

UNITED STATES  
DEPARTMENT OF THE INTERIOR  
BUREAU OF LAND MANAGEMENT

## NM OIL CONSERVATION

ARTESIA DISTRICT  
OCD Artesia

AUG 3 2015

FORM APPROVED  
OMB NO. 1004-0135  
Expires: July 31, 2010**SUNDRY NOTICES AND REPORTS ON WELLS**  
*Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.*

RECEIVED

**SUBMIT IN TRIPLICATE - Other instructions on reverse side.**

1. Type of Well <input checked="" type="checkbox"/> Oil Well <input type="checkbox"/> Gas Well <input type="checkbox"/> Other		8. Well Name and No. CEDAR CANYON 27 FEDERAL 7H
2. Name of Operator OXY USA INCORPORATED		9. API Well No. 30-015-43233
3a. Address 5 GREENWAY PLAZA STE 110 HOUSTON, TX 77046-0521	3b. Phone No. (include area code) Ph: 432.685.5717	10. Field and Pool, or Exploratory PIERCE CROSSING
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 28 T24S R29E SESE 1260FSL 0200FEL 32.184430 N Lat, 103.981106 W Lon		11. County or Parish, and State EDDY COUNTY, NM

## 12. CHECK APPROPRIATE BOX(ES) TO INDICATE NATURE OF NOTICE, REPORT, OR OTHER DATA

TYPE OF SUBMISSION	TYPE OF ACTION			
<input checked="" type="checkbox"/> Notice of Intent	<input type="checkbox"/> Acidize	<input type="checkbox"/> Deepen	<input type="checkbox"/> Production (Start/Resume)	<input type="checkbox"/> Water Shut-Off
<input type="checkbox"/> Subsequent Report	<input type="checkbox"/> Alter Casing	<input type="checkbox"/> Fracture Treat	<input type="checkbox"/> Reclamation	<input type="checkbox"/> Well Integrity
<input type="checkbox"/> Final Abandonment Notice	<input type="checkbox"/> Casing Repair	<input type="checkbox"/> New Construction	<input type="checkbox"/> Recomplete	<input checked="" type="checkbox"/> Other
	<input type="checkbox"/> Change Plans	<input type="checkbox"/> Plug and Abandon	<input type="checkbox"/> Temporarily Abandon	Change to Original A
	<input type="checkbox"/> Convert to Injection	<input type="checkbox"/> Plug Back	<input type="checkbox"/> Water Disposal	PD

13. Describe Proposed or Completed Operation (clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or recomple horizontally, give subsurface locations and measured and true vertical depths of all pertinent markers and zones. Attach the Bond under which the work will be performed or provide the Bond No. on file with BLM/BIA. Required subsequent reports shall be filed within 30 days following completion of the involved operations. If the operation results in a multiple completion or recompletion in a new interval, a Form 3160-4 shall be filed once testing has been completed. Final Abandonment Notices shall be filed only after all requirements, including reclamation, have been completed, and the operator has determined that the site is ready for final inspection.)

OXY USA Inc. respectfully requests approval for the following changes to the drilling plan:

Proposed TD - 13822'M 8805'V

1. Move Surface Location 45' north 40' east:  
New - 1790 FSL 240 FEL  
Old - 1745 FSL 200 FEL  
See attached for amended plats

2. Request casing design modification, to drill the well with smaller bit sizes:  
14-3/4" surface hole w/ 10-3/4" csg, 9-7/8" intermediate hole w/ 7-5/8" csg and 6-3/4" production hole w/ 5-1/2" & 4-1/2" csg. Details are below.

USE Existing COA  
Jm B 7-24-15  
SEE ATTACHED FOR  
CONDITIONS OF APPROVAL

14. I hereby certify that the foregoing is true and correct.

Electronic Submission #309857 verified by the BLM Well Information System  
For OXY USA INCORPORATED, sent to the Carlsbad  
Committed to AFMSS for processing by JENNIFER SANCHEZ on 07/23/2015 (15JAS0434SE)

Name (Printed/Typed) DAVID STEWART

Title REGULATORY ADVISOR

Signature (Electronic Submission)

Date 07/22/2015

APPROVED

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By

Title

JUL 24 2015

Date

Conditions of approval, if any, are attached. Approval of this notice 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.

Office

BUREAU OF LAND MANAGEMENT  
CARLSBAD FIELD OFFICE

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.

\*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\* BLM REVISED \*\*

## Additional data for EC transaction #309857 that would not fit on the form

### 32. Additional remarks, continued

#### a. Surface Casing

10-3/4" 45.5# J-55 BT&C new csg @ 0-500', 14-3/4" hole w/ 8.4# mud

Coll Rating (psi)-2090 Burst Rating (psi)-3580

SF Coll-9.61 SF Burst-1.40 SF Ten-5.71

\*The surface casing will be set a minimum of 25' into the Rustler Anhydrite. If salt is encountered it will be set at least 25' above the salt.

#### b. Intermediate Casing

7-5/8" 26.4# L-80 BT&C new csg @ 0-2900', 9-7/8" hole w/ 10.0# mud

Coll Rating (psi)-3400 Burst Rating (psi)-6020

SF Coll-5.44 SF Burst-1.37 SF Ten-3.62

#### c. Production Casing

5-1/2" 20# P-110 USF new csg @ 0-8900'M, 6-3/4" hole w/ 9.2# mud

Coll Rating (psi)-11100 Burst Rating (psi)-12600

SF Coll-2.67 SF Burst-1.26 SF Ten-2.30

4-1/2" 13.5# P-110 BT&C new csg @ 8900-13822'M, 6-3/4" hole w/ 9.2# mud

Coll Rating (psi)-10670 Burst Rating (psi)-12410

SF Coll-2.57 SF Burst-1.25 SF Ten-2.70

Collapse and burst loads calculated using Stress Check with anticipated loads, see attached for design assumptions

3. Cement program adjustment to the new bit/casing sizes. Cement program modifications detailed below.

a. Surface - Circulate cement to surface w/ 540sx PP cmt w/ 2% CaCl<sub>2</sub>, 14.8ppg 1.35 yield 1415# 24hr CS 150% Excess.

b. Intermediate - Circulate cement to surface w/ 580sx HES light PP cmt w/ 5% Salt + .1% HR-800, 12.9ppg 1.85 yield 824# 24hs CS 125% Excess followed by 200sx PP cmt, 14.8ppg 1.33 yield 1789# 24hr CS 125% Excess.

c. Production - Cement w/ 220sx Tuned Light (TM) system cmt w/ 3#/sx Kol-Seal + .125#/sx Poly-E-Flake + .8% HR-601, 10.2ppg 3.05 yield 555# 24hr CS 25% Excess followed by 560sx Super H cmt w/ 3#/sx salt + .1% HR-800 + .3% CFR-3 + .5% Halad(R)-344 + 2#/sx Kol-Seal, 13.2ppg 1.65 yield 1462# 24hr CS 25% Excess. Estimated TOC @ 1900'.

Description of Cement Additives: Calcium Chloride, Salt (Accelerator); CFR-3 (Dispersant); Kol-Seal, Poly-E-Flake (Lost Circulation Additive); Halad-344 (Low Fluid Loss Control); HR-601, HR-800 (Retarder)

The above cement volumes could be revised pending the caliper measurement.

#### 4. Mud Program

Depth	Mud WT	Vis Sec	Fluid Loss	Type
0-500'	8.4-8.8	28-38	NC	FW Gel
500-2900'	9.8-10	28-32	NC	NaCl Brine
2900-TD	8.8-9.6	38-50	50-75cc/30min	EnerSeal (MMH)

**NM OIL CONSERVATION**  
ARTESIA DISTRICT

AUG 3 2015

Form C-102

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

**RECEIVED** Revised August 1, 2011  
Submit one copy to appropriate  
District Office

☒ **AMENDED REPORT**

District I  
1625 N. French Dr., Hobbs, NM 88240  
Phone: (575) 393-6161 Fax: (575) 393-0720  
District II  
811 S. First St., Artesia, NM 88210  
Phone: (575) 748-1283 Fax: (575) 748-9720  
District III  
1000 Rio Bravo Road, Alamogordo, NM 87410  
Phone: (505) 334-6178 Fax: (505) 334-6170  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505  
Phone: (505) 476-3460 Fax: (505) 476-3462

**WELL LOCATION AND ACREAGE DEDICATION PLAT**

API Number <b>30-015-43233</b>	Pool Code <b>96473</b>	Pool Name <b>Pierce Crossing Bone Spring East</b>
Property Code <b>315038</b>	Property Name <b>CEDAR CANYON "27" FEDERAL</b>	Well Number <b>7H</b>
OGRID No. <b>1496</b>	Operator Name <b>OXY USA INC.</b>	Elevation <b>2924.3'</b>

**Surface Location**

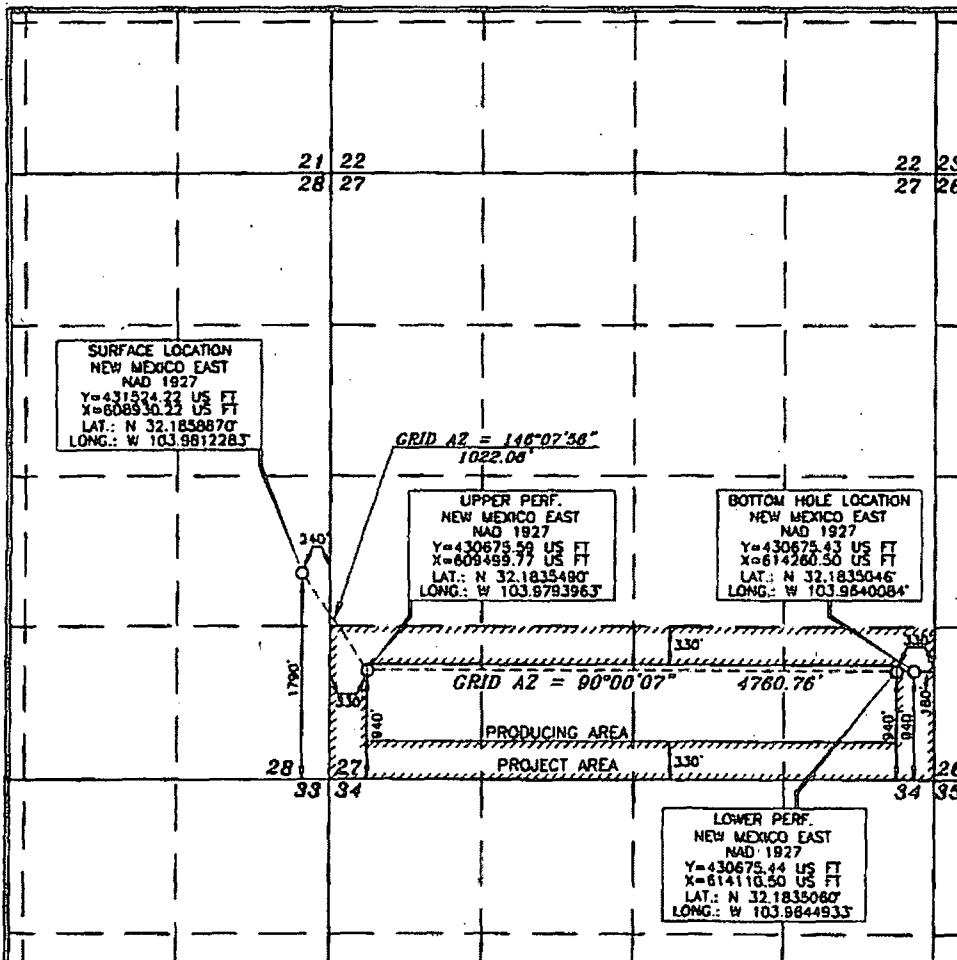
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
<b>I</b>	<b>28</b>	<b>24 SOUTH</b>	<b>29 EAST, N.M.P.M.</b>		<b>1790'</b>	<b>SOUTH</b>	<b>240'</b>	<b>EAST</b>	<b>EDDY</b>

**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
<b>P</b>	<b>27</b>	<b>24 SOUTH</b>	<b>29 EAST, N.M.P.M.</b>		<b>940'</b>	<b>SOUTH</b>	<b>180'</b>	<b>EAST</b>	<b>EDDY</b>

Dedicated Acres <b>160</b>	Joint or Infill <b>N</b>	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.



**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 retained 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]* 7/21/15  
David Stewart - Sr. Rep. Adv.  
david\_stewart@oxy.com

**SURVEYOR CERTIFICATION**

I hereby certify that the information shown on this plat was prepared from a true and correct survey made by me or by a duly licensed surveyor and that the same is true and correct to the best of my belief.

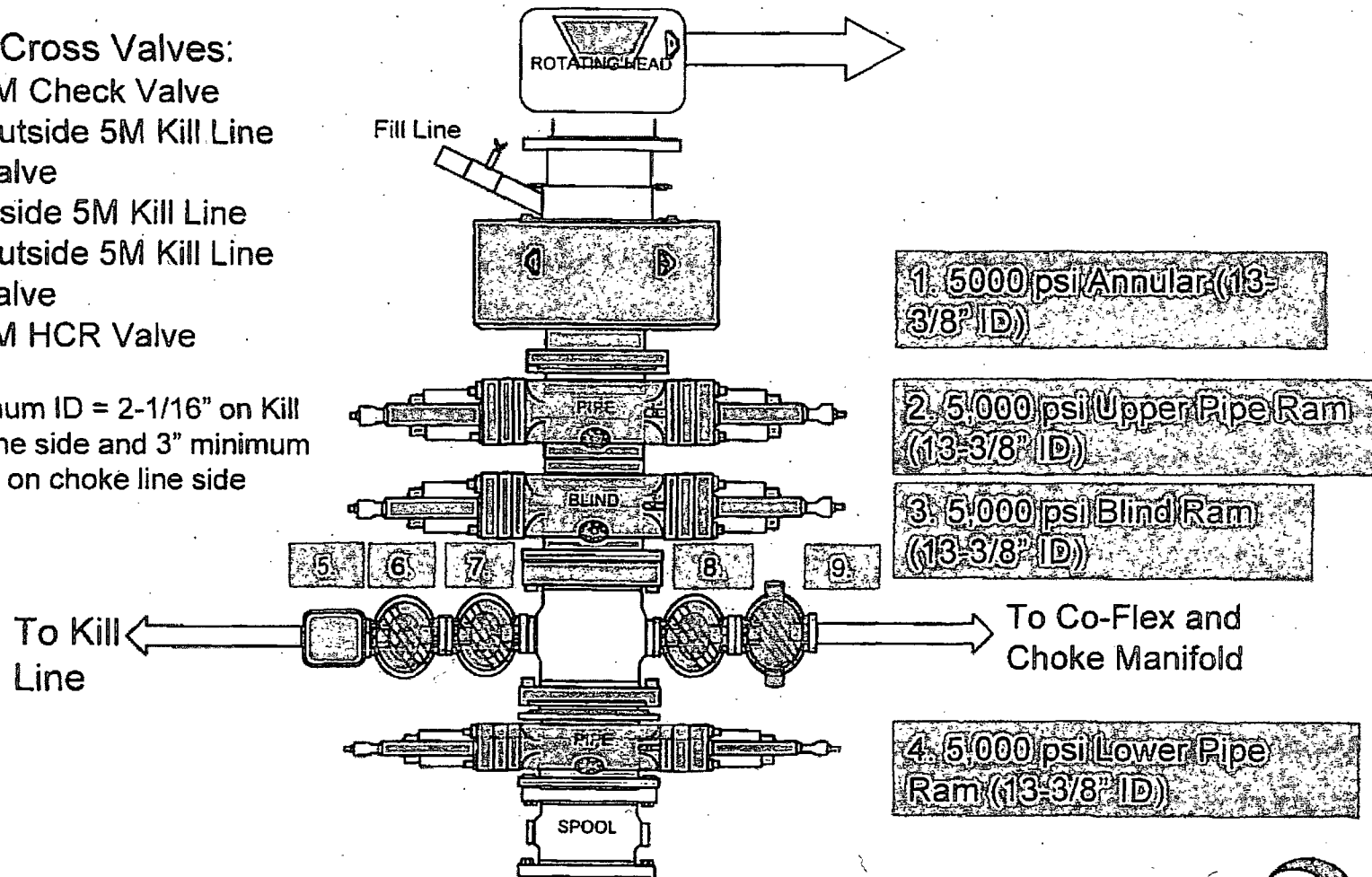
Date of Survey: **7/17/2015**  
Signature and Seal of Professional Surveyor: *[Signature]* 15079

# 5M BOP Stack

## Mud Cross Valves:

5. 5M Check Valve
6. Outside 5M Kill Line Valve
7. Inside 5M Kill Line Valve
8. Outside 5M Kill Line Valve
9. 5M HCR Valve

\*Minimum ID = 2-1/16" on Kill Line side and 3" minimum ID on choke line side

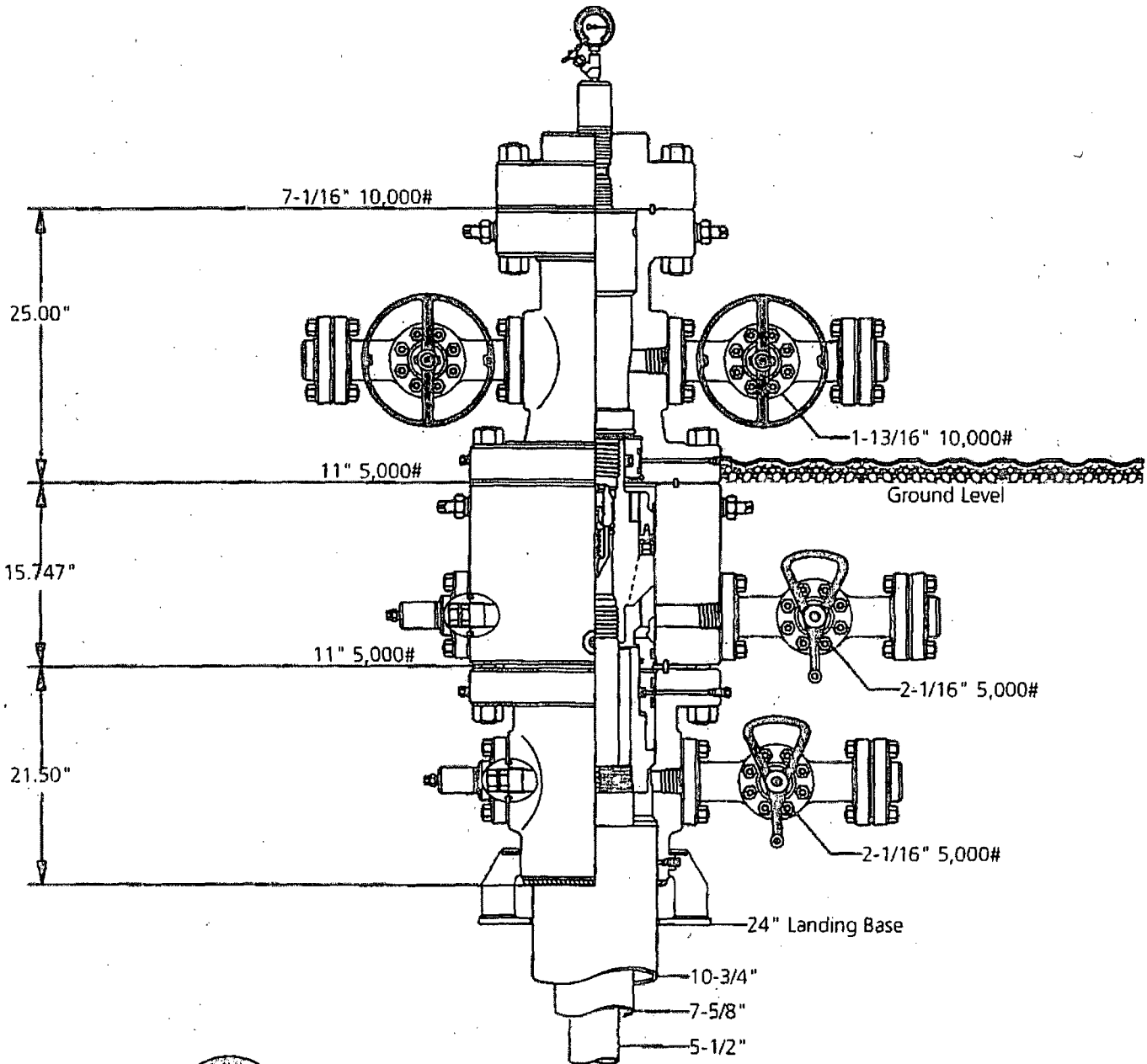


BOP



Wellhead

Note: Dimensional information reflected on this drawing are estimated measurements only.



11" 5K MBS w/ 5.5" Mandrel  
Permian Basin  
SENM

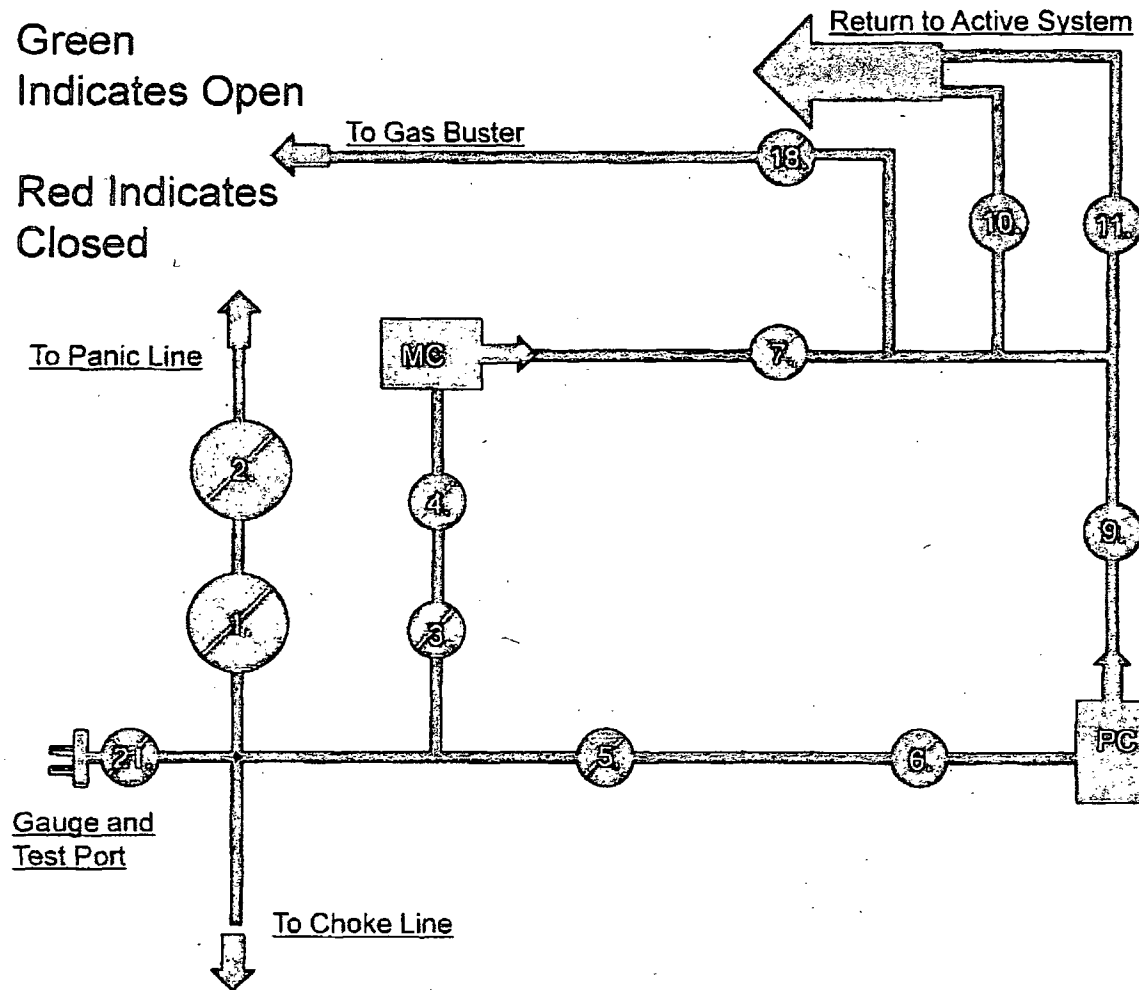


Name	Jeanette	Date	5-17-15	Working Pressure	#	1256281
------	----------	------	---------	------------------	---	---------

# 5M Choke Panel

Green  
Indicates Open

Red Indicates  
Closed



1. 4" Choke Manifold Valve
2. 4" Choke Manifold Valve
3. 3" Choke Manifold Valve
4. 3" Choke Manifold Valve
5. 3" Choke Manifold Valve
6. 3" Choke Manifold Valve
7. 3" Choke Manifold Valve
8. PC - Power Choke
9. 3" Choke Manifold Valve
10. 3" Choke Manifold Valve
11. Choke Manifold Valve
12. MC - Manual Choke

18. Choke Manifold Valve

21. Vertical Choke Manifold  
Valve

\*All Valves 3" minimum



**OXY USA Inc.**  
**Cedar Canyon 27 Federal #6H/7H**

**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 (Intermediate)**

- Internal: Displacement fluid + 70% CSG Burst rating
- External: Pore Pressure from the Intermediate hole TD to Surface CSG shoe and MW of the drilling mud that was in the hole when the CSG was run to surface

**CSG Test (Production)**

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

**Gas Kick (Surface/Intermediate)**

- 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 (e.g. Gas Kick while drilling the production hole section is a burst load used to design the intermediate CSG)
- 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 Intermediate CSG shoe and 8.5 ppg MWE to surface

**Collapse Loads**

**Lost Circulation (Surface/Intermediate)**

- 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 intermediate 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/Intermediate/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**

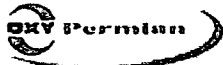
**Running CSG (Surface/Intermediate/Production)**

- 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/Intermediate/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.



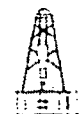
Cedar Canyon 27 Federal 7H  
Eddy County, NM (NAD 27 NME)  
Northing: 431524.22  
Easting: 608930.22  
Plan #5



Azinuths to Grid North  
True North: -0.15°  
Magnetic North: 7.18°

Magnetic Field  
Strength: 48372.3snT  
Dip Angle: 60.05°  
Date: 1/7/2015  
Model: HDGM

To convert Magnetic North to Grid, Add 7.18°  
To convert True North to Grid, Subtract 0.15°



KB @ 2949.30usft  
Gr @ 2924.30

WELL DETAILS CC 27 Fed 7H

Ground Level: 2924.30

+N/-S +E/-W	Northing	Easting	Latitude	Longitude
0.00 0.00	431524.22	608930.22	32° 11' 9.193 N	103° 58' 52.422 W

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting
Fed 7H FTP	8725.00	-848.63	569.55	430675.59	609499.77
Fed 7H LTP	8802.50	-848.78	5180.28	430675.44	614110.50
Fed 7H BHL	8805.00	-848.79	5330.28	430675.43	614260.50

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSecl	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3600.00	0.00	0.00	3600.00	0.00	0.00	0.00	0.00	0.00	
3933.33	10.00	174.00	3931.64	-28.86	3.03	3.00	174.00	7.53	
7556.74	10.00	174.00	7500.00	-654.61	68.80	0.00	0.00	170.89	
7890.07	0.00	0.00	7831.64	-683.46	71.83	3.00	180.00	178.42	
8210.55	0.00	0.00	8152.12	-683.46	71.83	0.00	0.00	178.42	
9100.85	89.03	105.00	8725.00	-829.24	615.90	10.00	105.00	738.64	
9621.42	89.03	89.38	8733.87	-894.19	1130.71	3.00	-90.13	1257.26	
13821.84	89.03	89.38	8805.00	-848.79	5330.28	0.00	0.00	5397.44	Fed 7H BHL

PROJECT DETAILS:

Eddy County, NM (NAD 27 NME)

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

SITE DETAILS:

Cedar Canyon 27 Federal 7H

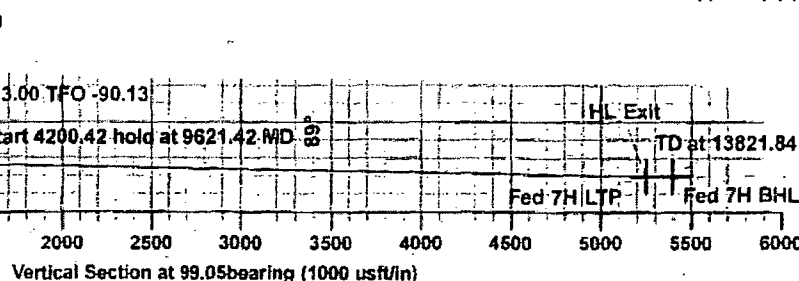
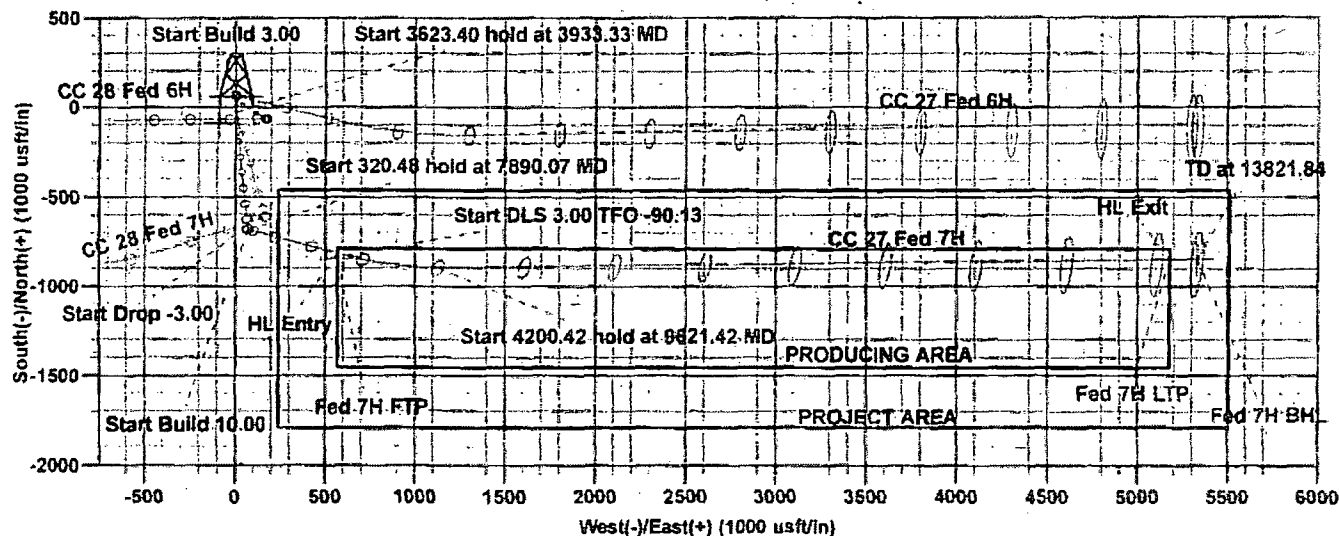
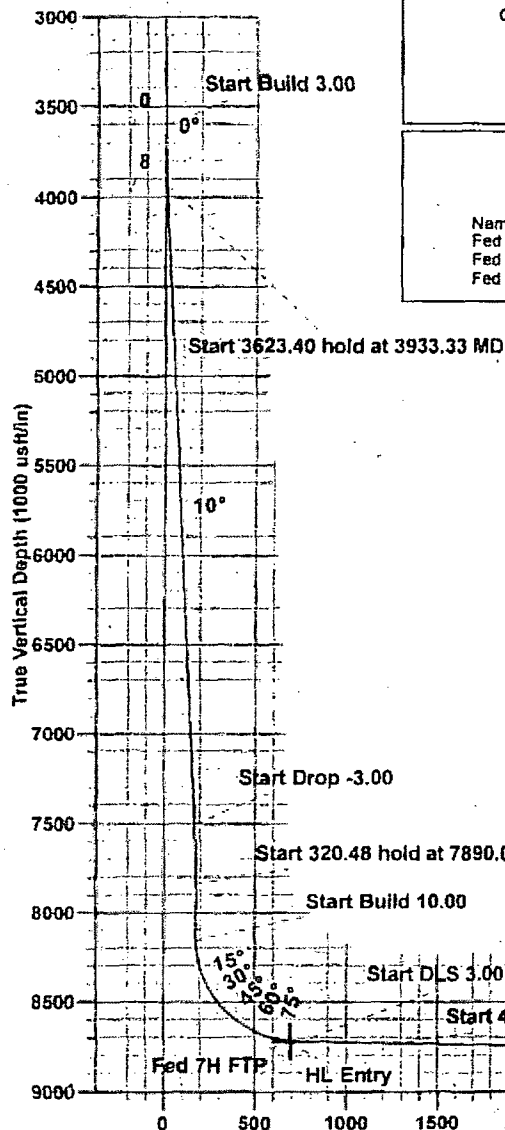
Site Centre Northing: 431479.37

Easting: 608970.20

Positional Uncertainty: 0.00

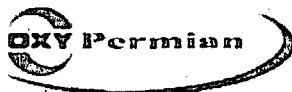
Convergence: 0.19

Local North: Grid



DP-1





# Scientific Drilling Planning Report

DP-2

Database:	Midland District	Local Co-ordinate Reference:	Well CC 27 Fed 7H
Company:	OXY	TVD Reference:	KB @ 2949.30usft
Project:	Eddy County, NM (NAD 27 NME)	MD Reference:	KB @ 2949.30usft
Site:	Cedar Canyon 27 Federal 7H	North Reference:	Grid
Well:	CC 27 Fed 7H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #5		

Project:	Eddy County, NM (NAD 27 NME), 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		

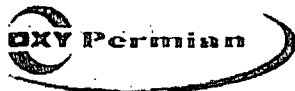
Site:	Cedar Canyon 27 Federal 7H		
Site Position:	From:	Map	
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
Northing:	431,479.37 usft	Latitude:	32° 11' 8.748 N
Easting:	608,970.20 usft	Longitude:	103° 58' 51.958 W
Grid Convergence:			0.19 °

Well:	CC 27 Fed 7H					
Well Position	+N/-S	44.85 usft	Northing:	431,524.22 usft	Latitude:	32° 11' 9.193 N
	+E/-W	-39.98 usft	Easting:	608,930.22 usft	Longitude:	103° 58' 52.422 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	2,924.30 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	1/7/2015	7.37	60.05	48,372

Design:	Plan #5			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(bearing)
	0.00	0.00	0.00	99.05

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,933.33	10.00	174.00	3,931.64	-28.86	3.03	3.00	3.00	0.00	174.00	
7,556.74	10.00	174.00	7,500.00	-654.61	68.80	0.00	0.00	0.00	0.00	
7,890.07	0.00	0.00	7,831.64	-683.46	71.83	3.00	-3.00	0.00	180.00	
8,210.55	0.00	0.00	8,152.12	-683.46	71.83	0.00	0.00	0.00	0.00	
9,100.85	89.03	105.00	8,725.00	-829.24	615.90	10.00	10.00	0.00	105.00	
9,621.42	89.03	89.38	8,733.87	-894.19	1,130.71	3.00	0.00	-3.00	-90.13	
13,821.84	89.03	89.38	8,805.00	-848.79	5,330.28	0.00	0.00	0.00	0.00	Fed 7H BHL

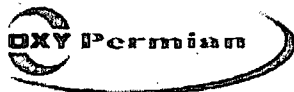


# Scientific Drilling Planning Report

DP-3

Database:	Midland District	Local Co-ordinate Reference:	Well CC 27 Fed 7H
Company:	OXY	TVD Reference:	KB @ 2949.30usft
Project:	Eddy County, NM (NAD 27 NME)	MD Reference:	KB @ 2949.30usft
Site:	Cedar Canyon 27 Federal 7H	North Reference:	Grid
Well:	CC 27 Fed 7H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #5		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	3.00	174.00	3,699.95	-2.60	0.27	0.68	3.00	3.00	0.00
3,800.00	6.00	174.00	3,799.63	-10.41	1.09	2.72	3.00	3.00	0.00
3,900.00	9.00	174.00	3,898.77	-23.38	2.46	6.10	3.00	3.00	0.00
3,933.33	10.00	174.00	3,931.64	-28.86	3.03	7.53	3.00	3.00	0.00
4,000.00	10.00	174.00	3,997.30	-40.37	4.24	10.54	0.00	0.00	0.00
4,100.00	10.00	174.00	4,095.78	-57.64	6.06	15.05	0.00	0.00	0.00
4,200.00	10.00	174.00	4,194.26	-74.91	7.87	19.56	0.00	0.00	0.00
4,300.00	10.00	174.00	4,292.74	-92.18	9.69	24.06	0.00	0.00	0.00
4,400.00	10.00	174.00	4,391.22	-109.45	11.50	28.57	0.00	0.00	0.00
4,500.00	10.00	174.00	4,489.70	-126.72	13.32	33.08	0.00	0.00	0.00
4,600.00	10.00	174.00	4,588.18	-143.99	15.13	37.59	0.00	0.00	0.00
4,700.00	10.00	174.00	4,686.66	-161.26	16.95	42.10	0.00	0.00	0.00
4,800.00	10.00	174.00	4,785.14	-178.53	18.76	46.61	0.00	0.00	0.00
4,900.00	10.00	174.00	4,883.62	-195.80	20.58	51.11	0.00	0.00	0.00
5,000.00	10.00	174.00	4,982.11	-213.07	22.39	55.62	0.00	0.00	0.00
5,100.00	10.00	174.00	5,080.59	-230.34	24.21	60.13	0.00	0.00	0.00
5,200.00	10.00	174.00	5,179.07	-247.61	26.02	64.64	0.00	0.00	0.00

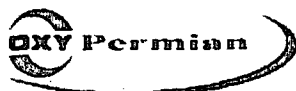


# Scientific Drilling Planning Report

DP -4

Database:	Midland District	Local Co-ordinate Reference:	Well CC 27 Fed 7H
Company:	OXY	IVD Reference:	KB @ 2949.30usft
Project:	Eddy County, NM (NAD 27 NME)	MD Reference:	KB @ 2949.30usft
Site:	Cedar Canyon 27 Federal 7H	North Reference:	Grid
Well:	CC 27 Fed 7H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #5		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	N-S (usft)	E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
5,300.00	10.00	174.00	5,277.55	-264.88	27.84	69.15	0.00	0.00	0.00
5,400.00	10.00	174.00	5,376.03	-282.14	29.65	73.66	0.00	0.00	0.00
5,500.00	10.00	174.00	5,474.51	-299.41	31.47	78.16	0.00	0.00	0.00
5,600.00	10.00	174.00	5,572.99	-316.68	33.28	82.67	0.00	0.00	0.00
5,700.00	10.00	174.00	5,671.47	-333.95	35.10	87.18	0.00	0.00	0.00
5,800.00	10.00	174.00	5,769.95	-351.22	36.92	91.69	0.00	0.00	0.00
5,900.00	10.00	174.00	5,868.43	-368.49	38.73	96.20	0.00	0.00	0.00
6,000.00	10.00	174.00	5,966.91	-385.76	40.55	100.71	0.00	0.00	0.00
6,100.00	10.00	174.00	6,065.39	-403.03	42.36	105.21	0.00	0.00	0.00
6,200.00	10.00	174.00	6,163.87	-420.30	44.18	109.72	0.00	0.00	0.00
6,300.00	10.00	174.00	6,262.36	-437.57	45.99	114.23	0.00	0.00	0.00
6,400.00	10.00	174.00	6,360.84	-454.84	47.81	118.74	0.00	0.00	0.00
6,500.00	10.00	174.00	6,459.32	-472.11	49.62	123.25	0.00	0.00	0.00
6,600.00	10.00	174.00	6,557.80	-489.38	51.44	127.76	0.00	0.00	0.00
6,700.00	10.00	174.00	6,656.28	-506.65	53.25	132.26	0.00	0.00	0.00
6,800.00	10.00	174.00	6,754.76	-523.92	55.07	136.77	0.00	0.00	0.00
6,900.00	10.00	174.00	6,853.24	-541.19	56.88	141.28	0.00	0.00	0.00
7,000.00	10.00	174.00	6,951.72	-558.46	58.70	145.79	0.00	0.00	0.00
7,100.00	10.00	174.00	7,050.20	-575.73	60.51	150.30	0.00	0.00	0.00
7,200.00	10.00	174.00	7,148.68	-593.00	62.33	154.81	0.00	0.00	0.00
7,300.00	10.00	174.00	7,247.16	-610.27	64.14	159.31	0.00	0.00	0.00
7,400.00	10.00	174.00	7,345.64	-627.54	65.96	163.82	0.00	0.00	0.00
7,500.00	10.00	174.00	7,444.12	-644.81	67.77	168.33	0.00	0.00	0.00
7,556.74	10.00	174.00	7,500.00	-654.61	68.80	170.89	0.00	0.00	0.00
7,600.00	8.70	174.00	7,542.69	-661.60	69.54	172.71	3.00	-3.00	0.00
7,700.00	5.70	174.00	7,641.89	-674.06	70.85	175.97	3.00	-3.00	0.00
7,800.00	2.70	174.00	7,741.61	-681.35	71.61	177.87	3.00	-3.00	0.00
7,890.07	0.00	0.00	7,831.64	-683.46	71.83	178.42	3.00	-3.00	0.00
7,900.00	0.00	0.00	7,841.57	-683.46	71.83	178.42	0.00	0.00	0.00
8,000.00	0.00	0.00	7,941.57	-683.46	71.83	178.42	0.00	0.00	0.00
8,100.00	0.00	0.00	8,041.57	-683.46	71.83	178.42	0.00	0.00	0.00
8,200.00	0.00	0.00	8,141.57	-683.46	71.83	178.42	0.00	0.00	0.00
8,210.55	0.00	0.00	8,152.12	-683.46	71.83	178.42	0.00	0.00	0.00
8,250.00	3.95	105.00	8,191.54	-683.81	73.15	179.77	10.00	10.00	0.00
8,300.00	8.95	105.00	8,241.21	-685.27	78.57	185.35	10.00	10.00	0.00
8,350.00	13.95	105.00	8,290.20	-687.83	88.15	195.22	10.00	10.00	0.00
8,400.00	18.95	105.00	8,338.14	-691.50	101.81	209.29	10.00	10.00	0.00
8,450.00	23.95	105.00	8,384.66	-696.23	119.47	227.47	10.00	10.00	0.00
8,500.00	28.95	105.00	8,429.42	-701.99	140.97	249.61	10.00	10.00	0.00
8,550.00	33.95	105.00	8,472.06	-708.74	166.16	275.54	10.00	10.00	0.00
8,600.00	38.95	105.00	8,512.27	-716.42	194.84	305.08	10.00	10.00	0.00
8,650.00	43.95	105.00	8,549.74	-724.98	226.80	337.98	10.00	10.00	0.00
8,700.00	48.95	105.00	8,584.18	-734.36	261.79	374.01	10.00	10.00	0.00
8,750.00	53.95	105.00	8,615.33	-744.48	299.54	412.89	10.00	10.00	0.00
8,800.00	58.95	105.00	8,642.96	-755.26	339.78	454.32	10.00	10.00	0.00
8,850.00	63.95	105.00	8,666.85	-766.62	382.18	497.99	10.00	10.00	0.00
8,900.00	68.95	105.00	8,686.83	-778.48	426.44	543.56	10.00	10.00	0.00
8,950.00	73.95	105.00	8,702.73	-790.74	472.21	590.69	10.00	10.00	0.00
9,000.00	78.95	105.00	8,714.45	-803.32	519.15	639.02	10.00	10.00	0.00
9,050.00	83.95	105.00	8,721.88	-816.11	566.89	688.18	10.00	10.00	0.00
9,100.85	89.03	105.00	8,725.00	-829.24	615.90	738.64	10.00	10.00	0.00
9,200.00	89.02	102.02	8,726.68	-852.41	712.28	837.47	3.00	-0.01	-3.00
9,300.00	89.02	99.02	8,728.39	-870.67	810.58	937.41	3.00	0.00	-3.00
9,400.00	89.02	96.02	8,730.09	-883.76	909.69	1,037.35	3.00	0.00	-3.00



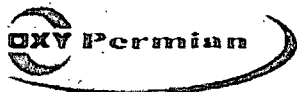
# Scientific Drilling Planning Report

DP-5

Database:	Midland District	Local Co-ordinate Reference:	Well CC 27 Fed 7H
Company:	OXY	TVD Reference:	KB @ 2949.30usft
Project:	Eddy County, NM (NAD 27 NME)	MD Reference:	KB @ 2949.30usft
Site:	Cedar Canyon 27 Federal 7H	North Reference:	Grid
Well:	CC 27 Fed 7H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #5		

## Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	N/S (usft)	E/W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,500.00	89.02	93.02	8,731.80	-891.64	1,009.35	1,137.01	3.00	0.00	-3.00
9,600.00	89.03	90.02	8,733.50	-894.30	1,109.29	1,236.12	3.00	0.00	-3.00
9,621.42	89.03	89.38	8,733.87	-894.19	1,130.71	1,257.26	3.00	0.01	-3.00
9,700.00	89.03	89.38	8,735.20	-893.34	1,209.27	1,334.71	0.00	0.00	0.00
9,800.00	89.03	89.38	8,736.89	-892.26	1,309.25	1,433.28	0.00	0.00	0.00
9,900.00	89.03	89.38	8,738.58	-891.18	1,409.23	1,531.84	0.00	0.00	0.00
10,000.00	89.03	89.38	8,740.28	-890.10	1,509.21	1,630.41	0.00	0.00	0.00
10,100.00	89.03	89.38	8,741.97	-889.02	1,609.19	1,728.97	0.00	0.00	0.00
10,200.00	89.03	89.38	8,743.66	-887.94	1,709.17	1,827.54	0.00	0.00	0.00
10,300.00	89.03	89.38	8,745.36	-886.86	1,809.15	1,926.11	0.00	0.00	0.00
10,400.00	89.03	89.38	8,747.05	-885.78	1,909.13	2,024.67	0.00	0.00	0.00
10,500.00	89.03	89.38	8,748.74	-884.70	2,009.11	2,123.24	0.00	0.00	0.00
10,600.00	89.03	89.38	8,750.44	-883.61	2,109.09	2,221.80	0.00	0.00	0.00
10,700.00	89.03	89.38	8,752.13	-882.53	2,209.07	2,320.37	0.00	0.00	0.00
10,800.00	89.03	89.38	8,753.82	-881.45	2,309.05	2,418.93	0.00	0.00	0.00
10,900.00	89.03	89.38	8,755.52	-880.37	2,409.03	2,517.50	0.00	0.00	0.00
11,000.00	89.03	89.38	8,757.21	-879.29	2,509.01	2,616.07	0.00	0.00	0.00
11,100.00	89.03	89.38	8,758.91	-878.21	2,608.99	2,714.63	0.00	0.00	0.00
11,200.00	89.03	89.38	8,760.60	-877.13	2,708.97	2,813.20	0.00	0.00	0.00
11,300.00	89.03	89.38	8,762.29	-876.05	2,808.95	2,911.76	0.00	0.00	0.00
11,400.00	89.03	89.38	8,763.99	-874.97	2,908.93	3,010.33	0.00	0.00	0.00
11,500.00	89.03	89.38	8,765.68	-873.89	3,008.91	3,108.90	0.00	0.00	0.00
11,600.00	89.03	89.38	8,767.37	-872.81	3,108.89	3,207.46	0.00	0.00	0.00
11,700.00	89.03	89.38	8,769.07	-871.72	3,208.87	3,306.03	0.00	0.00	0.00
11,800.00	89.03	89.38	8,770.76	-870.64	3,308.85	3,404.59	0.00	0.00	0.00
11,900.00	89.03	89.38	8,772.45	-869.56	3,408.83	3,503.16	0.00	0.00	0.00
12,000.00	89.03	89.38	8,774.15	-868.48	3,508.81	3,601.72	0.00	0.00	0.00
12,100.00	89.03	89.38	8,775.84	-867.40	3,608.79	3,700.29	0.00	0.00	0.00
12,200.00	89.03	89.38	8,777.53	-866.32	3,708.77	3,798.86	0.00	0.00	0.00
12,300.00	89.03	89.38	8,779.23	-865.24	3,808.75	3,897.42	0.00	0.00	0.00
12,400.00	89.03	89.38	8,780.92	-864.16	3,908.73	3,995.99	0.00	0.00	0.00
12,500.00	89.03	89.38	8,782.61	-863.08	4,008.71	4,094.55	0.00	0.00	0.00
12,600.00	89.03	89.38	8,784.31	-862.00	4,108.69	4,193.12	0.00	0.00	0.00
12,700.00	89.03	89.38	8,786.00	-860.92	4,208.67	4,291.69	0.00	0.00	0.00
12,800.00	89.03	89.38	8,787.70	-859.83	4,308.65	4,390.25	0.00	0.00	0.00
12,900.00	89.03	89.38	8,789.39	-858.75	4,408.63	4,488.82	0.00	0.00	0.00
13,000.00	89.03	89.38	8,791.08	-857.67	4,508.61	4,587.38	0.00	0.00	0.00
13,100.00	89.03	89.38	8,792.78	-856.59	4,608.59	4,685.95	0.00	0.00	0.00
13,200.00	89.03	89.38	8,794.47	-855.51	4,708.56	4,784.51	0.00	0.00	0.00
13,300.00	89.03	89.38	8,796.16	-854.43	4,808.54	4,883.08	0.00	0.00	0.00
13,400.00	89.03	89.38	8,797.86	-853.35	4,908.52	4,981.65	0.00	0.00	0.00
13,500.00	89.03	89.38	8,799.55	-852.27	5,008.50	5,080.21	0.00	0.00	0.00
13,600.00	89.03	89.38	8,801.24	-851.19	5,108.48	5,178.78	0.00	0.00	0.00
13,700.00	89.03	89.38	8,802.94	-850.11	5,208.46	5,277.34	0.00	0.00	0.00
13,800.00	89.03	89.38	8,804.63	-849.03	5,308.44	5,375.91	0.00	0.00	0.00
13,821.84	89.03	89.38	8,805.00	-848.79	5,330.28	5,397.44	0.00	0.00	0.00



# Scientific Drilling Planning Report

DP-6

Database:	Midland District	Local Co-ordinate Reference:	Well CC 27 Fed 7H
Company:	OXY	TVD Reference:	KB @ 2949.30usft
Project:	Eddy County, NM (NAD 27 NME)	MD Reference:	KB @ 2949.30usft
Site:	Cedar Canyon 27 Federal 7H	North Reference:	Grid
Well:	CC 27 Fed 7H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #5		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(bearing)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
Fed 7H FTP	0.00	0.00	8,725.00	-848.63	569.55	430,675.59	609,499.77	32° 11' 0.776 N	103° 58' 45.827 W
- plan misses target center by 30.79usft at 9061.16usft MD (8722.95 TVD, -818.99 N, 577.62 E)									
- Point									
Fed 7H LTP	0.00	0.00	8,802.50	-848.78	5,180.28	430,675.44	614,110.50	32° 11' 0.622 N	103° 57' 52.176 W
- plan misses target center by 1.63usft at 13671.83usft MD (8802.46 TVD, -850.41 N, 5180.30 E)									
- Point									
Fed 7H BHL	0.00	0.00	8,805.00	-848.79	5,330.28	430,675.43	614,260.50	32° 11' 0.616 N	103° 57' 50.430 W
- plan hits target center									
- Point									

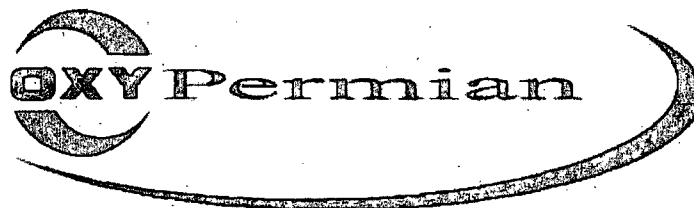
Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(usft)	(usft)	+N/-S (usft)	+E/-W (usft)	
3,600.00	3,600.00	0.00	0.00	Start Build 3.00
3,933.33	3,931.64	-28.86	3.03	Start 3623.40 hold at 3933.33 MD
7,556.74	7,500.00	-654.61	68.80	Start Drop -3.00
7,890.07	7,831.64	-683.46	71.83	Start 320.48 hold at 7890.07 MD
8,210.55	8,152.12	-683.46	71.83	Start Build 10.00
9,052.07	8,722.10	-816.65	568.88	HL Entry
9,100.85	8,725.00	-829.24	615.90	Start DLS 3.00 TFO -90.13
9,621.42	8,733.87	-894.19	1,130.71	Start 4200.42 hold at 9621.42 MD
13,671.11	8,802.45	-850.42	5,179.58	HL Exit
13,821.84	8,805.00	-848.79	5,330.28	TD at 13821.84

H<sub>2</sub>S-1

NM OIL CONSERVATION  
ARTESIA DISTRICT

AUG 3 2015

RECEIVED



**Permian Drilling  
Hydrogen Sulfide Drilling Operations Plan  
Cedar Canyon 27 Federal #7H**

Open drill site. No homes or buildings are near the proposed location.

**1. Escape**

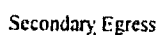
Personnel shall escape upwind of wellbore in the event of an emergency gas release. Escape can take place through the lease road on the Northwest side of the location. Personnel need to move to a safe distance and block the entrance to location. If the primary route is not an option due to the wind direction, then a secondary egress route should be taken.



### Rig Layout

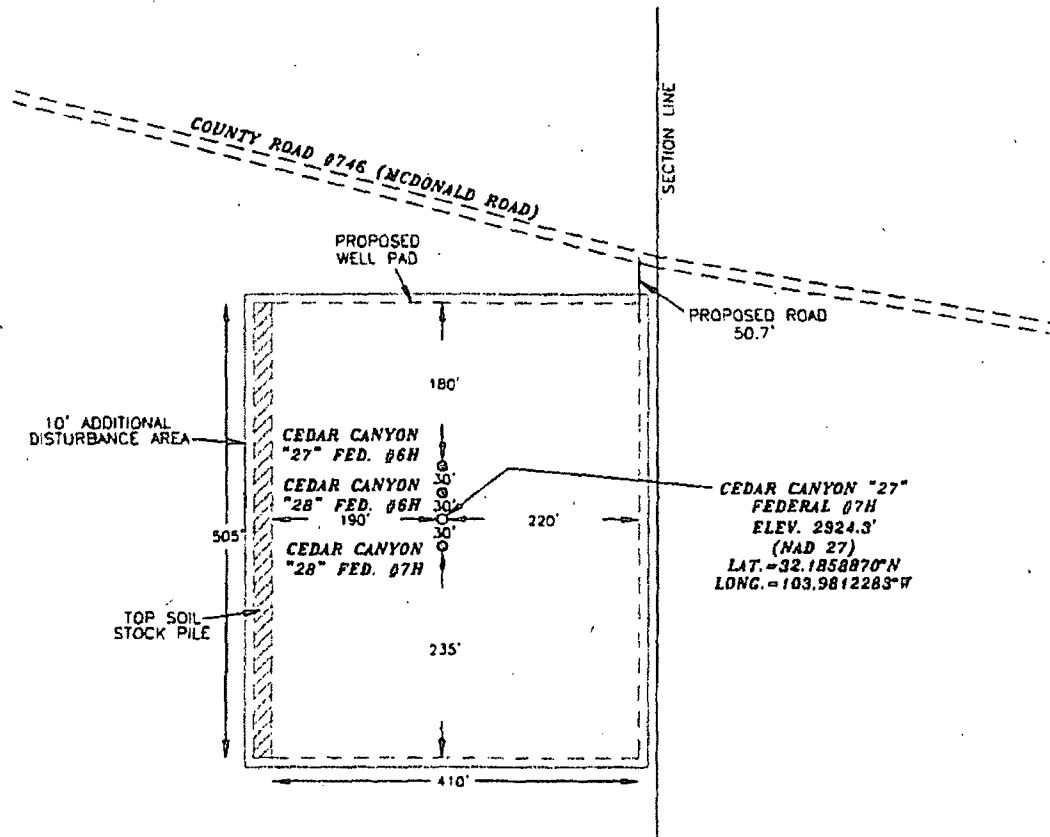
A gas buster is connected to both the choke manifold and flowline outlets.

### Primary Briefing Area



Site Plan

# OXY USA INC. CEDAR CANYON "27" FEDERAL #7H SITE PLAN



## SURVEYORS CERTIFICATE

I, TERRY J. ASEL, NEW MEXICO PROFESSIONAL SURVEYOR NO. 15079, DO HEREBY CERTIFY THAT I CONDUCTED AND AM RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF, AND MEETS THE "MINIMUM STANDARDS FOR SURVEYING IN NEW MEXICO" AS ADOPTED BY THE NEW MEXICO STATE BOARD OF REGISTRATION FOR PROFESSIONAL ENGINEERS AND SURVEYORS.

*Terry J. Asel* 7/17/2015  
Terry J. Asel, N.M. R.P.L.S. No. 15079

Asel Surveying

P.O. BOX 393 - 310 W. TAYLOR  
HOBBS, NEW MEXICO - 575-393-9146



**LEGEND**  
 - DENOTES STOCK PILE AREA  
 - DENOTES PROPOSED WELL PAD  
 - DENOTES PROPOSED ROAD

200' 0 200' 400' FEET.  
  
 SCALE: 1"=200'

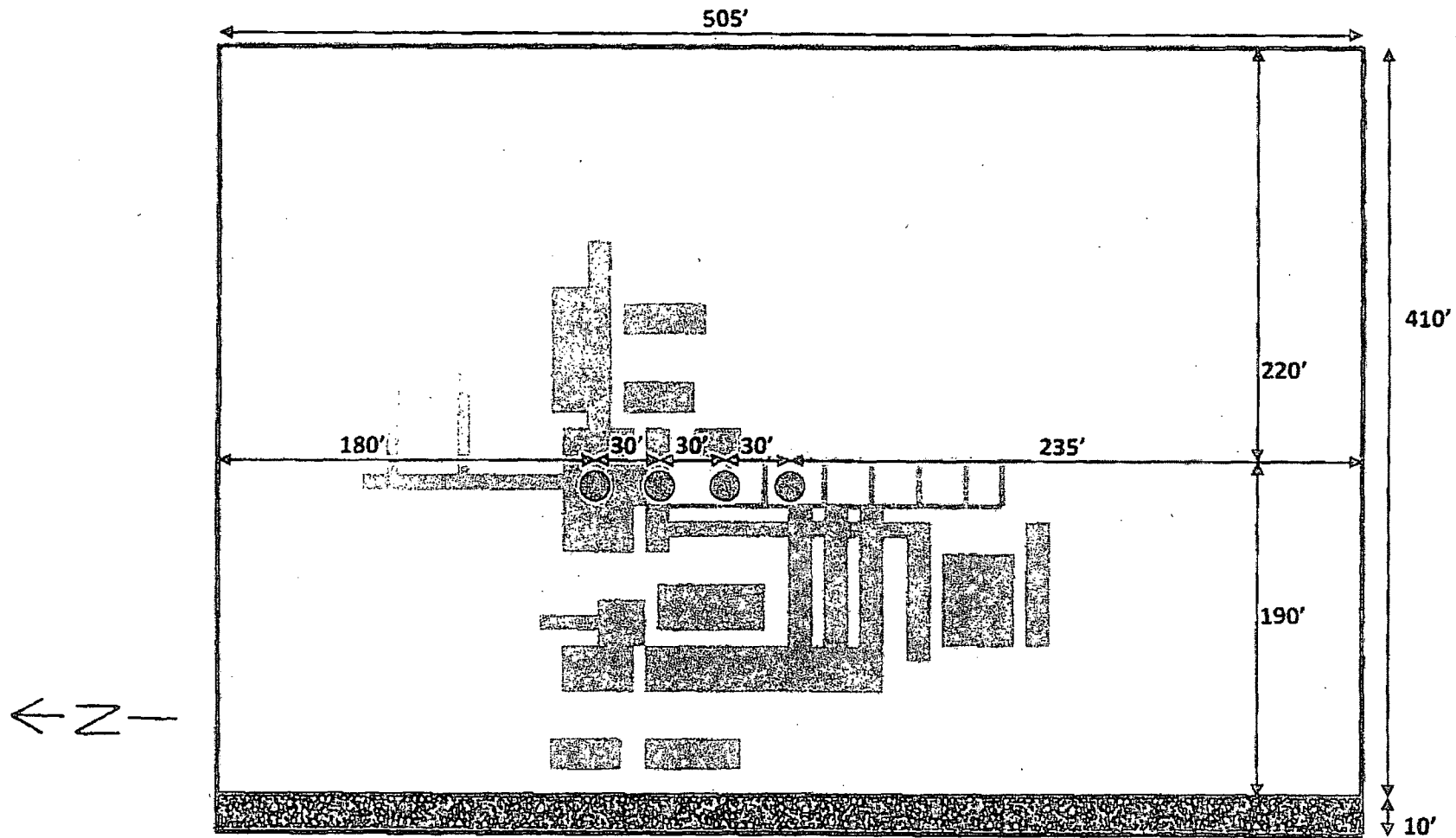
## OXY USA INC.

CEDAR CANYON "27" FEDERAL #7H LOCATED  
AT 1790' FSL & 240' FEL IN SECTION 28,  
TOWNSHIP 24 SOUTH, RANGE 29 EAST,  
N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 07/17/15	Sheet 1 of 1 Sheets
W.O. Number: 141204WL-b (Rev. A)	Drawn By: KA Rev: A
Date: 07/13/15	141204WL-b Scale: 1"=200'



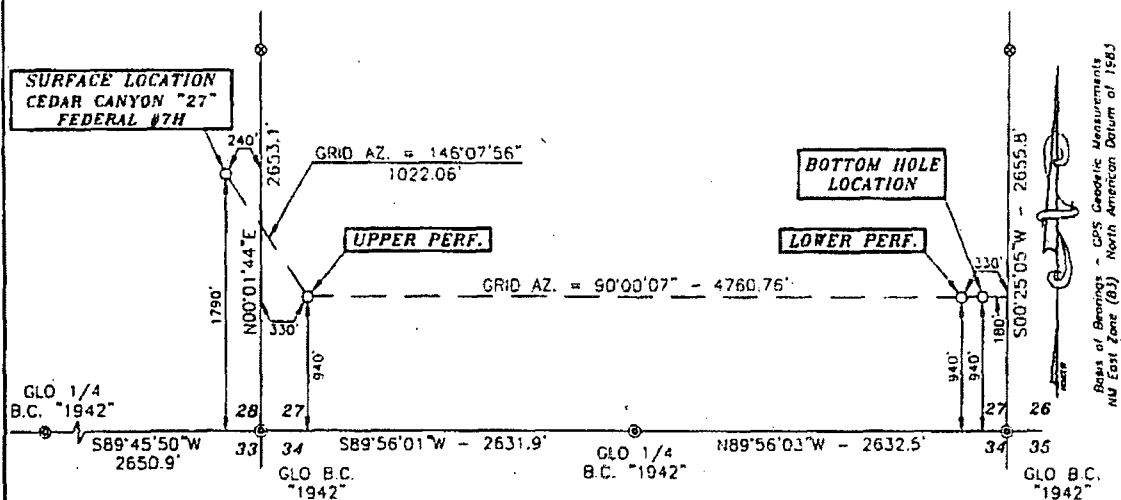
Pad Site Overall Rig Layout  
4 Well Pad Site



Pad layout

Stakeout Detail

SECTIONS 28 & 27, TOWNSHIP 24 SOUTH, RANGE 29 EAST, N.M.P.M.,  
EDDY COUNTY  
NEW MEXICO



DRIVING DIRECTIONS:  
FROM THE INTERSECTION OF U.S. HWY.  
#285 AND BLACK RIVER VILLAGE ROAD IN  
MALAGA, GO EAST ON COUNTY ROAD #720  
FOR 1.3 MILES, TURN RIGHT ON COUNTY  
ROAD #746 (MCDONALD ROAD) AND GO  
SOUTH FOR 0.8 MILES, CONTINUE  
SOUTHEAST/EAST FOR 4.7 MILES, TURN  
RIGHT ON PROPOSED ROAD AND GO SOUTH  
FOR 50.7 FEET TO LOCATION.



**SURVEYORS CERTIFICATE**

I, TERRY J. ASEL, NEW MEXICO PROFESSIONAL SURVEYOR  
NO. 15079, DO HEREBY CERTIFY THAT I CONDUCTED AND AM  
RESPONSIBLE FOR THIS SURVEY, THAT THIS SURVEY IS  
TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND  
BELIEF, AND MEETS THE "MINIMUM STANDARDS FOR  
SURVEYING IN NEW MEXICO" AS ADOPTED BY THE NEW  
MEXICO STATE BOARD OF REGISTRATION FOR  
PROFESSIONAL ENGINEERS AND SURVEYORS.

*Terry J. Asel* 7/17/2015  
Terry J. Asel, N.M. R.P.L.S. No. 15079

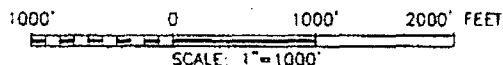
Asel Surveying



P.O. BOX 393 - 310 W TAYLOR  
MOBBS, NEW MEXICO - 575-393-9146

**LEGEND**

- ⊗ - DENOTES FOUND MONUMENT AS NOTED
- ⊙ - DENOTES CALCULATED CORNER

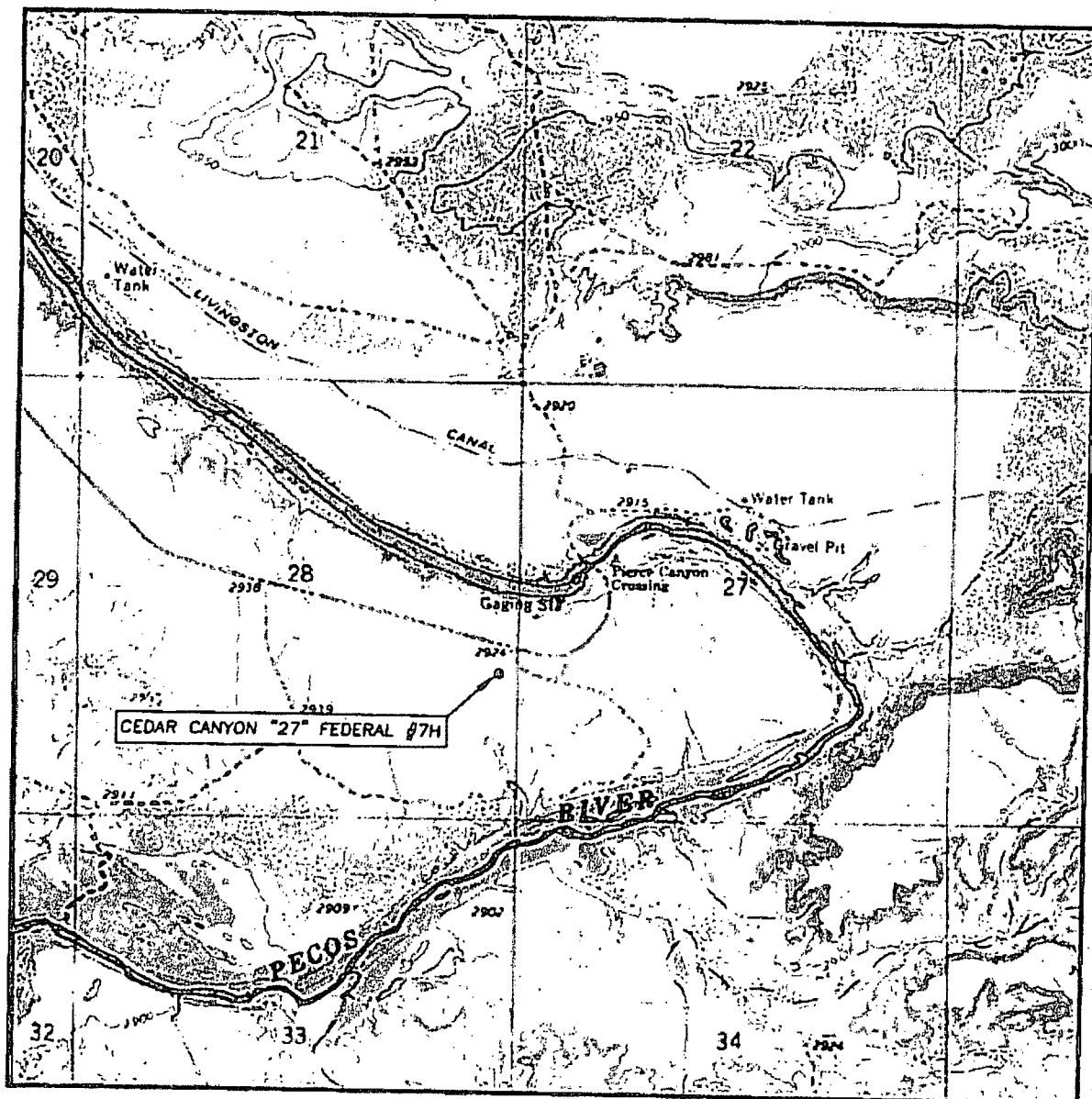


**OXY USA INC.**

CEDAR CANYON "27" FEDERAL #7H LOCATED  
AT 1790' FSL & 240' FEL IN SECTION 28,  
TOWNSHIP 24 SOUTH, RANGE 29 EAST,  
N.M.P.M., EDDY COUNTY, NEW MEXICO

Survey Date: 07/17/15	Sheet 1 of 1 Sheets
W.O. Number: 141204WL-b (Rev A)	Drawn By: KA Rev: A
Date: 07/13/15	141204WL-b Scale: 1"=1000'

# LOCATION VERIFICATION MAP



SCALE: 1" = 2000'

CONTOUR INTERVAL: 10'

SEC. 28 TWP. 24-S RGE. 29-E

SURVEY\_\_\_\_\_ N.M.P.M.

COUNTY \_\_\_\_\_ EDDY

DESCRIPTION 1790' FSL & 240' FEL

ELEVATION            2924.3'

OPERATOR OXY USA INC.

LEASE CEDAR CANYON "27" FEDERAL #7H

U.S.G.S. TOPOGRAPHIC MAP

PIERCE CANYON, N.M.

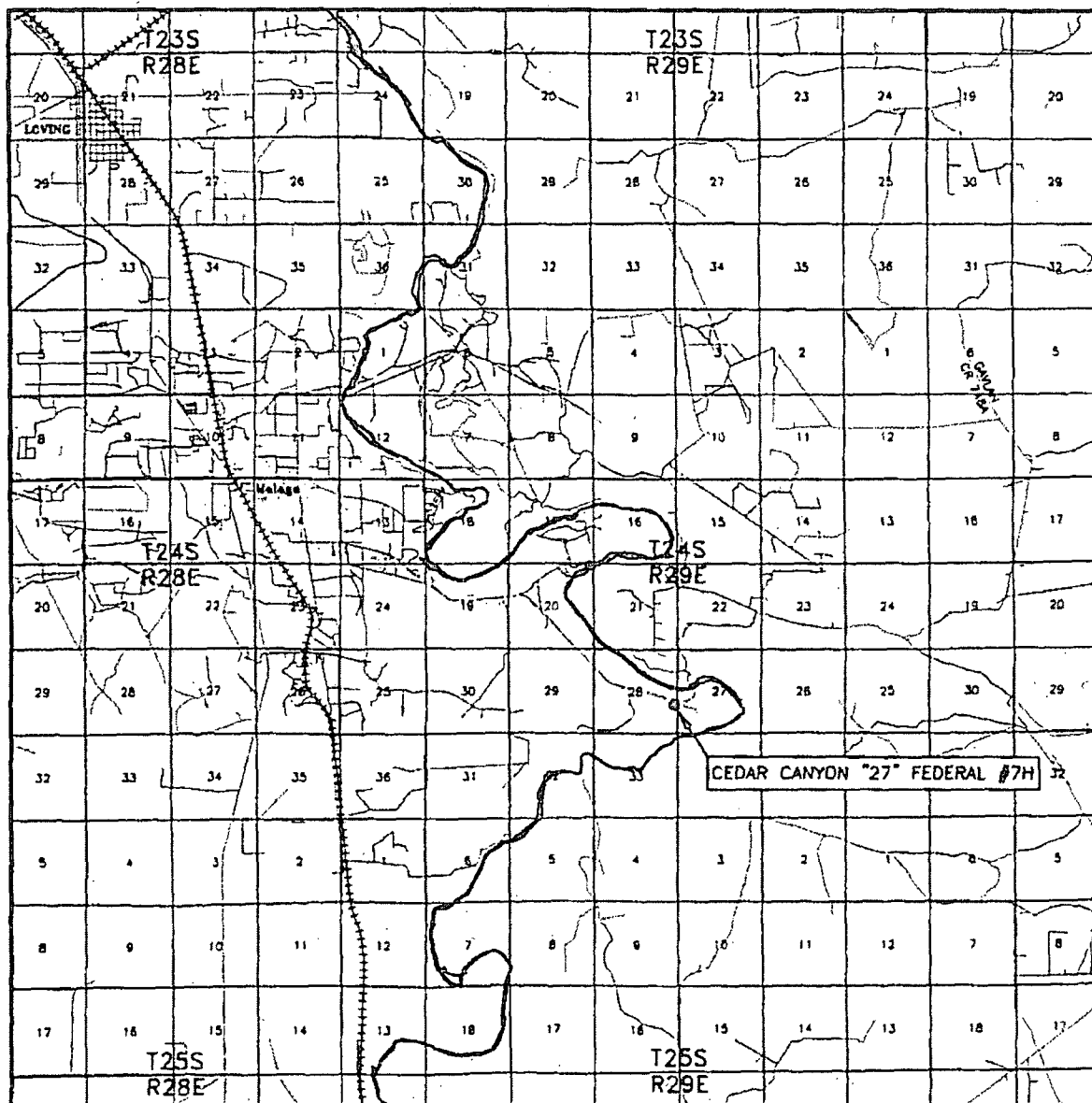
## Asel Surveying

P.O. BOX 393 - 310 W. TAYLOR  
HOBBS, NEW MEXICO - 575-393-9146



UM

# VICINITY MAP



SEC. 28 TWP. 24-S RGE. 29-E  
 SURVEY N.M.P.M.  
 COUNTY FOOY  
 DESCRIPTION 1790' FSL & 240' FEL  
 ELEVATION 2924.3'  
 OPERATOR OXY USA INC.

SCALE: 1" = 2 MILES

Asel Surveying

P.O. BOX 393 - 310 W. TAYLOR  
 HOBBS, NEW MEXICO - 575-393-9146



LEASE CEDAR CANYON "27" FEDERAL #7H

DIRECTIONS FROM THE INTERSECTION OF U.S. HWY. #285 AND BLACK RIVER VILLAGE ROAD IN MALAGA,  
 GO EAST ON COUNTY ROAD #720 FOR 1.3 MILES, TURN RIGHT ON COUNTY ROAD #746 (MCDONALD  
 ROAD) AND GO SOUTH FOR 0.8 MILES, CONTINUE SOUTHEAST/EAST FOR 4.7 MILES, TURN RIGHT ON  
 PROPOSED ROAD AND GO SOUTH FOR 50.7 FEET TO LOCATION.



Sanchez, Jennifer &lt;j1sanchez@blm.gov&gt;

## Sundry for CC 27/28 - Connection specs

1 message

Diego\_Tellez@oxy.com &lt;Diego\_Tellez@oxy.com&gt;

Fri, Jul 24, 2015 at 10:03 AM

To: j1sanchez@blm.gov

Cc: Chan\_Tysor@oxy.com, Jim\_Wilson@oxy.com, David\_Stewart@oxy.com, Ricardo\_Viloria@oxy.com, Juan\_Mejia2@oxy.com

Hi Jennifer,

As per our phone conversation please find attached the specs for the 5 ½" connection we are planning on running for our production string.

Hole size	Casing	Connection	Connection OD	Clearance	Meets BLM requirement of 0.422" clearance?
6.750"	5 ½" 20# P110	USF	5.646"	0.552"	Yes
6.750"	4 ½" 13.5# P110	DQX	5.000"	0.875"	Yes

Also, we are 7-9 days from spudding well Cypress 34 Federal 10H. We submitted the sundry (very similar to the ones for CC 27/28) back in June (6/25/15 – EC Transaction 306905 – Serial No. 830-830-4621). Could you also help us approving this one, provided it meets all BLM requirements to your satisfaction? API number for this well is 30-015-43076.

Many thanks for helping us with these sundries.

Regards,

**Diego Tellez**

Drilling Engineer - Team Lead

Permian Resources Delaware / New Mexico

Occidental Oil & Gas Corp.

O: 713-350-4602 / M: 713-303-4932

# PERFORMANCE DATA

**TMK Ultra Premium SF™**  
**Technical Data Sheet**

**5.500 in**

**20.00 lbs/ft**

**P-110**

## Tubular Parameters

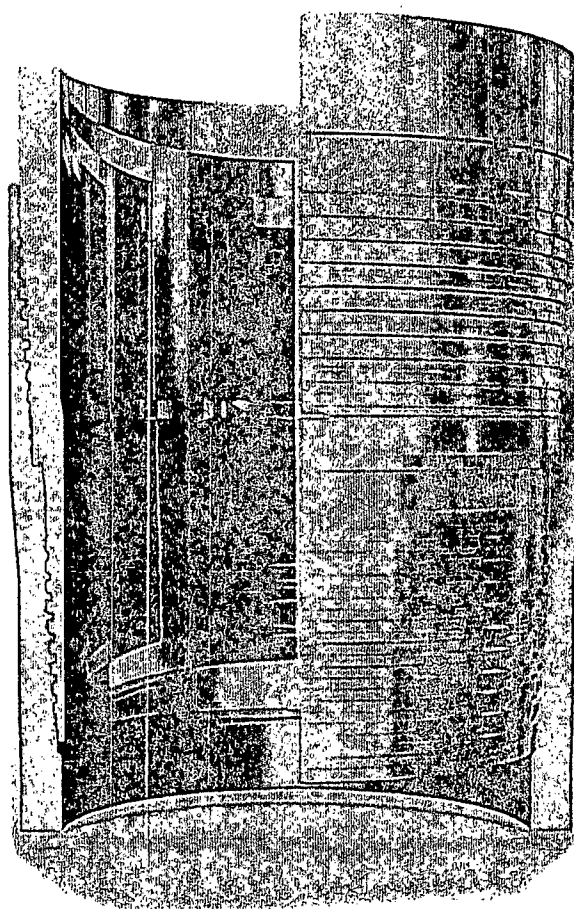
Size	5.500	in	Minimum Yield	110,000	psi
Nominal Weight	20.00	lbs/ft	Minimum Tensile	125,000	psi
Grade	P-110		Yield Load	641,000	lbs
PE Weight	19.81	lbs/ft	Tensile Load	728,000	lbs
Wall Thickness	0.361	in	Min. Internal Yield Pressure	12,600	psi
Nominal ID	4.778	in	Collapse Pressure	11,100	psi
Drift Diameter	4.653	in			
Nom. Pipe Body Area	5.828	in <sup>2</sup>			

## Connection Parameters

Connection OD	5.646	in
Connection ID	4.734	in
Make-Up Loss	5.526	in
Critical Section Area	5.289	in <sup>2</sup>
Tension Efficiency	90.5	%
Compression Efficiency	90.5	%
Yield Load In Tension	580,000	lbs
Min. Internal Yield Pressure	12,600	psi
Collapse Pressure	11,100	psi

## Make-Up Torques

Min. Make-Up Torque	10,100	ft-lbs
Opt. Make-Up Torque	10,600	ft-lbs
Max. Make-Up Torque	11,700	ft-lbs
Yield Torque	15,600	ft-lbs



Printed on: February-25-2014

### NOTE:

The content of this Technical Data Sheet is for general information only and does not guarantee performance or imply fitness for a particular purpose, which only a competent drilling professional can determine considering the specific installation and operation parameters. Information that is printed or downloaded is no longer controlled by TMK IPSCO and might not be the latest information. Anyone using the information herein does so at their own risk. To verify that you have the latest TMK IPSCO technical information, please contact TMK IPSCO Technical Sales toll-free at 1-888-258-2000.



AUG 3 2015

RECEIVED

**PECOS DISTRICT  
CONDITIONS OF APPROVAL**

<b>OPERATOR'S NAME:</b>	<b>OXY USA Inc.</b>
<b>LEASE NO.:</b>	<b>NMNM-94651</b>
<b>WELL NAME &amp; NO.:</b>	<b>Cedar Canyon 27 Federal 7H</b>
<b>SURFACE HOLE FOOTAGE:</b>	<b>1790' FSL &amp; 0240' FEL</b>
<b>BOTTOM HOLE FOOTAGE</b>	<b>0940' FSL &amp; 0180' FEL Sec. 27, T. 24 S., R 29 E.</b>
<b>LOCATION:</b>	<b>Section 28, T. 24 S., R 29 E., NMPM</b>
<b>COUNTY:</b>	<b>Eddy County, New Mexico</b>

**The original COAs still stand with the following drilling modifications:**

**I. DRILLING**

**A. DRILLING OPERATIONS REQUIREMENTS**

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

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

☒ **Eddy County**

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

1. **Although Hydrogen Sulfide has not been reported in the area, it is always a potential hazard. Operator has stated that they will have monitoring equipment in place prior to drilling out of the surface shoe. If Hydrogen Sulfide is encountered, report measured amounts and formations to the BLM.**
2. Setting surface casing with Transcend Drilling Spudder Rig
  - a. Notify the BLM when removing the Transcend Drilling Spudder Rig.
  - b. Notify the BLM when moving in the H&P Flex Rig. Rig to be moved in within 90 days of notification that Transcend Drilling Spudder Rig has left the location. Failure to notify or have rig on location within 90 days will result in an Incident of Non-Compliance.
  - c. Once the H&P Flex Rig is on location, it will drill the Cedar Canyon 28 Federal 6H and 7H and the Cedar Canyon 27 Federal 6H and 7H in conjunction using batch drilling.

- d. BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as H&P Flex Rig is rigged up on well. CIT for the surface casing shall be performed and results recorded on subsequent sundry.
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 is 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 Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

## **B. CASING**

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

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

### **Wait on cement (WOC) for Water Basin:**

**After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. 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**

**Possibility of water flows in the Castile and Salado.**

**Possibility of lost circulation in the Rustler, Salado, and Delaware.**



1. The 10-3/4 inch surface casing shall be set at approximately 500 feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface. **If salt is encountered, set casing at least 25 feet above the salt.**
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job.
  - b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**
  - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

**Formation below the 10-3/4" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.**

2. The minimum required fill of cement behind the 7-5/8 inch intermediate casing, which shall be set at approximately 2900 feet, 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.**

**If 75% or greater lost circulation occurs while drilling the intermediate casing hole, the cement on the production casing must come to surface.**

**Formation below the 7-5/8" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.**

**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 X 4-1/2 inch production casing is:

☒ Cement as proposed by operator. Operator shall provide method of verification. **Excess calculates to 24% - Additional cement may be required.**

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. Variance approved to use flex line from BOP to choke manifold. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. **Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.** If the BLM inspector questions the straightness of the hose, a BLM engineer will be contacted and will review in the field or via picture supplied by inspector to determine if changes are required (operator shall expect delays if this occurs).

Option 1 - BOP testing if wells are drilled conventionally- BOP is not removed between casing strings.

3. **Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 5000 (5M) psi.**
  - a. **Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.**
  - b. **If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.**
  - c. **Manufacturer representative shall install the test plug for the initial BOP test.**

- d. Operator shall perform the intermediate casing integrity test to 70% of the casing burst. This will test the multi-bowl seals.
- e. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.

5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.

Option 2 - BOP testing for Batch Drilling-BOP is removed between casing strings

- 4. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **5000 (5M) psi**. **5M system requires an HCR valve, remote kill line and annular to match. The remote kill line is to be installed prior to testing the system and tested to stack pressure.** BOP/BOPE shall be tested after nipple up according to Onshore Order #2.
- 5. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
  - b. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.
  - c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
  - d. The results of the test shall be reported to the appropriate BLM office.
  - e. 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.**

- f. 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. This test shall be performed prior to the test at full stack pressure.

#### **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.

**JAM 072415**