

COG OPERATING

Cotton Draw
Eddy County, NM
Seabiscuit Federal Com #2H
VH - Job #32K0111086

30-015-37607

Survey: Actual

SDI Standard Survey Report

30 January, 2011

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AUG 29 2011

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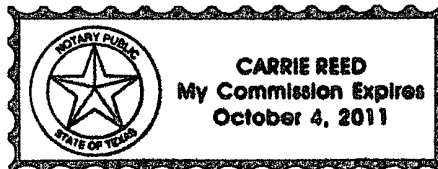
This survey is correct to the best of my knowledge and is supported by actual field data.

Robert

Notarized this date 30th of January, 2011.

Carrie Reed

Notary Signature
County of Midland
State of Texas



Scientific Drilling International, Inc.

SDI Standard Survey Report

Company:	COG OPERATING	Local Co-ordinate Reference:	Well Seabiscuit Federal Com #2H
Project:	Cotton Draw	TVD Reference:	WELL @ 0 0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0 0usft (Original Well Elev)
Well:	Seabiscuit Federal Com #2H	North Reference:	Grid
Wellbore:	VH - Job #32K0111086	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0111086	Database:	EDM:Regulatory

Project:	Cotton Draw		
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		Eddy County, NM			
Site Position:		Northing:	446,243.03 usft	Latitude:	32° 13' 31 476 N
From:	Lat/Long	Easting:	685,868 49 usft	Longitude:	103° 43' 56 197 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"	Grid Convergence:	0 32 °

Well	Seabiscuit Federal Com #2H, Directional (Pathfinder)					
Well Position	+N/-S	0 0 usft	Northing:	446,243 03 usft	Latitude:	32° 13' 31 476 N
	+E/-W	0 0 usft	Easting:	685,868.49 usft	Longitude:	103° 43' 56 197 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft	Ground Level:	0.0 usft	

Wellbore		VH - Job #32K0111086			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	BGGM2010	1/26/2011	7 76	60 17	48,698

Design		VH - Job #32K0111086		
Audit Notes:				
Version:	1 0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0 0	0 0	0.0	359 71

Survey Program		Date	1/30/2011		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.0	8,545 0	Actual (VH - Job #32K0111086)	Keeper	Keeper Gyro	

Survey	Measured Depth	Inclination	Azimuth	True Vertical	North/South	East/West	Closure Azimuth	Closure Distance
	(usft)	(°)	(°)	Depth	(usft)	(usft)	(°)	(usft)
	0 0	0 00	0 00	0 0	0 0	0 0	0 00	0 0
	100 0	0 27	187 39	100 0	-0.2	0 0	187.39	0.2
	200 0	0 42	204 79	200 0	-0 8	-0 2	194.99	0 8
	300 0	0 48	193 02	300 0	-1 5	-0 5	196.70	1.6
	400 0	0 49	187 91	400 0	-2 4	-0 6	194 54	2.5
	500 0	0.50	184 13	500 0	-3 2	-0 7	192 32	3 3
	600 0	0 57	190.39	600 0	-4 2	-0 8	191.25	4 2
	700 0	0 71	176 56	700 0	-5 3	-0 9	189 49	5 3
	800 0	0 61	178 95	800 0	-6 4	-0 8	187.40	6 5
	900 0	0.72	188 79	900 0	-7 6	-0 9	186 92	7 6
	1,000 0	0 56	179 86	1,000 0	-8.7	-1.0	186 66	8 7
	1,100 0	0.27	176.68	1,100 0	-9 4	-1 0	186.06	9.5

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Company:	COG OPERATING	Local Co-ordinate Reference:	Well Seabiscuit Federal Corn #2H
Project:	Cotton Draw	TVD Reference:	WELL @ 0 0usft (Original Well Elev)
Site:	Eddy County, NM	MD Reference:	WELL @ 0 0usft (Original Well Elev)
Well:	Seabiscuit Federal Corn #2H	North Reference:	Grid
Wellbore:	VH - Job #32K0111086	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0111086	Database:	EDM-Regulatory

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
1,200.0	0.19	251.41	1,200.0	-9.7	-1.1	186.72	9.8
1,300.0	0.14	21.73	1,300.0	-9.6	-1.3	187.42	9.7
1,400.0	0.36	4.76	1,400.0	-9.2	-1.2	187.33	9.3
1,500.0	0.57	354.72	1,499.9	-8.4	-1.2	188.15	8.5
1,600.0	0.69	355.96	1,599.9	-7.3	-1.3	190.03	7.4
1,700.0	0.90	353.08	1,699.9	-5.9	-1.4	193.57	6.1
1,800.0	0.89	350.62	1,799.9	-4.4	-1.6	200.67	4.7
1,900.0	1.02	5.09	1,899.9	-2.7	-1.7	211.97	3.2
2,000.0	1.02	17.77	1,999.9	-1.0	-1.3	233.83	1.7
2,100.0	1.45	21.89	2,099.9	1.0	-0.6	329.85	1.2
2,200.0	1.30	25.10	2,199.8	3.2	0.4	6.17	3.3
2,300.0	1.24	26.65	2,299.8	5.2	1.3	14.12	5.4
2,400.0	0.97	37.27	2,399.8	6.9	2.3	18.61	7.3
2,500.0	0.91	43.15	2,499.8	8.1	3.4	22.53	8.8
2,600.0	0.94	57.78	2,599.8	9.1	4.6	26.74	10.2
2,700.0	1.17	65.55	2,699.8	10.0	6.2	31.92	11.8
2,800.0	1.35	62.54	2,799.7	11.0	8.2	36.80	13.7
2,900.0	1.59	57.14	2,899.7	12.3	10.4	40.34	16.1
3,000.0	1.98	57.89	2,999.6	13.9	13.0	43.11	19.1
3,100.0	1.72	52.47	3,099.6	15.8	15.7	44.87	22.3
3,200.0	1.03	49.75	3,199.6	17.3	17.6	45.51	24.6
3,300.0	0.60	30.76	3,299.6	18.3	18.5	45.36	26.0
3,400.0	0.51	15.96	3,399.6	19.2	18.9	44.62	26.9
3,500.0	0.55	0.16	3,499.5	20.1	19.0	43.48	27.7
3,600.0	0.46	337.67	3,599.5	20.9	18.9	42.07	28.2
3,700.0	0.50	340.92	3,699.5	21.7	18.6	40.58	28.6
3,800.0	0.54	333.22	3,799.5	22.5	18.2	38.97	29.0
3,900.0	0.44	113.31	3,899.5	22.8	18.4	38.85	29.3
4,000.0	0.79	111.15	3,999.5	22.4	19.4	40.84	29.6
4,100.0	0.87	124.98	4,099.5	21.7	20.6	43.53	30.0
4,200.0	1.37	142.52	4,199.5	20.3	22.0	47.22	30.0
4,300.0	1.48	141.35	4,299.5	18.4	23.5	51.98	29.9
4,400.0	1.31	139.52	4,399.4	16.5	25.1	56.63	30.0
4,500.0	1.06	138.15	4,499.4	15.0	26.4	60.50	30.4
4,600.0	0.79	190.83	4,599.4	13.6	26.9	63.22	30.2
4,700.0	0.77	184.89	4,699.4	12.2	26.7	65.40	29.4
4,800.0	0.60	172.04	4,799.4	11.1	26.7	67.55	28.9
4,900.0	0.56	172.99	4,899.4	10.0	26.9	69.50	28.7
5,000.0	0.53	177.10	4,999.4	9.1	27.0	71.35	28.5
5,100.0	0.06	185.15	5,099.4	8.6	27.0	72.34	28.3
5,200.0	0.08	327.07	5,199.4	8.6	26.9	72.30	28.3
5,300.0	0.20	22.07	5,299.4	8.8	27.0	71.90	28.4
5,400.0	0.34	28.36	5,399.4	9.2	27.2	71.22	28.7
5,500.0	0.42	16.22	5,499.4	9.9	27.4	70.24	29.1

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Site:	Eddy County, NM	MD Reference:	WELL @ 0.0usft (Original Well Elev)
Well:	Seabiscuit Federal Com #2H	North Reference:	Grid
Wellbore:	VH - Job #32K0111086	Survey Calculation Method:	Minimum Curvature
Design:	VH - Job #32K0111086	Database:	EDM-Regulatory

Survey							
Measured Depth (usft)	Inclination (°)	Azimuth (°)	True Vertical Depth	North/South (usft)	East/West (usft)	Closure Azimuth (°)	Closure Distance (usft)
5,600.0	0.47	29.32	5,599.4	10.6	27.7	69.14	29.7
5,700.0	0.58	27.27	5,699.4	11.4	28.2	68.01	30.4
5,800.0	0.46	31.37	5,799.4	12.2	28.6	66.96	31.1
5,900.0	0.61	25.44	5,899.4	13.0	29.0	65.90	31.8
6,000.0	0.60	22.82	5,999.4	13.9	29.5	64.87	32.6
6,100.0	0.67	26.21	6,099.3	15.0	29.9	63.45	33.5
6,200.0	0.46	357.65	6,199.3	15.9	30.2	62.24	34.1
6,300.0	0.33	339.64	6,299.3	16.6	30.1	61.15	34.3
6,400.0	0.16	277.50	6,399.3	16.8	29.8	60.54	34.2
6,500.0	0.01	338.19	6,499.3	16.9	29.7	60.38	34.1
6,600.0	0.08	313.18	6,599.3	16.9	29.6	60.26	34.1
6,700.0	0.07	276.98	6,699.3	17.0	29.5	60.08	34.0
6,800.0	0.16	210.79	6,799.3	16.9	29.4	60.14	33.9
6,900.0	0.24	219.76	6,899.3	16.6	29.2	60.38	33.6
7,000.0	1.40	222.19	6,999.3	15.5	28.2	61.19	32.2
7,100.0	1.39	221.15	7,099.3	13.7	26.6	62.75	29.9
7,200.0	1.17	215.31	7,199.3	12.0	25.2	64.63	27.9
7,300.0	0.59	175.06	7,299.3	10.6	24.7	66.73	26.8
7,400.0	0.51	176.41	7,399.3	9.6	24.7	68.69	26.5
7,500.0	0.58	158.23	7,499.3	8.7	24.9	70.70	26.4
7,600.0	0.60	153.16	7,599.2	7.8	25.4	72.91	26.5
7,700.0	0.71	136.17	7,699.2	6.9	26.0	75.19	26.9
7,800.0	0.81	139.12	7,799.2	5.9	26.9	77.64	27.6
7,900.0	1.21	125.60	7,899.2	4.8	28.2	80.45	28.6
8,000.0	1.80	121.51	7,999.2	3.3	30.4	83.78	30.6
8,100.0	1.81	123.90	8,099.1	1.6	33.1	87.20	33.1
8,200.0	1.96	121.92	8,199.1	-0.2	35.9	90.27	35.9
8,300.0	2.28	111.07	8,299.0	-1.8	39.2	92.61	39.2
8,400.0	2.22	112.57	8,398.9	-3.2	42.8	94.34	42.9
8,500.0	1.71	119.00	8,498.9	-4.7	45.9	95.86	46.1
8,545.0	1.47	90.15	8,543.9	-5.0	47.1	96.11	47.3



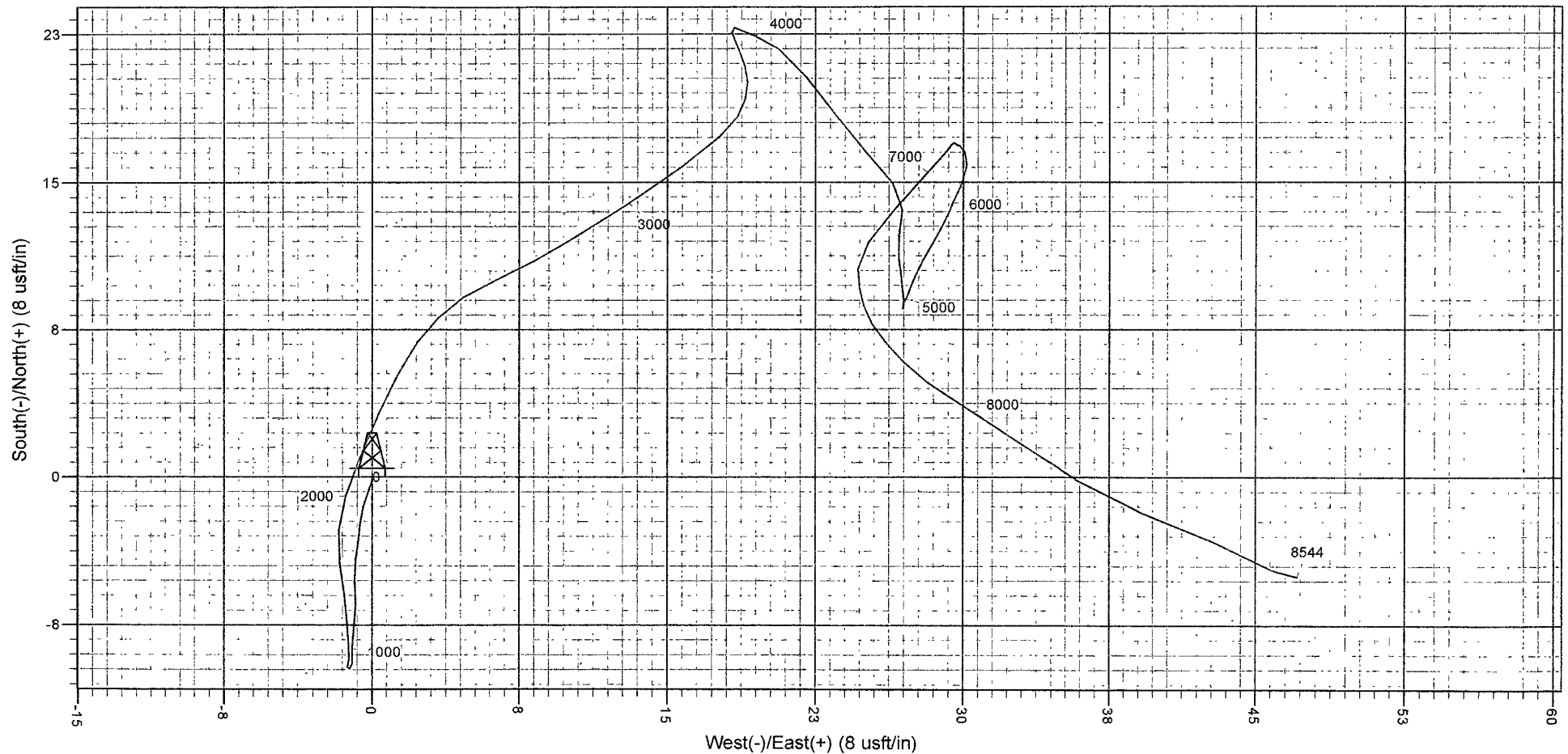
Project: Cotton Draw
Eddy County, NM
Well: Seabiscuit Federal Com #2H
Wellbore: VH - Job #32K0111086
Design: VH - Job #32K0111086



Azimuths to Grid North
True North -0.32°
Magnetic North. 7.44°
Magnetic Field
Strength. 48698 2snT
Dip Angle 60.17°
Date 1/26/2011
Model BGGM2010

WELL DETAILS: Seabiscuit Federal Com #2H
WELL @ 0.0usft (Original Well Elev)

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	446243.03	685868.49	32° 13' 31.476 N	103° 43' 56.197 W	



PROJECT DETAILS: Cotton Draw
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

SITE DETAILS: Eddy County, NM
Site Centre Latitude: 32° 13' 31.476 N
Longitude: 103° 43' 56.197 W
Positional Uncertainty: 0.0
Convergence: 0.32
Local North: Grid