Oxy USA Inc. - Charlie Chocolate 14-15 Fed Com 31H

1. Geologic Formations

TVD of target	8815'	Pilot Hole Depth	10390'
MD at TD:	19165'	Deepest Expected fresh water:	64'

Delaware Basin

Formation	TVD - RKB	Expected Fluids
Rustler	64	
Salado	635	
Yates	890	
Capitan Reef	2,300	
Lamar/Delaware	3,000	Oil/Gas
Bone Spring	5,390	Oil/Gas
1st Bone Spring	6,670	Oil/Gas
2nd Bone Spring	6,900	Oil/Gas
3rd Bone Spring	7,790	Oil/Gas
Wolfcamp (Lateral)	**8,994**	**Oil/Gas/Depletion**
Penn	9,850	Oil/Gas/Depletion
Strawn (Pilot)	**10,123**	**Oil/Gas**

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

2. Casing Program

Hole Size (in)	Casing Interval From (ft)	Casing Interval To (ft)	Csg. Size (in)	Weight (lbs)	Grade	Conn.	SF Collapse	SF Burst	Buoyant Body SF Tension	Buoyant Joint SF Tension
17.5	0	400	13.375	54.5	J-55	BTC	1.125	1.2	1.4	1.4
12.25	0	3,050	9.625	43.5	L-80	BTC	1.125	1.2	1.4	1.4
8.5	0	2,950	7.625	26.4	L-80 HC	SF	1.125	1.2	1.4	1.4
	2,950	6,950	7.625	26.4	L-80 HC	FJ	1.125	1.2	1.4	1.4
6.75	0	19,165	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, SF TORQ, and/or DQW TORQ connections to accommodate hole conditions or drilling operations.

Annular Clearance Variance Request

As per the agreement reached in the Oxy/BLM 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:

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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?	Y
If yes, does production casing cement tie back a minimum of 50' above the Reef?	Y
Is well within the designated 4 string boundary.	N
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?	Y
If yes, are there two strings cemented to surface?	Y
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	
Is well located in critical Cave/Karst?	Y
If yes, are there three strings cemented to surface?	Y

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)	429	14.8	1.33	6.365	5:26	Class C Cement, Accelerator
Intermediate (Lead)	615	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 (Lead)	242	10.2	2.58	11.568	6:59	Pozzolan Cement, Retarder
Intermediate II (Tail)	35	13.2	1.65	8.640	11:54	Class H Cement, Retarder, Dispersant, Salt
Production (Lead)	N/A	N/A	N/A	N/A	N/A	N/A
Production (Tail)	931	13.2	1.38	6.686	3:49	Class H Cement, Retarder, Dispersant, Salt

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Casing String	Top (ft)	Bottom (ft)	% Excess
Surface (Lead)	N/A	N/A	N/A
Surface (Tail)	0	400	100%
Intermediate (Lead)	0	2550	50%
Intermediate (Tail)	2550	3050	20%
Intermediate II (Lead)	0	6450	20%
Intermediate II (Tail)	6450	6950	20%
Production (Lead)	N/A	N/A	N/A
Production (Tail)	6450	19165	20%

Pilot Hole Cementing specs:
Pilot hole depth: 10350' MD
KOP: 8211' MD (Open Hole)

Plug	Plug Top	Plug Bottom	% Excess	No. Sacks	Wt. (lb/gal)	Yld (ft3/sack)	Water (gal/sk)	Slurry Description and Cement Type
1	9850	10350	10	174	14.4	1.246	5.52	50% H Cement, 50% Poz, ~3.5% Bentonite
2	8850	9350	10	174	14.4	1.246	5.52	50% H Cement, 50% Poz, ~3.5% Bentonite
3	8411	8850	10	153	14.4	1.246	5.52	50% H Cement, 50% Poz, ~3.5% Bentonite
4	7911	8411	20	252	17.5	0.94	3.47	H Cement, Dispersant, Retarder

Note: The first plug is designed to be 500' in length to isolate the bottom Wolfcamp from potential high pressure zones. The second, and third plugs will be 400-500' in length. Plan to bring fifth plug 300ft above the curve KOP.

Offline Cementing

Oxy requests a variance to cement the 9.625" and/or 7.625" intermediate casing strings offline in accordance to the approved variance, EC Tran 461365.

The summarized operational sequence will be as follows:

1. Run casing as per normal operations. While running casing, conduct negative pressure test and confirm integrity of the float equipment (float collar and shoe).
2. Land casing.
3. Fill pipe with kill weight fluid, and confirm well is static.
    a. If well is not static notify BLM and kill well.
    b. Once well is static notify BLM with intent to proceed with nipple down and offline cementing.
4. Set and pressure test annular packoff.
5. After confirmation of both annular barriers and internal barriers, nipple down BOP and install cap flange. If any barrier fails to test, the BOP stack will not be nippled down until after the cement job is completed.
6. Skid rig to next well on pad.
7. Confirm well is static before removing cap flange.
8. If well is not static notify BLM and kill well prior to cementing or nippling up for further remediation.
9. Install offline cement tool.
10. Rig up cement equipment.

a. Notify BLM prior to cement job.
11. Perform cement job.
12. Confirm well is static and floats are holding after cement job.
13. Remove cement equipment, offline cement tools and install night cap with pressure gauge for monitoring.

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	✓	250/3000psi
			Pipe Ram		
			Double Ram	✓	
			Other*		
8.5" Hole	13-5/8"	3M	Annular	✓	70% of working pressure
		3M	Blind Ram	✓	250/3000psi
			Pipe Ram		
			Double Ram	✓	
			Other*		
6.75" Hole (Pilot)	13-5/8"	5M	Annular	✓	70% of working pressure
		10M	Blind Ram	✓	250/10000psi
			Pipe Ram		
			Double Ram	✓	
			Other*		
6.75" Hole (Lateral)	13-5/8"	5M	Annular	✓	70% of working pressure
		5M	Blind Ram	✓	250/5000psi
			Pipe Ram		
			Double Ram	✓	
			Other*		

*Specify if additional ram is utilized.

Per BLM's Memorandum No. NM-2017-008: *Decision and Rationale for a Variance Allowing the Use of a 5M Annular Preventer with a 10M BOP Stack*, Oxy requests to employ a 5M annular with a 10M BOPE stack in the pilot and lateral sections of the well and will ensure that two barriers to flow are maintained at all times. Please see attached Well Control Plan.

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. See attached schematics.

BOP Break Testing Request

As per the agreement reached in the Oxy/BLM 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

PILOT

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From (ft)	To (ft)				
0	400	Water-Based Mud	8.6-8.8	40-60	N/C
400	3050	Saturated Brine-Based Mud	9.8-10.0	35-45	N/C
3050	6950	Saturated Brine-Based Mud or Water-Based Mud	9.0-9.6	38-50	N/C
6950	10390	Water-Based Mud	10.0-13.5	42-48	< 10 cc

LATERAL

Depth		Type	Weight (ppg)	Viscosity	Water Loss
From (ft)	To (ft)				
6950	19165	Saturated Brine-Based Mud or Oil-Based Mud	9.5-12.0	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

Logs Planned		Interval
Yes	FMI	Pilot & Lateral
Yes	Mud Log	Pilot & Lateral
Yes	Triple Combo (Spectral Gamma, Dipole Sonic, CMR)	Pilot & Lateral

7. Drilling Conditions

Condition	Specify what type and where?
BH Pressure at deepest TVD	7266 psi (Pilot) 5501 psi (Lateral)
Abnormal Temperature	No
BH Temperature at deepest TVD	163 °F (Pilot) 151 °F (Lateral)

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.	No
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: 1561.1 bbls (Pilot & Lateral).

9. Company Personnel

Name	Title	Office Phone	Mobile Phone
Clint Rothe	Drilling Engineer	713-840-3065	210-232-5694
William Turner	Drilling Engineer Supervisor	713-350-4951	661-817-4586
Simon Benavides	Drilling Superintendent	713-522-8652	281-684-6897
Diego Tellez	Drilling Manager	713-350-4602	713-303-4932

Project: PRD NM DIRECTIONAL PLANS (NAD 1983)
Site: Charlie Chocolate 14-15
Well: Charlie Chocolate 14-15 Fed Com 31H
Wellbore: Pilot
Design: Permitting Plan

PROJECT DETAILS: NM DIRECTIONAL PLANS (NAD 1983)

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

WELL DETAILS: Charlie Chocolate 14-15 Fed Com 31H

Ground Level: 3263.70

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	574700.48	600645.96	32° 34' 47.130378 N	104° 8' 26.833530 W

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5984.00	0.00	0.00	5984.00	0.00	0.00	0.00	0.00	0.00	Build 2.00°/100'
6584.18	12.00	119.59	6579.80	-30.93	54.47	2.00	119.59	62.64	Hold 12.00° Tangent
8014.86	12.00	119.59	7979.20	-177.87	313.20	0.00	0.00	360.18	Drop 2.00°/100'
8615.04	0.00	0.00	8575.00	-208.80	367.67	2.00	180.00	422.82	Hold Vertical
10390.04	0.00	0.00	10350.00	-208.80	367.67	0.00	0.00	422.82	TD Pilot Hole at 10390.04' MD

Azimuths to Grid North
True North: -0.10°
Magnetic North: 7.18°

Magnetic Field
Strength: 47983.8snT
Dip Angle: 60.32°
Date: 5/15/2019
Model: HDGM