12-416

Form 3160-3
(April 2004)

OCD Artesia

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

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

5. Lease Serial No.
SH NMLC-028731B SH LC068722

6. If Indian, Allotee or Tribe Name
N/A

1a. Type of work: ☑ DRILL ☐ REENTER

7. If Unit or CA Agreement, Name and No.
N/A

1b. Type of Well: ☑ Oil Well ☐ Gas Well ☐ Other ☑ Single Zone ☐ Multiple Zone

8. Lease Name and Well No.
SUBMARINE 10 FED COM #1H <39252>

2. Name of Operator
COG Operating LLC

9. API Well No.
30-015- 41300

3a. Address
One Concho Center 600 W Illinois Ave
Midland, TX 79701

3b. Phone No. *(include area code)*
432-685-4384

10. Field and Pool, or Exploratory
Dodd; Glorieta-Upper Yeso <97917>

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface SHL: 460' FNL & 285' FEL, Unit A
At proposed prod. zone BHL: 455' FNL & ~~150'~~ 330' FWL, Unit D

11. Sec., T. R. M. or Blk. and Survey or Area
Sec 10 T17S R29E

14. Distance in miles and direction from nearest town or post office*
2 miles from Loco Hills, NM

12. County or Parish
EDDY

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)	16. No. of acres in lease	17. Spacing Unit dedicated to this well
285'	1480 /160	160
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.	**19. Proposed Depth**	**20. BLM/BIA Bond No. on file**
652'	TVD: 5200' MD: 9665'	NMB000740; NMB000215
21. Elevations (Show whether DF, KDB, RT, GL, etc.)	**22. Approximate date work will start***	**23. Estimated duration**
3630' GL	03-31-13	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:

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

25. Signature	Name *(Printed/Typed)*	Date
	Kelly J. Holly	1-2-13

Title: Permitting Tech

Approved by *(Signature)* /s/George MacDonell	Name *(Printed/Typed)*	Date APR 25 2013
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

RECEIVED
APR 30 2013
NMOCD ARTESIA

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

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	Pool Code	Pool Name
30-015- 41300	97917	Dodd; Glorieta-Upper Yeso

Property Code	Property Name	Well Number
308195 39252	SUBMARINE 10 FEDERAL COM	1H

OGRID No.	Operator Name	Elevation
229137	COG OPERATING, LLC	3630'

Surface Location

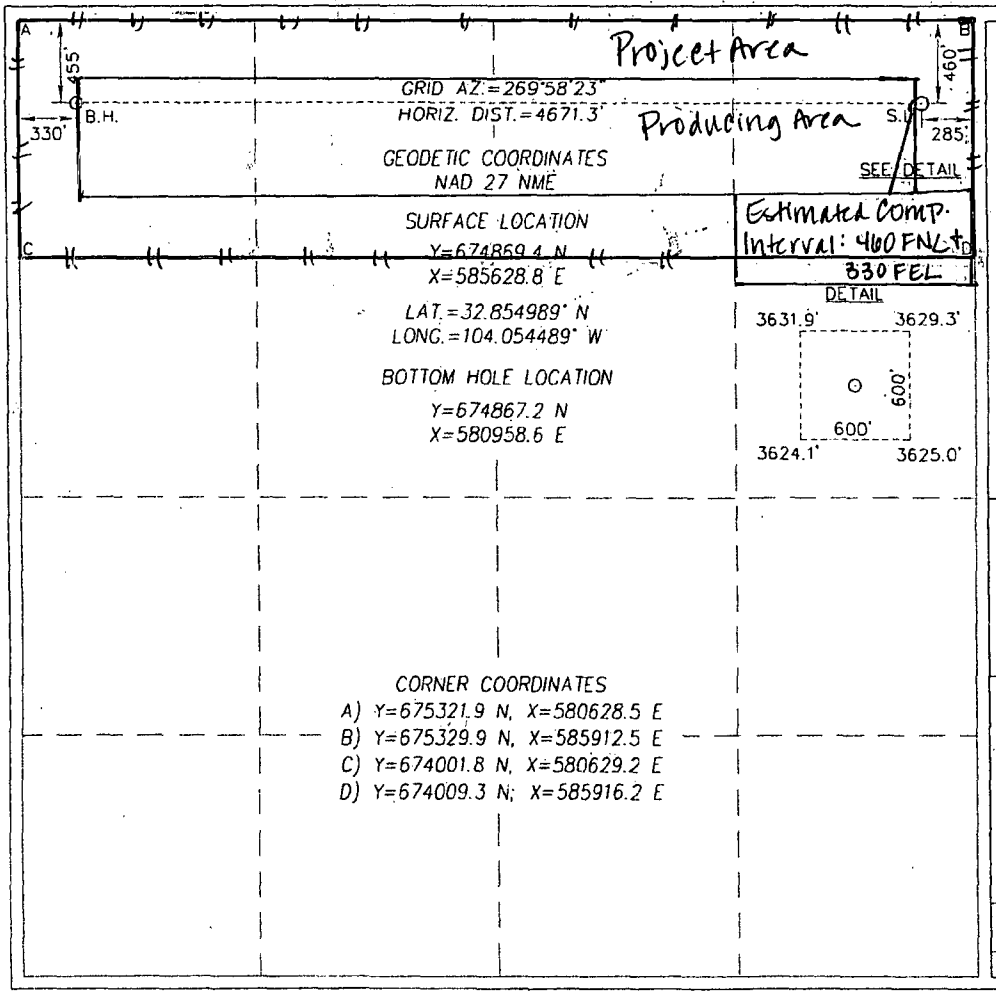
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	10	17-S	29-E		460	NORTH	285	EAST	EDDY

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
D	10	17-S	29-E		455	NORTH	330	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

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



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 8-29-12 Date

Kelly J. Holly
Printed Name

kholly@concho.com
E-mail Address

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.

JULY 3, 2012
Date of Survey

Signature & Seal of Professional Surveyor:

RONALD J. EIDSON NEW MEXICO 3239 REGISTERED PROFESSIONAL SURVEYOR

Ronald J. Eidson 08/29/2012

Certificate Number: Gary G. Eidson 12641
Ronald J. Eidson 3239

AF/DSR Rel. W.O.#12.11.0126 JWSC W.O.: 12.13.1405

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 17th day of July, 2012.

Signed: Carl Bird

Printed Name: Carl Bird

Position: Drilling Engineer

Address: One Concho Center, 600 W Illinois Ave , Midland, Texas 79701

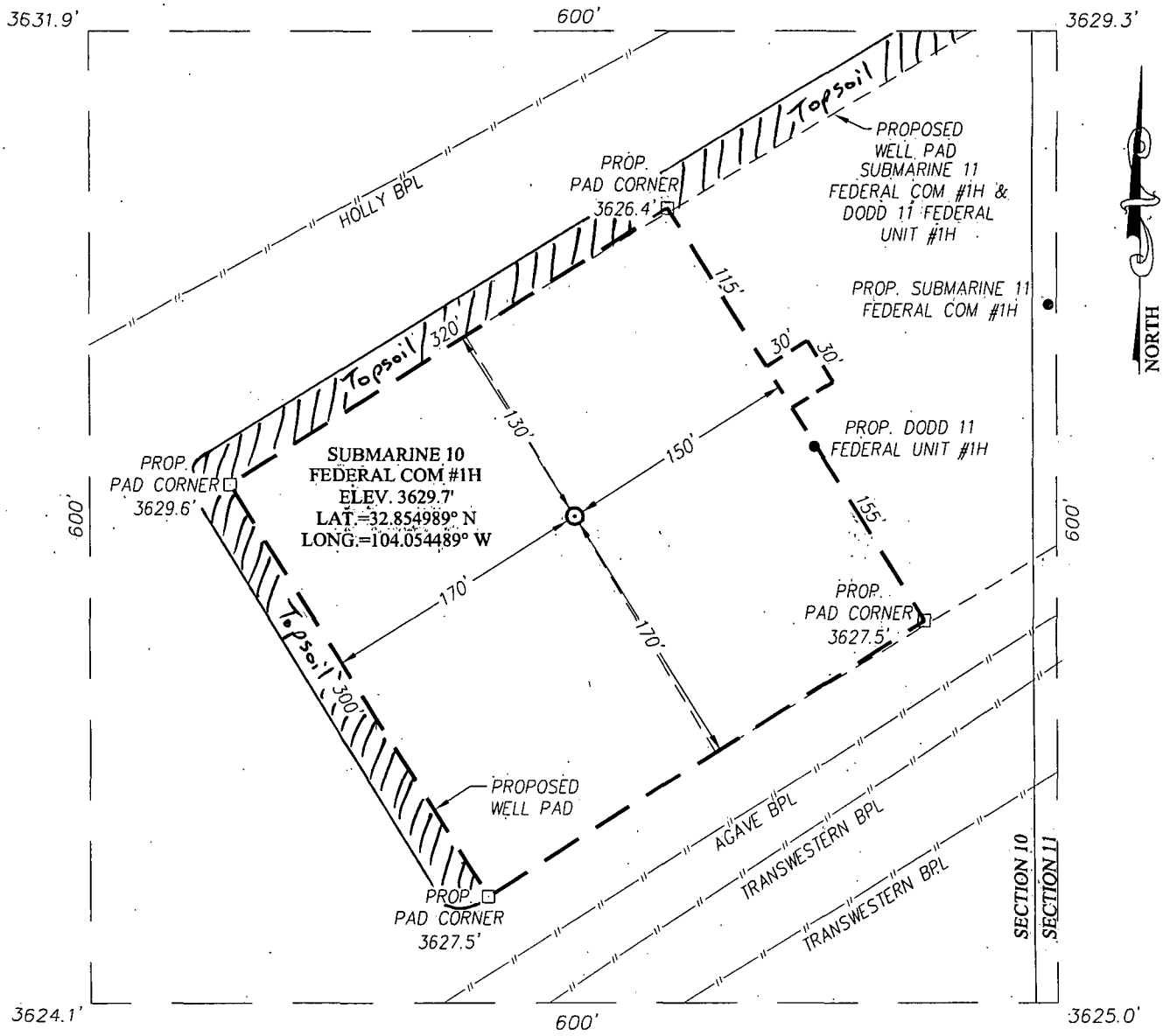
Telephone: (432) 683-7443

Field Representative (if not above signatory): Same

E-mail: cbird@concho.com

SECTION 10, TOWNSHIP 17 SOUTH, RANGE 29 EAST, N.M.P.M.

EDDY COUNTY NEW MEXICO



TN 2/6/13

DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF U.S. HWY. #82 AND CO. RD. #214 (BARNAVAL DRAW) GO NORTH ON CO. RD. #214 APPROX. 1.5 MILES. TURN RIGHT AND GO EAST APPROX. 0.8 MILES. TURN LEFT AND GO NORTH APPROX. 0.6 MILES. TURN RIGHT AND GO EAST APPROX. 0.1 MILES. TURN LEFT AND GO NORTH APPROX. 0.1 MILES TO THE EXISTING COG WELL PAD. THIS WELL IS NORTH APPROX. 330 FEET.

100 0 100 200 Feet

Scale: 1"=100'

PROVIDING SURVEYING SERVICES SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz

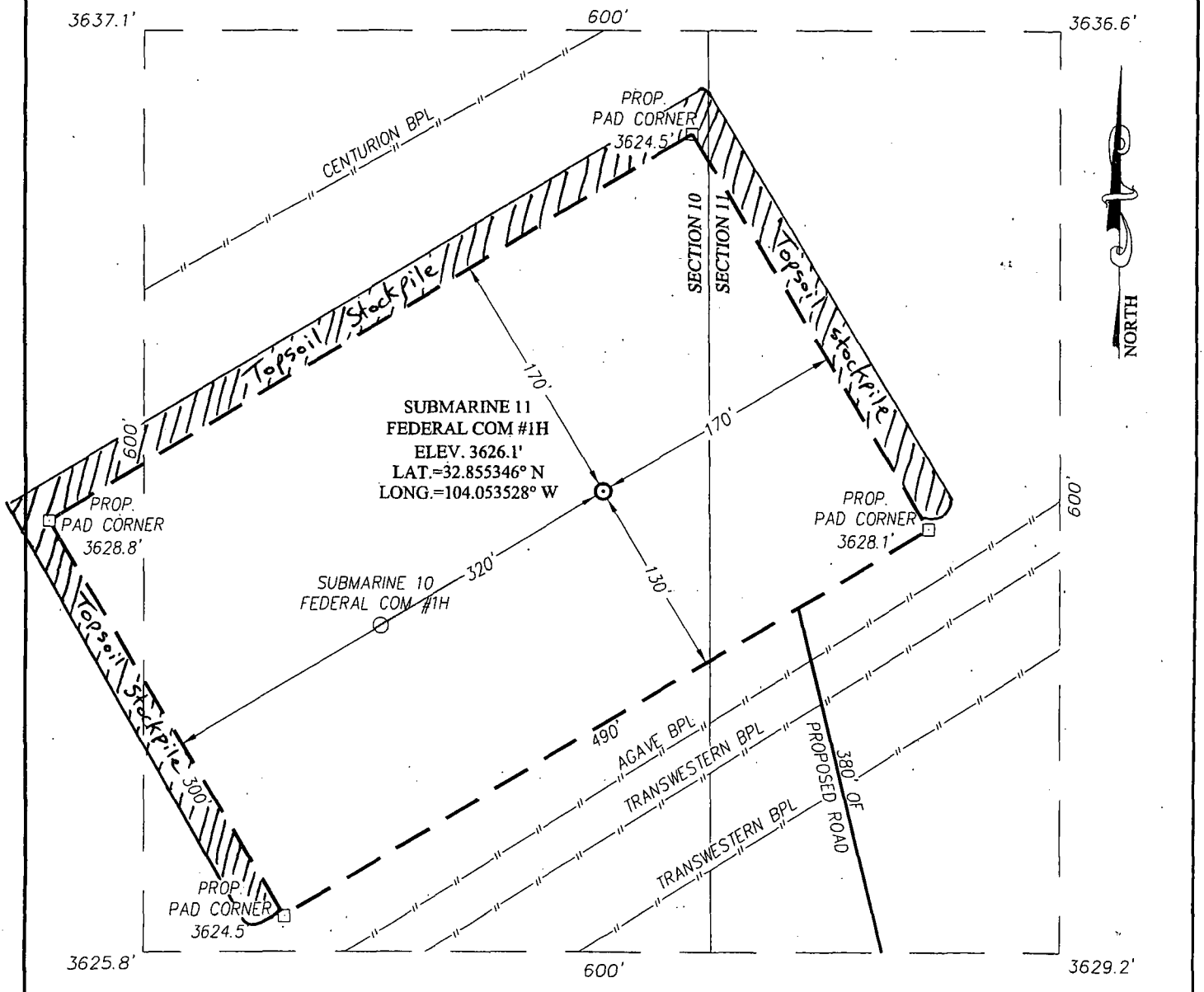
COG OPERATING, LLC

SUBMARINE 10 FEDERAL COM #1H WELL
LOCATED 460 FEET FROM THE NORTH LINE
AND 285 FEET FROM THE EAST LINE OF SECTION 10,
TOWNSHIP 17 SOUTH, RANGE 29 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO

Survey Date: 7/3/12	CAD Date: 7/13/12	Drawn By: AF
W.O. No.: 12110126	Rev:	Rel. W.O.:	Sheet 1 of 1

SECTION 11, TOWNSHIP 17 SOUTH, RANGE 29 EAST, N.M.P.M.

EDDY COUNTY NEW MEXICO



DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF HWY. #82 AND CO. RD. #214 (BARNAVAL DRAW) GO NORTHWEST ON CO. RD. #214 APPROX. 1.5 MILES. TURN RIGHT AND GO EAST APPROX. 0.8 MILES. TURN LEFT AND GO NORTH APPROX. 0.1 MILES. TURN RIGHT AND GO EAST APPROX. 0.5 MILES. TURN LEFT AND GO NORTH APPROX. 0.5 MILES. TURN LEFT AND GO WEST APPROX. 0.4 MILES TO THE ROAD SURVEY. FOLLOW ROAD SURVEY APPROX. 0.3 MILES NORTH.

TN 2/6/13

100 0 100 200 Feet

Scale: 1"=100'

PROVIDING SURVEYING SERVICES SINCE 1946

JOHN WEST SURVEYING COMPANY

412 N. DAL PASO

HOBBS, N.M. 88240

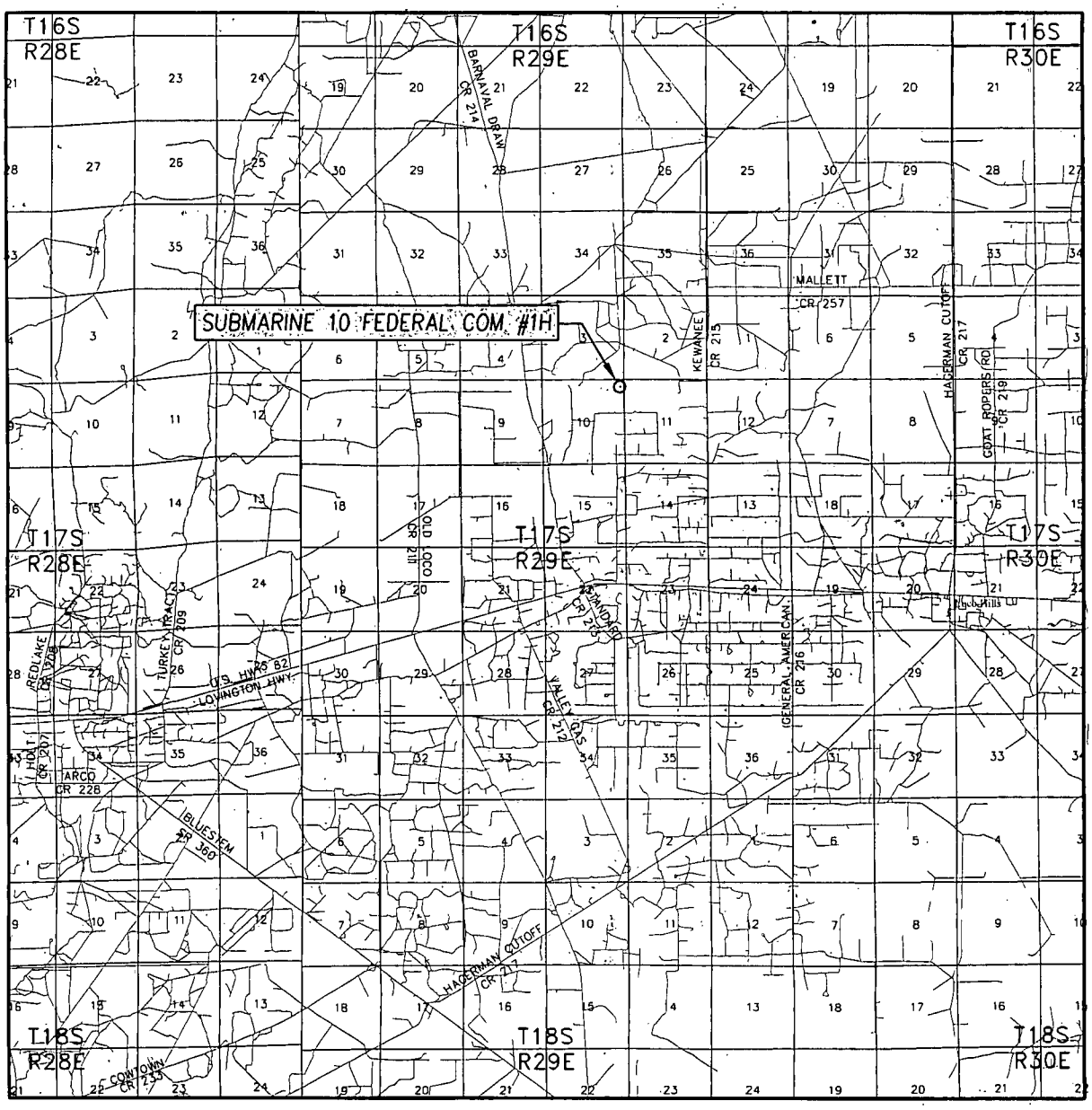
(575) 393-3117

COG OPERATING, LLC

SUBMARINE 11 FEDERAL COM #1H WELL LOCATED 330 FEET FROM THE NORTH LINE AND 10 FEET FROM THE WEST LINE OF SECTION 11, TOWNSHIP 17 SOUTH, RANGE 29 EAST, N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 1/13/12		Sheet 1 of 1 Sheets	
W.O. Number: 11.11.2276		Dr. By: AF	Rev 1:
Date: 1/28/12	Rel. W.O.:	11112276	Scale: 1"=100'

VICINITY MAP



SCALE: 1" = 2 MILES

SEC. 10 TWP. 17-S RGE. 29-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 460' FNL & 285' FEL

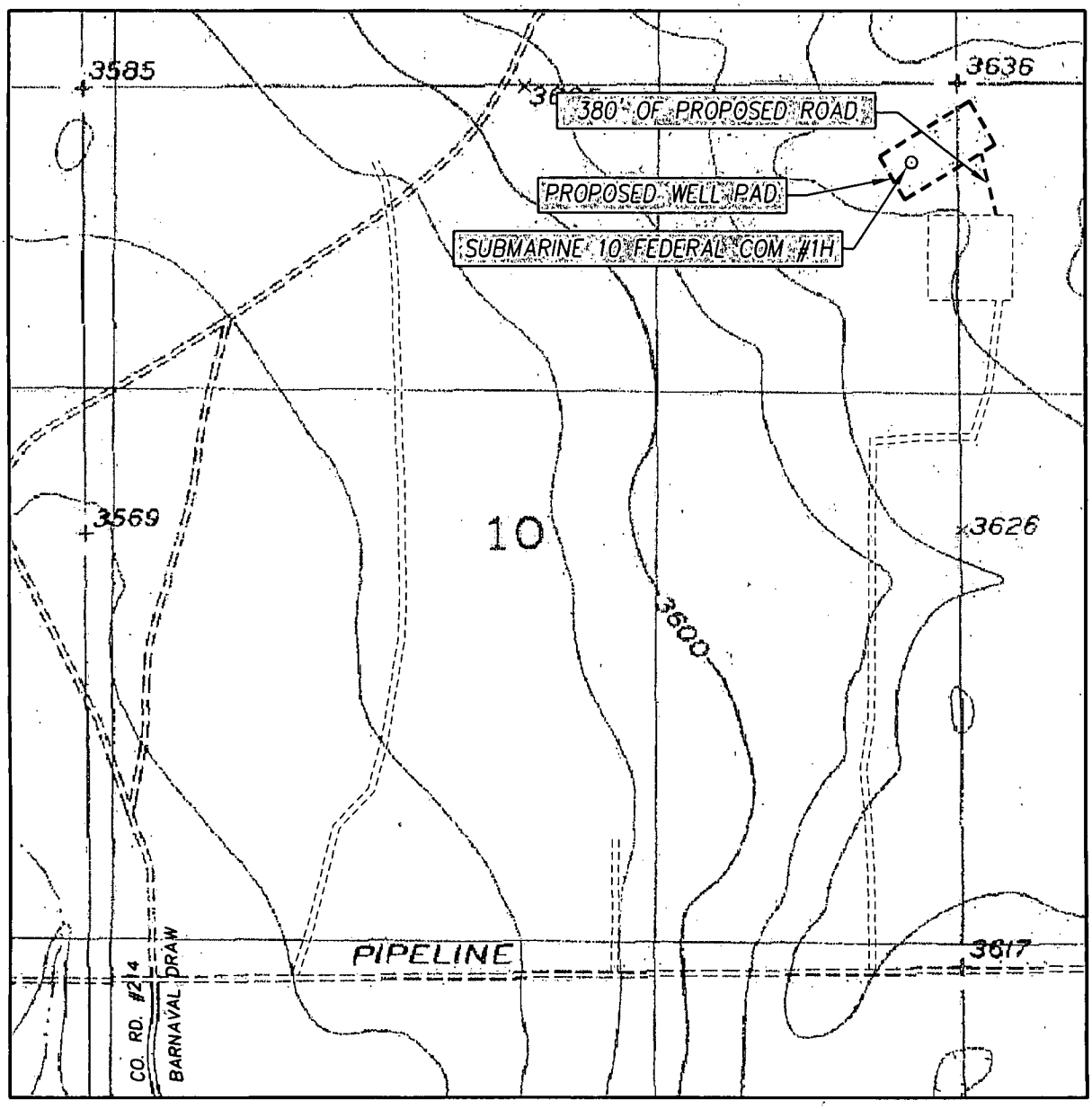
ELEVATION 3630'

OPERATOR COG OPERATING, LLC

LEASE SUBMARINE 10 FEDERAL COM

PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz

LOCATION VERIFICATION MAP



SCALE: 1" = 1000'

CONTOUR INTERVAL:
RED LAKE SE, N.M. – 10'

SEC. 10 TWP. 17-S RGE. 29-E

SURVEY N.M.P.M.

COUNTY EDDY STATE NEW MEXICO

DESCRIPTION 460' FNL & 285' FEL

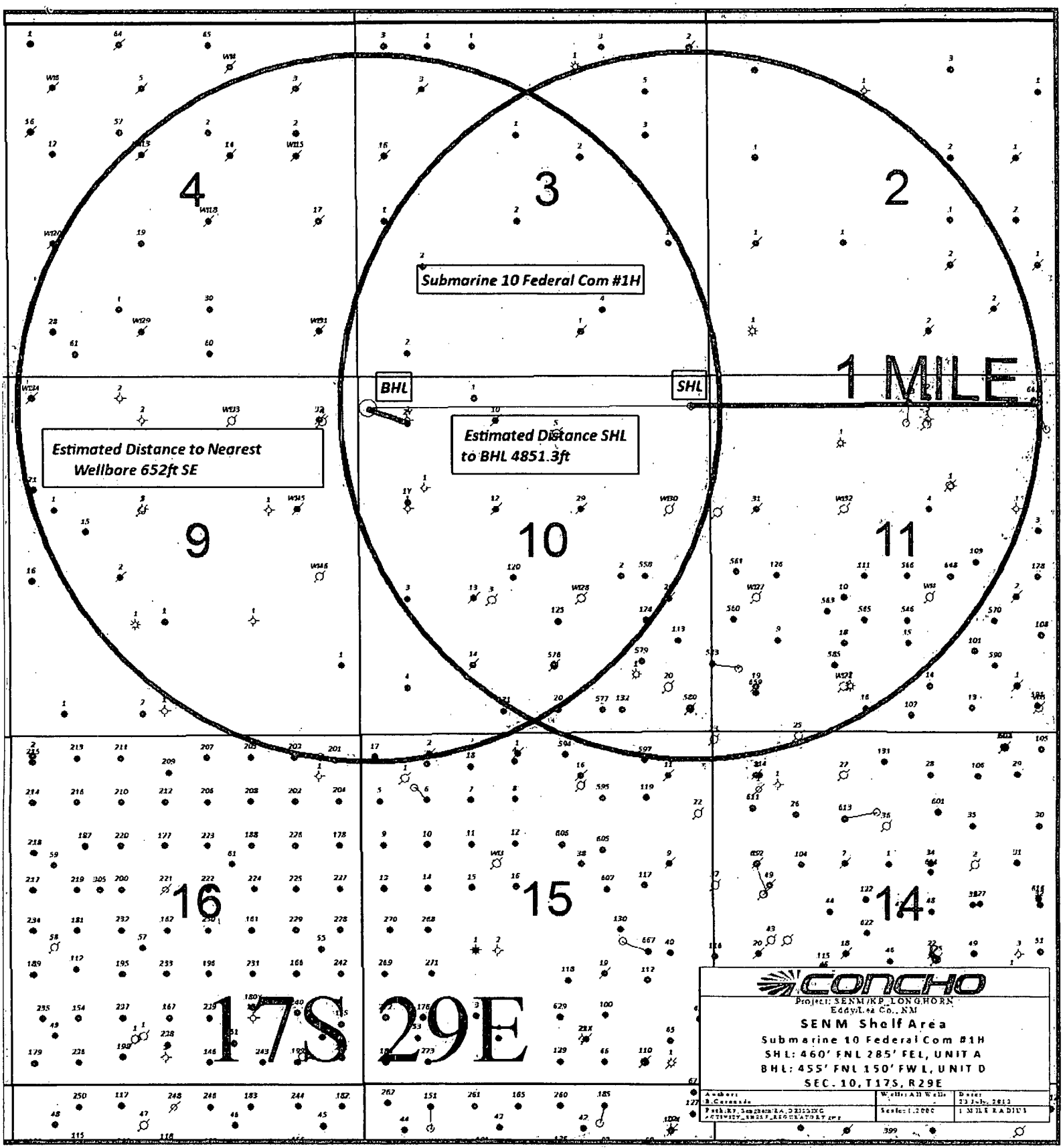
ELEVATION 3630'

OPERATOR COG OPERATING, LLC

LEASE SUBMARINE 10 FEDERAL COM

U.S.G.S. TOPOGRAPHIC MAP
RED LAKE SE, N.M.

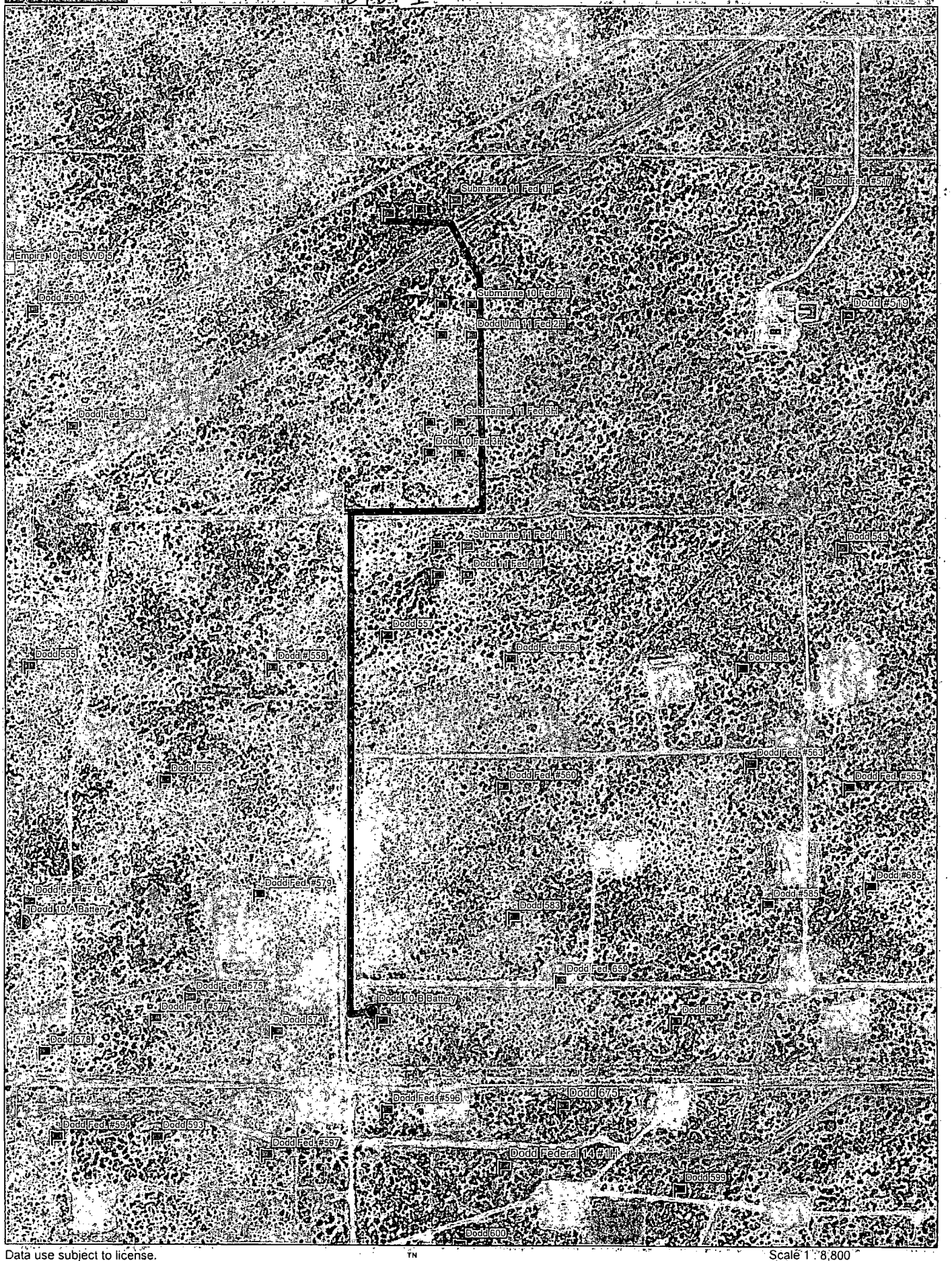
PROVIDING SURVEYING SERVICES
SINCE 1946
JOHN WEST SURVEYING COMPANY
412 N. DAL PASO
HOBBS, N.M. 88240
(575) 393-3117 www.jwsc.biz


4
3
2
Submarine 10 Federal Com #1H
BHL
SHL
1 MILE
Estimated Distance to Nearest Wellbore 652ft SE
Estimated Distance SHL to BHL 4851.3ft
9
10
11
16
15
14
17S
29E
CONCHO
Project: SENM/KP_LONGHORN
Eddy/Lea Co., NM
SENM Shelf Area
Submarine 10 Federal Com #1H
SHL: 460' FNL 285' FEL, UNIT A
BHL: 455' FNL 150' FWL, UNIT D
SEC. 10, T17S, R29E
Wells: All Wells
Scale: 1:2000
1 MILE RADIUS

DELORME

EXBT 1

XMap® 7



Data use subject to license.

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www.delorme.com

TN

MN (7.7°E)

Scale 1 : 8,800

0 200 400 800 1000 ft

0 80 160 240 320 400 m

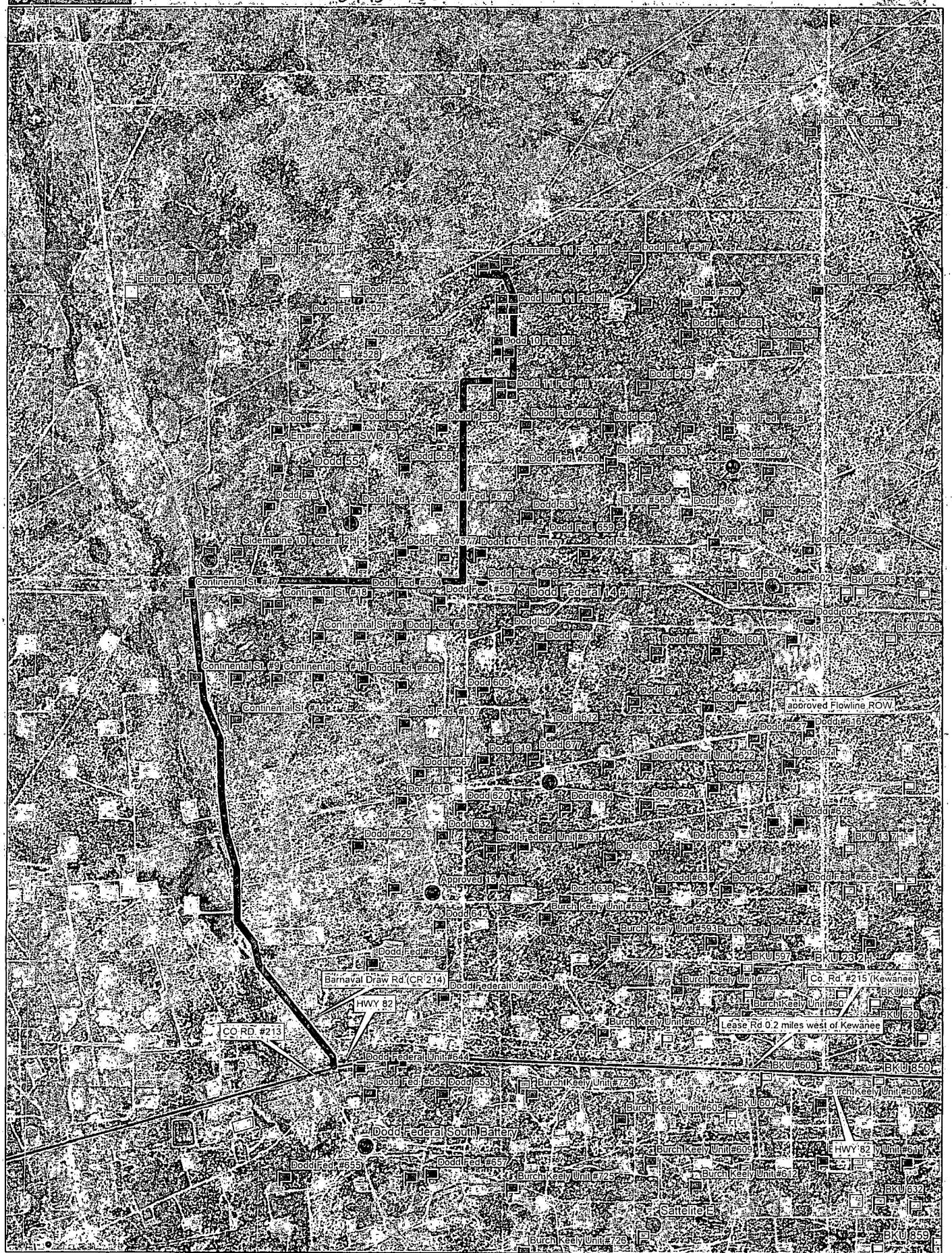
1" = 733.3 ft

Data Zoom 14-5

DELORME

EXBT 2

XMap® 7



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TN

MN (7.7°E)

Scale 1.: 25,000

0 600 1200 1800 2400 3000 ft

0 200 400 600 800 1000 m

1" = 2,083.3 ft

Data Zoom 13-0

ATTACHMENT TO FORM 3160-3
COG Operating, LLC
SUBMARINE 10 FEDERAL COM #1H
SHL: 460' FNL & 285' FEL, Unit A
BHL: 455' FNL & 330' FWL, Unit D
Sec 10, T17S, R29E
Eddy County, NM

1. Proration Unit Spacing: 160 Acres

2. Ground Elevation: 3630'

3. Proposed Depths: Horizontal: **EOC (end of curve) TVD=5200' MD=5473'**
Toe (end of lateral) TVD=5200' MD= 9665'

4. Estimated tops of geological markers:

Fresh Water	130'
Rustler	239'
Top of Salt	400'
Base of Salt	800'
Yates	958'
Seven Rivers	1234'
Queen	1824'
Grayburg	2236'
San Andres	2530'
Glorieta	3948'
Paddock	3994'
Blinebry	4421'
Tubb	5264'

5. Possible mineral bearing formations:

Grayburg	2236'	Oil/Gas
San Andres	2530'	Oil/Gas
Glorieta	3948'	Oil/Gas
Paddock	3994'	Oil/Gas
Blinebry	4421'	Oil/Gas
Tubb	5264'	Oil/Gas

No other formations are expected to give up oil, gas or fresh water in measurable quantities. Setting 13 3/8" casing to ~~264'~~ (25' into Rustler) and circulating cement back to the surface will protect the surface fresh water sand. The Salt Section will be protected by setting 9 5/8" casing to 975' and circulating cement back to surface in a single or multi-stage job or multi-stage job with an ECP. Any zones between the 9 5/8" casing shoe and TD, which contain commercial quantities of oil and/or gas, will have cement circulated across them in either a single or multi-stage cement jobs. The production casing will be a tapered string 7" X 5 ½". The 5 ½" will be cemented from TD back to KOP and the 7" will be cemented from KOP back to a minimum of 200' into the intermediate casing (although cement volume is actually calculated to surface). If wellbore conditions arise that require immediate action and/or a change to this program, COG Operating LLC personnel will always react to protect the wellbore and/or environment.

See COA

See COA

6. Proposed Mud System

The well will be drilled to TD with a combination of fresh water, brine, cut brine and polymer mud systems. The applicable depths and properties of these systems are as follows:

DEPTH (MD)	TYPE	WEIGHT	VISCOSITY	WATERLOSS
0-264' 300'	Fresh Water	8.5	28	N.C.
264'-975'	Brine	10	30	N.C.
975'-4723'	Cut Brine	8.7-9.2	30	N.C.
4723'-5473'	Cut Brine/polymer mud	8.7-9.2	30	N.C.
5473'-9665'	Cut Brine/polymer mud	8.7-9.2	30	N.C.

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

Visual mud monitoring equipment shall be in place to detect volume changes indicating loss or gain of circulating fluid volume.

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

6. Proposed Casing Program

See COA

Hole Size	Interval MD	OD Casing	Weight	Grade	Condition	Jt.	brst/clps/ten
17 ½"	0-264' 300'	13 3/8" 0-264' 300'	48#	H-40/J-55 Hybrid	New	ST&C	4.40/4.42/19.62
12 ¼"	264'-975'	9 5/8" 0-975'	40#	J/K-55	New	LT&C	3.95/3.16/12.24
8 ¾"	975'-4723'	7" 0-4723'	26#	L-80	New	LT&C	1.45/2.74/5.54
8 ¾"	4723'-5473'	5 ½" 4723'-5473'	17#	L-80	New	LT&C	1.55/2.86/5.03
7 7/8"	5473'-9665'	5 ½" 5473'-9665'	17#	L-80	New	LT&C	1.55/2.86/5.03

Production string will be a tapered string with 7" 26# L-80 LTC run from surface to kick off point (4723') and then crossed over to 5 ½" 17# L-80 LTC.

7. Proposed Cement Program See COA

13 3/8" SURFACE: **(Circulate to Surface)**

Lead: 0'-264'	425 sks	Class "C" w/2% CaCl2	1.32 cf/sk	14.8 ppg
Excess 141%		+ 0.25 pps CF		

9 5/8" INTERMEDIATE:

Option #1: Single Stage (Circulate to Surface)

Lead:	200 sks	50:50:10 C:Poz:Gel	2.45 cf/sk	11.8 ppg
0'-500'		w/ 5% Salt+ 0.25% CF		
Excess 183%		+5 pps LCM		
Tail:	200 sks	Class C w/2% CaCl2	1.32 cf/sk	14.8 ppg
500'-975'				
Excess 59%				

Option #2: Multi-stage w/ DV Tool @ +/-314'(DV Tool 50' below 13 3/8" csg. Shoe) (Circulate to Surface)

Stage #1:				
Lead:				
314'-500'	100 sks	50:50:10 C:Poz:Gel w/5%	2.45 cf/sk	11.8 ppg
Excess 321%		Salt+0.25% CF+5 pps LCM		
Tail:				
500'-975'	200 sks	Class "C" w/2% CaCl2	1.32 cf/sk	14.8 ppg
Excess 59%				
Stage #2				
0'-314'	100 sks	50:50:10 C:Poz:Gel w/5%	2.45 cf/sk	11.8 ppg
Excess 113%		salt+ 0.25% CF		

Note: Multi-stage tool to be set depending on hole conditions at approximately 314' (50' below the surface casing shoe). Cement volumes will be adjusted proportionately for depth changes of multi-stage tool.

7" X 5 ½" TAPERED PRODUCTION CASING:

Option #1: Single Stage (Cement cal to Surface)

:

1st Lead: 0'-3400' (min. tie back 200' above 9 5/8"shoe) Excess 94%	500 sks	35:65:6 C:Poz Gel w/5% salt+ 5 pps LCM+ 0.2 % SMS+ 0.3% FL-52A+ 0.125 pps CF+1 % BA-58+ 1% FL-25	2.01 cf/sk	12.5 ppg
2nd Lead: 3400'-4723' Excess 164%	400 sks	50:50:2 C:Poz Gel w/5% salt+ 3 pps LCM+ 0.6 % SMS+ 0.3% FL-52A+ 0.125 pps CF+1% FL-25+ 1% BA-58	1.37 cf/sk	14.0 ppg
Tail: 4723'-9665' Excess 2%	350 sks	Class "H" SOLUCEM-H** W/0.7% HR-601	2.62 cf/sk	15.0 ppg

** See attached Halliburton pilot test data. Although the yield on this tail cement is high it is not a "junk" cement. Also the amount of tail cement has been reduced so excess is now +/- zero %.

Option #2:Multi-stage (3 Stages)

Stage #1: TD to KOP w/DV Tool & ECP @ +/- 4723'

See COA

Tail: 4723'-9665' Excess 2%	350 sks	Class "H" SOLUCEM-H W/0.7% HR-601	2.62 cf/sk	15.0 ppg

Stage #2: DV Tool & ECP @ +/- 4723' to 2nd DV Tool @ 1025' (50' below 9 5/8" csg shoe)

Lead: 1025'-3400' (min. tie back 200' above 9 5/8"shoe) Excess 101%	350 sks	35:65:6 C:Poz Gel w/5% salt+ 5 pps LCM+ 0.2 % SMS+ 0.3% FL-52A+ 0.125 pps CF+1 % BA-58+ 1% FL-25	2.01 cf/sk	12.5 ppg

Tail: 3400'-4723' Excess 164%	400 sks	50:50:2 C:Poz Gel w/5% salt+ 3 pps LCM+ 0.6 % SMS+ 0.3% FL-52A+ 0.125 pps CF+1% FL-25+ 1% BA-58	1.37 cf/sk	14.0 ppg

Stage #3:
2nd DV Tool @ 1025' (50' below 9 5/8" csg shoe) to surface (Cement cal to Surface)

Lead: 0'-1025' (min. tie back 200' above 9 5/8" shoe) Excess 86%	150 sks	35:65:2 C:Poz Gel w/5% salt+ 5 pps LCM+ 0.2 % SMS+ 0.3% FL-52A+ 0.125 pps CF+1% FL-25+ 1% BA-58	2.01 cf/sk	12.5 ppg

Note: 5 ½" casing will be run from KOP at 4723' thru curve and lateral to TD of 9665' MD. .

Note: Assumption for 2nd DV tool is water flow. Cement volumes will be adjusted proportionately for depth changes of multi-stage tool.

Note: FL-52A is fluid loss additive, R-3 is retarder.

Note: Multi-stage tool to be set depending on hole conditions at approximately 1300'
Cement volumes will be adjusted proportionately for depth changes of multi-stage tool.

8. Pressure Control Equipment:

The blowout preventer equipment (BOP) shown in Exhibit #9 will consist of a double ram-type (2000 psi WP) preventer, and in some cases possibly a 2000 psi Hydril type annular preventer as provided for in Onshore Order #2. This unit will be hydraulically operated and the ram type preventer will be equipped with blind rams on top and 4 1/2" drill pipe rams on the bottom. A 13-5/8" BOP will be used during the drilling of the well. A 13 5/8" permanent casing head will be installed on the 13 3/8" casing. The BOP will be nippled up on the 13 5/8" permanent casing head and tested to 2000 psig. After setting 9-5/8", permanent "B section" well head will be installed and the BOP will then be nippled up on the permanent B . BOP and well head will be tested by a third party to 2000 psig and used continuously until total depth is reached. Pipe rams will be operationally checked each 24-hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve, choke lines and a choke manifold with a 2000 psi WP rating all of which will also be tested to working pressure by independent tester also. Any time a component of the BOP stack or choke manifold is changed or installed BOPE will be re-tested as required. see COA

9. Production Hole Drilling Summary:

Drill 8 ¾" hole and kick off at +/- 4723', building curve at 12°/100' over +/- 750' to horizontal at 5473' MD/ 5200' TVD Az 269.97°. Drill 7 7/8" lateral section in a easterly direction for +/4192' lateral to TD at +/-9665' MD, 5200' TVD. Run 7" x 5-1/2" production casing. 7" to be run from surface to kickoff point and then changed over to 5 ½"which will be run from KOP, thru curve and to TD. 7" x 5 ½" casing will be cemented from TD to surface.

10. 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.

11. Logging, Testing and Coring Program: See COA

A. The following logs will be run in the vertical portion of the hole to KOP: SLB-PEX/HRLA,HNGS.

B. The mud logging program will consist of lagged 10' samples from intermediate casing to KOP and from KOP to TD of Horizontal hole.

C. Drill Stem test is not anticipated.

D. No conventional coring is anticipated.

E. Further testing procedures will be determined after the 7" x 5 ½" production casing has been cemented at TD based on drill shows and log evaluation.

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

No abnormal pressures or temperatures are anticipated. The estimated bottom hole temperature at TD is 93° Fahrenheit and estimated maximum bottom hole pressure is 2288 psi. Wells in the Loco Hills area will penetrate formations that are known or could reasonably be expected to contain Hydrogen Sulfide. Measurable gas volumes or hydrogen sulfide levels have not been encountered during drilling operations in this area. However a H2S drilling operations plan is included with this APD. If H2S concentrations exceed 100 ppm a remote operated choke will be installed (see diagram #8 & #9) and COG will comply with the specifics of Onshore Order #6. All BOPE testing companies used by COG have H2S certified employees and will work on H2S locations. No major loss circulation zones have been reported in offsetting wells.

13. Anticipated Starting Date

Drilling operations will commence approximately on ***March 31, 2013*** with drilling and completion operations lasting approximately ***90*** days.

HALLIBURTON

Permian Basin, Hobbs

Lab References- Tail

Job Information

Request/Slurry	2019346	Rig Name	United 40	Date	19/Feb/2013
Submitted By	Nasraldin Alarbi	Job Type	Production Casing	Bulk Plant	
Customer	Cog Operating LLC	Location	Eddy	Well	BKU 965H

Well Information

Casing/Liner Size	5.5"	Depth MD	9122 ft	BHST	117 degF
Hole Size	7.875"	Depth TVD	4950 ft	BHCT	110 degF

Drilling Fluid Information

Mud Supplier Name	Mud Trade Name	Density

Cement Information - Tail Design

Conc	UOM	Cement/Additive	Sample Type	Sample Date	Lot No.	Cement Properties		
		SoluCem				Slurry Density	15.0	lbm/gal
100	% BWOC	Cemex Premium H				Slurry Yield	2.6	ft3/sack
						Water Requirement	11.15	gal/sack
11.15	gal/sack	Fresh Water				Total Mix Fluid	11.15	gal/sack

Water Source	Fresh Water
Water Chloride	N/A

Pilot Test Results Request ID 2019346

UCA Comp. Strength, Historical Data

End Temp (°F)	Pressure (psi)	500 psi (hh:mm)	12 hr CS (psi)	24 hr CS (psi)	48 hrs CS psi	72 hr CS psi
117	3000	14:45	413	814	1010	1200

CRESCENT DIRECTIONAL DRILLING

COG Operating LLC

Eddy County, NM
Submarine 10 Federal Com
#1H

OH

Plan: Plan #2

Standard Planning Report

09 October, 2012

Surface: 460' FNL, 285' FEL, Sec 10, T17S, R29E, Unit A
BHL: 455' FNL, 330' FWL, Sec 10, T17S, R29E, Unit D
PP: 460' FNL, 330' FEL, Sec 10, T17S, R29E, Unit A

CONCHO

Database:	Houston R5000 Database	**Local Co-ordinate Reference:**	Well #1H
Company:	COG Operating LLC	**TVD Reference:**	Well @ 3644.0usft (UDI #40 - 14' KB)
Project:	Eddy County, NM	**MD Reference:**	Well @ 3644.0usft (UDI #40 - 14' KB)
Site:	Submarine 10 Federal Com	**North Reference:**	Grid
Well:	#1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

Project Eddy County, NM

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 Submarine 10 Federal Com

Site Position:		**Northing:**	674,869.40 usft	**Latitude:**	32° 51' 17.961 N
From:	Map	**Easting:**	585,628.80 usft	**Longitude:**	104° 3' 16.159 W
Position Uncertainty:	0.0 usft	**Slot Radius:**	13-3/16 "	**Grid Convergence:**	0.15 °

Well #1H

Well Position	**+N/-S**	0.0 usft	**Northing:**	674,869.40 usft	**Latitude:**	32° 51' 17.961 N
	+E/-W	0.0 usft	**Easting:**	585,628.80 usft	**Longitude:**	104° 3' 16.159 W
Position Uncertainty		0.0 usft	**Wellhead Elevation:**		**Ground Level:**	3,630.0 usft

Wellbore OH

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/28/2012	7.71	60.66	48,821

Design Plan #2

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0

Vertical Section	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.0	0.0	0.0	269.97

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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
4,722.5	0.00	0.00	4,722.5	0.0	0.0	0.00	0.00	0.00	0.00	
5,472.5	90.00	269.97	5,200.0	-0.2	-477.5	12.00	12.00	0.00	269.97	
9,665.1	90.00	269.97	5,200.0	-2.2	-4,670.1	0.00	0.00	0.00	0.00	PBHL (S10#1H)

Database:	Houston R5000 Database	**Local Co-ordinate Reference:**	Well #1H
Company:	COG Operating LLC	**TVD Reference:**	Well @ 3644.0usft (UDI #40 - 14' KB)
Project:	Eddy County, NM	**MD Reference:**	Well @ 3644.0usft (UDI #40 - 14' KB)
Site:	Submarine 10 Federal Com	**North Reference:**	Grid
Well:	#1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,722.5	0.00	0.00	4,722.5	0.0	0.0	0.0	0.00	0.00	0.00
KOP - 4722.5' MD, 4722.5' TVD, 0.00° INC, 0.00° AZI, 0.0' VS									
4,725.0	0.30	269.97	4,725.0	0.0	0.0	0.0	11.83	11.83	0.00
4,750.0	3.30	269.97	4,750.0	0.0	-0.8	0.8	12.00	12.00	0.00
4,775.0	6.30	269.97	4,774.9	0.0	-2.9	2.9	12.00	12.00	0.00
4,800.0	9.30	269.97	4,799.7	0.0	-6.3	6.3	12.00	12.00	0.00

Database:	Houston R5000 Database	**Local Co-ordinate Reference:**	Well #1H
Company:	COG Operating LLC	**TVD Reference:**	Well @ 3644.0usft (UDI #40 - 14' KB)
Project:	Eddy County, NM	**MD Reference:**	Well @ 3644.0usft (UDI #40 - 14' KB)
Site:	Submarine 10 Federal Com	**North Reference:**	Grid
Well:	#1H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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)
4,825.0	12.30	269.97	4,824.2	0.0	-11.0	11.0	12.00	12.00	0.00
4,850.0	15.30	269.97	4,848.5	0.0	-16.9	16.9	12.00	12.00	0.00
4,875.0	18.30	269.97	4,872.4	0.0	-24.1	24.1	12.00	12.00	0.00
4,900.0	21.30	269.97	4,895.9	0.0	-32.6	32.6	12.00	12.00	0.00
4,925.0	24.30	269.97	4,919.0	0.0	-42.3	42.3	12.00	12.00	0.00
4,934.3	25.41	269.97	4,927.4	0.0	-46.2	46.2	12.00	12.00	0.00
PP - 4934.3 MD, 4927.4' TVD, 25.41° INC, 46.2' VS									
4,950.0	27.30	269.97	4,941.5	0.0	-53.2	53.2	12.00	12.00	0.00
4,975.0	30.30	269.97	4,963.4	0.0	-65.2	65.2	12.00	12.00	0.00
5,000.0	33.30	269.97	4,984.6	0.0	-78.4	78.4	12.00	12.00	0.00
5,025.0	36.30	269.97	5,005.2	0.0	-92.6	92.6	12.00	12.00	0.00
5,050.0	39.30	269.97	5,024.9	-0.1	-108.0	108.0	12.00	12.00	0.00
5,075.0	42.30	269.97	5,043.8	-0.1	-124.3	124.3	12.00	12.00	0.00
5,100.0	45.30	269.97	5,061.9	-0.1	-141.6	141.6	12.00	12.00	0.00
5,125.0	48.30	269.97	5,079.0	-0.1	-159.8	159.8	12.00	12.00	0.00
5,150.0	51.30	269.97	5,095.1	-0.1	-178.9	178.9	12.00	12.00	0.00
5,175.0	54.30	269.97	5,110.3	-0.1	-198.8	198.8	12.00	12.00	0.00
5,200.0	57.30	269.97	5,124.3	-0.1	-219.5	219.5	12.00	12.00	0.00
5,225.0	60.30	269.97	5,137.3	-0.1	-240.9	240.9	12.00	12.00	0.00
5,250.0	63.30	269.97	5,149.1	-0.1	-262.9	262.9	12.00	12.00	0.00
5,275.0	66.30	269.97	5,159.7	-0.1	-285.5	285.5	12.00	12.00	0.00
5,300.0	69.30	269.97	5,169.2	-0.1	-308.7	308.7	12.00	12.00	0.00
5,325.0	72.30	269.97	5,177.4	-0.2	-332.3	332.3	12.00	12.00	0.00
5,350.0	75.30	269.97	5,184.4	-0.2	-356.3	356.3	12.00	12.00	0.00
5,375.0	78.30	269.97	5,190.1	-0.2	-380.6	380.6	12.00	12.00	0.00
5,400.0	81.30	269.97	5,194.5	-0.2	-405.2	405.2	12.00	12.00	0.00
5,425.0	84.30	269.97	5,197.6	-0.2	-430.0	430.0	12.00	12.00	0.00
5,450.0	87.30	269.97	5,199.5	-0.2	-454.9	454.9	12.00	12.00	0.00
5,472.5	90.00	269.97	5,200.0	-0.2	-477.4	477.4	12.00	12.00	0.00
EOC - 5472.5 MD, 5200.0' TVD, 90.00° INC, 269.97° AZI, 477.4' VS									
5,500.0	90.00	269.97	5,200.0	-0.2	-504.9	504.9	0.02	0.02	0.00
5,600.0	90.00	269.97	5,200.0	-0.3	-604.9	604.9	0.00	0.00	0.00
5,700.0	90.00	269.97	5,200.0	-0.3	-704.9	704.9	0.00	0.00	0.00
5,800.0	90.00	269.97	5,200.0	-0.4	-804.9	804.9	0.00	0.00	0.00
5,900.0	90.00	269.97	5,200.0	-0.4	-904.9	904.9	0.00	0.00	0.00
6,000.0	90.00	269.97	5,200.0	-0.5	-1,004.9	1,004.9	0.00	0.00	0.00
6,100.0	90.00	269.97	5,200.0	-0.5	-1,104.9	1,104.9	0.00	0.00	0.00
6,200.0	90.00	269.97	5,200.0	-0.6	-1,204.9	1,204.9	0.00	0.00	0.00
6,300.0	90.00	269.97	5,200.0	-0.6	-1,304.9	1,304.9	0.00	0.00	0.00
6,400.0	90.00	269.97	5,200.0	-0.7	-1,404.9	1,404.9	0.00	0.00	0.00
6,500.0	90.00	269.97	5,200.0	-0.7	-1,504.9	1,504.9	0.00	0.00	0.00
6,600.0	90.00	269.97	5,200.0	-0.8	-1,604.9	1,604.9	0.00	0.00	0.00
6,700.0	90.00	269.97	5,200.0	-0.8	-1,704.9	1,704.9	0.00	0.00	0.00
6,800.0	90.00	269.97	5,200.0	-0.9	-1,804.9	1,804.9	0.00	0.00	0.00
6,900.0	90.00	269.97	5,200.0	-0.9	-1,904.9	1,904.9	0.00	0.00	0.00
7,000.0	90.00	269.97	5,200.0	-1.0	-2,004.9	2,004.9	0.00	0.00	0.00
7,100.0	90.00	269.97	5,200.0	-1.0	-2,104.9	2,104.9	0.00	0.00	0.00
7,200.0	90.00	269.97	5,200.0	-1.0	-2,204.9	2,204.9	0.00	0.00	0.00
7,300.0	90.00	269.97	5,200.0	-1.1	-2,304.9	2,304.9	0.00	0.00	0.00
7,400.0	90.00	269.97	5,200.0	-1.1	-2,404.9	2,404.9	0.00	0.00	0.00
7,500.0	90.00	269.97	5,200.0	-1.2	-2,504.9	2,504.9	0.00	0.00	0.00
7,600.0	90.00	269.97	5,200.0	-1.2	-2,604.9	2,604.9	0.00	0.00	0.00
7,700.0	90.00	269.97	5,200.0	-1.3	-2,704.9	2,704.9	0.00	0.00	0.00
7,800.0	90.00	269.97	5,200.0	-1.3	-2,804.9	2,804.9	0.00	0.00	0.00

Database:	Houston R5000 Database	Local Co-ordinate Reference:	Well #1H
Company:	COG Operating LLC	TVD Reference:	Well @ 3644.0usft (UDI #40 - 14' KB)
Project:	Eddy County, NM	MD Reference:	Well @ 3644.0usft (UDI #40 - 14' KB)
Site:	Submarine 10 Federal Com	North Reference:	Grid
Well:	#1H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #2		

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)
7,900.0	90.00	269.97	5,200.0	-1.4	-2,904.9	2,904.9	0.00	0.00	0.00
8,000.0	90.00	269.97	5,200.0	-1.4	-3,004.9	3,004.9	0.00	0.00	0.00
8,100.0	90.00	269.97	5,200.0	-1.5	-3,104.9	3,104.9	0.00	0.00	0.00
8,200.0	90.00	269.97	5,200.0	-1.5	-3,204.9	3,204.9	0.00	0.00	0.00
8,300.0	90.00	269.97	5,200.0	-1.6	-3,304.9	3,304.9	0.00	0.00	0.00
8,400.0	90.00	269.97	5,200.0	-1.6	-3,404.9	3,404.9	0.00	0.00	0.00
8,500.0	90.00	269.97	5,200.0	-1.7	-3,504.9	3,504.9	0.00	0.00	0.00
8,600.0	90.00	269.97	5,200.0	-1.7	-3,604.9	3,604.9	0.00	0.00	0.00
8,700.0	90.00	269.97	5,200.0	-1.8	-3,704.9	3,704.9	0.00	0.00	0.00
8,800.0	90.00	269.97	5,200.0	-1.8	-3,804.9	3,804.9	0.00	0.00	0.00
8,900.0	90.00	269.97	5,200.0	-1.9	-3,904.9	3,904.9	0.00	0.00	0.00
9,000.0	90.00	269.97	5,200.0	-1.9	-4,004.9	4,004.9	0.00	0.00	0.00
9,100.0	90.00	269.97	5,200.0	-1.9	-4,104.9	4,104.9	0.00	0.00	0.00
9,200.0	90.00	269.97	5,200.0	-2.0	-4,204.9	4,204.9	0.00	0.00	0.00
9,300.0	90.00	269.97	5,200.0	-2.0	-4,304.9	4,304.9	0.00	0.00	0.00
9,400.0	90.00	269.97	5,200.0	-2.1	-4,404.9	4,404.9	0.00	0.00	0.00
9,500.0	90.00	269.97	5,200.0	-2.1	-4,504.9	4,504.9	0.00	0.00	0.00
9,600.0	90.00	269.97	5,200.0	-2.2	-4,604.9	4,604.9	0.00	0.00	0.00
9,665.1	90.00	269.97	5,200.0	-2.2	-4,670.0	4,670.0	0.00	0.00	0.00
TD @ 9665.1' MD, 5200.0' TVD									

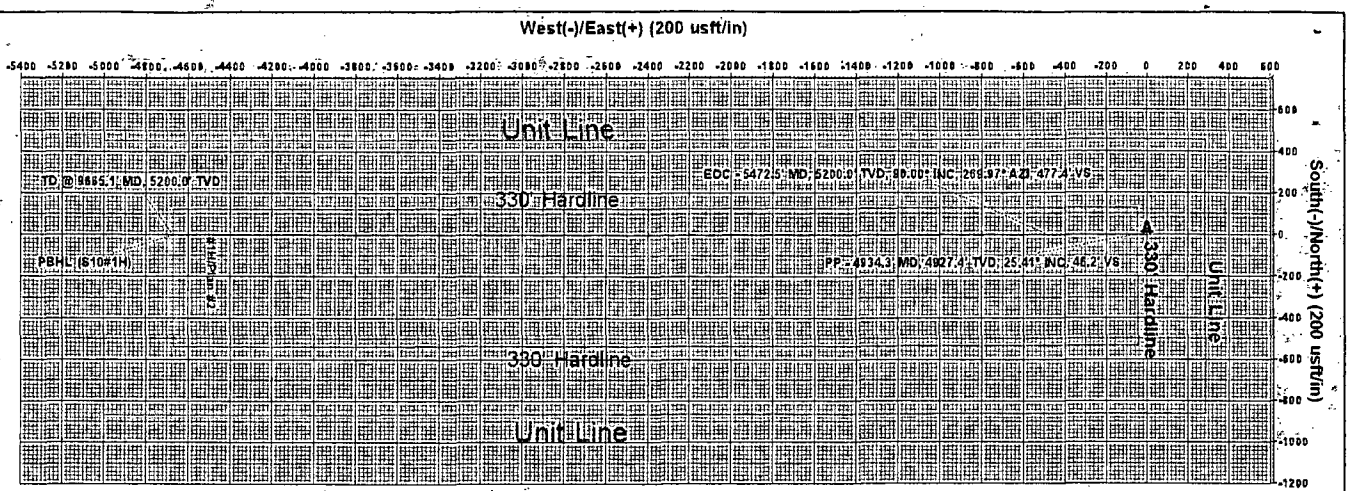
Design Targets

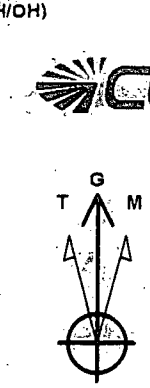
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
PBHL (S10#1H) - plan hits target center - Point	0.00	0.00	5,200.0	-2.2	-4,670.1	674,867.18	580,958.74	32° 51' 18.058 N	104° 4' 10.907 W

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	Local Coordinates +E/-W (usft)	Comment
4,722.5	4,722.5	0.0	0.0	KOP - 4722.5' MD, 4722.5' TVD, 0.00° INC, 0.00° AZI, 0.0' VS
4,934.3	4,927.4	0.0	-46.2	PP - 4934.3' MD, 4927.4' TVD, 25.41° INC, 46.2' VS
5,472.5	5,200.0	-0.2	-477.4	EOC - 5472.5' MD, 5200.0' TVD, 90.00° INC, 269.97° AZI, 477.4' VS
9,665.1	5,200.0	-2.2	-4,670.0	TD @ 9665.1' MD, 5200.0' TVD

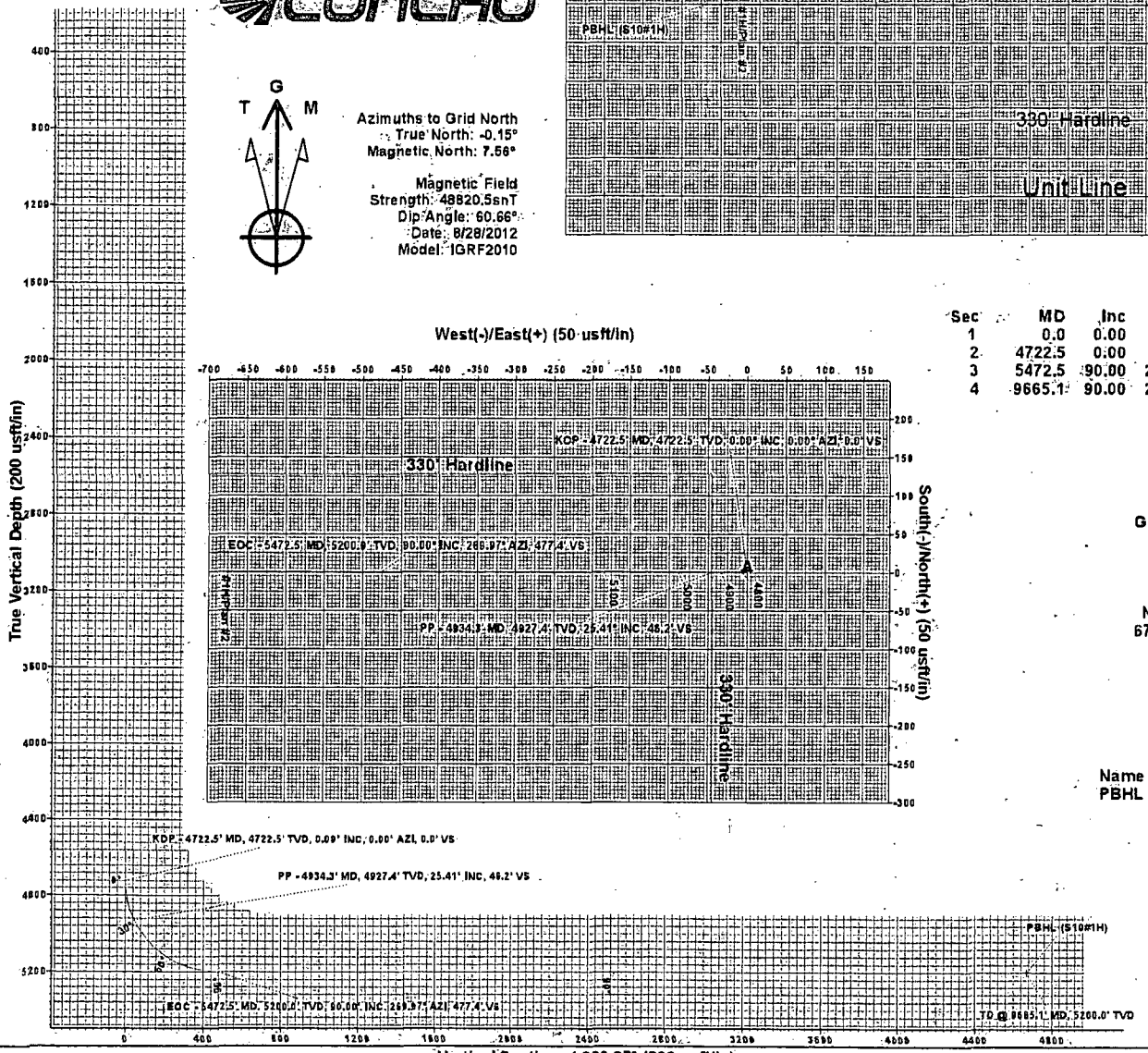
COG Operating LLC
Project: Eddy County, NM
Site: Submarine 10 Federal Com
Well: #1H
Wellbore: OH
Plan: Plan #2 (#1H/OH)





Azimuths to Grid North
True North: -0.15°
Magnetic North: 7.56°

Magnetic Field
Strength: 48820.5snT
Dip Angle: 60.66°
Date: 8/28/2012
Model: IGRF2010



Section Details

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	4722.5	0.00	0.00	4722.5	0.0	0.0	0.00	0.00	0.0	
3	5472.5	90.00	269.97	5200.0	-0.2	-477.5	12.00	269.97	477.5	
4	9665.1	90.00	269.97	5200.0	-2.2	-4670.1	0.00	0.00	4670.1	PBHL (S10#1H)

WELL DETAILS: #1H

Ground Elevation: 3630.0
RKB Elevation: Well @ 3644.0usft (UDI #40 - 14' KB)
Rig Name: UDI #40 - 14' KB

Surface Hole Location

Northing	Easting	Latitude	Longitude
674869.40	585628.80	32° 51' 17.961 N	104° 3' 16.159 W

DESIGN TARGET DETAILS

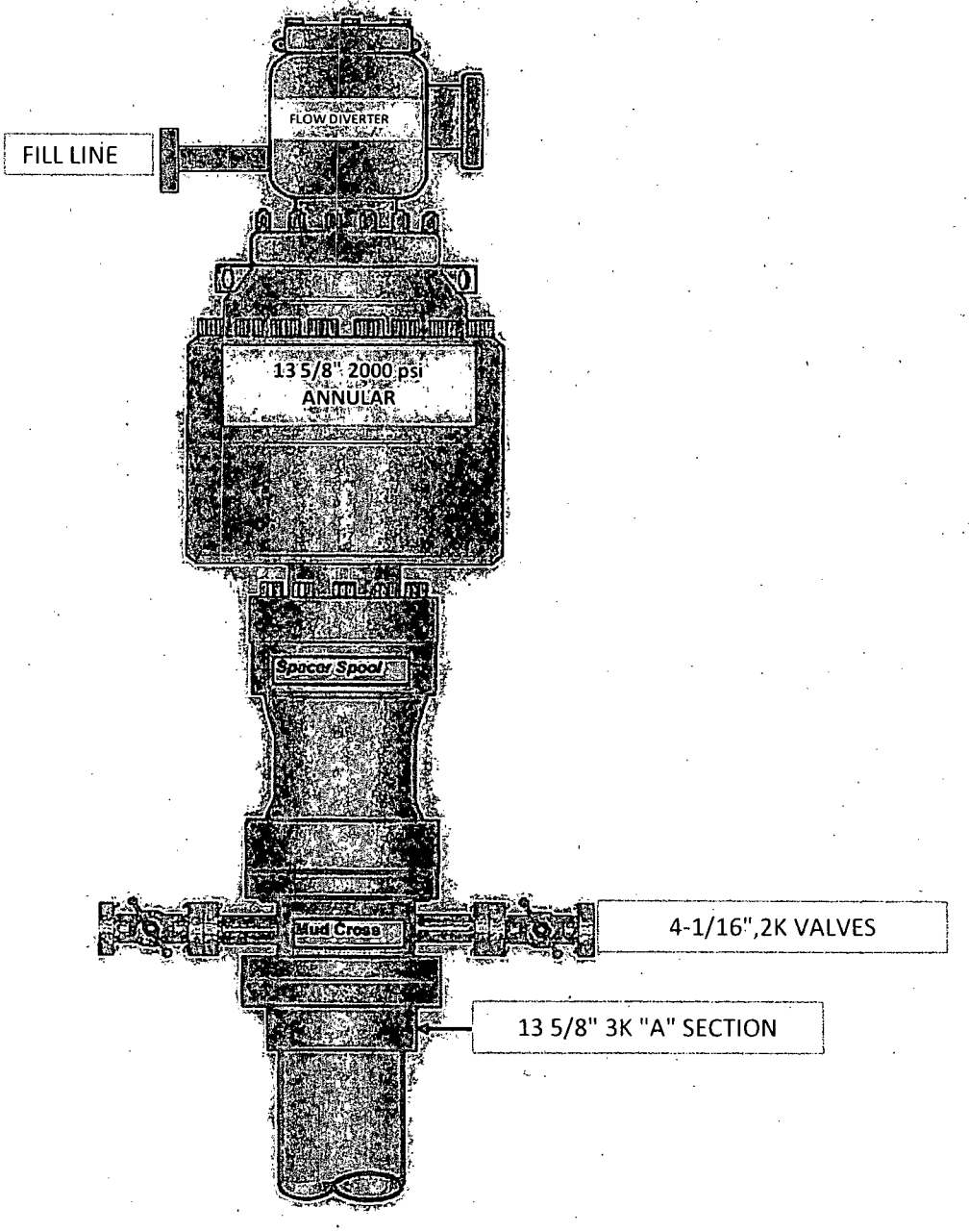
Name	TVD	+N/-S	+E/-W	Northing	Easting
PBHL (S10#1H)	5200.0	-2.2	-4670.1	674867.19	580958.74

PROJECT DETAILS: Eddy County, NM
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
Local North: Grid

Crescent Directional Drilling
7715 West Industrial Ave, Midland, Tx 79706
Phone: 432-618-1135

Plan: Plan #2 (#1H/OH)
Created By: Matt Higgins Date: 16:51, October 09 2012

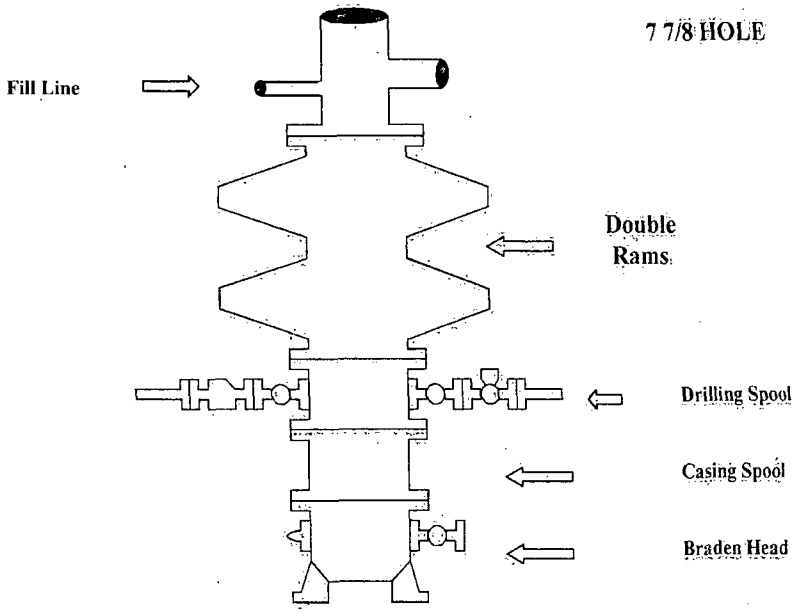
13 5/8" 2K ANNULAR



COG Operating LLC

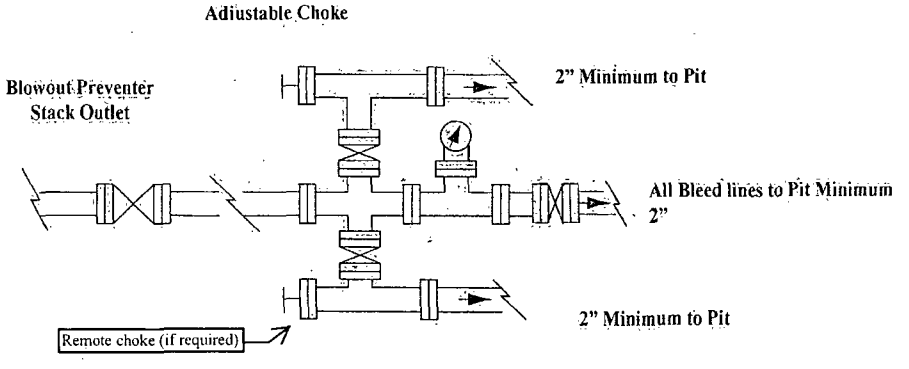
Exhibit #9

BOPE and Choke Schematic



Minimum 4" Nominal choke and kill lines

Choke Manifold Requirement (2000 psi WP)
No Annular Required



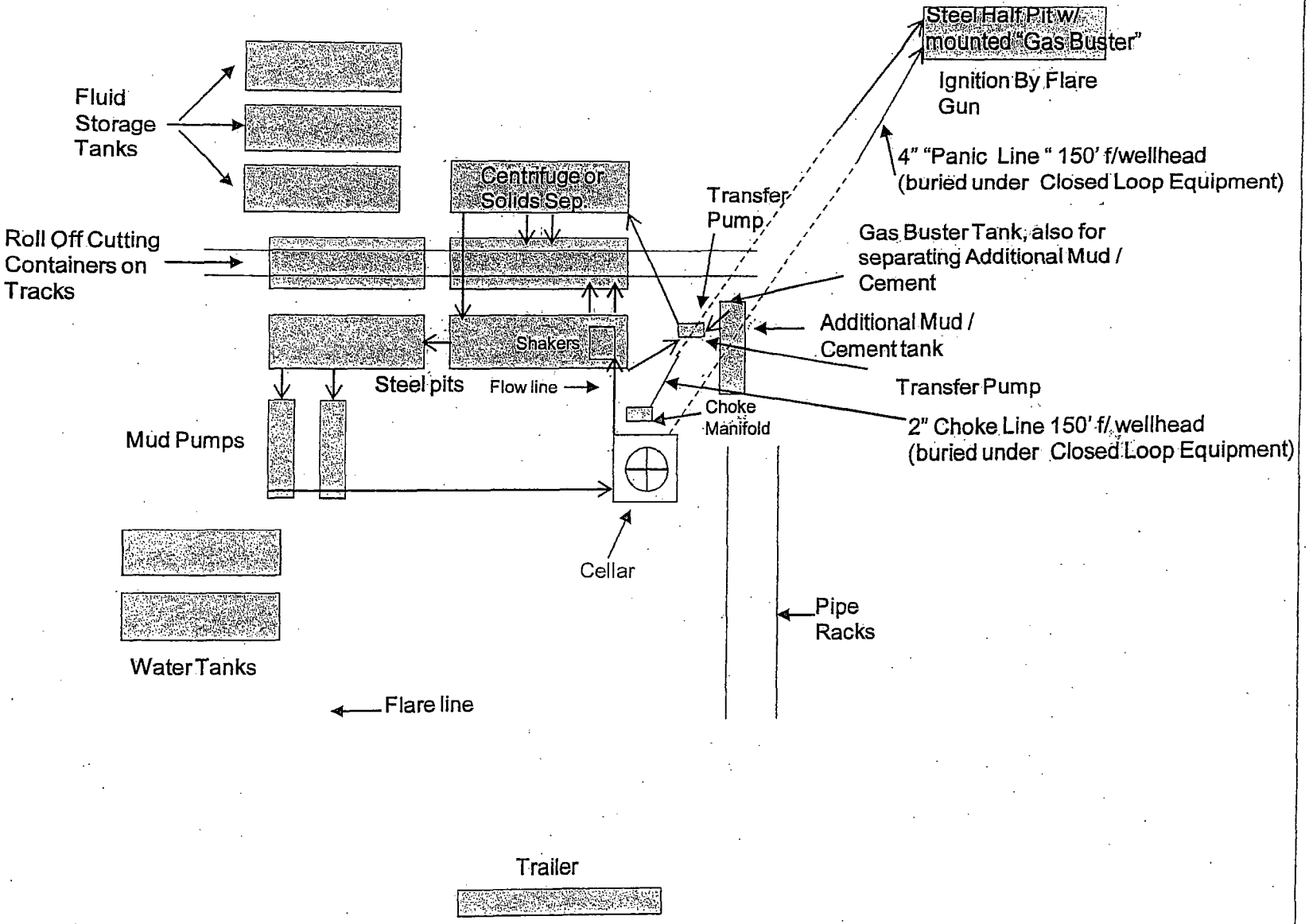
Adjustable Choke

NOTES REGARDING THE BLOWOUT PREVENTERS
Master Drilling Plan
Eddy County, New Mexico

1. Drilling nipple to be so constructed that it can be removed without use of a welder through rotary table opening, with minimum I.D. equal to preventer bore.
2. Wear ring to be properly installed in head.
3. Blow out preventer and all fittings must be in good condition, 2000 psi WP minimum.
4. All fittings to be flanged.
5. Safety valve must be available on rig floor at all times with proper connections, valve to be full 2000 psi WP minimum.
6. All choke and fill lines to be securely anchored especially ends of choke lines.
7. Equipment through which bit must pass shall be at least as large as the diameter of the casing being drilled through.
8. Kelly cock on Kelly.
9. Extension wrenches and hands wheels to be properly installed.
10. Blow out preventer control to be located as close to driller's position as feasible.
11. Blow out preventer closing equipment to include minimum 40-gallon accumulator, two independent sources of pump power on each closing unit installation all API specifications.

COG Operating LLC

Closed Loop Equipment Diagram



All drilling fluid circulated over shaker(s) with cuttings discharged into roll off container.

Fluid and fines below shaker(s) are circulated with transfer pump through centrifuge(s) or solids separator with cuttings and fines discharged into roll off container.

Fluid is continuously re-circulated through equipment with polymer added to aid separation of cutting fines.

Roll off containers are lined and de-watered with fluids re-circulated into system.

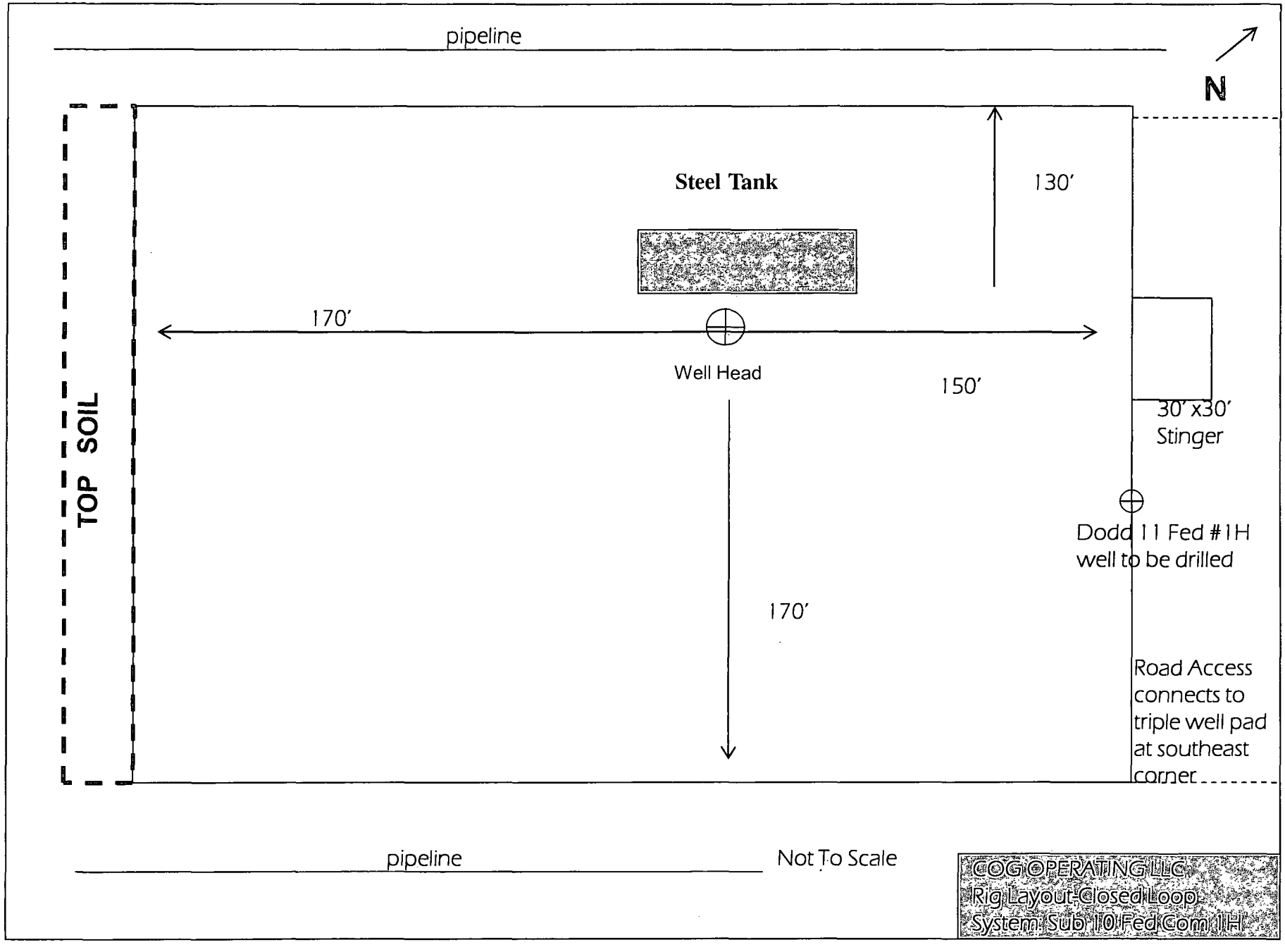
Additional tank is used to capture unused drilling fluid or cement returns from casing jobs.

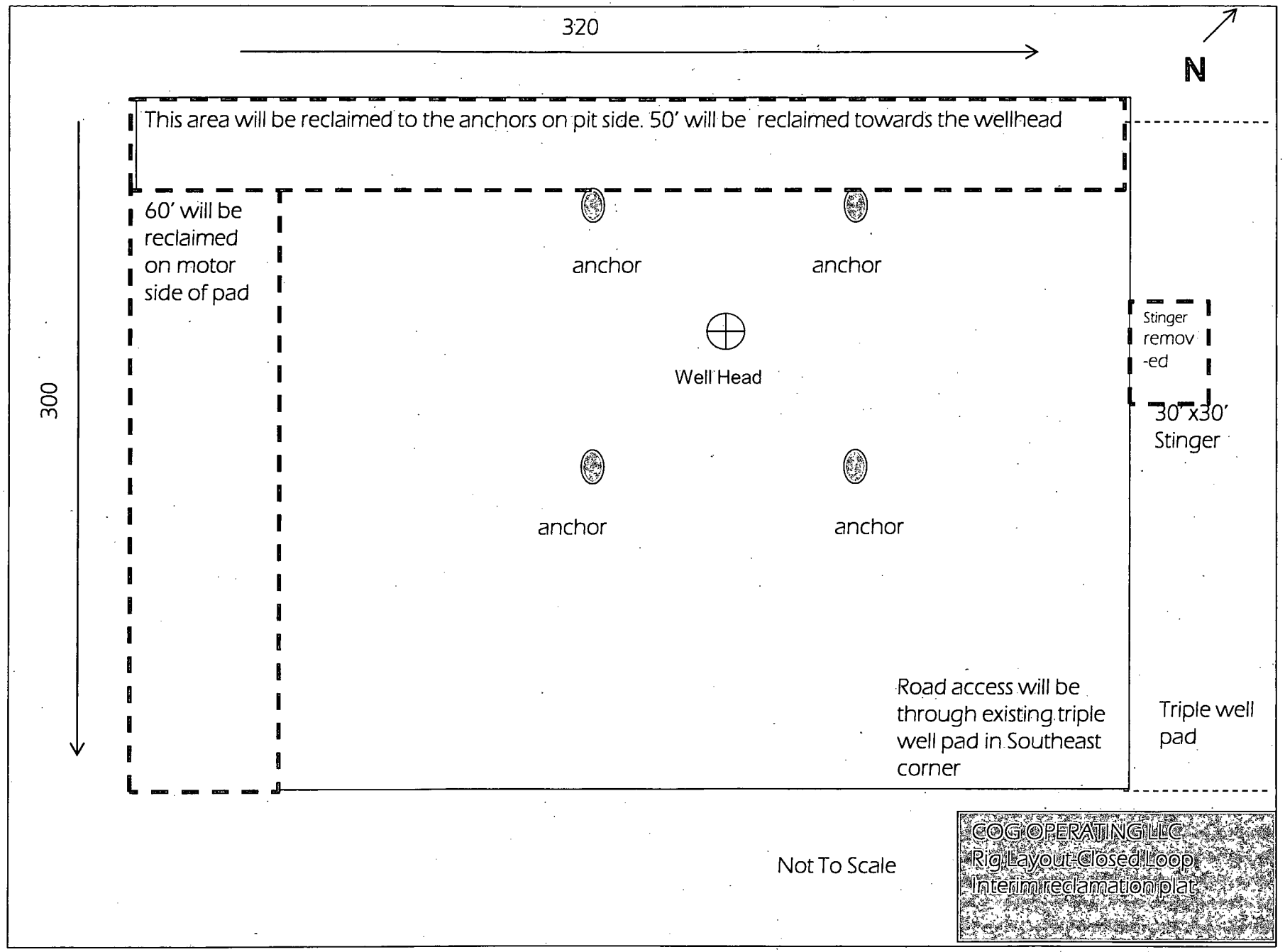
This equipment will be maintained 24 hrs./day by solids control personnel and or rig crews that stay on location.

Cuttings will be hauled to either:

CRI (permit number R9166)
or
GMI (permit number 711-019-001)

dependent upon which rig is available to drill this well.


pipeline
N
Steel Tank
130'
170'
Well Head
150'
30' x30'
Stinger
TOP SOIL
Dodd 11 Fed #1H
well to be drilled
170'
Road Access
connects to
triple well pad
at southeast
corner
pipeline
Not To Scale
COG OPERATING LLC
Rig Layout-Closed Loop
System Sub 10 Fed Com 1H


320
N
This area will be reclaimed to the anchors on pit side. 50' will be reclaimed towards the wellhead
60' will be reclaimed on motor side of pad
anchor
anchor
Well Head
Stinger remov -ed
30' x30' Stinger
300
anchor
anchor
Road access will be through existing triple well pad in Southeast corner
Triple well pad
Not To Scale
COG OPERATING LLC
Rig Layout Closed Loop
Interim reclamation plat

State of New Mexico
Energy, Minerals and Natural Resources Department

Susana Martinez
Governor

John H. Bemis
Cabinet Secretary

Brett F. Woods, Ph.D.
Deputy Cabinet Secretary

JAMI BAILEY
Division Director
Oil Conservation Division

Administrative Order DHC-4566
Order Date: 5/9/2012
Application Reference Number: pWVJ1213036549

COG OPERATING LLC
550 W TEXAS, SUITE 100
MIDLAND, TX 79701

Attention: Kanicia Castillo

Submarine 10 Federal Com Well No. 1H
API No: 30-015-NA
Unit A, Section 10, Township 17 South, Range 29 East, NMPM
Eddy County, New Mexico

Pool:	DODD;GLORIETA-UPPER YESO	Oil 97917
Names:	UNDES. EMPIRE; GLORIETA-YESO, EAST	Oil 96610

Reference is made to your recent application for an exception to 19.15.12.9A NMAC of the Division Rules and Regulations to permit the above-described well to commingle production from the subject pools in the wellbore.

It appearing that the subject well qualifies for approval for such exception pursuant to the provisions of 19.15.12.11A NMAC, and that reservoir damage or waste will not result from such downhole commingling, and correlative rights will not be violated thereby, you are hereby authorized to commingle the production as described above and any Division Order which authorized the dual completion or otherwise required separation of the zones is hereby placed in abeyance.

In accordance with 19.15.12.11A.(6) NMAC, the production attributed to any commingled pool within the well shall not exceed the allowable applicable to that pool.

Assignment of allowable and allocation of production from the well shall be as follows:

DODD;GLORIETA-UPPER YESO Pool	Pct Gas: 75	Pct Oil: 75
UNDES. EMPIRE; GLORIETA-YESO, EAST Pool	Pct Gas: 25	Pct Oil: 25

REMARKS: The operator shall notify the Division's district office upon implementation of commingling operations.

Pursuant to 19.15.12.11B NMAC, the commingling authority granted herein may be rescinded by the Division Director if conservation is not being best served by such commingling.

JAMI BAILEY
Director

JB/wvjj

cc: Oil Conservation Division – Artesia
Bureau of Land Management - Carlsbad

DATE IN	SUSPENSE	ENGINEER	LOGGED IN	TYPE	APP NO.
5/8/12		WVJ	5/8/12	DHC	pWVJ1213036549

ABOVE THIS LINE FOR DIVISION USE ONLY 4566

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

ADMINISTRATIVE APPLICATION CHECKLIST

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

[NSL-Non-Standard Location] [NSP-Non-Standard Proration Unit] [SD-Simultaneous Dedication]
[DHC-Downhole Commingling] [CTB-Lease Commingling] [PLC-Pool/Lease Commingling]
[PC-Pool Commingling] [OLS - Off-Lease Storage] [OLM-Off-Lease Measurement]
[WFX-Waterflood Expansion] [PMX-Pressure Maintenance Expansion]
[SWD-Salt Water Disposal] [IPI-Injection Pressure Increase]
[EOR-Qualified Enhanced Oil Recovery Certification] [PPR-Positive Production Response]

[1] TYPE OF APPLICATION - Check Those Which Apply for [A]

Submarine 10 Federal Com Lease
Eddy County, NM
Section 10, 17S, 29E
OGRID # 229137

[A] Location - Spacing Unit - Simultaneous Dedication
☐ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement
☒ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

[D] Other: Specify _____

[2] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or ☐ Does Not Apply

[A] ☒ Working, Royalty or Overriding Royalty Interest Owners

[B] ☐ Offset Operators, Leaseholders or Surface Owner

[C] ☐ Application is One Which Requires Published Legal Notice

[D] ☐ Notification and/or Concurrent Approval by BLM or SLO
U S Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☐ Waivers are Attached

[3] SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.

[4] CERTIFICATION: I hereby certify that the information submitted with this application for administrative approval is accurate and complete to the best of my knowledge. I also understand that no action will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

Kanicia Castillo		Lead Regulatory Analyst	5/2/12
Print or Type Name	Signature	Title	Date

kcastillo@concho.com
e-mail Address

District I
1625 N. French Drive, Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals and Natural Resources Department

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

Form C-107A
Revised August 1, 2011

APPLICATION TYPE
X Single Well
Establish Pre-Approved Pools
EXISTING WELLBORE
Yes X No

APPLICATION FOR DOWNHOLE COMMINGLING

COG Operating LLC — 550 West Texas Ave, Suite 100, Midland, TX 79701
Operator — Address

Submarine 10 Federal Com #1H — A, 10, 17S, 29E — DHC-4586 — Eddy
Lease — Well No. — Unit Letter-Section-Township-Range — County

OGRID No. 229137 Property Code _____ API No. _____ Lease Type: X Federal ___ State ___ Fee

DATA ELEMENT	UPPER ZONE	INTERMEDIATE ZONE	LOWER ZONE
Pool Name	Dodd-Glorieta-Upper Yeso	Grayburg Jackson;SR-Q-G-SA	
Pool Code	97917	28509	
Top and Bottom of Pay Section (Perforated or Open-Hole Interval)	4008 - 5355	4008 - 5355	
Method of Production (Flowing or Artificial Lift)	Artificial Lift	Artificial Lift	
Bottomhole Pressure (Note: Pressure data will not be required if the bottom perforation in the lower zone is within 150% of the depth of the top perforation in the upper zone)			
Oil Gravity or Gas BTU (Degree API or Gas BTU)			
Producing, Shut-In or New Zone	New Zone	New Zone	
Date and Oil/Gas/Water Rates of Last Production. (Note: For new zones with no production history, applicant shall be required to attach production estimates and supporting data.)	Date: Rates:	Date: Rates:	Date: Rates:
Fixed Allocation Percentage (Note: If allocation is based upon something other than current or past production, supporting data or explanation will be required.)	Oil 75 % Gas 75 %	Oil 25 % Gas 25 %	Oil % Gas %

ADDITIONAL DATA

Are all working, royalty and overriding royalty interests identical in all commingled zones? Yes X No
If not, have all working, royalty and overriding royalty interest owners been notified by certified mail? Yes ___ No ___

Are all produced fluids from all commingled zones compatible with each other? Yes X No

Will commingling decrease the value of production? Yes ___ No X

If this well is on, or communitized with, state or federal lands, has either the Commissioner of Public Lands or the United States Bureau of Land Management been notified in writing of this application? Yes X No

NMOCD Reference Case No. applicable to this well: _____

Attachments:
C-102 for each zone to be commingled showing its spacing unit and acreage dedication.
Production curve for each zone for at least one year. (If not available, attach explanation.)
For zones with no production history, estimated production rates and supporting data.
Data to support allocation method or formula.
Notification list of working, royalty and overriding royalty interests for uncommon interest cases.
Any additional statements, data or documents required to support commingling.

PRE-APPROVED POOLS

If application is to establish Pre-Approved Pools, the following additional information will be required:

List of other orders approving downhole commingling within the proposed Pre-Approved Pools
List of all operators within the proposed Pre-Approved Pools
Proof that all operators within the proposed Pre-Approved Pools were provided notice of this application.
Bottomhole pressure data

I hereby certify that the information above is true and complete to the best of my knowledge and belief.

SIGNATURE _____ TITLE Lead Regulatory Analyst DATE 5/02/12

TYPE OR PRINT NAME Kanicia Castillo TELEPHONE NO. (432) 685-4332

E-MAIL ADDRESS kcastillo@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	Pool Code	Pool Name
	97917	Dodd-Glorieta-Upper Yeso

Property Code	Property Name	Well Number
	SUBMARINE 10 FEDERAL COM	1H

OGRID No.	Operator Name	Elevation
229137	COG OPERATING, LLC	3626'

Surface Location

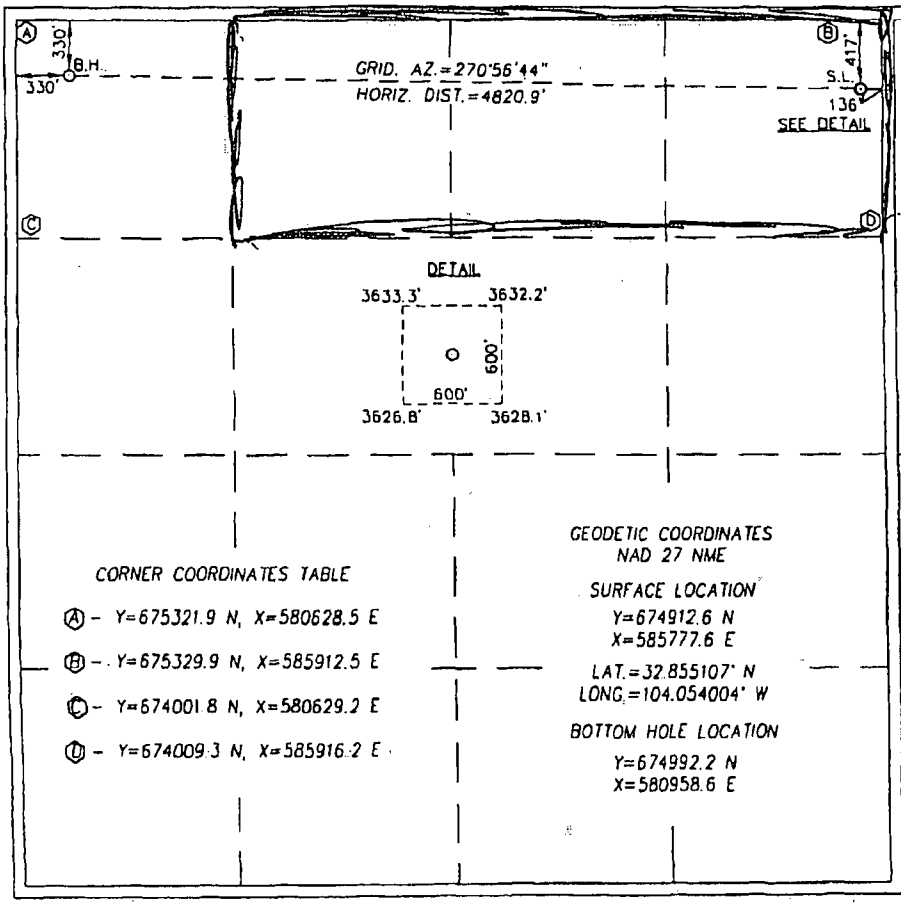
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	10	17-S	29-E		417	NORTH	136	EAST	EDDY

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
D	10	17-S	29-E		330	NORTH	330	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
~~160~~ 200			

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



CORNER COORDINATES TABLE

(A) - Y=675321.9 N, X=580628.5 E
(B) - Y=675329.9 N, X=585912.5 E
(C) - Y=674001.8 N, X=580629.2 E
(D) - Y=674009.3 N, X=585916.2 E

GEODETIC COORDINATES
NAD 27 NME

SURFACE LOCATION
Y=674912.6 N
X=585777.6 E
LAT.=32.855107° N
LONG.=104.054004° W

BOTTOM HOLE LOCATION
Y=674992.2 N
X=580958.6 E

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.

5/1/12
Signature Date

Kanicia Castillo
Printed Name

kcastillo@concho.com
E-mail Address

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.

JANUARY 13, 2012
Date of Survey

Signature & Seal of Professional Surveyor:

RONALD J. EIDSON
NEW MEXICO
3239
REGISTERED PROFESSIONAL SURVEYOR

Ronald J. Eidson 01/30/2012

Certificate Number: Gary L. Jones 12641
Ronald J. Eidson 3239

AP WSC W.O.: 11.11.2272

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1625 N. French Dr., Hobbs, NM 88240
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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	Pool Code	Pool Name
	28509	Grayburg Jackson;SR-Q-G-SA

Property Code	Property Name	Well Number
	SUBMARINE 10 FEDERAL COM	1H

OGRID No.	Operator Name	Elevation
229137	COG OPERATING, LLC	3626'

Surface Location

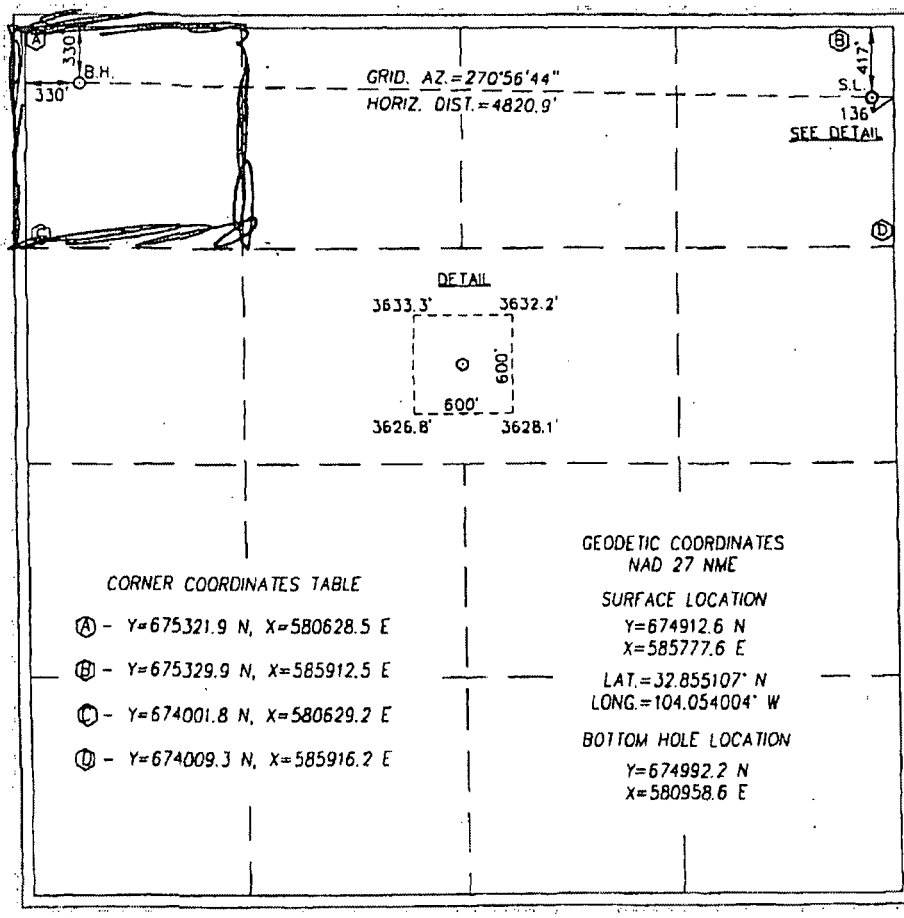
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	10	17-S	29-E		417	NORTH	136	EAST	EDDY

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
D	10	17-S	29-E		330	NORTH	330	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
160			

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



CORNER COORDINATES TABLE

(A) - Y=675321.9 N, X=580628.5 E
(B) - Y=675329.9 N, X=585912.5 E
(C) - Y=674001.8 N, X=580629.2 E
(D) - Y=674009.3 N, X=585916.2 E

GEODETIC COORDINATES
NAD 27 NME

SURFACE LOCATION
Y=674912.6 N
X=585777.6 E
LAT.=32.855107° N
LONG.=104.054004° W

BOTTOM HOLE LOCATION
Y=674992.2 N
X=580958.6 E

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.

5/2/12
Signature Date

Kanicia Castillo
Printed Name

kcastillo@concho.com
E-mail Address

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.

JANUARY 13, 2012
Date of Survey

Signature & Seal of Professional Surveyor:

RONALD J. EIDSON
NEW MEXICO
3239
REGISTERED PROFESSIONAL SURVEYOR

Ronald J. Eidson 5/30/2012

Certificate Number Gary L. Jones 12641
Ronald J. Eidson 3239

AP
WSC W.O.: 11.11.2272

Surface Use & Operating Plan

Submarine 10 Federal Com 1H

- Surface Tenant: Bogle Farms, Lewis Derrick, P O Box 441, Artesia, NM 88211.
- New Road: approx. 380' if triple pad has not been built
- Flow Line: approx. 1.0 mile
- Facilities: Dodd Federal Unit 10-B Battery

Well Site Information

V Door: Northeast

Topsoil: Southwest

Interim Reclamation: Northwest/Southwest

Notes

-sharing triple well pad with the Dodd 11 Federal #1H well

Onsite: 3/22/2011

John Fast (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 380' of new access road will be required for this location if the triple pad has not been built. 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 10-B Federal Tank Battery to be located in Section 10 at the Dodd Federal Unit #580 well location at approx. 400' FSL & 330' FEL 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 10-B Federal Tank Battery to be located in Section 10 at the Dodd Federal Unit #580 well location at approx. 400' FSL & 330' FEL in T17S R29E. The flowline will be SDR 7 3" poly line laid on the surface and will be approximately 1.0 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 Northeast. 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 recountoured 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 re-seeded 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
Drilling Superintendent
COG Operating LLC
One Concho Center
600 W Illinois Ave
Midland, TX 79701
Phone (432) 685-4304 (office)
(432) 221-0346 (business)

Ray Peterson
Drilling Manager
COG Operating LLC
One Concho Center
600 W Illinois Ave
Midland, TX 79701
Phone (432) 685-4304 (office)
(432) 818-2254 (business)

Well-Site Evaluation Field Form

Company Name: COG **Well Name** Dodd 11 Fed 1H

Location: Section 10, T. 17 S. R. 29 E. Footage 460 F N L & 285 F E L

Examined by J Fast **Date** 3-21-12

Evaluation: _____

Description & Topography: (cut & fill, etc.) undulating dunes

combined 2 well NE 110' from staked well

Soils: (reseeding stips, etc.) sandy Cave Area: low

Hydrogeology: (wells, playas, floodplain, drainages, erosive soils, plant indicators, etc.)

NA

Wildlife: (habitat, LPC, SDL, etc.) not SDL

Other: (VRM, range, existing structures, etc.) _____

Well Infrastructure

Oil Gas Vertical Horizontal Directional

V-Door Direction: NE

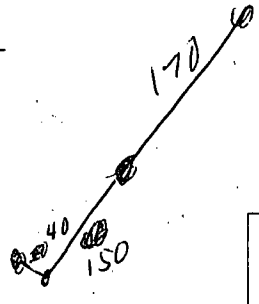
Pad Size: _____

Road Route: to SE corner of combined pad

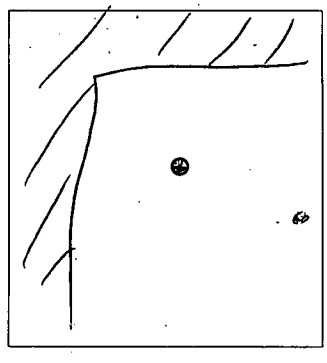
Pipeline: _____

Production Facility Placement: _____

Interim Reclamation: NW SW



NA



PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	COG OPERATING LLC
LEASE NO.:	LC028731B
WELL NAME & NO.:	1H-SUBMARINE 10 FED COM
SURFACE HOLE FOOTAGE:	460' FNL & 285' FEL
BOTTOM HOLE FOOTAGE	455' FNL & 150' FWL
LOCATION:	Section 10, T. 17 S., R 29 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.

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

V. SPECIAL REQUIREMENT(S)

Communitization Agreement

A Communitization Agreement covering the acreage dedicated to this well must be filed for approval with the BLM. The effective date of the agreement shall be prior to any sales. In addition, the well sign shall include the surface and bottom hole lease numbers. If the Communitization Agreement number is known, it shall also be on the sign. If not, it shall be placed on the sign when the sign is replaced.

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall stockpile the topsoil in a low profile manner in order to prevent wind/water erosion of the topsoil. The topsoil to be stripped is approximately 6 inches in depth. The topsoil will be used for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation.

The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

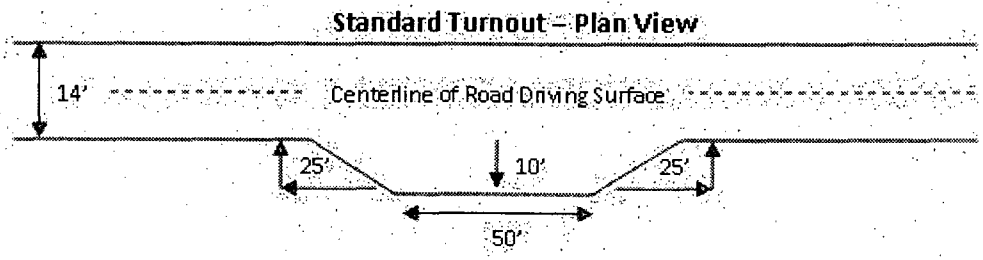
Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching
Ditching shall be required on both sides of the road.

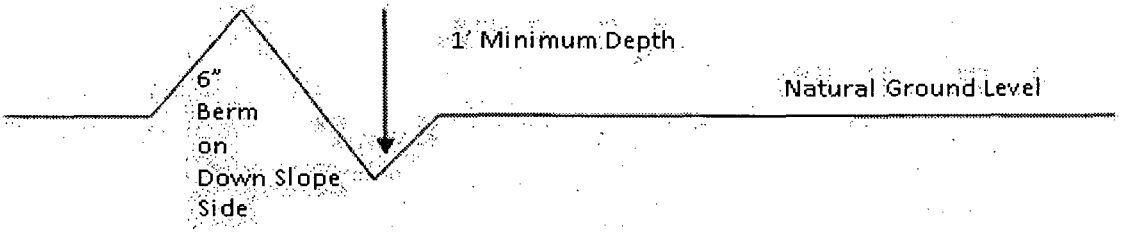
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



Drainage
Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

$$\text{400 foot road with 4\% road slope: } \frac{400'}{4\%} + 100' = 200' \text{ lead-off ditch interval}$$

Culvert Installations
Appropriately sized culvert(s) shall be installed at the deep waterway channel flow crossing.

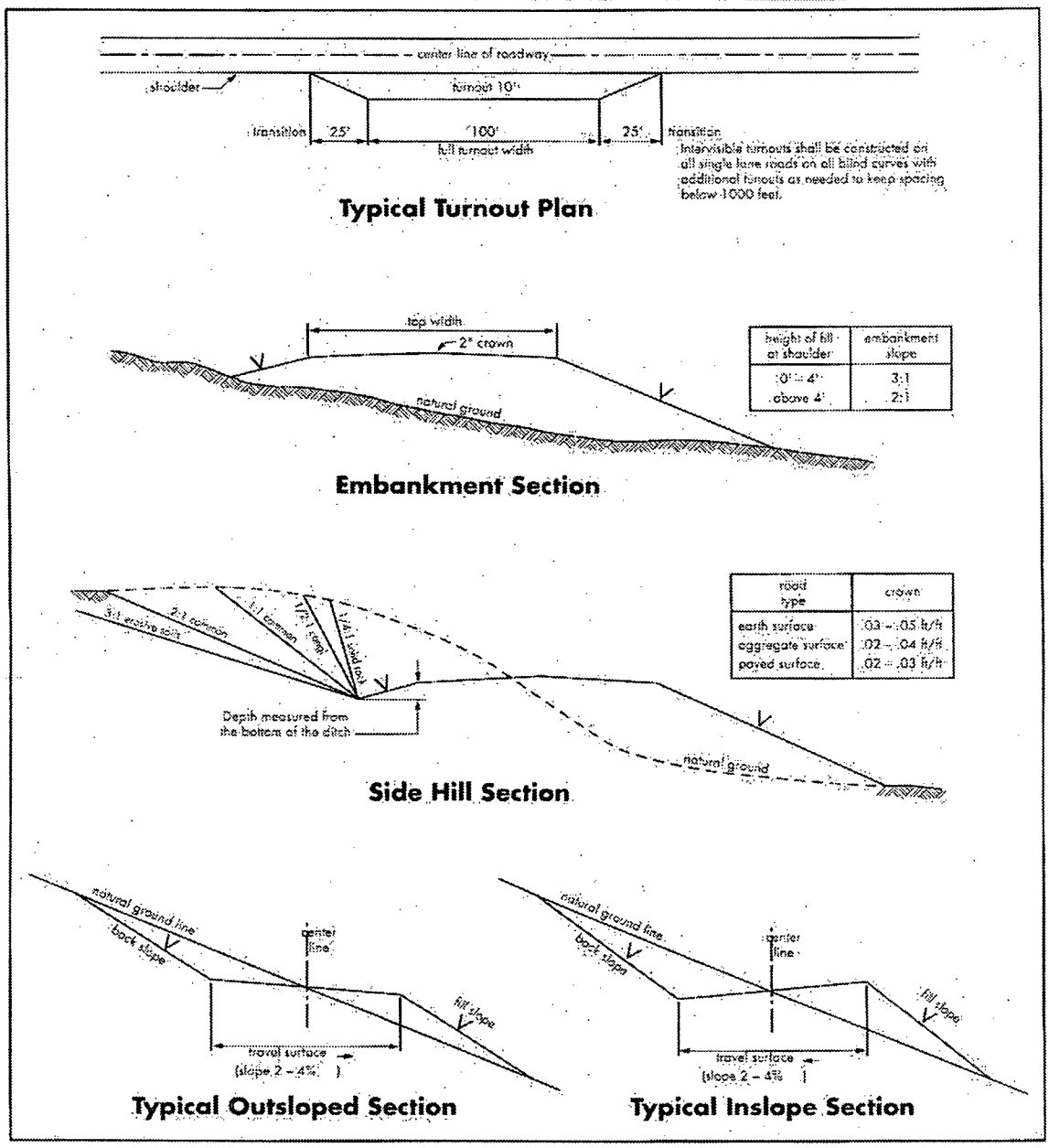
Cattleguards
An appropriately sized cattleguard(s) sufficient to carry out the project shall be installed and maintained at fence crossing(s).

Any existing cattleguard(s) on the access road shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattleguard(s) that are in place and are utilized during lease operations.

A gate shall be constructed and fastened securely to H-braces.

Public Access
Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

Figure 1 – Cross Sections and Plans For Typical Road Sections



VII. DRILLING

A. DRILLING OPERATIONS REQUIREMENTS

The BLM is to be notified in advance for a representative to witness:

a. Spudding well (minimum of 24 hours)
b. Setting and/or Cementing of all casing strings (minimum of 4 hours)
c. BOPE tests (minimum of 4 hours)

☒ **Eddy County**
Call the Carlsbad Field Office, 620 East Greene St., Carlsbad, NM 88220, (575) 361-2822

1. A Hydrogen Sulfide (H2S) Drilling Plan should be activated 500 feet prior to drilling into the **Grayburg** formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. **The record of the drilling rate along with the GR/N well log run from TD to surface will be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.).

Centralizers required on surface casing per Onshore Order 2.III.B.1.f.

Wait on cement (WOC) time prior to drilling out for a primary cement job will be a minimum 18 hours for a water basin, 24 hours in the potash area, or 500 pounds compressive strength, whichever is greater for all casing strings. DURING THIS WOC TIME, NO DRILL PIPE, ETC. SHALL BE RUN IN THE HOLE. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. See individual casing strings for details regarding lead cement slurry requirements.

No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

Possible water and brine flows in the Salado and Artesia Group.
Possible lost circulation in the Grayburg and San Andres formations.

1. The **13-3/8** inch surface casing shall be set at **approximately 300 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt)** and cemented to the surface. **If Salt is encountered set casing 25 feet above the salt.**

    a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.

    b. Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

2. The minimum required fill of cement behind the **9-5/8** inch intermediate casing is:

    ☒ As proposed. If cement does not circulate see B.1.a, c-d above.

Operator has proposed DV tool 50 feet below the surface shoe (375'), but will adjust cement proportionately if moved. DV tool SHALL be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range. If an ECP is used, it is to be set a minimum of 50' below the shoe to provide cement across the shoe. If it cannot be set below the shoe, a CBL shall be run to verify cement coverage.

a. First stage to DV tool:

☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

b. Second stage above DV tool:

☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office.

3. The minimum required fill of cement behind the **7 X 5-1/2** inch production casing is:

☒ Cement to 200 feet inside previous casing. If cement does not circulate, contact the appropriate BLM office.

Operator has proposed 2 DV tools at depth of 4723' and 1025', but will adjust cement proportionately if moved. DV tool shall be set a minimum of 50' below previous shoe and a minimum of 200' above current shoe. Operator shall submit sundry if DV tool depth cannot be set in this range.

a. First stage to DV tool:

☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with second stage cement job. Operator should have plans as to how they will achieve circulation on the next stage. **Additional cement may be required – excess calculates to 0%.**

b. Second stage above DV tool:

☒ Cement to circulate. If cement does not circulate, contact the appropriate BLM office before proceeding with third stage cement job. Operator should have plans as to how they will achieve circulation on the next stage.

c. Third stage above DV tool:

☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

4. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

C. PRESSURE CONTROL

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53 Sec. 17. **Operator approved for either 13-5/8" or 11" BOP stack.**

2. **In the case where the only BOP installed is an annular preventer, it shall be tested to full working pressure or a minimum of 2000 psi.**

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.

4. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.

    a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).

    b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.

    c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock.

    d. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**

    e. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug.

D. DRILL STEM TEST

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

E. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

CRW 042513

VIII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Containment Structures
The containment structure shall be constructed to hold the capacity of the entire contents of the largest tank, plus 24 hour production, unless more stringent protective requirements are deemed necessary by the Authorized Officer.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, Shale Green from the BLM Standard Environmental Color Chart (CC-001: June 2008).

B. PIPELINES

STANDARD STIPULATIONS FOR SURFACE INSTALLED PIPELINES

A copy of the APD and attachments, including stipulations, survey plat and/or map, will be on location during construction. BLM personnel may request to you a copy of your permit during construction to ensure compliance with all stipulations.

Holder agrees to comply with the following stipulations to the satisfaction of the Authorized Officer:

1. The holder shall indemnify the United States against any liability for damage to life or property arising from the occupancy or use of public lands under this grant.

2. The holder shall comply with all applicable Federal laws and regulations existing or hereafter enacted or promulgated. In any event, the holder shall comply with the Toxic Substances Control Act of 1976 as amended, 15 USC 2601 et seq. (1982) with regards to any toxic substances that are used, generated by or stored on the right-of-way or on facilities authorized under this right-of-way grant. (See 40 CFR, Part 702-799 and especially, provisions on polychlorinated biphenyls, 40 CFR 761.1-761.193.) Additionally, any release of toxic substances (leaks, spills, etc.) in excess of the reportable quantity established by 40 CFR, Part 117 shall be reported as required by the Comprehensive Environmental Response, Compensation, and Liability Act, section 102b. A copy of any report required or requested by any Federal agency or State government as a result of a reportable release or spill of any toxic substances shall be furnished to the authorized officer concurrent with the filing of the reports to the involved Federal agency or State government.

3. The holder agrees to indemnify the United States against any liability arising from the release of any hazardous substance or hazardous waste (as these terms are defined in the Comprehensive Environmental Response, Compensation and Liability Act of 1980, 42 U.S.C. 9601, et seq. or the Resource Conservation and Recovery Act, 42 U.S.C. 6901, et seq.) on the Right-of-Way (unless the release or threatened release is wholly unrelated to activity of the Right-of-Way holder's activity on the Right-of-Way), or resulting from the activity of the Right-of-Way holder on the Right-of-Way. This agreement applies without regard to whether a release is caused by the holder, its agent, or unrelated third parties.

4. The holder shall be liable for damage or injury to the United States to the extent provided by 43 CFR Sec. 2883.1-4. The holder shall be held to a standard of strict liability for damage or injury to the United States resulting from pipe rupture, fire, or spills caused or substantially aggravated by any of the following within the right-of-way or permit area:

a. Activities of the holder including, but not limited to construction, operation, maintenance, and termination of the facility.
b. Activities of other parties including, but not limited to:
    (1) Land clearing.
    (2) Earth-disturbing and earth-moving work.
    (3) Blasting.
    (4) Vandalism and sabotage.
c. Acts of God.

The maximum limitation for such strict liability damages shall not exceed one million dollars ($1,000,000) for any one event, and any liability in excess of such amount shall be determined by the ordinary rules of negligence of the jurisdiction in which the damage or injury occurred.

This section shall not impose strict liability for damage or injury resulting primarily from an act of war or from the negligent acts or omissions of the United States.

5. If, during any phase of the construction, operation, maintenance, or termination of the pipeline, any oil, salt water, or other pollutant should be discharged from the pipeline system, impacting Federal lands, the control and total removal, disposal, and cleaning up of such oil, salt water, or other pollutant, wherever found, shall be the responsibility of the holder, regardless of fault. Upon failure of the holder to control, dispose of, or clean up such discharge on or affecting Federal lands, or to repair all damages resulting therefrom, on the Federal lands, the Authorized Officer may take such measures as he deems necessary to control and clean up the discharge and restore the area, including, where appropriate, the aquatic environment and fish and wildlife habitats, at the full expense of the holder. Such action by the Authorized Officer shall not relieve the holder of any responsibility as provided herein.

6. All construction and maintenance activity will be confined to the authorized right-of-way width of **20** feet. If the pipeline route follows an existing road or buried pipeline right-of-way, the surface pipeline must be installed no farther than 10 feet from the edge of the road or buried pipeline right-of-way. If existing surface pipelines prevent this distance, the proposed surface pipeline must be installed immediately adjacent to the outer surface pipeline. All construction and maintenance activity will be confined to existing roads or right-of-ways.

7. No blading or clearing of any vegetation will be allowed unless approved in writing by the Authorized Officer.

8. The holder shall install the pipeline on the surface in such a manner that will minimize suspension of the pipeline across low areas in the terrain. In hummocky of duney areas, the pipeline will be "snaked" around hummocks and dunes rather then suspended across these features.

9. The pipeline shall be buried with a minimum of **24** inches under all roads, "two-tracks," and trails. Burial of the pipe will continue for 20 feet on each side of each crossing. The condition of the road, upon completion of construction, shall be returned to at least its former state with no bumps or dips remaining in the road surface.

10. The holder shall minimize disturbance to existing fences and other improvements on public lands. The holder is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the owner of any improvements prior to disturbing them. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

11. In those areas where erosion control structures are required to stabilize soil conditions, the holder will install such structures as are suitable for the specific soil conditions being encountered and which are in accordance with sound resource management practices.

12. Excluding the pipe, all above-ground structures not subject to safety requirement shall be painted by the holder to blend with the natural color of the landscape. The paint used shall be a color which simulates "Standard Environmental Colors" – **Shale Green**, Munsell Soil Color No. 5Y 4/2; designated by the Rocky Mountain Five State Interagency Committee.

13. The pipeline will be identified by signs at the point of origin and completion of the right-of-way and at all road crossings. At a minimum, signs will state the holder's name, BLM serial number, and the product being transported. Signs will be maintained in a legible condition for the life of the pipeline.

14. The holder shall not use the pipeline route as a road for purposes other than routine

maintenance as determined necessary by the Authorized Officer in consultation with the holder. The holder will take whatever steps are necessary to ensure that the pipeline route is not used as a roadway.

15. Any cultural and/or paleontological resource (historic or prehistoric site or object) discovered by the holder, or any person working on his behalf, on public or Federal land shall be immediately reported to the authorized officer. Holder shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the authorized officer. An evaluation of the discovery will be made by the authorized officer to determine appropriate cultural or scientific values. The holder will be responsible for the cost of evaluation and any decision as to proper mitigation measures will be made by the authorized officer after consulting with the holder.

16. The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, powerline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

IX. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

X. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Seed Mixture 2, for Sandy Sites

The holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed will be done in accordance with State law (s) and within nine (9) months prior to purchase. Commercial seed will be either certified or registered seed. The seed container will be tagged in accordance with State law(s) and available for inspection by the authorized officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). The holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. The seeding will be repeated until a satisfactory stand is established as determined by the authorized officer. Evaluation of growth will not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Sand dropseed (Sporobolus cryptandrus)	1.0
Sand love grass (Eragrostis trichodes)	1.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed