdown will be in two stages separated by RBP
- **Lower Wolfcamp Interval:** frac gradient: 0.65 – 0.7 psi/ft
- Perforate f/ 10,097' – 10,011' (86', 51 holes, 3/SPF)
- Perf w/ 4" CSG gun w/ EHD 0.45"
- See attached perforation depths
- Please list each perforation in PERC
- **Acid Breakdown/Ball out**
- MIRU Elite Well Services for Acid Job
- **Max Pressure: 5,800 psi**
- **Max Rate: 4-5 BPM**
- TIH w/ 7" x 2-7/8" treating packer (Tarrent County Tools), SN, & 2-7/8" L-80 work-string
- Total Acid Job: 6,550 gals 15% NE-FE w/ 120 7/8" RCN, BS

- Spot 250 gals 15% NE-FE acid
- POOH w/ 4 JTS, reverse 4 bbl
- Set Packer @ +/- 9,960'
- Break down pressure is 5,111 psig
- Roll pumps to breakdown; record ISIP @ 5, 10, & 15 min
- Ball-out formation 4-5 BPM w/ the following schedule

Gals (15% NE-FE)	Ball Sealers (S.G. 1.3)
900	None
900	40
900	None
900	40
900	None
900	40
900	None

6,300

120

- Flush to top perf w/ 2% KCL
- POOH
- RIH w/ RBP & extended neck ball catcher set @ +/- 9,940'
- **Upper Wolfcamp Interval:** frac gradient: 0.65 – 0.7 psi/ft
- Perforate f/ 9,875' – 9,640' (235', 111 holes, 3/SPF)
- Perf w/ 4" CSG gun w/ EHD 0.45"
- See attached perforation depths
- Please list each perforation in PERC
- **Acid Breakdown/Ball out**
- Max Pressure: 5,800 psi
- Max Rate: 4-5 BPM
- TIH w/ 7" x 2-7/8" treating packer (Tarrent County Tools), SN, & 2-7/8" L-80 work-string
- Total Acid Job: 14,000 gals 15% NE-FE w/ 125 7/8" RCN, BS
- Spot 250 gals 15% NE-FE acid
- POOH w/ 4 JTS, reverse 4 bbl
- Set Packer @ +/- 9,920'
- Break down pressure is 5,111 psig
- Roll pumps to breakdown; record ISIP @ 5, 10, & 15 min
- Ball-out formation 4-5 BPM w/ the following schedule

Gals (15% NE-FE)	Ball Sealers (S.G. 1.3)
1,250	None
1,250	40
1,250	None
1,250	40
1,250	None
1,250	40
1,250	None
1,250	40
1,250	None
1,250	40
1,250	None

13,750

200

- Flush to top perf w/ 2% KCL
- TIH and pull RBP
- Set RBP below bottom perfs @ +/- 10,150'
- Set Packer < 100' above top perfs +/- 9,540'
- Perform step rate test (Notify Richard Inge, prior to completing test, needs notice only)
  - TBG pressure must stabilize before test is performed
  - Have water tanks on location full of produced water ~ 1000 bbls
  - Max Pump rate is 10 BPM
  - Put 100 psi on annulus
  - Record initial shut in pressure and TBG before starting
  - Step rate schedule below

Rate (BPM)	Time (mins)	Fluid needed/stage (BBLS)
0.50	30	15
0.75	30	22.5
1.00	30	30
1.5	30	45
2.0	30	60
4.0	30	120
6.0	30	180
8.0	30	240

- Pump time for each stage should be consistent, adjust to 45 to 60 min/stage during the first stage if pressure isn't stabilizing
- Modify test "on the fly" is needed
- Collect shut-in pressure data for 30 minutes. Report data VS pressure data to engineer
- POOH/LD WS, SN, Packer, RBP
- TIH w/ BHA
  - 7" x 3-1/2 Arrow set 1-X w/ non/Carbide Slips NP
  - T2 on/off tool 2.813 Profile Nipple Nickel Plated
  - +/- 298' JTS 3-1/2" J-55 IPC TBG
  - Set packer +/- 9,550' (<100' above top perfs)
- Release packer @ O/O tool, PU and reverse circulate annular capacity with packer fluid
- Latch onto packer, wait ~ 1 hour top off backside with packer fluid

- Flange up Downing Std COG SENM SWD well head (diagram attached)
- **SI well over night, prep for MIT**
- Contact Richard Inge to witness and complete Mechanical Integrity Test to OCD specifications
  - Bring chart to Susan Lopez
- ND BOP and NU WH
- Contact Jason Barnett and turn over to injection

Richard Inge – 575-626-0831



III.

Side 1

# INJECTION WELL DATA SHEET

OPERATOR: COG Operating LLC

WELL NAME & NUMBER: Maljamar SWD 30 #2

WELL LOCATION: 1350' FNL & .770' FEL      H      30      17S      32E  
FOOTAGE LOCATION      UNIT LETTER      SECTION      TOWNSHIP      RANGE

## WELLBORE SCHEMATIC

See attached Schematic

## WELL CONSTRUCTION DATA

### Surface Casing

Hole Size: 17 1/2"      Casing Size: 13 3/8"

Cemented with: 850 sx.      or 1122 ft<sup>3</sup>

Top of Cement: Surface      Method Determined: Circulate

### Intermediate Casing

Hole Size: 12 1/4"      Casing Size: 9 5/8"

Cemented with: 1500 sx.      or 1980 ft<sup>3</sup>

Top of Cement: Surface      Method Determined: Circulate

### Production Casing

Hole Size: 8 3/4"      Casing Size: 7"

Cemented with: 2100 sx.      or 2100 ft<sup>3</sup>

Top of Cement: Surface      Method Determined: Circulate

Total Depth: 10,350

### Injection Interval

Jet perforated: 9,640 feet to 10,097

(Perforated or Open Hole; indicate which)

## INJECTION WELL DATA SHEET

Tubing Size: 3 1/2" EUE Lining Material: Internally plastic coated

Type of Packer: Double grip type, set in neutral

Packer Setting Depth: no more than 100' above top perf

Other Type of Tubing/Casing Seal (if applicable): N/A

### Additional Data

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

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

---

2. Name of the Injection Formation: Lower Wolfcamp

3. Name of Field or Pool (if applicable): SWD;Wolfcamp 96135

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:

San Andres @ 3,750', Yeso @ 5,425', Wolfcamp @ 9,500'

\_\_\_\_\_

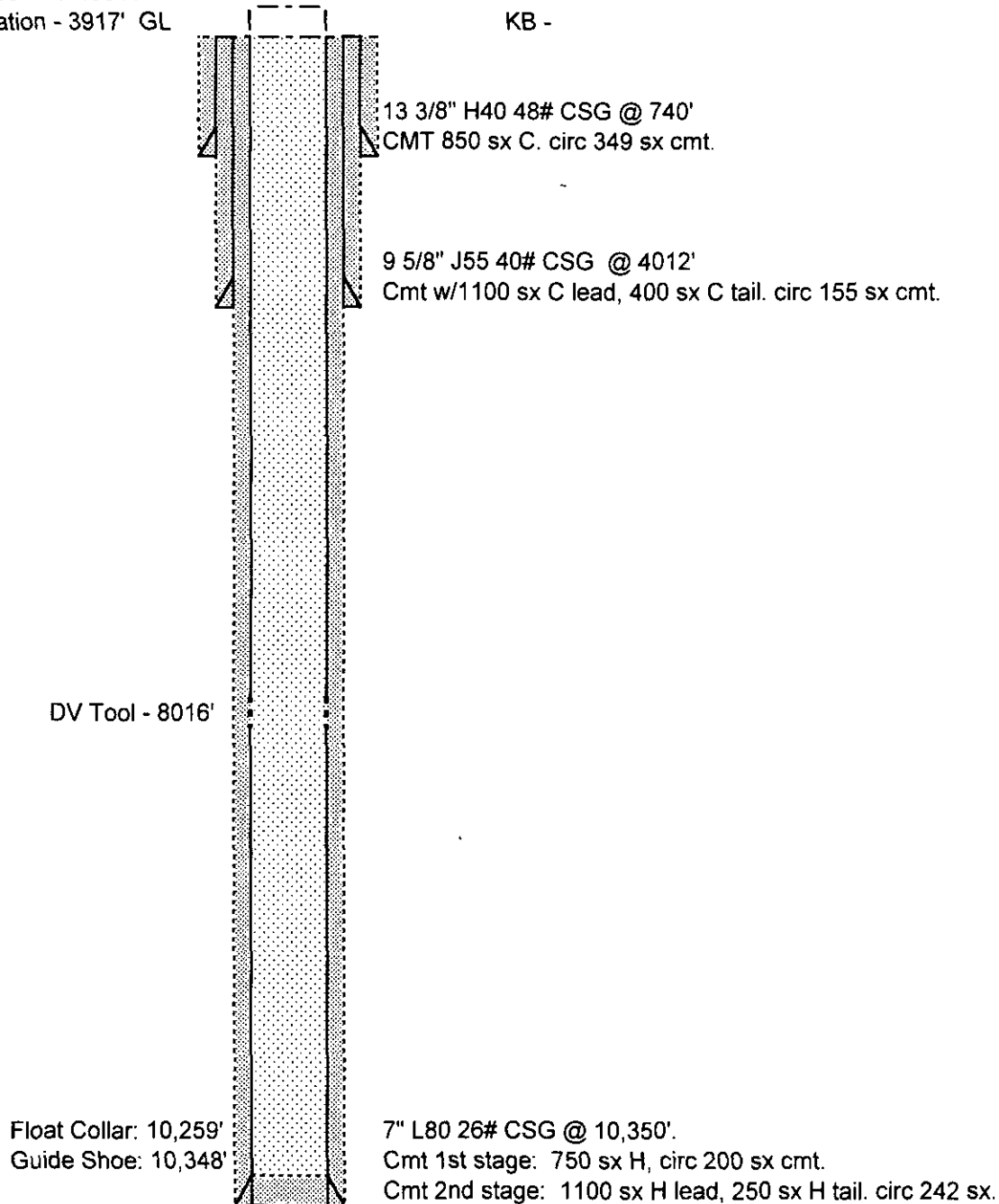
\_\_\_\_\_

# COG Operating LLC

Lease & Well #      Maljamar SWD 30 #2

Spud - 11/17/2011  
API 30-025-40310  
Elevation - 3917' GL

KB -



VII.

COG Operating, LLC  
Maljamar SWD 30 #2  
Lease # NMLC060199B  
API# 30-025-40310  
Sec 30, T17S, R32E, Unit H  
1350' FNL & 770' FEL  
Lea County, NM

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
  - **Average daily rate/volume 10,000 to 15,000 BWPD, Maximum daily rate/volume 20,000 BWPD**
2. Whether the system is open or closed;
  - **Closed System**
3. Proposed average and maximum injection pressure;
  - **Average injection pressure - Vacuum, Maximum injection pressure 1928 psig**
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than re-injected produced water; and,
  - **Produced water from the Yeso formation.**
  - **We do not anticipate incompatibility issues because we currently have similar SWD wells in the area that dispose of Yeso produced water in the Wolfcamp.**
  - **Existing Wolfcamp SWD wells: Maljamar SWD 29 #1 30-025-39519, Federal BI SWD #1 30-025-27068**
  - **Please see attached Yeso produced water analysis. (GC Fed 42)**
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.).
  - **Chemical Analysis for the disposal zone formation water is attached**

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENTFORM APPROVED  
OMB NO. 1004-0135  
Expires: July 31, 2010**SUNDRY NOTICES AND REPORTS ON WELLS**  
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*5. Lease Serial No.  
NMLC060199B

6. If Indian, Allottee or Tribe Name

7. If Unit or CA/Agreement, Name and/or No.

**SUBMIT IN TRIPLICATE - Other instructions on reverse side.**

1. Type of Well

☐ Oil Well ☐ Gas Well ☒ Other: INJECTION8. Well Name and No.  
MALJAMAR SWD 30 22. Name of Operator  
COG OPERATING LLCContact: KANICIA CASTILLO  
E-Mail: kcastillo@concho.com9. API Well No.  
30-025-403103a. Address  
ONE CONCHO CENTER 600 W ILLINOIS AVE  
MIDLAND, TX 797013b. Phone No. (include area code)  
Ph: 432-685-433210. Field and Pool, or Exploratory  
SWD;WOLFCAMP

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 30 T17S R32E Mer NMP 1350FNL 770FEL

11. County or Parish, and State

EDDY COUNTY, NM

**12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA**

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	Change to Original /
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	PD

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

COG Operating LLC, respectfully requests to complete in the lower wolfcamp.

The Maljamar SWD 30 #2 was drilled in late 2011 to be a SWD well servicing the eastern portion of Concho's shelf development. This well targeted the Wolfcamp reef at approximately 9500' TVD and was drilled to 10,365' to completely penetrate the Wolfcamp interval. This location was selected based on sub-surface mapping and seismic interpretation, which indicated a thicker Wolfcamp interval than in the southern portions of sections 28 and 29 where good SWD wells exist in the Wolfcamp reef. The seismic interpretation and geologic mapping were correct and a thicker Wolfcamp interval was encountered, however significant hydrocarbon shows were encountered in the top of the reef. Upon realizing the possibility of this interval producing in paying quantities, Concho reached out to the mineral lease holder, Mack Energy, in order to make some sort of deal to produce the well. No agreement could be reached at the time and the well has been sitting in an uncompleted state since

14. I hereby certify that the foregoing is true and correct.

**Electronic Submission #266949 verified by the BLM Well Information System  
For COG OPERATING LLC, sent to the Hobbs**

Name (Printed/Typed) KANICIA CASTILLO

Title PREPARER

Signature (Electronic Submission)

Date 09/29/2014

**THIS SPACE FOR FEDERAL OR STATE OFFICE USE**

Approved By

Title

Date

Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

**\*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\* OPERATOR-SUBMITTED \*\***

**Additional data for EC transaction #266949 that would not fit on the form**

**32. Additional remarks, continued**

that point.

Mack subsequently offset this well three times with producing wells, Brook #3, #4 and #5. These wells have made oil commercially but are now making large quantities of water from the upper portion of the reef. It is Concho's belief that this reef interval may have watered out at this point and that a completion deeper into the Wolfcamp reef in the Maljamar SWD 30 #2 could yield a suitable SWD candidate. Concho would like to perforate and test this lower interval to establish it as a SWD candidate.

Procedure: Please see attachment.

6

# Legend

Well No.

Outside Operator

Concho Acreage

**MALJAMAR  
SWD 30 #2  
HALF MILE  
RADIUS**

**CONCHO**

Production Section

SENM Shelf Area

Maljamar SWD 30 #2

1350 FNL 770 FEL

Sec. 30, T17S, R32E

Map File	Map File	Map File
Production Section	Production Section	Production Section
SENM Shelf Area	SENM Shelf Area	SENM Shelf Area
Maljamar SWD 30 #2	Maljamar SWD 30 #2	Maljamar SWD 30 #2
1350 FNL 770 FEL	1350 FNL 770 FEL	1350 FNL 770 FEL
Sec. 30, T17S, R32E	Sec. 30, T17S, R32E	Sec. 30, T17S, R32E



MALJAMAR  
SWD 30 #2  
HALF MILE  
RADIUS

FED

DEFER

MC FED

CC FED

24

19

20

21

25

30

29

28

COYOTE

AOUDAD

BROWN

BROWN

HOOPER STATE

WALLINGFORD

AOUDAD

36

POX

31

WEASEL

32

ANTELOPE

COYOTE

PANTHER

31

COOP

PEARSALL

33 'A'

PEARSALL

'AX'



## Maljamar SWD 30 #2

1. There are a total of 3 wells in the AOR penetrating the injection interval.
2. Of the total, there are zero plugged/dry and abandoned wells in the area of review penetrating the injection interval.

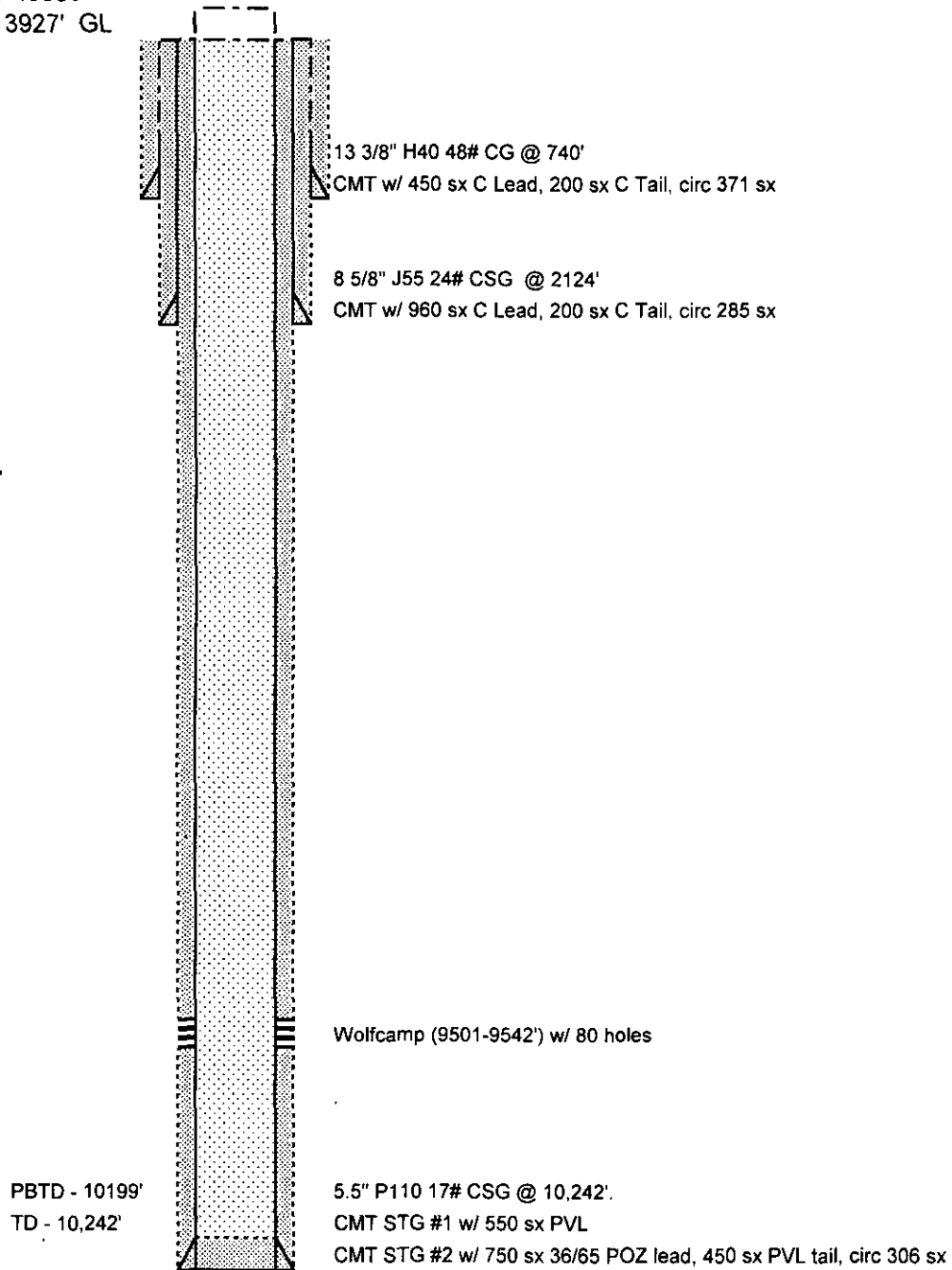
### Area of Review

Well Name	Operator	API #	Legals	Footage	Hole Size	Casing Size	Set Depth	Cement Vol. (SX)	TOC	DV Tool Depth	Cmt blw DVT (SX)	Cmt abv DVT (SX)	TOC blw DVT	TOC abv DVT
Brook Federal #3	Mack Energy Corp	30-025-40338	A-30-17S-32E	785 FNL & 10 FEL	17.5	13.375	740	650	0					
					12.25	8.625	2124	1160	0					
					7.875	5.5	10242	1750	0					
Brook Federal #4	Mack Energy Corp	30-025-40339	A-30-17S-32E	750 FNL & 1120 FEL	17.5	13.375	740	930	0					
					12.25	8.625	2128	930	0					
					7.875	5.5	10132	1825	0					
Brook Federal #5	Mack Energy Corp	30-025-40357	H-30-17S-32E	1700 FNL & 10 FEL	17.5	13.375	739	670	0					
					12.25	8.625	2084	1015	0					
					7.875	5.5	9770	1675	0					

# Mack Energy Corp.

Lease & Well #      Brook Federal #3

Spud - 11/26/2012  
API 30-025-40338  
Elevation - 3927' GL



# Mack Energy Corp.

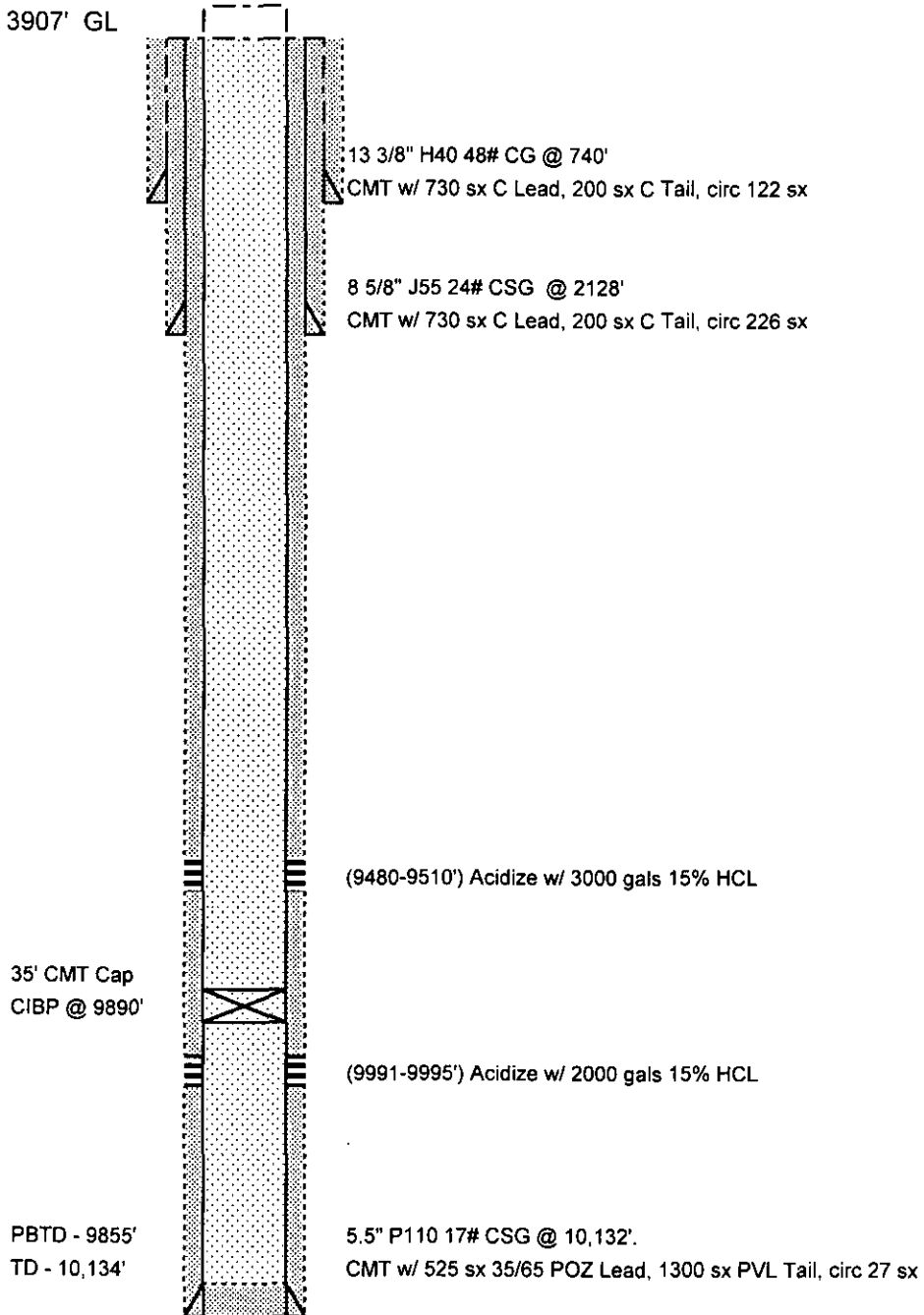
Lease & Well #

Brook Federal #4

Spud - 4/13/2012

API 30-025-40339

Elevation - 3907' GL



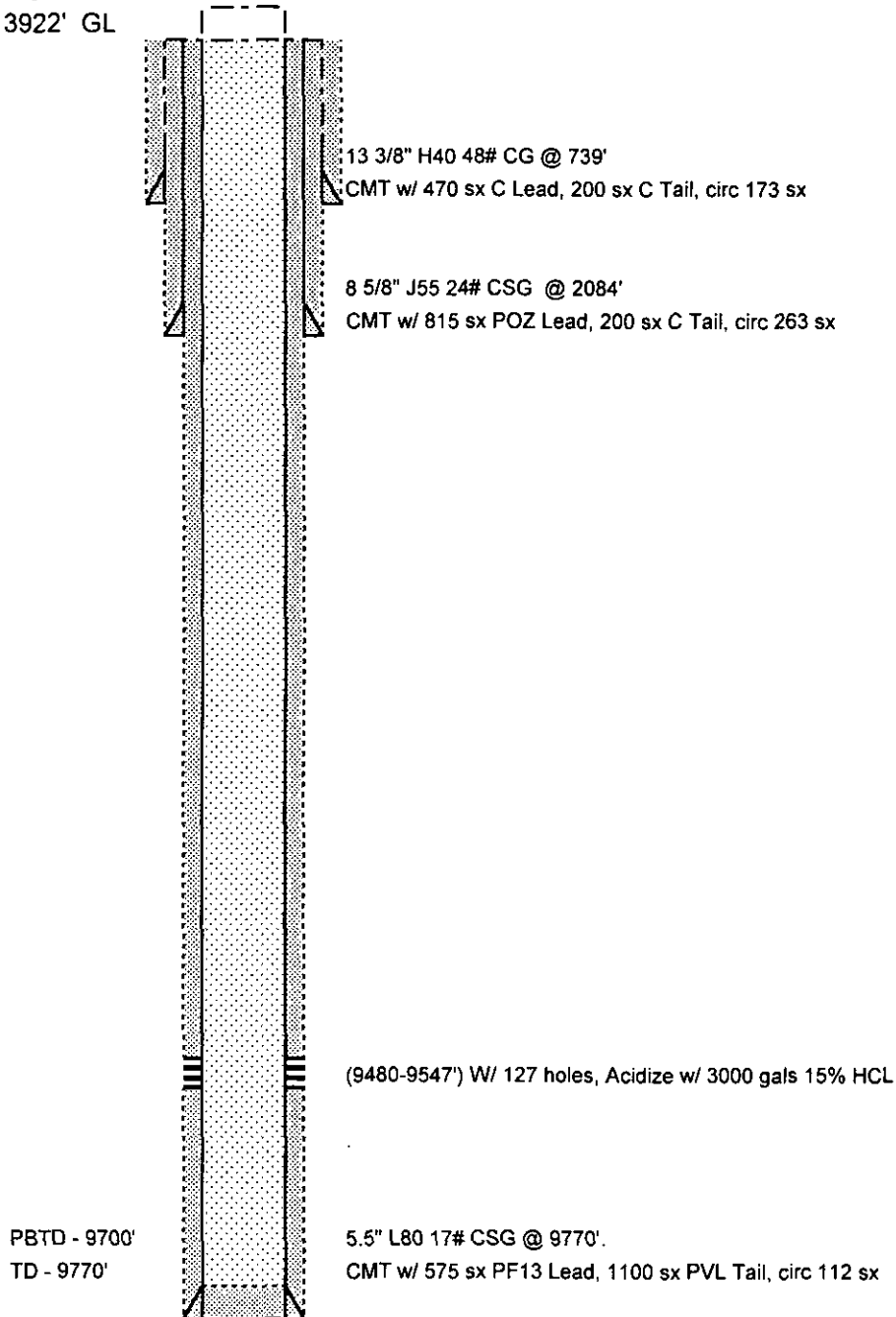
10/7/2014

Brook Fed #4-WBD

# Mack Energy Corp.

Lease & Well #      Brook Federal #5

Spud - 6/16/2013  
API 30-025-40357  
Elevation - 3922' GL



10/7/2014

Brook Fed #5-WBD

VII.

COG Operating, LLC  
Maljamar SWD 30 #2  
Lease # NMLC060199B  
API# 30-025-40310  
Sec 30, T17S, R32E, Unit H  
1350' FNL & 770' FEL  
Lea County, NM

VII. Attach data on the proposed operation, including:

1. Proposed average and maximum daily rate and volume of fluids to be injected;
  - **Average daily rate/volume 10,000 to 15,000 BWPD, Maximum daily rate/volume 20,000 BWPD**
2. Whether the system is open or closed;
  - **Closed System**
3. Proposed average and maximum injection pressure;
  - **Average injection pressure - Vacuum, Maximum injection pressure 1928 psig**
4. Sources and an appropriate analysis of injection fluid and compatibility with the receiving formation if other than re-injected produced water; and,
  - **Produced water only**
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.).
  - **N/A**

**Exhibit VIII**  
Geological Review  
Ground Water Sources  
Maljamar Area  
Lea County, New Mexico

The interval under consideration for disposal operations includes the Wolfcamp, part of the Wolfcamp Group. The interval is part of the Wolfcamp Series of the Lower Permian Age, located on the Northwest Shelf of the Delaware Basin in the western part of the Permian Basin.

The injection intervals are the following:

Maljamar SWD 30 #2 (SWD; Wolfcamp)

- Wolfcamp:
  - 9,640.0'-9,773.0' MD (6,880.0'- 7,115.0' TVD)
  - 9,798.0'-9,875.0' MD (9,798.0'-9,875.0' TVD)
  - 10,011.0'-10,097.0' MD (10,011.0'-10,097.0' TVD)

The Maljamar SWD 30 #2 is a vertical well that was drilled to a true vertical depth (TVD) of 10,350.0'.

Produced water from Lower Permian Age rocks is too mineralized to be potable or useable for live stock.

Ground water in Eddy County is obtained from porous and permeable aquifers in consolidated rocks of the Upper Permian and Triassic age and in relatively unconsolidated sediments of Tertiary and Quaternary age.

The area east of the Pecos River is a large area and includes half of Eddy County, generally from T 16 S R 27 E to T 26S R 31E, extending from the Chaves County line south to the Texas State line and east to the Lea County line.

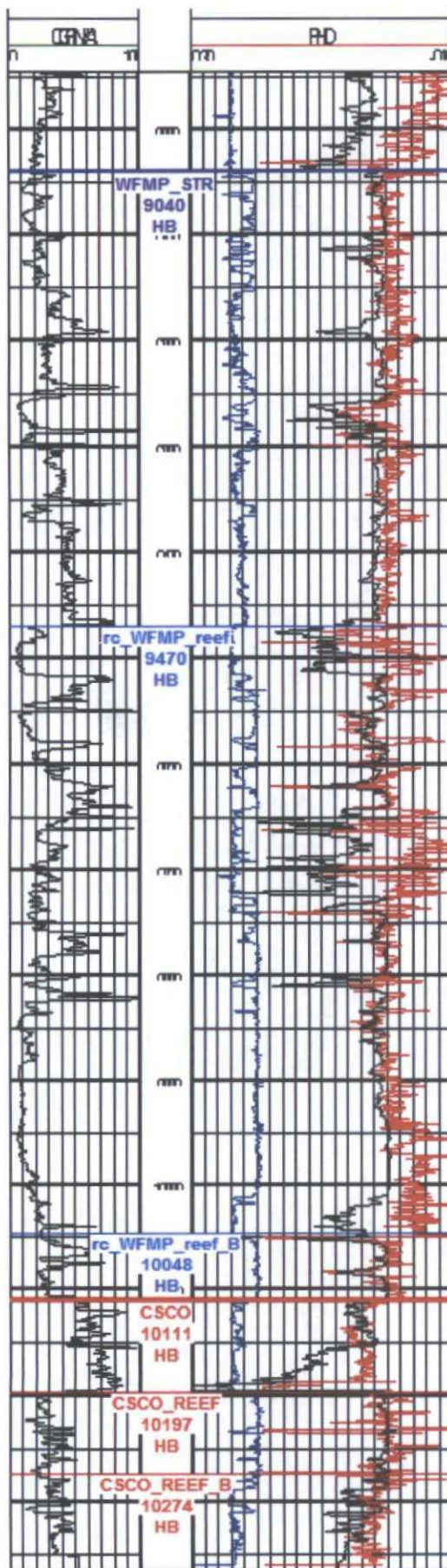
The Triassic System overlies the Rustler formation in Eddy County and is composed of red beds and sandstones of the Dockum group. The lower part of these beds is considered Permian and correlated with Dewey Lake red beds by some geologists. The total thickness of the Dockum group east of Artesia is about 1,000'. Formations of the Dockum group exposed in Eddy County are the Pierce Canyon red beds, the Santa Rosa sandstone and red beds possibly from the Chinle formation.

In the Empire, Empire East, Loco Hills, and Fren Fields, the sandstone beds in the Triassic Dockum group and possibly in the Dewey Lake red beds are the chief sources of ground water. The depth to water in this area is generally less than 300'. Most of the wells in the outcrop area of the Dockum group yield water of better quality than the wells to the west that produce from the Rustler formation. Analyses were made of 21 samples of water from wells probably taking all or part of their water from the Triassic red beds. The hardness of calcium carbonate in the 21 samples ranged from 201 to 3,590 ppm and was more than 1,000 ppm in 14 of the 21 samples. The chloride content ranged from 17 to 785 ppm and was more than 200 ppm in 10 of the samples. Probably about half the wells in the Triassic red beds produce water that is considered usable for domestic purposes. None of the wells in the Triassic red beds produce water too highly mineralized for stock.

A review of all geologic map data and well as visual searches by field personnel did not indicate the presence of any windmills in the areas of review for the proposed conversions.

In summary, ground water in the Empire, Empire East, Loco Hills, and Fren areas for stock and domestic use can be obtained from wells in the Triassic red beds at depths up to 300'. Water is generally of fair quality but locally impotable. The injection intervals for the proposed conversions are in the Wolfcamp group in the lower Permian age rocks at about 9,640' TVD to 10,097' TVD. No contamination of the known shallow potable ground waters is expected from the proposed deeper secondary operations due to over 9,300' of vertical separation between them. There was no indication of any use of ground water aquifers in the areas of reviews for the proposed conversions.

From Geology and Ground-Water Resources of Eddy County, New Mexico by G. E. Hendrickson and R. S. Jones. Ground-Water Report 3, New Mexico Bureau of Mines and Mineral Resources, 1952



TD-10365.00



IX.

COG Operating, LLC  
Maljamar SWD 30 #2  
Lease # NMLC060199B  
API# 30-025-40310  
Sec 30, T17S, R32E, Unit H  
1350' FNL & 770' FEL  
Lea County, NM

**Stimulation program:** Large conventional acid job. Depending on the step rate test, possibly sand fractured.

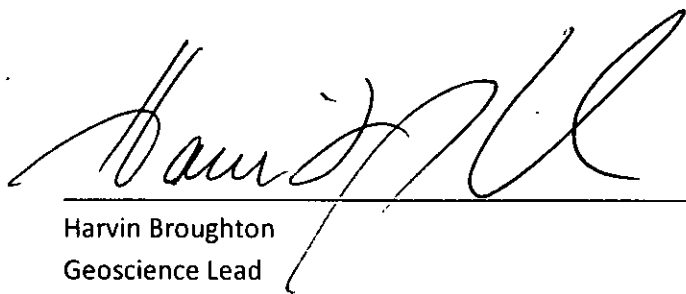
X.

COG Operating, LLC  
Maljamar SWD 30 #2  
Lease # NMLC060199B  
API# 30-025-40310  
Sec 30, T17S, R32E, Unit H  
1350' FNL & 770' FEL  
Lea County, NM

**Logging and test data:** No test data. Logs on file.

**Exhibit XII**  
**Geological Statement**

Concho Resources has examined available geological, seismic, and engineering data and finds no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.



---

Harvin Broughton  
Geoscience Lead  
432-686-3016

## LEGAL NOTICE

COG Operating LLC is reapplying for an SWD permit (SWD-1286) for the Maljamar SWD 30 #2. The well is located at 1350' FNL & 770' FEL, Sec. 30, T17S, R32E, Unit H, Lea County, NM. The well will dispose of water produced from oil and gas wells into the Wolfcamp zone at the depth 9,640' to 10,097' at a maximum rate of 20,000 barrels of water per day and at a maximum pressure of 1928 psi. Interested parties must file objections or requests for hearing with the New Mexico Oil

Conservation Division, 1220 South Saint Francis Drive, Santa Fe, NM 87505, within 15 days. Additional information can be obtained by contacting Kanicia Castillo, COG Operating LLC, One Concho Center, 600 W Illinois Ave, Midland, TX 79701; phone number is 432-685-4332.

Published in the Artesia Daily Press, Artesia, N.M., October 10, 2014  
Legal No. 23207.



October 9, 2014

Mack Energy Corporation  
11344 Lovington Hwy  
Artesia, NM 88210

Certified Mail Article Number: 91 7199 9991 7033 5389 3793

Re: Amendment to SWD-1286:

Maljamar SWD 30 #2  
API# 30-025-40310  
SL: Sec 30, 17S, R32E, Unit H  
1350' FNL & 770' FEL  
SWD;Wolfcamp (96135)  
Lea County, New Mexico

To Whom It May Concern:

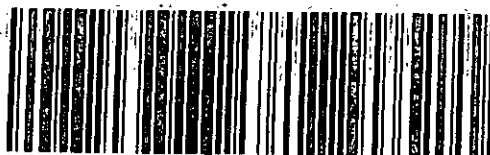
This letter will serve as notice under Rule 19.15.26.8B that COG Operating LLC has applied for a permit from the Oil Conservation Division in Santa Fe, NM for a new SWD well. We will be injecting, for the purpose of disposal, into the Wolfcamp zone. Perfs will be at 9,640' – 10,097'.

Should your company have any objection, it must be filed in writing within fifteen (15) days from the date of this notice. If the Oil Conservation Division determines the application complies with the applicable regulations, then it will be approved. The New Mexico Oil Conservation Division address is 1220 South St. Francis Drive, Santa Fe, New Mexico, 87505, the telephone number is 505-476-3440.

Sincerely,

A handwritten signature in black ink, appearing to read "K. Castillo".

Kanicia Castillo  
Lead Regulatory Analyst  
COG Operating LLC



91 7199 9991 7033 5389 3793



One Concho Center  
600 West Illinois Avenue  
Midland, Texas 79701

Mack Energy Corporation  
11344 Lovington Hwy  
Artesia, NM 88210

**SENDER: COMPLETE THIS SECTION**

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1. Article Addressed to:

Mack Energy Corporation  
11344 Lovington Hwy  
Artesia, NM 88210

2. Article Number

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A. Signature

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☐ Agent

☐ Addressee

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91 7199 9991 7033 5389 3793



Kanicia Castillo  
COG Operating LLC  
One Concho Center  
600 W Illinois Avenue  
Midland, TX 79701

October 27, 2014

Phillip Goetze  
New Mexico Oil Conservation Division  
1220 South St. Francis Drive  
Santa Fe, NM 87505

RE: Amend SWD-1286

Maljamar SWD 30 #2  
API# 30-025-40310  
H-30-17S-32E  
1350 FNL & 770 FEL  
Lea County, New Mexico

RECEIVED OCD  
2014 OCT 29 A 11:01

Mr. Goetze:

Please see attached AOR notice update. Mack Energy was previously noticed and their notice was returned. The updated letter and certified number is attached.

Please contact me at 432-685-4332 or email at [kcastillo@concho.com](mailto:kcastillo@concho.com) if you need additional information.

Sincerely,

A handwritten signature in black ink, appearing to be "K. Castillo", written over a horizontal line.

Kanicia Castillo  
Lead Regulatory Analyst  
COG Operating LLC

Cc: NMOCD – District 1 – Hobbs & BLM – Carlsbad, NM Field Office



October 17, 2014

Mack Energy Corporation  
11344 Lovington Hwy  
Artesia, NM 88210

Certified Mail Article Number: 91 7199 9991 7033 5389 3526

Re: SWD Application:

Maljamar SWD 30 #2  
API# 30-025-40310  
SL: Sec 30, 17S, R32E, Unit H  
1350' FNL & 770' FEL  
SWD;Wolfcamp (96135)  
Lea County, New Mexico

To Whom It May Concern:

This letter will serve as notice under Rule 19.15.26.8B that COG Operating LLC has applied for a permit from the Oil Conservation Division in Santa Fe, NM for a new SWD well. We will be injecting, for the purpose of disposal, into the Wolfcamp zone. Perfs will be at 9,640' – 10,097'.

Should your company have any objection, it must be filed in writing within fifteen (15) days from the date of this notice. If the Oil Conservation Division determines the application complies with the applicable regulations, then it will be approved. The New Mexico Oil Conservation Division address is 1220 South St. Francis Drive, Santa Fe, New Mexico, 87505, the telephone number is 505-476-3440.

Sincerely,

A handwritten signature in black ink, appearing to be "K C" followed by a long horizontal stroke.

Kanicia Castillo  
Lead Regulatory Analyst  
COG Operating LLC



<p><b>SENDER: COMPLETE THIS SECTION</b></p> <p>■ Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.</p> <p>■ Print your name and address on the reverse so that we can return the card to you.</p> <p>■ Attach this card to the back of the mailpiece, or on the front if space permits.</p> <p>1. Article Addressed to:</p> <p style="margin-left: 40px;">Mack Energy Corporation 11344 Lovington Hwy Artesia, NM 88210</p>	<p><b>COMPLETE THIS SECTION ON DELIVERY</b></p> <p>A. Signature  <div style="border-bottom: 1px solid black; width: 150px; margin: 5px 0;"></div> X <i>Kim Rodriguez</i> <div style="float: right; text-align: right;"> <input type="checkbox"/> Agent  <input type="checkbox"/> Addressee </div> </p> <p>B. Received by (Printed Name) <span style="float: right;">C. Date of Delivery</span>  <div style="border-bottom: 1px solid black; width: 150px; margin: 5px 0;"></div> <i>Kim Rodriguez</i> </p> <p>D. Is delivery address different from item 1? <input type="checkbox"/> Yes  If YES, enter delivery address below: <input type="checkbox"/> No </p>
<p>2. Article Number</p> <p style="margin-left: 40px;">(Transfer from service label)</p>	<p>3. Service Type</p> <p> <input checked="" type="checkbox"/> Certified Mail    <input type="checkbox"/> Express Mail  <input type="checkbox"/> Registered    <input type="checkbox"/> Return Receipt for Merchandise  <input type="checkbox"/> Insured Mail    <input type="checkbox"/> C.O.D. </p> <p>4. Restricted Delivery? (Extra Fee) <span style="float: right;"><input type="checkbox"/> Yes</span></p>



October 9, 2014

Mack Energy Corporation  
11344 Lovington Hwy  
Artesia, NM 88210

Certified Mail Article Number: 91 7199 9991 7033 5389 3793

Re: Amendment to SWD-1286:

Maljamar SWD 30 #2  
API# 30-025-40310  
SL: Sec 30, 17S, R32E, Unit H  
1350' FNL & 770' FEL  
SWD;Wolfcamp (96135)  
Lea County, New Mexico

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Sincerely,

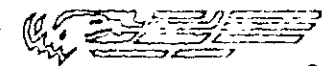
A handwritten signature in black ink, appearing to read "K. Castillo".

Kanicia Castillo  
Lead Regulatory Analyst  
COG Operating LLC

91 7199 9991 7033 5389 3793



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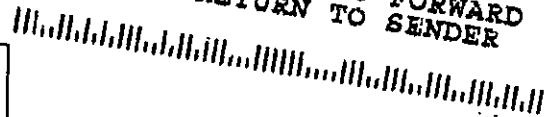
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11344 Lovington Hwy  
Artesia, NM 88210

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 1220 South St. Francis Drive  
 Santa Fe, NM 87505

2. Article Number (Transfer from service label) 7013 0600 0001 7469 7775

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Cimarex Energy Co  
 202 S Cheyenne, Ste 1000  
 Tulsa, OK 74103-4346

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 202 S Cheyenne, Ste 1000  
 Tulsa, OK 74103-4346

2. Article Number (Transfer from service label) 7013 0600 0001 7469 7867

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Cross Timbers Energy LLC  
 Attn: Justin Neeley - Land  
 400 West Seventh Street  
 Fort Worth, TX 76102

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1. Article Addressed to:

Cross Timbers Energy LLC  
 Attn: Justin Neeley - Land  
 400 West Seventh Street  
 Fort Worth, TX 76102

2. Article Number (Transfer from service label) 7013 0600 0001 7469 7843

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 Total Fee \$ \_\_\_\_\_

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 CLAYTON STA 79705  
 MIDLAND TX

**Diamond S Energy Co.**  
 6608 Bryant Irvin Rd.  
 Fort Worth, TX 76132

**Instructions**

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1. Article Addressed to:

**Diamond S Energy Co.**  
 6608 Bryant Irvin Rd.  
 Fort Worth, TX 76132

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature *[Signature]* ☐ Agent ☐ Address

B. Received by (Printed Name) *Fran Kahn* C. Date of Delivery *10/1/14*

D. Is delivery address different from item 1? ☐ Yes ☐ No  
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 Delivery Fee (if Required) \_\_\_\_\_  
 Total Fee \$ \_\_\_\_\_

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 CLAYTON STA 79705  
 MIDLAND TX

**XTO Energy Inc.**  
 Attn.: Permian Land  
 810 Houston Street  
 Fort Worth, Texas 76102

**Instructions**

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1. Article Addressed to:

**XTO Energy Inc.**  
 Attn.: Permian Land  
 810 Houston Street  
 Fort Worth, Texas 76102

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature *[Signature]* ☐ Agent ☐ Address

B. Received by (Printed Name) C. Date of Delivery

D. Is delivery address different from item 1? ☐ Yes ☐ No  
 If YES, enter delivery address below:

3. Service Type  
☐ Certified Mail ☐ Express Mail  
☐ Registered ☐ Return Receipt for Merchandise  
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) **7013 0600 0001 7469 7898**

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 MIDLAND TX

**Apache Corporation**  
 303 Veterans Airpark Lane  
 Suite 30000  
 Midland, TX 79705

**Instructions**

**SENDER: COMPLETE THIS SECTION**

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- Print your name and address on the reverse so that we can return the card to you.
- Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

**Apache Corporation**  
 303 Veterans Airpark Lane  
 Suite 30000  
 Midland, TX 79705

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature *[Signature]* ☐ Agent ☐ Address

B. Received by (Printed Name) *April Willis* C. Date of Delivery *9-30-1*

D. Is delivery address different from item 1? ☐ Yes ☐ No  
 If YES, enter delivery address below:

3. Service Type  
☐ Certified Mail ☐ Express Mail  
☐ Registered ☐ Return Receipt for Merchandise  
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

2. Article Number (Transfer from service label) **7013 0600 0001 7469 7805**

PS Form 3811, February 2004 Domestic Return Receipt 102595-02-M-11

**REGISTERED MAIL™ RECEIPT**  
(No Insurance Coverage Provided)  
For information visit our website at www.usps.com

**OFFICIAL USE**

Postage \$  
Certified Fee  
Receipt Fee (Required)  
Delivery Fee (Required)  
Insurance Fee

Postmark Here

Marathon Oil Company  
5555 San Felipe  
Mail Stop #3308  
Houston, Texas 77056

Instructions

**SENDER: COMPLETE THIS SECTION**

Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.  
Print your name and address on the reverse so that we can return the card to you.  
Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Marathon Oil Company  
5555 San Felipe  
Mail Stop #3308  
Houston, Texas 77056

2. Article Number (Transfer from service label) 7013 0600 0001 7469 7836

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature X *[Signature]* ☐ Agent ☐ Address

B. Received by (Printed Name) S. Campos C. Date of Delivery 10/26/14

D. Is delivery address different from item 1? ☐ Yes ☐ No  
If YES, enter delivery address below:

3. Service Type  
☐ Certified Mail ☐ Express Mail  
☐ Registered ☐ Return Receipt for Merchandise  
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

**REGISTERED MAIL™ RECEIPT**  
(No Insurance Coverage Provided)  
For information visit our website at www.usps.com

**OFFICIAL USE**

Postage \$  
Certified Fee  
Receipt Fee (Required)  
Delivery Fee (Required)  
Insurance Fee

Postmark Here

Oxy USA Inc.  
6 Desta Drive  
Midland, TX 79705

Instructions

**SENDER: COMPLETE THIS SECTION**

Complete items 1, 2, and 3. Also complete item 4 if Restricted Delivery is desired.  
Print your name and address on the reverse so that we can return the card to you.  
Attach this card to the back of the mailpiece, or on the front if space permits.

1. Article Addressed to:

Oxy USA Inc.  
6 Desta Drive  
Midland, TX 79705

2. Article Number (Transfer from service label) 7013 0600 0001 7469 7881

**COMPLETE THIS SECTION ON DELIVERY**

A. Signature X *[Signature]* ☐ Agent ☐ Address

B. Received by (Printed Name) Ashland Mason C. Date of Delivery 10/26/14

D. Is delivery address different from item 1? ☒ Yes ☐ No  
If YES, enter delivery address below:

PO Box 50250  
Midland, TX 79710

3. Service Type  
☐ Certified Mail ☐ Express Mail  
☐ Registered ☐ Return Receipt for Merchandise  
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee) ☐ Yes

**CERTIFIED MAIL™ RECEIPT**  
(Domestic Mail Only, No Insurance Coverage Provided)  
For delivery information visit our website at www.usps.com

**OFFICIAL USE**

Postage \$  
Certified Fee  
Return Receipt Fee (Endorsement Required)  
Restricted Delivery Fee (Endorsement Required)  
Insurance Fee

Postmark Here

McGowan Working Partners

Instructions

**CERTIFIED MAIL™ RECEIPT**  
(Domestic Mail Only, No Insurance Coverage Provided)  
For delivery information visit our website at www.usps.com

**OFFICIAL USE**

Postage \$  
Certified Fee  
Return Receipt Fee (Endorsement Required)  
Restricted Delivery Fee (Endorsement Required)  
Insurance Fee

Postmark Here

ConocoPhillips Petroleum Co.  
Attn.: Permian Land Dept.  
PO BOX 2197  
Houston, TX 77252-2197

Instructions

**CERTIFIED MAIL™ RECEIPT**  
(Domestic Mail Only, No Insurance Coverage Provided)  
For delivery information visit our website at www.usps.com

**OFFICIAL USE**

Postage \$  
Certified Fee  
Return Receipt Fee (Endorsement Required)  
Restricted Delivery Fee (Endorsement Required)  
Insurance Fee

Postmark Here

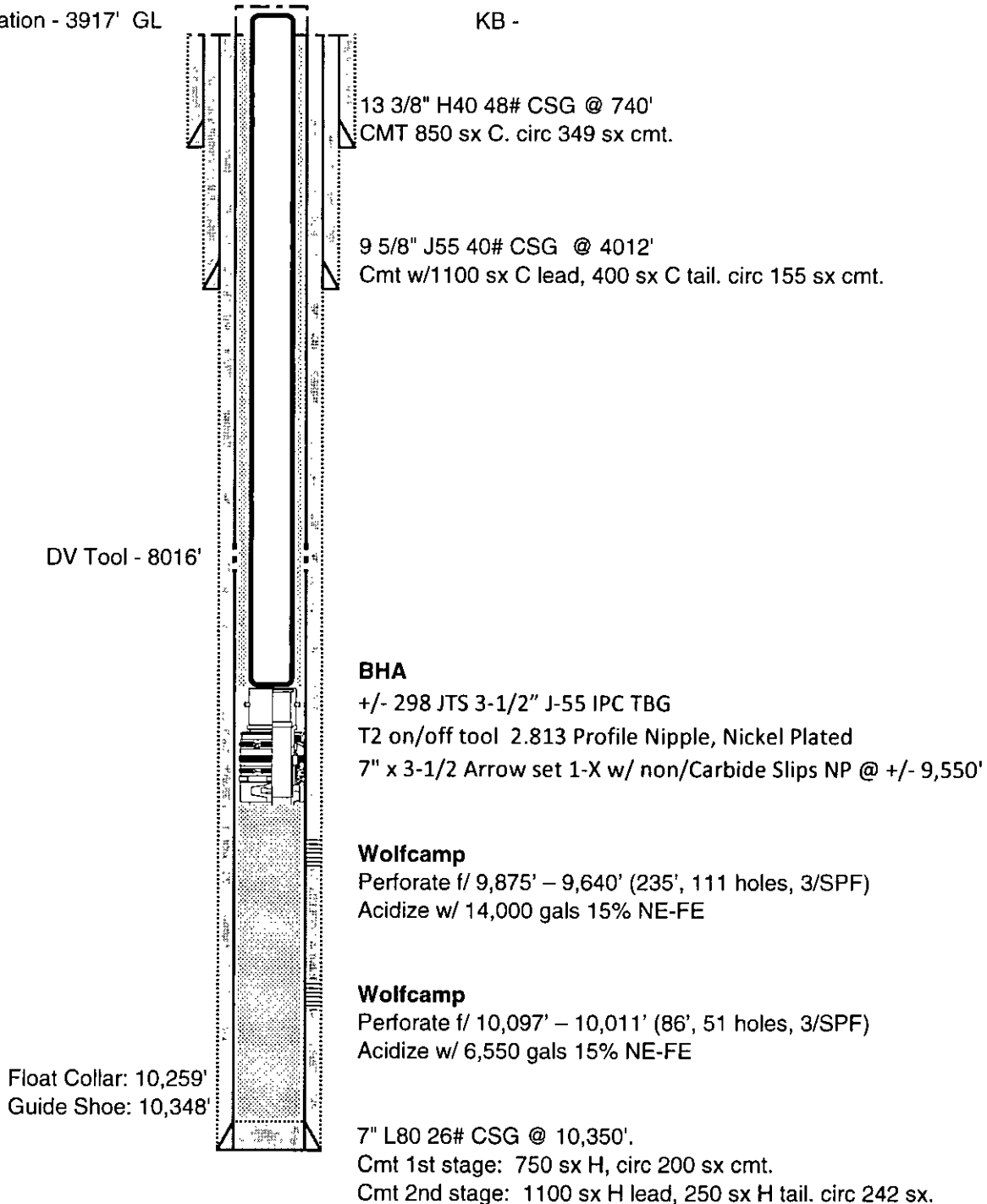
Boge, Inc.  
6304 CR 7430  
Lubbock, TX 79424

Instructions

# COG Operating LLC

Lease & Well #      Maljamar SWD 30 #2

Spud - 11/17/2011  
API 30-025-40310  
Elevation - 3917' GL



300254033800

614 ft

300254033800

554 ft

300254031000

MACK ENERGY CORP  
BROOK FEDERAL 4  
750 FNL 1120 FEL  
TWP: 18 S - Range: 18 E - Sec. 10

MACK ENERGY CORP  
BROOK FEDERAL 3  
785 FNL 10 FEL  
TWP: 18 S - Range: 16 E - Sec. 10

COG OPERATING LLC  
MALJAMAR SWD 30 2  
1350 FNL 770 FEL  
TWP: 17 S - Range: 32 E - Sec. 30

np

Producing  
Interval

Producing  
Interval

TD=10134.00  
Cum Oil All Zones: 78 MBO  
Cum Water All Zones: 1849 MBO  
Cum Gas All Zones: 148 MMCF  
Spud Date=4/13/2012

TD=10242.00  
Cum Oil All Zones: 20 MBO  
Cum Water All Zones: 492 MBO  
Cum Gas All Zones: 38 MMCF  
Spud Date=11/26/2012

TD=10365.00  
Spud Date=11/17/2011







Catalyst Oilfield Services  
 11999 E Hwy 158  
 Gardendale, TX 79758  
 (432) 563-0727  
 Fax: (432) 224-1038

## Water Analysis Report

Customer:	COG Operating LLC - NM	Sample #:	19044
Area:	Artesia	Analysis ID #:	19266
Lease:	GC Federal	BOPD:	44
Location:	42	BWPD:	452
Sample Point:	Wellhead		

		Anions		Cations	
		mg/l	meq/l	mg/l	meq/l
Sampling date:	5/8/2014	Chloride:	119690.6	Sodium:	69550.0
Analysis date:	5/13/2014	Bicarbonate:	341.6	Magnesium:	978.9
Analysis:	Catalyst	Carbonate:	0.00	Calcium:	5753.0
TDS (mg/l or g/m3):	198754	Sulfate:	1500.0	Potassium:	667.5
Density (g/cm3):	1.135			Strontium:	141.1
Hydrogen Sulfide:	153			Barium:	0.0
Carbon Dioxide:	260			Iron:	0.0
Comments:		pH at time of sampling:	6.45	Manganese:	0.0
		pH at time of analysis:			
		pH used in Calculation:	6.45	Conductivity (micro-ohms/cm):	189200
		Temperture @ lab conditions (F):	75	Resistivity (ohm meter):	0.0529

	Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Calcite CaCO3		Gypsum CaSo4*2H2O		Anhydrite CaSO4		Celestite SrSO4		Barite BaSO4		
°F	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount	
120	0.67	31.23	-0.27	0.00	-0.10	0.00	-0.13	0.00	0.00	0.00	



Catalyst Oilfield Services  
 11999 E Hwy 158  
 Gardendale, TX 79758  
 (432) 563-0727  
 Fax: (432) 224-1038

## Water Analysis Report

Customer:	COG Operating LLC - NM	Sample #:	22021
Area:	Artesia	Analysis ID #:	20884
Lease:	GC Federal	BOPD:	8
Location:	44	BWPD:	221
Sample Point:	Wellhead		

		Anions		Cations	
		mg/l	meq/l	mg/l	meq/l
Sampling date:	8/14/2014	Chloride:	124200.2	Sodium:	76130.0
Analysis date:	8/18/2014	Bicarbonate:	463.6	Magnesium:	749.2
Analysis:	Catalyst	Carbonate:	0.00	Calcium:	3934.0
TDS (mg/l or g/m3):	209684	Sulfate:	3500.0	Potassium:	521.5
Density (g/cm3):	1.140			Strontium:	101.5
Hydrogen Sulfide:	0			Barium:	0.0
Carbon Dioxide:	120			Iron:	0.0
Comments:				Manganese:	0.0
		pH at time of sampling:	6.20		
		pH at time of analysis:			
		pH used in Calculation:	6.20	Conductivity (micro-ohms/cm):	212000
		Temperture @ lab conditions (F):	75	Resistivity (ohm meter):	0.0472

Values Calculated at the Given Conditions - Amounts of Scale in lb/1000 bbl										
Temp	Calcite CaCO3		Gypsum CaSO4*2H2O		Anhydrite CaSO4		Celestite SrSO4		Barite BaSO4	
°F	Index	Amount	Index	Amount	Index	Amount	Index	Amount	Index	Amount
120	0.44	32.61	-0.07	0.00	0.11	258.86	0.07	10.01	0.00	0.00



C-108 Review Checklist: Received 10/10/2014 Add. Request: 2/17/2015 Reply Date: 2/17/2015 Suspended: \_\_\_\_\_ [Ver 15]

ORDER TYPE: WFX / PMX / SWD Number: 1527 Order Date: \_\_\_\_\_ Legacy Permits/Orders: N/A

Well No. 2 Well Name(s): MALJAMAR SWD 30

API: 30-0 25-40310 Spud Date: 11/17/2011 New or Old: new (UIC Class II Primacy 03/07/1982)

Footages 1350FWL, 770FEL Lot \_\_\_\_\_ or Unit H Sec 30 Tsp 17S Rge 32E County Lea

General Location: Southwest MALJAMAR Pool: SWD Wolfcamp Pool No.: 96135

BLM 100K Map: Hobbs Operator: COG Operating OGRID: 229137 Contact: Kathia Castillo

COMPLIANCE RULE 5.9: Total Wells: 3791 Inactive: 1 Fincl Assur: Y Compl. Order? Y IS 5.9 OK? Y Date: 2-17-2015

WELL FILE REVIEWED ☐ Current Status: new

WELL DIAGRAMS: NEW: Proposed ☐ or RE-ENTER: Before Conv. ☒ After Conv. ☒ Logs in Imaging: X

Planned Rehab Work to Well: None

Well Construction Details		Sizes (in)	Setting	Cement	Cement Top and
		Borehole / Pipe	Depths (ft)	Sx or Cf	Determination Method
Planned <input type="checkbox"/> or Existing <input type="checkbox"/> Surface		<u>17 1/2" / 13 3/8"</u>	<u>740</u>	<u>850</u>	<u>Surf. / Circ.</u>
Planned <input type="checkbox"/> or Existing <input type="checkbox"/> Interm/Prod				<u>110</u>	
Planned <input type="checkbox"/> or Existing <input type="checkbox"/> Interm/Prod		<u>12 1/4" / 9 5/8"</u>	<u>4050</u>	<u>1500</u>	<u>Surf. / Circ.</u>
Planned <input type="checkbox"/> or Existing <input type="checkbox"/> Prod/Liner					
Planned <input type="checkbox"/> or Existing <input type="checkbox"/> Liner		<u>8 1/4" / 7"</u>	<u>10,350</u>	<u>1614</u>	<u>Surf. / Circ.</u>
Planned <input type="checkbox"/> or Existing <input type="checkbox"/> OH/PERF		<u>9640-10047</u>		<u>457</u>	
Injection Lithostratigraphic Units:		Depths (ft)	Injection or Confining Units	Jobs	Completion/Operation Details:
Adjacent Unit: Litho. Struc. Por.			<u>9640-9647</u>	<u>9470</u>	Drilled TD <u>10350</u> PBDT <u>10259</u>
Confining Unit: Litho. Struc. Por.			<u>10047-10047</u>	<u>11011</u>	NEW TD _____ NEW PBDT _____
Proposed Inj Interval TOP:	<u>9640</u>		<u>Wolfcamp</u>	<u>9470</u>	NEW Open Hole <input type="checkbox"/> or NEW Perfs <input checked="" type="checkbox"/>
Proposed Inj Interval BOTTOM:	<u>10047</u>		<u>Cl. Sec</u>	<u>10111</u>	Tubing Size <u>3 1/2</u> in. Inter Coated? <u>Y</u>
Confining Unit: Litho. Struc. Por.		<u>9640-9647</u>			Proposed Packer Depth <u>9540</u> ft
Adjacent Unit: Litho. Struc. Por.					Min. Packer Depth <u>9540</u> (100-ft limit)
					Proposed Max. Surface Press. <u>1928</u> psi
					Admin. Inj. Press. <u>1928</u> (0.2 psi per ft)

#### AOR: Hydrologic and Geologic Information

POTASH: R-111-P \_\_\_\_\_ Noticed? \_\_\_\_\_ BLM Sec Ord ☐ WIPP ☐ Noticed? \_\_\_\_\_ Salt/Salado T: \_\_\_\_\_ B: \_\_\_\_\_ NW: Cliff House fm \_\_\_\_\_

FRESH WATER: Aquifer 300 Max Depth \_\_\_\_\_ HYDRO AFFIRM STATEMENT By Qualified Person ☒

NMOSE Basin: Lea CAPITAN REEF: thru ☐ adj ☒ NAO ☐ No. Wells within 1-Mile Radius? \_\_\_\_\_ FW Analysis ☒

Disposal Fluid: Formation Source(s) Yes, SAN Andromeda Analysis? \_\_\_\_\_ On Lease ☐ Operator Onl ☐ Commercial ☒

Disposal Int: Inject Rate (Avg/Max BWPD): 5,000 / 20,000 BWPD Protectable Waters? N/A Source: Yes System: Closed ☒ or Open ☐

HC Potential: Producing Interval? MA Formerly Producing? \_\_\_\_\_ Method: Logs/DST/P&A/Other None 2-Mile Radius Pool Map ☒

AOR Wells: 1/2-M Radius Ma 75 Well List? Y Total No. Wells Penetrating Interval: 3 Horizontals? N

Penetrating Wells: No. Active Wells 3 Num Repairs? \_\_\_\_\_ on which well(s)? \_\_\_\_\_ Diagrams? Y

Penetrating Wells: No. P&A Wells 0 Num Repairs? \_\_\_\_\_ on which well(s)? \_\_\_\_\_ Diagrams? \_\_\_\_\_

NOTICE: Newspaper Date 10-10-2014 Mineral Owner BLM Surface Owner BLM N. Date 10/10/2014

RULE 26.7(A): Identified Tracts? \_\_\_\_\_ Affected Persons: MAK ENERGY N. Date 10/14/2014

Order Conditions: Issues: documented water analysis, X-section thru cove

Add Order Cond: After drawing submit mud log, CBL 5 1/8" / 7"

**McMillan, Michael, EMNRD**

---

**From:** Swartz, Paul <pswartz@blm.gov>  
**Sent:** Monday, January 05, 2015 6:25 PM  
**To:** Kanicia Castillo  
**Subject:** Re: Maljamar 30 SWD 2 Procedure  
**Attachments:** 2015.MM.DD NOI StepRateTest (Oper Information) - COA Draft.docx

Kanicia,

Had a chance to look at the COG recent procedure to complete the Malajamar SWD 30 - 02 API 3002540310.

There are several concerns.

COG needs to confirm that an Administrative Order for the 9640-10097 interval has been approved by the NMOCD. The Order of 06/01/2011, SWD-1286, for the interval 9500-9700 has expired.

The acid stimulation pressure will be limited to a valid NMOCD approved Administrative Order. See the attached generic copy of conditions of approval for a step rate test and modify COG's completion procedure to comply with those COA's. The "Notes:" on Page 2 of 2 support this pressure limitation. The WIS submission #285657 will not be approved as submitted.

BLM's objection to use of the wellbore for water disposal has been modified to the following:

"This well has a New Mexico Oil Conservation Division Form C108 Application for Authorization to Inject dated 10/07/2014. The well seems to be structurally sound for conversion purposes. A review of wells that penetrate the injection zone within a half mile raised concern for the Carper - 01 API 3002520425. It has a MTD of 9220 in the Abo formation just above proposed Wolfcamp disposal. The well's P&A procedure was not adequate. It was only plugged from 4030' with 75sx pumped below a CICR 4030. The potential of a vertical pathway for disposal waters to untargeted formations is present because of the unverified barriers between formations. December 11, 2014 COG flew in from Houston with a presentation that lowered the concerns for this WDW. The geology shows a reasonable barrier between the formations. At this time BLM does not oppose this well's use as a produced water disposal well."

pswartz

575-200-7902

On Mon, Dec 29, 2014 at 9:08 AM, Swartz, Paul <pswartz@blm.gov> wrote:  
Thanks, Kanicia

## McMillan, Michael, EMNRD

**From:** Kanicia Castillo <kcastillo@concho.com>  
**Sent:** Tuesday, February 17, 2015 8:31 AM  
**To:** McMillan, Michael, EMNRD  
**Subject:** FW: FedEx Shipment 771445106591 Delivered - Maljamar 30 #2

Michael,

Here is the FedEx confirmation. On the letter to Phillip there is a CC at the bottom for the BLM. I mailed the applications all on the same day.

*Kanicia Castillo*

**Lead Regulatory Analyst**  
**COG OPERATING LLC**

One Concho Center  
600 W. Illinois Avenue  
Midland, TX 79701  
P.432.685.4332  
F.432.221.0858



**From:** [trackingupdates@fedex.com](mailto:trackingupdates@fedex.com) [<mailto:trackingupdates@fedex.com>]  
**Sent:** Friday, October 10, 2014 11:55 AM  
**To:** Kanicia Castillo  
**Subject:** FedEx Shipment 771445106591 Delivered

[fedex.com](http://fedex.com) | [Ship](#) | [Track](#) | [Manage](#) | [Learn](#) | [Office/Print Services](#)

## Your package has been delivered

Tracking # 771445106591

Ship (P/U) date:  
Thursday, 10/9/14

K. Castillo  
Concho  
Midland, TX 79701  
US

Delivery date:  
Friday, 10/10/14 10:50  
AM

Paul Swartz  
Bureau of Land Management  
620 E GREENE ST  
CARLSBAD, NM 88220  
US

Delivered

### Shipment Facts

Our records indicate that the following package has been delivered.

**Tracking number:** 771445106591

**Status:** Delivered: 10/10/2014 10:50  
AM Signed for By: M.YOUNG

**Signed for by:** M.YOUNG

**Delivery location:** CARLSBAD, NM

**Delivered to:** Receptionist/Front Desk

**Service type:** FedEx Priority Overnight

**Packaging type:** FedEx Envelope

**Number of pieces:** 1

**Weight:** 0.50 lb.

**Special handling/Services:** Deliver Weekday

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