

Results of Directional Survey

API number:	30-025-41309		
OGRID:		Operator:	EOG RESOURCES INC
		Property:	DILLON 31 # 2H

surface	ULSTR:	O	31	T 24S	R 34E
				220 FSL	1785 FEL

BH Loc	ULSTR:	B	31	T 24S	R 34E
14242	MD	9441.3	TVD	242 FNL	1856 FEL
				5038 FSL	

Top Perf/OH	ULSTR:	O	31	T 24S	R 34E
9590	MD	9440.0	TVD	393 FSL	1795 FEL

Bot Perf/OH	ULSTR:	B	31	T 24S	R 34E
14105	MD	9448.0	TVD	378 FNL	1848 FEL
				4902 FSL	

	MD	N/S	E/W	VD
	9579	162.29	-8.98	9436.51
TOP PERFS/OH	9590	172.69	-9.91	9439.97
	9611	192.54	-11.68	9446.58
	14060	4636.85	-59.30	9449.31
BOT PERFS/OH	14105	4681.70	-62.59	9448.01
	14156	4732.54	-66.32	9446.54

NEXT TO LAST	14185	4761.46	-67.81	9444.90
LAST READING	14242	4818.27	-70.69	9441.32
TD	14242	4818.27	-70.69	9441.32

Surface Location	220	FS	1785	FE
Projected BHL	5038	FS	1856	FE
Location of				
Top Perfs/OH	393	FS	1795	FE
Bottom Perfs/OH	4902	FS	1848	FE

SUMMARY of Subsurface Locations

Surface Location	O-31-24S-34E	220	FS	1785	FE	Vert. Depth
Top Perfs/OH	O-31-24S-34E	393	FS	1795	FE	9439.97
Bottom Perfs/OH	B-31-24S-34E	4902	FS	1848	FE	9448.01
Projected TD	B-31-24S-34E	5038	FS	1856	FE	9441.32

APR 14 2014



EOG Resources

Lea County, NM (NAD27 NME)

Dillon 31

#2H

WB1/Job #1311421

HOBBS OCD

MAR 17 2014

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Survey: Phoenix MWD Survey

Phoenix Final Survey Report

02 December, 2013





Phoenix Technology Services

Phoenix Final Survey Report



Company:	EOG Resources	Local Co-ordinate Reference:	Well #2H
Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB @ 3467.00usft (Patterson 452)
Site:	Dillon 31	MD Reference:	KB @ 3467.00usft (Patterson 452)
Well:	#2H	North Reference:	Grid
Wellbore:	WB1/Job #1311421	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Patterson 452)	Database:	GCR-DB

Project Lea County, NM (NAD27 NME)			
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		Dillon 31			
Site Position:		Northing:	425,560.00 usft	Latitude:	32° 10' 2.19023 N
From:	Map	Easting:	756,057.00 usft	Longitude:	103° 30' 21.00814 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16"	Grid Convergence:	0.44 °

Well	#2H					
Well Position	+N/-S	0.00 usft	Northing:	425,560.00 usft	Latitude:	32° 10' 2.18795 N
	+E/-W	0.00 usft	Easting:	756,087.00 usft	Longitude:	103° 30' 20.65915 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,440.00 usft	

Wellbore: WB1/Job #1311421					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010_14	11/07/13	7.26	60.09	48,349

Design: Surveys (Patterson 452):				
Audit Notes:				
Version: 1.0		Phase: ACTUAL		Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	359.33

Survey Program		Date 12/02/13		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
160.00	14,242.00	Phoenix MWD Survey (WB1/Job #131142)	MWD	MWD - Standard

Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160.00	1.40	265.00	159.98	-0.17	-1.95	-0.15	0.87
First Phoenix MWD Survey							
249.00	0.90	241.20	248.97	-0.60	-3.64	-0.56	0.77
341.00	1.10	146.20	340.96	-1.68	-3.78	-1.64	1.61
432.00	1.50	117.90	431.93	-2.97	-2.25	-2.94	0.82
524.00	1.80	127.50	523.90	-4.41	-0.04	-4.41	0.44
619.00	1.00	87.50	618.87	-5.28	1.98	-5.30	1.28
711.00	1.10	78.30	710.85	-5.07	3.64	-5.11	0.21
803.00	1.10	83.80	802.84	-4.79	5.39	-4.86	0.11
895.00	1.20	96.10	894.82	-4.80	7.22	-4.88	0.29
987.00	0.70	65.90	986.81	-4.67	8.69	-4.77	0.75



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Site:	Dillon 31	MD Reference:	KB @ 3467.00usft (Patterson 452)
Well:	#2H	North Reference:	Grid
Wellbore:	WB1/Job #1311421	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Patterson 452)	Database:	GCR/DB

Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
1,079.00	0.40	70.10	1,078.80	-4.33	9.51	-4.45	0.33
1,138.00	0.60	81.70	1,137.80	-4.22	10.01	-4.34	0.38
1,241.00	0.50	75.20	1,240.79	-4.03	10.97	-4.16	0.11
1,271.00	0.40	88.50	1,270.79	-3.99	11.21	-4.12	0.48
1,455.00	1.80	194.50	1,454.76	-6.77	11.12	-6.90	1.06
1,646.00	1.40	212.20	1,645.69	-11.65	9.13	-11.76	0.33
1,837.00	1.00	199.40	1,836.65	-15.20	7.33	-15.28	0.25
2,028.00	1.50	218.50	2,027.60	-18.73	5.22	-18.79	0.34
2,219.00	1.10	189.90	2,218.56	-22.49	3.35	-22.53	0.39
2,410.00	0.50	183.00	2,409.54	-25.13	2.99	-25.16	0.32
2,600.00	1.30	175.80	2,599.51	-28.10	3.11	-28.14	0.42
2,791.00	1.50	163.60	2,790.45	-32.66	3.97	-32.71	0.19
2,982.00	2.80	188.50	2,981.32	-39.68	3.99	-39.72	0.82
3,173.00	0.90	103.40	3,172.23	-44.64	4.76	-44.69	1.50
3,364.00	2.10	125.80	3,363.17	-47.03	9.06	-47.14	0.69
3,555.00	2.00	181.50	3,554.06	-52.41	11.81	-52.55	1.00
3,746.00	1.20	182.00	3,744.99	-57.74	11.65	-57.88	0.42
3,937.00	0.70	188.00	3,935.96	-60.90	11.42	-61.03	0.27
4,127.00	1.60	220.90	4,125.92	-64.05	9.52	-64.16	0.57
4,319.00	1.30	220.90	4,317.86	-67.72	6.34	-67.79	0.16
4,509.00	1.20	167.90	4,507.82	-71.30	5.34	-71.36	0.59
4,700.00	0.50	211.90	4,698.80	-73.96	5.32	-74.02	0.48
4,891.00	2.50	164.80	4,889.73	-78.69	5.98	-78.75	1.15
5,082.00	1.00	204.00	5,080.64	-84.23	6.39	-84.30	0.96
5,106.00	1.00	199.60	5,104.63	-84.62	6.23	-84.69	0.32
5,197.00	1.20	199.40	5,195.62	-86.27	5.65	-86.33	0.22
5,356.00	1.30	214.20	5,354.58	-89.33	4.08	-89.37	0.21
5,547.00	2.10	176.70	5,545.50	-94.62	3.07	-94.65	0.70
5,738.00	1.40	182.20	5,736.41	-100.44	3.18	-100.47	0.38
5,929.00	1.30	177.80	5,927.36	-104.94	3.17	-104.97	0.08
6,120.00	1.50	170.80	6,118.30	-109.57	3.66	-109.61	0.14
6,311.00	1.40	201.60	6,309.24	-114.21	3.20	-114.24	0.41
6,501.00	1.20	191.40	6,499.19	-118.32	1.95	-118.33	0.16
6,692.00	1.00	167.80	6,690.16	-121.91	1.91	-121.92	0.26
6,883.00	0.70	168.00	6,881.14	-124.68	2.50	-124.70	0.16
7,073.00	1.60	191.00	7,071.10	-128.42	2.24	-128.43	0.52
7,264.00	1.50	187.70	7,262.03	-133.51	1.39	-133.52	0.07
7,455.00	1.50	192.50	7,452.96	-138.43	0.52	-138.43	0.07
7,646.00	1.70	199.90	7,643.89	-143.53	-0.99	-143.51	0.15
7,836.00	1.40	168.00	7,833.82	-148.45	-1.47	-148.43	0.47
8,027.00	1.40	168.30	8,024.77	-153.02	-0.51	-153.00	0.00
8,218.00	1.30	174.40	8,215.71	-157.46	0.18	-157.45	0.09
8,408.00	0.90	163.10	8,405.68	-161.03	0.82	-161.03	0.24
8,599.00	0.80	167.50	8,596.66	-163.77	1.55	-163.78	0.06



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Project:	Lea County, NM (NAD27 NME)	TVD Reference:	KB @ 3467.00usft (Patterson 452)
Site:	Dillon 31	MD Reference:	KB @ 3467.00usft (Patterson 452)
Well:	#2H	North Reference:	Grid
Wellbore:	WB1/Job #1311421	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Patterson 452)	Database:	GCR DB

MD (usft)	Inc. (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (°/100usft)
8,783.00	0.90	171.20	8,780.64	-166.45	2.04	-166.47	0.06
8,878.00	1.30	161.80	8,875.62	-168.21	2.50	-168.23	0.46
8,974.00	0.70	24.70	8,971.61	-168.72	3.08	-168.74	1.95
9,006.00	4.40	359.40	9,003.57	-167.31	3.15	-167.34	11.81
9,038.00	8.10	359.90	9,035.38	-163.83	3.13	-163.85	11.56
9,069.00	11.90	0.80	9,065.90	-158.45	3.17	-158.47	12.27
9,101.00	16.40	1.70	9,096.92	-150.63	3.35	-150.66	14.08
9,133.00	20.60	0.90	9,127.26	-140.48	3.58	-140.51	13.15
9,165.00	24.20	0.40	9,156.84	-128.29	3.71	-128.32	11.27
9,196.00	27.60	0.40	9,184.73	-114.75	3.81	-114.79	10.97
9,228.00	30.80	359.80	9,212.66	-99.14	3.83	-99.18	10.04
9,260.00	33.80	359.60	9,239.70	-82.04	3.74	-82.08	9.38
9,292.00	37.50	359.30	9,265.70	-63.40	3.56	-63.43	11.58
9,323.00	41.50	358.90	9,289.61	-43.68	3.24	-43.72	12.93
9,356.00	44.20	358.60	9,313.81	-21.25	2.75	-21.28	8.21
9,387.00	47.40	357.40	9,335.42	0.96	1.97	0.93	10.69
9,419.00	50.40	357.20	9,356.45	25.04	0.83	25.03	9.39
9,451.00	53.70	357.00	9,376.13	50.24	-0.44	50.24	10.32
9,483.00	57.60	356.30	9,394.18	76.61	-1.99	76.63	12.32
9,515.00	61.90	355.50	9,410.30	104.17	-3.97	104.21	13.61
9,547.00	65.90	355.00	9,424.37	132.81	-6.35	132.87	12.58
9,579.00	69.50	354.80	9,436.51	162.29	-8.98	162.38	11.26
9,611.00	73.80	355.00	9,446.58	192.54	-11.68	192.66	13.45
9,643.00	78.20	355.80	9,454.32	223.48	-14.17	223.63	13.96
9,674.00	83.30	357.10	9,459.30	254.00	-16.06	254.18	16.96
9,706.00	87.30	358.30	9,461.93	285.86	-17.34	286.05	13.05
9,738.00	90.10	359.20	9,462.65	317.84	-18.04	318.03	9.19
9,770.00	90.60	359.50	9,462.46	349.84	-18.40	350.03	1.82
9,865.00	89.60	0.10	9,462.29	444.84	-18.73	445.03	1.23
9,961.00	90.90	1.40	9,461.87	540.83	-17.48	540.99	1.92
10,056.00	91.00	2.40	9,460.30	635.76	-14.33	635.88	1.06
10,148.00	89.40	0.80	9,459.98	727.72	-11.76	727.81	2.46
10,243.00	89.00	0.80	9,461.30	822.70	-10.43	822.76	0.42
10,339.00	89.60	358.80	9,462.48	918.69	-10.77	918.75	2.17
10,434.00	89.70	358.40	9,463.06	1,013.66	-13.09	1,013.74	0.43
10,530.00	90.20	359.40	9,463.14	1,109.64	-14.93	1,109.74	1.16
10,625.00	91.10	0.00	9,462.06	1,204.63	-15.43	1,204.73	1.14
10,720.00	90.70	358.70	9,460.57	1,299.61	-16.51	1,299.71	1.43
10,816.00	89.50	356.90	9,460.40	1,395.53	-20.19	1,395.67	2.25
10,911.00	89.70	356.50	9,461.07	1,490.37	-25.66	1,490.57	0.47
11,007.00	87.30	356.40	9,463.58	1,586.15	-31.60	1,586.41	2.50
11,102.00	89.10	358.70	9,466.56	1,681.00	-35.66	1,681.30	3.07
11,198.00	90.90	0.10	9,466.56	1,776.99	-36.66	1,777.30	2.38
11,293.00	89.90	357.40	9,465.90	1,871.96	-38.74	1,872.28	3.03
11,389.00	90.90	0.00	9,465.23	1,967.92	-40.91	1,968.26	2.90



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Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	V. Sec (usft)	DLeg (%/100usft)
11,484.00	90.30	1.80	9,464.23	2,062.90	-39.42	2,063.22	2.00
11,580.00	91.60	0.80	9,462.64	2,158.86	-37.24	2,159.15	1.71
11,675.00	88.40	0.40	9,462.64	2,253.84	-36.25	2,254.11	3.39
11,771.00	88.30	0.30	9,465.41	2,349.80	-35.66	2,350.05	0.15
11,866.00	88.20	358.90	9,468.31	2,444.75	-36.33	2,445.01	1.48
11,961.00	90.40	359.20	9,469.47	2,539.72	-37.90	2,539.99	2.34
12,057.00	91.10	358.70	9,468.21	2,635.70	-39.66	2,635.98	0.90
12,152.00	91.60	358.00	9,465.97	2,730.63	-42.39	2,730.94	0.91
12,248.00	92.50	358.40	9,462.54	2,826.52	-45.41	2,826.86	1.03
12,343.00	92.00	359.50	9,458.81	2,921.43	-47.15	2,921.78	1.27
12,439.00	90.40	359.70	9,456.80	3,017.40	-47.82	3,017.76	1.68
12,534.00	91.40	359.20	9,455.31	3,112.39	-48.73	3,112.74	1.18
12,629.00	90.20	359.00	9,453.98	3,207.36	-50.22	3,207.73	1.28
12,724.00	89.90	1.30	9,453.90	3,302.36	-49.97	3,302.71	2.44
12,819.00	91.20	1.60	9,452.99	3,397.32	-47.57	3,397.64	1.40
12,915.00	91.50	359.80	9,450.72	3,493.28	-46.40	3,493.59	1.90
13,010.00	88.30	358.40	9,450.89	3,588.25	-47.89	3,588.57	3.68
13,106.00	88.50	359.90	9,453.57	3,684.20	-49.31	3,684.53	1.58
13,201.00	91.30	1.20	9,453.74	3,779.19	-48.40	3,779.50	3.25
13,297.00	92.80	2.10	9,450.30	3,875.08	-45.64	3,875.35	1.82
13,392.00	90.50	1.80	9,447.57	3,969.98	-42.41	3,970.21	2.44
13,488.00	90.50	1.30	9,446.73	4,065.94	-39.81	4,066.13	0.52
13,583.00	90.30	2.40	9,446.07	4,160.89	-36.74	4,161.04	1.18
13,679.00	89.60	359.10	9,446.15	4,256.87	-35.49	4,256.99	3.51
13,774.00	90.00	359.40	9,446.48	4,351.86	-36.73	4,351.99	0.53
13,870.00	89.20	355.10	9,447.15	4,447.72	-41.34	4,447.90	4.56
13,965.00	88.90	354.30	9,448.73	4,542.30	-50.11	4,542.58	0.90
14,060.00	90.40	354.60	9,449.31	4,636.85	-59.30	4,637.23	1.61
14,156.00	92.90	357.00	9,446.54	4,732.54	-66.32	4,732.99	3.61
14,185.00	93.60	357.10	9,444.90	4,761.46	-67.81	4,761.92	2.44
Last Phoenix MWD Survey							
14,242.00	93.60	357.10	9,441.32	4,818.27	-70.69	4,818.77	0.00
Projection to TD							

Survey Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
160.00	159.98	-0.17	-1.95	First Phoenix MWD Survey
14,185.00	9,444.90	4,761.46	-67.81	Last Phoenix MWD Survey
14,242.00	9,441.32	4,818.27	-70.69	Projection to TD

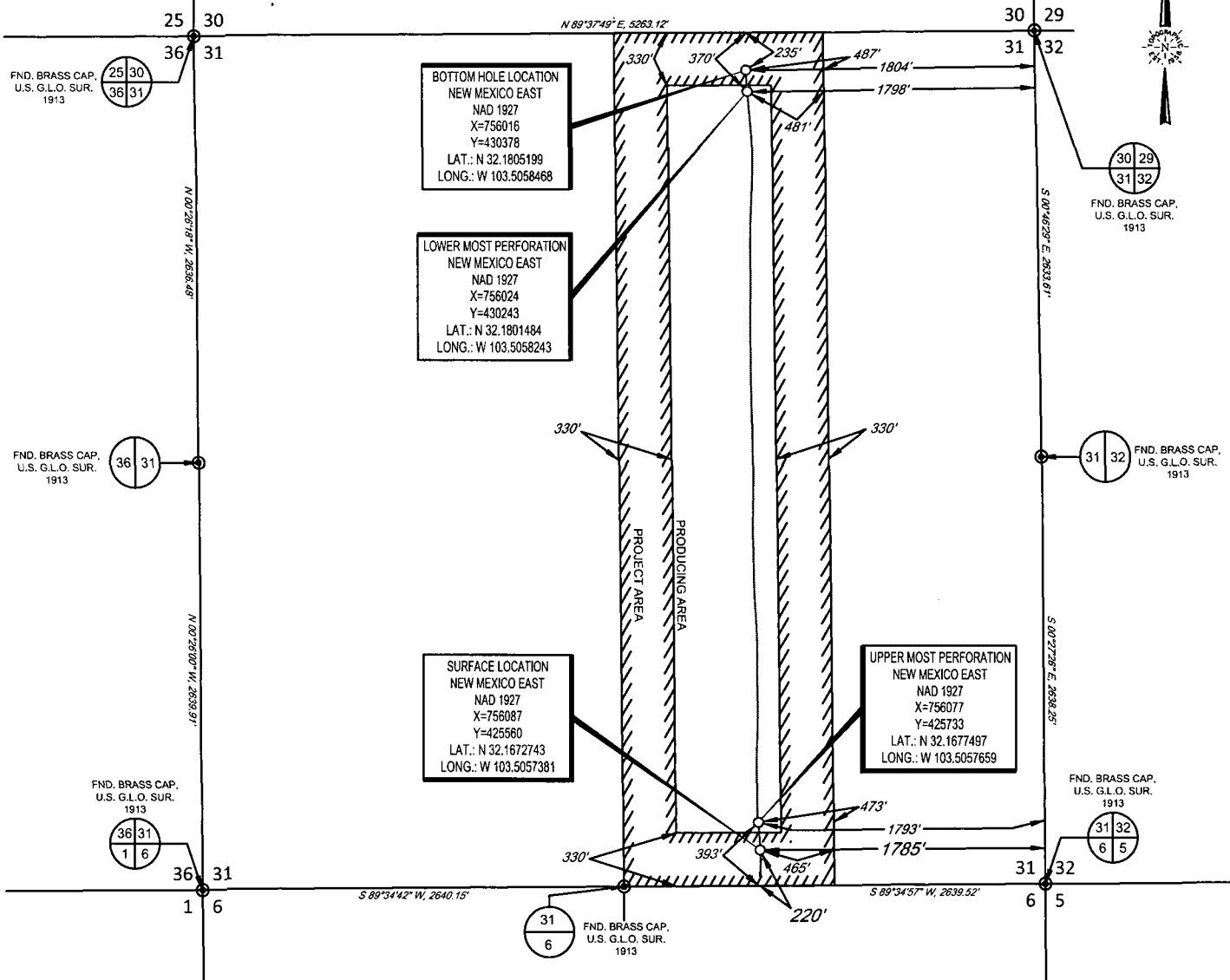
Checked By: _____ Approved By: _____ Date: _____

Dillon 31 #2H Drilling Recap.xls

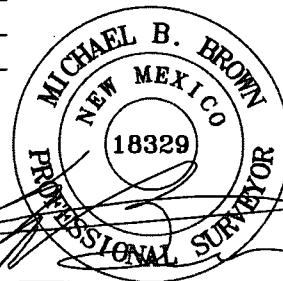
SCALE: 1" = 1000'

0' 500' 1000'

SECTION 31, TOWNSHIP 24 SOUTH, RANGE 34 EAST, N.M.P.M.
LEA COUNTY, NEW MEXICO



LEASE NAME & WELL NO.: DILLON 31 #2H
SECTION 31 TWP 24-S RGE 34-E SURVEY N.M.P.M.
COUNTY LEA STATE NM ELEVATION 3440'
DESCRIPTION 220' FSL & 1785' FEL



Michael Blake Brown, P.S. No. 18329
FEBRUARY 5, 2014



TOPOGRAPHIC
LOYALTY INNOVATION LEGACY

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eoog resources, Inc.

DILLON 31 #1H AS-COMPLETED	REVISION:	
	INT	DATE
DATE: 02/05/14		
FILE: AD_DILLON31_2H		
DRAWN BY: S.V.		
SHEET: 1 OF 1		

NOTES:

1. ORIGINAL DOCUMENT SIZE: 8.5" X 11"
2. ALL BEARINGS, DISTANCES, AND COORDINATE VALUES CONTAINED HEREIN ARE GRID BASED UPON THE NEW MEXICO STATE PLANE COORDINATE SYSTEM, EAST ZONE, U.S. SURVEY FEET, NORTH AMERICAN DATUM 19 27.
3. THIS EASEMENT/SERVITUDE LOCATION SHOWN HEREON HAS BEEN SURVEYED ON THE GROUND UNDER MY SUPERVISION AND PREPARED ACCORDING TO THE EVIDENCE FOUND AT THE TIME OF SURVEY. AND DATA PROVIDED BY EOG RESOURCES, INC. THIS CERTIFICATION IS MADE AND LIMITED TO THOSE PERSONS OR ENTITIES SHOWN ON THE FACE OF THIS PLAT AND IS NON-TRANSFERABLE. THIS SURVEY IS CERTIFIED FOR THIS TRANSACTION ONLY.