

OPERATOR'S COPY

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

1a. Type of work: <input checked="" type="checkbox"/> DRILL <input type="checkbox"/> REENTER		5. Lease Serial No. NM-121474
1b. Type of Well: <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other <input checked="" type="checkbox"/> Single Zone <input type="checkbox"/> Multiple Zone		6. If Indian, Allottee or Tribe Name -----
2. Name of Operator OGX RESOURCES, LLC. (Jeff Birkelbach 432-685-1287)		7. If Unit or CA Agreement, Name and No. -----
3a. Address P. O. BOX 2064 MIDLAND, TEXAS 79702	3b. Phone No. (include area code) 432-685-1287	8. Lease Name and Well No. COPPERHEAD "31" FED. COM. #11
4. Location of Well (Report location clearly and in accordance with any State requirements.) At surface 480' FSL & 480' FEL SECTION 31 T26S-R29E At proposed prod. zone 1650' FNL & 330' FEL SECTION 30 T26S-R29E		9. API Well No.
14. Distance in miles and direction from nearest town or post office* Approximately 17 miles South of Malaga New Mexico		10. Field and Pool, or Exploratory DELAWARE RIVER-BONE SPRING
15. Distance from proposed* location to nearest property or lease line, ft. (Also to nearest drig. unit line, if any) NA	16. No. of acres in lease 80	11. Sec., T. R. M. or Blk. and Survey or Area SECTION 31 T26S-R29E
18. Distance from proposed location* to nearest well, drilling, completed, applied for, on this lease, ft. NA	17. Spacing Unit-dedicated to this well. 160	12. County or Parish EDDY CO
21. Elevations (Show whether DF, KDB, RT, GL, etc.) 2895' GL	19. Proposed Depth TVD-7125' MD-12.348'	13. State NM
22. Approximate date work will start* WHEN APPROVED		20. BLM/BIA Bond No. on file NMB-000244
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. | 4. Bond to cover the operations unless covered by an existing bond on file (see Item 20 above). |
| 2. A Drilling Plan. | 5. Operator certification |
| 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). | 6. Such other site specific information and/or plans as may be required by the authorized officer. |

25. Signature <i>Joe T. Janica</i>	Name (Printed/Typed) Joe T. Janica	Date 09/24/10
Title Permit Eng.		
Approved by (Signature) <i>James A. Amos</i>	Name (Printed/Typed) James A. Amos	Date 2-22-11
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

Oil Conservation Division
Case No. 14637
Exhibit No. 10

2, make it a crime for any person knowingly and willfully to make to any department or agency of the Unit representations as to any matter within its jurisdiction.

Carlsbad Controlled Water Basin

APPROVAL SUBJECT TO
GENERAL REQUIREMENTS
AND SPECIAL STIPULATIONS
ATTACHED

SEE ATTACHED FOR
CONDITIONS OF APPROVAL

Signature

DISTRICT I
1625 N. FRENCH DR., HOBBS, NM 88240

State of New Mexico
Energy, Minerals and Natural Resources Department

Form C-102
Revised October 12, 2005
Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

DISTRICT II
1301 W. GRAND AVENUE, ARTESIA, NM 88210

OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

DISTRICT III
1000 Rio Brazos Rd., Aztec, NM 87410

DISTRICT IV
1220 S. ST. FRANCIS DR., SANTA FE, NM 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

AMENDED REPORT

API Number	Pool Code	Pool Name
	16800	DELAWARE RIVER-BONE SPRING
Property Code	Property Name	Well Number
	COPPERHEAD "31" FEDERAL COM	1H
OGRID No.	Operator Name	Elevation
217955	OGX RESOURCES	2895'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	31	26-S	29-E		480	SOUTH	480	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
7	30	26-S	29-E		1650	NORTH	330	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
189.5			

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

LOT 1
LOT 2
LOT 3
LOT 4 PRODUCING AREA
PROJECT AREA
LOT 1 SECTION 30
SECTION 31
LOT 1
LOT 2 **LOT 3** **LOT 6** **LOT 7**

GRID AZ - 01°41'06"
HORZ. DIST - 5430.1'
1650'
B.H.O. 330'
480'
217955

680' FSL & 474' FEL

SCALE - 1" = 2000'

EXHIBIT "A"

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.

Joe T. Janica
Signature Date
Joe T. Janica 09/24/10
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 supervision, and that the same is true and correct to the best of my belief.

Date Surveyed AUGUST 30, 2010
Signature & Seal of Professional Surveyor RONALD J. EDSON
Professional Surveyor No. 3239
AUGUST 30, 2010
RECEIVED
AUG 27 2010

Certificate No. GARY EDSON 12641
RONALD J. EDSON 3239

APPLICATION TO DRILL

OGX RESOURCES, LLC.
 COPPERHEAD "31" FEDERAL COM. #1H-
 UNIT "H" SECTION 31
 T26S-R29E EDDY CO. NM

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

1. LOCATION: SURFACE LOCATION: 480' FSL & 480' FEL SECTION 31 T26S-R29E
 BOTTOM HOLE LOCATION : 1650' FNL & 330' FEL SECTION 30 T26S-R29E
2. ELEVATION ABOVE SEA LEVEL: 2895' GL
3. GEOLOGICAL NAME OF SURFACE FORMATION: Quaternary Aeolian Deposits;
4. DRILLING TOOLS AND ASSOCIATED EQUIPMENT: Conventional rotary drilling rig using drilling mud as a circulating medium for the removal of solids from hole.
5. PROPOSED DRILLING DEPTH: TVD-7125'
 MD-12,348'
6. ESTIMATED TOPS OF GEOLOGICAL FORMATIONS:

Basal Anhydrite	2520'	Cherry Canyon	3600'
Lamar Lime	2700'	Brushy Canyon	4800'
Bell Canyon	2730'	Bone Springs	6450'
		TD (TVD)	7125'
7. POSSIBLE MINERAL BEARING FORMATIONS:

Bell Canyon	Oil/Gas	Bone Spring	Oil/Gas
Cherry Canyon	Oil/Gas		
Brushy Canyon	Oil/Gas		
8. CASING PROGRAM: *See COA*

HOLE SIZE	INTERVAL	CASING OD	WEIGHT	THREAD	COLLAR	GRADE	CONDITION
26"	0-40'	20"	NA	NA	NA	Conductor	New
17½"	0-450'	13 3/8"	48#	8-R	ST&C	H-40	New
11"	0- 2625' <i>2645'</i>	8 5/8"	32#	8-R	ST&C	J-55	New
7 7/8"	0-6600'	5½"	17#	8-R	LT&C	P-110	New
7 7/8"	6600-12,348'	5½"	17#	Butt	BT&C	P-110	New

Safety Factors: Collapse 1.25 Burst 1.0 Body Yield 1.5
 Joint Strength 8-R 1.8 Buttress 1.6

APPLICATION TO DRILL

OGX RESOURCES, LLC.
 COPPERHEAD "31" FEDERAL COM. #1H
 UNIT "H" SECTION 31
 T26S-R29E EDDY CO. NM

9. CASING CEMENTING AND SETTING DEPTHS:

20"	Conductor	Set 40' of 20" conductor pipe and cement to surface with Redi-Mix.
13 3/8"	Surface	Run and set 450' of 13 3/8" 48# H-40 ST&C casing. Cement with 225 Sx. of 35/65/6 Class "C" Premium Plus POZ cement + 6% Bentonite, + 5% Salt, + 5% MPA-5, + 0.7% Sodium Metasilicate, + 5# LCM/Sx. Yield 2.00, tail in with 200 Sx. of Class "C" Premium Plus cement + 2% CaCl, Yield 1.34, circulate cement to surface.
8 5/8"	Intermediate	Run and set 2625' of 8 5/8" 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 of Class "C" cement + 2% CaCl, Yield 1.34, circulate cement to surface.
5 1/2"	Production	Run and set 12,348' of 5 1/2" casing as follows: 5748' of 5 1/2" 17# P-110 BT&C, 6600' of 5 1/2" 17# P-110 LT&C casing. Cement with 400 Sx. of 35/65 Premium Plus Class "C" POZ cement + 6% Bentonite, + 5% Salt, + 5% MPA-5, + 0.7% Sodium Metasilicate, + 5# LCM/Sx, Yield 2.02, tail in with 9000 Sx. of Class "C" cement + 2% CaCl, Yield 1.34, circulate cement to surface .

10. PRESSURE CONTROL EQUIPMENT:

Annular

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 nipped up on the 13 3/8" casing and 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 on trips. Full opening stabbing valve and upper kelly cock with proper threads will be available on the rig floor at all times. Exhibit "E-1" shows a hydraulically operated closing unit and a 5000 PSI working pressure choke manifold with dual adjustable chokes. No abnormal pressures or temperatures are expected while drilling this well.

*2385' Per Operator
1-31-11 JMW*

APPLICATION TO DRILL

OGX RESOURCES, LLC.
 COPPERHEAD "31" FEDERAL COM. #1H-
 UNIT "H" SECTION 31
 T26S-R29E EDDY CO. NM

11. PROPOSED MUD CIRCULATING SYSTEM:

DEPTH	MUD WT.	VISC.	FLUID LOSS	TYPE MUD SYSTEM
40-450'	8.6-8.8	36-38	NC	Fresh water Spud Mud, use paper to control seepage.
450- 2625 2645'	10.0-10.1	29-30	NC	Brine water use paper to control seepage and high viscosity sweeps to clean hole.
2625 2645-6650'	8.4-9.1	28-29	NC	Fresh water use paper to control seepage and high viscosity sweeps to clean hole.
6650-12,348	8.4-9.1	34-36	12-15 cc or less	Same as above use Dynazan HB-41 and starch to control fluid loss and hole stability.

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.

APPLICATION TO DRILL

OGX RESOURCES, LLC.
COPPERHEAD "31" FEDERAL COM. #1H-
UNIT "H" SECTION 31
T26S-R29E EDDY CO. NM

12. LOGGING, CORING, AND TESTING PROGRAM:

See COA

- A. Open hole logs: Dual Laterolog, Neutron Density, Caliper, Gamma Ray from 6650' back to 8 5/8" casing shoe, run Gamma Ray, Neutron back to surface.
- B. Mud logger will be rigged up on the hole after drilling out the 13 3/8" casing shoe.
- C. No DST's or cores 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 BHP 3520 PSI, and Estimated BHT 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 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 30 days will be needed to complete well and construct surface facilities and/or lay flowlines in order to place well on production.

15. OTHER FACETS OF OPERATIONS:

After running casing, cased hole Gamma Ray, Neutron Collar logs will be run from TD back to all possible productive zones. The DELAWARE formation will be perforated and stimulated in order to establish production. The well will be swab tested and potentialized as AN OIL WELL.

**Copperhead 31 Fed Com No.1H
Delaware River South (Bone Spring)Field
Eddy County, New Mexico
Drilling Procedure
Sept 2010**

General Information

Lease:	Copperhead 31	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:	31	Permit Date:	
Township:	26S	Permit TVD:	7,500'
Range:	29E	Proposed MD:	12,348'
Surface Section Ties:	480' FSL & 480' FEL	Drilling Days:	23
BHL (target)	1650' FNL & 330' FEL Sec. 30		
Ground Level:	2895'	KB:	2912'
Latitude:	32.001288° N	Longitude	104.016382° 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 ~ 6,650'; logged and taken horizontal.

Directions To Well

From the junction of US Hwy 285 & Co.Rd. 725 (mile marker 4) / Est on 725 for 4 mi cross Pecos River.

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

<u>Formation</u>	<u>Depth</u>	<u>Frm Pres</u>	<u>Remarks</u>
Basal Anhydrite	2520'	10 ppge	Drig fluid must be saturated salt water
Lamar	2700'	8.4 ppge	Base of Salt
Bell Canyon	2730'	8.4 ppge	Oil / Gas / Formation water /Poss.H ₂ S
Cherry Canyon	3600'	8.4 ppge	Oil / Gas / Formation water
Brushy Canyon	4800'	8.4 ppge	Oil / Gas / Formation water
Bone Spring	6450'	8.4 ppge	Oil / Gas / Formation water
	7950'	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 450' and circulating cement back to surface. Potash/ fresh water sands will be protected by setting 8 5/8" casing at 2625' and circulating cement to the surface. The hydrocarbon producing intervals will be isolated by setting 5 1/2" casing to total depth and circulating cement 300' above the base of the 8 5/8" casing.

CASING PROGRAM:

See COA

<u>HOLE SIZE</u>	<u>DEPTH</u>	<u>OD Csg</u>	<u>WEIGHT</u>	<u>COLLAR</u>	<u>GRADE</u>	<u>NEW/USED</u>
17 1/2"	0-450'	13 3/8"	48	STC	H40	New
11"	0- 2625 2625'	8 5/8"	32	STC	J55	New
7 7/8"	0-6600'	5 1/2"	17	LTC	P110	New
7 7/8"	6600-12348'	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 1/2" BTC will be run thru the curve & Lateral)

<u>DEPTH</u>	<u>OD Csg</u>	<u>WEIGHT</u>	<u>factors: Burst / Collapse / Tension</u>		
0-450'	13 3/8"	48	1.65	1.52	12+
0- 2625 2625'	8 5/8"	32	1.23	1.50	3.58
0-12348'	5 1/2"	17	1.82	1.73	2.24

** The Intermediate hole will never be evacuated**

(51/2 Burst & Collapse Calculated @ 7500' TVD)

CEMENT PROGRAM:

13 3/8" Surface

Spacer50 bbls of fresh water
 SlurryLead: 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% CaCl₂ + 56.4% Fresh Water

Cement Properties	Lead	Tail
Est Volume (sacks)	225	200
Density (ppg)	12.80	14.80
Yield (ft ³ /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

Spacer30 bbls of fresh water
 Lead35:65 – Poz: Prem Plus C + 4% Bentonite + 5% salt + 5% MPA-5 + .7% Sodium Metasilicate + 5 lbs LCM + 99.6% fresh water
 TailC + 2% CaCl₂ + 56.4% fresh water

Cement Properties	<u>Lead</u>	<u>Tail</u>
Est Volume (sacks)	300	200
Density (ppg)	12.7	14.8
Yield (ft ³ /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

Spacer30 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
TailC + 2% CaCl₂ + 56.4% fresh water

Cement Properties

	<u>Lead</u>	<u>Tail</u>
Est Volume (sacks)	400	900
Density (ppg)	12.7	14.8
Yield (ft ³ /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	

2385' Per Operator 1-31-11 *DNW*

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

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 & 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 3520 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 23 days with an additional 20 days to complete the well and construct production facilities.



Pathfinder
Pathfinder X & Y Planning Report



Company: OGX Resources
Project: Eddy County (NAD27)
Site: Copperhead "31" Federal Com
Well: #1H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #1H
TYD Reference: WELL @ 2914.00usft (Original Well Elev)
MD Reference: WELL @ 2914.00usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Project: Eddy County (NAD27), New Mexico
Map System: US State Plane 1927 (Exact solution)
Geo Datum: NAD 1927 (NADCON CONUS)
Map Zone: New Mexico East 3001
System Datum: Mean Sea Level

Site: Copperhead "31" Federal Com
Site Position: Northing: 364,339.900 usft Latitude: 32° 0' 4.637 N
From: Map Easting: 598,251.900 usft Longitude: 104° 0' 58.977 W
Position Uncertainty: Slot Radius: 13-3/16 " Grid Convergence: 0.17°

Well: #1H
Well Position: +N-S 0.00 usft Northing: 364,339.900 usft Latitude: 32° 0' 4.637 N
+E-W 0.00 usft Easting: 598,251.900 usft Longitude: 104° 0' 58.977 W
Position Uncertainty: Wellhead Elevation: usft Ground Level: 2,895.00 usft

Wellbore: OH
Magnetics: Model Name: IGRF200510 Sample Date: 02/02/11
Declination (°): 7.80 Dip Angle (°): 59.93 Field Strength (nT): 48,508

Design: Plan #1
Audit Notes:
Version: Phase: PLAN Tie On Depth: 0.00
Vertical Section: Depth From (TYD) (usft) +N-S (usft) +E-W (usft) Direction (°)
0.00 0.00 0.00 1.42

Survey Tool Program: Date: 02/02/11
From (usft): 0.00
To (usft): 13,651.29
Survey (Wellbore): Plan #1 (OH)
Tool Name: MWD
Description: MWD - Standard



Pathfinder
Pathfinder X & Y Planning Report



Company: OGX Resources
 Project: Eddy County (NAD27)
 Site: Copperhead "31" Federal Com
 Well: #1H
 Wellbore: OH
 Design: Plan #1

Local Co-ordinate Reference:
 TVD Reference:
 MD Reference:
 North Reference:
 Survey Calculation Method:
 Database:

Well #1H
 WELL @ 2914.00ustf (Original Well Elev)
 WELL @ 2914.00ustf (Original Well Elev)
 Grid
 Minimum Curvature
 EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	NIS (usft)	EW (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	0.00	2,914.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
100.00	0.00	0.00	100.00	2,814.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
200.00	0.00	0.00	200.00	2,714.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
300.00	0.00	0.00	300.00	2,614.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
400.00	0.00	0.00	400.00	2,514.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
500.00	0.00	0.00	500.00	2,414.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
600.00	0.00	0.00	600.00	2,314.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
700.00	0.00	0.00	700.00	2,214.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
800.00	0.00	0.00	800.00	2,114.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
900.00	0.00	0.00	900.00	2,014.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
1,000.00	0.00	0.00	1,000.00	1,914.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
1,100.00	0.00	0.00	1,100.00	1,814.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
1,200.00	0.00	0.00	1,200.00	1,714.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
1,300.00	0.00	0.00	1,300.00	1,614.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
1,400.00	0.00	0.00	1,400.00	1,514.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
1,500.00	0.00	0.00	1,500.00	1,414.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
1,600.00	0.00	0.00	1,600.00	1,314.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
1,700.00	0.00	0.00	1,700.00	1,214.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
1,800.00	0.00	0.00	1,800.00	1,114.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
1,900.00	0.00	0.00	1,900.00	1,014.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
2,000.00	0.00	0.00	2,000.00	914.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
2,100.00	0.00	0.00	2,100.00	814.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
2,200.00	0.00	0.00	2,200.00	714.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
2,300.00	0.00	0.00	2,300.00	614.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
2,400.00	0.00	0.00	2,400.00	514.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
2,500.00	0.00	0.00	2,500.00	414.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
2,600.00	0.00	0.00	2,600.00	314.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90



Pathfinder

Pathfinder X & Y Planning Report



A Schlumberger Company

Company: OGX Resources
 Project: Eddy County (NAD27)
 Site: Copperhead "31" Federal Com
 Well: #1H
 Wellbore: OH
 Design: Plan #1

Local Co-ordinate Reference:
 TVD Reference:
 MD Reference:
 North Reference:
 Survey/Calculation Method:
 Database:

Well #1H
 WELL @ 2914.00ust (Original Well Elev)
 WELL @ 2914.00ust (Original Well Elev)
 Grid
 Minimum Curvature
 EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (")	Azi (")	TVD (usft)	TVDSS (usft)	N/S (usft)	EW (usft)	V. Sec (usft)	DLeg ("/100ust)	Northing (usft)	Easting (usft)
2,700.00	0.00	0.00	2,700.00	214.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
2,800.00	0.00	0.00	2,800.00	114.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
2,900.00	0.00	0.00	2,900.00	14.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
3,000.00	0.00	0.00	3,000.00	-86.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
3,100.00	0.00	0.00	3,100.00	-186.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
3,200.00	0.00	0.00	3,200.00	-286.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
3,300.00	0.00	0.00	3,300.00	-386.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
3,400.00	0.00	0.00	3,400.00	-486.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
3,500.00	0.00	0.00	3,500.00	-586.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
3,600.00	0.00	0.00	3,600.00	-686.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
3,700.00	0.00	0.00	3,700.00	-786.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
3,800.00	0.00	0.00	3,800.00	-886.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
3,900.00	0.00	0.00	3,900.00	-986.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
4,000.00	0.00	0.00	4,000.00	-1,086.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
4,100.00	0.00	0.00	4,100.00	-1,186.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
4,200.00	0.00	0.00	4,200.00	-1,286.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
4,300.00	0.00	0.00	4,300.00	-1,386.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
4,400.00	0.00	0.00	4,400.00	-1,486.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
4,500.00	0.00	0.00	4,500.00	-1,586.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
4,600.00	0.00	0.00	4,600.00	-1,686.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
4,700.00	0.00	0.00	4,700.00	-1,786.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
4,800.00	0.00	0.00	4,800.00	-1,886.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
4,900.00	0.00	0.00	4,900.00	-1,986.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
5,000.00	0.00	0.00	5,000.00	-2,086.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
5,100.00	0.00	0.00	5,100.00	-2,186.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
5,200.00	0.00	0.00	5,200.00	-2,286.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
5,300.00	0.00	0.00	5,300.00	-2,386.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90



Pathfinder
Pathfinder X & Y Planning Report



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 Site: Copperhead "31" Federal Com
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Local Co-ordinate Reference: Well #1H
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 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	D/Leg (*/100usft)	Northing (usft)	Eastng (usft)
5,400.00	0.00	0.00	5,400.00	-2,486.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
5,500.00	0.00	0.00	5,500.00	-2,586.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
5,600.00	0.00	0.00	5,600.00	-2,686.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
5,700.00	0.00	0.00	5,700.00	-2,786.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
5,800.00	0.00	0.00	5,800.00	-2,886.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
5,900.00	0.00	0.00	5,900.00	-2,986.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
6,000.00	0.00	0.00	6,000.00	-3,086.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
6,100.00	0.00	0.00	6,100.00	-3,186.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
6,200.00	0.00	0.00	6,200.00	-3,286.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
6,300.00	0.00	0.00	6,300.00	-3,386.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
6,400.00	0.00	0.00	6,400.00	-3,486.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
6,500.00	0.00	0.00	6,500.00	-3,586.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
6,600.00	0.00	0.00	6,600.00	-3,686.00	0.00	0.00	0.00	0.00	364,339.90	598,251.90
6,641.50	0.00	0.00	6,641.50	-3,727.50	0.00	0.00	0.00	0.00	364,339.90	598,251.90
6,650.00	1.06	1.42	6,650.00	-3,736.00	0.08	0.00	0.00	0.08	364,339.98	598,251.90
6,675.00	4.19	1.42	6,674.97	-3,760.97	1.22	0.03	1.22	1.22	364,341.12	598,251.93
6,700.00	7.31	1.42	6,699.84	-3,785.84	3.73	0.09	3.73	3.73	364,343.63	598,251.99
6,725.00	10.43	1.42	6,724.54	-3,810.54	7.58	0.19	7.58	7.58	364,347.48	598,252.09
6,750.00	13.56	1.42	6,748.99	-3,834.99	12.77	0.32	12.78	12.78	364,352.67	598,252.22
6,775.00	16.68	1.42	6,773.12	-3,859.12	19.29	0.48	19.30	19.30	364,359.19	598,252.38
6,800.00	19.81	1.42	6,796.86	-3,882.86	27.12	0.67	27.12	27.12	364,367.02	598,252.57
6,825.00	22.93	1.42	6,820.14	-3,906.14	36.22	0.90	36.23	36.23	364,376.12	598,252.80
6,850.00	26.05	1.42	6,842.89	-3,928.89	46.58	1.15	46.60	46.60	364,386.48	598,253.05
6,875.00	29.18	1.42	6,865.04	-3,951.04	58.17	1.44	58.18	58.18	364,398.07	598,253.34
6,900.00	32.30	1.42	6,886.52	-3,972.52	70.94	1.76	70.96	70.96	364,410.84	598,253.66
6,925.00	35.43	1.42	6,907.28	-3,993.28	84.86	2.10	84.89	84.89	364,424.76	598,254.00
6,950.00	38.55	1.42	6,927.24	-4,013.24	99.90	2.48	99.93	99.93	364,439.80	598,254.38



Pathfinder

Pathfinder X & Y Planning Report



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Project: Eddy County (NAD27)
Site: Copperhead "31" Federal Com
Well: #1H
Wellbore: OH
Design: Plan #1

Local Co-ordinate Reference: Well #1H
TVD Reference: WELL @ 2914.00usft (Original Well Elev)
MD Reference: WELL @ 2914.00usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	D Leg (°/100usft)	Northing (usft)	Easting (usft)
6,975.00	41.68	1.42	6,946.36	-4,032.36	116.00	2.88	116.04	12.50	364,455.90	598,254.78
7,000.00	44.80	1.42	6,964.57	-4,050.57	133.12	3.30	133.16	12.50	364,473.02	598,255.20
7,025.00	47.92	1.42	6,981.82	-4,067.82	151.20	3.75	151.25	12.50	364,491.10	598,255.65
7,050.00	51.05	1.42	6,998.06	-4,084.06	170.20	4.22	170.25	12.50	364,510.10	598,256.12
7,075.00	54.17	1.42	7,013.24	-4,099.24	190.05	4.71	190.11	12.50	364,529.95	598,256.61
7,100.00	57.30	1.42	7,027.31	-4,113.31	210.71	5.22	210.77	12.50	364,550.61	598,257.12
7,125.00	60.42	1.42	7,040.24	-4,126.24	232.09	5.75	232.17	12.50	364,571.99	598,257.65
7,150.00	63.54	1.42	7,051.98	-4,137.98	254.16	6.30	254.23	12.50	364,594.06	598,258.20
7,175.00	66.67	1.42	7,062.51	-4,148.51	276.82	6.86	276.91	12.50	364,616.72	598,258.76
7,200.00	69.79	1.42	7,071.78	-4,157.78	300.03	7.44	300.12	12.50	364,639.93	598,259.34
7,225.00	72.92	1.42	7,079.77	-4,165.77	323.71	8.02	323.81	12.50	364,663.61	598,259.92
7,250.00	76.04	1.42	7,086.46	-4,172.46	347.78	8.62	347.89	12.50	364,687.68	598,260.52
7,275.00	79.16	1.42	7,091.83	-4,177.83	372.19	9.23	372.31	12.50	364,712.09	598,261.13
7,300.00	82.29	1.42	7,095.85	-4,181.85	396.85	9.84	396.98	12.50	364,736.75	598,261.74
7,325.00	85.41	1.42	7,098.53	-4,184.53	421.70	10.45	421.83	12.50	364,761.60	598,262.35
7,350.00	88.54	1.42	7,099.85	-4,185.85	446.65	11.07	446.79	12.50	364,786.55	598,262.97
7,361.71	90.00	1.42	7,100.00	-4,186.00	458.36	11.36	458.50	12.50	364,798.26	598,263.26
7,400.00	90.00	1.42	7,100.00	-4,186.00	496.64	12.31	496.79	0.00	364,836.54	598,264.21
7,500.00	90.00	1.42	7,100.00	-4,186.00	596.61	14.79	596.79	0.00	364,936.51	598,266.69
7,600.00	90.00	1.42	7,100.00	-4,186.00	696.58	17.27	696.79	0.00	365,036.48	598,269.17
7,700.00	90.00	1.42	7,100.00	-4,186.00	796.55	19.75	796.79	0.00	365,136.45	598,271.65
7,800.00	90.00	1.42	7,100.00	-4,186.00	896.51	22.22	896.79	0.00	365,236.41	598,274.12
7,900.00	90.00	1.42	7,100.00	-4,186.00	996.48	24.70	996.79	0.00	365,336.38	598,276.60
8,000.00	90.00	1.42	7,100.00	-4,186.00	1,096.45	27.18	1,096.79	0.00	365,436.35	598,279.08
8,100.00	90.00	1.42	7,100.00	-4,186.00	1,196.42	29.66	1,196.79	0.00	365,536.32	598,281.56
8,200.00	90.00	1.42	7,100.00	-4,186.00	1,296.39	32.14	1,296.79	0.00	365,636.29	598,284.04
8,300.00	90.00	1.42	7,100.00	-4,186.00	1,396.36	34.61	1,396.79	0.00	365,736.26	598,286.51



Pathfinder
Pathfinder X & Y Planning Report



Company: OGX Resources
Project: Eddy County (NAD27)
Site: Copperhead "31" Federal Com
Well: #1H
Wellbore: OH
Design: Plan #1

Local Coordinate Reference:
TVD Reference: WELL @ 2914.00ustf (Original Well Elev)
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Database: EDM 5000.1 Single User Db

Well #1H
WELL @ 2914.00ustf (Original Well Elev)
WELL @ 2914.00ustf (Original Well Elev)
Grid
Minimum Curvature
EDM 5000.1 Single User Db

Planned Survey

MD (ustf)	Inc (°)	Azi (°)	TVD (ustf)	TVDSS (ustf)	N/S (ustf)	E/W (ustf)	V. Sec (ustf)	DLeg (°/100ustf)	Northing (ustf)	Easting (ustf)
8,400.00	90.00	1.42	7,100.00	-4,186.00	1,496.33	37.09	1,496.79	0.00	365,836.23	598,288.99
8,500.00	90.00	1.42	7,100.00	-4,186.00	1,596.30	39.57	1,596.79	0.00	365,936.20	598,291.47
8,600.00	90.00	1.42	7,100.00	-4,186.00	1,696.27	42.05	1,696.79	0.00	366,036.17	598,293.95
8,700.00	90.00	1.42	7,100.00	-4,186.00	1,796.24	44.53	1,796.79	0.00	366,136.14	598,296.43
8,800.00	90.00	1.42	7,100.00	-4,186.00	1,896.21	47.00	1,896.79	0.00	366,236.11	598,298.90
8,900.00	90.00	1.42	7,100.00	-4,186.00	1,996.18	49.48	1,996.79	0.00	366,336.08	598,301.38
9,000.00	90.00	1.42	7,100.00	-4,186.00	2,096.15	51.96	2,096.79	0.00	366,436.05	598,303.86
9,100.00	90.00	1.42	7,100.00	-4,186.00	2,196.12	54.44	2,196.79	0.00	366,536.02	598,306.34
9,200.00	90.00	1.42	7,100.00	-4,186.00	2,296.08	56.92	2,296.79	0.00	366,635.98	598,308.82
9,300.00	90.00	1.42	7,100.00	-4,186.00	2,396.05	59.40	2,396.79	0.00	366,735.95	598,311.30
9,400.00	90.00	1.42	7,100.00	-4,186.00	2,496.02	61.87	2,496.79	0.00	366,835.92	598,313.77
9,500.00	90.00	1.42	7,100.00	-4,186.00	2,595.99	64.35	2,596.79	0.00	366,935.89	598,316.25
9,600.00	90.00	1.42	7,100.00	-4,186.00	2,695.96	66.83	2,696.79	0.00	367,035.86	598,318.73
9,700.00	90.00	1.42	7,100.00	-4,186.00	2,795.93	69.31	2,796.79	0.00	367,135.83	598,321.21
9,800.00	90.00	1.42	7,100.00	-4,186.00	2,895.90	71.79	2,896.79	0.00	367,235.80	598,323.69
9,900.00	90.00	1.42	7,100.00	-4,186.00	2,995.87	74.26	2,996.79	0.00	367,335.77	598,326.16
10,000.00	90.00	1.42	7,100.00	-4,186.00	3,095.84	76.74	3,096.79	0.00	367,435.74	598,328.64
10,100.00	90.00	1.42	7,100.00	-4,186.00	3,195.81	79.22	3,196.79	0.00	367,535.71	598,331.12
10,200.00	90.00	1.42	7,100.00	-4,186.00	3,295.78	81.70	3,296.79	0.00	367,635.68	598,333.60
10,300.00	90.00	1.42	7,100.00	-4,186.00	3,395.75	84.18	3,396.79	0.00	367,735.65	598,336.08
10,400.00	90.00	1.42	7,100.00	-4,186.00	3,495.72	86.65	3,496.79	0.00	367,835.62	598,338.55
10,500.00	90.00	1.42	7,100.00	-4,186.00	3,595.69	89.13	3,596.79	0.00	367,935.59	598,341.03
10,600.00	90.00	1.42	7,100.00	-4,186.00	3,695.65	91.61	3,696.79	0.00	368,035.55	598,343.51
10,700.00	90.00	1.42	7,100.00	-4,186.00	3,795.62	94.09	3,796.79	0.00	368,135.52	598,345.99
10,800.00	90.00	1.42	7,100.00	-4,186.00	3,895.59	96.57	3,896.79	0.00	368,235.49	598,348.47
10,900.00	90.00	1.42	7,100.00	-4,186.00	3,995.56	99.05	3,996.79	0.00	368,335.46	598,350.95
11,000.00	90.00	1.42	7,100.00	-4,186.00	4,095.53	101.52	4,096.79	0.00	368,435.43	598,353.42



Pathfinder
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Well #1H
 WELL @ 2914.00usft (Original Well Elev)
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MD (usft)	Inc (°)	Azi (°)	TVD (usft)	TVDS (usft)	N/S (usft)	EW (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
11,100.00	90.00	1.42	7,100.00	-4,186.00	4,195.50	104.00	4,196.79	0.00	368,535.40	598,355.90
11,200.00	90.00	1.42	7,100.00	-4,186.00	4,295.47	106.48	4,296.79	0.00	368,635.37	598,358.38
11,300.00	90.00	1.42	7,100.00	-4,186.00	4,395.44	108.96	4,396.79	0.00	368,735.34	598,360.86
11,400.00	90.00	1.42	7,100.00	-4,186.00	4,495.41	111.44	4,496.79	0.00	368,835.31	598,363.34
11,500.00	90.00	1.42	7,100.00	-4,186.00	4,595.38	113.91	4,596.79	0.00	368,935.28	598,365.81
11,600.00	90.00	1.42	7,100.00	-4,186.00	4,695.35	116.39	4,696.79	0.00	369,035.25	598,368.29
11,700.00	90.00	1.42	7,100.00	-4,186.00	4,795.32	118.87	4,796.79	0.00	369,135.22	598,370.77
11,800.00	90.00	1.42	7,100.00	-4,186.00	4,895.29	121.35	4,896.79	0.00	369,235.19	598,373.25
11,900.00	90.00	1.42	7,100.00	-4,186.00	4,995.26	123.83	4,996.79	0.00	369,335.16	598,375.73
12,000.00	90.00	1.42	7,100.00	-4,186.00	5,095.22	126.30	5,096.79	0.00	369,435.12	598,378.20
12,100.00	90.00	1.42	7,100.00	-4,186.00	5,195.19	128.78	5,196.79	0.00	369,535.09	598,380.68
12,200.00	90.00	1.42	7,100.00	-4,186.00	5,295.16	131.26	5,296.79	0.00	369,635.06	598,383.16
12,300.00	90.00	1.42	7,100.00	-4,186.00	5,395.13	133.74	5,396.79	0.00	369,735.03	598,385.64
12,400.00	90.00	1.42	7,100.00	-4,186.00	5,495.10	136.22	5,496.79	0.00	369,835.00	598,388.12
12,500.00	90.00	1.42	7,100.00	-4,186.00	5,595.07	138.69	5,596.79	0.00	369,934.97	598,390.59
12,600.00	90.00	1.42	7,100.00	-4,186.00	5,695.04	141.17	5,696.79	0.00	370,034.94	598,393.07
12,700.00	90.00	1.42	7,100.00	-4,186.00	5,795.01	143.65	5,796.79	0.00	370,134.91	598,395.55
12,800.00	90.00	1.42	7,100.00	-4,186.00	5,894.98	146.13	5,896.79	0.00	370,234.88	598,398.03
12,900.00	90.00	1.42	7,100.00	-4,186.00	5,994.95	148.61	5,996.79	0.00	370,334.85	598,400.51
13,000.00	90.00	1.42	7,100.00	-4,186.00	6,094.92	151.09	6,096.79	0.00	370,434.82	598,402.99
13,100.00	90.00	1.42	7,100.00	-4,186.00	6,194.89	153.56	6,196.79	0.00	370,534.79	598,405.46
13,200.00	90.00	1.42	7,100.00	-4,186.00	6,294.86	156.04	6,296.79	0.00	370,634.76	598,407.94
13,300.00	90.00	1.42	7,100.00	-4,186.00	6,394.83	158.52	6,396.79	0.00	370,734.73	598,410.42
13,400.00	90.00	1.42	7,100.00	-4,186.00	6,494.79	161.00	6,496.79	0.00	370,834.69	598,412.90
13,500.00	90.00	1.42	7,100.00	-4,186.00	6,594.76	163.48	6,596.79	0.00	370,934.66	598,415.38
13,600.00	90.00	1.42	7,100.00	-4,186.00	6,694.73	165.95	6,696.79	0.00	371,034.63	598,417.85
13,651.37	90.00	1.42	7,100.00	-4,186.00	6,746.09	167.23	6,748.16	0.00	371,085.99	598,419.13



Pathfinder

Pathfinder X & Y Planning Report



Company: OGX Resources
Project: Eddy County (NAD27)
Site: Copperhead "31" Federal Com
Well: #1H
Wellbore: OH
Design: Plan #1

Local Co-ordinates Reference:
TVD Reference: Well #1H
MD Reference: WELL @ 2914.00usft (Original Well Elev)
North Reference: WELL @ 2914.00usft (Original Well Elev)
Survey Calculation Method: Grid
Database: Minimum Curvature
 EDM 5000.1 Single User Db

Checked By: _____

Approved By: _____

Date: _____



Project: Eddy County (NAD27)
 Site: Copperhead "31" Federal Com
 Well: #1H
 Wellbore: OH
 Plan: Plan #1 (#1H/OH)

PROJECT DETAILS: Eddy County (NAD27)
 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

WELL DETAILS: #1H

Ground Elevation: 2885.00
 RKB Elevation: WELL @ 2814.00usft (Original Well Elev)
 Rig Name: Original Well Elev

+N/S	+E/W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	364339.900	596251.300	32° 0' 4.637 N	104° 0' 58.977 W	

SECTION DETAILS

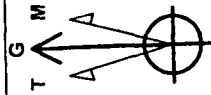
MD	Inc	Azi	TVD	+N/S	+E/W	Deg	True	VSect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6641.50	0.00	0.00	6641.50	0.00	0.00	0.00	0.00	0.00	0.00
7361.71	90.00	1.42	7100.00	458.50	11.36	12.50	1.42	458.50	
13651.37	90.00	1.42	7100.00	6746.09	167.23	0.00	0.00	6748.16	PBHL(CH=feet1)

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

TVD	+N/S	+E/W	Northing	Easting	Shape
7125.00	6746.10	166.70	371066.000	596418.600	Point



A Schlumberger Company



Azimuths to Grid North
 True North: -0.17°
 Magnetic North: 7.64°
 Magnetic Field
 Strength: 48506.28nT
 Dip Angle: 59.93°
 Date: 02/02/2011
 Model: IGRF200510

