

Results of Directional Survey

API number:	30-025-40812		
OGRID:		Operator:	CIMAREX ENERGY CO. OF COLORADO
		Property:	LAGUNA DEEP UNIT # 21H

surface	ULSTR:	C	36	T 19S	R 33E
				660 FNL	2310 FWL

BH Loc	ULSTR:	D	35	T 19S	R 33E
16444	MD	9380.4	TVD	706 FNL	335 FWL
					4945 FEL

Top Perf/OH	ULSTR:	C	36	T 19S	R 33E
9450	MD	9340.6	TVD	582 FNL	2039 FWL

Bot Perf/OH	ULSTR:	D	35	T 19S	R 33E
16260	MD	9384.5	TVD	701 FNL	519 FWL
					4761 FEL

	MD	N/S	E/W	VD
	9437	76.71	-259.08	9335.12
TOP PERFS/OH	9450	77.70	-270.82	9340.60
	9468	79.07	-287.08	9348.19
	16175	-38.76	-6986.17	9385.34
BOT PERFS/OH	16260	-40.67	-7071.13	9384.51
	16270	-40.90	-7081.13	9384.41

NEXT TO LAST	16380	-43.79	-7191.05	9381.59
LAST READING	16444	-45.66	-7255.02	9380.42
TD	16444	-45.66	-7255.02	9380.42

Surface Location	660	FN	2310	FW
Projected BHL	706	FN	4945	FE
Location of				
Top Perfs/OH	582	FN	2039	FW
Bottom Perfs/OH	701	FN	4761	FE

SUMMARY of Subsurface Locations

Surface Location	C-36-19S-33E	660	FN	2310	FW	Vert. Depth
Top Perfs/OH	C-36-19S-33E	582	FN	2039	FW	9340.60
Bottom Perfs/OH	D-35-19S-33E	701	FN	4761	FE	9384.51
Projected TD	D-35-19S-33E	706	FN	4945	FE	9380.42

MAR 05 2014



Laguna Deep Unit #21H Lea Co., NM

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	9698.00	87.94	274.41	9377.79	99.22	-512.89	0.00	0.00	512.42	
2	9893.86	89.63	268.78	9381.95	104.67	-708.54	3.00	-73.33	708.04	
3	16448.31	89.63	268.78	9424.00	-34.67	-7261.38	0.00	0.00	7261.46	PBHL

WELL DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
Laguna Deep Unit #21H	0.00	0.00	590792.80	761634.80	32°37'19.553N	103°37'04.112W	N/A

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Shape
PBHL	9424.00	-34.67	-7261.38	590758.13	754373.42	Point

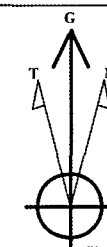
SITE DETAILS

Laguna Deep Unit #21H
Site Centre Northing: 590792.80
Easting: 761634.80

Ground Level: 3611.00
Positional Uncertainty: 0.00
Convergence: 0.39

LEGEND

- Laguna Deep Unit #21H, 1 Gyro
- Laguna Deep Unit #21H, 1 Extreme MWD
- Laguna Deep Unit #21H, 1 Plan #1
- Wft Svy



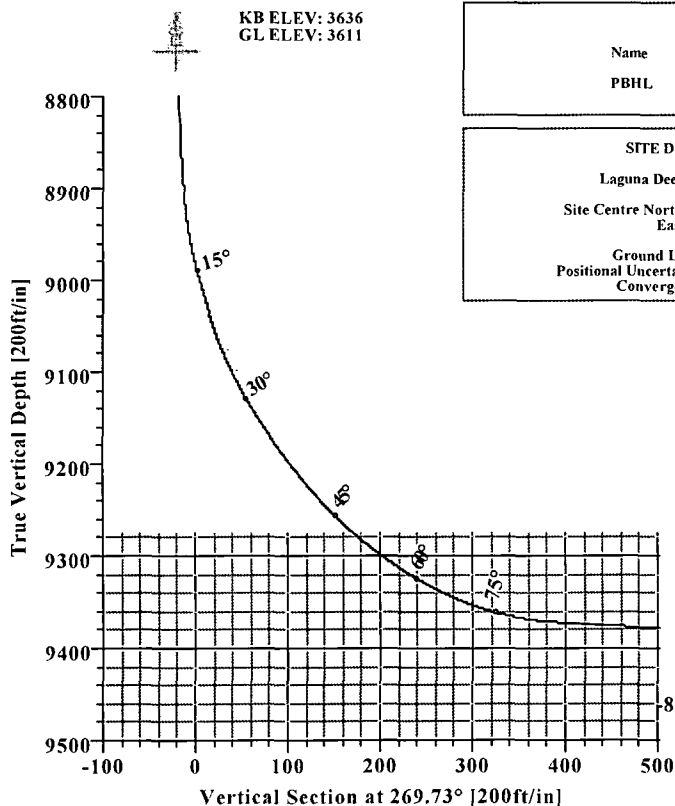
Azimuths to Grid North
True North: -0.39°
Magnetic North: 7.07°

Magnetic Field
Strength: 48728nT
Dip Angle: 60.51°
Date: 12/8/2012
Model: IGRF2010

Total Correction to Grid North: 7.07°

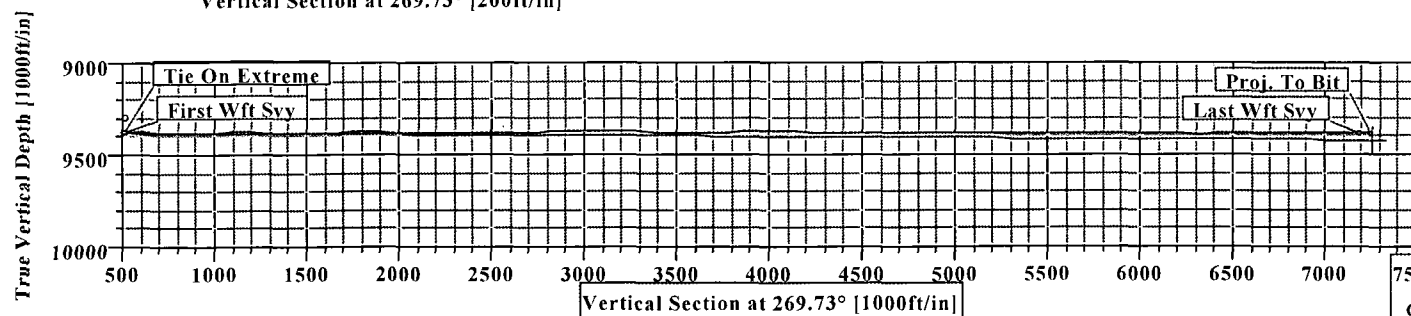
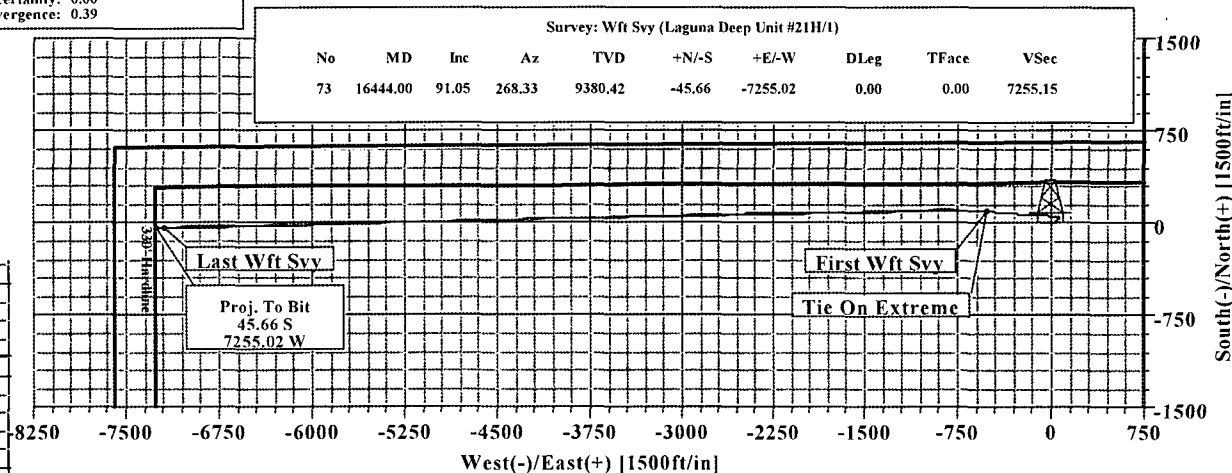
FIELD DETAILS

Lea Co., NM (NAD 83)
Geodetic System: US State Plane Coordinate System 1983
Ellipsoid: GRS 1980
Zone: New Mexico, Eastern Zone
Magnetic Model: IGRF2010
System Datum: Mean Sea Level
Local North: Grid North



Survey: Wft Svy (Laguna Deep Unit #21H/1)

No	MD	Inc	Az	TVD	+N/-S	+E/-W	DLeg	TFace	VSec
73	16444.00	91.05	268.33	9380.42	-45.66	-7255.02	0.00	0.00	7255.15



Weatherford

Survey: Wft Svy (Laguna Deep Unit #21H/1)

Created By: Russell W. Joyner

Date: 12/28/2012



Weatherford

Wft Survey Report X Y's.

**Weatherford**

Company: Cimarex Energy		Date: 12/28/2012	Time: 08:00:28	Page: 1						
Field: Lea Co., NM (NAD 83)		Co-ordinate(NE) Reference: Well: Laguna Deep Unit #21H, Grid North								
Site: Laguna Deep Unit #21H		Vertical (TVD) Reference: SITE 3636.0								
Well: Laguna Deep Unit #21H		Section (VS) Reference: Well (0.00N,0.00E,269.73Azi)								
Wellpath: 1		Survey Calculation Method: Minimum Curvature Db: Sybase								
Survey: Wft Svy		Start Date: 12/10/2012								
Company: Weatherford		Engineer: Russell W. Joyner								
Tool: MWD;MWD - Standard		Tied-to: User Defined								
Site: Laguna Deep Unit #21H										
Site Position:		Northing: 590792.80 ft	Latitude: 32 37 19.553 N							
From: Map		Easting: 761634.80 ft	Longitude: 103 37 4.112 W							
Position Uncertainty: 0.00 ft			North Reference: Grid							
Ground Level: 3611.00 ft			Grid Convergence: 0.39 deg							
Well: Laguna Deep Unit #21H Slot Name:										
Well Position: +N/-S 0.00 ft		Northing: 590792.80 ft	Latitude: 32 37 19.553 N							
+E/-W 0.00 ft		Easting: 761634.80 ft	Longitude: 103 37 4.112 W							
Position Uncertainty: 0.00 ft										
Wellpath: 1										
Current Datum: SITE		Height 3636.00 ft	Drilled From: Surface							
Magnetic Data: 12/8/2012			Tie-on Depth: 0.00 ft							
Field Strength: 48728 nT			Above System Datum: Mean Sea Level							
Vertical Section: Depth From (TVD)			Declination: 7.46 deg							
ft		+N/-S ft	Mag Dip Angle: 60.51 deg							
0.00		0.00	+E/-W ft	Direction deg						
			0.00	269.73						
Survey										
MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	DLS deg/100ft	VS ft	MapN ft	MapE ft	Comment
9698.00	87.94	274.41	9377.79	99.22	-512.89	0.00	512.42	590892.02	761121.91	Tie On Extreme
9707.00	88.53	274.87	9378.07	99.95	-521.85	8.31	521.38	590892.75	761112.95	First Wft Svy
9802.00	89.16	272.50	9379.99	106.05	-616.63	2.58	616.12	590898.85	761018.17	
9897.00	87.97	271.37	9382.37	109.26	-711.54	1.73	711.02	590902.06	760923.26	
9991.00	89.93	270.02	9384.09	110.40	-805.51	2.53	804.99	590903.20	760829.29	
10086.00	90.91	270.09	9383.39	110.49	-900.51	1.03	899.98	590903.29	760734.29	
10181.00	91.05	268.50	9381.77	109.32	-995.49	1.68	994.96	590902.12	760639.31	
10275.00	91.05	268.65	9380.05	106.98	-1089.44	0.16	1088.93	590899.78	760545.36	
10370.00	89.16	268.27	9379.87	104.43	-1184.40	2.03	1183.90	590897.23	760450.40	
10465.00	89.72	268.29	9380.80	101.58	-1279.36	0.59	1278.86	590894.38	760355.44	
10559.00	89.79	268.59	9381.20	99.02	-1373.32	0.33	1372.84	590891.82	760261.48	
10654.00	90.14	268.20	9381.26	96.36	-1468.28	0.55	1467.81	590889.16	760166.52	
10749.00	89.51	268.27	9381.55	93.43	-1563.24	0.67	1562.78	590886.23	760071.56	
10844.00	90.98	268.38	9381.14	90.66	-1658.19	1.55	1657.75	590883.46	759976.61	
10938.00	90.63	269.11	9379.82	88.60	-1752.16	0.86	1751.72	590881.40	759882.64	
10968.00	90.84	269.48	9379.44	88.23	-1782.15	1.42	1781.72	590881.03	759852.65	
11063.00	88.67	269.28	9379.84	87.20	-1877.14	2.29	1876.71	590880.00	759757.66	
11158.00	88.74	269.41	9381.99	86.12	-1972.11	0.16	1971.68	590878.92	759662.69	
11253.00	88.95	269.26	9383.91	85.01	-2067.09	0.27	2066.66	590877.81	759567.71	
11348.00	89.44	268.96	9385.24	83.54	-2162.06	0.60	2161.65	590876.34	759472.74	
11442.00	91.05	269.35	9384.84	82.15	-2256.05	1.76	2255.64	590874.95	759378.75	
11537.00	90.91	269.12	9383.21	80.88	-2351.03	0.28	2350.62	590873.68	759283.77	
11632.00	89.65	268.52	9382.75	78.93	-2446.00	1.47	2445.61	590871.73	759188.80	
11821.00	90.28	268.28	9382.87	73.65	-2634.93	0.36	2634.55	590866.45	758999.87	
11948.00	91.75	268.44	9380.62	70.02	-2761.85	1.16	2761.49	590862.82	758872.95	
12011.00	92.87	267.82	9378.08	67.96	-2824.77	2.03	2824.42	590860.76	758810.03	
12106.00	90.56	267.59	9375.23	64.16	-2919.64	2.44	2919.31	590856.96	758715.16	
12200.00	89.23	268.35	9375.41	60.83	-3013.58	1.63	3013.26	590853.63	758621.22	
12294.00	88.67	268.01	9377.13	57.85	-3107.52	0.70	3107.21	590850.65	758527.28	
12389.00	90.21	268.27	9378.06	54.76	-3202.46	1.64	3202.17	590847.56	758432.34	



Weatherford

Wft Survey Report X Y's.



Weatherford

Company: Cimarex Energy
Field: Lea Co., NM (NAD.83)
Site: Laguna Deep Unit #21H
Well: Laguna Deep Unit #21H
Wellpath: 1

Date: 12/28/2012
Time: 08:00:28
Page: 2
Co-ordinate(NE) Reference: Well: Laguna Deep Unit #21H, Grid North
Vertical (TVD) Reference: SITE 3636.0
Section (VS) Reference: Well (0.00N,0.00E,269.73Azi)
Survey Calculation Method: Minimum Curvature
Db: Sybase

Survey

MD ft	Incl deg	Azim deg	TVD ft	N/S ft	E/W ft	DLS deg/100ft	VS ft	MapN ft	MapE ft	Comment
12486.00	88.39	268.73	9379.24	52.22	-3299.41	1.94	3299.13	590845.02	758335.39	
12579.00	87.69	268.99	9382.42	50.37	-3392.34	0.80	3392.07	590843.17	758242.46	
12674.00	88.67	269.40	9385.44	49.04	-3487.28	1.12	3487.01	590841.84	758147.52	
12769.00	91.19	269.26	9385.56	47.93	-3582.27	2.66	3582.00	590840.73	758052.53	
12863.00	91.12	269.08	9383.66	46.57	-3676.24	0.21	3675.98	590839.37	757958.56	
12958.00	91.54	269.16	9381.46	45.11	-3771.20	0.45	3770.95	590837.91	757863.60	
13052.00	90.49	269.31	9379.79	43.85	-3865.18	1.13	3864.93	590836.65	757769.62	
13147.00	92.24	269.08	9377.53	42.52	-3960.14	1.86	3959.89	590835.32	757674.66	
13242.00	88.81	268.80	9376.66	40.76	-4055.10	3.62	4054.87	590833.56	757579.70	
13336.00	87.97	267.48	9379.30	37.71	-4149.01	1.66	4148.79	590830.51	757485.79	
13437.00	89.02	267.87	9381.95	33.62	-4249.89	1.11	4249.69	590826.42	757384.91	
13526.00	86.64	268.25	9385.32	30.61	-4338.77	2.71	4338.58	590823.41	757296.03	
13620.00	88.32	267.76	9389.45	27.34	-4432.62	1.86	4432.44	590820.14	757202.18	
13715.00	90.35	267.51	9390.56	23.42	-4527.53	2.15	4527.37	590816.22	757107.27	
13810.00	91.89	267.28	9388.70	19.10	-4622.41	1.64	4622.27	590811.90	757012.39	
13904.00	90.91	267.70	9386.40	14.99	-4716.29	1.13	4716.17	590807.79	756918.51	
13999.00	90.42	268.02	9385.30	11.44	-4811.22	0.62	4811.11	590804.24	756823.58	
14094.00	91.54	268.15	9383.68	8.26	-4906.15	1.19	4906.06	590801.06	756728.65	
14188.00	89.37	270.17	9382.93	6.89	-5000.13	3.15	5000.04	590799.69	756634.67	
14283.00	91.12	269.12	9382.52	6.30	-5095.12	2.15	5095.03	590799.10	756539.68	
14378.00	88.60	268.93	9382.75	4.68	-5190.10	2.66	5190.02	590797.48	756444.70	
14472.00	90.49	268.83	9383.50	2.84	-5284.07	2.01	5284.00	590795.64	756350.73	
14567.00	87.41	269.03	9385.24	1.07	-5379.03	3.25	5378.96	590793.87	756255.77	
14661.00	88.32	268.60	9388.74	-0.87	-5472.94	1.07	5472.88	590791.93	756161.86	
14756.00	90.77	267.79	9389.50	-3.86	-5567.88	2.72	5567.84	590788.94	756066.92	
14851.00	89.44	268.62	9389.32	-6.84	-5662.83	1.65	5662.80	590785.96	755971.97	
14945.00	91.26	268.36	9388.75	-9.32	-5756.79	1.96	5756.77	590783.48	755878.01	
15040.00	92.10	268.68	9385.96	-11.77	-5851.72	0.95	5851.71	590781.03	755783.08	
15135.00	88.18	268.74	9385.73	-13.91	-5946.68	4.13	5946.68	590778.89	755688.12	
15229.00	90.07	268.73	9387.17	-15.98	-6040.64	2.01	6040.65	590776.82	755594.16	
15324.00	88.32	268.96	9388.50	-17.90	-6135.61	1.86	6135.62	590774.90	755499.19	
15419.00	89.16	268.77	9390.59	-19.78	-6230.56	0.91	6230.59	590773.02	755404.24	
15513.00	90.56	267.96	9390.82	-22.46	-6324.52	1.72	6324.56	590770.34	755310.28	
15608.00	91.12	268.44	9389.43	-25.44	-6419.46	0.78	6419.51	590767.36	755215.34	
15702.00	90.28	268.43	9388.28	-28.01	-6513.42	0.89	6513.48	590764.79	755121.38	
15797.00	92.73	268.10	9385.79	-30.89	-6608.34	2.60	6608.41	590761.91	755026.46	
15891.00	89.51	268.58	9383.95	-33.61	-6702.27	3.46	6702.35	590759.19	754932.53	
15986.00	91.68	268.94	9382.96	-35.66	-6797.24	2.32	6797.33	590757.14	754837.56	
16080.00	88.11	269.27	9383.13	-37.13	-6891.21	3.81	6891.31	590755.67	754743.59	
16175.00	89.23	268.76	9385.34	-38.76	-6986.17	1.30	6986.27	590754.04	754648.63	
16270.00	91.89	268.66	9384.41	-40.90	-7081.13	2.80	7081.24	590751.90	754553.67	
16380.00	91.05	268.33	9381.59	-43.79	-7191.05	0.82	7191.18	590749.01	754443.75	Last Wft Svy
16444.00	91.05	268.33	9380.42	-45.66	-7255.02	0.00	7255.15	590747.14	754379.78	Proj. To Bit

Annotation

MD ft	TVD ft	
9698.00	9377.79	Tie On Extreme
9707.00	9378.07	First Wft Svy
16380.00	9381.59	Last Wft Svy
16444.00	9380.42	Proj. To Bit



Cimarex Laguna Deep Unit #21H Gyro+MWD 0ft to Update Survey Report

(Non-Def Survey)

Report Date: December 08, 2012 - 04:36 AM
Client: Cimarex
Field: NM Lea County (NAD 83)
Structure / Slot: Cimarex Laguna Deep Unit #21H / Cimarex Laguna Deep Unit #21H
Well: Cimarex Laguna Deep Unit #21H
Borehole: Original Borehole
UWI / API#: Unknown / Unknown
Survey Name: Cimarex Laguna Deep Unit #21H Gyro+MWD 0ft to Update
Survey Date: November 29, 2012
Tort / AHD / DDI / ERD Ratio: 115.855 ° / 666.883 ft / 4.903 / 0.071
Coordinate Reference System: NAD83 New Mexico State Plane, Eastern Zone, US Feet
Location Lat / Long: N 32° 37' 19.56411", W 103° 37' 4.09441"
Location Grid N/E Y/X: N 590792.800 ftUS, E 761634.800 ftUS
CRS Grid Convergence Angle: 0.3858 °
Grid Scale Factor: 0.99996467

Survey / DLS Computation: Minimum Curvature / Lubinski
Vertical Section Azimuth: 269.726 ° (Grid North)
Vertical Section Origin: 0.000 ft, 0.000 ft
TVD Reference Datum: RKB
TVD Reference Elevation: 3636.000 ft above MSL
Seabed / Ground Elevation: 3611.000 ft above MSL
Magnetic Declination: 7.562 °
Total Gravity Field Strength: 999.1774 mgn (9.8 based)
Total Magnetic Field Strength: 48691.065 nT
Magnetic Dip Angle: 60.477 °
Declination Date: November 29, 2012
Magnetic Declination Model: BGGM 2012
North Reference: Grid North
Grid Convergence Used: 0.3858 °
Total Corr Mag North->Grid North: 7.1762 °

Local Coord Referenced To: Structure Reference Point

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (N/S ft)	EW (E/W ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
SHL Laguna Deep Unit #21	0.00	0.00	0.00	0.00	0.00	N 0.00	E 0.00	0.00	0.00	N/A	357.51M
Marker MudLine	25.00	0.10	357.51	25.00	0.00	N 0.02	W 0.00	0.02	357.51	0.40	357.51M
	100.00	0.40	357.51	100.00	0.01	N 0.35	W 0.02	0.35	357.51	0.40	2.73M
	200.00	0.37	2.73	200.00	0.01	N 1.02	W 0.01	1.02	359.16	0.05	7.55M
	300.00	0.44	7.55	299.99	-0.06	N 1.72	E 0.05	1.72	1.69	0.08	0.93M
	400.00	0.68	0.93	399.99	-0.12	N 2.70	E 0.11	2.70	2.36	0.25	338.69M
	500.00	0.30	338.69	499.99	-0.04	N 3.53	E 0.03	3.53	0.41	0.42	326.11M
	600.00	0.23	326.11	599.98	0.16	N 3.94	W 0.18	3.95	357.36	0.09	281.99M
	700.00	0.19	281.99	699.98	0.44	N 4.15	W 0.46	4.17	353.73	0.16	28.41M
	800.00	0.19	28.41	799.98	0.52	N 4.33	W 0.54	4.36	352.90	0.30	28.43M
	824.40	0.22	28.43	824.38	0.48	N 4.40	W 0.50	4.43	353.55	0.12	59.91M
	919.20	0.15	59.91	919.18	0.28	N 4.63	W 0.30	4.64	356.25	0.13	48.64M
	1013.90	0.20	48.64	1013.88	0.05	N 4.80	W 0.07	4.80	359.14	0.06	29.31M
	1108.60	0.22	29.31	1108.58	-0.17	N 5.06	E 0.14	5.07	1.59	0.08	100.91M
	1203.40	0.09	100.91	1203.38	-0.33	N 5.21	E 0.30	5.22	3.33	0.22	298.27M
	1298.10	0.15	298.27	1298.08	-0.29	N 5.25	E 0.27	5.26	2.91	0.25	324.61M
	1392.90	0.17	324.61	1392.88	-0.10	N 5.43	E 0.08	5.43	0.80	0.08	79.55M
	1487.60	0.38	79.55	1487.58	-0.33	N 5.60	E 0.30	5.61	3.11	0.50	74.8M

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (N/S ft)	EW (E/W ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
	1582.30	0.52	74.80	1582.28	-1.05	N 5.77	E 1.03	5.86	10.10	0.15	100.8M
	1677.10	0.18	100.80	1677.08	-1.62	N 5.85	E 1.59	6.06	15.19	0.39	26M
	1771.80	0.09	26.00	1771.78	-1.80	N 5.89	E 1.77	6.15	16.70	0.19	303.76M
	1866.60	0.03	303.76	1866.58	-1.81	N 5.97	E 1.78	6.23	16.59	0.10	160.28M
	1961.30	0.02	160.28	1961.28	-1.79	N 5.97	E 1.76	6.23	16.46	0.05	24.44M
	2056.00	0.07	24.44	2055.98	-1.82	N 6.01	E 1.79	6.27	16.62	0.09	28.08M
	2150.80	0.30	28.08	2150.78	-1.96	N 6.28	E 1.93	6.57	17.12	0.24	45.4M
	2245.50	0.26	45.40	2245.47	-2.24	N 6.65	E 2.20	7.01	18.34	0.10	56.52M
	2340.30	0.43	56.52	2340.27	-2.69	N 7.00	E 2.65	7.48	20.77	0.19	66.65M
	2435.00	1.01	66.65	2434.96	-3.75	N 7.52	E 3.72	8.39	26.29	0.62	68.77M
	2529.70	1.70	68.77	2529.64	-5.83	N 8.36	E 5.79	10.17	34.71	0.73	63.7M
	2624.50	2.34	63.70	2624.38	-8.88	N 9.73	E 8.84	13.14	42.25	0.70	63.01M
	2719.20	2.53	63.01	2718.99	-12.49	N 11.53	E 12.43	16.96	47.15	0.20	63.35M
	2814.00	2.36	63.35	2813.71	-16.11	N 13.36	E 16.04	20.88	50.21	0.18	57.61M
	2908.70	2.76	57.61	2908.31	-19.78	N 15.46	E 19.71	25.05	51.90	0.50	65.77M
	3003.40	2.41	65.77	3002.92	-23.54	N 17.49	E 23.45	29.26	53.28	0.54	71.79M
	3098.20	1.67	71.79	3097.65	-26.67	N 18.74	E 26.58	32.53	54.81	0.81	79.12M
	3192.90	1.17	79.12	3192.33	-28.93	N 19.36	E 28.84	34.74	56.13	0.56	85.17M
	3287.70	1.02	85.17	3287.11	-30.73	N 19.61	E 30.63	36.37	57.37	0.20	82.68M
	3382.40	0.99	82.68	3381.79	-32.38	N 19.79	E 32.28	37.87	58.50	0.06	71.98M
	3477.10	1.03	71.98	3476.48	-34.00	N 20.15	E 33.91	39.44	59.27	0.20	74.57M
	3571.90	0.88	74.57	3571.27	-35.52	N 20.61	E 35.42	40.98	59.80	0.16	69.85M
	3666.60	0.98	69.85	3665.95	-36.98	N 21.08	E 36.88	42.48	60.24	0.13	70.04M
	3761.40	1.12	70.04	3760.74	-38.61	N 21.68	E 38.51	44.19	60.62	0.15	67.5M
	3856.10	1.82	67.50	3855.41	-40.88	N 22.57	E 40.77	46.60	61.03	0.74	81.58M
	3950.80	1.59	81.58	3950.06	-43.57	N 23.34	E 43.46	49.33	61.76	0.50	81.07M
	4045.60	1.35	81.07	4044.83	-45.98	N 23.70	E 45.86	51.63	62.67	0.25	54.93M
	4140.30	1.64	54.93	4139.50	-48.19	N 24.66	E 48.07	54.03	62.85	0.77	45.99M
	4235.10	1.42	45.99	4234.27	-50.15	N 26.25	E 50.03	56.50	62.31	0.34	40.4M
	4329.80	1.33	40.40	4328.94	-51.72	N 27.90	E 51.59	58.65	61.59	0.17	12.55M
	4424.50	1.15	12.55	4423.62	-52.65	N 29.67	E 52.50	60.31	60.53	0.66	355.27M
	4519.30	1.32	355.27	4518.40	-52.77	N 31.69	E 52.62	61.42	58.95	0.43	355.19M
	4614.00	1.08	355.19	4613.08	-52.62	N 33.66	E 52.46	62.33	57.31	0.25	347.56M
	4708.80	1.11	347.56	4707.86	-52.35	N 35.45	E 52.18	63.09	55.81	0.16	7.12M
	4803.50	1.23	7.12	4802.54	-52.29	N 37.35	E 52.11	64.12	54.37	0.44	33.46M
	4898.20	1.38	33.46	4897.22	-53.05	N 39.31	E 52.87	65.88	53.36	0.65	19.93M
	4993.00	1.20	19.93	4991.99	-54.03	N 41.20	E 53.83	67.79	52.57	0.37	11.49M
	5087.70	0.99	11.49	5086.68	-54.54	N 42.93	E 54.34	69.25	51.69	0.28	6.04M
	5182.50	0.85	6.04	5181.46	-54.78	N 44.43	E 54.57	70.37	50.85	0.17	14.93M
Final Gyro	5277.20	0.77	14.93	5276.15	-55.03	N 45.75	E 54.81	71.39	50.15	0.16	17.56M
Extreme MWD	5410.00	0.62	17.56	5408.94	-55.48	N 47.30	E 55.26	72.73	49.44	0.12	15.17M
	5504.00	0.62	15.17	5502.94	-55.77	N 48.27	E 55.54	73.59	49.01	0.03	21.28M
	5599.00	0.70	21.28	5597.93	-56.12	N 49.31	E 55.89	74.53	48.58	0.11	28.09M
	5693.00	0.62	28.09	5691.93	-56.58	N 50.29	E 56.34	75.52	48.24	0.12	35.17M

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (N/S ft)	EW (E/W ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
	5788.00	0.48	35.17	5786.92	-57.05	N 51.07	E 56.81	76.39	48.04	0.16	31.08M
	5978.00	0.31	31.08	5976.92	-57.78	N 52.16	E 57.53	77.66	47.80	0.09	251.38M
	6072.00	0.40	251.38	6070.92	-57.60	N 52.27	E 57.35	77.60	47.65	0.71	339.97M
	6167.00	0.79	339.97	6165.91	-57.07	N 52.78	E 56.81	77.55	47.11	0.92	341.29M
	6262.00	0.88	341.29	6260.90	-56.61	N 54.09	E 56.36	78.11	46.18	0.10	332.28M
	6357.00	0.70	332.28	6355.89	-56.11	N 55.29	E 55.85	78.59	45.29	0.23	309.02M
	6451.00	0.79	309.02	6449.89	-55.35	N 56.21	E 55.08	78.70	44.42	0.33	307.37M
	6546.00	0.88	307.37	6544.88	-54.26	N 57.07	E 53.99	78.56	43.41	0.10	314.49M
	6641.00	0.70	314.49	6639.87	-53.27	N 57.92	E 53.00	78.50	42.46	0.22	307.06M
	6735.00	0.79	307.06	6733.86	-52.35	N 58.71	E 52.07	78.47	41.57	0.14	301.57M
	6830.00	0.79	301.57	6828.85	-51.27	N 59.45	E 50.99	78.32	40.62	0.08	280.87M
	6925.00	0.79	280.87	6923.84	-50.08	N 59.91	E 49.79	77.90	39.73	0.30	270.67M
	7020.00	0.62	270.67	7018.83	-48.92	N 60.04	E 48.63	77.27	39.01	0.22	255.16M
	7114.00	0.62	255.16	7112.83	-47.92	N 59.92	E 47.63	76.54	38.48	0.18	263.47M
	7208.00	0.69	263.47	7206.82	-46.86	N 59.72	E 46.58	75.74	37.95	0.13	271.6M
	7302.00	0.79	271.60	7300.81	-45.65	N 59.68	E 45.37	74.96	37.24	0.15	273.18M
	7491.00	0.79	273.18	7489.80	-43.05	N 59.79	E 42.77	73.51	35.58	0.01	264.56M
	7586.00	0.88	264.56	7584.79	-41.67	N 59.75	E 41.38	72.68	34.71	0.16	268.56M
	7680.00	0.70	268.56	7678.78	-40.38	N 59.67	E 40.09	71.89	33.90	0.20	274.28M
	7774.00	0.79	274.28	7772.77	-39.16	N 59.70	E 38.87	71.24	33.07	0.12	273.27M
	7869.00	0.79	273.27	7867.76	-37.85	N 59.79	E 37.57	70.61	32.14	0.01	276.96M
	7965.00	0.70	276.96	7963.75	-36.61	N 59.90	E 36.32	70.05	31.23	0.11	284.56M
	8059.00	0.70	284.56	8057.74	-35.48	N 60.11	E 35.20	69.66	30.35	0.10	281.48M
	8153.00	0.79	281.48	8151.74	-34.29	N 60.39	E 34.01	69.30	29.39	0.10	274.6M
	8249.00	1.10	274.60	8247.72	-32.73	N 60.59	E 32.44	68.73	28.16	0.34	263.6M
	8344.00	1.41	263.60	8342.70	-30.66	N 60.53	E 30.37	67.72	26.64	0.41	254.19M
	8439.00	1.41	254.19	8437.67	-28.37	N 60.09	E 28.08	66.32	25.05	0.24	244.26M
	8544.00	1.71	244.26	8542.63	-25.71	N 59.05	E 25.43	64.29	23.30	0.38	233.36M
	8628.00	2.59	233.36	8626.57	-23.05	N 57.38	E 22.78	61.73	21.65	1.15	260.78M
	8722.00	1.49	260.78	8720.51	-20.13	N 55.91	E 19.87	59.34	19.56	1.53	272.78M
	8815.00	1.49	272.78	8813.48	-17.73	N 55.78	E 17.46	58.45	17.39	0.33	257.36M
	8834.00	1.71	257.36	8832.48	-17.21	N 55.73	E 16.94	58.25	16.91	2.53	277.3M
	8929.00	6.66	277.30	8927.20	-10.36	N 56.12	E 10.09	57.02	10.19	5.35	278.12M
	8962.00	11.07	278.12	8959.79	-5.32	N 56.81	E 5.05	57.03	5.08	13.37	14.34L
	8993.00	15.07	274.22	8989.99	1.64	N 57.53	W 1.92	57.56	358.09	13.21	74.05R
	9024.00	15.89	282.64	9019.86	9.80	N 58.75	W 10.08	59.61	350.27	7.71	7.03L
	9057.00	18.92	281.49	9051.35	19.44	N 60.81	W 19.73	63.93	342.02	9.24	9.36L
	9090.00	23.33	279.66	9082.13	31.12	N 62.97	W 31.42	70.37	333.48	13.51	17.24L
	9120.00	27.48	276.89	9109.22	43.84	N 64.80	W 44.16	78.41	325.73	14.39	32.25L
	9152.00	30.89	272.78	9137.16	59.38	N 66.08	W 59.70	89.05	317.91	12.35	28.18L
	9184.00	33.96	269.87	9164.16	76.52	N 66.46	W 76.84	101.60	310.86	10.76	3.3R
	9215.00	36.43	270.11	9189.50	94.39	N 66.46	W 94.71	115.70	305.06	7.98	11.55R
	9247.00	38.99	270.94	9214.81	113.96	N 66.64	W 114.28	132.29	300.25	8.16	25.67R
	9279.00	42.05	273.12	9239.13	134.73	N 67.39	W 135.05	150.93	296.52	10.54	11.43R

Comments	MD (ft)	Incl (°)	Azim Grid (°)	TVD (ft)	VSEC (ft)	NS (N/S ft)	EW (E/W ft)	Closure (ft)	Closure Azimuth (°)	DLS (°/100ft)	TF (°)
	9310.00	45.78	274.17	9261.46	156.17	N 68.76	W 156.50	170.94	293.72	12.26	4.34R
	9341.00	50.13	274.60	9282.22	179.11	N 70.53	W 179.45	192.81	291.46	14.07	1.8R
	9373.00	54.26	274.76	9301.83	204.30	N 72.59	W 204.65	217.14	289.53	12.91	7.56L
	9404.00	58.64	274.08	9318.96	230.04	N 74.58	W 230.40	242.17	287.94	14.25	4.5R
	9437.00	62.71	274.44	9335.12	258.71	N 76.71	W 259.08	270.20	286.49	12.37	8.24R
	9468.00	67.37	275.17	9348.19	286.70	N 79.07	W 287.08	297.77	285.40	15.18	0.87R
	9498.00	73.04	275.26	9358.35	314.79	N 81.64	W 315.18	325.58	284.52	18.90	0.27L
	9531.00	79.34	275.23	9366.22	346.67	N 84.56	W 347.08	357.23	283.69	19.09	3.16R
	9562.00	84.21	275.50	9370.66	377.19	N 87.43	W 377.61	387.60	283.04	15.73	1.12R
	9593.00	86.77	275.55	9373.09	407.93	N 90.41	W 408.37	418.26	282.48	8.26	79.99L
	9625.00	86.83	275.21	9374.88	439.73	N 93.40	W 440.18	449.98	281.98	1.08	35.77L
	9655.00	87.94	274.41	9376.25	469.58	N 95.92	W 470.04	479.73	281.53	4.56	HS
PTB	9698.00	87.94	274.41	9377.79	512.41	N 99.22	W 512.89	522.40	280.95	0.00	

Survey Type: Non-Def Survey

Survey Error Model: ISCWSA Rev 0 *** 3-D 95.000% Confidence 2.7955 sigma
Survey Program:

Description	MD From (ft)	MD To (ft)	EOU Freq (ft)	Hole Size (in)	Casing Diameter (in)	Survey Tool Type	Borehole / Survey
	0.000	25.000	Act Stns	30.000	30.000	SLB_NSG+MSHOT-Depth Only	Original Borehole / Cimarex Laguna Deep Unit #21H Gyro+MWD 0ft to Update
	25.000	5277.200	Act Stns	30.000	30.000	SLB_NSG+MSHOT	Original Borehole / Cimarex Laguna Deep Unit #21H
	5277.200	9698.000	Act Stns	30.000	30.000	SLB_MWD-POOR	Original Borehole / Cimarex Laguna Deep Unit #21H