

AAPD

Form 3160-5
(August 2007)UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

FORM APPROVED
OMB NO. 1004-0135
Expires: July 31, 2010**SUNDRY NOTICES AND REPORTS ON WELLS**
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.***SUBMIT IN TRIPLICATE - Other instructions on reverse side.**

1. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		8. Well Name and No. DODD FEDERAL UNIT 598
2. Name of Operator COG OPERATING LLC Contact: KELLY J HOLLY E-Mail: kholly@concho.com		9. API Well No. 30-015-40700
3a. Address ONE CONCHO CENTER 600 W ILLINOIS AVE MIDLAND, TX 79701	3b. Phone No. (include area code) Ph: 432-685-4384	10. Field and Pool, or Exploratory DODD; GLORIETA-UPPER YESO
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 14 T17S R29E Mer NMP NESE 1390FSL 915FEL		11. County or Parish, and State EDDY COUNTY, NM

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

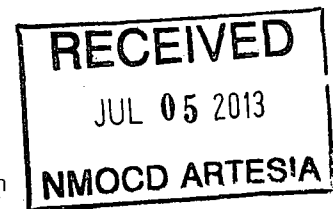
TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	Change to Original APD
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> 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 recompleat horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompleat in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

COG Operating LCC submitted APD for this well at this location:
SHL: 1390' FSL & 915' FEL, Unit I

COG Operating LLC respectfully requests permission to add a BHL to this well:
SHL: 1390' FSL & 915' FEL, Unit I
BHL: 1310' FSL & 1000' FEL, Unit P

A revised C-102, flowline, road map, H2S diagram, Rig Layout, Surface Use Plan and Directional Plan are attached for your review.

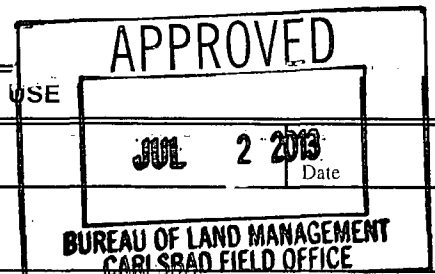


original COG SHL/Stand

Accepted for record
NMOCD TES

7/5/2013

14. I hereby certify that the foregoing is true and correct. Electronic Submission #210256 verified by the BLM Well Information System For COG OPERATING LLC, sent to the Carlsbad Committed to AFMSS for processing by KURT SIMMONS on 06/18/2013 ()	
Name (Printed/Typed) KELLY J HOLLY	Title PERMITTING TECH
Signature (Electronic Submission)	Date 06/11/2013
THIS SPACE FOR FEDERAL OR STATE OFFICE USE	
Approved By _____	Title _____
Conditions of approval, if any, are attached. Approval of this notice does not warrant or certify that the applicant holds legal or equitable title to those rights in the subject lease which would entitle the applicant to conduct operations thereon.	Office _____



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

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

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

Form C-102

Revised August 1, 2011

Submit one copy to appropriate
District Office

RECEIVED
JUL 05 2013
NMOCD ARTESIA

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-40700	Pool Code 97917	Pool Name Dodd, Glorieta Upper Yeso
Property Code 308195	Property Name DODD FEDERAL UNIT	Well Number 598
OGRID No. 229137	Operator Name COG OPERATING, LLC	Elevation 3613'

Surface Location



UL of lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
J	14	17-S	29-E		1390'	SOUTH	915'	EAST	EDDY

Bottom Hole Location If Different From Surface

UL of lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
P	14	17-S	29-E		1310'	SOUTH	1000'	EAST	EDDY

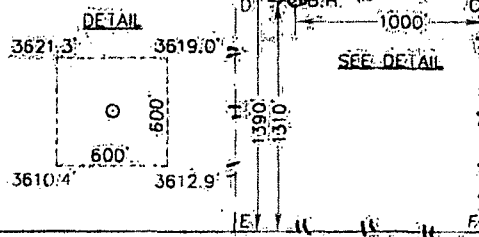
Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
4.0			

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>CORNER COORDINATES</p> <p>A-Y=667403.7 N, X=589900.9 E B-Y=667403.3 N, X=591222.2 E C-Y=666084.2 N, X=591225.5 E D-Y=666083.8 N, X=589904.2 E E-Y=664764.0 N, X=589907.5 E F-Y=664765.0 N, X=591228.9 E</p>		<p>OPERATOR CERTIFICATION</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 in a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.</p> <p> 6-10-13 Signature Date Kelly J. Holly Printed Name knolly@concho.com E-mail Address</p>	
<p>GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y=666153.9 N X=590310.5 E LAT = 32.830998° N LONG = 104.039322° W BOTTOM HOLE LOCATION Y=666073.9 N X=590225.8 E</p>		<p>SURVEYOR CERTIFICATION</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>JUNE 23, 2012 Date of Survey Signature of Professional Surveyor  Ronald J. Eidson Certified Number 3239 DSR Ref. W.O. 13/0572</p>	

GRID AZ = 226°38'33"
 (HORIZ. DIST. = 116.6')

Estimated
Completed
Interval:
1300 FSL + 990 FEL



Surface Use Plan
COG Operating, LLC
Dodd Federal Unit #598
SL: 1390' FSL & 915' FEL UL I
BHL: 1310' FSL & 1000' FEL UL P
Section 14, T-17-S, R-29-E
Eddy County, New Mexico

I hereby certify that I, or persons under my direct supervision, have inspected the drill site and access road proposed herein; that I am familiar with the conditions that presently exist; that I have full knowledge of State and Federal laws applicable to this operation; that the statements made in this APD package are, to the best of my knowledge, true and correct; and that the work associated with the operations proposed herein will be performed in conformity with this APD package and the terms and conditions under which it is approved. I also certify that I, or COG Operating, LLC, am responsible for the operations conducted under this application. These statements are subject to the provisions of 18 U.S.C. 1001 for the filing of false statements. Executed this 2nd day of July, 2013.

Signed: Carl Bird

Printed Name: Carl Bird

Position: Drilling Engineer

Address: 550 W. Texas, Suite 1300, Midland, Texas 79701

Telephone: (432) 683-7443

Field Representative (if not above signatory): Same

E-mail: cbird@concho.com

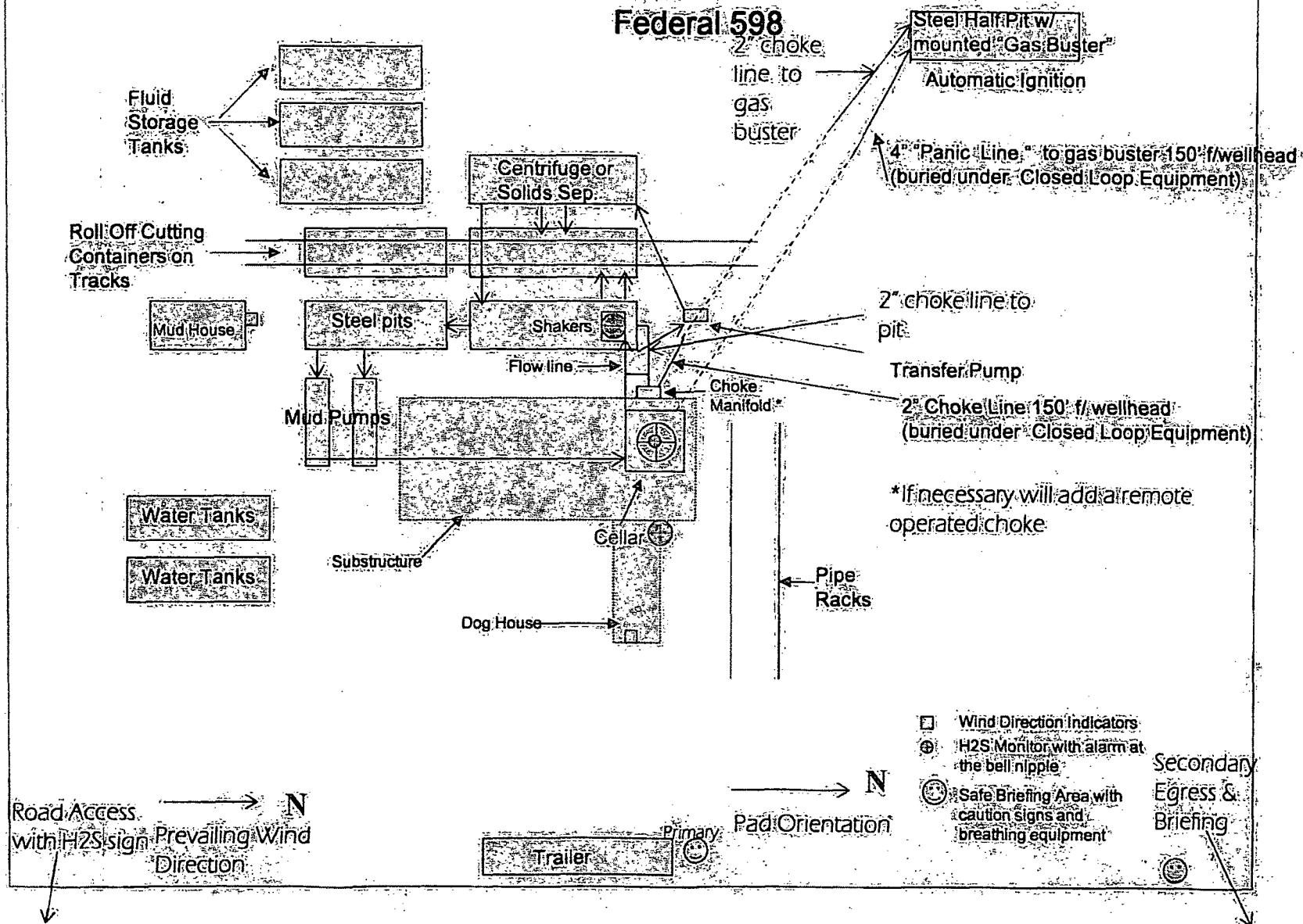
COG Operating LLC

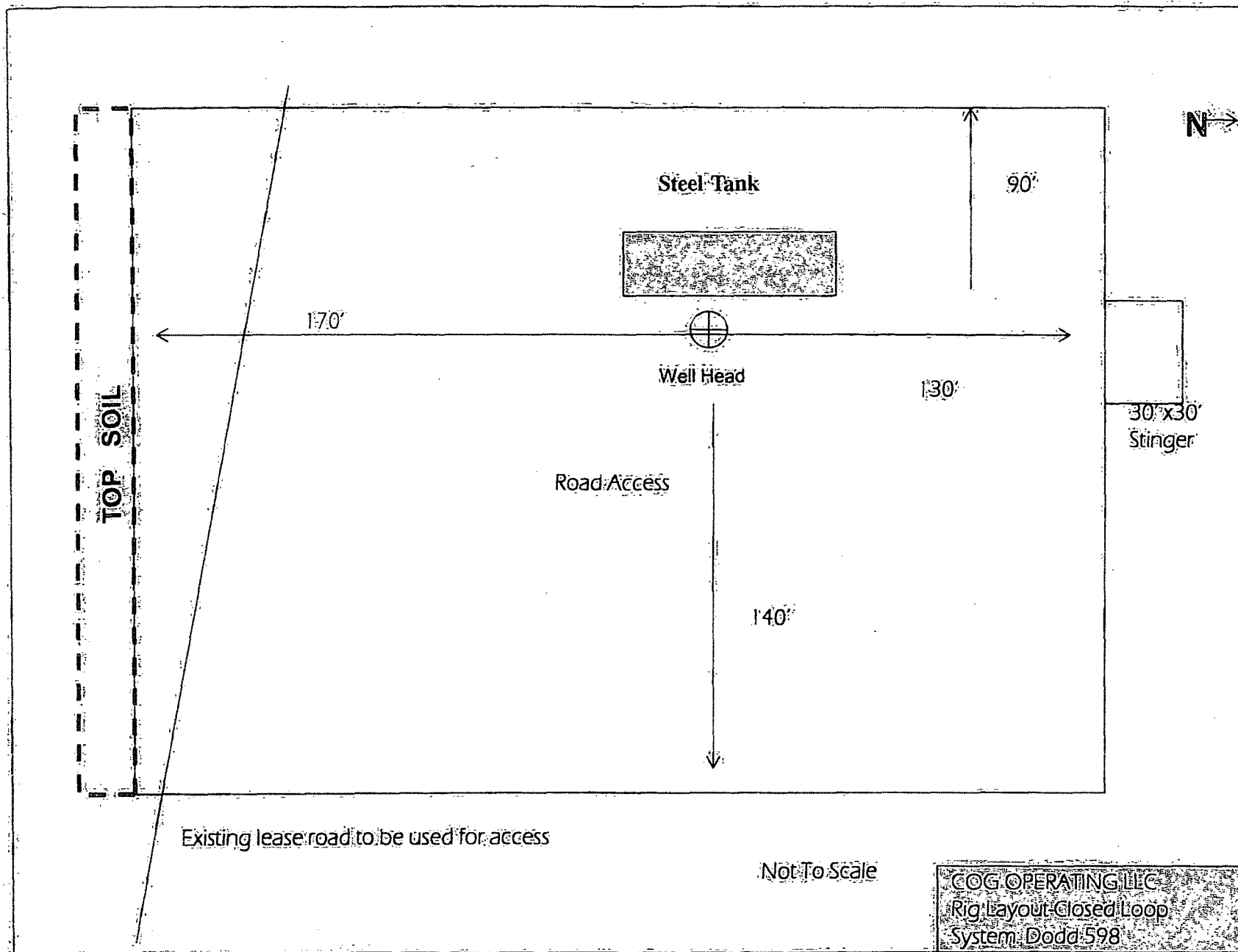
Drilling Location - H2S Safety Equipment Diagram

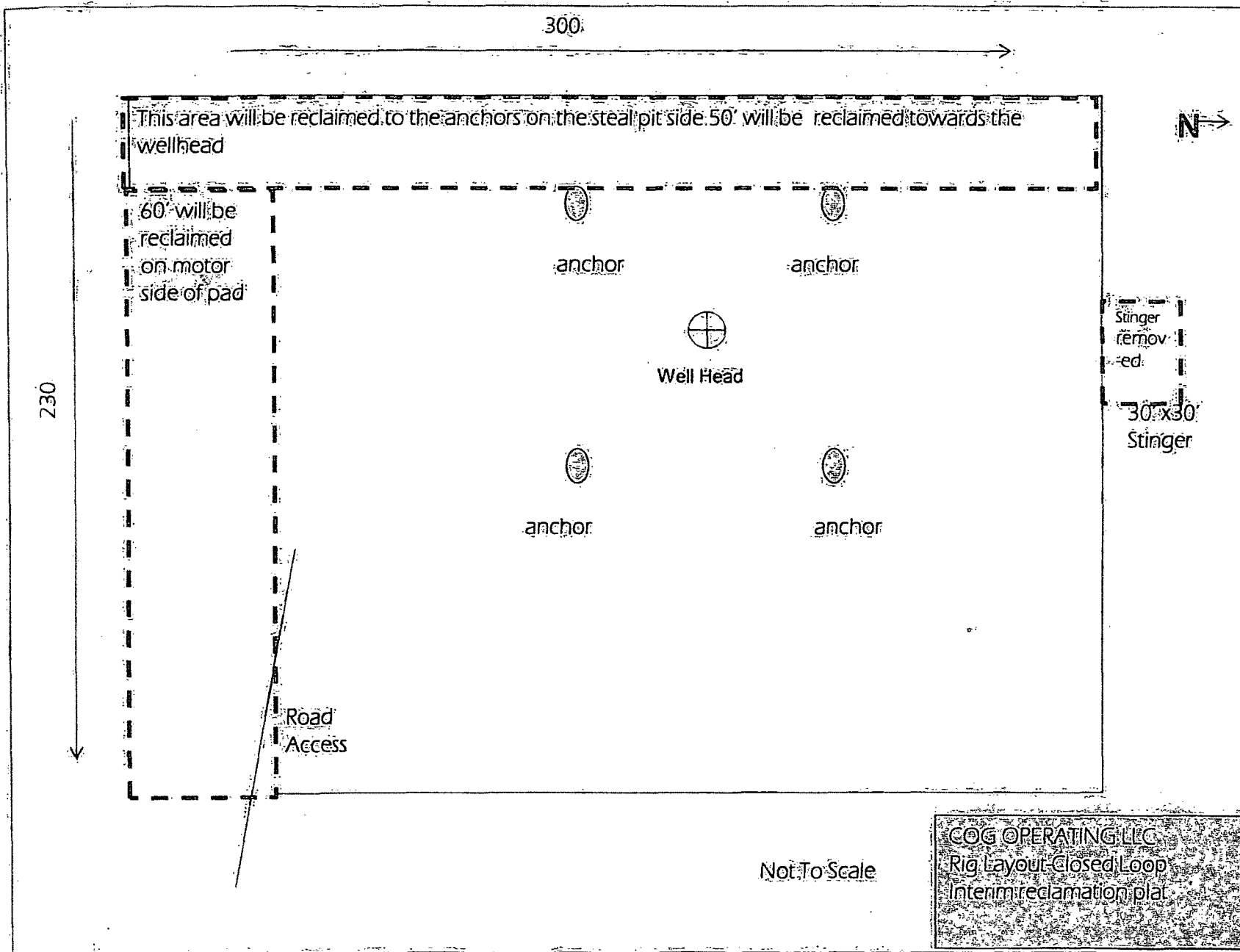
EXHIBIT 8-

Dodd

Federal 598







Surface Use & Operating Plan

Dodd Federal Unit #598

- Surface Tenant: Bogle Farms, Lewis Derrick, P O Box 441, Artesia, NM 88211.
- New Road: approx. 0'
- Flow Line: approx. 0.3 mi
- Facilities: Dodd 14-A Federal Tank Battery

Well Site Information

V Door: North

Topsoil: South

Interim Reclamation: West/South

Notes

-90' to pit side

-75' move to avoid pipeline

Onsite: 4/19/2012

Tanner Nygren (BLM), Caden Jameson (COG), Gary Box (J.W.S)

SURFACE USE AND OPERATING PLAN

1. Existing & Proposed Access Roads

- A. The well site survey and elevation plat for the proposed well is attached with this application. It was staked by John West Engineering, Hobbs, NM.
- B. All roads to the location are shown in the Vicinity Map. The existing lease roads are illustrated and are adequate for travel during drilling and production operations. Upgrading existing roads prior to drilling the well will be done where necessary. The road route to the well site is depicted in Exhibit #2. The road highlighted in Exhibit #2 will be used to access the well.
- C. Directions to location: See exhibit #2.
- D. Routine grading and maintenance of existing roads will be conducted as necessary to maintain their condition as long as any operations continue on this lease. Roads will be maintained according to specifications in section 2A of this Surface Use and Operating Plan.

2. Proposed Access Road:

The Elevation Plat shows that 0' of new access road will be required for this location. If any road is required it will be constructed as follows:

- A. The maximum width of the running surface will be 14'. The road will be crowned, ditched and constructed of 6" rolled and compacted caliche. Ditches will be at 3:1 slope and 4 feet wide. Water will be diverted where necessary to avoid ponding, prevent erosion, maintain good drainage, and to be consistent with local drainage patterns.
- B. The average grade will be less than 1%.
- C. No turnouts are planned.
- D. No culverts, cattleguard, gates, low water crossings or fence cuts are necessary.
- E. Surfacing material will consist of native caliche. Caliche will be obtained from the actual well site if available. If not available onsite, caliche will be hauled from the nearest BLM approved caliche pit.

3. Location of Existing Well:

The 1-mile Map shows all existing wells within a one-mile radius of this well.

As shown on this plat there are numerous wells producing from the San Andres and Yeso formations.

4. Location of Existing and/or Proposed Facilities:

- A. COG Operating LLC does operate a production facility on this lease.
- B. If the well is productive, contemplated facilities will be as follows:
 - 1) Production will be sent to the Dodd 14-A Federal Tank Battery located in Section 14 at the Dodd Federal Unit #625 well location in T17S R29E. The facility location is shown in Exhibit #1.
 - 2) The tank battery and facilities including all flow lines and piping will be installed according to API specifications.
 - 3) Any additional caliche will be obtained from the actual well site. If caliche does not exist or is not plentiful from the well site, the caliche will be hauled from a BLM approved caliche pit. Any additional construction materials will be purchased from contractors.
 - 4) Proposed flow lines, will follow an archaeologically approved route to the Dodd 14-A Federal Tank Battery located in Section 14 at the Dodd Federal Unit #625 well location in T17S R29E. The flowline will be SDR 7 3" poly line laid on the surface and will be approximately 0.3 mile in length. See Exhibit 1.
 - 5) It will be necessary to run electric power if this well is productive. Power will be provided by CVE and they will submit a separate plan and ROW for service to the well location.
 - 6) If the well is productive, rehabilitation plans will include the following:
 - The original topsoil from the well site will be returned to the location, and the site will be re-contoured as close as possible to the original site.

5. Location and Type of Water Supply:

The well will be drilled with combination brine and fresh water mud system as outlined in the drilling program. The water will be obtained from commercial water stations in the area and hauled to location by transport truck over the existing and proposed access roads shown in Exhibit #1. If a commercial fresh water source is nearby, fast line may be laid along existing road ROW's and fresh water pumped to the well. No water well will be drilled on the location.

6. Source of Construction Materials and Location "Turn-Over" Procedure:

Obtaining caliche: The primary way of obtaining caliche to build locations and roads will be by "turning over" the location. This means, caliche will be obtained from the actual well sight. A caliche permit will be obtained from BLM prior to pushing up any caliche. 2400 cu. Yards is max amount of caliche needed for pad and roads. Amount will vary for each pad. The procedure below has been approved by BLM personnel:

- A. The top 6 inches of topsoil is pushed off and stockpiled along the side of the location.**
- B. An approximate 120' X 120' area is used within the proposed well site to remove caliche.**
- C. Subsoil is removed and piled alongside the 120' by 120' area within the pad site.**
- D. When caliche is found, material will be stock piled within the pad site to build the location and road.**
- E. Then subsoil is pushed back in the hole and caliche is spread accordingly across entire location and road.**
- F. Once well is drilled, the stock piled top soil will be used for interim reclamation and spread along areas where caliche is picked up and the location size is reduced. Neither caliche nor subsoil will be stock piled outside of the well pad. Topsoil will be stockpiled along the edge of the pad as depicted in attached plat.**

In the event that no caliche is found onsite, caliche will be hauled in from a BLM approved caliche pit.

7. Methods of Handling Water Disposal:

- A. The well will be drilled utilizing a closed loop mud system. Drill cuttings will be held in roll-off style mud boxes and taken to an NMOCD approved disposal site.
- B. Drilling fluids will be contained in steel mud pits.
- C. Water produced from the well during completion will be held temporarily in steel tanks and then taken to an NMOCD approved commercial disposal facility.
- D. Garbage and trash produced during drilling or completion operations will be collected in a trash bin and hauled to an approved landfill. No toxic waste or hazardous chemicals will be produced by this operation.
- E. Human waste and grey water will need to be properly contained and disposed of. Proper disposal and elimination of waste and grey water may include but are not limited to portable septic systems and/or portable waste gathering systems (i.e. portable toilets).
- F. After the rig is moved out and the well is either completed or abandoned, all waste materials will be cleaned up within 30 days. In the event of a dry hole only a dry hole marker will remain.

8. Ancillary Facilities:

No airstrip, campsite or other facilities will be built as a result of the operation on this well.

9. Well Site Layout:

- A. The drill pad layout, with elevations staked by John West Engineering, is shown in the Elevation Plat. Dimensions of the pad and pits are shown on the Rig Layout. V door direction is North. Topsoil, if available, will be stockpiled per BLM specifications. Because the pad is almost level no major cuts will be required.
- B. The Rig Layout Closed-Loop exhibit shows the proposed orientation of closed loop system and access road. No permanent living facilities are planned, but a temporary foreman/toolpusher's trailer will be on location during the drilling operations.

10. Plans for Restoration of the Surface:

- A. Interim Reclamation will take place after the well has been completed. The pad will be downsized by reclaiming the areas not needed for production operations. The portions of the pad that are not needed for production operations will be re-contoured to its original state as much as possible. The caliche that is removed will be reused to either build another pad site or for road repairs within the lease. The stockpiled topsoil will then be spread out reclaimed area and reseeded with a BLM approved seed mixture. In the event that the well must be worked over or maintained, it may be necessary to drive, park, and/or operate machinery on reclaimed land. This area will be repaired or reclaimed after work is complete.
- B. Final Reclamation: Upon plugging and abandoning the well all caliche for well pad and lease road will be removed and surface will be recontoured to reflect its surroundings as much as possible. Caliche will be recycled for road repair or reused for another well pad within the lease. If any topsoil remains, it will be spread out and the area will be reseeded with a BLM approved mixture and re-vegetated as per BLM orders.

11. Surface Ownership:

- A. The surface is owned by the U.S. Government and is administered by the Bureau of Land Management. The surface is multiple uses with the primary uses of the region for grazing of livestock and the production of oil and gas.
- B. The surface tenant is Bogle Farms, Lewis Derrick, P.O. Box 441, Artesia, NM 88211.
- C. The proposed road routes and surface location will be restored as directed by the BLM

12. Other Information:

- A. The area around the well site is grassland and the topsoil is sandy. The vegetation is moderately sparse with native prairie grasses, some mesquite and shinnery oak. No wildlife was observed but it is likely that mule deer, rabbits, coyotes and rodents traverse the area.
- B. There is no permanent or live water in the immediate area.
- C. There are no dwellings within 2 miles of this location.
- D. If needed, a Cultural Resources Examination is being prepared by Southern New Mexico Archaeological Services, Inc. P.O. Box 1, Bent New Mexico, 88314, phone # 505-671-4797 and the results will be forwarded to your office in the near future. Otherwise, **COG will be participating in the Permian Basin MOA Program.**

13. Bond Coverage:

Bond Coverage is Nationwide Bond # 000215

14. Lessee's and Operator's Representative:

The COG Operating LLC representative responsible for assuring compliance with the surface use plan is as follows:

Jim Evans	Ray Peterson
Drilling Superintendent	Drilling Manager
COG Operating LLC	COG Operating LLC
550 W. Texas, Suite 1300	550 W. Texas, Suite 1300
Midland, TX 79701	Midland, TX 79701
Phone (432) 685-4304 (office)	Phone (432) 685-4304 (office)
(432) 221-0346 (business)	(432) 818-2254 (business)

RECEIVED

JUL 05 2013

NMOCD ARTESIA

Plan Proposal

FOR

COG Operating, LLC
Dodd Federal Unit #598
Eddy Co., NM

Design #1

Presented By

Aaron Boger
Account Manager

Bret Wolford
Well Planner

SHL

1390 FSL & 915 FEL

PBHL/Top Paddock (4100 TVD)

1300 FSL & 990 FEL

Sec. 14-T17S-R29E

NOTED



COG Operating, LLC
Project: Eddy County(NM27E)
Site: Sec.14-T17S-R29E
Well: Dodd Federal Unit #598
Wellbore: Wellbore #1
Design: Design #1
Latitude: 32° 49' 51.593 N
Longitude: 104° 2' 21.560 W
Ground Level: 3613.00
WELL @ 3630.00usft

Archer

PROJECT DETAILS: Eddy County(NM27E)

Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001

System Datum: Mean Sea Level

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Dodd Federal Unit #598, Grid North
Vertical (TVD) Reference: WELL @ 3630.00usft
Section (VS) Reference: Slot - (0.00N, 0.00E)
Measured Depth Reference: WELL @ 3630.00usft
Calculation Method: Minimum Curvature

WELL DETAILS: Dodd Federal Unit #598

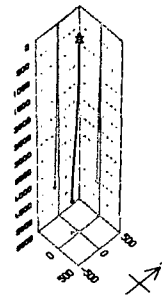
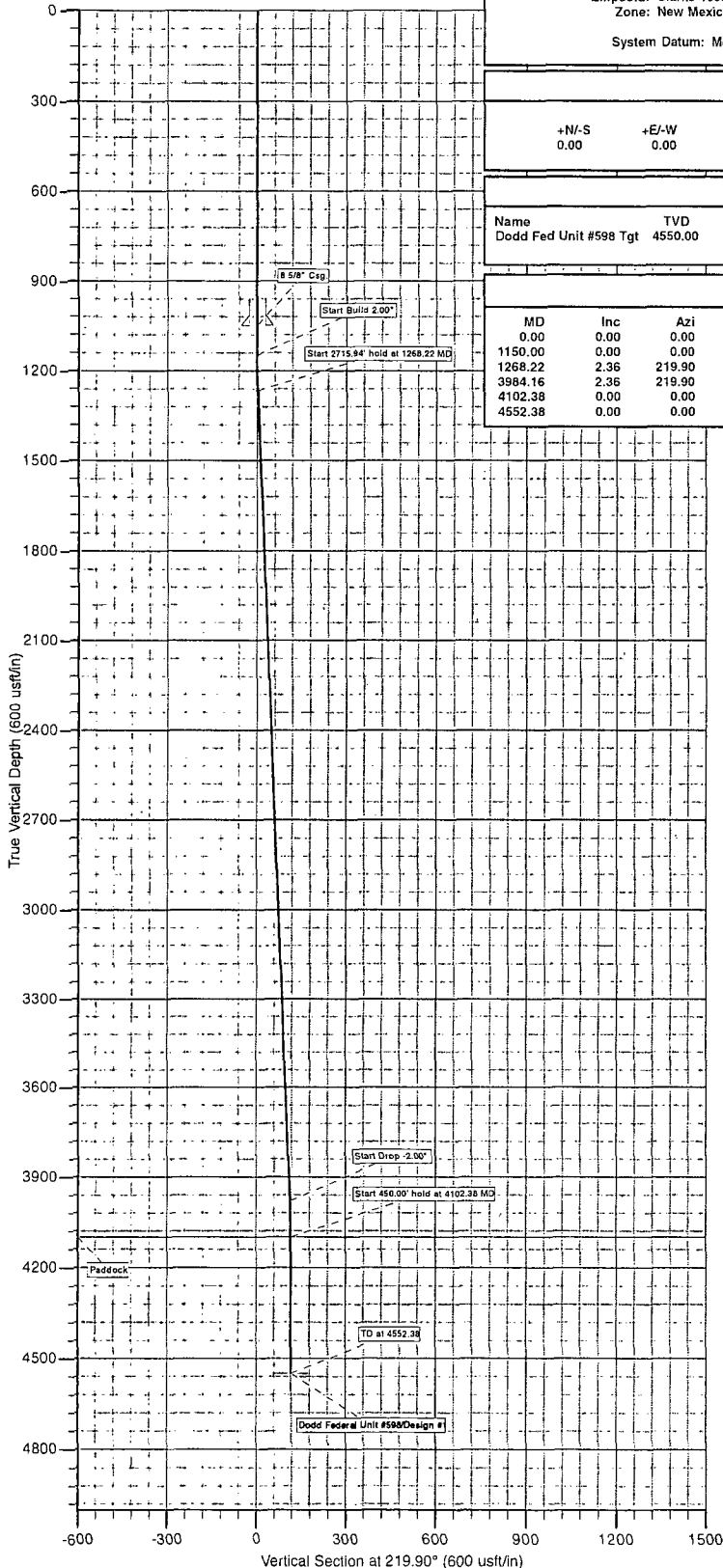
+N-S	+E-W	Northing	Ground Level:	Latitude	Longitude	Slot
0.00	0.00	666153.900	3613.00 590310.500	32° 49' 51.593 N	104° 2' 21.560 W	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES AND LAT/LONG)

Name	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude	Shape
Dodd Fed Unit #598 Tgt	4550.00	-89.70	-75.00	666064.200	590235.500	32° 49' 50.708 N	104° 2' 22.442 W	Circle (Radius: 20.00)

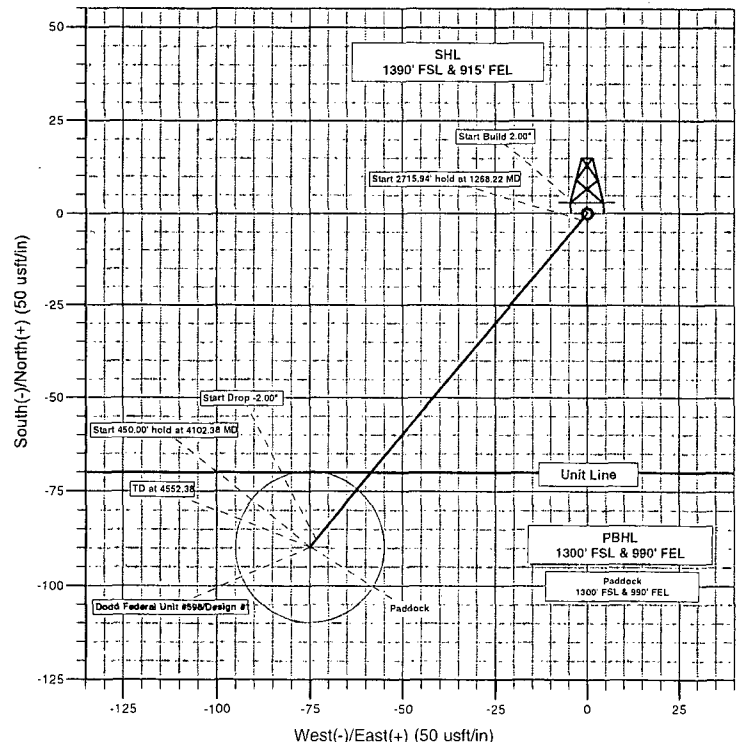
SECTION DETAILS

MD	Inc	Azi	TVD	+N-S	+E-W	Dlog	TFace	VSection	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1150.00	0.00	0.00	1150.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00°
1268.22	2.36	219.90	1268.19	-1.87	-1.56	2.00	219.90	2.44	Start 2715.94° hold at 1268.22 MD
3984.16	2.36	219.90	3981.81	-87.83	-73.44	0.00	0.00	114.48	Start Drop -2.00°
4102.38	0.00	0.00	4100.00	-89.70	-75.00	2.00	180.00	116.92	Start 450.00° hold at 4102.38 MD
4552.38	0.00	0.00	4550.00	-89.70	-75.00	0.00	0.00	116.92	TD at 4552.38



Azimuths to Grid North
True North: -0.16°
Magnetic North: 7.45°

Magnetic Field
Strength: 48731.3nT
Dip Angle: 60.62°
Date: 2013/06/04
Model: IGRF2010



Plan: Design #1 (Dodd Federal Unit #598/Wellbore #1)

Created By: Bret Wolford Date: 10:50, June 04 2013



COG Operating, LLC

Eddy County(NM27E)

Sec.14-T17S-R29E

Dodd Federal Unit #598

Wellbore #1

Plan: Design #1

Standard Planning Report

04 June, 2013

Archer

Database:	EDM150001 Single User Db	Local Co-ordinate Reference:	Well/Dodd Federal Unit #598
Company:	COG Operating, LLC	TVD Reference:	WELL @ 3630.00usft
Project:	Eddy County (NM27E)	MD Reference:	WELL @ 3630.00usft
Site:	Sec 14-T17S-R29E	North Reference:	Grid
Well:	Dodd Federal Unit #598	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project:	Eddy County (NM27E)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site:	Sec 14-T17S-R29E		
Site Position:		Northing:	665,092.800 usft
From:	Map	Easting:	588,494.000 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"
		Latitude:	32° 49' 41.143 N
		Longitude:	104° 2' 42.883 W
		Grid Convergence:	0.16 "

Well: Dodd Federal Unit #598						
Well Position	+N/-S	1,061.10 usft	Northing:	666,153.900 usft	Latitude:	32° 49' 51.593 N
	+E/-W	1,816.50 usft	Easting:	590,310.500 usft	Longitude:	104° 2' 21.560 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,613.00 usft

Wellbore:	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2010	06/04/13	7.61	60.62	48,731

Design:	Design #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N-S	+E-W	Direction
	(usft)	(usft)	(usft)	(°)
	4,550.00	0.00	0.00	219.90

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	N/S (usft)	E/W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,150.00	0.00	0.00	1,150.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,268.22	2.36	219.90	1,268.19	-1.87	-1.56	2.00	2.00	0.00	219.90	
3,984.16	2.36	219.90	3,981.81	-87.83	-73.44	0.00	0.00	0.00	0.00	
4,102.38	0.00	0.00	4,100.00	-89.70	-75.00	2.00	-2.00	0.00	180.00	
4,552.38	0.00	0.00	4,550.00	-89.70	-75.00	0.00	0.00	0.00	0.00	

Database:	EDM150001 Single User Db	Local Co-ordinate Reference:	Well: Dodd Federal Unit #598
Company:	COG Operating, LLC	TVD Reference:	WELL @ 3630.00usft
Project:	Eddy County (NM27E)	MD Reference:	WELL @ 3630.00usft
Site:	Sec. 14-T17S-R29E	North Reference:	Grid
Well:	Dodd Federal Unit #598	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
8.5/8" Csg.									
1,050.00	0.00	0.00	1,050.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00°									
1,150.00	0.00	0.00	1,150.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	1.00	219.90	1,200.00	-0.33	-0.28	0.44	2.00	2.00	0.00
Start 2715.94° hold at 1268.22 MD									
1,268.22	2.36	219.90	1,268.19	-1.87	-1.56	2.44	2.00	2.00	0.00
1,300.00	2.36	219.90	1,299.94	-2.88	-2.41	3.75	0.00	0.00	0.00
1,400.00	2.36	219.90	1,399.85	-6.04	-5.05	7.88	0.00	0.00	0.00
1,500.00	2.36	219.90	1,499.77	-9.21	-7.70	12.00	0.00	0.00	0.00
1,600.00	2.36	219.90	1,599.68	-12.37	-10.34	16.13	0.00	0.00	0.00
1,700.00	2.36	219.90	1,699.60	-15.54	-12.99	20.25	0.00	0.00	0.00
1,800.00	2.36	219.90	1,799.51	-18.70	-15.64	24.38	0.00	0.00	0.00
1,900.00	2.36	219.90	1,899.43	-21.87	-18.28	28.50	0.00	0.00	0.00
2,000.00	2.36	219.90	1,999.34	-25.03	-20.93	32.63	0.00	0.00	0.00
2,100.00	2.36	219.90	2,099.26	-28.20	-23.58	36.75	0.00	0.00	0.00
2,200.00	2.36	219.90	2,199.17	-31.36	-26.22	40.88	0.00	0.00	0.00
2,300.00	2.36	219.90	2,299.09	-34.53	-28.87	45.00	0.00	0.00	0.00
2,400.00	2.36	219.90	2,399.00	-37.69	-31.51	49.13	0.00	0.00	0.00
2,500.00	2.36	219.90	2,498.92	-40.86	-34.16	53.26	0.00	0.00	0.00
2,600.00	2.36	219.90	2,598.83	-44.02	-36.81	57.38	0.00	0.00	0.00
2,700.00	2.36	219.90	2,698.75	-47.19	-39.45	61.51	0.00	0.00	0.00
2,800.00	2.36	219.90	2,798.66	-50.35	-42.10	65.63	0.00	0.00	0.00
2,900.00	2.36	219.90	2,898.58	-53.52	-44.75	69.76	0.00	0.00	0.00
3,000.00	2.36	219.90	2,998.49	-56.68	-47.39	73.88	0.00	0.00	0.00
3,100.00	2.36	219.90	3,098.41	-59.85	-50.04	78.01	0.00	0.00	0.00
3,200.00	2.36	219.90	3,198.32	-63.01	-52.68	82.13	0.00	0.00	0.00
3,300.00	2.36	219.90	3,298.24	-66.18	-55.33	86.26	0.00	0.00	0.00
3,400.00	2.36	219.90	3,398.15	-69.34	-57.98	90.39	0.00	0.00	0.00
3,500.00	2.36	219.90	3,498.07	-72.51	-60.62	94.51	0.00	0.00	0.00
3,600.00	2.36	219.90	3,597.98	-75.67	-63.27	98.64	0.00	0.00	0.00
3,700.00	2.36	219.90	3,697.90	-78.84	-65.92	102.76	0.00	0.00	0.00
3,800.00	2.36	219.90	3,797.81	-82.00	-68.56	106.89	0.00	0.00	0.00
3,900.00	2.36	219.90	3,897.73	-85.17	-71.21	111.01	0.00	0.00	0.00
Start Drop -2.00°									
3,984.16	2.36	219.90	3,981.81	-87.83	-73.44	114.48	0.00	0.00	0.00
4,000.00	2.05	219.90	3,997.64	-88.30	-73.83	115.09	2.00	-2.00	0.00
Start 450.00° hold at 4102.38 MD - Paddock									
4,102.38	0.00	0.00	4,100.00	-89.70	-75.00	116.92	2.00	-2.00	0.00
4,200.00	0.00	0.00	4,197.62	-89.70	-75.00	116.92	0.00	0.00	0.00
4,300.00	0.00	0.00	4,297.62	-89.70	-75.00	116.92	0.00	0.00	0.00
4,400.00	0.00	0.00	4,397.62	-89.70	-75.00	116.92	0.00	0.00	0.00

Database:	EDM5000.1 Single User Db	Local Co-ordinate Reference:	Well: Dodd Federal Unit #598
Company:	COG Operating, LLC	TVD Reference:	WELL @ 3630.00usft
Project:	Eddy County (NM27E)	MD Reference:	WELL @ 3630.00usft
Site:	Sec. 14-T17S-R29E	North Reference:	Grid
Well:	Dodd Federal Unit #598	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (%/100usft)	Build Rate (%/100usft)	Turn Rate (%/100usft)
4,500.00	0.00	0.00	4,497.62	-89.70	-75.00	116.92	0.00	0.00	0.00
TD at 4552.38 - Dodd Fed Unit #598 Tgt									
4,552.38	0.00	0.00	4,550.00	-89.70	-75.00	116.92	0.00	0.00	0.00

Design Targets									
Target Name	hit/miss target	Dip Angle (°)	Dip Dir (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude Longitude
Dodd Fed Unit #598 Tgt		0.00	0.00	4,550.00	-89.70	-75.00	666,064.200	590,235.500	32° 49' 50.708 N 104° 2' 22.442 W
- plan hits target center									
- Circle (radius 20.00)									

Casing Points							
Measured Depth (usft)	Vertical Depth (usft)	Name		Casing Diameter (")	Hole Diameter (")		
1,050.00	1,050.00	8 5/8" Csg.		8-5/8	12-1/4		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,102.38	4,100.00	Paddock		0.00		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
1,150.00	1,150.00	0.00	0.00	Start Build 2.00°
1,268.22	1,268.19	-1.87	-1.56	Start 2715.94' hold at 1268.22 MD
3,984.16	3,981.81	-87.83	-73.44	Start Drop -2.00°
4,102.38	4,100.00	-89.70	-75.00	Start 450.00' hold at 4102.38 MD
4,552.38	4,550.00	-89.70	-75.00	TD at 4552.38