Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

FORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018

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.

SUBMIT IN TRIPLICATE - Other instructions on page 2

5. Lease Serial No.
NMNM85893

6. If Indian, Allottee or Tribe Name

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

1. Type of Well
☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.
CEDAR CANYON 21-22 FEDERAL COM 32I

2. Name of Operator
OXY USA INC
Contact: DAVID STEWART
E-Mail: david_stewart@oxy.com

9. API Well No.
30-015-44176-00-X1

3a. Address
MIDLAND, TX 79710

3b. Phone No. (include area code)
Ph: 432.685.5717

10. Field and Pool or Exploratory Area
~~PURPLE SAGE-WOLFCAMP (GAS)~~
~~WOLFCAMP~~ ED Corral Draw Bonespring 96238

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 21 T24S R29E SWNW 1794FNL 141FWL
32.205326 N Lat, 103.997551 W Lon

11. County or Parish, State
EDDY COUNTY, NM

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

TYPE OF SUBMISSION	TYPE OF ACTION			
☒ Notice of Intent	☐ Acidize	☐ Deepen	☐ Production (Start/Resume)	☐ Water Shut-Off
☐ Subsequent Report	☐ Alter Casing	☐ Hydraulic Fracturing	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other Change to Original APD
	☐ Change Plans	☐ Plug and Abandon	☐ Temporarily Abandon	
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	

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 recomplete 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 must 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 must be filed once testing has been completed. Final Abandonment Notices must 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 from the approved permit:

1. Change in the Target Bench from Wolfcamp to the 3rd Bone Springs.

2. Change in the Casing Design - Due to the change in the formation, the production casing liner will be amended. See attached for detail.

3. Change in the Cement Program - Due to the change in the formation, the cementing program will be amended. See attached for detail

4. Change in Directional Plan - Due to the change in the formation, the directional survey will be amended. See attached for detail.

NM OIL CONSERVATION
ARTESIA DISTRICT
DEC 26 2017
RECEIVED

All previous COAs still apply.

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

Electronic Submission #384674 verified by the BLM Well Information System
For OXY USA INC, sent to the Carlsbad
Committed to AFMSS for processing by PRISCILLA PEREZ on 09/20/2017 (17PP0920SE)

Name *(Printed/Typed)* DAVID STEWART — Title SR REGULATORY ADVISOR

Signature (Electronic Submission) — Date 08/15/2017

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By CHARLES NIMMER — Title PETROLEUM ENGINEER — Date 12/19/2017

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 Carlsbad

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

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

RJP 12-27-17

Additional data for EC transaction #384674 that would not fit on the form

32. Additional remarks, continued

5. Change in the Mud Program -

OXY proposes to drill out the 13-3/8? surface casing shoe with a saturated brine system from 400-2936', which is the base of the salt system. At this point we will swap fluid systems to a high viscosity mixed metal hydroxide system or a fully saturated brine direct emulsion system. We will drill with this system to the production TD @ 9265'. This fluid will also be used in the production, However OXY proposes both OBM and brine as contingency options.

Depth	Fluid Type	Mud Weight
0-400'	Spud Mud	8.4-8.6
400-PCP	DEWBM	9.0-9.5
PCP-TD	DEWBM (Brine/OBM-Contingency)	9.5-10.0

6. Change in Bottomhole Pressure, Bottomhole Temperature, and Estimated Cuttings Volume - Due to the change in the formation, see attached for detail.

7. Change to the wellhead design due to availability and cost. - See attached for detail.

OXY requests the option to contract a Surface Rig to drill, set surface casing, and cement for this well. If the timing between rigs is such that OXY would not be able to preset surface, the Primary Rig will MIRU and drill the well in its entirety per the APD. This was originally requested 8/2/17, Serial No. 852-61005, EC Transaction 383510. Please see the attached document for information on the spudder rig.

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 RD., 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, New Mexico 87505

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

☑ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
30-015-44176	96238	Corral Draw; Pierce Crossing; Bone Spring, ~~East~~

Property Code	Property Name	Well Number
	CEDAR CANYON 21-22 FEDERAL COM	32H

OGRID No.	Operator Name	Elevation
16696	OXY USA INC.	2931.4'

Surface Location

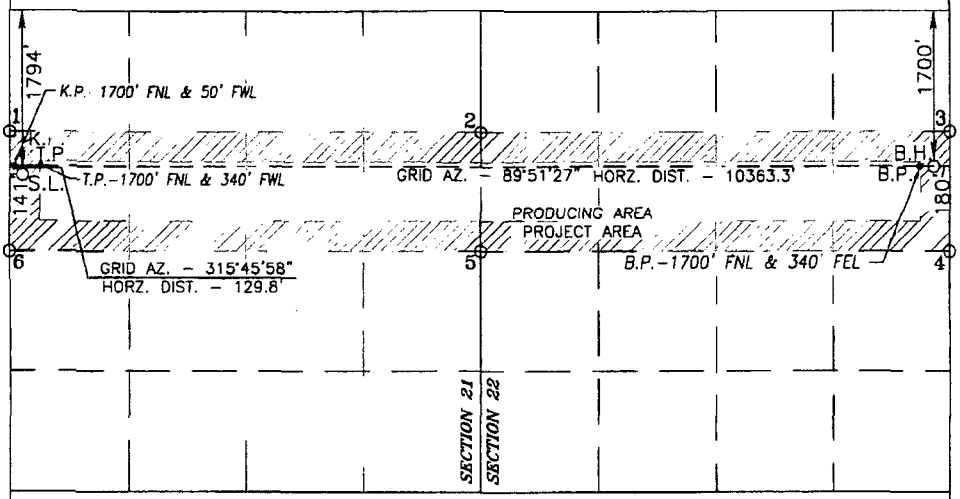
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
E	21	24-S	29-E		1794	NORTH	141	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	22	24-S	29-E		1700	NORTH	180	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
320	Y		

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



POINT LEGEND			
1	Y=439060.4 N X=645055.4 E	4	Y=437758.6 N X=655849.6 E
2	Y=439088.4 N X=650350.6 E	5	Y=437761.6 N X=650353.2 E
3	Y=439085.7 N X=655646.1 E	6	Y=437733.9 N X=645049.4 E

PROPOSED BOTTOM HOLE LOCATION
Y=438712.8 N
X=655467.1 E
LAT.=32.205560° N
LONG.=103.964335° W

* ALL COORDINATES ARE NAD 83 NME VALUES

OPERATOR CERTIFICATION

I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

8/14/17
Signature Date

David Stewart Sr. Reg. Adv.
Printed Name

david_stewart@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.

JULY 27, 2016
Date of Survey

Signature & Seal of Professional Surveyor

10/13/16

Certificate No. CHAD HARCROW 17777

W.O. #16-804 DRAWN BY: AM

OXY USA Inc. – Cedar Canyon 21-22 Federal Com 32H - Amended

1. Geologic Formations

TVD of target	9978'	Pilot Hole Depth	N/A
MD at TD:	19921'	Deepest Expected fresh water:	298'

Delaware Basin

Formation	TVD - RKB	Expected Fluids
Rustler	298	Brine
Salado	666	Losses
Castile (Anhydrite)	1308	
Lamar/Delaware	2886	
Bell Canyon	2901	Water
Cherry Canyon	3603	Oil/Gas
Brushy Canyon	5044	Oil/Gas
Bone Spring	6604	Oil/Gas
2nd Bone Spring	7789	Oil/Gas
3rd Bone Spring	**8703**	**Oil/Gas**

*H2S, water flows, loss of circulation, abnormal pressures, etc.

2. Casing Program

Hole Size (in)	Casing Interval		Csg. Size (in)	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	Buoyant Body SF Tension	Buoyant Joint SF Tension
	From (ft)	To (ft)								
17.5	0	400	13.375	54.5	J55	BTC	4.83	1.34	2.46	2.63
12.25	0	7500	9.625	43.5	HCL-80	BTC	1.22	1.58	2.05	2.15
12.25	7500	9265	9.625	47	HCL-80	BTC	1.29	1.85	3.83	4.16
8.5	9165	19921	5.5	20	P-110	DQX	2.10	1.20	2.26	2.48

All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h
*Oxy requests the option to set casing shallower yet still below the salts if losses or hole conditions require this. Cement volumes may be adjusted if casing is set shallower and a DV tool may be run in case hole conditions merit pumping a second stage cement job to comply with permitted top of cement. If cement circulated to surface during first stage we will drop a cancelation cone and not pump the second stage.

	Y or N
Is casing new? If used, attach certification as required in Onshore Order #1	Y
Does casing meet API specifications? If no, attach casing specification sheet.	Y
Is premium or uncommon casing planned? If yes attach casing specification sheet.	Y
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	Y
Is well located within Capitan Reef?	N
If yes, does production casing cement tie back a minimum of 50' above the Reef?	
Is well within the designated 4 string boundary.	

Is well located in SOPA but not in R-111-P?	N
If yes, are the first 2 strings cemented to surface and 3rd string cement tied back 500' into previous casing?	
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	
Is 2nd string set 100' to 600' below the base of salt?	
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	

3. Cementing Program

Casing	# Sks	Wt. lb/ gal	Yld ft3/ sack	H20 gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	270	14.2	1.68	6.53	6:50	Class C Cement, Accelerator
Production Casing	670	10.2	3.05	15.63	15:07	Pozzolan Cement, Retarder
	239	13.2	1.65	8.45	12:57	Class H Cement, Retarder, Dispersant, Salt
DV/ECP Tool @ 2936' (We request the option to cancel the second stage if cement is circulated to surface during the first stage of cement operations)						
2nd Stage	682	12.9	1.85	9.86	12:44	Class C Cement, Accelerator, Retarder
	207	14.8	1.33	6.34	6:31	Class C Cement
Production Liner	1740	13.2	1.631	8.37	15:15	Class H Cement, Retarder, Dispersant, Salt

Casing String	Top of Lead (ft)	Bottom of Lead (ft)	Top of Tail (ft)	Bottom of Tail (ft)	% Excess Lead	% Excess Tail
Surface	N/A	N/A	0	400	N/A	50%
Production Casing	2836	8265	8265	9265	20%	20%
2nd Stage Prodution Casing	0	2436	2436	2936	75%	75%
Production Liner	N/A	N/A	9165	19921	N/A	15%

- **Cement Top and Liner Overlap**
  - Oxy is requesting permission to have minimum fill of cement behind the 5.5" production liner to be 100 ft into previous casing string. The reason for this is so that we can come back and develop shallower benches from the same 9.625" mainbore in the future
  - Our plan is to use a whipstock for our exit through the mainbore. Based on our lateral target, we are planning a whipstock cased/hole exit so that kick-off point will allow for roughly 10deg/100' doglegs needed for the curve
  - Cement will be brought to the top of this liner hanger

4. Pressure Control Equipment

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
12.25" Production	13-5/8"	5M	Annular	✓	70% of working pressure
			Blind Ram	✓	250/5000psi
			Pipe Ram		
			Double Ram	✓	
			Other*		

*Specify if additional ram is utilized.

BOP/BOPE will be tested by an independent service company to 250 psi low and the high pressure indicated above per Onshore Order 2 requirements. The System may be upgraded to a higher pressure but still tested to the working pressure listed in the table above. If the system is upgraded all the components installed will be functional and tested.

Pipe rams will be operationally checked each 24 hour period. Blind rams will be operationally checked on each trip out of the hole. These checks will be noted on the daily tour sheets. Other accessories to the BOP equipment will include a Kelly cock and floor safety valve (inside BOP) and choke lines and choke manifold. See attached schematics.

	Formation integrity test will be performed per Onshore Order #2. On Exploratory wells or on that portion of any well approved for a 5M BOPE system or greater, a pressure integrity test of each casing shoe shall be performed. Will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.i.
	A variance is requested for the use of a flexible choke line from the BOP to Choke Manifold. See attached for specs and hydrostatic test chart.
	Y — Are anchors required by manufacturer?
	A multibowl or a unionized multibowl wellhead system will be employed. The wellhead and connection to the BOPE will meet all API 6A requirements. The BOP will be tested per Onshore Order #2 after installation on the surface casing which will cover testing requirements for a maximum of 30 days. If any seal subject to test pressure is broken the system must be tested. We will test the flange connection of the wellhead with a test port that is directly in the flange. We are proposing that we will run the wellhead through the rotary prior to cementing surface casing as discussed with the BLM on October 8, 2015. See attached schematics.

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From (ft)	To (ft)				
0	400	Water-Based Mud	8.4-8.6	40-60	N/C
400	2936	Brine	9.8-10.0	35-45	N/C
2936	9265	Water-Based Mud	8.8-9.6	38-50	N/C
9265	19921	Oil-Based Mud	9.6 - 11.0	35-50	N/C

Sufficient mud materials to maintain mud properties and meet minimum lost circulation and weight increase requirements will be kept on location at all times. The following is a general list of products: Barite, Bentonite, Gypsum, Lime, Soda Ash, Caustic Soda, Nut Plug, Cedar Fiber, Cotton Seed Hulls, Drilling Paper, Salt Water Clay, CACL2. Oxy will use a closed mud system.

OXY proposes to drill out the 13-3/8" surface casing shoe with a saturated brine system from 400- 2936', which is the base of the salt system. At this point we will swap fluid systems to a high viscosity mixed metal hydroxide system or a fully saturated brine direct emulsion system. We will drill with this system to the production TD @ 9265'. This fluid will also be used in the production, However OXY proposes both OBM and brine as contingency options.

What will be used to monitor the loss or gain of fluid?	PVT/MD Totco/Visual Monitoring

6. Logging and Testing Procedures

Logging, Coring and Testing.	
Yes	Will run GR from TD to surface (horizontal well – vertical portion of hole). Stated logs run will be in the Completion Report and submitted to the BLM.
No	Logs are planned based on well control or offset log information.
No	Drill stem test? If yes, explain
No	Coring? If yes, explain

Additional logs planned		Interval
No	Resistivity	
No	Density	
No	CBL	
Yes	Mud log	ICP - TD
No	PEX	

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	5708 psi
Abnormal Temperature	No
BH Temperature at deepest TVD	160°F

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.

Hydrogen Sulfide (H2S) monitors will be installed prior to drilling out the surface shoe. If H2S is detected in concentrations greater than 100 ppm, the operator will comply with the provisions of Onshore Oil and Gas Order #6. If Hydrogen Sulfide is encountered, measured values and formations will be provided to the BLM.	
N	H2S is present
Y	H2S Plan attached

8. Other facets of operation

	Yes/No
Will the well be drilled with a walking/skidding operation? If yes, describe. • We plan to drill the three well pad in batch by section: all surface sections, intermediate sections and production sections. The wellhead will be secured with a night cap whenever the rig is not over the well.	Yes
Will more than one drilling rig be used for drilling operations? If yes, describe. • Oxy requests the option to contract a Surface Rig to drill, set surface casing, and cement for this well. If the timing between rigs is such that Oxy would not be able to preset surface, the Primary Rig will MIRU and drill the well in its entirety per the APD. Please see the attached document for information on the spudder rig.	Yes

Total estimated cuttings volume: 2159.2 bbls.

9. Company Personnel

Name	Title	Office Phone	Mobile Phone
Philippe Haffner	Drilling Engineer	713-985-6379	832-767-9047
Diego Tellez	Drilling Engineer Supervisor	713-350-4602	713-303-4932
Simon Benavides	Drilling Superintendent	713-522-8652	281-684-6897
John Willis	Drilling Manager	713-366-5556	713-259-1417

Schlumberger

Oxy Cedar Canyon 21-22 Federal Com 32H REV2 JR 11Aug17 Proposal
Geodetic Report
(Non-Def Plan)

Report Date:	August 11, 2017 - 03:03 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	OXY	**Vertical Section Azimuth:**	89.338 ° (Grid North)
Field:	NM Eddy County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Oxy Cedar Canyon 21-22 Federal Com 32H / Oxy Cedar Canyon 21-22	**TVD Reference Datum:**	RKB=26.5'
Well:	Oxy Cedar Canyon 21-22 Federal Com 32H	**TVD Reference Elevation:**	2957.900 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	2931.400 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	7.166 °
Survey Name:	Oxy Cedar Canyon 21-22 Federal Com 32H REV2 JR 11Aug17	**Total Gravity Field Strength:**	998.4677mgn (9.80665 Based)
Survey Date:	August 11, 2017	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	108.124 ° / 10492.090 ft / 6.355 / 1.052	**Total Magnetic Field Strength:**	48096.841 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	60.013 °
Location Lat / Long:	N 32° 12' 19.17479", W 103° 59' 51.17715"	**Declination Date:**	August 11, 2017
Location Grid N/E Y/X:	*N 438594.100 ftUS, E 645194.200 ftUS*	***Magnetic Declination Model:***	*HDGM 2017*
CRS Grid Convergence Angle:	0.1790 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99992144	**Grid Convergence Used:**	0.1790 °
Version / Patch:	2.10.544.0	**Total Corr Mag North->Grid**	6.9865 °
		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	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	100.00	0.00	305.88	100.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	200.00	0.00	305.88	200.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
Rustler	*298.00*	*0.00*	*305.88*	*298.00*	*0.00*	*0.00*	*0.00*	*0.00*	*438594.10*	*645194.20*	*N 32 12 19.17*	*W 103 59 51.18*
	300.00	0.00	305.88	300.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	400.00	0.00	305.88	400.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	500.00	0.00	305.88	500.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	600.00	*0.00*	*305.88*	*600.00*	*0.00*	*0.00*	*0.00*	*0.00*	*438594.10*	*645194.20*	*N 32 12 19.17*	*W 103 59 51.18*
Salado	*666.00*	*0.00*	*305.88*	*666.00*	*0.00*	*0.00*	*0.00*	*0.00*	*438594.10*	*645194.20*	*N 32 12 19.17*	*W 103 59 51.18*
	700.00	0.00	305.88	700.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	800.00	0.00	305.88	800.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	900.00	0.00	305.88	900.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	1000.00	0.00	305.88	1000.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	1100.00	0.00	305.88	1100.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	1200.00	0.00	305.88	1200.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	1300.00	0.00	305.88	1300.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
Castile (Anhydrite)	*1308.00*	*0.00*	*305.88*	*1308.00*	*0.00*	*0.00*	*0.00*	*0.00*	*438594.10*	*645194.20*	*N 32 12 19.17*	*W 103 59 51.18*
	1400.00	0.00	305.88	1400.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	1500.00	0.00	305.88	1500.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	1600.00	0.00	305.88	1600.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	1700.00	0.00	305.88	1700.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	1800.00	0.00	305.88	1800.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	1900.00	0.00	305.88	1900.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	2000.00	0.00	305.88	2000.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	2100.00	0.00	305.88	2100.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	2200.00	0.00	305.88	2200.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	2300.00	0.00	305.88	2300.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	2400.00	0.00	305.88	2400.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	2500.00	0.00	305.88	2500.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	2600.00	0.00	305.88	2600.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	2700.00	0.00	305.88	2700.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	2800.00	0.00	305.88	2800.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
Lamar/Delaware	*2886.00*	*0.00*	*305.88*	*2886.00*	*0.00*	*0.00*	*0.00*	*0.00*	*438594.10*	*645194.20*	*N 32 12 19.17*	*W 103 59 51.18*
	2900.00	0.00	305.88	2900.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
Bell Canyon	*2901.00*	*0.00*	*305.88*	*2901.00*	*0.00*	*0.00*	*0.00*	*0.00*	*438594.10*	*645194.20*	*N 32 12 19.17*	*W 103 59 51.18*
	3000.00	0.00	305.88	3000.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	3100.00	0.00	305.88	3100.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	3200.00	0.00	305.88	3200.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	3300.00	0.00	305.88	3300.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	3400.00	0.00	305.88	3400.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	3500.00	0.00	305.88	3500.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	3600.00	0.00	305.88	3600.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
Cherry Canyon	*3603.00*	*0.00*	*305.88*	*3603.00*	*0.00*	*0.00*	*0.00*	*0.00*	*438594.10*	*645194.20*	*N 32 12 19.17*	*W 103 59 51.18*
	3700.00	0.00	305.88	3700.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	3800.00	0.00	305.88	3800.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	3900.00	0.00	305.88	3900.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	4000.00	0.00	305.88	4000.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	4100.00	0.00	305.88	4100.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	4200.00	0.00	305.88	4200.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	4300.00	0.00	305.88	4300.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	4400.00	0.00	305.88	4400.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	4500.00	0.00	305.88	4500.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	4600.00	0.00	305.88	4600.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	4700.00	0.00	305.88	4700.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	4800.00	0.00	305.88	4800.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	4900.00	0.00	305.88	4900.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	5000.00	0.00	305.88	5000.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
Brushy Canyon	*5044.00*	*0.00*	*305.88*	*5044.00*	*0.00*	*0.00*	*0.00*	*0.00*	*438594.10*	*645194.20*	*N 32 12 19.17*	*W 103 59 51.18*
	5100.00	0.00	305.88	5100.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	5200.00	0.00	305.88	5200.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	5300.00	0.00	305.88	5300.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	5400.00	0.00	305.88	5400.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	5500.00	0.00	305.88	5500.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	5600.00	0.00	305.88	5600.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	5700.00	0.00	305.88	5700.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	5800.00	0.00	305.88	5800.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	5900.00	0.00	305.88	5900.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	6000.00	0.00	305.88	6000.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	6100.00	*0.00*	*305.88*	*6100.00*	*0.00*	*0.00*	*0.00*	*0.00*	*438594.10*	*645194.20*	*N 32 12 19.17*	*W 103 59 51.18*
	6200.00	0.00	305.88	6200.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	6300.00	0.00	305.88	6300.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	6400.00	0.00	305.88	6400.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	6500.00	0.00	305.88	6500.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	6600.00	0.00	305.88	6600.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
Bone Spring	*6604.00*	*0.00*	*305.88*	*6604.00*	*0.00*	*0.00*	*0.00*	*0.00*	*438594.10*	*645194.20*	*N 32 12 19.17*	*W 103 59 51.18*
	6700.00	0.00	305.88	6700.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	6800.00	0.00	305.88	6800.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	6900.00	0.00	305.88	6900.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	7000.00	0.00	305.88	7000.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	7100.00	0.00	305.88	7100.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	7200.00	0.00	305.88	7200.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	7300.00	0.00	305.88	7300.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	7400.00	0.00	305.88	7400.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	7500.00	*0.00*	*305.88*	*7500.00*	*0.00*	*0.00*	*0.00*	*0.00*	*438594.10*	*645194.20*	*N 32 12 19.17*	*W 103 59 51.18*
	7600.00	0.00	305.88	7600.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	7700.00	0.00	305.88	7700.00	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
Build 2°/100'	7733.50	0.00	305.88	7733.50	0.00	0.00	0.00	0.00	438594.10	645194.20	N 32 12 19.17	W 103 59 51.18
	7800.00	1.33	305.88	7799.99	-0.62	0.45	-0.63	2.00	438594.55	645193.57	N 32 12 19.18	W 103 59 51.18
	7900.00	3.33	305.88	7899.91	-3.89	2.84	-3.92	2.00	438596.94	645190.28	N 32 12 19.20	W 103 59 51.22
	8000.00	5.33	305.88	7999.62	-9.95	7.26	-10.04	2.00	438601.36	645184.17	N 32 12 19.25	W 103 59 51.29
	8100.00	7.33	305.88	8099.00	-18.81	13.72	-18.97	2.00	438607.82	645175.23	N 32 12 19.31	W 103 59 51.40
	8200.00	9.33	305.88	8197.94	-30.45	22.21	-30.71	2.00	438616.31	645163.50	N 32 12 19.40	W 103 59 51.53
Hold Tangent	8233.33	10.00	305.88	8230.80	-34.94	25.49	-35.24	2.00	438619.59	645158.96	N 32 12 19.43	W 103 59 51.59
	8300.00	10.00	305.88	8296.46	-44.24	32.28	-44.61	0.00	438626.37	645149.59	N 32 12 19.50	W 103 59 51.70
	8400.00	10.00	305.88	8394.94	-58.18	42.45	-58.68	0.00	438636.55	645135.53	N 32 12 19.60	W 103 59 51.86
Turn 2°/100'	8415.28	10.00	305.88	8409.99	-60.32	44.01	-60.83	0.00	438638.10	645133.38	N 32 12 19.61	W 103 59 51.88
	8500.00	8.40	309.52	8493.61	-70.95	52.26	-71.56	2.00	438646.35	645122.64	N 32 12 19.69	W 103 59 52.01
	8600.00	6.59	316.02	8592.76	-80.47	61.04	-81.19	2.00	438655.13	645113.02	N 32 12 19.78	W 103 59 52.12
	8700.00	*4.92*	*327.15*	*8692.25*	*-86.70*	*68.77*	*-87.50*	*2.00*	*438662.87*	*645106.71*	*N 32 12 19.86*	*W 103 59 52.19*

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 ° ' ")
	8800.00	3.61	347.77	8791.98	-89.61	75.45	-90.49	2.00	438669.54	645103.72	N 32 12 19.92	W 103 59 52.23
	8900.00	3.13	21.40	8891.82	-89.22	81.06	-90.16	2.00	438675.16	645104.05	N 32 12 19.98	W 103 59 52.22
	9000.00	3.81	52.99	8991.64	-85.52	85.60	-86.51	2.00	438679.70	645107.70	N 32 12 20.02	W 103 59 52.18
	9100.00	5.22	71.27	9091.33	-78.51	89.07	-79.54	2.00	438683.16	645114.66	N 32 12 20.06	W 103 59 52.10
	9200.00	6.93	81.23	9190.77	-68.21	91.45	-69.27	2.00	438685.54	645124.94	N 32 12 20.08	W 103 59 51.98
	9300.00	8.76	87.16	9289.83	-54.62	92.75	-55.69	2.00	438686.84	645138.51	N 32 12 20.09	W 103 59 51.82
ICP	*9310.29*	*8.96*	*87.63*	*9300.00*	*-53.04*	*92.82*	*-54.11*	*2.00*	*438686.91*	*645140.09*	*N 32 12 20.09*	*W 103 59 51.80*
Build 10°/100'	9365.65	10.00	89.86	9354.60	-43.92	93.01	-45.00	2.00	438687.10	645149.20	N 32 12 20.10	W 103 59 51.70
	9400.00	13.44	89.86	9388.23	-36.95	93.03	-38.02	10.00	438687.12	645156.18	N 32 12 20.10	W 103 59 51.62
	9500.00	23.44	89.86	9482.98	-5.37	93.10	-6.44	10.00	438687.20	645187.76	N 32 12 20.10	W 103 59 51.25
	9600.00	33.44	89.86	9570.80	42.19	93.22	41.11	10.00	438687.32	645235.31	N 32 12 20.10	W 103 59 50.70
	9700.00	43.44	89.86	9649.03	104.27	93.38	103.20	10.00	438687.47	645297.39	N 32 12 20.10	W 103 59 49.97
	9800.00	53.44	89.86	9715.30	178.99	93.56	177.92	10.00	438687.65	645372.11	N 32 12 20.10	W 103 59 49.10
	9900.00	63.44	89.86	9767.58	264.09	93.77	263.02	10.00	438687.87	645457.20	N 32 12 20.09	W 103 59 48.11
	10000.00	73.44	89.86	9804.29	356.96	94.00	355.90	10.00	438688.10	645550.07	N 32 12 20.09	W 103 59 47.03
	10100.00	83.44	89.86	9824.31	454.80	94.25	453.75	10.00	438688.34	645647.91	N 32 12 20.09	W 103 59 45.89
Landing Point	10156.85	89.12	89.86	9828.00	511.51	94.39	510.45	10.00	438688.48	645704.61	N 32 12 20.09	W 103 59 45.23
	10200.00	89.12	89.86	9828.66	554.65	94.50	553.60	0.00	438688.59	645747.75	N 32 12 20.09	W 103 59 44.73
	10300.00	89.12	89.86	9830.20	654.64	94.75	653.59	0.00	438688.84	645847.73	N 32 12 20.09	W 103 59 43.57
	10400.00	89.12	89.86	9831.73	754.62	95.00	753.57	0.00	438689.09	645947.71	N 32 12 20.09	W 103 59 42.40
	10500.00	89.12	89.86	9833.27	854.60	95.24	853.56	0.00	438689.34	646047.69	N 32 12 20.09	W 103 59 41.24
	10600.00	89.12	89.86	9834.80	954.59	95.49	953.55	0.00	438689.59	646147.67	N 32 12 20.09	W 103 59 40.08
	10700.00	89.12	89.86	9836.34	1054.57	95.74	1053.54	0.00	438689.83	646247.65	N 32 12 20.09	W 103 59 38.91
	10800.00	89.12	89.86	9837.88	1154.56	95.99	1153.53	0.00	438690.08	646347.63	N 32 12 20.09	W 103 59 37.75
	10900.00	89.12	89.86	9839.41	1254.54	96.24	1253.51	0.00	438690.33	646447.61	N 32 12 20.09	W 103 59 36.58
	11000.00	89.12	89.86	9840.95	1354.53	96.49	1353.50	0.00	438690.58	646547.59	N 32 12 20.09	W 103 59 35.42
	11100.00	89.12	89.86	9842.49	1454.51	96.74	1453.49	0.00	438690.83	646647.57	N 32 12 20.09	W 103 59 34.26
	11200.00	89.12	89.86	9844.02	1554.49	96.99	1553.48	0.00	438691.08	646747.55	N 32 12 20.09	W 103 59 33.09
	11300.00	89.12	89.86	9845.56	1654.48	97.24	1653.46	0.00	438691.33	646847.53	N 32 12 20.09	W 103 59 31.93
	11400.00	89.12	89.86	9847.09	1754.46	97.49	1753.45	0.00	438691.58	646947.51	N 32 12 20.08	W 103 59 30.77
	11500.00	89.12	89.86	9848.63	1854.45	97.74	1853.44	0.00	438691.83	647047.49	N 32 12 20.08	W 103 59 29.60
	11600.00	89.12	89.86	9850.17	1954.43	97.98	1953.43	0.00	438692.08	647147.47	N 32 12 20.08	W 103 59 28.44
	11700.00	89.12	89.86	9851.70	2054.41	98.23	2053.42	0.00	438692.33	647247.45	N 32 12 20.08	W 103 59 27.28
	11800.00	89.12	89.86	9853.24	2154.40	98.48	2153.40	0.00	438692.57	647347.43	N 32 12 20.08	W 103 59 26.11
	11900.00	89.12	89.86	9854.78	2254.38	98.73	2253.39	0.00	438692.82	647447.41	N 32 12 20.08	W 103 59 24.95
	12000.00	89.12	89.86	9856.31	2354.37	98.98	2353.38	0.00	438693.07	647547.39	N 32 12 20.08	W 103 59 23.78
	12100.00	89.12	89.86	9857.85	2454.35	99.23	2453.37	0.00	438693.32	647647.37	N 32 12 20.08	W 103 59 22.62
	12200.00	89.12	89.86	9859.38	2554.33	99.48	2553.36	0.00	438693.57	647747.35	N 32 12 20.08	W 103 59 21.46
	12300.00	89.12	89.86	9860.92	2654.32	99.73	2653.34	0.00	438693.82	647847.33	N 32 12 20.08	W 103 59 20.29
	12400.00	89.12	89.86	9862.46	2754.30	99.98	2753.33	0.00	438694.07	647947.31	N 32 12 20.08	W 103 59 19.13
	12500.00	89.12	89.86	9863.99	2854.29	100.23	2853.32	0.00	438694.32	648047.29	N 32 12 20.08	W 103 59 17.97
	12600.00	89.12	89.86	9865.53	2954.27	100.47	2953.31	0.00	438694.57	648147.27	N 32 12 20.08	W 103 59 16.80
	12630.65	89.12	89.86	9866.00	2984.92	100.55	2983.95	0.00	438694.64	648177.91	N 32 12 20.08	W 103 59 16.45
	12700.00	89.12	89.86	9867.07	3054.25	*100.72*	3053.29	*0.00*	438694.82	*648247.25*	*N 32 12 20.08*	*W 103 59 15.64*
	12800.00	89.12	89.86	9868.60	3154.24	100.97	3153.28	0.00	438695.06	648347.23	N 32 12 20.07	W 103 59 14.47
	12900.00	89.12	89.86	9870.14	3254.22	101.22	3253.27	0.00	438695.31	648447.21	N 32 12 20.07	W 103 59 13.31
	13000.00	89.12	89.86	9871.67	3354.21	101.47	3353.26	0.00	438695.56	648547.19	N 32 12 20.07	W 103 59 12.15
	13100.00	89.12	89.86	9873.21	3454.19	101.72	3453.25	0.00	438695.81	648647.17	N 32 12 20.07	W 103 59 10.98
	13200.00	89.12	89.86	9874.75	3554.18	101.97	3553.23	0.00	438696.06	648747.15	N 32 12 20.07	W 103 59 9.82
	13300.00	89.12	89.86	9876.28	3654.16	102.22	3653.22	0.00	438696.31	648847.13	N 32 12 20.07	W 103 59 8.66
	13400.00	89.12	89.86	9877.82	3754.14	102.47	3753.21	0.00	438696.56	648947.11	N 32 12 20.07	W 103 59 7.49
	13500.00	89.12	89.86	9879.36	3854.13	102.72	3853.20	0.00	438696.81	649047.09	N 32 12 20.07	W 103 59 6.33
	13600.00	89.12	89.86	9880.89	3954.11	102.97	3953.19	0.00	438697.06	649147.07	N 32 12 20.07	W 103 59 5.17
	13700.00	89.12	89.86	9882.43	4054.10	103.21	4053.17	0.00	438697.31	649247.05	N 32 12 20.07	W 103 59 4.00
	13800.00	89.12	89.86	9883.96	4154.08	103.46	4153.16	0.00	438697.56	649347.03	N 32 12 20.07	W 103 59 2.84
	13900.00	89.12	89.86	9885.50	4254.06	103.71	4253.15	0.00	438697.80	649447.01	N 32 12 20.07	W 103 59 1.67
	14000.00	89.12	89.86	9887.04	4354.05	103.96	4353.14	0.00	438698.05	649546.99	N 32 12 20.07	W 103 59 0.51
	14100.00	89.12	89.86	9888.57	4454.03	104.21	4453.13	0.00	438698.30	649646.97	N 32 12 20.07	W 103 58 59.35
	14200.00	89.12	89.86	9890.11	4554.02	104.46	4553.11	0.00	438698.55	649746.95	N 32 12 20.06	W 103 58 58.18
	14300.00	89.12	89.86	9891.64	4654.00	104.71	4653.10	0.00	438698.80	649846.93	N 32 12 20.06	W 103 58 57.02
	14400.00	89.12	89.86	9893.18	4753.98	104.96	4753.09	0.00	438699.05	649946.91	N 32 12 20.06	W 103 58 55.86
	14500.00	89.12	89.86	9894.72	4853.97	105.21	4853.08	0.00	438699.30	650046.89	N 32 12 20.06	W 103 58 54.69
	14600.00	89.12	89.86	9896.25	4953.95	105.46	4953.06	0.00	438699.55	650146.87	N 32 12 20.06	W 103 58 53.53
	14700.00	89.12	89.86	9897.79	5053.94	105.71	5053.05	0.00	438699.80	650246.85	N 32 12 20.06	W 103 58 52.36
	14800.00	89.12	89.86	9899.33	5153.92	105.95	5153.04	0.00	438700.05	650346.83	N 32 12 20.06	W 103 58 51.20
	14900.00	89.12	89.86	9900.86	5253.90	106.20	5253.03	0.00	438700.29	650446.81	N 32 12 20.06	W 103 58 50.04
	15000.00	89.12	89.86	9902.40	5353.89	106.45	5353.02	0.00	438700.54	650546.79	N 32 12 20.06	W 103 58 48.87
	15100.00	89.12	89.86	9903.93	5453.87	106.70	5453.00	0.00	438700.79	650646.77	N 32 12 20.06	W 103 58 47.71
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	15300.00	89.12	89.86	9907.01	5653.84	107.20	5652.98	0.00	438701.29	650846.72	N 32 12 20.06	W 103 58 45.38
	15400.00	89.12	89.86	9908.54	5753.83	107.45	5752.97	0.00	438701.54	650946.70	N 32 12 20.06	W 103 58 44.22
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	16500.00	89.12	89.86	9925.44	6853.65	110.19	6852.83	0.00	438704.28	652046.48	N 32 12 20.05	W 103 58 31.42
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	16700.00	89.12	89.86	9928.51	7053.62	110.69	7052.81	0.00	438704.78	652246.44	N 32 12 20.04	W 103 58 29.09
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	17300.00	89.12	89.86	9937.73	7653.52	112.18	7652.74	0.00	438706.27	652846.32	N 32 12 20.04	W 103 58 22.11
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	18800.00	89.12	89.86	9960.77	9153.28	115.92	9152.56	0.00	438710.01	654346.02	N 32 12 20.03	W 103 58 4.65
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	19100.00	89.12	89.86	9965.38	9453.24	116.66	9452.52	0.00	438710.75	654645.96	N 32 12 20.02	W 103 58 1.16
	19200.00	89.12	89.86	9966.92	9553.22	116.91	9552.51	0.00	438711.00	654745.94	N 32 12 20.02	W 103 58 0.00
	19300.00	89.12	89.86	9968.46	9653.21	117.16	9652.50	0.00	438711.25	654845.92	N 32 12 20.02	W 103 57 58.83
	19400.00	89.12	89.86	9969.99	9753.19	117.41	9752.48	0.00	438711.50	654945.90	N 32 12 20.02	W 103 57 57.67
	19500.00	89.12	89.86	9971.53	9853.17	117.66	9852.47	0.00	438711.75	655045.88	N 32 12 20.02	W 103 57 56.51
	19600.00	89.12	89.86	9973.06	9953.16	117.91	9952.46	0.00	438712.00	655145.86	N 32 12 20.02	W 103 57 55.34
	19700.00	89.12	89.86	9974.60	10053.14	118.16	10052.45	0.00	438712.25	655245.84	N 32 12 20.02	W 103 57 54.18
	19800.00	89.12	89.86	9976.14	10153.13	118.41	10152.44	0.00	438712.50	655345.82	N 32 12 20.02	W 103 57 53.02
	19900.00	89.12	89.86	9977.67	10253.11	118.66	10252.42	0.00	438712.75	655445.80	N 32 12 20.02	W 103 57 51.85
Cedar Canyon 21-22 Federal Com 32H PBHL	19921.31	89.12	89.86	9978.00	10274.41	118.71	10273.73	0.00	438712.80	655467.10	N 32 12 20.02	W 103 57 51.60

Survey Type: Non-Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma

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 ° ' ")

Survey Program:

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	26.500	1/100.000	30.000	30.000		NAL_MWD_PLUS_0.5_DEG-	Original Borehole / Oxy Cedar
	1	26.500	19921.307	1/100.000	30.000	30.000		NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Cedar

Plan - Rev2

H&P 636 (RKB=26.5ft)

Schlumberger

OXY

Borehole:	Well:	Field:	Structure:
Original Borehole	Oxy Cedar Canyon 21-22 Federal Com 32H	NM Eddy County (NAD 83)	Oxy Cedar Canyon 21-22 Federal Com 32H

Gravity & Magnetic Parameters

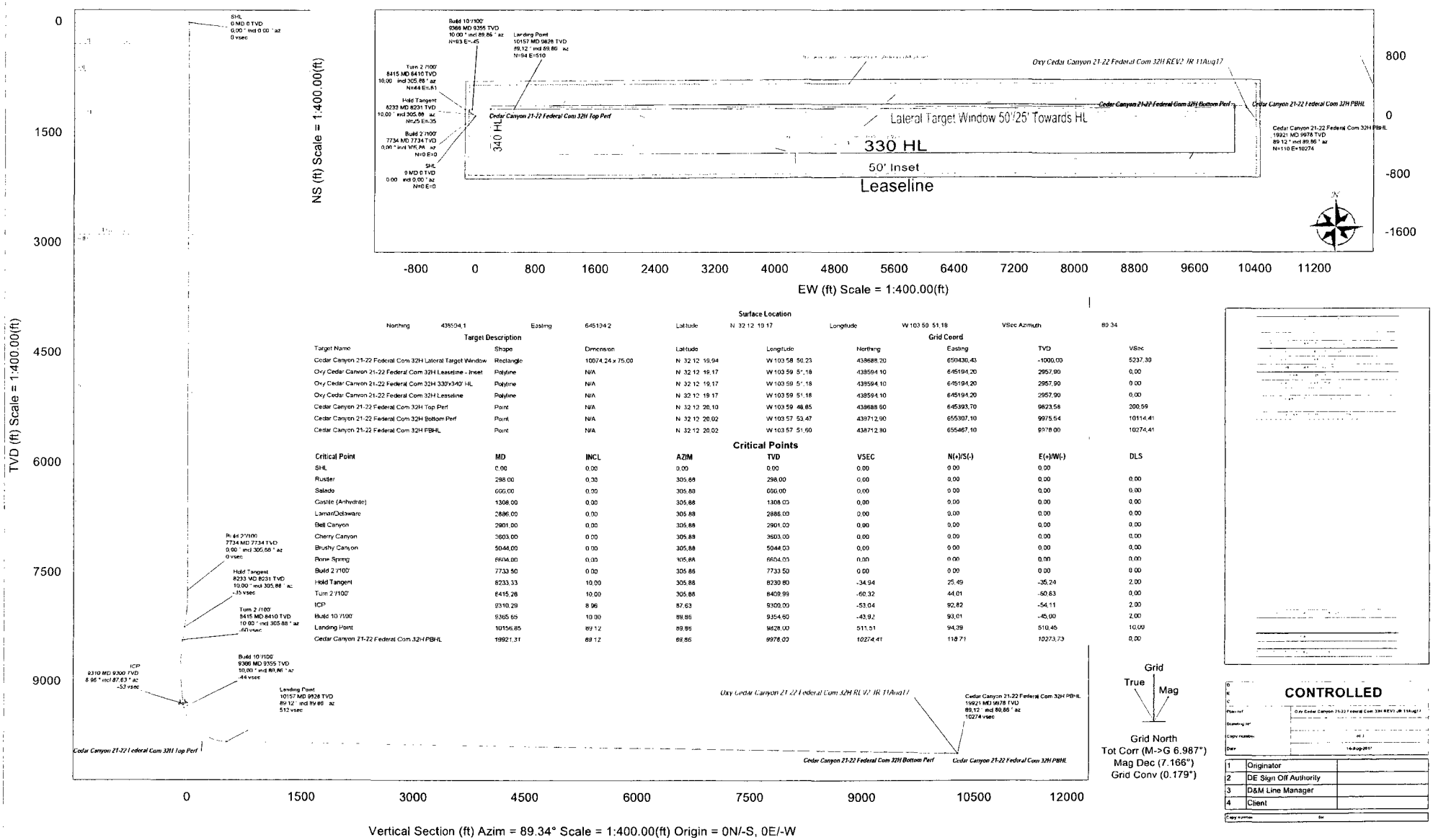
Model:	HDGM 2017	Dip:	60.013°	Date:	11-Aug-2017
MagDec:	7.166°	FS:	48066.845nT	Gravity FS:	998.469mgn (9.80665 Based)

Surface Location — NAD83 New Mexico State Plane, Eastern Zone, US Feet

Lat:	N 32 12 19.17	Northing:	438594.1ftUS	Grid Conv:	0.179°
Lon:	W 103 59 51.18	Easting:	645194.2ftUS	Scale Fact:	0.99992144

Miscellaneous

Slot:	Oxy Cedar Canyon 21-22 Federal Com 32H	TVD Ref:	RKB=26.5'(2957.9ft above MSL)
Plan:	Oxy Cedar Canyon 21-22 Federal Com 32H REV2 JR 11Aug17		



Surface Location

Northing 438594.1 Easting 645194.2 Latitude N 32 12 19.17 Longitude W 103 59 51.18 VSec Azimuth 89.34

Target Description — Grid Coord

Target Name	Shape	Dimension	Latitude	Longitude	Northing	Easting	TVD	VSec
Cedar Canyon 21-22 Federal Com 32H Lateral Target Window	Rectangle	10074.24 x 75.00	N 32 12 19.94	W 103 58 50.23	438688.20	650430.43	-1000.00	5237.39
Oxy Cedar Canyon 21-22 Federal Com 32H Leaseline - Inset	Polyline	N/A	N 32 12 19.17	W 103 59 51.18	438594.10	645194.20	2957.90	0.00
Oxy Cedar Canyon 21-22 Federal Com 32H 330'x340' HL	Polyline	N/A	N 32 12 19.17	W 103 59 51.18	438594.10	645194.20	2957.90	0.00
Oxy Cedar Canyon 21-22 Federal Com 32H Leaseline	Polyline	N/A	N 32 12 19.17	W 103 59 51.18	438594.10	645194.20	2957.90	0.00
Cedar Canyon 21-22 Federal Com 32H Top Perf	Point	N/A	N 32 12 20.10	W 103 59 48.85	438688.60	645393.70	9823.58	200.59
Cedar Canyon 21-22 Federal Com 32H Bottom Perf	Point	N/A	N 32 12 20.02	W 103 57 53.47	438712.90	655307.10	9975.54	10114.41
Cedar Canyon 21-22 Federal Com 32H PBHL	Point	N/A	N 32 12 20.02	W 103 57 51.60	438712.80	655467.10	9978.00	10274.41

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
Rustler	298.00	0.30	305.88	298.00	0.00	0.00	0.00	0.00
Salado	666.00	0.30	305.88	666.00	0.00	0.00	0.00	0.00
Castile (Anhydrite)	1308.00	0.00	305.88	1308.00	0.00	0.00	0.00	0.00
Lamar/Delaware	2886.00	0.00	305.88	2886.00	0.00	0.00	0.00	0.00
Bell Canyon	2901.00	0.00	305.88	2901.00	0.00	0.00	0.00	0.00
Cherry Canyon	3603.00	0.00	305.88	3603.00	0.00	0.00	0.00	0.00
Brushy Canyon	5044.00	0.00	305.88	5044.00	0.00	0.00	0.00	0.00
Bone Spring	6604.00	0.00	305.88	6604.00	0.00	0.00	0.00	0.00
Build 2°/100'	7733.50	0.00	305.88	7733.50	0.00	0.00	0.00	0.00
Hold Tangent	8233.33	10.00	305.88	8230.80	-34.94	25.49	-35.24	2.00
Turn 2°/100'	8415.26	10.00	305.88	8409.99	-60.32	44.01	-60.63	0.00
ICP	9310.29	8.96	87.63	9300.00	-53.04	92.82	-54.11	2.00
Build 10°/100'	9365.65	10.00	89.86	9354.60	-43.92	93.01	-45.00	2.00
Landing Point	10156.85	89.12	89.86	9828.00	511.51	94.39	510.45	10.00
Cedar Canyon 21-22 Federal Com 32H PBHL	19921.31	89.12	89.86	9978.00	10274.41	118.71	10273.73	0.00

Grid
True Mag
Grid North
Tot Corr (M->G 6.987°)
Mag Dec (7.166°)
Grid Conv (0.179°)

CONTROLLED

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

OXY USA Inc
APD ATTACHMENT: SPUDDER RIG DATA

OPERATOR NAME / NUMBER: OXY USA Inc

1. SUMMARY OF REQUEST:

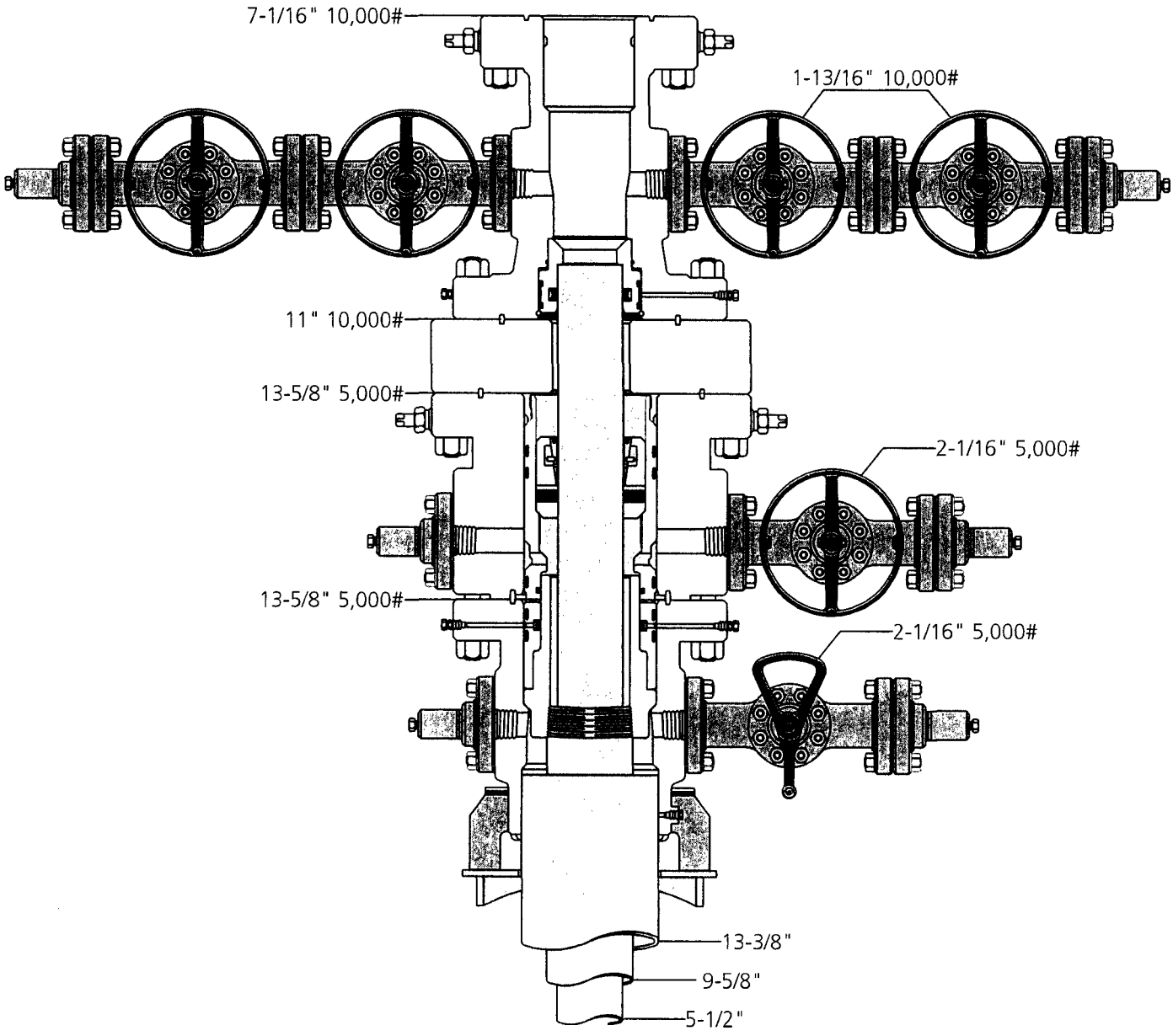
Oxy USA respectfully requests approval for the following operations for the surface hole in the drill plan:

1. Utilize a spudder rig to pre-set surface casing for time and cost savings.

2. Description of Operations

1. Spudder rig will move in to drill the surface hole and pre-set surface casing on the well.
    a. After drilling the surface hole section, the spudder rig will run casing and cement following all of the applicable rules and regulations (OnShore Order 2, all COAs and NMOCD regulations).
    b. The spudder rig will utilize fresh water-based mud to drill the surface hole to TD. Solids control will be handled entirely on a closed loop basis. No earth pits will be used.
2. The wellhead will be installed and tested as soon as the surface casing is cut off and the WOC time has been reached.
3. A blind flange at the same pressure rating as the wellhead will be installed to seal the wellbore. Pressure will be monitored with needle valves installed on two wingvalves.
    a. A means for intervention will be maintained while the drilling rig is not over the well.
4. Spudder rig operations are expected to take 2-3 days per well on the pad.
5. The BLM will be contacted and notified 24 hours prior to commencing spudder rig operations.
6. Drilling operations will begin with a larger rig and a BOP stack equal to or greater than the pressure rating that was permitted will be nippled up and tested on the wellhead before drilling operations resume on each well.
    a. The larger rig will move back onto the location within 90 days from the point at which the wells are secured and the spudder rig is moved off location.
    b. The BLM will be contacted / notified 24 hours before the larger rig moves back on the pre-set locations.
7. Oxy will have supervision on the rig to ensure compliance with all BLM and NMOCD regulations and to oversee operations.
8. Once the rig is removed, Oxy will secure the wellhead area by placing a guard rail around the cellar area.

Spudder Rig Layout

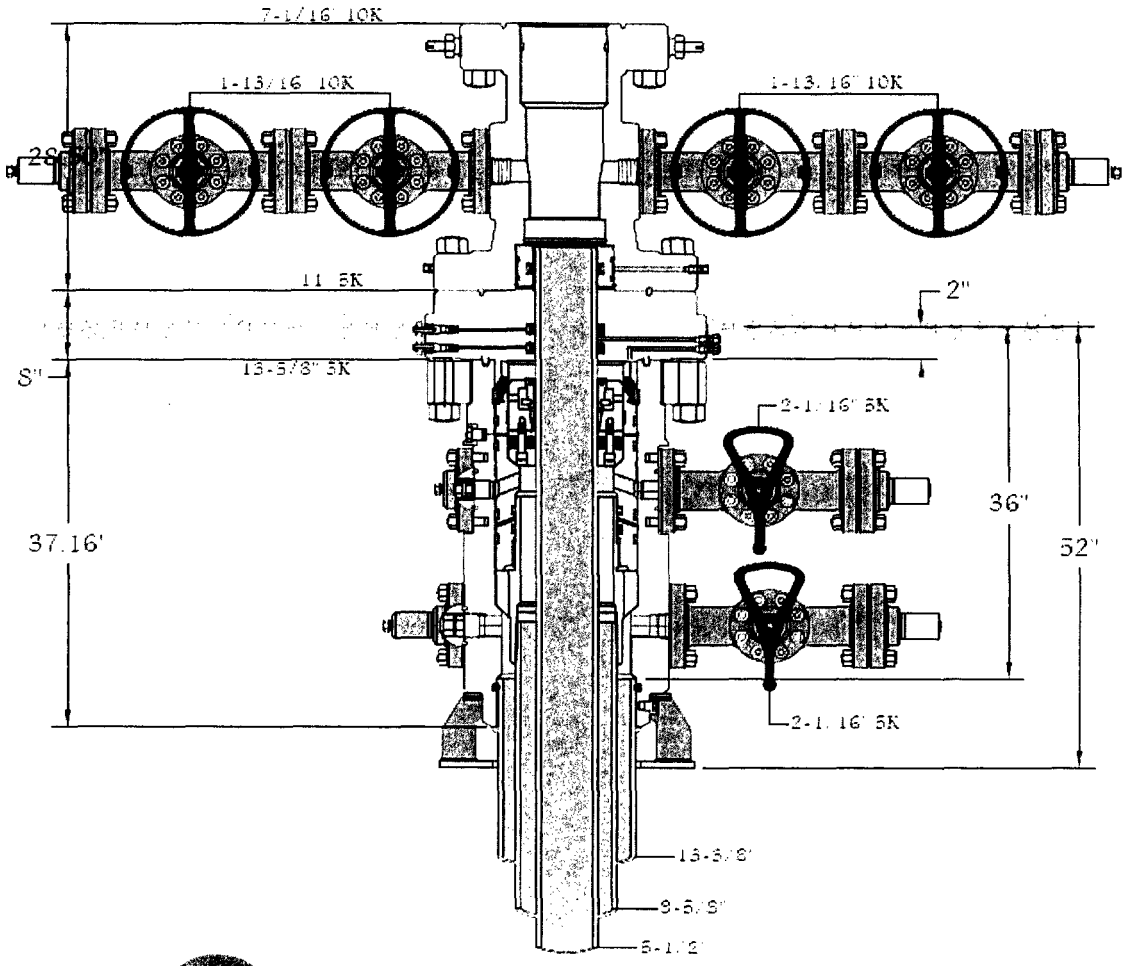


OXY

13" 5K MBS SL2 Wellhead

CAMERON
A Schlumberger Company

Name: Jeanette	Date: 7-12-16	Working Pressure: #	J-9786-4



13-5/8" 5K MN-DS

CAMERON
A Schlumberger Company

Brandon	5-10-17		1505172