Form 3160-3
(April 2004)

OPERATOR'S COPY

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

APPLICATION FOR PERMIT TO DRILL OR REENTER

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

5. Lease Serial No.
NM-12559

6. If Indian, Allotee or Tribe Name

1a. Type of work: [X] DRILL [ ] REENTER

7. If Unit or CA Agreement, Name and No.

1b. Type of Well: [X] Oil Well [ ] Gas Well [ ] Other [X] Single Zone [ ] Multiple Zone

8. Lease Name and Well No. # 1H
COTTONMOUTH "23" FEDERAL C

2. Name of Operator
OGX RESOURCES, LLC. 217955 (Jeff Birkelbach 432-685-1287)

9. API Well No.
30-015-39784

3a. Address
P. O. BOX 2064 MIDLAND, TEXAS 79702

3b. Phone No. *(include area code)*
432-685-1287

10. Field and Pool, or Exploratory
Hay Hollow, B.S. [36215]

4. Location of Well *(Report location clearly and in accordance with any State requirements.*)*
At surface 35' FNL & 2310' FWL SECTION 23 T26S-R28E
At proposed prod. zone 330' FSL & 2310' FWL SECTION 23 T26S-R28E

11. Sec., T. R. M. or Blk. and Survey or Area
SECTION 23 T26S-R28E

14. Distance in miles and direction from nearest town or post office*
Approximately 12 miles South of Malaga New Mexico

12. County or Parish
EDDY CO.

13. State
NM

15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any)
35'

16. No. of acres in lease
320

17. Spacing Unit dedicated to this well
160

18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft.
NA

19. Proposed Depth
TVD-7050
MD-11,790'

20. BLM/BIA Bond No. on file
NMB-000244

21. Elevations (Show whether DF, KDB, RT, GL, etc.)
2945' GL.

22. Approximate date work will start*
WHEN APPROVED

23. Estimated duration
25 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 (s 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: Joe T. Janica
Name *(Printed/Typed)*: Joe T. Janica
Date: 10/11/11

Title: Permit Eng.

RECEIVED
DEC 15 2011
NMOCD ARTESIA

Approved by *(Signature)*:
Name *(Printed/Typed)*:
Date: 12/14/11

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)*

Carlsbad Controlled Water Basin

Approval Subject to General Requirements & Special Stipulations Attached

SEE ATTACHED FOR CONDITIONS OF APPROVAL

Operator Certification

I hereby certify that I or someone under my direct supervision have inspected the drill site and access route proposed herein; that I am familiar with the conditions which currently exist; that I have full knowledge of state and federal laws applicable sto this operation; that the statements made in the 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, the company that I represent, 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 a false stateme

OPERATORS REPRESENTATIVES

BERORE CONSTRUCTION	DURING AND AFTER CONSTRUCTION
TIERRA EXPLORATION, INC.	OGX RESOURCES, LLC.
P.O. BOX 2188	P. O. BOX 2064
HOBBS, NEW MEXICO 88241	MIDLAND, TEXAS 79702
JOE JANICA 575-391-850	JEFF BIRKELBACH 432-685-1287
CELL 575-390-1598	CELL 432-553-0391

NAME Joe T. Janica Joe T Janica

TITLE Permit Eng. DATE 10/11/11

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
DISTRICT II
1301 W. Grand Avenue, Artesia, NM 88210
DISTRICT III
1000 Rio Brazos Rd., 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-102
Revised October 15, 2009

Submit one copy to appropriate District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-39784	30215	HAY HOLLOW; Bone Spring

Property Code	Property Name	Well Number
38980	COTTONMOUTH "23" FEDERAL COM	1H

OGRID No.	Operator Name	Elevation
217955	OGX RESOURCES, LLC	2945'

Surface Location

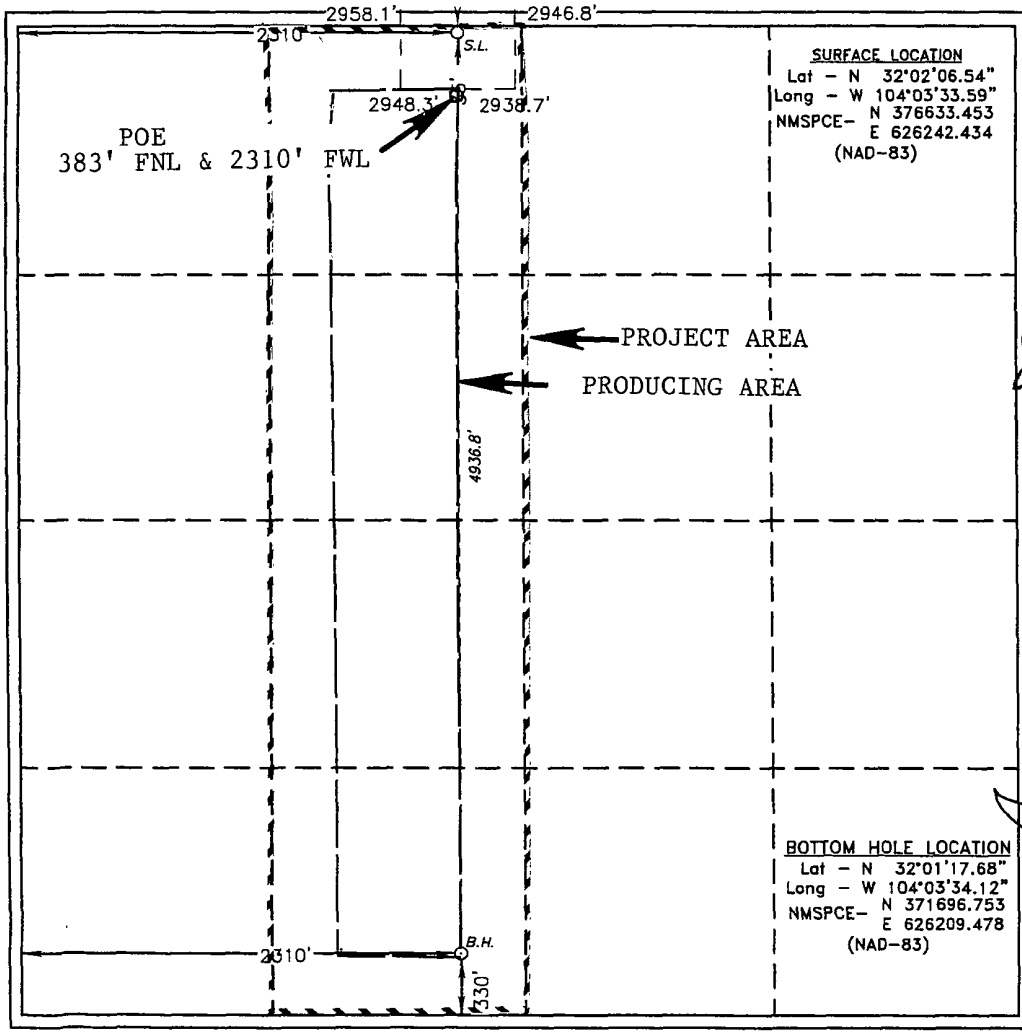
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	23	26 S	28 E		35	NORTH	2310	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
N	23	26 S	28 E		330	SOUTH	2310	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



SURFACE LOCATION
Lat – N 32°02'06.54"
Long – W 104°03'33.59"
NMSPCE– N 376633.453
E 626242.434
(NAD-83)

BOTTOM HOLE LOCATION
Lat – N 32°01'17.68"
Long – W 104°03'34.12"
NMSPCE– N 371696.753
E 626209.478
(NAD-83)

OPERATOR CERTIFICATION

I hereby certify that the information contained 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 a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature — Date: 10/11/11

Joe T. Janica
Printed Name

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 supervison, and that the same is true and correct to the best of my belief.

MARCH 14, 2011
Date Surveyed

Signature & Seal of Professional Surveyor

W.O. No. 24166

Certificate No. Gary L. Jones 7977

BASIN SURVEYS

EXHIBIT "A"

APPLICATION TO DRILL

OGX RESOURCES, LLC.
COTTONMOUTH "23" FEDERAL COM. #1H
UNIT "C" SECTION 23
T26S-R28E EDDY CO. NM

In responce to questions asked under Section II of Bulletin NTL-6, the following information on the above well will be provider.

1. LOCATION: SHL: 35' FNL & 2310' FWL SECTION 23 T26S-R28E EDDY CO. NM
BHL: 330' FSL & 2310' FWL SECTION 23 T26S-R28E EDDY CO. NM
2. ELEVATION ABOVE SEA LEVEL: 2945' GL.

3. GEOLOGICAL NAME OF SURFACE FORMATION: Quaternery Aeolian Deposits;

4. DRILLING TOOLS AND ASSOCIATED EQUIPMENT: Conventional rotary drilling rig using drilling mud as a circulating medium for the removal of solidsfrom the hole.

5. PROPOSED DRILLING DEPTH: TVD-7050'
MD-11,790'

6. ESTIMATED TOPS OF GEOLOGICAL FORMATIONS:

Rustler Anhydrite	400'	Cherry Canyon	3500'
Basal Anhydrite	2420'	Brushy Canyon	4700'
Lamar Lime	2600'	Bone Spring	6350'
Bell Canyon	2630'	TVD	7050'

7. POSSIBLE MINERAL BEARING FORMATIONS: Top Salt 515' Base of Salt 1560'

Bell Canyon	Oil/Gas/Form. Water	Brushy Canyon	Oil/Gas/Form.Water
Cherry Canyon	Oil/Gas/Form. Water	Bone Spring	Oil/Gas/Form.Water

Possible Fresh Water 100±'

8. CASING PROGRAM:

HOLE SIZE	INTERVAL	CASING OD	WEIGHT	THREAD	COLLAR	GRADE	CONDITION
26"	0-40'	20"	NA	NA	NA	Conductor	New
17½"	0-425'	13 3/8"	48#	8-R	ST&C	H-40	New
11"	0-2525'	8 5/8"	32#	8-R	ST&C	J-55	New
7 7/8"	0-6400'	5 ½	17#	8-R	LT&C	P-110	New
7 7/8"	6500-11790'	5½"	17#	Buttress	BT&C	P-110	New

CASING SAFETY FACTORS: Collapse 1.125 Burst 1.00 Body Yield 1.5
Joint Strength 8-Round 1.8
Buttress 1.6

APPLICATION TO DRILL

OGX RESOURCES, LLC.
COTTONMOUTH "23" FEDERAL COM. #1H
UNIT "C" SECTION 23
T26S-R28E EDDY CO. NM

9. CASING CEMENTING & SETTING DEPTHS:

20"	Conductor	Set 40' of 20" conductor pipe and cement to surface with Redi-mix.
13 3/8"	Surface	Run and set 425' of 13 3/8" 48# H-40 ST&C casing. Cement to surface with 225 Sx. of 35/65/6 Premium Plus Class "C" POZ, + 6% Bentonite, + 5% Salt, + 5% MPA-5, + 0.7% Sodium Metasilicate, + 5# LCM/Sx. Yield 2.00, tail in with 200 Sx. of Premium Plus Class "C" cement + 2% CaCl, Yield 1.34 circulate cement to surface. 50% Excess
8 5/8"	Intermediate	Run and set 2525' of 8 %/8" 32# J-55 ST&C casing. Cement with 300 Sx. of 35/65 Premium Plus Class "C" POZ cement + 4% Bentonite, + 5% Salt, + 5% MPA-5, + 0.7% Sodium Metasilicate, + 5# LCM/Sx., Yield 2.02, tail in with 200 Sx. of Class "C" cement + 2% CaCl, Yield 1.34, Circulate cement to surface. After fluid caliper volume is calculated add 25% Excess
5½"	Production	Run and set 11,790' of 5½" casing as follows: 5390' of 5½" 17# P-110 BTC, 6400' of 5½" 17# P-110 LT&C casing. Cement with 400 Sx. of 35/65 Premium PLus Class "C" POZ cement + 4% Bentonite, + 5% Salt, + 5% MPA-5, + 0.7% Sodium Metasilicate, + 5# LCM/Sx. Yield 2.02, tail in with 900 Sx. of Class "C" cement + 2% CaCl, Yield 1.34 circulate cement to surface. After fluid and open hole calipers have been calculated Add 25% Excess

10. PRESSURE CONTROL EQUIPMENT: Exhibit "E" shows a 900 Series 3000 PSI working pressure B.O.P. consisting of an annular bag type preventor. middle blind rams, and bottom pipe rams. The B.O.P. will be nippled up on the 13 3/8" casingand tested to API specifications. The B.O.P. will be operated at least once in each 24 hour period, and the blind rams will be operated when the drill pipe is out of the hole. Full opening stabbing valve and upper kelly cock will available at all times on the derrick floor. Exhibit "E-1" shows a hydraulically operate closing unit and a 5000 PSI working pressure choke manifold with dual adjustiable choles. No abnormal pressures or temperatures are expected while drilling this well.
B.O.P. 13 5/8" X 11"

Tara 1 NOV 2011

APPLICATION TO DRILL

OGX RESOURCES, LLC.
COTTONMOUTH "23" FEDERAL COM. #1H
UNIT "C" SECTION 23
T26S-R28E EDDY CO. NM

11. PROPOSED MUD CIRCULATING SYSTRM:

DEPTH	MUD WT.	VISC.	FLUID LOSS	TYPE MUD SYSTEM
40-425	8.6-8.8	36-38	NC	Fresh water Spud Mud, use paper to control seepage.
425-2525'	10.0-10.1	29-30	NC	Brine water use paper to control seepage and high viscosity sweeps to clean hole.
2525-6400'	8.4-9.1	28-29	NC	Fresh water use paper to control seepage and high viscosity sweeps to cles hole.
6400-11,790'	8.4-9.1	34-36	12-15 cc or less	Same as above use Dynazan HB-411 and starch to contr fluid loss and hole stabi ity.

A closed mud system will be employed during the drilling of this well all cuttings and fluids will be disposed in a State approved disposal facility.

Sufficient mud materials will be kept on location at all times in order to combat lost circulation, or unexpected kicks. In order to run DST's, open hole logs, cut cores and casing, the viscosity,water loss and other properties may have to be altered to meet these requirements.

12. LOGGING , CORING , AND TESTING PROGRAM: See COA

A. Open hole logs: Dual Laterolog, Neutron/Density, Gamma Ray, Caliper from KOP back to 8 5/8" casing shoe. Gamma Ray, Neutron from 8 5/8" casing shoe back to surface.

B. Mud logger will be rigged up on hole below the 13 3/8" casing and remain on the hole to TD.

C. No cores or DST's are planned at this time.

13. POTENTIAL HAZARDS:

No abnormal pressures or temperatures are expected. There is no known presence of H2S in this area. If H2S is encountered the operator will comply with the provisions of Onshore Oil and Gas Order No. 6. No lost circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated bottom hole presure 3050 PSI and estimated bottom hole temperature 130° .

14. ANTICIPATED STARTING DATE AND DURATION OF OPERATION:

Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be as soon after The BLM approval and as soon as a rig will be available. Move in operation and drilling is expected to take 25 days. If production casing is run then an additional 20 days will be required to complete the well and construct surface production facilities.

15. OTHER FACETS OF OPERATION:

After running casing, cased hole Gamma Ray, Neutron, Collar logs will be run over the productive interval. The BONE SPRING formation will be perforated and stimulated in order to establish production, and potentialed as an oil well.

Cottonmouth 23 Fed Com No.1H
Delaware River South (Bone Spring)Field
Eddy County, New Mexico
Drilling Procedure
Sept 2011

General Information

Lease:	Cottonmouth 23 Fed Com	AFE BCP:	$
Well No.:	1H	AFE ACP:	
Field:	Delaware River Bone Spring Sth	AFE Total:	
County:	Eddy	AFE NO:	
State:	New Mexico	API No.:	30-015-XXXXX
Section:	23	Permit Date:	
Township:	26S	Permit TVD:	7,100'
Range:	28E	Proposed MD:	11,789'
Surface Section Ties:	35' FNL & 2310' FWL	Drilling Days:	25
BHL (target)	330' FSL & 2310' FEL		
Ground Level:	2945'	KB:	2962'
Latitude:	32°02'06.54" N	Longitude	104°03'33.59" W

Well Objectives

The primary objective of this well is to evaluate potential within the Delaware intervals and taken horizontal in the Upper Bone Spring Shale. The well will be drilled to ~ 6,500'; logged and taken horizontal.

Directions To Well

Special Drilling Considerations

1. No hunting for game is permitted. No fire arms are to be taken to the location. Keep trash picked up on location and road.
2. Do not run hard-banded or hard-faced drill pipe in casing without consulting OGX.
3. Cement must be circulated on surface and intermediate. If cement does not circulate, run a temperature survey and contact the BLM and Operations Engineer for remedial instructions.
4. BOP equipment will be NU on the 13-3/8" surface casing. All safety and well control equipment should be rigged up and operational prior to drilling out the 13-3/8" casing shoe.

DRILLING PROGRAM

Geologic Name of Surface Formation:

Permian

FORMATION TOPS / ANTICIPATED FRESH WATER, OIL, or GAS / PRESSURES

Formation	Depth	Frm Pres	Remarks
Basal Anhydrite	2420'	10 ppge	Drlg fluid must be saturated salt water
Lamar	2600'	8.4 ppge	Base of Salt
Bell Canyon	2630'	8.4 ppge	Oil / Gas / Formation water /Poss.H_2S
Cherry Canyon	3500'	8.4 ppge	Oil / Gas / Formation water
Brushy Canyon	4700'	8.4 ppge	Oil / Gas / Formation water
Bone Spring	6350'	8.4 ppge	Oil / Gas / Formation water

No other formations are expected to yield oil, gas or fresh water in measurable volumes. The surface fresh water sands will be protected by setting 13 3/8" casing at 425' and circulating cement back to surface. Potash/ fresh water sands will be protected be setting 8 5/8" casing at 2525' and circulating cement to the surface. The hydrocarbon producing intervals will be isolated by setting 5 ½" casing to total depth and circulating cement 300' above the base of the 8 5/8" casing.

CASING PROGRAM:

HOLE SIZE	DEPTH	OD Csg	WEIGHT	COLLAR	GRADE	NEW/USED
17 1/2"	0-425'	13 3/8"	48	STC	H40	New
11"	0-2525'	8 5/8"	32	STC	J55	New
7 7/8"	0-6400'	5 1/2"	17	LTC	P110	New
7 7/8"	6400-11789'	5 1/2"	17	BTC	P110	New

Casing weight and grades are minimum – higher weights & better grades may be substituted

(8 5/8" 32# will be special drift to 7.921)
(5 ½" BTC will be run thru the curve & Lateral)

DEPTH	OD Csg	WEIGHT	factors: Burst	/ Collapse	/ Tension
0-450'	13 3/8"	48	1.65	1.52	12+
0-2525'	8 5/8"	32	1.27	1.56	3.64
0-11295**	5 ½"	17	1.87	1.76	2.27

17
1 c

** The Intermediate hole will never be evacuated**

(51/2 Burst & Collapse Calculated @ 7200' TVD)

CEMENT PROGRAM:

13 3/8" Surface

Spacer .....50 bbls of fresh water
Slurry .....Lead: 35:65:6 – Poz: Prem Plus C + 6% Bentonite + 5% salt + 5% MPA-5 + .7% Sodium Metasilicate + 5 lbs LCM + 97.9 fresh water
Tail: Premium Plus C + 2% $CaCl_2$ + 56.4% Fresh Water

Cement Properties	Lead	Tail
Est Volume (sacks)	225	200
Density (ppg)	12.80	14.80
Yield (ft3/sx)	2.00	1.34
Mix Water, gps	10.21	6.36
Thickening Time, hrs:min		~3:30
Free Water, %		0
Fluid Loss, cc's		~850
Top of Cement	surface	

8 5/8" Intermediate

Spacer .....30 bbls of fresh water
Lead ..... 35:65 – Poz: Prem Plus C + 4% Bentonite + 5% salt + 5% MPA-5 + .7% Sodium Metasilicate + 5 lbs LCM + 99.6% fresh water
Tail .....C + 2% $CaCl_2$ + 56.4% fresh water

Cement Properties

	Lead	Tail
Est Volume (sacks)	300	200
Density (ppg)	12.7	14.8
Yield (ft3/sx)	2.02	1.34
Mix Water, gps	10.39	6.36
Thickening Time, hrs:min	4:07	3:32
Free Water, %	2.0	0
Fluid Loss, cc's	~750	~600
Top of Cement	surface	

The above cement volumes will be revised pending fluid caliper measurements.

5 1/2" Production

Spacer .....30 bbls of fresh water
Lead ..... 35:65 – Poz: Prem Plus C + 4% Bentonite + 5% salt + 5% MPA-5 + .7% Sodium Metasilicate + 5 lbs LCM + 99.6% fresh water
Tail .....C + 2% $CaCl_2$ + 56.4% fresh water

Cement Properties

	Lead	Tail
Est Volume (sacks)	400	900
Density (ppg)	12.7	14.8
Yield (ft3/sx)	2.02	1.34
Mix Water, gps	10.39	6.36
Thickening Time, hrs:min	4:07	3:32
Free Water, %	2.0	0
Fluid Loss, cc's	~750	~600
Top of Cement	surface	

The above cement volumes will be revised pending fluid and open hole caliper measurements.

Kick-Off plug in Pilot Hole for Horizontal

No Plug Required

MUD PROPERTIES SUMMARY:

Depth (feet)	Weight (ppg)	Viscosity (sec/1000cc)	Fluid Loss (cc/30min)	PV (cps)	YP (lb/100ft²)	Mud Type
0' – 425' **Set 13-3/8" Casing**	8.6 – 8.8	36 – 38	N/C	6 – 10	6 – 20	**Spud Mud**
425' – 2,525' **Set 8-5/8" Casing**	10.0 – 10.1	29 – 30	N/C	0 – 1	0 – 1	**Brine**
2,525' – 6,500'	8.4 – 9.1	28 – 29	N/C	0 – 1	0 – 1	**Fresh Water**
6,500' – 11,789' MD **Set 5-1/2"**	8.4 – 9.10	34 – 36	12 – 15	4 – 8	4 – 8	**Dynazan / Starch** **HB 411**

Auxiliary Well Control & Monitoring Equipment:

A Kelly cock will be in the drill string at all times.

A full opening drill pipe stabbing valve having the appropriate connections will be on the floor at all times.

H_2S detection equipment will be in operation after drilling out the 13 3/8" casing shoe until the 5 ½" csg is cemented.

LOGGING, CORING, AND TESTING

No logs at surface.

Mud loggers on below 13 3/8" casing shoe – no electric logs at intermediate depth

The Vertical @ KO pt. (Production) hole will be logged: Gyro (Thru DP) & GR / Dual Laterolog / Neutron-Density / Caliper

No DST's or pressure testing is anticipated.

The horizontal lateral will be mud logged and GR via MWD.

Potential Hazards:

No abnormal pressures or temperatures are expected. There is no known presence of H_2S in this area. If H_2S Is encountered the operator will comply with the provisions of Onshore Oil & Gas Order No.6. No loss circulation is expected to occur. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Estimated BHP is 3050 psi. & BHT is 130° F.

Anticipated Starting Date & Duration:

Road and location construction will begin after the BLM has approved the APD. Anticipated spud date will be ASAP subsequent to APD approval. Move in and drilling operations will take 25 days with an additional 20 days to complete the well and construct production facilities.

OGX Resources

Project: Eddy County, New Mexico (Nad27)
Site: Cottonmouth 23 Fed Com 1H
Well: Cottonmouth 23 Fed Com 1H
Wellbore: Wellbore #1
Plan: Plan #1 091411 (Cottonmouth 23 Fed Com 1H/Wellbore #1)

PHOENIX TECHNOLOGY SERVICES

N

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
6591.63	0.00	0.00	6591.63	0.00	0.00	0.00	0.00	0.00	
7311.63	90.00	180.38	7050.00	-458.36	-3.07	12.50	180.38	458.37	
11789.99	90.00	180.38	7050.00	-4936.61	-33.06	0.00	0.00	4936.72	BHL Cottonmouth 23 Fed Com 1H

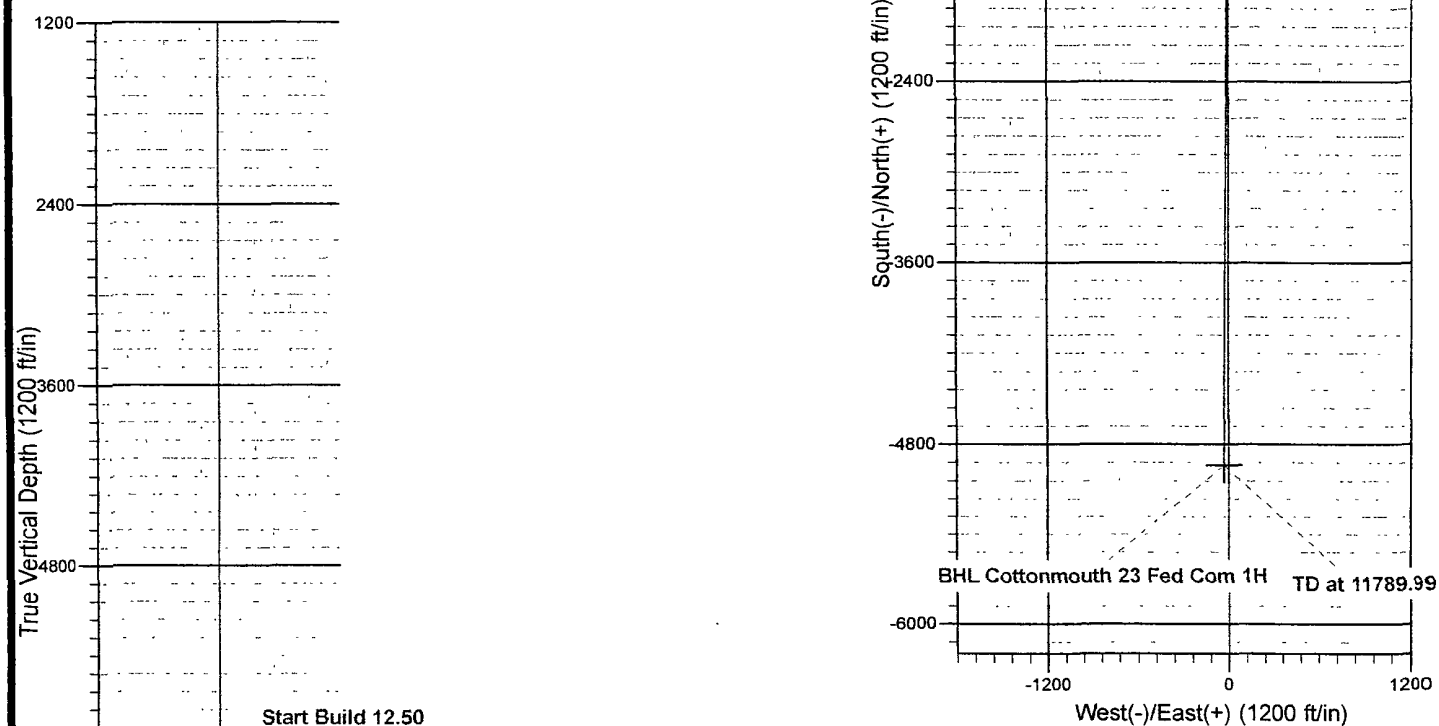
WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
BHL Cottonmouth 23 Fed Com 1H	7050.00	-4936.61	-33.06	Point

WELL DETAILS: Cottonmouth 23 Fed Com 1H

Ground Level: 2945.00

Northing	Easting	Latitude	Longitude
376576.10	585057.39	32° 2' 6.09 N	104° 3' 31.85 W



OGX Resources

Eddy County, New Mexico (Nad27)
Cottonmouth 23 Fed Com 1H
Cottonmouth 23 Fed Com 1H
Wellbore #1

Plan: Plan #1 091411

OGX Resources

14 September, 2011

PHOENIX
TECHNOLOGY SERVICES

Phoenix Technology Services

OGX Resources

Company:	OGX Resources	**Local Co-ordinate Reference:**	Well Cottonmouth 23 Fed Com 1H
Project:	Eddy County, New Mexico (Nad27)	**TVD Reference:**	WELL @ 2963 00ft (Original Well Elev + 18' KB)
Site:	Cottonmouth 23 Fed Com 1H	**MD Reference:**	WELL @ 2963.00ft (Original Well Elev + 18' KB)
Well:	Cottonmouth 23 Fed Com 1H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1 091411	**Database:**	GCR3

Project Eddy County, New Mexico (Nad27)

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 Cottonmouth 23 Fed Com 1H

Site Position:		**Northing:**	376,576.10 ft	**Latitude:**	32° 2' 6.09 N
From:	Map	**Easting:**	585,057.39 ft	**Longitude:**	104° 3' 31.85 W
Position Uncertainty:	0.00 ft	**Slot Radius:**	"	**Grid Convergence:**	0.15 °

Well Cottonmouth 23 Fed Com 1H

Well Position	**+N/-S**	0.00 ft	**Northing:**	376,576.10 ft	**Latitude:**	32° 2' 6.09 N
	+E/-W	0.00 ft	**Easting:**	585,057.39 ft	**Longitude:**	104° 3' 31.85 W
Position Uncertainty		0.00 ft	**Wellhead Elevation:**	ft	**Ground Level:**	2,945.00 ft

Wellbore Wellbore #1

Magnetics	**Model Name**	**Sample Date**	**Declination (°)**	**Dip Angle (°)**	**Field Strength (nT)**
	IGRF2010_14	9/14/2011	7.76	59.92	48,425

Design Plan #1 091411

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.00

Vertical Section:	**Depth From (TVD) (ft)**	**+N/-S (ft)**	**+E/-W (ft)**	**Direction (°)**
	0.00	0.00	0.00	180.38

Survey Tool Program **Date** 9/14/2011

From (ft)	**To (ft)**	**Survey (Wellbore)**	**Tool Name**	**Description**
0.00	11,789.99	Plan #1 091411 (Wellbore #1)	MWD	MWD - Standard

Company:	OGX Resources	**Local Co-ordinate Reference:**	Well Cottonmouth 23 Fed Com 1H
Project:	Eddy County, New Mexico (Nad27)	**TVD Reference:**	WELL @ 2963.00ft (Original Well Elev + 18' KB)
Site:	Cottonmouth 23 Fed Com 1H	**MD Reference:**	WELL @ 2963.00ft (Original Well Elev + 18' KB)
Well:	Cottonmouth 23 Fed Com 1H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1 091411	**Database:**	GCR3

Planned Survey

MD (ft)	Inc (°)	Azi (azimuth) (°)	TVDSS (ft)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
0.00	0 00	0.00	-2,963.00	0.00	0.00	0.00	0 00	0.00	376,576.10	585,057.39
100.00	0.00	0.00	-2,863.00	100.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
200.00	0.00	0.00	-2,763.00	200.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
300.00	0.00	0.00	-2,663.00	300.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
400.00	0.00	0 00	-2,563.00	400.00	0.00	0.00	0.00	0 00	376,576.10	585,057.39
500.00	0.00	0.00	-2,463.00	500.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
600.00	0 00	0.00	-2,363.00	600.00	0.00	0.00	0.00	0 00	376,576.10	585,057.39
700 00	0 00	0.00	-2,263.00	700.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
800.00	0.00	0 00	-2,163.00	800.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
900.00	0.00	0.00	-2,063.00	900.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
1,000.00	0.00	0.00	-1,963.00	1,000.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
1,100.00	0.00	0.00	-1,863.00	1,100.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
1,200.00	0.00	0.00	-1,763.00	1,200.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
1,300.00	0.00	0.00	-1,663.00	1,300.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
1,400.00	0.00	0.00	-1,563.00	1,400.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
1,500.00	0.00	0 00	-1,463.00	1,500.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
1,600.00	0.00	0.00	-1,363.00	1,600.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
1,700.00	0.00	0.00	-1,263.00	1,700.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
1,800.00	0.00	0.00	-1,163.00	1,800.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
1,900.00	0.00	0.00	-1,063.00	1,900.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
2,000.00	0 00	0.00	-963.00	2,000 00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
2,100.00	0.00	0.00	-863.00	2,100.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
2,200.00	0 00	0 00	-763 00	2,200.00	0 00	0.00	0.00	0.00	376,576.10	585,057.39
2,300 00	0.00	0 00	-663.00	2,300.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
2,400.00	0.00	0.00	-563.00	2,400.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
2,500 00	0.00	0.00	-463.00	2,500.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
2,600 00	0.00	0.00	-363.00	2,600.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39

Company:	OGX Resources	**Local Co-ordinate Reference:**	Well Cottonmouth 23 Fed Com 1H
Project:	Eddy County, New Mexico (Nad27)	**TVD Reference:**	WELL @ 2963.00ft (Original Well Elev + 18' KB)
Site:	Cottonmouth 23 Fed Com 1H	**MD Reference:**	WELL @ 2963.00ft (Original Well Elev + 18' KB)
Well:	Cottonmouth 23 Fed Com 1H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1 091411	**Database:**	GCR3

Planned Survey

MD (ft)	Inc (°)	Azi (azimuth) (°)	TVDSS (ft)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
2,700.00	0.00	0.00	-263.00	2,700.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
2,800.00	0.00	0.00	-163.00	2,800.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
2,900.00	0.00	0.00	-63.00	2,900.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
3,000.00	0.00	0.00	37.00	3,000.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
3,100.00	0.00	0.00	137.00	3,100.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
3,200.00	0.00	0.00	237.00	3,200.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
3,300.00	0.00	0.00	337.00	3,300.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
3,400.00	0.00	0.00	437.00	3,400.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
3,500.00	0.00	0.00	537.00	3,500.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
3,600.00	0.00	0.00	637.00	3,600.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
3,700.00	0.00	0.00	737.00	3,700.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
3,800.00	0.00	0.00	837.00	3,800.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
3,900.00	0.00	0.00	937.00	3,900.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
4,000.00	0.00	0.00	1,037.00	4,000.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
4,100.00	0.00	0.00	1,137.00	4,100.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
4,200.00	0.00	0.00	1,237.00	4,200.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
4,300.00	0.00	0.00	1,337.00	4,300.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
4,400.00	0.00	0.00	1,437.00	4,400.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
4,500.00	0.00	0.00	1,537.00	4,500.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
4,600.00	0.00	0.00	1,637.00	4,600.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
4,700.00	0.00	0.00	1,737.00	4,700.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
4,800.00	0.00	0.00	1,837.00	4,800.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
4,900.00	0.00	0.00	1,937.00	4,900.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
5,000.00	0.00	0.00	2,037.00	5,000.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
5,100.00	0.00	0.00	2,137.00	5,100.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
5,200.00	0.00	0.00	2,237.00	5,200.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
5,300.00	0.00	0.00	2,337.00	5,300.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39

Company:	OGX Resources	**Local Co-ordinate Reference:**	Well Cottonmouth 23 Fed Com 1H
Project:	Eddy County, New Mexico (Nad27)	**TVD Reference:**	WELL @ 2963.00ft (Original Well Elev + 18' KB)
Site:	Cottonmouth 23 Fed Com 1H	**MD Reference:**	WELL @ 2963.00ft (Original Well Elev + 18' KB)
Well:	Cottonmouth 23 Fed Com 1H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1 091411	**Database:**	GCR3

Planned Survey

MD (ft)	Inc (°)	Azi (azimuth) (°)	TVDSS (ft)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
5,400.00	0.00	0.00	2,437.00	5,400.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
5,500.00	0.00	0.00	2,537.00	5,500.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
5,600.00	0.00	0.00	2,637.00	5,600.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
5,700.00	0.00	0.00	2,737.00	5,700.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
5,800.00	0.00	0.00	2,837.00	5,800.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
5,900.00	0.00	0.00	2,937.00	5,900.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
6,000.00	0.00	0.00	3,037.00	6,000.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
6,100.00	0.00	0.00	3,137.00	6,100.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
6,200.00	0.00	0.00	3,237.00	6,200.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
6,300.00	0.00	0.00	3,337.00	6,300.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
6,400.00	0.00	0.00	3,437.00	6,400.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
6,500.00	0.00	0.00	3,537.00	6,500.00	0.00	0.00	0.00	0.00	376,576.10	585,057.39
6,591.63	0.00	0.00	3,628.63	6,591.63	0.00	0.00	0.00	0.00	376,576.10	585,057.39
Start Build 12.50										
6,600.00	1.05	180.38	3,637.00	6,600.00	-0.08	0.00	0.08	12.50	376,576.02	585,057.39
6,700.00	13.55	180.38	3,735.99	6,698.99	-12.75	-0.09	12.75	12.50	376,563.35	585,057.30
6,800.00	26.05	180.38	3,829.90	6,792.90	-46.55	-0.31	46.55	12.50	376,529.55	585,057.08
6,900.00	38.55	180.38	3,914.26	6,877.26	-99.87	-0.67	99.87	12.50	376,476.23	585,056.72
7,000.00	51.05	180.38	3,985.08	6,948.08	-170.19	-1.14	170.19	12.50	376,405.91	585,056.25
7,100.00	63.55	180.38	4,039.00	7,002.00	-254.17	-1.70	254.17	12.50	376,321.93	585,055.69
7,200.00	76.05	180.38	4,073.47	7,036.47	-347.83	-2.33	347.83	12.50	376,228.28	585,055.06
7,300.00	88.55	180.38	4,086.85	7,049.85	-446.72	-2.99	446.73	12.50	376,129.38	585,054.40
7,311.63	90.00	180.38	4,087.00	7,050.00	-458.36	-3.07	458.37	12.50	376,117.74	585,054.32
Start 4478.35 hold at 7311.63 MD										
7,400.00	90.00	180.38	4,087.00	7,050.00	-546.72	-3.66	546.73	0.00	376,029.38	585,053.73
7,500.00	90.00	180.38	4,087.00	7,050.00	-646.72	-4.33	646.73	0.00	375,929.38	585,053.06
7,600.00	90.00	180.38	4,087.00	7,050.00	-746.72	-5.00	746.73	0.00	375,829.39	585,052.39

Company:	OGX Resources	**Local Co-ordinate Reference:**	Well Cottonmouth 23 Fed Com 1H
Project:	Eddy County, New Mexico (Nad27)	**TVD Reference:**	WELL @ 2963 00ft (Original Well Elev + 18' KB)
Site:	Cottonmouth 23 Fed Com 1H	**MD Reference:**	WELL @ 2963.00ft (Original Well Elev + 18' KB)
Well:	Cottonmouth 23 Fed Com 1H	**North Reference:**	Grid
Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1 091411	**Database:**	GCR3

Planned Survey

MD (ft)	Inc (°)	Azi (azimuth) (°)	TVDSS (ft)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
7,700.00	90.00	180.38	4,087.00	7,050.00	-846.71	-5.67	846.73	0.00	375,729.39	585,051.72
7,800.00	90 00	180.38	4,087.00	7,050.00	-946.71	-6.34	946.73	0.00	375,629.39	585,051.05
7,900.00	90.00	180.38	4,087.00	7,050.00	-1,046.71	-7.01	1,046.73	0.00	375,529 39	585,050.38
8,000.00	90.00	180.38	4,087.00	7,050.00	-1,146.71	-7 68	1,146.73	0.00	375,429.40	585,049 71
8,100 00	90.00	180.38	4,087.00	7,050.00	-1,246.70	-8.35	1,246 73	0.00	375,329.40	585,049.04
8,200 00	90 00	180.38	4,087.00	7,050.00	-1,346.70	-9 02	1,346 73	0.00	375,229.40	585,048.37
8,300.00	90.00	180.38	4,087.00	7,050.00	-1,446.70	-9.69	1,446.73	0.00	375,129.40	585,047.70
8,400.00	90.00	180.38	4,087.00	7,050.00	-1,546.70	-10.36	1,546.73	0.00	375,029.40	585,047.03
8,500.00	90.00	180.38	4,087.00	7,050.00	-1,646.70	-11.03	1,646.73	0.00	374,929.41	585,046.36
8,600.00	90.00	180.38	4,087.00	7,050.00	-1,746.69	-11.70	1,746.73	0.00	374,829.41	585,045.69
8,700.00	90.00	180 38	4,087.00	7,050.00	-1,846.69	-12.37	1,846.73	0.00	374,729.41	585,045.02
8,800.00	90.00	180.38	4,087.00	7,050.00	-1,946.69	-13.04	1,946.73	0.00	374,629.41	585,044.35
8,900.00	90.00	180.38	4,087.00	7,050.00	-2,046.69	-13.71	2,046.73	0.00	374,529.42	585,043.68
9,000.00	90.00	180.38	4,087.00	7,050.00	-2,146.68	-14.38	2,146.73	0.00	374,429.42	585,043.01
9,100.00	90.00	180.38	4,087.00	7,050.00	-2,246.68	-15.05	2,246.73	0.00	374,329.42	585,042.34
9,200.00	90 00	180.38	4,087.00	7,050.00	-2,346.68	-15.72	2,346.73	0.00	374,229.42	585,041.67
9,300.00	90.00	180.38	4,087.00	7,050.00	-2,446.68	-16.39	2,446.73	0.00	374,129.43	585,041.00
9,400.00	90.00	180.38	4,087.00	7,050.00	-2,546.68	-17.05	2,546.73	0.00	374,029.43	585,040.34
9,500.00	90.00	180.38	4,087.00	7,050.00	-2,646.67	-17.72	2,646.73	0.00	373,929.43	585,039.67
9,600.00	90.00	180.38	4,087.00	7,050.00	-2,746.67	-18.39	2,746.73	0.00	373,829.43	585,039.00
9,700.00	90.00	180.38	4,087.00	7,050.00	-2,846.67	-19.06	2,846.73	0.00	373,729.44	585,038.33
9,800.00	90.00	180.38	4,087.00	7,050.00	-2,946.67	-19.73	2,946.73	0.00	373,629.44	585,037.66
9,900.00	90.00	180.38	4,087.00	7,050.00	-3,046.66	-20.40	3,046.73	0.00	373,529.44	585,036.99
10,000.00	90.00	180.38	4,087 00	7,050.00	-3,146.66	-21.07	3,146.73	0.00	373,429.44	585,036.32
10,100.00	90.00	180 38	4,087.00	7,050.00	-3,246.66	-21.74	3,246.73	0.00	373,329.45	585,035.65
10,200.00	90 00	180.38	4,087.00	7,050.00	-3,346.66	-22.41	3,346.73	0.00	373,229.45	585,034.98
10,300.00	90.00	180.38	4,087.00	7,050.00	-3,446.66	-23.08	3,446.73	0.00	373,129.45	585,034.31

Phoenix Technology Services

OGX Resources

Company:	OGX Resources	**Local Co-ordinate Reference:**	Well Cottonmouth 23 Fed Com 1H
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Wellbore:	Wellbore #1	**Survey Calculation Method:**	Minimum Curvature
Design:	Plan #1 091411	**Database:**	GCR3

Planned Survey

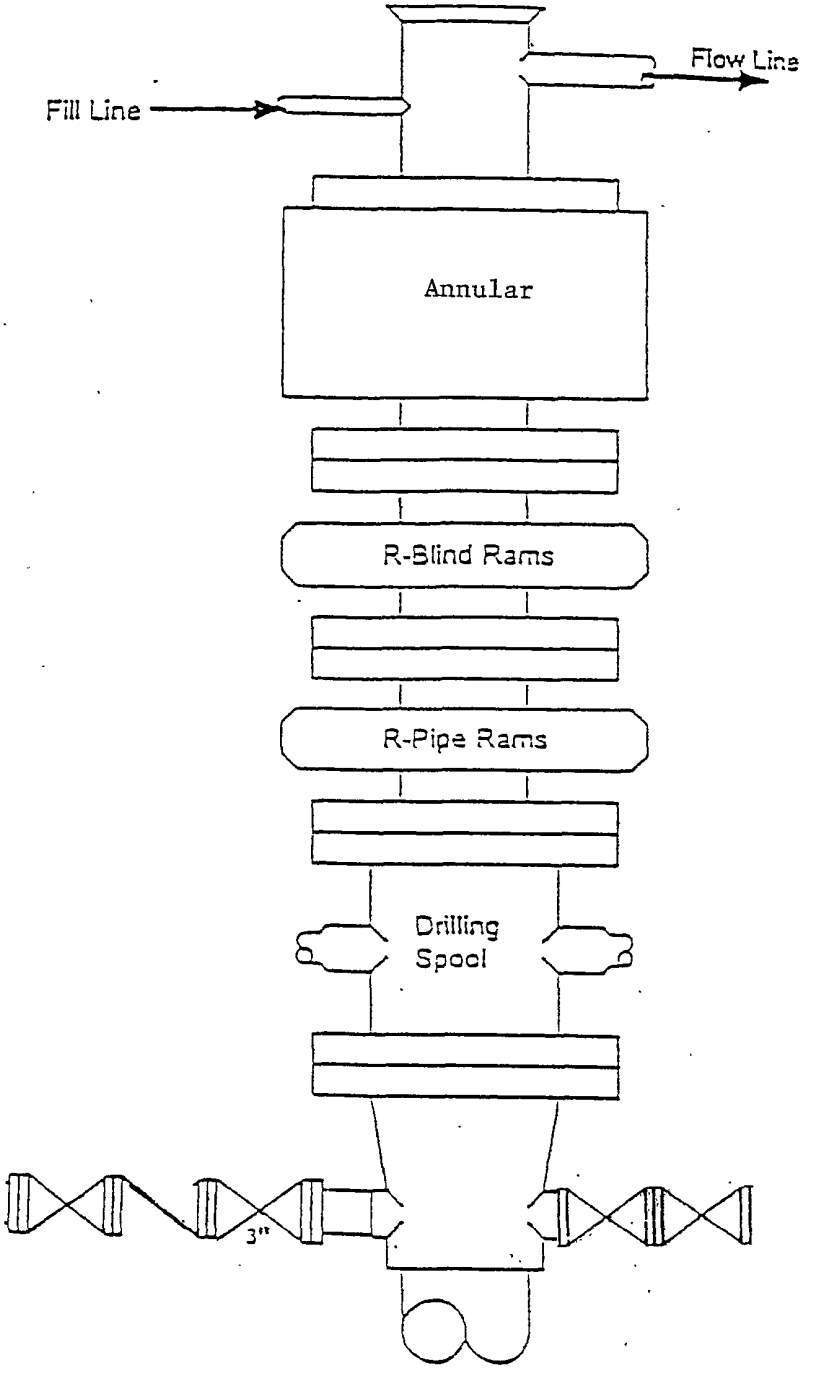
MD (ft)	Inc (°)	Azi (azimuth) (°)	TVDSS (ft)	TVD (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
10,400.00	90.00	180.38	4,087.00	7,050.00	-3,546.65	-23.75	3,546.73	0.00	373,029.45	585,033.64
10,500.00	90.00	180.38	4,087.00	7,050.00	-3,646.65	-24.42	3,646.73	0.00	372,929.46	585,032.97
10,600.00	90.00	180.38	4,087.00	7,050.00	-3,746.65	-25.09	3,746.73	0.00	372,829.46	585,032.30
10,700.00	90.00	180.38	4,087.00	7,050.00	-3,846.65	-25.76	3,846.73	0.00	372,729.46	585,031.63
10,800.00	90.00	180.38	4,087.00	7,050.00	-3,946.64	-26.43	3,946.73	0.00	372,629.46	585,030.96
10,900.00	90.00	180.38	4,087.00	7,050.00	-4,046.64	-27.10	4,046.73	0.00	372,529.47	585,030.29
11,000.00	90.00	180.38	4,087.00	7,050.00	-4,146.64	-27.77	4,146.73	0.00	372,429.47	585,029.62
11,100.00	90.00	180.38	4,087.00	7,050.00	-4,246.64	-28.44	4,246.73	0.00	372,329.47	585,028.95
11,200.00	90.00	180.38	4,087.00	7,050.00	-4,346.64	-29.11	4,346.73	0.00	372,229.47	585,028.28
11,300.00	90.00	180.38	4,087.00	7,050.00	-4,446.63	-29.78	4,446.73	0.00	372,129.48	585,027.61
11,400.00	90.00	180.38	4,087.00	7,050.00	-4,546.63	-30.45	4,546.73	0.00	372,029.48	585,026.94
11,500.00	90.00	180.38	4,087.00	7,050.00	-4,646.63	-31.12	4,646.73	0.00	371,929.48	585,026.27
11,600.00	90.00	180.38	4,087.00	7,050.00	-4,746.63	-31.79	4,746.73	0.00	371,829.48	585,025.60
11,700.00	90.00	180.38	4,087.00	7,050.00	-4,846.62	-32.46	4,846.73	0.00	371,729.49	585,024.93
11,789.99	90.00	180.38	4,087.00	7,050.00	-4,936.61	-33.06	4,936.72	0.00	371,639.50	585,024.33

TD at 11789.99

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
6,591.63	6,591.63	0.00	0.00	Start Build 12.50
7,311.63	7,050.00	-458.36	-3.07	Start 4478.35 hold at 7311.63 MD
11,789.99	7,050.00	-4,936.61	-33.06	TD at 11789.99

Checked By: _____ Approved By: _____ Date: _____



Type 900 Series
3000 psi WP

EXHIBIR "E"
SKETCH OF B.O.P. TO BE USED ON

OGX REAOURCES, LLC.
COTTONMOUTH "23" FEDERAL COM. #1H
UNIT "C" SECTION 23
T26S-R28E EDDY CO. NM

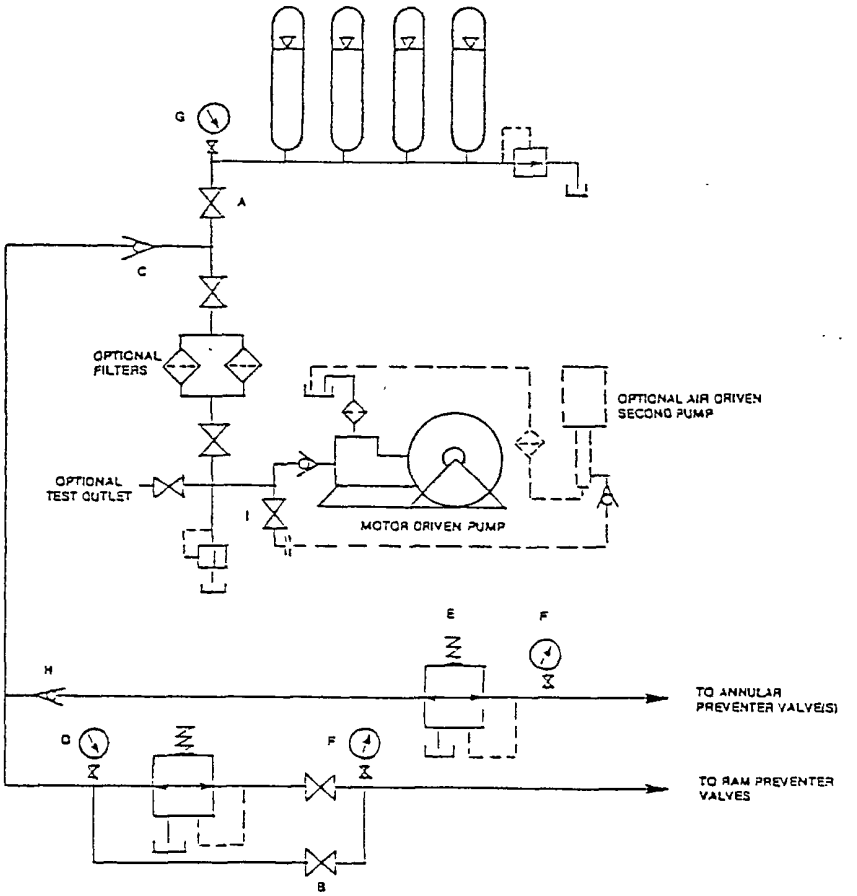


FIGURE K6-1. The schematic sketch of an accumulator system shows re-quired and optional components.

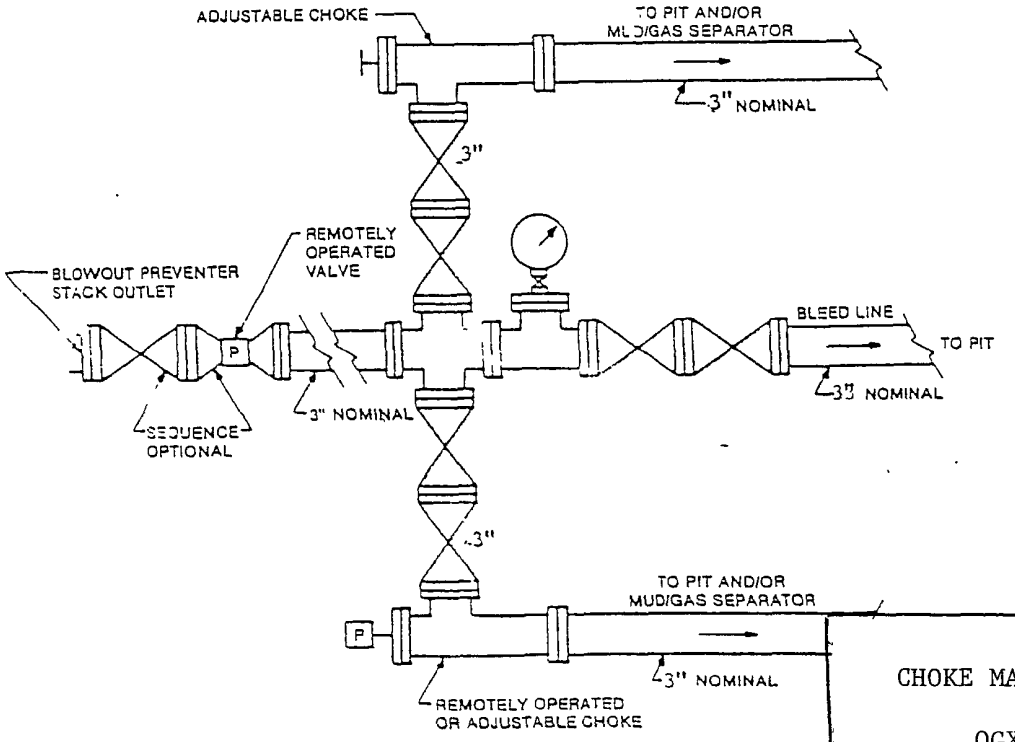
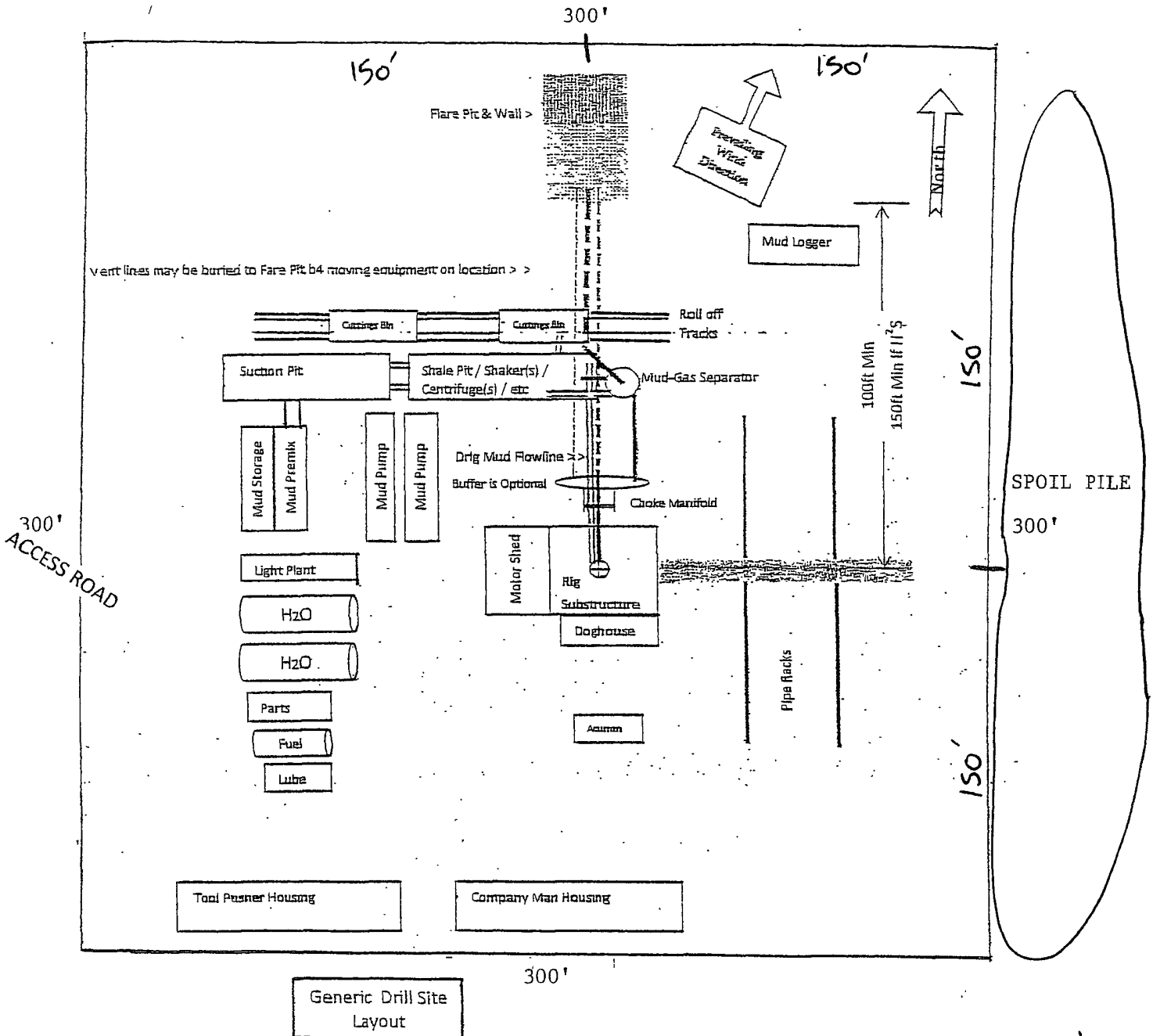


FIGURE K4-2. Typical choke manifold assembly for 5M rated worki pressure service — surface installation.

EXHIBIT "E-1"
CHOKE MANIFOLD & CLOSING UNIT

OGX RESOURCES, LLC.
COTTONMOUTH "23" FEDERAL COM. #1H
UNIT "C" SECTION 23
T26S-R28E EDDY CO. NM



Generic Drill Site Layout

Preplanning reasonable spacing accommodations for a useable "Closed Loop" drillsite layout is challenging. Particular site specific conflicts need to be resolved. This generic APD plat was prepared to demonstrate several necessary elements. The plat should include: a north arrow, prevailing wind direction, spacing access for truck removal of cutting bins, flare pit location, and piping provision to vent all combustible gas to the flare pit. Include the choke manifold and mud-gas separator location and their connection routing.

10/17/11
TEN

EXHIBIT "D"
RIG LAY OUT PLAT

OGX RESOURCES, LLC.
COTTONMOUTH "23" FEDERAL COM. #1H
UNIT "C" SECTION 23
T26S-R28E EDDY CO. NM

OGX RESOURCES, LLC.

HYDROGEN SULFIDE CONTINGENCY PLAN
FOR DRILLING/WORKOVER/FACILITY

This well and its anticipated facility are not expected to have Hydrogen Sulfide releases. However, there may be Hydrogen Sulfide production in the nearby area. There are no Private residences in the area but a contingency plan has been orchestrated. OGX RESOURCES, LLC. Will have a company representative available to rig personnel throughout drilling or production operations. If Hydrogen Sulfide is detected or suspected, monitoring equipment will be acquired for monitoring and/or testing.

TABLE OF CONTENTS

GENERAL H2S EMERGENCY ACTIONS:

In the event of an H2S emergency, the following plan will be initiated.

1) All personnel will immediately evacuate to an up-wind and if possible up-hill "safe area".

2) If for any reason a person must enter the hazardous area, they must wear a SCBA (Self contained breathing apparatus)

3) Always use the "buddy system"

4) Isolate the well/problem if possible.

5) Account for all personnel

6) Display the proper colors warning all unsuspecting personnel of the danger at hand.

7) Contact the Company personnel as soon as possible if not at the location. (use the enclosed call list as instructed)

At this point the company representative will evaluate the situation and co-ordinate the necessary duties to bring the situation under control,and if necessary,the notification of emergency response agencies and residents.

EMERGENCY PROCEDURES FOR AN UNCONTROLLABLE RELEASE OF H2S

1) All personnel will don the self-contained breathing apparatus.

2) Remove all personnel to the "safe area" (always use the "buddy system")

3) Contact company personnel if not on location.

4) Set in motion the steps to protect and or remove the general public to an upwind "safe area". Maintain strict security & safety procedures while dealing with the source.

5) No entry to any unauthorized personnel.

6) Notify the appropriate agencies: City Police-City street(s)
State Police-State Rd,
County Sheriff-County Rd.
(will assist in general public evacuation/safety while maintaining roadblocks)

7) Call the NMOCD & or BLM

If at this time the supervising person determines the release of H2S cannot be contained to the site location and the general public is in harms way he will take necessary steps to contact the following:

EMERGENCY CALL LIST: (Start and continue until ONE of these people have been reached)

	OFFICE	MOBILE	HOME
Jeff Birkelbach	432-685-1287	432-694-7880	432-553-0391
Donny Leak		432-634-4862	432-399-4489
Silver Oak Drilling Co.	575-748-1288	575-748-8622 Mark Eldridge	Cell 575-748-8605
Rig Phone	575-513-1745		

EMERGENCY RESPONSE NUMBERS: Lea County, New Mexico

State Police	575-392-5588
Lea County Sheriff	575-396-3611
Emergency Medical Service (Ambulance)	911 or 575-393-2677
State Emergency Response Center (SERC)	575-476-9620
Hobbs Police Department	575-397-9265
Hobbs Fire Department	575-393-2677
Lovington Police Department	575-396-3144
Lovington Fire Department	575-396-2359
Loco Hills Fire Department	575-677-2349
Maljamar Fire Department	575-676-4100
(NMOCD) New Mexico Oil Conservation Division,	
District I (Lea, Roosevelt, Chaves, Curry)	575-393-6161
District II (Eddy, Chaves)	575-748-1283
American Safety	575-746-1096
Indian Fire & Safety	575-746-4660 or 800-530-8693
Callaway Safety	575-746-2847
BJ Services	575-746-3569

H2S TOXIC EFFECTS:

H2S is extremely toxic. The acceptable ceiling for eight hours of exposure is 10 ppm, which is .001% by volume. H2S is approximately 20% heavier than air (Sp.Gr=1.19 / Air=1) and colorless. It forms an explosive mixture with air between 4.3% and 46.0%. By volume hydrogen sulfide (H2S) is almost as toxic as hydrogen cyanide and is 5-6 times more toxic than carbon monoxide.

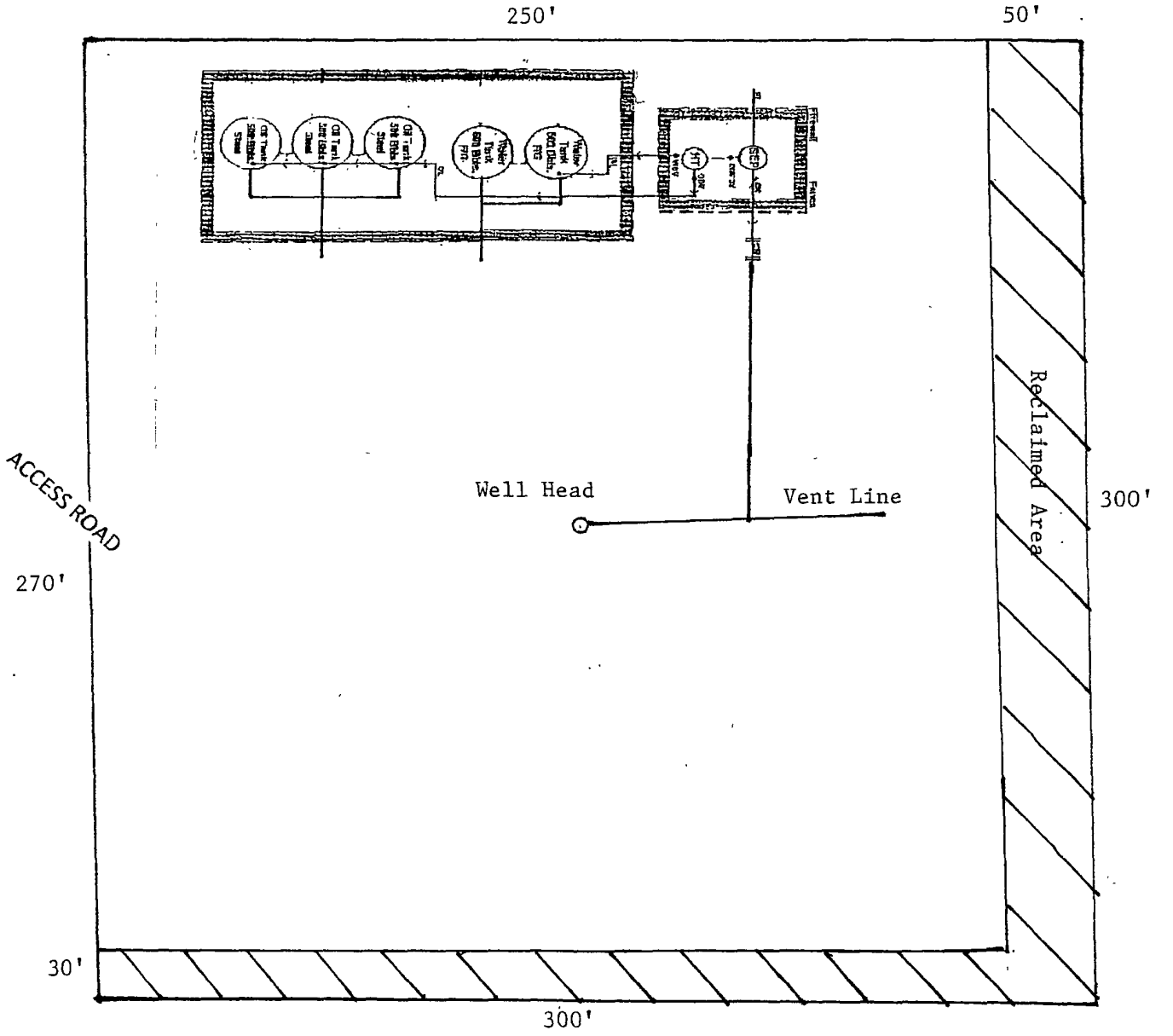
Various Gases

Common Name	Chemical Abbrev.	Sp. Gr.	Threshold Limits	Hazardous Limits	Lethal Concentration
Hydrogen Sulfide	H2S	1.19	10 ppm 15 ppm	100 ppm/hr	600 ppm
Hydrogen Cyanide	HCN	0.94	10 ppm	150 ppm/hr	300 ppm
Sulfur Dioxide	SO2	2.21	2 ppm	N/A	1000 ppm
Chlorine	CL2	2.45	1 ppm	4 ppm/hr	1000 ppm
Carbon Monoxide	CO	0.97	50 ppm	400 ppm/hr	1000 ppm
Carbon Dioxide	CO2	1.52	5000 ppm	5%	10%
Methane	CH4	0.55	90,000	Combustible @ 5%	N/A

1. Threshold limit – Concentrations at which it is believed that all workers may be repeatedly exposed, day after day without adverse effects.
2. Hazardous limit – Concentration that may cause death.
3. Lethal concentration – Concentration that will cause death with short-term exposure.
4. Threshold limit – 10 ppm – NIOSH guide to chemical hazards.
5. Short-term threshold limit.

PHYSICAL EFFECTS OF HYDROGEN SULFIDE:

CONCENTRATIONS		PHYSICAL EFFECTS
.001%	10 ppm	Obvious and unpleasant odor. Safe for 8 hr. exposure
.005%	50 ppm	Can cause some flu-like symptoms and can cause pneumonia.
.01%	100 ppm	Kills the sense of smell in 3-15 minutes. May irritate eyes and throat.
.02%	200 ppm	Kills the sense of smell rapidly. Severely irritates eyes and throat. Severe flu-like symptoms after 4 or more hours. May cause lung damage and/or death.
.06%	600 ppm	Loss of consciousness quickly, death will result if not rescued promptly.



PLAT OF PROPOSED RECLAIMED AREA

OGX RESOURCES, LLC.
COTTONMOUTH "23" FEDERAL COM. #1H
UNIT "C" SECTION 23
T26S-R28E EDDY CO. NM

PECOS DISTRICT
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	OGX Resources
LEASE NO.:	NM12559
WELL NAME & NO.:	1H Cottonmouth 23 Fed Com
SURFACE HOLE FOOTAGE:	35' FNL & 2310' FWL
BOTTOM HOLE FOOTAGE	330' FSL & 2310' FWL
LOCATION:	Section 23, T.26 S., R.28 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)

SPCC Plan:
OGX has attached a Spill Prevention, Control and Countermeasure (SPCC) Plan to the APD. The personnel constructing the drill site, drilling the well and working with the production facilities must become familiar with this plan and the plan must be implemented. An important section is 2.2 "Contingency Plan."

Protecting a River

- The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.
    - The berm shall be constructed at a minimum of 12 inches high with impermeable mineral material.
    - No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.
    - The topsoil stockpile shall be located outside the bermed well pad.
    - Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
    - No storm drains, tubing or openings shall be placed in the berm.
    - If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
    - The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and after interim reclamation has been completed.
    - Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)

- Any water erosion that may occur due to the construction of the well pad during the life of the well will be quickly corrected and proper measures will be taken to prevent future erosion.

- Stockpiling of topsoil is required. The top soil shall be stockpiled in an appropriate location to prevent loss of soil due to water or wind erosion and not used for berming or erosion control.

Tank Battery COAs Only:

- Tank battery locations will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

- Automatic shut off, check values, or similar systems will be installed for tanks to minimize the effects of catastrophic line failures used in production or drilling.

Fence Requirement

Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. Once the work is completed, the fence will be restored to its prior condition, or better. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

Where the well pad crosses the fence line, OGX shall reroute the fence line around the north side of the well location no farther than 2 feet off the pad edge. The rerouted fence line shall be constructed in the same condition and standard as the existing fence line. Corners of the rerouted fence shall have H-braces.

Cattleguard Requirement

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 on one side of the cattleguard and fastened securely to H-braces.

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.

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) 234-6235 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 (20) 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.

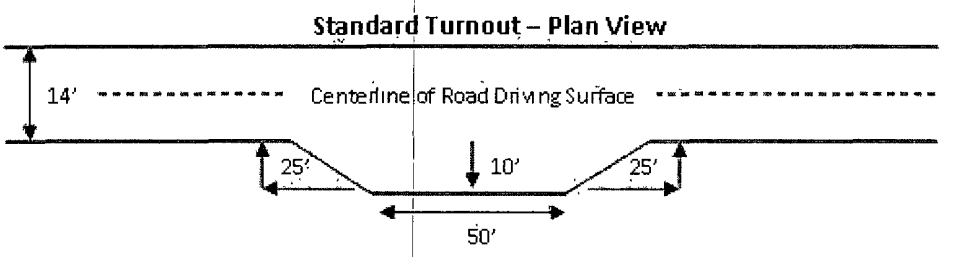
Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

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.

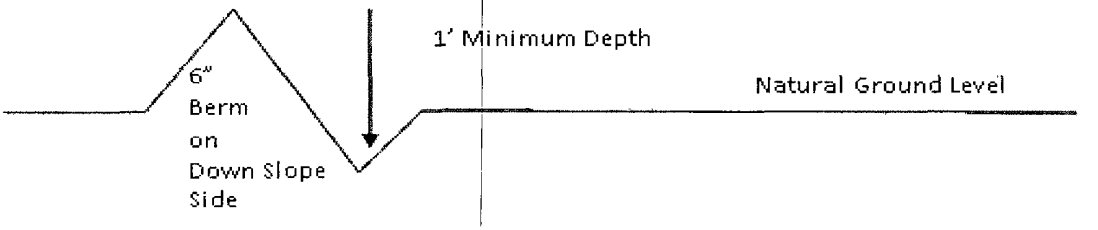
Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall be constructed on all blind curves. Turnouts shall conform to the following diagram:



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.

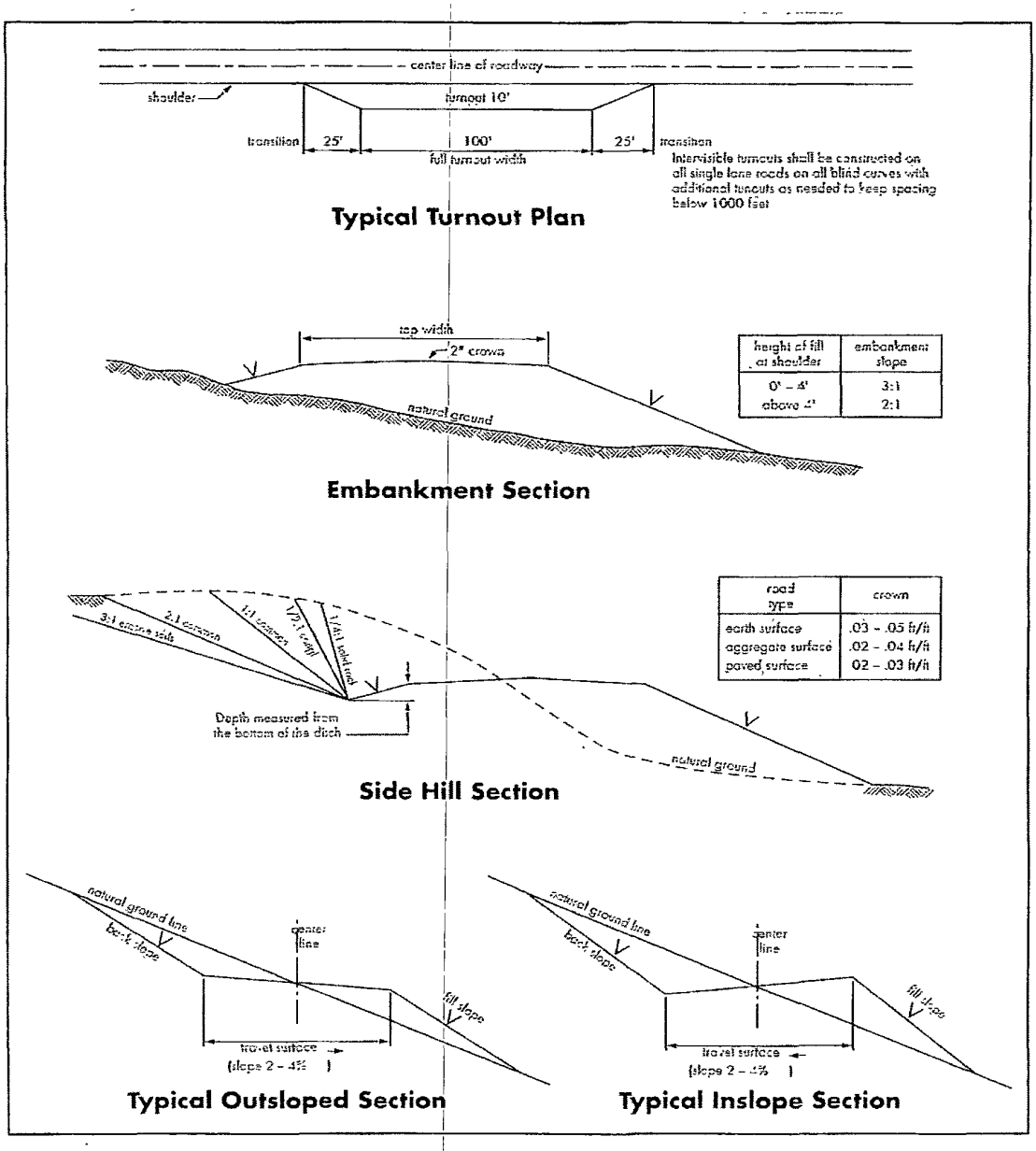
Fence Requirement

Where entry is required across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting.

The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fence(s).

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 a minimum of 4 hours in advance for a representative to witness:

a. Spudding well
b. Setting and/or Cementing of all casing strings
c. BOPE tests

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

1. **Although Hydrogen Sulfide has not been reported in this section, it is always a potential hazard. If Hydrogen Sulfide is encountered, please report measured amounts 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. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall 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 top and bottom of Salt are to be recorded on the Completion Report.**

B. CASING

Changes to the approved APD casing and cement program require submitting a sundry and receiving approval prior to work. Failure to obtain approval prior to work will result in an Incident of Non-Compliance being issued.

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.

Medium Cave/Karst
Possible lost circulation in the Delaware and Bone Spring.

1. The **13-3/8** inch surface casing shall be set at **approximately 425 feet (a minimum of 25 feet above the salt)** and cemented to the surface. **Onshore Order II requires casing to be set across a competent bed. If salt is encountered, set casing shoe 25 feet above the top of 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 **8-5/8** inch intermediate casing is:

    ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst. Additional cement may be necessary – Excess calculates to 16%.**

Centralizers required on horizontal leg, must be type for horizontal service and a minimum of one every other joint.

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

   ☒ Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Additional cement will be required – Excess calculates to -2%.**

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.

2. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.

   a. **For surface casing only:** If the BOP/BOPE is to be tested against casing, the wait on cement (WOC) time for that casing is to be met (see WOC statement at start of casing section). Independent service company required.

3. 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**. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (18 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

c. The results of the test shall be reported to the appropriate BLM office.

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 113011

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, Munsell Soil Color Chart # 5Y 4/2

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 1, for Loamy 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 regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (small/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
Plains lovegrass (Eragrostis intermedia)	0.5
Sand dropseed (Sporobolus cryptandrus)	1.0
Sideoats grama (Bouteloua curtipendula)	5.0
Plains bristlegrass (Setaria macrostachya)	2.0

*Pounds of pure live seed:

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