

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.

Carlsbad Field Office
Artesia

SUBMIT IN TRIPLICATE - Other instructions on page 2

1. Type of Well ☒ Oil Well ☐ Gas Well ☐ Other		5. Lease Serial No. NMLC028784A
2. Name of Operator COG OPERATING LLC Contact: ROBYN RUSSELL E-Mail: russell@concho.com		6. If Indian, Allottee or Tribe Name
3a. Address 600 W. ILLINOIS AVENUE MIDLAND, TX 79701	3b. Phone No. (include area code) Ph: 432-685-4385	7. If Unit or CA/Agreement, Name and/or No. NMNM88525X
4. Location of Well (Footage, Sec., T., R., M., or Survey Description) Sec 24 T17S R29E NENE 296FNL 153FEL		8. Well Name and No. BURCH KEELY UNIT 962H
		9. API Well No. 30-015-44101
		10. Field and Pool or Exploratory Area BURCH KEELY;G-UPPER YESO
		11. County or Parish, State EDDY 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 A
	☐ Convert to Injection	☐ Plug Back	☐ Water Disposal	PD

13. Describe Proposed or Completed Operation: Clearly state all pertinent details, including estimated starting date of any proposed work and approximate duration thereof. If the proposal is to deepen directionally or 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 LLC respectfully requests to change the bottom hole location of this well.

From: 330 FNL 330 FEL, Sec 19, T17S, R30E
To: 330 FNL 10 FEL, Sec 19, T17S, R30E

This change is to maximize the returns and reduce waste of the reservoir. Attached is a revised plat and directional plan.

NM OIL CONSERVATION

ARTESIA DISTRICT

MAY 30 2017

RECEIVED

14. I hereby certify that the foregoing is true and correct. Electronic Submission #375293 verified by the BLM Well Information System For COG OPERATING LLC, sent to the Carlsbad Committed to AFMSS for processing by DEBORAH MCKINNEY on 05/10/2017 ()	
Name (Printed/Typed) ROBYN RUSSELL	Title REGULATORY ANALYST
Signature (Electronic Submission)	Date 05/08/2017
THIS SPACE FOR FEDERAL OR STATE OFFICE USE	
Approved By <u>Mustafa Hague</u>	Title PETROLEUM ENGINEER
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.	Date <u>5/24/2017</u>
Office <u>CFO</u>	BUREAU OF LAND MANAGEMENT CARLSBAD FIELD OFFICE

Title 18 U.S.C. Section 1001 and Title 43 U.S.C. Section 1212, make it a crime for any person knowingly and willfully to make to any department or agency of the United States any false, fictitious or fraudulent statements or representations as to any matter within its jurisdiction.

(Instructions on page 2)

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

District I
1625 N. French Dr. Hobbs, NM 88240
Phone (505) 393-6161 Fax (505) 334-0720
District II
811 S. First St. Artesia, NM 87010
Phone (505) 748-1283 Fax (505) 748-0720
District III
1000 P.O. Brazos Road, Aztec, NM 87410
Phone (505) 334-6178 Fax (505) 334-6170
District IV
1220 S. St. Francis Dr. Santa Fe, NM 87501
Phone (505) 476-3460 Fax (505) 476-3461

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

NM OIL CONSERVATION

ARTESIA DISTRICT

Form C-102

MAY 30 2017 Revised August 1, 2011

Submit one copy to appropriate

District Office

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☐ AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30 015 44101	Pool Code 97918	Pool Name Burch Keely; Gloriaeta Upper Yaso
Property Code 308086	Property Name BURCH KEELY UNIT	Well Number 962H
OGRID NO 229137	Operator Name COG OPERATING, LLC	Elevation 3618

Surface Location

A	21	17S	29E	296	NORTH	153	EAST	EDDY
Bottom Hole Location If Different From Surface								
A	19	17S	30E	330	NORTH	10	EAST	EDDY
157 43								

No allowable will be assigned to this completion until all interest have been consolidated or a non-standard unit has been approved by the division.

DETAIL "A"	OPERATOR CERTIFICATION I, the undersigned, being duly qualified, do hereby certify that the well location shown on this plat was placed 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: 05.01/2017 Signature: Robyn M. Russell Printed Name: Robyn M. Russell Address: Rrussellaconcho.com
	SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was placed 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: 6/25/13 Signature and Seal of Professional Surveyor: [Seal] Certificate Number: 19680 3/23/17 BH CHANGE



NM OIL CONSERVATION

ARTESIA DISTRICT

MAY 30 2017

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COG Operating LLC

Eddy County, NM (NAD-27 2015)

Burch Keely Unit #962H

API #: 30-015-44101

SHL: 296' FNL, 153' FEL, Sec 24, T17S, R29E, Unit A

PP: 333' FNL, 330' FWL, Sec 19, T17S, R30E, Unit D

BHL: 330' FNL, 10' FEL, Sec 19, T17S, R30E, Unit A

Plan: Design #1

Standard Planning Report

04 May, 2017





TDS
Planning Report



Database: EDM 5000.1 Single User Db
Company: COG Operating LLC
Project: Eddy County, NM (NAD-27 2015)
Site: Burch Keely Unit #962H
Well: SHL: 296' FNL, 153' FEL, Sec 24, T17S, R29E, Unit A
Wellbore: BHL: 330' FNL, 10' FEL, Sec 19, T17S, R30E, Unit A
Design: Design #1

Local Co-ordinate Reference: Site Burch Keely Unit #962H
TVD Reference: KB @ 3636.00usft (Silver Oak 3)
MD Reference: KB @ 3636.00usft (Silver Oak 3)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Project	Eddy County, NM (NAD-27 2015)		
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	Burch Keely Unit #962H			
Site Position:		Northing:	664,480.60 usft	Latitude: 32° 49' 34.864 N
From: Map		Easting:	596,355.50 usft	Longitude: 104° 1' 10.772 W
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence: 0.17 °

Well	SHL: 296' FNL, 153' FEL, Sec 24, T17S, R29E, Unit A			
Well Position	+N/-S	0.00 usft	Northing:	664,480.60 usft
	+E/-W	0.00 usft	Easting:	596,355.50 usft
Position Uncertainty	0.00 usft		Wellhead Elevation:	0.00 usft
			Ground Level:	3,618.00 usft

Wellbore	BHL: 330' FNL, 10' FEL, Sec 19 T17S, R30E, Unit A			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)
	IGRF2015	5/3/2017	7.22	60.54
				Field Strength (nT)
				48,259

Design	Design #1			
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	90.15

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	
4,429.21	0.00	0.00	4,429.21	0.00	0.00	0.00	0.00	0.00	0.00	
5,256.48	91.00	94.57	4,950.00	-42.23	528.28	11.00	11.00	0.00	94.57	
5,508.27	91.00	89.53	4,945.61	-51.24	779.78	2.00	0.00	-2.00	-89.96	
10,070.43	91.00	89.53	4,866.02	-14.10	5,341.10	0.00	0.00	0.00	0.00	PBHL (BKU#962H/L1



TDS
Planning Report



Database: EDM 5000.1 Single User Db
Company: COG Operating LLC
Project: Eddy County, NM (NAD-27 2015)
Site: Burch Keely Unit #962H
Well: SHL: 296' FNL, 153' FEL, Sec 24, T17S, R29E, Unit A
Wellbore: BHL: 330' FNL, 10' FEL, Sec 19, T17S, R30E, Unit A
Design: Design #1

Local Co-ordinate Reference: Site Burch Keely Unit #962H
TVD Reference: KB @ 3636.00usft (Silver Oak 3)
MD Reference: KB @ 3636.00usft (Silver Oak 3)
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
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	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
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,429.21	0.00	0.00	4,429.21	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 11.00									
4,450.00	2.29	94.57	4,449.99	-0.03	0.41	0.41	11.00	11.00	0.00
4,500.00	7.79	94.57	4,499.78	-0.38	4.79	4.79	11.00	11.00	0.00
4,550.00	13.29	94.57	4,548.92	-1.11	13.90	13.90	11.00	11.00	0.00
4,600.00	18.79	94.57	4,596.96	-2.21	27.66	27.67	11.00	11.00	0.00
4,650.00	24.29	94.57	4,643.45	-3.67	45.95	45.96	11.00	11.00	0.00



TDS
Planning Report



Database: EDM 5000.1 Single User Db
Company: COG Operating LLC
Project: Eddy County, NM (NAD-27 2015)
Site: Burch Keely Unit #962H
Well: SHL: 296' FNL, 153' FEL, Sec 24, T17S, R29E, Unit A
Wellbore: BHL: 330' FNL, 10' FEL, Sec 19, T17S, R30E, Unit A
Design: Design #1

Local Co-ordinate Reference: Site Burch Keely Unit #962H
TVD Reference: KB @ 3636.00usft (Silver Oak 3)
MD Reference: KB @ 3636.00usft (Silver Oak 3)
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)
4,700.00	29.79	94.57	4,687.97	-5.48	68.60	68.61	11.00	11.00	0.00
4,750.00	35.29	94.57	4,730.10	-7.63	95.40	95.42	11.00	11.00	0.00
4,800.00	40.79	94.57	4,769.47	-10.08	126.09	126.12	11.00	11.00	0.00
4,850.00	46.29	94.57	4,805.70	-12.82	160.41	160.45	11.00	11.00	0.00
4,900.00	51.79	94.57	4,838.47	-15.83	198.03	198.08	11.00	11.00	0.00
4,950.00	57.29	94.57	4,867.46	-19.07	238.61	238.66	11.00	11.00	0.00
5,000.00	62.79	94.57	4,892.43	-22.52	281.78	281.84	11.00	11.00	0.00
5,050.00	68.29	94.57	4,913.12	-26.15	327.13	327.19	11.00	11.00	0.00
5,100.00	73.79	94.57	4,929.37	-29.91	374.24	374.32	11.00	11.00	0.00
5,150.00	79.29	94.57	4,941.00	-33.79	422.70	422.78	11.00	11.00	0.00
5,200.00	84.79	94.57	4,947.93	-37.73	472.04	472.14	11.00	11.00	0.00
5,250.00	90.29	94.57	4,950.07	-41.71	521.81	521.92	11.00	11.00	0.00
5,256.48	91.00	94.57	4,950.00	-42.23	528.27	528.38	11.00	11.00	0.00
Start DLS 2.00 TFO -89.96									
5,300.00	91.00	93.70	4,949.24	-45.36	571.67	571.79	2.00	0.00	-2.00
5,400.00	91.00	91.70	4,947.50	-50.07	671.54	671.67	2.00	0.00	-2.00
5,508.27	91.00	89.53	4,945.61	-51.24	779.78	779.92	2.00	0.00	-2.00
Start 4562.17 hold at 5508.27 MD									
5,600.00	91.00	89.53	4,944.01	-50.49	871.50	871.63	0.00	0.00	0.00
5,700.00	91.00	89.53	4,942.26	-49.68	971.48	971.60	0.00	0.00	0.00
5,800.00	91.00	89.53	4,940.52	-48.86	1,071.46	1,071.58	0.00	0.00	0.00
5,900.00	91.00	89.53	4,938.77	-48.05	1,171.44	1,171.56	0.00	0.00	0.00
6,000.00	91.00	89.53	4,937.03	-47.23	1,271.42	1,271.54	0.00	0.00	0.00
6,100.00	91.00	89.53	4,935.28	-46.42	1,371.40	1,371.52	0.00	0.00	0.00
6,200.00	91.00	89.53	4,933.54	-45.61	1,471.38	1,471.50	0.00	0.00	0.00
6,300.00	91.00	89.53	4,931.79	-44.79	1,571.37	1,571.48	0.00	0.00	0.00
6,400.00	91.00	89.53	4,930.05	-43.98	1,671.35	1,671.46	0.00	0.00	0.00
6,500.00	91.00	89.53	4,928.30	-43.16	1,771.33	1,771.44	0.00	0.00	0.00
6,600.00	91.00	89.53	4,926.56	-42.35	1,871.31	1,871.42	0.00	0.00	0.00
6,700.00	91.00	89.53	4,924.82	-41.54	1,971.29	1,971.39	0.00	0.00	0.00
6,800.00	91.00	89.53	4,923.07	-40.72	2,071.27	2,071.37	0.00	0.00	0.00
6,900.00	91.00	89.53	4,921.33	-39.91	2,171.25	2,171.35	0.00	0.00	0.00
7,000.00	91.00	89.53	4,919.58	-39.09	2,271.24	2,271.33	0.00	0.00	0.00
7,100.00	91.00	89.53	4,917.84	-38.28	2,371.22	2,371.31	0.00	0.00	0.00
7,200.00	91.00	89.53	4,916.09	-37.47	2,471.20	2,471.29	0.00	0.00	0.00
7,300.00	91.00	89.53	4,914.35	-36.65	2,571.18	2,571.27	0.00	0.00	0.00
7,400.00	91.00	89.53	4,912.60	-35.84	2,671.16	2,671.25	0.00	0.00	0.00
7,500.00	91.00	89.53	4,910.86	-35.02	2,771.14	2,771.23	0.00	0.00	0.00
7,600.00	91.00	89.53	4,909.12	-34.21	2,871.13	2,871.21	0.00	0.00	0.00
7,700.00	91.00	89.53	4,907.37	-33.40	2,971.11	2,971.18	0.00	0.00	0.00
7,800.00	91.00	89.53	4,905.63	-32.58	3,071.09	3,071.16	0.00	0.00	0.00
7,900.00	91.00	89.53	4,903.88	-31.77	3,171.07	3,171.14	0.00	0.00	0.00
8,000.00	91.00	89.53	4,902.14	-30.95	3,271.05	3,271.12	0.00	0.00	0.00
8,100.00	91.00	89.53	4,900.39	-30.14	3,371.03	3,371.10	0.00	0.00	0.00
8,200.00	91.00	89.53	4,898.65	-29.33	3,471.01	3,471.08	0.00	0.00	0.00
8,300.00	91.00	89.53	4,896.90	-28.51	3,571.00	3,571.06	0.00	0.00	0.00
8,400.00	91.00	89.53	4,895.16	-27.70	3,670.98	3,671.04	0.00	0.00	0.00
8,500.00	91.00	89.53	4,893.42	-26.88	3,770.96	3,771.02	0.00	0.00	0.00
8,600.00	91.00	89.53	4,891.67	-26.07	3,870.94	3,871.00	0.00	0.00	0.00
8,700.00	91.00	89.53	4,889.93	-25.26	3,970.92	3,970.97	0.00	0.00	0.00
8,800.00	91.00	89.53	4,888.18	-24.44	4,070.90	4,070.95	0.00	0.00	0.00
8,900.00	91.00	89.53	4,886.44	-23.63	4,170.88	4,170.93	0.00	0.00	0.00



TDS Planning Report



Database: EDM 5000.1 Single User Db
Company: COG Operating LLC
Project: Eddy County, NM (NAD-27 2015)
Site: Burch Keely Unit #962H
Well: SHL: 296' FNL, 153' FEL, Sec 24, T17S, R29E, Unit A
Wellbore: BHL: 330' FNL, 10' FEL, Sec 19, T17S, R30E, Unit A
Design: Design #1

Local Co-ordinate Reference: Site Burch Keely Unit #962H
TVD Reference: KB @ 3636.00usft (Silver Oak 3)
MD Reference: KB @ 3636.00usft (Silver Oak 3)
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)
9,000.00	91.00	89.53	4,884.69	-22.81	4,270.87	4,270.91	0.00	0.00	0.00
9,100.00	91.00	89.53	4,882.95	-22.00	4,370.85	4,370.89	0.00	0.00	0.00
9,200.00	91.00	89.53	4,881.20	-21.19	4,470.83	4,470.87	0.00	0.00	0.00
9,300.00	91.00	89.53	4,879.46	-20.37	4,570.81	4,570.85	0.00	0.00	0.00
9,400.00	91.00	89.53	4,877.72	-19.56	4,670.79	4,670.83	0.00	0.00	0.00
9,500.00	91.00	89.53	4,875.97	-18.74	4,770.77	4,770.81	0.00	0.00	0.00
9,600.00	91.00	89.53	4,874.23	-17.93	4,870.75	4,870.79	0.00	0.00	0.00
9,700.00	91.00	89.53	4,872.48	-17.12	4,970.74	4,970.76	0.00	0.00	0.00
9,800.00	91.00	89.53	4,870.74	-16.30	5,070.72	5,070.74	0.00	0.00	0.00
9,900.00	91.00	89.53	4,868.99	-15.49	5,170.70	5,170.72	0.00	0.00	0.00
10,000.00	91.00	89.53	4,867.25	-14.67	5,270.68	5,270.70	0.00	0.00	0.00
10,070.43	91.00	89.53	4,866.02	-14.10	5,341.10	5,341.12	0.00	0.00	0.00

TD at 10070.43

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
Max Dev 68.73' @ 4639	0.00	0.00	0.00	-34.50	-176.65	664,446.10	596,178.85	32° 49' 34.528 N	104° 1' 12.843 W
- plan misses target center by 179.99usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Circle (radius 68.73)									
86.10' Radius @ 4873.1	0.00	0.00	0.00	-15.34	5,021.04	664,465.26	601,376.54	32° 49' 34.561 N	104° 0' 11.929 W
- plan misses target center by 4870.86usft at 9835.31usft MD (4870.12 TVD, -16.01 N, 5106.02 E)									
- Circle (radius 86.10)									
KOP (BKU#962H/L1)	0.00	0.00	4,429.21	0.00	0.00	664,480.60	596,355.50	32° 49' 34.864 N	104° 1' 10.772 W
- plan hits target center									
- Point									
PBHL (BKU#962H/L1)	0.00	0.00	4,866.02	-14.10	5,341.10	664,466.50	601,696.60	32° 49' 34.563 N	104° 0' 8.179 W
- plan hits target center									
- Point									
END TURN (BKU#962H)	0.00	0.00	4,945.61	-51.24	779.78	664,429.37	597,135.29	32° 49' 34.334 N	104° 1' 1.635 W
- plan hits target center									
- Point									
PP (BKU#962H/L1)	0.00	0.00	4,948.83	-38.62	483.21	664,441.98	596,838.71	32° 49' 34.467 N	104° 1' 5.110 W
- plan hits target center									
- Point									
EOC/TURN (BKU#962H)	0.00	0.00	4,950.00	-42.23	528.27	664,438.38	596,883.78	32° 49' 34.430 N	104° 1' 4.582 W
- plan hits target center									
- Point									



TDS
Planning Report



Database: EDM 5000.1 Single User Db
Company: COG Operating LLC
Project: Eddy County, NM (NAD-27 2015)
Site: Burch Keely Unit #962H
Well: SHL: 296' FNL, 153' FEL, Sec 24, T17S,
R29E, Unit A
Wellbore: BHL: 330' FNL, 10' FEL, Sec 19, T17S, R30E,
Unit A
Design: Design #1

Local Co-ordinate Reference: Site Burch Keely Unit #962H
TVD Reference: KB @ 3636.00usft (Silver Oak 3)
MD Reference: KB @ 3636.00usft (Silver Oak 3)
North Reference: Grid
Survey Calculation Method: Minimum Curvature

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
4,429.21	4,429.21	0.00	0.00	Start Build 11.00
5,256.48	4,950.00	-38.62	483.21	Start DLS 2.00 TFO -89.96
5,508.27	4,945.61	-42.23	528.28	Start 4562.17 hold at 5508.27 MD
10,070.43	4,866.02	-51.24	779.78	TD at 10070.43



COG Operating LLC
Project: Eddy County, NM (NAD-27 2015)
Site: Burch Keely Unit #962H

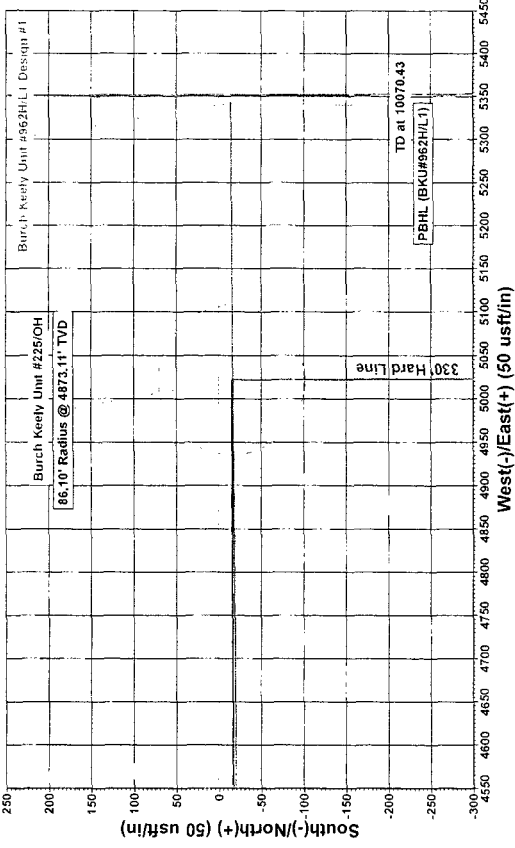
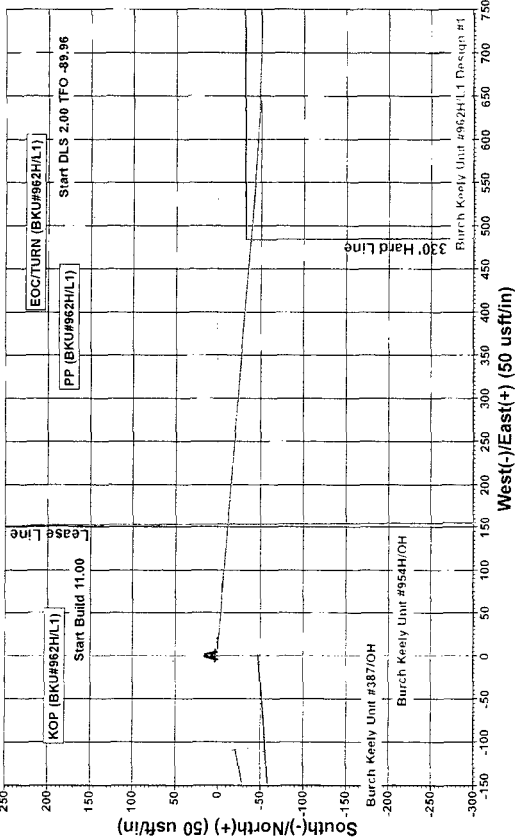
Well: SHL- 296' FNL, 153' FEL, Sec 24, T17S, R29E, Unit A
Wellbore: BHL- 330' FNL, 10' FEL, Sec 19, T17S, R30E, Unit A

Plan: Design #1 (SHL- 296' FNL, 153' FEL, Sec 24, T17S, R29E, Unit A/BHL- 330' FNL, 10' FEL, Sec 19, T17S, R30E, Unit A)

Section Details

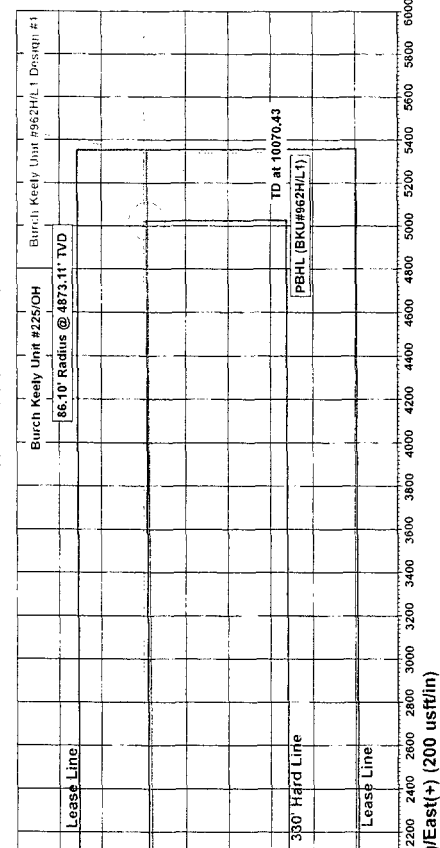
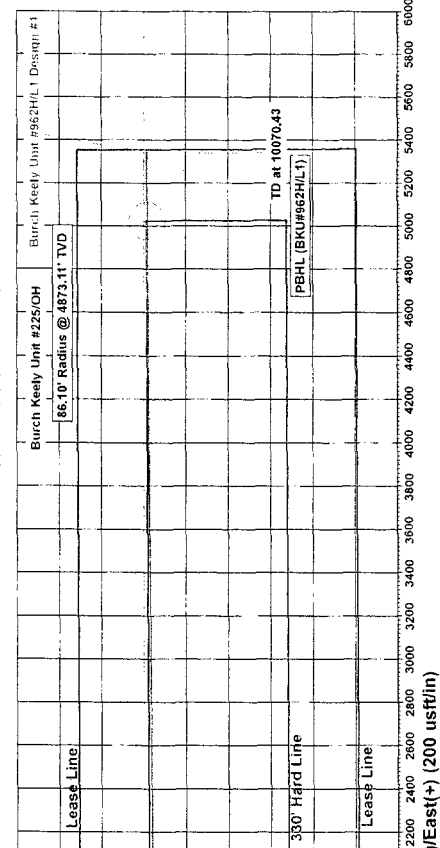
Sec	MD	Inc	Azi	TVD	+N/S	+E/W	Dleg	TFace	Vsect	Target
-----	----	-----	-----	-----	------	------	------	-------	-------	--------

1	4479.21	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	5256.48	91.00	94.57	4950.00	-42.23	528.28	11.00	94.57	528.39	528.39
3	5508.27	91.00	89.53	4945.61	-51.24	779.78	2.00	-89.96	779.91	779.91
4	10070.43	91.00	89.53	4886.02	-14.10	5341.10	0.00	0.00	5341.12	PBHL (BKU#962H/L1)

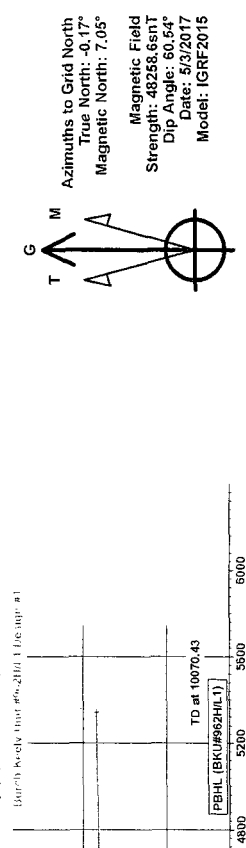
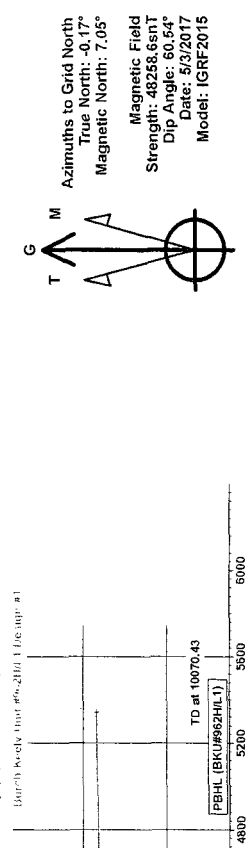


West(-)/East(+) (50 usft/in)

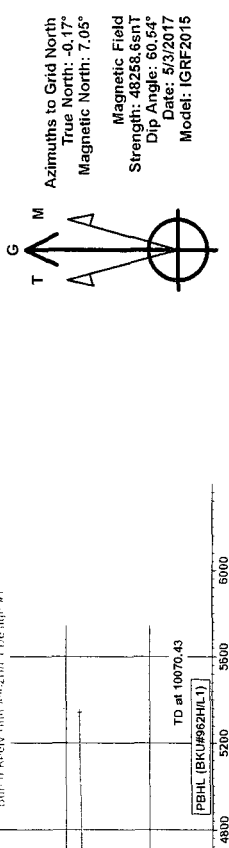
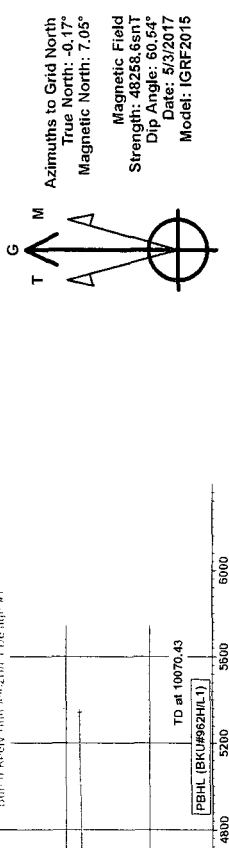
West(-)/East(+) (50 usft/in)



West(-)/East(+) (200 usft/in)

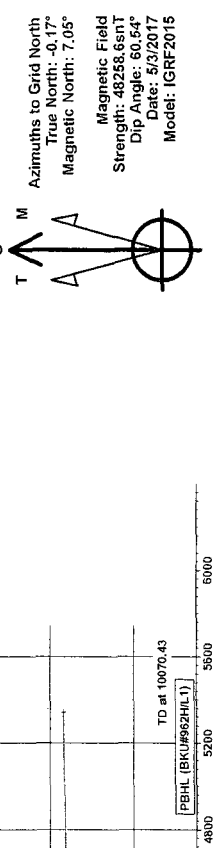
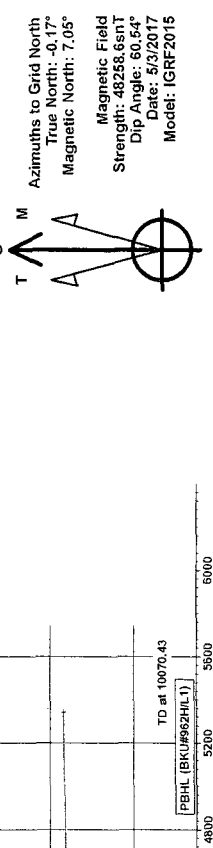


West(-)/East(+) (200 usft/in)



South(-)/North(+) (50 usft/in)

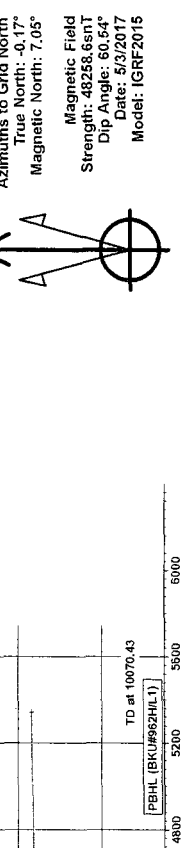
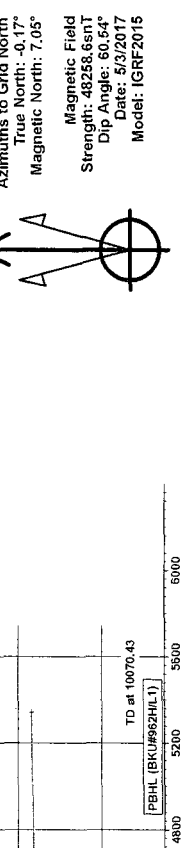
South(-)/North(+) (200 usft/in)



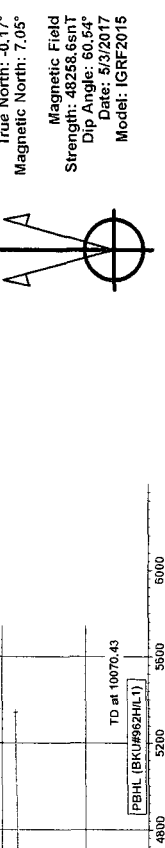
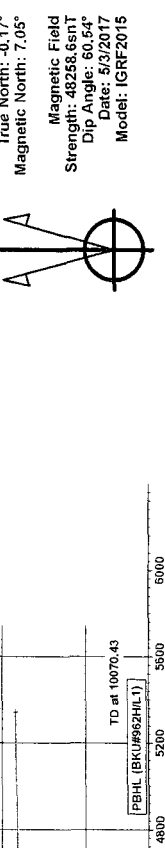
South(-)/North(+) (200 usft/in)



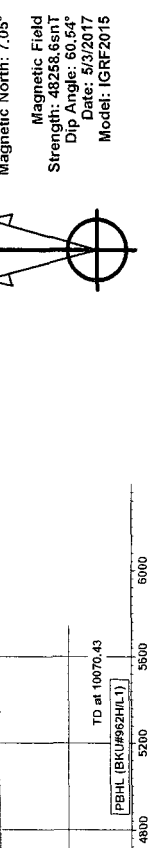
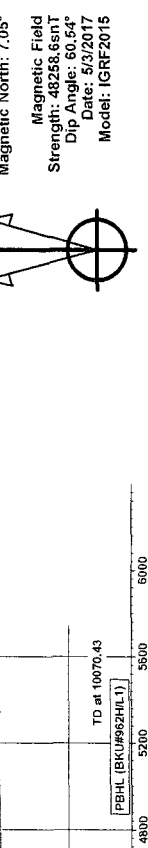
South(-)/North(+) (50 usft/in)



South(-)/North(+) (200 usft/in)



South(-)/North(+) (50 usft/in)



South(-)/North(+) (200 usft/in)



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South(-)/North(+) (50 usft/in)



South(-)/North(+) (200 usft/in)



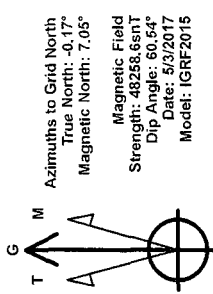
South(-)/North(+) (50 usft/in)



South(-)/North(+) (200 usft/in)



South(-)/North(+) (50 usft/in)



PROJECT DETAILS: Eddy County, NM (NAD-27 2015)
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level
Local North: Grid

Ground Elevation: 3618.00
RKB Elevation: KB @ 3636.00usft (Silver Oak 3)
Northing: 664480.60
Easting: 596355.50
Latitude: 32° 49' 34.864 N
Longitude: 104° 1' 10.772 W

Terra Directional Services LLC
3705 South County Road 1210, Midland, TX 79706
Phone: 432-618-1210





NEW OIL CONSERVATION
ARTESIA DISTRICT
MAY 30 2017

RECEIVED

COG Operating LLC

Eddy County, NM (NAD-27 2015)

Burch Keely Unit #962H

API #: 30-015-44101

SHL: 296' FNL, 153' FEL, Sec 24, T17S, R29E, Unit A

PP: 333' FNL, 330' FWL, Sec 19, T17S, R30E, Unit D

BHL: 330' FNL, 10' FEL, Sec 19, T17S, R30E, Unit A

Design #1

Anticollision Report

04 May, 2017





TDS
Anticollision Report



Company: COG Operating LLC	Local Co-ordinate Reference: Site Burch Keely Unit #962H
Project: Eddy County, NM (NAD-27 2015)	TVD Reference: KB @ 3636.00usft (Silver Oak 3)
Reference Site: Burch Keely Unit #962H	MD Reference: KB @ 3636.00usft (Silver Oak 3)
Site Error: 0.00 usft	North Reference: Grid
Reference Well: SHL: 296' FNL, 153' FEL, Sec 24, T17S, R29E, Unit A	Survey Calculation Method: Minimum Curvature
Well Error: 0.00 usft	Output errors are at 2.00 sigma
Reference Wellbore BHL: 330' FNL, 10' FEL, Sec 19, T17S, R30E, Unit A	Database: EDM 5000.1 Single User Db
Reference Design: Design #1	Offset TVD Reference: Offset Datum

Reference	Design #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum separation factor of 4.00	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	5/4/2017		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	10,070.43	Design #1 (BHL: 330' FNL, 10' FEL, Sec 1	MWD	MWD - Standard

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						
Eddy County Offset Wells						
Burch Keely Unit #225 - OH - OH	9,664.23	4,855.96	0.19	-420.39	0.000	Level 1, CC, ES, SF
Burch Keely Unit #387 - OH - OH	4,410.00	4,394.12	114.60	16.22	1.165	Level 2, CC, ES, SF
Burch Keely Unit #954H - OH - OH	4,800.00	9,968.00	168.68	122.23	3.632	ES, SF
Burch Keely Unit #954H - OH - OH	4,800.79	9,968.00	168.67	122.32	3.639	CC

Offset Design													Offset Site Error:		0.00 usft
Survey Program: 432-INC													Offset Well Error:		0.00 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			
9,300.00	4,879.46	4,873.70	4,872.85	124.75	287.60	179.36	-17.61	4,934.41	363.79	256.54	107.25	3.392			
9,400.00	4,877.72	4,868.87	4,868.01	127.49	287.13	179.14	-17.60	4,934.56	263.91	156.73	107.18	2.462			
9,500.00	4,875.97	4,864.00	4,863.15	130.24	286.66	178.63	-17.60	4,934.72	164.03	56.92	107.11	1.531			
9,600.00	4,874.23	4,859.11	4,858.26	132.99	286.18	176.57	-17.60	4,934.87	64.15	-42.89	107.04	0.599	Level 1		
9,664.23	4,873.11	4,855.96	4,855.11	134.75	285.88	89.97	-17.59	4,934.97	0.19	-420.39	420.58	0.000	Level 1, CC, ES, SF		
9,700.00	4,872.48	4,854.19	4,853.34	135.73	285.70	6.04	-17.59	4,935.03	35.73	-71.29	107.02	0.334	Level 1		
9,800.00	4,870.74	4,849.24	4,848.40	138.48	285.22	1.57	-17.59	4,935.19	135.61	28.70	106.90	1.268	Level 3		
9,900.00	4,868.99	4,844.26	4,843.42	141.23	284.74	0.89	-17.58	4,935.35	235.48	128.65	106.83	2.204			
10,000.00	4,867.25	4,839.26	4,838.42	143.98	284.26	0.61	-17.58	4,935.51	335.36	228.60	106.76	3.141			
10,070.89	4,866.01	4,835.69	4,834.85	145.92	283.91	0.50	-17.58	4,935.62	406.16	299.09	107.07	3.794			

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



TDS

Anticollision Report



Company: COG Operating LLC
 Project: Eddy County, NM (NAD-27 2015)
 Reference Site: Burch Keely Unit #962H
 Site Error: 0.00 usft
 Reference Well: SHL: 296' FNL, 153' FEL, Sec 24, T17S, R29E, Unit A
 Well Error: 0.00 usft
 Reference Wellbore: BHL: 330' FNL, 10' FEL, Sec 19, T17S, R30E, Unit A
 Reference Design: Design #1

Local Co-ordinate Reference: Site Burch Keely Unit #962H
 TVD Reference: KB @ 3636.00usft (Silver Oak 3)
 MD Reference: KB @ 3636.00usft (Silver Oak 3)
 North Reference: Grid
 Survey Calculation Method: Minimum Curvature
 Output errors are at 2.00 sigma
 Database: EDM 5000.1 Single User Db
 Offset TVD Reference: Offset Datum

Offset Design Eddy County Offset Wells - Burch Keely Unit #387 - OH - OH													Offset Site Error:	0.00 usft
Survey Program: 201-INC													Offset Well Error:	0.00 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 Tooface (')	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor		
1,800.00	1,800.00	1,784.35	1,783.95	3.91	104.59	-101.05	-28.49	-145.93	148.70	109.58	39.12	3.801		
1,900.00	1,900.00	1,884.34	1,883.93	4.14	109.12	-101.05	-28.24	-144.65	147.39	106.11	41.29	3.570		
2,000.00	2,000.00	1,984.33	1,983.91	4.36	113.64	-101.05	-27.99	-143.36	146.08	102.63	43.45	3.362		
2,100.00	2,100.00	2,084.32	2,083.90	4.59	118.17	-101.05	-27.74	-142.08	144.77	99.16	45.62	3.174		
2,200.00	2,200.00	2,184.31	2,183.88	4.81	122.72	-101.05	-27.49	-140.79	143.46	95.64	47.83	3.000		
2,300.00	2,300.00	2,284.30	2,283.86	5.04	127.28	-101.05	-27.24	-139.51	142.16	92.07	50.09	2.838		
2,400.00	2,400.00	2,384.30	2,383.84	5.26	131.85	-101.05	-26.99	-138.22	140.85	88.48	52.37	2.690		
2,500.00	2,500.00	2,484.29	2,483.83	5.49	136.45	-101.05	-26.74	-136.94	139.54	84.84	54.69	2.551		
2,600.00	2,600.00	2,584.28	2,583.81	5.71	141.05	-101.05	-26.48	-135.66	138.23	81.21	57.02	2.424		
2,700.00	2,700.00	2,684.27	2,683.79	5.94	145.64	-101.05	-26.23	-134.37	136.92	77.57	59.35	2.307		
2,800.00	2,800.00	2,784.26	2,783.78	6.16	150.24	-101.05	-25.98	-133.09	135.61	73.94	61.68	2.199		
2,900.00	2,900.00	2,884.25	2,883.76	6.39	154.83	-101.05	-25.73	-131.80	134.30	70.32	63.98	2.099		
3,000.00	3,000.00	2,984.24	2,983.74	6.61	159.41	-101.05	-25.48	-130.52	132.99	66.74	66.26	2.007		
3,100.00	3,100.00	3,084.24	3,083.72	6.84	163.99	-101.05	-25.23	-129.23	131.68	63.16	68.53	1.922		
3,200.00	3,200.00	3,184.23	3,183.71	7.06	168.57	-101.05	-24.98	-127.95	130.38	59.57	70.80	1.841		
3,300.00	3,300.00	3,284.22	3,283.69	7.28	173.15	-101.05	-24.73	-126.66	129.07	55.98	73.09	1.766		
3,400.00	3,400.00	3,384.21	3,383.67	7.51	177.74	-101.05	-24.48	-125.38	127.76	52.38	75.38	1.695		
3,500.00	3,500.00	3,484.20	3,483.66	7.73	182.33	-101.05	-24.23	-124.09	126.45	48.78	77.67	1.628		
3,600.00	3,600.00	3,584.19	3,583.64	7.96	186.92	-101.05	-23.98	-122.81	125.14	45.18	79.96	1.565		
3,700.00	3,700.00	3,684.18	3,683.62	8.18	191.51	-101.05	-23.73	-121.53	123.83	41.58	82.25	1.506		
3,800.00	3,800.00	3,784.18	3,783.60	8.41	196.10	-101.05	-23.47	-120.24	122.52	37.99	84.53	1.449 Level 3		
3,900.00	3,900.00	3,884.17	3,883.59	8.63	200.68	-101.05	-23.22	-118.96	121.21	34.41	86.81	1.396 Level 3		
4,000.00	4,000.00	3,984.16	3,983.57	8.86	205.27	-101.05	-22.97	-117.67	119.90	30.82	89.08	1.346 Level 3		
4,100.00	4,100.00	4,084.15	4,083.55	9.08	209.86	-101.05	-22.72	-116.39	118.59	27.23	91.36	1.298 Level 3		
4,200.00	4,200.00	4,184.14	4,183.54	9.31	214.45	-101.05	-22.47	-115.10	117.29	23.65	93.64	1.253 Level 3		
4,300.00	4,300.00	4,284.13	4,283.52	9.53	219.03	-101.05	-22.22	-113.82	115.98	20.08	95.90	1.209 Level 2		
4,400.00	4,400.00	4,384.12	4,383.50	9.76	223.61	-101.05	-21.97	-112.53	114.67	16.51	98.16	1.168 Level 2		
4,410.00	4,410.00	4,394.12	4,393.50	9.78	224.07	164.39	-21.94	-112.40	114.60	16.22	98.38	1.165 Level 2, CC, ES, SF		
4,500.00	4,499.78	4,483.96	4,483.33	9.97	228.18	164.90	-21.72	-111.25	117.99	17.57	100.42	1.175 Level 2		
4,600.00	4,599.96	4,581.41	4,580.77	10.18	232.64	166.84	-21.47	-110.00	139.01	35.73	103.29	1.346 Level 3		
4,700.00	4,687.97	4,640.00	4,639.35	10.45	235.33	167.71	-21.33	-109.25	181.15	76.04	105.12	1.723		
4,800.00	4,769.47	4,640.00	4,639.35	10.86	235.33	163.88	-21.33	-109.25	260.92	162.22	98.70	2.644		
4,900.00	4,838.47	4,640.00	4,639.35	11.54	235.33	147.43	-21.33	-109.25	356.73	260.57	96.16	3.710		



TDS
Anticollision Report



Company: COG Operating LLC
Project: Eddy County, NM (NAD-27 2015)
Reference Site: Burch Keely Unit #962H
Site Error: 0.00 usft
Reference Well: SHL: 296' FNL, 153' FEL, Sec 24, T17S, R29E, Unit A
Well Error: 0.00 usft
Reference Wellbore: BHL: 330' FNL, 10' FEL, Sec 19, T17S, R30E, Unit A
Reference Design: Design #1

Local Co-ordinate Reference: Site Burch Keely Unit #962H
TVD Reference: KB @ 3636.00usft (Silver Oak 3)
MD Reference: KB @ 3636.00usft (Silver Oak 3)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Offset Design Eddy County Offset Wells - Burch Keely Unit #954H - OH - OH													Offset Site Error: 0.00 usft
Survey Program: 100-VES-ISCWSA-GYRO-3, 4297-MWD													Offset Well Error: 0.00 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	
4,800.00	4,769.47	9,968.00	4,854.93	10.86	142.52	163.55	-47.97	0.87	168.68	122.23	46.44	3.632 ES SF	
4,800.79	4,770.07	9,968.00	4,854.93	10.87	142.52	163.55	-47.97	0.87	168.67	122.32	46.36	3.639 CC	



TDS
Anticollision Report

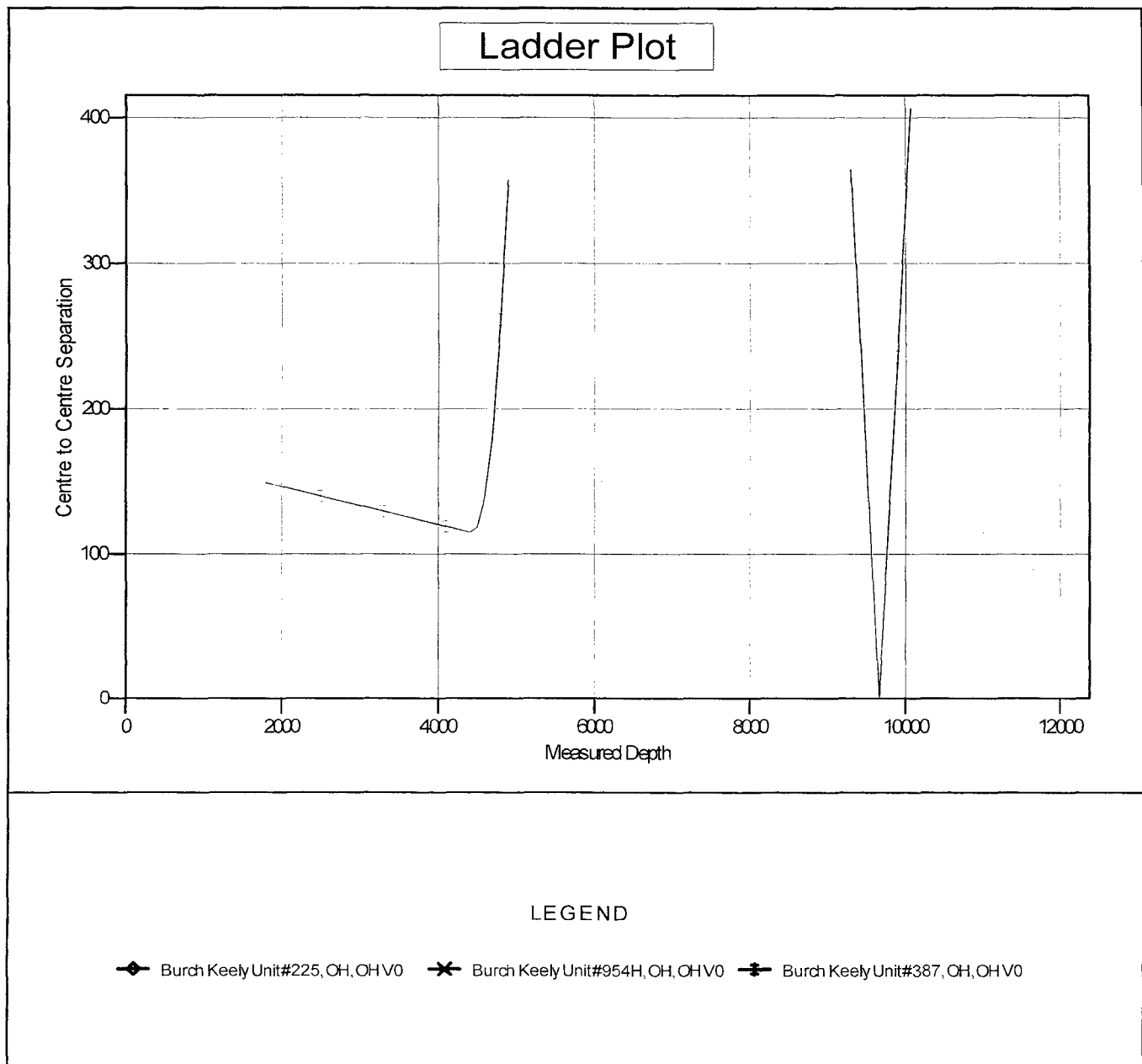


Company: COG Operating LLC
Project: Eddy County, NM (NAD-27 2015)
Reference Site: Burch Keely Unit #962H
Site Error: 0.00 usft
Reference Well: SHL: 296' FNL, 153' FEL, Sec 24, T17S, R29E, Unit A
Well Error: 0.00 usft
Reference Wellbore: BHL: 330' FNL, 10' FEL, Sec 19, T17S, R30E, Unit A
Reference Design: Design #1

Local Co-ordinate Reference: Site Burch Keely Unit #962H
TVD Reference: KB @ 3636.00usft (Silver Oak 3)
MD Reference: KB @ 3636.00usft (Silver Oak 3)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Reference Depths are relative to KB @ 3636.00usft (Silver Oak 3)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Burch Keely Unit #962H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.17°





TDS
Anticollision Report



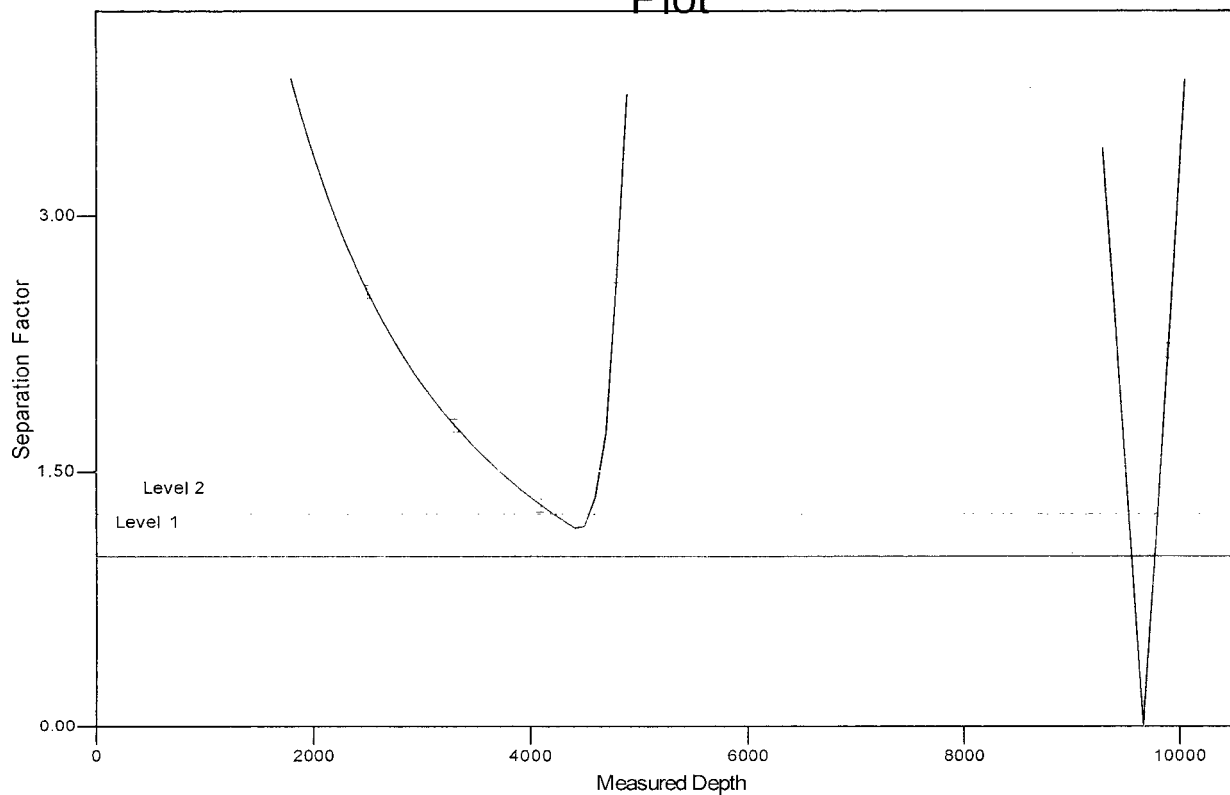
Company: COG Operating LLC
Project: Eddy County, NM (NAD-27 2015)
Reference Site: Burch Keely Unit #962H
Site Error: 0.00 usft
Reference Well: SHL: 296' FNL, 153' FEL, Sec 24, T17S, R29E, Unit A
Well Error: 0.00 usft
Reference Wellbore: BHL: 330' FNL, 10' FEL, Sec 19, T17S, R30E, Unit A
Reference Design: Design #1

Local Co-ordinate Reference: Site Burch Keely Unit #962H
TVD Reference: KB @ 3636.00usft (Silver Oak 3)
MD Reference: KB @ 3636.00usft (Silver Oak 3)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Output errors are at: 2.00 sigma
Database: EDM 5000.1 Single User Db
Offset TVD Reference: Offset Datum

Reference Depths are relative to KB @ 3636.00usft (Silver Oak 3)
Offset Depths are relative to Offset Datum
Central Meridian is 104° 20' 0.000 W

Coordinates are relative to: Burch Keely Unit #962H
Coordinate System is US State Plane 1927 (Exact solution), New Mexico East 30
Grid Convergence at Surface is: 0.17°

Separation Factor Plot



LEGEND

◆ Burch Keely Unit#225, OH, OH V0 ✕ Burch Keely Unit#954H, OH, OH V0 ◆ Burch Keely Unit#387, OH, OH V0