Form 3160-5
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

FORM APPROVED
OMB No. 1004-0137
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.

SUBMIT IN TRIPLICATE – *Other instructions on page 2.*

1. Type of Well ☐ Oil Well ☐ Gas Well ☑ Other SWD	5. Lease Serial No. NM-92180
	6. If Indian, Allottee or Tribe Name
	7. If Unit of CA/Agreement, Name and/or No.
	8. Well Name and No. CHARGER 29 FEDERAL #1 SWD
2. Name of Operator COG OPERATING, LLC	9. API Well No. 30-015-28808
3a. Address 2208 W. MAIN STREET, ARTESIA, NM 88210 3b. Phone No. *(include area code)* 575-748-6940	10. Field and Pool or Exploratory Area UNDESIGNATED DELAWARE
4. Location of Well *(Footage, Sec., T.,R.,M., or Survey Description)* SEC 29, T23S-R30E, 1780' FNL & 810' FWL, UNIT LETTER E	11. Country or Parish, State EDDY COUNTY, NM

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☑ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
	☐ Alter Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Subsequent Report	☐ Casing Repair	☐ New Construction	☐ Recomplete	☑ Other SWD
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
☐ Final Abandonment Notice	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

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 recomplete 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 must be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 must be filed once testing has been completed. Final Abandonment Notices must be filed only after all requirements, including reclamation, have been completed and the operator has determined that the site is ready for final inspection.)

SUBMITTED FORM C-108 - COPY ATTACHED

Accepted for record
NMOCD
RI 5/20/14

"SWD-630-A" APPROVED 9/14/2012

RECEIVED
MAY 12 2014
NMOCD ARTESIA

SEE ATTACHED FOR CONDITIONS OF APPROVAL

SUBJECT TO LIKE APPROVAL BY STATE

14. I hereby certify that the foregoing is true and correct. Name *(Printed/Typed)*

BRIAN COLLINS

Title SENIOR OPERATIONS ENGINEER

Signature

Date 08/27/2012

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

Title

Date MAR 7 2014

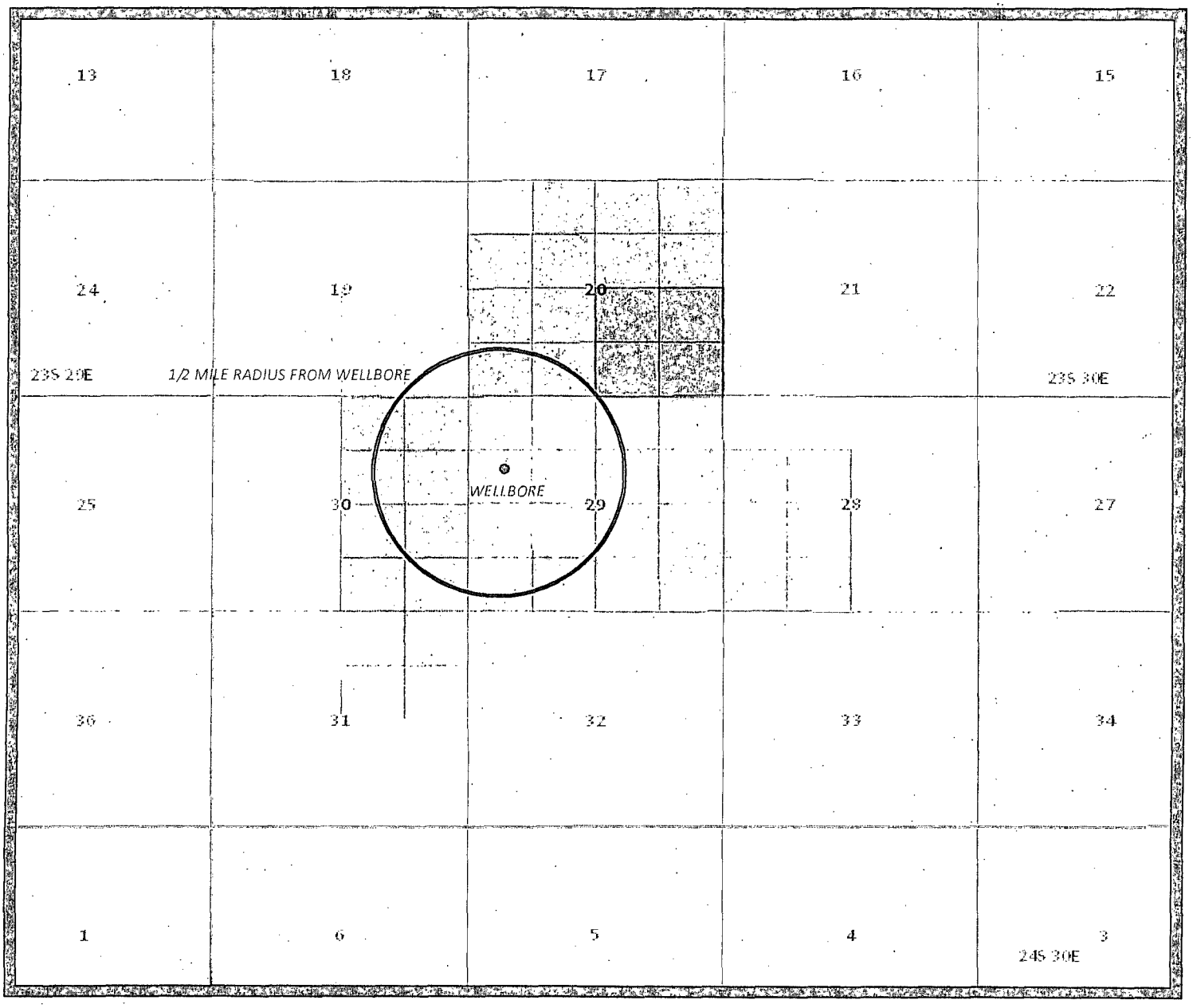
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.

Office

ACCEPTED FOR RECORD
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD 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.

(Instructions on page 2)



Devon Energy Production Company LP

Devon Energy Production Company LP

COG Operating LLC

COG Operating LLC

Chevron USA Inc.

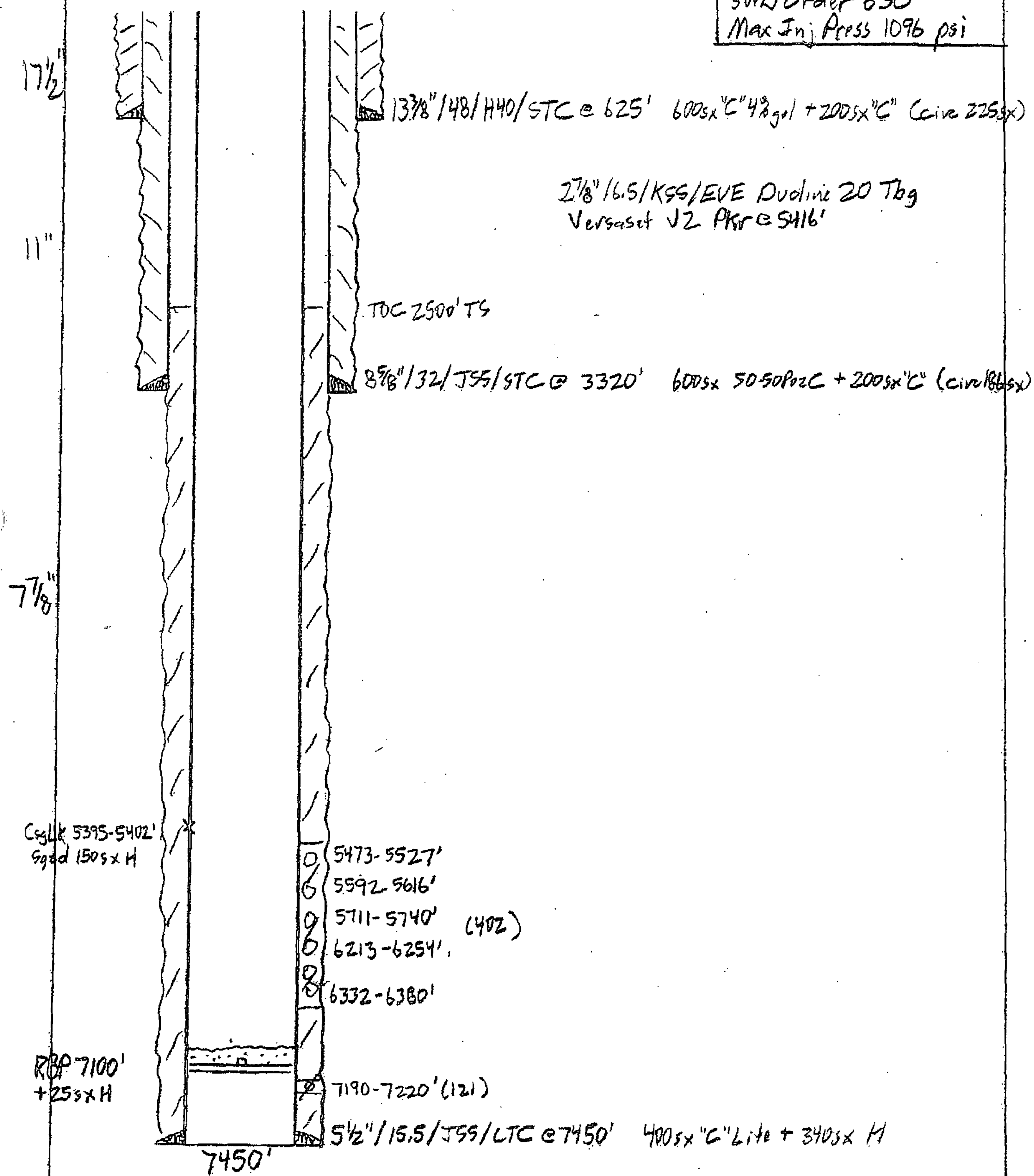
Bureau of Land Management

CHARGER 29 FEDERAL #1 SW
1780 FNL & 810 FWL
Section 29; T23S - R30E

30-015-28808

Charger 29 Fed 1 SWD
1780' FNL, 810' FWL
E-29-23s-30e
Eddy, NM

SWD Order 630
Max Inj Press 1096 psi



TOPS 35500

COMPANY Santa Fe Energy Resources Inc

WELL Charger 29 Federal No. 1

FIELD Undesignated Group 4

COUNTY Eddy STATE New Mexico

Run 1

COUNTY: Eddy
Field: Undesignated Group 4
Location 1780' FNL and 810' FWL
Well Charger '29' Federal No. 1
Company Santa Fe Energy Resources Inc

Schlumberger

Litho-Density
Compensated Neutron

BUREAU OF LAND MANAGEMENT RECEIVED MAY 01 1998 DIST. 6 Carlsbad, New Mexico

LOCATION

1780' FNL and 810' FWL	Elev.:	K.B.	3101 F
		G.L.	3088 F
		D.F.	3100 F
Permanent Datum: Ground Level	Elev.:	3088 F	
Log Measured From: Kelly Bushing	13.0 F	above Perm. Datum	
Drilling Measured From: Kelly Bushing			

API Serial No	SECTION	TOWNSHIP	RANGE
30-015-29808	29	23-S	30-E

FINAL PRINT

Logging Date	12 March, 1998			
Run Number	One			
Depth Driller	7450 F			
Schlumberger Depth	7448 F			
Bottom Log Interval	7405 F			
Top Log Interval	200 F			
Casing Driller Size @ Depth	8.625 IN	@ 3320 F		@
Casing Schlumberger	3322 F			
Bit Size	7.875 IN			
Type Fluid In Hole	Impermex/Fresh Water			
MUD Density / Viscosity	8.9 LB/G	29 S		
Fluid Loss / PH		10		
Source Of Sample	Circulation Tank			
RM @ Measured Temperature	0.147 OHMM	@ 72 DEGF		@
RMF @ Measured Temperature	0.147 OHMM	@ 72 DEGF		@
RMC @ Measured Temperature		@		@
Source RMF / RMC	Flowline			
RM @ MRT / RMF @ MRT	0.091 @ 121	0.091 @ 121		
Maximum Recorded Temperatures	121 DEGF			
Circulation Stopped / Time	12 Mar., 1998	08.45		
Logger On Bottom / Time	12 Mar., 1998	1400		
Unit Number / Location	3015	Roswell		
Recorded By	Fatih M. Kara/Dave Roberts			
Witnessed By	Mike Dilli			

BUREAU OF LAND MANAGEMENT RECEIVED MAY 02 1998 DIST. ROSWELL

Logging Date	
Run Number	
Depth Driller	
Schlumberger Depth	
Bottom Log Interval	
Top Log Interval	
Casing Driller Size @ Depth	
Casing Schlumberger	
Bit Size	
Type Fluid In Hole	
MUD Density / Viscosity	
Fluid Loss / PH	
Source Of Sample	
RM @ Measured Temperature	
RMF @ Measured Temperature	
RMC @ Measured Temperature	
Source RMF / RMC	
RM @ MRT / RMF @ MRT	@
Maximum Recorded Temperatures	
Circulation Stopped / Time	
Logger On Bottom / Time	
Unit Number / Location	
Recorded By	
Witnessed By	

SWD 639

MAXIMUM STRING DIAMETER 6.88 IN
MEASUREMENTS RELATIVE TO TOOL ZERO
UNITS ARE IN FEET

Output DLIS Files

DEFAULT	SPEA .007	FN:6	FIELD	12-MAR-1999 14:33	7464.0 FT	125.0 FT

Integrated Hole/Cement Volume Summary

Hole Volume = 1746.35 F3

Cement Volume = 1039.23 F3 (assuming 5.50 IN casing O.D.)

Computed from 7449.0 FT to 3320.0 FT using data channel(s) CALI

OP System Version: 7C0-428

MCM

AIT-B	RPCAX-600	CNT-H	RPCAX-600
HOLEV	RPCAX-600		

Changed Parameter Summary

DLIS Name	New Value	Previous Value	Depth & Time
BHS	CASED	OPEN	3258.1 16:54:38

PIP SUMMARY

- Integrated Hole Volume Minor Pip Every 10 F3
- Integrated Hole Volume Major Pip Every 100 F3
- Integrated Cement Volume Minor Pip Every 10 F3
- Integrated Cement Volume Major Pip Every 100 F3

Time Mark Every 60 S

GR Backup
From T1 to GR1

MAIN LOG

Gamma Ray 1 (GR)

Tension (TENS)
10000 (LBF) 0

Gamma Ray (GR)
0 (GAPI) 100

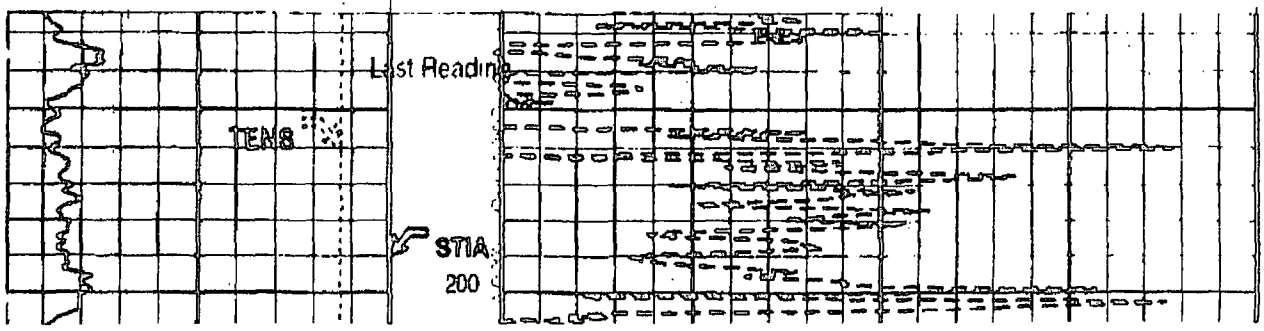
Bulk Density (RHOB)
2 (G/C3) 3

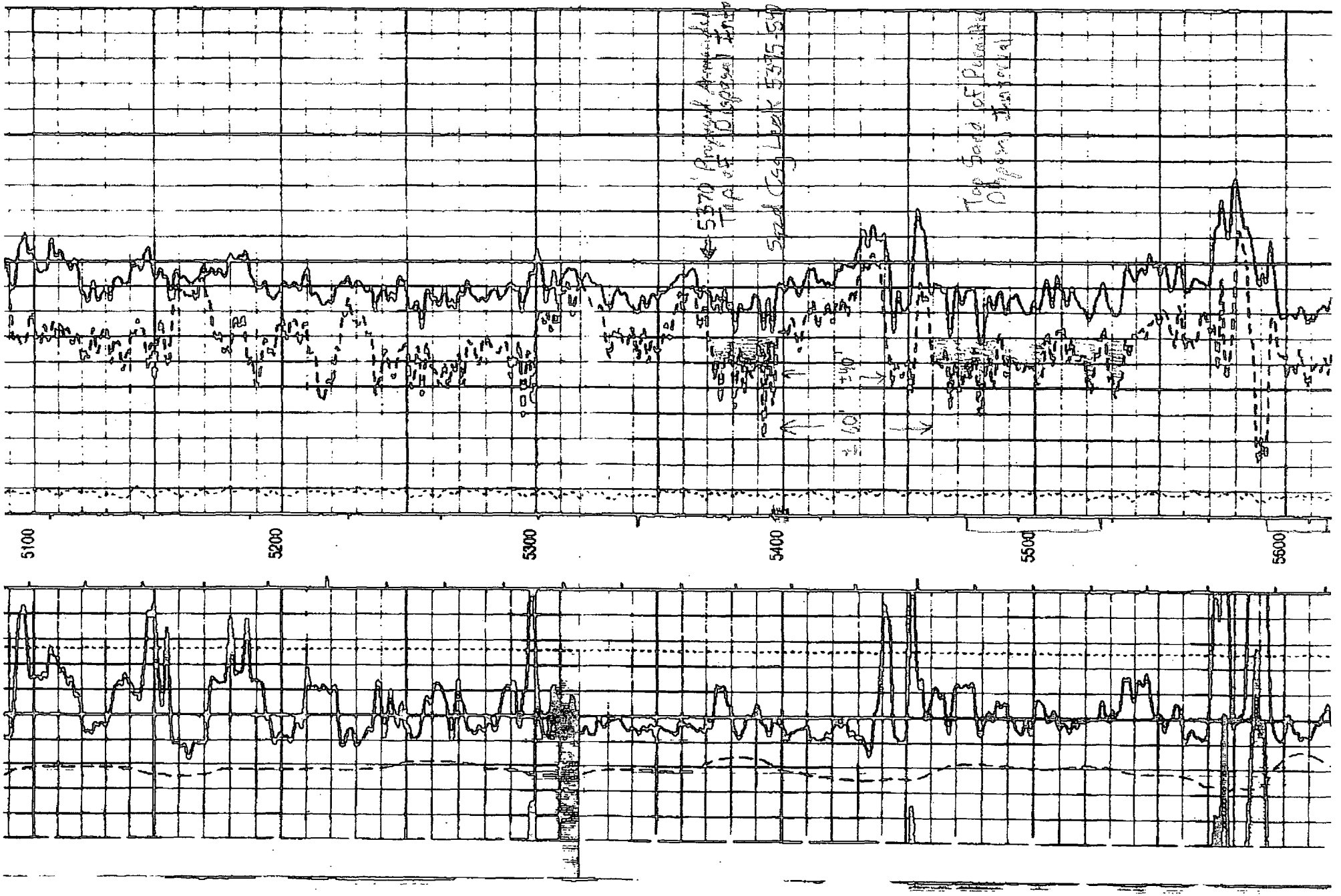
Neutron Porosity (NPHI)
0.3 (V/V) -0.1

Caliper (CALI)
6 (IN) 16

Bulk Density Quality Curve (BDQC)
10 (----) 0

Bulk Density Correction (DRHO)
-0.05 (G/C3) 0.45




5100
5200
5300
5400
5500
5600

Conditions of Approval

Upstanding Operating Company
Mighty Good - 99
API 30015xxxxx, TxxS-RxxE, Sec xx

Month xx, 2014

This draft is being attached to inform operators of water disposal wells that BLM – CFO is requiring a Notice of Intent request for increased wellhead pressures be filed **PRIOR to a Step Rate Test.** Below is the text of conditions of approval that will be attached to such a notice of intent.

Stabilized injection: after perforation and acid stimulation workover, and the daily disposal volume rates and injection pressures have leveled out for about 3 months.

A profile survey is a wireline survey log that determines what perforations are taking produced water. You may want to use the same contractor that will run your step rate test. That log presentation should list the information requested by items 1-7.

1. If available, submit an electronic copy (Adobe Acrobat Document) cement bond log record from the top of the injection interval to top of cement. The CBL may be attached to a pswartz@blm.gov email.
2. Submit a stabilized injection profile survey for the well for review.
3. Submit the well's stabilized current psig/ft surface pressure to the top perforation.
4. Submit an anticipated bottom hole fracture pressure for the field or pool formation.
5. State the **targeted** maximum bbl/min injection rate.. **The objective is to avoid fracturing the injection formation.**
6. Submit the injection fluid lbs/gal weight.
7. Submit an anticipated formation fracture or breakdown pressure at the injection top.
8. Stop injection a minimum of 48 hours and record the tubing pressure as it drops. The pressure should stabilize at or below the NMOCD permitted pressure for 8 hours. Document the pressure test on a seven day full rotation calibrated recorder chart registering within 25 to 85 per cent of its full range.
9. Calculate seven injection rates by multiplying the targeted maximum bbl/min injection by 0.05 for Step 1, 0.10 for Step 2, 0.20 for Step 3, 0.40 for Step 4, 0.60 for Step 5, 0.80 for Step 6, and 1.00 for Step 7. Record both surface and top perforation step pressures at five minute increments. Each step's time duration (usually 30 minutes) should be within 1 minute or less of the preceding step. If stabilized pressure values ($\Delta \pm 15$psig) are not obtained between the last two (five minute) increments the test results will be considered inconclusive.
10. The Step Rate fluid used should be the same as the proposed injection fluid.
11. Flow rates are to be controlled with a constant flow regulator and measured with a turbine flow meter calibrated within 0.1 bbl/min. Record those rates using a chart recorder or strip chart.

12. Use a down hole transmitting pressure device and a surface pressure device with accuracies of ±10psig to measure pressures.
13. **Notify BLM 575-200-7902 , if there is no response, 575-361-2822 Eddy Co. or 575-393-3612 Lea Co 24 hours before beginning the test. If no answer, leave a voice mail or email with the API#, workover purpose, and a call back phone number. Note the contact, time, & date in your subsequent report.**
14. When breakdown pressure is not achieved at the **targeted rate** the formation is accepting the injection fluid without fracturing, which is the **objective**. Stop the test.
15. When the formation fracture pressure has been exceeded as evidenced by at least two rate-pressure combinations greater than the breakdown pressure stop the test and record the bottom hole Instantaneous Shut-in Pressure. This ISIP is considered the minimum pressure to hold open a fracture in this formation at this well. Fifty psig less than the ISIP is the maximum bottom hole pressure BLM will approve.
16. Record with each five minute interval the corresponding rate (bbl/min), down hole, and surface pressure (psig). Provide BLM with the tabulation of each five minute interval. Include a graph showing the stabilized pressure at each injection rate. Submit that data to BLM with the shut-in pressure recording of paragraph 8.

Notes:
These conditions of approval for a step-rate test is an adaptation of principals and comments from several sources. The major resource being a paper dated January 12, 1999 from the United States Environmental Protection Agency, Region VIII, 999 18th Street – Suite 500, Denver, Colorado.

The intent of a step rate test is to establish that a proposed rate of injection into a formation is below fracture. Because it becomes likely that fracture pressure may be attained and exceeded it is considered a nonroutine fracturing job and requires a notice of intent. Reference: 43 CFR 3162.3-2 Subsequent well operations.

Compliance of the operator with these BLM conditions of approval is necessary for consideration of an injection pressure increase.