Form 3160-5
(June 2015)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

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

NM OIL CONSERVATION
ARTESIA DISTRICT
MAR 11 2019
RECEIVED

5. Lease Serial No.
NMNM45236

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.
IRIDIUM MDP1 28-21 FEDERAL COM 3H

2. Name of Operator
OXY USA INCORPORATED
Contact: SARAH CHAPMAN
E-Mail: SARAH_CHAPMAN@OXY.COM

9. API Well No.
30-015-45244-00-X1

3a. Address
5 GREENWAY PLAZA SUITE 110
HOUSTON, TX 77046-0521

3b. Phone No. (include area code)
Ph: 713-350-4997

10. Field and Pool or Exploratory Area
INGLE WELLS

4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)*
Sec 33 T23S R31E NENW 249FNL 2369FWL
32.267498 N Lat, 103.783623 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 to amend the APD with the following changes:

1. BHL is moving 60' west from the current permitted location.

2. OXY is proposing to run a 2nd intermediate 7-5/8" csg string to be set at 9207'.

See updated C-102, drill plan, drill plot, directional survey and supplemental form for more information.

SEE ATTACHED FOR CONDITIONS OF APPROVAL

14. I hereby certify that the foregoing is true and correct.
Electronic Submission #454658 verified by the BLM Well Information System
For OXY USA INCORPORATED, sent to the Carlsbad
Committed to AFMSS for processing by PRISCILLA PEREZ on 02/14/2019 (19PP1078SE)

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

Signature (Electronic Submission) — Date 02/14/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By MUSTAFA HAQUE — Title PETROLEUM ENGINEER — Date 02/25/2019

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 ****

RWP 3-28-19

Oxy USA Inc. - Iridium MDP1 28-21 Fed Com 3H - Amendment

1. Geologic Formations

TVD of target	9792'	Pilot Hole Depth	N/A
MD at TD:	20285'	Deepest Expected fresh water:	448'

Delaware Basin

Formation	TVD - RKB	Expected Fluids
Rustler	448	
Salado	813	Salt
Castile	2,733	Salt
Lamar/Delaware	4,236	Oil/Gas/Brine
Bell Canyon	4,264	Oil/Gas/Brine
Cherry Canyon	5,131	Oil/Gas/Brine
Brushy Canyon	6,417	Losses
Bone Spring	8,036	Oil/Gas
1st Bone Spring	9,097	Oil/Gas
2nd Bone Spring	**9,323**	**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	683	13.375	54.5	J-55	BTC	1.125	1.2	1.4	1.4
12.25	0	4286	9.625	43.5	L-80	BTC	1.125	1.2	1.4	1.4
8.5	0	9207	7.625	26.4	L-80 HC	SF (0 ft to 4200 ft) FJ (4200 ft to 9207 ft)	1.125	1.2	1.4	1.4
6.75	0	20285	5.5	20	P-110	DQX	1.125	1.2	1.4	1.4
							SF Values will meet or Exceed			

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.

*Oxy requests the option to run production casing with DQX and/or SF TORQ connections to accommodate hole conditions or drilling operations.

Annular Clearance Variance Request

As per the agreement reached in the Oxy/BLM face-to-face meeting on Feb 22, 2018, Oxy requests permission to allow deviation from the 0.422" annular clearance requirement from Onshore Order #2 under the following conditions:

1. Annular clearance to meet or exceed 0.422" between intermediate casing ID and production casing coupling only on the first 500' overlap between both casings.
2. Annular clearance less than 0.422" is acceptable for the curve and lateral portions of the production open hole section.

	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?	Y
If yes, are the first three strings cemented to surface?	Y
Is 2nd string set 100' to 600' below the base of salt?	Y
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 String	# Sks	Wt. (lb/gal)	Yld (ft3/sack)	H20 (gal/sk)	500# Comp. Strength (hours)	Slurry Description
Surface (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Surface (Tail)	532	14.8	1.33	6.365	5:26	Class C Cement, Accelerator
Intermediate (Lead)	918	12.9	1.88	10.130	14:22	Pozzolan Cement, Retarder
Intermediate (Tail)	155	14.8	1.33	6.370	12:45	Class C Cement, Accelerator
Intermediate II 1st Stage (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Intermediate II 1st Stage (Tail)	125	13.2	1.65	8.640	11:54	Class H Cement, Retarder, Dispersant, Salt
Intermediate II 2nd Stage (Tail Slurry) to be pumped as Bradenhead Squeeze from surface, down the intermediate annulus						
Intermediate II 2nd Stage (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Intermediate II 2nd Stage (Tail)	351	12.9	1.92	10.410	23:10	Class C Cement, Accelerator
Production (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Production (Tail)	849	13.2	1.38	6.686	3:49	Class H Cement, Retarder, Dispersant, Salt

Casing String	Top (ft)	Bottom (ft)	% Excess
Surface (Lead)	N/A	N/A	N/A
Surface (Tail)	0	683	100%
Intermediate (Lead)	0	3786	50%
Intermediate (Tail)	3786	4286	20%
Intermediate II 1st Stage (Lead)	N/A	N/A	N/A
Intermediate II 1st Stage (Tail)	6667	9207	5%
Intermediate II 2nd Stage (Lead)	N/A	N/A	N/A
Intermediate II 2nd Stage (Tail)	0	6,667	25%
Production (Lead)	N/A	N/A	N/A
Production (Tail)	8707	20285	20%

4. Pressure Control Equipment

BOP installed and tested before drilling which hole?	Size?	Min. Required WP	Type	✓	Tested to:
12.25" Hole	13-5/8"	3M	Annular	✓	70% of working pressure
		3M	Blind Ram	✓	250 psi / 3000 psi
			Pipe Ram		
			Double Ram	✓	
			Other*		
8.5" Hole	13-5/8"	3M	Annular	✓	70% of working pressure
		3M	Blind Ram	✓	250 psi / 3000 psi
			Pipe Ram		
			Double Ram	✓	
			Other*		
6.75" Hole	13-5/8"	5M	Annular	✓	70% of working pressure
		5M	Blind Ram	✓	250 psi / 5000 psi
			Pipe Ram		
			Double Ram	✓	
			Other*		

*Specify if additional ram is utilized.

Oxy will utilize a 5M annular with a 10M BOPE stack. The 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. Due to the four string design, Oxy plans to employ a 13-3/8" 3K sacrificial wellhead that will be employed to drill the 12.25" Intermediate Hole. Upon completion of drilling and cementing operations on the 12.25" Intermediate Hole section (along with proper WOC time), the wellhead will be cut off and salvaged. At this point, a standard 13-5/8 MNDS 5x10 Slips (13.375 x 9.625 x 7.625 x 5.5) wellhead will be welded onto the 9-5/8" casing for the remainder of drilling operations on the pad. See attached schematics.	

BOP Break Testing Request

As per the agreement reached in the Oxy/BLM face-to-face meeting on Feb 22, 2018, Oxy requests permission to allow BOP Break Testing under the following conditions:

- After a full BOP test is conducted on the first well on the pad.
- When skidding to drill an intermediate section that does not penetrate into the Wolfcamp.
- Full BOP test will be required prior to drilling any production hole.

5. Mud Program

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From (ft)	To (ft)				
0	683	Water-Based Mud	8.6-8.8	40-60	N/C
683	4286	Saturated Brine-Based Mud	9.8-10.0	35-45	N/C
4286	9207	Water-Based or Oil-Based Mud	8.0-9.6	38-50	N/C
9207	20285	Water-Based or Oil-Based Mud	8.0-9.6	38-50	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.

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	4838 psi
Abnormal Temperature	No
BH Temperature at deepest TVD	159°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 two 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: 1536.1 bbls.

Attachments
_x__ Directional Plan

9. Company Personnel

Name	Title	Office Phone	Mobile Phone
Margret Giltner	Drilling Engineer	713-366-5026	210-683-8480
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 Iridium MDP1 28-21 Federal Com 3H Rev1 mcs 21Jan19 Proposal
Geodetic Report
(Def Plan)

Report Date:	January 23, 2019 - 04:47 PM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	OXY	**Vertical Section Azimuth:**	358.427 ° (Grid North)
Field:	NM Eddy County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Oxy Iridium MDP1 28-21 Federal Com 3H / Oxy Iridium MDP1 28-21 Federal Com 3H	**TVD Reference Datum:**	RKB=26.5'
Well:	Oxy Iridium MDP1 28-21 Federal Com 3H	**TVD Reference Elevation:**	3412.500 ft above MSL
Borehole:	Original Borehole	**Seabed / Ground Elevation:**	3386.000 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.855 °
Survey Name:	Oxy Iridium MDP1 28-21 Federal Com 3H Rev1 mcs 21Jan19	**Total Gravity Field Strength:**	998.4499mgn (9.80665 Based)
Survey Date:	January 21, 2019	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	97.542 ° / 10909.682 ft / 6.343 / 1.114	**Total Magnetic Field Strength:**	47970.639 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.993 °
Location Lat / Long:	N 32° 16' 2.99203", W 103° 47' 1.05082"	**Declination Date:**	January 21, 2019
Location Grid N/E Y/X:	N 461483.890 ftUS, E 711245.000 ftUS	**Magnetic Declination Model:**	HDGM 2018
CRS Grid Convergence Angle:	0.2935 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99994215	**Grid Convergence Used:**	0.2935 °
Version / Patch:	2.10.753.0	**Total Corr Mag North->Grid North:**	6.5612 °
		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	358.43	0.00	0.00	0.00	0.00	N/A	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	100.00	0.00	288.73	100.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	200.00	0.00	288.73	200.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	300.00	0.00	288.73	300.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	400.00	0.00	288.73	400.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	500.00	0.00	288.73	500.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	600.00	0.00	288.73	600.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	700.00	0.00	288.73	700.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	800.00	0.00	288.73	800.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	900.00	0.00	288.73	900.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	1000.00	0.00	288.73	1000.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	1100.00	0.00	288.73	1100.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	1200.00	0.00	288.73	1200.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	1300.00	0.00	288.73	1300.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	1400.00	0.00	288.73	1400.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	1500.00	0.00	288.73	1500.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	1600.00	0.00	288.73	1600.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	1700.00	0.00	288.73	1700.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	1800.00	0.00	288.73	1800.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	1900.00	0.00	288.73	1900.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	2000.00	0.00	288.73	2000.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	2100.00	0.00	288.73	2100.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	2200.00	0.00	288.73	2200.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	2300.00	0.00	288.73	2300.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	2400.00	0.00	288.73	2400.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	2500.00	0.00	288.73	2500.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	2600.00	0.00	288.73	2600.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	2700.00	0.00	288.73	2700.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	2800.00	0.00	288.73	2800.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	2900.00	0.00	288.73	2900.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	3000.00	0.00	288.73	3000.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	3100.00	0.00	288.73	3100.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	3200.00	0.00	288.73	3200.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	3300.00	0.00	288.73	3300.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	3400.00	0.00	288.73	3400.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	3500.00	0.00	288.73	3500.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	3600.00	0.00	288.73	3600.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	3700.00	0.00	288.73	3700.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	3800.00	0.00	288.73	3800.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	3900.00	0.00	288.73	3900.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	4000.00	0.00	288.73	4000.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	4100.00	0.00	288.73	4100.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	4200.00	0.00	288.73	4200.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	4300.00	0.00	288.73	4300.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	4400.00	0.00	288.73	4400.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	4500.00	0.00	288.73	4500.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	4600.00	0.00	288.73	4600.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	4700.00	0.00	288.73	4700.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	4800.00	0.00	288.73	4800.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	4900.00	0.00	288.73	4900.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	5000.00	0.00	288.73	5000.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	5100.00	0.00	288.73	5100.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	5200.00	0.00	288.73	5200.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	5300.00	0.00	288.73	5300.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	5400.00	0.00	288.73	5400.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	5500.00	0.00	288.73	5500.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	5600.00	0.00	288.73	5600.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	5700.00	0.00	288.73	5700.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	5800.00	0.00	288.73	5800.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	5900.00	0.00	288.73	5900.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	6000.00	0.00	288.73	6000.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	6100.00	0.00	288.73	6100.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	6200.00	0.00	288.73	6200.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	6300.00	0.00	288.73	6300.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	6400.00	0.00	288.73	6400.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	6500.00	0.00	288.73	6500.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	6600.00	0.00	288.73	6600.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	6700.00	0.00	288.73	6700.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	6800.00	0.00	288.73	6800.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	6900.00	0.00	288.73	6900.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	7000.00	0.00	288.73	7000.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	7100.00	0.00	288.73	7100.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	7200.00	0.00	288.73	7200.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	7300.00	0.00	288.73	7300.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	7400.00	0.00	288.73	7400.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	7500.00	0.00	288.73	7500.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	7600.00	0.00	288.73	7600.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05
	7700.00	0.00	288.73	7700.00	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05

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 ° ' ")	
Build 1°/100' DLS	7736.50	0.00	288.73	7736.50	0.00	0.00	0.00	0.00	461483.89	711245.00	N 32 16 2.99	W 103 47 1.05	
	7800.00	0.64	288.73	7800.00	0.12	0.11	-0.33	1.00	461484.00	711244.67	N 32 16 2.99	W 103 47 1.05	
	7900.00	1.64	288.73	7899.98	0.81	0.75	-2.21	1.00	461484.64	711242.79	N 32 16 3.00	W 103 47 1.08	
	8000.00	2.64	288.73	7999.91	2.10	1.95	-5.74	1.00	461485.84	711239.26	N 32 16 3.01	W 103 47 1.12	
	8100.00	3.64	288.73	8099.76	4.00	3.70	-10.92	1.00	461487.59	711234.08	N 32 16 3.03	W 103 47 1.18	
	8200.00	4.64	288.73	8199.49	6.50	6.02	-17.74	1.00	461489.91	711227.26	N 32 16 3.05	W 103 47 1.26	
	8300.00	5.64	288.73	8299.09	9.61	8.89	-26.22	1.00	461492.78	711218.78	N 32 16 3.08	W 103 47 1.36	
	8400.00	6.64	288.73	8398.52	13.32	12.33	-36.34	1.00	461496.21	711208.66	N 32 16 3.12	W 103 47 1.47	
	8500.00	7.64	288.73	8497.74	17.63	16.31	-48.10	1.00	461500.20	711196.90	N 32 16 3.16	W 103 47 1.61	
	8600.00	8.64	288.73	8596.73	22.54	20.86	-61.50	1.00	461504.75	711183.50	N 32 16 3.20	W 103 47 1.77	
	8700.00	9.64	288.73	8695.47	28.05	25.96	-76.54	1.00	461509.85	711168.47	N 32 16 3.25	W 103 47 1.94	
Hold	8736.96	10.00	288.73	8731.88	30.24	27.98	-82.51	1.00	461511.87	711162.50	N 32 16 3.27	W 103 47 2.01	
	8800.00	10.00	288.73	8793.97	34.04	31.50	-92.88	0.00	461515.39	711152.13	N 32 16 3.31	W 103 47 2.13	
Turn 1°/100' DLS	8855.35	10.00	288.73	8848.47	37.38	34.59	-101.99	0.00	461518.48	711143.02	N 32 16 3.34	W 103 47 2.24	
	8900.00	9.91	291.26	8892.45	40.21	37.23	-109.24	1.00	461521.12	711135.76	N 32 16 3.37	W 103 47 2.32	
	9000.00	9.78	297.06	8990.98	47.62	44.21	-124.83	1.00	461528.10	711120.18	N 32 16 3.44	W 103 47 2.50	
	9100.00	9.75	302.96	9089.53	56.49	52.68	-139.50	1.00	461536.57	711105.51	N 32 16 3.52	W 103 47 2.67	
	9200.00	9.82	308.83	9188.08	66.82	62.63	-153.24	1.00	461546.52	711091.77	N 32 16 3.62	W 103 47 2.83	
	9300.00	9.98	314.57	9286.60	78.59	74.06	-166.05	1.00	461557.95	711078.96	N 32 16 3.73	W 103 47 2.98	
Build 10°/100' DLS	9307.68	10.00	315.00	9294.16	79.56	75.00	-167.00	1.00	461558.89	711078.01	N 32 16 3.74	W 103 47 2.99	
	9400.00	17.75	338.87	9383.77	98.51	93.65	-178.22	10.00	461577.54	711066.79	N 32 16 3.93	W 103 47 3.12	
	9500.00	27.20	345.68	9476.10	135.07	129.91	-189.90	10.00	461613.79	711055.12	N 32 16 4.29	W 103 47 3.25	
	9600.00	36.92	350.14	9560.76	187.21	181.77	-200.72	10.00	461665.65	711044.29	N 32 16 4.80	W 103 47 3.38	
	9700.00	46.74	352.93	9635.19	253.35	247.66	-210.37	10.00	461731.54	711034.64	N 32 16 5.45	W 103 47 3.49	
	9800.00	56.62	354.94	9697.12	331.47	325.59	-218.55	10.00	461809.46	711026.46	N 32 16 6.22	W 103 47 3.58	
	9900.00	66.52	356.54	9744.67	419.20	413.18	-225.02	10.00	461897.05	711020.00	N 32 16 7.09	W 103 47 3.65	
	10000.00	76.44	357.91	9776.39	513.88	507.77	-229.56	10.00	461991.63	711015.45	N 32 16 8.03	W 103 47 3.69	
	10100.00	86.38	359.17	9791.33	612.63	606.49	-232.06	10.00	462090.34	711012.95	N 32 16 9.00	W 103 47 3.72	
Landing Point	10137.83	90.11	359.64	9792.50	650.43	644.29	-232.45	10.00	462128.14	711012.56	N 32 16 9.38	W 103 47 3.72	
	10200.00	90.11	359.64	9792.37	712.59	706.46	-232.84	0.00	462190.31	711012.17	N 32 16 9.99	W 103 47 3.72	
	10300.00	90.11	359.64	9792.18	812.58	806.46	-233.47	0.00	462290.30	711011.54	N 32 16 10.98	W 103 47 3.72	
	10400.00	90.11	359.64	9791.98	912.54	906.46	-234.10	0.00	462390.29	711010.91	N 32 16 11.97	W 103 47 3.72	
	10500.00	90.11	359.64	9791.78	1012.52	1006.45	-234.73	0.00	462490.28	711010.28	N 32 16 12.96	W 103 47 3.72	
	10600.00	90.11	359.64	9791.59	1112.50	1106.45	-235.36	0.00	462590.28	711009.65	N 32 16 13.95	W 103 47 3.73	
	10700.00	90.11	359.64	9791.39	1212.47	1206.45	-235.99	0.00	462690.27	711009.02	N 32 16 14.94	W 103 47 3.73	
	10800.00	90.11	359.64	9791.19	1312.45	1306.45	-236.62	0.00	462790.26	711008.39	N 32 16 15.93	W 103 47 3.73	
	10900.00	90.11	359.64	9791.00	1412.43	1406.45	-237.25	0.00	462890.25	711007.76	N 32 16 16.92	W 103 47 3.73	
	11000.00	90.11	359.64	9790.80	1512.41	1506.44	-237.88	0.00	462990.24	711007.13	N 32 16 17.91	W 103 47 3.73	
	11100.00	90.11	359.64	9790.60	1612.38	1606.44	-238.51	0.00	463090.23	711006.50	N 32 16 18.90	W 103 47 3.73	
	11200.00	90.11	359.64	9790.40	1712.36	1706.44	-239.14	0.00	463190.23	711005.87	N 32 16 19.89	W 103 47 3.73	
	11300.00	90.11	359.64	9790.21	1812.34	1806.44	-239.77	0.00	463290.22	711005.24	N 32 16 20.88	W 103 47 3.74	
	11400.00	90.11	359.64	9790.01	1912.32	1906.43	-240.40	0.00	463390.21	711004.61	N 32 16 21.87	W 103 47 3.74	
	11500.00	90.11	359.64	9789.81	2012.29	2006.43	-241.03	0.00	463490.20	711003.98	N 32 16 22.86	W 103 47 3.74	
	11600.00	90.11	359.64	9789.62	2112.27	2106.43	-241.66	0.00	463590.19	711003.35	N 32 16 23.85	W 103 47 3.74	
	11700.00	90.11	359.64	9789.42	2212.25	2206.43	-242.29	0.00	463690.19	711002.72	N 32 16 24.84	W 103 47 3.74	
	11800.00	90.11	359.64	9789.22	2312.23	2306.43	-242.92	0.00	463790.18	711002.09	N 32 16 25.83	W 103 47 3.74	
	11900.00	90.11	359.64	9789.02	2412.20	2406.42	-243.55	0.00	463890.17	711001.46	N 32 16 26.82	W 103 47 3.74	
	12000.00	90.11	359.64	9788.83	2512.18	2506.42	-244.18	0.00	463990.16	711000.83	N 32 16 27.81	W 103 47 3.75	
	12100.00	90.11	359.64	9788.63	2612.16	2606.42	-244.81	0.00	464090.15	711000.20	N 32 16 28.79	W 103 47 3.75	
	12200.00	90.11	359.64	9788.43	2712.13	2706.42	-245.44	0.00	464190.14	710999.57	N 32 16 29.78	W 103 47 3.75	
	12300.00	90.11	359.64	9788.24	2812.11	2806.41	-246.07	0.00	464290.14	710998.94	N 32 16 30.77	W 103 47 3.75	
	12400.00	90.11	359.64	9788.04	2912.09	2906.41	-246.70	0.00	464390.13	710998.31	N 32 16 31.76	W 103 47 3.75	
	12500.00	90.11	359.64	9787.84	3012.07	3006.41	-247.33	0.00	464490.12	710997.68	N 32 16 32.75	W 103 47 3.75	
	12600.00	90.11	359.64	9787.65	3112.04	3106.41	-247.96	0.00	464590.11	710997.05	N 32 16 33.74	W 103 47 3.75	
	12700.00	90.11	359.64	9787.45	3212.02	3206.41	-248.59	0.00	464690.10	710996.42	N 32 16 34.73	W 103 47 3.75	
	12800.00	90.11	359.64	9787.25	3312.00	3306.40	-249.22	0.00	464790.10	710995.79	N 32 16 35.72	W 103 47 3.76	
	12900.00	90.11	359.64	9787.05	3411.98	3406.40	-249.85	0.00	464890.09	710995.16	N 32 16 36.71	W 103 47 3.76	
	13000.00	90.11	359.64	9786.86	3511.95	3506.40	-250.48	0.00	464990.08	710994.53	N 32 16 37.70	W 103 47 3.76	
	13100.00	90.11	359.64	9786.66	3611.93	3606.40	-251.11	0.00	465090.07	710993.90	N 32 16 38.69	W 103 47 3.76	
	13200.00	90.11	359.64	9786.46	3711.91	3706.39	-251.74	0.00	465190.06	710993.27	N 32 16 39.68	W 103 47 3.76	
	13300.00	90.11	359.64	9786.27	3811.89	3806.39	-252.37	0.00	465290.06	710992.64	N 32 16 40.67	W 103 47 3.76	
	13400.00	90.11	359.64	9786.07	3911.86	3906.39	-253.00	0.00	465390.05	710992.01	N 32 16 41.66	W 103 47 3.76	
	13500.00	90.11	359.64	9785.87	4011.84	4006.39	-253.63	0.00	465490.04	710991.38	N 32 16 42.65	W 103 47 3.77	
	13600.00	90.11	359.64	9785.67	4111.82	4106.39	-254.26	0.00	465590.03	710990.75	N 32 16 43.64	W 103 47 3.77	
	13700.00	90.11	359.64	9785.48	4211.80	4206.38	-254.89	0.00	465690.02	710990.12	N 32 16 44.63	W 103 47 3.77	
	13800.00	90.11	359.64	9785.28	4311.77	4306.38	-255.52	0.00	465790.01	710989.49	N 32 16 45.62	W 103 47 3.77	
	13900.00	90.11	359.64	9785.08	4411.75	4406.38	-256.15	0.00	465890.01	710988.86	N 32 16 46.61	W 103 47 3.77	
	14000.00	90.11	359.64	9784.89	4511.73	4506.38	-256.78	0.00	465990.00	710988.23	N 32 16 47.60	W 103 47 3.77	
	14100.00	90.11	359.64	9784.69	4611.71	4606.38	-257.41	0.00	466089.99	710987.60	N 32 16 48.58	W 103 47 3.77	
	14200.00	90.11	359.64	9784.49	4711.68	4706.37	-258.04	0.00	466189.98	710986.97	N 32 16 49.57	W 103 47 3.78	
	14300.00	90.11	359.64	9784.30	4811.66	4806.37	-258.67	0.00	466289.97	710986.34	N 32 16 50.56	W 103 47 3.78	
	14400.00	90.11	359.64	9784.10	4911.64	4906.37	-259.30	0.00	466389.97	710985.71	N 32 16 51.55	W 103 47 3.78	
	14500.00	90.11	359.64	9783.90	5011.62	5006.37	-259.93	0.00	466489.96	710985.08	N 32 16 52.54	W 103 47 3.78	
	14600.00	90.11	359.64	9783.70	5111.59	5106.36	-260.56	0.00	466589.95	710984.45	N 32 16 53.53	W 103 47 3.78	
	14700.00	90.11	359.64	9783.51	5211.57	5206.36	-261.19	0.00	466689.94	710983.82	N 32 16 54.52	W 103 47 3.78	
	14800.00	90.11	359.64	9783.31	5311.55	5306.36	-261.82	0.00	466789.93	710983.19	N 32 16 55.51	W 103 47 3.78	
	14900.00	90.11	359.64	9783.11	5411.53	5406.36	-262.45	0.00	466889.92	710982.56	N 32 16 56.50	W 103 47 3.79	
	15000.00	90.11	359.64	9782.92	5511.50	5506.36	-263.08	0.00	466989.92	710981.93	N 32 16 57.49	W 103 47 3.79	
	15100.00	90.11	359.64	9782.72	5611.48	5606.35	-263.71	0.00	467089.91	710981.30	N 32 16 58.48	W 103 47 3.79	
	15200.00	90.11	359.64	9782.52	5711.46	5706.36	-264.34	0.00	467189.90	710980.67	N 32 16 59.47	W 103 47 3.79	
	15300.00	90.11	359.64	9782.32	5811.44	5806.35	-264.97	0.00	467289.89	710980.04	N 32 17 0.46	W 103 47 3.79	
	15400.00	90.11	359.64	9782.13	5911.41	5906.35	-265.60	0.00	467389.88	710979.41	N 32 17 1.45	W 103 47 3.79	
	15500.00	90.11	359.64	9781.93	6011.39	6006.34	-266.23	0.00	467489.88	710978.78	N 32 17 2.44	W 103 47 3.79	
	15600.00	90.11	359.64	9781.73	6111.37	6106.34	-266.86	0.00	467589.87	710978.15	N 32 17 3.43	W 103 47 3.79	
	15700.00	90.11	359.64	9781.54	6211.34	6206.34	-267.49	0.00	467689.86	710977.52	N 32 17 4.42	W 103 47 3.80	
	15800.00	90.11	359.64	9781.34	6311.32	6306.34	-268.12	0.00	467789.85	710976.89	N 32 17 5.41	W 103 47 3.80	
	15900.00	90.11	359.64	9781.14	6411.30	6406.34	-268.75	0.00	467889.84	710976.27	N 32 17 6.40	W 103 47 3.80	
	16000.00	90.11	359.64	9780.95	6511.28	6506.33	-269.38	0.00	467989.83	710975.64	N 32 17 7.39	W 103 47 3.80	
	16100.00	90.11	359.64	9780.75	6611.25	6606.33	-270.01	0.00	468089.83	710975.01	N 32 17 8.37	W 103 47 3.80	
	16200.00	90.11	359.64	9780.55	6711.23	6706.33	-270.64	0.00	468189.82	710974.38	N 32 17 9.36	W 103 47 3.80	
	16300.00	90.11	359.64	9780.35	6811.21	6806.33	-271.27	0.00	468289.81	710973.75	N 32 17 10.35	W 103 47 3.80	
	16400.00	90.11	359.64	9780.16	6911.19	6906.33	-271.90	0.00	468389.80	710973.12	N 32 17 11.34	W 103 47 3.81	
	16500.00	90.11	359.64	9779.96	7011.16	7006.32	-272.53	0.00	468489.79	710972.49	N 32 17 12.33	W 103 47 3.81	
	16600.00	90.11	359.64	9779.76	7111.14	7106.32	-273.16	0.00	468589.79	710971.86	N 32 17 13.32	W 103 47 3.81	
	16700.00	90.11	359.64	9779.57	7211.12	7206.32	-273.79	0.00	468689.78	710971.23	N 32 17 14.31	W 103 47 3.81	
	16800.00	90.11	359.64	9779.37	7311.10	7306.32	-274.42	0.00	468789.77	710970.60	N 32 17 15.30	W 103 47 3.81	
	16900.00	90.11	359.64	9779.17	7411.07	7406.31	-275.05	0.00	468889.76	710969.97	N 32 17 16.29	W 103 47 3.81	
	17000.00	90.11	359.64	9778.97	7511.05	7506.31	-275.68	0.00	468989.75	710969.34	N 32 17 17.28	W 103 47 3.81	
	17100.00	90.11	359.64	9778.78	7611.03	7606.31	-276.31	0.00	469089.74	710968.71	N 32 17 18.27	W 103 47 3.82	
	17200.00	90.11	359.64	9778.58	7711.01	7706.31	-276.94	0.00	469189.74	710968.08	N 32 17 19.26	W 103 47 3.82	
	17300.00	90.11	359.64	9778.38	7810.98	7806.31	-277.57	0.00	469289.73	710967.45	N 32 17 20.25	W 103 47 3.82	
	17400.00	90.11	359.64	9778.19	7910.96	7906.30	-278.20	0.00	469389.72	710966.82	N 32 17 21.24	W 103 47 3.82	
	17500.00	90.11	359.64	9777.99	8010.94	8006.30	-278.83	0.00	469489.71	710966.19	N 32 17 22.23	W 103 47 3.82	
	17600.00	90.11	359.64	9777.79	8110.92	8106.30	-279.46	0.00	469589.70	710965.56	N 32 17 23.22	W 103 47 3.82	
	17700.00	90.11	359.64	9777.60	8210.89	8206.30	-280.09	0.00	469689.70	710964.93	N 32 17 24.21	W 103 47 3.82	
	17800.00	90.11	359.64	9777.40	8310.87	8306.29	-280.72	0.00	469789.69	710964.30	N 32 17 25.20	W 103 47 3.83	

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 ° ' ")	
	17900.00	90.11	359.64	9777.20	8410.85	8406.29	-281.35	0.00	469889.68	710963.67	N 32 17 26.19	W 103 47	3.83
	18000.00	90.11	359.64	9777.00	8510.83	8506.29	-281.98	0.00	469989.67	710963.04	N 32 17 27.18	W 103 47	3.83
	18100.00	90.11	359.64	9776.81	8610.80	8606.29	-282.61	0.00	470089.66	710962.41	N 32 17 28.16	W 103 47	3.83
	18200.00	90.11	359.64	9776.61	8710.78	8706.29	-283.24	0.00	470189.66	710961.78	N 32 17 29.15	W 103 47	3.83
	18300.00	90.11	359.64	9776.41	8810.76	8806.28	-283.87	0.00	470289.65	710961.15	N 32 17 30.14	W 103 47	3.83
	18400.00	90.11	359.64	9776.22	8910.74	8906.28	-284.50	0.00	470389.64	710960.52	N 32 17 31.13	W 103 47	3.83
	18500.00	90.11	359.64	9776.02	9010.71	9006.28	-285.13	0.00	470489.63	710959.89	N 32 17 32.12	W 103 47	3.83
	18600.00	90.11	359.64	9775.82	9110.69	9106.28	-285.76	0.00	470589.62	710959.26	N 32 17 33.11	W 103 47	3.84
	18700.00	90.11	359.64	9775.62	9210.67	9206.28	-286.39	0.00	470689.61	710958.63	N 32 17 34.10	W 103 47	3.84
	18800.00	90.11	359.64	9775.43	9310.64	9306.27	-287.02	0.00	470789.61	710958.00	N 32 17 35.09	W 103 47	3.84
	18900.00	90.11	359.64	9775.23	9410.62	9406.27	-287.65	0.00	470889.60	710957.37	N 32 17 36.08	W 103 47	3.84
	19000.00	90.11	359.64	9775.03	9510.60	9506.27	-288.28	0.00	470989.59	710956.74	N 32 17 37.07	W 103 47	3.84
	19100.00	90.11	359.64	9774.84	9610.58	9606.27	-288.91	0.00	471089.58	710956.11	N 32 17 38.06	W 103 47	3.84
	19200.00	90.11	359.64	9774.64	9710.55	9706.26	-289.54	0.00	471189.57	710955.48	N 32 17 39.05	W 103 47	3.84
	19300.00	90.11	359.64	9774.44	9810.53	9806.26	-290.17	0.00	471289.57	710954.85	N 32 17 40.04	W 103 47	3.85
	19400.00	90.11	359.64	9774.25	9910.51	9906.26	-290.80	0.00	471389.56	710954.22	N 32 17 41.03	W 103 47	3.85
	19500.00	90.11	359.64	9774.05	10010.48	10006.26	-291.43	0.00	471489.55	710953.59	N 32 17 42.02	W 103 47	3.85
	19600.00	90.11	359.64	9773.85	10110.46	10106.26	-292.06	0.00	471589.54	710952.96	N 32 17 43.01	W 103 47	3.85
	19700.00	90.11	359.64	9773.65	10210.44	10206.25	-292.69	0.00	471689.53	710952.33	N 32 17 44.00	W 103 47	3.85
	19800.00	90.11	359.64	9773.46	10310.42	10306.25	-293.32	0.00	471789.52	710951.70	N 32 17 44.99	W 103 47	3.85
	19900.00	90.11	359.64	9773.26	10410.40	10406.25	-293.95	0.00	471889.52	710951.07	N 32 17 45.98	W 103 47	3.85
	20000.00	90.11	359.64	9773.06	10510.37	10506.25	-294.58	0.00	471989.51	710950.44	N 32 17 46.97	W 103 47	3.86
	20100.00	90.11	359.64	9772.87	10610.35	10606.24	-295.21	0.00	472089.50	710949.81	N 32 17 47.95	W 103 47	3.86
	20200.00	90.11	359.64	9772.67	10710.33	10706.24	-295.84	0.00	472189.49	710949.18	N 32 17 48.94	W 103 47	3.86
Oxy Iridium MDP1 28-21 Federal Com 3H - PBHL	20285.55	90.11	359.64	9772.50	10795.85	10791.79	-296.38	0.00	472275.03	710948.64	N 32 17 49.79	W 103 47	3.86

Survey Type: Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
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-Depth Only	Original Borehole / Oxy Iridium MDP1 28-21 Federal Com 3H Rev1 mcs 21Jan19
	1	26.500	20285.545	1/100.000	30.000	30.000		NAL_MWD_PLUS_0.5_DEG	Original Borehole / Oxy Iridium MDP1 28-21 Federal Com 3H

Schlumberger

OXY

Borehole:	Well:	Field:	Structure:
Original Borehole	Oxy Iridium MDP1 28-21 Federal Com 3H	NM Eddy County (NAD 83)	Oxy Iridium MDP1 28-21 Federal Com 3H

Gravity & Magnetic Parameters

Model: HDGM 2018 Dip: 59.993° Date: 21-Jan-2019

MagDec: 6.855° FS: 47970.838nT Gravity FS: 998.46mgn (9.80665 Based)

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

Lat: N 32 15 2.89 Northing: 461483.68fUS Grid Conv: 0.2935°

Lon: W 103 47 1.95 Easting: 711245fUS Scale Fact: 0.99994215

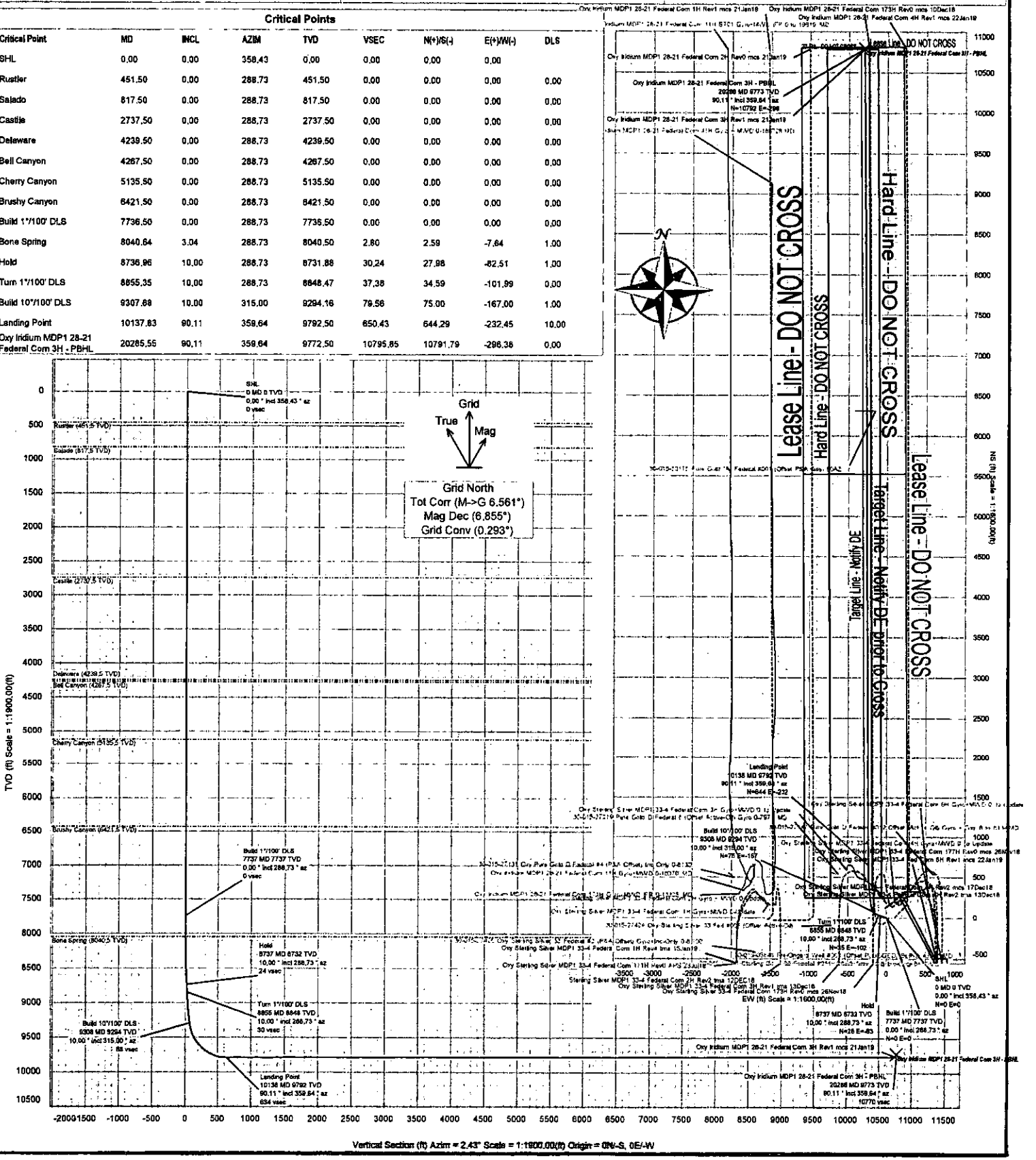
Miscellaneous

Slot: Oxy Iridium MDP1 28-21 Federal Com 3H TVD Ref: RKB=29.5'(3412.5ft above NSL)

Plan: Oxy Iridium MDP1 28-21 Federal Com 3H Rev1 mcs 21Jan19

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL	0.00	0.00	358.43	0.00	0.00	0.00	0.00	
Rustler	451.50	0.00	288.73	451.50	0.00	0.00	0.00	0.00
Salado	817.50	0.00	288.73	817.50	0.00	0.00	0.00	0.00
Castile	2737.50	0.00	288.73	2737.50	0.00	0.00	0.00	0.00
Delaware	4239.50	0.00	288.73	4239.50	0.00	0.00	0.00	0.00
Bell Canyon	4267.50	0.00	288.73	4267.50	0.00	0.00	0.00	0.00
Cherry Canyon	5135.50	0.00	288.73	5135.50	0.00	0.00	0.00	0.00
Brushy Canyon	6421.50	0.00	288.73	6421.50	0.00	0.00	0.00	0.00
Build 1°/100' DLS	7736.50	0.00	288.73	7736.50	0.00	0.00	0.00	0.00
Bone Spring	8040.64	3.04	288.73	8040.50	2.80	2.59	-7.64	1.00
Hold	8736.96	10.00	288.73	8731.88	30.24	27.98	-82.51	1.00
Turn 1°/100' DLS	8855.35	10.00	288.73	8848.47	37.38	34.59	-101.99	0.00
Build 10°/100' DLS	9307.68	10.00	315.00	9294.16	79.56	75.00	-167.00	1.00
Landing Point	10137.83	90.11	359.64	9792.50	650.43	644.29	-232.45	10.00
Oxy Iridium MDP1 28-21 Federal Com 3H - PBHL	20285.55	90.11	359.64	9772.50	10795.85	10791.79	-296.38	0.00



PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	OXY USA INC.
LEASE NO.:	NMNM 045236
WELL NAME & NO.:	Iridium MDP1 28-21 Fed Com 3H
SURFACE HOLE FOOTAGE:	249'/N & 2369'/W
BOTTOM HOLE FOOTAGE	20'/N & 2140'/W
LOCATION:	SECTION 33, T23S, R31E, NMPM
COUNTY:	EDDY

Potash	○ None	○ Secretary	◉ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	
Other	☐ 4 String Area	☐ Capitan Reef	☐ WIPP

All previous COAs still apply, except for the following:

A. CASING

1. The **13 3/8** inch surface casing shall be set at approximately **683** feet (a minimum of 25 feet into the Rustler Anhydrite and above the salt) and cemented to the surface.

    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 will be a minimum of **24 hours in the Potash Area** or 500 pounds compressive strength, whichever is greater. (This is to include the lead cement)

    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.

2. The minimum required fill of cement behind the **9 5/8** inch first intermediate casing is:

Option 1 (Single Stage):

- Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to potash.**

Option 2:

Operator has proposed a DV tool, the depth may be adjusted as long as the cement is changed proportionally. The DV tool may be cancelled if cement circulates to surface on the first stage.

a. First stage to DV tool: Cement to circulate. If cement does not circulate off the DV tool, contact the appropriate BLM office before proceeding with second stage cement job.

b. Second stage above DV tool:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to potash.**

Second intermediate casing must be kept fluid filled to meet BLM minimum collapse requirement.

3. The minimum required fill of cement behind the **7 5/8** inch second intermediate casing is:

- Cement to surface. If cement does not circulate, contact the appropriate BLM office.

Operator has proposed to pump down 9 5/8" X 7 5/8" annulus. Operator must run a CBL from the TD of the 7 5/8" casing to surface.

4. The minimum required fill of cement behind the **5 1/2** inch production casing is:

- Cement should be tie-back at least **500** feet into previous string. Operator shall provide method of verification. **Excess calculates to 19% - additional cement will be required.**

B. PRESSURE CONTROL

1. Variance approved to use flex line from BOP to choke manifold. Manufacturer's specification to be readily available. No external damage to flex line. Flex line to be installed as straight as possible (no hard bends).

2.

Option 1:

i. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **3000 (3M)** psi.

ii. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **7 5/8"** second intermediate casing shoe shall be **5000 (5M)** psi.

Option 2:

i. 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. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.
   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.

MHH 02252019

GENERAL 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)

☒ Chaves and Roosevelt Counties
Call the Roswell Field Office, 2909 West Second St., Roswell NM 88201.
During office hours call (575) 627-0272.
After office hours call (575)

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

☒ Lea County
Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 393-3612

A. CASING

1. 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.

2. Wait on cement (WOC) for Potash Areas: 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 for all cement blends, 2) until cement has been in place at least 24 hours. WOC time will be recorded in the driller's log.

3. 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.

4. Provide compressive strengths including hours to reach required 500 pounds compressive strength prior to cementing each casing string. Have well specific cement details onsite prior to pumping the cement for each casing string.

5. No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.

6. 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. Formation at the shoe shall be tested to a minimum of the mud weight equivalent anticipated to control the formation pressure to the next casing depth or at total depth of the well. This test shall be performed before drilling more than 20 feet of new hole.

7. 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.

8. Whenever a casing string is cemented in the R-111-P potash area, the NMOCD requirements shall be followed.

B. 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. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: 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.

3. 5M or higher 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.

4. If the operator has proposed a multi-bowl wellhead assembly in the APD. The following requirements must be met:

    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. 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.
e. Whenever any seal subject to test pressure is broken, all the tests in OOGO2.III.A.2.i must be followed.

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. In potash areas, 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. For all casing strings, casing cut-off and BOP installation can be initiated at twelve hours after bumping the plug. However, **no tests** shall commence until the cement has had a minimum of 24 hours setup time.

c. The tests shall be done by an independent service company utilizing a test plug not a cup or J-packer. The operator also has the option of utilizing an independent tester to test without a plug (i.e. against the casing) pursuant to Onshore Order 2 with the pressure not to exceed 70% of the burst rating for the casing. Any test against the casing must meet the WOC time for water basin (8 hours) or potash (24 hours) or 500 pounds compressive strength, whichever is greater, prior to initiating the test (see casing segment as lead cement may be critical item).

d. 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.

e. The results of the test shall be reported to the appropriate BLM office.

f. 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.

g. 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.

h. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

Haque, Mustafa <mhaque@blm.gov>

[EXTERNAL] Oxy - Iridium MDP1 28-21 Fed Com 1H, 2H, 3H, 4H - Bulk Drilling Sundry (Deepening of Surface TD)

4 messages

Tilley, Mitchel <Mitchel_Tilley@oxy.com> Thu, Nov 15, 2018 at 10:36 AM
To: "Haque, Mustafa" <mhaque@blm.gov>, "Lewis, Mark" <melewis@blm.gov>
Cc: "Adam, Derek W" <Derek_Adam@oxy.com>, "Turner, William" <William_Turner2@oxy.com>, "Tellez, Diego" <Diego_Tellez@oxy.com>, "Al Lawati, Mohamed A" <Mohamed_Al_Lawati@oxy.com>, "Daniels, Kaitlyn A" <Kaitlyn_Daniels@oxy.com>, "Stewart, David R" <David_Stewart@oxy.com>, "Morris, Justin C" <Justin_Morris@oxy.com>, "Benavides, Simon" <Simon_Benavides@oxy.com>

Haque / Mark,

Oxy rigs in the Iridium drilling area have been experiencing low formation integrity tests (FIT's) after drilling out of the surface shoe. The low FIT's have caused problems while drilling, casing, and cementing the intermediate hole sections.

Oxy request approval to deepen the surface casing on the upcoming wells for spudding listed below to approximately 700'. The new TD's satisfy the regulatory rules where surface casing must: > 25 ft into Rustler formation & not penetrate into the top of the Salado formation. The well design for these surface holes will remain the same as 17-1/2" OH x 13-3/8" CSG.

API	Well Name	New TD (ft)
3001545242	Iridium MDP1 28-21 Fed Com 1H	700
3001545243	Iridium MDP1 28-21 Fed Com 2H	700
3001545244	Iridium MDP1 28-21 Fed Com 3H	700
3001545245	Iridium MDP1 28-21 Fed Com 4H	700

Sincerely,

Mitchel Tilley
Drilling Engineer – Permian Resources (NM)
Oxy USA Inc.
Cell: 720.201.2649 | Office: 713.599.4111
Mitchel_Tilley@oxy.com

Lewis, Mark <melewis@blm.gov> Thu, Nov 15, 2018 at 4:54 PM
To: Mitchel_Tilley@oxy.com
Cc: "Haque, Mustafa" <mhaque@blm.gov>, Derek_Adam@oxy.com, William_Turner2@oxy.com, Diego_Tellez@oxy.com, Mohamed_Al_Lawati@oxy.com, Kaitlyn_Daniels@oxy.com, David_Stewart@oxy.com, Justin_Morris@oxy.com, Simon_Benavides@oxy.com

Received, thank you. non issue in Geology BLM view. Thank you
Have a great Thanks Giving
[Quoted text hidden]
--
Mark E. Lewis PG.

Interior-Bureau of Land Management
Geologist Fluid Minerals, Leasable & Salable Minerals
Interior-BLM, NM. Carlsbad Field Office-NM CFO

620 East Greene Street SR 62/180 Hobbs HWY