

District I
1625 N French Dr, Hobbs, NM 88240
District II
1301 W Grand Avenue, Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S St Francis Dr, Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources
Department
Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

MAY 21 2009 Form C-144 CLEZ
July 21, 2008

For closed-loop systems that only use above ground steel tanks or haul-off bins and propose to implement waste removal for closure, submit to the appropriate NMOC District Office

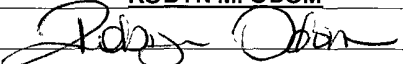
Closed-Loop System Permit or Closure Plan Application

(that only use above ground steel tanks or haul-off bins and propose to implement waste removal for closure)

Type of action. ☒ Permit ☐ Closure

Instructions: Please submit one application (Form C-144 CLEZ) per individual closed-loop system request. For any application request other than for a closed-loop system that only use above ground steel tanks or haul-off bins and propose to implement waste removal for closure, please submit a Form C-144.

Please be advised that approval of this request does not relieve the operator of liability should operations result in pollution of surface water, ground water or the environment. Nor does approval relieve the operator of its responsibility to comply with any other applicable governmental authority's rules, regulations or ordinances.

1.	
Operator COG OPERATING LLC	OGRID #: 229137
Address. 550 WEST TEXAS, SUITE 1300 MIDLAND, TX 79701	
Facility or well name TEX MACK #211H	
API Number 30-015- 37104	OCD Permit Number: 0209 354
U/L or Qtr/Qtr UL D	Section 2 Township 17S Range 31E County EDDY
Center of Proposed Design Latitude N/A	Longitude N/A NAD ☐ 1927 ☐ 1983
Surface Owner. ☐ Federal ☒ State ☐ Private ☐ Tribal Trust or Indian Allotment	
2.	
☒ Closed-loop System: Subsection H of 19 15 17 11 NMAC	
Operation ☒ Drilling a new well ☐ Workover or Drilling (Applies to activities which require prior approval of a permit or notice of intent) ☐ P&A	
☐ Above Ground Steel Tanks or ☒ Haul-off Bins	
3.	
Signs: Subsection C of 19 15 17.11 NMAC	
☐ 12"x 24", 2" lettering, providing Operator's name, site location, and emergency telephone numbers	
☒ Signed in compliance with 19 15 3 103 NMAC	
4.	
Closed-loop Systems Permit Application Attachment Checklist: Subsection B of 19 15 17 9 NMAC	
Instructions: Each of the following items must be attached to the application. Please indicate, by a check mark in the box, that the documents are attached.	
☒ Design Plan - based upon the appropriate requirements of 19 15.17 11 NMAC	
☒ Operating and Maintenance Plan - based upon the appropriate requirements of 19 15 17.12 NMAC	
☒ Closure Plan (Please complete Box 5) - based upon the appropriate requirements of Subsection C of 19 15 17 9 NMAC and 19 15 17.13 NMAC	
☐ Previously Approved Design (attach copy of design) API Number _____	
☐ Previously Approved Operating and Maintenance Plan API Number _____	
5.	
Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only: (19.15.17.13 D NMAC)	
Instructions: Please identify the facility or facilities for the disposal of liquids, drilling fluids and drill cuttings. Use attachment if more than two facilities are required.	
Disposal Facility Name. CRI	Disposal Facility Permit Number R1966
Disposal Facility Name: GM INC	Disposal Facility Permit Number 711-019-001
Will any of the proposed closed-loop system operations and associated activities occur on or in areas that will not be used for future service and operations?	
☐ Yes (If yes, please provide the information below) ☒ No	
Required for impacted areas which will not be used for future service and operations:	
☐ Soil Backfill and Cover Design Specifications - based upon the appropriate requirements of Subsection H of 19 15.17 13 NMAC	
☐ Re-vegetation Plan - based upon the appropriate requirements of Subsection I of 19 15 17 13 NMAC	
☐ Site Reclamation Plan - based upon the appropriate requirements of Subsection G of 19.15.17 13 NMAC	
6.	
Operator Application Certification:	
I hereby certify that the information submitted with this application is true, accurate and complete to the best of my knowledge and belief	
Name (Print) ROBYN M. ODOM	Title. REGULATORY ANALYST
Signature: 	Date. 05-20-09
e-mail address: rodom@conchoresources.com	Telephone: 432-685-4385

7. **OCD Approval:** ☒ Permit Application (including closure plan) ☐ Closure Plan (only)

OCD Representative Signature: _____

Approval Date: _____

Title: _____

OCD Permit Number: _____

8. **Closure Report (required within 60 days of closure completion):** Subsection K of 19.15 17.13 NMAC

Instructions: Operators are required to obtain an approved closure plan prior to implementing any closure activities and submitting the closure report. The closure report is required to be submitted to the division within 60 days of the completion of the closure activities. Please do not complete this section of the form until an approved closure plan has been obtained and the closure activities have been completed.

☐ Closure Completion Date: _____

9. **Closure Report Regarding Waste Removal Closure For Closed-loop Systems That Utilize Above Ground Steel Tanks or Haul-off Bins Only:**

Instructions: Please indentify the facility or facilities for where the liquids, drilling fluids and drill cuttings were disposed. Use attachment if more than two facilities were utilized.

Disposal Facility Name: _____

Disposal Facility Permit Number: _____

Disposal Facility Name: _____

Disposal Facility Permit Number: _____

Were the closed-loop system operations and associated activities performed on or in areas that *will not* be used for future service and operations?

☐ Yes (If yes, please demonstrate compliance to the items below) ☐ No

Required for impacted areas which will not be used for future service and operations.

☐ Site Reclamation (Photo Documentation)

☐ Soil Backfilling and Cover Installation

☐ Re-vegetation Application Rates and Seeding Technique

10. **Operator Closure Certification:**

I hereby certify that the information and attachments submitted with this closure report is true, accurate and complete to the best of my knowledge and belief. I also certify that the closure complies with all applicable closure requirements and conditions specified in the approved closure plan.

Name (Print): _____

Title: _____

Signature: _____

Date: _____

e-mail address: _____

Telephone: _____

Closed Loop Operation & Maintenance Procedure

All drilling fluid circulated over shaker(s) with cuttings discharged into roll off container.

Fluid and fines below shaker(s) are circulated with transfer pump through centrifuge(s) or solids separator with cuttings and fines discharged into roll off container.

Fluid is continuously re-circulated through equipment with polymer added to aid separation of cutting fines.

Roll off containers are lined and de-watered with fluids re-circulated into system.

Additional tank is used to capture unused drilling fluid or cement returns from casing jobs.

This equipment will be maintained 24 hrs./day by solids control personnel and or rig crews that stay on location.

Cuttings will be hauled to either:

CRI (permit number R9166).

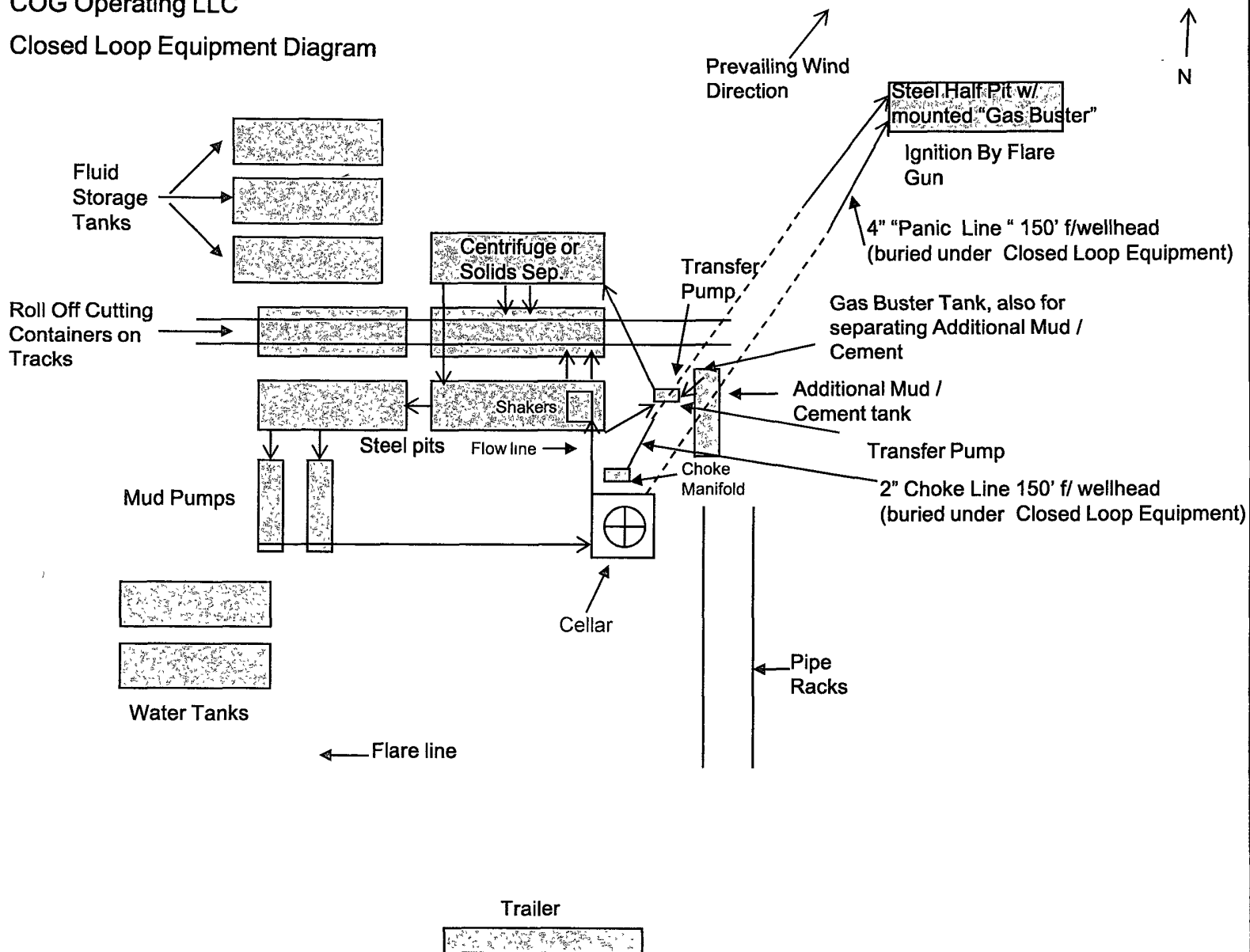
or

GMI (permit number 711-019-001)

dependent upon which rig is available to drill this well.

COG Operating LLC

Closed Loop Equipment Diagram



COG Operating LLC

Eddy County

Tex-Mack 211H

Tex-Mack #211H

OH

Plan: Plan #1

Pathfinder X & Y Survey Report

06 May, 2009

The logo for Pathfinder, featuring the word "PATHFINDER" in a bold, sans-serif font. A thick, black, curved line starts under the "P" and sweeps under the "FINDER" portion of the word.

Pathfinder Energy Services
Pathfinder X & Y Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference.	Well Tex-Mack #211H
Project:	Eddy County	TVD Reference	WELL @ 5200 00ft (Original Well Elev)
Site:	Tex-Mack 211H	MD Reference	WELL @ 5200 00ft (Original Well Elev)
Well:	Tex-Mack #211H	North Reference	Grid
Wellbore	OH	Survey Calculation Method	Minimum Curvature
Design:	Plan #1	Database	Midland Database

Project	Eddy County		
Map System	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum	North American Datum 1983		
Map Zone	New Mexico Eastern Zone		

Site	Tex-Mack 211H
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Site Position:	Northing	ft	Latitude:	
From	None		Longitude:	
Position Uncertainty	0 00 ft		Grid Convergence	0 00 °

Well	Tex-Mack #211H					
Well Position	+N/-S	0 00 ft	Northing:	0 000 ft	Latitude	30° 59' 18 404 N
	+E/-W	0 00 ft	Easting:	0 000 ft	Longitude	106° 3' 38 987 W
Position Uncertainty		0 00 ft	Wellhead Elevation:	ft	Ground Level	5,200 00ft

Wellbore	OH
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	05/06/2009	8 77	58 62	47,789

Design	Plan #1
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Audit Notes:				
Version:	Phase	PLAN	Tie On Depth	0 00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0 00	0 00	0 00	346 46

Survey Tool Program	Date 05/06/2009			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0 00	7,978 53	Plan #1 (OH)		

Pathfinder Energy Services
Pathfinder X & Y Survey Report



Company Project: Site Well: Wellbore: Design	COG Operating LLC Eddy County Tex-Mack 211H Tex-Mack #211H OH Plan #1	Local Co-ordinate Reference: TVD Reference: MD Reference: North Reference: Survey Calculation Method Database.				Well Tex-Mack #211H WELL @ 5200 00ft (Original Well Elev) WELL @ 5200 00ft (Original Well Elev) Grid Minimum Curvature Midland Database			

Planned Survey

MD (ft)	Inc' (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	EW' (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
0 00	0 00	0 00	0 00	-5,200 00	0 00	0 00	0 00	0 00	0 00	0 00
100 00	0 00	0 00	100 00	-5,100 00	0 00	0 00	0 00	0 00	0 00	0 00
200 00	0 00	0 00	200 00	-5,000 00	0 00	0 00	0 00	0 00	0 00	0 00
300 00	0 00	0 00	300 00	-4,900 00	0 00	0 00	0 00	0 00	0 00	0 00
400 00	0 00	0 00	400 00	-4,800 00	0 00	0 00	0 00	0 00	0 00	0 00
500 00	0 00	0 00	500 00	-4,700 00	0 00	0 00	0 00	0 00	0 00	0 00
600 00	0 00	0 00	600 00	-4,600 00	0 00	0 00	0 00	0 00	0 00	0 00
700 00	0 00	0 00	700 00	-4,500 00	0 00	0 00	0 00	0 00	0 00	0 00
800 00	0 00	0 00	800 00	-4,400 00	0 00	0 00	0 00	0 00	0 00	0 00
900 00	0 00	0 00	900 00	-4,300 00	0 00	0 00	0 00	0 00	0 00	0 00
1,000 00	0 00	0 00	1,000 00	-4,200 00	0 00	0 00	0 00	0 00	0 00	0 00
1,100 00	0 00	0 00	1,100 00	-4,100 00	0 00	0 00	0 00	0 00	0 00	0 00
1,200 00	0 00	0 00	1,200 00	-4,000 00	0 00	0 00	0 00	0 00	0 00	0 00
1,300 00	0 00	0 00	1,300 00	-3,900 00	0 00	0 00	0 00	0 00	0 00	0 00
1,400 00	0 00	0 00	1,400 00	-3,800 00	0 00	0 00	0 00	0 00	0 00	0 00
1,500 00	0 00	0 00	1,500 00	-3,700 00	0 00	0 00	0 00	0 00	0 00	0 00
1,600 00	0 00	0 00	1,600 00	-3,600 00	0 00	0 00	0 00	0 00	0 00	0 00
1,700 00	0 00	0 00	1,700 00	-3,500 00	0 00	0 00	0 00	0 00	0 00	0 00
1,800 00	0 00	0 00	1,800 00	-3,400 00	0 00	0 00	0 00	0 00	0 00	0 00
1,900 00	0 00	0 00	1,900 00	-3,300 00	0 00	0 00	0 00	0 00	0 00	0 00
2,000 00	0 00	0 00	2,000 00	-3,200 00	0 00	0 00	0 00	0 00	0 00	0 00
2,100 00	0 00	0 00	2,100 00	-3,100 00	0 00	0 00	0 00	0 00	0 00	0 00
2,200 00	0 00	0 00	2,200 00	-3,000 00	0 00	0 00	0 00	0 00	0 00	0 00
2,300 00	0 00	0 00	2,300 00	-2,900 00	0 00	0 00	0 00	0 00	0 00	0 00
2,400 00	0 00	0 00	2,400 00	-2,800 00	0 00	0 00	0 00	0 00	0 00	0 00
2,500 00	0 00	0 00	2,500 00	-2,700 00	0 00	0 00	0 00	0 00	0 00	0 00
2,600 00	0 00	0 00	2,600 00	-2,600 00	0 00	0 00	0 00	0 00	0 00	0 00

Pathfinder Energy Services
Pathfinder X & Y Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well Tex-Mack #211H
Project:	Eddy County	TVD Reference	WELL @ 5200 00ft (Original Well Elev)
Site:	Tex-Mack 211H	MD Reference:	WELL @ 5200 00ft (Original Well Elev)
Well:	Tex-Mack #211H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database:	Midland Database

Planned Survey											
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)	
2,700 00	0 00	0 00	2,700 00	-2,500 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
2,800 00	0 00	0 00	2,800 00	-2,400 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
2,900 00	0 00	0 00	2,900 00	-2,300 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
3,000 00	0 00	0 00	3,000 00	-2,200 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
3,100 00	0 00	0 00	3,100 00	-2,100 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
3,200 00	0 00	0 00	3,200 00	-2,000 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
3,300 00	0 00	0 00	3,300 00	-1,900 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
3,400 00	0 00	0 00	3,400 00	-1,800 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
3,500 00	0 00	0 00	3,500 00	-1,700 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
3,600 00	0 00	0 00	3,600 00	-1,600 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
3,700 00	0 00	0 00	3,700 00	-1,500 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
3,800 00	0 00	0 00	3,800 00	-1,400 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
3,900 00	0 00	0 00	3,900 00	-1,300 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
4,000 00	0 00	0 00	4,000 00	-1,200 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
4,100 00	0 00	0 00	4,100 00	-1,100 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
4,200 00	0 00	0 00	4,200 00	-1,000 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
4,300 00	0 00	0 00	4,300 00	-900 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
4,400 00	0 00	0 00	4,400 00	-800 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
4,500 00	0 00	0 00	4,500 00	-700 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
4,600 00	0 00	0 00	4,600 00	-600 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
4,700 00	0 00	0 00	4,700 00	-500 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
4,800 00	0 00	0 00	4,800 00	-400 00	0 00	0 00	0 00	0 00	0 00	0 00	0 00
4,887 50	0 00	0 00	4,887 50	-312 50	0 00	0 00	0 00	0 00	0 00	0 00	0 00
KOP-4887 50°MD,0 00°INC,0.00°AZI											
4,900 00	1 50	346 46	4,900 00	-300 00	0 16	-0 04	0 16	12 00	0 16	-0 04	
4,925 00	4 50	346 46	4,924 96	-275 04	1 43	-0 34	1 47	12 00	1 43	-0 34	
4,950 00	7 50	346 46	4,949 82	-250 18	3 97	-0 96	4 08	12 00	3 97	-0 96	

Pathfinder Energy Services
Pathfinder X & Y Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well Tex-Mack #211H
Project:	Eddy County	TVD Reference	WELL @ 5200 00ft (Original Well Elev)
Site:	Tex-Mack 211H	MD Reference	WELL @ 5200 00ft (Original Well Elev)
Well	Tex-Mack #211H	North Reference.	Grd
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Plan #1	Database.	Midland Database

Planned Survey										
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
4,975 00	10 50	346 46	4,974 51	-225 49	7 77	-1 87	7 99	12 00	7 77	-1 87
5,000 00	13 50	346 46	4,998 96	-201 04	12 82	-3 09	13 19	12 00	12 82	-3 09
5,025 00	16 50	346 46	5,023 11	-176 89	19 11	-4 60	19 66	12 00	19 11	-4 60
5,050 00	19 50	346 46	5,046 88	-153 12	26 62	-6 41	27 38	12 00	26 62	-6 41
5,075 00	22 50	346 46	5,070 22	-129 78	35 33	-8 51	36 34	12 00	35 33	-8 51
5,100 00	25 50	346 46	5,093 06	-106 94	45 21	-10 89	46 51	12 00	45 21	-10 89
5,125 00	28 50	346 46	5,115 33	-84 67	56 25	-13 54	57 85	12 00	56 25	-13 54
5,150 00	31 50	346 46	5,136 98	-63 02	68 40	-16 47	70 35	12 00	68 40	-16 47
5,175 00	34 50	346 46	5,157 94	-42 06	81 63	-19 66	83 96	12 00	81 63	-19 66
5,200 00	37 50	346 46	5,178 17	-21 83	95 91	-23 10	98 65	12 00	95 91	-23 10
5,225 00	40 49	346 46	5,197 60	-2 40	111 20	-26 78	114 38	12 00	111 20	-26 78
5,250 00	43 49	346 46	5,216 17	16 17	127 46	-30 70	131 11	12 00	127 46	-30 70
5,275 00	46 49	346 46	5,233 85	33 85	144 65	-34 83	148 78	12 00	144 65	-34 83
5,300 00	49 49	346 46	5,250 58	50 58	162 71	-39 18	167 36	12 00	162 71	-39 18
5,325 00	52 49	346 46	5,266 31	66 31	181 59	-43 73	186 78	12 00	181 59	-43 73
5,350 00	55 49	346 46	5,281 01	81 01	201 25	-48 46	207 00	12 00	201 25	-48 46
5,375 00	58 49	346 46	5,294 63	94 63	221 63	-53 37	227 97	12 00	221 63	-53 37
5,400 00	61 49	346 46	5,307 13	107 13	242 67	-58 44	249 61	12 00	242 67	-58 44
5,425 00	64 49	346 46	5,318 48	118 48	264 33	-63 65	271 88	12 00	264 33	-63 65
5,450 00	67 49	346 46	5,328 65	128 65	286 53	-69 00	294 72	12 00	286 53	-69 00
5,475 00	70 49	346 46	5,337 61	137 61	309 21	-74 46	318 05	12 00	309 21	-74 46
5,500 00	73 49	346 46	5,345 34	145 34	332 33	-80 03	341 83	12 00	332 33	-80 03
5,525 00	76 49	346 46	5,351 81	151 81	355 80	-85 68	365 97	12 00	355 80	-85 68
5,550 00	79 49	346 46	5,357 02	157 02	379 57	-91 41	390 42	12 00	379 57	-91 41
5,575 00	82 49	346 46	5,360 93	160 93	403 57	-97 19	415 11	12 00	403 57	-97 19
5,600 00	85 49	346 46	5,363 55	163 55	427 74	-103 01	439 97	12 00	427 74	-103 01
5,625 00	88 49	346 46	5,364 86	164 86	452 01	-108 85	464 93	12 00	452 01	-108 85

Pathfinder Energy Services
Pathfinder X & Y Survey Report



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Planned Survey											
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)	
5,632 51	89 39	346 46	5,365 00	165 00	459 31	-110 61	472 44	12 00	459 31	-110 61	
EOC-5632 51'MD,89 39°INC,346 46°AZI,12 00°DLS, 472.44'VS, 459 31'N, -110 61'E											
5,700 00	89 39	346 46	5,365 72	165 72	524 92	-126 41	539 93	0 00	524 92	-126 41	
5,800 00	89 39	346 46	5,366 78	166 78	622 13	-149 82	639 92	0 00	622 13	-149 82	
5,900 00	89 39	346 46	5,367 85	167 85	719 35	-173 23	739 91	0 00	719 35	-173 23	
6,000 00	89 39	346 46	5,368 91	168 91	816 56	-196 64	839 91	0 00	816 56	-196 64	
6,100 00	89 39	346 46	5,369 98	169 98	913 78	-220 05	939 90	0 00	913 78	-220 05	
6,200 00	89 39	346 46	5,371 04	171 04	1,011 00	-243 47	1,039 90	0 00	1,011 00	-243 47	
6,300 00	89 39	346 46	5,372 11	172 11	1,108 21	-266 88	1,139 89	0 00	1,108 21	-266 88	
6,400 00	89 39	346 46	5,373 17	173 17	1,205 43	-290 29	1,239 89	0 00	1,205 43	-290 29	
6,500 00	89 39	346 46	5,374 24	174 24	1,302 64	-313 70	1,339 88	0 00	1,302 64	-313 70	
6,600 00	89 39	346 46	5,375 30	175 30	1,399 86	-337 11	1,439 87	0 00	1,399 86	-337 11	
6,700 00	89 39	346 46	5,376 36	176 36	1,497 07	-360 52	1,539 87	0 00	1,497 07	-360 52	
6,800 00	89 39	346 46	5,377 43	177 43	1,594 29	-383 93	1,639 86	0 00	1,594 29	-383 93	
6,900 00	89 39	346 46	5,378 49	178 49	1,691 50	-407 34	1,739 86	0 00	1,691 50	-407 34	
7,000 00	89 39	346 46	5,379 56	179 56	1,788 72	-430 75	1,839 85	0 00	1,788 72	-430 75	
7,100 00	89 39	346 46	5,380 62	180 62	1,885 93	-454 16	1,939 85	0 00	1,885 93	-454 16	
7,200 00	89 39	346 46	5,381 69	181 69	1,983 15	-477 58	2,039 84	0 00	1,983 15	-477 58	
7,300 00	89 39	346 46	5,382 75	182 75	2,080 36	-500 99	2,139 83	0 00	2,080 36	-500 99	
7,400 00	89 39	346 46	5,383 82	183 82	2,177 58	-524 40	2,239 83	0 00	2,177 58	-524 40	
7,500 00	89 39	346 46	5,384 88	184 88	2,274 79	-547 81	2,339 82	0 00	2,274 79	-547 81	
7,600 00	89 39	346 46	5,385 95	185 95	2,372 01	-571 22	2,439 82	0 00	2,372 01	-571 22	
7,700 00	89 39	346 46	5,387 01	187 01	2,469 22	-594 63	2,539 81	0 00	2,469 22	-594 63	
7,800 00	89 39	346 46	5,388 08	188 08	2,566 44	-618 04	2,639 81	0 00	2,566 44	-618 04	
7,900 00	89 39	346 46	5,389 14	189 14	2,663 65	-641 45	2,739 80	0 00	2,663 65	-641 45	
7,978 53	89 39	346 46	5,389 98	189 98	2,740 00	-659 84	2,818 33	0 00	2,740 00	-659 84	
BHL-7978.53'MD,89 39°INC,346 46°AZI, 5389.98'TVD, 2818 33'VS, 2740 00'N, -659.84'E - PBHL(#211)											

Pathfinder Energy Services
Pathfinder X & Y Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well Tex-Mack #211H
Project:	Eddy County	TVD Reference	WELL @ 5200 00ft (Original Well Elev)
Site:	Tex-Mack 211H	MD Reference	WELL @ 5200 00ft (Original Well Elev)
Well	Tex-Mack #211H	North Reference	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design	Plan #1	Database	Midland Database

Targets _____									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
PBHL(#211) - plan hits target - Point	0 00	360 00	5,390 00	2,740 00	-660 00	2,740 000	-660 000	30° 59' 45 410 N	106° 3' 47 056 W

Plan Annotations _____				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
4,887 50	4,887 50	0 00	0 00	KOP-4887 50'MD,0 00°INC,0 00°AZI
5,632 51	5,365 00	459 31	-110 61	EOC-5632 51'MD,89 39°INC,346 46°AZI,12 00°DLS, 472 44°VS, 459 3
7,978 53	5,389 98	2,740 00	-659 84	BHL-7978 53'MD,89 39°INC,346 46°AZI, 5389 98'TVD, 2818 33°VS, 27

Checked By _____	Approved By: _____	Date: _____
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