

30-015-43465

February 5, 2016

NM OIL CONSERVATION

ARTESIA DISTRICT

MAR 1 1 2016

Concho Resources, Inc. One Concho Center 600 W. Illinois Avenue Midland, Texas 79701

RECEIVED

Attn: Kanicia Castillo

RE: Diamondback 22 State Com No 011H

Please find enclosed a copy of the survey from 0' to 8590' ran on the above referenced well.

Sincerely

Keith Havelka Operations

STATE OF TEXAS

§

COUNTY OF NUECES

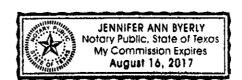
This instrument was acknowledged before me on the ____ day of the A.D., 2016, by Keith Havelka.

A.D., 2010, by Keith Haveika.

ennifer Ann Byerly

(Notary Public, State of Texas

VES Survey International
P.O. Box 261021, Corpus Christi, Texas 78426
T (361) 767-0602 F (361) 767-0612
www.vessurvey.com



In the think of the state of th

Company: Concho

Lease/Well: Diamondback 22 State Com No/011H

State/County: New Mexico/Eddy Rig Name: Patriot 6

Latitude: 32.03470, Longitude: -104.07070 VS-Azi: 168.81 Degrees

Grid North = True North -0.14 degs (NAD 27) Grid Correction Applied = -0.14 degs



Who Harthard I Tolk

Depth Reference : RKB= 18 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS Filename: ...ondback 22 state com #011h.ut Report Date/Time: 2/5/2016 / 15:40 Minimum Curvature Method

VES Survey International West Texas

432-563-5444

Diamondback 22 State Com No 011H / API 30-015-43465 Surveyor: Eric Warner

Dogled Closure Closure Vertical Drift 밀 Measured

Selfon	Severity	Deg/100	**	0.31	99.0	0.40	0.39	0.30	0.53	0.65	99'0	0.48	0.11	0.76	0.36	0.11	0.47	0.57	0.16
ainsoid	Direction	Deg	0.00	296.56	326.72	23.57	35.40	73.26	116.02	109.06	89.80	75.31	65.55	61.50	63.05	67.01	71.93	75.65	76.75
Sincolo	Distance	FT	0.00	0.27	0:30	0.52	0.72	0.61	1.16	2.37	3.86	5.37	6.75	7.80	8.34	8.92	9.16	8.71	7.84
Verical	Section	FT	0.00	-0.17	-0.28	-0.42	-0.50	-0.06	0.70	1.19	0.74	-0.33	-1.55	-2.32	-2.26	-1.82	-1.10	-0.48	-0.28
	+E/-W	FT	0.00	-0.24	-0.16	0.21	0.42	0.58	1.04	2.24	3.86	5.20	6.15	6.85	7.43	8.21	8.71	8.44	7.63
	S-/N+	FT	0:00	0.12	0.25	0.47	0.59	0.18	-0.51	-0.77	0.01	1.36	2.80	3.72	3.78	3.48	2.84	2.16	1.80
	ΟΣL	FT	0.00	100.00	200.00	300.00	400.00	900.00	599.99	699.98	799.97	899.95	999.93	1099.93	1199.93	1299.92	1399.92	1499.91	1599.91
Ē	Direction	Deg	0.00	296.56	88.90	12.39	122.81	179.44	129.61	81.43	52.37	34.41	32.82	52.40	105.58	115.04	168.77	237.16	253.79
3	Angle	Deg	0.00	0.31	0.37	0.26	0.22	0.35	89.0	98.0	-1.27	₹0.93	1.04	0.31	0.44	0.52	0.53	0.49	0.54
	Depth	FT	0.00	100.00	200.00	300.00	400.00	500.00	00.009	700.00	800.00	900.00	1000.00	1100.00	1200.00	1300.00	1400.00	1500.00	1600.00
		-																	

V.E.S. Survey Date: 1/29/2016 Page 1 of 3

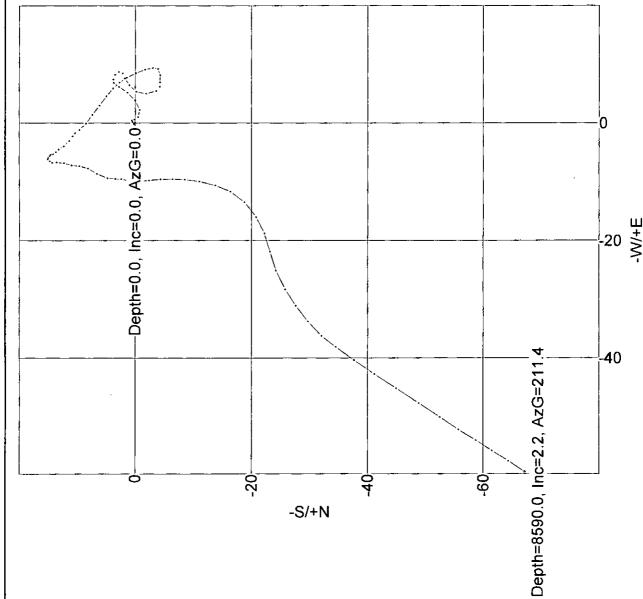
Depth FT Angle Direction Direction 1.13 Direction Deg 1700.00 1.13 2229.03 1800.00 0.78 2124.44 1800.00 0.38 89.12 2000.00 0.38 89.12 2100.00 0.38 89.12 2200.00 0.38 89.12 2200.00 0.44 93.72 2300.00 0.89 343.30 2600.00 0.89 343.30 2700.00 0.89 343.30 2800.00 0.89 343.30 3700.00 0.80 343.30 3700.00 0.80 345.07 3700.00 0.81 37.20 3800.00 0.81 330.46 3800.00 0.81 329.38 3800.00 0.81 328.38 3800.00 0.89 324.66 4000.00 0.40 356.30 4500.00 0.42 296.60 4500.00 0.42 296.60 4500.00		+NS +T 1.02 -0.20 -0.20 -1.87 -1.70 -0.11	+E/-W FT 6.43 6.43 6.43 6.43 6.43 6.43 6.20 6.91 9.21 9.37 9.37 9.37 6.87 6.87 6.87 4.55	Section FT 0.25 1.23 2.80 2.80 5.37 5.53 5.78 5.67 1.76 0.07 -1.34 -2.62 -3.99	Distance FT 6.51 5.33 5.34 7.52 8.12 9.19 10.02 9.24 8.50 7.39 7.39 7.01	Direction Deg 81.00 92.18 110.51 123.48 124.45 121.73 117.75 113.24 108.01 100.61 90.76 79.32 68.38 56.89	Severity Deg/100 0.67 0.44 0.75 0.07 0.53 0.77 0.23 0.21 0.14 0.14 0.23 0.09
0.38 0.38 0.38 0.97 0.97 0.95 0.95 0.96 0.96 0.96 0.97 0.30 0.30 0.30 0.40 0.08 0.08 0.09 0.09 0.09 0.09 0.09 0.0		207 127 89 20 197 87 96	6.43 6.43 5.00 5.00 6.91 6.91 9.21 9.27 7.72 6.87 6.87 6.87 6.87	6.25 1.23 1.23 2.80 4.60 5.37 5.53 5.78 5.67 7.76 0.07 -1.34 -2.62 -3.99	6.51 6.54 6.54 6.54 7.52 9.19 9.24 9.24 9.24 7.39 7.01	}	0.67 0.44 0.75 0.75 0.07 0.23 0.21 0.21 0.21 0.23 0.23 0.21 0.23 0.21 0.23
1.13 0.78 1.25 1.26 0.38 0.95 0.89 1.11 1.09 0.30 0.30 0.30 0.31 0.37 0.31 0.32 0.30 0.40 0.08 0.08 0.37 0.40 0.40 0.13			6.43 5.32 5.00 5.00 6.91 9.24 9.37 7.72 6.87 4.55 4.55	0.25 1.23 2.80 2.80 4.60 5.78 5.78 7.00 7.1.34 7.39 7.43 7.56 7.56 7.56 7.56 7.56 7.56 7.56 7.56	6.51 6.53 7.52 6.54 6.54 6.54 7.00 7.00 7.00 7.00 7.00 7.00 7.00 7.0		0.67 0.75 0.75 0.05 0.07 0.23 0.23 0.23 0.23 0.23 0.23 0.23
0.78 0.88 0.44 0.97 0.69 0.09 1.18 1.19 0.30 0.30 0.40 0.30 0.40 0.40 0.40 0.40 0.40 0.41 0.43			5.32 5.00 6.20 6.91 8.13 9.21 7.72 6.87 4.55 4.55	1.23 2.80 4.60 5.37 5.67 6.67 1.76 1.76 1.34 -2.62 -3.99	5.33 46.65 46.56 6.59 9.24 9.24 9.24 9.24 9.24 9.24 9.24 9.2		0.44 0.75 0.66 0.07 0.23 0.23 0.23 0.23 0.23 0.09 0.09
0.88 0.38 0.44 0.97 0.69 0.89 1.11 1.01 0.30 0.30 0.30 0.46 0.37 0.46 0.08 0.08 0.08 0.08 0.09 0.00 0.00 0.00		-1.87 -3.64 -4.25 -4.28 -3.96 -0.11 -0.11 -1.46 -6.16 -6.16	5.00 6.20 6.20 8.13 9.37 7.72 6.87 4.55 4.55	2.80 4.60 5.53 5.53 7.78 7.17 7.00 7.13 7.39 7.43 7.43 7.43 7.43 7.43 7.43 7.43 7.43	6.54 6.54 7.52 10.02 9.24 9.24 8.50 1.39 6.74		0.75 0.66 0.75 0.07 0.23 0.23 0.21 0.24 0.23 0.23 0.09
0.88 0.44 0.97 0.44 1.06 0.89 1.10 0.95 0.95 0.95 0.95 0.96 0.96 0.97 0.30 0.42 0.42 0.42 0.42 0.43 0.13		3.61 4.25 4.25 4.28 -3.96 -1.70 -1.46 1.46 7.72 8.19 7.39	5.46 6.20 6.91 8.13 9.27 7.72 6.87 5.87 4.55	5.53 5.53 5.78 5.67 6.07 1.76 1.34 2.62 -3.99	6.54 8.12 9.19 9.19 9.24 9.24 1.39 6.77		0.66 0.75 0.07 0.53 0.77 0.23 0.23 0.21 0.24 0.23 0.23
0.38 0.44 0.97 0.69 0.89 1.06 0.80 0.30 0.30 0.30 0.46 0.37 0.42 0.08 0.08 0.08 0.08 0.03 0.04 0.04 0.04 0.04 0.04 0.04 0.04		4.25 4.27 4.28 4.28 5.3.96 6.11 6.14 6.16 6.16 6.16	6.20 6.91 9.21 9.37 7.72 6.87 6.87 6.87 6.87 9.08	5.37 5.53 5.67 6.67 7.60 7.00 7.134 7.34 7.39 7.43 7.56 7.56 7.56 7.56 7.56 7.56 7.56 7.56	9.15 9.19 9.19 9.24 9.25 7.39 6.77		0.75 0.07 0.53 0.21 0.21 0.15 0.09
0.44 0.97 0.69 0.89 1.06 0.95 0.30 0.30 0.46 0.40 0.08 0.08 0.09 0.40 0.40 0.08 0.13 0.13		4.27 4.28 -3.96 -1.70 -1.46 1.46 2.72 3.83 7.39	6.91 9.13 9.37 9.08 9.08 6.87 7.72 6.87 4.55	5.53 5.78 5.67 4.81 1.76 0.07 -2.62 -3.99 -5.47	8.12 9.19 9.24 9.24 7.39 6.74		0.07 0.53 0.77 0.23 0.23 0.21 0.15 0.09 0.09
0.97 0.69 0.89 1.06 0.95 0.91 1.11 1.01 1.01 0.30 0.30 0.42 0.42 0.42 0.43 0.13		4.28 -3.96 -1.70 -0.11 1.46 2.72 3.83 7.39	8.13 9.21 9.37 7.72 6.87 5.87 4.55	5.78 5.67 4.81 1.76 0.07 -2.62 -3.99 -5.47	9.19 10.02 9.85 9.24 7.39 6.74	117.75 113.24 108.01 100.61 90.76 79.32 68.38 56.89	0.53 0.77 0.23 0.23 0.21 0.15 0.09 0.09
0.44 0.89 1.06 0.95 0.95 0.91 1.11 1.01 0.30 0.46 0.42 0.42 0.42 0.42 0.42 0.43 0.13		-3.96 -3.05 -1.70 -0.11 1.46 2.72 3.83 4.97 7.39	9.21 9.37 7.72 6.87 5.87 4.55	5.67 4.81 3.43 1.76 0.07 -2.62 -3.99 -5.47	10.02 9.85 9.24 7.39 7.01	113.24 108.01 100.61 90.76 79.32 68.38 56.89	0.77 0.48 0.23 0.21 0.21 0.21 0.09
0.69 0.89 1.06 0.95 0.80 1.11 1.11 1.01 0.30 0.30 0.30 0.46 0.37 0.42 0.08 0.08 0.13 0.13		-3.05 -1.70 -0.11 1.46 2.72 3.83 4.97 7.39	9.37 9.08 8.50 7.72 6.87 5.87 2.97	4.81 3.43 1.76 0.07 -2.62 -3.99 -5.47	9.85 9.24 8.50 7.39 6.74	108.01 100.61 90.76 79.32 68.38 56.89	0.48 0.23 0.21 0.15 0.14 0.09
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1.06 0.95 0.80 1.11 1.11 1.01 0.81 0.81 0.86 0.88 0.88 0.42 0.42 0.42 0.43 0.13		-0.11 1.46 2.72 3.83 4.97 7.39	8.50 7.72 6.87 5.87 4.55 2.97	1.76 0.07 -1.34 -2.62 -3.99 -5.47	8.50 7.86 7.39 7.01 6.74	90.76 79.32 68.38 56.89	0.21 0.15 0.21 0.14 0.09 0.08
0.95 0.80 1.09 1.11 1.11 1.01 0.30 0.30 0.42 0.42 0.08 0.08 0.13 0.13		1.46 2.72 3.83 4.97 6.16 7.39	7.72 6.87 5.87 4.55 2.97	0.07 -1.34 -2.62 -3.99 -5.47	7.86 7.39 7.01 6.74	79.32 68.38 56.89 42.52	0.15 0.21 0.14 0.09 0.08
0.80 1.09 1.18 1.11 1.01 0.30 0.30 0.46 0.08 0.08 0.08 0.13 0.13		2.72 3.83 4.97 6.16 7.39	6.87 5.87 4.55 2.97	-1.34 -2.62 -3.99 -5.47	7.39	68.38 56.89 42.52	0.21 0.14 0.23 0.09
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0.81 0.30 0.46 0.66 0.88 0.42 0.42 0.21 0.21 0.13 0.13	3399.69	8.49	-0.10	-8.35	8.49	359.33	0.14
0.30 0.46 0.66 0.88 0.42 0.40 0.21 0.28 0.13 0.15	38 3499.68	9.58	-1.19	69.63 69.63	996	352.90	0.45
0.46 0.66 0.88 0.40 0.08 0.21 0.13 0.43		10.37	-1.75	-10.51	10.51	350.44	0.53
0.66 0.88 0.37 0.40 0.08 0.21 0.28 0.13 0.43		10.79	-2.26	-11.02	11.03	348.19	0.17
0.88 0.37 0.42 0.40 0.21 0.28 0.13 0.43		11.36	-3.05	-11.74	11.77		0.20
0.37 0.42 0.40 0.08 0.21 0.13 0.43 0.15		12.31	-3.98	-12.85	12.94	342.09	0.35
0.40 0.40 0.21 0.28 0.13 0.15	37 3000 65	12 25	7 63	13.07	7	341.18	2
0.40 0.08 0.21 0.13 0.43 0.15		43.70	76.	12.00	14.58	340.20	5 6
0.08 0.21 0.28 0.13 0.15		13.72	i i	74.41-	4.00 4.00	330 50	0.32
0.21 0.28 0.13 0.43 0.75		14.62	5 8	14.38	15.57	339.80	- t. C
0.28 0.13 0.43 0.15		14.77	-5.58	-15.58	15.79	339.31	0.13
0.28 0.13 0.43 0.15							•
0.13 0.43 0.15 0.75	.33 4499.65	15.04	-5.91	-15.90	16.16	338.54	0.07
0.43 0.15 0.75	85 4599.65	15.13	-6.19	-16.05	16.35	337.75	0.28
0.15 0.75		14.76	-6.49	-15.74	16.12	336.27	0.31
0.75	78 4799.64	14.33	-6.76	-15.37	15.85	334.75	0.27
	14 4899.64	13.57	-6.71	-14.61	15.14	333.68	0.64
5000.00 0.82 197.49	49 4999.63	12.24	-6.81	-13.33	14.01	330.89	0.38
	.76 5099.62	10.94	-7.20	-12.13	13.10	326.65	0.10
0.83	.48 5199.61	9.61	-7.33	-10.85	12.08	322.66	0.28
0.96	.00 5299.60	8.16	-7.70	-9.50	11.22	316.64	0.53
	.44 5399.58	6.59	-8.64	-8.14	10.86	307.33	0.17
5500.00 1.13 192.37	.37 5499.57	4.78	-9.37	-6.51	10.52	297.04	0.38
		Page 2 of 3	3				

V.E.S. Survey Date: 1/29/2016

Measured Depth	incl Angle	Drift Direction	ΔΛΙ	S-/N+	+E/-W	Vertical Section	Closure Distance	Closure Direction	Dogleg
FT	Deg	Deg	FT	FT	FT	FT	FF	Deg	Deg/100
5600.00	0.47	166.78	5599.56	3.42	-9.48	-5.19	10.08	289.81	0.73
5700.00	0.72	194.15	5699.55	2.40	-9.54	4.21	9.84	284.13	0.37
5800.00	1.19	190.02	5799.54	0.77	-9.88	-2.67	9.91	274.46	0.47
5900.00	0.66	168.35	5899.52	-0.81	-9.94	-1.13	9.98	265.34	. 0.63
6000.00	1.16	174.80	5999.51	-2.38	-9.74	0.44	10.02	256.28	0.51
6100.00	1.11	175.75	6099,49	4.35	-9.57	2.41	10.52	245.54	0.05
6200.00	1.27	182.92	6199.47	-6.43	-9.56	4.46	11.52	236.05	0.22
6300.00	1.11	179.79	6299.45	-8.51	-9.61	6.48	12.83	228.48	0.18
6400.00	1.78	191,36	6399.41	-10.99	-9.91	8.86	14.80	222.03	0.73
6500.00	1.54	198.06	6499.37	-13.79	-10.63	11.46	17.41	217.63	0.31
00'0099	1.67	205.67	6599.33	-16.38	-11.68	13.80	20.11	215.49	0.25
6700.00	1.85	226.10	6699.29	-18.81	-13.47	15.83	23.13	215.61	0.65
00.0089	1.86	237.59	6799.24	-20.80	-16.01	17.29	26.24	217.58	0.37
00.0069	1.72	248.81	6899.19	-22.21	-18.78	18.14	29.09	220.22	0.38
7000.00	2.00	256.00	6999.13	-23.18	-21.88	18.49	31.87	223.35	0.36
7100.00	1.91	248.92	7099.08	-24.20	-25.13	18.86	34.88	226.08	0.26
7200.00	2.22	238.44	7199.01	-25.81	-28.33	19.82	38.33	227.66	0.49
7300.00	1.59	235.63	7298.96	-27.61	-31.13	21.04	41.61	228.43	0.64
7400.00	2.30	229.37	7398.90	-29.70	-33.80	22.58	44.99	228.69	0.74
7500.00	1.58	222.17	7498.84	-32.03	-36.25	24.39	48.38	228.53	0.76
7600.00	2.03	214.24	7598.79	-34.52	-38.17	26.46	51.47	227.88	0.51
7700.00	2.34	216.44	7698.72	-37.63	40.38	29.07	55.20	227.02	0.32
7800.00	2.56	212.07	7798.63	-41.16	42.78	32.08	59.37	226.11	0.29
7900.00	2.55	213.71	7898.53	44.91	-45.20	35.28	63.72	225.19	0.07
8000.00	2.78	212.16	7998.42	48.81	47.73	38.62	68.27	224.36	0.23
8100.00	2.23	214.53	8098.32	-52.46	-50.12	41.74	72.56	223.69	0.56
8200.00	2.15	212.62	8198.25	-55.64	-52.23	44.45	76.32	223.19	0.11
8300.00	2.06	211.93	8298.18	-58.74	-54.19	47.11	79.92	222.69	0.09
8400.00	1.70	212.27	8398.13	-61.52	-55.93	49.50	83.15	222.28	0.36
8500.00	2.18	213.59	8498.07	-64.36	-57.78	51.92	86.49	221.92	0.48
8590.00	2.19	211.42	8588.01	-67.25	-59.62	54.40	89.87	221.56	0.09

VES Survey International
West Texas
432-563-5444
Surveyor: Eric Warner
Diamondback 22 State Com No 011H / API 30-015-43465





V.E.S. Survey Date: 1/29/2016



' _	Eric V	rarner	селлу тлат г am	i empioyea by ve	:5 Survey Int	ernationa	ii. That I did on the day	/(S)
of	01/29/16	through	01/29/16	conduct or super	vise the takin	g of a	Rate Gyro	survey from a
dept	h of(0.00 1	eet to a depth of	8,590.00	_feet; that th	e data is	true, correct, complete	e and
with	in the limitati	ons of the	tool as set forth by	/ Vaughn Energy	Services, tha	at I am au	thorized and qualified	
to m	ake this repo	ort; that this	s survey was cond	lucted at the requ	est of		Concho	for the
<u>Di</u>	amondback	22 State C	<u>om N</u> ≎ Well#	011H	API	#	30-015-43465	
in _	Ede	dy	County / Paris	h New M	lexico	; and tha	t I have reviewed this	report and
find	that it confor	ms to the p	orinciples and proc	cedures as set fo	orth by Vaugh	n Energy	Services	

Eric Warner Service Technician Vaughn Energy Services



	Eric W	/arner	certify that I am	employed by VE	S Survey Int	ernati	onal. That I did on the day	y(s)
of _	01/29/16	through	01/29/16c	onduct or super	vise the takin	g of a	Rate Gyro	survey from a
dept	h of(0.00	feet to a depth of	8,590.00	_feet; that th	e data	a is true, correct, complet	e and
withi	n the limitati	ons of the	tool as set forth by	Vaughn Energy	Services, tha	ıt I an	n authorized and qualified	
to m	ake this repo	ort; that thi	s survey was condu	ucted at the requ	est of		Concho	for the
Dia	amondback :	22 State C	Com N≉ Well#	011H	API	#	30-015-43465	
in _	Ed	dy	County / Parish	n New M	lexico	; and	that I have reviewed this	report and
find t	hat it confor	ms to the	principles and proce	edures as set fo	orth by Vaugh	n Ene	ergy Services	

Eric Warner Service Technician Vaughn Energy Services



COG Operating LLC.

Eddy County, NM
Diamondback 22 State Com
#11H

NM OIL CONSERVATION

ARTESIA DISTRICT

MAR 1 1 2016

RECEIVED

OH

Survey: MWD

Survey Report - Geographic

05 February, 2016



Wellplanning

Survey Report - Geographic

Company: COG Operating LLC. Local Co-ordinate Reference: Well #11H

 Project:
 Eddy County, NM
 TVD Reference:
 WELL @ 3002.1usft (Original Well Elev)

 Site:
 Diamondback 22 State Com
 MD Reference:
 WELL @ 3002.1usft (Original Well Elev)

Well: #11H North Reference: Grid

Wellbore: OH Survey Calculation Method: Minimum Curvature

Design: OH Database: EDM 5000.1 Single User Db

Project Eddy County, NM

 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 Diamondback 22 State Com 376,046.00 usft Northing: Site Position: 32° 2' 1.000 N Latitude: Easting: 578,606.90 usft 104° 4' 46.798 W From: Мар Longitude: Position Uncertainty: 0.0 usft Slot Radius: 13-3/16 " Grid Convergence: 0.13 °

#11H Well Well Position 0.0 usft 376,442.30 usft +N/-S Northing: Latitude: 32° 2' 4 857 N 104° 4' 14.530 W 0.0 usft 581,383,50 usft +F/-W Easting: Longitude: **Position Uncertainty** 2.0 usft Wellhead Elevation: Ground Level: 2,984.1 usft

ΟĤ Wellbore Magnetics **Model Name** Sample Date Declination Dip Angle Field Strength (°) **(°)** (nT) IGRF2015 1/11/2016 7.32 59,82 47,921

Design OH Audit Notes: ACTUAL Version: 1.0 Phase: Tie On Depth: 0.0 Depth From (TVD) Vertical Section: +N/-S +E/-W Direction (usft) (usft) (usft) (*) 0.0 0.0 168.81 0.0

2/5/2016 Survey Program Date From To (usft) (usft) Tool Name Survey (Wellbore) Description VESSI_GYROFLEX VESSI Gyroffex Gyro 100.0 8,590.0 MWD #1 (OH) 8.665.0 13,995.0 MWD (OH) MWD MWD - Standard

Survey Measured Vertical Мар Map Depth Inclination Azimuth Depth +N/-S +E/-W Northing **Easting** (usft) (usft) (usft) (usft) (usft) (usft) (°) (°) Latitude Longitude 8,588.0 8,590.0 2.19 211.42 -67.3 -59,6 376,375,04 581,323.94 32° 2' 4.193 N 104° 4' 15.224 W 2.10 8,665.0 200.10 8 663 0 -69.8 -60.8 376,372.52 581,322.72 32° 2' 4.168 N 104° 4' 15.239 W 8,696.0 2.80 185.00 8,693.9 -71.1 -61.0 376,371.24 581,322.46 32° 2' 4.155 N 104° 4' 15.242 W 8,728.0 4.40 155.00 8,725.9 -73.0-60.6 376,369.35 581,322.91 32° 2' 4.136 N 104° 4' 15.236 W 6.90 8,756.7 -75.4 376,366.91 104° 4' 15.216 W 8,759.0 137.00 -58.8581,324.68 32° 2' 4.112 N 8,788.4 376,363.77 104° 4' 15.176 W 8,791.0 9.80 129.40 -78.5 -55.4 581,328.10 32° 2' 4.081 N 104° 4' 15.118 W 8,823.0 13.20 126.60 8,819.7 -82.4 -50,4 376,359.86 581,333.14 32° 2' 4.042 N 104° 4' 15.046 W 16.70 126.60 32° 2' 3 996 N 8.853.0 8 848 7 -87 1 -44.2 376,355.25 581,339.35 20.50 127.50 8,879.0 376,349.09 581,347.49 104° 4' 14.952 W 8,885.0 -93.2 -36.0 32° 2' 3.935 N 8,917.0 24.20 129.40 8,908.6 -100.8-26.5 376,341.52 581,357.00 32° 2' 3.860 N 104° 4' 14.841 W 26.90 8,936.6 -109.5 -16.3 376,332.84 581,367.18 104° 4′ 14.723 W 8,948.0 131.40 32° 2' 3.774 N



Weliplanning

Survey Report - Geographic

Company: COG Operating LLC.

ЮΗ

Project: 'Eddy County, NM

Site: Diamondback 22 State Com

Well: (#11H Wellbore: ;OH

Design:

Local Co-ordinate Reference:

TVD Reference:
MD Reference:

North Reference: Survey Calculation Method:

Database:

Well #11H

WELL @ 3002.1usft (Original Well Elev) WELL @ 3002.1usft (Original Well Elev)

Grid

Minimum Curvature

EDM 5000.1 Single User Db

Measured Depth (usft)	Inclination (°)	Azimuth	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitud e	Longitude
8,980.0	30.10	130.70	8,964.7	-119.5	-4.8	376,322.82	581,378,69	32° 2' 3.674 N	104° 4' 14.5
9,012.0	33.10	130,40	8,992.0	-130.4	7.9	376,311.92	581,391,43	32° 2' 3.566 N	104° 4′ 14.4
9,044.0	36.60	130.70	9,018.2	-142.3	21.8	376,300.04	581,405.32	32° 2' 3.448 N	104° 4' 14.2
9,075.0	39.90	131.50	9,042.6	-154.9	36.3	376,287.42	581,419.78	32° 2′ 3.323 N	104° 4' 14.1
9,105.0	44.10	132.20	9,064.8	-168.3	51.2	376,274.02	581,434.73	32° 2' 3.190 N	104° 4' 13.9
9,137.0	48.60	133.00	9,086.9	-183.9	68.3	376,258.35	581,451.76	32° 2′ 3.035 N	104° 4' 13.7
9,168.0	52.80	133.10	9,106.6	-200.3	85.8	376,241.98	581,469.29	32° 2' 2.872 N	104° 4′ 13.5
9,199.0	55.60	133.50	9,124.7	-217.6	104,1	376,224.74	581,487.58	32° 2' 2.701 N	104° 4' 13.3
9,231.0	58.10	134.70	9,142.2	-236.2	123.3	376,206.09	581,506.82	32° 2' 2.516 N	. 104° 4' 13.1
9,262.0	60.10	136.20	9,158,1	-255.2	142.0	376,187.13	581,525.48	32° 2' 2.328 N	104° 4' 12.8
9,294.0	62.90	137.30	9,173.4	-275.6	161.2	376,166.65	581,544.74	32° 2' 2.125 N	104° 4' 12.6
9,326.0	65.70	137,60	9,187.2	-296.9	180.7	376,145.41	581,564.24	32° 2' 1.914 N	104° 4' 12.4
9,356.0	68.60	138.00	9,198.9	-317.4	199.3	376,124.93	581,582.80	32° 2' 1,711 N	104° 4′ 12.2
9,388.0	71.20	138.00	9,209.9	-339.7	219.4	376,102.60	581,602,91	32° 2' 1.490 N	104° 4' 11.9
9,420.0	73.50	138,00	9,219.6	-362.4	239.8	376,079.94	581,623.31	32° 2' 1.265 N	104° 4' 11.7
9,451.0	76.00	138.70	9,227.7	-384.7	259.7	376,057.59	581,643.19	32° 2' 1.043 N	104° 4' 11.5
9,482.0	78.10	140.00	9,234.7	-407.6	279.4	376,034.67	581,662.86	32° 2' 0.816 N	104° 4' 11.2
9,514.0	80.10	141.20	9,240.7	-431.9	299.3	376,010.39	581,682.81	32° 2' 0.575 N	104° 4′ 11.0
9,546.0	81.10	141.90	9,246.0	-456.6	318.9	375,985. 6 7	581,702.44	32° 2' 0.330 N	104° 4' 10.8
9,578.0	82.60	142.70	9,250.5	-481.7	338.3	375,960.61	581,721.81	32° 2' 0.082 N	104° 4' 10.6
9,609.0	83.60	143.20	9,254.2	-506.3	356.8	375,936.05	581,740.35	32° 1′ 59.838 N	104° 4' 10.3
9,641.0	85.70	143.80	9,257.2	-531.9	375.8	375,910.44	581,759.30	32° 1' 59.584 N	104° 4' 10.1
9,673.0	86.90	144.10	9,259.3	-557.7	394.6	375,884.62	581,778.09	32° 1' 59.328 N	104° 4' 9.9
9,736.0	90.40	144.60	9,260.8	-608.9	431.3	375,833.45	581,814.79	32° 1' 58.821 N	104° 4' 9.5
9,769.0	91,10	147.40	9,260.3	-636.2	449.7	375,806.09	581,833.24	32° 1′ 58.550 N	104° 4' 9.3
9,863.0	89.60	151.70	9,259.8	-717.2	497.4	375,725.08	581,880.87	32° 1′ 57.747 N	104° 4′ 8.7
9,958.0	90.30	154.60	9,259.8	-802.0	540.3	375,640.33	581,923.77	32° 1′ 56.907 N	104° 4' 8.2
10,052.0	90.50	156.60	9,259.2	-887.6	579.1	375,554.73	581,962.60	32° 1' 56.059 N	104° 4' 7.8
10,147.0	89.40	157.90	9,259.3	-975.2	615.8	375,467.13	581,999.34	32° 1' 55.191 N	104° 4′ 7.4
10,242.0	89.80	159.90	9,259.9	-1,063.8	650.0	375,378.51	582,033.53	32° 1′ 54.313 N	104° 4' 7.0
10,337.0	90.00	162.00	9,260.1	-1,153.6	681.0	375,288.71	582,064.54	32° 1′ 53.424 N	104° 4' 6.6
10,429.0	89.60	164.00	9,260.4	-1,241.6	707.9	375,200.74	582,091.44	32° 1′ 52.552 N	104° 4' 6.3
10,524.0	90.70	166.20	9,260.2	-1,333.4	732.4	375,108.94	582,115.86	32° 1' 51.643 N	104° 4' 6.0
10,618.0	89.10	167.10	9,260.3	-1,424.8	754.1	375,017.48	582,137.56	32° 1′ 50.738 N	104° 4′ 5.8
10,744.0	88.10	171.10	9,263.4	-1,548.5	777.9	374,893.82	582,161,38	32° 1′ 49.513 N	104° 4′ 5.5
10,840.0	88.30	170.50	9,266.4	-1,643.2	793.2	374,799.10	582,176.72	32° 1′ 48.576 N	104° 4' 5.3
10,934.0	88.50	173.80	9,269.1	-1,736.3	806.0	374,706.03	582,189.55	32° 1′ 47.654 N	104° 4' 5.2
11,029.0	89.60	175.70	9,270.6	-1,830.8	814.7	374,611.45	582,198.24	32° 1' 46.718 N	104° 4' 5.1
11,156.0	90.10	178.80	9,271.0	-1,957.7	820.8	374,484.61	582,204.33	32° 1′ 45.463 N	104° 4′ 5.0
11,251.0	90.30	178.20	9,270.6	-2,052.7	823.3	374,389.65	582,206.82	32° 1′ 44.523 N	104° 4' 5.0
11,345.0	90.80	178.50	9,269.7	-2,146.6	826.0	374,295.69	582,209.53	32° 1' 43.593 N	104° 4' 4.9
11,440.0	88.90	178,50	9,270.0	-2,241.6	828.5	374,200.73	582,212.01	32° 1′ 42,653 N	104° 4' 4.9
11,534.0	89.90	178.20	9,271.0	-2,335.5	831.2	374,106.77	582,214.72	32° 1' 41.723 N	104° 4' 4.9
11,629.0	90.40	178.00	9,270.7	-2,430.5	834.4	374,011.83	582,217.87	32° 1' 40.783 N	104° 4′ 4.9
11,724.0	89.30	177.90	9,271.0	-2,525.4	837.8	373,916.89	582,221.27	32° 1' 39,844 N	104° 4' 4.8
11,819.0	89.80	178.00	9,271.7	-2,620.3	841.2	373,821.95	582,224.67	32° 1′ 38.904 N	104° 4′ 4.8
11,914.0	90.20	177.50	9,271.7	-2,715.3	844.9	373,727.03	582,228.40	32° 1' 37.964 N	104° 4′ 4.7
12,009.0	90.70	177.20	9,271.0	-2,810.2	849.3	373,632.13	582,232.79	32° 1′ 37.025 N	104° 4′ 4.7
12,104.0	90.10	178.50	9,270.3	-2,905.1	852.8	373,537.20	582,236.35	32° 1′ 36.086 N	104° 4' 4.7
12,199.0	91.10	178.50	9,269.3	-3,000.1	855.3	373,442.24	582,238.84	32° 1' 35.146 N	104° 4' 4.6
12,323.0	88.10	178.70	9,270.2	-3,124.0	858.4	373,318.30	582,241.87	32° 1' 33.919 N	104° 4′ 4.6
12,419.0	89.30	178.70	9,272.3	-3,220.0	860.5	373,222.35	582,244.05	32° 1' 32.969 N	104° 4' 4.6
12,514.0	90.20	178.40	9,272.8	-3,314.9	862.9	373,127.38	582,246.45	32° 1′ 32.030 N	104° 4′ 4.6
12,608.0	89.40	178.00	9,273.1	-3,408.9	865.9	373,033,43	582,249.40	32° 1' 31.100 N	104° 4' 4.5
12,703.0	90.50	177.90	9,273.2	-3,503.8	869.3	372,938.49	582,252.80	32* 1' 30.160 N	104° 4' 4.5



Wellplanning

Survey Report - Geographic

COG Operating LLC. Company:

Project:

Eddy County, NM

Site: Well:

Design:

Wellbore:

Diamondback 22 State Com

#11H ОН ОН

Local Co-ordinate Reference:

TVD Reference:

MD Reference:

North Reference:

Survey Calculation Method: Database:

Well #11H

WELL @ 3002.1usft (Original Well Elev)

WELL @ 3002.1usft (Original Well Elev)

Grid

Minimum Curvature

EDM 5000.1 Single User Db

Measured			Vertical			Map	Мар		
Depth (usft)	Inclination (°)	Azimuth (°)	Depth (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
12,798.0	90.30	177.70	9,272.5	-3,598.7	872.9	372,843.56	582,256.45	32° 1' 29.220 N	104° 4' 4.492 \
12,892.0	88.80	176.60	9,273.2	-3,692.6	877.6	372,749.69	582,261.12	32° 1' 28.291 N	104° 4' 4,440 V
12,986.0	89.50	176.10	9,274.6	-3,786.4	883.6	372,655.89	582,267.10	32° 1' 27.363 N	104° 4' 4.373 V
13,081.0	90.00	176.10	9,275.1	-3,881.2	890.1	372,561,11	582,273.57	32° 1' 26.425 N	104° 4' 4.301 V
13,176.0	89.70	175.70	9,275.3	-3,975.9	896.9	372,466.35	582,280.36	32° 1' 25.487 N	104° 4' 4.225 \
13,270.0	90.90	178.10	9,274.8	-4,069.8	901.9	372,372.50	582,285.44	32° 1' 24.558 N	104° 4' 4,169 \
13,365.0	89.90	178.20	9,274.2	-4,164.7	905.0	372,277.55	582,288.51	32° 1' 23,618 N	104° 4' 4.136 V
13,459.0	89.40	178.20	9,274.7	-4,258.7	908.0	372,183.60	582,291.46	32° 1' 22.688 N	104° 4′ 4.104 V
13,553.0	89.90	178.00	9,275.3	-4,352.6	911.1	372,089.66	582,294.58	32° 1' 21.758 N	104° 4' 4.070 V
13,648.0	89.60	178.30	9,275.7	-4,447.6	914.1	371,994.71	582,297.64	32° 1' 20.819 N	104° 4' 4.038 V
13,741.0	90.60	177.70	9,275.6	-4,540.5	917.4	371,901.76	582,300.89	32° 1' 19.899 N	104° 4' 4,003 V
13,804.0	91.20	178.00	9,274.6	-4,603.5	919.7	371,838.82	582,303.25	32° 1' 19,276 N	104° 4′ 3.977 V
13,944.0	91.30	177.90	9,271.5	-4,743.4	924.8	371,698.94	582,308.26	32° 1′ 17.891 N	104° 4′ 3.923 V
13,995.0	91.30	177.90	9,270.4	-4,794.3	926.6	371,647.99	582,310.13	32° 1' 17.387 N	104° 4' 3,902 V

Checked By:	A	Approved By:	С	Date:	