

EOG Resources, Inc.

Chama 3 Fed #1H

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Original Hole

Survey: MWD

Pathfinder Standard X & Y Report

19 February, 2008

WHS
Pathfinder Standard X & Y Report

Company: EOG Resources, Inc.
Project: Chama 3 Fed #1H
Site: Chama 3 Fed #1H
Well: Chama 3 Fed #1H
Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well Chama 3 Fed #1H
TVD Reference: EST RKB @ 3929.00ft
MD Reference: EST RKB @ 3929.00ft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 2003.16 Single User Db

Project	Chama 3 Fed #1H		
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	Chama 3 Fed #1H		
Site Position:		Northing:	645,775.100 ft
From:	Map	Easting:	395,812.100 ft
Position Uncertainty:	0.00 ft	Slot Radius:	"
		Latitude:	32° 46' 29.528 N
		Longitude:	104° 40' 20.315 W
		Grid Convergence:	-0.18 °

Well	Chama 3 Fed #1H		
Well Position	+N/-S	0.00 ft	Northing: 645,775.100 ft
	+E/-W	0.00 ft	Easting: 395,812.100 ft
Position Uncertainty	0.00 ft	Wellhead Elevation:	ft
		Latitude:	32° 46' 29.528 N
		Longitude:	104° 40' 20.315 W
		Ground Level:	3,929.00 ft

Wellbore	Original Hole		
Magnetics	Model Name	Sample Date	Declination
	IGRF200510	2/2/2008	(°) 8.52
			Dip Angle
			(°) 60.59
			Field Strength
			(nT) 49,175

Design	Original Hole		
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
			(°) 268.95

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Survey Program		Date 2/19/2008		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
100.00	4,000.00	Gyro Survey (Original Hole)	CB-GYRO-MS	Camera based gyro multishot
4,052.00	8,220.00	MWD (Original Hole)	MWD	MWD - Standard

MD (ft)	Inc (")	Azi (")	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg ("/100ft)	TFace (")
4,000.00	1.84	69.94	3,999.58	70.58	14.85	-27.17	26.90	0.00	0.00
4,052.00	2.20	61.04	4,051.55	122.55	15.62	-25.52	25.23	0.92	-45.57
4,084.00	2.02	60.29	4,083.53	154.53	16.20	-24.49	24.19	0.57	-171.65
4,116.00	0.88	303.63	4,115.52	186.52	16.61	-24.20	23.89	7.94	-161.96
4,148.00	4.66	269.89	4,147.48	218.48	16.75	-25.71	25.40	12.37	-40.82
4,179.00	9.23	266.14	4,178.24	249.24	16.58	-29.45	29.14	14.81	-7.53
4,211.00	13.37	267.61	4,209.62	280.62	16.25	-35.71	35.41	12.97	4.70
4,243.00	16.88	268.66	4,240.50	311.50	15.99	-44.05	43.75	11.00	4.97
4,274.00	19.79	269.50	4,269.93	340.93	15.83	-53.80	53.50	9.43	5.59
4,306.00	23.04	268.47	4,299.71	370.71	15.62	-65.48	65.19	10.22	-7.08
4,338.00	26.56	267.50	4,328.76	399.76	15.14	-78.89	78.60	11.07	-7.04
4,370.00	30.07	267.69	4,356.92	427.92	14.51	-94.06	93.78	10.97	1.55
4,401.00	33.50	267.68	4,383.27	454.27	13.85	-110.37	110.10	11.06	-0.09
4,433.00	36.49	266.40	4,409.48	480.48	12.89	-128.69	128.44	9.62	-14.32
4,465.00	40.10	267.06	4,434.59	505.59	11.76	-148.49	148.25	11.35	6.72
4,496.00	43.62	267.95	4,457.68	528.68	10.87	-169.15	168.93	11.52	9.91
4,528.00	47.22	268.84	4,480.14	551.14	10.24	-191.93	191.71	11.42	10.30
4,560.00	50.47	269.70	4,501.19	572.19	9.93	-216.02	215.80	10.36	11.55
4,592.00	53.64	270.21	4,520.87	591.87	9.92	-241.25	241.03	9.99	7.39
4,623.00	57.86	270.83	4,538.31	609.31	10.15	-266.87	266.64	13.71	7.10
4,655.00	62.96	271.02	4,554.11	625.11	10.60	-294.68	294.44	15.95	1.90

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MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	TFace (°)
4,687.00	68.15	270.34	4,567.34	638.34	10.95	-323.80	323.55	16.33	-6.95
4,719.00	72.55	269.55	4,578.10	649.10	10.91	-353.93	353.67	13.95	-9.73
4,741.00	76.06	270.25	4,584.05	655.05	10.88	-375.11	374.85	16.25	10.96
4,773.00	79.67	269.74	4,590.78	661.78	10.87	-406.39	406.12	11.39	-7.92
4,805.00	82.83	269.30	4,595.65	666.65	10.61	-438.01	437.74	9.97	-7.87
4,836.00	85.47	269.04	4,598.80	669.80	10.16	-468.84	468.58	8.56	-5.61
4,868.00	88.81	269.32	4,600.40	671.40	9.70	-500.79	500.53	10.47	4.79
4,900.00	89.16	269.25	4,600.97	671.97	9.31	-532.79	532.53	1.12	-11.31
4,932.00	88.81	269.10	4,601.53	672.53	8.84	-564.78	564.52	1.19	-156.81
5,027.00	91.28	267.53	4,601.46	672.46	6.05	-659.73	659.51	3.08	-32.44
5,122.00	92.15	268.18	4,598.62	669.62	2.50	-754.62	754.44	1.14	36.74
5,217.00	90.75	266.61	4,596.21	667.21	-1.82	-849.48	849.37	2.21	-131.71
5,312.00	91.10	268.65	4,594.68	665.68	-5.75	-944.38	944.33	2.18	80.25
5,407.00	91.45	268.28	4,592.57	663.57	-8.29	-1,039.33	1,039.30	0.54	-46.58
5,502.00	94.79	269.45	4,587.40	658.40	-10.17	-1,134.15	1,134.15	3.72	19.25
5,597.00	96.55	270.04	4,578.01	649.01	-10.59	-1,228.68	1,228.67	1.95	18.42
5,693.00	94.62	268.97	4,568.67	639.67	-11.42	-1,324.22	1,324.20	2.30	-151.06
5,788.00	93.56	268.80	4,561.89	632.89	-13.26	-1,418.96	1,418.96	1.13	-170.91
5,883.00	92.42	269.50	4,556.94	627.94	-14.67	-1,513.81	1,513.83	1.41	148.46
5,978.00	91.63	268.83	4,553.58	624.58	-16.05	-1,608.74	1,608.77	1.09	-139.70
6,072.00	91.36	269.17	4,551.13	622.13	-17.69	-1,702.70	1,702.73	0.46	128.46
6,168.00	91.19	269.44	4,548.99	619.99	-18.86	-1,798.67	1,798.71	0.33	122.20
6,264.00	90.13	269.41	4,547.88	618.88	-19.82	-1,894.65	1,894.70	1.10	-178.38
6,360.00	89.78	269.65	4,547.96	618.96	-20.61	-1,990.65	1,990.69	0.44	145.56
6,455.00	90.13	269.18	4,548.03	619.03	-21.58	-2,085.64	2,085.69	0.62	-53.33
6,551.00	89.78	267.85	4,548.11	619.11	-24.07	-2,181.61	2,181.68	1.43	-104.74
6,648.00	91.71	267.63	4,546.85	617.85	-27.89	-2,278.52	2,278.65	2.00	-6.50

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Survey									
MD (ft)	Inc (°)	Azi (°)	TVD (ft)	TVDSS (ft)	N/S (ft)	E/W (ft)	V. Sec (ft)	DLeg (°/100ft)	TFace (°)
6,744.00	90.92	267.30	4,544.65	615.65	-32.14	-2,374.40	2,374.59	0.89	-157.33
6,840.00	89.43	266.56	4,544.35	615.35	-37.28	-2,470.26	2,470.53	1.73	-153.59
6,936.00	92.15	267.49	4,543.03	614.03	-42.26	-2,566.11	2,566.45	2.99	18.87
7,032.00	91.36	266.67	4,540.09	611.09	-47.15	-2,661.94	2,662.36	1.19	-133.93
7,128.00	90.57	265.70	4,538.47	609.47	-53.53	-2,757.71	2,758.23	1.30	-129.16
7,224.00	92.24	268.15	4,536.12	607.12	-58.68	-2,853.53	2,854.13	3.09	55.69
7,320.00	92.15	267.74	4,532.44	603.44	-62.12	-2,949.40	2,950.04	0.44	-102.38
7,416.00	91.71	268.33	4,529.21	600.21	-65.41	-3,045.29	3,045.98	0.77	126.72
7,512.00	90.04	268.88	4,527.74	598.74	-67.75	-3,141.25	3,141.96	1.83	161.77
7,608.00	89.69	268.95	4,527.97	598.97	-69.57	-3,237.23	3,237.96	0.37	168.69
7,701.00	88.72	268.79	4,529.26	600.26	-71.40	-3,330.20	3,330.95	1.06	-170.64
7,798.00	90.40	269.31	4,530.00	601.00	-73.01	-3,427.18	3,427.94	1.81	17.20
7,894.00	90.31	269.13	4,529.41	600.41	-74.32	-3,523.17	3,523.94	0.21	-116.56
7,989.00	89.43	268.91	4,529.62	600.62	-75.94	-3,618.15	3,618.94	0.95	-165.96
8,085.00	92.95	269.95	4,527.63	598.63	-76.90	-3,714.11	3,714.90	3.82	16.45
8,143.00	92.42	269.75	4,524.91	595.91	-77.05	-3,772.05	3,772.83	0.98	-159.34
8,220.00	92.42	269.75	4,521.66	592.66	-77.38	-3,848.98	3,849.75	0.00	0.00

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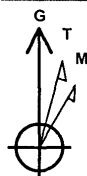
Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
PBHL	0.00	0.00	4,520.00	-71.30	-3,897.30	645,703.800	391,914.800	32° 46' 28.697 N	104° 41' 5.960 W
- survey misses by 48.73ft at 8220.00ft MD (4521.66 TVD, -77.38 N, -3848.98 E)									
- Point									

Survey Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
8,220.00	4,521.66	-77.38	-3,848.98	Straight Line Projection @ 8220' MD

Checked By: _____ Approved By: _____ Date: _____



EOW



Azimuths to Grid North
True North: 0.18°
Magnetic North: 8.70°
Magnetic Field
Strength: 49175.1snT
Dip Angle: 60.59°
Date: 2/2/2008
Model: IGRF200510

Project: Chama 3 Fed #1H
Site: Chama 3 Fed #1H
Well: Chama 3 Fed #1H
Wellbore: Original Hole
Plan: Plan #1 (Chama 3 Fed #1H/Original Hole)



WELL DETAILS: Chama 3 Fed #1H

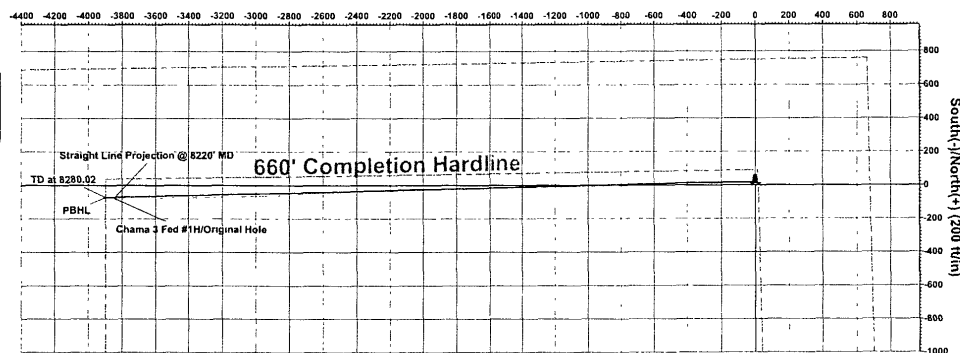
Ground Elevation: 3929.00
RKB Elevation: EST RKB @ 3929.00ft
Rig Name:

+N-S	+E-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	645775.100	395812.100	32° 46' 29.528 N	104° 40' 20.315 W	

SECTION DETAILS

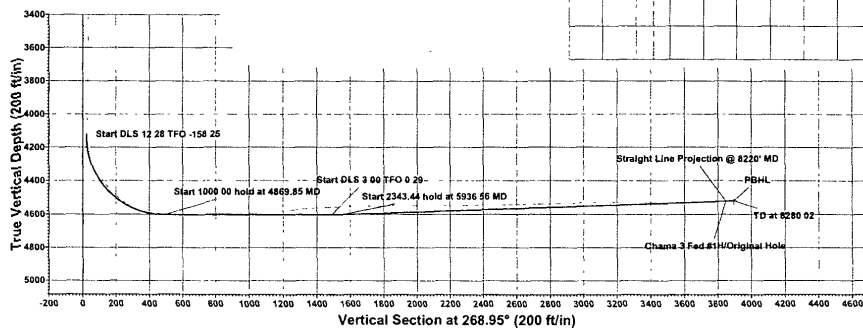
Sec	MD	Inc	Azi	TVD	+N-S	+E-W	DLeg	TFace	VSec	Target
1	4121.00	2.11	66.86	4120.51	16.39	-23.25	0.00	0.00	22.96	
2	4869.85	90.00	268.60	4602.99	11.58	-489.58	12.28	-158.25	489.29	
3	5869.85	90.00	268.60	4602.99	-12.85	-1489.28	0.00	0.00	1489.27	
4	5936.56	92.00	268.61	4601.83	-14.48	-1555.96	3.00	0.29	1555.96	
5	8280.00	92.00	268.61	4520.05	-71.29	-3897.26	0.00	0.00	3897.93	
6	8280.02	92.00	268.61	4520.04	-71.29	-3897.30	0.00	0.00	3897.95	PBHL

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



WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting	Shape
PBHL	4520.00	-71.30	-3897.30	645703.800	391914.800	Point



Vertical Section at 268.95° (200 ft/in)

PROJECT DETAILS: Chama 3 Fed #1H
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

Plan: Plan #1 (Chama 3 Fed #1H/Original Hole)

Created By: Mark Freeman Date: 14.03. February 19 2008
Checked: _____ Date: _____