

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

OCD Artesia

FORM APPROVED
OMB No 1004-0137
Expires July 31, 2010

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.

SUBMIT IN TRIPLICATE - Other Instructions on page 2.

1 Type of Well ☐ Oil Well ☒ Gas Well ☐ Other		5. Lease Serial No NMNM100342
2 Name of Operator COG Operating LLC		6. If Indian, Allottee, or Tribe Name
3a Address 2208 W. Main Street Artesia, NM 88210	3b Phone No (include area code) 575-748-6940	7. If Unit or CA Agreement Name and/or No
4 Location of Well (Footage, Sec., T., R., M., or Survey Description) 660' FNL & 760' FWL, Unit D (NWNW) Sec12-T19S-R31E 660' FSL & 660' FWL, Unit M (SWSW) Sec12-T19S-R31E		8. Well Name and No Poptart 12 Federal #4H
Lat. Long.		9. API Well No 30-015-39712
10. Field and Publ. or Exploratory Area Wildcat, Wolfcamp		11. County or Parish, State Eddy County NM

12 CHECK APPROPRIATE BOX(S) 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	☐ Altering Casing	☐ Fracture Treat	☐ Reclamation	☐ Well Integrity
☐ Final Abandonment Notice	☐ Casing Repair	☐ New Construction	☐ Recomplete	☒ Other
	☐ Change Plans	☐ Plug and abandon	☐ Temporarily Abandon	Resume
	☐ Convert to Injection	☐ Plug back	☐ Water Disposal	Operations

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 or pertinent markers and sands Attach the Bond under which the work will performed or provide the Bond No on file with the BLM/ BIA Required subsequent reports shall 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 shall be filed once testing has been completed Final Abandonment Notice shall be filed only after all requirements, including reclamantion, have been completed, and the operator has determined that the site is ready for final inspection)

COG Operating LLC respectfully requests approval to resume operations for the referenced well.

RU completion unit and drill out cement to ~9857'. Run casing inspection log. RD completion unit. MI drilling rig. Set whipstock and cut window from ~9841' - 9852'.

See attached directional plan.

Drill 6-1/8" curve to ~10591' MD / 10310' TVD with 12.0 ppg WBM system.

Drill 6-1/8" 3968' vertical section lateral to TD @ 14144' MD / 10420' with 12.0 ppg WBM system.

Run 4-1/2" 11.60# P110 LTC liner f/ ~9550' - 14144'.

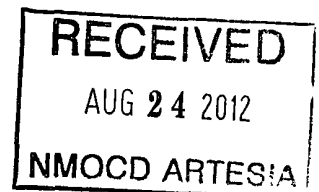
Cement liner to TOL w/ 525 sx 50:50:2 H w/ 1% salt, 0.4% Gas Stop & 0.3% CFR-3 (14.4 ppg /1.25 yld)

RDMO drilling rig.

RDMO drilling rig.

**SEE ATTACHED FOR
CONDITIONS OF APPROVAL**

Accepted for record
NMOCD



14 I hereby certify that the foregoing is true and correct
Name (Printed/ Typed)

Mayte Reyes

Signature

Title. Regulatory Analyst

Date 8/9/12

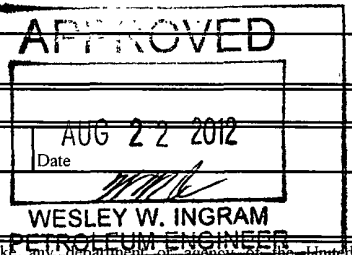
THIS SPACE FOR FEDERAL OR STATE OFFICE USE

Approved by

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

Title

Office



Title 18 USC Section 1001 AND Title 43 USC Section 1212, make it a crime for any person knowingly and willfully to make 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)



A Schlumberger Company

COG Operating LLC

Eddy County(NAD83)

Poptart "12" Federal

#4H

ST #3

Plan: Post Gyro Plan #11

Pathfinder X&Y Report

08 August, 2012





A Schlumberger Company

Pathfinder

Pathfinder X&Y Report



Company: COG Operating LLC
Project: Eddy County(NAD83)
Site: Poptart "12" Federal
Well: #4H
Wellbore: ST #3
Design: Post Gyro Plan #11

Local Co-ordinate Reference: Well #4H
TVD Reference: KB = 17 @ 3630.9usft (Original Well Elev)
MD Reference: KB = 17 @ 3630.9usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Project: Eddy County(NAD83)

Map System: US State Plane 1983
Geo Datum: North American Datum 1983
Map Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

Site: Poptart "12" Federal

Site Position:		Northing:	611,657.420 usft	Latitude:	32.680
From:	Map	Easting:	696,507.170 usft	Longitude:	-103.829
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.27 °

Well: #4H

Well Position	+N/-S	0.0 usft	Northing:	611,657.420 usft	Latitude:	32.680
	+E/-W	0.0 usft	Easting:	696,507.170 usft	Longitude:	-103.829
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,613.9 usft

Wellbore: ST #3

Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF200510	2/10/2012	7.65	60.57	48,834

Design: Post Gyro Plan #11

Audit Notes:

Version: **Phase:** PLAN **Tie On Depth:** 9,842.0

Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	181.00



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Survey Tool Program		Date 8/8/2012			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100 0	9,842 0	Gyro #1 (OH)	NS-GYRO-MS	North sensing gyrocompassing m/s	
9,842 0	14,143 7	Post Gyro Plan #11 (ST #3)	NS-GYRO-MS	North sensing gyrocompassing m/s	

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
0 0	0 00	0 00	0 0	-3,630.9	0.0	0.0	0 0	0.00	611,657.42	696,507.17	
100.0	0.40	177 92	100 0	-3,530.9	-0.3	0.0	0.3	0.40	611,657.07	696,507.18	
200.0	0.26	151.13	200 0	-3,430.9	-0.9	0.1	0.9	0.20	611,656.52	696,507.30	
300 0	0.29	199.66	300.0	-3,330 9	-1.3	0.2	1.3	0.23	611,656 09	696,507.33	
400 0	0 50	189.86	400.0	-3,230 9	-2 0	0.0	2.0	0.22	611,655.42	696,507.17	
500 0	0.35	160 28	500.0	-3,130.9	-2.7	0.0	2 7	0.26	611,654.70	696,507.20	
600.0	0.58	205.98	600.0	-3,030.9	-3.5	-0 1	3.5	0.42	611,653.96	696,507 08	
700 0	0.73	184 98	700.0	-2,930.9	-4.6	-0.4	4 6	0.28	611,652.87	696,506.80	
800 0	1 00	182 32	800 0	-2,830 9	-6.1	-0 5	6.1	0 27	611,651 36	696,506 71	
900 0	1 65	148.65	899.9	-2,731.0	-8 2	0.3	8.2	0 99	611,649.26	696,507.43	
1,000 0	1 44	150 00	999 9	-2,631 0	-10.5	1 6	10 4	0 21	611,646.94	696,508.80	
1,100 0	1 56	150.83	1,099 9	-2,531.0	-12 8	2.9	12.7	0.12	611,644.67	696,510.09	
1,200 0	1 15	150 24	1,199.8	-2,431.1	-14.8	4.1	14 7	0.41	611,642.61	696,511.26	
1,300.0	1.24	145.64	1,299.8	-2,331.1	-16 6	5.2	16.5	0.13	611,640 84	696,512.36	
1,400.0	1 04	147 81	1,399.8	-2,231 1	-18.2	6 3	18.1	0.20	611,639.18	696,513 46	
1,500 0	0 91	131.46	1,499.8	-2,131.1	-19.5	7.4	19 4	0 31	611,637.89	696,514.54	
1,600 0	1.13	115 84	1,599.8	-2,031 1	-20 5	8.8	20.3	0.35	611,636.93	696,516.02	
1,700.0	1.14	93 53	1,699.8	-1,931 1	-21.0	10 7	20.8	0.44	611,636.44	696,517 90	
1,800 0	1 70	80.95	1,799.7	-1,831.2	-20 8	13.2	20.6	0 64	611,636.61	696,520.36	
1,900 0	1 84	77 04	1,899 7	-1,731.2	-20 2	16.2	19.9	0.18	611,637 21	696,523.39	
2,000.0	2.20	71.34	1,999.6	-1,631.3	-19.2	19 6	18.9	0 41	611,638.18	696,526 77	



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Pathfinder

Pathfinder X&Y Report



Company: COG Operating LLC
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Site: Poptart "12" Federal
Well: #4H
Wellbore: ST #3
Design: Post Gyro Plan #11

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Database: EDM 5000 1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
2,100.0	2.02	79.73	2,099.5	-1,531.4	-18.3	23.2	17.9	0.36	611,639.11	696,530.32
2,200.0	2.10	75.29	2,199.5	-1,431.4	-17.5	26.7	17.1	0.18	611,639.89	696,533.83
2,300.0	1.96	74.71	2,299.4	-1,331.5	-16.6	30.1	16.1	0.14	611,640.80	696,537.25
2,400.0	1.96	83.15	2,399.4	-1,231.5	-16.0	33.4	15.4	0.29	611,641.46	696,540.60
2,500.0	1.87	87.22	2,499.3	-1,131.6	-15.7	36.8	15.0	0.16	611,641.74	696,543.93
2,600.0	1.67	87.83	2,599.3	-1,031.6	-15.5	39.8	14.8	0.20	611,641.88	696,547.01
2,700.0	1.46	92.04	2,699.2	-931.7	-15.5	42.6	14.8	0.24	611,641.89	696,549.74
2,800.0	1.40	93.46	2,799.2	-831.7	-15.7	45.1	14.9	0.07	611,641.77	696,552.23
2,900.0	1.18	97.12	2,899.2	-731.7	-15.9	47.3	15.0	0.23	611,641.57	696,554.47
3,000.0	1.14	98.81	2,999.1	-631.8	-16.1	49.3	15.3	0.05	611,641.29	696,556.48
3,100.0	0.97	111.92	3,099.1	-531.8	-16.6	51.1	15.7	0.29	611,640.82	696,558.25
3,200.0	0.92	112.15	3,199.1	-431.8	-17.2	52.6	16.3	0.05	611,640.20	696,559.78
3,300.0	0.67	114.41	3,299.1	-331.8	-17.8	53.9	16.8	0.25	611,639.65	696,561.05
3,400.0	0.55	109.13	3,399.1	-231.8	-18.2	54.9	17.2	0.13	611,639.26	696,562.04
3,500.0	0.48	101.82	3,499.1	-131.8	-18.4	55.7	17.4	0.10	611,639.01	696,562.90
3,600.0	0.48	81.11	3,599.1	-31.8	-18.4	56.6	17.4	0.17	611,638.99	696,563.73
3,700.0	0.45	83.71	3,699.1	68.2	-18.3	57.4	17.3	0.04	611,639.10	696,564.53
3,800.0	0.43	93.10	3,799.1	168.2	-18.3	58.1	17.3	0.07	611,639.12	696,565.29
3,900.0	0.23	113.65	3,899.1	268.2	-18.4	58.7	17.4	0.23	611,639.02	696,565.85
4,000.0	0.03	122.26	3,999.1	368.2	-18.5	58.9	17.5	0.20	611,638.93	696,566.06
4,100.0	0.12	296.31	4,099.1	468.2	-18.5	58.8	17.4	0.15	611,638.96	696,565.99
4,200.0	0.17	298.39	4,199.1	568.2	-18.3	58.6	17.3	0.05	611,639.08	696,565.76
4,300.0	0.13	303.48	4,299.1	668.2	-18.2	58.4	17.2	0.04	611,639.21	696,565.54
4,400.0	0.04	328.53	4,399.1	768.2	-18.1	58.3	17.1	0.10	611,639.30	696,565.43
4,500.0	0.54	346.08	4,499.1	868.2	-17.6	58.1	16.6	0.50	611,639.79	696,565.29
4,600.0	0.83	340.59	4,599.1	968.2	-16.5	57.8	15.5	0.30	611,640.93	696,564.94
4,700.0	1.03	346.95	4,699.1	1,068.2	-14.9	57.3	13.9	0.22	611,642.49	696,564.50



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4,800.0	0.74	345.94	4,799.0	1,168.1	-13.4	57.0	12.4	0.29	611,643.99	696,564.14
4,900.0	0.83	336.11	4,899.0	1,268.1	-12.1	56.5	11.2	0.16	611,645.28	696,563.69
5,000.0	0.66	345.40	4,999.0	1,368.1	-10.9	56.1	9.9	0.21	611,646.50	696,563.25
5,100.0	1.07	331.64	5,099.0	1,468.1	-9.5	55.5	8.6	0.46	611,647.88	696,562.66
5,200.0	0.91	331.24	5,199.0	1,568.1	-8.0	54.7	7.1	0.16	611,649.40	696,561.83
5,300.0	0.89	334.56	5,299.0	1,668.1	-6.6	53.9	5.7	0.06	611,650.79	696,561.12
5,400.0	1.06	330.28	5,399.0	1,768.1	-5.1	53.2	4.2	0.18	611,652.30	696,560.33
5,500.0	1.03	318.58	5,499.0	1,868.1	-3.6	52.1	2.7	0.22	611,653.77	696,559.27
5,600.0	1.10	307.01	5,598.9	1,968.0	-2.4	50.7	1.5	0.23	611,655.03	696,557.91
5,700.0	1.11	302.24	5,698.9	2,068.0	-1.3	49.2	0.4	0.09	611,656.12	696,556.33
5,800.0	1.13	301.70	5,798.9	2,168.0	-0.3	47.5	-0.6	0.02	611,657.16	696,554.67
5,900.0	1.21	310.10	5,898.9	2,268.0	0.9	45.9	-1.7	0.19	611,658.35	696,553.02
6,000.0	1.38	307.48	5,998.9	2,368.0	2.3	44.1	-3.1	0.18	611,659.77	696,551.26
6,100.0	1.37	304.94	6,098.8	2,467.9	3.8	42.2	-4.5	0.06	611,661.18	696,549.32
6,200.0	1.14	313.04	6,198.8	2,567.9	5.1	40.4	-5.8	0.29	611,662.55	696,547.61
6,300.0	1.26	315.87	6,298.8	2,667.9	6.6	39.0	-7.3	0.13	611,664.02	696,546.12
6,400.0	1.23	313.20	6,398.8	2,767.9	8.1	37.4	-8.8	0.07	611,665.54	696,544.57
6,500.0	1.04	330.17	6,498.7	2,867.8	9.6	36.2	-10.3	0.38	611,667.06	696,543.34
6,600.0	0.87	331.74	6,598.7	2,967.8	11.1	35.4	-11.7	0.17	611,668.52	696,542.53
6,700.0	0.94	351.78	6,698.7	3,067.8	12.6	34.9	-13.2	0.32	611,670.00	696,542.05
6,800.0	0.78	12.86	6,798.7	3,167.8	14.1	34.9	-14.7	0.35	611,671.47	696,542.09
6,900.0	0.89	2.46	6,898.7	3,267.8	15.5	35.1	-16.1	0.19	611,672.91	696,542.27
7,000.0	1.33	15.88	6,998.7	3,367.8	17.4	35.5	-18.0	0.51	611,674.81	696,542.62
7,100.0	1.24	24.75	7,098.6	3,467.7	19.5	36.2	-20.1	0.22	611,676.90	696,543.39
7,200.0	1.73	31.10	7,198.6	3,567.7	21.8	37.5	-22.4	0.52	611,679.18	696,544.63
7,300.0	1.55	34.74	7,298.6	3,667.7	24.2	39.0	-24.8	0.21	611,681.58	696,546.18
7,400.0	1.97	35.36	7,398.5	3,767.6	26.7	40.8	-27.4	0.42	611,684.10	696,547.94



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7,500.0	1.94	36.66	7,498.5	3,867.6	29.4	42.8	-30.2	0.05	611,686.86	696,549.95
7,600.0	1.88	45.10	7,598.4	3,967.5	32.0	44.9	-32.7	0.29	611,689.37	696,552.12
7,700.0	2.19	34.46	7,698.3	4,067.4	34.7	47.2	-35.5	0.49	611,692.10	696,554.36
7,800.0	2.17	26.97	7,798.3	4,167.4	37.9	49.1	-38.8	0.29	611,695.37	696,556.30
7,900.0	1.99	60.61	7,898.2	4,267.3	40.5	51.5	-41.4	1.22	611,697.91	696,558.67
8,000.0	1.41	55.64	7,998.2	4,367.3	42.0	54.0	-43.0	0.60	611,699.45	696,561.20
8,100.0	0.43	28.63	8,098.2	4,467.3	43.1	55.2	-44.0	1.05	611,700.48	696,562.40
8,200.0	0.62	44.89	8,198.2	4,567.3	43.8	55.8	-44.7	0.24	611,701.19	696,562.96
8,300.0	0.74	23.14	8,298.1	4,667.2	44.7	56.4	-45.7	0.28	611,702.17	696,563.60
8,400.0	1.00	347.78	8,398.1	4,767.2	46.2	56.5	-47.2	0.58	611,703.61	696,563.66
8,500.0	1.20	339.62	8,498.1	4,867.2	48.0	55.9	-49.0	0.25	611,705.45	696,563.11
8,600.0	1.46	343.03	8,598.1	4,967.2	50.2	55.2	-51.2	0.27	611,707.65	696,562.38
8,700.0	1.88	338.89	8,698.0	5,067.1	53.0	54.2	-53.9	0.44	611,710.40	696,561.42
8,800.0	1.97	320.79	8,798.0	5,167.1	55.8	52.6	-56.7	0.61	611,713.26	696,559.74
8,900.0	1.32	286.14	8,898.0	5,267.1	57.5	50.4	-58.4	1.16	611,714.91	696,557.55
9,000.0	1.09	287.63	8,997.9	5,367.0	58.1	48.4	-58.9	0.23	611,715.52	696,555.53
9,100.0	0.93	258.57	9,097.9	5,467.0	58.2	46.7	-59.0	0.53	611,715.65	696,553.83
9,200.0	0.86	245.43	9,197.9	5,567.0	57.8	45.2	-58.5	0.22	611,715.17	696,552.35
9,300.0	0.82	304.39	9,297.9	5,667.0	57.8	43.9	-58.6	0.83	611,715.27	696,551.08
9,400.0	1.07	292.55	9,397.9	5,767.0	58.6	42.5	-59.3	0.32	611,716.03	696,549.63
9,500.0	0.82	294.49	9,497.9	5,867.0	59.3	40.9	-60.0	0.25	611,716.68	696,548.11
9,600.0	0.97	294.14	9,597.9	5,967.0	59.9	39.5	-60.6	0.15	611,717.33	696,546.69
9,700.0	0.81	275.58	9,697.8	6,066.9	60.3	38.0	-61.0	0.33	611,717.74	696,545.21
9,800.0	0.90	290.11	9,797.8	6,166.9	60.7	36.6	-61.3	0.23	611,718.08	696,543.77
9,842.0	0.92	285.28	9,839.8	6,208.9	60.9	36.0	-61.5	0.19	611,718.28	696,543.14
9,850.0	2.98	203.08	9,847.8	6,216.9	60.7	35.8	-61.3	37.50	611,718.11	696,542.99
9,851.8	3.63	199.84	9,849.6	6,218.7	60.6	35.8	-61.2	37.50	611,718.01	696,542.96



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Pathfinder Pathfinder X&Y Report



Company: COG Operating LLC
Project: Eddy County(NAD83)
Site: Poptart "12" Federal
Well: #4H
Wellbore: ST #3
Design: Post Gyro Plan #11

Local Co-ordinate Reference: Well #4H
TVD Reference: KB = 17 @ 3630.9usft (Original Well Elev)
MD Reference: KB = 17 @ 3630.9usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)	
9,875.0	6.41	199.84	9,872.7	6,241.8	58.7	35.1	-59.3	12.00	611,716.10	696,542.27	
9,900.0	9.41	199.84	9,897.5	6,266.6	55.4	33.9	-56.0	12.00	611,712.86	696,541.10	
9,925.0	12.41	199.84	9,922.0	6,291.1	51.0	32.3	-51.5	12.00	611,708.41	696,539.49	
9,950.0	15.41	199.84	9,946.3	6,315.4	45.3	30.3	-45.9	12.00	611,702.76	696,537.45	
9,975.0	18.41	199.84	9,970.2	6,339.3	38.5	27.8	-39.0	12.00	611,695.91	696,534.98	
10,000.0	21.41	199.84	9,993.7	6,362.8	30.5	24.9	-30.9	12.00	611,687.91	696,532.09	
10,025.0	24.41	199.84	10,016.7	6,385.8	21.3	21.6	-21.7	12.00	611,678.75	696,528.79	
10,050.0	27.41	199.84	10,039.2	6,408.3	11.1	17.9	-11.4	12.00	611,668.47	696,525.08	
10,075.0	30.41	199.84	10,061.1	6,430.2	-0.3	13.8	0.1	12.00	611,657.11	696,520.98	
10,100.0	33.41	199.84	10,082.3	6,451.4	-12.7	9.3	12.6	12.00	611,644.68	696,516.49	
10,125.0	36.41	199.84	10,102.8	6,471.9	-26.2	4.5	26.1	12.00	611,631.22	696,511.64	
10,150.0	39.41	199.84	10,122.5	6,491.6	-40.7	-0.7	40.7	12.00	611,616.77	696,506.42	
10,175.0	42.41	199.84	10,141.4	6,510.5	-56.1	-6.3	56.2	12.00	611,601.37	696,500.87	
10,200.0	45.41	199.84	10,159.4	6,528.5	-72.4	-12.2	72.6	12.00	611,585.06	696,494.98	
10,225.0	48.41	199.84	10,176.5	6,545.6	-89.5	-18.4	89.8	12.00	611,567.89	696,488.79	
10,234.0	49.50	199.84	10,182.4	6,551.5	-95.9	-20.7	96.3	12.01	611,561.49	696,486.48	
10,234.9	49.50	199.84	10,183.0	6,552.1	-96.6	-20.9	96.9	0.00	611,560.83	696,486.24	
10,250.0	51.07	198.68	10,192.7	6,561.8	-107.5	-24.8	107.9	12.00	611,549.89	696,482.42	
10,275.0	53.70	196.86	10,207.9	6,577.0	-126.4	-30.8	126.9	12.00	611,531.04	696,476.38	
10,300.0	56.36	195.16	10,222.2	6,591.3	-146.1	-36.4	146.7	12.00	611,511.35	696,470.74	
10,325.0	59.04	193.56	10,235.6	6,604.7	-166.5	-41.7	167.2	12.00	611,490.88	696,465.50	
10,350.0	61.73	192.05	10,248.0	6,617.1	-187.7	-46.5	188.5	12.00	611,469.69	696,460.69	
10,375.0	64.45	190.61	10,259.3	6,628.4	-209.6	-50.9	210.4	12.00	611,447.83	696,456.31	
10,400.0	67.17	189.24	10,269.5	6,638.6	-232.1	-54.8	233.0	12.00	611,425.37	696,452.39	
10,425.0	69.91	187.92	10,278.7	6,647.8	-255.1	-58.3	256.0	12.00	611,402.37	696,448.92	
10,450.0	72.66	186.65	10,286.7	6,655.8	-278.5	-61.3	279.6	12.00	611,378.88	696,445.92	
10,475.0	75.41	185.42	10,293.6	6,662.7	-302.4	-63.8	303.5	12.00	611,354.98	696,443.39	



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Pathfinder Pathfinder X&Y Report



Company: COG Operating LLC
Project: Eddy County(NAD83)
Site: Poptart "12" Federal
Well: #4H
Wellbore: ST #3
Design: Post Gyro Plan #11

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

Well #4H
KB = 17 @ 3630.9usft (Original Well Elev)
KB = 17 @ 3630.9usft (Original Well Elev)
Grid
Minimum Curvature
EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
10,500.0	78.17	184.21	10,299.3	6,668.4	-326.7	-65.8	327.8	12.00	611,330.73	696,441.35
10,525.0	80.94	183.03	10,303.8	6,672.9	-351.2	-67.4	352.3	12.00	611,306.20	696,439.80
10,550.0	83.71	181.87	10,307.1	6,676.2	-376.0	-68.4	377.1	12.00	611,281.45	696,438.74
10,575.0	86.48	180.72	10,309.3	6,678.4	-400.9	-69.0	402.0	12.00	611,256.55	696,438.18
10,590.7	88.23	180.00	10,310.0	6,679.1	-416.6	-69.1	417.7	11.99	611,240.85	696,438.08
10,600.0	88.23	180.00	10,310.3	6,679.4	-425.9	-69.1	427.0	0.00	611,231.57	696,438.08
10,700.0	88.23	180.00	10,313.4	6,682.5	-525.8	-69.1	526.9	0.00	611,131.62	696,438.08
10,800.0	88.23	180.00	10,316.5	6,685.6	-625.8	-69.1	626.9	0.00	611,031.67	696,438.08
10,900.0	88.23	180.00	10,319.6	6,688.7	-725.7	-69.1	726.8	0.00	610,931.71	696,438.08
11,000.0	88.23	180.00	10,322.7	6,691.8	-825.7	-69.1	826.7	0.00	610,831.76	696,438.08
11,100.0	88.23	180.00	10,325.8	6,694.9	-925.6	-69.1	926.7	0.00	610,731.81	696,438.08
11,200.0	88.23	180.00	10,328.9	6,698.0	-1,025.6	-69.1	1,026.6	0.00	610,631.86	696,438.08
11,300.0	88.23	180.00	10,332.0	6,701.1	-1,125.5	-69.1	1,126.5	0.00	610,531.90	696,438.08
11,400.0	88.23	180.00	10,335.1	6,704.2	-1,225.5	-69.1	1,226.5	0.00	610,431.95	696,438.08
11,500.0	88.23	180.00	10,338.1	6,707.2	-1,325.4	-69.1	1,326.4	0.00	610,332.00	696,438.08
11,600.0	88.23	180.00	10,341.2	6,710.3	-1,425.4	-69.1	1,426.4	0.00	610,232.05	696,438.08
11,700.0	88.23	180.00	10,344.3	6,713.4	-1,525.3	-69.1	1,526.3	0.00	610,132.10	696,438.08
11,800.0	88.23	180.00	10,347.4	6,716.5	-1,625.3	-69.1	1,626.2	0.00	610,032.14	696,438.08
11,900.0	88.23	180.00	10,350.5	6,719.6	-1,725.2	-69.1	1,726.2	0.00	609,932.19	696,438.08
12,000.0	88.23	180.00	10,353.6	6,722.7	-1,825.2	-69.1	1,826.1	0.00	609,832.24	696,438.08
12,100.0	88.23	180.00	10,356.7	6,725.8	-1,925.1	-69.1	1,926.0	0.00	609,732.29	696,438.08
12,200.0	88.23	180.00	10,359.8	6,728.9	-2,025.1	-69.1	2,026.0	0.00	609,632.34	696,438.08
12,300.0	88.23	180.00	10,362.9	6,732.0	-2,125.0	-69.1	2,125.9	0.00	609,532.38	696,438.08
12,400.0	88.23	180.00	10,366.0	6,735.1	-2,225.0	-69.1	2,225.9	0.00	609,432.43	696,438.08
12,500.0	88.23	180.00	10,369.1	6,738.2	-2,324.9	-69.1	2,325.8	0.00	609,332.48	696,438.08
12,600.0	88.23	180.00	10,372.2	6,741.3	-2,424.9	-69.1	2,425.7	0.00	609,232.53	696,438.08
12,700.0	88.23	180.00	10,375.3	6,744.4	-2,524.8	-69.1	2,525.7	0.00	609,132.58	696,438.08



A Schlumberger Company

Pathfinder

Pathfinder X&Y Report



Company: COG Operating LLC
Project: Eddy County(NAD83)
Site: Poptart "12" Federal
Well: #4H
Wellbore: ST #3
Design: Post Gyro Plan #11

Local Co-ordinate Reference: Well #4H
TVD Reference: KB = 17 @ 3630.9usft (Original Well Elev)
MD Reference: KB = 17 @ 3630.9usft (Original Well Elev)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Planned Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)	Northing (usft)	Easting (usft)
12,800.0	88.23	180.00	10,378.4	6,747.5	-2,624.8	-69.1	2,625.6	0.00	609,032.62	696,438.08
12,900.0	88.23	180.00	10,381.5	6,750.6	-2,724.7	-69.1	2,725.5	0.00	608,932.67	696,438.08
13,000.0	88.23	180.00	10,384.6	6,753.7	-2,824.7	-69.1	2,825.5	0.00	608,832.72	696,438.08
13,100.0	88.23	180.00	10,387.7	6,756.8	-2,924.7	-69.1	2,925.4	0.00	608,732.77	696,438.08
13,200.0	88.23	180.00	10,390.8	6,759.9	-3,024.6	-69.1	3,025.3	0.00	608,632.82	696,438.08
13,300.0	88.23	180.00	10,393.9	6,763.0	-3,124.6	-69.1	3,125.3	0.00	608,532.86	696,438.08
13,400.0	88.23	180.00	10,397.0	6,766.1	-3,224.5	-69.1	3,225.2	0.00	608,432.91	696,438.08
13,500.0	88.23	180.00	10,400.1	6,769.2	-3,324.5	-69.1	3,325.2	0.00	608,332.96	696,438.08
13,600.0	88.23	180.00	10,403.2	6,772.3	-3,424.4	-69.1	3,425.1	0.00	608,233.01	696,438.08
13,700.0	88.23	180.00	10,406.3	6,775.4	-3,524.4	-69.1	3,525.0	0.00	608,133.06	696,438.08
13,800.0	88.23	180.00	10,409.3	6,778.4	-3,624.3	-69.1	3,625.0	0.00	608,033.10	696,438.08
13,900.0	88.23	180.00	10,412.4	6,781.5	-3,724.3	-69.1	3,724.9	0.00	607,933.15	696,438.08
14,000.0	88.23	180.00	10,415.5	6,784.6	-3,824.2	-69.1	3,824.8	0.00	607,833.20	696,438.08
14,100.0	88.23	180.00	10,418.6	6,787.7	-3,924.2	-69.1	3,924.8	0.00	607,733.25	696,438.08
14,144.0	88.23	180.00	10,420.0	6,789.1	-3,968.2	-69.1	3,968.8	0.00	607,689.23	696,438.08

Checked By: _____ Approved By: _____ Date: _____



Project: Eddy County(NAD83)
 Site: Poptart "12" Federal
 Well: #4H
 Wellbore: ST #3
 Plan: Post Gyro Plan #11 (#4H/ST #3)



Azimuths to Grid North
 True North: -0.27°
 Magnetic North: 7.38°

Magnetic Field
 Strength: 48834.2snT
 Dip Angle: 60.57°
 Date: 2/10/2012
 Model: IGRF200510

PATHFINDER®

A Schlumberger Company

PROJECT DETAILS: Eddy County(NAD83)
 Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Eastern Zone
 System Datum: Mean Sea Level
 Local North: Grid

WELL DETAILS #4H

Ground Elevation: 3613.9
 RKB Elevation KB = 17 @ 3630.9usft (Original Well Elev)
 Rig Name Original Well Elev

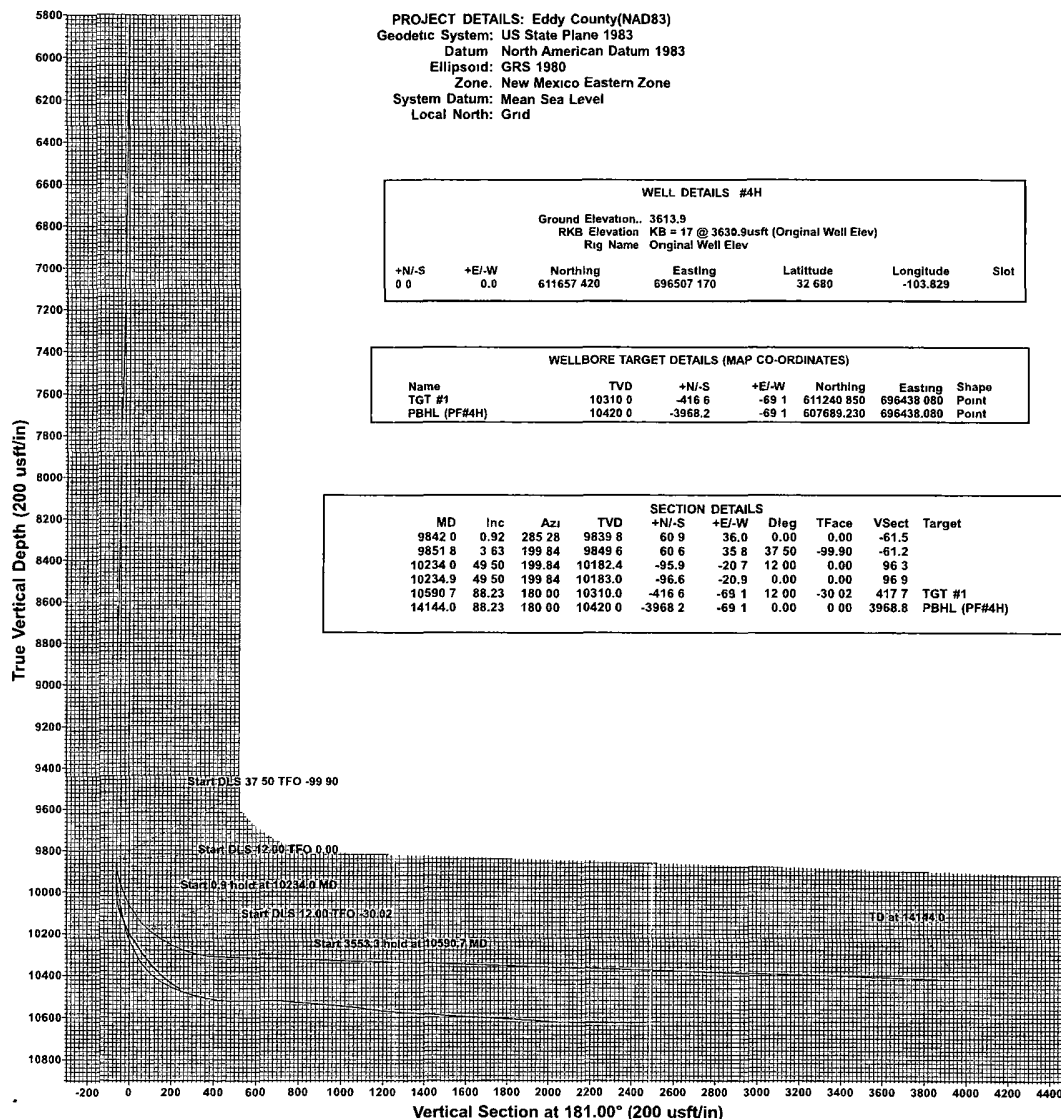
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Spot
0.0	0.0	611657.420	696507.170	32.680	-103.829	

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

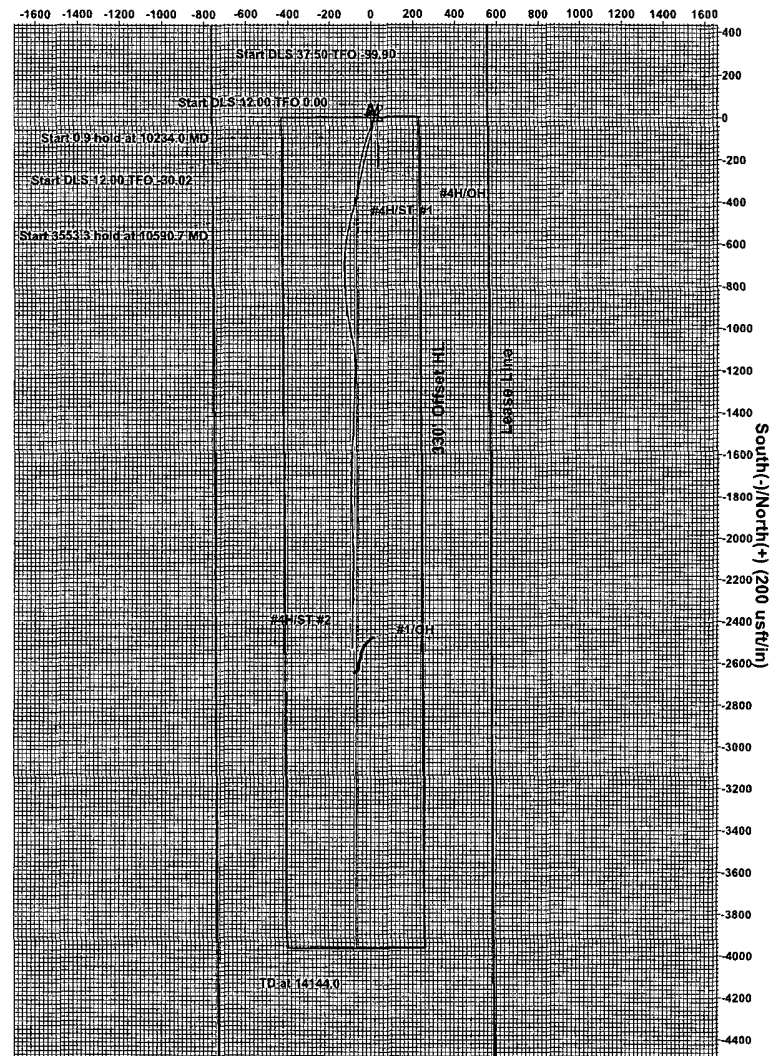
Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
TGT #1	10310.0	-416.6	-69.1	611240.850	696438.080	Point
PBHL (PF#4H)	10420.0	-3968.2	-69.1	607689.230	696438.080	Point

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
9842.0	0.92	285.28	9839.8	60.9	36.0	0.00	0.00	-61.5	
9851.8	3.63	199.84	9849.6	60.6	35.8	37.50	-99.90	-61.2	
10234.0	49.50	199.84	10182.4	-95.9	-20.7	12.00	0.00	96.3	
10234.9	49.50	199.84	10183.0	-96.6	-20.9	0.00	0.00	96.9	
10590.7	88.23	180.00	10310.0	-416.6	-69.1	12.00	-30.02	417.7	TGT #1
14144.0	88.23	180.00	10420.0	-3968.2	-69.1	0.00	0.00	3968.8	PBHL (PF#4H)



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



Plan Post Gyro Plan #11 (#4H/ST #3)

Created By: Michael Trout Date: 17 Aug, August 08 2012

Checked: _____ Date: _____

LOGGING LLC
 Eddy County(NAD83)
 Project: "12" Federal
 Well: #4H
 Original Wellbore:
 ST #3
 Post Gyro Plan #11

Conditions of Approval

**COG Operating LLC
Poptart 12 Federal #4H
API 30-015-39712**

August 22, 2012

1. Surface disturbance beyond the existing pad shall have prior approval.
2. A closed loop system is required. The operator shall properly dispose of drilling/circulating contents at an authorized disposal site. Tanks are required for all operations, no excavated pits.
3. Functional H₂S monitoring equipment shall be on location.
4. A minimum 5000 (5M) BOPE shall be used. All blowout preventer (BOP) and related equipment (BOPE) shall comply with reasonable well control requirements. A two ram system with a blind ram and a pipe ram designed for the work string shall be adequate. Tapered work strings will require an additional pipe ram. The manifold shall comply with Onshore Oil and Gas Order #2 (attachment 1, 5M diagram of choke manifold equipment). The accumulator system shall have an immediately available power source to close the rams and retain 200 psi above pre-charge. The pre-charge test shall follow requirements in Onshore Order #2.
5. All waste (i.e. trash, salts, chemicals, sewage, gray water, etc.) created as a result of work over operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area. Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.
6. **Provide BLM with electronic copies (Adobe Acrobat Document) of the casing inspection log and a cement bond log record from 9,700' or below to top of cement.**
7. **Operator shall secure well while waiting for drilling rig to move in. Operator to notify BLM (575-361-2822) when completion unit is released and when drilling rig is moved in. Operator has 15 days from the time the completion rig is released until the drilling rig shall be on location.**
8. **Before the 7" window is cut, perform a BLM PET witnessed (charted) casing integrity test of 2,100 psig. At least 24 hours before the test: Call 575-361-2822, if there is no response email Paul R. Swartz pswartz@blm.gov phone 575-200-7902. Pressure leakoff may require remedial work before proceeding. Include a copy of the chart with the subsequent sundry for this workover.**
9. **Cement to come to top of liner. Operator to provide method of verification.**
10. File a **subsequent sundry** Form 3160-5 within 30 days of the completion. Include an updated wellbore diagram and a post lateral deviation report.

11. Submit the BLM Form 3160-4 **Completion Report** within 30 days of the date all BLM approved procedures are complete.
12. Workover approval is good for 90 days (completion to be within 90 days of approval). A legitimate request is necessary for extension of that date.

PRS/WWI 082212

Access information for use of Form 3160-5 "Sundry Notices and Reports on Wells"

NM Fed Regs & Forms - http://www.blm.gov/nm/st/en/prog/energy/oil_and_gas.html

§ 43 CFR 3162.3-2 Subsequent Well Operations.

§ 43 CFR 3160.0-9 (c)(1) Information collection.

§ 3162.4-1 (c) Well records and reports.