

12-915

Form 3160-3
(April 2004)

RECEIVED

SEP 24 2012

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

FORM APPROVED
OMB No. 1004-0137
Expires March 31, 2007

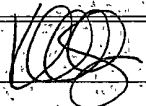
APPLICATION FOR PERMIT TO DRILL OR REENTER

1a Type of work: ☒ DRILL ☐ REENTER		5 Lease Serial No. SHL: NM-0000162; BHL: NM-2507	
1b Type of Well: ☒ Oil Well ☐ Gas Well ☐ Other ☐ Single Zone ☐ Multiple Zone		6 If Indian, Allottee or Tribe Name N/A	
2 Name of Operator COG Operating LLC		7 If Unit or CA Agreement, Name and No. N/A	
3a Address 550 W. Texas Ave., Suite 100 Midland, TX 79701		8 Lease Name and Well No. Trigg 6 Federal Com #3H	
3b Phone No. (include area code) 432-685-4384		9 API Well No. 30-015-40744	
4 Location of Well (Report location clearly and in accordance with any State requirements *) At surface 2959' FNL & 38' FWL, Lot 12, Sec 5, T16S, R31E At proposed prod zone 2970' FNL & 330' FWL, Lot 12, Sec 6, T16S, R31E		10 Field and Pool, or Exploratory Wildcat, Wolfcamp WC; G-05 S153117E;	
11 Sec, T, R, M or Bk. and Survey or Area Sec 6, T16S, R31E		12 County or Parish EDDY	
13 State NM		14 Distance in miles and direction from nearest town or post office* 11.5 miles Northwest of Maljamar, NM	
15 Distance from proposed location to nearest property or lease line, ft (Also to nearest drg unit line, if any) 938'	16 No. of acres in lease SHL: 480; BHL: 854.35	17 Spacing Unit dedicated to this well 149.18	
18 Distance from proposed location to nearest well, drilling completed, applied for, on this lease, ft 748'	19 Proposed Depth TVD: 8240' MD: 12591' pilot hole 8600'	20 BLM/BIA Bond No on file NMB000215; NMB000740	
21 Elevations (Show whether DF, KDB, RT, GL, etc.) 4037' GL	22 Approximate date work will start* 08/31/2012	23 Estimated duration 15 days	

24. Attachments

The following, completed in accordance with the requirements of Onshore Oil and Gas Order No. 1, shall be attached to this form

- Well plat certified by a registered surveyor.
- A Drilling Plan.
- A Surface Use Plan (if the location is on National Forest System Lands, the SUPO shall be filed with the appropriate Forest Service Office).
- Bond to cover the operations unless covered by an existing bond on file (see Item 20 above)
- Operator certification
- Such other site-specific information and/or plans as may be required by the authorized officer

25 Signature 	Name (Printed/Typed) Kelly J. Holly	Date 06/05/2012
Title Permitting Tech		
Approved by (Signature) /s/ Don Peterson	Name (Printed/Typed) /s/ Don Peterson	Date SEP 21 2012
Title FIELD MANAGER		
Office CARLSBAD FIELD OFFICE		

Application approval 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.
Conditions of approval, if any, are attached

APPROVAL FOR TWO YEARS

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)

Roswell Controlled Water Basin

Approval Subject to General Requirements
& Special Stipulations AttachedSEE ATTACHED FOR
CONDITIONS OF APPROVAL

Surface Use Plan
COG Operating, LLC
Trigg 6 Federal Com 3H
SL: 2959' FNL & 38' FWL UN 12
Section 5, T-16-S, R-31-E
BHL: 2970' FNL & 330' FWL UN 12
Section 5, T-16-S, R-31-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 25th day of April, 2012.

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

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

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015- 40744	Pool Code 97722	Pool Name WILDCAT; WOLF CAMP 6-05 5153117E; ABO-WOLF CAMP
Property Code 39206	Property Name TRIGG 6 FEDERAL COM	Well Number 3H
GRID No 229137	Operator Name COG OPERATING, LLC	Elevation 4037'

Surface Location

UL or lot No	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
12/D	5	16-S	31-E		2959	NORTH	38	WEST	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
12/D	6	16-S	31-E		2970	NORTH	330	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No
149.18			

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

LOT 4 29.59 AC. LOT 3 40.57 AC. LOT 2 40.28 AC. LOT 1 39.99 AC. LOT 4 39.76 AC. LOT 3 39.60 AC. LOT 2 39.44 AC. LOT 1 39.28 AC. LOT 5 LOT 6 LOT 7 LOT 8 Estimated Completed Interval 2959' FNL 330' FEL GRID. AZ = 269°45'38" HORIZ. DIST = 4631.1' Producing Area LOT 12 LOT 11 LOT 10 LOT 9 LOT 12 LOT 11 LOT 10 LOT 9 LOT 13 LOT 14 LOT 15 LOT 16 LOT 13 LOT 14 LOT 15 LOT 16 SECTION 6 SECTION 5 GEODETTIC COORDINATES NAD 27 NME SURFACE LOCATION Y=712094.3 N X=632908.9 E LAT.=32.956868° N LONG = 103.900029° W BOTTOM HOLE LOCATION Y=712075.0 N X=628279.0 E CORNER COORDINATES TABLE SCALE: 1"=2000' DETAIL 4040.6' 4044.5' 600' 4027.8' 4034.8'	OPERATOR CERTIFICATION 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. Signature: Robyn M. Odom Date: 7/23/2012 Printed Name: Robyn M. Odom E-mail Address: Rodom@concho.com SURVEYOR CERTIFICATION 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. APRIL 9, 2012 Date of Survey Signature & Seal of Professional Surveyor RONALD J. EIDSON 3239 4/9/2012 Certificate Number: 3239 Surveyor: Ronald J. Eidson AF
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ATTACHMENT TO FORM 3160-3
 COG Operating, LLC
 Trigg 6 Federal Com #3H
 SHL: 2959' FNL & 38' FWL, Lot 12
 Sec 5, T16S, R31E
 BHL: 2970' FNL & 330' FWL, Lot 12
 Sec 6, T16S, R31E
 Eddy County, NM

1. Proration Unit Spacing: 160 Acres
2. Ground Elevation: 4037'
3. Proposed Depths: Pilot hole TD = 8600', Horizontal TVD = 8,240', MD = 12,591'

4. Estimated tops of geological markers:

Rustler	520'
Salado	675'
Base of Salt/Tansil	1530'
Yates	1790'
Seven Rivers	2034'
Queen	2569'
Grayburg	3100'
San Andres	3300'
Glorietta	4940'
Paddock	5060'
Blinberry	5450'
Tubb	6070'
Drinkard	6275'
Abo	6350'
Abo Shale	6840'
Lower Abo/Wolfcamp	8130'
Base Lo. Abo	8250'
Pilot Hole	8600'

5. Possible mineral bearing formations:

Water Sand	150'	Fresh Water
Yates	1790'	Oil / Gas
Queen	2569'	Oil / Gas
San Andres	3300'	Oil / Gas
Tubb	6070'	Oil / Gas
Abo	6840'	Oil / Gas
Lower Abo/Wolfcamp	8130'	Oil / Gas

6. Casing Program - Proposed

<u>Hole size</u>	<u>Interval</u>	<u>OD of Casing</u>	<u>Weight</u>	<u>Cond.</u>	<u>Collar</u>	<u>Grade</u>
17-1/2"	0' - +/- 545'	13-3/8"	48#	New	STC	H-40 or J/K-55 Hybrid
Collapse sf - 4.36, Burst sf - 9.79, Tension sf - 16.77						
12 1/4"	0' - +/- 3300'	9-5/8"	40#	New	STC	J/K-55
Collapse sf - 1.36, Burst sf - 2.09, Tension sf - 3.25						
8-3/4"	0' - +/- 7275'	7"	26#	New	LTC	P-110
Collapse sf - 1.67, Burst sf - 2.68, Tension sf - 3.40						

Note: The 7" casing setting may vary from 7275' (+/- 100') based on geologic information from the Trigg 5 Federal #1 located in Sec 5 T16S R31E.

ATTACHMENT TO FORM 3160-3

COG Operating, LLC
Trigg 6 Federal Com #3H
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Hole size	Interval	OD of Casing	Weight	Cond.	Collar	Grade
6-1/8"	7175' - 12591'	4-1/2"	11.6#	New	LTC	P-110
Collapse sf - 1.74, Burst sf - 2.46, Tension sf - 2.74						

Respectfully request permission for 100' liner overlap to set pump as deep as possible. Liner top may also vary +/- 100' depending on 7" casing shoe depth.

7. Cement Program

13 3/8" Surface Casing set at +/- 545', Lead: +/- 200 sx Class "C" w/ 2% CaCl₂, 4% gel, wt. 13.5 ppg, yield 1.74 cf/sk. Tail: 450 sx Class "C" w/ 2% CaCl₂ yield 1.35 cf/sk., wt. 14.8 ppg. 130% excess calculated to surface.

9 5/8" Intrmd. Csg. Set at +/- 3300'. Lead: 800sx 35:65:6 C:Poz:gel w/ 5pps LCM-1, 0.2% sodium metasilicate, 0.3% FL52A (fluid loss additive), 5% NaCl, yield 2.05 cf/sk., wt. 12.5 ppg. Tail: 200sx Class "C" w/ 2% CaCl₂, yield 1.34 cf/sk., wt. 14.8 ppg. 76% excess, calculated to surface.

7" Production Casing set at +/- 7275' MD, Lead: 750 sx Class "C" w/ 4% gel wt 13.5 ppg, yield 1.72 cf/sk. Tail: 200sx Class "C" w/ 0.35% R-3 (retarder), yield 1.33 cf/sk., wt. 14.8 ppg. 100% excess calculated to surface.

6-1/8" Pilot hole 7275' to 8600' plugged back to 7500' with 350 sx Class "C" with 0.3% R-3 (retarder), 1.5% CD-32, yield 0.99 cf/sk., wt 16.8 ppg. 30% excess.

4 1/2" Production Liner set from +/- 7175' to +/- 12591' MD, 8240' TVD, Liner run with +/- 12 isolation Packers and Sliding sleeves in un-cemented Lateral.

8. Pressure Control Equipment:

After setting 13 3/8" casing and installing 3000 psi casing head, NU 13 5/8" 3000 psi annular BOP. Test annular BOP, casing and manifold with clear fluid to 1000 psig. After setting 9 5/8" casing and installing 3000 psi casing spool, NU 3000 psi double ram BOP and 3000 psi annular BOP. Test double ram BOP and manifold to 3000 psig with clear fluid and annular to 1500 psig using an independent tester. This equipment will be used continuously until TD is reached. Blind rams will be operationally checked on each trip out of hole. Pipe rams will be operationally checked each 24 hour period. These checks will be noted on daily tour sheets. Other accessories to the BOP equipment include a Kelly cock and floor safety valves, choke lines and choke manifold with 3000 psi WP rating. This equipment will be tested to recommended working pressures also.

9. Proposed Mud Circulating System

Interval	Mud Wt.	Visc.	FL	Type Mud System
0' - 545' ⁷⁵⁰	8.5	28	NC	Fresh water native mud w/ paper for seepage and sweeps. Lime for PH.
545' - 3300'	9.1	30	NC	Cut brine mud, lime for PH and paper for seepage and sweeps.

ATTACHMENT TO FORM 3160-3

COG Operating, LLC
Trigg 6 Federal Com #3H
Page 3 of 4

Interval	Mud Wt.	Visc.	FL	Type Mud System
3300' - 7275'	9.1	29	NC	Drill section with fresh water/cut brine circulating the reserve utilizing periodic sweeps of paper as needed for seepage control and solids removal.
7275' - 12591'	9.5	36	10	Drill pilot hole, curve and horizontal section with XCD polymer / cut brine / starch.

sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept at the well site at all times.

10. Production Hole Drilling Summary:

Set 7" production casing at +/- 7275'. Drill 6-1/8" pilot hole thru Lower Abo/Wolfcamp to +/- 8600', run open hole logs. Spot +/- 350' sx. Class "C" Kick off plug from +/- 7500' to +/- 8600'. Drill 6-1/8" hole and kick off at +/- 7688', building curve over +/- 741' to horizontal at 8429' MD, 8165' TVD. Drill horizontal section in a Easterly direction for +/- 4162' lateral to TD at +/- 12591' MD, 8240' TVD. Run 4 1/2" production liner in Open hole lateral and set isolation packers and liner top packer @ +/- 7125' MD.

11. Auxiliary Well Control and Monitoring Equipment

- A. Kelly cock will be kept in the drill string at all times.
- B. A full opening drill pipe-stabbing valve with proper drill pipe connections will be on the rig floor at all times.

12. Logging, Testing and Coring Program: *See COA*

- A. The electric logging program will consist of FMI, GR-Dual Laterolog, Spectral Density, Dual Spaced Neutron, CSNG Log and will be ran from T.D. in vertical pilot hole to 9 5/8" casing shoe.
- B. The mud logging program will consist of lagged 10' samples from surface casing point to T.D. in vertical pilot hole and from Kick off point to TD in Horizontal hole.
- C. Drill Stem test is not anticipated.
- D. Whole cores will be taken in the pilot hole.
- E. Further testing procedures will be determined after the 4 1/2" production casing has been run.

13. Abnormal Conditions, Pressures, Temperatures and Potential Hazards:

No abnormal pressures or temperatures are anticipated. The estimated bottom hole temperature at TD is 120 degrees and estimated maximum bottom hole pressure is 3785 psi. pilot hole, 3626 psi for TVD of lateral. Low levels of Hydrogen sulfide have been monitored in producing wells in the area, so H2S may

ATTACHMENT TO FORM 3160-3

COG Operating, LLC
Trigg 6 Federal Com #3H

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be present while drilling of the well. An H2S plan is attached to the Drilling Program. No major loss of circulation zones has been reported in offsetting wells.

14. Anticipated Starting Date

Drilling operations will commence approximately on September **30, 2012** with drilling and completion operations lasting approximately 90 days.



COG Operating LLC

Eddy County, NM (NAN27 NME)

Trigg 6 Federal Com #3H

OH

Plan: Plan #1 8-3/4" Hole

Surface: 2959' FNL, 38' FWL, Sec 5, T16S, R31E, Lot #12

PP: 2959' FNL, 330' FEL, Sec 6, T16S, R31E, Lot #9

BHL: 2970' FNL, 330' FEL, Sec 6, T16S, R31E, Lot #12

Standard Planning Report

31 May, 2012





Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Trigg 6 Federal Com #3H
Company:	COG Operating LLC	TVD Reference:	GL @ 4037.00usft
Project:	Eddy County NM (NAN27 NME)	MD Reference:	GL @ 4037.00usft
Site:	Trigg 6 Federal Com #3H	North Reference:	Grid
Well:	Trigg 6 Federal Com #3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 8-3/4" Hole		

Project:	Eddy County NM (NAN27 NME)		
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		

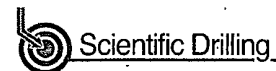
Site:	Trigg 6 Federal Com #3H		
Site Position:		Northing:	712,094.30 usft
From:	Map	Easting:	632,908.90 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"
		Latitude:	32° 57' 24.726 N
		Longitude:	103° 54' 0.105 W
		Grid Convergence:	0.24°

Well: Trigg 6 Federal Com #3H						
Well Position	+N/-S	0 00 usft	Northing:	712,094 30 usft	Latitude:	32° 57' 24 726
	+E/-W	0 00 usft	Easting:	632,908 90 usft	Longitude:	103° 54' 0 105.W
Position Uncertainty		0 00 usft	Wellhead Elevation:		Ground Level:	4,037 00 us

Wellbore: OH					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	05/31/12	7.68	60.78	48,920

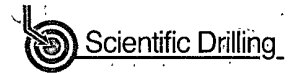
Design: Plan #1 8-3/4" Hole				
Audit Notes:				
Version:		Phase: PLAN	Tie On Depth: 0 00	
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0 00	0 00	0 00	269 76

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
7,687.50	0.00	0.00	7,687.50	0.00	0.00	0.00	0.00	0.00	0.00	
8,429.06	88.97	269.76	8,165.00	-1.95	-468.96	12.00	12.00	0.00	269.76	
12,590.71	88.97	269.76	8,240.00	-19.30	-4,629.90	0.00	0.00	0.00	0.00	PBHL-Trigg 6 #3H



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Trigg 6 Federal Com #3H
Company:	COG Operating LLC	TVD Reference:	GL @ 4037.00usft
Project:	Eddy County, NM (NAN27.NME)	MD Reference:	GL @ 4037.00usft
Site:	Trigg 6 Federal Com #3H	North Reference:	Grid
Well:	Trigg 6 Federal Com #3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 - 8-3/4" Hole		

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
7,687 50	0 00	0 00	7,687 50	0 00	0 00	0 00	0 00	0 00	0 00
KOP Start Build 12.00/100°									
7,700 00	1 50	269 76	7,700 00	0 00	-0 16	0 16	12 00	12 00	0 00
7,800 00	13 50	269 76	7,798 96	-0 05	-13 19	13 19	12 00	12 00	0 00
7,900 00	25 49	269 76	7,893 06	-0 19	-46 50	46 50	12 00	12 00	0 00
8,000 00	37 49	269 76	7,978 17	-0 41	-98 64	98 65	12 00	12 00	0 00
8,100 00	49 49	269 76	8,050 59	-0 70	-167 34	167 34	12 00	12 00	0 00
8,200 00	61 49	269 76	8,107 14	-1 04	-249 59	249 59	12 00	12 00	0 00
8,300 00	73 48	269 76	8,145 37	-1 42	-341 80	341 80	12 00	12 00	0 00
8,327 08	76 73	269 76	8,152 33	-1 53	-367 96	367 97	12 00	12 00	0 00
PP=330° FEL Trigg 6 #3H									
8,400 00	85 48	269 76	8,163 59	-1 83	-439 94	439 94	12 00	12 00	0 00
8,429 06	88 97	269 76	8,165 00	-1 95	-468 96	468 96	12 00	12 00	0 00
Land EOC hold 88.97°									
8,500 00	88 97	269 76	8,166 27	-2 25	-539 89	539 89	0 00	0 00	0 00
8,600 00	88 97	269 76	8,168 08	-2 67	-639 87	639 88	0 00	0 00	0 00
8,700 00	88 97	269 76	8,169 88	-3 08	-739 85	739 86	0 00	0 00	0 00
8,800 00	88 97	269 76	8,171 68	-3 50	-839 84	839 84	0 00	0 00	0 00
8,900 00	88 97	269 76	8,173 48	-3 92	-939 82	939 83	0 00	0 00	0 00
9,000 00	88 97	269 76	8,175 29	-4 33	-1,039 80	1,039 81	0 00	0 00	0 00
9,100 00	88 97	269 76	8,177 09	-4 75	-1,139 78	1,139 79	0 00	0 00	0 00
9,200 00	88 97	269 76	8,178 89	-5 17	-1,239 77	1,239 78	0 00	0 00	0 00
9,300 00	88 97	269 76	8,180 69	-5 58	-1,339 75	1,339 76	0 00	0 00	0 00
9,400 00	88 97	269 76	8,182 49	-6 00	-1,439 73	1,439 75	0 00	0 00	0 00
9,500 00	88 97	269 76	8,184 30	-6 42	-1,539 72	1,539 73	0 00	0 00	0 00
9,600 00	88 97	269 76	8,186 10	-6 84	-1,639 70	1,639 71	0 00	0 00	0 00
9,700 00	88 97	269 76	8,187 90	-7 25	-1,739 68	1,739 70	0 00	0 00	0 00
9,800 00	88 97	269 76	8,189 70	-7 67	-1,839 66	1,839 68	0 00	0 00	0 00
9,900 00	88 97	269 76	8,191 51	-8 09	-1,939 65	1,939 66	0 00	0 00	0 00
10,000 00	88 97	269 76	8,193 31	-8 50	-2,039 63	2,039 65	0 00	0 00	0 00
10,100 00	88 97	269 76	8,195 11	-8 92	-2,139 61	2,139 63	0 00	0 00	0 00
10,200 00	88 97	269 76	8,196 91	-9 34	-2,239 60	2,239 62	0 00	0 00	0 00
10,300 00	88 97	269 76	8,198 72	-9 75	-2,339 58	2,339 60	0 00	0 00	0 00
10,400 00	88 97	269 76	8,200 52	-10 17	-2,439 56	2,439 58	0 00	0 00	0 00
10,500 00	88 97	269 76	8,202 32	-10 59	-2,539 54	2,539 57	0 00	0 00	0 00
10,600 00	88 97	269 76	8,204 12	-11 00	-2,639 53	2,639 55	0 00	0 00	0 00
10,700 00	88 97	269 76	8,205 92	-11 42	-2,739 51	2,739 53	0 00	0 00	0 00
10,800 00	88 97	269 76	8,207 73	-11 84	-2,839 49	2,839 52	0 00	0 00	0 00
10,900 00	88 97	269 76	8,209 53	-12 25	-2,939 48	2,939 50	0 00	0 00	0 00
11,000 00	88 97	269 76	8,211 33	-12 67	-3,039 46	3,039 49	0 00	0 00	0 00
11,100 00	88 97	269 76	8,213 13	-13 09	-3,139 44	3,139 47	0 00	0 00	0 00
11,200 00	88 97	269 76	8,214 94	-13 50	-3,239 43	3,239 45	0 00	0 00	0 00
11,300 00	88 97	269 76	8,216 74	-13 92	-3,339 41	3,339 44	0 00	0 00	0 00
11,400 00	88 97	269 76	8,218 54	-14 34	-3,439 39	3,439 42	0 00	0 00	0 00
11,500 00	88 97	269 76	8,220 34	-14 75	-3,539 37	3,539 40	0 00	0 00	0 00
11,600 00	88 97	269 76	8,222 14	-15 17	-3,639 36	3,639 39	0 00	0 00	0 00
11,700 00	88 97	269 76	8,223 95	-15 59	-3,739 34	3,739 37	0 00	0 00	0 00
11,800 00	88 97	269 76	8,225 75	-16 00	-3,839 32	3,839 36	0 00	0 00	0 00
11,900 00	88 97	269 76	8,227 55	-16 42	-3,939 31	3,939 34	0 00	0 00	0 00
12,000 00	88 97	269 76	8,229 35	-16 84	-4,039 29	4,039 32	0 00	0 00	0 00
12,100 00	88 97	269 76	8,231 16	-17 25	-4,139 27	4,139 31	0 00	0 00	0 00
12,200 00	88 97	269 76	8,232 96	-17 67	-4,239 25	4,239 29	0 00	0 00	0 00



Database:	EDM 5000-1 Single User Db	Local Co-ordinate Reference:	Site Trigg 6/Federal Corn #3H
Company:	COG Operating, LLC	TVD Reference:	GL @ 4037'00usft
Project:	Eddy County NM (NAN27 NME)	MD Reference:	GL @ 4037'00usft
Site:	Trigg 6/Federal Corn #3H	North Reference:	Gnd
Well:	Trigg 6/Federal Corn #3H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1 8-3/4" Hole		

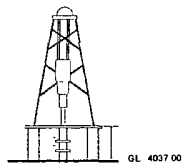
Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
12,300 00	88 97	269 76	8,234 76	-18 09	-4,339 24	4,339 27	0 00	0 00	0 00	
12,400 00	88 97	269 76	8,236 56	-18 51	-4,439 22	4,439 26	0 00	0 00	0 00	
12,500 00	88 97	269 76	8,238 37	-18 92	-4,539 20	4,539 24	0 00	0 00	0 00	
12,590 71	88 97	269 76	8,240 00	-19 30	-4,629 90	4,629 94	0 00	0 00	0 00	
PBHL-Trigg 6 #3H										

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
hit/miss target									
Shape									
PP=330' FEL Trigg 6 #3H	0 00	0 00	8,152 33	-1 53	-367 99	712,092 76	632,540 91	32° 57' 24 726 N	103° 54' 4 424 W
- plan hits target center									
- Point									
PBHL-Trigg 6 #3H	0 00	0 00	8,240 00	-19 30	-4,629 90	712,075 00	628,279 00	32° 57' 24 720 N	103° 54' 54 444 W
- plan hits target center									
- Point									

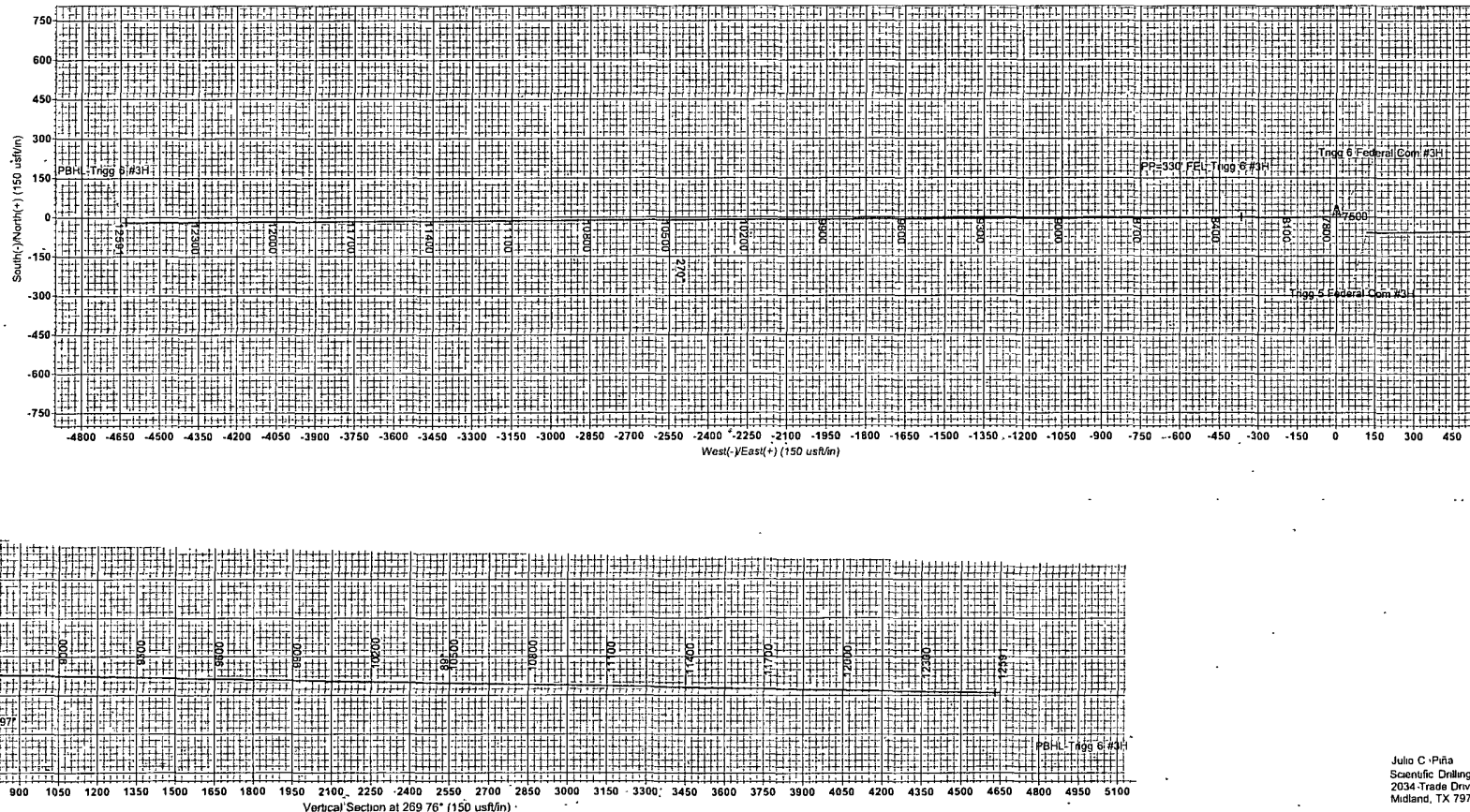
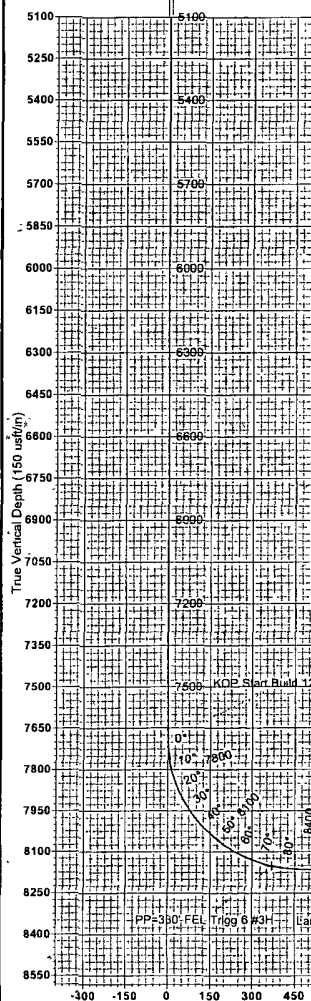
Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N/-S (usft)	+E/-W (usft)		
7,687 50	7,687 50	0 00	0 00	KOP Start Build 12 00/100'	
8,429 06	8,165 00	-1 95	-468 96	Land EOC hold 88 97°	



Trigg 6 Federal Com #3H
Eddy County, NM (NAN27 NME)
Northing (Y) 712094.30
Easting (X) 632908.90
Plan #1 8-3/4" Hole



GL 4037.00



WELL DETAILS Trigg 6 Federal Com #3H

	+N/-S	+E/-W	Northing	Ground Level	4037.00	Latitude	Longitude	Slot
	0.00	0.00	712094.30	Easting	632908.90	32° 57' 24.726 N	103° 54' 0.105 W	

SECTION DETAILS

Sec	MD	Inc	At	TVD	+N/-S	+E/-W	Diag	TFace	VSeal	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	7587.50	0.00	0.00	7587.50	0.00	0.00	0.00	0.00	0.00	
3	8426.06	88.97	266.76	8185.00	-1.95	-4629.90	12.00	266.76	488.97	
4	12590.71	88.97	266.76	8240.00	-19.30	-4629.90	0.00	0.00	4629.94	PBHL Trigg 6 #3H

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
PP-330' FEL Trigg 6 #3H	8152.33	-1.53	-367.90	712092.77	632540.91	32° 57' 24.726 N	103° 54' 4.424 W	Point
PBHL Trigg 6 #3H	8240.00	-19.30	-4629.90	712075.00	628279.00	32° 57' 24.726 N	103° 54' 54.444 W	Point

PROJECT DETAILS Eddy County NM (NAN27 NME)

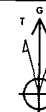
Geodetic System: US State Plane 1027 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

SITE DETAILS Trigg 6 Federal Com #3H

Sea Centre Northing: 712094.30
Easting: 632908.90
Positional Uncertainty: 0.00
Convergence: 0.24
Local North: Grid

LEGEND

Trigg 6 Federal Com #3H, OH, Plan #1 8-3/4" Hole V0
Plan #1 8-3/4" Hole



Azimuth to Grid North
True North: 0.24°
Magnetic North: 7.44°
Magnetic Field
Strength: 48920.4uT
Dip Angle: 60.78°
Date: 05/21/2012
Model: IGRF2010

To convert Magnetic North to Grid, Add 7.44°
To convert True North to Grid, Subtract 0.24°

Map System: US State Plane 1027 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone Name: New Mexico East 3001

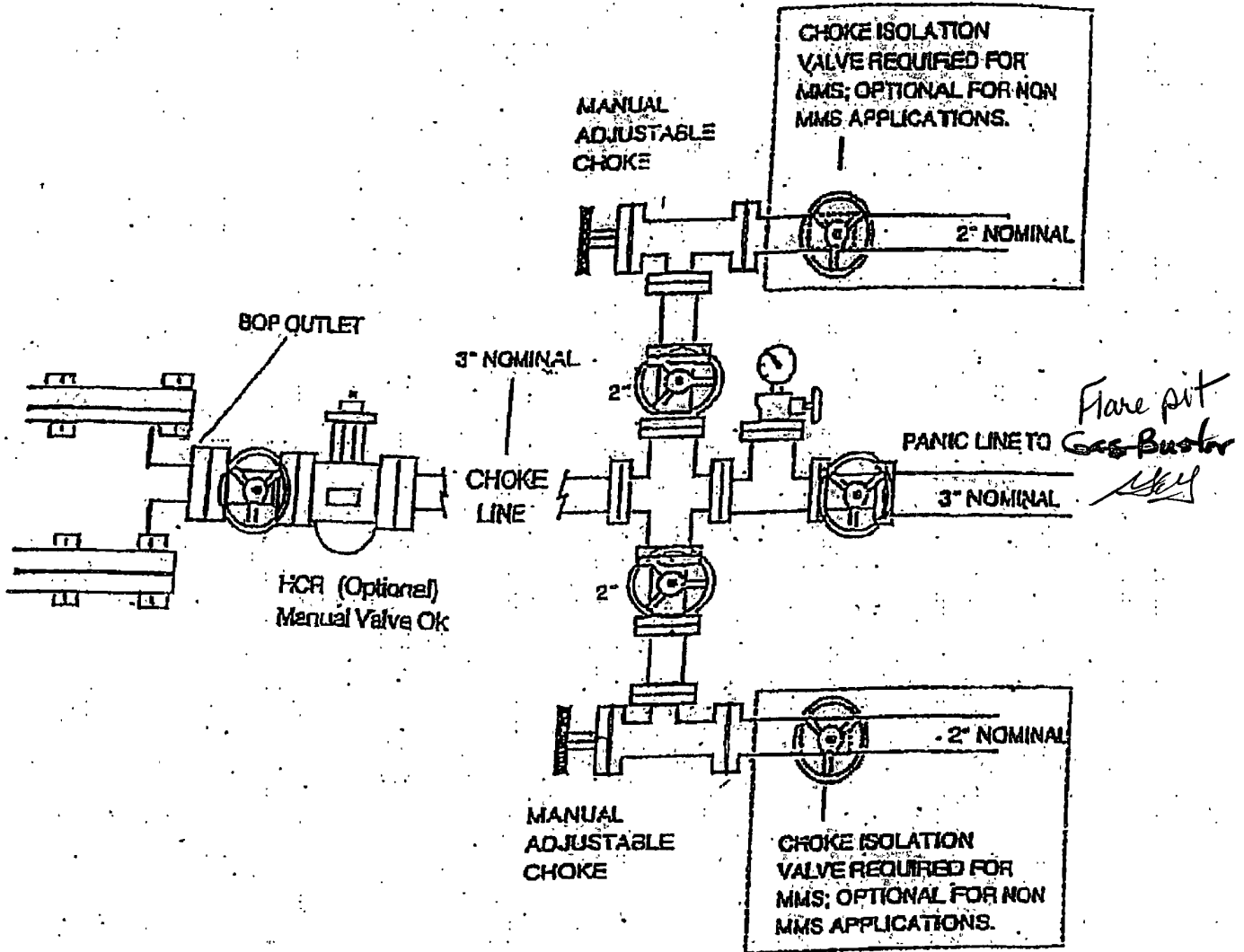
Local Origin: Site Trigg 6 Federal Com #3H Grid North
Latitude: 32° 57' 24.726 N
Longitude: 103° 54' 0.105 W
Grid East: 632908.90
Grid North: 712094.30
Scale Factor: 1.000

Geographic Model: IGRF2010
Sample Date: 31-May-12
Magnetic Declination: 7.68°
Dip Angle from Horizontal: 60.78°
Magnetic Field Strength: 48920

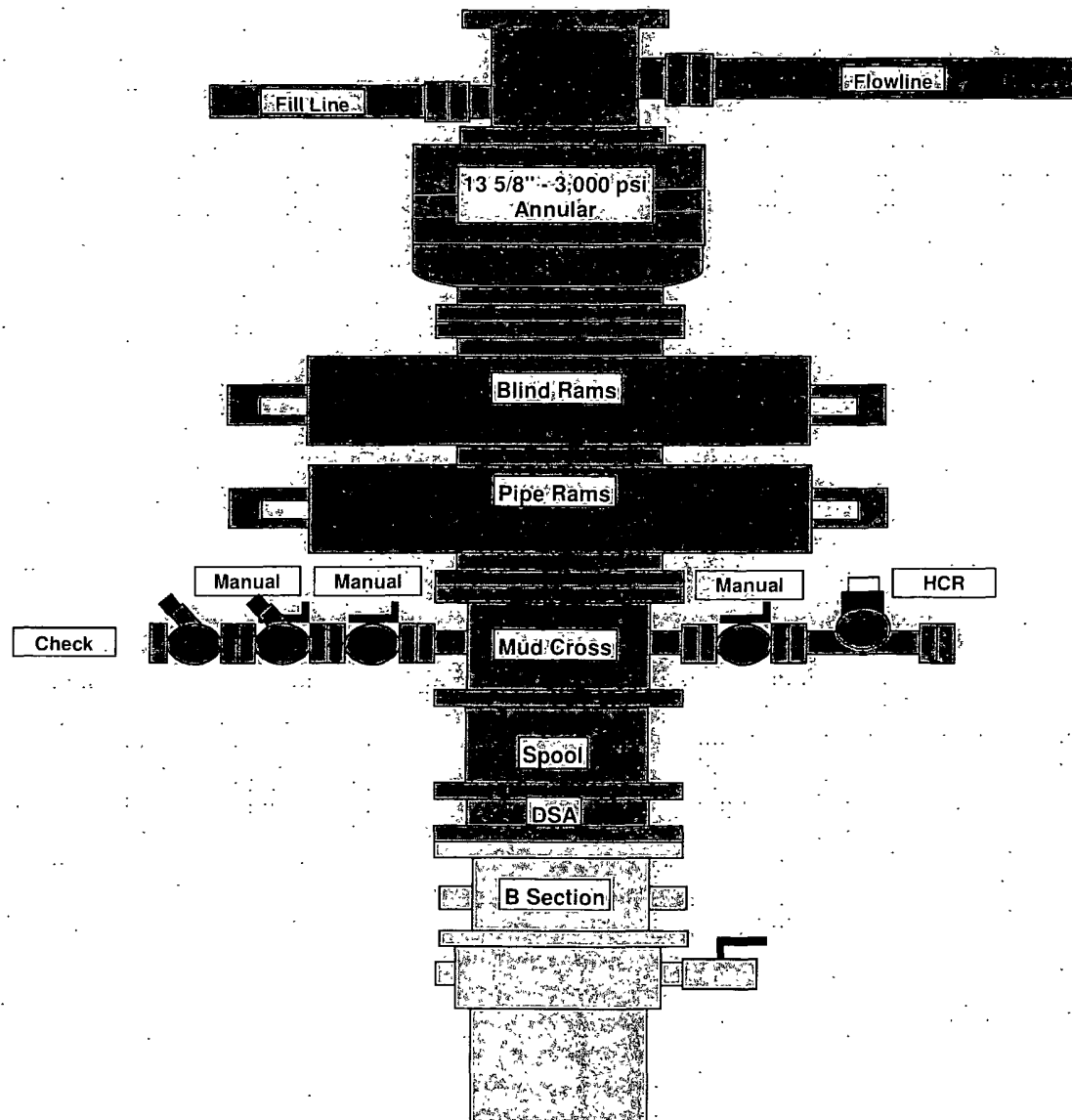
To convert Magnetic North to Grid, Add 7.44°
To convert Magnetic North to True North, Add 7.68° East
To convert True North to Grid, Subtract 0.24°

CHOKE MANIFOLD

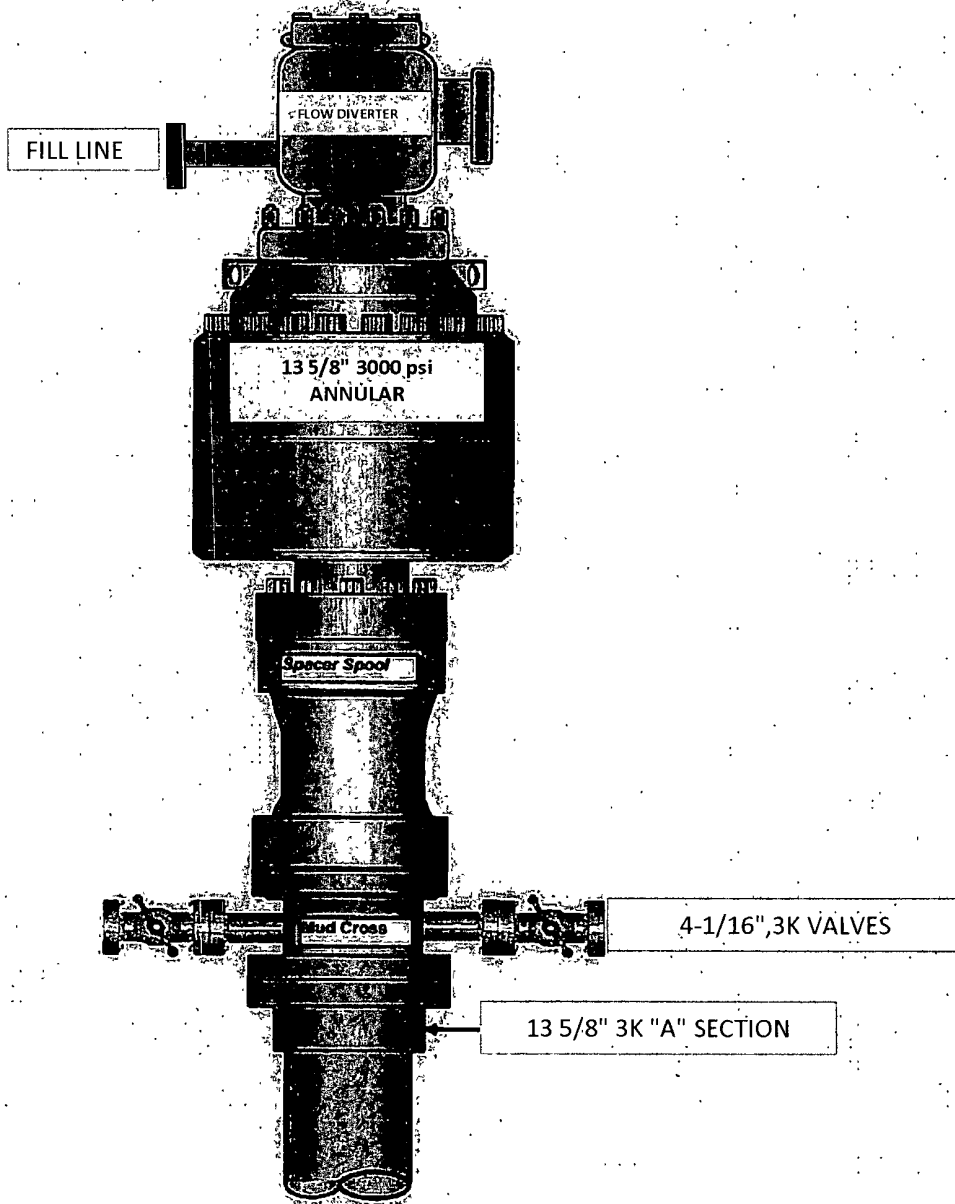
3M SERVICE

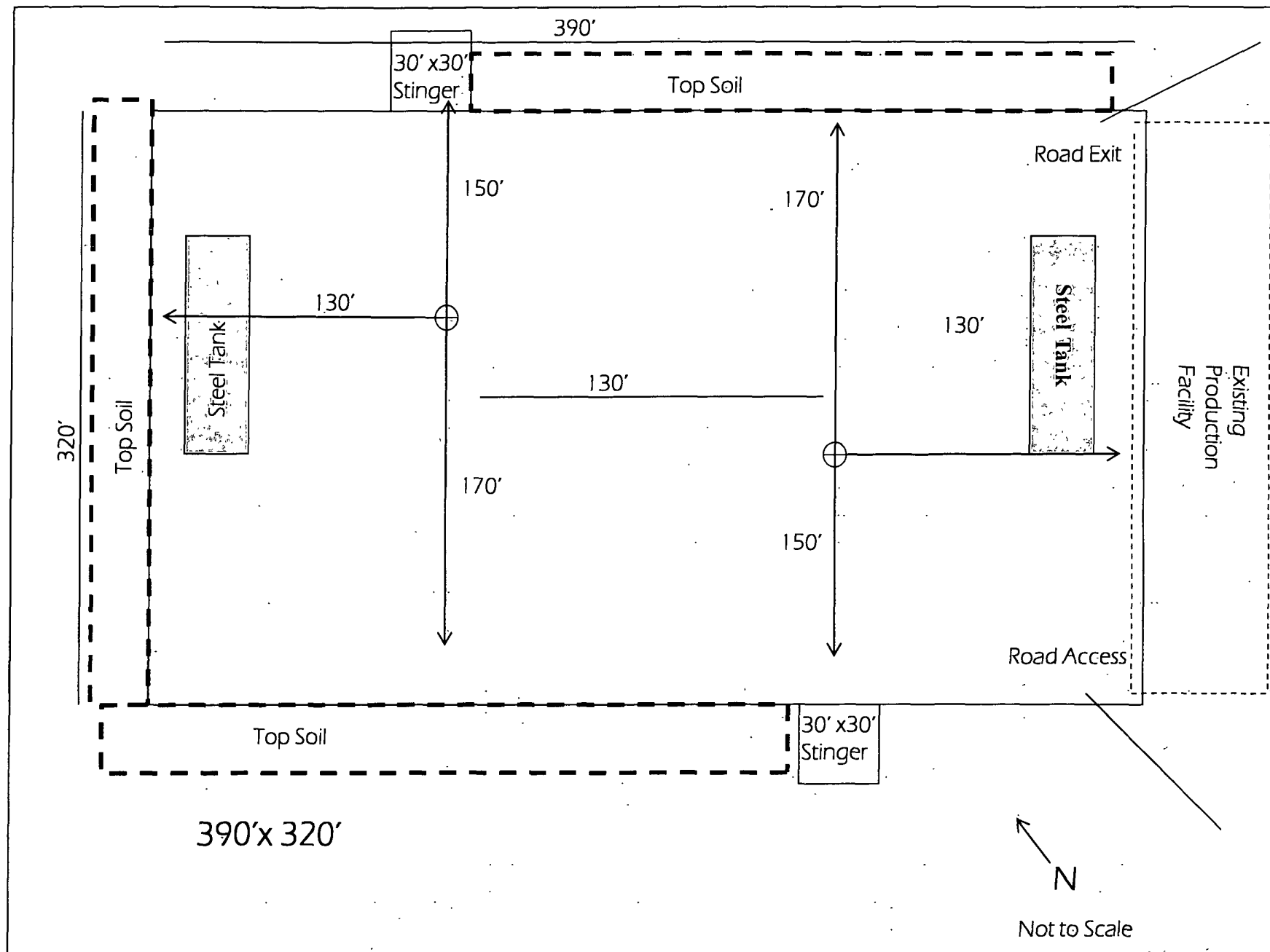


13 5/8" 3M BOP
FOR 8 3/4" + 6 1/8" open hole



**13 5/8" 3K ANNULAR
BOP**





COG Operating LLC

Hydrogen Sulfide Drilling Operation Plan

I. HYDROGEN SULFIDE TRAINING

All personnel, whether regularly assigned, contracted, or employed on an unscheduled basis, will receive training from a qualified instructor in the following areas prior to commencing drilling operations on this well:

1. The hazards and characteristics of hydrogen sulfide (H₂S)
2. The proper use and maintenance of personal protective equipment and life support systems.
3. The proper use of H₂S detectors, alarms, warning systems, briefing areas, evacuation procedures, and prevailing winds.
4. The proper techniques for first aid and rescue procedures.

In addition, supervisory personnel will be trained in the following areas:

1. The effects of H₂S on metal components. If high tensile tubular are to be used, personnel will be trained in their special maintenance requirements.
2. Corrective action and shut-in procedures when drilling or reworking a well and blowout prevention and well control procedures.
3. The contents and requirements of the H₂S Drilling Operations Plan and Public Protection Plan.

There will be an initial training session just prior to encountering a known or probable H₂S zone (within 3 days or 500 feet) and weekly H₂S and well control drills for all personnel in each crew. The initial training session shall include a review of the site specific H₂S Drilling Operations Plan and the Public Protection Plan. **The concentrations of H₂S of wells in this area from surface to TD are low enough that a contingency plan is not required.**

II. H2S SAFETY EQUIPMENT AND SYSTEMS

Note: All H2S safety equipment and systems will be installed, tested, and operational when drilling reaches a depth of 500 feet above, or three days prior to penetrating the first zone containing or reasonable expected to contain H2S.

1. Well Control Equipment:

- A. Flare line.
- B. Choke manifold.
- C. Blind rams and pipe rams to accommodate all pipe sizes with properly sized closing unit.
- D. Auxiliary equipment may include if applicable: annular preventer & rotating head.

2. Protective equipment for essential personnel:

- A. Mark II Survive air 30-minute units located in the doghouse and at briefing areas, as indicated on well site diagram.

3. H2S detection and monitoring equipment:

- A. 1 portable H2S monitors positioned on location for best coverage and response. These units have warning lights and audible sirens when H2S levels of 20 PPM are reached.

4. Visual warning systems:

- A. Wind direction indicators as shown on well site diagram (Exhibit #8).
- B. Caution/Danger signs (Exhibit #7) shall be posted on roads providing direct access to location. Signs will be painted a high visibility yellow with black lettering of sufficient size to be readable at a reasonable distance from the immediate location. Bilingual signs will be used, when appropriate. See example attached.

5. Mud program:

- A. The mud program has been designed to minimize the volume of H2S circulated to surface. Proper mud weight, safe drilling practices, and the use of H2S scavengers will minimize hazards when penetrating H2S bearing zones.

6. Metallurgy:

- A. All drill strings, casings, tubing, wellhead, blowout preventer, drilling spool, kill lines, choke manifold and lines, and valves shall be suitable for H2S service.
- B. All elastomers used for packing and seals shall be H2S trim.

7. Communication:

- A. Radio communications in company vehicles including cellular telephone and 2-way radio.
- B. Land line (telephone) communication at Office.

8. Well testing:

- A. Drill stem testing will be performed with a minimum number of personnel in the immediate vicinity, which are necessary to safely and adequately conduct the test. The drill stem testing will be conducted during daylight hours and formation fluids will not be flowed to the surface. All drill-stem-testing operations conducted in an H2S environment will use the closed chamber method of testing.
- B. There will be no drill stem testing.

EXHIBIT #7

WARNING
YOU ARE ENTERING AN H₂S
AUTHORIZED PERSONNEL ONLY

- 1. BEARDS OR CONTACT LENSES NOT ALLOWED
- 2. HARD HATS REQUIRED
- 3. SMOKING IN DESIGNATED AREAS ONLY
- 4. BE WIND CONSCIOUS AT ALL TIMES
- 5. CHECK WITH COG OPERATING FOREMAN AT

COG OPERATING LLC
1-432-683-7443
1-575-746-2010

EDDY COUNTY EMERGENCY NUMBERS

ARTESIA FIRE DEPT. 575-746-5050
ARTESIA POLICE DEPT. 575-746-5000
EDDY CO. SHERIFF DEPT. 575-746-9888

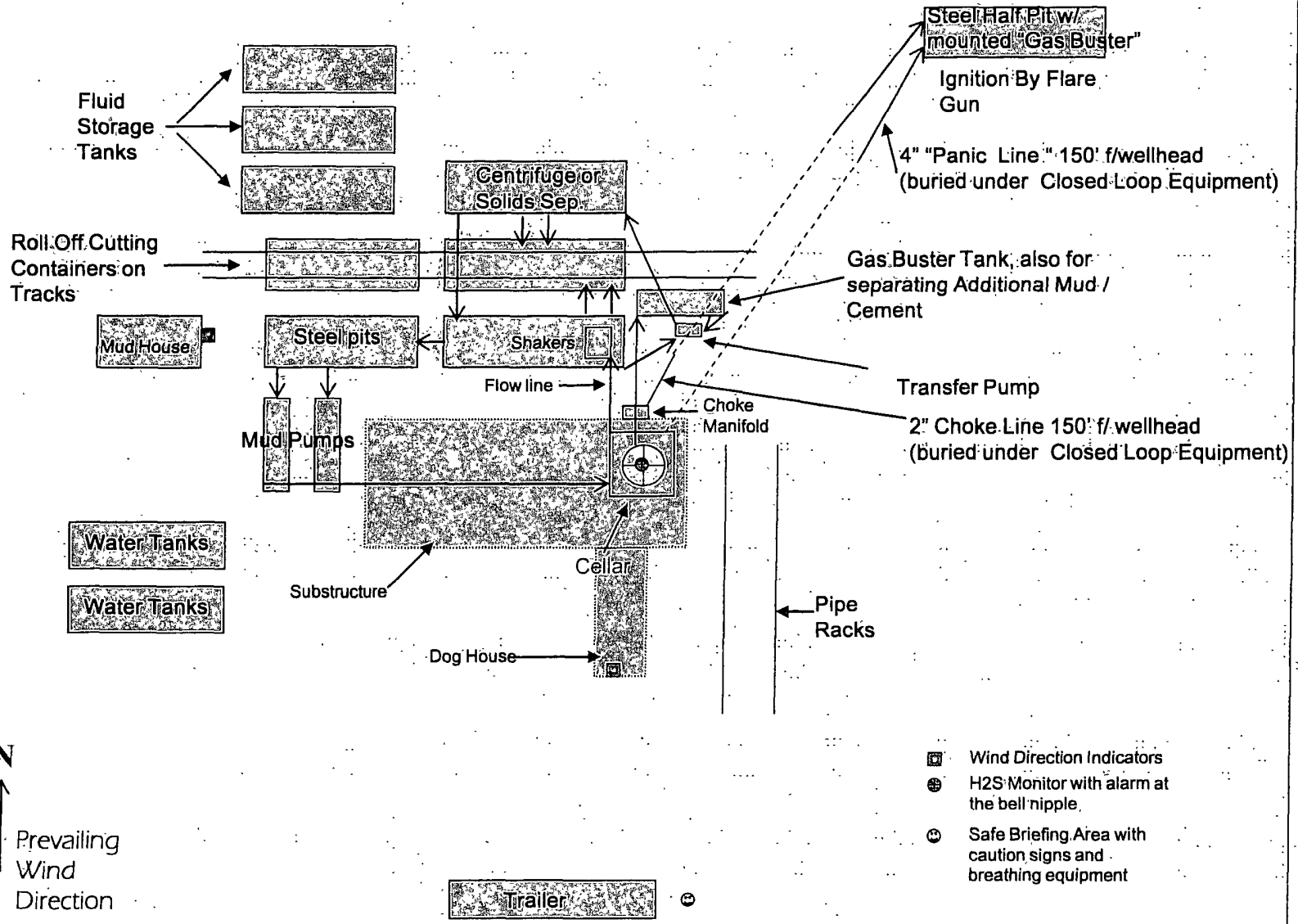
LEA COUNTY EMERGENCY NUMBERS

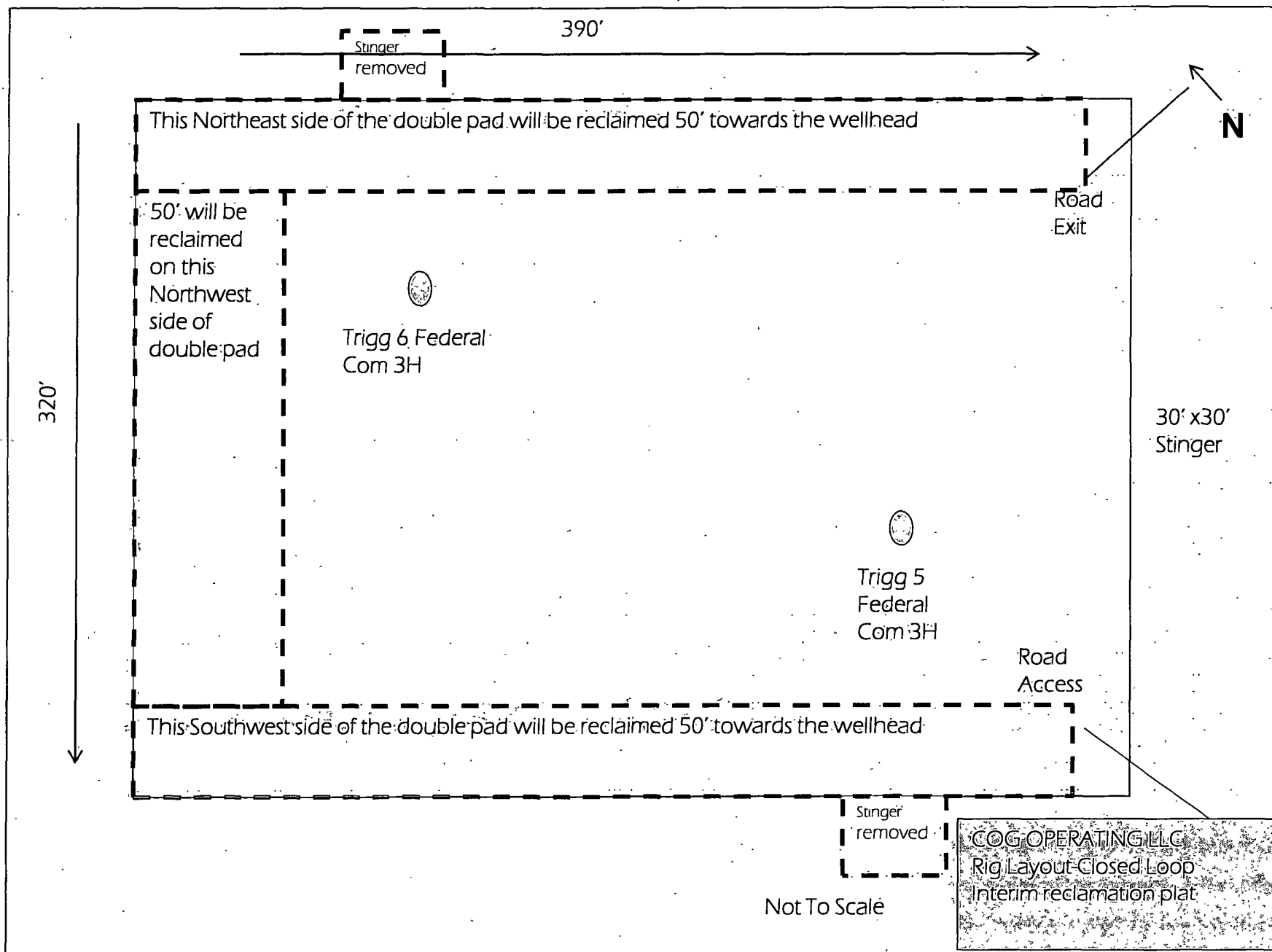
HOBBS FIRE DEPT. 575-397-9308
HOBBS POLICE DEPT. 575-397-9285
LEA CO. SHERIFF DEPT. 575-396-1196

COG Operating LLC

EXHIBIT 8

Drilling Location - H2S Safety Equipment Diagram





PECOS DISTRICT CONDITIONS OF APPROVAL

OPERATOR'S NAME:	COG Operating
LEASE NO.:	NM2507
WELL NAME & NO.:	3H Trigg 6 Federal Com
SURFACE HOLE FOOTAGE:	2959' FNL & 38' FWL
BOTTOM HOLE FOOTAGE:	2970' FNL & 330' FWL
LOCATION:	Section 6, T.16 S., R.31 E., NMPM
COUNTY:	Eddy County, New Mexico

TABLE OF CONTENTS

Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

- ☐ **General Provisions**
- ☐ **Permit Expiration**
- ☐ **Archaeology, Paleontology, and Historical Sites**
- ☐ **Noxious Weeds**
- ☒ **Special Requirements**
 - Interim Reclamation
 - Lesser Prairie-Chicken Timing Stipulations
 - Ground-level Abandoned Well Marker
 - Communitization Agreement
- ☒ **Construction**
 - Notification
 - Topsoil
 - Closed Loop System
 - Federal Mineral Material Pits
 - Well Pads
 - Roads
- ☐ **Road Section Diagram**
- ☒ **Drilling**
 - Logging Requirements
 - Waste Material and Fluids
- ☒ **Production (Post Drilling)**
 - Well Structures & Facilities
 - Pipelines
- ☐ **Interim Reclamation**
- ☒ **Final Abandonment & Reclamation**