

1/26/07 DATE IN	2/10/07 SUSPENSE	W. JONES ENGINEER	1/26/07 LOGGED IN	SWD TYPE	APP NO. PTD50702637329
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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]

- [1] **TYPE OF APPLICATION** - Check Those Which Apply for [A]
- [A] Location - Spacing Unit - Simultaneous Dedication
☐ 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.

Print or Type Name

Signature

Title

Date

e-mail Address



2007 JAN 26 AM 9 36

Andrew J. McCalmont
Asset Manager – Permian Basin

January 25, 2007

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

Attn: David Catanach

Re: Application for Authorization to Inject
Lotos 11 Federal 2
Sec 11-T24S-R31E
Eddy County, NM

Mr. Catanach,

Please find enclosed for your review Chesapeake's application to convert the referenced well to SWD. As required, we have notified offset leasehold owners and the surface owner and put same in the Carlsbad Current-Argus newspaper. Enclosed are all the required supporting documentation necessary for this application as well as proof of notice and publication.

I have examined all the available data in the surrounding area including geologic, hydrologic, and engineering data and I find no evidence that there can be any connection between any underground fresh water and the proposed injection zone.

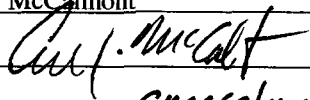
Chesapeake Energy respectfully requests that you grant administrative approval of this application as soon as possible so that we may commence the conversion of this well. Should you have any questions or concerns please don't hesitate to call me at (405) 879-7852.

Yours truly,

A handwritten signature in black ink, appearing to read "Andrew J. McCalmont".

Andrew J. McCalmont

APPLICATION FOR AUTHORIZATION TO INJECT

- I. PURPOSE: _____ Secondary Recovery _____ Pressure Maintenance _____ ☒ Disposal _____ Storage
Application qualifies for administrative approval? _____ ☒ Yes _____ No
- II. OPERATOR: Chesapeake Energy
ADDRESS: PO Box 18496 Oklahoma City, OK 73154-0496
CONTACT PARTY: Andrew McCalmont PHONE: 405-879-7852
- 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 _____ ☒ 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: Andrew McCalmont TITLE: Asset Manager
SIGNATURE:  DATE: 11/10/06
E-MAIL ADDRESS: amccalmont@chlkenergy.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: _____

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.

III. Well Data

A.

1. Lotos 11 Federal No. 2
Section 11-T24S-R31E
1780' FNL - 660' FEL
2. Surface casing - 11-3/4" 42# set at 412'. Cement with 400 sxs, circ 154 sx to surface.

Intermediate casing - 8-5/8" 23# set at 4425'. Cement with 1200 sxs, circ 80 sx to surface.

Production casing - 5-1/2" 15.5/17# set at 8621'. Cement with 840 sx, top of cement 5520' by CBL.
Perforated 4 sqz holes at 5400, cement with 450 sx. TOC calc at 1200'.
3. Injection tubing to be used will be 6.5# 2-7/8" poly-lined tubing. Setting depth is above injection interval at ~ 4500'.
4. Injection packer to be used is an Arrow Set 1 packer set at ~ 4500'.

B.

1. The injection formation is the Bell and Cherry Canyon sand members of the Delaware Mountain Group.
2. The injection interval will be 4570 - 5632' (OA).
3. This well was originally drilled in 1996 to test the Brushy Canyon formation. The well is TA'ed as it is no longer commercial in this interval.
4. The Brushy Canyon is perforated 8026 - 8298' (OA). A CIBP is set at 7980'. 35' of cement is on top of this CIBP.
The Brushy Canyon is also perforated 6886 - 7099' (OA). A CIBP is set at 6836'. 35' of cement is on top of this CIBP.
5. There are no known oil or gas zones above the proposed injection interval within the area of review.

The nearest deeper producing zone within the area of review is in the Chesapeake operated Todd 2 State #3. Its top perforation is at 7220'.

The Chesapeake operated Littlefield Federal #1 is a SWD well injecting into perforations 4580 - 4654' and open hole 4656 - 6500'.

VII. Data on Proposed Operation

1. Anticipated average daily injection rate into the Lotos 11 Fed 2 SWD is 1500 BWIPD, with maximum daily rate expected at 2500 BWIPD.
2. The system will be a closed system.
3. The maximum injection pressure will be 914 psig (current maximum allowed injection pressure). Expected average injection pressure will be 850 psig.
4. The injected fluid will be Delaware produced water, which will be re-injected into the Delaware. Therefore, the formation fluid and injected fluid will be compatible.
5. The proposed disposal zone is not productive of oil or gas within 1 mile of the Lotos 11 Fed 2. A Delaware (Bell Canyon) water analysis is attached from Chesapeake's Lotos "C" Federal No. 901. This water analysis was obtained during an unsuccessful Bell Canyon recompletion in 1996.

VIII. Geological Data

The top of the Delaware is at 4420' in the Lotos 11 Fed 2. The Delaware is a sequence of sand and shales that is approximately 3800' thick in this area. These numerous sands are generally porous, permeable, and water bearing. Immediately above the Delaware is a massive anhydrite and salt section from approximately 1100 - 4420'. The only fresh water in the area is above 320'. The nearest fresh water well is located in Unit letter F, Sec 2-24S-31E which is Chesapeake's Todd 2 State lease. A water analysis of this well is attached.

IX. Proposed Stimulation

This well will be completed by perforating the Bell and Cherry Canyon then acidized with 15% HCL and rock salt for diversion.

- X. An openhole log is on file with the OCD.
- XI. A water analysis is attached for Chesapeake's fresh water well in Unit Letter F, Sec 2-24S-31E. A search of this area reveals that there are no other fresh water wells located within 1 mile of the Lotos 11 Fed 2.
- XII. The available geologic and engineering data has been reviewed and there is no evidence of open faults or any other hydrologic connection between the disposal zone and any underground source of drinking water.

PROPOSED WELLBORE SCHEMATIC

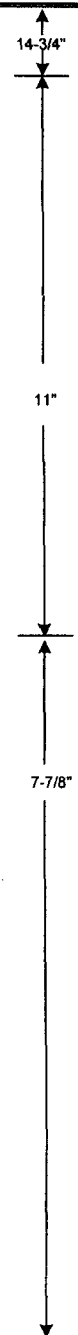
CHESAPEAKE OPERATING INC.

WELL : LOTOS 11 FEDERAL #2 SWD Conversion
 LOCATION : 1780' FNL & 660' FEL, SEC. 11-T24S-31E
 COUNTY : EDDY STATE : NM
 FIELD : POKER LAKE, DELAWARE
 ELEVATION : 3,518' GL 3,536' KB



API #: 30-015-28821
 SPUD DATE: 3/24/96
 COMPL. DATE: 5/12/96
 CHK#: 890471

Hole Size



11-3/4" 42# wc-40 Surf Csg. @ 412'
 Cmt'd w/ 400sx Class "C" + 4% gel + 2% CaCl₂. Circ 154sx to surface.

TOC @ 1200' (Calc)

Tubing Detail:
 2-7/8" Poly Lined Injection Tubing
 Arrowset Packer @ 4500'

8-5/8" 23# M-50 Inter Csg. @ 4,425'
 Cmt'd w/ 1200 sx 35:85:6 POZ "C" + 6% gel + 15% salt + 1/4 ppg Cello flakes + 200 sx Class "H" + 2% CaCl₂.
 Circ. 80 sx to surface.

Bell Canyon Perfs @ 4570' - 5270' (OA)

Cherry Canyon Perfs @ 5422' - 5632' (OA)

CIBP @ 6836' w/ 35' cmt cap

Bushy Canyon Delaware @ 6886 - 6900'

Bushy Canyon Delaware @ 7,026-7040'; 7088' (1 shot); 7099' (1 shot)

CIBP @ 7980' w/ 35' cmt cap

Bushy Canyon Delaware @ 8,026-298'

5-1/2" 15.5, 17# K-55 LTC Prod Csg. @ 8,621'

TD @ 8,621'
 PBTD 6801'
 Cmt 1st Stage w/ 340 sx "C"
 2nd Stage cmt w/ 500 sx 50:50 POZ "H" w/ 2% gel + 5% salt + .15% D59 FLA

Well History:

4/26/96: Perf Bushy Canyon Delaware @ 8026', 69', 70' w/ 1 jsfp, 8136' - 61' w/ 2 jsfp & 8220', 97', 98' w/ 1 jsfp. Acdz w/ 500 gal 7 1/2 NeFe. Frac w/ 58,000 gal & 212,000# 16/30 Ottawa sd. PWOP.

7/3/96: Perf Bushy Canyon Delaware @ 6886'-6900 w/ 1 jsfp, 7026' - 7040' w/ 1 jsfp, 7088' w/ 1 shot & 7099' w/ 1 shot. (18 holes). Acdz w/ 1500 gal 7 1/2 NeFe. PWOP.

12/16/97: Flow up annulus. Set CIBP @ 5600' w/ 10' cmt cap. Perf sqz holes @ 5400' w/ 4 jsfp. Set CR @ 5291'. Sqz perfs @ 5400' w/ 350 sx 35/65 Poz C w/ 6% gel, 5% salt, 1/4# Flocele mixed at 12.7 ppg, 1.84 fl3/sx. Tail w/ 100 sx Class C neat mixed at 14.8 ppg, 1.35 fl3/sx. Max sqz psi - 1500# at 1/4 bpm. Left 1.5 bbbls slurry in csg, 137.5 bbbls behind 5-1/2" csg. Tag cmt @ 5300'. Drid CR. Drid cmt & CIBP to 5615'.

5/23/06: Set CIBP @ 7980' w/ 35' cmt cap. Set CIBP @ 6836' w/ 35' cmt cap. MIT - held OK. TA well.

Proposed inf zones

PREPARED BY: Paul M. Rico

DATE: 4/24/06

UPDATED BY: AJM / Lorie Higginbotham

DATE: 11/7/06

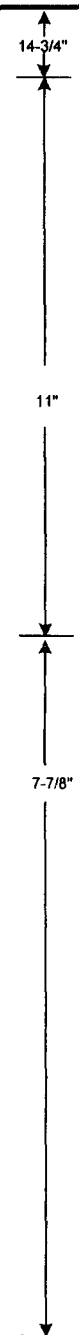
CURRENT WELLBORE SCHEMATIC CHESAPEAKE OPERATING INC.

WELL : LOTOS 11 FEDERAL #2
LOCATION : 1780' FNL & 660' FEL, SEC. 11-T24S-31E
COUNTY : EDDY STATE : NM
FIELD : POKER LAKE, DELAWARE
ELEVATION : 3,518' GL 3,536' KB



API #: 30-015-28821
SPUD DATE: 3/24/96
COMPL. DATE: 5/12/96
CHK#: 890471

Hole Size



11-3/4" 42# WC-40 Surf Csg. @ 412'
Cmt'd w/ 400sx Class "C" + 4% gel + 2% CaCl₂. Circ 154sx to surface.

TOC @ 1200' (Calc)

8-5/8" 23# M-50 Inter Csg. @ 4,425'
Cmt'd w/ 1200 sx 35:65:6 POZ "C" + 6% gel + 15% salt + 1/4 ppg Cello flakes + 200 sx Class "H" + 2% CaCl₂. Circ. 80 sx to surface.

Sqz holes @ 5400' (4 jsp)

Bushy Canyon Delaware @ 6886 - 6900'
Bushy Canyon Delaware @ 7,026-7040'; 7088' (1 shot); 7099' (1 shot)

Bushy Canyon Delaware @ 8,026-298'

5-1/2" 15.5, 17# K-55 LTC Prod Csg. @ 8,621'
TD @ 8,621'
PBTD @ 6801'
Cmt 1st Stage w/ 340 sx "C"
2nd Stage cmt w/ 500 sx 50:50 POZ "H" w/ 2% gel + 5% salt + .15% D59 FLA

Well History:

4/26/96: Perf Bushy Canyon Delaware @ 8026', 89', 70' w/ 1 jsp, 8136' - 61' w/ 2 jsp & 8220', 97', 98' w/ 1 jsp. Acdz w/ 500 gal 7 1/2 NeFe. Frac w/ 58,000 gal & 212,000# 16/30 Ottawa sd.

7/3/96: Perf Bushy Canyon Delaware @ 6886'-6900' w/ 1 jsp, 7026' - 7040' w/ 1 jsp, 7088' w/ 1 shot & 7099' w/ 1 shot. (18 holes). Acdz w/ 1500 gal 7 1/2 NeFe.

12/16/97: Set CIBP @ 5600' w/ 10' cmt cap. Perf sqz holes @ 5400' w/ 4 jsp. Set CR @ 5291'. Sqz perms @ 5400' w/ 350 sx 35/65 Poz C w/ 6% gel, 5% salt, 1/4# Floccle mixed at 12.7 ppg, 1.84 ft³/sx FB 100 sx Class C neat mixed at 14.8 ppg, 1.35 ft³/sx. Max sqz psi - 1500# at 1/4 bpm. Left 1.5 bbls slurry in csg, 137.5 bbls behind 5-1/2" csg. Drid CR & CIBP. PWOP.

5/23/06: Set CIBP @ 7980' w/ 35' cmt cap. Set CIBP @ 6836' w/ 35' cmt cap. MIT well - held OK. TA well.

PREPARED BY: Paul M. Rico

DATE: 4/24/06

UPDATED BY: AJM / Lorie Higginbotham

DATE: 11/3/06

P.O. BOX 98
MIDLAND, TX. 79702
PHONE (432) 683-4521

Martin Water Laboratories, Inc.

709 W. INDIANA
MIDLAND, TEXAS 79701
FAX (432) 682-8819

RESULT OF WATER ANALYSES

TO: Mr. Rip Clary
PO Box 190, Hobbs, NM 88241

LABORATORY NO. 1106-146
SAMPLE RECEIVED 11-16-06
RESULTS REPORTED 11-20-06

COMPANY Chesapeake LEASE Todd 2 State NW/NE 11-245-31E

FIELD OR POOL _____
SECTION _____ BLOCK _____ SURVEY _____ COUNTY _____ STATE _____

SOURCE OF SAMPLE AND DATE TAKEN:

NO. 1 Submitted water sample - taken from fresh water well on 11-16-06.

NO. 2

NO. 3

NO. 4

REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES

	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.0010			
pH When Sampled				
pH When Received	7.71			
Bicarbonate as HCO ₃	239			
Supersaturation as CaCO ₃				
Undersaturation as CaCO ₃				
Total Hardness as CaCO ₃	320			
Calcium as Ca	66			
Magnesium as Mg	38			
Sodium and/or Potassium	44			
Sulfate as SO ₄	172			
Chloride as Cl	28			
Iron as Fe	0.2			
Barium as Ba	0			
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	587			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen,				
Hydrogen Sulfide	0.0			
Resistivity, ohm-in at 77° F.	0.000			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				

Results Reported As Milligrams Per Liter

Additional Determinations And Remarks

The undersigned certifies the above to be true and correct to the best of

Well File

P O BOX 1468
MIDLAND, TEXAS 79756
PH 343 3234 OR 563 1040

Martin Water Laboratories, Inc.

201 W. INDIANA
MIDLAND, TEXAS 79701
PHONE 681-1111

RESULT OF WATER ANALYSES

TO: Mr. Tom Myers
110 W. Louisiana, Ste 500, Midland, TX 79701

LABORATORY NO. 596215
SAMPLE RECEIVED 5-17-96
RESULTS REPORTED 5-29-96

COMPANY Sonat Exploration LEASE Lotos "C"
FIELD OR POOL Poker Lake
SECTION BLOCK SURVEY COUNTY Eddy STATE NM
SOURCE OF SAMPLE AND DATE TAKEN: unsuccessful

NO. 1 Produced water - taken from Lotos "C" #901.

NO. 2

NO. 3

NO. 4

Bell Canyon Recompletion
From Perfs - 4832'-5064' (Bell Canyon)

REMARKS:

CHEMICAL AND PHYSICAL PROPERTIES				
	NO. 1	NO. 2	NO. 3	NO. 4
Specific Gravity at 60° F.	1.1052			
pH When Sampled				
pH When Received	6.40			
Bicarbonate as HCO ₃	85			
Supersaturation as CaCO ₃				
Undersaturation as CaCO ₃				
Total Hardness as CaCO ₃	35,500			
Calcium as Ca	10,100			
Magnesium as Mg	2,491			
Sodium and/or Potassium	48,105			
Sulfate as SO ₄	0			
Chloride as Cl	99,427			
Iron as Fe	106			
Barium as Ba	256			
Turbidity, Electric				
Color as Pt				
Total Solids, Calculated	160,464			
Temperature °F.				
Carbon Dioxide, Calculated				
Dissolved Oxygen				
Hydrogen Sulfide	0.0			
Resistivity, ohm/cm at 77° F.	0.066			
Suspended Oil				
Filtrable Solids as mg/l				
Volume Filtered, ml				

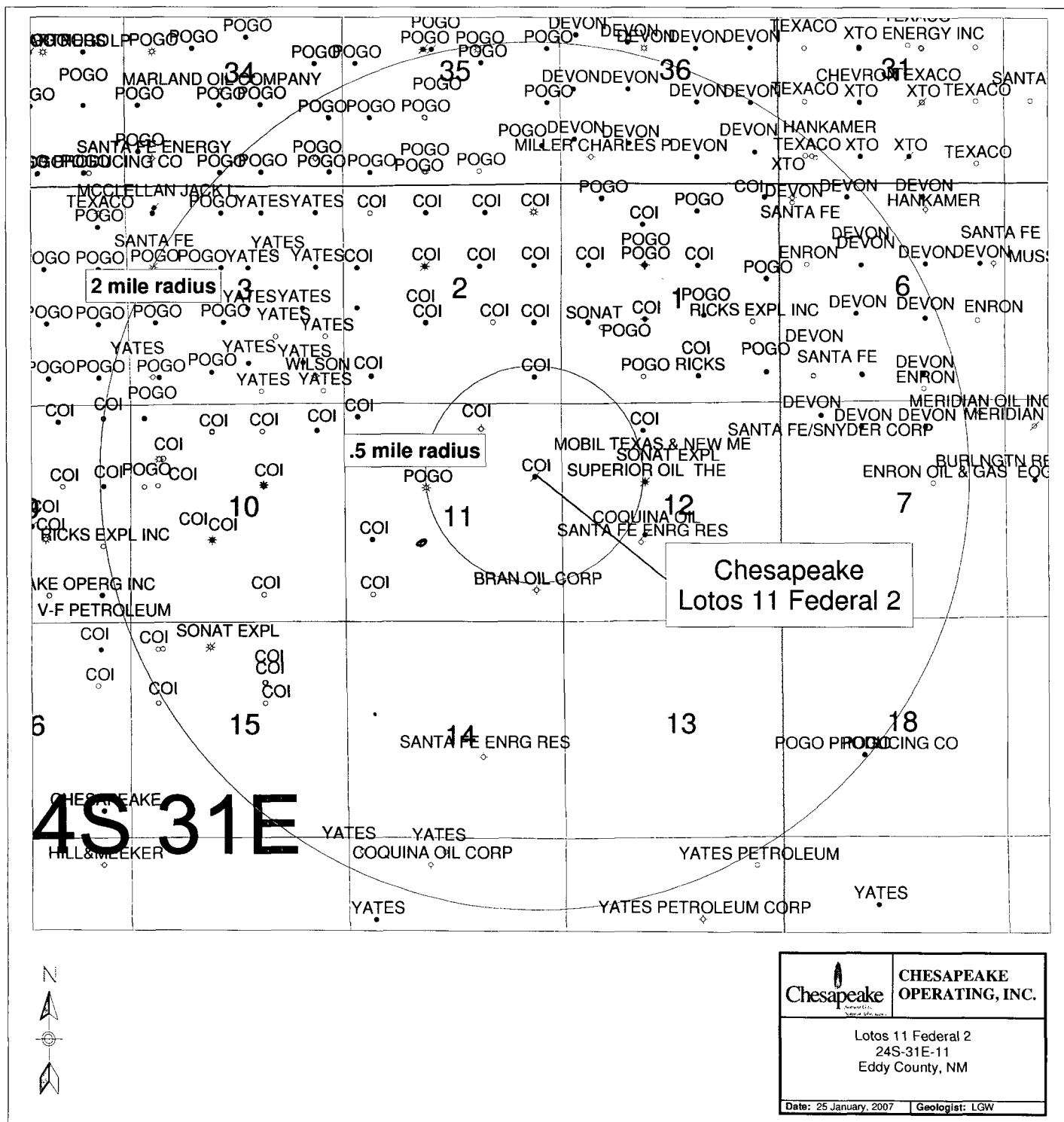
Results Reported As Milligrams Per Liter

Additional Determinations And Remarks When we compare the above with our records in this field, we find it has characteristics reasonably similar to what we would expect from a natural Delaware except it has no sulfate and has a significant amount of barium, which is contrary to our records. However, different Delaware intervals occasionally have slight differences in regard to these two components. We also find the water has ratios of salts that are very similar to Morrow water, but this water shows significantly higher levels of salts. If this is a Morrow producer, then it would be possible that it is receiving some water from the Delaware in conjunction with some water from the Morrow.

By 
Waylan C. Martin, M.A.

OFFSET

WELLS



[illegible]

480

VI. Tabulation of Data on All Wells Within Area of Review

1. Todd 2 State No. 3
Chesapeake Operating
Sec 2-24S-31E, 660' FSL - 660' FEL

Drilled May, 1996

Casing Record:

Surface - 11-3/4" @ 432'. Cement with 400 sxs. Circ 153 sacks.
Intermediate - 8-5/8" @ 4350'. Cement with 2386 sxs, circ 90 sxs.
Production - 5-1/2" @ 8511'. Cement with 1460 sxs in 2 stages. TOC @ 3566'.

DV = above

Completion Record:

Perf 8112 - 36'. Az and sand frac.
Perf 7346 - 60'. Az and sand frac.

Well is currently on rod pump.

2. SDS 11 Federal #1
Pogo Energy
Sec 11-24S-31E, 2090' FSL - 1980' FWL.

Drilled August, 1993

Casing Record:

Surface - 11-3/4" @ 418'. Cement with 685 sxs. Circ 99 sxs.
Intermediate - 8-5/8" @ 4450'. Cement with 1753 sxs. Circ 296 sxs.
Production - 5-1/2" @ 8440'. Cement with 974 sxs. TOC 3400 calc. ✓

Completion Record:

Perf 8218 - 54'. Az and frac. Set CIBP at 8200'.
Perf 4962'. Az and frac. Current SWD injection zone.

Well is now injecting down 2-7/8" poly-lined tubing with packer set at 4857'.

3. Soto A Federal 1 (P&A)
Primero Operating
Sec 12-24S-31E, 1980' FWL - 1980' FNL

Drilled September, 1980

Casing Record:

Surface - 20" @ 660'. Cement with 1450 sx. Circ 65 sx to surface.
Intermediate - 13-3/8" @ 4530' with 2700 sx. Circ 100 sx.
Production - 9-5/8" @ 12602' with 1430 sx.
Liner - 5" 14509 - 15618' with 255 sx.

P&A Record: P&A 12/11/2000. CIBP @ 13800', 11635', Cement plug 8861 - 65', Cement retainer @ 7288', CIBP @ 7100', Cement plugs 4304 - 4630', 2600 - 2700', 610 - 710', 0 - 50'.

4. Bran - Bettis Federal #1 (P&A)
Bran Oil Corp
Sec 11-24S-31E, 660' FSL - 660' FEL

Drilled December, 1986. P&A'ed January, 1987.

Casing Record:

Surface - 8-5/8" @ 410'. Cement with 250 sxs. Circ 12 sx.

P&A Record: P&A 1/9/87. Cement plugs 6600 - 6794', 3970 - 4570', 800 - 1100', 410 - 472', 0 - 472'.

5. Littlefield Federal #1 SWD
Chesapeake Operating
Sec 11-24S-31E, 600' FNL - 1980' FEL

Drilled February, 1964. Re-entered July, 1992.

Casing Record:

Surface - 8-5/8" @ 365'. Cement with 150 sxs. Circ 20 sxs.

Production - 4-1/2" @ 4656'. Cement with 750 sxs. Shoot sqz holes @ 2200' and 1000' and circ cement to surface.

Completion Record:

DO to OH TD 6500'. Az. Ran tbg and packer. Pkr set at 4500'.

Active SWD well. Injecting down lined 2-3/8" tubing into Bell and Cherry Canyon perms 4580 - 4654' (OA) and OH 4656' - 6500'.

CURRENT WELLBORE SCHEMATIC

CHESAPEAKE OPERATING INC.

WELL : TODD 2 STATE #3
LOCATION : 660' FSL & 660' FEL, SEC 2-T24S-R31E, Unit "P"
COUNTY : EDDY STATE : NM
FIELD : INGLE WELLS (DELAWARE)
ELEVATION : 3,501' GL 3520 KB



API #: 30-015-28906
SPUD DATE: 4/25/96
RELEASED RIG: 5/26/96
COMPL DATE: 6/11/96
CHK #: 890565

Hole Size

14-3/4"

11"

7-7/8"

11-3/4" 42# WC40 STC Surf Csg. @ 432'

Cmt: Lead w/200 sx Cl C w/4% gel, 2% CaCl₂ & 1/4 pps Flocele, 13.5 ppg & 1.74 yld.
Tail w/200 sx Cl C w/2% CaCl₂ & 1/4 pps Flocele, 14.8 ppg & 1.34 yld. Circ 153 sx to pit.

TOC @ 3,566'

8-5/8" 23 & 24# M50 & K55 STC Inter Csg. @ 4,350'

Cmt: Lead w/2,188 sx Poz C + 6% gel, 5% salt & 1/4 pps Flocele, 12.4 ppg & 2.14 yld.
Tail w/200 sx Cl H w/2% CaCl₂, 15.8 ppg & 1.2 yld. Circ 90 sx to pit.

DV Tool @ 6,491'

Delaware perms 7,220-246'

Mesa Verde perms 7,346-60' w/2 jspl (29 holes) w/4" guns.

basal Brushy Canyon perms @ 8,112-8,136' w/2 jspl (48 holes)

5-1/2" 15.5 & 17# J55 & K55 LTC Prod'n Csg @ 8,511'

Cmt: 1st Stage w/550 sx 50/50 Poz H w/2% gel, 5# salt, 0.15% D59 FLA, 1/4# Flocele, 14.2 ppg & 1.34 yld. Circ 75 sx
2nd Stage w/910 sx 50/50 Poz H w/2% gel, 5# salt, 0.15% D59 FLA, 1/4# Flocele, 14.2 ppg & 1.34 yld.

TD @ 8,511'
PBTD @ 8,460'

Well History

June, 1996 Perf Delaware bas Brushy Canyon 8,112-136' w/2 jspl (48 holes). Acdz w/1000 gal 7-1/2% NEFe. Frac w/77,500 gal x-link gel + 200,000# 16/30 Ottawa sd.

9/12/1996 Pmpg 105 BOPD 146 MCFGPD 102 BWPD.

Add Mesa Verde pvc.

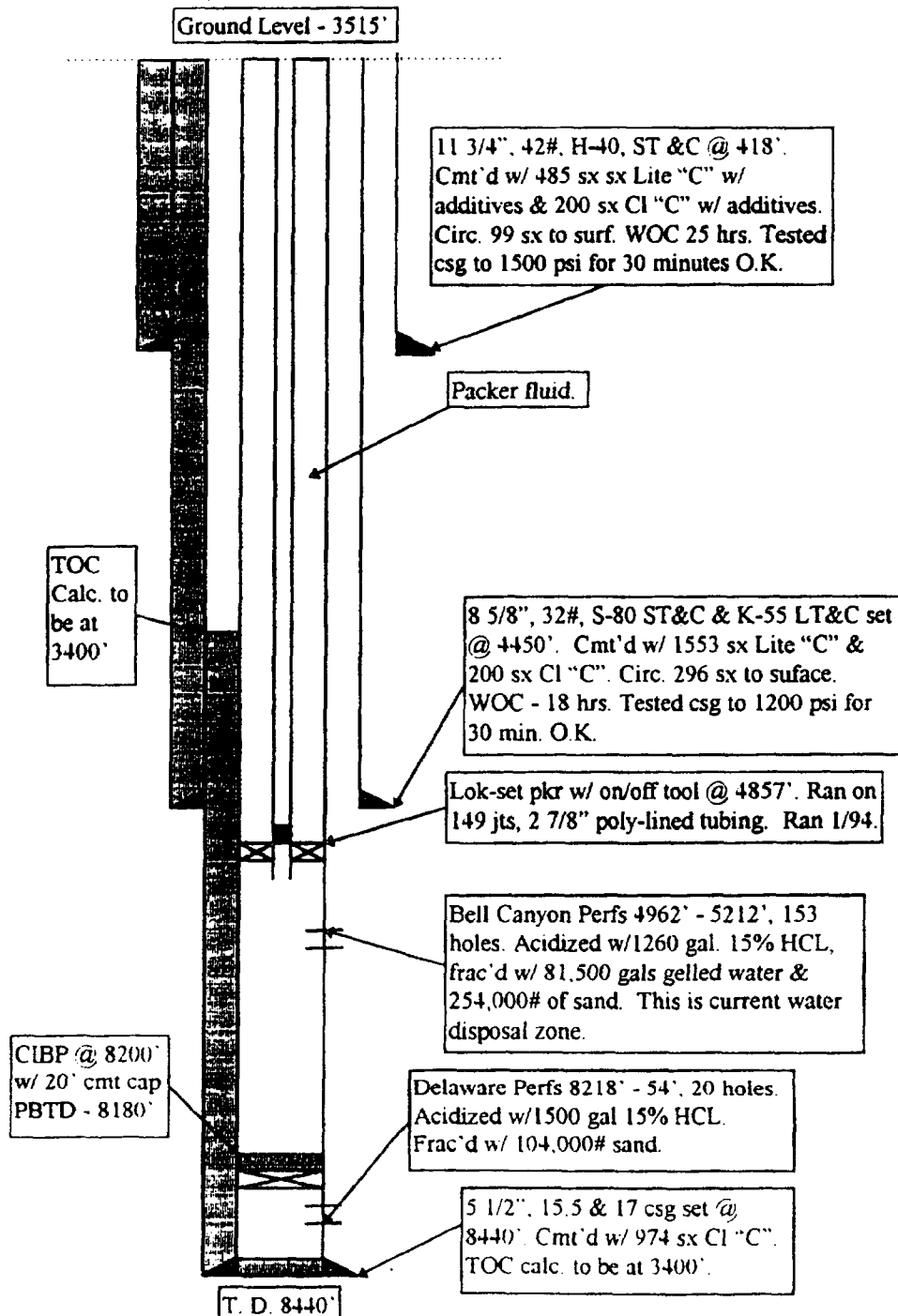
Feb. 1997 Perf Mesa Verde 7,346-60' w/2 jspl (29 holes) w/4" guns. Acdz w/800 gal 7-1/2% NEFe & 45 BS. Flush to btm w/2% KCl wr. Frac w/25,000 gal x-link fluid & 50,000# 16/30 RCS (0-5 ppg). Flush w/42 bbl slk wr.

PREPARED BY: Linda S. Fries
UPDATED BY:

DATE: 9/28/05
DATE:

SDS "11" FEDERAL #1 - 5000
 OPERATOR - MERIT ENERGY CORPORATION
 2090' FNL & 1980' FWL
 Section 11, Unit Letter "F"
 T24S - R31E
 Eddy County, New Mexico

Spud - 08/12/93
 Currently - SWDW rate 2000 bwpd



CURRENT WELLBORE SCHEMATIC

CHESAPEAKE OPERATING INC



WELL : Sotol A Federal #1

FIELD : Poker Lake

COUNTY : Eddy

STATE : NM

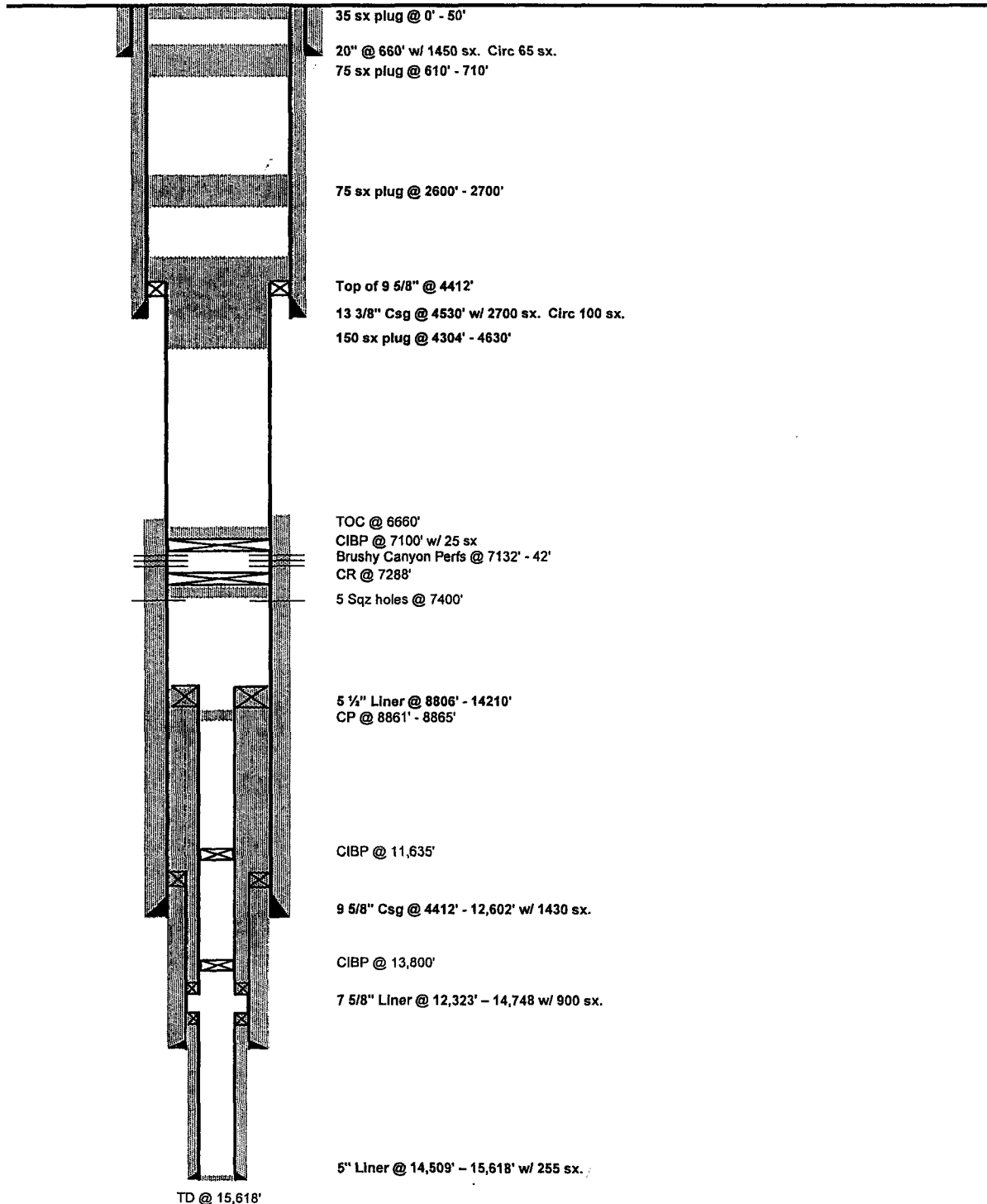
LOCATION : 1980' FNL & 1980' FWL Section 12, T24S-R31E

ELEVATION : GL 3526' RKB 3557.5'

API #: 30-015-23459

SPUD DATE: 9/29/80

COMPLETION DATE: 3/24/81



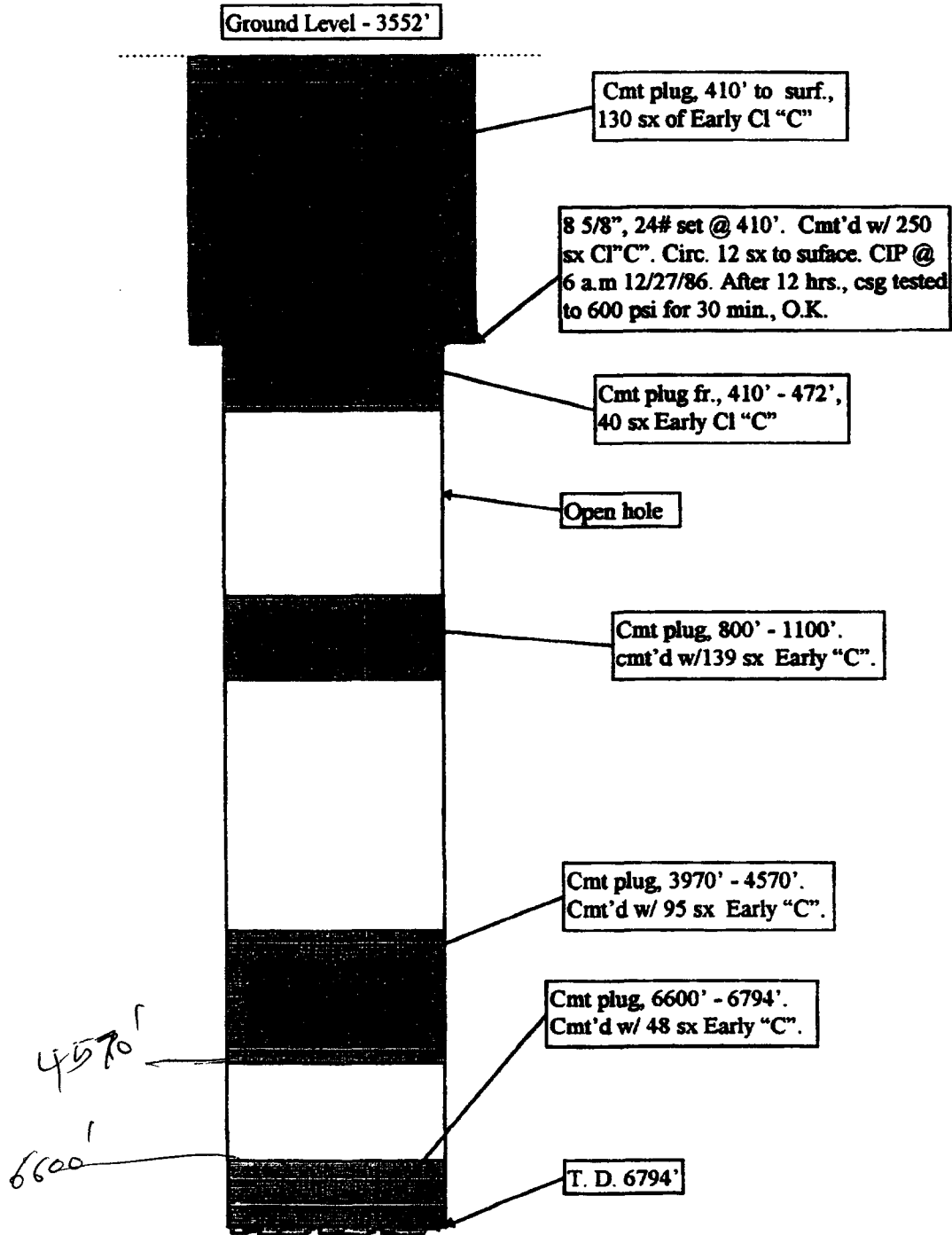
PREPARED BY : Lorie Higginbotham/AM

DATE 11/8/06 (AM)

Present

BRAN-BETTIS FEDERAL #1
OPERATOR - BRAN OIL CORPORATION
660' FSL & 660' FEL, Section 11
T24S - R31E, NMPH
Eddy County, New Mexico

Spud - 12/26/86
P&A'D 1/9/87



CURRENT WELLBORE SCHEMATIC

CHESAPEAKE OPERATING INC.

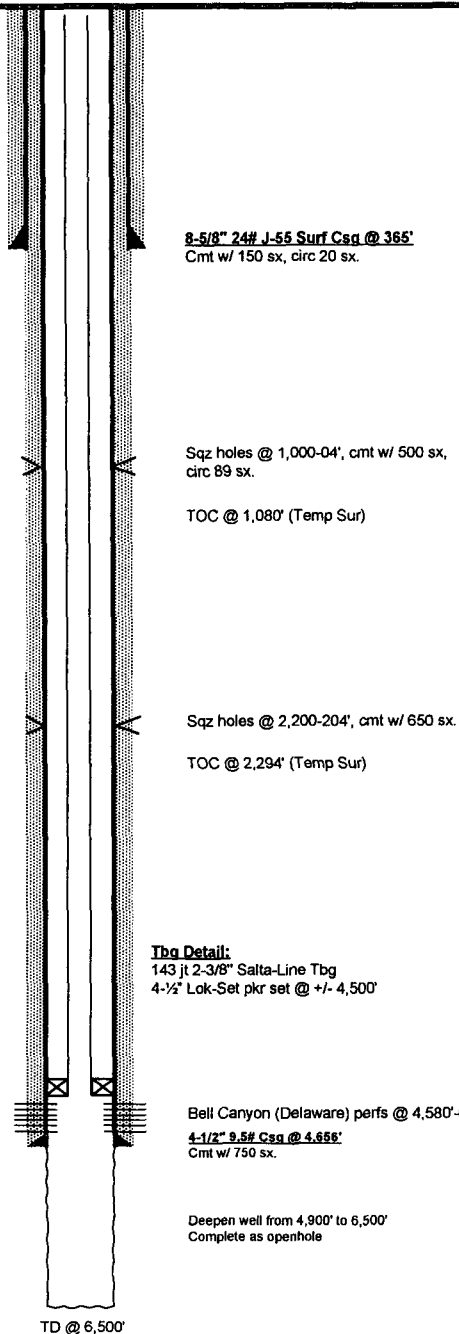


WELL : LITTLEFIELD FEDERAL #1 SWD
LOCATION : 600' FNL & 1980' FEL, SEC. 11-T24S-R31E
COUNTY : EDDY STATE : NM
FIELD : SAND DUNES
ELEVATION : 3,515' GL 3,525' KB

API #: 30-015-10259
SPUD DATE: 2/26/64
COMPL. DATE: 3/04/64
RE-ENTRY: 7/14/92
CHK #: 890467

Well History:

2/26/64: Spud
3/04/64: Completion, request permit to abandon.
7/14/92: Re-Entry, injection permit approved.
11/20/97: Deepening permit approved.
2/98: Deepened well, complete as openhole.



PREPARED BY: Renee Thomas

DATE: 10/31/05

UPDATED BY: _____

DATE: _____

December 06, 2006

Chesapeake Operating, Inc. has applied to convert the Lotos "11" Federal, Well #2 into a salt water disposal well. The well is located 1780' FNL and 660' FEL of Section 11, T24S, R31E, Eddy County, New Mexico. The proposed injection interval will be the Bell and Cherry Canyon sand at a depth of 4570' - 5632'. Maximum expected injected volume is 1500 BWIPD with a maximum daily rate expected at 2500 BWIPD. The maximum injection pressure will be 914 psig with an expected average injection pressure of 850 psig. 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 of this notice. Questions should be directed to Andrew McCalmont, C/O Chesapeake Operating, Inc., P.O. Box 18496, Oklahoma City, OK 73154-0496



RECEIPT NOTIFICATION

OFFSET OPERATORS

Marbob Energy Corporation
PO Box 227
Artesia, NM 88211

Receipt # 7005 1820 0004 5231 5681

Pogo Producing Company
PO Box 10340
Midland, TX 79702

Receipt # 7005 1820 0004 5231 5674

SURFACE OWNER

United States of America
c/o BLM
PO Box 1778
Carlsbad, NM 88220

Receipt # 7003 2260 0003 3596 9614

SURFACE LESSEE

Richardson Cattle Company
PO Box 487
Carlsbad, NM 88220

Receipt # 7005 1820 0004 5231 5698

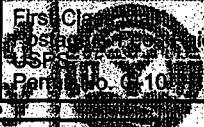
UNITED STATES POSTAL SERVICE

MIDLAND / ODESSA

TX 797

17 NOV 2006 PM 2 L

United Way

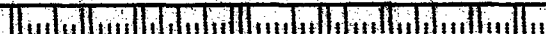


• Sender: Please print your name, address, and ZIP+4 in this box •

Chesapeake Operating, Inc.
P.O. Box 18496
Oklahoma City, OK 73154-0496

Attn: Justin Zerkle

73154+0496



UNITED STATES POSTAL SERVICE



First-Class Mail
Postage & Fees Paid
USPS
Permit No. G-10

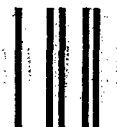
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Oklahoma City, OK 73154-0496

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USPS
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• Sender: Please print your name, address, and ZIP+4 in this box •

Chesapeake Operating, Inc.
P.O. Box 18496
Oklahoma City, OK 73154-0496

Attn: Justin Zerkle

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:

Marbob Energy Corporation
P.O. Box 227
Artesia, NM 88211-0227

Lotos 11 Federal 2

2. Article Number

(Transfer from service label)

7005 1820 0004 5231 5681

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☐ Agent☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

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

3. Service Type

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

4. Restricted Delivery? (Extra Fee)

☐ Yes

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.

Article Addressed to:

Richardson Cattle Company
P.O. Box 487
Carlsbad, NM 88220

Lotos 11 Federal 2

Article Number

(Transfer from service label)

7005 1820 0004 5231 5698

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☐ Agent☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

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

3. Service Type

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

4. Restricted Delivery? (Extra Fee)

☐ Yes

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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.

Article Addressed to:

Pogo Producing Company
P.O. Box 10340
Midland, TX 79702

Lotos 11 Federal 2

Article Number

(Transfer from service label)

7005 1820 0004 5231 5674

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-1540

COMPLETE THIS SECTION ON DELIVERY

A. Signature

X

☐ Agent☐ Addressee

B. Received by (Printed Name)

C. Date of Delivery

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

3. Service Type

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

4. Restricted Delivery? (Extra Fee)

☐ Yes

UNITED STATES POSTAL SERVICE



First-Class Mail.
Postage & Fees Paid
USPS
Permit No. G-10

• Sender: Please print your name, address, and ZIP+4 in this box •

Chesapeake Operating, Inc.
P.O. Box 18496
Oklahoma City, OK 73154-0496

Attn: Justin Zerkle

8007

**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:

Bureau of Land Management
Carlsbad Field Office
620 E. Greene St.
Carlsbad, NM 88220

Lotos 11 Federal 2 SWD

2. Article Number

(Transfer from service label)

COMPLETE THIS SECTION ON DELIVERY**A. Signature**

X

Betty Hill

☐ Agent

☐ Address

B. Received by (Printed Name)

BETTY HILL

C. Date of Delivery

1-16

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

3. Service Type

- ☐ Certified Mail ☐ Express Mail
☐ Registered ☐ Return Receipt for Merchandise
☐ Insured Mail ☐ C.O.D.

4. Restricted Delivery? (Extra Fee)

☐ Yes

7003 2260 0003 3596 9614

PS Form 3811, February 2004

Domestic Return Receipt

102595-02-M-10

11-248-31E
JTC. H-3E-11E

ESSELTE

NO. R753 1/3



Goal. Taps per / BGA

Rustler 824

T/Salado 1232

B/Salado 4292

Lamar 4520

Bell Canyon 4560

Cherry Canyon 5365

Brushy Canyon 6637

Bone Spring 8358

Injection Permit Checklist 12/7/06

SWD Order Number 1073 Dates: Division Approved _____ District Approved _____

Well Name/Num: LOTOS 11 FEDERAL #2 Date Spudded: 3/24/96

API Num: (30-) 015-28821 County: EDDY

Footages 1780 FNL/660 FEL Sec 11 Tsp 24S Rge 31E

Operator Name: CHESA PEAKE ~~OKLAHOMA~~ OKLAHOMA Contact ANDREW J. Mc CALMONT

Operator Address: PO BOX 18496 OKLAHOMA CITY, OK 73154-0496

Current Status of Well: _____ Planned Work: _____ Inj. Tubing Size: _____

	Hole/Pipe Sizes	Depths	Cement	Top/Method
Surface	14 3/4" 11 3/4"	412	400	CIRC
Intermediate	11" 8 5/8"	4425	1200	CIRC
Production	7 7/8" 5 1/2"	8621	840	5520' CBL
Last DV Tool			SQZ @ 5400' w/ 4500X New TOC 1200'	
Open Hole/Liner				
Plug Back Depth				

Diagrams Included (Y/N): Before Conversion ☒ After Conversion ☒

Checks (Y/N): Well File Reviewed ☒ ELogs in Imaging ☒

Intervals:	Depths	Formation	Producing (Yes/No)
(Salt/Potash)			
Capitan Reef	1100 - 4420'		
Cliff House, Etc.			
Formation Above	4420	Delom Top	
Top Inj Interval	4570	Bell Cong	NO
Bottom Inj Interval	5632	Cherry Cong	NO
Formation Below			

MIDDLE of Del. Basin
> 1 mile west of R-III P
914 PSI Max. WHIP
NO Open Hole (Y/N)
NO Deviated Hole (Y/N)

Fresh Water: Exists (Y/N) Yes Wells (Y/N) Yes Analysis Included (Y/N): ☒ Affirmative Statement ☒

Salt Water Analysis: Injection Zone (Y/N/NA) Yes DisPWaters (Y/N/NA) _____ Types: Delom reinjection

Notice: Newspaper (Y/N) Yes Surface Owner BKM Mineral Owner(s) _____

Other Affected Parties: Yates, POCO, Maribol

AOR/Repairs: NumActiveWells 3 Repairs? NO Producing in Injection Interval in AOR NO

AOR Num of P&A Wells 2 Repairs? NO Diagrams Included? Yes

Required Work to this Well: PLUG BACK TO 600' below inj. interval

Well Table Adequate (Y/N) _____ AOR STRs: Sec _____ Tsp _____ Rge _____ RBDMS Updated (Y/N) 2/9/07

New AOR Table Filename _____ Sec _____ Tsp _____ Rge _____ UIC Form Completed (Y/N) ☒

Conditions of Approval: Sec _____ Tsp _____ Rge _____ This Form completed 2/9/07

Data Request Sent _____

(See LITIFIED Federal #1 SWD well)

- 1) AOR wells are open FROM \approx 4,500' - 6,600'
- 2) Some AOR wells injected into THIS interval
- 3) Below 6600 is Fde