

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.

OCD Hobbs
NMNM120907

HOBBS OCD
If Indian, Allottee or Tribe Name

SUBMIT IN TRIPLICATE - Other instructions on page 2

OCT 07 2019

7. If Unit or CA/Agreement, Name and/or No.

1. Type of Well

☒ Oil Well ☐ Gas Well ☐ Other

8. Well Name and No.

EIDER 23 FEDERAL 602H

2. Name of Operator
COG PRODUCTION LLC

Contact: MAYTE X REYES
E-Mail: mreyes1@concho.com

9. API Well No.

30-025-46379-00-X1

3a. Address
2208 W MAIN STREET
ARTESIA, NM 88210

3b. Phone No. (include area code)
Ph: 575-748-6945

10. Field and Pool or Exploratory Area
WILDCAT

4. Location of Well (Footage, Sec., T., R., M., or Survey Description)

Sec 23 T24S R32E NWNE 435FNL 1995FEL
32.209187 N Lat, 103.643280 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 Plans	☐ Plug and Abandon	☐ Temporarily Abandon	Change to Original APD
	☐ 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 recompleat 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 recompleat 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.

COG Operating respectfully requests approval for the following changes to the originally approved APD.

BHL CHANGE
FROM: 2590' FNL & 2310' FEL Section 26. T24S. R32E
TO: 2590' FNL & 1980' FEL Section 26. T24S. T32E.

C102 Attached.
Directional plan attached.
AC attached.

All previous Conditions of Approval still apply. DR

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

Electronic Submission #485288 verified by the BLM Well Information System
For COG PRODUCTION LLC, sent to the Hobbs

Committed to AFMSS for processing by PRISCILLA PEREZ on 09/26/2019 (19PP3291SE)

Name (Printed/Typed) MAYTE X REYES

Title SENIOR REGULATORY ANALYST

Signature (Electronic Submission)

Date 09/26/2019

THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved By DYLAN ROSSMANGO

Title PETROLEUM ENGINEER

Date 10/03/2019

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 Hobbs

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 ****



PHOENIX
TECHNOLOGY SERVICES

COG Operating LLC

Lea County, NM (NAD27 NME)

Eider 23 Federal

602H

OH

Plan 1 09-25-19

Anticollision Report

25 September, 2019





Anticollision Report



Company: COG Operating LLC
 Project: Lea County, NM (NAD27 NME)
 Reference Site: Eider 23 Federal
 Site Error: 0.00 usft
 Reference Well: 602H
 Well Error: 1.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 09-25-19

Local Co-ordinate Reference: Well 602H
 TVD Reference: RKB @ 3597.30usft (Permitting)
 MD Reference: RKB @ 3597.30usft (Permitting)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at: 2.00 sigma
 Database: USA Compass
 Offset TVD Reference: Offset Datum

Reference	Plan 1 09-25-19				
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria				
Interpolation Method:	MD Interval 100.00usft		Error Model:	ISWWSA	
Depth Range:	Unlimited		Scan Method:	Closest Approach 3D	
Results Limited by:	Maximum center-center distance of 50,000.00 usft		Error Surface:	Pedal Curve	
Warning Levels Evaluated at:	2.00 Sigma		Casing Method:	Not applied	

Survey Tool Program	Date 9/25/2019				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	19,894.60	Plan 1 09-25-19 (OH)	MWD+HRGM	OWSG MWD + HRGM	

Summary							
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning	
Offset Well - Wellbore - Design							
Eider 23 Federal							
702H - OH - Plan 1 09-25-19	2,500.00	2,500.00	30.00	11.45	1.617	CC, ES, SF	

Offset Design Eider 23 Federal - 702H - OH - Plan 1 09-25-19													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 1.00 usft
Reference	Offset	Semi Major Axis		Distance									
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	1.00	1.00	89.05	0.50	30.00	30.00				
100.00	100.00	100.00	100.00	1.03	1.03	89.05	0.50	30.00	30.00	27.97	2.04	14.724	
200.00	200.00	200.00	200.00	1.34	1.34	89.05	0.50	30.00	30.00	27.53	2.47	12.143	
300.00	300.00	300.00	300.00	1.73	1.73	89.05	0.50	30.00	30.00	26.82	3.08	9.734	
400.00	400.00	400.00	400.00	2.11	2.11	89.05	0.50	30.00	30.00	26.27	3.73	8.040	
500.00	500.00	500.00	500.00	2.48	2.48	89.05	0.50	30.00	30.00	25.80	4.40	6.816	
600.00	600.00	600.00	600.00	2.85	2.85	89.05	0.50	30.00	30.00	24.82	5.08	5.801	
700.00	700.00	700.00	700.00	3.22	3.22	89.05	0.50	30.00	30.00	24.23	5.78	5.194	
800.00	800.00	800.00	800.00	3.58	3.58	89.05	0.50	30.00	30.00	23.53	6.47	4.635	
900.00	900.00	900.00	900.00	3.85	3.85	89.05	0.50	30.00	30.00	22.83	7.17	4.182	
1,000.00	1,000.00	1,000.00	1,000.00	4.31	4.31	89.05	0.50	30.00	30.00	22.13	7.88	3.809	
1,100.00	1,100.00	1,100.00	1,100.00	4.87	4.87	89.05	0.50	30.00	30.00	21.42	8.58	3.496	
1,200.00	1,200.00	1,200.00	1,200.00	5.03	5.03	89.05	0.50	30.00	30.00	20.71	9.29	3.229	
1,300.00	1,300.00	1,300.00	1,300.00	5.40	5.40	89.05	0.50	30.00	30.00	20.00	10.00	3.000	
1,400.00	1,400.00	1,400.00	1,400.00	5.76	5.76	89.05	0.50	30.00	30.00	19.29	10.71	2.802	
1,500.00	1,500.00	1,500.00	1,500.00	6.12	6.12	89.05	0.50	30.00	30.00	18.58	11.42	2.627	
1,600.00	1,600.00	1,600.00	1,600.00	6.48	6.48	89.05	0.50	30.00	30.00	17.87	12.13	2.473	
1,700.00	1,700.00	1,700.00	1,700.00	6.84	6.84	89.05	0.50	30.00	30.00	17.16	12.84	2.336	
1,800.00	1,800.00	1,800.00	1,800.00	7.20	7.20	89.05	0.50	30.00	30.00	16.45	13.56	2.213	
1,900.00	1,900.00	1,900.00	1,900.00	7.56	7.56	89.05	0.50	30.00	30.00	15.73	14.27	2.103	
2,000.00	2,000.00	2,000.00	2,000.00	7.92	7.92	89.05	0.50	30.00	30.00	15.02	14.98	2.002	
2,100.00	2,100.00	2,100.00	2,100.00	8.28	8.28	89.05	0.50	30.00	30.00	14.31	15.70	1.911	
2,200.00	2,200.00	2,200.00	2,200.00	8.64	8.64	89.05	0.50	30.00	30.00	13.59	16.41	1.828	
2,300.00	2,300.00	2,300.00	2,300.00	9.00	9.00	89.05	0.50	30.00	30.00	12.88	17.13	1.752	
2,400.00	2,400.00	2,400.00	2,400.00	9.36	9.36	89.05	0.50	30.00	30.00	12.16	17.84	1.682	
2,500.00	2,500.00	2,500.00	2,500.00	9.72	9.72	89.05	0.50	30.00	30.00	11.45	18.56	1.617	CC, ES, SF

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Company: COG Operating LLC
 Project: Lea County, NM (NAD27 NME)
 Reference Site: Eider 23 Federal
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 Reference Well: 602H
 Well Error: 1.00 usft
 Reference Wellbore: OH
 Reference Design: Plan 1 09-25-19

Local Co-ordinate Reference: Well 602H
 TVD Reference: RKB @ 3597.30usft (Permitting)
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 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 2.00 sigma
 Database: USA Compass
 Offset TVD Reference: Offset Datum

Offset Design Eider 23 Federal - 702H - OH - Plan 1 09-25-19													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 1.00 usft
Reference		Offset		Semi Major Axis		Distance		Minimum Separation		Separation Factor		Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
2,600.00	2,599.98	2,598.96	2,598.94	10.15	10.12	89.45	1.00	31.63	31.60	12.33	19.27	1.640	
2,700.00	2,699.84	2,697.69	2,697.53	10.70	10.81	94.94	2.50	36.52	36.84	16.83	20.01	1.831	
2,800.00	2,799.45	2,795.93	2,795.41	11.25	11.11	101.23	4.98	44.60	45.56	24.89	20.67	2.204	
2,900.00	2,898.90	2,893.59	2,892.38	11.67	11.81	105.29	8.42	55.81	58.13	36.75	21.38	2.719	
3,000.00	2,898.36	2,890.57	2,888.17	12.01	12.11	106.32	12.79	70.06	73.59	51.43	22.16	3.320	
3,100.00	3,097.81	3,088.90	3,085.01	12.35	12.50	106.26	17.79	86.37	90.66	67.73	22.93	3.953	
3,200.00	3,197.26	3,187.43	3,182.04	12.69	12.81	106.21	22.81	102.73	107.76	84.11	23.64	4.558	
3,300.00	3,296.72	3,285.96	3,279.08	13.04	13.12	106.18	27.82	119.09	124.85	100.50	24.35	5.128	
3,400.00	3,396.17	3,384.48	3,376.11	13.39	13.44	106.15	32.84	135.45	141.94	116.88	25.05	5.685	
3,500.00	3,495.62	3,483.01	3,473.14	13.73	13.75	106.13	37.86	151.81	159.03	133.26	25.77	6.172	
3,600.00	3,595.07	3,581.54	3,570.17	14.08	14.07	106.11	42.88	168.17	176.12	149.64	26.48	6.651	
3,700.00	3,694.53	3,680.07	3,667.20	14.43	14.40	106.10	47.90	184.53	193.21	166.02	27.19	7.105	
3,800.00	3,793.98	3,778.60	3,764.23	14.78	14.72	106.09	52.91	200.89	210.30	182.39	27.91	7.534	
3,900.00	3,893.43	3,877.13	3,861.26	15.14	15.05	106.08	57.93	217.25	227.39	198.76	28.63	7.941	
4,000.00	3,892.89	3,875.68	3,858.29	15.49	15.38	106.07	62.95	233.61	244.48	215.13	29.36	8.328	
4,100.00	4,092.34	4,074.18	4,055.33	15.85	15.71	106.06	67.97	249.97	261.58	231.49	30.08	8.695	
4,200.00	4,191.79	4,172.71	4,152.36	16.20	16.04	106.05	72.98	266.33	278.67	247.86	30.81	9.045	
4,300.00	4,291.24	4,271.24	4,249.39	16.56	16.38	106.05	78.00	282.68	295.76	264.22	31.54	9.377	
4,400.00	4,390.70	4,369.77	4,348.42	16.91	16.71	106.04	83.02	299.04	312.85	280.58	32.27	9.695	
4,500.00	4,490.15	4,468.30	4,443.45	17.27	17.05	106.04	88.04	315.40	329.94	296.94	33.00	9.997	
4,600.00	4,589.60	4,566.83	4,540.48	17.63	17.40	106.04	93.05	331.76	347.03	313.30	33.74	10.287	
4,700.00	4,689.06	4,665.36	4,637.51	17.99	17.74	106.03	98.07	348.12	364.12	329.65	34.47	10.563	
4,800.00	4,788.51	4,763.89	4,734.55	18.35	18.09	106.03	103.09	364.48	381.21	346.00	35.21	10.827	
4,900.00	4,887.96	4,862.41	4,831.58	18.71	18.43	106.03	108.11	380.84	398.31	362.36	35.94	11.081	
5,000.00	4,987.41	4,960.94	4,928.61	19.07	18.79	106.02	113.12	397.20	415.40	378.71	36.68	11.324	
5,100.00	5,086.87	5,059.47	5,025.64	19.43	19.15	106.02	118.14	413.56	432.49	395.06	37.42	11.557	
5,200.00	5,186.32	5,158.00	5,122.87	19.79	19.51	106.02	123.16	429.92	449.58	411.41	38.16	11.780	
5,300.00	5,285.77	5,256.53	5,219.70	20.16	19.88	106.02	128.18	446.28	466.67	427.76	38.91	11.995	
5,400.00	5,385.23	5,355.06	5,318.73	20.52	20.26	106.01	133.20	462.64	483.76	444.11	39.65	12.201	
5,500.00	5,484.68	5,453.59	5,413.76	20.88	20.65	106.01	138.21	479.00	500.85	460.46	40.39	12.400	
5,600.00	5,584.13	5,552.11	5,510.80	21.25	21.04	106.01	143.23	495.36	517.94	476.81	41.14	12.591	
5,700.00	5,683.58	5,650.64	5,607.83	21.61	21.44	106.01	148.25	511.72	535.03	493.15	41.88	12.775	
5,800.00	5,783.04	5,749.17	5,704.86	21.98	21.84	106.01	153.27	528.08	552.13	509.50	42.63	12.952	
5,900.00	5,882.49	5,847.70	5,801.89	22.34	22.24	106.00	158.28	544.44	569.22	525.84	43.37	13.123	
6,000.00	5,981.94	5,946.23	5,898.92	22.71	22.65	106.00	163.30	560.80	586.31	542.19	44.12	13.288	
6,100.00	6,081.40	6,044.76	5,995.95	23.07	23.05	106.00	168.32	577.16	603.40	558.53	44.87	13.448	
6,200.00	6,180.85	6,143.29	6,092.98	23.44	23.46	106.03	173.34	593.52	620.49	574.87	45.62	13.602	
6,300.00	6,280.50	6,241.89	6,190.09	23.81	23.87	106.17	178.36	609.89	637.01	590.85	46.36	13.741	
6,400.00	6,380.37	6,340.52	6,287.22	24.25	24.28	106.00	183.38	626.27	652.59	605.50	47.09	13.858	
6,500.00	6,480.36	6,439.06	6,384.27	24.65	24.69	107.35	188.40	642.63	667.31	619.49	47.82	13.955	
6,600.00	6,580.36	6,537.54	6,481.25	24.99	25.10	106.53	193.41	658.98	681.77	633.24	48.54	14.046	
6,700.00	6,680.36	6,636.03	6,578.24	25.33	25.51	105.74	198.43	675.33	696.38	647.11	49.28	14.136	
6,800.00	6,780.36	6,734.51	6,675.22	25.68	25.92	104.99	203.44	691.68	711.10	661.12	49.98	14.226	
6,900.00	6,880.36	6,832.99	6,772.20	26.03	26.34	104.26	208.46	708.03	725.94	675.24	50.71	14.317	
7,000.00	6,980.36	6,931.47	6,869.19	26.38	26.75	103.57	213.48	724.39	740.90	689.47	51.43	14.406	
7,100.00	7,080.36	7,029.95	6,966.17	26.73	27.16	102.90	218.49	740.74	755.95	703.80	52.15	14.496	
7,200.00	7,180.36	7,128.43	7,063.15	27.08	27.58	102.26	223.51	757.09	771.10	718.23	52.87	14.585	
7,300.00	7,280.36	7,226.91	7,160.14	27.43	27.99	101.64	228.52	773.44	786.35	732.76	53.59	14.673	
7,400.00	7,380.36	7,325.39	7,257.12	27.78	28.41	101.05	233.54	789.79	801.68	747.37	54.31	14.761	
7,500.00	7,480.36	7,423.87	7,354.11	28.13	28.82	100.47	238.55	806.14	817.09	762.06	55.03	14.848	
7,600.00	7,580.36	7,522.35	7,451.09	28.48	29.24	99.92	243.57	822.49	832.58	776.83	55.75	14.934	
7,700.00	7,680.36	7,620.83	7,548.07	28.83	29.65	99.39	248.58	838.85	848.14	791.87	56.47	15.019	

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Offset Design Eider 23 Federal - 702H - OH - Plan 1 09-25-19													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 1.00 usft
Reference		Offset		Semi Major Axis		Distance		Minimum Separation		Warning			
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N-S (usft)	Offset Wellbore Centre +E-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
7,800.00	7,780.36	7,719.31	7,645.06	29.18	30.07	98.88	253.80	855.20	883.77	808.58	57.19	15.103	
7,900.00	7,880.36	7,817.79	7,742.04	29.53	30.48	98.39	258.61	871.55	879.47	821.56	57.91	15.187	
8,000.00	7,980.36	7,916.27	7,839.02	29.89	30.90	97.91	263.63	887.90	895.23	836.80	58.63	15.269	
8,100.00	8,080.36	8,014.75	7,936.01	30.24	31.31	97.45	268.64	904.25	911.04	851.69	59.35	15.351	
8,200.00	8,180.36	8,113.23	8,032.99	30.59	31.73	97.01	273.66	920.60	926.91	866.85	60.07	15.431	
8,300.00	8,280.36	8,211.71	8,129.98	30.94	32.15	96.58	278.67	936.96	942.84	882.05	60.79	15.510	
8,400.00	8,380.36	8,310.19	8,228.96	31.29	32.56	96.16	283.69	953.31	958.81	897.31	61.51	15.589	
8,500.00	8,480.36	8,408.67	8,323.94	31.64	32.98	95.76	288.70	969.66	974.83	912.61	62.23	15.668	
8,600.00	8,580.36	8,507.15	8,420.93	32.00	33.40	95.37	293.72	986.01	990.90	927.98	62.95	15.742	
8,700.00	8,680.36	8,605.63	8,517.91	32.35	33.82	95.00	298.73	1,002.36	1,007.01	943.35	63.66	15.817	
8,800.00	8,780.36	8,704.11	8,614.89	32.70	34.23	94.63	303.75	1,018.71	1,023.16	958.78	64.38	15.892	
8,900.00	8,880.36	8,802.59	8,711.88	33.05	34.65	94.28	308.76	1,035.06	1,039.36	974.25	65.10	15.965	
9,000.00	8,980.36	8,901.07	8,808.86	33.41	35.07	93.94	313.78	1,051.42	1,055.58	989.78	65.82	16.037	
9,100.00	9,080.36	8,999.55	8,905.85	33.76	35.49	93.61	318.79	1,067.77	1,071.85	1,005.31	66.54	16.108	
9,200.00	9,180.36	9,098.03	9,002.83	34.11	35.91	93.28	323.81	1,084.12	1,088.15	1,020.88	67.26	16.178	
9,300.00	9,280.36	9,196.51	9,099.81	34.46	36.32	92.97	328.82	1,100.47	1,104.48	1,036.49	67.98	16.246	
9,400.00	9,380.36	9,294.99	9,198.80	34.82	36.74	92.67	333.84	1,116.82	1,120.84	1,052.14	68.70	16.314	
9,500.00	9,480.36	9,393.47	9,293.78	35.17	37.16	92.37	338.86	1,133.17	1,137.23	1,067.81	69.42	16.381	
9,600.00	9,580.36	9,491.95	9,390.76	35.52	37.58	92.09	343.87	1,149.53	1,153.65	1,083.51	70.14	16.447	
9,700.00	9,680.36	9,590.44	9,487.75	35.88	38.00	91.81	348.89	1,165.88	1,170.10	1,099.24	70.88	16.512	
9,800.00	9,780.36	9,688.92	9,584.73	36.23	38.42	91.54	353.90	1,182.23	1,186.57	1,114.99	71.58	16.576	
9,900.00	9,880.36	9,787.40	9,681.72	36.59	38.84	91.27	358.92	1,198.58	1,203.07	1,130.77	72.30	16.639	
10,000.00	9,980.36	9,885.88	9,778.70	36.94	39.25	91.02	363.93	1,214.83	1,219.59	1,146.57	73.02	16.701	
10,100.00	10,080.36	9,984.36	9,875.68	37.29	39.67	90.77	368.95	1,231.28	1,236.14	1,162.40	73.75	16.762	
10,200.00	10,180.36	10,082.84	9,972.67	37.65	40.09	90.53	373.96	1,247.64	1,252.71	1,178.24	74.47	16.822	
10,300.00	10,280.36	10,181.32	10,069.65	38.00	40.51	90.29	378.98	1,263.99	1,269.30	1,194.11	75.19	16.882	
10,400.00	10,380.36	10,279.80	10,166.63	38.36	40.93	90.06	383.99	1,280.34	1,285.91	1,210.00	75.91	16.940	
10,500.00	10,480.36	10,406.60	10,291.64	38.71	41.46	89.78	389.24	1,300.70	1,302.14	1,225.29	76.65	16.994	
10,600.00	10,580.36	10,583.14	10,468.85	39.06	42.16	89.51	396.49	1,321.07	1,313.72	1,235.61	77.11	16.818	
10,700.00	10,680.36	10,761.66	10,645.03	39.42	42.79	89.38	399.58	1,331.15	1,319.38	1,240.19	77.19	16.661	
10,800.00	10,780.36	10,896.99	10,780.36	39.77	43.23	89.37	399.90	1,332.22	1,319.98	1,240.03	79.95	16.510	
10,900.00	10,880.36	10,998.99	10,880.36	40.13	43.54	89.37	399.90	1,332.22	1,319.98	1,239.35	80.63	16.370	
11,000.00	10,980.36	11,096.99	10,980.36	40.48	43.85	89.37	399.90	1,332.22	1,319.98	1,238.66	81.32	16.232	
11,100.00	11,080.36	11,196.99	11,080.36	40.84	44.17	89.37	399.90	1,332.22	1,319.98	1,237.98	82.01	16.096	
11,200.00	11,180.36	11,296.99	11,180.36	41.19	44.49	89.37	399.90	1,332.22	1,319.98	1,237.29	82.69	15.963	
11,300.00	11,280.36	11,396.99	11,280.36	41.55	44.80	89.37	399.90	1,332.22	1,319.98	1,236.60	83.38	15.831	
11,400.00	11,380.36	11,496.99	11,380.36	41.90	45.12	89.37	399.90	1,332.22	1,319.98	1,235.82	84.07	15.702	
11,500.00	11,480.36	11,596.99	11,480.36	42.26	45.44	89.37	399.90	1,332.22	1,319.98	1,235.23	84.75	15.575	
11,600.00	11,580.36	11,696.99	11,580.36	42.61	45.76	89.37	399.90	1,332.22	1,319.98	1,234.54	85.44	15.449	
11,700.00	11,680.36	11,796.99	11,680.36	42.97	46.08	89.37	399.90	1,332.22	1,319.98	1,233.85	86.13	15.328	
11,700.83	11,681.18	11,797.82	11,681.18	42.97	46.08	-90.39	399.90	1,332.22	1,319.98	1,233.85	86.13	15.325	
11,800.00	11,780.28	11,896.92	11,780.28	43.31	46.40	-90.50	399.90	1,332.22	1,320.00	1,233.21	86.79	15.209	
11,900.00	11,878.53	11,995.17	11,878.53	43.72	46.71	-91.23	399.90	1,332.22	1,320.28	1,232.88	87.40	15.106	
12,000.00	11,972.18	12,099.05	11,981.91	44.10	47.10	-92.36	391.31	1,332.25	1,321.15	1,233.21	87.94	15.023	
12,100.00	12,058.39	12,209.00	12,087.74	44.43	47.53	-93.45	362.09	1,332.38	1,322.50	1,234.10	88.40	14.960	
12,200.00	12,134.52	12,325.32	12,191.43	44.70	47.91	-94.47	309.83	1,332.60	1,324.18	1,235.41	88.77	14.917	
12,300.00	12,198.28	12,448.17	12,287.12	44.90	48.20	-95.36	233.15	1,332.92	1,325.95	1,236.90	89.05	14.890	
12,400.00	12,247.71	12,577.15	12,367.59	45.03	48.37	-96.08	132.71	1,333.35	1,327.54	1,238.29	89.25	14.874	
12,500.00	12,281.33	12,711.06	12,425.23	45.12	48.45	-96.55	12.18	1,333.86	1,328.68	1,239.26	89.42	14.858	
12,600.00	12,298.10	12,847.90	12,453.66	45.18	48.48	-96.75	-121.34	1,334.42	1,329.16	1,239.54	89.62	14.831	
12,700.00	12,299.94	12,962.32	12,455.88	45.23	48.53	-96.74	-235.69	1,334.90	1,329.13	1,239.25	89.88	14.787	
12,800.00	12,299.83	13,062.32	12,455.69	45.31	48.61	-96.73	-335.68	1,335.33	1,329.12	1,238.90	90.22	14.732	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
Reference Site: Eider 23 Federal
Site Error: 0.00 usft
Reference Well: 602H
Well Error: 1.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 09-25-19

Local Co-ordinate Reference: Well 602H
TVD Reference: RKB @ 3597.30usft (Permitting)
MD Reference: RKB @ 3597.30usft (Permitting)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: USA Compass
Offset TVD Reference: Offset Datum

Offset Design Eider 23 Federal - 702H - OH - Plan 1 09-25-19													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 1.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
12,900.00	12,299.72	13,162.32	12,455.49	45.42	48.74	-96.73	-435.68	1,335.75	1,329.11	1,238.48	90.65	14.662	
13,000.00	12,299.81	13,262.32	12,455.30	45.58	48.91	-96.73	-535.68	1,338.17	1,329.10	1,237.93	91.17	14.578	
13,100.00	12,299.50	13,362.32	12,455.11	45.79	49.14	-96.72	-635.68	1,336.60	1,329.09	1,237.32	91.77	14.482	
13,200.00	12,299.39	13,462.32	12,454.91	46.07	49.42	-96.72	-735.68	1,337.02	1,329.08	1,236.62	92.46	14.375	
13,300.00	12,299.28	13,562.32	12,454.72	46.41	49.76	-96.72	-835.68	1,337.44	1,329.07	1,235.84	93.23	14.256	
13,400.00	12,299.17	13,662.32	12,454.53	46.81	50.14	-96.71	-935.68	1,337.87	1,329.06	1,234.98	94.08	14.127	
13,500.00	12,299.06	13,762.32	12,454.34	47.26	50.56	-96.71	-1,035.68	1,338.29	1,329.05	1,234.04	95.01	13.988	
13,600.00	12,298.95	13,862.32	12,454.14	47.76	51.03	-96.71	-1,135.68	1,338.71	1,329.04	1,233.03	96.02	13.842	
13,700.00	12,298.84	13,962.32	12,453.95	48.29	51.54	-96.70	-1,235.67	1,339.13	1,329.03	1,231.94	97.10	13.688	
13,800.00	12,298.73	14,062.32	12,453.76	48.87	52.09	-96.70	-1,335.67	1,339.56	1,329.02	1,230.78	98.25	13.527	
13,900.00	12,298.62	14,162.32	12,453.56	49.49	52.67	-96.70	-1,435.67	1,339.98	1,329.01	1,229.55	99.47	13.362	
14,000.00	12,298.51	14,262.32	12,453.37	50.14	53.29	-96.69	-1,535.67	1,340.40	1,328.00	1,228.25	100.75	13.191	
14,100.00	12,298.40	14,362.32	12,453.18	50.83	53.94	-96.69	-1,635.67	1,340.83	1,328.99	1,226.89	102.10	13.016	
14,200.00	12,298.29	14,462.32	12,452.98	51.54	54.62	-96.68	-1,735.67	1,341.25	1,328.98	1,225.47	103.51	12.839	
14,300.00	12,298.18	14,562.32	12,452.79	52.29	55.33	-96.68	-1,835.67	1,341.67	1,328.97	1,223.99	104.98	12.659	
14,400.00	12,298.07	14,662.32	12,452.60	53.07	56.07	-96.68	-1,935.67	1,342.10	1,328.96	1,222.48	106.51	12.478	
14,500.00	12,297.95	14,762.32	12,452.40	53.87	56.83	-96.67	-2,035.67	1,342.52	1,328.96	1,220.87	108.09	12.295	
14,600.00	12,297.84	14,862.32	12,452.21	54.71	57.63	-96.67	-2,135.66	1,342.94	1,328.95	1,219.22	109.72	12.112	
14,700.00	12,297.73	14,962.32	12,452.02	55.56	58.44	-96.67	-2,235.66	1,343.38	1,328.94	1,217.53	111.40	11.929	
14,800.00	12,297.62	15,062.32	12,451.82	56.44	59.28	-96.66	-2,335.66	1,343.79	1,328.93	1,215.79	113.13	11.747	
14,900.00	12,297.51	15,162.32	12,451.63	57.34	60.15	-96.66	-2,435.66	1,344.21	1,328.92	1,214.01	114.91	11.565	
15,000.00	12,297.40	15,262.32	12,451.44	58.27	61.03	-96.66	-2,535.66	1,344.63	1,328.91	1,212.18	116.72	11.385	
15,100.00	12,297.29	15,362.32	12,451.24	59.21	61.94	-96.65	-2,635.66	1,345.06	1,328.90	1,210.32	118.58	11.207	
15,200.00	12,297.18	15,462.32	12,451.05	60.18	62.86	-96.65	-2,735.66	1,345.48	1,328.89	1,208.41	120.48	11.030	
15,300.00	12,297.07	15,562.32	12,450.86	61.16	63.81	-96.65	-2,835.66	1,345.90	1,328.88	1,206.46	122.41	10.856	
15,400.00	12,296.96	15,662.32	12,450.67	62.16	64.77	-96.64	-2,935.66	1,346.33	1,328.87	1,204.48	124.38	10.684	
15,500.00	12,296.85	15,762.32	12,450.47	63.18	65.75	-96.64	-3,035.65	1,346.75	1,328.86	1,202.47	126.39	10.514	
15,600.00	12,296.74	15,862.32	12,450.28	64.21	66.74	-96.63	-3,135.65	1,347.17	1,328.85	1,200.42	128.43	10.347	
15,700.00	12,296.63	15,962.32	12,450.09	65.26	67.76	-96.63	-3,235.65	1,347.59	1,328.84	1,198.35	130.49	10.183	
15,800.00	12,296.52	16,062.32	12,449.89	66.33	68.78	-96.63	-3,335.65	1,348.02	1,328.83	1,196.24	132.59	10.022	
15,900.00	12,296.41	16,162.32	12,449.70	67.40	69.82	-96.62	-3,435.65	1,348.44	1,328.82	1,194.10	134.72	9.864	
16,000.00	12,296.30	16,262.32	12,449.51	68.50	70.88	-96.62	-3,535.65	1,348.86	1,328.81	1,191.94	136.87	9.709	
16,100.00	12,296.19	16,362.32	12,449.31	69.60	71.95	-96.62	-3,635.65	1,349.29	1,328.80	1,189.78	139.05	9.557	
16,200.00	12,296.08	16,462.32	12,449.12	70.71	73.03	-96.61	-3,735.65	1,349.71	1,328.79	1,187.54	141.25	9.408	
16,300.00	12,295.97	16,562.32	12,448.93	71.84	74.12	-96.61	-3,835.65	1,350.13	1,328.78	1,185.31	143.47	9.262	
16,400.00	12,295.86	16,662.32	12,448.73	72.98	75.22	-96.61	-3,935.64	1,350.56	1,328.77	1,183.05	145.72	9.119	
16,500.00	12,295.75	16,762.32	12,448.54	74.13	76.34	-96.60	-4,035.64	1,350.98	1,328.76	1,180.77	147.99	8.979	
16,600.00	12,295.64	16,862.32	12,448.35	75.28	77.47	-96.60	-4,135.64	1,351.40	1,328.75	1,178.48	150.28	8.842	
16,700.00	12,295.53	16,962.32	12,448.15	76.45	78.60	-96.60	-4,235.64	1,351.82	1,328.74	1,176.16	152.58	8.708	
16,800.00	12,295.42	17,062.32	12,447.96	77.63	79.75	-96.59	-4,335.64	1,352.25	1,328.73	1,173.82	154.91	8.577	
16,900.00	12,295.31	17,162.32	12,447.77	78.81	80.90	-96.59	-4,435.64	1,352.67	1,328.72	1,171.47	157.25	8.450	
17,000.00	12,295.20	17,262.32	12,447.57	80.01	82.06	-96.59	-4,535.64	1,353.09	1,328.72	1,169.10	159.62	8.324	
17,100.00	12,295.08	17,362.32	12,447.38	81.21	83.24	-96.58	-4,635.64	1,353.52	1,328.71	1,166.71	161.99	8.202	
17,200.00	12,294.97	17,462.32	12,447.19	82.42	84.42	-96.58	-4,735.64	1,353.94	1,328.70	1,164.31	164.38	8.083	
17,300.00	12,294.86	17,562.32	12,446.99	83.63	85.60	-96.57	-4,835.63	1,354.36	1,328.69	1,161.90	166.79	7.968	
17,400.00	12,294.75	17,662.32	12,446.80	84.85	86.80	-96.57	-4,935.63	1,354.79	1,328.68	1,159.47	169.21	7.852	
17,500.00	12,294.64	17,762.32	12,446.61	86.08	88.00	-96.57	-5,035.63	1,355.21	1,328.67	1,157.02	171.65	7.741	
17,600.00	12,294.53	17,862.32	12,446.42	87.32	89.21	-96.56	-5,135.63	1,355.63	1,328.66	1,154.56	174.09	7.632	
17,700.00	12,294.42	17,962.32	12,446.22	88.56	90.43	-96.56	-5,235.63	1,356.05	1,328.65	1,152.09	176.55	7.525	
17,800.00	12,294.31	18,062.32	12,446.03	89.81	91.65	-96.56	-5,335.63	1,356.48	1,328.64	1,149.61	179.03	7.421	
17,900.00	12,294.20	18,162.32	12,445.84	91.06	92.88	-96.55	-5,435.63	1,356.90	1,328.63	1,147.12	181.51	7.320	
18,000.00	12,294.09	18,262.32	12,445.64	92.32	94.11	-96.55	-5,535.63	1,357.32	1,328.62	1,144.62	184.00	7.221	

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation



Anticollision Report



Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
Reference Site: Eider 23 Federal
Site Error: 0.00 usft
Reference Well: 602H
Well Error: 1.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 09-25-19

Local Co-ordinate Reference: Well 602H
TVD Reference: RKB @ 3597.30usft (Permitting)
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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: USA Compass
Offset TVD Reference: Offset Datum

Offset Design Eider 23 Federal - 702H - OH - Plan 1 09-25-19													Offset Site Error: 0.00 usft
Survey Program: 0-MWD+HRGM													Offset Well Error: 1.00 usft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	
18,100.00	12,293.98	18,362.32	12,445.45	93.58	95.35	-96.55	-5,635.63	1,357.75	1,328.61	1,142.10	186.51	7.124	
18,200.00	12,293.87	18,462.32	12,445.26	94.85	96.60	-96.54	-5,735.62	1,358.17	1,328.60	1,139.58	189.02	7.029	
18,300.00	12,293.76	18,562.32	12,445.06	96.13	97.85	-96.54	-5,835.62	1,358.59	1,328.59	1,137.04	191.55	6.936	
18,400.00	12,293.65	18,662.32	12,444.87	97.40	99.10	-96.54	-5,935.62	1,359.02	1,328.58	1,134.50	194.08	6.845	
18,500.00	12,293.54	18,762.32	12,444.68	98.69	100.36	-96.53	-6,035.62	1,359.44	1,328.57	1,131.95	196.62	6.757	
18,600.00	12,293.43	18,862.32	12,444.48	99.97	101.63	-96.53	-6,135.62	1,359.86	1,328.56	1,129.39	199.18	6.670	
18,700.00	12,293.32	18,962.32	12,444.29	101.26	102.90	-96.52	-6,235.62	1,360.28	1,328.55	1,126.82	201.74	6.586	
18,800.00	12,293.21	19,062.32	12,444.10	102.56	104.17	-96.52	-6,335.62	1,360.71	1,328.54	1,124.24	204.30	6.503	
18,900.00	12,293.10	19,162.32	12,443.90	103.85	105.45	-96.52	-6,435.62	1,361.13	1,328.54	1,121.68	206.88	6.422	
19,000.00	12,292.99	19,262.31	12,443.71	105.16	106.73	-96.51	-6,535.62	1,361.55	1,328.53	1,119.06	209.46	6.343	
19,100.00	12,292.88	19,362.31	12,443.52	106.46	108.02	-96.51	-6,635.61	1,361.98	1,328.52	1,116.46	212.05	6.265	
19,200.00	12,292.77	19,462.31	12,443.32	107.77	109.31	-96.51	-6,735.61	1,362.40	1,328.51	1,113.86	214.65	6.189	
19,300.00	12,292.66	19,562.31	12,443.13	109.08	110.60	-96.50	-6,835.61	1,362.82	1,328.50	1,111.25	217.25	6.115	
19,400.00	12,292.55	19,662.31	12,442.94	110.39	111.90	-96.50	-6,935.61	1,363.25	1,328.49	1,108.63	219.86	6.042	
19,500.00	12,292.44	19,762.31	12,442.75	111.71	113.20	-96.50	-7,035.61	1,363.67	1,328.48	1,106.00	222.48	5.971	
19,600.00	12,292.33	19,862.31	12,442.55	113.03	114.50	-96.49	-7,135.61	1,364.09	1,328.47	1,103.37	225.10	5.902	
19,700.00	12,292.22	19,962.31	12,442.36	114.38	115.81	-96.49	-7,235.61	1,364.51	1,328.46	1,100.73	227.73	5.834	
19,800.00	12,292.10	20,062.31	12,442.17	115.68	117.12	-96.49	-7,335.61	1,364.94	1,328.45	1,098.09	230.36	5.767	
19,883.34	12,292.01	20,145.66	12,442.01	116.79	118.21	-96.48	-7,418.95	1,365.29	1,328.44	1,095.88	232.56	5.712	
19,894.60	12,292.00	20,148.11	12,442.00	116.94	118.24	-96.48	-7,421.40	1,365.30	1,328.47	1,095.66	232.81	5.706	

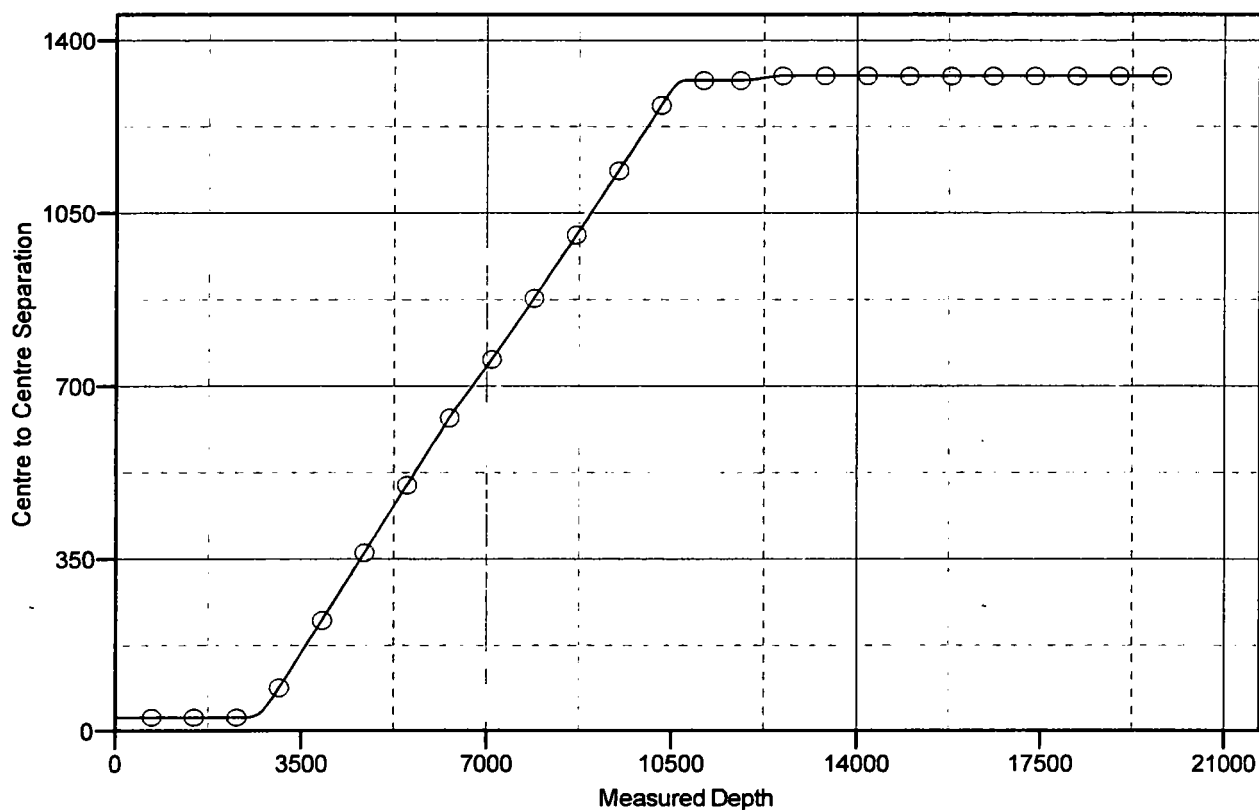
Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
Reference Site: Eider 23 Federal
Site Error: 0.00 usft
Reference Well: 602H
Well Error: 1.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 09-25-19

Local Co-ordinate Reference: Well 602H
TVD Reference: RKB @ 3597.30usft (Permitting)
MD Reference: RKB @ 3597.30usft (Permitting)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: USA Compass
Offset TVD Reference: Offset Datum

Reference Depths are relative to RKB @ 3597.30usft (Permitting)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 19' 60.000000 W

Coordinates are relative to: 602H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.37°

Ladder Plot



LEGEND

—○— 702H, OH, Plan 109-25-19 V0



Anticollision Report



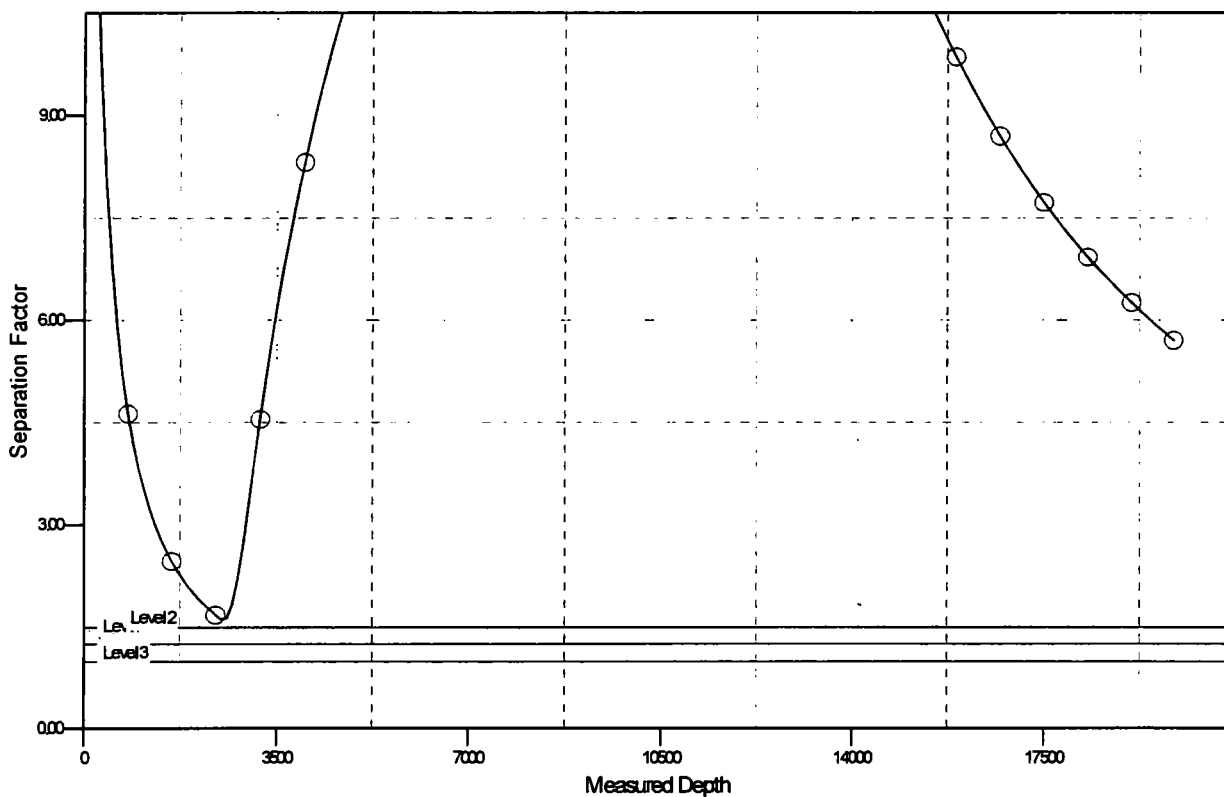
Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
Reference Site: Eider 23 Federal
Site Error: 0.00 usft
Reference Well: 602H
Well Error: 1.00 usft
Reference Wellbore: OH
Reference Design: Plan 1 09-25-19

Local Co-ordinate Reference: Well 602H
TVD Reference: RKB @ 3597.30usft (Permitting)
MD Reference: RKB @ 3597.30usft (Permitting)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: USA Compass
Offset TVD Reference: Offset Datum

Reference Depths are relative to RKB @ 3597.30usft (Permitting)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 19' 60.000000 W

Coordinates are relative to: 602H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.37°

Separation Factor Plot



LEGEND

702H, OH, Plan 109-25-19 V0



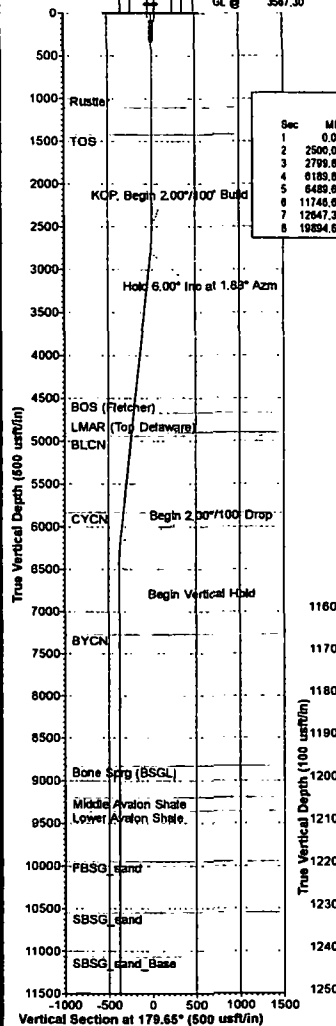
Project: Lea County, NM (NAD27 NME)
Site: Elder 23 Federal
Well: 602H
Wellbore: OH
Design: Plan 1 09-25-19
Rig: Permitting



PHOENIX
TECHNOLOGY SERVICES



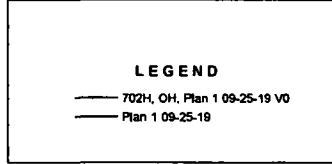
Azimuths to Grid North
True North: -0.37°
Magnetic North: 6.20°
Magnetic Field
Strength: 47824.1nT
Dip Angle: 59.84°
Date: 11/24/2019
Model: MVHD



WELL DETAILS									

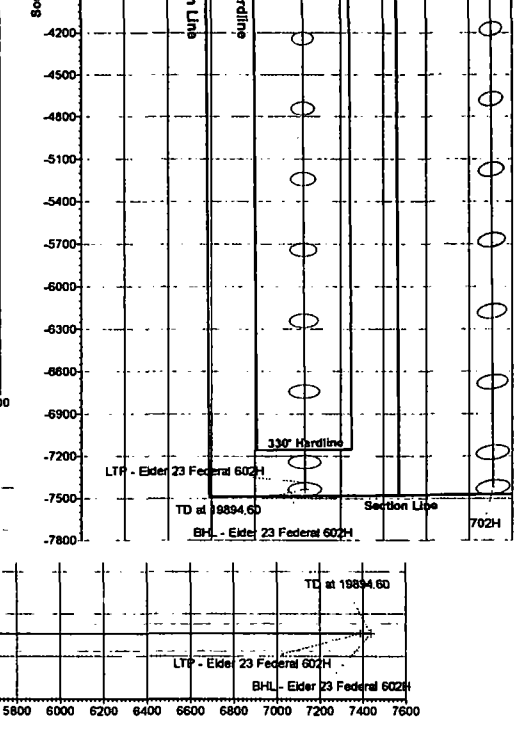
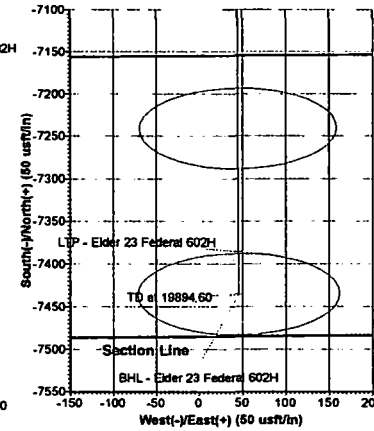
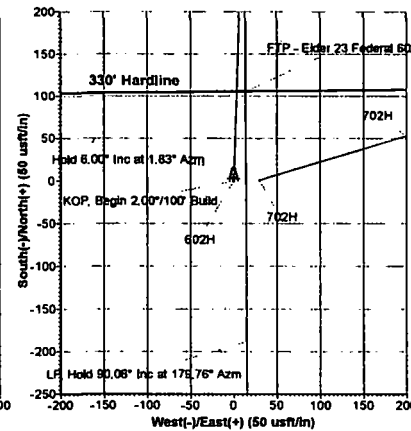
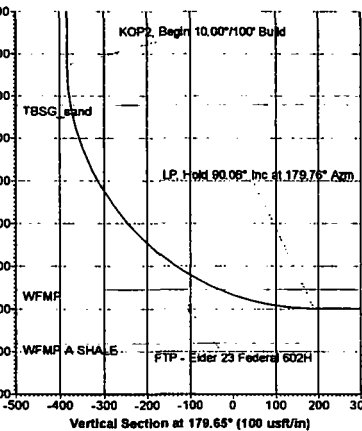
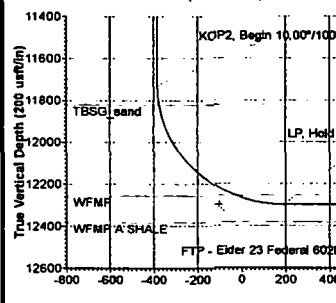
SECTION DETAILS										
D	Inc	Azi	TVD	+N/8	+E/W	Dleg	TFace	VFace	Target	Annotation
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
0	0.00	0.00	2500.00	0.00	0.00	0.00	0.00	0.00	0.00	KOP, Begin 2.00°/100' Build
2	0.00	1.83	2799.28	15.87	0.50	2.00	1.83	-15.86		Hold 6.00° Inc at 1.83° Azm
3	0.00	1.83	6170.72	389.83	11.81	0.00	0.00	-389.55		Begin 2.00°/100' Drop
4	0.00	0.00	6470.00	385.30	12.32	2.00	180.00	-385.22		Begin Vertical Hold
5	0.00	0.00	11727.64	385.30	12.32	0.00	0.00	-385.22		KOP2, Begin 10.00°/100' Build
6	90.06	179.76	12300.00	-188.29	14.74	10.00	179.76	188.37		LP, Hold 90.06° Inc at 179.76° Azm
7	90.06	179.76	12292.00	-7435.50	45.40	0.00	0.00	7435.84	BHL - Elder 23 Federal 602H	TD at 18894.60

DESIGN TARGET DETAILS									
Name	TVD	+N/8	+E/W	Northing	Easting	Latitude	Longitude		
BHL - Elder 23 Federal 602H	12292.00	-7435.50	45.40	433026.50	713021.00	32° 11' 10.038250 N	103° 38' 34.114342 W		
LTP - Elder 23 Federal 602H	12292.00	-7385.50	45.20	433078.50	713821.40	32° 11' 10.533048 N	103° 38' 34.112934 W		
FTP - Elder 23 Federal 602H	12300.00	105.20	13.50	440587.20	713589.70	32° 12' 33.680798 N	103° 38' 33.921968 W		



Map System: US State Plane 1927 (Exact contour)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1858
Zone Name: New Mexico East 3001
Local Origin: Well 602H, Grid North
Latitude: 32° 12' 32.620628 N
Longitude: 103° 38' 34.086957 W
Grid East: 713578.20
Grid North: 440462.00
Scale Factor: 1.000
Geomagnetic Model: MVHD
Sample Date: 24-Nov-19
Magnetic Declination: 6.57°
Dip Angle from Horizontal: 59.84°
Magnetic Field Strength: 47824.05142320nT
To convert a Magnetic Direction to a Grid Direction, Add 8.21°
To convert a Magnetic Direction to a True Direction, Add 6.57° East
To convert a True Direction to a Grid Direction, Subtract 0.37°

FORMATION TOP DETAILS				
TVD	MD	Formation	DipAngle	DipDir
1110.30	1110.30	Rustite	-0.06	178.65
1430.30	1430.30	TOS	-0.06	178.65
4876.52	4887.40	BOS (Fletcher)	-0.06	178.65
4808.65	4818.69	LMAR (Top Delaware)	-0.06	178.65
4943.65	4955.90	BLCN	-0.06	178.65
5638.65	5655.92	CYCN	-0.06	178.65
7271.70	7291.35	BYCN	-0.06	178.65
8829.70	8849.35	Bone Sprg (BSGL)	-0.06	178.65
9189.70	9219.35	Middle Avellan Shale	-0.06	178.65
9360.70	9380.35	Lower Avellan Shale	-0.06	178.65
9950.70	9970.35	PBSG sand	-0.06	178.65
10548.70	10568.35	SBSG sand	-0.06	178.65
11071.70	11091.35	SBSG sand Base	-0.06	178.65
11821.70	11841.77	TBSG sand	-0.06	178.65
12255.34	12418.98	WFMP	-0.06	178.65





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COG Operating LLC

Lea County, NM (NAD27 NME)

Eider 23 Federal

602H

OH

Plan: Plan 1 09-25-19

Standard Planning Report

25 September, 2019





Planning Report



Database: USA Compass
Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
Site: Eider 23 Federal
Well: 602H
Wellbore: OH
Design: Plan 1 09-25-19

Local Co-ordinate Reference: Well 602H
TVD Reference: RKB @ 3597.30usft (Permitting)
MD Reference: RKB @ 3597.30usft (Permitting)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	Lea County, NM (NAD27 NME)		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site		Eider 23 Federal				
Site Position:		Northing:	440,462.00 usft	Latitude:	32° 12' 32.620628 N	
From:	Map	Easting:	713,576.20 usft	Longitude:	103° 38' 34.086957 W	
Position Uncertainty:		0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.37 °

Well	602H					
Well Position	+N-S	0.00 usft	Northing:	440,462.00 usft	Latitude:	32° 12' 32.620628 N
	+E-W	0.00 usft	Easting:	713,576.20 usft	Longitude:	103° 38' 34.086957 W
Position Uncertainty		1.00 usft	Wellhead Elevation:		Ground Level:	3,567.30 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	MVHD	11/24/2019	6.57	59.84	47,824.05142320

Design	Plan 1 09-25-19			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)
	0.00	0.00	0.00	179.65

Plan Survey Tool Program Date 9/25/2019

Depth From (usft)	Depth To (usft)	Survey (Wellbore)	Tool Name	Remarks
1	0.00	19,894.60 Plan 1 09-25-19 (OH)	MWD+HRGM	
			OWSG MWD + HRGM	

Plan Sections										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,799.82	6.00	1.83	2,799.28	15.67	0.50	2.00	2.00	0.00	1.83	
6,189.82	6.00	1.83	6,170.72	369.63	11.81	0.00	0.00	0.00	0.00	
6,489.64	0.00	0.00	6,470.00	385.30	12.32	2.00	-2.00	0.00	180.00	
11,746.69	0.00	0.00	11,727.04	385.30	12.32	0.00	0.00	0.00	0.00	
12,647.32	90.06	179.76	12,300.00	-188.29	14.74	10.00	10.00	19.96	179.76	
19,894.60	90.06	179.76	12,292.00	-7,435.50	45.40	0.00	0.00	0.00	0.00	BHL - Eider 23 Federal



Planning Report



Database: USA Compass
Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
Site: Eider 23 Federal
Well: 602H
Wellbore: OH
Design: Plan 1 09-25-19

Local Co-ordinate Reference: Well 602H
TVD Reference: RKB @ 3597.30usft (Permitting)
MD Reference: RKB @ 3597.30usft (Permitting)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP, Begin 2.00°/100' Build									
2,600.00	2.00	1.83	2,599.98	1.74	0.06	-1.74	2.00	2.00	0.00
2,700.00	4.00	1.83	2,699.84	6.97	0.22	-6.97	2.00	2.00	0.00
2,799.82	6.00	1.83	2,799.28	15.67	0.50	-15.66	2.00	2.00	0.00
Hold 6.00° Inc at 1.83° Azm									
2,800.00	6.00	1.83	2,799.45	15.69	0.50	-15.68	0.00	0.00	0.00
2,900.00	6.00	1.83	2,898.90	26.13	0.84	-26.12	0.00	0.00	0.00
3,000.00	6.00	1.83	2,998.36	36.57	1.17	-36.56	0.00	0.00	0.00
3,100.00	6.00	1.83	3,097.81	47.01	1.50	-47.00	0.00	0.00	0.00
3,200.00	6.00	1.83	3,197.26	57.45	1.84	-57.44	0.00	0.00	0.00
3,300.00	6.00	1.83	3,296.72	67.89	2.17	-67.88	0.00	0.00	0.00
3,400.00	6.00	1.83	3,396.17	78.33	2.50	-78.32	0.00	0.00	0.00
3,500.00	6.00	1.83	3,495.62	88.78	2.84	-88.76	0.00	0.00	0.00
3,600.00	6.00	1.83	3,595.07	99.22	3.17	-99.20	0.00	0.00	0.00
3,700.00	6.00	1.83	3,694.53	109.66	3.50	-109.64	0.00	0.00	0.00
3,800.00	6.00	1.83	3,793.98	120.10	3.84	-120.07	0.00	0.00	0.00
3,900.00	6.00	1.83	3,893.43	130.54	4.17	-130.51	0.00	0.00	0.00
4,000.00	6.00	1.83	3,992.89	140.98	4.51	-140.95	0.00	0.00	0.00
4,100.00	6.00	1.83	4,092.34	151.42	4.84	-151.39	0.00	0.00	0.00
4,200.00	6.00	1.83	4,191.79	161.87	5.17	-161.83	0.00	0.00	0.00
4,300.00	6.00	1.83	4,291.24	172.31	5.51	-172.27	0.00	0.00	0.00
4,400.00	6.00	1.83	4,390.70	182.75	5.84	-182.71	0.00	0.00	0.00
4,500.00	6.00	1.83	4,490.15	193.19	6.17	-193.15	0.00	0.00	0.00
4,600.00	6.00	1.83	4,589.60	203.63	6.51	-203.59	0.00	0.00	0.00
4,700.00	6.00	1.83	4,689.06	214.07	6.84	-214.03	0.00	0.00	0.00
4,800.00	6.00	1.83	4,788.51	224.51	7.18	-224.47	0.00	0.00	0.00
4,900.00	6.00	1.83	4,887.96	234.96	7.51	-234.91	0.00	0.00	0.00
5,000.00	6.00	1.83	4,987.41	245.40	7.84	-245.34	0.00	0.00	0.00
5,100.00	6.00	1.83	5,086.87	255.84	8.18	-255.78	0.00	0.00	0.00
5,200.00	6.00	1.83	5,186.32	266.28	8.51	-266.22	0.00	0.00	0.00
5,300.00	6.00	1.83	5,285.77	276.72	8.84	-276.66	0.00	0.00	0.00
5,400.00	6.00	1.83	5,385.23	287.16	9.18	-287.10	0.00	0.00	0.00
5,500.00	6.00	1.83	5,484.68	297.60	9.51	-297.54	0.00	0.00	0.00
5,600.00	6.00	1.83	5,584.13	308.05	9.85	-307.98	0.00	0.00	0.00
5,700.00	6.00	1.83	5,683.58	318.49	10.18	-318.42	0.00	0.00	0.00
5,800.00	6.00	1.83	5,783.04	328.93	10.51	-328.86	0.00	0.00	0.00
5,900.00	6.00	1.83	5,882.49	339.37	10.85	-339.30	0.00	0.00	0.00
6,000.00	6.00	1.83	5,981.94	349.81	11.18	-349.74	0.00	0.00	0.00
6,100.00	6.00	1.83	6,081.40	360.25	11.51	-360.18	0.00	0.00	0.00
6,189.82	6.00	1.83	6,170.72	369.63	11.81	-369.55	0.00	0.00	0.00
Begin 2.00°/100' Drop									
6,200.00	5.79	1.83	6,180.85	370.68	11.85	-370.60	2.00	-2.00	0.00
6,300.00	3.79	1.83	6,280.50	379.03	12.11	-378.95	2.00	-2.00	0.00
6,400.00	1.79	1.83	6,380.37	383.90	12.27	-383.81	2.00	-2.00	0.00
6,489.64	0.00	0.00	6,470.00	385.30	12.32	-385.22	2.00	-2.00	0.00
Begin Vertical Hold									
11,746.69	0.00	0.00	11,727.04	385.30	12.32	-385.22	0.00	0.00	0.00
KOP2, Begin 10.00°/100' Build									
11,800.00	5.33	179.76	11,780.28	382.82	12.33	-382.74	10.00	10.00	0.00
11,900.00	15.33	179.76	11,878.53	364.91	12.40	-364.83	10.00	10.00	0.00
12,000.00	25.33	179.76	11,972.18	330.21	12.55	-330.13	10.00	10.00	0.00



Planning Report



Database: USA Compass
Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
Site: Eider 23 Federal
Well: 602H
Wellbore: OH
Design: Plan 1 09-25-19

Local Co-ordinate Reference: Well 602H
TVD Reference: RKB @ 3597.30usft (Permitting)
MD Reference: RKB @ 3597.30usft (Permitting)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
12,100.00	35.33	179.76	12,058.39	279.77	12.76	-279.69	10.00	10.00	0.00
12,200.00	45.33	179.76	12,134.52	215.13	13.03	-215.05	10.00	10.00	0.00
12,300.00	55.33	179.76	12,198.28	138.26	13.36	-138.17	10.00	10.00	0.00
12,400.00	65.33	179.76	12,247.71	51.48	13.73	-51.39	10.00	10.00	0.00
12,500.00	75.33	179.76	12,281.33	-42.57	14.13	42.65	10.00	10.00	0.00
12,600.00	85.33	179.76	12,298.10	-141.02	14.54	141.11	10.00	10.00	0.00
12,647.32	90.06	179.76	12,300.00	-188.29	14.74	188.37	10.00	10.00	0.00
LP, Hold 90.06° Inc at 179.76° Azm									
12,700.00	90.06	179.76	12,299.94	-240.97	14.96	241.05	0.00	0.00	0.00
12,800.00	90.06	179.76	12,299.83	-340.97	15.39	341.05	0.00	0.00	0.00
12,900.00	90.06	179.76	12,299.72	-440.97	15.81	441.05	0.00	0.00	0.00
13,000.00	90.06	179.76	12,299.61	-540.97	16.23	541.05	0.00	0.00	0.00
13,100.00	90.06	179.76	12,299.50	-640.96	16.66	641.05	0.00	0.00	0.00
13,200.00	90.06	179.76	12,299.39	-740.96	17.08	741.05	0.00	0.00	0.00
13,300.00	90.06	179.76	12,299.28	-840.96	17.50	841.05	0.00	0.00	0.00
13,400.00	90.06	179.76	12,299.17	-940.96	17.93	941.05	0.00	0.00	0.00
13,500.00	90.06	179.76	12,299.06	-1,040.96	18.35	1,041.05	0.00	0.00	0.00
13,600.00	90.06	179.76	12,298.95	-1,140.96	18.77	1,141.05	0.00	0.00	0.00
13,700.00	90.06	179.76	12,298.84	-1,240.96	19.19	1,241.05	0.00	0.00	0.00
13,800.00	90.06	179.76	12,298.73	-1,340.96	19.62	1,341.05	0.00	0.00	0.00
13,900.00	90.06	179.76	12,298.62	-1,440.96	20.04	1,441.05	0.00	0.00	0.00
14,000.00	90.06	179.76	12,298.51	-1,540.96	20.46	1,541.05	0.00	0.00	0.00
14,100.00	90.06	179.76	12,298.40	-1,640.95	20.89	1,641.05	0.00	0.00	0.00
14,200.00	90.06	179.76	12,298.29	-1,740.95	21.31	1,741.05	0.00	0.00	0.00
14,300.00	90.06	179.76	12,298.18	-1,840.95	21.73	1,841.05	0.00	0.00	0.00
14,400.00	90.06	179.76	12,298.07	-1,940.95	22.16	1,941.05	0.00	0.00	0.00
14,500.00	90.06	179.76	12,297.95	-2,040.95	22.58	2,041.05	0.00	0.00	0.00
14,600.00	90.06	179.76	12,297.84	-2,140.95	23.00	2,141.05	0.00	0.00	0.00
14,700.00	90.06	179.76	12,297.73	-2,240.95	23.43	2,241.05	0.00	0.00	0.00
14,800.00	90.06	179.76	12,297.62	-2,340.95	23.85	2,341.05	0.00	0.00	0.00
14,900.00	90.06	179.76	12,297.51	-2,440.95	24.27	2,441.05	0.00	0.00	0.00
15,000.00	90.06	179.76	12,297.40	-2,540.95	24.69	2,541.05	0.00	0.00	0.00
15,100.00	90.06	179.76	12,297.29	-2,640.95	25.12	2,641.05	0.00	0.00	0.00
15,200.00	90.06	179.76	12,297.18	-2,740.94	25.54	2,741.05	0.00	0.00	0.00
15,300.00	90.06	179.76	12,297.07	-2,840.94	25.96	2,841.05	0.00	0.00	0.00
15,400.00	90.06	179.76	12,296.96	-2,940.94	26.39	2,941.05	0.00	0.00	0.00
15,500.00	90.06	179.76	12,296.85	-3,040.94	26.81	3,041.05	0.00	0.00	0.00
15,600.00	90.06	179.76	12,296.74	-3,140.94	27.23	3,141.05	0.00	0.00	0.00
15,700.00	90.06	179.76	12,296.63	-3,240.94	27.66	3,241.05	0.00	0.00	0.00
15,800.00	90.06	179.76	12,296.52	-3,340.94	28.08	3,341.05	0.00	0.00	0.00
15,900.00	90.06	179.76	12,296.41	-3,440.94	28.50	3,441.05	0.00	0.00	0.00
16,000.00	90.06	179.76	12,296.30	-3,540.94	28.92	3,541.05	0.00	0.00	0.00
16,100.00	90.06	179.76	12,296.19	-3,640.94	29.35	3,641.05	0.00	0.00	0.00
16,200.00	90.06	179.76	12,296.08	-3,740.93	29.77	3,741.05	0.00	0.00	0.00
16,300.00	90.06	179.76	12,295.97	-3,840.93	30.19	3,841.05	0.00	0.00	0.00
16,400.00	90.06	179.76	12,295.86	-3,940.93	30.62	3,941.05	0.00	0.00	0.00
16,500.00	90.06	179.76	12,295.75	-4,040.93	31.04	4,041.05	0.00	0.00	0.00
16,600.00	90.06	179.76	12,295.64	-4,140.93	31.46	4,141.05	0.00	0.00	0.00
16,700.00	90.06	179.76	12,295.53	-4,240.93	31.89	4,241.05	0.00	0.00	0.00
16,800.00	90.06	179.76	12,295.42	-4,340.93	32.31	4,341.05	0.00	0.00	0.00
16,900.00	90.06	179.76	12,295.31	-4,440.93	32.73	4,441.05	0.00	0.00	0.00
17,000.00	90.06	179.76	12,295.20	-4,540.93	33.15	4,541.04	0.00	0.00	0.00
17,100.00	90.06	179.76	12,295.08	-4,640.93	33.58	4,641.04	0.00	0.00	0.00



Planning Report



Database: USA Compass
Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
Site: Eider 23 Federal
Well: 602H
Wellbore: OH
Design: Plan 1 09-25-19

Local Co-ordinate Reference: Well 602H
TVD Reference: RKB @ 3597.30usft (Permitting)
MD Reference: RKB @ 3597.30usft (Permitting)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
17,200.00	90.06	179.76	12,294.97	-4,740.93	34.00	4,741.04	0.00	0.00	0.00
17,300.00	90.06	179.76	12,294.86	-4,840.92	34.42	4,841.04	0.00	0.00	0.00
17,400.00	90.06	179.76	12,294.75	-4,940.92	34.85	4,941.04	0.00	0.00	0.00
17,500.00	90.06	179.76	12,294.64	-5,040.92	35.27	5,041.04	0.00	0.00	0.00
17,600.00	90.06	179.76	12,294.53	-5,140.92	35.69	5,141.04	0.00	0.00	0.00
17,700.00	90.06	179.76	12,294.42	-5,240.92	36.12	5,241.04	0.00	0.00	0.00
17,800.00	90.06	179.76	12,294.31	-5,340.92	36.54	5,341.04	0.00	0.00	0.00
17,900.00	90.06	179.76	12,294.20	-5,440.92	36.96	5,441.04	0.00	0.00	0.00
18,000.00	90.06	179.76	12,294.09	-5,540.92	37.39	5,541.04	0.00	0.00	0.00
18,100.00	90.06	179.76	12,293.98	-5,640.92	37.81	5,641.04	0.00	0.00	0.00
18,200.00	90.06	179.76	12,293.87	-5,740.92	38.23	5,741.04	0.00	0.00	0.00
18,300.00	90.06	179.76	12,293.76	-5,840.91	38.65	5,841.04	0.00	0.00	0.00
18,400.00	90.06	179.76	12,293.65	-5,940.91	39.08	5,941.04	0.00	0.00	0.00
18,500.00	90.06	179.76	12,293.54	-6,040.91	39.50	6,041.04	0.00	0.00	0.00
18,600.00	90.06	179.76	12,293.43	-6,140.91	39.92	6,141.04	0.00	0.00	0.00
18,700.00	90.06	179.76	12,293.32	-6,240.91	40.35	6,241.04	0.00	0.00	0.00
18,800.00	90.06	179.76	12,293.21	-6,340.91	40.77	6,341.04	0.00	0.00	0.00
18,900.00	90.06	179.76	12,293.10	-6,440.91	41.19	6,441.04	0.00	0.00	0.00
19,000.00	90.06	179.76	12,292.99	-6,540.91	41.62	6,541.04	0.00	0.00	0.00
19,100.00	90.06	179.76	12,292.88	-6,640.91	42.04	6,641.04	0.00	0.00	0.00
19,200.00	90.06	179.76	12,292.77	-6,740.91	42.46	6,741.04	0.00	0.00	0.00
19,300.00	90.06	179.76	12,292.66	-6,840.91	42.88	6,841.04	0.00	0.00	0.00
19,400.00	90.06	179.76	12,292.55	-6,940.90	43.31	6,941.04	0.00	0.00	0.00
19,500.00	90.06	179.76	12,292.44	-7,040.90	43.73	7,041.04	0.00	0.00	0.00
19,600.00	90.06	179.76	12,292.33	-7,140.90	44.15	7,141.04	0.00	0.00	0.00
19,700.00	90.06	179.76	12,292.22	-7,240.90	44.58	7,241.04	0.00	0.00	0.00
19,800.00	90.06	179.76	12,292.10	-7,340.90	45.00	7,341.04	0.00	0.00	0.00
19,894.60	90.06	179.76	12,292.00	-7,435.50	45.40	7,435.64	0.00	0.00	0.00

TD at 19894.60

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Eastings (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
BHL - Eider 23 Federal 6	0.00	0.00	12,292.00	-7,435.50	45.40	433,026.50	713,621.60	32° 11' 19.038250 N	103° 38' 34.114342 W
- plan hits target center									
- Point									
LTP - Eider 23 Federal 6	0.00	0.00	12,292.06	-7,385.50	45.20	433,076.50	713,621.40	32° 11' 19.533048 N	103° 38' 34.112934 W
- plan misses target center by 44.60usft at 19800.00usft MD (12292.10 TVD, -7340.90 N, 45.00 E)									
- Point									
FTP - Eider 23 Federal 6	0.00	0.00	12,300.00	105.20	13.50	440,567.20	713,589.70	32° 12' 33.660796 N	103° 38' 33.921968 W
- plan misses target center by 70.59usft at 12379.18usft MD (12238.68 TVD, 70.24 N, 13.65 E)									
- Point									



Planning Report



Database: USA Compass
Company: COG Operating LLC
Project: Lea County, NM (NAD27 NME)
Site: Eider 23 Federal
Well: 602H
Wellbore: OH
Design: Plan 1 09-25-19

Local Co-ordinate Reference: Well 602H
TVD Reference: RKB @ 3597.30usft (Permitting)
MD Reference: RKB @ 3597.30usft (Permitting)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,110.30	1,110.30	Rustler		-0.06	179.65
1,430.30	1,430.30	TOS		-0.06	179.65
4,687.40	4,676.52	BOS (Fletcher)		-0.06	179.65
4,918.69	4,906.55	LMAR (Top Delaware)		-0.06	179.65
4,955.90	4,943.55	BLCN		-0.06	179.65
5,855.92	5,838.65	CYCN		-0.06	179.65
7,291.35	7,271.70	BYCN		-0.06	179.65
8,849.35	8,829.70	Bone Sprg (BSGL)		-0.06	179.65
9,219.35	9,199.70	Middle Avalon Shale		-0.06	179.65
9,380.35	9,360.70	Lower Avalon Shale		-0.06	179.65
9,970.35	9,950.70	FBSG_sand		-0.06	179.65
10,568.35	10,548.70	SBSG_sand		-0.06	179.65
11,091.35	11,071.70	SBSG_sand_Base		-0.06	179.65
11,841.77	11,821.70	TBSG_sand		-0.06	179.65
12,418.96	12,255.34	WFMP		-0.06	179.65

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
2,500.00	2,500.00	0.00	0.00	KOP, Begin 2.00°/100' Build
2,799.82	2,799.28	15.67	0.50	Hold 6.00° Inc at 1.83° Azm
6,189.82	6,170.72	369.63	11.81	Begin 2.00°/100' Drop
6,489.64	6,470.00	385.30	12.32	Begin Vertical Hold
11,746.69	11,727.04	385.30	12.32	KOP2, Begin 10.00°/100' Build
12,647.32	12,300.00	-188.29	14.74	LP, Hold 90.06° Inc at 179.76° Azm
19,894.60	12,292.00	-7,435.50	45.40	TD at 19894.60

DISTRICT I
1826 N. FRENCH DR., ROSA, NM 88240
Phone: (505) 309-0181 Fax: (505) 309-0720

DISTRICT II
511 S. FIRST ST., ARTESIA, NM 88210
Phone: (505) 748-1283 Fax: (505) 748-0720

DISTRICT III
1000 RIO BRAZOS RD., AZTEC, NM 87410
Phone: (505) 334-0178 Fax: (505) 334-0170

DISTRICT IV
1220 S. ST. FRANCIS DR., SANTA FE, NM 87505
Phone: (505) 478-3460 Fax: (505) 478-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 SOUTH ST. FRANCIS DR.
Santa Fe, New Mexico 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-025-46379	Pool Code 98309	Pool Name WC-025 G-08 S243213C; WOLFCAMP
Property Code 326116	Property Name EIDER 23 FEDERAL	Well Number 602H
OGRID No. 217955	Operator Name COG PRODUCTION, LLC	Elevation 3567.3'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	23	24-S	32-E		435	NORTH	1995	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	26	24-S	32-E		2590	NORTH	1980	EAST	LEA

Dedicated Acres 240	Joint or Infill	Consolidation Code	Order No.
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NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED
OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

NAD 83 NME <u>SURFACE LOCATION</u> Y=440520.7 N X=754760.6 E LAT.=32.209185° N LONG.=103.643281° W	Y=440948.6 N X=754101.7 E 330' FNL & 1980' FEL Y=440625.9 N X=754774.1 E LAT.=32.209474° N LONG.=103.643235° W GRID AZ. TO TIP 07°18'26" SECTION 23 SECTION 26 NAD 83 NME <u>PROPOSED BOTTOM HOLE LOCATION</u> Y=433085.0 N X=754806.4 E LAT.=32.188746° N LONG.=103.643287° W 2540' FNL & 1980' FEL Y=433135.0 N X=754806.2 E LAT.=32.188883° N LONG.=103.643287° W Y=433027.8 N X=754142.2 E	435' 1995' S.L. GRID AZ. - 179°45'17" HORIZ. DIST. - 7541.0' 2590' B.H.L. - 1980' Y=440963.3 N X=755425.8 E Y=433041.2 N X=755465.0 E NMNM120907	OPERATOR CERTIFICATION I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. <i>Mayte Reyes</i> 9-23-19 Signature Date Mayte Reyes Printed Name mreyes1@concho.com E-mail Address SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. APRIL 4, 2019 Date of Survey Signature & Seal of Professional Surveyor  <i>Chad Harcrow</i> 9/16/19 Certificate No. CHAD HARCROW 17777 W.O. # 19-1706 DRAWN BY: DS
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