

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENTFORM APPROVED
OMB NO. 1004-0137
Expires: January 31, 2018

SUNDRY NOTICES AND REPORTS ON WELLS

Do not use this form for proposals to drill or to re-enter an abandoned well. Use form 3160-3 (APD) for such proposals.

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well ☐ Oil Well ☒ Gas Well ☐ Other		8. Well Name and No. SCOTER 6-31 FEDERAL COM 44H
2. Name of Operator CIMAREX ENERGY CO.		9. API Well No. 30-015-45264
3a. Address 600 N. MARIENFELD SUITE 600 MIDLAND, TX 79701		10. Field and Pool or Exploratory Area PURPLE SAGE WC
3b. Phone No. (include area code) Ph: 432-620-1909		11. County or Parish, State EDDY COUNTY, NM
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 6 T25S R27E 365FSL 320FEL		

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 Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original A
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	PD

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 recomple 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 recomple 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 to change the SHL and BHL for the Scoter 6-31 Federal Com 44H. There will be no new surface disturbance.

RECEIVED

Original:

SHL- 365' FSL & 300' FEL Sec 6, 25S, 27E Eddy Co. NM
BHL- 330' FNL & 1090' FEL Sec 31, 24S, 27E Eddy Co. NM

OCT 16 2018

Proposed:

SHL- 365' FSL & 320' FEL Sec 6, 25S, 27E Eddy Co NM
BHL- 330' FNL & 380' FEL Sec 31, 24S, 27E Eddy Co NM

553 10-11-2018.

Surface
201

DISTRICT II-ARTESIA O.C.D.

Comes under

Dist. BLM-NM- A020-2018-0908-EA

No new disturbance

Same CWS Apply

See below changes to the casing and cement program:

Engineering (Gas). All previous COAs shall apply. 25 90-9-18

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

Electronic Submission #437930 verified by the BLM Well Information System
For CIMAREX ENERGY CO., sent to the Carlsbad
Committed to AFMSS for processing by PRISCILLA PEREZ on 10/04/2018 ()

Name (Printed/Typed) AMITHY E CRAWFORD

Title REGULATORY ANALYST

Signature (Electronic Submission)

Date 10/02/2018

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By <u>Ba Ballard</u>	Title <u>Supervisor NRS</u>	Date <u>10-11-2018</u>
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

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)

** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED ** OPERATOR-SUBMITTED **

Ruf 10-27-18.

Additional data for EC transaction #437930 that would not fit on the form

32. Additional remarks, continued

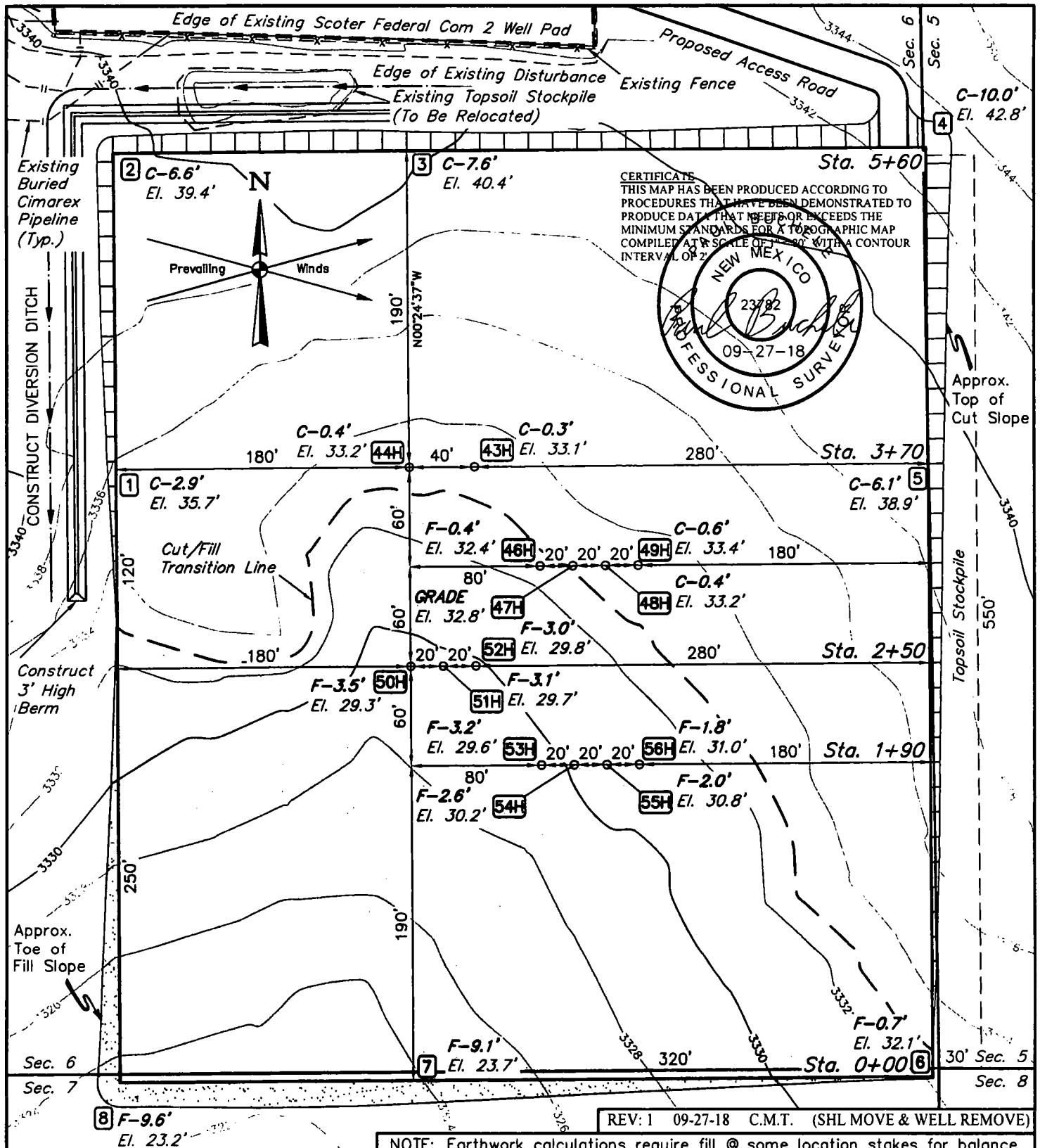
13.375" Surface csg 48# H-40/J55 hybrid STC set at 400'. Cement with Lead: 61 sks, 13.5 ppg, 1.72 yield, Class C + Bentonite. Tail: 195 sks, 14.8 ppg, 1.34 Yield, Class C + LCM.

9.625 intermediate csg 36# J-55 LTC set at 2096'. Cement with Lead: 400 sks, 12.9 ppg, 1.88 yield, 35:65 (POZ C) + Salt + bentonite. Tail: 123 sks, 14.8 ppg, 1.34 Yield, Class C + LCM.

7" Production Csg 26# L80/N80, LTC/BTC set at 9275'. Cement with Lead: 326 sks, 10.3 ppg, 3.64 yield. Tuned Light + LCM. Tail: 134 sks, 14.2 ppg, 1.3 yield, 50:50 (Poz H) + salt + bentonite + Fluid Loss + dispersant + SMS.

4.5" Liner 11.6 #, P-110, BTC set at 18404'. TOL at 8226'. Cement with 664 sks, 14.2 ppg, 1.3 yield, 50:50 (POZ H) + Salt + Bentonite + Fluid Loss + Dispersant +SMS.

Please see attached New C-102, Well Pad Diagram, Drilling plan and Directional Survey.



FINISHED GRADE ELEVATION = 3332.8'

NOTES:

- Contours shown at 2' intervals.
- Cut/Fill slopes 1 1/2:1 (Typ. except where noted)
- Underground utilities shown on this sheet are for visualization purposes only, actual locations to be determined prior to construction.
- Reroute existing utilities as needed.



UELS, LLC
Corporate Office * 85 South 200 East
Vernal, UT 84078 * (435) 789-1017

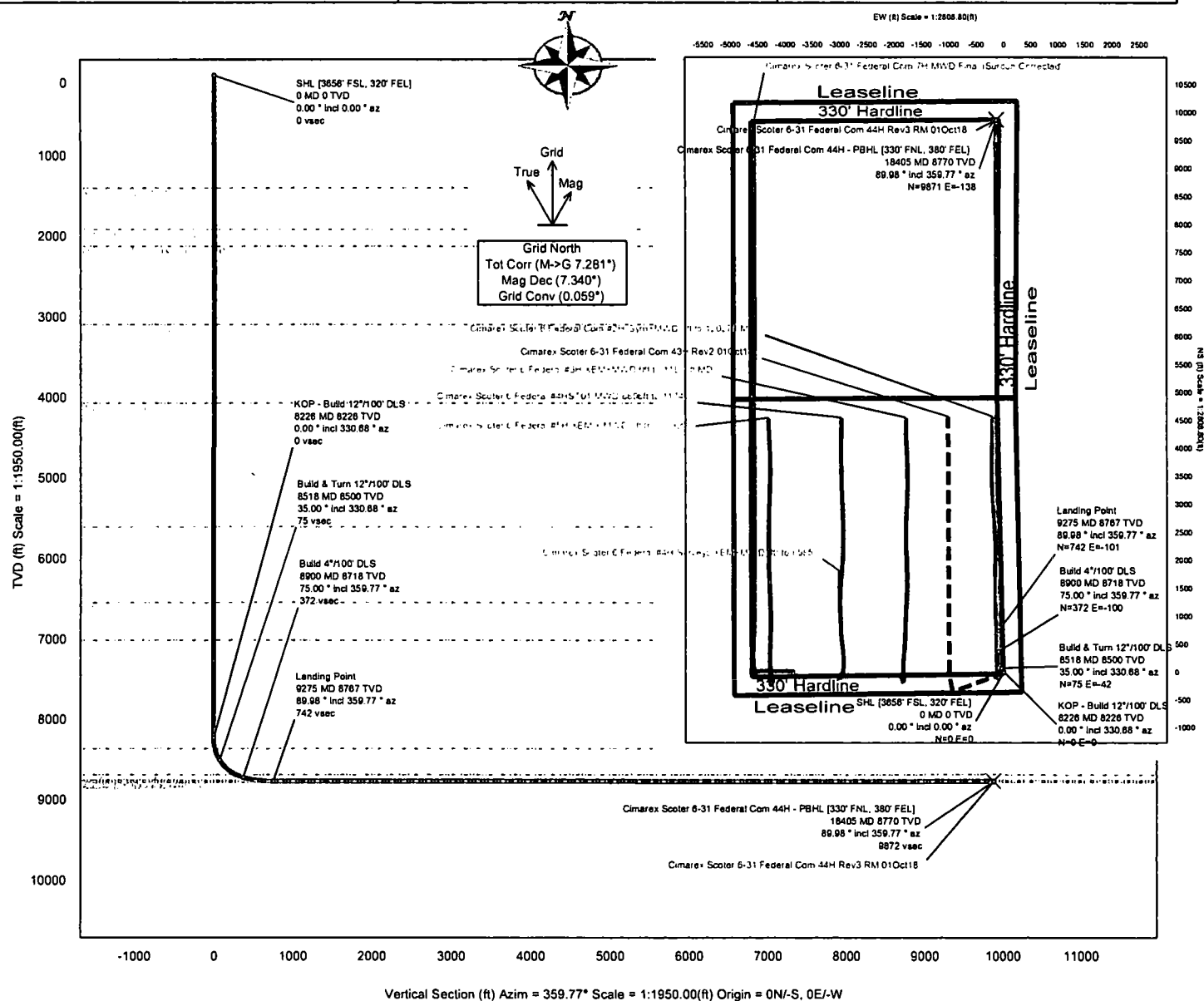
CIMAREX ENERGY CO.

SCOTER 6-31 FEDERAL COM E2E2
SE 1/4 SE 1/4, SECTION 6, T25S, R27E, N.M.P.M.
EDDY COUNTY, NEW MEXICO

SURVEYED BY	M.P., B.D.	05-10-17	SCALE
DRAWN BY	S.F.	05-20-17	1" = 80'
LOCATION LAYOUT		EXHIBIT D	

Borehole:	Well:	Field:	Structure:
Original	Cimarex Scoter 6-31 Federal Com 44H	NM Eddy County (NAD 83)	Cimarex Scoter 6-31 Federal Com 44H

Gravity & Magnetic Parameters	Surface Location	Miscellaneous
Model: HDGM 2018 Dip: 59.841° Date: 01-Oct-2018	NAD83 New Mexico State Plane, Eastern Zone, US Feet	Cimarex Scoter
MagDec: 7.34° FS: 47881.891nT Gravity FS: 986.432mgm (8.80885 Based)	Lat: N 32 9 10.39 Northing: 419372.8NUS Grid Conv: 0.0582°	Slot: 6-31 Federal
	Lon: W 104 13 18.27 Easting: 676786.39RUS Scale Fact: 0.99991045	Plan: Cimarex Scoter 6-31 Federal Com 44H Rev3 RM 01Oct18



Critical Points								
Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
SHL (3656' FSL, 320' FEL)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Salado (Top Salt)	1394.00	0.00	330.68	1394.00	0.00	0.00	0.00	0.00
Castille (Base Salt)	1908.00	0.00	330.68	1908.00	0.00	0.00	0.00	0.00
Bell Canyon (Top Delaware)	2116.00	0.00	330.68	2116.00	0.00	0.00	0.00	0.00
Cherry Canyon	3088.00	0.00	330.68	3088.00	0.00	0.00	0.00	0.00
Brushy Canyon	4066.00	0.00	330.68	4066.00	0.00	0.00	0.00	0.00
Top Bone Spring	5805.00	0.00	330.68	5805.00	0.00	0.00	0.00	0.00
Top 1st BSPG SS	6542.00	0.00	330.68	6542.00	0.00	0.00	0.00	0.00
Top 2nd BSPG SS	7010.00	0.00	330.68	7010.00	0.00	0.00	0.00	0.00
KOP - Build 12°/100' DLS	8226.48	0.00	330.68	8226.48	0.00	0.00	0.00	0.00
Top 3rd BSPS SS	8361.80	16.24	330.68	8360.00	16.61	16.61	-9.33	12.00
Build & Turn 12°/100' DLS	8518.15	35.00	330.68	8500.35	75.29	75.29	-42.29	12.00
Top Wolfcamp	8802.30	64.21	354.72	8684.00	279.78	279.78	-95.58	12.00
Build 4°/100' DLS	8900.50	75.00	359.77	8718.19	371.55	371.55	-99.83	12.00
Wolfcamp "Y" SS	9068.02	81.70	359.77	8752.00	535.52	535.52	-100.49	4.00
Landing Point	9275.02	89.98	359.77	8767.00	741.81	741.81	-101.32	4.00
Wolfcamp "Y" SS Target	9275.07	89.98	359.77	8787.00	741.86	741.86	-101.32	0.00
Cimarex Scoter 6-31 Federal Com 44H - PBHL (330' FNL, 380' FEL)	18404.55	89.98	359.77	8770.00	9871.25	9871.25	-137.97	0.00
Base "Y" SS	NaN			8782.00				

Cimarex Scoter 6-31 Federal Com 44H Rev3 RM 01Oct18 Anti-Collision Summary Report

Analysis Date-24hr Time: October 01, 2018 - 14:05
 Client: Cimarex
 Field: NM Eddy County (NAD 83)
 Structure: Cimarex Scoter 6-31 Federal Com 44H
 Slot: Cimarex Scoter 6-31 Federal Com 44H
 Well: Cimarex Scoter 6-31 Federal Com 44H
 Borehole: Original
 Scan MD Range: 0.00R - 18404.55R

Analysis Method: 3D Least Distance
 Reference Trajectory: Cimarex Scoter 6-31 Federal Com 44H Rev3 RM 01Oct18 (Def Plan)
 Depth Interval: Every 10.00 Measured Depth (ft)
 Rule Set: NAL Procedure: D&M AntiCollision Standard S002
 Min Pts: All local minima indicated.
 Version / Patch: 2.10.740.0
 Database / Project: US1153APP452.dir.atb.com/drilling-NM Eddy County 2.10

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
	Ct-Ct (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		

Results highlighted: Sep-Factor separation <= 1.50 ft

Cimarex Scoter 6-31 Federal
 Com 43H Rev2 01Oct18 (Def
 Plan)

40.01	32.51	37.51	7.50	N/A	MAS = 9.91 (m)	0.00	0.00	CtCt<=15m<15.00				Enter Alert	Fail Major
40.01	32.51	37.51	7.50	N/A	MAS = 9.91 (m)	26.00	26.00					WRP	
32.07	32.51	19.83	-0.43	3.04	MAS = 9.91 (m)	1720.00	1720.00				StcRuk<8.91	Enter Major	
17.20	32.51	4.46	-15.31	1.44	MAS = 9.91 (m)	1890.00	1890.00			OSF<1.50		Enter Minor	
13.23	32.51	0.22	-19.27	1.02	MAS = 9.91 (m)	1950.00	1950.00					MinPts	
13.26	32.51	0.21	-19.24	1.02	MAS = 9.91 (m)	1970.00	1970.00					MinPts	
17.51	32.51	4.30	-15.00	1.40	MAS = 9.91 (m)	2030.00	2030.00			OSF>1.50		Exit Minor	
31.84	32.51	18.37	-0.87	2.88	MAS = 9.91 (m)	2120.00	2120.00				StcRuk<8.91	Exit Major	
60.00	32.51	45.93	27.49	4.87	MAS = 9.91 (m)	2270.00	2270.00		OSF>5.00			Exit Alert	
994.63	63.54	951.43	931.09	24.38	OSF1.50	7050.00	7050.00					MinPt-O-SF	
994.65	64.33	950.33	929.73	24.08	OSF1.50	7210.00	7210.00					MinPt-CICI	
994.08	64.42	950.30	929.66	24.02	OSF1.50	7220.00	7220.00					MINPT-O-EQU	
994.17	64.52	950.32	929.65	23.99	OSF1.50	7230.00	7230.00					MinPt-O-ADP	
1001.52	85.65	956.92	935.87	23.73	OSF1.50	7380.00	7380.00					MinPt-O-SF	
1698.63	53.87	1692.02	1644.96	49.72	OSF1.50	8900.00	8718.06					MinPt-O-SF	
1802.89	187.01	1690.71	1635.87	16.42	OSF1.50	13130.00	8768.27					MINPT-O-EQU	
1803.05	187.20	1690.74	1635.84	16.40	OSF1.50	13140.00	8768.27					MinPt-O-ADP	
1809.24	188.38	1696.15	1640.65	18.34	OSF1.50	13260.00	8768.31					MinPt-O-SF	
5596.05	104.50	5525.55	5491.55	82.26	OSF1.50	18404.55	8770.00					TD	

Cimarex Scoter 6 Federal Com
 42H Gyro-MWD DR to 12027R
 MD (Def Survey)

445.85	32.81	443.35	413.05	N/A	MAS = 10.00 (m)	0.00	0.00					MinPts	Warning Alert
445.88	32.81	443.34	413.05	17500.10	MAS = 10.00 (m)	26.00	26.00					WRP	
443.47	32.81	436.47	410.67	97.86	MAS = 10.00 (m)	1050.00	1050.00					MinPts	
443.57	32.81	434.70	410.76	70.17	MAS = 10.00 (m)	1480.00	1480.00					MinPts	
443.54	32.81	432.28	410.74	50.33	MAS = 10.00 (m)	2020.00	2020.00					MinPts	
443.42	32.81	431.67	410.61	47.70	MAS = 10.00 (m)	2130.00	2130.00					MinPts	
122.03	38.68	95.32	83.35	4.98	OSF1.50	5010.00	5010.00		OSF<5.00			Enter Alert	
84.86	46.05	53.32	38.81	2.84	OSF1.50	5600.00	5600.00					MinPt-CICI	
84.03	48.24	53.28	38.70	2.83	OSF1.50	5620.00	5620.00					MINPT-O-EQU	
85.01	48.35	53.30	38.80	2.82	OSF1.50	5630.00	5630.00					MinPt-O-ADP	
85.25	48.50	53.42	38.75	2.82	OSF1.50	5650.00	5650.00					MinPt-O-SF	
103.01	50.76	128.34	112.25	4.99	OSF1.50	6880.00	6880.00		OSF>5.00			Exit Alert	
159.56	50.70	124.63	108.66	4.69	OSF1.50	7140.00	7140.00		OSF<5.00			Enter Alert	
114.84	56.16	78.66	58.77	3.14	OSF1.50	7320.00	7320.00					MinPts	
153.12	48.23	120.13	104.89	4.94	OSF1.50	7450.00	7450.00		OSF>5.00			Exit Alert	
1266.10	32.81	1249.81	1233.25	90.31	MAS = 10.00 (m)	8900.00	8718.06					MinPt-O-SF	
1343.93	36.94	1318.47	1306.99	58.43	OSF1.50	8510.00	8767.08					MINPT-O-EQU	
1347.33	54.83	1309.87	1292.40	38.47	OSF1.50	10150.00	8767.29					MinPt-CICI	
1347.70	55.90	1309.56	1291.74	37.74	OSF1.50	10200.00	8767.30					MINPT-O-EQU	
1348.05	56.37	1309.64	1291.68	37.46	OSF1.50	10220.00	8767.31					MinPt-O-ADP	
1390.87	139.79	1296.84	1251.08	15.17	OSF1.50	13010.00	8768.23					MinPt-CICI	
1391.17	142.07	1295.02	1248.20	14.83	OSF1.50	13110.00	8768.26					MINPT-O-EQU	
1391.25	143.08	1295.05	1248.16	14.82	OSF1.50	13120.00	8768.26					MinPt-O-ADP	
1392.72	143.39	1296.29	1249.33	14.80	OSF1.50	13170.00	8768.28					MinPt-O-SF	
5479.88	78.15	5426.27	5400.72	107.16	OSF1.50	18404.55	8770.00					TD	

Cimarex Scoter 6 Federal 42H
 XEM-MWD DR to 11940R MD
 (Def Survey)

1869.39	32.81	1866.89	1836.58	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	Pass
1869.14	32.81	1866.82	1836.33	75990.40	MAS = 10.00 (m)	20.00	20.00					MinPt-O-SF	
1869.11	32.81	1866.59	1836.30	108739.13	MAS = 10.00 (m)	26.00	26.00					WRP	
1869.10	32.81	1866.57	1836.29	56747.77	MAS = 10.00 (m)	40.00	40.00					MinPts	
1869.13	32.81	1866.55	1836.32	24023.63	MAS = 10.00 (m)	60.00	60.00					MINPT-O-EQU	
1876.05	32.81	1870.82	1843.24	688.58	MAS = 10.00 (m)	670.00	670.00					MinPts	
1876.09	32.81	1870.78	1843.26	667.07	MAS = 10.00 (m)	690.00	690.00					MINPT-O-EQU	
1855.05	32.81	1873.22	1852.28	200.93	MAS = 10.00 (m)	2060.00	2060.00					MinPts	
1855.11	32.81	1873.20	1852.30	200.01	MAS = 10.00 (m)	2070.00	2070.00					MINPT-O-EQU	
1851.20	36.35	1836.19	1824.91	82.40	OSF1.50	5090.00	5090.00					MinPt-CICI	
1851.20	40.08	1833.73	1821.21	74.23	OSF1.50	5640.00	5640.00					MinPt-CICI	
1851.53	40.74	1833.53	1820.78	72.95	OSF1.50	5740.00	5740.00					MINPT-O-EQU	
1851.86	41.14	1833.60	1820.73	72.21	OSF1.50	5800.00	5800.00					MinPt-O-ADP	
1862.70	42.33	1833.73	1820.46	70.08	OSF1.50	5980.00	5980.00					MinPt-CICI	
1862.88	42.60	1833.55	1820.29	69.82	OSF1.50	6020.00	6020.00					MINPT-O-EQU	
1862.94	42.66	1833.90	1820.26	69.51	OSF1.50	6030.00	6030.00					MinPt-O-ADP	
1849.84	48.70	1816.52	1801.13	60.02	OSF1.50	6920.00	6920.00					MinPt-O-SF	
1835.07	50.34	1800.80	1784.68	57.53	OSF1.50	7190.00	7190.00					MinPt-CICI	
1835.04	50.41	1800.55	1784.64	57.46	OSF1.50	7200.00	7200.00					MinPts	
1845.55	52.78	1809.52	1782.77	55.01	OSF1.50	7440.00	7440.00					MinPts	
1872.72	55.31	1835.01	1817.40	53.12	OSF1.50	7730.00	7730.00					MinPt-O-SF	
2148.88	55.79	2108.66	2091.06	60.36	OSF1.50	8820.00	8891.43					MinPt-O-ADP	
2180.27	64.04	2139.74	2115.23	53.08	OSF1.50	9300.00	8767.01					MINPT-O-EQU	

Offset Trajectory	Separation			Allow Dev. (ft)	Sep. Fac.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	Ct-Cl (ft)	MAS (ft)	EOU (ft)				MD (ft)	TVD (ft)	Alert	Minor	Major		
2181.50	45.53	2138.08	2115.08	2115.08	51.88	OSF1.50	9380.00	8787.03				MinPt-O-ADP	
2173.84	85.08	2118.08	2088.55	2088.55	39.43	OSF1.50	9880.00	8787.20				MinPt-CICI	
2175.01	90.40	2113.81	2084.80	2084.80	37.07	OSF1.50	10050.00	8787.25				MinPt-O-EQU	
2175.87	91.44	2114.08	2084.43	2084.43	36.86	OSF1.50	10090.00	8787.27				MinPt-CICI	
2179.77	108.82	2106.52	2071.15	2071.15	30.78	OSF1.50	10460.00	8787.39				MinPt-O-ADP	
2182.78	116.44	2104.32	2068.34	2068.34	28.70	OSF1.50	10880.00	8787.48				MinPt-CICI	
2186.24	171.40	2041.14	1984.84	1984.84	19.13	OSF1.50	11880.00	8787.88				MinPt-O-EQU	
2182.83	187.82	2038.58	1974.81	1974.81	17.48	OSF1.50	12310.00	8788.00				MinPt-CICI	
2182.89	188.17	2038.61	1974.72	1974.72	17.45	OSF1.50	12320.00	8788.00				MinPt-O-EQU	
2188.22	257.32	2015.83	1930.89	1930.89	12.87	OSF1.50	13090.00	8788.25				MinPt-CICI	
2188.22	257.38	2015.82	1930.87	1930.87	12.86	OSF1.50	13100.00	8788.26				MinPt-CICI	
2188.53	257.42	2015.08	1931.10	1931.10	12.86	OSF1.50	13130.00	8788.27				MinPt-O-SF	
5744.71	128.93	5859.28	5817.78	5817.78	89.22	OSF1.50	18404.55	8770.00				TD	

Cimarex Scoter 6 Federal 64H
Surveys XEM-MWD ON to
8985 (Def Survey)

3043.84	32.81	3041.34	3011.03	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	Pass
3043.83	32.81	3041.10	3010.82	119394.70	MAS = 10.00 (m)	20.00	20.00					MinPt-O-SF	
3043.59	32.81	3041.07	3010.78	125854.53	MAS = 10.00 (m)	26.00	26.00					WRP	
2992.14	32.81	2977.30	2959.33	242.58	MAS = 10.00 (m)	2820.00	2820.00					MinPts	
2992.82	32.81	2978.88	2959.82	222.70	MAS = 10.00 (m)	3070.00	3070.00					MinPt-O-EQU	
2993.31	32.81	2978.88	2960.50	211.69	MAS = 10.00 (m)	3230.00	3230.00					MinPt-O-EQU	
2993.84	32.81	2978.87	2961.03	204.10	MAS = 10.00 (m)	3350.00	3350.00					MinPt-O-EQU	
3002.73	32.89	2979.98	2969.84	148.11	OSF1.50	4810.00	4810.00					MinPt-O-ADP	
3015.54	41.72	2988.89	2973.82	115.23	OSF1.50	5820.00	5820.00					MinPt-CICI	
3015.88	42.28	2988.87	2973.42	113.87	OSF1.50	6000.00	6000.00					MinPt-O-EQU	
3015.80	42.40	2988.70	2973.40	113.29	OSF1.50	6020.00	6020.00					MinPt-O-ADP	
3013.32	45.70	2982.03	2967.83	104.55	OSF1.50	6510.00	6510.00					MinPt-O-SF	
2937.89	51.21	2902.88	2888.88	90.00	OSF1.50	7210.00	7210.00					MinPt-CICI	
2937.93	51.37	2902.82	2888.56	90.31	OSF1.50	7230.00	7230.00					MinPt-O-EQU	
2938.00	51.44	2902.83	2888.56	90.17	OSF1.50	7240.00	7240.00					MinPt-O-ADP	
3036.52	56.88	2997.90	2979.84	84.00	OSF1.50	8020.00	8020.00					MinPt-O-SF	
3207.43	84.54	3183.57	3142.89	77.49	OSF1.50	9230.00	9230.00					MinPts	
3210.87	71.41	3182.23	3139.29	89.83	OSF1.50	9330.00	9330.00					MinPt-O-EQU	
3211.61	72.55	3182.41	3139.06	88.72	OSF1.50	9380.00	9380.00					MinPt-O-ADP	
3214.38	78.40	3181.28	3135.88	83.48	OSF1.50	9520.00	9520.00					MinPt-O-EQU	
3215.14	79.32	3181.43	3135.82	82.73	OSF1.50	9580.00	9580.00					MinPt-O-ADP	
3221.07	85.85	3183.00	3135.21	57.92	OSF1.50	9750.00	9750.00					MinPts	
3221.84	95.38	3157.42	3128.48	51.99	OSF1.50	9900.00	9900.00					MinPt-CICI	
3221.24	101.90	3152.48	3119.34	48.57	OSF1.50	10050.00	10050.00					MinPt-CICI	
3221.87	107.64	3149.27	3114.23	45.93	OSF1.50	10180.00	10180.00					MinPt-CICI	
3221.90	113.13	3145.85	3108.78	43.85	OSF1.50	10300.00	10300.00					MinPt-CICI	
3222.44	115.84	3144.51	3108.80	42.89	OSF1.50	10390.00	10390.00					MinPts	
3263.98	119.08	3183.76	3144.90	41.97	OSF1.50	10870.00	10870.00					MinPt-O-SF	
8875.78	107.05	8803.58	8568.74	124.44	OSF1.50	18404.55	8770.00					TD	

Cimarex Scoter 6 Federal
BAHST01 MWD 8600H to
11740 (Def Survey)

3043.84	32.81	3041.34	3011.03	N/A	MAS = 10.00 (m)	0.00	0.00					Surface	Pass
3043.83	32.81	3041.10	3010.82	119394.70	MAS = 10.00 (m)	20.00	20.00					MinPt-O-SF	
3043.59	32.81	3041.07	3010.78	125854.53	MAS = 10.00 (m)	26.00	26.00					WRP	
2992.14	32.81	2977.30	2959.33	242.58	MAS = 10.00 (m)	2820.00	2820.00					MinPts	
2992.82	32.81	2978.88	2959.82	222.70	MAS = 10.00 (m)	3070.00	3070.00					MinPt-O-EQU	
2993.31	32.81	2978.88	2960.50	211.69	MAS = 10.00 (m)	3230.00	3230.00					MinPt-O-EQU	
2993.84	32.81	2978.87	2961.03	204.10	MAS = 10.00 (m)	3350.00	3350.00					MinPt-O-EQU	
3002.73	32.89	2979.98	2969.84	148.11	OSF1.50	4810.00	4810.00					MinPt-O-ADP	
3015.54	41.72	2988.89	2973.82	115.23	OSF1.50	5820.00	5820.00					MinPt-CICI	
3015.88	42.28	2988.87	2973.42	113.87	OSF1.50	6000.00	6000.00					MinPt-O-EQU	
3015.80	42.40	2988.70	2973.40	113.29	OSF1.50	6020.00	6020.00					MinPt-O-ADP	
3013.32	45.70	2982.03	2967.83	104.55	OSF1.50	6510.00	6510.00					MinPt-O-SF	
2937.89	51.52	2902.87	2888.37	90.02	OSF1.50	7210.00	7210.00					MinPt-CICI	
2937.93	51.68	2902.81	2888.25	89.74	OSF1.50	7230.00	7230.00					MinPt-O-EQU	
2938.00	51.75	2902.82	2888.24	89.80	OSF1.50	7240.00	7240.00					MinPt-O-ADP	
3036.52	57.05	2997.85	2979.47	83.43	OSF1.50	8020.00	8020.00					MinPt-O-SF	
3207.43	84.95	3183.30	3142.48	78.68	OSF1.50	9230.00	9230.00					MinPt-O-EQU	
3210.87	71.97	3181.88	3138.70	89.27	OSF1.50	9330.00	9330.00					MinPt-O-EQU	
3211.61	73.11	3182.04	3138.50	88.17	OSF1.50	9380.00	9380.00					MinPt-O-ADP	
3214.38	79.02	3180.87	3135.38	82.97	OSF1.50	9520.00	9520.00					MinPt-O-EQU	
3215.37	80.18	3181.08	3135.20	82.06	OSF1.50	9570.00	9570.00					MinPt-O-ADP	
3221.07	86.50	3182.58	3134.58	57.47	OSF1.50	9750.00	9750.00					MinPts	
3156.57	143.20	3080.27	3013.37	33.82	OSF1.50	10630.00	10630.00					MinPt-CICI	
3162.86	156.38	3057.78	3008.47	30.80	OSF1.50	11270.00	11270.00					MinPt-O-EQU	
3163.43	157.25	3057.78	3008.18	30.64	OSF1.50	11290.00	11290.00					MinPt-O-EQU	
3168.52	161.77	3057.83	3004.74	29.80	OSF1.50	11360.00	11360.00					MinPt-O-EQU	
3171.95	172.38	3058.20	2999.57	27.99	OSF1.50	11580.00	11580.00					MinPt-O-EQU	
3174.38	175.20	3058.74	2999.18	27.55	OSF1.50	11670.00	11670.00					MinPt-O-ADP	
3181.27	185.15	3057.01	2998.12	26.11	OSF1.50	11860.00	11860.00					MinPt-O-EQU	
3187.18	238.87	3027.10	2948.31	20.21	OSF1.50	12860.00	12860.00					MinPt-CICI	
3190.23	293.99	2993.40	2898.24	16.40	OSF1.50	13160.00	13160.00					MinPts	
3192.30	294.32	2995.25	2897.88	16.40	OSF1.50	13230.00	13230.00					MinPt-O-SF	
8189.30	188.81	8062.73	8000.70	49.88	OSF1.50	18404.55	8770.00					TD	

Cimarex Scoter 6-31 Federal
Com 7H MWD Final (Surcon
Corrected) (Def Survey)

3853.08	32.81	3851.28	3820.28	N/A	MAS = 10.00 (m)	0.00	0.00					Surface
3852.81	32.81	3850.97	3820.00	118848.87	MAS = 10.00 (m)	26.00	26.00					MinPt-O-SF
3852.71	32.81	3850.83	3819.91	50975.08	MAS = 10.00 (m)	80.00	80.00					MinPts
3853.41	32.81	3850.32	3820.80	3011.23	MAS = 10.00 (m)	310.00	310.00					MINPT-O-EQU
3854.20	32.81	3850.51	3821.39	2049.30	MAS = 10.00 (m)	470.00	470.00					MINPT-O-EQU
3850.85	32.81	3844.57	3818.04	832.24	MAS = 10.00 (m)	1050.00	1050.00					MinPts
3850.81	32.81	3844.50	3818.10	808.18	MAS = 10.00 (m)	1060.00	1060.00					MINPT-O-EQU
3844.92	32.81	3836.20	3812.11	544.48	MAS = 10.00 (m)	1600.00	1600.00					MinPts
3840.22	32.81	3830.06	3807.41	453.39	MAS = 10.00 (m)	1910.00	1910.00					MinPts
3840.27	32.81	3830.02	3807.48	446.61	MAS = 10.00 (m)	1940.00	1940.00					MINPT-O-EQU
4453.15	61.17	4411.85	4391.97	111.88	OSF1.50	8800.00	8683.00					MinPts
4453.20	61.25	4411.88	4391.98	111.84	OSF1.50	8810.00	8687.30					MinPt-O-ADP
4520.85	71.25	4472.87	4449.58	87.10	OSF1.50	9830.00	8767.12					MinPt-CICI
4517.57	77.47	4465.44	4440.10	89.09	OSF1.50	9970.00	8767.23					MinPt-CICI
4515.18	85.01	4458.03	4430.17	81.01	OSF1.50	10330.00	8767.35					MinPt-CICI
4515.40	89.54	4455.22	4425.85	78.85	OSF1.50	10530.00	8767.41					MinPt-CICI

Offset Trajectory	Separation			Sep. Fact.	Controlling Rule	Reference Trajectory		Risk Level			Alert	Status
	CI-CI (ft)	MAS (ft)	EOU (ft)			MD (ft)	TYD (ft)	Alert	Minor	Major		
4514.74	99.18	4448.14	4415.58	69.26	OSF1.50	10930.00	8767.54				MinPt-CICI	
4515.31	100.86	4447.52	4414.34	68.03	OSF1.50	11020.00	8767.57				MINPT-O-EQU	
4516.12	101.98	4447.87	4414.17	67.37	OSF1.50	11070.00	8767.59				MinPt-O-ADP	
4514.64	123.87	4431.51	4390.08	55.25	OSF1.50	11890.00	8767.86				MinPt-CICI	
4514.60	131.38	4426.54	4383.23	52.10	OSF1.50	12180.00	8767.95				MinPt-CICI	
4515.24	133.29	4425.90	4381.95	51.35	OSF1.50	12250.00	8767.98				MINPT-O-EQU	
4516.11	134.38	4426.06	4381.75	50.85	OSF1.50	12300.00	8767.99				MinPt-O-ADP	
4517.41	136.73	4423.77	4377.68	48.98	OSF1.50	12460.00	8768.05				MinPt-CICI	
4518.90	155.44	4412.79	4361.46	43.98	OSF1.50	13020.00	8768.23				MinPt-CICI	
4517.92	159.03	4411.42	4358.89	42.99	OSF1.50	13170.00	8768.28				MINPT-O-EQU	
4518.87	160.16	4411.62	4358.71	42.89	OSF1.50	13220.00	8768.30				MinPt-O-ADP	
4502.06	201.10	4367.54	4300.99	33.81	OSF1.50	14600.00	8768.75				MinPt-CICI	
4499.13	216.06	4354.82	4283.08	31.43	OSF1.50	15110.00	8768.92				MinPt-CICI	
4500.23	219.41	4353.47	4280.81	30.96	OSF1.50	15250.00	8768.96				MINPT-O-EQU	
4501.83	221.08	4353.77	4280.55	30.73	OSF1.50	15320.00	8768.99				MinPt-O-ADP	
4497.65	273.18	4315.08	4224.50	24.82	OSF1.50	17040.00	8769.55				MinPt-CICI	
4497.76	285.05	4307.27	4212.73	23.78	OSF1.50	17440.00	8769.68				MinPt-CICI	
4498.94	288.48	4306.15	4210.48	23.50	OSF1.50	17580.00	8769.73				MINPT-O-EQU	
4499.23	291.88	4304.30	4207.56	23.25	OSF1.50	17680.00	8769.76				MinPt-CICI	
4498.91	301.68	4297.31	4197.23	22.47	OSF1.50	17990.00	8769.86				MinPt-CICI	
4495.25	313.81	4285.58	4181.44	21.58	OSF1.50	18390.00	8770.00				MinPt-CICI	
4495.26	314.10	4285.38	4181.16	21.58	OSF1.50	18404.55	8770.00				MinPt	

Cimarex Scoter 6 Federal #5H
XEM - MWD ON to 11832H
(Def Survey)

4284.04	32.81	4281.54	4251.24	N/A	MAS = 10.00 (m)	0.00	0.00				Surface	Pass
4283.74	32.81	4281.20	4250.93	108597.13	MAS = 10.00 (m)	28.00	28.00				MinPt-O-SF	
4282.73	32.81	4278.26	4249.92	2172.18	MAS = 10.00 (m)	490.00	490.00				MinPt	
4230.27	32.81	4211.72	4197.46	263.98	MAS = 10.00 (m)	3570.00	3570.00				MinPt	
4230.82	32.81	4210.30	4197.81	237.61	MAS = 10.00 (m)	3980.00	3980.00				MinPt	
4231.39	32.81	4209.79	4198.56	221.89	MAS = 10.00 (m)	4230.00	4230.00				MINPT-O-EQU	
4254.45	45.07	4223.50	4209.41	149.82	OSF1.50	6290.00	6290.00				MinPt-CICI	
4254.82	45.56	4223.42	4209.06	148.11	OSF1.50	6360.00	6360.00				MINPT-O-EQU	
4254.86	45.84	4223.46	4209.01	147.16	OSF1.50	6400.00	6400.00				MinPt-O-ADP	
4268.84	49.25	4234.98	4219.30	136.88	OSF1.50	6900.00	6900.00				MinPt-O-SF	
4268.56	50.14	4232.30	4216.42	134.27	OSF1.50	7080.00	7080.00				MinPt-CICI	
4268.81	50.26	4232.27	4216.35	133.91	OSF1.50	7080.00	7080.00				MINPT-O-EQU	
4268.87	50.33	4232.28	4216.34	133.74	OSF1.50	7090.00	7090.00				MinPt-O-ADP	
4401.45	62.18	4359.18	4339.27	110.57	OSF1.50	8680.00	8618.82				MinPt-CICI	
4401.83	62.85	4359.02	4338.87	109.70	OSF1.50	8710.00	8636.81				MINPT-O-EQU	
4401.75	62.81	4359.05	4338.94	109.41	OSF1.50	8720.00	8642.58				MinPt-O-ADP	
4415.03	71.48	4396.54	4343.55	95.96	OSF1.50	9020.00	8744.27				MINPT-O-EQU	
4414.18	80.71	4359.54	4333.47	84.81	OSF1.50	9420.00	8767.05				MinPt-CICI	
4415.82	85.18	4358.00	4330.44	80.06	OSF1.50	9590.00	8767.10				MINPT-O-EQU	
4417.58	87.57	4358.37	4330.01	77.85	OSF1.50	9680.00	8767.13				MinPt-O-ADP	
4418.71	88.72	4358.73	4330.00	76.83	OSF1.50	9720.00	8767.15				MinPt-O-ADP	
4444.38	110.02	4370.19	4334.35	61.87	OSF1.50	10280.00	8767.32				MINPT-O-EQU	
4448.57	113.43	4370.12	4333.15	60.10	OSF1.50	10310.00	8767.34				MINPT-O-EQU	
4450.52	116.13	4370.94	4332.36	57.70	OSF1.50	10410.00	8767.37				MinPt-O-ADP	
4435.14	213.29	4292.11	4221.85	31.54	OSF1.50	12190.00	8767.96				MinPt-CICI	
4443.83	234.76	4286.50	4209.17	28.88	OSF1.50	12700.00	8768.13				MINPT-O-EQU	
4448.03	237.36	4286.96	4208.67	28.38	OSF1.50	12770.00	8768.15				MinPt-O-ADP	
4455.88	251.14	4287.42	4204.54	26.87	OSF1.50	13000.00	8768.22				MINPT-O-EQU	
4482.10	303.85	4268.70	4158.26	22.20	OSF1.50	13220.00	8768.30				MinPt	
4471.91	305.07	4267.89	4166.83	22.19	OSF1.50	13420.00	8768.36				MinPt-O-SF	
6830.04	241.82	8768.00	8688.23	43.42	OSF1.50	18404.55	8770.00				TD	

Cimarex Scoter 6-31 Federal Com 44H Rev3 RM 01Oct18 Proposal Geodetic Report

(Def Plan)



Report Date: October 01, 2018 - 02:05 PM
 Client: Cimarex
 Field: NM Eddy County (NAD 83)
 Structure / Slot: Cimarex Scoter 6-31 Federal Com 44H / Cimarex Scoter 6-31 Federal Com 44H
 Well: Cimarex Scoter 6-31 Federal Com 44H
 Borehole: Original
 UWI / APIS: Unknown / Unknown
 Survey Name: Cimarex Scoter 6-31 Federal Com 44H Rev3 RM 01Oct18
 Survey Date: October 01, 2018
 Tort / AHD / DDI / ERD Ratio: 95.882 * / 9890.788 ft / 6.299 / 1.128
 Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
 Location Lat / Long: N 32° 0' 10.38708", W 104° 13' 19.26871"
 Location Grid N/E Y/X: N 419372.800 RUS, E 575788.380 fUS
 CRS Grid Convergence Angle: 0.0592 *
 Grid Scale Factor: 0.99991045
 Version / Patch: 2.10.740.0

Survey / DLS Computation: Minimum Curvature / Lubinski
 Vertical Section Azimuth: 0.000 * (Grid North)
 Vertical Section Origin: 0.000 ft, 0.000 ft
 TVD Reference Datum: RKB
 TVD Reference Elevation: 3359.200 ft above MSL
 Seabed / Ground Elevation: 3333.200 ft above MSL
 Magnetic Declination: 7.340 *
 Total Gravity Field Strength: 998.4320mgn (9.80665 Based)
 Gravity Model: GARM
 Total Magnetic Field Strength: 47881.991 nT
 Magnetic Dip Angle: 59.841 *
 Declination Date: October 01, 2018
 Magnetic Declination Model: HDGM 2018
 North Reference: Grid North
 Grid Convergence Used: 0.0592 *
 Total Corr Mag North->Grid: 7.2808 *
 North: Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (fUS)	Easting (fUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
SHL [3658' FSL, 320' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	100.00	0.00	330.68	100.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	200.00	0.00	330.68	200.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	300.00	0.00	330.68	300.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	400.00	0.00	330.68	400.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	500.00	0.00	330.68	500.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	600.00	0.00	330.68	600.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	700.00	0.00	330.68	700.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	800.00	0.00	330.68	800.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	900.00	0.00	330.68	900.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	1000.00	0.00	330.68	1000.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	1100.00	0.00	330.68	1100.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	1200.00	0.00	330.68	1200.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	1300.00	0.00	330.68	1300.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
Salado (Top Salt)	1394.00	0.00	330.68	1394.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	1400.00	0.00	330.68	1400.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	1500.00	0.00	330.68	1500.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	1600.00	0.00	330.68	1600.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	1700.00	0.00	330.68	1700.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	1800.00	0.00	330.68	1800.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	1900.00	0.00	330.68	1900.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
Castille (Base Salt)	1908.00	0.00	330.68	1908.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	2000.00	0.00	330.68	2000.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	2100.00	0.00	330.68	2100.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
Bell Canyon (Top Delaware)	2116.00	0.00	330.68	2116.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	2200.00	0.00	330.68	2200.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	2300.00	0.00	330.68	2300.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	2400.00	0.00	330.68	2400.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	2500.00	0.00	330.68	2500.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	2600.00	0.00	330.68	2600.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	2700.00	0.00	330.68	2700.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	2800.00	0.00	330.68	2800.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	2900.00	0.00	330.68	2900.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	3000.00	0.00	330.68	3000.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
Cherry Canyon	3088.00	0.00	330.68	3088.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	3100.00	0.00	330.68	3100.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	3200.00	0.00	330.68	3200.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	3300.00	0.00	330.68	3300.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	3400.00	0.00	330.68	3400.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	3500.00	0.00	330.68	3500.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	3600.00	0.00	330.68	3600.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	3700.00	0.00	330.68	3700.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	3800.00	0.00	330.68	3800.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	3900.00	0.00	330.68	3900.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	4000.00	0.00	330.68	4000.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
Brushy Canyon	4088.00	0.00	330.68	4088.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	4100.00	0.00	330.68	4100.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	4200.00	0.00	330.68	4200.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	4300.00	0.00	330.68	4300.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	4400.00	0.00	330.68	4400.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	4500.00	0.00	330.68	4500.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	4600.00	0.00	330.68	4600.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	4700.00	0.00	330.68	4700.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	4800.00	0.00	330.68	4800.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	4900.00	0.00	330.68	4900.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	5000.00	0.00	330.68	5000.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	5100.00	0.00	330.68	5100.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	5200.00	0.00	330.68	5200.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	5300.00	0.00	330.68	5300.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	5400.00	0.00	330.68	5400.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	5500.00	0.00	330.68	5500.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	5600.00	0.00	330.68	5600.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
Top Bone Spring	5605.00	0.00	330.68	5605.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	5700.00	0.00	330.68	5700.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	5800.00	0.00	330.68	5800.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	5900.00	0.00	330.68	5900.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	6000.00	0.00	330.68	6000.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	6100.00	0.00	330.68	6100.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	6200.00	0.00	330.68	6200.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	6300.00	0.00	330.68	6300.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	6400.00	0.00	330.68	6400.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"
	6500.00	0.00	330.68	6500.00	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32° 9' 10.39"	W 104° 13' 19.27"

Comments	MD	Ind	Adm Gnd	TVD	VSEC	NS	EW	DLS	Northng	Eastng	Latitude	Longitude
Top 1st BSPG	(ft)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft/100ft)	(ft/s)	(ft/s)	(N/S - °)	(E/W - °)
SS	6542.00	0.00	330.66	6542.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32 9 10.39	W 104 13 19.27
	6600.00	0.00	330.66	6600.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32 9 10.39	W 104 13 19.27
	6700.00	0.00	330.66	6700.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32 9 10.39	W 104 13 19.27
	6800.00	0.00	330.66	6800.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32 9 10.39	W 104 13 19.27
	6900.00	0.00	330.66	6900.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32 9 10.39	W 104 13 19.27
	7000.00	0.00	330.66	7000.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32 9 10.39	W 104 13 19.27
Top 2nd BSPG	7010.00	0.00	330.66	7010.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32 9 10.39	W 104 13 19.27
SS	7100.00	0.00	330.66	7100.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32 9 10.39	W 104 13 19.27
	7200.00	0.00	330.66	7200.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32 9 10.39	W 104 13 19.27
	7300.00	0.00	330.66	7300.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32 9 10.39	W 104 13 19.27
	7400.00	0.00	330.66	7400.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32 9 10.39	W 104 13 19.27
	7500.00	0.00	330.66	7500.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32 9 10.39	W 104 13 19.27
	7600.00	0.00	330.66	7600.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32 9 10.39	W 104 13 19.27
	7700.00	0.00	330.66	7700.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32 9 10.39	W 104 13 19.27
	7800.00	0.00	330.66	7800.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32 9 10.39	W 104 13 19.27
	7900.00	0.00	330.66	7900.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32 9 10.39	W 104 13 19.27
	8000.00	0.00	330.66	8000.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32 9 10.39	W 104 13 19.27
	8100.00	0.00	330.66	8100.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32 9 10.39	W 104 13 19.27
	8200.00	0.00	330.66	8200.00	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32 9 10.39	W 104 13 19.27
KOP - Build	8228.46	0.00	330.66	8228.46	0.00	0.00	0.00	0.00	419372.80	575786.39	N 32 9 10.39	W 104 13 19.27
127100' DLS	8300.00	8.82	330.66	8280.71	4.92	4.92	-2.77	12.00	419377.72	575783.62	N 32 9 10.44	W 104 13 19.30
Top 3rd BSPG	8361.80	16.24	330.66	8360.21	16.61	16.61	-8.33	12.00	419369.41	575777.06	N 32 9 10.55	W 104 13 19.36
SS	8400.00	20.82	330.66	8390.21	27.19	27.19	-15.27	12.00	419369.89	575771.12	N 32 9 10.66	W 104 13 19.44
	8500.00	32.82	330.66	8483.28	66.46	66.46	-37.33	12.00	419439.25	575748.07	N 32 9 11.05	W 104 13 19.76
Build & Turn	8518.15	35.00	330.66	8500.35	75.29	75.29	-42.29	12.00	419448.06	575744.11	N 32 9 11.13	W 104 13 19.76
127100' DLS	8600.00	42.85	340.12	8564.03	122.04	122.04	-63.30	12.00	419494.83	575723.10	N 32 9 11.60	W 104 13 20.00
	8700.00	53.19	348.36	8630.89	193.49	193.49	-83.01	12.00	419566.27	575703.39	N 32 9 12.30	W 104 13 20.23
	8800.00	63.89	354.59	8683.00	277.72	277.72	-95.38	12.00	419650.50	575701.03	N 32 9 13.14	W 104 13 20.37
Top Workcamp	8902.30	64.21	354.59	8694.00	279.76	279.76	-95.56	12.00	419652.56	575690.84	N 32 9 13.16	W 104 13 20.37
	8900.00	74.85	359.75	8718.06	371.07	371.07	-98.83	12.00	419733.84	575688.57	N 32 9 13.40	W 104 13 20.42
Build 47100'	8900.50	75.00	359.77	8718.19	371.55	371.55	-98.83	12.00	419744.31	575688.56	N 32 9 13.46	W 104 13 20.42
DLS	9000.00	78.58	359.77	8740.59	468.46	468.46	-100.22	4.00	419841.24	575660.18	N 32 9 15.02	W 104 13 20.43
Workcamp 7' SS	9068.02	81.70	359.77	8752.00	535.52	535.52	-100.46	4.00	419908.28	575665.91	N 32 9 15.69	W 104 13 20.43
	9100.00	82.98	359.77	8758.26	587.22	587.22	-100.62	4.00	419939.67	575665.78	N 32 9 16.00	W 104 13 20.43
	9200.00	86.98	359.77	8766.01	666.82	666.82	-101.32	4.00	420039.58	575665.38	N 32 9 16.99	W 104 13 20.43
Landing Point	9275.02	89.88	359.77	8767.00	741.81	741.81	-101.32	4.00	420114.54	575665.08	N 32 9 17.73	W 104 13 20.44
Workcamp 7' SS	9275.07	89.88	359.77	8767.00	741.86	741.86	-101.32	0.00	420114.59	575665.08	N 32 9 17.73	W 104 13 20.44
Target	9300.00	89.88	359.77	8767.01	766.78	766.78	-101.42	0.00	420139.51	575664.88	N 32 9 17.88	W 104 13 20.44
	9400.00	89.88	359.77	8767.01	866.78	866.78	-101.82	0.00	420239.50	575664.58	N 32 9 18.67	W 104 13 20.44
	9500.00	89.88	359.77	8767.01	966.78	966.78	-102.22	0.00	420339.48	575664.18	N 32 9 19.85	W 104 13 20.44
	9600.00	89.88	359.77	8767.11	1066.78	1066.78	-102.63	0.00	420439.46	575663.78	N 32 9 20.94	W 104 13 20.45
	9700.00	89.88	359.77	8767.14	1166.78	1166.78	-103.03	0.00	420539.47	575663.37	N 32 9 21.93	W 104 13 20.45
	9800.00	89.88	359.77	8767.17	1266.78	1266.78	-103.43	0.00	420639.46	575662.97	N 32 9 22.92	W 104 13 20.45
	9900.00	89.88	359.77	8767.21	1366.78	1366.78	-103.83	0.00	420739.45	575662.57	N 32 9 23.91	W 104 13 20.46
	10000.00	89.88	359.77	8767.24	1466.78	1466.78	-104.23	0.00	420839.44	575662.17	N 32 9 24.90	W 104 13 20.46
	10100.00	89.88	359.77	8767.27	1566.77	1566.77	-104.63	0.00	420939.43	575661.77	N 32 9 25.89	W 104 13 20.46
	10200.00	89.88	359.77	8767.30	1666.77	1666.77	-105.03	0.00	421039.42	575661.37	N 32 9 26.88	W 104 13 20.47
	10300.00	89.88	359.77	8767.34	1766.77	1766.77	-105.44	0.00	421139.41	575660.96	N 32 9 27.87	W 104 13 20.47
	10400.00	89.88	359.77	8767.37	1866.77	1866.77	-105.84	0.00	421239.40	575660.56	N 32 9 28.86	W 104 13 20.48
	10500.00	89.88	359.77	8767.44	1966.77	1966.77	-106.24	0.00	421339.39	575660.16	N 32 9 29.85	W 104 13 20.48
	10600.00	89.88	359.77	8767.47	2066.77	2066.77	-106.64	0.00	421439.38	575659.76	N 32 9 30.84	W 104 13 20.48
	10700.00	89.88	359.77	8767.50	2166.77	2166.77	-107.04	0.00	421539.37	575659.36	N 32 9 31.83	W 104 13 20.48
	10800.00	89.88	359.77	8767.53	2266.77	2266.77	-107.44	0.00	421639.36	575658.96	N 32 9 32.82	W 104 13 20.48
	10900.00	89.88	359.77	8767.57	2366.77	2366.77	-107.84	0.00	421739.35	575658.56	N 32 9 33.81	W 104 13 20.48
	11000.00	89.88	359.77	8767.53	2466.77	2466.77	-108.25	0.00	421839.34	575658.15	N 32 9 34.80	W 104 13 20.50
	11100.00	89.88	359.77	8767.50	2566.77	2566.77	-108.65	0.00	421939.33	575657.75	N 32 9 35.79	W 104 13 20.50
	11200.00	89.88	359.77	8767.53	2666.77	2666.77	-109.05	0.00	422039.32	575657.35	N 32 9 36.78	W 104 13 20.51
	11300.00	89.88	359.77	8767.57	2766.77	2766.77	-109.45	0.00	422139.31	575656.95	N 32 9 37.77	W 104 13 20.51
	11400.00	89.88	359.77	8767.60	2866.76	2866.76	-109.85	0.00	422239.30	575656.55	N 32 9 38.76	W 104 13 20.51
	11500.00	89.88	359.77	8767.73	2966.76	2966.76	-110.25	0.00	422339.29	575656.15	N 32 9 39.75	W 104 13 20.51
	11600.00	89.88	359.77	8767.76	3066.76	3066.76	-110.65	0.00	422439.28	575655.75	N 32 9 40.73	W 104 13 20.52
	11700.00	89.88	359.77	8767.80	3166.76	3166.76	-111.06	0.00	422539.27	575655.34	N 32 9 41.72	W 104 13 20.52
	11800.00	89.88	359.77	8767.83	3266.76	3266.76	-111.46	0.00	422639.26	575654.94	N 32 9 42.71	W 104 13 20.52
	11900.00	89.88	359.77	8767.86	3366.76	3366.76	-111.86	0.00	422739.25	575654.54	N 32 9 43.70	W 104 13 20.53
	12000.00	89.88	359.77	8767.90	3466.76	3466.76	-112.26	0.00	422839.24	575654.14	N 32 9 44.69	W 104 13 20.53
	12100.00	89.88	359.77	8767.93	3566.76	3566.76	-112.66	0.00	422939.23	575653.74	N 32 9 45.68	W 104 13 20.54
	12200.00	89.88	359.77	8767.96	3666.76	3666.76	-113.06	0.00	423039.22	575653.34	N 32 9 46.67	W 104 13 20.54
	12300.00	89.88	359.77	8767.99	3766.76	3766.76	-113.47	0.00	423139.21	575652.94	N 32 9 47.66	W 104 13 20.54
	12400.00	89.88	359.77	8768.03	3866.76	3866.76	-113.87	0.00	423239.20	575652.54	N 32 9 48.65	W 104 13 20.54
	12500.00	89.88	359.77	8768.06	3966.76	3966.76	-114.27	0.00	423339.19	575652.13	N 32 9 49.64	W 104 13 20.55
	12600.00	89.88	359.77	8768.09	4066.75	4066.75	-114.67	0.00	423439.18	575651.73	N 32 9 50.63	W 104 13 20.55
	12700.00	89.88	359.77	8768.13	4166.75	4166.75	-115.07	0.00	423539.17	575651.33	N 32 9 51.62	W 104 13 20.56
	12800.00	89.88	359.77	8768.16	4266.75	4266.75	-115.47	0.00	423639.16	575650.93	N 32 9 52.61	W 104 13 20.56
	12900.00	89.88	359.77	8768.19	4366.75	4366.75	-115.87	0.00	423739.15	575650.53	N 32 9 53.60	W 104 13 20.56
	13000.00	89.88	359.77	8768.22	4466.75	4466.75	-116.28	0.00	423839.14	575650.13	N 32 9 54.59	W 104 13 20.57
	13100.00	89.88	359.77	8768.26	4566.75	4566.75	-116.68	0.00	423939.13	575649.72	N 32 9 55	

Comments	MD (ft)	Incl (°)	Adm Ghd	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (ft/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (NWS+°)	Longitude (EWT+°)
	15700.00	89.88	359.77	8789.14	7166.73	7166.73	-127.52	0.00	429538.69	575656.29	N 32 10 21.20	W 104 13 20.68
	15600.00	89.88	359.77	8789.14	7266.73	7266.73	-127.52	0.00	429038.68	575656.89	N 32 10 22.39	W 104 13 20.68
	15500.00	89.88	359.77	8789.14	7366.73	7366.73	-127.52	0.00	428538.65	575656.48	N 32 10 23.58	W 104 13 20.67
	15400.00	89.88	359.77	8789.21	7466.73	7466.73	-128.32	0.00	428038.64	575656.08	N 32 10 24.77	W 104 13 20.67
	15300.00	89.88	359.77	8789.24	7566.73	7566.73	-128.72	0.00	427538.63	575656.68	N 32 10 25.96	W 104 13 20.67
	15200.00	89.88	359.77	8789.28	7666.72	7666.72	-129.12	0.00	427038.62	575657.28	N 32 10 27.14	W 104 13 20.68
	15100.00	89.88	359.77	8789.34	7766.72	7766.72	-129.52	0.00	426538.61	575656.88	N 32 10 28.33	W 104 13 20.68
	15000.00	89.88	359.77	8789.37	7866.72	7866.72	-129.93	0.00	426038.60	575656.48	N 32 10 29.52	W 104 13 20.68
	14900.00	89.88	359.77	8789.44	7966.72	7966.72	-130.33	0.00	425538.58	575656.08	N 32 10 30.71	W 104 13 20.68
	14800.00	89.88	359.77	8789.47	8066.72	8066.72	-131.13	0.00	425038.58	575655.67	N 32 10 31.90	W 104 13 20.68
	14700.00	89.88	359.77	8789.54	8166.72	8166.72	-131.53	0.00	424538.56	575655.27	N 32 10 33.09	W 104 13 20.68
	14600.00	89.88	359.77	8789.54	8266.72	8266.72	-131.83	0.00	424038.55	575654.87	N 32 10 34.28	W 104 13 20.70
	14500.00	89.88	359.77	8789.54	8366.72	8366.72	-132.33	0.00	423538.54	575654.47	N 32 10 35.47	W 104 13 20.70
	14400.00	89.88	359.77	8789.60	8466.72	8466.72	-132.74	0.00	423038.52	575654.07	N 32 10 36.66	W 104 13 20.71
	14300.00	89.88	359.77	8789.64	8566.72	8566.72	-133.14	0.00	422538.51	575653.67	N 32 10 37.85	W 104 13 20.71
	14200.00	89.88	359.77	8789.67	8666.72	8666.72	-133.54	0.00	422038.50	575653.27	N 32 10 39.04	W 104 13 20.72
	14100.00	89.88	359.77	8789.70	8766.71	8766.71	-134.24	0.00	421538.49	575652.86	N 32 10 40.23	W 104 13 20.72
	14000.00	89.88	359.77	8789.74	8866.71	8866.71	-134.74	0.00	421038.48	575652.46	N 32 10 41.42	W 104 13 20.73
	13900.00	89.88	359.77	8789.80	8966.71	8966.71	-135.14	0.00	420538.47	575652.06	N 32 10 42.61	W 104 13 20.73
	13800.00	89.88	359.77	8789.83	9066.71	9066.71	-135.55	0.00	420038.46	575651.66	N 32 10 43.80	W 104 13 20.74
	13700.00	89.88	359.77	8789.87	9166.71	9166.71	-135.95	0.00	419538.45	575651.26	N 32 10 44.99	W 104 13 20.74
	13600.00	89.88	359.77	8789.90	9266.71	9266.71	-136.35	0.00	419038.44	575650.86	N 32 10 46.18	W 104 13 20.74
	13500.00	89.88	359.77	8789.93	9366.71	9366.71	-136.75	0.00	418538.43	575650.46	N 32 10 47.37	W 104 13 20.74
	13400.00	89.88	359.77	8789.97	9466.71	9466.71	-137.15	0.00	418038.42	575650.06	N 32 10 48.56	W 104 13 20.75
	13300.00	89.88	359.77	8789.97	9566.71	9566.71	-137.55	0.00	417538.41	575649.65	N 32 10 49.75	W 104 13 20.75
	13200.00	89.88	359.77	8789.97	9666.71	9666.71	-137.95	0.00	417038.40	575649.25	N 32 10 50.94	W 104 13 20.75
	13100.00	89.88	359.77	8789.97	9766.71	9766.71	-137.95	0.00	416538.40	575648.85	N 32 10 52.13	W 104 13 20.75
	13000.00	89.88	359.77	8789.97	9866.71	9866.71	-137.95	0.00	416038.40	575648.45	N 32 10 53.32	W 104 13 20.75

Cinatrex Scaler
B-31 Federal
Com 44H -
PcHL 1530 FNL,
380 FcLl

Survey Type:

Def Plan

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7965 sigma

Description	Part	MD From (ft)	MD To (ft)	ECU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	28.000	17100.000	30.000	30.000		NAL_MMWD_IFR1+MS-Depth Only	Original / Cinatrex Scaler B-31 Federal Com 44H Rev3 RM 01Oct18
	1	28.000	18404.546	17100.000	30.000	30.000		NAL_MMWD_IFR1+MS	Original / Cinatrex Scaler B-31 Federal Com 44H Rev3 RM

Cimarex Scoter 6-31 Federal Com 44H Rev3 RM 01Oct18 Proposal Geodetic Report

(Def Plan)



Report Date: October 01, 2018 - 02:05 PM
Client: Cimarex
Field: NM Eddy County (NAD 83)
Structure / Slot: Cimarex Scoter 6-31 Federal Com 44H / Cimarex Scoter 6-31 Federal Com 44H
Well: Cimarex Scoter 6-31 Federal Com 44H
Borehole: Original
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Scoter 6-31 Federal Com 44H Rev3 RM 01Oct18
Survey Date: October 01, 2018
Tort / AHD / DDI / ERD Ratio: 95.882 * / 9890.788 ft / 0.209 / 1.128
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 0' 10.38708", W 104° 13' 19.28671"
Location Grid N/E Y/X: N 419372.800 ftUS, E 575788.390 ftUS
CRS Grid Convergence Angle: 0.0592 *
Grid Scale Factor: 0.99991045
Version / Patch: 2.10.740.0

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 0.000 * (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3359.200 ft above MSL
Seabed / Ground Elevation: 3333.200 ft above MSL
Magnetic Declination: 7.340 *
Total Gravity Field Strength: 998.4320mgn (9.80665 Based)
Gravity Model: GARM
Total Magnetic Field Strength: 47881.991 nT
Magnetic Dip Angle: 59.841 *
Declination Date: October 01, 2018
Magnetic Declination Model: HDGM 2018
North Reference: Grid North
Grid Convergence Used: 0.0592 *
Total Corr Mag North->Grid North: 7.2808 *
Local Coord Referenced To: Structure Reference Point

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 [365' FSL, 320' FEL]	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	419372.80	575788.39	N 32 0 10.39	W 104 13 19.27
KOP - Build 12"/100' DLS	8226.48	0.00	330.68	8226.48	0.00	0.00	0.00	0.00	419372.80	575788.39	N 32 0 10.39	W 104 13 19.27
Build & Turn 12"/100' DLS	8518.15	35.00	330.68	8500.35	75.29	75.29	-42.29	12.00	419448.08	575744.11	N 32 0 11.13	W 104 13 19.78
Build 4"/100' DLS	8900.50	75.00	359.77	8718.19	371.55	371.55	-99.83	12.00	419744.31	575688.58	N 32 0 14.08	W 104 13 20.42
Landing Point Cimarex Scoter 6-31 Federal Com 44H - PBHL [330' FNL, 380' FEL]	9275.02	89.98	359.77	8767.00	741.81	741.81	-101.32	4.00	420114.54	575685.08	N 32 0 17.73	W 104 13 20.44
	18404.55	89.98	359.77	8770.00	9871.25	9871.25	-137.97	0.00	428243.15	575648.43	N 32 10 48.07	W 104 13 20.75

Survey Type: Def Plan

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

Description	Part	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Expected Max Inclination (deg)	Survey Tool Type	Borehole / Survey
	1	0.000	26.000	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS-Depth Only	Original / Cimarex Scoter 6-31 Federal Com 44H Rev3 RM 01Oct18
	1	26.000	18404.546	1/100.000	30.000	30.000		NAL_MWD_IFR1+MS	Original / Cimarex Scoter 6-31 Federal Com 44H Rev3 RM

1. Geological Formations

TVD of target 8,770

Pilot Hole TD N/A

MD at TD 18,404

Deepest expected fresh water

Formation	Depth (TVD) from KB	Water/Mineral Bearing/Target Zone	Hazards
Salado	1394	N/A	
Castille	1908	N/A	
Bell Canyon	2116	N/A	
Cherry Canyon	3088	N/A	
Brushy Canyon	4066	Hydrocarbons	
Bone Spring	5605	Hydrocarbons	
1st Bone Spring Ss	6542	Hydrocarbons	
2nd Bone Spring Ss	7010	Hydrocarbons	
3rd Bone Spring Ss	8360	Hydrocarbons	
Wolfcamp A	8684	Hydrocarbons	
Wolfcamp Y Ss Target	8767	Hydrocarbons	

2. Casing Program

Hole Size	Casing Depth From	Casing Depth To	Casing Size	Weight (lb/ft)	Grade	Conn.	SF Collapse	SF Burst	SF Tension
17 1/2	0	400	13-3/8"	48.00	H-40/J-55 Hybrid	ST&C	4.04	9.45	16.77
12 1/4	0	2096	9-5/8"	36.00	J-55	LT&C	1.82	3.17	6.00
8 3/4	0	8226	7"	26.00	L-80	LT&C	1.41	1.88	2.24
8 3/4	8226	9275	7"	26.00	N-80	BT&C	1.32	1.76	42.70
6	8226	18404	4-1/2"	11.60	P-110	BT&C	1.58	2.24	58.16
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.	N
Is premium or uncommon casing planned? If yes attach casing specification sheet.	Y
Does the above casing design meet or exceed BLM's minimum standards? If not provide justification (loading assumptions, casing design criteria).	Y
Will the intermediate pipe be kept at a minimum 1/3 fluid filled to avoid approaching the collapse pressure rating of the casing?	N
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	61	13.50	1.72	9.15	15.5	Lead: Class C + Bentonite
	195	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Intermediate	400	12.90	1.88	9.65	12	Lead: 35:65 (Poz:C) + Salt + Bentonite
	123	14.80	1.34	6.32	9.5	Tail: Class C + LCM
Production	326	10.30	3.64	22.18		Lead: Tuned Light + LCM
	134	14.20	1.30	5.86	14:30	Tail: 50:50 (Poz:H) + Salt + Bentonite + Fluid Loss + Dispersant + SMS
Completion System	664	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	31
Intermediate	0	49
Production	1896	23
Completion System	9275	10

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		
6	13 5/8	5M	Annular	X	50% of working pressure
			Blind Ram		5M
			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.

X	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 400'	FW Spud Mud	8.30 - 8.80	30-32	N/C
400' to 2096'	Brine Water	9.70 - 10.20	30-32	N/C
2096' to 9275'	FW/Cut Brine	8.50 - 9.00	30-32	N/C
9275' to 18404'	Oil Based Mud	10.00 - 10.50	50-70	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
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6. Logging and Testing Procedures

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

Additional Logs Planned	Interval
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7. Drilling Conditions

Condition	
BH Pressure at deepest TVD	4788 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 5000 psi will be installed on the wellhead system and will be pressure tested to 250 psi low followed by a 5000 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 5000 psi.

A solid steel body pack-off will be utilized after running and cementing the production casing. After installation the pack-off and lower flange will be pressure tested to 5000 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.