Form 3160-4
(August 2007)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

NM OIL CONSERVATION
ARTESIA DISTRICT
Carlsbad Field Office
OCD Artesia MAY 15 2018
RECEIVED

FORM APPROVED
OMB No. 1004-0137
Expires: July 31, 2010

WELL COMPLETION OR RECOMPLETION REPORT AND LOG

5. Lease Serial No. NMNM81586

1a. Type of Well ☒ Oil Well ☐ Gas Well ☐ Dry ☐ Other
b. Type of Completion ☒ New Well ☐ Work Over ☐ Deepen ☐ Plug Back ☐ Diff. Resvr.
Other

6. If Indian, Allottee or Tribe Name

7. Unit or CA Agreement Name and No.

2. Name of Operator: OXY USA INC
Contact: JANA MENDIOLA
E-Mail: janalyn_mendiola@oxy.com

8. Lease Name and Well No.: CEDAR CANYON 23-24 FEDERAL 32H

3. Address: MIDLAND, TX 79710
3a. Phone No. (include area code): Ph: 432-685-5936

9. API Well No.: 30-015-44180-00-S1

4. Location of Well (Report location clearly and in accordance with Federal requirements)*
At surface: Sec 22 T24S R29E Mer NMP NENE 520FNL 172FEL 32.208802 N Lat, 103.964305 W Lon
At top prod interval reported below: Sec 23 T24S R29E Mer NMP SWNW 1712FNL 365FWL 32.205558 N Lat, 103.962653 W Lon
At total depth: Sec 24 T24S R29E Mer NMP SENW 1641FNL 2482FWL 32.205557 N Lat, 103.938684 W Lon

10. Field and Pool, or Exploratory: PIERCE CROSSING-BONE SPRING, E
~~PIERCE CROSSING-BONE SPRING~~

11. Sec., T., R., M., or Block and Survey or Area: Sec 22 T24S R29E Mer NMP

12. County or Parish: EDDY
13. State: NM

14. Date Spudded: 06/19/2017
15. Date T.D. Reached: 07/28/2017
16. Date Completed ☐ D & A ☒ Ready to Prod. 09/18/2017
17. Elevations (DF, KB, RT, GL)*: 2944 GL

18. Total Depth: MD 17665 TVD 10169
19. Plug Back T.D.: MD 17597 TVD 10169
20. Depth Bridge Plug Set: MD TVD

21. Type Electric & Other Mechanical Logs Run (Submit copy of each): MUDLOG

22. Was well cored? ☒ No ☐ Yes (Submit analysis)
Was DST run? ☒ No ☐ Yes (Submit analysis)
Directional Survey? ☐ No ☒ Yes (Submit analysis)

23. Casing and Liner Record *(Report all strings set in well)*

Hole Size	Size/Grade	Wt. (#/ft.)	Top (MD)	Bottom (MD)	Stage Cementer Depth	No. of Sks. & Type of Cement	Slurry Vol. (BBL)	Cement Top*	Amount Pulled
14.750	10.750 J55	45.5	0	422		385	93	0	
9.875	7.625 L80	29.7	0	9495	3047	1600	611	0	
6.750	4.500 P110	13.5	9280	17650		790	232	9280	

24. Tubing Record

Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)	Size	Depth Set (MD)	Packer Depth (MD)

25. Producing Intervals / 26. Perforation Record

Formation	Top	Bottom	Perforated Interval	Size	No. Holes	Perf. Status
A) BONE SPRING			10240 TO 17475	0.420	1480	ACTIVE
B) BONE SPRING 3RD						
C)						
D)						

27. Acid, Fracture, Treatment, Cement Squeeze, Etc.

Depth Interval	Amount and Type of Material
10240 TO 17475	9971136G SLICKWATER + 74970G 15% HCL ACID W/ 11458768# SAND

28. Production - Interval A

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
09/20/2017	09/28/2017	24	→	4460.0	1220.0	11035.0			FLOWS FROM WELL

Choke Size	Tbg. Press. Flwg.	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status
68/128	SI	1016.0	→	4460	1220	11035	2740	POW

28a. Production - Interval B

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
09/20/2017	09/28/2017	24	→	4460.0	12220.0	11035.0			FLOWS FROM WELL

Choke Size	Tbg. Press. Flwg.	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status
68/128	SI	1016.0	→	4460	12220	11035	2740	POW

(See Instructions and spaces for additional data on reverse side)

ELECTRONIC SUBMISSION #395432 VERIFIED BY THE BLM WELL INFORMATION SYSTEM

**** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ** BLM REVISED ****

Interim Reclamation must be done 6 months from 9/18/2017.

28b. Production - Interval C

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
			→						

Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status
			→					

28c. Production - Interval D

Date First Produced	Test Date	Hours Tested	Test Production	Oil BBL	Gas MCF	Water BBL	Oil Gravity Corr. API	Gas Gravity	Production Method
			→						

Choke Size	Tbg. Press. Flwg. SI	Csg. Press.	24 Hr. Rate	Oil BBL	Gas MCF	Water BBL	Gas:Oil Ratio	Well Status
			→					

29. Disposition of Gas *(Sold, used for fuel, vented, etc.)*
SOLD

30. Summary of Porous Zones (Include Aquifers):

Show all important zones of porosity and contents thereof: Cored intervals and all drill-stem tests, including depth interval tested, cushion used, time tool open, flowing and shut-in pressures and recoveries.

31. Formation (Log) Markers

Formation	Top	Bottom	Descriptions, Contents, etc.	Name	Top Meas. Depth
BELL CANYON	3070	3893	OIL, GAS, WATER	RUSTLER	211
CHERRY CANYON	3894	5216	OIL, GAS, WATER	SALADO	877
BRUSHY CANYON	5217	6800	OIL, GAS, WATER	CASTILE	1431
BONE SPRING	6801	7867	OIL, GAS, WATER	DELAWARE	3020
BONE SPRING 1ST	7868	8739	OIL, GAS, WATER	BELL CANYON	3070
BONE SPRING 2ND	8740	9769	OIL, GAS, WATER	CHERRY CANYON	3894
BONE SPRING 3RD	9770	10169	OIL, GAS, WATER	BRUSHY CANYON	5217
				BONE SPRING	6801

ACCEPTED FOR RECORD
FEB 05 2018
BUREAU OF LAND MANAGEMENT
CARLSBAD FIELD OFFICE

32. Additional remarks (include plugging procedure):
52. FORMATION (LOG) MARKERS CONTD.

1ST BONE SPRING 7868'M
2ND BONE SPRING 8740'M
3RD BONE SPRING 9770'M

Logs were mailed 11/17/17.

33. Circle enclosed attachments:

1. Electrical/Mechanical Logs (1 full set req'd.)
2. Geologic Report
3. DST Report
4. Directional Survey
5. Sundry Notice for plugging and cement verification
6. Core Analysis
7 Other:

34. I hereby certify that the foregoing and attached information is complete and correct as determined from all available records (see attached instructions):

Electronic Submission #395432 Verified by the BLM Well Information System.
For OXY USA INC, sent to the Carlsbad
Committed to AFMSS for processing by DUNCAN WHITLOCK on 12/01/2017 (18DW0025SE)

Name *(please print)* DAVID STEWART Title SR REGULATORY ADVISOR

Signature (Electronic Submission) Date 11/17/2017

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 fradulent statements or representations as to any matter within its jurisdiction.

**** REVISED ** REVISED ** REVISED ** REVISED ** REVISED ** REVISED ** REVISED ** REVISED ****

Additional data for transaction #395432 that would not fit on the form

32. Additional remarks, continued

Log Header, Directional Survey, As-Drilled Amended C-102 plat & WBD are attached.

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

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

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

☑ AMENDED REPORT
(As-Drilled)

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-44180	96473	Pierce Crossing Bone Spring, East

Property Code	Property Name	Well Number
317749	CEDAR CANYON "23-24" FEDERAL	32H

OGRID No.	Operator Name	Elevation
16696	OXY USA INC.	2943.6'

Surface Location

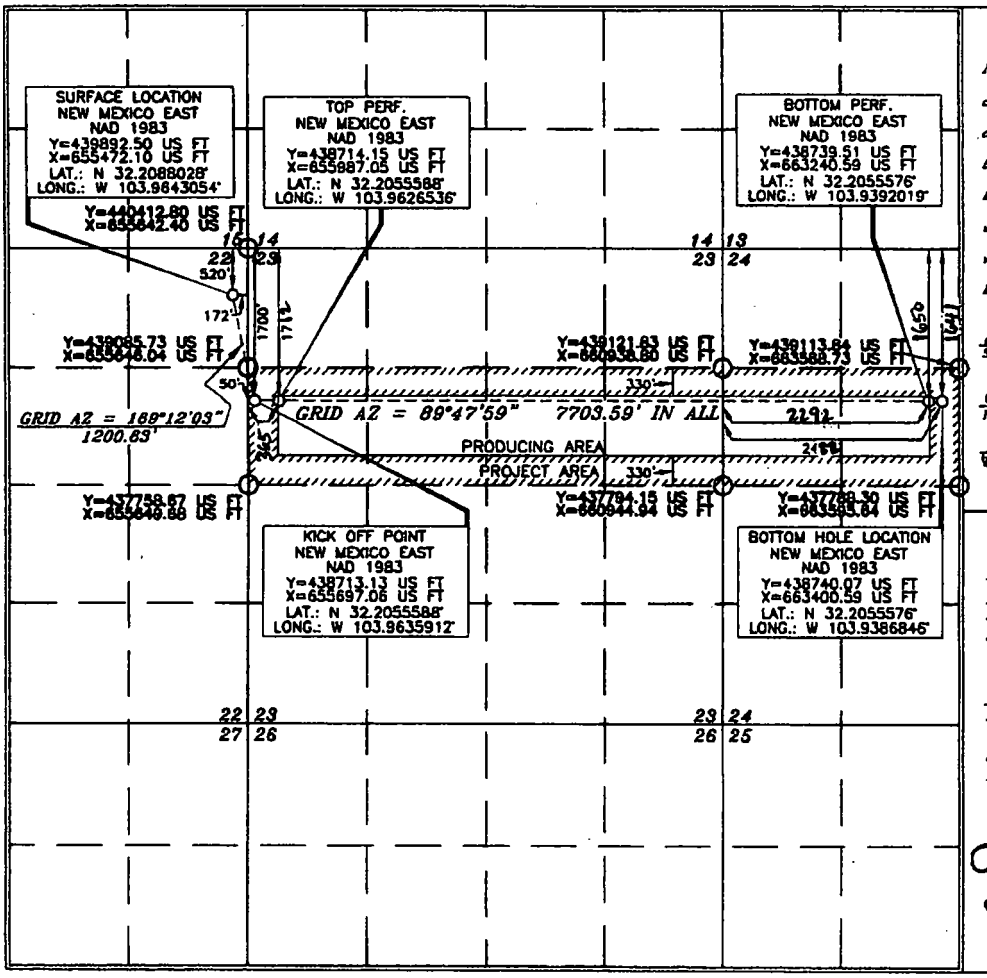
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	22	24 SOUTH	29 EAST, N.M.P.M.		520'	NORTH	172'	EAST	EDDY

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
F	24	24 SOUTH	29 EAST, N.M.P.M.		~~1700'~~ 1641	NORTH	~~2400'~~ 2482	WEST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	~~Order No.~~
240	Y		BP - 1650 FNL 2292 FWL TP - 1712 FNL 365 FWL

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 unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Signature 9/5/17 Date

Jana Mendiola
Printed Name

janalyn_mendiola@oxy.com
E-mail Address

SURVEYOR CERTIFICATION

I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief.

15079
MARCH 30, 2016
Date of Survey

Signature and Seal of Professional Surveyor:
TERRY J. ASEL
NEW MEXICO
15079
REGISTERED PROFESSIONAL LAND SURVEYOR

Certificate Number 15079 9/16/2016

WO# 160330WL-a-XY (Rev. B) (KA)

Schlumberger Drilling and Measurements
Drilling Group
Geo Market Area: South West Texas Basin
7220 W I-H 20
Midland, Texas 79706
Phone : (432) 742-5400 (Main)
Fax : (432) 742-5606 (Shared)

Schlumberger

Well Reference:

32.20880 -103.96431

I, Rasheed Atanda certify that; I am employed by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I did on the day(s) of July 06, 2017 through July 28, 2017, conduct or supervise the taking of the TelePacer & SlimPulse surveys from a depth of 1500.37.00 feet to a depth of 17622.00 feet referenced to driller's depth; that the data is true, correct, complete and within the limitations of the tool as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation; that I am authorized and qualified to make this report; that this survey was conducted at the request of OXY USA INC. for the Cedar Canyon 23-24 Federal 32H Well (Original Hole) API No. 30-015-44180 in New Mexico; and that I have reviewed this report and find that it conforms to the principals and procedures as set forth by Drilling & Measurements, a division of Schlumberger Technology Corporation.

By
Rasheed Atanda
FE

Subscribed and Sworn to before me this 10th day of August (month) 2017 (yr)

My Commission expires:
December 20, 2020

JENNIFER ALLEMAND
Notary Public
State of Colorado
Notary ID # 20164047962
My Commission Expires 12-20-2020

Notary Public (signature)

Adams County Colorado
(County State)

Final PVA - Rev6

H&P 639 (RKB=26.5ft)

Schlumberger

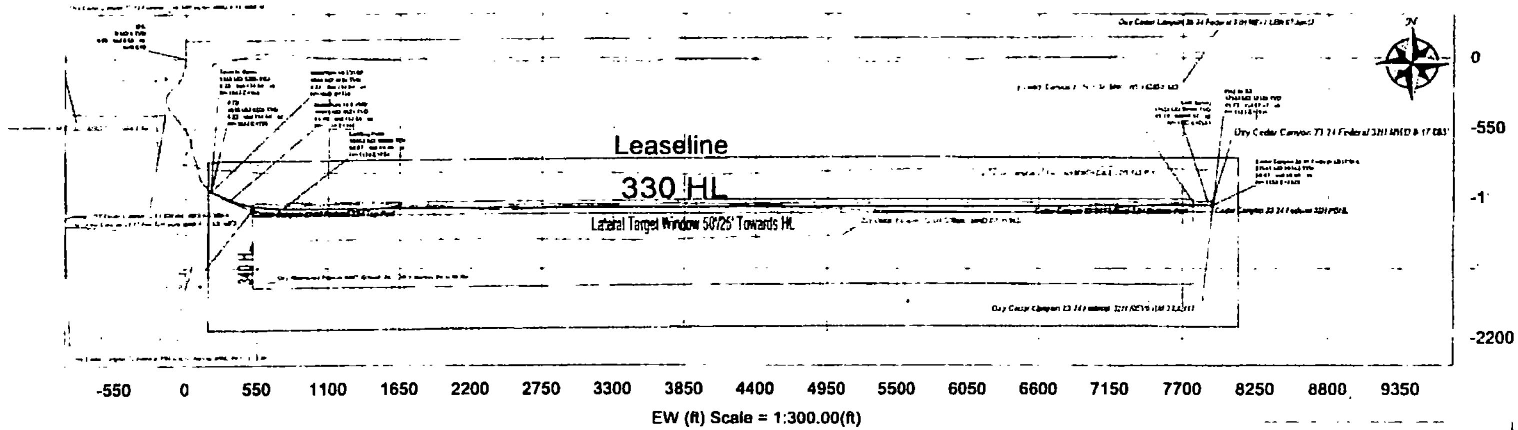
OXY

Borehole: Original Borehole

Well: Oxy Cedar Canyon 23-24 Federal 32H

Field: NM Eddy County (NAD 83)

Structure: Oxy Cedar Canyon 23-24 Federal 32H



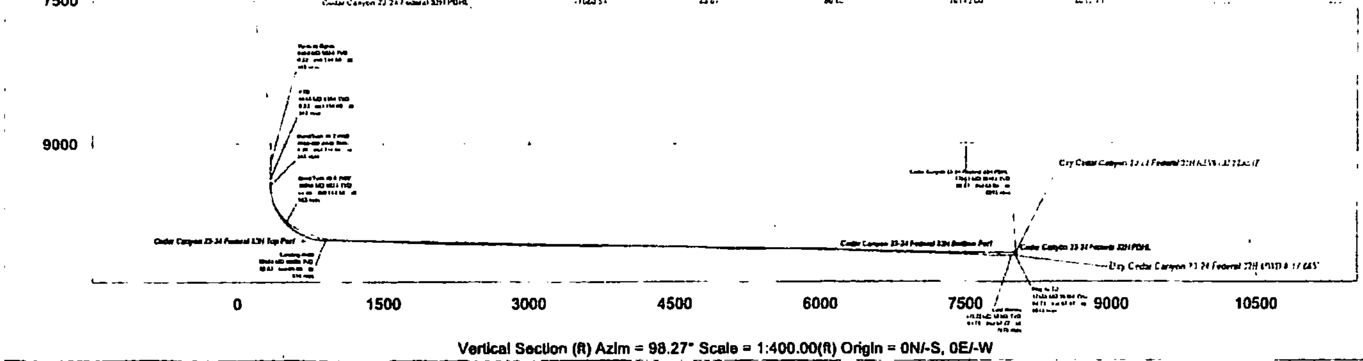
Surface Location

Target Description

Target Name	Shape	Dimension	Latitude	Longitude	Northing	Easting				
Cedar Canyon 23-24 Federal 32H Lateral Target Window 50/25' Toward HL	Rectangle	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Oxy Cedar Canyon 23-24 Federal 32H Leaseline	Polyline	N/A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Oxy Cedar Canyon 23-24 Federal 32H 330'x340' HL	Polyline	N/A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cedar Canyon 23-24 Federal 32H Top Perf	Point	N/A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cedar Canyon 23-24 Federal 32H Bottom Perf	Point	N/A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cedar Canyon 23-24 Federal 32H PBHL	Point	N/A	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
Rustler	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Salado	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Castile (Anhydrite)	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Lamar/Delaware	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Bell Canyon	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cherry Canyon	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Brushy Canyon	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Bone Spring	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
KOP	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
FTB	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Landing Point	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Cedar Canyon 23-24 Federal 32H PBHL	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]



Grid
True
Mag

Grid North
Tot Corr (M->G 6.918°)
Mag Dec (7.115°)
Grid Conv (0.197°)

CONTROLLED

1	Originator
2	Sign Off Authority
3	D&M Line Manager
4	Client

Schlumberger

Oxy Cedar Canyon 23-24 Federal 32H MWD 0-17,665' Survey Geodetic Report

(Def Survey)

Report Date:	July 28, 2017 - 12:05 PM	**Survey / DLS Computation**	Minimum Curvature / Lubinski
Client:	OXY	**Vertical Section Azimuth:**	98.270 ° (Grid North)
Field:	NM Eddy County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Oxy Cedar Canyon 23-24 Federal 32H / Oxy Cedar Canyon 23 24 Federal 32H	**TVD Reference Datum:**	RKB=26.5'
Well:	Oxy Cedar Canyon 23-24 Federal 32H	**TVD Reference Elevation:**	2970.100 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	2943.600 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	7.126 °
Survey Name:	Oxy Cedar Canyon 23-24 Federal 32H MWD 0-17,665	**Total Gravity Field Strength:**	998.4895mgn (9.80665 Based)
Survey Date:	June 20, 2017	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	337.844 ° / 8981.671 ft / 6.722 / 0.883	**Total Magnetic Field Strength:**	48106.251 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	60.015 °
Location Lat / Long:	N 32° 12' 31.69021", W 103° 57' 51.49939	**Declination Date:**	July 22, 2017
Location Grid N/E Y/X:	N 439892.500 ftUS, E 655472.100 ftUS	**Magnetic Declination Model:**	HDGM 2017
CRS Grid Convergence Angle:	0.1967 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99992401	**Grid Convergence Used:**	0.1967 °
Version / Patch:	2.10.544.0	**Total Corr Mag North->Grid North:**	6.9296 °
		Local Coord Referenced To:	Well Head

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	439892.50	655472.10	N 32 12 31.69	W 103 57 51.50
RKB	26.50	0.00	0.00	26.50	0.00	0.00	0.00	0.00	439892.50	655472.10	N 32 12 31.69	W 103 57 51.50
	90.37	0.09	351.10	90.37	-0.01	0.05	-0.01	0.14	439892.55	655472.09	N 32 12 31.69	W 103 57 51.50
	181.37	0.38	124.62	181.37	0.23	-0.05	0.23	0.49	439892.45	655472.33	N 32 12 31.69	W 103 57 51.50
	272.37	0.41	118.75	272.37	0.81	-0.38	0.76	0.06	439892.12	655472.86	N 32 12 31.69	W 103 57 51.49
	363.64	0.32	101.20	363.64	1.37	-0.59	1.30	0.16	439891.91	655473.40	N 32 12 31.68	W 103 57 51.48
	454.37	0.39	87.23	454.36	1.93	-0.62	1.86	0.12	439891.88	655473.96	N 32 12 31.68	W 103 57 51.48
	544.37	0.31	77.66	544.36	2.46	-0.55	2.40	0.11	439891.95	655474.50	N 32 12 31.68	W 103 57 51.47
	634.37	0.06	163.83	634.36	2.70	-0.55	2.65	0.35	439891.95	655474.75	N 32 12 31.69	W 103 57 51.47
	724.37	0.07	192.70	724.36	2.72	-0.65	2.65	0.04	439891.85	655474.75	N 32 12 31.68	W 103 57 51.47
	813.37	0.06	185.21	813.36	2.72	-0.74	2.64	0.01	439891.76	655474.74	N 32 12 31.68	W 103 57 51.47
	905.37	0.07	189.54	905.36	2.72	-0.85	2.62	0.01	439891.65	655474.72	N 32 12 31.68	W 103 57 51.47
	995.37	0.06	191.91	995.36	2.71	-0.95	2.60	0.01	439891.55	655474.70	N 32 12 31.68	W 103 57 51.47
	1027.37	0.07	187.42	1027.36	2.71	-0.98	2.60	0.04	439891.52	655474.70	N 32 12 31.68	W 103 57 51.47
	1121.37	0.07	192.56	1121.36	2.71	-1.10	2.58	0.01	439891.40	655474.68	N 32 12 31.68	W 103 57 51.47
	1216.37	0.08	192.07	1216.36	2.70	-1.22	2.55	0.01	439891.28	655474.65	N 32 12 31.68	W 103 57 51.47
	1311.37	0.07	199.45	1311.36	2.68	-1.34	2.52	0.01	439891.16	655474.62	N 32 12 31.68	W 103 57 51.47
	1405.37	0.07	228.34	1405.36	2.64	-1.43	2.46	0.04	439891.07	655474.56	N 32 12 31.68	W 103 57 51.47
	1500.37	0.09	192.40	1500.36	2.59	-1.54	2.40	0.06	439890.96	655474.50	N 32 12 31.67	W 103 57 51.47
	1595.37	0.07	186.26	1595.36	2.59	-1.67	2.37	0.02	439890.83	655474.47	N 32 12 31.67	W 103 57 51.47
	1689.37	0.08	194.43	1689.36	2.59	-1.79	2.35	0.02	439890.71	655474.45	N 32 12 31.67	W 103 57 51.47
	1784.37	0.08	199.71	1784.35	2.56	-1.92	2.31	0.01	439890.58	655474.41	N 32 12 31.67	W 103 57 51.47
	1878.37	0.08	208.84	1878.36	2.53	-2.04	2.26	0.01	439890.46	655474.36	N 32 12 31.67	W 103 57 51.47
	1973.37	0.10	238.47	1973.36	2.44	-2.14	2.16	0.05	439890.36	655474.26	N 32 12 31.67	W 103 57 51.47
	2068.37	0.10	234.09	2068.36	2.32	-2.23	2.02	0.01	439890.27	655474.12	N 32 12 31.67	W 103 57 51.48
	2162.37	0.07	226.70	2162.36	2.22	-2.32	1.91	0.03	439890.18	655474.01	N 32 12 31.67	W 103 57 51.48
	2257.37	0.14	219.42	2257.36	2.13	-2.45	1.79	0.07	439890.05	655473.89	N 32 12 31.67	W 103 57 51.48
	2352.37	0.15	256.02	2352.36	1.95	-2.57	1.60	0.10	439889.93	655473.70	N 32 12 31.66	W 103 57 51.48
	2446.37	0.06	235.13	2446.35	1.79	-2.64	1.43	0.08	439889.86	655473.53	N 32 12 31.66	W 103 57 51.48
	2541.37	0.07	265.65	2541.35	1.68	-2.68	1.31	0.04	439889.82	655473.41	N 32 12 31.65	W 103 57 51.48
	2635.37	0.08	222.41	2635.36	1.59	-2.73	1.21	0.06	439889.77	655473.31	N 32 12 31.65	W 103 57 51.49
	2730.37	0.11	29.10	2730.36	1.59	-2.70	1.21	0.20	439889.80	655473.31	N 32 12 31.66	W 103 57 51.49
	2825.37	0.08	236.67	2825.36	1.57	-2.66	1.20	0.19	439889.84	655473.30	N 32 12 31.65	W 103 57 51.49
	2919.37	0.12	203.86	2919.36	1.49	-2.78	1.11	0.07	439889.72	655473.21	N 32 12 31.66	W 103 57 51.49
	3014.37	0.15	204.51	3014.36	1.43	-2.99	1.01	0.03	439889.51	655473.11	N 32 12 31.66	W 103 57 51.49
	3109.37	0.12	213.69	3109.36	1.36	-3.18	0.91	0.04	439889.32	655473.01	N 32 12 31.66	W 103 57 51.49
	3203.37	0.12	216.93	3203.36	1.27	-3.34	0.75	0.01	439889.16	655472.89	N 32 12 31.66	W 103 57 51.49
	3298.37	0.02	24.33	3298.36	1.22	-3.41	0.74	0.15	439889.09	655472.84	N 32 12 31.66	W 103 57 51.49
	3393.37	0.10	180.95	3393.35	1.24	-3.47	0.75	0.12	439889.03	655472.85	N 32 12 31.66	W 103 57 51.49
	3487.37	0.10	211.88	3487.36	1.22	-3.63	0.70	0.06	439888.87	655472.80	N 32 12 31.65	W 103 57 51.49
	3580.37	0.09	216.00	3580.36	1.15	-3.75	0.62	0.01	439888.75	655472.72	N 32 12 31.65	W 103 57 51.49
	3677.37	0.10	211.63	3677.36	1.08	-3.89	0.53	0.01	439888.61	655472.63	N 32 12 31.65	W 103 57 51.49
	3772.37	0.09	202.77	3772.36	1.03	-4.03	0.45	0.02	439888.47	655472.55	N 32 12 31.65	W 103 57 51.49
	3866.37	0.09	213.09	3866.35	0.98	-4.16	0.38	0.02	439888.34	655472.48	N 32 12 31.65	W 103 57 51.50
	3961.37	0.09	185.52	3961.36	0.95	-4.29	0.34	0.05	439888.21	655472.44	N 32 12 31.65	W 103 57 51.50
	4056.37	1.00	195.58	4056.35	0.85	-5.17	0.11	0.96	439887.33	655472.21	N 32 12 31.64	W 103 57 51.50
	4150.37	1.00	194.92	4150.34	0.65	-6.75	-0.32	0.01	439885.75	655471.78	N 32 12 31.62	W 103 57 51.50
	4245.37	5.63	195.16	4245.15	-0.01	-12.05	-1.76	4.87	439880.45	655470.34	N 32 12 31.57	W 103 57 51.52
	4340.37	11.00	195.65	4339.12	-1.76	-25.27	-5.47	5.65	439867.23	655466.63	N 32 12 31.44	W 103 57 51.56
	4434.37	15.32	193.65	4430.63	-4.14	-45.87	-10.87	4.63	439846.53	655461.23	N 32 12 31.24	W 103 57 51.63
	4529.37	16.14	191.88	4522.07	-6.15	-71.09	-16.55	1.00	439821.41	655455.55	N 32 12 30.99	W 103 57 51.69
	4623.37	15.63	191.06	4612.48	-7.59	-96.30	-21.67	0.59	439796.20	655450.44	N 32 12 30.74	W 103 57 51.76
	4718.37	15.44	187.32	4704.01	-8.00	-121.41	-25.73	1.07	439771.10	655446.37	N 32 12 30.49	W 103 57 51.80
	4813.37	12.47	206.96	4796.25	-11.08	-143.11	-32.00	5.84	439749.40	655440.10	N 32 12 30.28	W 103 57 51.88
	4908.37	14.12	216.23	4888.71	-18.80	-161.60	-43.50	2.83	439730.91	655428.60	N 32 12 30.09	W 103 57 52.01
	5003.37	15.97	209.90	4980.46	-30.05	-182.28	-56.86	2.60	439710.23	655415.24	N 32 12 29.89	W 103 57 52.17
	5097.37	15.46	209.28	5070.94	-39.31	-204.42	-69.44	0.57	439688.10	655402.67	N 32 12 29.67	W 103 57 52.32
	5192.37	12.79	231.65	5163.13	-51.11	-221.98	-83.91	6.39	439670.54	655388.19	N 32 12 29.50	W 103 57 52.48
	5287.37	11.61	243.09	5255.97	-66.31	-232.87	-100.85	2.72	439659.64	655371.25	N 32 12 29.39	W 103 57 52.68
	5381.37	11.99	231.50	5347.96	-80.86	-243.31	-117.08	2.55	439649.21	655355.03	N 32 12 29.29	W 103 57 52.87
	5476.37	11.99	220.60	5440.90	-92.90	-256.94	-131.22	2.38	439635.58	655340.89	N 32 12 29.15	W 103 57 53.04
	5571.37	11.97	213.16	5533.83	-102.32	-272.68	-143.03	1.62	439619.84	655329.08	N 32 12 29.00	W 103 57 53.17
	5665.37	11.76	198.52	5625.85	-108.13	-289.93	-151.41	3.20	439602.59	655320.70	N 32 12 28.83	W 103 57 53.27
	5760.37	11.81	185.69	5718.86	-109.45	-308.76	-155.48	2.71	439583.74	655316.63	N 32 12 28.64	W 103 57 53.32
	5855.37	12.15	173.71	5811.81	-106.53	-328.40	-155.39	2.68	439564.13	655316.73	N 32 12 28.45	W 103 57 53.32
	5949.37	12.41	159.51	5903.68	-99.18	-347.69	-150.76	3.22	439544.83	655321.35	N 32 12 28.25	W 103 57 53.27
	6044.37	13.42	152.91	5996.28	-87.89	-367.07	-142.17	1.68	439525.46	655329.94	N 32 12 28.06	W 103 57 53.17
	6139.37	14.61	144.93	6088.46	-73.29	-386.70	-130.26	2.39	439505.83	655341.85	N 32 12 27.87	W 103 57 53.03
	6234.37	15.71	143.05	6180.15	-55.93	-406.78	-115.65	1.27	439485.75	655356.46	N 32 12 27.67	W 103 57 52.85
	6328.37	16.07	140.83	6270.56	-37.32	-427.04	-99.78	0.76	439465.49	655372.33	N 32 12 27.47	W 103 57 52.69
	6423.37	15.53	141.72	6361.97	-18.40	-447.22	-83.60	0.62	439445.32	655388.51	N 32 12 27.27	W 103 57 52.49
	6518.37	16.22	140.94	6453.35	0.59	-467.50	-67.36	0.76	439425.03	655404.75	N 32 12 27.07	W 103 57 52.30
	6612.37	16.92	142.44	6543.44	20.05	-488.54	-50.75	0.87	439404.00	655421.36	N 32 12 26.86	W 103 57 52.11
	6707.37	17.15	141.34	6634.27	40.20	-510.44	-33.57	0.42	439382.10	655438.53	N 32 12 26.64	W 103 57 51.91
	6802.37	17.30	143.94	6725.01	60.30	-532.79	-16.50	0.83	439359.75	655455.60	N 32 12 26.42	W 103 57 51.71
	6897.37	17.47	145.86	6815.68	79.78	-556.01	-0.19	0.63	439336.53	655471.91	N 32 12 26.19	W 103 57 51.52
	6991.37	17.65	151.99	6905.30	97.74	-580.28	14.43	1.98	439312.27	655485.52	N 32 12 25.95	W 103 57 51.35
	7086.37	17.33	158.67	6995.92	113.21	-606.19	26.29	2.20	439286.36	655498.36	N 32 12 25.69	W 103 57 51.22

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
	7161 37	16 40	166 10	7086 84	125 22	-632 41	34 61	2 41	439260 14	655506 71	N 32 12 25 43	W 103 57 51 12
	7276 37	15 40	165 86	7178 21	135 07	-657 67	40 90	1 05	439234 88	655512 99	N 32 12 25 18	W 103 57 51 05
	7371 37	13 62	169 76	7270 18	143 41	-680 91	45 55	2 12	439211 64	655518 04	N 32 12 24 95	W 103 57 50 99
	7466 37	14 81	176 89	7362 27	149 35	-704 05	48 59	2 23	439186 51	655520 69	N 32 12 24 72	W 103 57 50 96
	7561 37	16 74	167 99	7453 23	157 05	-731 11	52 43	4 93	439161 44	655524 53	N 32 12 24 45	W 103 57 50 92
	7655 37	16 84	161 71	7542 74	168 37	-758 61	59 85	2 87	439133 74	655531 94	N 32 12 24 18	W 103 57 50 83
	7750 37	14 68	157 56	7634 16	180 67	-783 01	68 76	2 56	439109 55	655540 86	N 32 12 23 94	W 103 57 50 73
	7845 37	13 13	159 80	7726 38	191 97	-804 26	77 08	1 73	439088 30	655549 18	N 32 12 23 73	W 103 57 50 63
	7940 37	14 29	165 32	7818 67	201 68	-825 73	83 78	1 84	439066 83	655555 87	N 32 12 23 52	W 103 57 50 56
	8034 37	17 12	168 78	7909 16	210 82	-850 53	89 41	3 17	439042 03	655561 51	N 32 12 23 27	W 103 57 50 49
	8129 37	16 64	169 27	7999 51	220 48	-878 32	94 99	1 02	439013 25	655567 08	N 32 12 22 99	W 103 57 50 43
	8224 37	16 85	161 79	8089 85	231 62	-907 46	102 15	3 19	438985 09	655574 24	N 32 12 22 71	W 103 57 50 35
	8319 37	15 45	156 52	8181 20	244 42	-932 17	111 50	2 13	438960 41	655583 59	N 32 12 22 46	W 103 57 50 24
	8413 37	15 17	152 11	8271 87	258 27	-954 52	122 24	1 27	438938 05	655594 33	N 32 12 22 24	W 103 57 50 11
	8508 37	15 42	144 61	8363 52	274 32	-975 61	135 37	2 10	438916 77	655607 46	N 32 12 22 03	W 103 57 49 96
	8603 37	16 66	135 17	8454 76	294 13	-995 93	152 45	3 20	438896 64	655624 54	N 32 12 21 83	W 103 57 49 76
	8697 37	14 13	136 23	8545 31	314 14	-1013 85	170 05	3 03	438878 83	655642 15	N 32 12 21 65	W 103 57 49 56
	8792 37	7 40	139 61	8638 59	327 89	-1026 99	182 06	7 11	438865 98	655654 15	N 32 12 21 52	W 103 57 49 42
	8887 37	4 31	140 03	8733 08	335 15	-1034 39	188 22	3 25	438858 19	655660 40	N 32 12 21 45	W 103 57 49 35
	8981 37	1 69	144 09	8826 95	338 75	-1038 21	191 40	2 81	438854 37	655663 48	N 32 12 21 41	W 103 57 49 31
	9076 37	1 68	143 85	8921 90	340 69	-1040 47	193 04	0 01	438852 11	655665 12	N 32 12 21 39	W 103 57 49 29
	9171 37	0 21	111 00	9016 89	341 84	-1041 65	194 02	1 59	438850 93	655666 10	N 32 12 21 38	W 103 57 49 28
	9266 37	0 19	115 91	9111 89	342 15	-1041 78	194 32	0 03	438850 80	655666 41	N 32 12 21 38	W 103 57 49 28
	9360 37	0 22	114 66	9205 89	342 48	-1041 93	194 63	0 03	438850 65	655666 71	N 32 12 21 37	W 103 57 49 28
	9540 00	0 68	320 17	9385 51	342 01	-1041 25	194 26	0 49	438851 33	655668 34	N 32 12 21 38	W 103 57 49 28
	9588 00	0 47	290 68	9433 51	341 61	-1040 87	193 89	0 74	438851 62	655665 98	N 32 12 21 38	W 103 57 49 28
	9683 00	11 53	120 56	9527 90	350 05	-1045 67	201 73	12 62	438846 91	655673 82	N 32 12 21 34	W 103 57 49 19
	9778 00	26 16	115 85	9617 57	378 95	-1059 71	228 90	15 47	438832 87	655700 98	N 32 12 21 20	W 103 57 48 88
	9872 00	37 04	117 40	9697 51	425 60	-1081 84	272 62	11 61	438810 75	655744 90	N 32 12 20 98	W 103 57 48 37
	9967 00	42 59	116 93	9770 45	483 13	-1109 59	326 92	6 65	438783 00	655799 00	N 32 12 20 70	W 103 57 47 74
	10062 00	52 32	114 60	9834 62	549 83	-1139 67	389 92	10 40	438752 72	655861 99	N 32 12 20 40	W 103 57 47 01
	10156 00	63 62	110 32	9884 41	626 58	-1170 08	463 49	12 62	438722 51	655935 55	N 32 12 20 10	W 103 57 46 15
	10251 00	70 16	105 13	9921 71	713 30	-1195 07	547 09	9 79	438697 53	656019 15	N 32 12 19 85	W 103 57 45 18
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	10440 00	78 21	91 35	9976 68	893 55	-1217 84	725 92	9 11	438674 75	656197 95	N 32 12 19 61	W 103 57 43 10
	10535 00	87 17	86 43	9988 96	986 66	-1217 64	820 04	9 91	438674 96	656292 05	N 32 12 19 61	W 103 57 42 00
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	10931 00	87 32	86 57	10015 80	1374 11	-1197 05	1214 55	1 23	438695 53	656686 56	N 32 12 19 80	W 103 57 37 41
	11025 00	88 42	85 19	10018 29	1466 03	-1191 13	1308 30	1 24	438701 46	656780 30	N 32 12 19 86	W 103 57 36 32
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	11971 00	88 55	94 25	10044 80	2397 22	-1179 77	2250 93	1 51	438712 82	657722 85	N 32 12 19 94	W 103 57 25 35
	12065 00	89 62	92 88	10045 31	2491 89	-1185 68	2345 73	1 63	438706 91	657817 65	N 32 12 19 88	W 103 57 24 25
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	15662 00	88 18	90 57	10090 05	6046 31	-1202 05	5934 11	3 00	438690 50	661405 75	N 32 12 19 59	W 103 56 42 48
	15755 00	84 70	90 46	10095 85	6139 25	-1202 94	6026 81	3 63	438689 65	661500 54	N 32 12 19 58	W 103 56 41 38
	15850 00	85 70	90 60	10103 07	6233 11	-1203 62	6123 62	2 11	438688 78	661595 26	N 32 12 19 58	W 103 56 40 28
	15944 00	86 63	90 60	10108 54	6326 11	-1204 80	6217 47	0 97	438687 78	661689 08	N 32 12 19 55	W 103 56 39 19
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	16229 00	88 00	89 35	10122 96	6607 95	-1206 06	6502 09	1 38	438685 54	661973 66	N 32 12 19 53	W 103 56 35 87
	16324 00	86 28	88 39	10126 05	6701 62	-1204 19	6597 02	1 06	438688 40	662068 61	N 32 12 19 54	W 103 56 34 77
	16418 00	88 25	88 14	10128 89	6794 16	-1201 35	6690 93	0 27	438691 24	662162 51	N 32 12 19 57	W 103 56 33 68
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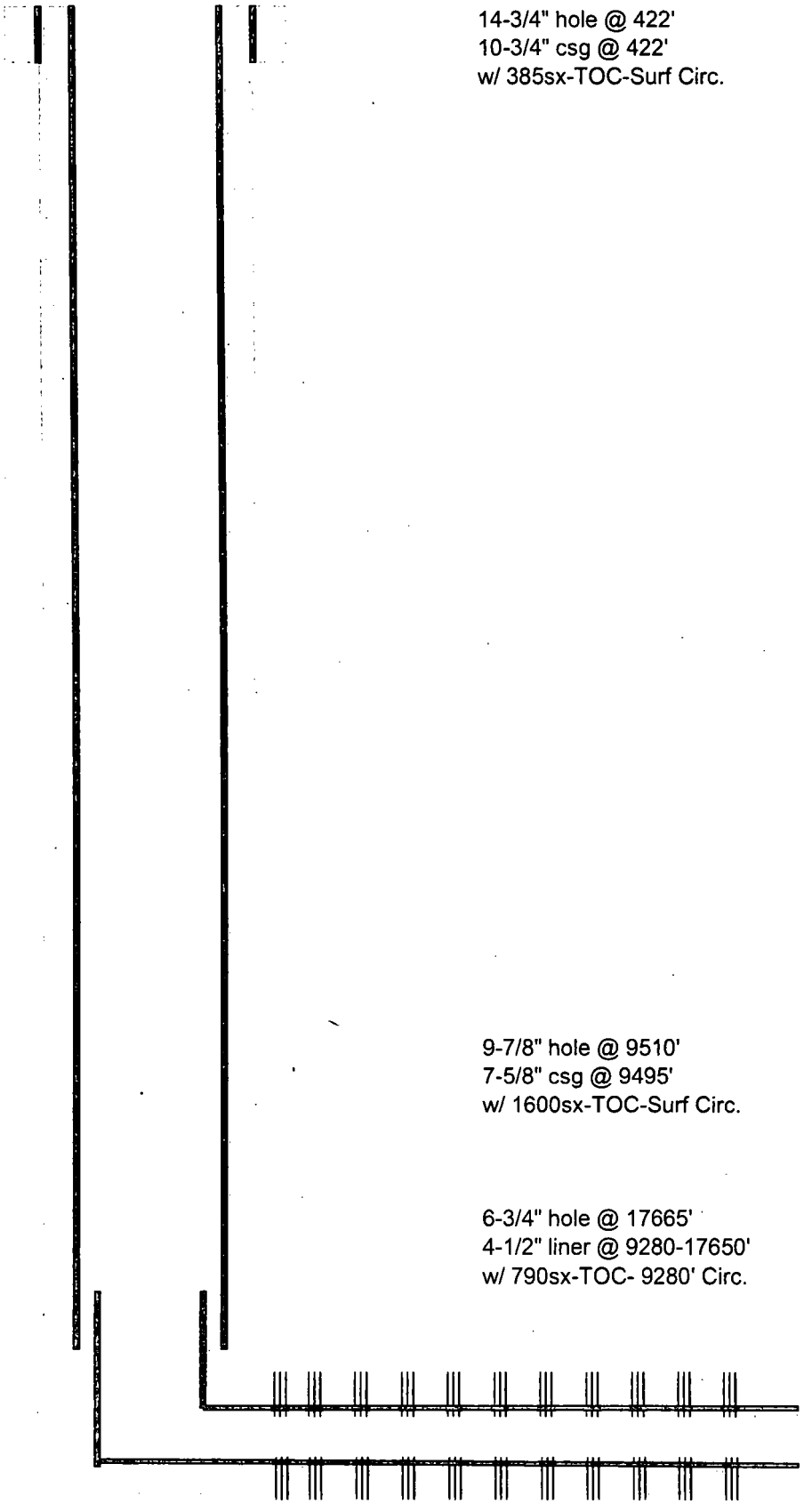
	16608 00	88 85	87 31	10135 08	6980 79	-1193 50	6880 67	1 18	438699 09	662352 23	N 32 12 19 64	W 103 56 31 47
	16703 00	88 93	86 95	10135 93	7073 96	-1188 79	6975 53	0 39	438703 84	662447 09	N 32 12 19 68	W 103 56 30 35
	16797 00	89 17	86 23	10136 49	7166 02	-1183 16	7069 35	0 81	438709 43	662540 89	N 32 12 19 74	W 103 56 29 27
	16986 00	87 14	84 14	10144 58	7350 00	-1167 31	7257 57	1 54	438725 29	662728 10	N 32 12 19 89	W 103 56 27 08
	17081 00	88 00	84 80	10148 61	7442 17	-1158 16	7352 04	1 14	438734 43	662823 56	N 32 12 19 97	W 103 56 26 98
	17270 00	85 80	86 90	10158 63	7626 46	-1144 50	7540 24	1 61	438748 09	663011 75	N 32 12 20 10	W 103 56 23 75
	17364 00	86 18	85 12	10165 40	7718 08	-1137 98	7633 78	1 93	438754 61	663105 29	N 32 12 20 16	W 103 56 22 70
	17459 00	88 65	85 60	10169 62	7810 74	-1131 04	7728 42	2 65	438761 55	663199 52	N 32 12 20 23	W 103 56 21 60
	17554 00	91 55	86 58	10169 48	7903 75	-1125 31	7823 24	3 07	438767 26	663294 13	N 32 12 20 28	W 103 56 20 50
Last Survey	17622 00	89 79	87 97	10168 67	7970 49	-1122 06	7891 15	3 03	438770 51	663362 64	N 32 12 20 31	W 103 56 19 71
Proj to TD	17665 00	89 79	87 97	10168 82	8012 80	-1120 55	7934 12	0 00	438772 03	663405 61	N 32 12 20 32	W 103 56 19 20

Survey Type: Def Survey

Survey Error Model: ISCWSA Rev 0 *** 3-D 95 000% Confidence 2 7955 sigma
Survey Program

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
Description		Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size Casing Diameter (in)	(in)	Survey Tool Type		Borehole / Survey		
		1	0 000	26 500	1/98 425	30 000	30 000	NAL_NSG+MSHOT-Depth Only		Original Borehole / Oxy Cedar Canyon 23-24 Federal 32H MWD 0-17,665'		
		1	26 500	26 500	Act Stns	30 000	30 000	NAL_NSG+MSHOT-Depth Only		Original Borehole / Oxy Cedar Canyon 23-24 Federal 32H MWD 0-17,665'		
		1	26 500	9360 370	Act Stns	30 000	30 000	NAL_NSG+MSHOT		Original Borehole / Oxy Cedar Canyon 23-24 Federal 32H MWD		
		1	9360 370	17665 000	Act Stns	30 000	30 000	NAL_MWD_PLUS_0 5_DEG		Original Borehole / Oxy Cedar Canyon 23-24 Federal 32H MWD		

OXY USA Inc.
Cedar Canyon 23-24 Federal 32H
API No. 30-015-44180



COLUMBINE LOGGING

Scale: 5" / 100'
Measured Depth Log

Well Name	30015441800000_Cedar Canyon 23-24 Fed Com 32H_ML_5IN Horz_R		
Location	520' FNL x 172' FEL, T24-S, R-29E		
State	New Mexico	**County**	Eddy
Country	USA	**Rig Number**	H & P 639
API Number	30015441800000	**Field**	Cedar Canyon
Spud Date	6/19/2017	**Drilling Completed**	7/28/2017
Surface Coordinates	N 32°12'31.25" W 103°57'49.74"		
Bottom Hole Coordinates	N 32°12'19.56" W 103°56'17.51"		
Ground Elevation	2,943.6'	**K.B. Elevation**	2,970.1'
Logged Interval	9,510 **To** 17,665	**Total Depth**	17,665'
Formation	3rd Bone Spring Sand		
Type of Drilling Fluid	OBM		