

PATRIOT DRILLING, LLC

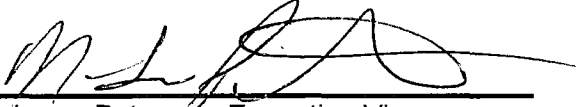
30-015-41286

OPERATOR: COG Operating, LLC
WELL/LEASE: Windmill 32 Fed Com # 4 H
COUNTY: Eddy Co., NM

**STATE OF NEW MEXICO
DEVIATION REPORT**

<u>Depth</u>	<u>Deviation</u>	<u>Depth</u>	<u>Deviation</u>
345	1/2	4,131	1/2
950	1	4,442	1 1/2
1,582	1	4,753	3 1/2
2,080	1	4,958	4
3,054	1/2	5,156	3/4
3,500	1	5,250	3/4
3,777	1/2		

Patriot Drilling, LLC

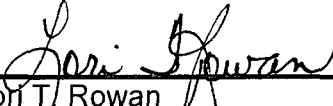


M. Leroy Peterson, Executive Vice-
President

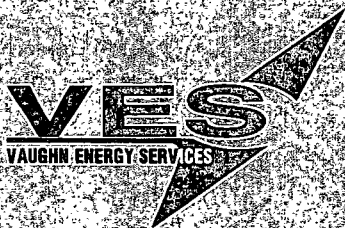
The foregoing instrument was acknowledged before me on this 3rd day of June, 2013 by M. Leroy Peterson, Executive Vice-President of Patriot Drilling, LLC.

My Commission Expires: 02/01/2015





Lori T. Rowan
Notary Public for Ector Co., Texas



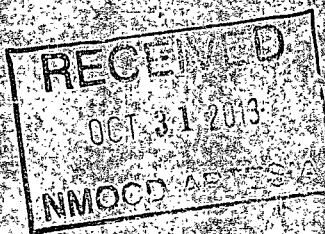
A GYRO TECHNOLOGIES INC. COMPANY

PO Box 261021
Corpus Christi, Texas 78426
(361) 767-0602 • (800) 606-GYRO • Fax (361) 767-0612

May 30, 2013

30-015-41286

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



Attn: Kanicia Castillo

RE Windmill 32 Federal Com No. 004H

Please find enclosed a copy of the survey from 0 00' to 5300 00' ran on the above referenced well.

Sincerely,

Keith Havelka
Operations

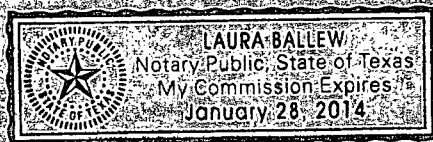
STATE OF TEXAS §

COUNTY OF NUECES §

This instrument was acknowledged before me on the 30th day of May A.D. 2013, by Keith Havelka

Laura Ballew

Laura Ballew
Notary Public, State of Texas



Company: COG Operating, LLC (Concho)
Lease/Well: Windmill 32 Federal Com/ No. 004H



Rig Name: Patriot #6
State/County: New Mexico/Eddy
Latitude: 32.70, Longitude: -104.29
GRID North is 0.02 Degrees East of True North
VS-Azi: 0.00 Degrees



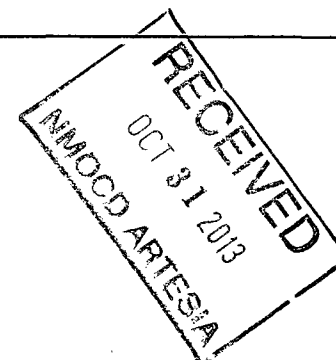
Depth Reference : RKB= 17 Feet

DRILLOG HA GYRO SURVEY CALCULATIONS

Filename: ...32 fed com #4h gyro survey.ut
Minimum Curvature Method
Report Date/Time: 5/30/2013 / 09:55

Vaughn Energy Services
Midland, Texas
432-563-5444

Survey Engineer: Logan Henry
Windmill 32 Federal Com No. 004H / API 30-015-41286

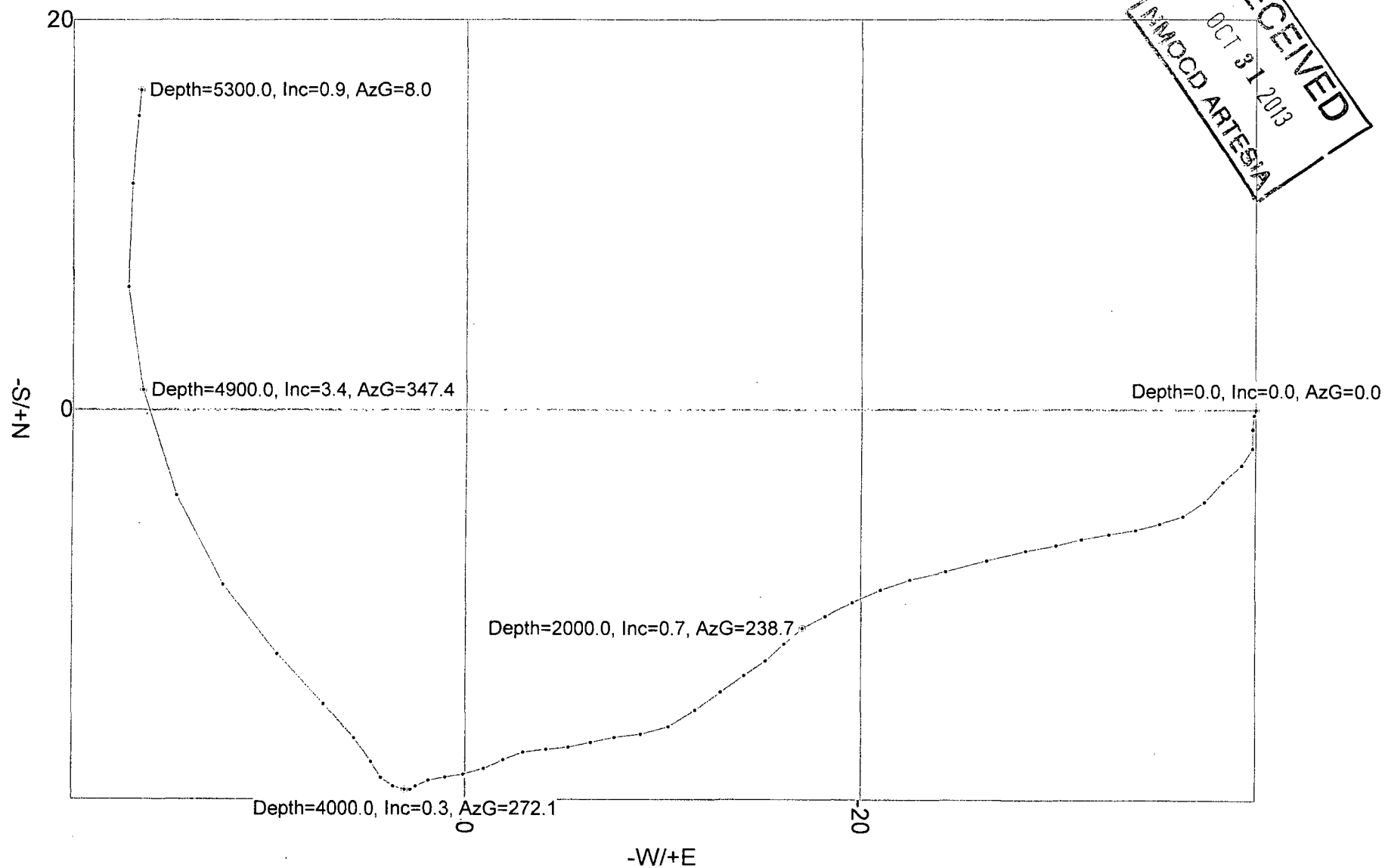


Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	****
100.00	0.35	199.54	100.00	-0.29	-0.10	-0.29	0.30	199.54	0.35
200.00	0.51	174.08	200.00	-1.02	-0.16	-1.02	1.03	188.83	0.25
300.00	0.60	185.22	299.99	-1.98	-0.16	-1.98	1.99	184.61	0.14
400.00	0.69	236.10	399.99	-2.84	-0.71	-2.84	2.93	193.97	0.56
500.00	0.81	220.88	499.98	-3.71	-1.67	-3.71	4.07	204.21	0.23
600.00	0.78	223.74	599.97	-4.74	-2.61	-4.74	5.41	208.79	0.05
700.00	0.76	249.32	699.96	-5.47	-3.70	-5.47	6.60	214.05	0.34
800.00	0.70	255.70	799.95	-5.85	-4.91	-5.85	7.64	219.96	0.10
900.00	0.75	254.57	899.94	-6.18	-6.13	-6.18	8.70	224.77	0.05
1000.00	0.81	265.79	999.93	-6.40	-7.47	-6.40	9.84	229.38	0.16
1100.00	0.81	253.56	1099.92	-6.66	-8.85	-6.66	11.07	233.06	0.17
1200.00	0.71	258.82	1199.92	-6.98	-10.14	-6.98	12.31	235.47	0.12
1300.00	1.07	261.00	1299.90	-7.24	-11.68	-7.24	13.74	238.18	0.36
1400.00	1.26	250.61	1399.88	-7.76	-13.64	-7.76	15.69	240.38	0.28
1500.00	1.21	259.47	1499.86	-8.31	-15.72	-8.31	17.78	242.12	0.20
1600.00	0.94	253.28	1599.84	-8.74	-17.53	-8.74	19.59	243.50	0.29
1700.00	0.87	247.35	1699.83	-9.27	-19.02	-9.27	21.15	244.01	0.11
1800.00	0.93	243.69	1799.82	-9.92	-20.44	-9.92	22.72	244.11	0.08

Measured Depth FT	Incl Angle Deg	Drift Direction Deg	TVD FT	+N/-S FT	+E/-W FT	Vertical Section FT	Closure Distance FT	Closure Direction Deg	Dogleg Severity Deg/100
1900.00	0.84	243.70	1899.80	-10.61	-21.83	-10.61	24.27	244.09	0.09
2000.00	0.66	238.74	1999.80	-11.23	-22.98	-11.23	25.58	243.95	0.20
2100.00	0.76	220.73	2099.79	-12.03	-23.90	-12.03	26.76	243.28	0.25
2200.00	0.71	234.48	2199.78	-12.90	-24.84	-12.90	27.99	242.56	0.18
2300.00	0.78	234.85	2299.77	-13.65	-25.90	-13.65	29.28	242.21	0.07
2400.00	0.88	232.52	2399.76	-14.51	-27.07	-14.51	30.71	241.81	0.10
2500.00	0.94	235.09	2499.75	-15.44	-28.35	-15.44	32.28	241.42	0.08
2600.00	0.92	242.55	2599.74	-16.28	-29.74	-16.28	33.90	241.29	0.12
2700.00	0.80	267.78	2699.72	-16.68	-31.15	-16.68	35.33	241.83	0.39
2800.00	0.72	257.45	2799.72	-16.84	-32.46	-16.84	36.57	242.58	0.16
2900.00	0.69	257.74	2899.71	-17.11	-33.66	-17.11	37.76	243.06	0.03
3000.00	0.65	257.54	2999.70	-17.36	-34.80	-17.36	38.89	243.49	0.04
3100.00	0.65	270.76	3099.70	-17.47	-35.93	-17.47	39.95	244.06	0.15
3200.00	0.70	254.67	3199.69	-17.63	-37.08	-17.63	41.06	244.58	0.19
3300.00	0.55	240.90	3299.68	-18.02	-38.08	-18.02	42.13	244.68	0.21
3400.00	0.67	251.31	3399.68	-18.44	-39.06	-18.44	43.19	244.73	0.17
3500.00	0.57	257.15	3499.67	-18.74	-40.10	-18.74	44.27	244.95	0.12
3600.00	0.47	265.47	3599.67	-18.88	-41.00	-18.88	45.14	245.27	0.13
3700.00	0.51	252.89	3699.66	-19.05	-41.84	-19.05	45.98	245.52	0.12
3800.00	0.32	233.36	3799.66	-19.35	-42.50	-19.35	46.70	245.52	0.23
3900.00	0.04	258.09	3899.66	-19.53	-42.76	-19.53	47.01	245.46	0.29
4000.00	0.30	272.13	3999.66	-19.52	-43.05	-19.52	47.27	245.61	0.26
4100.00	0.41	295.88	4099.66	-19.36	-43.63	-19.36	47.73	246.07	0.18
4200.00	0.46	318.34	4199.65	-18.90	-44.22	-18.90	48.09	246.85	0.18
4300.00	0.66	330.08	4299.65	-18.11	-44.77	-18.11	48.29	247.98	0.23
4400.00	1.06	320.19	4399.64	-16.89	-45.65	-16.89	48.68	249.69	0.43
4500.00	1.63	316.65	4499.61	-15.15	-47.22	-15.15	49.59	252.22	0.58
4600.00	2.41	317.82	4599.55	-12.55	-49.61	-12.55	51.18	255.80	0.78
4700.00	2.78	326.13	4699.44	-8.97	-52.38	-8.97	53.14	260.28	0.53
4800.00	3.17	337.52	4799.31	-4.40	-54.79	-4.40	54.97	265.41	0.70
4900.00	3.36	347.42	4899.15	1.02	-56.49	1.02	56.50	271.03	0.59
5000.00	2.76	357.68	4999.01	6.29	-57.22	6.29	57.57	276.27	0.81
5100.00	3.35	5.77	5098.86	11.60	-57.03	11.60	58.20	281.50	0.72
5200.00	0.63	0.74	5198.79	15.05	-56.73	15.05	58.69	284.86	2.72
5300.00	0.90	7.96	5298.79	16.38	-56.61	16.38	58.93	286.13	0.29



Vaughn Energy Services
Midland, Texas
432-563-5444
Survey Engineer: Logan Henry
Windmill 32 Federal Com No. 004H / API 30-015-41286



VES Survey Date: 05/22/2013

COG Windmill 32 Federal Com #4H Gyro + MWD Tie In - 10430ft Survey **Geodetic Report** (Non-Def Survey)



Report Date: May 28, 2013 - 09:49 AM
Client: COG
Field: NM Eddy County (NAD 27)
Structure / Slot: COG Windmill 32 Federal Com #4H / COG Windmill 32 Federal Com #4H
Well: COG Windmill 32 Federal Com #4H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: COG Windmill 32 Federal Com #4H Gyro + MWD Tie In - 10430ft
Survey Date: May 22, 2013
Tort / AHD / DDI / ERD Ratio: 146.623 * / 4798.936 ft / 6.089 / 0.803
Coordinate Reference System: NAD27 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 41' 54.13877", W 104° 17' 33.68973"
Location Grid N/E Y/X: N 617781.100 RUS, E 512502.300 RUS
CRS Grid Convergence Angle: 0.0220 °
Grid Scale Factor: 0.99990927

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 267.640 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3366.900 ft above MSL
Seabed / Ground Elevation: 3348.900 ft above MSL
Magnetic Declination: 7.830 °
Total Gravity Field Strength: 998.5316mgn (9.80665 Based)
Total Magnetic Field Strength: 48613.516 nT
Magnetic Dip Angle: 60.442 °
Declination Date: May 22, 2013
Magnetic Declination Model: BGM 2013
North Reference: Grid North
Grid Convergence Used: 0.0220 °
Total Corr Mag North->Grid North: 7.8079 °
Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' '')	Longitude (E/W ° ' '')
Tie-In	0.00	0.00	0.00	0.00	0.00	0.00	0.00	N/A	617781.10	512502.30	N 32 41 54.14	W 104 17 33.69
Marker MudLine	18.00	0.06	199.54	18.00	0.00	-0.01	0.00	0.35	617781.09	512502.30	N 32 41 54.14	W 104 17 33.69
	100.00	0.35	199.54	100.00	0.11	-0.29	-0.10	0.35	617780.81	512502.20	N 32 41 54.14	W 104 17 33.69
	200.00	0.51	174.08	200.00	0.20	-1.02	-0.16	0.25	617780.08	512502.14	N 32 41 54.13	W 104 17 33.69
	300.00	0.60	185.22	299.99	0.24	-1.98	-0.16	0.14	617779.12	512502.14	N 32 41 54.12	W 104 17 33.69
	400.00	0.69	236.10	399.99	0.82	-2.84	-0.71	0.56	617778.26	512501.59	N 32 41 54.11	W 104 17 33.70
	500.00	0.81	220.88	499.98	1.82	-3.71	-1.67	0.23	617777.39	512500.63	N 32 41 54.10	W 104 17 33.71
	600.00	0.78	223.74	599.97	2.80	-4.74	-2.60	0.05	617776.36	512499.70	N 32 41 54.09	W 104 17 33.72
	700.00	0.76	249.32	699.96	3.92	-5.46	-3.69	0.34	617775.64	512498.61	N 32 41 54.08	W 104 17 33.73
	800.00	0.70	255.70	799.95	5.14	-5.85	-4.91	0.10	617775.25	512497.39	N 32 41 54.08	W 104 17 33.75
	900.00	0.75	254.57	899.94	6.38	-6.17	-6.13	0.05	617774.93	512496.17	N 32 41 54.08	W 104 17 33.76
	1000.00	0.81	265.79	999.93	7.72	-8.40	-7.47	0.16	617774.70	512494.84	N 32 41 54.08	W 104 17 33.78
	1100.00	0.81	253.56	1099.92	9.11	-8.65	-8.85	0.17	617774.45	512493.45	N 32 41 54.07	W 104 17 33.79
	1200.00	0.71	258.82	1199.92	10.41	-6.97	-10.13	0.12	617774.13	512492.17	N 32 41 54.07	W 104 17 33.81
	1300.00	1.07	261.00	1299.90	11.95	-7.24	-11.66	0.36	617773.86	512490.64	N 32 41 54.07	W 104 17 33.83
	1400.00	1.26	250.61	1399.88	13.93	-7.75	-13.62	0.28	617773.35	512488.68	N 32 41 54.06	W 104 17 33.85
	1500.00	1.21	259.47	1499.86	16.03	-8.31	-15.70	0.20	617772.80	512486.60	N 32 41 54.06	W 104 17 33.87
	1600.00	0.94	253.28	1599.84	17.87	-8.73	-17.52	0.29	617772.37	512484.78	N 32 41 54.05	W 104 17 33.89
	1700.00	0.87	247.35	1699.83	19.37	-9.26	-19.01	0.12	617771.84	512483.29	N 32 41 54.05	W 104 17 33.91
	1800.00	0.93	243.69	1799.82	20.83	-9.91	-20.44	0.08	617771.19	512481.87	N 32 41 54.04	W 104 17 33.93
	1900.00	0.84	243.70	1899.81	22.24	-10.60	-21.82	0.09	617770.50	512480.48	N 32 41 54.03	W 104 17 33.95
	2000.00	0.66	238.74	1999.80	23.41	-11.22	-22.97	0.19	617769.88	512479.33	N 32 41 54.03	W 104 17 33.96
	2100.00	0.76	220.73	2099.79	24.37	-12.02	-23.90	0.24	617769.08	512478.41	N 32 41 54.02	W 104 17 33.97
	2200.00	0.71	234.48	2199.78	25.34	-12.89	-24.83	0.18	617768.21	512477.47	N 32 41 54.01	W 104 17 33.98
	2300.00	0.78	234.85	2299.77	26.43	-13.64	-25.89	0.07	617767.46	512476.41	N 32 41 54.00	W 104 17 33.99
	2400.00	0.88	232.52	2399.76	27.63	-14.50	-27.06	0.11	617766.60	512475.24	N 32 41 54.00	W 104 17 34.01
	2500.00	0.94	235.09	2499.75	28.95	-15.43	-28.34	0.07	617765.67	512473.96	N 32 41 53.99	W 104 17 34.02
	2600.00	0.92	242.55	2599.74	30.37	-16.27	-29.73	0.12	617764.83	512472.58	N 32 41 53.98	W 104 17 34.04
	2700.00	0.80	267.78	2699.73	31.80	-16.67	-31.14	0.39	617764.43	512471.17	N 32 41 53.97	W 104 17 34.05
	2800.00	0.72	257.45	2799.72	33.11	-16.83	-32.45	0.16	617764.27	512469.86	N 32 41 53.97	W 104 17 34.07
	2900.00	0.69	257.74	2899.71	34.32	-17.10	-33.65	0.03	617764.00	512468.65	N 32 41 53.97	W 104 17 34.08
	3000.00	0.65	257.54	2999.70	35.48	-17.35	-34.79	0.04	617763.75	512467.51	N 32 41 53.97	W 104 17 34.10
	3100.00	0.65	270.76	3099.70	36.60	-17.46	-35.91	0.15	617763.64	512466.39	N 32 41 53.97	W 104 17 34.11
	3200.00	0.70	254.67	3199.69	37.76	-17.62	-37.07	0.20	617763.48	512465.23	N 32 41 53.96	W 104 17 34.12
	3300.00	0.55	240.90	3299.68	38.79	-18.01	-38.08	0.21	617763.09	512464.23	N 32 41 53.96	W 104 17 34.14
	3400.00	0.67	251.31	3399.68	39.78	-18.43	-39.05	0.16	617762.67	512463.25	N 32 41 53.96	W 104 17 34.15
	3500.00	0.57	257.15	3499.67	40.83	-18.73	-40.09	0.12	617762.37	512462.21	N 32 41 53.95	W 104 17 34.16
	3600.00	0.47	265.47	3599.67	41.73	-18.88	-40.98	0.13	617762.23	512461.32	N 32 41 53.95	W 104 17 34.17
	3700.00	0.51	252.89	3699.66	42.57	-19.04	-41.82	0.11	617762.06	512460.49	N 32 41 53.95	W 104 17 34.18
	3800.00	0.32	233.36	3799.66	43.23	-19.34	-42.47	0.23	617761.77	512459.84	N 32 41 53.95	W 104 17 34.19
	3900.00	0.04	258.09	3899.66	43.49	-19.51	-42.72	0.28	617761.59	512459.58	N 32 41 53.95	W 104 17 34.19
	4000.00	0.30	272.13	3999.66	43.79	-19.51	-43.02	0.26	617761.59	512459.28	N 32 41 53.95	W 104 17 34.19
	4100.00	0.41	295.88	4099.66	44.36	-19.34	-43.60	0.18	617761.76	512458.70	N 32 41 53.95	W 104 17 34.20
	4200.00	0.46	318.34	4199.66	44.93	-18.89	-44.19	0.18	617762.22	512458.11	N 32 41 53.95	W 104 17 34.21
	4300.00	0.66	330.08	4299.65	45.45	-18.09	-44.75	0.23	617763.02	512457.56	N 32 41 53.96	W 104 17 34.21
	4400.00	1.06	320.19	4399.64	46.28	-16.88	-45.63	0.43	617764.23	512456.68	N 32 41 53.97	W 104 17 34.22
	4500.00	1.63	316.65	4499.61	47.78	-15.13	-47.19	0.58	617765.97	512455.11	N 32 41 53.99	W 104 17 34.24
	4600.00	2.41	317.82	4599.55	50.06	-12.54	-49.58	0.78	617768.56	512452.72	N 32 41 54.01	W 104 17 34.27
	4700.00	2.78	326.13	4699.45	52.67	-8.97	-52.35	0.53	617772.13	512449.96	N 32 41 54.05	W 104 17 34.30
	4800.00	3.17	337.52	4799.31	54.89	-4.40	-54.76	0.71	617776.70	512447.55	N 32 41 54.10	W 104 17 34.33
	4900.00	3.36	347.42	4899.15	56.36	1.02	-56.45	0.59	617782.12	512445.85	N 32 41 54.15	W 104 17 34.35
	5000.00	2.76	357.68	4999.01	56.88	6.28	-57.19	0.81	617787.38	512445.12	N 32 41 54.20	W 104 17 34.36
	5100.00	3.35	5.77	5098.87	56.46	11.59	-56.99	0.73	617792.89	512445.32	N 32 41 54.25	W 104 17 34.36
	5200.00	0.63	0.74	5198.80	56.02	15.05	-56.69	2.72	617796.15	512445.62	N 32 41 54.29	W 104 17 34.35
	5300.00	0.90	7.96	5298.79	55.85	16.38	-56.57	0.29	617797.48	512445.73	N 32 41 54.30	W 104 17 34.35
	5422.00	2.99	291.02	5420.72	58.60	18.47	-59.41	2.39	617799.57	512442.89	N 32 41 54.32	W 104 17 34.38
	5453.00	5.10	278.35	5451.64	60.70	18.96	-61.53	7.35	617800.06	512440.78	N 32 41 54.33	W 104 17 34.41
	5484.00	7.83	271.67	5482.44	64.16	19.22	-65.00	9.12	617800.32	512437.30	N 32 41 54.33	W 104 17 34.45

[illegible]

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (ft)	EW (ft)	DLS (°/100ft)	Northing (ftUS)	Easting (ftUS)	Latitude (N/S ° ' ")	Longitude (E/W ° ' ")
		5300.000	10352.000		Act Stns	30.000	30.000	SLB_MWD-STD			Original Borehole / COG	
		10352.000	10430.000		Act Stns	30.000	30.000	SLB_BLIND+TREND			Windmill 32 Federal Com #4H	
											Original Borehole / COG	
											Windmill 32 Federal Com #4H	

WELL	COG Windmill 32 Federal Com #4H	FIELD	NM Eddy County (NAD 27)	STRUCTURE	Patriot 6
Mapsheet Parameters	Model: B000M 2012	Dip: 60.41°	Date: March 07, 2013	Surface Location	NAD27 New Mexico State Plane, Eastern Zone, US Feet
	Mag Dec: 7.850°	FS	48621.5±T	Lat: N 32 41 54.139	Northings: 417781.10 NUS
				Lon: W 104 17 33.690	Eastings: 512503.30 NUS
					Grid Coord: 0.022°
					Scale Fact: 0.99960927
Mapsheet	Windmill 32 Federal Com #4H	TVD Ref:	RKN(3366 RH above MSL)		
Plan	Rev J MDT 21May13	Srv Date:	March 07, 2013		

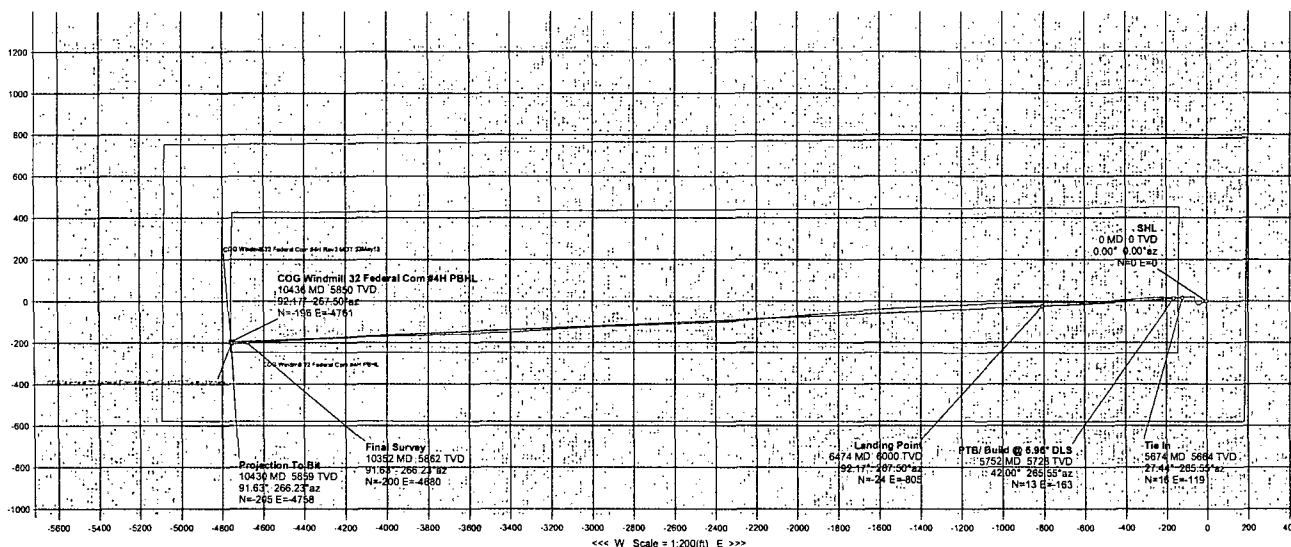
Legend

- COG Windmill 32 Federal Com #4H PBHL
- COG Windmill 32 Federal Com #4H PBHL
- COG Windmill 32 Federal Com #4H PBHL
- COG Windmill 32 Federal Com #4H PBHL
- COG Windmill 32 Federal Com #4H PBHL
- COG Windmill 32 Federal Com #4H PBHL



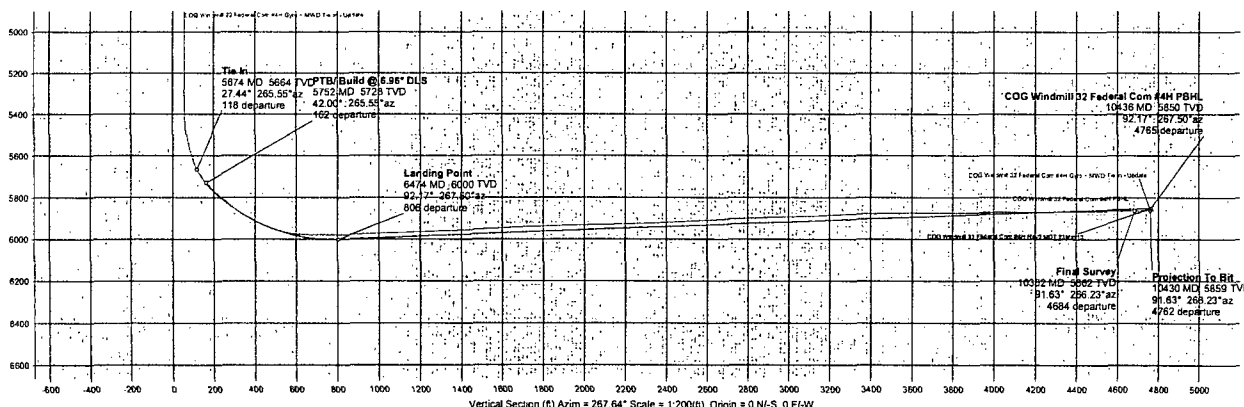
Grid North
Tot Corr (M->G)
7.8279°
Mag Dec (7.850°)
Grid Conv (0.022°)

<<< S Scale = 1:200(f) N >>>



Comments	Survey MD (ft)	Inclination(deg)	Azimuth(deg)	TVD(ft)	Sub-Sea TVD (ft)	VS(ft)	NS(ft)	E-W(ft)	Warding(ftUS)	Eastings(ftUS)	N- (deg)	W- (deg)	DLS(ft)	Tool Face(deg)
Tie In	5674.00	27.44	265.55	5663.91	2297.01	117.80	16.38	-118.57	617797.47	512383.74	N 32 41 54.301	W 104 17 35.077	18.47	0.00
PTB/Build @ 6.96° DLS	5752.00	42.00	265.55	5727.85	2360.95	162.08	12.94	-162.75	617794.04	512339.57	N 32 41 54.267	W 104 17 35.594	18.67	2.54
Landing Point	6473.77	92.17	267.50	6000.01	2633.11	805.73	-23.90	-805.43	617757.20	511696.95	N 32 41 53.905	W 104 17 43.115	6.96	0.00
COG Windmill 32 Federal Com #4H PBHL	10435.58	92.17	267.50	5850.00	2483.10	4764.69	-196.42	-4760.64	617584.70	507742.10	N 32 41 52.210	W 104 18 29.397	0.00	

TVD Scale = 1:200(f)



Drawn By: _____
Data Created: May 23, 2013 11:13:04 PM
Checked By: _____
Checked Date: _____
Approved By: _____
Approved Date: _____