PECOS DISTRICT
DRILLING OPERATIONS
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**EOG Resources, Inc.**
LEASE NO.:	**NMNM-118727**
WELL NAME & NO.:	**Orrtanna 20 Fed 710H**
SURFACE HOLE FOOTAGE:	**0557' FSL & 2408' FEL**
BOTTOM HOLE FOOTAGE	**0230' FNL & 1652' FEL**
LOCATION:	**Section 20, T. 26 S., R 33 E., NMPM**
COUNTY:	**County, New Mexico**

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)

☐ **Lea County**

Call the Hobbs Field Station, 414 West Taylor, Hobbs NM 88240, (575) 3933612

Anti-collison reports will need to be submitted for the Orrtanna wells

A. **Hydrogen Sulfide**

1. A Hydrogen Sulfide (H2S) Drilling Plan shall be activated 500 feet prior to drilling into the **Delaware** formation. **As a result, the Hydrogen Sulfide area must meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, please provide measured values and formations to the BLM.**

2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a "Major" violation.**

3. Option – Setting surface casing with Surface Rig

   a. Notify the BLM when removing the Surface Services Rig.

   b. Notify the BLM when moving in the H&P Flex Rig. Rig to be moved in within 60 days of notification that Ashton Oilfield Services Rig has left the location. Failure to notify or have rig on location within 60 days will result in an Incident of Non-Compliance.

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.

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

Medium Cave/Karst
Possibility of water flows in the Salado and Castile.
Possibility of lost circulation in the Rustler, Red Beds, and Delaware.
Abnormal pressures may be encountered.

1. The **10 3/4** inch surface casing shall be set at approximately **1160** feet 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 is to include the lead cement slurry.**

    c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.

    d. If cement falls back, remedial cementing will be done prior to drilling out that string.

Formation below the 10-3/4" shoe to be tested according to Onshore Order 2.III.B.1.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe (not the mud weight required to prevent dissolving the salt formation) and the mud weight for the bottom of the hole. Report results to BLM office.

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

    ☐ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.**

If cement does not circulate to surface on the intermediate casing, the cement on the production casing must come to surface.

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

Variance approved to use a 5M annular. The annular must be tested to full working pressure (5000 psi.)

10M 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. The appropriate BLM office shall be notified a minimum of 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).

    a. The tests shall be done by an independent service company utilizing a test plug **not a cup or J-packer**.

    b. 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.

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

    d. 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.**

    e. 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.

EOG Resources - Midland

Lea County, NM (NAD 83 NME)
Orrtanna 20 Fed
#710H

OH

Plan: Plan #0.1

Standard Planning Report

16 June, 2017

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well #710H
Company:	EOG Resources - Midland	**TVD Reference:**	KB = 25' @ 3279.00usft
Project:	Lea County, NM (NAD 83 NME)	**MD Reference:**	KB = 25' @ 3279.00usft
Site:	Orrtanna 20 Fed	**North Reference:**	Grid
Well:	#710H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	-0.01	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	-0.01	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	-0.01	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	-0.01	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	-0.01	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	-0.01	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	-0.01	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	-0.01	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	-0.01	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	-0.01	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	-0.01	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	-0.01	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	-0.01	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	-0.01	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	-0.01	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	-0.01	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	-0.01	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	-0.01	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	-0.01	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	-0.01	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	-0.01	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	-0.01	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	-0.01	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	-0.01	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	-0.01	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	-0.01	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	-0.01	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	-0.01	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	-0.01	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	-0.01	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	-0.01	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	-0.01	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	-0.01	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	-0.01	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	-0.01	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	-0.01	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	-0.01	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	-0.01	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	-0.01	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	-0.01	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	-0.01	0.00	0.00	0.00
4,100.00	1.00	125.21	4,100.00	-0.50	0.71	-0.39	1.00	1.00	0.00
4,200.00	2.00	125.21	4,199.96	-2.01	2.85	-1.54	1.00	1.00	0.00
4,300.00	3.00	125.21	4,299.86	-4.53	6.42	-3.46	1.00	1.00	0.00
4,400.00	4.00	125.21	4,399.68	-8.05	11.40	-6.14	1.00	1.00	0.00
4,500.00	5.00	125.21	4,499.37	-12.57	17.81	-9.59	1.00	1.00	0.00
4,600.00	6.00	125.21	4,598.90	-18.10	25.64	-13.80	1.00	1.00	0.00
4,662.37	6.62	125.21	4,660.89	-22.05	31.25	-16.82	1.00	1.00	0.00
4,700.00	6.62	125.21	4,698.27	-24.56	34.79	-18.73	0.00	0.00	0.00
4,800.00	6.62	125.21	4,797.61	-31.21	44.22	-23.80	0.00	0.00	0.00
4,900.00	6.62	125.21	4,896.94	-37.86	53.64	-28.87	0.00	0.00	0.00
5,000.00	6.62	125.21	4,996.27	-44.51	63.06	-33.94	0.00	0.00	0.00
5,100.00	6.62	125.21	5,095.60	-51.16	72.49	-39.01	0.00	0.00	0.00
5,200.00	6.62	125.21	5,194.94	-57.81	81.91	-44.08	0.00	0.00	0.00

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well #710H
Company:	EOG Resources - Midland	**TVD Reference:**	KB = 25' @ 3279.00usft
Project:	Lea County, NM (NAD 83 NME)	**MD Reference:**	KB = 25' @ 3279.00usft
Site:	Orrtanna 20 Fed	**North Reference:**	Grid
Well:	#710H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,700.00	6.62	125.21	10,658.23	-423.62	600.23	-322.96	0.00	0.00	0.00
10,800.00	6.62	125.21	10,757.56	-430.27	609.66	-328.03	0.00	0.00	0.00
10,900.00	6.62	125.21	10,856.89	-436.93	619.08	-333.10	0.00	0.00	0.00
11,000.00	6.62	125.21	10,956.22	-443.58	628.51	-338.18	0.00	0.00	0.00
11,100.00	6.62	125.21	11,055.56	-450.23	637.93	-343.25	0.00	0.00	0.00
11,200.00	6.62	125.21	11,154.89	-456.88	647.35	-348.32	0.00	0.00	0.00
11,300.00	6.62	125.21	11,254.22	-463.53	656.78	-353.39	0.00	0.00	0.00
11,400.00	6.62	125.21	11,353.55	-470.18	666.20	-358.46	0.00	0.00	0.00
11,500.00	6.62	125.21	11,452.89	-476.83	675.63	-363.53	0.00	0.00	0.00
11,600.00	6.62	125.21	11,552.22	-483.48	685.05	-368.60	0.00	0.00	0.00
11,700.00	6.62	125.21	11,651.55	-490.13	694.47	-373.67	0.00	0.00	0.00
11,800.00	6.62	125.21	11,750.88	-496.79	703.90	-378.74	0.00	0.00	0.00
11,872.30	6.62	125.21	11,822.70	-501.60	710.71	-382.41	0.00	0.00	0.00
11,875.00	6.44	122.86	11,825.38	-501.77	710.97	-382.54	12.00	-6.76	-87.16
11,900.00	5.42	95.20	11,850.25	-502.63	713.32	-383.02	12.00	-4.10	-110.66
11,925.00	5.93	64.92	11,875.14	-502.19	715.66	-382.21	12.00	2.05	-121.12
11,950.00	7.68	44.03	11,899.96	-500.45	717.99	-380.12	12.00	6.98	-83.53
11,975.00	10.03	31.83	11,924.67	-497.40	720.30	-376.74	12.00	9.42	-48.82
12,000.00	12.66	24.43	11,949.18	-493.05	722.59	-372.09	12.00	10.52	-29.61
12,025.00	15.42	19.59	11,973.43	-487.42	724.83	-366.17	12.00	11.05	-19.36
12,050.00	18.26	16.20	11,997.36	-480.53	727.04	-359.02	12.00	11.35	-13.53
12,075.00	21.14	13.71	12,020.89	-472.39	729.20	-350.63	12.00	11.52	-9.98
12,100.00	24.05	11.79	12,043.97	-463.02	731.31	-341.05	12.00	11.63	-7.67
12,125.00	26.98	10.27	12,066.53	-452.45	733.36	-330.29	12.00	11.71	-6.10
12,150.00	29.92	9.02	12,088.51	-440.71	735.35	-318.38	12.00	11.76	-4.98
12,175.00	32.87	7.98	12,109.85	-427.83	737.27	-305.36	12.00	11.80	-4.16
12,200.00	35.82	7.09	12,130.49	-413.85	739.12	-291.27	12.00	11.83	-3.55
12,225.00	38.79	6.32	12,150.37	-398.81	740.88	-276.13	12.00	11.85	-3.07
12,250.00	41.76	5.65	12,169.44	-382.74	742.57	-260.00	12.00	11.87	-2.70
12,275.00	44.73	5.05	12,187.65	-365.69	744.16	-242.91	12.00	11.89	-2.40
12,300.00	47.70	4.51	12,204.95	-347.70	745.66	-224.92	12.00	11.90	-2.17
12,325.00	50.68	4.01	12,221.29	-328.83	747.06	-206.06	12.00	11.91	-1.97
12,350.00	53.66	3.56	12,236.62	-309.13	748.37	-186.41	12.00	11.91	-1.81
12,375.00	56.64	3.14	12,250.90	-288.65	749.56	-166.00	12.00	11.92	-1.68
12,400.00	59.62	2.75	12,264.10	-267.45	750.65	-144.89	12.00	11.93	-1.56
12,425.00	62.60	2.38	12,276.18	-245.59	751.63	-123.15	12.00	11.93	-1.47
12,450.00	65.59	2.04	12,287.10	-223.12	752.50	-100.83	12.00	11.93	-1.39
12,466.04	67.50	1.82	12,293.48	-208.41	753.00	-86.23	12.00	11.94	-1.34
FTP (Orrtanna 20 Fed #707H)									
12,475.00	68.57	1.70	12,296.83	-200.11	753.25	-77.99	12.00	11.94	-1.31
12,500.00	71.56	1.38	12,305.36	-176.62	753.88	-54.70	12.00	11.94	-1.28
12,525.00	74.54	1.08	12,312.65	-152.71	754.40	-31.01	12.00	11.94	-1.23
12,550.00	77.53	0.78	12,318.68	-128.46	754.79	-7.01	12.00	11.94	-1.20
12,575.00	80.51	0.48	12,323.44	-103.92	755.06	17.26	12.00	11.94	-1.17
12,600.00	83.50	0.20	12,326.92	-79.17	755.20	41.73	12.00	11.95	-1.15
12,625.00	86.49	359.91	12,329.10	-54.27	755.23	66.32	12.00	11.95	-1.14
12,650.00	89.47	359.63	12,329.98	-29.28	755.13	90.97	12.00	11.95	-1.13
12,654.41	90.00	359.58	12,330.00	-24.87	755.10	95.32	12.00	11.95	-1.13
12,700.00	90.00	359.58	12,330.00	20.71	754.76	140.27	0.00	0.00	0.00
12,800.00	90.00	359.58	12,330.00	120.71	754.03	238.89	0.00	0.00	0.00
12,900.00	90.00	359.58	12,330.00	220.71	753.30	337.50	0.00	0.00	0.00
13,000.00	90.00	359.58	12,330.00	320.71	752.56	436.11	0.00	0.00	0.00
13,100.00	90.00	359.58	12,330.00	420.70	751.83	534.72	0.00	0.00	0.00

Database:	EDM 5000.14 Single User Db	**Local Co-ordinate Reference:**	Well #710H
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Project:	Lea County, NM (NAD 83 NME)	**MD Reference:**	KB = 25' @ 3279.00usft
Site:	Orrtanna 20 Fed	**North Reference:**	Grid
Well:	#710H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	OH		
Design:	Plan #0.1		

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
FTP (Orrtanna 20 Fed # - plan misses target center by 39.90usft at 12466.04usft MD (12293.48 TVD, -208.41 N, 753.00 E) - Point	0.00	0.00	12,330.00	-223.99	757.00	372,775.00	771,374.00	32.02266644	-103.59107804
PBHL (Orrtanna 20 Fed - plan hits target center - Point	0.00	0.00	12,330.00	4,490.01	722.00	377,489.00	771,339.00	32.03562476	-103.59108646

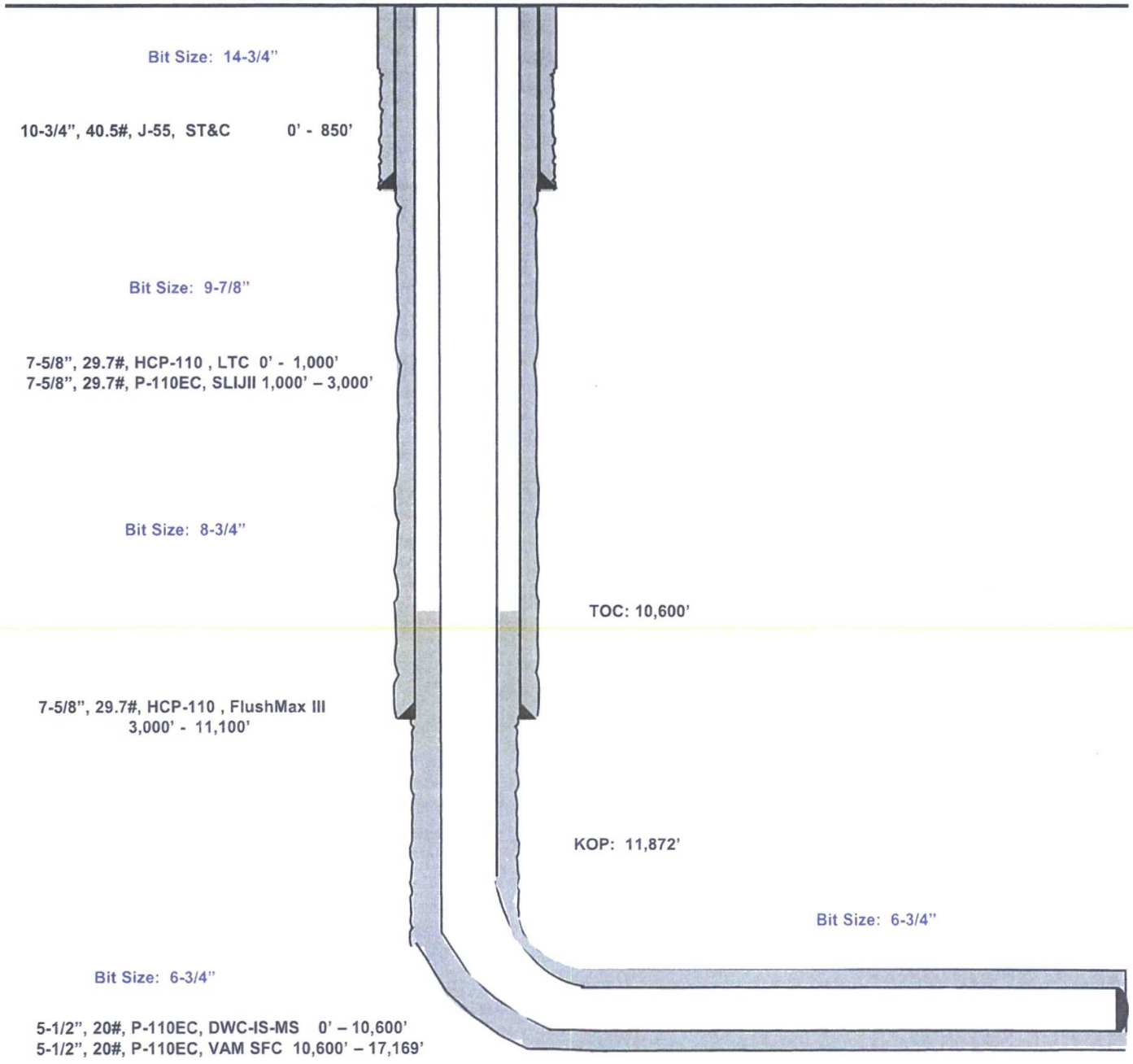
Orrtanna 20 Fed #710H

Lea County, New Mexico
Proposed Wellbore

557' FSL
2408' FEL
Section 20
T-26-S, R-33-E

API: 30-025-*****

KB: 3,279'
GL: 3,254'



Lateral: 17,169' MD, 12,330' TVD
Upper Most Perf:
330' FSL & 1653' FEL Sec. 20
Lower Most Perf:
330' FNL & 1652' FEL Sec. 20
BH Location: 230' FNL & 1652' FEL
Section 20
T-26-S, R-33-E

Surface Use Plan of Operations

Introduction

The following surface use plan of operations will be followed and carried out once the APD is approved. No other disturbance will be created other than what was submitted in this surface use plan. If any other surface disturbance is needed after the APD is approved, a BLM approved sundry notice or right of way application will be acquired prior to any new surface disturbance.

Before any surface disturbance is created, stakes or flagging will be installed to mark boundaries of permitted areas of disturbance, including soils storage areas. As necessary, slope, grade, and other construction control stakes will be placed to ensure construction in accordance with the surface use plan. All boundary markers will be maintained in place until final construction cleanup is completed. If disturbance boundary markers are disturbed or knocked down, they will be replaced before construction proceeds.

If terms and conditions are attached to the approved APD and amend any of the proposed actions in this surface use plan, we will adhere to the terms and conditions.

1. Existing Roads

a. The existing access road route to the proposed project is depicted on Orrtanna 20 Fed 710H_vicinity map. Improvements to the driving surface will be done where necessary. No new surface disturbance will be done, unless otherwise noted in the New or Reconstructed Access Roads section of this surface use plan..

b. The existing access road route to the proposed project does not cross lease or unit boundaries, so a BLM right-of-way grant will not be acquired for this proposed road route.

c. The operator will improve or maintain existing roads in a condition the same as or better than before operations begin. The operator will repair pot holes, clear ditches, repair the crown, etc. All existing structures on the entire access route such as cattleguards, other range improvement projects, culverts, etc. will be properly repaired or replaced if they are damaged or have deteriorated beyond practical use.

d. We will prevent and abate fugitive dust as needed, whether created by vehicular traffic, equipment operations, or wind events. BLM written approval will be acquired before application of surfactants, binding agents, or other dust suppression chemicals on roadways.

2. New or Reconstructed Access Roads

a. An access road will be needed for this proposed project. See the survey plat for the location of the access road.

b. The length of access road needed to be constructed for this proposed project is about 830 feet.

c. The maximum driving width of the access road will be 24 feet. The maximum width of surface disturbance when constructing the access road will not exceed 25 feet. All areas outside of the driving surface will be revegetated.

d. The access road will be constructed with 6 inches of compacted caliche.

e. When the road travels on fairly level ground, the road will be crowned and ditched with a 2% slope from the tip of the road crown to the edge of the driving surface. The ditches will be 3 feet wide with 3:1 slopes. See Road Cross Section diagram below.

allowed, topsoil will be stockpiled and separated from the excavated trench mineral material. Final reclamation procedures will match the procedures in Plans for Surface Reclamation. When the excavated soil is backfilled, it will be compacted to prevent subsidence. No berm over the pipeline will be evident.

ii. Orrtanna 20 Fed area sketch depicts the proposed production pipeline route from the well to the existing production facility.

iii. Since the proposed pipeline crossess lease boundaries, a right of way grant will be acquired prior to installation of the proposed pipeline.

If any plans change regarding the production facility or other infrastructure (pipeline, electric line, etc.), we will submit a sundry notice or right of way (if applicable) prior to installation or construction.

Additional Pipeline(s)

We propose to install 1 additional pipeline(s):

1. Buried gas lift pipeline:

a. We plan to install a 3 inch buried flex steel pipeline from the proposed well to the central tank battery. The proposed length of the pipeline will be 4198 feet. The working pressure of the pipeline will be about 125 psi. A 50 feet wide work area will be needed to install the buried pipeline. We will need an extra 10 foot wide area near corners to safely install the pipeline. In areas where blading is allowed, topsoil will be stockpiled and separated from the excavated trench mineral material. Final reclamation procedures will match the procedures in Plans for Surface Reclamation. When the excavated soil is backfilled, it will be compacted to prevent subsidence. No berm over the pipeline will be evident.

b. Orrtanna 20 Fed area sketch depicts the proposed gas lift pipeline route.

c. Since the proposed pipeline crossess lease boundaries, a right of way grant will be acquired prior to installation of the proposed pipeline.

Electric Line(s)

a. No electric line will be applied for with this APD.

5. Location and Types of Water

a. The source and location of the water supply are as follows: Water will be supplied from the frac pond as shown on the attached water source map This location will be drilled using a combination of water mud systems (outlined in the drilling program) The water will be obtained from commercial water stations in the area or recycled treated water and hauled to location by trucks or poly pipelines using existing and proposed roads depicted on the proposed existing access road maps In these cases where a poly pipeline is used to transport fresh water for drilling purposes_ proper authorizations will be secured by the contractor.

b. Orrtanna 20 Fed water source and caliche map depicts the proposed route for a 12 inch poly temporary (<90 days) water pipeline supplying water for drilling operations.

6. Construction Material

a. Caliche will be supplied from pits shown on the attached caliche source map.
Caliche utilized for the drilling pad will be obtained either from an existing approved mineral pit, or by benching into a hill, which will allow the pad to be level with existing caliche from the cut, or extracted by "Flipping" the well location. A mineral material permit will be obtained from BLM prior to excavating any caliche on Federal Lands. Amount will vary for each pad. The procedure for "Flipping" a well location is as follows:

viii. reserve pit location/dimensions if applicable

ix. other disturbances needed (flare pit, stinger, frac farm pad, etc.)

x. existing structures within the 600' x 600' archaeoligical surveyed area (pipelines, electric lines, well pads, etc

b. The proposed drilling pad was staked and surveyed by a professional surveyor. The attached survey plat of the well site depicts the drilling pad layout as staked.

c. A title of a well site diagram is Orrtanna 20 Fed 707H_rig layout. This diagram depicts the rig layout.

d. Topsoil Salvaging

i. Grass, forbs, and small woody vegetation, such as mesquite will be excavated as the topsoil is removed. Large woody vegetation will be stripped and stored separately and respread evenly on the site following topsoil respreading. Topsoil depth is defined as the top layer of soil that contains 80% of the roots. In areas to be heavily disturbed, the top 6 inches of soil material, will be stripped and stockpiled on the perimeter of the well location and along the perimeter of the access road to control run-on and run-off, to keep topsoil viable, and to make redistribution of topsoil more efficient during interim reclamation. Stockpiled topsoil should include vegetative material. Topsoil will be clearly segregated and stored separately from subsoils. Contaminated soil will not be stockpiled, but properly treated and handled prior to topsoil salvaging.

10. Plans for Surface Reclamation

Reclamation Objectives

i. The objective of interim reclamation is to restore vegetative cover and a portion of the landform sufficient to maintain healthy, biologically active topsoil; control erosion; and minimize habitat and forage loss, visual impact, and weed infestation, during the life of the well or facilities.

ii. The long-term objective of final reclamation is to return the land to a condition similar to what existed prior to disturbance. This includes restoration of the landform and natural vegetative community, hydrologic systems, visual resources, and wildlife habitats. To ensure that the long-term objective will be reached through human and natural processes, actions will be taken to ensure standards are met for site stability, visual quality, hydrological functioning, and vegetative productivity.

iii. The BLM will be notified at least 3 days prior to commencement of any reclamation procedures.

iv. If circumstances allow, interim reclamation and/or final reclamation actions will be completed no later than 6 months from when the final well on the location has been completed or plugged. We will gain written permission from the BLM if more time is needed.

v. Interim reclamation will be performed on the well site after the well is drilled and completed. Orrtanna 20 Fed 710H_interim reclamation depicts the location and dimensions of the planned interim reclamation for the well site.

Interim Reclamation Procedures (If performed)

1. Within 30 days of well completion, the well location and surrounding areas will be cleared of, and maintained free of, all materials, trash, and equipment not required for production.

2. In areas planned for interim reclamation, all the surfacing material will be removed and returned to the original mineral pit or recycled to repair or build roads and well pads.

3. The areas planned for interim reclamation will then be recontoured to the original contour if feasible, or if not feasible, to an interim contour that blends with the surrounding topography as much as possible. Where applicable, the fill material of the well pad will be backfilled into the cut to bring the

One 3-inch flex steel gas lift line per well
One 4-inch poly production flowline per well
The well is planned to be produced using gas lift as the artificial lift method.
Produced water will be transported via pipeline to the EOG produced water gathering system.

This is an expansion of the previously reviewed and approved dual well pad (Orrtanna 20 Fed 705H and 706H) adding this additional well (Orrtanna 20 Fed 710H).

13. Maps and Diagrams

Orrtanna 20 Fed 710H_vicinity map - Existing Road
Orrtanna 20 Fed 710H_radius map - Wells Within One Mile
Orrtanna 20 Fed area sketch - Production Pipeline
Orrtanna 20 Fed area sketch - gas lift Pipeline
Orrtanna 20 Fed water source and caliche map - Drilling Water Pipeline
Orrtanna 20 Fed 710H_rig layout - Well Site Diagram
Orrtanna 20 Fed 710H_ interim reclamation - Interim Reclamation

PECOS DISTRICT
SURFACE USE
CONDITIONS OF APPROVAL

OPERATOR'S NAME:	EOG Resources Inc.
LEASE NO.:	NMNM118727
WELL NAME & NO.:	Orrtanna 20 Fed 710H
SURFACE HOLE FOOTAGE:	557'/S & 2408'/E
BOTTOM HOLE FOOTAGE	230'/N & 1652'/E
LOCATION:	Section 20, T 26S, R 33E
COUNTY:	Lea County, New Mexico

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Standard Conditions of Approval (COA) apply to this APD. If any deviations to these standards exist or special COAs are required, the section with the deviation or requirement will be checked below.

V. SPECIAL REQUIREMENT(S)

Timing Limitation Stipulation / Condition of Approval for lesser prairie-chicken: Oil and gas activities including 3-D geophysical exploration, and drilling will not be allowed in lesser prairie-chicken habitat during the period from March 1st through June 15th annually. During that period, other activities that produce noise or involve human activity, such as the maintenance of oil and gas facilities, pipeline, road, and well pad construction, will be allowed except between 3:00 am and 9:00 am. The 3:00 am to 9:00 am restriction will not apply to normal, around-the-clock operations, such as venting, flaring, or pumping, which do not require a human presence during this period. Additionally, no new drilling will be allowed within up to 200 meters of leks known at the time of permitting. Normal vehicle use on existing roads will not be restricted. Exhaust noise from pump jack engines must be muffled or otherwise controlled so as not to exceed 75 db measured at 30 feet from the source of the noise.

Below Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well. For more installation details, contact the Carlsbad Field Office at 575-234-5972.

Cave and Karst

** Depending on location, additional Drilling, Casing, and Cementing procedures may be required by engineering to protect critical karst groundwater recharge areas.

Cave/Karst Surface Mitigation

The following stipulations will be applied to minimize impacts during construction, drilling and production.

Construction:
In the advent that any underground voids are opened up during construction activities, construction activities will be halted and the BLM will be notified immediately.

No Blasting:
No blasting will be utilized for pad construction. The pad will be constructed and leveled by adding the necessary fill and caliche.

Pad Berming:
The entire perimeter of the well pad will be bermed to prevent oil, salt, and other chemical contaminants from leaving the well pad.

- The compacted berm shall be constructed at a minimum of 12 inches high with impermeable mineral material (e.g. caliche).
- No water flow from the uphill side(s) of the pad shall be allowed to enter the well pad.

bearing zone, the BLM will be notified immediately by the operator. The BLM will assess the situation and work with the operator on corrective actions to resolve the problem.

Abandonment Cementing:
Upon well abandonment in high cave karst areas additional plugging conditions of approval may be required. The BLM will assess the situation and work with the operator to ensure proper plugging of the wellbore.

Pressure Testing:
Annual pressure monitoring will be performed by the operator on all casing annuli and reported in a sundry notice. If the test results indicated a casing failure has occurred, remedial action will be undertaken to correct the problem to the BLM's approval.

Range

During construction, the proponent shall minimize disturbance to existing fences, water lines, troughs, windmills, and other improvements on public lands. The proponent is required to promptly repair improvements to at least their former state. Functional use of these improvements will be maintained at all times. The holder will contact the grazing permittee/allottee prior to disturbing any range improvement projects. When necessary to pass through a fence line, the fence shall be braced on both sides of the passageway prior to cutting of the fence. No permanent gates will be allowed unless approved by the Authorized Officer.

Exclosure Fencing
The operator will install and maintain exclosure fencing for all open well cellars to prevent access to public, livestock, and large forms of wildlife before and after drilling operations until the pit is free of fluids and the operator initiates backfilling. (For examples of exclosure fencing design, refer to BLM's Oil and Gas Gold Book, Exclosure Fence Illustrations, Figure 1, Page 18.)

G. ON LEASE ACCESS ROADS

Road Width
The access road shall have a driving surface that creates the smallest possible surface disturbance and does not exceed fourteen (14) feet in width. The maximum width of surface disturbance, when constructing the access road, shall not exceed twenty-five (25) feet.

Surfacing
Surfacing material is not required on the new access road driving surface. If the operator elects to surface the new access road or pad, the surfacing material may be required to be removed at the time of reclamation.

Where possible, no improvements should be made on the unsurfaced access road other than to remove vegetation as necessary, road irregularities, safety issues, or to fill low areas that may sustain standing water.

The Authorized Officer reserves the right to require surfacing of any portion of the access road at any time deemed necessary. Surfacing may be required in the event the road deteriorates, erodes, road traffic increases, or it is determined to be beneficial for future field development. The surfacing depth and type of material will be determined at the time of notification.

Crowning
Crowning shall be done on the access road driving surface. The road crown shall have a grade of approximately 2% (i.e., a 1" crown on a 14' wide road). The road shall conform to Figure 1; cross section and plans for typical road construction.

Ditching
Ditching shall be required on both sides of the road.

Turnouts
Vehicle turnouts shall be constructed on the road. Turnouts shall be intervisible with interval spacing distance less than 1000 feet. Turnouts shall conform to Figure 1; cross section and plans for typical road construction.

Drainage

Construction Steps

1. Salvage topsoil
2. Construct road
3. Redistribute topsoil
4. Revegetate slopes

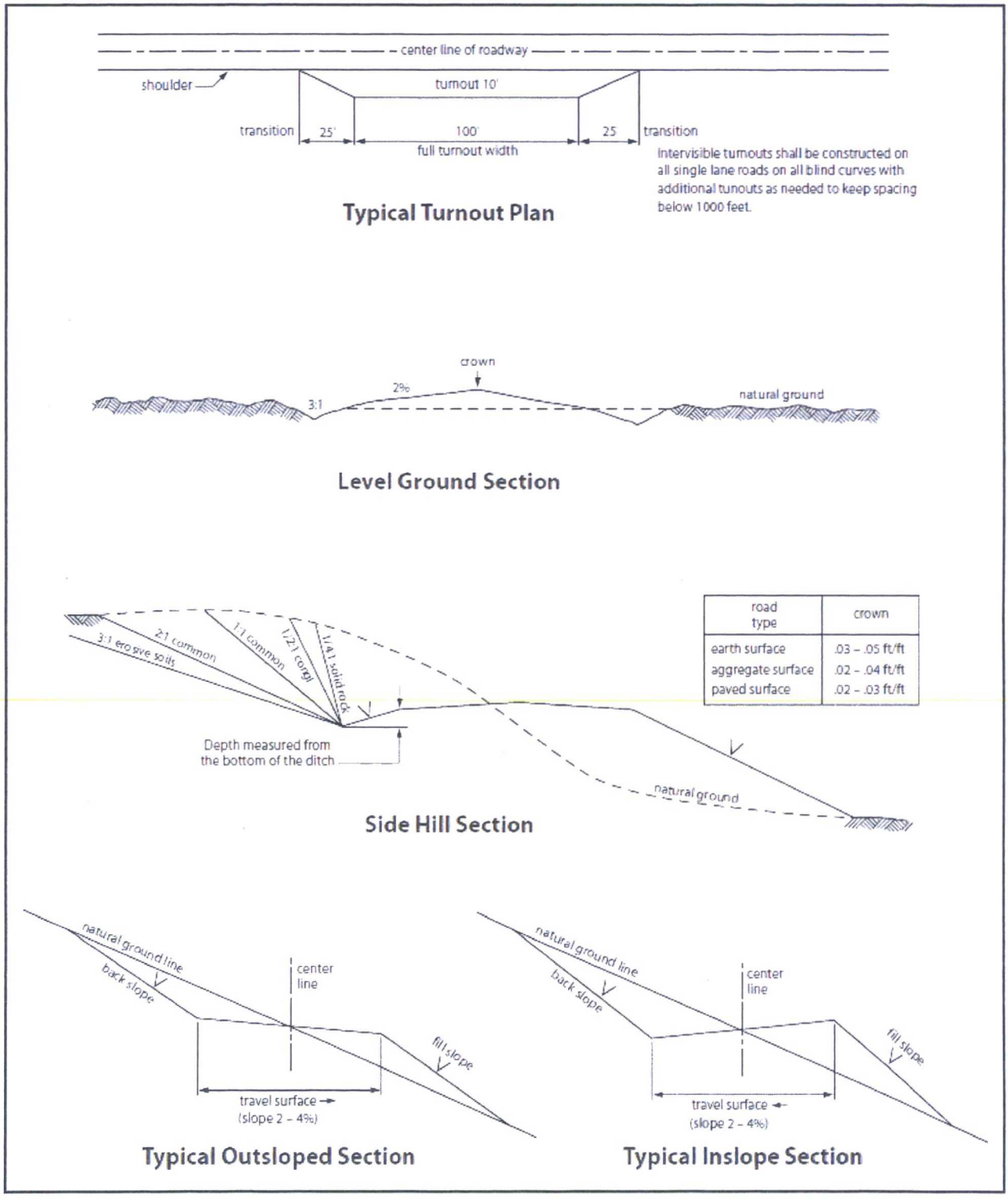


Figure 1. Cross-sections and plans for typical road sections representative of BLM resource or FS local and higher-class roads.

Proposed production facilities such as storage tanks and other vessels will have a secondary containment structure that is constructed to hold the capacity of 1.5 times the largest tank, plus freeboard to account for precipitation, unless more stringent protective requirements are deemed necessary.

Painting Requirement
All above-ground structures including meter housing that are not subject to safety requirements shall be painted a flat non-reflective paint color, **Shale Green** from the BLM Standard Environmental Color Chart (CC-001: June 2008).

VIII. INTERIM RECLAMATION

During the life of the development, all disturbed areas not needed for active support of production operations should undergo interim reclamation in order to minimize the environmental impacts of development on other resources and uses.

Within six (6) months of well completion, operators should work with BLM surface management specialists (Jim Amos: 575-234-5909) to devise the best strategies to reduce the size of the location. Interim reclamation should allow for remedial well operations, as well as safe and efficient removal of oil and gas.

During reclamation, the removal of caliche is important to increasing the success of revegetating the site. Removed caliche that is free of contaminants may be used for road repairs, fire walls or for building other roads and locations. In order to operate the well or complete workover operations, it may be necessary to drive, park and operate on restored interim vegetation within the previously disturbed area. Disturbing revegetated areas for production or workover operations will be allowed. If there is significant disturbance and loss of vegetation, the area will need to be revegetated. Communicate with the appropriate BLM office for any exceptions/exemptions if needed.

All disturbed areas after they have been satisfactorily prepared need to be reseeded with the seed mixture provided below.

Upon completion of interim reclamation, the operator shall submit a Sundry Notices and Reports on Wells, Subsequent Report of Reclamation (Form 3160-5).

IX. FINAL ABANDONMENT & RECLAMATION

At final abandonment, well locations, production facilities, and access roads must undergo "final" reclamation so that the character and productivity of the land are restored.

Earthwork for final reclamation must be completed within six (6) months of well plugging. All pads, pits, facility locations and roads must be reclaimed to a satisfactory revegetated, safe, and stable condition, unless an agreement is made with the landowner or BLM to keep the road and/or pad intact.

Seed Mixture for LPC Sand/Shinnery Sites

Holder shall seed all disturbed areas with the seed mixture listed below. The seed mixture shall be planted in the amounts specified in pounds of pure live seed (PLS)* per acre. There shall be no primary or secondary noxious weeds in the seed mixture. Seed will be tested and the viability testing of seed shall be done in accordance with State law(s) and within nine (9) months prior to purchase. Commercial seed shall be either certified or registered seed. The seed container shall be tagged in accordance with State law(s) and available for inspection by the Authorized Officer.

Seed will be planted using a drill equipped with a depth regulator to ensure proper depth of planting where drilling is possible. The seed mixture will be evenly and uniformly planted over the disturbed area (smaller/heavier seeds have a tendency to drop the bottom of the drill and are planted first). Holder shall take appropriate measures to ensure this does not occur. Where drilling is not possible, seed will be broadcast and the area shall be raked or chained to cover the seed. When broadcasting the seed, the pounds per acre are to be doubled. Seeding shall be repeated until a satisfactory stand is established as determined by the Authorized Officer. Evaluation of growth may not be made before completion of at least one full growing season after seeding.

Species to be planted in pounds of pure live seed* per acre:

Species	lb/acre
Plains Bristlegrass	5lbs/A
Sand Bluestem	5lbs/A
Little Bluestem	3lbs/A
Big Bluestem	6lbs/A
Plains Coreopsis	2lbs/A
Sand Dropseed	1lbs/A

*Pounds of pure live seed:

Pounds of seed **x** percent purity **x** percent germination = pounds pure live seed

I. GENERAL PROVISIONS

The approval of the Application For Permit To Drill (APD) is in compliance with all applicable laws and regulations: 43 Code of Federal Regulations 3160, the lease terms, Onshore Oil and Gas Orders, Notices To Lessees, New Mexico Oil Conservation Division (NMOCD) Rules, National Historical Preservation Act As Amended, and instructions and orders of the Authorized Officer. Any request for a variance shall be submitted to the Authorized Officer on Form 3160-5, Sundry Notices and Report on Wells.

II. PERMIT EXPIRATION

If the permit terminates prior to drilling and drilling cannot be commenced within 60 days after expiration, an operator is required to submit Form 3160-5, Sundry Notices and Reports on Wells, requesting surface reclamation requirements for any surface disturbance. However, if the operator will be able to initiate drilling within 60 days after the expiration of the permit, the operator must have set the conductor pipe in order to allow for an extension of 60 days beyond the expiration date of the APD. (Filing of a Sundry Notice is required for this 60 day extension.)

III. ARCHAEOLOGICAL, PALEONTOLOGY & HISTORICAL SITES

Any cultural and/or paleontological resource discovered by the operator or by any person working on the operator's behalf shall immediately report such findings to the Authorized Officer. The operator is fully accountable for the actions of their contractors and subcontractors. The operator shall suspend all operations in the immediate area of such discovery until written authorization to proceed is issued by the Authorized Officer. An evaluation of the discovery shall be made by the Authorized Officer to determine the appropriate actions that shall be required to prevent the loss of significant cultural or scientific values of the discovery. The operator shall be held responsible for the cost of the proper mitigation measures that the Authorized Officer assesses after consultation with the operator on the evaluation and decisions of the discovery. Any unauthorized collection or disturbance of cultural or paleontological resources may result in a shutdown order by the Authorized Officer.

IV. NOXIOUS WEEDS

The operator shall be held responsible if noxious weeds become established within the areas of operations. Weed control shall be required on the disturbed land where noxious weeds exist, which includes the roads, pads, associated pipeline corridor, and adjacent land affected by the establishment of weeds due to this action. The operator shall consult with the Authorized Officer for acceptable weed control methods, which include following EPA and BLM requirements and policies.

- The topsoil stockpile shall be located outside the bermed well pad.
- Topsoil, either from the well pad or surrounding area, shall not be used to construct the berm.
- No storm drains, tubing or openings shall be placed in the berm.
- If fluid collects within the bermed area, the fluid must be vacuumed into a safe container and disposed of properly at a state approved facility.
- The integrity of the berm shall be maintained around the surfaced pad throughout the life of the well and around the downsized pad after interim reclamation has been completed.
- Any access road entering the well pad shall be constructed so that the integrity of the berm height surrounding the well pad is not compromised. (Any access road crossing the berm cannot be lower than the berm height.)

Tank Battery Liners and Berms:
Tank battery locations and all facilities will be lined and bermed. A 20 mil permanent liner will be installed with a 4 oz. felt backing to prevent tears or punctures. Tank battery berms must be large enough to contain 1 ½ times the content of the largest tank.

Leak Detection System:
A method of detecting leaks is required. The method could incorporate gauges to measure loss, situating values and lines so they can be visually inspected, or installing electronic sensors to alarm when a leak is present. Leak detection plan will be submitted to BLM for approval.

Automatic Shut-off Systems:
Automatic shut off, check values, or similar systems will be installed for pipelines and tanks to minimize the effects of catastrophic line failures used in production or drilling.

Cave/Karst Subsurface Mitigation

The following stipulations will be applied to protect cave/karst and ground water concerns:

Rotary Drilling with Fresh Water:
Fresh water will be used as a circulating medium in zones where caves or karst features are expected. SEE ALSO: Drilling COAs for this well.

Directional Drilling:
Kick off for directional drilling will occur at least 100 feet below the bottom of the cave occurrence zone. SEE ALSO: Drilling COAs for this well.

Lost Circulation:
ALL lost circulation zones from the surface to the base of the cave occurrence zone will be logged and reported in the drilling report.

Regardless of the type of drilling machinery used, if a void of four feet or more and circulation losses greater than 70 percent occur simultaneously while drilling in any cave-

VI. CONSTRUCTION

A. NOTIFICATION

The BLM shall administer compliance and monitor construction of the access road and well pad. Notify the Carlsbad Field Office at (575) 234-5909 at least 3 working days prior to commencing construction of the access road and/or well pad.

When construction operations are being conducted on this well, the operator shall have the approved APD and Conditions of Approval (COA) on the well site and they shall be made available upon request by the Authorized Officer.

B. TOPSOIL

The operator shall strip the top portion of the soil (root zone) from the entire well pad area and stockpile the topsoil along the edge of the well pad as depicted in the APD. The root zone is typically six (6) inches in depth. All the stockpiled topsoil will be redistributed over the interim reclamation areas. Topsoil shall not be used for berming the pad or facilities. For final reclamation, the topsoil shall be spread over the entire pad area for seeding preparation.

Other subsoil (below six inches) stockpiles must be completely segregated from the topsoil stockpile. Large rocks or subsoil clods (not evident in the surrounding terrain) must be buried within the approved area for interim and final reclamation.

C. CLOSED LOOP SYSTEM

Tanks are required for drilling operations: No Pits.

The operator shall properly dispose of drilling contents at an authorized disposal site.

D. FEDERAL MINERAL MATERIALS PIT

Payment shall be made to the BLM prior to removal of any federal mineral materials. Call the Carlsbad Field Office at (575) 234-5972.

E. WELL PAD SURFACING

Surfacing of the well pad is not required.

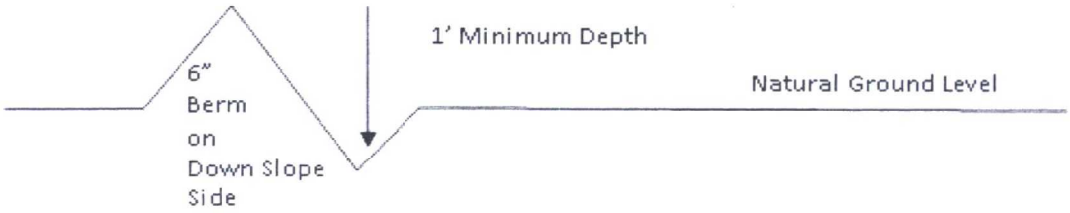
If the operator elects to surface the well pad, the surfacing material may be required to be removed at the time of reclamation. The well pad shall be constructed in a manner which creates the smallest possible surface disturbance, consistent with safety and operational needs.

F. EXCLOSURE FENCING (CELLARS & PITS)

Drainage control systems shall be constructed on the entire length of road (e.g. ditches, sidehill outsloping and insloping, lead-off ditches, culvert installation, and low water crossings).

A typical lead-off ditch has a minimum depth of 1 foot below and a berm of 6 inches above natural ground level. The berm shall be on the down-slope side of the lead-off ditch.

Cross Section of a Typical Lead-off Ditch



All lead-off ditches shall be graded to drain water with a 1 percent minimum to 3 percent maximum ditch slope. The spacing interval are variable for lead-off ditches and shall be determined according to the formula for spacing intervals of lead-off ditches, but may be amended depending upon existing soil types and centerline road slope (in %);

Formula for Spacing Interval of Lead-off Ditches

Example - On a 4% road slope that is 400 feet long, the water flow shall drain water into a lead-off ditch. Spacing interval shall be determined by the following formula:

400 foot road with 4% road slope: $\frac{400'}{4\%} + 100' = 200'$ lead-off ditch interval

Cattle guards

An appropriately sized cattle guard sufficient to carry out the project shall be installed and maintained at fence/road crossings. Any existing cattle guards on the access road route shall be repaired or replaced if they are damaged or have deteriorated beyond practical use. The operator shall be responsible for the condition of the existing cattle guards that are in place and are utilized during lease operations.

Fence Requirement

Where entry is granted across a fence line, the fence shall be braced and tied off on both sides of the passageway prior to cutting. The operator shall notify the private surface landowner or the grazing allotment holder prior to crossing any fences.

Public Access

Public access on this road shall not be restricted by the operator without specific written approval granted by the Authorized Officer.

VII. PRODUCTION (POST DRILLING)

A. WELL STRUCTURES & FACILITIES

Placement of Production Facilities
Production facilities should be placed on the well pad to allow for maximum interim recontouring and revegetation of the well location.

Exclosure Netting (Open-top Tanks)
Immediately following active drilling or completion operations, the operator will take actions necessary to prevent wildlife and livestock access, including avian wildlife, to all open-topped tanks that contain or have the potential to contain salinity sufficient to cause harm to wildlife or livestock, hydrocarbons, or Resource Conservation and Recovery Act of 1976-exempt hazardous substances. At a minimum, the operator will net, screen, or cover open-topped tanks to exclude wildlife and livestock and prevent mortality. If the operator uses netting, the operator will cover and secure the open portion of the tank to prevent wildlife entry. The operator will net, screen, or cover the tanks until the operator removes the tanks from the location or the tanks no longer contain substances that could be harmful to wildlife or livestock. Use a maximum netting mesh size of 1 ½ inches. The netting must not be in contact with fluids and must not have holes or gaps.

Chemical and Fuel Secondary Containment and Exclosure Screening
The operator will prevent all hazardous, poisonous, flammable, and toxic substances from coming into contact with soil and water. At a minimum, the operator will install and maintain an impervious secondary containment system for any tank or barrel containing hazardous, poisonous, flammable, or toxic substances sufficient to contain the contents of the tank or barrel and any drips, leaks, and anticipated precipitation. The operator will dispose of fluids within the containment system that do not meet applicable state or U. S. Environmental Protection Agency livestock water standards in accordance with state law; the operator must not drain the fluids to the soil or ground. The operator will design, construct, and maintain all secondary containment systems to prevent wildlife and livestock exposure to harmful substances. At a minimum, the operator will install effective wildlife and livestock exclosure systems such as fencing, netting, expanded metal mesh, lids, and grate covers. Use a maximum netting mesh size of 1 ½ inches.

Open-Vent Exhaust Stack Exclosures
The operator will construct, modify, equip, and maintain all open-vent exhaust stacks on production equipment to prevent birds and bats from entering, and to discourage perching, roosting, and nesting. (*Recommended exclosure structures on open-vent exhaust stacks are in the shape of a cone.*) Production equipment includes, but may not be limited to, tanks, heater-treaters, separators, dehydrators, flare stacks, in-line units, and compressor mufflers.

Containment Structures

After all disturbed areas have been satisfactorily prepared, these areas need to be revegetated with the seed mixture provided below. Seeding should be accomplished by drilling on the contour whenever practical or by other approved methods. Seeding may need to be repeated until revegetation is successful, as determined by the BLM.

Operators shall contact a BLM surface protection specialist prior to surface abandonment operations for site specific objectives (Jim Amos: 575-234-5909).

Below Ground-level Abandoned Well Marker to avoid raptor perching: Upon the plugging and subsequent abandonment of the well, the well marker will be installed at ground level on a plate containing the pertinent information for the plugged well.