

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Rd., Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy, Minerals & Natural Resources

NMOCD-REC'D: 09/03/2020
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Form C-104
Revised August 1, 2011
Submit one copy to appropriate District Office
☐ AMENDED REPORT

I. REQUEST FOR ALLOWABLE AND AUTHORIZATION TO TRANSPORT

¹ Operator name and Address COG Operating LLC 2208 W. Main Street Artesia, NM 88210		² O GRID Number 229137	
		³ Reason for Filing Code/ Effective Date RT / 9/1/20	
⁴ API Number 30 – 015-46597	⁵ Pool Name Hay Hallow; Bone Spring		⁶ Pool Code 30216
⁷ Property Code 325001	⁸ Property Name Daisy 24 State Com		⁹ Well Number 505H

II. ¹⁰ Surface Location

Ul or lot no. A	Section 24	Township 25S	Range 27E	Lot Idn	Feet from the 221	North/South Line North	Feet from the 711	East/West line East	County Eddy
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¹¹ Bottom Hole Location

Ul or lot no. O	Section 25	Township 25S	Range 27E	Lot Idn	Feet from the 52	North/South Line South	Feet from the 1681	East/West line East	County Eddy
¹² Lse Code S	¹³ Producing Method Code		¹⁴ Gas Connection Date		¹⁵ C-129 Permit Number		¹⁶ C-129 Effective Date		¹⁷ C-129 Expiration Date

III. Oil and Gas Transporters

¹⁸ Transporter O GRID	¹⁹ Transporter Name and Address	²⁰ O/G/W
	ACC (Alpha Crude Connector Pipeline)	O
282301	Energy Transfer Company 2001 Bryan Street Ste 3700 Dallas, TX 75201	G
278421	Holly Refining and Marketing	O
		O

IV. Well Completion Data

²¹ Spud Date 2/5/20	²² Ready Date 8/10/20	²³ TD 18,127'	²⁴ PBTD 17,960'	²⁵ Perforations 8,065-17,950'	²⁶ DHC, MC
²⁷ Hole Size		²⁸ Casing & Tubing Size	²⁹ Depth Set		³⁰ Sacks Cement
17 1/2"		13 5/8"	516'		560
12 1/4"		9 7/8"	2314'		750
8 3/4"		5 1/2"	18113'		3200
		2 7/8"	7197'		

V. Well Test Data

³¹ Date New Oil	³² Gas Delivery Date	³³ Test Date	³⁴ Test Length	³⁵ Tbg. Pressure	³⁶ Csg. Pressure
³⁷ Choke Size	³⁸ Oil	³⁹ Water	⁴⁰ Gas		⁴¹ Test Method

⁴² I hereby certify that the rules of the Oil Conservation Division have been complied with and that the information given above is true and complete to the best of my knowledge and belief. Signature: Amanda Avery Printed name: Amanda Avery Title: Regulatory Analyst E-mail Address: aavery@concho.com Date: 9/1/20	OIL CONSERVATION DIVISION	
	Approved by: <i>*DENIED</i>	
	Title:	
	Approval Date: <i>*C-104 RT is a late submittal. A Completion Sundry approved and in well files received 9/2/2020. Submit the C-104 NW, C-102&survey (attached to this Denial) & C-105 as soon as possible. Thank you.</i>	
	Phone: 575-748-6962	

District I
1625 N. French Dr., Hobbs, NM 88240
Phone: (575) 393-6161 Fax: (575) 393-0720
District II
811 S. First St., Artesia, NM 88210
Phone: (575) 748-1283 Fax: (575) 748-9720
District III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, NM 87505

NMOCD-REC'D: 09/02/2020 Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

☒ AMENDED REPORT
As Drilled

WELL LOCATION AND ACREAGE DEDICATION PLAT

1 API Number 30-015-46597	2 Pool Code 30216	3 Pool Name Hay Hollow; Bone Spring
4 Property Code 325001	5 Property Name DAISY 24 STATE COM	6 Well Number 505H
7 OGRID No. 229137	8 Operator Name COG OPERATING LLC	9 Elevation 3089'

" Surface Location

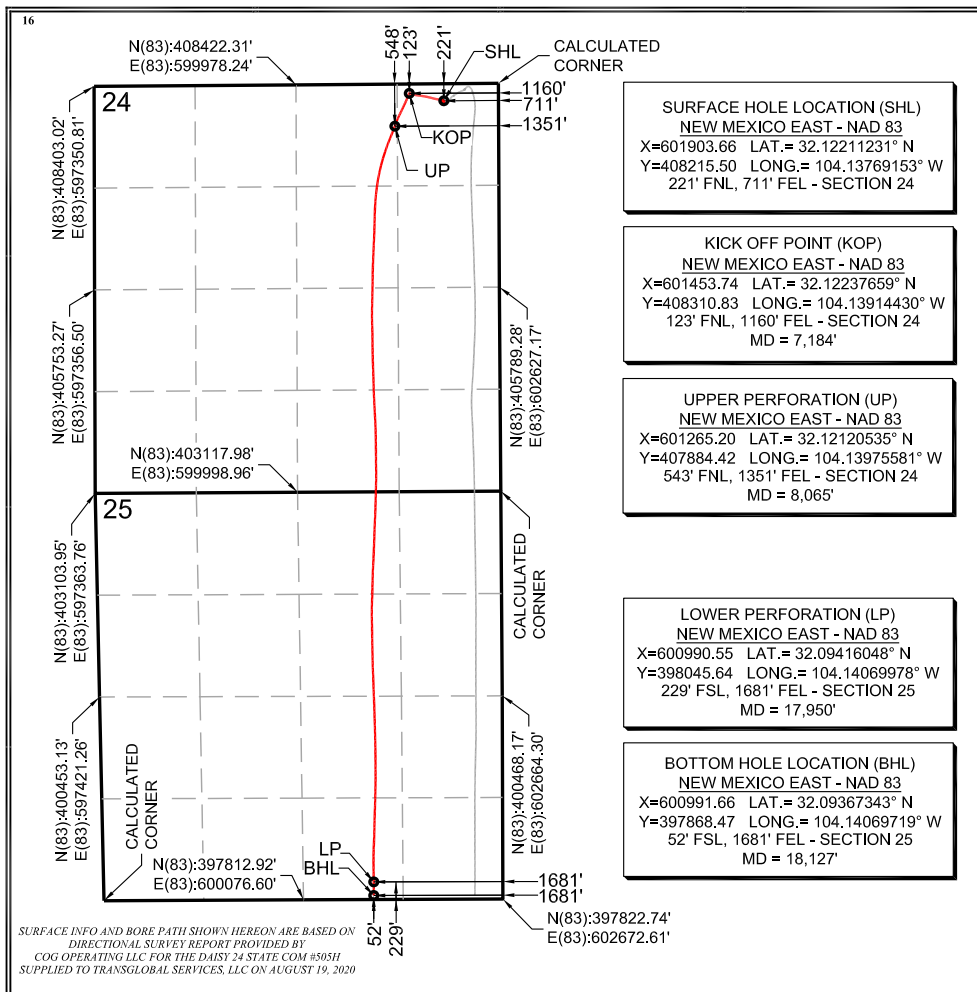
UL or lot no.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	24	25-S	27-E		221'	NORTH	711'	EAST	EDDY

" 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
O	25	25-S	27-E		52'	SOUTH	1681'	EAST	EDDY

12 Dedicated Acres 320	13 Joint or Infill	14 Consolidation Code	15 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.



17 OPERATOR CERTIFICATION

I hereby certify that the information contained 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 a mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division.

Amanda Avery 9/1/20
Signature Date
Amanda Avery
Printed Name
aavery@concho.com
E-mail Address

18 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.

Date of Survey
Signature and Seal of Registered Surveyor:
Garrett J. Smelter
25036
08/21/2020
Certificate Number



COG Operating LLC

Eddy County, NM (NAD27 NME)

Daisy 24 State Com

505H

OH \ 66036

Design: Surveys (Pioneer 84)

Standard Survey Report

27 February, 2020



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 505H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 3114.00usft (Pioneer 84)
Site:	Daisy 24 State Com	MD Reference:	RKB @ 3114.00usft (Pioneer 84)
Well:	505H	North Reference:	Grid
Wellbore:	OH \ 66036	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	Database:	USA Compass

Project	Eddy 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	Daisy 24 State Com		
Site Position:		Northing:	408,073.20 usft
From:	Map	Easting:	556,552.70 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 7' 18.400350 N
		Longitude:	104° 9' 2.377557 W
		Grid Convergence:	0.10 °

Well	505H		
Well Position	+N/-S	0.00 usft	Northing: 408,157.83 usft
	+E/-W	0.00 usft	Easting: 560,719.89 usft
Position Uncertainty	1.00 usft	Wellhead Elevation:	usft
		Latitude:	32° 7' 19.165404 N
		Longitude:	104° 8' 13.917948 W
		Ground Level:	3,089.00 usft

Wellbore	OH \ 66036				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	2/15/2020	7.03	59.80	47,770.00000000

Design	Surveys (Pioneer 84)				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	221.78	

Survey Program	Date	2/27/2020			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.00	7,037.00	SDI Gyro Surveys (OH \ 66036)	Scientific Keeper	Scientific Drilling Intl. Standard Wireline Keeper	
7,079.00	18,127.00	Phoenix MWD Surveys - SQC (OH \ 66036)	MWD+IFR1+FDIR	OWSG MWD + IFR1 + FDIR Correction	

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	
100.00	0.68	176.90	100.00	-0.59	0.03	0.42	0.68	0.68	0.00	
125.00	0.71	167.26	125.00	-0.89	0.07	0.62	0.48	0.12	-38.56	
150.00	0.64	162.16	149.99	-1.18	0.15	0.78	0.37	-0.28	-20.40	
175.00	0.55	176.13	174.99	-1.43	0.20	0.93	0.68	-0.36	55.88	
200.00	0.56	223.65	199.99	-1.64	0.13	1.14	1.79	0.04	190.08	
225.00	0.51	235.06	224.99	-1.79	-0.05	1.37	0.47	-0.20	45.64	
250.00	0.91	238.33	249.99	-1.96	-0.31	1.67	1.61	1.60	13.08	
275.00	1.17	235.19	274.98	-2.21	-0.69	2.10	1.06	1.04	-12.56	
300.00	1.34	237.35	299.98	-2.51	-1.14	2.63	0.71	0.68	8.64	

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 505H
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Site:	Daisy 24 State Com	MD Reference:	RKB @ 3114.00usft (Pioneer 84)
Well:	505H	North Reference:	Grid
Wellbore:	OH \ 66036	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	Database:	USA Compass

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)
325.00	1.46	232.05	324.97	-2.86	-1.64	3.23	0.71	0.48	-21.20
350.00	1.48	234.30	349.96	-3.25	-2.15	3.86	0.24	0.08	9.00
375.00	1.68	233.47	374.95	-3.65	-2.71	4.53	0.81	0.80	-3.32
400.00	1.77	237.10	399.94	-4.08	-3.33	5.26	0.57	0.36	14.52
425.00	1.67	237.64	424.93	-4.49	-3.96	5.99	0.41	-0.40	2.16
450.00	1.79	234.46	449.92	-4.91	-4.59	6.72	0.61	0.48	-12.72
475.00	1.75	239.25	474.91	-5.33	-5.23	7.46	0.61	-0.16	19.16
500.00	1.73	244.53	499.90	-5.69	-5.90	8.17	0.65	-0.08	21.12
525.00	1.62	246.04	524.89	-5.99	-6.57	8.84	0.47	-0.44	6.04
550.00	1.32	251.02	549.88	-6.23	-7.16	9.42	1.30	-1.20	19.92
575.00	1.32	253.26	574.87	-6.41	-7.71	9.91	0.21	0.00	8.96
600.00	1.25	254.76	599.86	-6.56	-8.25	10.39	0.31	-0.28	6.00
625.00	1.30	256.25	624.86	-6.70	-8.79	10.85	0.24	0.20	5.96
650.00	1.24	258.18	649.85	-6.82	-9.33	11.30	0.29	-0.24	7.72
675.00	1.28	261.45	674.85	-6.92	-9.87	11.74	0.33	0.16	13.08
700.00	1.27	260.81	699.84	-7.01	-10.42	12.17	0.07	-0.04	-2.56
725.00	1.26	261.05	724.83	-7.09	-10.96	12.59	0.05	-0.04	0.96
750.00	1.39	265.41	749.83	-7.16	-11.54	13.03	0.66	0.52	17.44
775.00	1.36	268.24	774.82	-7.19	-12.13	13.45	0.30	-0.12	11.32
800.00	1.26	267.03	799.81	-7.22	-12.71	13.85	0.42	-0.40	-4.84
825.00	0.88	269.92	824.81	-7.23	-13.17	14.17	1.53	-1.52	11.56
850.00	0.85	260.79	849.81	-7.26	-13.55	14.44	0.56	-0.12	-36.52
875.00	0.74	265.62	874.80	-7.30	-13.89	14.70	0.51	-0.44	19.32
900.00	0.73	253.07	899.80	-7.36	-14.20	14.95	0.64	-0.04	-50.20
925.00	0.64	251.96	924.80	-7.45	-14.49	15.21	0.36	-0.36	-4.44
950.00	0.68	251.24	949.80	-7.54	-14.76	15.46	0.16	0.16	-2.88
975.00	0.48	251.65	974.80	-7.62	-15.00	15.68	0.80	-0.80	1.64
1,000.00	0.45	251.33	999.80	-7.69	-15.19	15.86	0.12	-0.12	-1.28
1,025.00	0.46	253.24	1,024.79	-7.75	-15.38	16.03	0.07	0.04	7.64
1,050.00	0.51	243.66	1,049.79	-7.83	-15.58	16.22	0.38	0.20	-38.32
1,075.00	0.37	236.42	1,074.79	-7.92	-15.75	16.40	0.60	-0.56	-28.96
1,100.00	0.47	247.85	1,099.79	-8.00	-15.91	16.57	0.52	0.40	45.72
1,125.00	0.30	247.68	1,124.79	-8.07	-16.06	16.72	0.68	-0.68	-0.68
1,150.00	0.34	230.68	1,149.79	-8.14	-16.18	16.85	0.41	0.16	-68.00
1,175.00	0.35	236.92	1,174.79	-8.23	-16.30	17.00	0.16	0.04	24.96
1,200.00	0.34	232.36	1,199.79	-8.32	-16.43	17.15	0.12	-0.04	-18.24
1,225.00	0.31	226.44	1,224.79	-8.41	-16.53	17.29	0.18	-0.12	-23.68
1,250.00	0.16	249.63	1,249.79	-8.47	-16.62	17.38	0.70	-0.60	92.76
1,275.00	0.56	238.05	1,274.79	-8.54	-16.75	17.53	1.62	1.60	-46.32
1,300.00	0.37	251.33	1,299.79	-8.63	-16.93	17.72	0.87	-0.76	53.12
1,325.00	0.43	254.82	1,324.79	-8.68	-17.10	17.87	0.26	0.24	13.96
1,350.00	0.46	266.10	1,349.79	-8.72	-17.29	18.02	0.37	0.12	45.12
1,375.00	0.20	290.50	1,374.79	-8.71	-17.43	18.11	1.16	-1.04	97.60

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 505H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 3114.00usft (Pioneer 84)
Site:	Daisy 24 State Com	MD Reference:	RKB @ 3114.00usft (Pioneer 84)
Well:	505H	North Reference:	Grid
Wellbore:	OH \ 66036	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	Database:	USA Compass

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)
1,400.00	0.33	257.17	1,399.79	-8.71	-17.54	18.18	0.79	0.52	-133.32
1,425.00	0.19	308.82	1,424.79	-8.70	-17.64	18.24	1.04	-0.56	206.60
1,450.00	0.40	289.22	1,449.79	-8.64	-17.76	18.28	0.92	0.84	-78.40
1,475.00	0.41	280.16	1,474.79	-8.60	-17.93	18.36	0.26	0.04	-36.24
1,500.00	0.29	304.29	1,499.79	-8.55	-18.07	18.41	0.75	-0.48	96.52
1,525.00	0.55	283.07	1,524.78	-8.48	-18.24	18.48	1.19	1.04	-84.88
1,550.00	0.31	316.17	1,549.78	-8.41	-18.40	18.53	1.34	-0.96	132.40
1,575.00	0.38	307.42	1,574.78	-8.31	-18.52	18.53	0.35	0.28	-35.00
1,600.00	0.43	309.10	1,599.78	-8.20	-18.65	18.54	0.21	0.20	6.72
1,625.00	0.33	57.70	1,624.78	-8.10	-18.67	18.48	2.48	-0.40	434.40
1,650.00	0.39	76.14	1,649.78	-8.04	-18.52	18.34	0.52	0.24	73.76
1,675.00	0.57	76.67	1,674.78	-7.99	-18.32	18.17	0.72	0.72	2.12
1,700.00	0.95	80.53	1,699.78	-7.93	-17.99	17.90	1.53	1.52	15.44
1,725.00	0.89	73.97	1,724.78	-7.84	-17.60	17.58	0.48	-0.24	-26.24
1,750.00	1.02	72.98	1,749.77	-7.72	-17.20	17.22	0.52	0.52	-3.96
1,775.00	0.82	74.62	1,774.77	-7.61	-16.82	16.88	0.81	-0.80	6.56
1,800.00	0.83	78.11	1,799.77	-7.53	-16.47	16.59	0.20	0.04	13.96
1,825.00	0.91	77.02	1,824.76	-7.45	-16.10	16.28	0.33	0.32	-4.36
1,850.00	0.99	76.16	1,849.76	-7.35	-15.69	15.94	0.33	0.32	-3.44
1,875.00	1.03	78.97	1,874.76	-7.25	-15.26	15.58	0.25	0.16	11.24
1,900.00	0.95	82.13	1,899.75	-7.18	-14.84	15.24	0.39	-0.32	12.64
1,925.00	1.17	79.24	1,924.75	-7.11	-14.38	14.88	0.91	0.88	-11.56
1,950.00	1.40	87.93	1,949.74	-7.05	-13.83	14.47	1.20	0.92	34.76
1,975.00	1.53	88.24	1,974.73	-7.03	-13.19	14.03	0.52	0.52	1.24
2,000.00	1.80	92.24	1,999.72	-7.03	-12.46	13.55	1.18	1.08	16.00
2,025.00	1.99	94.52	2,024.71	-7.08	-11.64	13.03	0.82	0.76	9.12
2,050.00	2.36	94.85	2,049.69	-7.16	-10.69	12.46	1.48	1.48	1.32
2,075.00	2.71	94.23	2,074.67	-7.25	-9.59	11.79	1.40	1.40	-2.48
2,100.00	2.90	95.55	2,099.64	-7.35	-8.37	11.06	0.80	0.76	5.28
2,125.00	2.88	99.47	2,124.61	-7.52	-7.12	10.35	0.79	-0.08	15.68
2,150.00	2.70	109.94	2,149.58	-7.82	-5.95	9.79	2.16	-0.72	41.88
2,175.00	2.35	126.33	2,174.55	-8.32	-4.98	9.53	3.19	-1.40	65.56
2,200.00	2.32	138.29	2,199.53	-9.01	-4.23	9.54	1.95	-0.12	47.84
2,225.00	2.28	151.32	2,224.51	-9.82	-3.66	9.76	2.09	-0.16	52.12
2,250.00	2.10	162.09	2,249.49	-10.69	-3.28	10.16	1.79	-0.72	43.08
2,275.00	2.18	164.86	2,274.48	-11.59	-3.01	10.65	0.52	0.32	11.08
2,300.00	2.20	162.56	2,299.46	-12.50	-2.74	11.15	0.36	0.08	-9.20
2,325.00	2.14	165.87	2,324.44	-13.41	-2.49	11.66	0.56	-0.24	13.24
2,350.00	2.17	162.62	2,349.42	-14.32	-2.23	12.16	0.50	0.12	-13.00
2,375.00	2.08	166.69	2,374.40	-15.21	-1.99	12.67	0.70	-0.36	16.28
2,400.00	1.79	172.18	2,399.39	-16.04	-1.83	13.18	1.38	-1.16	21.96
2,425.00	1.10	175.13	2,424.38	-16.67	-1.75	13.60	2.78	-2.76	11.80
2,450.00	0.73	182.85	2,449.38	-17.06	-1.74	13.89	1.56	-1.48	30.88

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 505H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 3114.00usft (Pioneer 84)
Site:	Daisy 24 State Com	MD Reference:	RKB @ 3114.00usft (Pioneer 84)
Well:	505H	North Reference:	Grid
Wellbore:	OH \ 66036	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	Database:	USA Compass

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)
2,475.00	0.67	247.83	2,474.38	-17.28	-1.89	14.14	3.01	-0.24	259.92
2,500.00	0.57	251.74	2,499.38	-17.37	-2.14	14.38	0.43	-0.40	15.64
2,525.00	0.58	252.67	2,524.37	-17.45	-2.38	14.60	0.05	0.04	3.72
2,550.00	0.60	248.32	2,549.37	-17.54	-2.62	14.82	0.20	0.08	-17.40
2,575.00	0.52	250.55	2,574.37	-17.62	-2.85	15.04	0.33	-0.32	8.92
2,600.00	0.61	252.15	2,599.37	-17.70	-3.08	15.25	0.37	0.36	6.40
2,625.00	0.65	250.61	2,624.37	-17.79	-3.34	15.49	0.17	0.16	-6.16
2,650.00	0.54	251.53	2,649.37	-17.87	-3.59	15.72	0.44	-0.44	3.68
2,675.00	0.68	258.03	2,674.37	-17.94	-3.84	15.94	0.62	0.56	26.00
2,700.00	0.61	253.70	2,699.36	-18.01	-4.12	16.17	0.34	-0.28	-17.32
2,725.00	0.59	254.27	2,724.36	-18.08	-4.37	16.39	0.08	-0.08	2.28
2,750.00	0.62	255.39	2,749.36	-18.15	-4.62	16.62	0.13	0.12	4.48
2,775.00	0.51	253.87	2,774.36	-18.21	-4.86	16.82	0.44	-0.44	-6.08
2,800.00	0.73	259.14	2,799.36	-18.28	-5.13	17.04	0.91	0.88	21.08
2,825.00	0.55	243.06	2,824.36	-18.36	-5.39	17.28	1.01	-0.72	-64.32
2,850.00	0.55	255.59	2,849.36	-18.44	-5.61	17.49	0.48	0.00	50.12
2,875.00	0.56	281.35	2,874.36	-18.45	-5.85	17.65	0.99	0.04	103.04
2,900.00	0.88	321.12	2,899.35	-18.28	-6.09	17.69	2.30	1.28	159.08
2,925.00	1.50	330.96	2,924.35	-17.84	-6.37	17.55	2.60	2.48	39.36
2,950.00	1.73	329.81	2,949.34	-17.23	-6.72	17.32	0.93	0.92	-4.60
2,975.00	1.84	327.85	2,974.33	-16.56	-7.12	17.09	0.50	0.44	-7.84
3,000.00	1.87	328.51	2,999.31	-15.88	-7.55	16.87	0.15	0.12	2.64
3,025.00	1.73	328.75	3,024.30	-15.20	-7.95	16.64	0.56	-0.56	0.96
3,050.00	1.90	325.31	3,049.29	-14.54	-8.39	16.43	0.81	0.68	-13.76
3,075.00	1.87	326.91	3,074.27	-13.86	-8.84	16.23	0.24	-0.12	6.40
3,100.00	1.93	326.73	3,099.26	-13.17	-9.30	16.01	0.24	0.24	-0.72
3,125.00	1.78	326.01	3,124.25	-12.49	-9.75	15.81	0.61	-0.60	-2.88
3,150.00	1.79	326.35	3,149.24	-11.84	-10.18	15.62	0.06	0.04	1.36
3,175.00	1.70	324.68	3,174.22	-11.22	-10.61	15.43	0.41	-0.36	-6.68
3,200.00	1.65	321.46	3,199.21	-10.63	-11.05	15.29	0.43	-0.20	-12.88
3,225.00	1.62	320.24	3,224.20	-10.08	-11.50	15.18	0.18	-0.12	-4.88
3,250.00	1.67	318.28	3,249.19	-9.54	-11.97	15.08	0.30	0.20	-7.84
3,275.00	1.63	323.15	3,274.18	-8.98	-12.42	14.97	0.58	-0.16	19.48
3,300.00	1.64	321.96	3,299.17	-8.41	-12.86	14.84	0.14	0.04	-4.76
3,325.00	1.61	322.59	3,324.16	-7.85	-13.29	14.71	0.14	-0.12	2.52
3,350.00	1.54	327.90	3,349.15	-7.29	-13.68	14.55	0.65	-0.28	21.24
3,375.00	1.64	319.54	3,374.14	-6.73	-14.09	14.41	1.01	0.40	-33.44
3,400.00	1.61	322.11	3,399.13	-6.18	-14.54	14.30	0.32	-0.12	10.28
3,425.00	1.60	320.96	3,424.12	-5.63	-14.98	14.18	0.13	-0.04	-4.60
3,450.00	1.64	321.94	3,449.11	-5.08	-15.42	14.06	0.19	0.16	3.92
3,475.00	1.68	317.94	3,474.10	-4.53	-15.88	13.96	0.49	0.16	-16.00
3,500.00	1.68	320.55	3,499.09	-3.97	-16.36	13.86	0.31	0.00	10.44
3,525.00	1.77	319.18	3,524.08	-3.40	-16.85	13.76	0.40	0.36	-5.48
3,550.00	1.68	320.92	3,549.07	-2.82	-17.33	13.65	0.42	-0.36	6.96

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 505H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 3114.00usft (Pioneer 84)
Site:	Daisy 24 State Com	MD Reference:	RKB @ 3114.00usft (Pioneer 84)
Well:	505H	North Reference:	Grid
Wellbore:	OH \ 66036	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	Database:	USA Compass

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)
3,575.00	1.68	318.60	3,574.06	-2.26	-17.80	13.55	0.27	0.00	-9.28
3,600.00	1.76	317.83	3,599.05	-1.70	-18.30	13.46	0.33	0.32	-3.08
3,625.00	1.74	325.63	3,624.04	-1.10	-18.78	13.33	0.96	-0.08	31.20
3,650.00	1.74	318.98	3,649.02	-0.50	-19.24	13.19	0.81	0.00	-26.60
3,675.00	1.67	321.36	3,674.01	0.07	-19.72	13.09	0.40	-0.28	9.52
3,700.00	1.67	317.36	3,699.00	0.62	-20.19	12.99	0.47	0.00	-16.00
3,725.00	1.59	318.06	3,723.99	1.14	-20.67	12.92	0.33	-0.32	2.80
3,750.00	1.55	316.43	3,748.98	1.65	-21.13	12.85	0.24	-0.16	-6.52
3,775.00	1.51	315.93	3,773.97	2.13	-21.60	12.80	0.17	-0.16	-2.00
3,800.00	1.44	315.85	3,798.97	2.59	-22.04	12.75	0.28	-0.28	-0.32
3,825.00	1.38	314.70	3,823.96	3.03	-22.48	12.72	0.27	-0.24	-4.60
3,850.00	1.36	313.21	3,848.95	3.44	-22.91	12.69	0.16	-0.08	-5.96
3,875.00	1.27	310.03	3,873.94	3.82	-23.34	12.70	0.46	-0.36	-12.72
3,900.00	1.15	306.80	3,898.94	4.15	-23.75	12.73	0.55	-0.48	-12.92
3,925.00	1.16	301.07	3,923.93	4.43	-24.17	12.79	0.46	0.04	-22.92
3,950.00	1.10	301.10	3,948.93	4.69	-24.59	12.89	0.24	-0.24	0.12
3,975.00	1.17	301.04	3,973.92	4.94	-25.01	12.98	0.28	0.28	-0.24
4,000.00	1.10	306.54	3,998.92	5.22	-25.42	13.05	0.52	-0.28	22.00
4,025.00	1.30	294.96	4,023.91	5.48	-25.87	13.15	1.25	0.80	-46.32
4,050.00	2.30	293.45	4,048.90	5.80	-26.59	13.39	4.00	4.00	-6.04
4,075.00	3.05	295.92	4,073.87	6.29	-27.65	13.73	3.03	3.00	9.88
4,100.00	3.45	294.07	4,098.83	6.89	-28.93	14.14	1.65	1.60	-7.40
4,125.00	3.99	294.08	4,123.78	7.55	-30.42	14.63	2.16	2.16	0.04
4,150.00	5.21	290.53	4,148.70	8.30	-32.27	15.31	5.01	4.88	-14.20
4,175.00	5.81	288.92	4,173.58	9.11	-34.53	16.21	2.48	2.40	-6.44
4,200.00	6.16	287.20	4,198.45	9.92	-37.01	17.26	1.57	1.40	-6.88
4,225.00	6.70	287.22	4,223.29	10.75	-39.69	18.43	2.16	2.16	0.08
4,250.00	7.93	284.10	4,248.09	11.60	-42.75	19.83	5.17	4.92	-12.48
4,275.00	8.12	284.06	4,272.84	12.45	-46.14	21.46	0.76	0.76	-0.16
4,300.00	8.14	283.69	4,297.59	13.30	-49.57	23.11	0.22	0.08	-1.48
4,325.00	8.23	283.59	4,322.34	14.13	-53.03	24.79	0.36	0.36	-0.40
4,350.00	8.20	282.83	4,347.08	14.95	-56.50	26.50	0.45	-0.12	-3.04
4,375.00	7.97	282.30	4,371.83	15.72	-59.94	28.21	0.97	-0.92	-2.12
4,400.00	7.84	281.48	4,396.59	16.42	-63.30	29.93	0.69	-0.52	-3.28
4,425.00	7.79	281.43	4,421.36	17.10	-66.63	31.64	0.20	-0.20	-0.20
4,450.00	7.85	280.38	4,446.13	17.74	-69.97	33.39	0.62	0.24	-4.20
4,475.00	7.58	278.87	4,470.90	18.31	-73.28	35.17	1.35	-1.08	-6.04
4,500.00	7.47	278.03	4,495.69	18.79	-76.52	36.97	0.62	-0.44	-3.36
4,525.00	7.33	277.48	4,520.48	19.22	-79.71	38.77	0.63	-0.56	-2.20
4,550.00	7.15	276.94	4,545.28	19.62	-82.84	40.56	0.77	-0.72	-2.16
4,575.00	7.13	276.13	4,570.09	19.97	-85.92	42.35	0.41	-0.08	-3.24
4,600.00	7.18	277.11	4,594.89	20.33	-89.02	44.15	0.53	0.20	3.92
4,625.00	8.03	280.30	4,619.67	20.83	-92.28	45.95	3.80	3.40	12.76

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 505H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 3114.00usft (Pioneer 84)
Site:	Daisy 24 State Com	MD Reference:	RKB @ 3114.00usft (Pioneer 84)
Well:	505H	North Reference:	Grid
Wellbore:	OH \ 66036	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	Database:	USA Compass

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)
4,650.00	8.30	280.52	4,644.42	21.48	-95.78	47.80	1.09	1.08	0.88
4,675.00	8.30	280.94	4,669.16	22.15	-99.32	49.66	0.24	0.00	1.68
4,700.00	8.26	280.87	4,693.90	22.83	-102.86	51.51	0.17	-0.16	-0.28
4,725.00	7.88	279.39	4,718.65	23.45	-106.31	53.35	1.73	-1.52	-5.92
4,750.00	7.61	278.65	4,743.42	23.98	-109.64	55.17	1.15	-1.08	-2.96
4,775.00	7.63	278.58	4,768.20	24.47	-112.92	56.98	0.09	0.08	-0.28
4,800.00	8.06	280.13	4,792.96	25.03	-116.28	58.81	1.92	1.72	6.20
4,825.00	9.26	283.79	4,817.68	25.82	-119.96	60.67	5.28	4.80	14.64
4,850.00	9.53	285.18	4,842.34	26.84	-123.91	62.54	1.41	1.08	5.56
4,875.00	9.65	285.49	4,866.99	27.94	-127.93	64.40	0.52	0.48	1.24
4,900.00	9.62	285.49	4,891.64	29.06	-131.96	66.25	0.12	-0.12	0.00
4,925.00	9.50	285.70	4,916.30	30.17	-135.96	68.08	0.50	-0.48	0.84
4,950.00	9.51	284.85	4,940.95	31.26	-139.94	69.93	0.56	0.04	-3.40
4,975.00	9.42	285.17	4,965.61	32.33	-143.91	71.78	0.42	-0.36	1.28
5,000.00	9.48	284.69	4,990.27	33.38	-147.88	73.63	0.40	0.24	-1.92
5,025.00	9.41	285.27	5,014.93	34.44	-151.84	75.48	0.47	-0.28	2.32
5,050.00	9.18	285.39	5,039.61	35.51	-155.74	77.28	0.92	-0.92	0.48
5,075.00	8.78	284.40	5,064.30	36.51	-159.51	79.04	1.72	-1.60	-3.96
5,100.00	8.71	284.03	5,089.01	37.45	-163.19	80.80	0.36	-0.28	-1.48
5,125.00	8.62	284.27	5,113.72	38.37	-166.84	82.55	0.39	-0.36	0.96
5,150.00	8.63	284.47	5,138.44	39.30	-170.48	84.28	0.13	0.04	0.80
5,175.00	8.46	283.36	5,163.16	40.19	-174.08	86.01	0.95	-0.68	-4.44
5,200.00	8.26	282.71	5,187.90	41.01	-177.62	87.76	0.88	-0.80	-2.60
5,225.00	8.22	282.74	5,212.64	41.80	-181.12	89.50	0.16	-0.16	0.12
5,250.00	8.14	282.46	5,237.38	42.58	-184.59	91.23	0.36	-0.32	-1.12
5,275.00	8.37	283.57	5,262.13	43.39	-188.09	92.96	1.12	0.92	4.44
5,300.00	9.21	282.85	5,286.83	44.26	-191.81	94.79	3.39	3.36	-2.88
5,325.00	10.54	283.21	5,311.46	45.23	-195.98	96.85	5.33	5.32	1.44
5,350.00	10.86	282.78	5,336.03	46.27	-200.51	99.08	1.32	1.28	-1.72
5,375.00	10.87	283.18	5,360.58	47.33	-205.10	101.36	0.30	0.04	1.60
5,400.00	10.91	283.09	5,385.13	48.40	-209.70	103.62	0.17	0.16	-0.36
5,425.00	10.82	282.89	5,409.68	49.46	-214.29	105.89	0.39	-0.36	-0.80
5,450.00	10.64	282.82	5,434.24	50.50	-218.83	108.14	0.72	-0.72	-0.28
5,475.00	10.35	282.12	5,458.82	51.48	-223.27	110.37	1.27	-1.16	-2.80
5,500.00	9.95	281.93	5,483.43	52.40	-227.58	112.55	1.61	-1.60	-0.76
5,525.00	9.68	281.50	5,508.07	53.26	-231.75	114.69	1.12	-1.08	-1.72
5,550.00	9.58	281.46	5,532.71	54.10	-235.85	116.80	0.40	-0.40	-0.16
5,575.00	9.19	281.02	5,557.38	54.89	-239.85	118.87	1.59	-1.56	-1.76
5,600.00	8.99	280.82	5,582.07	55.64	-243.73	120.90	0.81	-0.80	-0.80
5,625.00	8.99	280.60	5,606.76	56.36	-247.57	122.91	0.14	0.00	-0.88
5,650.00	9.39	280.65	5,631.44	57.10	-251.49	124.98	1.60	1.60	0.20
5,675.00	10.51	280.21	5,656.06	57.88	-255.74	127.23	4.49	4.48	-1.76
5,700.00	10.83	279.45	5,680.63	58.67	-260.30	129.68	1.40	1.28	-3.04

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 505H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 3114.00usft (Pioneer 84)
Site:	Daisy 24 State Com	MD Reference:	RKB @ 3114.00usft (Pioneer 84)
Well:	505H	North Reference:	Grid
Wellbore:	OH \ 66036	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	Database:	USA Compass

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)
5,725.00	11.04	279.30	5,705.18	59.44	-264.98	132.22	0.85	0.84	-0.60
5,750.00	10.89	278.91	5,729.72	60.20	-269.68	134.78	0.67	-0.60	-1.56
5,775.00	10.78	278.64	5,754.27	60.91	-274.32	137.34	0.48	-0.44	-1.08
5,800.00	10.49	278.50	5,778.84	61.60	-278.88	139.87	1.16	-1.16	-0.56
5,825.00	10.08	278.01	5,803.44	62.24	-283.30	142.34	1.68	-1.64	-1.96
5,850.00	10.18	277.92	5,828.05	62.85	-287.65	144.78	0.40	0.40	-0.36
5,875.00	9.79	277.90	5,852.67	63.45	-291.95	147.20	1.56	-1.56	-0.08
5,900.00	9.48	277.90	5,877.32	64.02	-296.09	149.53	1.24	-1.24	0.00
5,925.00	9.30	278.30	5,901.99	64.60	-300.13	151.79	0.77	-0.72	1.60
5,950.00	9.28	278.55	5,926.66	65.19	-304.12	154.01	0.18	-0.08	1.00
5,975.00	8.73	275.29	5,951.35	65.66	-308.01	156.24	3.00	-2.20	-13.04
6,000.00	8.44	275.60	5,976.07	66.02	-311.72	158.46	1.17	-1.16	1.24
6,025.00	8.21	275.75	6,000.81	66.38	-315.32	160.59	0.92	-0.92	0.60
6,050.00	8.46	276.07	6,025.54	66.75	-318.93	162.71	1.02	1.00	1.28
6,075.00	9.98	278.94	6,050.22	67.28	-322.90	164.96	6.35	6.08	11.48
6,100.00	10.46	279.64	6,074.82	68.00	-327.27	167.34	1.98	1.92	2.80
6,125.00	10.28	279.33	6,099.41	68.74	-331.71	169.75	0.75	-0.72	-1.24
6,150.00	9.99	279.12	6,124.02	69.44	-336.05	172.11	1.17	-1.16	-0.84
6,175.00	9.58	279.01	6,148.66	70.11	-340.25	174.41	1.64	-1.64	-0.44
6,200.00	9.28	279.05	6,173.32	70.76	-344.30	176.63	1.20	-1.20	0.16
6,225.00	8.59	278.90	6,198.02	71.36	-348.13	178.73	2.76	-2.76	-0.60
6,250.00	8.02	278.53	6,222.76	71.91	-351.70	180.70	2.29	-2.28	-1.48
6,275.00	7.46	278.35	6,247.53	72.40	-355.03	182.55	2.24	-2.24	-0.72
6,300.00	7.02	278.99	6,272.33	72.88	-358.14	184.27	1.79	-1.76	2.56
6,325.00	6.73	279.89	6,297.15	73.37	-361.10	185.87	1.24	-1.16	3.60
6,350.00	6.77	281.02	6,321.98	73.90	-363.99	187.40	0.55	0.16	4.52
6,375.00	6.76	280.39	6,346.80	74.45	-366.88	188.92	0.30	-0.04	-2.52
6,400.00	6.40	279.43	6,371.64	74.94	-369.70	190.43	1.51	-1.44	-3.84
6,425.00	6.49	278.22	6,396.48	75.37	-372.47	191.96	0.65	0.36	-4.84
6,450.00	6.97	277.07	6,421.31	75.76	-375.38	193.60	1.99	1.92	-4.60
6,475.00	7.66	275.46	6,446.10	76.11	-378.54	195.45	2.88	2.76	-6.44
6,500.00	7.78	275.61	6,470.88	76.43	-381.89	197.44	0.49	0.48	0.60
6,525.00	7.32	275.31	6,495.66	76.74	-385.15	199.38	1.85	-1.84	-1.20
6,550.00	6.90	276.00	6,520.47	77.05	-388.23	201.21	1.71	-1.68	2.76
6,575.00	6.41	277.13	6,545.30	77.38	-391.11	202.88	2.03	-1.96	4.52
6,600.00	6.17	279.85	6,570.15	77.78	-393.82	204.38	1.53	-0.96	10.88
6,625.00	6.31	285.18	6,595.00	78.37	-396.47	205.71	2.38	0.56	21.32
6,650.00	6.45	294.07	6,619.85	79.30	-399.08	206.75	3.99	0.56	35.56
6,675.00	5.94	297.31	6,644.70	80.47	-401.51	207.50	2.47	-2.04	12.96
6,700.00	5.16	301.61	6,669.58	81.65	-403.62	208.02	3.53	-3.12	17.20
6,725.00	4.15	307.82	6,694.50	82.80	-405.29	208.29	4.51	-4.04	24.84
6,750.00	3.69	313.48	6,719.44	83.91	-406.59	208.32	2.40	-1.84	22.64
6,775.00	3.72	311.35	6,744.39	84.99	-407.78	208.31	0.56	0.12	-8.52
6,800.00	4.25	304.15	6,769.33	86.05	-409.16	208.44	2.91	2.12	-28.80

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 505H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 3114.00usft (Pioneer 84)
Site:	Daisy 24 State Com	MD Reference:	RKB @ 3114.00usft (Pioneer 84)
Well:	505H	North Reference:	Grid
Wellbore:	OH \ 66036	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	Database:	USA Compass

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)
6,825.00	5.72	293.41	6,794.23	87.07	-411.07	208.95	6.94	5.88	-42.96
6,850.00	6.72	289.89	6,819.09	88.06	-413.58	209.89	4.28	4.00	-14.08
6,875.00	6.68	289.04	6,843.92	89.03	-416.33	211.00	0.43	-0.16	-3.40
6,900.00	6.96	286.63	6,868.74	89.94	-419.16	212.20	1.60	1.12	-9.64
6,925.00	7.62	285.19	6,893.54	90.81	-422.21	213.59	2.74	2.64	-5.76
6,950.00	7.92	284.13	6,918.31	91.66	-425.48	215.13	1.33	1.20	-4.24
6,975.00	7.76	284.67	6,943.07	92.51	-428.78	216.70	0.70	-0.64	2.16
7,000.00	7.23	284.78	6,967.86	93.34	-431.94	218.18	2.12	-2.12	0.44
7,025.00	6.79	285.45	6,992.67	94.13	-434.88	219.55	1.79	-1.76	2.68
7,037.00	6.57	282.62	7,004.59	94.47	-436.24	220.20	3.30	-1.83	-23.58
Tie In									
7,079.00	5.66	277.19	7,046.35	95.26	-440.64	222.55	2.57	-2.17	-12.93
First Phoenix MWD Survey									
7,126.00	5.00	275.30	7,093.15	95.73	-444.98	225.08	1.45	-1.40	-4.02
7,189.00	4.96	255.38	7,155.92	95.30	-450.35	228.98	2.73	-0.06	-31.62
7,236.00	8.01	220.33	7,202.63	92.29	-454.43	233.95	10.35	6.49	-74.57
7,284.00	10.73	200.02	7,249.99	85.54	-458.13	241.45	8.84	5.67	-42.31
7,331.00	14.39	193.52	7,295.86	75.75	-460.99	250.66	8.34	7.79	-13.83
7,379.00	16.20	198.04	7,342.16	63.58	-464.46	262.04	4.51	3.77	9.42
7,426.00	19.78	202.39	7,386.86	49.99	-469.52	275.55	8.13	7.62	9.26
7,474.00	22.45	202.82	7,431.63	34.03	-476.17	291.88	5.57	5.56	0.90
7,521.00	26.41	203.08	7,474.42	16.13	-483.75	310.28	8.43	8.43	0.55
7,569.00	30.31	204.45	7,516.65	-4.72	-492.96	331.96	8.24	8.13	2.85
7,616.00	36.25	205.77	7,555.92	-28.05	-503.92	356.66	12.73	12.64	2.81
7,663.00	37.20	204.12	7,593.60	-53.54	-515.76	383.56	2.91	2.02	-3.51
7,710.00	40.95	205.54	7,630.08	-80.41	-528.21	411.89	8.20	7.98	3.02
7,758.00	41.87	204.62	7,666.08	-109.17	-541.67	442.30	2.30	1.92	-1.92
7,790.00	43.42	205.96	7,689.61	-128.77	-550.93	463.09	5.61	4.84	4.19
7,821.00	44.94	205.32	7,711.85	-148.24	-560.28	483.84	5.11	4.90	-2.06
7,853.00	46.96	204.93	7,734.09	-169.07	-570.04	505.87	6.37	6.31	-1.22
7,884.00	49.29	205.25	7,754.79	-189.97	-579.83	527.98	7.56	7.52	1.03
7,916.00	52.45	205.02	7,774.98	-212.44	-590.37	551.76	9.89	9.88	-0.72
7,948.00	55.26	203.95	7,793.85	-235.95	-601.08	576.43	9.19	8.78	-3.34
8,005.00	59.84	201.05	7,824.43	-280.39	-619.45	621.80	9.11	8.04	-5.09
8,037.00	64.55	200.52	7,839.35	-306.84	-629.49	648.22	14.79	14.72	-1.66
8,068.00	70.27	200.18	7,851.26	-333.67	-639.44	674.85	18.48	18.45	-1.10
8,100.00	75.25	199.97	7,860.74	-362.36	-649.92	703.24	15.58	15.56	-0.66
8,131.00	81.13	200.78	7,867.08	-390.79	-660.48	731.48	19.14	18.97	2.61
8,148.00	83.42	201.96	7,869.37	-406.48	-666.62	747.26	15.12	13.47	6.94
8,235.00	91.87	202.34	7,872.94	-486.92	-699.37	829.07	9.72	9.71	0.44
8,330.00	91.26	200.49	7,870.34	-575.32	-734.04	918.09	2.05	-0.64	-1.95
8,424.00	91.26	198.31	7,868.27	-663.96	-765.25	1,004.98	2.32	0.00	-2.32
8,519.00	90.55	196.14	7,866.77	-754.68	-793.38	1,091.38	2.40	-0.75	-2.28

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 505H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 3114.00usft (Pioneer 84)
Site:	Daisy 24 State Com	MD Reference:	RKB @ 3114.00usft (Pioneer 84)
Well:	505H	North Reference:	Grid
Wellbore:	OH \ 66036	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	Database:	USA Compass

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)
8,614.00	90.36	194.40	7,866.02	-846.32	-818.40	1,176.38	1.84	-0.20	-1.83
8,708.00	90.63	192.99	7,865.21	-937.64	-840.65	1,259.31	1.53	0.29	-1.50
8,803.00	88.29	188.23	7,866.10	-1,030.98	-858.14	1,340.56	5.58	-2.46	-5.01
8,898.00	89.37	188.61	7,868.04	-1,124.94	-872.04	1,419.89	1.21	1.14	0.40
8,993.00	88.21	185.60	7,870.05	-1,219.17	-883.79	1,497.99	3.39	-1.22	-3.17
9,088.00	88.00	184.21	7,873.19	-1,313.77	-891.91	1,573.95	1.48	-0.22	-1.46
9,183.00	89.18	182.05	7,875.53	-1,408.59	-897.09	1,648.11	2.59	1.24	-2.27
9,278.00	90.65	181.67	7,875.67	-1,503.54	-900.18	1,720.97	1.60	1.55	-0.40
9,372.00	91.53	181.52	7,873.88	-1,597.48	-902.79	1,792.77	0.95	0.94	-0.16
9,467.00	92.46	181.78	7,870.57	-1,692.39	-905.53	1,865.36	1.02	0.98	0.27
9,562.00	90.37	182.17	7,868.23	-1,787.30	-908.80	1,938.32	2.24	-2.20	0.41
9,657.00	90.30	182.44	7,867.67	-1,882.22	-912.62	2,011.65	0.29	-0.07	0.28
9,752.00	91.04	182.68	7,866.56	-1,977.12	-916.86	2,085.24	0.82	0.78	0.25
9,847.00	91.23	182.35	7,864.68	-2,072.01	-921.03	2,158.78	0.40	0.20	-0.35
9,941.00	89.91	181.63	7,863.75	-2,165.94	-924.29	2,231.00	1.60	-1.40	-0.77
10,036.00	89.02	180.59	7,864.63	-2,260.92	-926.13	2,303.06	1.44	-0.94	-1.09
10,131.00	89.30	180.89	7,866.03	-2,355.90	-927.36	2,374.70	0.43	0.29	0.32
10,226.00	90.75	181.54	7,865.98	-2,450.87	-929.38	2,446.87	1.67	1.53	0.68
10,321.00	90.78	181.14	7,864.72	-2,545.84	-931.60	2,519.17	0.42	0.03	-0.42
10,416.00	91.25	181.10	7,863.03	-2,640.81	-933.45	2,591.22	0.50	0.49	-0.04
10,511.00	92.38	180.88	7,860.02	-2,735.74	-935.09	2,663.11	1.21	1.19	-0.23
10,606.00	92.00	179.42	7,856.39	-2,830.67	-935.34	2,734.07	1.59	-0.40	-1.54
10,701.00	91.44	177.66	7,853.54	-2,925.59	-932.92	2,803.24	1.94	-0.59	-1.85
10,796.00	90.69	179.06	7,851.78	-3,020.53	-930.21	2,872.23	1.67	-0.79	1.47
10,890.00	89.03	179.49	7,852.01	-3,114.52	-929.02	2,941.52	1.82	-1.77	0.46
10,985.00	86.74	179.22	7,855.51	-3,209.45	-927.95	3,011.60	2.43	-2.41	-0.28
11,080.00	86.79	178.84	7,860.87	-3,304.28	-926.34	3,081.25	0.40	0.05	-0.40
11,175.00	86.84	178.43	7,866.15	-3,399.11	-924.08	3,150.46	0.43	0.05	-0.43
11,270.00	86.77	178.18	7,871.45	-3,493.92	-921.28	3,219.29	0.27	-0.07	-0.26
11,365.00	86.79	178.07	7,876.78	-3,588.72	-918.17	3,287.92	0.12	0.02	-0.12
11,460.00	89.35	178.17	7,879.98	-3,683.60	-915.06	3,356.60	2.70	2.69	0.11
11,554.00	90.24	178.43	7,880.32	-3,777.56	-912.27	3,424.81	0.99	0.95	0.28
11,649.00	90.86	177.64	7,879.41	-3,872.50	-909.01	3,493.43	1.06	0.65	-0.83
11,744.00	91.38	176.61	7,877.55	-3,967.36	-904.25	3,561.00	1.21	0.55	-1.08
11,839.00	88.51	176.77	7,877.64	-4,062.19	-898.76	3,628.06	3.03	-3.02	0.17
11,934.00	88.19	177.29	7,880.38	-4,157.02	-893.84	3,695.50	0.64	-0.34	0.55
12,028.00	88.33	177.28	7,883.23	-4,250.88	-889.39	3,762.52	0.15	0.15	-0.01
12,123.00	89.20	179.38	7,885.28	-4,345.81	-886.63	3,831.47	2.39	0.92	2.21
12,218.00	89.84	179.36	7,886.07	-4,440.80	-885.58	3,901.61	0.67	0.67	-0.02
12,313.00	90.47	179.27	7,885.82	-4,535.79	-884.45	3,971.69	0.67	0.66	-0.09
12,408.00	91.68	179.83	7,884.03	-4,630.77	-883.70	4,042.02	1.40	1.27	0.59
12,503.00	92.20	179.65	7,880.82	-4,725.71	-883.27	4,112.54	0.58	0.55	-0.19
12,598.00	91.59	178.82	7,877.68	-4,820.65	-882.00	4,182.49	1.08	-0.64	-0.87
12,693.00	88.96	180.97	7,877.22	-4,915.64	-881.83	4,253.21	3.58	-2.77	2.26

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 505H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 3114.00usft (Pioneer 84)
Site:	Daisy 24 State Com	MD Reference:	RKB @ 3114.00usft (Pioneer 84)
Well:	505H	North Reference:	Grid
Wellbore:	OH \ 66036	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	Database:	USA Compass

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)
12,788.00	89.70	181.16	7,878.33	-5,010.61	-883.59	4,325.21	0.80	0.78	0.20
12,883.00	90.19	181.13	7,878.42	-5,105.59	-885.49	4,397.30	0.52	0.52	-0.03
12,977.00	90.90	181.76	7,877.53	-5,199.56	-887.86	4,468.95	1.01	0.76	0.67
13,072.00	91.60	181.98	7,875.46	-5,294.48	-890.96	4,541.81	0.77	0.74	0.23
13,167.00	92.50	182.34	7,872.06	-5,389.35	-894.54	4,614.94	1.02	0.95	0.38
13,262.00	90.59	182.27	7,869.50	-5,484.24	-898.36	4,688.24	2.01	-2.01	-0.07
13,357.00	91.06	182.37	7,868.13	-5,579.15	-902.20	4,761.58	0.51	0.49	0.11
13,451.00	89.19	181.94	7,867.92	-5,673.08	-905.74	4,833.98	2.04	-1.99	-0.46
13,546.00	89.72	181.72	7,868.83	-5,768.03	-908.77	4,906.80	0.60	0.56	-0.23
13,640.00	90.81	182.26	7,868.39	-5,861.97	-912.04	4,979.03	1.29	1.16	0.57
13,735.00	91.41	182.62	7,866.55	-5,956.86	-916.08	5,052.49	0.74	0.63	0.38
13,830.00	92.07	182.91	7,863.67	-6,051.71	-920.66	5,126.27	0.76	0.69	0.31
13,925.00	89.57	182.02	7,862.31	-6,146.60	-924.74	5,199.76	2.79	-2.63	-0.94
14,020.00	88.89	181.46	7,863.58	-6,241.55	-927.63	5,272.48	0.93	-0.72	-0.59
14,115.00	89.34	181.59	7,865.05	-6,336.50	-930.16	5,344.97	0.49	0.47	0.14
14,209.00	90.21	181.74	7,865.42	-6,430.46	-932.89	5,416.86	0.94	0.93	0.16
14,304.00	90.23	181.79	7,865.06	-6,525.42	-935.81	5,489.62	0.06	0.02	0.05
14,399.00	89.19	180.24	7,865.54	-6,620.39	-937.50	5,561.57	1.96	-1.09	-1.63
14,494.00	88.91	179.51	7,867.11	-6,715.38	-937.29	5,632.26	0.82	-0.29	-0.77
14,589.00	89.36	179.14	7,868.55	-6,810.36	-936.17	5,702.35	0.61	0.47	-0.39
14,684.00	89.98	179.14	7,869.09	-6,905.35	-934.74	5,772.23	0.65	0.65	0.00
14,779.00	90.53	178.88	7,868.67	-7,000.33	-933.10	5,841.97	0.64	0.58	-0.27
14,873.00	90.88	179.04	7,867.51	-7,094.31	-931.40	5,910.91	0.41	0.37	0.17
14,968.00	91.57	179.05	7,865.48	-7,189.28	-929.81	5,980.68	0.73	0.73	0.01
15,063.00	91.54	178.71	7,862.90	-7,284.22	-927.96	6,050.24	0.36	-0.03	-0.36
15,158.00	89.29	177.78	7,862.22	-7,379.17	-925.05	6,119.11	2.56	-2.37	-0.98
15,253.00	89.94	177.68	7,862.86	-7,474.09	-921.29	6,187.39	0.69	0.68	-0.11
15,347.00	90.69	177.94	7,862.34	-7,568.02	-917.69	6,255.04	0.84	0.80	0.28
15,442.00	91.68	178.10	7,860.37	-7,662.94	-914.41	6,323.64	1.06	1.04	0.17
15,537.00	89.67	177.96	7,859.25	-7,757.88	-911.15	6,392.25	2.12	-2.12	-0.15
15,631.00	88.68	178.12	7,860.61	-7,851.81	-907.93	6,460.16	1.07	-1.05	0.17
15,726.00	89.31	178.25	7,862.27	-7,946.75	-904.92	6,528.95	0.68	0.66	0.14
15,821.00	89.31	177.83	7,863.42	-8,041.68	-901.68	6,597.58	0.44	0.00	-0.44
15,916.00	90.97	178.72	7,863.19	-8,136.64	-898.82	6,666.49	1.98	1.75	0.94
16,010.00	91.65	178.65	7,861.04	-8,230.59	-896.66	6,735.11	0.73	0.72	-0.07
16,105.00	92.60	178.58	7,857.51	-8,325.49	-894.36	6,804.35	1.00	1.00	-0.07
16,200.00	90.60	178.67	7,854.86	-8,420.42	-892.09	6,873.63	2.11	-2.11	0.09
16,295.00	89.94	179.51	7,854.41	-8,515.41	-890.58	6,943.45	1.12	-0.69	0.88
16,389.00	90.50	179.80	7,854.05	-8,609.41	-890.01	7,013.17	0.67	0.60	0.31
16,484.00	90.52	179.55	7,853.21	-8,704.40	-889.47	7,083.65	0.26	0.02	-0.26
16,579.00	90.93	180.03	7,852.01	-8,799.39	-889.12	7,154.26	0.66	0.43	0.51
16,674.00	89.56	181.07	7,851.60	-8,894.38	-890.04	7,225.70	1.81	-1.44	1.09
16,768.00	89.41	181.11	7,852.44	-8,988.36	-891.82	7,296.97	0.17	-0.16	0.04

Company:	COG Operating LLC	Local Co-ordinate Reference:	Well 505H
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	RKB @ 3114.00usft (Pioneer 84)
Site:	Daisy 24 State Com	MD Reference:	RKB @ 3114.00usft (Pioneer 84)
Well:	505H	North Reference:	Grid
Wellbore:	OH \ 66036	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Pioneer 84)	Database:	USA Compass

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)
16,863.00	89.64	181.52	7,853.23	-9,083.33	-894.00	7,369.25	0.49	0.24	0.43
16,958.00	90.10	181.63	7,853.45	-9,178.30	-896.62	7,441.81	0.50	0.48	0.12
17,053.00	90.40	181.84	7,853.03	-9,273.25	-899.49	7,514.53	0.39	0.32	0.22
17,148.00	88.83	181.38	7,853.67	-9,368.21	-902.16	7,587.12	1.72	-1.65	-0.48
17,242.00	87.62	181.06	7,856.58	-9,462.14	-904.16	7,658.50	1.33	-1.29	-0.34
17,337.00	88.26	181.57	7,860.00	-9,557.05	-906.34	7,730.73	0.86	0.67	0.54
17,432.00	90.03	182.80	7,861.42	-9,651.97	-909.96	7,803.92	2.27	1.86	1.29
17,527.00	89.84	181.50	7,861.52	-9,746.90	-913.53	7,877.09	1.38	-0.20	-1.37
17,622.00	89.89	180.98	7,861.75	-9,841.88	-915.58	7,949.29	0.55	0.05	-0.55
17,716.00	89.52	179.94	7,862.23	-9,935.87	-916.34	8,019.88	1.17	-0.39	-1.11
17,811.00	89.36	178.84	7,863.16	-10,030.86	-915.32	8,090.04	1.17	-0.17	-1.16
17,906.00	89.92	179.24	7,863.76	-10,125.84	-913.73	8,159.81	0.72	0.59	0.42
18,001.00	90.72	179.65	7,863.23	-10,220.84	-912.81	8,230.04	0.95	0.84	0.43
18,064.00	91.01	179.73	7,862.28	-10,283.83	-912.47	8,276.79	0.48	0.46	0.13
Final Phoenix MWD Survey									
18,079.12	91.01	179.73	7,862.01	-10,298.95	-912.40	8,288.01	0.00	0.00	0.00
LTP: 18079.12' MD									
18,127.00	91.01	179.73	7,861.16	-10,346.82	-912.18	8,323.56	0.00	0.00	0.00
Projection to Bit									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
7,037.00	7,004.59	94.47	-436.24	Tie In
7,079.00	7,046.35	95.26	-440.64	First Phoenix MWD Survey
18,064.00	7,862.28	-10,283.83	-912.47	Final Phoenix MWD Survey
18,079.12	7,862.01	-10,298.95	-912.40	LTP: 18079.12' MD
18,127.00	7,861.16	-10,346.82	-912.18	Projection to Bit