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State of New Mexico  
Energy, Minerals & Natural Resources Department  
OIL CONSERVATION DIVISION  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

RECEIVED

JUL 08 2013

Form C-102  
Revised August 1, 2011  
Submit one copy to appropriate  
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number <b>30-015-47518</b>	Pool Code <b>3250</b>	Pool Name <b>Atoka; Glorieta - Yeso</b>
Property Code <b>304948</b>	Property Name <b>ROGERS "23" FEE</b>	Well Number <b>10</b>
OGRID No. <b>16696</b>	Operator Name <b>OXY USA INC.</b>	Elevation <b>3309.1'</b>

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	23	18 SOUTH	26 EAST, N.M.P.M.		1650'	NORTH	370'	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
H	23	18 SOUTH	26 EAST, N.M.P.M.		1755'	NORTH	370'	EAST	EDDY
Dedicated Acres <b>40</b>		Joint or Infill	Consolidation Code	Order No.					

No allowable will be assigned to this completion until all interests have been consolidated or a non-standard unit has been approved by the division.

<p><b>SURFACE LOCATION</b> NEW MEXICO EAST NAD 1927 Y=631446.6 X=496509.6 LAT.: N 32.7359414° LONG.: W 104.3446844°</p> <p><b>BOTTOM HOLE LOCATION</b> NEW MEXICO EAST NAD 1927 Y=631341.6 X=496508.5 LAT.: N 32.7356528° LONG.: W 104.3446879°</p> <p>GRID AZ = 180°35'12" 105.00'</p>	<p><b>OPERATOR CERTIFICATION</b></p> <p>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.</p> <p><i>Jennifer Duarte</i> 7/5/13 Signature Date Jennifer Duarte Printed Name jennifer-duarte@oxy.com E-mail Address</p>
	<p><b>SURVEYOR CERTIFICATION</b></p> <p>I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.</p> <p>JERRY JASE 15079 MAY 14, 2013 Date of Survey Signature and Seal of Professional Surveyor <i>Jerry J. Jase</i> 6/6/2013 Certificate Number 15079</p>

WO# 130514WL-f (KA)

**OXY USA Inc**  
**Rogers 23 Fee #10**  
**APD Data**

**OPERATOR NAME / NUMBER:** OXY USA Inc 16696

**LEASE NAME / NUMBER:** Rogers 23 Fee #10 **Federal Lease No:**

**STATE:** NM **COUNTY:** Eddy

**SURFACE LOCATION:** 1650' FNL & 370' FEL, Sec 23, T18S, R26E

**BOTTOM HOLE LOCATION:** 1755' FNL & 370' FEL, Sec 23, T18S, R26E

**APPROX GR ELEV:** 3309.1'

**EST KB ELEV:** 3323.1' (14' KB-GL)

**1. GEOLOGIC NAME OF SURFACE FORMATION**

a. Permian

**2. ESTIMATED TOPS OF GEOLOGICAL MARKERS & DEPTHS OF ANTICIPATED FRESH WATER, OIL OR GAS**

Formation Name	TVD	Expected Fluids
T. Seven Rivers	200	-
T. Queen	400	None
T. Grayburg	830	None
T. San Andres	1124	-
T. Glorieta	2700	Oil
T. Yeso	2860	Oil
TD	4500	TD

A. Fresh Water formation is outcropping and will be covered with the 16" conductor pipe, which will be set at 80' prior to spud.

**GREATEST PROJECTED TD:** 4500' MD / 4500' TVD

**OBJECTIVE:** Yeso

**3. CASING PROGRAM**

Surface Casing ran in a 11 " hole filled with 8.4 ppg mud

Hole Size (in)	Interval (ft)	OD (in)	Wt (ppf)	Grade	Conn	ID (in)	Condition	Jt Str (M-lbs)	Burst (psi)	Collapse (psi)	Burst SF	Coll SF	Ten SF
11	400	8.625	24	J55	STC	8.097	New	244	2950	1370	1.42	10.42	2.26

Production Casing ran in a 7.875" hole filled with 9.6 ppg mud

Hole Size (in)	Interval (ft)	OD (in)	Wt (ppf)	Grade	Conn	ID (in)	Condition	Jt Str (M-lbs)	Burst (psi)	Collapse (psi)	Burst SF	Coll SF	Ten SF
7.875	4500	5.5	17	L80	BTC	4.892	New	338	7740	6290	1.25	2.69	2.05

## Casing Design Assumptions:

### **Burst Loads**

#### CSG Test (Surface)

- Internal: Displacement fluid + 70% CSG Burst rating
- External: Pore Pressure from section TD to surface

#### CSG Test (Production)

- Internal: Displacement fluid + 80% CSG Burst rating
- External: Pore Pressure from the well TD the Surface CSG shoe and MW of the drilling mud that was in the hole when the CSG was run to surface

#### Gas Kick (Surface)

- Internal: Gas Kick based on Pore Pressure or Fracture Gradient @ CSG shoe with a gas 0.115psi/ft Gas gradient to surface while drilling the next hole section
- External: Pore Pressure from section TD to previous CSG shoe and MW of the drilling mud that was in the hole when the CSG was run to surface

#### Stimulation (Production)

- Internal: Displacement fluid + Max Frac treating pressure (not to exceed 80% CSG Burst rating)
- External: Pore Pressure from the well TD to the surface CSG shoe and 8.5 ppg MWE to surface

### **Collapse Loads**

#### Lost Circulation (Surface)

- Internal: Losses experienced while drilling the next hole section (e.g. losses while drilling the production hole section are used as a collapse load to design the surface CSG). After losses there will be a column of mud inside the CSG with an equivalent weight to the Pore Pressure of the lost circulation zone
- External: MW of the drilling mud that was in the hole when the CSG was run

#### Cementing (Surface/Production)

- Internal: Displacement Fluid
- External: Cement Slurries to TOC, MW to surface

#### Full Evacuation (Production)

- Internal: Atmospheric Pressure
- External: MW of the drilling mud that was in the hole when the CSG was run

### **Tension Loads**

#### Running CSG (Surface/Production)

- Axial load of the buoyant weight of the string plus either 100 klb over-pull or string weight in air, whichever is less

#### Green Cement (Surface/Production)

- Axial load of the buoyant weight of the string plus the cement plug bump pressure (Final displacement pressure + 500 psi)

Burst, Collapse and Tensile SF are calculated using Landmark's Stress Check (Casing Design) software.

## **4. CEMENT PROGRAM:**

### **Surface Interval**

Interval	Amount sx	Ft of Fill	Type	Gal/Sk	PPG	Ft <sup>3</sup> /sk	24 Hr Comp
<b>Surface (TOC: 0' – 400')</b>							
<b>Lead:</b> 0' – 400' (165% Excess)	210	400	Premium Plus Cement: 1 % Calcium Chloride - Flake	6.36	14.8	1.34	1608 psi

**Production Interval**

Interval	Amount sx	Ft of Fill	Type	Gal/Sk	PPG	Ft <sup>3</sup> /sk	24 Hr Comp
<b>Production (TOC: 0' – 4500')</b>							
<b>Lead:</b> 0' – 2700' (100 % Excess)	480	2700	Halliburton Light Premium Plus: 5% Salt, 3 lbm/sk Kol-Seal, 0.125 lb/sx Poly-E-Flake, 0.35% HR-800	9.69	12.9	1.87	660 psi
<b>Tail:</b> 2700' - 4500' (100 % Excess)	410	1800	Premium Plus Cement: 0.5% Halad ®-344, 0.2% WellLife 734, 5 lbm/sk Microbond, 0.3% Econolite, 0.3% CFR-3	7.72	14.2	1.55	1914 psi

**Description of Cement Additives:** Calcium Chloride – Flake (Accelerator), Kol-Seal (Lost Circulation Additive), Poly-E-Flake (Lost Circulation Additive), HR-800 (Retarder), Halad ®-344 (Low Fluid Loss Control), WellLife 734 (Cement Enhancer), Microbond (Expander), Econolite (Ligh Weight Additive), CFR-3 (Dispersant)

The volumes indicated above may be revised depending on if a caliper measurement.

**5. DIRECTIONAL PLAN**

Please see attached directional plan.

**6. PRESSURE CONTROL EQUIPMENT**

**Surface: 0' – 400'** None.

**Production: 400' MD/TVD – 4500' MD/TVD.** the minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required to drill below the surface casing shoe shall be 3000 (3M) psi. Operator will be using an 11" 3M two ram stack with 3M annular preventer, & 3M Choke Manifold.

- a. The 11" 3000 psi blowout prevention equipment will be installed and operational after setting the 8 5/8" surface casing and the 8 5/8" SOW x 11" 3K conventional wellhead; the rotating head body will be installed but the rubber will be installed when it becomes operationally necessary.
- b. The BOP and ancillary BOPE will be tested by a third party upon installation to the 8 5/8" 24# J-55 surface casing. All equipment will be tested to 250/3000 psi for 5 minutes and charted, except the annular, which will be tested to 70% of working pressure.
- c. The pipe rams will be functionally tested during each 24 hour period; the blind rams will be functionally tested on each trip out of the hole. These functional tests will be documented on the Daily Driller's Log. Other accessory equipment (BOPE) will include a safety valve and subs as needed to fit all drill strings, and a 2" kill line and 3" choke line having a 3000 psi WP rating. Oxy requests that the system be tested at 3,000 psi.
- d. The operator will use a co-flex line between the BOP and choke manifold when using specs equal or higher than the following ratings below. See attached schematic.  
Size: 3" Ends: Flanges WP Rating: 3,000 psi  
Anchors required by manufacturer: No
- e. BOP & Choke manifold diagrams attached.

## 7. MUD PROGRAM:

Depth	Mud Wt ppg	Vis Sec	Fluid Loss	Type System
0' – 400'	8.4 – 8.8	27 – 38	NC	Fresh Water / Spud Mud
400' – TD	9.6 – 10.0	28 – 40	NC	Brine Water / Salt Gel / Sweeps

**Remarks:** Pump high viscosity sweeps as needed for hole cleaning. The mud system will be monitored visually/manually as well as with an electronic PVT. The necessary mud products for additional weight and fluid loss control will be on location at all times. Appropriately weighted mud will be used to isolate potential gas, oil, and water zones until such time as casing can be cemented into place for zonal isolation.

## 8. AUXILIARY WELL CONTROL AND MONITORING EQUIPMENT

- a. A full opening drill pipe stabbing valve having the appropriate connections will be on the rig floor unobstructed and readily accessible at all times.
- b. Hydrogen Sulfide detection equipment will be in operation after drilling out the surface casing shoe until the production casing is cemented. Breathing equipment will be on location upon drilling the surface casing shoe until total depth is reached.

## 9. POTENTIAL HAZARDS:

- a. H2S detection equipment will be in operation after drilling out the surface casing shoe until the production casing has been cemented. Breathing equipment will be on location from drilling out the surface shoe until production casing is cemented.
- b. No abnormal temperatures or pressures are anticipated. The highest anticipated pressure gradient is **0.5 psi/ft**. Maximum anticipated bottom hole pressure is **2250 psi**.
- c. All personnel will be familiar with all aspects of safe operation of equipment being used to drill this well. Adequate flare lines will be installed off the mud/gas separator where gas may be flared safely.

## 10. ANTICIPATED STARTING DATE AND DURATION OF OPERATIONS

Road and location construction will begin after the NMOCD has approved the APD. Anticipated spud date will be as soon as possible after NMOCD approval and as soon as a rig will be available. Move in operations and drilling is expected to take 15 days. If production casing is run, then an additional 30 days will be needed to complete the well and construct surface facilities and/or lay flow lines in order to place well on production.

## 11. WIRELINE LOGGING / MUD LOGGING / LWD

- a. NO open hole wireline logging
- b. NO mud logging

## COMPANY PERSONNEL:

<u>Name</u>	<u>Title</u>	<u>Office Phone</u>	<u>Mobile Phone</u>
Kacie Cruz	Drilling Engineer	(713)350-4889	(281) 433-6594
Sebastian Millan	Drilling Engineer Supervisor	(713)350-4950	(832) 528-3268
Roger Allen	Drilling Superintendent	(713)215-7617	(281) 682-3919
Oscar Quintero	Drilling Manager	(713)985-6343	(713) 689-4946



## ENGINEERING CALCS

Permian - Eddy County, NM

Rogers 23 Fee #10

Rogers 23 Fee #10

ORIG HOLE

Plan: Design #1

## Standard Planning Report - Geographic

26 June, 2013

**Occidental Oil & Gas Corp.**  
Planning Report - Geographic

Database:	HOPSPP	Local Co-ordinate Reference:	Well Rogers 23 Fee #10
Company:	ENGINEERING CALCS	TVD Reference:	well @ 3333.10ft
Project:	Permian - Eddy County, NM	Mid Reference:	well @ 3333.10ft
Site:	Rogers 23 Fee #10	North Reference:	Grid
Well:	Rogers 23 Fee #10	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIG HOLE		
Design:	Design #1		

Project	Permian - Eddy County, NM, New Mexico		
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		Using geodetic scale factor

Site	Rogers 23 Fee #10		
Site Position:	Map	Northing:	631,446.60 ft
From:		Easting:	496,509.60 ft
Position Uncertainty:	0.00 ft	Slot Radius:	0.000 in
		Latitude:	32° 44' 9.376 N
		Longitude:	104° 20' 40.876 W
		Grid Convergence:	-0.01 °

Well	Rogers 23 Fee #10		
Well Position	+N/-S	0.00 ft	Northing:
	+E/-W	0.00 ft	Easting:
Position Uncertainty	0.00 ft	Wellhead Elevation:	3,311.60 ft
		Latitude:	32° 44' 9.376 N
		Longitude:	104° 20' 40.876 W
		Ground Level:	3,309.10 ft

Wellbore	ORIG HOLE		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/25/2013	7.73	60.48	48,636

Design	Design #1		
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Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	180.60

Plan Sections:										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,409.51	0.00	0.00	1,409.51	0.00	0.00	0.00	0.00	0.00	0.00	
1,659.51	5.00	180.60	1,659.19	-10.90	-0.11	2.00	2.00	0.00	180.60	
2,614.27	5.00	180.60	2,610.32	-94.11	-0.99	0.00	0.00	0.00	0.00	
2,864.27	0.00	0.00	2,860.00	-105.01	-1.10	2.00	-2.00	0.00	180.00	
4,504.27	0.00	0.00	4,500.00	-105.01	-1.10	0.00	0.00	0.00	0.00	Rogers 23 Fee #10

**Occidental Oil & Gas Corp.**  
Planning Report - Geographic

Database:	HOPSPP	Local Co-ordinate Reference:	Well Rogers 23 Fee #10
Company:	ENGINEERING CALCS	TVD Reference:	well @ 3333'10ft
Project:	Permian - Eddy County, NM	MD Reference:	well @ 3333'10ft
Site:	Rogers 23 Fee #10	North Reference:	Grid
Well:	Rogers 23 Fee #10	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIG HOLE		
Design:	Design #1		

Planned Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	N/S (ft)	E/W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude	
0.00	0.00	0.00	0.00	0.00	0.00	631,446.60	496,509.60	32° 44' 9.376 N	104° 20' 40.876 W	
1,409.51	0.00	0.00	1,409.51	0.00	0.00	631,446.60	496,509.60	32° 44' 9.376 N	104° 20' 40.876 W	
KOP										
1,500.00	1.81	180.60	1,499.98	-1.43	-0.01	631,445.18	496,509.59	32° 44' 9.362 N	104° 20' 40.877 W	
1,600.00	3.81	180.60	1,599.86	-6.33	-0.07	631,440.27	496,509.53	32° 44' 9.314 N	104° 20' 40.877 W	
1,659.51	5.00	180.60	1,659.19	-10.90	-0.11	631,435.70	496,509.49	32° 44' 9.269 N	104° 20' 40.877 W	
Start 954.76 hold at 1659.51 MD										
1,700.00	5.00	180.60	1,699.53	-14.43	-0.15	631,432.18	496,509.45	32° 44' 9.234 N	104° 20' 40.877 W	
1,800.00	5.00	180.60	1,799.15	-23.14	-0.24	631,423.46	496,509.36	32° 44' 9.147 N	104° 20' 40.879 W	
1,900.00	5.00	180.60	1,898.77	-31.86	-0.33	631,414.75	496,509.27	32° 44' 9.061 N	104° 20' 40.880 W	
2,000.00	5.00	180.60	1,998.39	-40.57	-0.43	631,406.03	496,509.18	32° 44' 8.975 N	104° 20' 40.881 W	
2,100.00	5.00	180.60	2,098.01	-49.29	-0.52	631,397.32	496,509.08	32° 44' 8.889 N	104° 20' 40.882 W	
2,200.00	5.00	180.60	2,197.63	-58.00	-0.61	631,388.60	496,508.99	32° 44' 8.802 N	104° 20' 40.883 W	
2,300.00	5.00	180.60	2,297.25	-66.72	-0.70	631,379.89	496,508.90	32° 44' 8.716 N	104° 20' 40.884 W	
2,400.00	5.00	180.60	2,396.87	-75.44	-0.79	631,371.18	496,508.81	32° 44' 8.630 N	104° 20' 40.885 W	
2,500.00	5.00	180.60	2,496.48	-84.15	-0.88	631,362.46	496,508.72	32° 44' 8.544 N	104° 20' 40.886 W	
2,600.00	5.00	180.60	2,596.10	-92.87	-0.97	631,353.75	496,508.63	32° 44' 8.458 N	104° 20' 40.887 W	
2,614.27	5.00	180.60	2,610.32	-94.11	-0.99	631,352.50	496,508.62	32° 44' 8.445 N	104° 20' 40.887 W	
Start Drop -2.00										
2,700.00	3.29	180.60	2,695.82	-100.30	-1.05	631,346.31	496,508.55	32° 44' 8.384 N	104° 20' 40.888 W	
2,800.00	1.29	180.60	2,795.74	-104.29	-1.09	631,342.32	496,508.51	32° 44' 8.345 N	104° 20' 40.888 W	
2,864.27	0.00	0.00	2,860.00	-105.01	-1.10	631,341.60	496,508.50	32° 44' 8.337 N	104° 20' 40.888 W	
Start 1640.00 hold at 2864.27 MD										
4,504.27	0.00	0.00	4,500.00	-105.01	-1.10	631,341.60	496,508.50	32° 44' 8.337 N	104° 20' 40.888 W	
PBHL - Rogers 23 Fee #10										

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	N/S (ft)	E/W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude	
hit/miss target										
Shape:										
Rogers 23 Fee #10	0.00	360.00	4,500.00	-105.01	-1.10	631,341.60	496,508.50	32° 44' 8.337 N	104° 20' 40.888 W	
- plan hits target center										
- Point										

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		N/S (ft)	E/W (ft)	Comment	
1,409.51	1,409.51	0.00	0.00	KOP	
1,659.51	1,659.19	-10.90	-0.11	Start 954.76 hold at 1659.51 MD	
2,614.27	2,610.32	-94.11	-0.99	Start Drop -2.00	
2,864.27	2,860.00	-105.01	-1.10	Start 1640.00 hold at 2864.27 MD	
4,504.27	4,500.00	-105.01	-1.10	PBHL	



# SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	1409.51	0.00	0.00	1409.51	0.00	0.00	0.00	0.00	0.00	
3	1659.51	5.00	180.60	1659.19	-10.90	-0.11	2.00	180.60	10.90	
4	2614.27	5.00	180.60	2610.32	-94.11	-0.99	0.00	0.00	94.11	
5	2864.27	0.00	0.00	2860.00	-105.01	-1.10	2.00	180.00	105.02	
6	4504.27	0.00	0.00	4500.00	-105.01	-1.10	0.00	0.00	105.02	Rogers 23 Fee #10

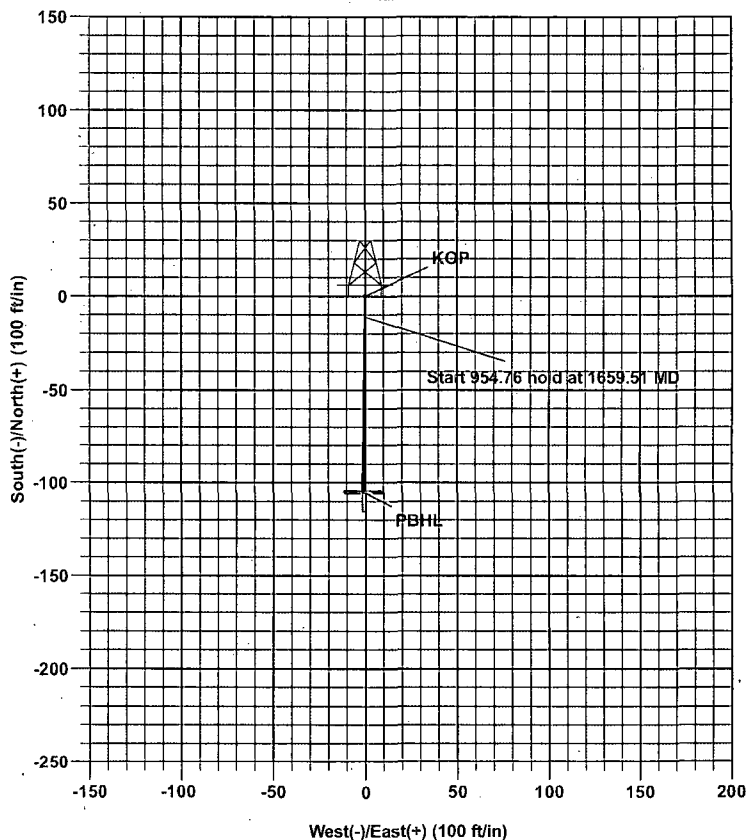
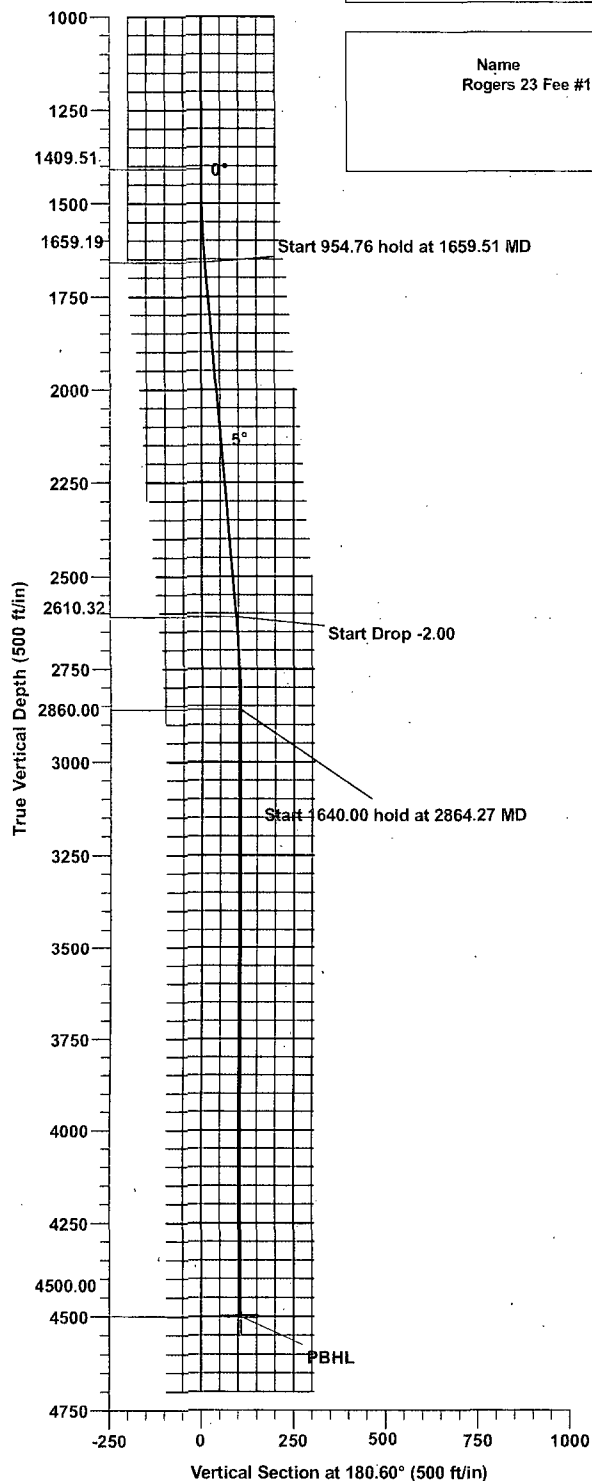
Project: Permian - Eddy County, NM  
 Site: Rogers 23 Fee #10  
 Well: Rogers 23 Fee #10  
 Wellbore: ORIG HOLE  
 Design: Design #1

## WELL DETAILS: Rogers 23 Fee #10

+N/-S	+E/-W	Northing	Ground Level: Easting	3309.10 Latitude	Longitude
0.00	0.00	631446.60	496509.60	32° 44' 9.376 N	104° 20' 40.876 W

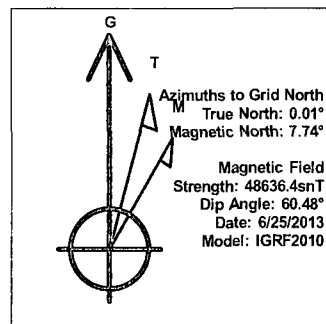
## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
Rogers 23 Fee #10	4500.00	-105.01	-1.10	631341.60	496508.50



## SITE DETAILS: Rogers 23 Fee #10

Site Centre Northing: 631446.60  
 Easting: 496509.60  
 Positional Uncertainty: 0.00  
 Convergence: -0.01  
 Local North: Grid



Plan: Design #1 (Rogers 23 Fee #10/ORIG HOLE)

Created By: Puneet Bhatia Date: 16:15, June 26 2013