

DATE IN <u>4-29-10</u>	SUSPENSE	ENGINEER <u>DB</u>	LOGGED IN <u>4-29-10</u>	TYPE <u>NSL</u>	APP NO. <u>1011948412</u>
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ABOVE THIS LINE FOR DIVISION USE ONLY

NEW MEXICO OIL CONSERVATION DIVISION

- Engineering Bureau -

1220 South St. Francis Drive, Santa Fe, NM 87505



C.OG
Good Hands 15#1

ADMINISTRATIVE APPLICATION CHECKLIST

30-025-39463

THIS CHECKLIST IS MANDATORY FOR ALL ADMINISTRATIVE APPLICATIONS FOR EXCEPTIONS TO DIVISION RULES AND REGULATIONS WHICH REQUIRE PROCESSING AT THE DIVISION LEVEL IN SANTA FE

Application Acronyms:

[NSL-Non-Standard Location] **[NSP-Non-Standard Proration Unit]** **[SD-Simultaneous Dedication]**
[DHC-Downhole Commingling] **[CTB-Lease Commingling]** **[PLC-Pool/Lease Commingling]**
[PC-Pool Commingling] **[OLS - Off-Lease Storage]** **[OLM-Off-Lease Measurement]**
[WFX-Waterflood Expansion] **[PMX-Pressure Maintenance Expansion]**
[SWD-Salt Water Disposal] **[IPI-Injection Pressure Increase]**
[EOR-Qualified Enhanced Oil Recovery Certification] **[PPR-Positive Production Response]**

6057-A

[1] TYPE OF APPLICATION - Check Those Which Apply for [A]

[A] Location - Spacing Unit - Simultaneous Dedication
☒ NSL ☐ NSP ☐ SD

Check One Only for [B] or [C]

[B] Commingling - Storage - Measurement
☐ DHC ☐ CTB ☐ PLC ☐ PC ☐ OLS ☐ OLM

[C] Injection - Disposal - Pressure Increase - Enhanced Oil Recovery
☐ WFX ☐ PMX ☐ SWD ☐ IPI ☐ EOR ☐ PPR

[D] Other: Specify _____

[2] NOTIFICATION REQUIRED TO: - Check Those Which Apply, or ☒ Does Not Apply

INTEREST ARE THE SAME

[A] ☐ Working, Royalty or Overriding Royalty Interest Owners

[B] ☐ Offset Operators, Leaseholders or Surface Owner

[C] ☐ Application is One Which Requires Published Legal Notice

[D] ☐ Notification and/or Concurrent Approval by BLM or SLO
 U.S. Bureau of Land Management - Commissioner of Public Lands, State Land Office

[E] ☐ For all of the above, Proof of Notification or Publication is Attached, and/or,

[F] ☐ Waivers are Attached

[3] SUBMIT ACCURATE AND COMPLETE INFORMATION REQUIRED TO PROCESS THE TYPE OF APPLICATION INDICATED ABOVE.

[4] **CERTIFICATION:** I hereby certify that the information submitted with this application for administrative approval is **accurate** and **complete** to the best of my knowledge. I also understand that **no action** will be taken on this application until the required information and notifications are submitted to the Division.

Note: Statement must be completed by an individual with managerial and/or supervisory capacity.

ROBYN M. ODOM
Print or Type Name

Signature

Title

REGULATORY ANALYST

Date

(432) 685-4385
 Phone Number

rododm@conchoresources.com
 E-mail Address

4/28/10

Lea County, NM

COG proposes to drill a Horizontal, North ½, 120 acre spacing
Tulk; Abo, North oil well
TVD of approximately 8815', MD 13,450'

Location:

SHL: 1190' FNL & 430' FEL Sec 15, T14S, R32E, Unit A
BHL: 1211' FNL & 3349' FEL Sec 15, T14S, R32E, Unit C

This well had to be drilled at a non-standard location due to sand dunes.

The plan for this well is to complete it in the Abo formation.

We won't know the exact perms until we drill & log it, but it will be very similar to the Reindeer 21 Federal #2 which was recently drilled in June 2008 and is

located at: SHL: 330' FNL & 330' FEL Section 21, T16S, R28E, Unit A.
BHL: 330' FNL & 330' FWL Section 21, T16S, R28E, Unit D

Reindeer 21 Federal #2 has perfs from: 6946' – 8331' overall, but broken up into 4 separate intervals, with 4 separate fracs:

1st Perf: 6946',
acidized w/ 9300 gals,
frac'd w/ 91,000 gals gel, 60,500# 30/50 sand.

2nd Perf: 7479',
acidized w/ 9300 gals,
frac'd w/ 91,000 gals gel, 60,500# 30/50 sand.

3rd Perf: 7884',
acidized w/ 9300 gals,
frac'd w/ 91,000 gals gel, 60,500# 30/50 sand.

4th Perf: 8331',
acidized w/ 9300 gals,
frac'd w/ 91,000 gals gel, 60,500# 30/50 sand.

Attachment 1

Plat & Map

Attachment 2

Map & legend of offset wells.

Attachment 3

Updated land plat showing that COG Operating LLC owns all Section 15.
The acreage we are encroaching on is the SE/4 NW/4, SE/4 NE/4, and the SW/4 NW/4
of Sec. 15.

All interests are the same.

COG Operating LLC respectfully requests permission to have this NSL approved.

DISTRICT I
1625 N. French Dr., Hobbs, NM 88240

DISTRICT II
1301 W. Grand Avenue, 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 and Natural Resources Department

Form C-102
Revised October 12, 2005

Submit to Appropriate District Office
State Lease - 4 Copies
Fee Lease - 3 Copies

OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-025-39463	Pool Code 60265	Pool Name <i>under</i> TULK; ABO NORTH
Property Code 37747	Property Name GOOD HANDS "15" STATE	Well Number 1H
GRID No. 229137	Operator Name COG OPERATING LLC	Elevation 4294'

Surface Location

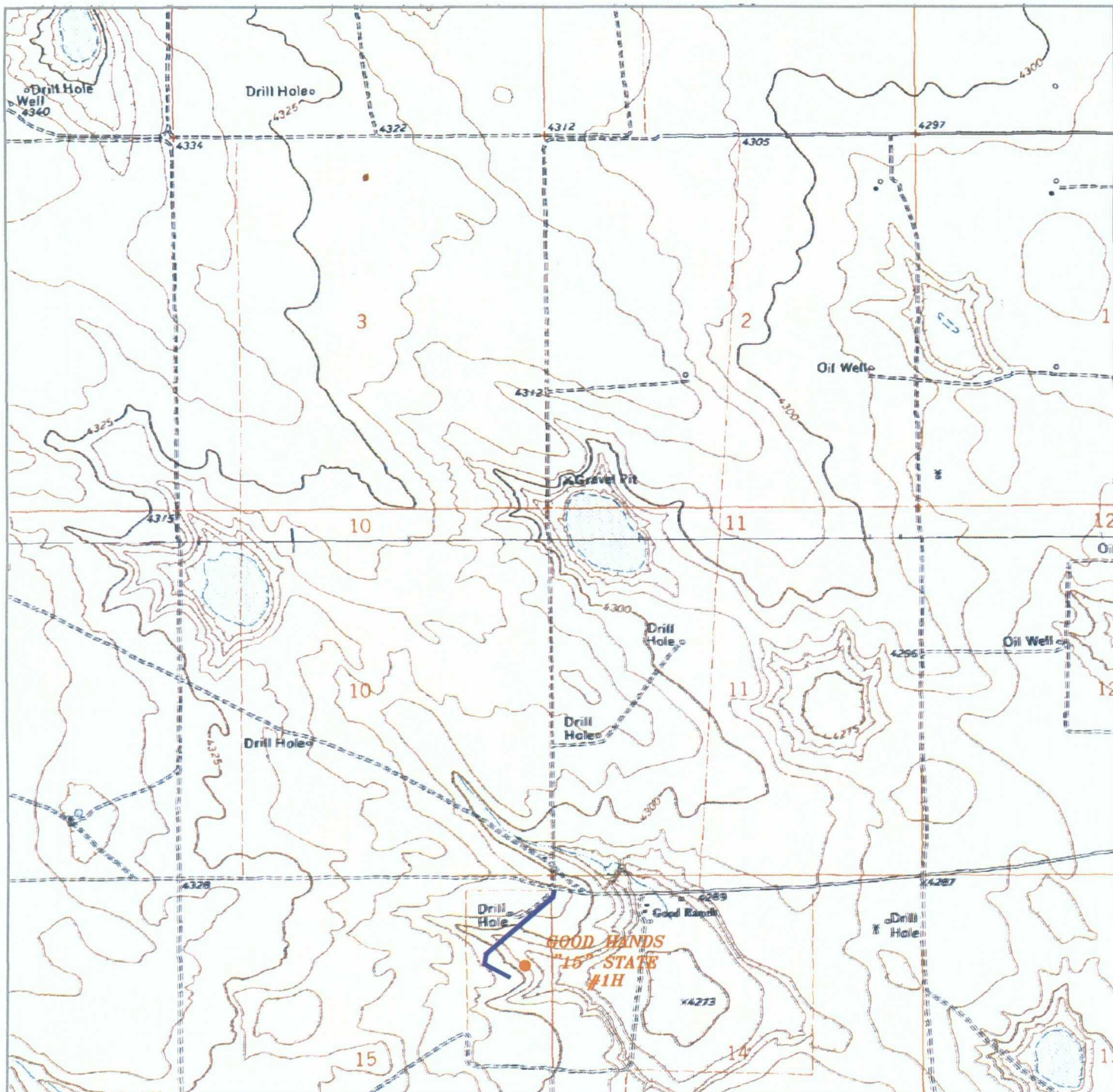
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
A	15	14 S	32 E		1190	NORTH	430	EAST	LEA

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
C	15	14 S	32 E		1211	NORTH	3349	EAST	LEA
Dedicated Acres 120	Joint or Infill	Consolidation Code	Order No.						

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

BOTTOM HOLE LOCATION Lat - N 33°06'30.98" Long - W 103°42'47.38" NMSPCE- N 767611.460 E 731235.978 (NAD-83)	SURFACE LOCATION Lat - N 33°06'30.85" Long - W 103°41'54.12" NMSPCE- N 767625.383 E 735766.229 (NAD-83)	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 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. <i>Chasity Jackson</i> 1-29-10 Signature Date Chasity Jackson Printed Name 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. <i>Gary L. Jones</i> Date Surveyed Signature & Seal of Professional Surveyor W.C. [Signature] Certificate No. Gary L. Jones 7977 BASIN SURVEYS
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GOOD HANDS "15" STATE #1H

Located 1190' FNL and 430' FEL
 Section 15, Township 14 South, Range 32 East,
 N.M.P.M., Lea County, New Mexico.



P.O. Box 1786
 1120 N. West County Rd.
 Hobbs, New Mexico 88241
 (575) 393-7316 - Office
 (575) 392-2206 - Fax
basinsurveys.com

W.O. Number: JMS 21430

Survey Date: 06-03-2009

Scale: 1" = 2000'

Date: 06-04-2009



COG
 OPERATING
 LLC



COG Operating LLC

Lea County(NAD83)

Good Hands "15" State

#1H

OH

Survey: MWD #1

Pathfinder X & Y Survey Report

08 October, 2009

PATHFINDER



Pathfinder Energy Services
Pathfinder X & Y Survey Report



Company:	COG Operating LLC	Local Co-ordinate Reference:	Well #1H
Project:	Lea County (NAD83)	TVD Reference:	WELL @ 4312.00ft (Original Well Elev)
Site:	Good Hands "15" State	MD Reference:	WELL @ 4312.00ft (Original Well Elev)
Well:	#1H	North Reference:	Grid
Wellbore:	OH	Survey/Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland Database
Project:	Lea County (NAD83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site:	Good Hands "15" State		
Site Position:		Northing:	767,625.383 ft
From:	Map	Easting:	735,766.229 ft
Position Uncertainty:	0.00 ft	Slot Radius:	"
		Latitude:	33° 6' 30.847 N
		Longitude:	103° 41' 54.120 W
		Grid Convergence:	0.35 °

Well:	#1H		
Well Position	+N/S	0.00 ft	Northing:
	+E/W	0.00 ft	Easting:
Position Uncertainty	0.00 ft	Wellhead Elevation:	ft
			Latitude:
			Longitude:
			Ground Level:

Wellbore:	OH		
Magnetics	Model Name	Sample Date	Declination
	IGRF200510	09/12/2009	7.91
			Dip Angle
			61.04
			Field Strength
			49.334

Design:	OH		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:			
	Depth From (TVD)	+N/S	+E/W
	(ft)	(ft)	(ft)
	0.00	0.00	0.00
			Direction
			(°)
			269.82



Pathfinder Energy Services
Pathfinder X & Y Survey Report



Company: COG Operating LLC
Project: Lea County (NAD83)
Site: Good Hands "15" State
Well: #1H
Wellbore: OH
Design: OH

Local Co-ordinate Reference
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well #1H
WELL @ 4312.00ft (Original Well Elev)
WELL @ 4312.00ft (Original Well Elev)
Grid:
Minimum Curvature
Midland Database

Survey Program		Date		10/08/2009	
From	To	Survey (Wellbore)		Tool Name	
(ft)	(ft)			Description	
100.00	8,020.00	GYRO (OH)		NS-GYRO-MS	
8,275.00	11,621.00	MWD #1 (OH)		MWD	
				North sensing gyrocompassing m/s	
				MWD - Standard	

Survey	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	NS (ft)	EW (ft)	V/Sec (ft)	DLeg (°/100ft)	Northing (ft)	Easting (ft)
	8,020.00	0.72	157.49	8,019.33	3,707.33	-15.52	9.72	-9.67	0.00	767,609.86	735,775.95
	8,275.00	0.97	186.47	8,274.31	3,962.31	-19.14	10.09	-10.03	0.19	767,606.24	735,776.32
	8,339.00	0.70	175.63	8,338.30	4,026.30	-20.07	10.06	-9.99	0.49	767,605.31	735,776.29
	8,379.00	0.88	163.98	8,378.30	4,066.30	-20.61	10.16	-10.10	0.60	767,604.77	735,776.39
	8,408.00	0.79	197.20	8,407.29	4,095.29	-21.02	10.16	-10.10	1.67	767,604.37	735,776.39
	8,434.00	2.46	250.80	8,433.28	4,121.28	-21.37	9.58	-9.52	8.04	767,604.01	735,775.81
	8,472.00	7.83	259.66	8,471.12	4,159.12	-22.10	6.26	-6.19	14.24	767,603.28	735,772.49
	8,504.00	11.43	260.40	8,502.66	4,190.66	-23.02	0.99	-0.92	11.26	767,602.36	735,767.22
	8,537.00	15.74	261.01	8,534.73	4,222.73	-24.27	-6.66	6.73	13.07	767,601.11	735,759.57
	8,561.00	18.55	262.36	8,557.66	4,245.66	-25.29	-13.66	13.74	11.82	767,600.10	735,752.57
	8,593.00	21.81	262.95	8,587.69	4,275.69	-26.69	-24.61	24.69	10.21	767,598.69	735,741.62
	8,632.00	26.12	264.68	8,623.32	4,311.32	-28.38	-40.35	40.44	11.20	767,597.00	735,725.88
	8,665.00	29.63	266.66	8,652.49	4,340.49	-29.53	-55.73	55.82	11.00	767,595.86	735,710.50
	8,697.00	33.06	268.78	8,679.82	4,367.82	-30.17	-72.36	72.46	11.26	767,595.21	735,693.87
	8,729.00	36.49	269.78	8,706.10	4,394.10	-30.40	-90.61	90.70	10.87	767,594.99	735,675.62
	8,747.00	38.51	270.43	8,720.38	4,408.38	-30.38	-101.56	101.66	11.44	767,595.01	735,664.66
	8,779.00	42.38	270.98	8,744.72	4,432.72	-30.12	-122.32	122.41	12.14	767,595.27	735,643.91
	8,811.00	45.99	270.67	8,767.67	4,455.67	-29.80	-144.62	144.71	11.30	767,595.59	735,621.61
	8,843.00	49.95	271.27	8,789.09	4,477.09	-29.39	-168.38	168.47	12.45	767,595.99	735,597.85
	8,875.00	53.99	272.16	8,808.80	4,496.80	-28.63	-193.57	193.65	12.81	767,596.75	735,572.66
	8,904.00	58.12	273.34	8,824.99	4,512.99	-27.47	-217.59	217.67	14.64	767,597.91	735,548.64



Pathfinder Energy Services
Pathfinder X & Y Survey Report



Company:		COG Operating LLC			Local Co-ordinate Reference:			Well #1H		
Project:		Lea County (NAD83)			TVD Reference:			WELL @ 4312.00ft (Original Well Elev)		
Site:		Good Hands 115 State			MD Reference:			WELL @ 4312.00ft (Original Well Elev)		
Well:		#1H			North Reference:			Grid		
Wellbore:		OH			Survey Calculation Method:			Minimum Curvature		
Design:		OH			Database:			Midland Database		
Survey										
MD	Incl	Azi	TVD	TVDSS	NS	EW	V.Sec	Dleg	Nothing	Easting
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)	(%/100ft)	(ft)	(ft)
8,937.00	62.34	273.99	8,841.37	4,529.37	-25.64	-246.17	246.25	12.90	767,599.75	735,520.06
8,969.00	66.74	273.34	8,855.12	4,543.12	-23.79	-274.99	275.07	13.87	767,601.59	735,491.23
9,000.00	70.26	270.82	8,866.49	4,554.49	-22.76	-303.81	303.88	13.64	767,602.63	735,462.42
9,033.00	74.13	268.69	8,876.57	4,564.57	-22.90	-335.22	335.29	13.24	767,602.49	735,431.01
9,064.00	78.08	268.40	8,884.02	4,572.02	-23.66	-365.30	365.37	12.77	767,601.72	735,400.93
9,097.00	82.04	268.99	8,889.71	4,577.71	-24.40	-397.79	397.86	12.13	767,600.98	735,368.44
9,128.00	85.82	269.89	8,892.99	4,580.99	-24.70	-428.61	428.68	12.53	767,600.68	735,337.62
9,161.00	89.08	270.69	8,894.46	4,582.46	-24.53	-461.57	461.64	10.17	767,600.85	735,304.66
9,199.00	90.31	271.26	8,894.66	4,582.66	-23.89	-499.56	499.64	3.57	767,601.50	735,266.67
9,219.00	92.51	271.87	8,894.17	4,582.17	-23.34	-519.55	519.62	11.41	767,602.04	735,246.68
9,252.00	92.51	271.62	8,892.72	4,580.72	-22.34	-552.50	552.57	0.76	767,603.05	735,213.73
9,283.00	92.15	271.41	8,891.46	4,579.46	-21.52	-583.46	583.53	1.34	767,603.87	735,182.76
9,315.00	91.01	271.12	8,890.58	4,578.58	-20.81	-615.44	615.51	3.68	767,604.57	735,150.78
9,347.00	91.10	271.23	8,889.99	4,577.99	-20.16	-647.43	647.49	0.44	767,605.23	735,118.80
9,379.00	91.63	271.54	8,889.23	4,577.23	-19.38	-679.41	679.47	1.92	767,606.00	735,086.82
9,412.00	91.89	271.38	8,888.22	4,576.22	-18.54	-712.39	712.44	0.92	767,606.84	735,053.84
9,439.00	92.15	271.54	8,887.26	4,575.26	-17.85	-739.36	739.41	1.13	767,607.53	735,026.87
9,471.00	92.33	271.11	8,886.01	4,574.01	-17.11	-771.33	771.38	1.46	767,608.27	734,994.90
9,503.00	90.40	269.64	8,885.25	4,573.25	-16.91	-803.32	803.37	7.58	767,608.48	734,962.91
9,535.00	90.75	269.10	8,884.93	4,572.93	-17.26	-835.31	835.36	2.01	767,608.13	734,930.92
9,566.00	90.48	268.31	8,884.60	4,572.60	-17.96	-866.30	866.35	2.69	767,607.43	734,899.93
9,599.00	90.31	267.44	8,884.37	4,572.37	-19.18	-899.28	899.33	2.69	767,606.20	734,866.95
9,630.00	90.92	267.26	8,884.04	4,572.04	-20.61	-930.24	930.30	2.05	767,604.77	734,835.99
9,662.00	90.75	267.63	8,883.57	4,571.57	-22.04	-962.21	962.27	1.27	767,603.34	734,804.02
9,696.00	89.96	267.53	8,883.37	4,571.37	-23.43	-995.18	995.25	2.41	767,601.95	734,771.05
9,727.00	90.00	267.76	8,883.38	4,571.38	-24.75	-1,027.15	1,027.22	0.73	767,600.63	734,739.08
9,759.00	89.43	268.51	8,883.54	4,571.54	-25.79	-1,059.13	1,059.21	2.94	767,599.59	734,707.10

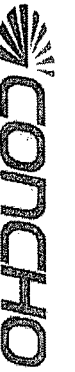


Pathfinder Energy Services
Pathfinder X & Y Survey Report



Company:	GOG Operating LLC	Local Co-ordinate Reference:	Well #1H
Project:	Lee County (NAD83)	TVD Reference:	WELL @ 4312.00ft (Original Well Elev)
Site:	Good Hands "15" State	MD Reference:	WELL @ 4312.00ft (Original Well Elev)
Well:	#1H	North Reference:	GN
Wellbore:	OH	Survey/Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland Database

Survey	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	EW (ft)	V Sec (ft)	DLeg (ft/00ft)	Northing (ft)	Easting (ft)
	9,791.00	90.13	268.69	8,883.66	4,571.66	-26.57	-1,091.12	1,091.20	2.26	767,598.81	734,675.11
	9,823.00	90.66	268.98	8,883.44	4,571.44	-27.22	-1,123.12	1,123.20	1.89	767,598.16	734,643.11
	9,855.00	91.71	269.03	8,882.78	4,570.78	-27.78	-1,155.10	1,155.19	3.28	767,597.60	734,611.13
	9,886.00	91.19	269.21	8,881.99	4,569.99	-28.25	-1,186.09	1,186.17	1.78	767,597.13	734,580.14
	9,918.00	89.87	269.94	8,881.70	4,569.70	-28.49	-1,218.09	1,218.17	4.71	767,596.89	734,548.14
	9,950.00	89.87	269.87	8,881.77	4,569.77	-28.54	-1,250.09	1,250.17	0.22	767,596.84	734,516.14
	9,982.00	88.55	270.57	8,882.21	4,570.21	-28.42	-1,282.08	1,282.17	4.67	767,596.96	734,484.15
	10,015.00	86.97	270.57	8,883.50	4,571.50	-28.09	-1,315.05	1,315.14	4.79	767,597.29	734,451.17
	10,047.00	85.82	270.55	8,885.51	4,573.51	-27.78	-1,346.99	1,347.07	3.59	767,597.60	734,419.24
	10,079.00	86.00	270.48	8,887.79	4,575.79	-27.50	-1,378.91	1,378.99	0.60	767,597.89	734,387.32
	10,111.00	87.49	270.05	8,889.61	4,577.61	-27.35	-1,410.85	1,410.93	4.85	767,598.04	734,355.38
	10,143.00	89.52	270.15	8,890.45	4,578.45	-27.29	-1,442.84	1,442.92	6.35	767,598.09	734,323.39
	10,175.00	89.87	269.56	8,890.62	4,578.62	-27.37	-1,474.84	1,474.92	2.14	767,598.01	734,291.39
	10,207.00	89.55	269.59	8,890.78	4,578.78	-27.61	-1,506.84	1,506.92	1.00	767,597.77	734,259.39
	10,238.00	90.57	269.64	8,890.75	4,578.75	-27.82	-1,537.84	1,537.92	3.29	767,597.56	734,228.39
	10,270.00	91.01	269.48	8,890.31	4,578.31	-28.06	-1,569.83	1,569.91	1.46	767,597.32	734,196.40
	10,302.00	89.25	269.29	8,890.23	4,578.23	-28.41	-1,601.83	1,601.91	5.53	767,596.98	734,164.40
	10,334.00	88.90	269.91	8,890.75	4,578.75	-28.63	-1,633.83	1,633.91	2.22	767,596.75	734,132.40
	10,366.00	89.34	269.81	8,891.24	4,579.24	-28.71	-1,665.82	1,665.90	1.41	767,596.67	734,100.41
	10,398.00	90.48	269.16	8,891.29	4,579.29	-29.00	-1,697.82	1,697.90	4.10	767,596.39	734,068.41
	10,430.00	91.36	269.01	8,890.78	4,578.78	-29.51	-1,729.81	1,729.89	2.79	767,595.88	734,036.42
	10,462.00	90.78	269.02	8,890.18	4,578.18	-30.06	-1,761.80	1,761.89	1.81	767,595.33	734,004.43
	10,494.00	91.01	269.95	8,889.68	4,577.68	-30.35	-1,793.79	1,793.88	2.99	767,595.04	733,972.43
	10,558.00	92.77	270.27	8,887.57	4,575.57	-30.22	-1,857.76	1,857.84	2.80	767,595.16	733,908.47
	10,602.00	91.19	270.43	8,886.05	4,574.05	-29.95	-1,901.73	1,901.81	3.61	767,595.43	733,864.50
	10,666.00	92.15	271.66	8,884.18	4,572.18	-28.79	-1,965.69	1,965.77	2.44	767,596.60	733,800.54
	10,730.00	95.06	272.24	8,880.16	4,568.16	-26.61	-2,029.52	2,029.59	4.64	767,598.77	733,736.71



Pathfinder Energy Services
Pathfinder X & Y Survey Report



Company:	COG Operating, LLC	Local Co-ordinate Reference:	Well #1H
Project:	Lea County (NAD83)	TVD Reference:	WELE @ 4312.00ft (Original Well Elev)
Site:	Good Hands "15" State	MD Reference:	WELE @ 4312.00ft (Original Well Elev)
Well:	#1H	North Reference:	Gtd
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	Midland Database

Survey	MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	NS (ft)	EW (ft)	V. Sec (ft)	Dleg (°/100ft)	Northing (ft)	Easting (ft)
	10,794.00	96.20	271.77	8,873.88	4,561.88	-24.39	-2,093.17	2,093.24	1.93	767,601.00	733,673.06
	10,859.00	95.23	270.85	8,867.41	4,556.41	-22.91	-2,157.83	2,157.89	2.05	767,602.48	733,608.40
	10,922.00	91.71	269.75	8,863.60	4,551.60	-22.58	-2,220.70	2,220.76	5.85	767,602.80	733,545.53
	10,986.00	91.28	269.08	8,861.93	4,549.93	-23.23	-2,284.67	2,284.74	1.24	767,602.15	733,481.55
	11,050.00	93.47	269.25	8,859.27	4,547.27	-24.16	-2,348.61	2,348.67	3.43	767,601.22	733,417.62
	11,114.00	92.42	269.17	8,855.99	4,543.99	-25.05	-2,412.52	2,412.58	1.65	767,600.34	733,353.71
	11,179.00	90.40	268.80	8,854.39	4,542.39	-26.20	-2,477.48	2,477.55	3.16	767,599.19	733,288.74
	11,242.00	90.57	268.84	8,853.85	4,541.85	-27.49	-2,540.47	2,540.54	0.28	767,597.89	733,225.76
	11,306.00	91.63	269.00	8,852.62	4,540.62	-28.70	-2,604.44	2,604.52	1.68	767,596.68	733,161.78
	11,370.00	91.01	270.22	8,851.15	4,539.15	-29.14	-2,668.42	2,668.50	2.14	767,596.25	733,097.80
	11,434.00	88.20	272.59	8,851.59	4,539.59	-27.57	-2,732.39	2,732.47	5.74	767,597.82	733,033.84
	11,498.00	88.02	272.39	8,853.70	4,541.70	-24.79	-2,796.30	2,796.36	0.42	767,600.59	732,969.93
	11,530.00	88.81	272.05	8,854.59	4,542.59	-23.55	-2,828.26	2,828.32	2.69	767,601.83	732,937.97
	11,621.00	89.80	271.36	8,855.69	4,543.69	-20.84	-2,919.21	2,919.26	1.33	767,604.54	732,847.02

Proj To TD-11621.00°MD,89.80°INC,271.36°AZI, 8855.69°TVD, 2919.26°VS, -20.84°N, -2919.21°E



Pathfinder Energy Services
Pathfinder X & Y Survey Report



Company: COG Operating LLC
Project: Lea County(NAD83)
Site: Good Hands, 15 State
Well: #1H
Wellbore: OH
Design: OH

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:
Well #1H
WELL @ 4312.00ft (Original Well Elev)
WELL @ 4312.00ft (Original Well Elev)
Grid:
Minimum Curvature
Midland Database

Targets

Target Name	Dip Angle	Dip Dir	TVD	+N/S	+E/W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
PBHL #1HGH	0.00	0.00	8,821.00	-13.67	-4,530.25	767,611.712	731,235.978	33° 6' 30.980 N	103° 42' 47.380 W
- survey misses by 1611.43ft at 11621.00ft MD (8855.69 TVD, -20.84 N, -2919.21 E)									
- Point									

Survey Annotations

Measured Depth	Vertical Depth	Local Coordinates	Comment
(ft)	(ft)	+N/S (ft) +E/W (ft)	
11,621.00	8,855.69	-20.84	Proj To TD-11621.00MD,89.80°INC,271.36°AZI, 8855.69 TVD, 2919.21

Checked By: _____

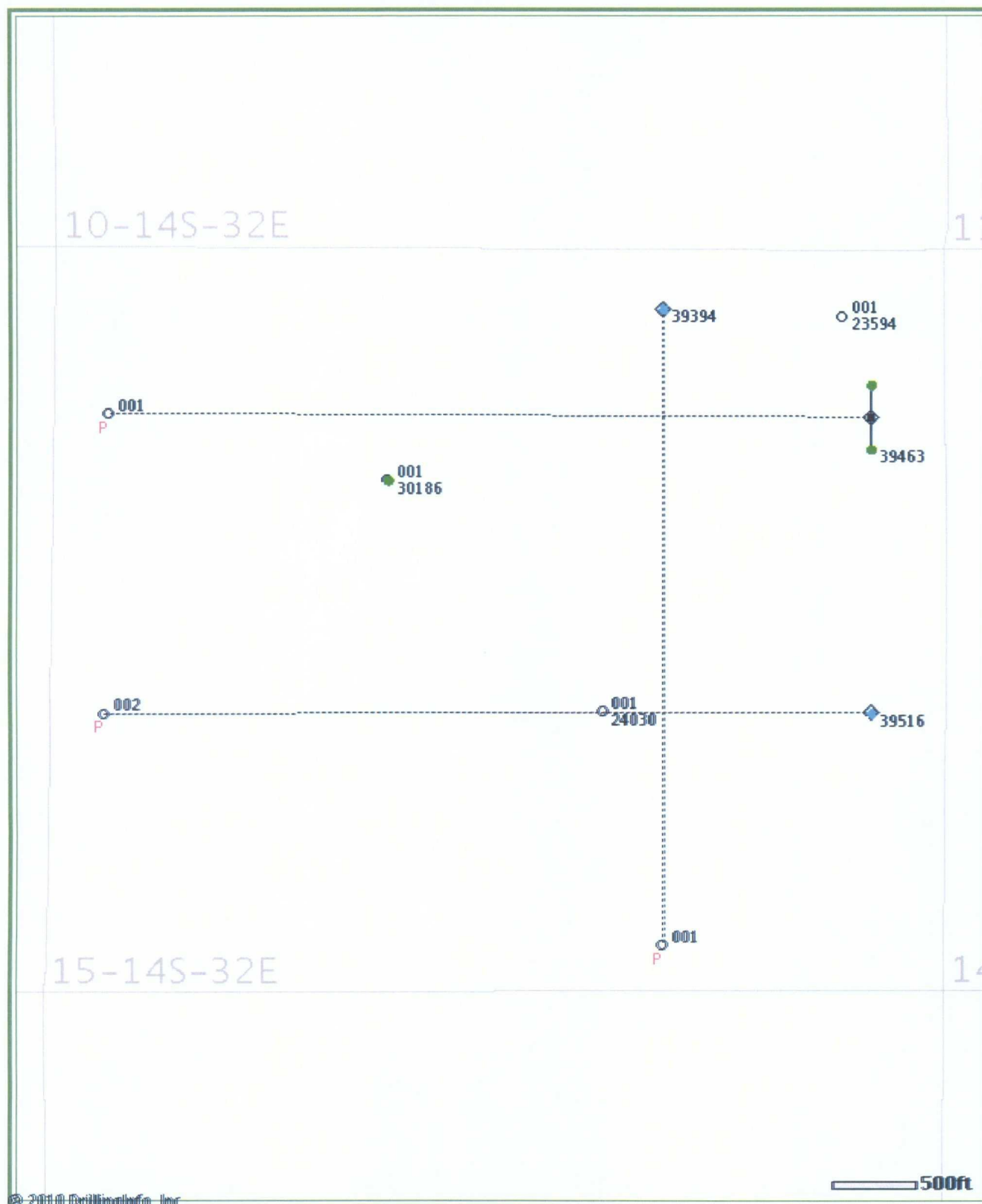
Approved By: _____

Date: _____

Offset Wells to Good Hands 15 State #1

API#	Operator	Lease	Well#	County	Legal	Field Name	Reservoir Name	Total Depth	Well Type	Well Status	First Prod.	Last Prod.
30-025-30186	RUBICON OIL & GAS, LLC	STATE 15	001	LEA	S:15, T:14S, R:32E	DRY & ABANDONED		13,160	PO	Unknown		
30-025-39394	COG OPERATING LLC	GOOD HANDS 15 STATE COM	001	LEA	S:15, T:14S, R:32E	TULK	ABO, NORTH	13,450	PO	Active Permit		
30-025-39463	COG OPERATING LLC		001H	LEA	S:15, T:14S, R:32E	TULK	ABO, NORTH	11,621	O	Active Permit	Nov 2009	Jan 2010
30-025-39516	COG OPERATING LLC	GOOD HANDS 15 STATE	002	LEA	S:15, T:14S, R:32E	TULK	ABO, NORTH	13,300	PO	Active Permit		
30-025-39463	COG OPERATING LLC	GOOD HANDS 15 STATE	001H	LEA	S:15, T:14S, R:32E	TULK;ABO, NORTH		11,621	O	Active Permit		

Offset Wells to Good Hands 15 State #1



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