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.

HOBBS OCD
AUG 22 2019
RECEIVED

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other	5. Lease Serial No. NMNM0559539
	6. If Indian, Allottee or Tribe Name
	7. If Unit or CA/Agreement, Name and/or No.
	8. Well Name and No. JAMES 20 FEDERAL 37H
2. Name of Operator CIMAREX ENERGY COMPANY Contact: AMITHY E CRAWFORD E-Mail: acrawford@cimarex.com	9. API Well No. 30-025-45602-00-X1
3a. Address 600 N. MARIENFELD SUITE 600 MIDLAND, TX 79701 3b. Phone No. (include area code) Ph: 432-620-1909	10. Field and Pool or Exploratory Area BONE SPRINGS
4. Location of Well *(Footage, Sec., T., R., M., or Survey Description)* Sec 20 T23S R32E NWNW 340FNL 780FWL 32.296337 N Lat, 103.702682 W Lon	11. County or Parish, State LEA 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.

Cimarex respectfully requests approval to change the SHL and BHL thereby deviating the directional plan. No additional disturbance is required for the well pad.

Carlsbad Field Office
OCD Hobbs

Approved:
SHL: 340 FNL & 780 FWL Sec 20, 23S, 32E
BHL: 330 FSL & 1030 FWL Sec 20, 23S, 32E

Proposed
SHL: 400 FNL & 855 FWL Sec 20, 23S, 32E
BHL: 100 FSL & 330 FWL Sec 29, 23S, 32E

SEE ATTACHED FOR CONDITIONS OF APPROVAL

All Previous COAs Still Apply; Except For the Following.
Engineering OK. J.P. 8-12-20
See Attached COAs

Please see attached plat, directional prelim & drilling plan for changes.

Surface good same COA's 8-12-2019 ZR

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

Electronic Submission #473056 verified by the BLM Well Information System
For CIMAREX ENERGY COMPANY, sent to the Hobbs
Committed to AFMSS for processing by PRISCILLA PEREZ on 07/12/2019 (19PP2508SE)

Name *(Printed/Typed)* AMITHY E CRAWFORD — Title REGULATORY ANALYST

Signature (Electronic Submission) — Date 07/12/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By Cody Mathis — Title PEM - LPM — Date 08/12/2019

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 CFO

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 ****

KB

Additional data for EC transaction #473056 that would not fit on the form

32. Additional remarks, continued

Cimarex also requests to change the name of the well to the:
James 20-29 Federal Com 37H

Revisions to Operator-Submitted EC Data for Sundry Notice #473056

	Operator Submitted	BLM Revised (AFMSS)
Sundry Type:	APDCH NOI	APDCH NOI
Lease:	NMNM0559539	NMNM0559539
Agreement:		
Operator:	CIMAREX ENERGY CO. 600 N. MARIENFELD, SUITE 600 MIDLAND, TX 79701 Ph: 432-620-1909	CIMAREX ENERGY COMPANY 600 N. MARIENFELD SUITE 600 MIDLAND, TX 79701 Ph: 432.620.1938
Admin Contact:	AMITHY E CRAWFORD REGULATORY ANALYST E-Mail: acrawford@cimarex.com Ph: 432-620-1909	AMITHY E CRAWFORD REGULATORY ANALYST E-Mail: acrawford@cimarex.com Ph: 432-620-1909
Tech Contact:	AMITHY E CRAWFORD REGULATORY ANALYST E-Mail: acrawford@cimarex.com Ph: 432-620-1909	AMITHY E CRAWFORD REGULATORY ANALYST E-Mail: acrawford@cimarex.com Ph: 432-620-1909
Location: State: County:	 NM LEA	 NM LEA
Field/Pool:	SAND DUNES; BONE SPRING S	BONE SPRINGS
Well/Facility:	JAMES 20-29 FEDERAL COM 37H Sec 20 T23S R32E 400FNL 855FWL	JAMES 20 FEDERAL 37H Sec 20 T23S R32E NWNW 340FNL 780FWL 32.296337 N Lat, 103.702682 W Lon

Schlumberger

CIMAREX

Cimarex James 20-29 Federal Com #37H Rev0 RM 02Jul19 Proposal
Geodetic Report
(Non-Def Plan)

Report Date:	July 03, 2019 - 10:07 AM	**Survey / DLS Computation:**	Minimum Curvature / Lubinski
Client:	Cimarex Energy	**Vertical Section Azimuth:**	179.619 ° (Grid North)
Field:	NM Lea County (NAD 83)	**Vertical Section Origin:**	0.000 ft, 0.000 ft
Structure / Slot:	Cimarex James 20-29 Federal Com #37H / New Slot	**TVD Reference Datum:**	RKB
Well:	James 20-29 Federal Com #37H	**TVD Reference Elevation:**	3703.600 ft above MSL
Borehole:	James 20-29 Federal Com #37H	**Seabed / Ground Elevation:**	3677.600 ft above MSL
UWI / API#:	Unknown / Unknown	**Magnetic Declination:**	6.754 °
Survey Name:	Cimarex James 20-29 Federal Com #37H Rev0 RM 02Jul19	**Total Gravity Field Strength:**	998.4354mgn (9.80665 Based)
Survey Date:	July 02, 2019	**Gravity Model:**	GARM
Tort / AHD / DDI / ERD Ratio:	105.152 ° / 10593.783 ft / 6.334 / 1.004	**Total Magnetic Field Strength:**	47960.298 nT
Coordinate Reference System:	NAD83 New Mexico State Plane, Eastern Zone, US Feet	**Magnetic Dip Angle:**	59.997 °
Location Lat / Long:	N 32° 17' 46.22614", W 103° 42' 8.78875"	**Declination Date:**	July 02, 2019
Location Grid N/E Y/X:	N 472054.120 ftUS, E 736276.930 ftUS	**Magnetic Declination Model:**	HDGM 2019
CRS Grid Convergence Angle:	0.3371 °	**North Reference:**	Grid North
Grid Scale Factor:	0.99995281	**Grid Convergence Used:**	0.3371 °
Version / Patch:	2.10.760.0	**Total Corr Mag North->Grid North:**	6.4172 °
		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 [400' FNL, 855' FWL]	0.00	0.00	182.64	0.00	0.00	0.00	0.00	N/A	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	100.00	0.00	269.49	100.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	200.00	0.00	269.49	200.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	300.00	0.00	269.49	300.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	400.00	0.00	269.49	400.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	500.00	0.00	269.49	500.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	600.00	0.00	269.49	600.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	700.00	0.00	269.49	700.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	800.00	0.00	269.49	800.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	900.00	0.00	269.49	900.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	1000.00	0.00	269.49	1000.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	1100.00	0.00	269.49	1100.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
Rustler	*1130.00*	*0.00*	*269.49*	*1130.00*	*0.00*	*0.00*	*0.00*	*0.00*	*472054.12*	*736276.93*	*N 32 17 46.23*	*W 103 42 8.79*
	1200.00	0.00	269.49	1200.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	1300.00	0.00	269.49	1300.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	1400.00	0.00	269.49	1400.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
Top of Salt	*1440.00*	*0.00*	*269.49*	*1440.00*	*0.00*	*0.00*	*0.00*	*0.00*	*472054.12*	*736276.93*	*N 32 17 46.23*	*W 103 42 8.79*
	1500.00	0.00	269.49	1500.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	1600.00	0.00	269.49	1600.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	1700.00	0.00	269.49	1700.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	1800.00	0.00	269.49	1800.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	1900.00	0.00	269.49	1900.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	2000.00	*0.00*	*269.49*	*2000.00*	*0.00*	*0.00*	*0.00*	*0.00*	*472054.12*	*736276.93*	*N 32 17 46.23*	*W 103 42 8.79*
	2100.00	0.00	269.49	2100.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	2200.00	0.00	269.49	2200.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	2300.00	0.00	269.49	2300.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	2400.00	0.00	269.49	2400.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	2500.00	0.00	269.49	2500.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	2600.00	0.00	269.49	2600.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	2700.00	0.00	269.49	2700.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	2800.00	0.00	269.49	2800.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	2900.00	0.00	269.49	2900.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
Nudge 2°/100' DLS	3000.00	0.00	269.49	3000.00	0.00	0.00	0.00	0.00	472054.12	736276.93	N 32 17 46.23	W 103 42 8.79
	3100.00	2.00	269.49	3099.98	0.00	-0.02	-1.75	2.00	472054.10	736275.19	N 32 17 46.23	W 103 42 8.81
	3200.00	4.00	269.49	3199.84	0.02	-0.06	-6.98	2.00	472054.08	736269.95	N 32 17 46.23	W 103 42 8.87
	3300.00	6.00	269.49	3299.45	0.03	-0.14	-15.69	2.00	472053.98	736261.24	N 32 17 46.23	W 103 42 8.97
Hold Nudge	3378.80	7.58	269.49	3377.70	0.06	-0.22	-25.01	2.00	472053.90	736251.93	N 32 17 46.23	W 103 42 9.08
	3400.00	7.58	269.49	3398.71	0.06	-0.25	-27.80	0.00	472053.87	736249.13	N 32 17 46.23	W 103 42 9.11
	3500.00	7.58	269.49	3497.84	0.09	-0.36	-40.98	0.00	472053.76	736235.95	N 32 17 46.22	W 103 42 9.27
	3600.00	7.58	269.49	3596.97	0.12	-0.48	-54.17	0.00	472053.64	736222.76	N 32 17 46.22	W 103 42 9.42
	3700.00	7.58	269.49	3696.09	0.15	-0.60	-67.35	0.00	472053.52	736209.58	N 32 17 46.22	W 103 42 9.57
	3800.00	7.58	269.49	3795.22	0.18	-0.71	-80.54	0.00	472053.41	736196.40	N 32 17 46.22	W 103 42 9.73
	3900.00	7.58	269.49	3894.35	0.21	-0.83	-93.72	0.00	472053.29	736183.22	N 32 17 46.22	W 103 42 9.88
	4000.00	7.58	269.49	3993.47	0.24	-0.95	-106.90	0.00	472053.17	736170.03	N 32 17 46.22	W 103 42 10.03
	4100.00	7.58	269.49	4092.60	0.27	-1.06	-120.09	0.00	472053.06	736156.85	N 32 17 46.22	W 103 42 10.19
	4200.00	7.58	269.49	4191.73	0.30	-1.18	-133.27	0.00	472052.94	736143.67	N 32 17 46.22	W 103 42 10.34
	4300.00	7.58	269.49	4290.86	0.32	-1.30	-146.45	0.00	472052.82	736130.48	N 32 17 46.22	W 103 42 10.49
	4400.00	7.58	269.49	4389.98	0.35	-1.42	-159.64	0.00	472052.70	736117.30	N 32 17 46.22	W 103 42 10.65
	4500.00	7.58	269.49	4489.11	0.38	-1.53	-172.82	0.00	472052.59	736104.12	N 32 17 46.22	W 103 42 10.80
Base of Salt	*4521.07*	*7.58*	*269.49*	*4510.00*	*0.39*	*-1.56*	*-175.60*	*0.00*	*472052.56*	*736101.34*	*N 32 17 46.22*	*W 103 42 10.83*
	4600.00	7.58	269.49	4588.24	0.41	-1.65	-186.00	0.00	472052.47	736090.93	N 32 17 46.22	W 103 42 10.96
	4700.00	7.58	269.49	4687.36	0.44	-1.77	-199.19	0.00	472052.35	736077.75	N 32 17 46.22	W 103 42 11.11
Lamar	*4704.68*	*7.58*	*269.49*	*4692.00*	*0.44*	*-1.77*	*-199.80*	*0.00*	*472052.35*	*736077.14*	*N 32 17 46.22*	*W 103 42 11.12*
	4800.00	7.58	269.49	4786.49	0.47	-1.88	-212.37	0.00	472052.24	736064.57	N 32 17 46.22	W 103 42 11.26
Bell Canyon	*4874.16*	*7.58*	*269.49*	*4860.00*	*0.49*	*-1.97*	*-222.15*	*0.00*	*472052.15*	*736054.79*	*N 32 17 46.22*	*W 103 42 11.38*
	4900.00	7.58	269.49	4885.62	0.50	-2.00	-225.56	0.00	472052.12	736051.39	N 32 17 46.22	W 103 42 11.42
	5000.00	7.58	269.49	4984.75	0.53	-2.12	-238.74	0.00	472052.00	736038.20	N 32 17 46.22	W 103 42 11.57
	5100.00	7.58	269.49	5083.87	0.56	-2.23	-251.92	0.00	472051.89	736025.02	N 32 17 46.22	W 103 42 11.72
	5200.00	7.58	269.49	5183.00	0.59	-2.35	-265.11	0.00	472051.77	736011.84	N 32 17 46.22	W 103 42 11.88
	5300.00	7.58	269.49	5282.13	0.62	-2.47	-278.29	0.00	472051.65	735998.65	N 32 17 46.22	W 103 42 12.03
	5400.00	7.58	269.49	5381.25	0.65	-2.58	-291.47	0.00	472051.54	735985.47	N 32 17 46.22	W 103 42 12.18
	5500.00	7.58	269.49	5480.38	0.68	-2.70	-304.66	0.00	472051.42	735972.29	N 32 17 46.22	W 103 42 12.34
	5600.00	7.58	269.49	5579.51	0.70	-2.82	-317.84	0.00	472051.30	735959.11	N 32 17 46.22	W 103 42 12.49
	5700.00	7.58	269.49	5678.64	0.73	-2.94	-331.02	0.00	472051.19	735945.92	N 32 17 46.22	W 103 42 12.65
Cherry Canyon	*5701.38*	*7.58*	*269.49*	*5680.00*	*0.73*	*-2.94*	*-331.21*	*0.00*	*472051.18*	*735945.74*	*N 32 17 46.22*	*W 103 42 12.65*
	5800.00	7.58	269.49	5777.76	0.76	-3.05	-344.21	0.00	472051.07	735932.74	N 32 17 46.22	W 103 42 12.80
	5900.00	7.58	269.49	5876.89	0.79	-3.17	-357.39	0.00	472050.95	735919.56	N 32 17 46.22	W 103 42 12.95
	6000.00	7.58	269.49	5976.02	0.82	-3.29	-370.57	0.00	472050.83	735906.37	N 32 17 46.22	W 103 42 13.11
	6100.00	7.58	269.49	6075.14	0.85	-3.40	-383.76	0.00	472050.72	735893.19	N 32 17 46.21	W 103 42 13.26
	6200.00	7.58	269.49	6174.27	0.88	-3.52	-396.94	0.00	472050.60	735880.01	N 32 17 46.21	W 103 42 13.41
	6300.00	7.58	269.49	6273.40	0.91	-3.64	-410.13	0.00	472050.48	735866.82	N 32 17 46.21	W 103 42 13.57
	6400.00	7.58	269.49	6372.52	0.94	-3.75	-423.31	0.00	472050.37	735853.64	N 32 17 46.21	W 103 42 13.72
	6500.00	7.58	269.49	6471.65	0.97	-3.87	-436.49	0.00	472050.25	735840.46	N 32 17 46.21	W 103 42 13.87
	6600.00	7.58	269.49	6570.78	1.00	-3.99	-449.68	0.00	472050.13	735827.28	N 32 17 46.21	W 103 42 14.03
	6700.00	7.58	269.49	6669.91	1.03	-4.10	-462.86	0.00	472050.02	735814.09	N 32 17 46.21	W 103 42 14.18
	6800.00	7.58	269.49	6769.03	1.06	-4.22	-476.04	0.00	472049.90	735800.91	N 32 17 46.21	W 103 42 14.33

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 ° ' ")
	6900.00	7.58	269.49	6868.16	1.08	-4.34	-489.23	0.00	472049.78	735787.73	N 32 17 46.21	W 103 42 14.49
Brushy Canyon	*6962.56*	*7.58*	*269.49*	*6950.00*	*1.11*	*-4.43*	*-500.11*	*0.00*	*472049.69*	*735778.84*	*N 32 17 46.21*	*W 103 42 14.62*
	7000.00	7.58	269.49	6987.29	1.11	-4.45	-502.41	0.00	472049.67	735774.54	N 32 17 46.21	W 103 42 14.64
Drop to Vertical 2°/100' DLS	7033.00	7.58	269.49	7020.00	1.12	-4.49	-506.76	0.00	472049.63	735770.19	N 32 17 46.21	W 103 42 14.69
	7100.00	6.24	269.49	7086.51	1.14	-4.56	-514.82	2.00	472049.56	735762.14	N 32 17 46.21	W 103 42 14.79
	7200.00	4.24	269.49	7186.09	1.16	-4.65	-523.94	2.00	472049.47	735753.01	N 32 17 46.21	W 103 42 14.89
	7300.00	2.24	269.49	7285.92	1.17	-4.70	-529.59	2.00	472049.42	735747.37	N 32 17 46.21	W 103 42 14.96
	7400.00	0.24	269.49	7385.90	1.18	-4.71	-531.74	2.00	472049.41	735745.21	N 32 17 46.21	W 103 42 14.98
Hold Vertical	7411.80	0.00	269.49	7377.70	1.18	-4.71	-531.77	2.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
	7500.00	0.00	269.49	7485.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
	7600.00	0.00	269.49	7585.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
	7700.00	0.00	269.49	7685.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
	7800.00	0.00	269.49	7785.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
	7900.00	0.00	269.49	7885.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
	8000.00	0.00	269.49	7985.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
	8100.00	0.00	269.49	8085.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
	8200.00	0.00	269.49	8185.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
	8300.00	0.00	269.49	8285.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
	8400.00	0.00	269.49	8385.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
	8500.00	0.00	269.49	8485.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
	8600.00	0.00	269.49	8585.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
Bone Spring	*8634.10*	*0.00*	*269.49*	*8620.00*	*1.18*	*-4.71*	*-531.77*	*0.00*	*472049.41*	*735745.19*	*N 32 17 46.21*	*W 103 42 14.98*
	8700.00	0.00	269.49	8685.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
Leonard Shale	*8749.10*	*0.00*	*269.49*	*8735.00*	*1.18*	*-4.71*	*-531.77*	*0.00*	*472049.41*	*735745.19*	*N 32 17 46.21*	*W 103 42 14.98*
	8800.00	0.00	269.49	8785.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
	8900.00	0.00	269.49	8885.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
	9000.00	0.00	269.49	8985.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
	9100.00	0.00	269.49	9085.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
Avalon Shale	*9174.10*	*0.00*	*269.49*	*9160.00*	*1.18*	*-4.71*	*-531.77*	*0.00*	*472049.41*	*735745.19*	*N 32 17 46.21*	*W 103 42 14.98*
	9200.00	0.00	269.49	9185.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
	9300.00	0.00	269.49	9285.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
	9400.00	0.00	269.49	9385.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
	9500.00	0.00	269.49	9485.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
	9600.00	0.00	269.49	9585.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
	9700.00	0.00	269.49	9685.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
	9800.00	0.00	269.49	9785.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
1st Bone Spring Sand	*9814.10*	*0.00*	*269.49*	*9800.00*	*1.18*	*-4.71*	*-531.77*	*0.00*	*472049.41*	*735745.19*	*N 32 17 46.21*	*W 103 42 14.98*
	9900.00	0.00	269.49	9885.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
	10000.00	0.00	269.49	9985.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
2nd Bone Spring Carb	*10084.10*	*0.00*	*269.49*	*10050.00*	*1.18*	*-4.71*	*-531.77*	*0.00*	*472049.41*	*735745.19*	*N 32 17 46.21*	*W 103 42 14.98*
	10100.00	0.00	269.49	10065.90	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
KOP - Build 12°/100' DLS	10108.64	0.00	269.49	10072.54	1.18	-4.71	-531.77	0.00	472049.41	735745.19	N 32 17 46.21	W 103 42 14.98
	10200.00	11.20	179.62	10165.30	10.28	-13.81	-531.71	12.00	472040.31	735745.25	N 32 17 46.12	W 103 42 14.98
	10300.00	23.20	179.62	10260.65	39.80	-43.34	-531.51	12.00	472010.79	735745.45	N 32 17 45.83	W 103 42 14.98
	10400.00	35.20	179.62	10347.78	88.50	-92.04	-531.19	12.00	471962.09	735745.77	N 32 17 45.35	W 103 42 14.98
2nd Bone Spring Sand	*10402.72*	*35.53*	*179.62*	*10350.00*	*90.07*	*-93.61*	*-531.18*	*12.00*	*471960.52*	*735745.78*	*N 32 17 45.33*	*W 103 42 14.98*
	10500.00	47.20	179.62	10422.88	154.25	-157.79	-530.75	12.00	471896.34	735746.21	N 32 17 44.70	W 103 42 14.98
	10600.00	59.20	179.62	10482.67	234.18	-237.72	-530.22	12.00	471816.42	735746.74	N 32 17 43.90	W 103 42 14.98
	10700.00	71.20	179.62	10524.54	324.60	-328.33	-529.62	12.00	471725.81	735747.34	N 32 17 43.01	W 103 42 14.98
	10800.00	83.20	179.62	10546.64	422.14	-425.66	-528.97	12.00	471628.48	735747.99	N 32 17 42.05	W 103 42 14.98
2nd BSPG SS Target Landing Point	10856.64	90.00	179.62	10550.00	478.64	-482.17	-528.59	12.00	471571.97	735748.36	N 32 17 41.49	W 103 42 14.98
	10900.00	90.00	179.62	10550.00	522.00	-525.53	-528.30	0.00	471528.62	735748.65	N 32 17 41.06	W 103 42 14.98
	11000.00	90.00	179.62	10550.00	622.00	-625.53	-527.64	0.00	471428.62	735749.32	N 32 17 40.07	W 103 42 14.98
	11100.00	90.00	179.62	10550.00	722.00	-725.52	-526.97	0.00	471328.63	735749.98	N 32 17 39.08	W 103 42 14.98
	11200.00	90.00	179.62	10550.00	822.00	-825.52	-526.31	0.00	471228.64	735750.65	N 32 17 38.09	W 103 42 14.98
	11300.00	90.00	179.62	10550.00	922.00	-925.52	-525.64	0.00	471128.65	735751.31	N 32 17 37.10	W 103 42 14.98
	11400.00	90.00	179.62	10550.00	1022.00	-1025.52	-524.98	0.00	471028.65	735751.98	N 32 17 36.11	W 103 42 14.97
	11500.00	90.00	179.62	10550.00	1122.00	-1125.52	-524.31	0.00	470928.66	735752.64	N 32 17 35.12	W 103 42 14.97
	11600.00	90.00	179.62	10550.00	1222.00	-1225.51	-523.65	0.00	470828.67	735753.31	N 32 17 34.13	W 103 42 14.97
	11700.00	90.00	179.62	10550.00	1322.00	-1325.51	-522.99	0.00	470728.67	735753.97	N 32 17 33.14	W 103 42 14.97
	11800.00	90.00	179.62	10550.00	1422.00	-1425.51	-522.32	0.00	470628.68	735754.64	N 32 17 32.15	W 103 42 14.97
	11900.00	90.00	179.62	10550.00	1522.00	-1525.51	-521.66	0.00	470528.69	735755.30	N 32 17 31.16	W 103 42 14.97
	12000.00	90.00	179.62	10550.00	1622.00	-1625.51	-520.99	0.00	470428.70	735755.97	N 32 17 30.17	W 103 42 14.97
	12100.00	90.00	179.62	10550.00	1722.00	-1725.50	-520.33	0.00	470328.70	735756.63	N 32 17 29.18	W 103 42 14.97
	12200.00	90.00	179.62	10550.00	1822.00	-1825.50	-519.66	0.00	470228.71	735757.30	N 32 17 28.19	W 103 42 14.97
	12300.00	90.00	179.62	10550.00	1922.00	-1925.50	-519.00	0.00	470128.72	735757.96	N 32 17 27.20	W 103 42 14.97
	12400.00	90.00	179.62	10550.00	2022.00	-2025.50	-518.33	0.00	470028.72	735758.62	N 32 17 26.21	W 103 42 14.97
	12500.00	90.00	179.62	10550.00	2122.00	-2125.49	-517.67	0.00	469928.73	735759.29	N 32 17 25.22	W 103 42 14.96
	12600.00	90.00	179.62	10550.00	2222.00	-2225.49	-517.00	0.00	469828.74	735759.95	N 32 17 24.24	W 103 42 14.96
	12700.00	90.00	179.62	10550.00	2322.00	-2325.49	-516.34	0.00	469728.75	735760.62	N 32 17 23.25	W 103 42 14.96
	12800.00	90.00	179.62	10550.00	2422.00	-2425.49	-515.67	0.00	469628.75	735761.28	N 32 17 22.26	W 103 42 14.96
	12900.00	90.00	179.62	10550.00	2522.00	-2525.49	-515.01	0.00	469528.76	735761.95	N 32 17 21.27	W 103 42 14.96
	13000.00	90.00	179.62	10550.00	2622.00	-2625.48	-514.34	0.00	469428.77	735762.61	N 32 17 20.28	W 103 42 14.96
	13100.00	90.00	179.62	10550.00	2722.00	-2725.48	-513.68	0.00	469328.77	735763.28	N 32 17 19.29	W 103 42 14.96
	13200.00	90.00	179.62	10550.00	2822.00	-2825.48	-513.01	0.00	469228.78	735763.94	N 32 17 18.30	W 103 42 14.96
	13300.00	90.00	179.62	10550.00	2922.00	-2925.48	-512.35	0.00	469128.79	735764.61	N 32 17 17.31	W 103 42 14.96
	13400.00	90.00	179.62	10550.00	3022.00	-3025.47	-511.68	0.00	469028.80	735765.27	N 32 17 16.32	W 103 42 14.96
	13500.00	90.00	179.62	10550.00	3122.00	-3125.47	-511.02	0.00	468928.80	735765.94	N 32 17 15.33	W 103 42 14.96
	13600.00	90.00	179.62	10550.00	3222.00	-3225.47	-510.35	0.00	468828.81	735766.60	N 32 17 14.34	W 103 42 14.95
	13700.00	90.00	179.62	10550.00	3322.00	-3325.47	-509.69	0.00	468728.82	735767.27	N 32 17 13.35	W 103 42 14.95
	13800.00	90.00	179.62	10550.00	3422.00	-3425.47	-509.02	0.00	468628.82	735767.93	N 32 17 12.36	W 103 42 14.95
	13900.00	90.00	179.62	10550.00	3522.00	-3525.46	-508.36	0.00	468528.83	735768.60	N 32 17 11.37	W 103 42 14.95
	14000.00	90.00	179.62	10550.00	3622.00	-3625.46	-507.69	0.00	468428.84	735769.26	N 32 17 10.38	W 103 42 14.95
	14100.00	90.00	179.62	10550.00	3722.00	-3725.46	-507.03	0.00	468328.85	735769.93	N 32 17 9.39	W 103 42 14.95
	14200.00	90.00	179.62	10550.00	3822.00	-3825.46	-506.36	0.00	468228.85	735770.59	N 32 17 8.40	W 103 42 14.95
	14300.00	90.00	179.62	10550.00	3922.00	-3925.45	-505.70	0.00	468128.86	735771.26	N 32 17 7.41	W 103 42 14.95
	14400.00	90.00	179.62	10550.00	4022.00	-4025.45	-505.03	0.00	468028.87	735771.92	N 32 17 6.42	W 103 42 14.95
	14500.00	90.00	179.62	10550.00	4122.00	-4125.45	-504.37	0.00	467928.87	735772.59	N 32 17 5.43	W 103 42 14.95
	14600.00	90.00	179.62	10550.00	4222.00	-4225.45	-503.70	0.00	467828.88	735773.25	N 32 17 4.45	W 103 42 14.95
	14700.00	90.00	179.62	10550.00	4322.00	-4325.45	-503.04	0.00	467728.89	735773.92	N 32 17 3.46	W 103 42 14.94
	14800.00	90.00	179.62	10550.00	4422.00	-4425.44	-502.37	0.00	467628.90	735774.58	N 32 17 2.47	W 103 42 14.94
	14900.00	90.00	179.62	10550.00	4522.00	-4525.44	-501.71	0.00	467528.90	735775.25	N 32 17 1.48	W 103 42 14.94
	15000.00	90.00	179.62	10550.00	4622.00	-4625.44	-501.04	0.00	467428.91	735775.91	N 32 17 0.49	W 103 42 14.94
	15100.00	90.00	179.62	10550.00	4722.00	-4725.44	-500.38	0.00	467328.92	735776.58	N 32 16 59.50	W 103 42 14.94
	15200.00	90.00	179.62	10550.00	4822.00	-4825.43	-499.71	0.00	467228.92	735777.24	N 32 16 58.51	W 103 42 14.94
	15300.00	90.00	179.62	10550.00	4922.00	-4925.43	-499.05	0.00	467128.93	735777.91	N 32 16 57.52	W 103 42 14.94
	15400.00	90.00	179.62	10550.00	5022.00	-5025.43	-498.38	0.00	467028.94	735778.57	N 32 16 56.53	W 103 42 14.94
	15500.00	90.00	179.62	10550.00	5122.00	-5125.43	-497.72	0.00	466928.95	735779.24	N 32 16 55.54	W 103 42 14.94
	15600.00	90.00	179.62	10550.00	5222.00	-5225.43	-497.05	0.00	466828.95	735779.90	N 32 16 54.55	W 103 42 14.94
	15700.00	90.00	179.62	10550.00	5322.00	-5325.42	-496.39	0.00	466728.96	735780.57	N 32 16 53.56	W 103 42 14.94
	15800.00	90.00	179.62	10550.00	5422.00	-5425.42	-495.72	0.00	466628.97	735781.23	N 32 16 52.57	W 103 42 14.93
	15900.00	90.00	179.62	10550.00	5522.00	-5525.42	-495.06	0.00	466528.97	735781.90	N 32 16 51.58	W 103 42 14.93

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 ° ' ")
	16000.00	90.00	179.62	10550.00	5822.00	-5825.42	-494.39	0.00	466428.98	735782.56	N 32 16 50.59	W 103 42 14.93
	16100.00	90.00	179.62	10550.00	5722.00	-5725.41	-493.73	0.00	466328.99	735783.23	N 32 16 49.60	W 103 42 14.93
	16200.00	90.00	179.62	10550.00	5822.00	-5825.41	-493.08	0.00	466229.00	735783.89	N 32 16 48.61	W 103 42 14.93
	16300.00	90.00	179.62	10550.00	5922.00	-5925.41	-492.40	0.00	466129.00	735784.56	N 32 16 47.62	W 103 42 14.93
	16400.00	90.00	179.62	10550.00	6022.00	-6025.41	-491.73	0.00	466029.01	735785.22	N 32 16 46.63	W 103 42 14.93
	16500.00	90.00	179.62	10550.00	6122.00	-6125.41	-491.07	0.00	465929.02	735785.89	N 32 16 45.64	W 103 42 14.93
	16600.00	90.00	179.62	10550.00	6222.00	-6225.40	-490.40	0.00	465829.02	735788.55	N 32 16 44.66	W 103 42 14.93
	16700.00	90.00	179.62	10550.00	6322.00	-6325.40	-489.74	0.00	465729.03	735787.22	N 32 16 43.67	W 103 42 14.93
	16800.00	90.00	179.62	10550.00	6422.00	-6425.40	-489.07	0.00	465629.04	735787.88	N 32 16 42.68	W 103 42 14.93
	16900.00	90.00	179.62	10550.00	6522.00	-6525.40	-488.41	0.00	465529.05	735788.55	N 32 16 41.69	W 103 42 14.92
	17000.00	90.00	179.62	10550.00	6622.00	-6625.39	-487.74	0.00	465429.05	735789.21	N 32 16 40.70	W 103 42 14.92
	17100.00	90.00	179.62	10550.00	6722.00	-6725.39	-487.08	0.00	465329.06	735789.87	N 32 16 39.71	W 103 42 14.92
	17200.00	90.00	179.62	10550.00	6822.00	-6825.39	-486.41	0.00	465229.07	735790.54	N 32 16 38.72	W 103 42 14.92
	17300.00	90.00	179.62	10550.00	6922.00	-6925.39	-485.75	0.00	465129.07	735791.20	N 32 16 37.73	W 103 42 14.92
	17400.00	90.00	179.62	10550.00	7022.00	-7025.39	-485.08	0.00	465029.08	735791.87	N 32 16 36.74	W 103 42 14.92
	17500.00	90.00	179.62	10550.00	7122.00	-7125.38	-484.42	0.00	464929.09	735792.53	N 32 16 35.75	W 103 42 14.92
	17600.00	90.00	179.62	10550.00	7222.00	-7225.38	-483.75	0.00	464829.10	735793.20	N 32 16 34.76	W 103 42 14.92
	17700.00	90.00	179.62	10550.00	7322.00	-7325.38	-483.09	0.00	464729.10	735793.86	N 32 16 33.77	W 103 42 14.92
	17800.00	90.00	179.62	10550.00	7422.00	-7425.38	-482.42	0.00	464629.11	735794.53	N 32 16 32.78	W 103 42 14.92
	17900.00	90.00	179.62	10550.00	7522.00	-7525.37	-481.76	0.00	464529.12	735795.19	N 32 16 31.79	W 103 42 14.92
	18000.00	90.00	179.62	10550.00	7622.00	-7625.37	-481.09	0.00	464429.12	735795.86	N 32 16 30.80	W 103 42 14.91
	18100.00	90.00	179.62	10550.00	7722.00	-7725.37	-480.43	0.00	464329.13	735796.52	N 32 16 29.81	W 103 42 14.91
	18200.00	90.00	179.62	10550.00	7822.00	-7825.37	-479.77	0.00	464229.14	735797.19	N 32 16 28.82	W 103 42 14.91
	18300.00	90.00	179.62	10550.00	7922.00	-7925.37	-479.10	0.00	464129.15	735797.85	N 32 16 27.83	W 103 42 14.91
	18400.00	90.00	179.62	10550.00	8022.00	-8025.36	-478.44	0.00	464029.15	735798.52	N 32 16 26.84	W 103 42 14.91
	18500.00	90.00	179.62	10550.00	8122.00	-8125.36	-477.77	0.00	463929.16	735799.18	N 32 16 25.85	W 103 42 14.91
	18600.00	90.00	179.62	10550.00	8222.00	-8225.36	-477.11	0.00	463829.17	735799.85	N 32 16 24.86	W 103 42 14.91
	18700.00	90.00	179.62	10550.00	8322.00	-8325.36	-476.44	0.00	463729.17	735800.51	N 32 16 23.88	W 103 42 14.91
	18800.00	90.00	179.62	10550.00	8422.00	-8425.35	-475.78	0.00	463629.18	735801.18	N 32 16 22.89	W 103 42 14.91
	18900.00	90.00	179.62	10550.00	8522.00	-8525.35	-475.11	0.00	463529.19	735801.84	N 32 16 21.90	W 103 42 14.91
	19000.00	90.00	179.62	10550.00	8622.00	-8625.35	-474.45	0.00	463429.20	735802.51	N 32 16 20.91	W 103 42 14.91
	19100.00	90.00	179.62	10550.00	8722.00	-8725.35	-473.78	0.00	463329.20	735803.17	N 32 16 19.92	W 103 42 14.90
	19200.00	90.00	179.62	10550.00	8822.00	-8825.35	-473.12	0.00	463229.21	735803.84	N 32 16 18.93	W 103 42 14.90
	19300.00	90.00	179.62	10550.00	8922.00	-8925.34	-472.45	0.00	463129.22	735804.50	N 32 16 17.94	W 103 42 14.90
	19400.00	90.00	179.62	10550.00	9022.00	-9025.34	-471.79	0.00	463029.22	735805.17	N 32 16 16.95	W 103 42 14.90
	19500.00	90.00	179.62	10550.00	9122.00	-9125.34	-471.12	0.00	462929.23	735805.83	N 32 16 15.96	W 103 42 14.90
	19600.00	90.00	179.62	10550.00	9222.00	-9225.34	-470.46	0.00	462829.24	735806.50	N 32 16 14.97	W 103 42 14.90
	19700.00	90.00	179.62	10550.00	9322.00	-9325.33	-469.79	0.00	462729.25	735807.16	N 32 16 13.98	W 103 42 14.90
	19800.00	90.00	179.62	10550.00	9422.00	-9425.33	-469.13	0.00	462629.25	735807.83	N 32 16 12.99	W 103 42 14.90
	19900.00	90.00	179.62	10550.00	9522.00	-9525.33	-468.46	0.00	462529.26	735808.49	N 32 16 12.00	W 103 42 14.90
	20000.00	90.00	179.62	10550.00	9622.00	-9625.33	-467.80	0.00	462429.27	735809.16	N 32 16 11.01	W 103 42 14.90
	20100.00	90.00	179.62	10550.00	9722.00	-9725.33	-467.13	0.00	462329.27	735809.82	N 32 16 10.02	W 103 42 14.90
	20200.00	90.00	179.62	10550.00	9822.00	-9825.32	-466.47	0.00	462229.28	735810.49	N 32 16 9.03	W 103 42 14.89
	20300.00	90.00	179.62	10550.00	9922.00	-9925.32	-465.80	0.00	462129.29	735811.15	N 32 16 8.04	W 103 42 14.89
	20400.00	90.00	179.62	10550.00	10022.00	-10025.32	-465.14	0.00	462029.30	735811.82	N 32 16 7.05	W 103 42 14.89
Cimarex James 20-29 Federal Com #37H - PBHL [100' FSL, 330' FWL]	20441.17	90.00	179.62	10550.00	10063.17	-10068.49	-464.86	0.00	461988.13	735812.09	N 32 16 6.65	W 103 42 14.89

Survey Type: Non-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	26.000	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS-Depth Only	James 20-29 Federal Com #37H / Cimarex James 20-29 Federal Com #37H Rev0 RM 02Jul19
	1	26.000	20441.169	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS	James 20-29 Federal Com #37H / Cimarex James 20-29 Federal

Schlumberger

CIMAREX

Cimarex James 20-29 Federal Com #37H Rev0 RM 02Jul19 Anti-Collision Summary Report

Analysis Date-24hr Time:	July 03, 2019 - 10:07	**Analysis Method:**	3D Least Distance
Client:	Cimarex Energy	**Reference Trajectory:**	Cimarex James 20-29 Federal Com #37H Rev0 RM 02Jul19 (Non-Def Plan)
Field:	NM Lea County (NAD 83)	**Depth Interval:**	Every 10.00 Measured Depth (ft)
Structure:	Cimarex James 20-29 Federal Com #37H	**Rule Set:**	NAL Procedure: D&M AntiCollision Standard S002
Slot:	New Slot	**Min Pts:**	All local minima indicated.
Well:	James 20-29 Federal Com #37H	**Version / Patch:**	2.10.760.0
Borehole:	James 20-29 Federal Com #37H	**Database \ Project:**	US1153APP452.dir.slb.com\drilling-NM Lea County 2.10
Scan MD Range:	0.00ft - 20441.17ft		

Trajectory Error Model: ISCWSA0 3-D 95.000% Confidence 2.7955 sigma, for subject well. For offset wells, error model version is specified with each well respectively.

Offset Trajectories Summary

Offset Selection Criteria
Wellhead distance scan: Not performed!
Selection filters: Definitive Surveys - Definitive Plans - Definitive surveys exclude definitive plans
- All Non-Def Surveys when no Def-Survey is set in a borehole - All Non-Def Plans when no Def-Plan is set in a borehole

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ctr-Ctr (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		

Results highlighted: Sep-Factor separation <= 1.50 ft

Cimarex James 29 Federal #35H XEM + MWD 0ft to 13649ft MD (Def Survey) — Pass

5224.68	32.81	5222.18	5191.87	N/A	MAS = 10.00 (m)	0.00	0.00		Surface
5224.60	32.81	5222.09	5191.79	673522.06	MAS = 10.00 (m)	20.00	20.00		MinPt-O-SF
5224.59	32.81	5222.08	5191.78	N/A	MAS = 10.00 (m)	26.00	26.00		WRP
5224.44	32.81	5221.77	5191.63	31148.75	MAS = 10.00 (m)	90.00	90.00		MinPts
5224.52	32.81	5221.70	5191.71	16288.40	MAS = 10.00 (m)	130.00	130.00		MINPT-O-EOU
5227.04	32.81	5223.29	5194.23	4185.61	MAS = 10.00 (m)	340.00	340.00		MINPT-O-EOU
5227.60	32.81	5221.66	5194.79	1528.43	MAS = 10.00 (m)	800.00	800.00		MinPts
5228.41	32.81	5221.24	5195.60	1119.15	MAS = 10.00 (m)	1060.00	1060.00		MINPT-O-EOU
5240.28	32.81	5226.83	5207.47	438.31	MAS = 10.00 (m)	2750.00	2750.00		MINPT-O-EOU
5236.24	32.81	5219.22	5203.44	380.30	MAS = 10.00 (m)	4100.00	4092.60		MinPts
5236.29	32.81	5219.17	5203.48	357.99	MAS = 10.00 (m)	4140.00	4132.25		MINPT-O-EOU
5244.60	32.81	5225.39	5211.80	313.60	MAS = 10.00 (m)	4940.00	4925.27		MINPT-O-EOU
5249.43	32.81	5227.79	5216.62	274.10	MAS = 10.00 (m)	5690.00	5668.72		MINPT-O-EOU
5250.87	32.81	5228.17	5218.06	259.83	MAS = 10.00 (m)	5960.00	5936.37		MINPT-O-EOU
5251.19	33.20	5228.23	5218.00	256.48	OSF1.50	6030.00	6005.75		MinPt-O-ADP
5251.73	33.89	5228.30	5217.84	250.83	OSF1.50	6160.00	6134.62		MINPT-O-EOU
5251.87	34.05	5228.33	5217.81	249.55	OSF1.50	6190.00	6164.35		MinPt-O-ADP
5253.00	34.97	5228.85	5218.03	242.57	OSF1.50	6350.00	6322.96		MinPt-O-ADP
5261.24	39.05	5234.37	5222.19	215.84	OSF1.50	7100.00	7068.51		MinPt-O-SF
5445.02	49.42	5411.24	5395.60	173.99	OSF1.50	10106.64	10072.54		MinPt-O-SF
1148.77	130.94	1060.65	1017.84	13.39	OSF1.50	16250.00	10550.00		MinPt-CtCt
1149.05	131.65	1060.45	1017.40	13.32	OSF1.50	16290.00	10550.00		MINPT-O-EOU
1149.24	131.88	1060.49	1017.36	13.29	OSF1.50	16300.00	10550.00		MinPt-O-ADP
1144.96	147.46	1045.62	997.49	11.82	OSF1.50	16940.00	10550.00		MinPt-CtCt
1142.79	154.47	1038.98	988.32	11.26	OSF1.50	17220.00	10550.00		MinPt-CtCt
1142.16	163.15	1032.56	979.01	10.64	OSF1.50	17560.00	10550.00		MinPt-CtCt
1142.93	169.70	1028.96	973.22	10.23	OSF1.50	17810.00	10550.00		MinPt-CtCt
1142.83	176.37	1024.41	966.46	9.84	OSF1.50	18060.00	10550.00		MinPt-CtCt
1142.78	180.68	1021.49	962.10	9.60	OSF1.50	18220.00	10550.00		MinPt-CtCt
1143.23	188.81	1016.53	954.42	9.18	OSF1.50	18520.00	10550.00		MinPt-CtCt
1142.69	198.69	1009.39	944.00	8.72	OSF1.50	18880.00	10550.00		MinPt-CtCt
1136.30	209.42	995.85	926.88	8.22	OSF1.50	19260.00	10550.00		MinPt-CtCt
1137.70	213.26	994.68	924.42	8.08	OSF1.50	19400.00	10550.00		MINPT-O-EOU
1140.01	216.04	995.15	923.98	7.99	OSF1.50	19500.00	10550.00		MinPt-O-ADP
1184.84	238.27	1025.16	946.57	7.52	OSF1.50	20290.00	10550.00		MinPt-O-SF
1206.64	237.09	1047.74	969.55	7.70	OSF1.50	20441.17	10550.00		TD

Cimarex James Federal #20H MWD 0ft to 12150ft (Def Survey) — Pass

5154.28	32.81	5151.76	5121.47	N/A	MAS = 10.00 (m)	0.00	0.00		Surface
5154.23	32.81	5151.67	5121.42	95089.56	MAS = 10.00 (m)	26.00	26.00		WRP
5153.83	32.81	5150.77	5121.02	9229.93	MAS = 10.00 (m)	170.00	170.00		MinPts
5154.13	32.81	5149.74	5121.32	2721.93	MAS = 10.00 (m)	480.00	480.00		MinPts
5132.65	32.81	5116.53	5099.84	377.14	MAS = 10.00 (m)	3100.00	3099.98		MinPt-O-SF
5131.65	32.81	5115.48	5098.85	375.50	MAS = 10.00 (m)	3270.00	3269.80		MinPts
5238.43	38.97	5211.62	5199.46	215.33	OSF1.50	7100.00	7068.51		MinPt-O-SF
5247.72	38.79	5221.03	5208.93	216.78	OSF1.50	7780.00	7745.90		MinPt-O-ADP
5250.85	40.02	5223.34	5210.83	209.82	OSF1.50	8050.00	8015.90		MINPT-O-EOU
5250.96	40.16	5223.36	5210.81	209.07	OSF1.50	8080.00	8045.90		MinPt-O-ADP
5277.99	47.46	5245.52	5230.53	176.02	OSF1.50	9560.00	9525.90		MinPt-CtCt
5278.04	47.60	5245.47	5230.44	175.47	OSF1.50	9590.00	9555.90		MINPT-O-EOU
5278.08	47.64	5245.48	5230.43	175.29	OSF1.50	9600.00	9565.90		MinPt-O-ADP
5278.29	50.39	5243.86	5227.89	165.23	OSF1.50	10200.00	10165.30		MinPt-O-SF
5264.74	50.30	5230.37	5214.44	165.14	OSF1.50	10260.00	10223.27		MinPt-O-SF
1357.92	117.54	1278.73	1240.39	17.67	OSF1.50	15500.00	10550.00		MinPts
1357.89	117.62	1278.74	1240.37	17.66	OSF1.50	15510.00	10550.00		MinPt-O-ADP
1359.98	118.03	1280.44	1241.93	17.62	OSF1.50	15570.00	10550.00		MinPt-O-SF
5126.54	64.36	5082.60	5062.18	124.25	OSF1.50	20441.17	10550.00		TD

Cimarex James 29 Federal 35H XEM + MWD 0ft - 13872ft MD (Def Survey) — Pass

5088.68	32.81	5084.18	5053.88	N/A	MAS = 10.00 (m)	0.00	0.00		Surface
5088.59	32.81	5084.00	5053.78	57482.86	MAS = 10.00 (m)	26.00	26.00		WRP
5088.31	32.81	5083.58	5053.50	21851.24	MAS = 10.00 (m)	110.00	110.00		MinPts
5088.41	32.81	5083.46	5053.60	11391.02	MAS = 10.00 (m)	160.00	160.00		MINPT-O-EOU
5088.91	32.81	5083.96	5056.10	2082.72	MAS = 10.00 (m)	600.00	600.00		MINPT-O-EOU
5089.92	32.81	5083.62	5057.11	1341.19	MAS = 10.00 (m)	900.00	900.00		MINPT-O-EOU
5094.64	32.81	5085.26	5061.84	739.88	MAS = 10.00 (m)	1610.00	1610.00		MINPT-O-EOU
5104.35	32.81	5088.89	5071.55	393.55	MAS = 10.00 (m)	2940.00	2940.00		MINPT-O-EOU
5104.61	32.81	5088.88	5071.81	385.68	MAS = 10.00 (m)	3000.00	3000.00		MINPT-O-EOU

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
	5105.28	32.81	5089.34	5072.47	379.70	MAS = 10.00 (m)	3100.00	3099.98				MinPt-O-SF	
	5223.25	38.01	5197.08	5185.24	220.62	OSF1.50	7100.00	7066.51				MinPt-O-SF	
	5383.74	47.94	5350.95	5335.81	177.65	OSF1.50	10106.64	10072.54				MinPt-O-SF	
	1521.67	122.54	1439.14	1399.13	18.98	OSF1.50	16080.00	10550.00				MinPt-CtCt	
	1521.95	123.41	1438.85	1398.55	18.85	OSF1.50	16120.00	10550.00				MINPT-O-EOU	
	1522.51	124.08	1438.96	1398.43	18.75	OSF1.50	16150.00	10550.00				MinPt-O-ADP	
	1520.17	137.68	1427.42	1382.29	16.82	OSF1.50	16900.00	10550.00				MinPt-CtCt	
	1520.94	139.95	1426.81	1380.99	16.57	OSF1.50	16980.00	10550.00				MINPT-O-EOU	
	1521.64	141.00	1427.00	1380.84	16.45	OSF1.50	16720.00	10550.00				MinPt-O-ADP	
	1526.30	200.43	1391.85	1325.87	11.55	OSF1.50	18360.00	10550.00				MinPt-CtCt	
	1526.99	202.37	1391.25	1324.62	11.44	OSF1.50	18430.00	10550.00				MINPT-O-EOU	
	1527.67	203.18	1391.39	1324.49	11.40	OSF1.50	18460.00	10550.00				MinPt-O-ADP	
	1535.47	220.11	1387.90	1315.36	10.57	OSF1.50	18870.00	10550.00				MINPT-O-EOU	
	1536.17	220.93	1388.05	1315.24	10.53	OSF1.50	18900.00	10550.00				MinPt-O-ADP	
	1569.90	246.11	1404.99	1323.79	9.65	OSF1.50	19550.00	10550.00				MinPt-O-ADP	
	1620.74	291.50	1425.57	1329.24	8.40	OSF1.50	20350.00	10550.00				MinPts	
	1632.06	290.49	1437.56	1341.56	8.49	OSF1.50	20441.17	10550.00				TD	
Harvard James 20 Federal #2 (Offset) Oil Inc Only 0ft-8850ft (Def Survey)													Pass
	1953.32	32.81	1950.82	1920.51	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	1953.25	32.81	1950.74	1920.44	253748.64	MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
	1953.23	32.81	1950.73	1920.42	N/A	MAS = 10.00 (m)	20.00	20.00				MinPts	
	1953.23	32.81	1950.73	1920.43	N/A	MAS = 10.00 (m)	26.00	26.00				WRP	
	1949.08	67.40	1903.31	1881.68	44.99	OSF1.50	1370.00	1370.00				MinPt-CtCt	
	1961.84	156.24	1857.31	1806.40	19.24	OSF1.50	3040.00	3040.00				MinPt-CtCt	
	1964.25	163.77	1854.24	1800.48	18.25	OSF1.50	3210.00	3209.81				MINPT-O-EOU	
	1967.46	167.71	1854.82	1799.75	17.84	OSF1.50	3290.00	3289.60				MinPt-O-ADP	
	2312.61	438.34	2019.76	1874.47	7.95	OSF1.50	8560.00	8525.90				MinPt-CtCt	
	2317.82	452.67	2015.26	1865.26	7.72	OSF1.50	8890.00	8855.90				MINPT-O-EOU	
	2320.13	457.31	2014.42	1862.82	7.64	OSF1.50	8960.00	8925.90				MinPts	
	2374.92	325.59	2157.02	2049.33	11.01	OSF1.50	11980.00	10550.00				MinPts	
	2374.93	325.60	2157.03	2049.33	11.01	OSF1.50	11990.00	10550.00				MinPt-O-ADP	
	2404.76	329.97	2183.95	2074.79	11.00	OSF1.50	12360.00	10550.00				MinPt-O-SF	
	8785.94	452.28	8483.59	8333.66	29.29	OSF1.50	20441.17	10550.00				TD	
Cimarex James Federal #20H ST01 MWD 8951ft to 14067ft (Def Survey)													Pass
	5154.28	32.81	5151.78	5121.47	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	5154.23	32.81	5151.67	5121.42	95089.65	MAS = 10.00 (m)	26.00	26.00				WRP	
	5153.83	32.81	5150.77	5121.02	9229.93	MAS = 10.00 (m)	170.00	170.00				MinPts	
	5154.13	32.81	5149.74	5121.32	2721.93	MAS = 10.00 (m)	480.00	480.00				MinPts	
	5132.65	32.81	5116.53	5099.84	377.14	MAS = 10.00 (m)	3100.00	3099.98				MinPt-O-SF	
	5131.65	32.81	5115.46	5098.85	375.50	MAS = 10.00 (m)	3270.00	3269.60				MinPts	
	5238.43	38.97	5211.62	5199.46	215.33	OSF1.50	7100.00	7066.51				MinPt-O-SF	
	5247.72	38.79	5221.03	5208.93	216.78	OSF1.50	7780.00	7745.90				MinPt-O-ADP	
	5250.85	40.02	5223.34	5210.83	209.82	OSF1.50	8050.00	8015.90				MINPT-O-EOU	
	5250.96	40.16	5223.36	5210.81	209.07	OSF1.50	8080.00	8045.90				MinPt-O-ADP	
	5393.76	48.59	5380.52	5345.15	175.44	OSF1.50	10106.64	10072.54				MinPt-O-SF	
	2015.45	108.91	1942.01	1906.54	28.37	OSF1.50	15540.00	10550.00				MinPt-CtCt	
	2015.61	109.43	1941.83	1906.18	28.24	OSF1.50	15570.00	10550.00				MINPT-O-EOU	
	2015.76	109.60	1941.86	1906.17	28.20	OSF1.50	15580.00	10550.00				MinPt-O-ADP	
	2052.65	114.33	1976.50	1938.22	27.50	OSF1.50	15940.00	10550.00				MinPt-O-SF	
	2137.65	125.97	2052.83	2011.68	25.94	OSF1.50	16300.00	10550.00				MinPt-O-ADP	
	2186.50	164.05	2076.30	2022.44	20.28	OSF1.50	17080.00	10550.00				MinPt-CtCt	
	2188.36	170.13	2074.10	2018.23	19.56	OSF1.50	17260.00	10550.00				MINPT-O-EOU	
	2159.62	244.48	1995.80	1915.14	13.37	OSF1.50	18940.00	10550.00				MinPt-CtCt	
	2168.76	264.41	1991.68	1904.36	12.41	OSF1.50	19410.00	10550.00				MINPT-O-EOU	
	2171.12	344.84	1940.40	1826.28	9.60	OSF1.50	20200.00	10550.00				MinPt-CtCt	
	2171.24	345.11	1940.33	1826.13	9.50	OSF1.50	20220.00	10550.00				MinPts	
	2173.54	345.90	1942.10	1827.63	9.48	OSF1.50	20300.00	10550.00				MinPt-O-SF	
	2184.74	346.21	1953.10	1838.53	9.52	OSF1.50	20441.17	10550.00				TD	
Harvard James Federal #12 Blind_Inc_Only 0ft to 6865' (Def Survey)													Pass
	5652.39	32.81	5649.89	5619.58	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	5652.37	32.81	5649.87	5619.56	N/A	MAS = 10.00 (m)	10.00	10.00				MinPt-O-SF	
	5652.36	32.81	5649.86	5619.55	N/A	MAS = 10.00 (m)	26.00	26.00				WRP	
	5636.55	102.96	5567.08	5533.60	84.13	OSF1.50	3080.00	3079.99				MinPt-CtCt	
	5673.40	536.45	5314.63	5136.95	15.93	OSF1.50	8880.00	8845.90				MinPt-O-SF	
	5673.30	536.43	5314.66	5136.87	15.93	OSF1.50	8910.00	8875.90				MinPts	
	2295.70	380.74	2041.04	1914.96	9.09	OSF1.50	15830.00	10550.00				MinPt-CtCt	
	2295.73	380.83	2041.00	1914.89	9.09	OSF1.50	15840.00	10550.00				MINPT-O-EOU	
	2295.79	380.93	2041.01	1914.86	9.09	OSF1.50	15850.00	10550.00				MinPt-O-ADP	
	2383.45	399.26	2118.44	1984.19	9.00	OSF1.50	16470.00	10550.00				MinPt-O-SF	
	5151.72	517.20	4806.09	4634.52	15.01	OSF1.50	20441.17	10550.00				TD	
Devon Lonecat Federal #1 (Offset) Oil Inc Only 0ft-8870ft (Def Survey)													Pass
	4378.29	32.81	4375.79	4345.48	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	4378.28	32.81	4375.77	4345.47	N/A	MAS = 10.00 (m)	10.00	10.00				MinPts	
	4378.28	32.81	4375.52	4345.47	17034.45	MAS = 10.00 (m)	26.00	26.00				WRP	
	4376.57	41.32	4347.19	4334.25	168.98	OSF1.50	830.00	830.00				MinPt-CtCt	
	4374.25	96.09	4309.36	4278.18	70.07	OSF1.50	1680.00	1680.00				MinPt-CtCt	
	4380.66	160.63	4272.74	4220.03	41.53	OSF1.50	3090.00	3089.99				MinPt-CtCt	
	4383.23	173.54	4266.70	4209.68	38.42	OSF1.50	3350.00	3349.13				MINPT-O-EOU	
	4401.47	193.93	4271.35	4207.54	34.47	OSF1.50	3820.00	3815.05				MinPt-O-ADP	
	4431.47	240.83	4270.09	4190.64	27.88	OSF1.50	4530.00	4518.85				MINPT-O-EOU	
	4431.85	241.27	4270.17	4190.58	27.83	OSF1.50	4560.00	4548.59				MinPt-O-ADP	
	4451.18	261.04	4278.32	4190.14	25.81	OSF1.50	5030.00	5014.48				MINPT-O-EOU	
	4478.30	295.46	4280.49	4182.84	22.92	OSF1.50	5730.00	5708.37				MinPt-O-ADP	
	4525.44	349.12	4291.85	4176.31	19.57	OSF1.50	6700.00	6669.91				MINPT-O-EOU	
	4548.66	431.12	4260.42	4117.55	15.91	OSF1.50	8340.00	8305.90				MinPt-CtCt	
	4554.54	461.42	4246.09	4093.12	14.88	OSF1.50	8920.00	8885.90				MinPts	
	4554.56	461.43	4246.11	4093.14	14.88	OSF1.50	8930.00	8895.90				MinPt-O-SF	
	2341.78	333.94	2118.33	2007.85	10.59	OSF1.50	14630.00	10550.00				MinPts	
	2341.82	333.98	2118.33	2007.83	10.59	OSF1.50	14640.00	10550.00				MinPt-O-ADP	
	2385.13	341.24	2156.81	2043.90	10.55	OSF1.50	15080.00	10550.00				MinPt-O-SF	
	6267.76	450.74	5966.43	5817.02	20.97	OSF1.50	20441.17	10550.00				TD	

Offset Trajectory	Separation			Allow	Sep.	Controlling	Reference Trajectory		Risk Level			Alert	Status
	Ct-Ct (ft)	MAS (ft)	EOU (ft)	Dev. (ft)	Fact.	Rule	MD (ft)	TVD (ft)	Alert	Minor	Major		
Harvard James 20 Federal #1 (Offset) Oil Inc Only 0ft-8889 (Def Survey)													Pass
	3120.68	32.81	3116.18	3087.88	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	3120.68	32.81	3116.18	3087.87	N/A	MAS = 10.00 (m)	10.00	10.00				MinPts	
	3120.69	32.81	3116.04	3087.88	21537.38	MAS = 10.00 (m)	26.00	26.00				WRP	
	3117.84	56.16	3079.56	3061.68	87.09	OSF1.50	1100.00	1100.00				MinPt-CtCt	
	3125.38	148.48	3026.56	2976.90	32.09	OSF1.50	2870.00	2870.00				MinPt-CtCt	
	3128.53	162.63	3019.26	2965.90	29.28	OSF1.50	3170.00	3169.90				MINPT-O-EOU	
	3132.42	167.30	3020.05	2965.12	28.49	OSF1.50	3270.00	3269.60				MinPt-O-ADP	
	3171.90	209.71	3031.26	2962.19	22.94	OSF1.50	3980.00	3973.65				MINPT-O-EOU	
	3174.67	212.73	3032.02	2961.94	22.63	OSF1.50	4060.00	4052.95				MinPt-O-ADP	
	3234.23	264.16	3057.29	2970.07	18.53	OSF1.50	5020.00	5004.57				MINPT-O-EOU	
	3241.50	275.69	3056.88	2965.81	17.78	OSF1.50	5230.00	5212.74				MINPT-O-EOU	
	3244.08	278.60	3057.58	2965.58	17.62	OSF1.50	5310.00	5292.04				MinPt-O-ADP	
	3376.04	459.50	3068.87	2916.54	11.07	OSF1.50	8840.00	8805.90				MinPt-CtCt	
	3376.41	463.96	3066.27	2912.46	10.97	OSF1.50	8930.00	8895.90				MinPts	
	3376.44	463.96	3066.30	2912.48	10.97	OSF1.50	8940.00	8905.90				MinPt-O-SF	
	2354.14	335.08	2129.92	2019.06	10.61	OSF1.50	13310.00	10550.00				MinPt-CtCt	
	2354.15	335.11	2129.91	2019.04	10.61	OSF1.50	13320.00	10550.00				MinPts	
	2379.51	339.13	2152.59	2040.38	10.59	OSF1.50	13660.00	10550.00				MinPt-O-SF	
	7506.42	456.55	7201.23	7049.88	24.79	OSF1.50	20441.17	10550.00				TD	
Harvard James Federal #3 (Offset) Oil Inc Only 0ft-8610ft (Def Survey)													Pass
	8313.38	32.81	8310.88	8280.57	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	8313.37	32.81	8310.87	8280.56	N/A	MAS = 10.00 (m)	10.00	10.00				MinPts	
	8313.37	32.81	8310.81	8280.57	139011.15	MAS = 10.00 (m)	26.00	26.00				WRP	
	8310.56	94.67	8246.62	8215.89	135.22	OSF1.50	1890.00	1890.00				MinPt-CtCt	
	8313.06	168.69	8199.77	8144.37	75.01	OSF1.50	3210.00	3209.81				MinPt-CtCt	
	8323.02	192.79	8193.68	8130.23	65.59	OSF1.50	3800.00	3795.22				MINPT-O-EOU	
	8335.32	207.44	8196.19	8127.87	60.99	OSF1.50	4180.00	4171.90				MinPt-O-ADP	
	8361.95	273.18	8179.00	8088.78	46.33	OSF1.50	5320.00	5301.95				MINPT-O-EOU	
	8378.10	292.06	8182.56	8086.04	43.39	OSF1.50	5810.00	5787.67				MinPt-O-ADP	
	8420.94	443.63	8124.35	7977.31	28.63	OSF1.50	8650.00	8615.90				MinPt-CtCt	
	8420.94	443.65	8124.34	7977.29	28.62	OSF1.50	8660.00	8625.90				MinPts	
	8420.98	443.65	8124.38	7977.33	28.62	OSF1.50	8680.00	8645.90				MinPt-O-SF	
	2768.76	361.31	2527.06	2407.45	11.56	OSF1.50	18580.00	10550.00				MinPt-CtCt	
	2768.81	361.50	2526.98	2407.32	11.56	OSF1.50	18580.00	10550.00				MINPT-O-EOU	
	2768.89	361.59	2527.00	2407.30	11.56	OSF1.50	18590.00	10550.00				MinPt-O-ADP	
	2794.30	366.44	2549.17	2427.86	11.51	OSF1.50	18940.00	10550.00				MinPt-O-SF	
	3345.84	401.33	3077.25	2944.31	12.57	OSF1.50	20441.17	10550.00				TD	
Harvard James Federal #2 (Offset) Oil Blind+Inc Only 0ft-8151ft (Def Survey)													Pass
	9557.84	32.81	9555.34	9525.03	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	
	9557.73	32.81	9555.22	9524.92	728878.98	MAS = 10.00 (m)	26.00	26.00				WRP	
	9557.69	32.81	9542.14	9524.88	732.14	MAS = 10.00 (m)	3000.00	3000.00				MinPts	
	9557.75	32.81	9542.07	9524.94	724.69	MAS = 10.00 (m)	3060.00	3060.00				MINPT-O-EOU	
	9586.17	386.29	9327.62	9199.90	37.48	OSF1.50	5100.00	5083.67				MinPts	
	9617.15	395.78	9352.46	9221.37	36.67	OSF1.50	6520.00	6491.48				MINPT-O-EOU	
	9617.67	396.37	9352.59	9221.30	36.62	OSF1.50	6590.00	6560.87				MinPt-O-ADP	
	9632.05	406.41	9360.26	9225.64	35.76	OSF1.50	7530.00	7495.90				MinPt-O-ADP	
	9622.98	421.19	9341.35	9201.79	34.47	OSF1.50	8240.00	8205.90				MinPts	
	9623.07	421.20	9341.43	9201.87	34.47	OSF1.50	8250.00	8245.90				MinPt-O-SF	
	2787.03	304.40	2583.27	2482.63	13.84	OSF1.50	19880.00	10550.00				MinPt-CtCt	
	2787.15	304.82	2583.11	2482.33	13.82	OSF1.50	19910.00	10550.00				MINPT-O-EOU	
	2787.41	305.12	2583.17	2482.30	13.80	OSF1.50	19930.00	10550.00				MinPt-O-ADP	
	2842.22	317.10	2629.98	2525.12	13.64	OSF1.50	20441.17	10550.00				MinPt-O-SF	

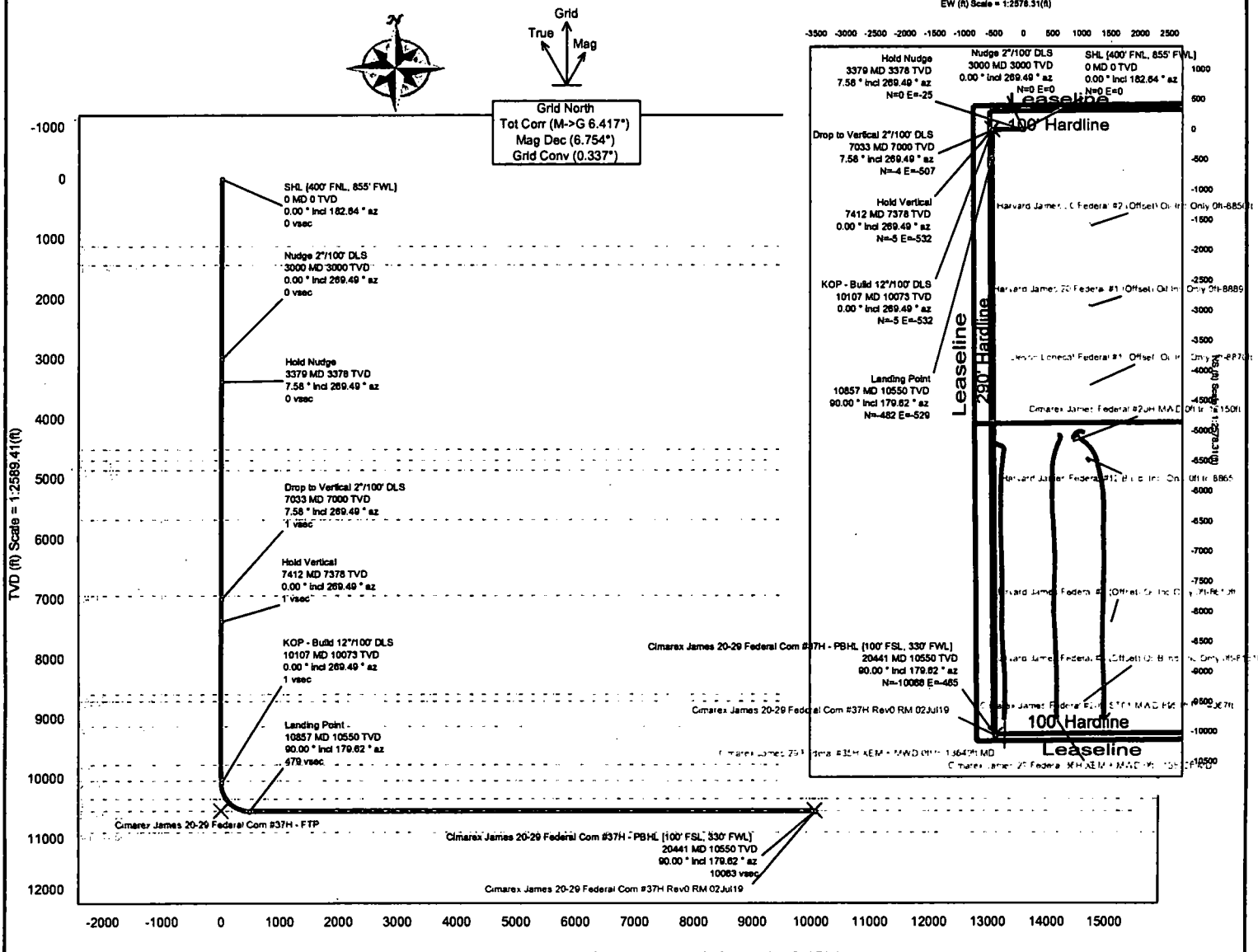
Schlumberger

Cimarex Energy Rev 0

CIMAREX

Borehole:	Well:	Field:	Structure:
James 20-29 Federal Com #37H	James 20-29 Federal Com #37H	NM Lea County (NAD 83)	Cimarex James 20-29 Federal Com #37H

Gravity & Magnetic Parameters				Surface Location	NAD83 New Mexico State Plane, Eastern Zone, US Feet				Miscellaneous			
Model:	HDGM 2019	Dip:	59.897°	Date:	02-Jul-2019	Lat:	N 32 17 46.23	Northing:	472054.12fUS	Grid Conv:	0.3371°	Slot:	New Slot	TVD Ref:	RKB(3703.68 above MSL)
MagDec:	6.754°	FS:	47960.298nT	Gravity FS:	999.438mgn (9.80665 Based)	Lon:	W 103 42 6.79	Easting:	736278.83fUS	Scale Fact:	0.99995281	Plan:	Cimarex James 20-29 Federal Com #37H Rev0 RM 02Jul19		



Vertical Section (ft) Azim = 179.62° Scale = 1:2589.41(ft) Origin = 0N/-S, 0E/-W

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL (400' FNL, 855' FWL)	0.00	0.00	182.64	0.00	0.00	0.00	0.00	
Rustler	1130.00	0.00	269.49	1130.00	0.00	0.00	0.00	0.00
Top of Salt	1440.00	0.00	269.49	1440.00	0.00	0.00	0.00	0.00
Nudge 2°/100' DLS	3000.00	0.00	269.49	3000.00	0.00	0.00	0.00	0.00
Hold Nudge	3378.80	7.58	269.49	3377.70	0.06	-0.22	-25.01	2.00
Base of Salt	4521.07	7.58	269.49	4510.00	0.39	-1.56	-175.60	0.00
Lamar	4704.68	7.58	269.49	4692.00	0.44	-1.77	-199.80	0.00
Bell Canyon	4874.16	7.58	269.49	4860.00	0.49	-1.97	-222.15	0.00
Cherry Canyon	5701.38	7.58	269.49	5680.00	0.73	-2.94	-331.21	0.00
Brushy Canyon	6982.58	7.58	269.49	6950.00	1.11	-4.43	-500.11	0.00
Drop to Vertical 2°/100' DLS	7033.00	7.58	269.49	7000.00	1.12	-4.49	-506.76	0.00
Hold Vertical	7411.80	0.00	269.49	7377.70	1.18	-4.71	-531.77	2.00
Bone Spring	8634.10	0.00	269.49	8600.00	1.18	-4.71	-531.77	0.00
Leonard Shale	8749.10	0.00	269.49	8715.00	1.18	-4.71	-531.77	0.00
Avalon Shale	9174.10	0.00	269.49	9140.00	1.18	-4.71	-531.77	0.00
1st Bone Spring Sand	9814.10	0.00	269.49	9780.00	1.18	-4.71	-531.77	0.00
2nd Bone Spring Carb	10084.10	0.00	269.49	10050.00	1.18	-4.71	-531.77	0.00
KOP - Build 12°/100' DLS	10106.64	0.00	269.49	10072.54	1.18	-4.71	-531.77	0.00
2nd Bone Spring Sand	10402.72	35.53	179.62	10350.00	90.07	-93.61	-531.18	12.00
Landing Point	10856.64	90.00	179.62	10550.00	478.64	-482.17	-528.59	12.00
2nd BSPG SS Target	10856.64	90.00	179.62	10550.00	478.64	-482.17	-528.59	12.00
Cimarex James 20-29 Federal Com #37H - PBHL (100' FSL, 330' FWL)	20441.17	90.00	179.62	10550.00	10063.17	-10068.49	-484.86	0.00
3rd Bone Spring Carb	NaN			10910.00				

1. Geological Formations

TVD of target 10,550
MD at TD 20,441

Pilot Hole TD N/A
Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Rustler	1160	N/A	
Salado	2260	N/A	
Castille	3260	N/A	
Base of Salt	4510	N/A	
Delaware Sands	4720	Hydrocarbons	
Bone Spring	8500	Hydrocarbons	
Avalon Shale	9050	Hydrocarbons	
Avalon Target	9345	Hydrocarbons	
1st Bone Spring Sand	9650	Hydrocarbons	

2. Casing Program

Hole Size	Casing Depth From	Casing Depth To	Setting Depth TVD	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17 1/2	0	1210	1210	13-3/8"	48.00	H-40/J-55 Hybrid	ST&C	1.34	3.12	5.54
12 1/4	0	4700	4700	9-5/8"	36.00	J-55	LT&C	1.08	1.41	2.68
8 3/4	0	10107	10107	5-1/2"	17.00	L-80	LT&C	1.33	1.64	1.88
8 3/4	10107	20441	10550	5-1/2"	17.00	L-80	BT&C	1.27	1.57	52.72
					BLM Minimum Safety Factor			1.125	1	1.6 Dry 1.8 Wet

TVD was used on all calculations.
All casing strings will be tested in accordance with Onshore Oil and Gas Order #2 III.B.1.h

	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.	N
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?	N
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?	N
Is well located in R-111-P and SOPA?	N
If yes, are the first three strings cemented to surface?	N
Is 2nd string set 100' to 600' below the base of salt?	N
Is well located in high Cave/Karst?	N
If yes, are there two strings cemented to surface?	N
(For 2 string wells) If yes, is there a contingency casing if lost circulation occurs?	N
Is well located in critical Cave/Karst?	N
If yes, are there three strings cemented to surface?	N
Is AC Report included?	N

3. Cementing Program

Casing	# Sks	Wt. lb/gal	Yld ft3/sack	H2O gal/sk	500# Comp. Strength (hours)	Slurry Description
Surface	587	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	157	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate	880	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
	275	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Production	485	10.30	3.64	22.18		Lead: Tuned Light + LCM
	2510	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS

Casing String	TOC	% Excess
Surface	0	45
Intermediate	0	51
Production	4500	25

4. Pressure Control Equipment

	A variance is requested for the use of a diverter on the surface casing. See attached for schematic.

BOP installed and tested before drilling which hole?	Size	Min Required WP	Type		Tested To
12 1/4	13 5/8	2M	Annular	X	50% of working pressure
			Blind Ram		2M
			Pipe Ram		
			Double Ram	X	
			Other		
8 3/4	13 5/8	3M	Annular	X	50% of working pressure
			Blind Ram		3M
			Pipe Ram		
			Double Ram	X	
			Other		

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.	
X	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.	
	N	Are anchors required by manufacturer?

5. Mud Program

Depth	Type	Weight (ppg)	Viscosity	Water Loss
0' to 1210'	FW Spud Mud	8.30 - 8.80	30-32	N/C
1210' to 4700'	Brine Water	9.70 - 10.20	30-32	N/C
4700' to 20441'	Cut Brine or OBM	8.50 - 9.00	27-70	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.

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

6. Logging and Testing Procedures

Logging, Coring and Testing	
X	Will run GR/CNL fromTD 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.
	Drill stem test?
	Coring?

Additional Logs Planned	Interval

7. Drilling Conditions

Condition	
BH Pressure at deepest TVD	4937 psi
Abnormal Temperature	No

	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.
X	H2S is present
X	H2S plan is attached

8. Other Facets of Operation

9. Wellhead

A multi-bowl wellhead system will be utilized.

After running the 13-3/8" surface casing, a 13 5/8" BOP/BOPE system with a minimum working pressure of 3000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 3000 psi test. Annular will be tested to 50% of working pressure. The pressure test will be repeated at least every 30 days, as per Onshore Order No. 2.

The multi-bowl wellhead will be installed by vendor's representative. A copy of the installation instructions has been sent to the BLM field office.

The wellhead will be installed by a third-party welder while being monitored by the wellhead vendor representative.

All BOP equipment will be tested utilizing a conventional test plug. Not a cup or J-packer type.

A solid steel body pack-off will be utilized after running and cementing the intermediate casing. After installation the pack-off and lower flange will be pressure tested to 3000 psi.

The surface casing string will be tested as per Onshore Order No. 2 to at least 0.22 psi/ft or 1500 psi, whichever is greater.

The casing string utilizing steel body pack-off will be tested to 70% of casing burst.

If well conditions dictate conventional slips will be set and BOPE will be tested to appropriate pressures based on permitted pressure requirements.

PECOS DISTRICT
DRILLING CONDITIONS OF APPROVAL

OPERATOR'S NAME:	**Cimarex Energy Company**
LEASE NO.:	**NMNM0559539**
WELL NAME & NO.:	**James 20 Federal 37H**
SURFACE HOLE FOOTAGE:	**400'/N & 855'/W**
BOTTOM HOLE FOOTAGE	**100'/S & 330'/W**
LOCATION:	**Section 20, T.23 S., R.32 E., NMPM**
COUNTY:	**Lea County, New Mexico**

COA

H2S	◉ Yes	○ No	
Potash	◉ None	○ Secretary	○ R-111-P
Cave/Karst Potential	◉ Low	○ Medium	○ High
Variance	○ None	◉ Flex Hose	○ Other
Wellhead	○ Conventional	◉ Multibowl	○ Both
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 **1210** 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 **8 hours** 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.

Operator shall filled 1/3rd casing with fluid while running intermediate casing to maintain collapse safety factor.

2. The minimum required fill of cement behind the **9-5/8** 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 or potash.

3. The minimum required fill of cement behind the **5-1/2** inch production casing is:
   - Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification.

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. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be **2000 (2M)** psi.

3. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the **9-5/8** intermediate casing shoe shall be **3000 (3M)** psi.

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

1. 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.
   a. In the event the operator has proposed to drill multiple wells utilizing a skid/walking rig. Operator shall secure the wellbore on the current well, after installing and testing the wellhead, by installing a blind flange of like pressure rating to the wellhead and a pressure gauge that can be monitored while drilling is performed on the other well(s).
   b. When the operator proposes to set surface casing with Spudder Rig
      - Notify the BLM when moving in and removing the Spudder Rig.
      - Notify the BLM when moving in the 2nd Rig. Rig to be moved in within 90 days of notification that Spudder Rig has left the location.
      - BOP/BOPE test to be conducted per Onshore Oil and Gas Order No. 2 as soon as 2nd Rig is rigged up on well.

2. Floor controls are required for 3M or Greater systems. These controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.

3. The record of the drilling rate along with the GR/N well log (one log per well pad is acceptable) run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.

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. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

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. The casing intergrity test can be done (prior to the cement setting up) immediately after bumping the plug.

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: The flex line must meet the requirements of API 16C. 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, except the casing pressure test can be initiated immediately after bumping the plug (only applies to single stage cement jobs).

    c. The tests shall be done by an independent service company utilizing a test plug. The results of the test shall be reported to the appropriate BLM office.

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. 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.

f. 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. This test shall be performed prior to the test at full stack pressure.

g. 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.

C. DRILLING MUD

Mud system monitoring equipment, with derrick floor indicators and visual and audio alarms, shall be operating before drilling into the Wolfcamp formation, and shall be used until production casing is run and cemented.

D. WASTE MATERIAL AND FLUIDS

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

Waste Minimization Plan (WMP)

In the interest of resource development, submission of additional well gas capture development plan information is deferred but may be required by the BLM Authorized Officer at a later date.

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