

ABOVE THIS LINE FOR DIVISION USE ONLY

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



~~MAN 12345~~

**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 \_\_\_\_\_

Goldenchild 6 State SWD\*  
30-015-41846

XTO Energy

PROPERTY OF XTO ENERGY

Devonial / New Drill

[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.

DeeAnn Kamp  
Print or Type Name

DeeAnn Kamp  
Signature

Regulatory Manager  
Title

12-3-13  
Date

DeeAnn-Kamp@xtoenergy.com  
e-mail Address

**APPLICATION FOR AUTHORIZATION TO INJECT**

- I. PURPOSE: \_\_\_\_\_ Secondary Recovery \_\_\_\_\_ Pressure Maintenance \_\_\_\_\_  Disposal \_\_\_\_\_ Storage  
Application qualifies for administrative approval? \_\_\_\_\_  Yes \_\_\_\_\_ No
- II. OPERATOR: XTO ENERGY, INC  
ADDRESS: 200 N. LORAIN ST STE 800 MIDLAND, TX 79701  
CONTACT PARTY: STEPHANIE RABADUE PHONE: 432-620-6714
- 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. Exhibit A
- 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. Exhibit B: No wells w/in 1/2 mile penetrate the inj/disp zone
- VII. Attach data on the proposed operation, including: Exhibit C
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. Exhibit C
- IX. Describe the proposed stimulation program, if any. Exhibit C
- \*X. Attach appropriate logging and test data on the well. (If well logs have been filed with the Division, they need not be resubmitted). Exhibit C
- \*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. Exhibit C
- 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. Exhibit C
- XIII. Applicants must complete the "Proof of Notice" section on the reverse side of this form. Exhibit D
- 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: STEPHANIE RABADUE TITLE: REGULATORY ANALYST  
SIGNATURE: *Stephanie Rabadue* DATE: 12/4/2013  
E-MAIL ADDRESS: STEPHANIE\_RABADUE@XTOENERGY.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: See Attached WBD & NMOCD Forms

- (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 Exhibit D

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

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

- (1) The name, address, phone number, and contact party for the applicant;
- (2) The intended purpose of the injection well; with the exact location of single wells or the Section, Township, and Range location of multiple wells;
- (3) The formation name and depth with expected maximum injection rates and pressures; and,
- (4) A notation that interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, New Mexico 87505, within 15 days.

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

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

# INJECTION WELL DATA SHEET

OPERATOR: XTO ENERGY, INC

WELL NAME & NUMBER: GOLDENCHILD 6 STATE SWD #1

WELL LOCATION:	<u>800 FSL &amp; 330 FEL</u>	<u>P</u>	<u>6</u>	<u>25S</u>	<u>29E</u>
	FOOTAGE LOCATION	UNIT LETTER	SECTION	TOWNSHIP	RANGE

**WELLBORE SCHEMATIC**

**WELL CONSTRUCTION DATA**

Surface Casing

SEE ATTACHED WBD FOR FULL DETAILS

Hole Size: 26 Casing Size: 20  
 Cemented with: 930 sx. *or* \_\_\_\_\_ ft<sup>3</sup>  
 Top of Cement: SURFACE Method Determined: CIRC

Intermediate Casing

Hole Size: 17-1/2 Casing Size: 13-3/8  
 Cemented with: 2630 sx. *or* \_\_\_\_\_ ft<sup>3</sup>  
 Top of Cement: SURFACE Method Determined: CIRC

Production Casing

Hole Size: 12-1/4 Casing Size: 9-5/8  
 Cemented with: 2350 sx. *or* \_\_\_\_\_ ft<sup>3</sup>  
 Top of Cement: SURFACE Method Determined: CBL  
 Total Depth: 16,500

Injection Interval

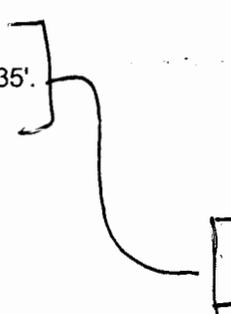
14,935 feet to 16,500

(Perforated or Open Hole; indicate which)

*4 1/2" 13.5# P-110*

A production liner will also be set in this well fr/ 10,630-14,935'.

See Attached WBD for Full Details



**INJECTION WELL DATA SHEET**

Tubing Size: 4" Lining Material: IPC

Type of Packer: 4" RATCH LATCH PERM PKR

Packer Setting Depth: 14,900

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

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: DEVONIAN

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

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: OVERLYING - MORROW; 12,909'

UNDERLYING: NONE KNOWN

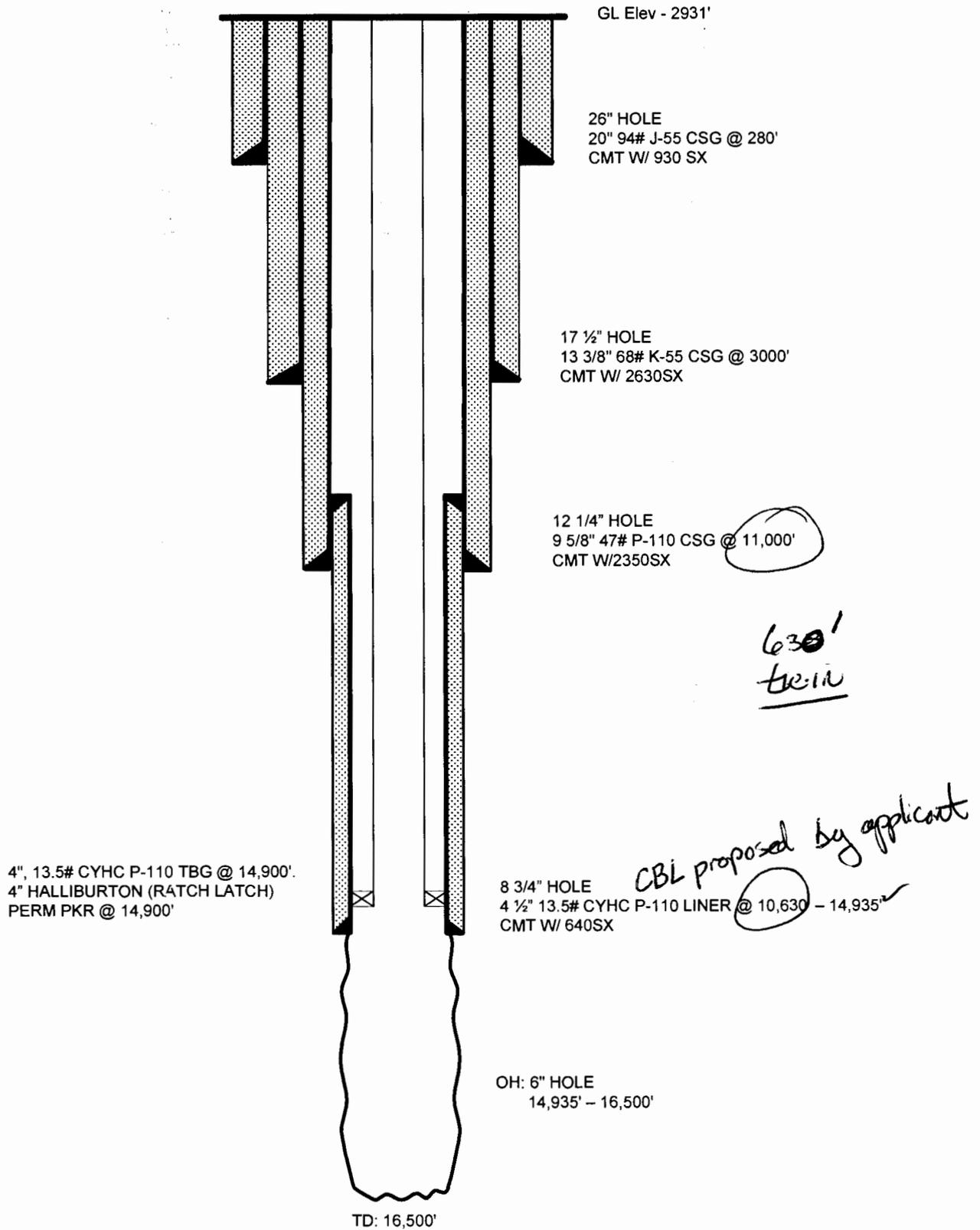
# GOLDENCHILD 6 STATE SWD #1

API #: UNKNOWN; APPLIED FOR

800' FSL, 330' FSL

UNIT P, SEC 6, T25S, R29E, EDDY COUNTY

SPUD: NOT DRILLED





**Exhibit B**

**Project Area:** Goldenchild 6 State SWD #1  
 1/2 Mile Radius Well Table

Well Name	Well #	API #	TD	TOC / Ver Method	Spud Date	Comp Date	Pool	Status	Operator	N/S	E/W	Unit	Sec	Township	Range
Goldenchild 6 State	1	30-015-38544	6550	TOC: 3090' / CBL	10/2/2011	2/14/2012	Willow Lake; Delaware	Active - Oil	XTO Energy Inc	2080 South	990 East	I	6	25S	29E
Goldenchild 6 State	2	30-015-41732	5400	N/A	N/A		Willow Lake; Delaware	Permitted Loc	XTO Energy Inc	990 South	2210 East	O	6	25S	29E
Rustler Bluff	1	30-015-34839	5200	TOC: 2337' / TS	11/14/2006	3/6/2007	Willow Lake; Delaware	Active - Oil	PPC Operating LLC	1980 South	1680 East	J	6	25S	29E
Showstopper 7 Federal Com	1H	30-015-36559	11,231	TOC: 680' / TS	6/24/2009	10/22/2009	Willow Lake; Bone Spring	Active - Oil	COG Operating LLC	330 North	480 East	A	7	25S	29E

**No Wells Within 1/2 Mile Penetrate the Injection/Disposal Zone**

AOR:  $\emptyset$  wells penetrate *[Signature]*

## **XTO Energy Inc.**

Goldenchild 6 State SWD #1

API #: Unknown/Pending

800 FSL & 330 FEL, Sec 6, T25S, R29E

Eddy County, New Mexico

Re: C-108 (Application for Authorization to Inject)

### **Exhibit C**

#### **VII. Data for Proposed Operation**

1. Proposed average & maximum daily rate & volume: 12,000 maximum, 5000 average
2. System is closed
3. Proposed Injection Pressure: 5000 maximum, 1500 average
4. This is a permit for a multi-lease SWD. The sources of disposal fluids will be reinjected produced water from the 2nd Bone Spring, the Brushy Canyon formation and the Willow Lake; Delaware pool.
5. Upon drilling the well, a chemical analysis of the disposal formation water will be provided.

#### **VII. Geologic Data**

1. Proposed zone is: Devonian.
2. Geologic formation is the Devonian. The lithologic detail is cherty fractured limestone and dolomite with a thickness of 1580' and depth of 14,920-16,500'.
3. The Rustler is a known source of fresh water throughout this area. The average depth to the Rustler is 200-400'. There are no known sources of fresh water below the proposed disposal zone.

#### **IX. Proposed Stimulation Program**

The OH will be stimulated with 5000 gals 15% HCL to clean up near wellbore damage. No further stimulation is planned.

#### **X. Well Test Information**

No well test information is available. Log will be provided to Division once well is drilled.

#### **XI. Chemical Analysis**

Not aware of fresh water wells within one mile of subject well.

#### **XII. Geological Statement**

XTO has examined all available geologic and engineering data in this area and finds no evidence of open faults or other hydrologic connections between the disposal zone and any potable aquifers.

#### **XII. Proof of Notice**

Proof of notice is on attached page.

#### **XIV. Surface Owner**

The land is the New Mexico State Land Office and has been notified via certified mail. See Exhibit F.

## Exhibit D

### Surface Owner:

New Mexico State Land Office  
310 Old Santa Fe Trail  
Santa Fe, NM 87501  
Certified Mail Receipt No: 7011 3500 0001 7373 8114

### Grazing Lessee:

Scott Branson  
P.O. Box 1502  
Carlsbad, NM 88221-1502  
Certified Mail Receipt No: 7011 3500 0001 7373 8107

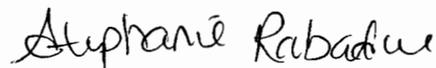
### Offset Operators within ½ mile radius (active wells):

1. XTO Energy Inc (OGRID: 005380)  
200 N. Loraine St, Ste 800  
Midland, TX 79701  
Applicant Operator
2. COG Operating LLC (OGRID: 229137)  
One Concho Center  
600 W. Illinois Ave  
Midland, TX 79701  
Certified Mail Receipt No: 7011 3500 0001 7373 8091
3. PPC Operating Company LLC (OGRID: 288774)  
4700 W. Sam Houston Pkwy N. Ste 140  
Houston, TX 77041  
Certified Mail Receipt No: 7011 3500 0001 7373 8084

### Mineral Ownership:

1. Fee Title – State of New Mexico  
310 Old Santa Fe Trail  
Santa Fe, NM 87501  
Certified Mail Receipt No: 7011 3500 0001 7373 8114
2. Record Title & Operating Rights– EOG Resources  
P.O. Box 2267  
Midland, TX 79702  
Certified Mail Receipt No: 7011 3500 0001 7373 8077

I, Stephanie Rabadue, do hereby certify that on December 4, 2013 the above and attached listed interest parties were mailed copies of the application to dispose of water in the Goldenchild 6 State SWD #1 well.

  
Stephanie Rabadue  
Regulatory Analyst

**Affidavit of Publication**

REC'D/MIDLAND

REC'D/MIDLAND

State of New Mexico,  
County of Eddy, ss.

DEC 02 2013

DEC 02 2013

**Kathy McCarroll**, being first duly sworn,  
on oath says:

That she is the Classified Supervisor of the Carlsbad Current-Argus, a newspaper published daily at the City of Carlsbad, in said county of Eddy, state of New Mexico and of general paid circulation in said county; that the same is a duly qualified newspaper under the laws of the State wherein legal notices and advertisements may be published; that the printed notice attached hereto was published in the regular and entire edition of said newspaper and not in supplement thereof on the date as follows, to wit:

November 26 2013

That the cost of publication is **\$55.42** and that payment thereof has been made and will be assessed as court costs.

Kathy J. Carroll

Subscribed and sworn to before me this

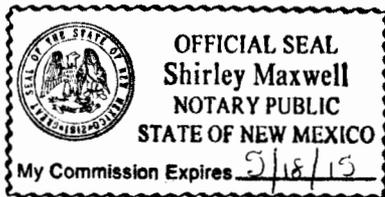
26th day of November, 2013

Shirley Maxwell

My commission Expires

May 18, 2015

Notary Public



**November 26, 2013**  
NOTICE OF APPLICATION  
FOR FLUID DISPOSAL  
WELL PERMIT

XTO Energy, Inc., OGRID No. 005380, 200 N. Lorraine Street, Suite 800, Midland, Texas 79701 is applying to the New Mexico Oil and Gas Conservation Division to permit a salt water disposal well into a formation that is productive of oil and gas.

The applicant proposes to permit a salt water disposal well into a productive zone (Devonian) in the Goldenchild 6 State lease. The proposed well is located 800 FSL & 330 FEL, Unit Ltr. P, Section 6, Township 25S, Range 29E, Eddy County, New Mexico. Fluid will be disposed into strata in the subsurface depth interval from 14,920' to 16,500' with a maximum injection rate of 15,000 BWPD and

a maximum injection pressure of 5000psi. Please find attached C-108, Application for Authorization to Inject.

All interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, NM 87505, within 15 days.



December 3, 2013

Re: Form C-108, Application for Authorizion to Inject  
Goldenchild 6 State SWD #1 (API #: Pending)  
Eddy County, NM  
800 FSL & 330 FEL  
Unit P, Section 6, T25S, R29E

To: EOG Resources  
P.O. Box 2267  
Midland, TX 79702

To Whom It May Concern:

This letter is to notify you XTO Energy Inc. has submitted to the Oil Conservation Division an application to drill a salt water disposal well. Our records indicate that you are a mineral owner with operating rights. Attached please find a copy of the application sent to the Oil Conservation Division for your review.

All interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, NM 87505, within 15 days.

If you have questions please contact me at:

Phone: 432-620-6714

E-mail: [stephanie\\_rabadue@xtoenergy.com](mailto:stephanie_rabadue@xtoenergy.com).

Sincerely,

A handwritten signature in black ink that reads "Stephanie Rabadue".

Stephanie Rabadue  
Regulatory Analyst



December 3, 2013

Re: Form C-108, Application for Authorization to Inject  
Goldenchild 6 State SWD #1 (API #: Pending)  
Eddy County, NM  
800 FSL & 330 FEL  
Unit P, Section 6, T25S, R29E

To: New Mexico State Land Office  
310 Old Santa Fe Trail  
Santa Fe, NM 87501

To Whom It May Concern:

This letter is to notify you XTO Energy Inc. has submitted to the Oil Conservation Division an application to drill a salt water disposal well. Our records indicate that you are the surface owner. Attached please find a copy of the application sent to the Oil Conservation Division for your review.

All interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, NM 87505, within 15 days.

If you have questions please contact me at:

Phone: 432-620-6714

E-mail: [stephanie\\_rabadue@xtoenergy.com](mailto:stephanie_rabadue@xtoenergy.com).

Sincerely,

A handwritten signature in cursive script that reads "Stephanie Rabadue".

Stephanie Rabadue  
Regulatory Analyst



December 3, 2013

Re: Form C-108, Application for Authorization to Inject  
Goldenchild 6 State SWD #1 (API #: Pending)  
Eddy County, NM  
800 FSL & 330 FEL  
Unit P, Section 6, T25S, R29E

To: Scott Branson  
P.O. Box 1502  
Carlsbad, NM 88221-1502

Mr. Branson,

This letter is to notify you XTO Energy Inc. has submitted to the Oil Conservation Division an application to drill a salt water disposal well. Our records indicate that you are the grazing lessee. Attached please find a copy of the application sent to the Oil Conservation Division for your review.

All interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, NM 87505, within 15 days.

If you have questions please contact me at:

Phone: 432-620-6714

E-mail: [stephanie\\_rabadue@xtoenergy.com](mailto:stephanie_rabadue@xtoenergy.com).

Sincerely,

A handwritten signature in black ink that reads "Stephanie Rabadue".

Stephanie Rabadue  
Regulatory Analyst



December 3, 2013

Re: Form C-108, Application for Authorization to Inject  
Goldenchild 6 State SWD #1 (API #: Pending)  
Eddy County, NM  
800 FSL & 330 FEL  
Unit P, Section 6, T25S, R29E

To: COG Operating LLC (OGRID: 229137)  
One Concho Center  
600 W. Illinois Ave  
Midland, TX 79701

To Whom It May Concern:

This letter is to notify you XTO Energy Inc. has submitted to the Oil Conservation Division an application to drill a salt water disposal well. Our records indicate that you are an offset operator within ½ mile. Attached please find a copy of the application sent to the Oil Conservation Division for your review.

All interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, NM 87505, within 15 days.

If you have questions please contact me at:

Phone: 432-620-6714

E-mail: [stephanie\\_rabadue@xtoenergy.com](mailto:stephanie_rabadue@xtoenergy.com).

Sincerely,

A handwritten signature in black ink that reads 'Stephanie Rabadue'.

Stephanie Rabadue  
Regulatory Analyst



December 3, 2013

Re: Form C-108, Application for Authorization to Inject  
Goldenchild 6 State SWD #1 (API #: Pending)  
Eddy County, NM  
800 FSL & 330 FEL  
Unit P, Section 6, T25S, R29E

To: PPC Operating Company LLC (OGRID: 288774)  
4700 W. Sam Houston Pkwy N. Ste 140  
Houston, TX 77041

To Whom It May Concern:

This letter is to notify you XTO Energy Inc. has submitted to the Oil Conservation Division an application to drill a salt water disposal well. Our records indicate that you are an offset operator within ½ mile. Attached please find a copy of the application sent to the Oil Conservation Division for your review.

All interested parties must file objections or requests for hearing with the Oil Conservation Division, 1220 South St. Francis Dr., Santa Fe, NM 87505, within 15 days.

If you have questions please contact me at:

Phone: 432-620-6714

E-mail: [stephanie\\_rabadue@xtoenergy.com](mailto:stephanie_rabadue@xtoenergy.com).

Sincerely,

A handwritten signature in cursive script that reads "Stephanie Rabadue".

Stephanie Rabadue  
Regulatory Analyst

**District I**  
 1625 N. French Dr., Hobbs, NM 88240  
 Phone: (575) 393-6161 Fax: (575) 393-0720  
**District II**  
 811 S. First St., Artesia, NM 88210  
 Phone: (575) 748-1283 Fax: (575) 748-9720  
**District III**  
 1000 Rio Brazos Road, Aztec, NM 87410  
 Phone: (505) 334-6178 Fax: (505) 334-6170  
**District IV**  
 1220 S. St. Francis Dr., Santa Fe, NM 87505  
 Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico

Form C-101  
 Revised July 18, 2013

Energy Minerals and Natural Resources

Oil Conservation Division

AMENDED REPORT

1220 South St. Francis Dr.

Santa Fe, NM 87505

*Permit copy  
 original sent to division*

APPLICATION FOR PERMIT TO DRILL, RE-ENTER, DEEPEN, PLUGBACK, OR ADD A ZONE

Operator Name and Address XTO Energy, Inc 200 N. Loraine St Ste 800 Midland, TX 79701		OGRID Number 005380
Property Code		API Number
Goldenchild to State SWD	Property Name	Well No. 1

7. Surface Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County
P	6	25S	29E		800	SOUTH	330	EAST	EDDY

8. Proposed Bottom Hole Location

UL - Lot	Section	Township	Range	Lot Idn	Feet from	N/S Line	Feet From	E/W Line	County

9. Pool Information

Pool Name SWD; DEVONIAN	Pool Code 96101
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Additional Well Information

Work Type N	Well Type S	Cable/Rotary R	Lease Type S	Ground Level Elevation 2931
Multiple No	Proposed Depth 16,500	Formation DEVONIAN	Contractor PIONEER	Spud Date ASAP
Depth to Ground water	Distance from nearest fresh water well		Distance to nearest surface water	

We will be using a closed-loop system in lieu of lined pits

21. Proposed Casing and Cement Program

Type	Hole Size	Casing Size	Casing Weight/ft	Setting Depth	Sacks of Cement	Estimated TOC
J-55	26"	20"	94#	280'	930	SURFACE
K-55	17-1/2"	13-3/8"	68#	3000'	2630	SURFACE
P-110	12-1/4"	9-5/8"	47#	11,000'	2350	SURFACE

Casing/Cement Program: Additional Comments

4th Hole/Casing String: 8-3/4" Hole 7", 32#, CYHC P-110 Liner fr/10,630-14,935, cmt w/640sx, Est TOC: 10,630'

22. Proposed Blowout Prevention Program

Type	Working Pressure	Test Pressure	Manufacturer
DOUBLE BLIND RAM	5000psi	5000psi	Cameron

<p>23. I hereby certify that the information given above is true and complete to the best of my knowledge and belief.          I further certify that I have complied with 19.15.14.9 (A) NMAC <input checked="" type="checkbox"/> and/or 19.15.14.9 (B) NMAC <input type="checkbox"/>, if applicable.          Signature: <i>Stephanie Rabadue</i>          Printed name: Stephanie Rabadue          Title: Regulatory Analyst          E-mail Address: stephanie_rabadue@xtoenergy.com          Date: 12/3/2013</p>	OIL CONSERVATION DIVISION	
	Approved By:	
	Title:	
	Approved Date:	Expiration Date:
	E-mail Address: stephanie_rabadue@xtoenergy.com	
	Phone: 432-620-6714	Conditions of Approval Attached

OCT 29 2013

DISTRICT I  
1625 N. French Dr., Hobbs, NM 88240  
Phone: (575) 393-6161 Fax: (575) 393-0720

DISTRICT II  
811 S. First St., Artesia, NM 88210  
Phone: (575) 748-1283 Fax: (575) 748-9720

DISTRICT III  
1000 Rio Brazos Road, Aztec, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico  
Energy, Minerals & Natural Resources Department

OIL CONSERVATION DIVISION

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

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code 96101	Pool Name SWD, Devonian
Property Code	Property Name GOLDENCHILD 6 STATE SWD	Well Number 1
OGRID No. 005380	Operator Name XTO ENERGY	Elevation 2931'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	6	25-S	29-E		800	SOUTH	330	EAST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

<p>GEODEIC COORDINATES NAD 27 NME</p> <p>SURFACE LOCATION Y=419932.5 N X=598279.7 E</p> <p>LAT.=32.154113° N LONG.=104.015765° W</p>		<p><b>OPERATOR CERTIFICATION</b></p> <p>I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p>Stephanie Rabadue 11-15-13 Signature Date</p> <p>Stephanie Rabadue Printed Name</p> <p>stephanie.rabadue@xtenergy.com E-mail Address</p>
		<p><b>SURVEYOR CERTIFICATION</b></p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>OCTOBER 17, 2013</p>
		<p>Date of Survey</p> <p>Signature &amp; Seal of Professional Surveyor:</p> <p>Ronald J. Eidson 10/28/2013</p>
		<p>Certificate Number</p> <p>3239</p> <p>BKL JWSC W.O.: 13.11.1168</p>

## Goetze, Phillip, EMNRD

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**From:** Shapard, Craig, EMNRD  
**Sent:** Monday, December 09, 2013 11:51 AM  
**To:** Goetze, Phillip, EMNRD  
**Cc:** Sharp, Karen, EMNRD; Dade, Randy, EMNRD  
**Subject:** Goldenchild 6 State SWD

Phillip,

Approved Devonian SWD permit API # 30-015-41846 for above well.

T.C. Shapard  
District II Geologist  
Energy Minerals & Natural Resource Department  
811 S. First Street  
Artesia, New Mexico 88202  
Office: (575) 748-1283 Ext. 103  
Fax: (575) 748-9120  
E-MAIL: [Craig.Shapard@state.nm.us](mailto:Craig.Shapard@state.nm.us)



**C-108 Review Checklist:** Received 12/12/13 Add. Request: 12/11/13 Reply Date: 1/2/14 Suspended:            [Ver 12] [Qualified Statement / Lab analysis]

**PERMIT TYPE:** WFX / PMX / SWD Number: 1458 Permit Date: 01/22/14 Legacy Permits/Orders: NA

Well No. 1 Well Name(s): Goldenchild State

API: 30-0 15-41846 Spud Date: TBD New or Old: N (UIC Class II Primacy 03/07/1982)

Footages 800 FSL/330 FEL Lot            or Unit P Sec 6 Tsp 25S Rge 29E County Eddy

General Location: 4 mi SE of Malaga / (XTO producers) Pool: SWD; Devonian Pool No.:           

BLM 100K Map: Carlsbad Operator: XTO Energy, Inc. OGRID: 5380 Contact: Stephanie Rabadue

COMPLIANCE RULE 5.9: Inactive Wells: 9 Total Wells: 2606 Fincl Assur: Yes Compl. Order? No IS 5.9 OK? Date: Yes 01/22/14

WELL FILE REVIEWED  Current Status: APD application

WELL DIAGRAMS: NEW: Proposed  or RE-ENTER: Before Conv.  After Conv.  Logs in Imaging: [Proposed CBL / request mudlog]

Planned Rehab Work to Well: NA

Well Construction Details:	Sizes (in) Borehole / Pipe	Setting Depths (ft)	Cement Sx or Cf	Cement Top and Determination Method
Planned <input type="checkbox"/> or Existing <input type="checkbox"/> <b>Conductor</b>	—	—	—	—
Planned <input checked="" type="checkbox"/> or Existing <input type="checkbox"/> <b>Surface</b>	26 / 20	0 to 280	930	Cir. to surf
Planned <input checked="" type="checkbox"/> or Existing <input type="checkbox"/> <b>Interm/Prod</b>	17 1/2 / 13 3/8	0 to 3000	None	Cir. to surf
Planned <input checked="" type="checkbox"/> or Existing <input type="checkbox"/> <b>Prod/Interm</b>	12 1/4 / 9 5/8	0 to 11000	None	Cir. to surf
Planned <input checked="" type="checkbox"/> or Existing <input type="checkbox"/> <b>Liner/Prod</b>	8 3/4 / 4 1/2	10630 - 14935	None	(CBL) - in log suite
Planned <input checked="" type="checkbox"/> or Existing <input type="checkbox"/> <b>OH/PERF</b>	6	14935 - 16500	Inj Length 1565	

Injection Stratigraphic Units:	Depths (ft)	Injection or Confining Units	Tops?	Completion/Operation Details:
Adjacent Unit: Litho. Struc. Por.	—	Mississippian LS	UNK	Drilled TD <u>          </u> PBSD <u>          </u>
Confining Unit: Litho. Struc. Por.	+15	Woodford Sh	UNK	NEW TD <u>16500</u> NEW PBSD <u>NA</u>
Proposed Inj Interval TOP:	14935	Devonian, Fm	14920 (base)	NEW Open Hole <input checked="" type="checkbox"/> or NEW Perfs <input type="checkbox"/>
Proposed Inj Interval BOTTOM:	16500		16500+	Tubing Size <u>4</u> in. Inter Coated? <u>Yes</u>
Confining Unit: Litho. Struc. Por.	+16500	upper Si. shale / fossiliferous		Proposed Packer Depth <u>14900</u> ft
Adjacent Unit: Litho. Struc. Por.	—			Min. Packer Depth <u>14835</u> (100-ft limit)
				Proposed Max. Surface Press. <u>          </u> psi
				Admin. Inj. Press. <u>2987</u> (0.2 psi per ft)

**AOR: Hydrologic and Geologic Information**

POTASH: R-111-P Noticed? NA BLM Sec Ord NA WIPP Noticed? NA SALADO: T:            B:            CLIFF HOUSE NA

FRESH WATER: Formation Rustler / Alluvial fill / Pecos Riv Max Depth ~200' Wells? 0 FW Analysis Hydrologic Affirm By Qualified Person

Disposal Fluid: Formation Source(s) Brushy Canyon / Bone Spring Analysis? Yes On Lease  Operator Only  or Commercial

Disposal Interval: Inject Rate (Avg/Max BWPD): 1500/5000 Protectable Waters?: Unk - potential low mud log CAPITAN REEF: thru  adj  NA

HC Potential: Producing Interval? Unk Formerly Producing? No Method: Logs/DST/P&A/Other Request 2-Mile Radius Pool Map

AOR Wells: 1/2-M Radius Map? Yes Well List? Yes Total No. Wells Penetrating Interval: 0 Horizontals? Not in section

Penetrating Wells: No. Active Wells 0 Num Repairs? — on which well(s)?            Diagrams?           

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

NOTICE: Newspaper Date 11/26/2013 Mineral Owner SLO Surface Owner SLO / leased N. Date 12/4/13

RULE 26.7(A): Identified Tracts? Yes Affected Persons: EOG/XTO/COG/PPC operating grazing surface N. Date 12/4/13

Permit Conditions: Issues: No water info for interval - HC potential user noticed

Add Permit Cond: Mudlog & salinity calc.

## Goetze, Phillip, EMNRD

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**From:** Rabadue, Stephanie <Stephanie\_Rabadue@xtoenergy.com>  
**Sent:** Thursday, January 02, 2014 1:58 PM  
**To:** Goetze, Phillip, EMNRD  
**Cc:** McMillan, Michael, EMNRD; Ezeanyim, Richard, EMNRD  
**Subject:** RE: C-108 Application for the Goldenchild 6 State SWD #1  
**Attachments:** Mis Amigos 2nd Bone Spring Water Analysis.pdf; Goldenchild Water Analysis.pdf; Nash 34 Water Analysis.pdf; Goldenchild Geological Statement.pdf

Good afternoon, Mr. Goetze!

As requested please find:

1. Item 1: A geological statement from this area's geologist employed by XTO Energy signed by him that includes the well name and location dated on company letterhead.
2. Item 3: A chemical analysis of three producing wells, one for each formation in which we intend to dispose of into this disposal well. The nearest 2<sup>nd</sup> Bone Spring producer that we have, at this time, is the Mis Amigos #1H well in Lea County. The Willow Lake; Delaware sample is included from a well located on this disposal well's lease. The Brushy Canyon sample has been taken from our nearby Nash Unit lease.

If this data does not satisfy the below requirements or if there is additional data that is needed at this time, please let me know and I will accommodate as necessary!

Thank you so much! I hope you all had a wonderful holiday!

Take care and have a beautiful day!

Stephanie Rabadue  
Regulatory Analyst – Permian Division  
432-620-6714  
[stephanie\\_rabadue@xtoenergy.com](mailto:stephanie_rabadue@xtoenergy.com)

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**From:** Goetze, Phillip, EMNRD [<mailto:Phillip.Goetze@state.nm.us>]  
**Sent:** Wednesday, December 11, 2013 9:52 AM  
**To:** Rabadue, Stephanie  
**Cc:** McMillan, Michael, EMNRD; Ezeanyim, Richard, EMNRD  
**Subject:** C-108 Application for the Goldenchild 6 State SWD #1

Stephanie:

I went through your C-108 application (Goldenchild 6 State SWD #1; API 30-015-41846) for administrative completeness. I will require the following items to complete the application. All can be forwarded by e-mail when they are finished.

1. Item 1: XII. Geological Statement: though I am sure that "XTO has examined" the data, this affirmation must be endorsed by an identifiable, qualified person – an individual such as geologist /engineer familiar with area and in the employment of the applicant. Please prepare an endorsement (the geological statement including well name/location/etc.) on letterhead with a signature and date. PG/PE professional stamp not required.
2. Item 3: VII.4. Chemistry of injection fluids: Though you have identified the formations that will be sources of the produced waters, I will need some chemistry (analysis from producing wells representative of the formations or values from a source such as Go-Tech) as part of the review. (Since this is a new drill, OCD will be requesting a sample or calculation of salinity (from e-logs) for the injection interval as part of the permit requirements. You have identified this in your application.)

If you have any questions regarding these items, please contact me at your convenience. Meanwhile, the application will be entered into the database schedule for review. Thanks. PRG

**Phillip R. Goetze, P.G.**

Engineering and Geological Services Bureau, Oil Conservation Division

1220 South St. Francis Dr., Santa Fe, NM 87505

O: 505.476.3466 F: 505.476.3462



1/2/2014

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

Re: C-108 Application for Authorization to Inject

To Whom it May Concern:

XTO Energy, Inc has examined the geologic data in connection with Goldenchild 6 State SWD #1 ( a well to be located 800 FSL & 330 FEL, Unit P, Section 6, T25S, R29E in Eddy County NM) and has determined that there are no open faults or other hydrologic connections between the disposal zone and any underground drinking water/potable aquifers.

Sincerely,

A handwritten signature in black ink, appearing to read 'B. Henthorn'.

Brian Henthorn  
Geologist  
XTO Energy, an ExxonMobil Subsidiary  
810 Houston St.  
Fort Worth, TX 76102

**Water Analysis Report**

Production Company: **XTO ENERGY**  
Well Name: **NASH UNIT 034**  
Sample Point: **WH**  
Sample Date: **2/17/2012**  
Sample ID: **WA-207485**

Sales Rep: **Tyler Ogden**  
Lab Tech: **Courtney Cline**

Scaling potential predicted using ScaleSoftPitzer from Brine Chemistry Consortium (Rice University)

Sample Specifics		Analysis @ Properties in Sample Specifics			
		Cations	mg/L	Anions	mg/L
Test Date:	2/17/2012	Sodium (Na):	92171.29	Chloride (Cl):	195000
System Temperature 1 (°F):	120	Potassium (K):	1270.7	Sulfate (SO <sub>4</sub> ):	135
System Pressure 1 (psig):	122.6	Magnesium (Mg):	3657.75	Bicarbonate (HCO <sub>3</sub> ):	1464
System Temperature 2 (°F):	100	Calcium (Ca):	23662.2	Carbonate (CO <sub>3</sub> ):	0
System Pressure 2 (psig):	50	Strontium (Sr):	118.54	Acetic Acid (CH <sub>3</sub> COO)	0
Calculated Density (g/ml):	1.2	Barium (Ba):	2.8	Propionic Acid (C <sub>2</sub> H <sub>5</sub> COO)	0
pH:	5.5	Iron (Fe):	12.75	Butanoic Acid (C <sub>3</sub> H <sub>7</sub> COO)	0
Calculated TDS (mg/L):	317503.84	Zinc (Zn):	0.11	Isobutyric Acid ((CH <sub>3</sub> ) <sub>2</sub> CHCOO)	0
CO <sub>2</sub> in Gas (%):	144.46	Lead (Pb):	0	Fluoride (F):	0
Dissolved CO <sub>2</sub> (mg/L):	1000	Ammonia NH <sub>3</sub> :	0	Bromine (Br):	0
H <sub>2</sub> S in Gas (%):	0	Manganese (Mn):	8.7	Silica (SiO <sub>2</sub> ):	0
H <sub>2</sub> S in Water (mg/L):	0				

**Notes:**

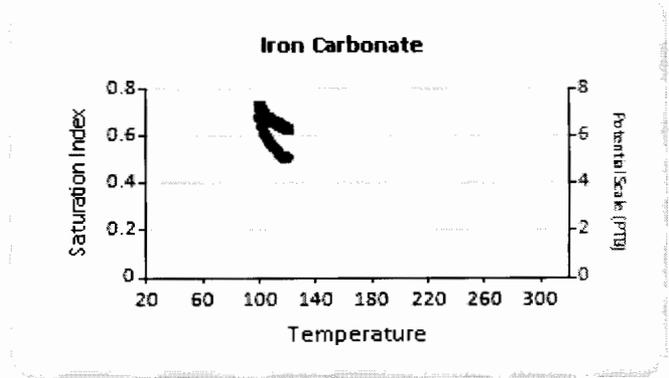
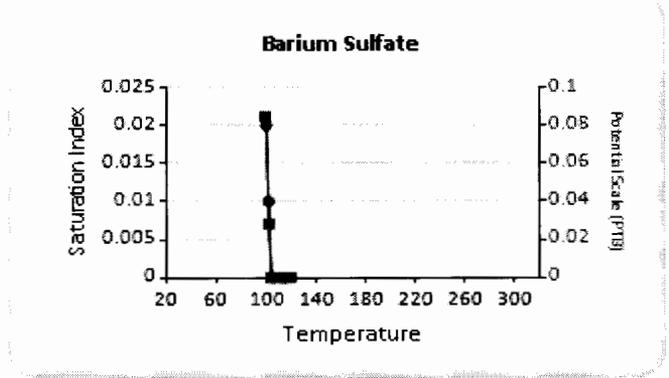
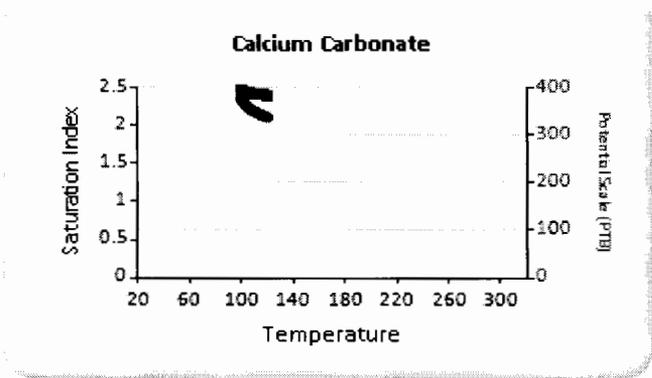
Formation: Brushy Canyon (6800' TVD). Eddy County, New Mexico Sec 12,13,14 T23S-R29E, XTO Engineer: David Luna David\_Luna@xtoenergy.com

(PTB = Pounds per Thousand Barrels)

Temp (°F)	PSI	Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO <sub>4</sub> ·2H <sub>2</sub> O		Celestite SrSO <sub>4</sub>		Halite NaCl		Zn Sulfide
		SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	
100	50	2.35	392.58	0.02	0.08	0.00	0.00	0.68	7.28	0.00	0.00	0.00	0.00	0.00	0.00	0.00
102	58	2.30	391.04	0.01	0.03	0.00	0.00	0.64	7.10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
104	66	2.26	389.70	0.00	0.00	0.00	0.00	0.61	6.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00
106	74	2.23	388.53	0.00	0.00	0.00	0.00	0.59	6.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00
108	82	2.20	387.49	0.00	0.00	0.00	0.00	0.57	6.68	0.00	0.00	0.00	0.00	0.00	0.00	0.00
111	90	2.18	386.58	0.00	0.00	0.00	0.00	0.55	6.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00
113	98	2.16	385.77	0.00	0.00	0.00	0.00	0.54	6.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115	106	2.14	385.05	0.00	0.00	0.00	0.00	0.52	6.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00
117	114	2.13	384.40	0.00	0.00	0.00	0.00	0.51	6.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120	122	2.11	383.83	0.00	0.00	0.00	0.00	0.51	6.31	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Temp (°F)	PSI	Hemihydrate CaSO <sub>4</sub> ·0.5H <sub>2</sub> O		Anhydrate CaSO <sub>4</sub>		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		SI
		SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	
100	50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
102	58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
104	66	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
106	74	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
108	82	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
111	90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0

113	98	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0	
115	106	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
117	114	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0
120	122	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.0



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Goldenchild SWD C-108

2nd Bone Spring Produced Water

Units of Measurement: **Standard**

**Water Analysis Report**

Production Company: **XTO ENERGY**  
 Well Name: **MIS AMIGOS 1**  
 Sample Point: **WH**  
 Sample Date: **2/7/2013**  
 Sample ID: **WA-234093**

Sales Rep: **Bruce Kelly**  
 Lab Tech: **Bea Rodriguez**

Scaling potential predicted using ScaleSoftPitzer from  
 Brine Chemistry Consortium (Rice University)

Sample Specifics		Analysis @ Properties in Sample Specifics			
Test Date:	2/12/2013	Cations		Anions	
		mg/L		mg/L	
System Temperature 1 (°F):	130.00	Sodium (Na):	50007.89	Chloride (Cl):	88000.00
System Pressure 1 (psig):	132.6000	Potassium (K):	836.84	Sulfate (SO4):	452.00
System Temperature 2 (°F):	98.00	Magnesium (Mg):	583.29	Bicarbonate (HCO3):	195.20
System Pressure 2 (psig):	50.0000	Calcium (Ca):	4848.46	Carbonate (CO3):	
Calculated Density (g/ml):	1.092	Strontium (Sr):	298.39	Acetic Acid (CH3COO)	
pH:	6.61	Barium (Ba):	1.55	Propionic Acid (C2H5COO)	
Calculated TDS (mg/L):	145261.68	Iron (Fe):	36.97	Butanoic Acid (C3H7COO)	
CO2 in Gas (%):		Zinc (Zn):	0.23	Isobutyric Acid ((CH3)2CHCOO)	
Dissolved CO2 (mg/L):	430.00	Lead (Pb):	0.00	Fluoride (F):	
H2S in Gas (%):		Ammonia NH3:		Bromine (Br):	
H2S in Water (mg/L):	0.00	Manganese (Mn):	0.86	Silica (SiO2):	

**Notes:**

(PTB = Pounds per Thousand Barrels)

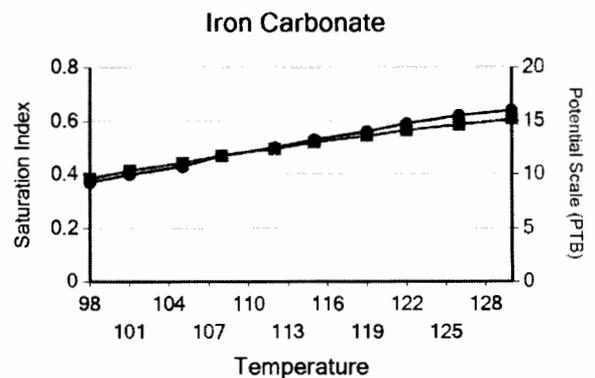
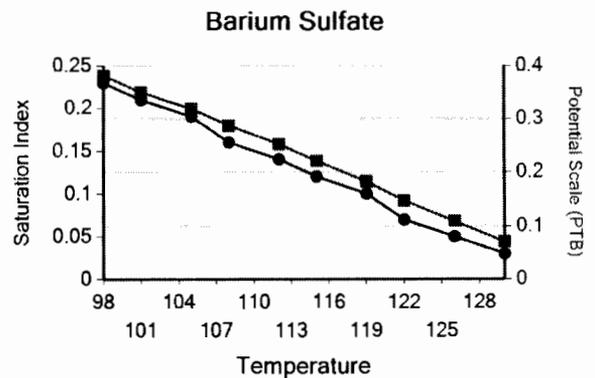
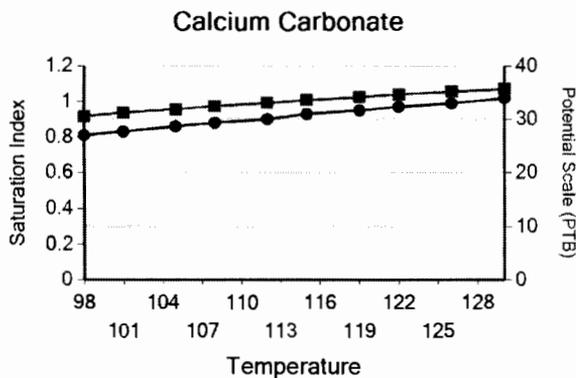
Temp (°F)	PSI	Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4·2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
		SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
98.00	50.00	0.81	30.55	0.23	0.38	0.00	0.00	0.37	9.60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
101.00	59.00	0.83	31.21	0.21	0.35	0.00	0.00	0.40	10.36	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.00	68.00	0.86	31.85	0.19	0.32	0.00	0.00	0.43	11.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
108.00	77.00	0.88	32.46	0.16	0.29	0.00	0.00	0.47	11.75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
112.00	86.00	0.90	33.06	0.14	0.25	0.00	0.00	0.50	12.40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115.00	95.00	0.93	33.62	0.12	0.22	0.00	0.00	0.53	13.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
119.00	105.00	0.95	34.17	0.10	0.18	0.00	0.00	0.56	13.58	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
122.00	114.00	0.97	34.70	0.07	0.15	0.00	0.00	0.59	14.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
126.00	123.00	0.99	35.21	0.05	0.11	0.00	0.00	0.62	14.64	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130.00	132.00	1.02	35.71	0.03	0.07	0.00	0.00	0.64	15.13	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Temp (°F)	PSI	Hemihydrate CaSO4·0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
		SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
98.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
101.00	59.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.00	68.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
108.00	77.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
112.00	86.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115.00	95.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
119.00	105.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
122.00	114.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
126.00	123.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130.00	132.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

Water Analysis Report

These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate Iron Carbonate



*Goldenchild SWD C-108*  
*Delaware Produced Water*

Units of Measurement: **Standard**

**Water Analysis Report**

Production Company: **XTO ENERGY**  
 Well Name: **GOLDENCHILD 6 1**  
 Sample Point: **WH**  
 Sample Date: **2/18/2013**  
 Sample ID: **WA-235306**

Sales Rep: **Bruce Kelly**  
 Lab Tech: **LaTasha Cornish**

Scaling potential predicted using ScaleSoftPitzer from  
 Brine Chemistry Consortium (Rice University)

Sample Specifics		Analysis @ Properties in Sample Specifics			
Test Date:	2/27/2013	Cations		Anions	
		mg/L		mg/L	
System Temperature 1 (°F):	130.00	Sodium (Na):	28141.68	Chloride (Cl):	51000.00
System Pressure 1 (psig):	132.6000	Potassium (K):	296.69	Sulfate (SO4):	477.00
System Temperature 2 (°F):	75.10	Magnesium (Mg):	970.05	Bicarbonate (HCO3):	122.00
System Pressure 2 (psig):	50.0000	Calcium (Ca):	2626.50	Carbonate (CO3):	
Calculated Density (g/ml):	1.054	Strontium (Sr):	319.55	Acetic Acid (CH3COO)	
pH:	7.07	Barium (Ba):	29.89	Propionic Acid (C2H5COO)	
Calculated TDS (mg/L):	83987.55	Iron (Fe):	2.98	Butanoic Acid (C3H7COO)	
CO2 in Gas (%):		Zinc (Zn):	0.07	Isobutyric Acid ((CH3)2CHCOO)	
Dissolved CO2 (mg/L):	140.00	Lead (Pb):	0.00	Fluoride (F):	
H2S in Gas (%):		Ammonia NH3:		Bromine (Br):	
H2S in Water (mg/L):	0.00	Manganese (Mn):	1.14	Silica (SiO2):	

**Notes:**

(PTB = Pounds per Thousand Barrels)

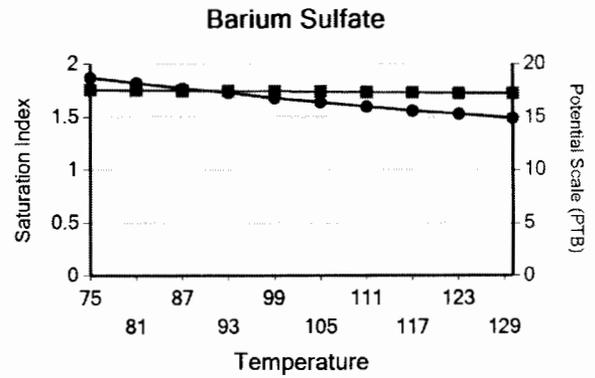
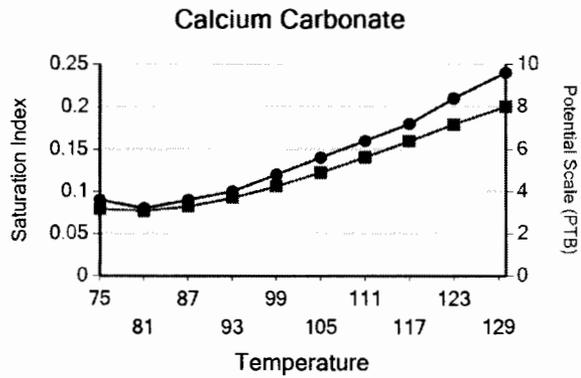
Temp (°F)	PSI	Calcium Carbonate		Barium Sulfate		Iron Sulfide		Iron Carbonate		Gypsum CaSO4 2H2O		Celestite SrSO4		Halite NaCl		Zinc Sulfide	
		SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
75.00	50.00	0.09	3.17	1.87	17.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
81.00	59.00	0.08	3.08	1.82	17.53	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
87.00	68.00	0.09	3.28	1.77	17.49	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
93.00	77.00	0.10	3.69	1.73	17.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
99.00	86.00	0.12	4.24	1.68	17.42	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.00	95.00	0.14	4.89	1.64	17.38	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
111.00	105.00	0.16	5.61	1.60	17.34	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
117.00	114.00	0.18	6.38	1.56	17.30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
123.00	123.00	0.21	7.18	1.53	17.26	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130.00	132.00	0.24	8.00	1.49	17.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

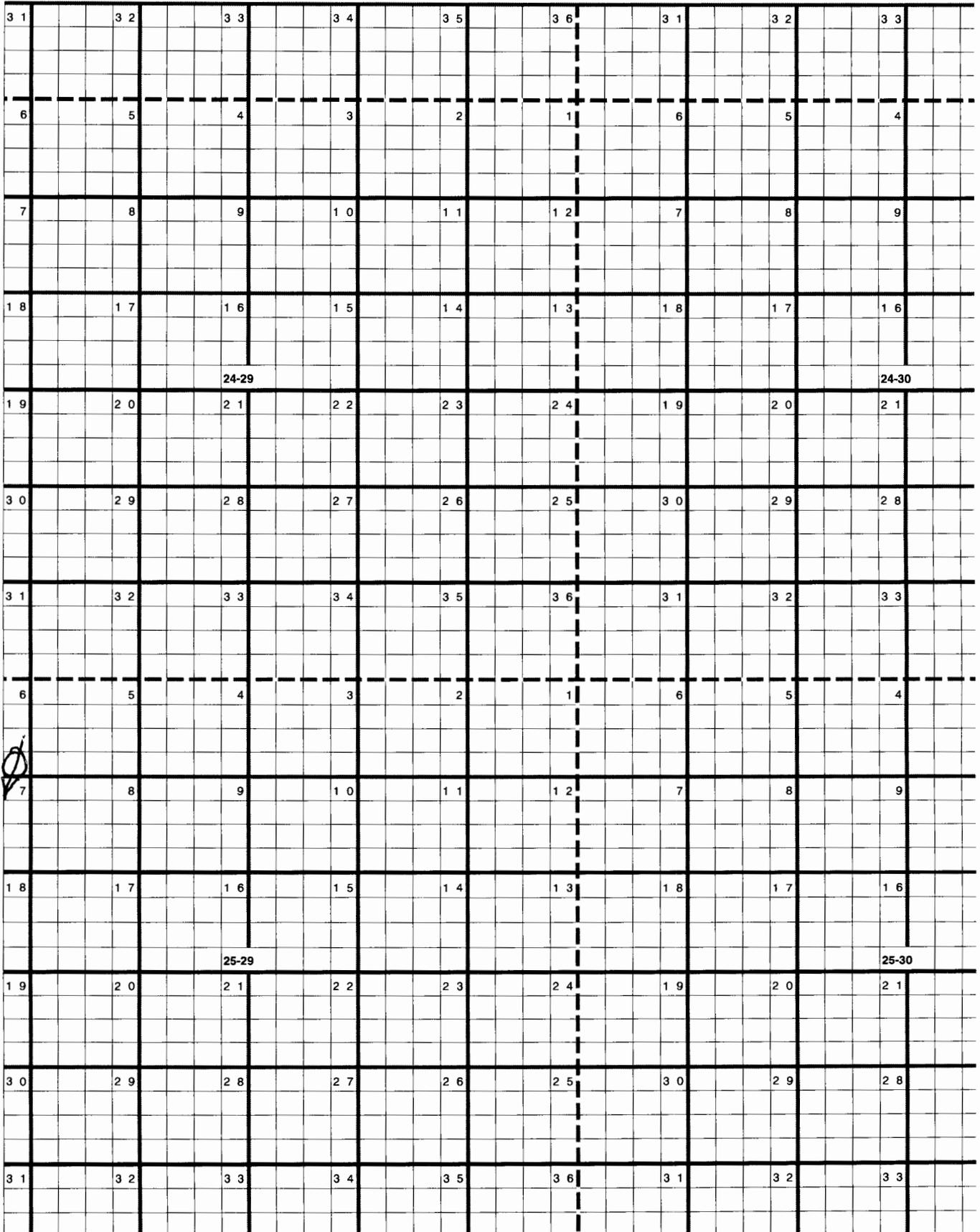
Temp (°F)	PSI	Hemihydrate CaSO4 0.5H2O		Anhydrate CaSO4		Calcium Fluoride		Zinc Carbonate		Lead Sulfide		Mg Silicate		Ca Mg Silicate		Fe Silicate	
		SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB	SI	PTB
75.00	50.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
81.00	59.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
87.00	68.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
93.00	77.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
99.00	86.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105.00	95.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
111.00	105.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
117.00	114.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
123.00	123.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130.00	132.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**Water Analysis Report**

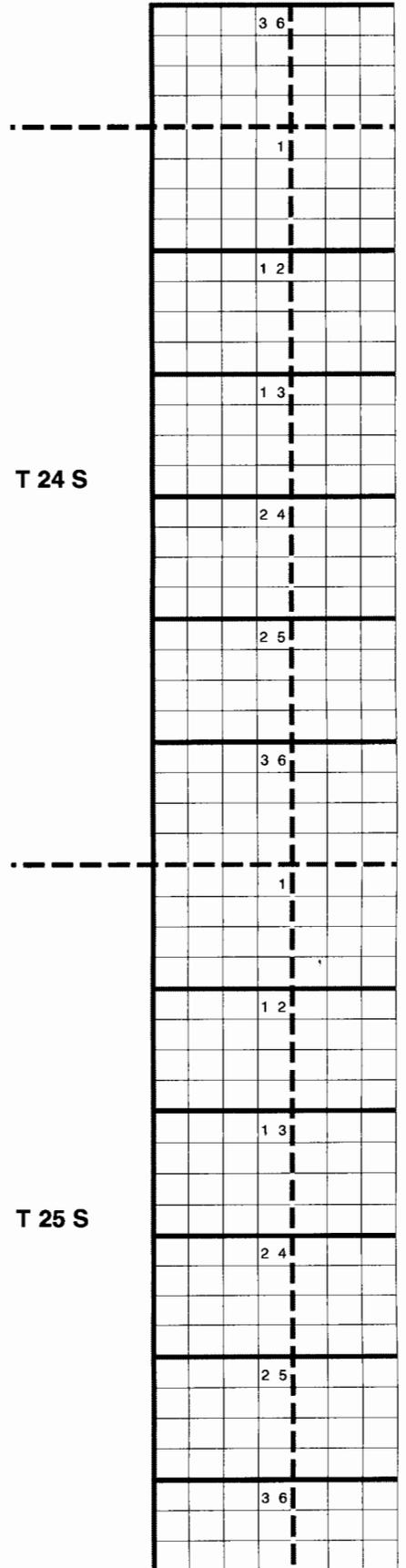
These scales have positive scaling potential under initial temperature and pressure: Calcium Carbonate Barium Sulfate

These scales have positive scaling potential under final temperature and pressure: Calcium Carbonate Barium Sulfate





Devonian  
Pools



*Devonian beds*