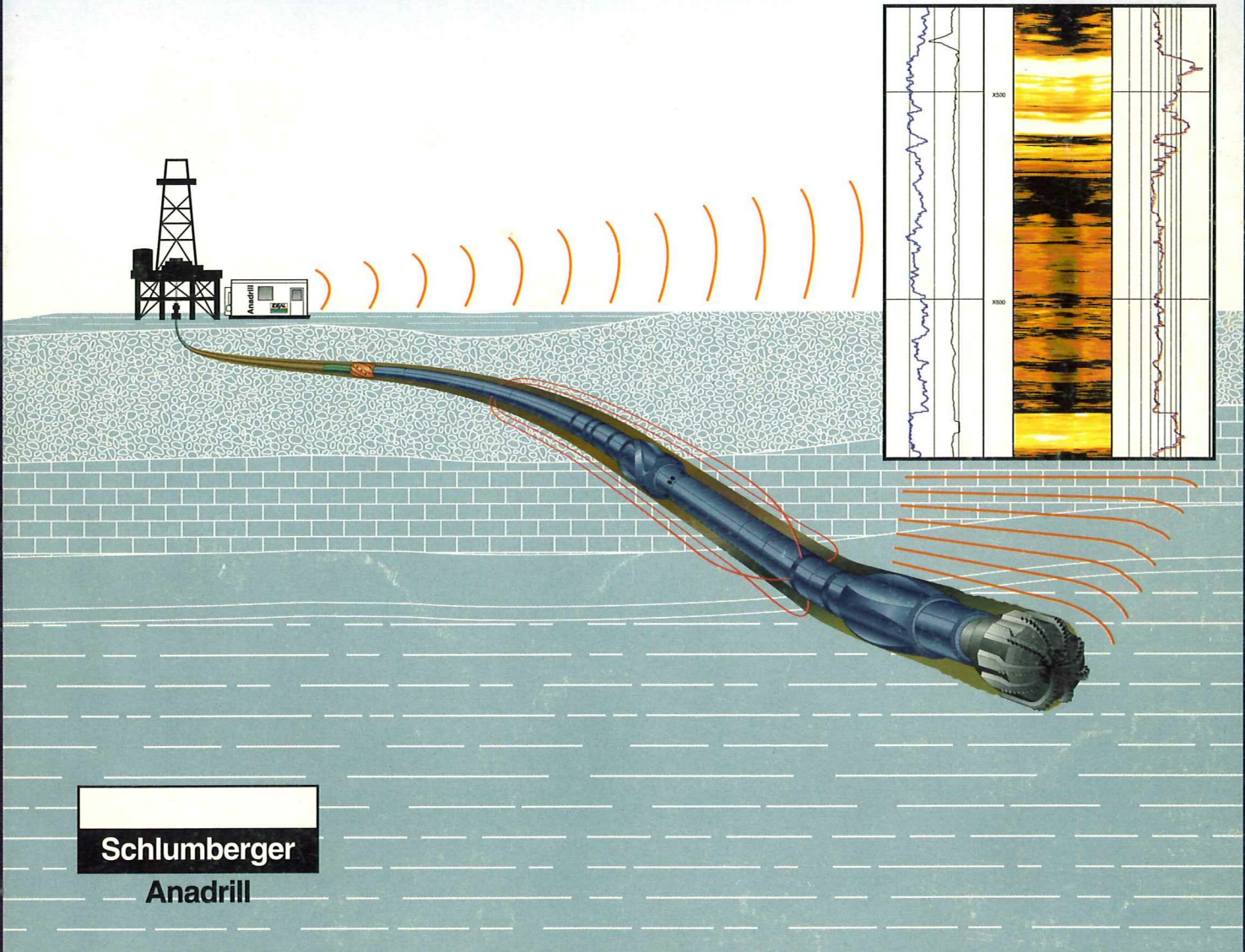


Petrotech Peruana S.A.

LO 16-25, ST1 & ST2

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Nº 00-15, 2002

End of Well Report



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Petrotech Peruana S.A.


LO 16-25, ST1 & ST2

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DATE

End of Well Report


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1. GENERAL DATA

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WELL LO 16-25, LO 16-25 ST#1
LO 16-25 ST#2

PLATFORM LO16-25

RIG PEPESA 48

1.1 Coordinates

Magnetic Parameters

Model: BGGM 2002 **FS:** 28757.435 nT

Dip: 14.710° **Magnetic Declination:** +1.378° @ October 2002

Surface Coordinates

UTM: UTM – Zone 17S, WGS84

True Coordinates: Lat. S: 4° 28' 9.181"
Long. W: 81° 21' 55.642"

UTM Coordinates: N: 9 505 997.130 mts. E: 459 456.430 mts.

TVD reference: 50 Ft. above MSL

Target Coordinates

Target Formation Top **RIO BRAVO**

Programmed TVD : 3800 Ft. TVD

UTM Coordinates : N: 9 506790.00 mts. E: 458 150.00 mts.

1.2 Rig Data

<u>Drawworks:</u>	OIME - 750
<u>Traveling Block:</u>	IDECO UTB -265 Ton
<u>Mud Pump:</u>	
# 1	IDECO-T-1000 (10" x 7")
# 2	IDECO-T-1000 (10" x 7")

1.3 Casing Data

Conductor 18"	569 ft MD
Casing 13 3/8" K-55, 54.5 #/ft	1016 ft MD
Casing 9 5/8" N-80, 43.5 #/ft	4500 ft MD

1.4 Well Plan Description

This is a slant type development well planned for 62.25 deg. Inclination, 300.51 deg. azimuth, BUR 5.5 deg/100ft, and a KOP of 570 ft, which main target is the top of the RIO BRAVO formation.

1.5 Geological information (in ft)

	TVD (proposal)
TALARA	AT SEA BOTTOM
CHACRA	2350.0 FT
RIO BRAVO	4050.0 FT
T.D.	4630.0 FT

1.6 Directional Drilling Personnel

Ing. R. Torres	Leader Directional Drilling Engineer
Ing. G. Soto	DD Engineer
Ing. F. Hagan	DDS Engineer
Ing. P. Mejia	MWD/LWD Engineer
Ing. S. Sakaneta	MWD/LWD Engineer
Ing. V. Laguna	MWD/LWD Engineer

1.7 Office Suport

Ing. A. Martin	Perú FSM
Ing. J. Rodriguez	Drilling Planning

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PERUANA S.A.

END OF WELL REPORT: **LO16-25,ST1& ST2**


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2. DIRECTIONAL DRILLING REPORTS

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END OF WELL REPORT: LO16-25,ST1& ST2

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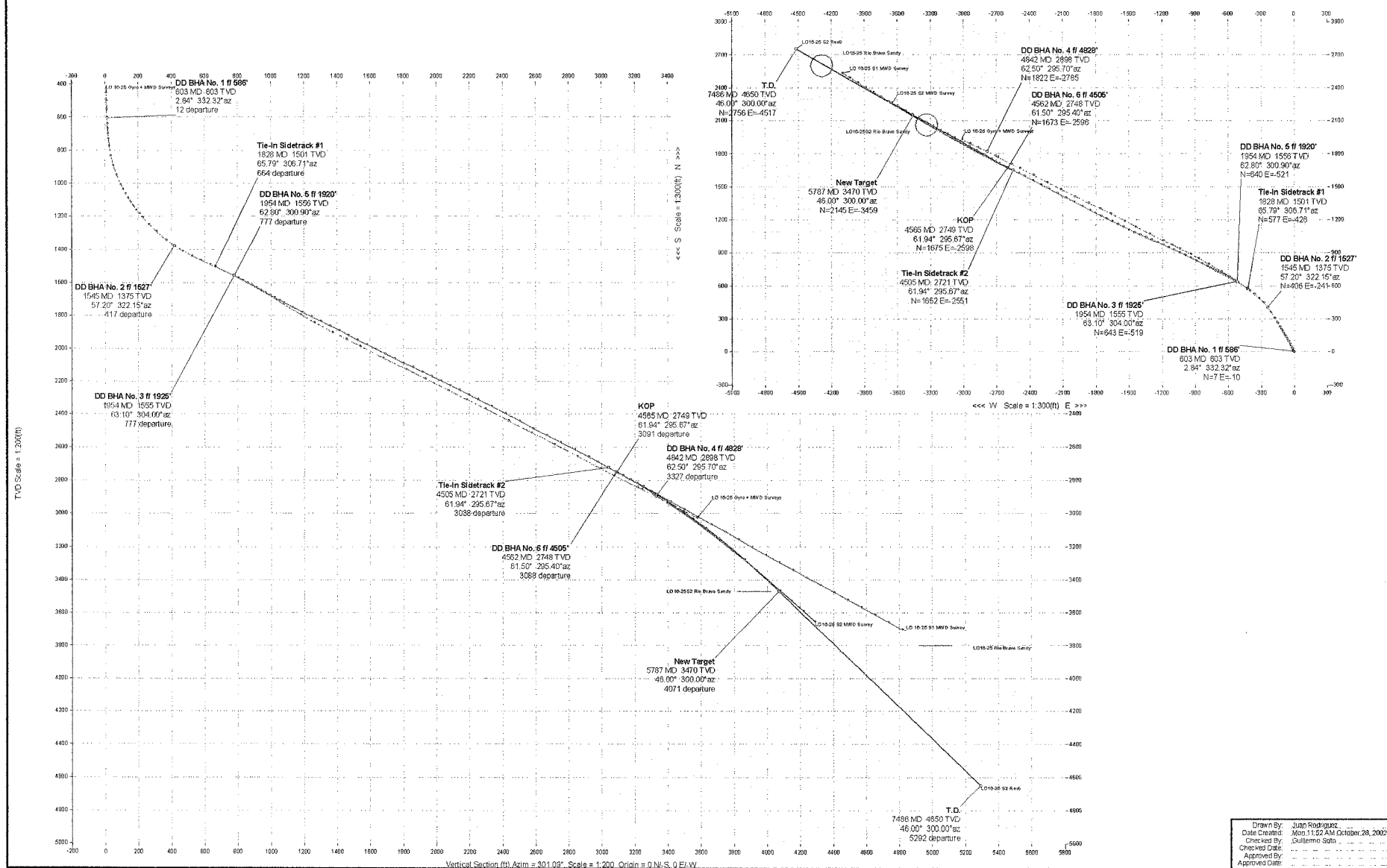
2.1. FINAL PLOT & SURVEY FILES

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Petro-Tech Peruana S.A.

WELL	Well LO16-25	FIELD	Lobitos	STRUCTURE	Platform LO16 (WGS84)
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MapInfo Parameter	DD	WGS84	ES	October 06, 2002	Surface Location	UTM Zone 17S, WGS84, Meter	Grid Color	Microseconds	TVD Unit	
Model:	ROOM 2002	Map Doc:	14.02.07	ES	282916.011	Lat:	900000.70 m	Site:	144.825	DD Unit:
					WGS 1984 UTM	Long:	4000000.00 m	Plan:	LO16-25-02 Feet	DD Scale:
									1000.001 (from MSL)	DD Scale:
									1000.001 (from MSL)	DD Scale:



Drawn By:	Juan Rodriguez
Date Created:	Mon 11:22 AM October 28, 2002
Checked By:	Guillermo Soto
Checked Date:	
Approved By:	
Approved Date:	



LO 16-25 Gyro + MWD Survey Report

<p>Report Date: October 21, 2002 Client: Petro-Tech Peruana S.A. Field: Lobitos Structure / Slot: Platform LO16 (WGS84) / Slot #25 Well: Well LO16-25 Borehole: Borehole LO16-25 UWIAPI#: Survey Name / Date: LO 16-25 Gyro + MWD Surveys / September 11, 2002 Tort / AHD / DDI / ERD ratio: 115.509° / 3651.39 ft / 5.854 / 1.206 Grid Coordinate System: UTM Zone 17S - WGS84, Meters Location Lat/Long: S 4 28 9.181, W 81 21 55.642 Location Grid N/E Y/X: N 9505997.130 m, E 459456.430 m Grid Convergence Angle: +0.02847801° Grid Scale Factor: 0.99962035</p>	<p>Survey / DLS Computation Method: Minimum Curvature / Lubinski Vertical Section Azimuth: 301.090° Vertical Section Origin: N 0.000 ft, E 0.000 ft TVD Reference Datum: KB TVD Reference Elevation: 50.0 ft relative to MSL Sea Bed / Ground Level Elevation: 0.000 ft relative to MSL Magnetic Declination: 1.389° Total Field Strength: 28763.698 nT Magnetic Dip: 14.710° Declination Date: September 05, 2002 Magnetic Declination Model: BGGM 2001 North Reference: True North Total Corr Mag North -> True North: +1.389° Local Coordinates Referenced To: Well Head</p>
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Comments	Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (deg)	DLS (deg/100 ft)	Build Rate (deg/100 ft)	Walk Rate (deg/100 ft)
Tie-In	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	50.00	0.66	152.14	50.00	-0.25	-0.25	0.13	0.29	152.14	1.32	1.32	0.00
	100.00	0.47	167.15	100.00	-0.64	-0.71	0.31	0.78	156.07	0.48	-0.38	30.02
	150.00	0.66	278.35	150.00	-0.51	-0.87	0.08	0.87	175.03	1.88	0.38	222.40
	200.00	1.21	295.02	199.99	0.28	-0.60	-0.69	0.91	228.80	1.22	1.10	33.34
	250.00	1.44	295.93	249.97	1.43	-0.10	-1.73	1.73	266.56	0.46	0.46	1.82
	300.00	0.90	302.92	299.96	2.45	0.38	-2.63	2.65	278.32	1.12	-1.08	13.98
	350.00	2.19	305.53	349.95	3.79	1.15	-3.73	3.91	287.16	2.58	2.58	5.22
	365.00	2.25	304.68	364.93	4.37	1.49	-4.21	4.46	289.46	0.46	0.40	-5.67
	400.00	1.93	297.97	399.91	5.65	2.15	-5.29	5.72	292.14	1.15	-0.91	-19.17
	450.00	1.91	301.86	449.88	7.32	2.99	-6.75	7.38	293.90	0.26	-0.04	7.78
	500.00	1.62	311.14	499.86	8.85	3.89	-7.99	8.88	295.99	0.81	-0.58	18.56
	550.00	1.97	308.72	549.83	10.40	4.90	-9.19	10.41	298.05	0.72	0.70	-4.84
DD BHA No. 1 f/ 586'	603.00	2.84	332.32	602.79	12.42	6.63	-10.51	12.42	302.24	2.45	1.64	44.53
	640.00	3.76	336.62	639.73	14.19	8.55	-11.42	14.27	306.84	2.57	2.49	11.62
	670.00	4.81	338.43	669.64	15.99	10.63	-12.27	16.23	310.90	3.53	3.50	6.03
	700.00	6.14	341.49	699.50	18.22	13.32	-13.24	18.78	315.17	4.54	4.43	10.20
	730.00	7.66	344.86	729.29	20.88	16.77	-14.27	22.02	319.60	5.24	5.07	11.23
	775.00	10.37	343.78	773.73	26.03	23.55	-16.19	28.58	325.50	6.03	6.02	-2.40
	834.00	14.18	339.44	831.37	35.60	35.42	-20.21	40.78	330.29	6.64	6.46	-7.36
	896.00	19.00	334.60	890.77	49.98	51.66	-27.21	58.39	332.22	8.08	7.77	-7.81
	958.00	24.20	329.60	948.40	69.58	71.76	-37.98	81.19	332.11	8.89	8.39	-8.06
	1022.00	28.90	328.20	1005.64	94.88	96.23	-52.77	109.75	331.26	7.41	7.34	-2.19
	1053.00	31.20	328.30	1032.47	108.69	109.43	-60.94	125.25	330.89	7.42	7.42	0.32
	1084.00	33.20	329.30	1058.70	123.32	123.56	-69.49	141.76	330.64	6.68	6.45	3.23
	1116.00	35.76	330.09	1085.08	139.22	139.20	-78.63	159.87	330.54	8.12	8.00	2.47
	1147.00	37.27	330.68	1109.99	155.30	155.23	-87.75	178.32	330.52	5.00	4.87	1.90
	1178.00	39.25	330.89	1134.33	171.98	171.99	-97.11	197.51	330.55	6.40	6.39	0.68
	1210.00	41.06	330.46	1158.79	189.92	189.98	-107.22	218.15	330.56	5.72	5.66	-1.34
	1241.00	43.06	330.09	1181.80	208.05	208.01	-117.52	238.91	330.54	6.50	6.45	-1.19
	1273.00	44.76	330.12	1204.86	227.46	227.25	-128.58	261.10	330.50	5.31	5.31	0.09
	1335.00	48.28	330.02	1247.51	266.81	266.23	-151.02	306.08	330.44	5.68	5.68	-0.16
	1399.00	51.39	328.12	1288.79	310.00	308.17	-176.17	354.97	330.24	5.36	4.86	-2.97
	1483.00	54.15	326.89	1339.61	369.90	364.56	-212.11	421.78	329.81	3.49	3.29	-1.46
DD BHA No. 2 f/ 1527'	1545.00	57.20	322.15	1374.58	416.86	406.21	-241.84	472.75	329.23	8.00	4.92	-7.65
	1609.00	60.14	316.74	1407.87	468.73	447.69	-277.39	526.66	328.22	8.56	4.59	-8.45
	1674.00	64.48	312.62	1438.08	524.65	488.11	-318.32	582.74	326.89	8.72	6.68	-6.34
	1734.00	66.15	309.19	1463.14	578.36	523.79	-359.53	635.31	325.53	5.89	2.78	-5.72
	1797.00	66.34	307.66	1488.52	635.55	559.63	-404.70	690.63	324.13	2.24	0.30	-2.43
	1828.00	65.79	306.71	1501.10	663.72	576.75	-427.27	717.78	323.47	3.32	-1.77	-3.06

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Comments	Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (deg)	DLS (deg/100 ft)	Build Rate (deg/100 ft)	Walk Rate (deg/100 ft)
DD BHA No. 3 f/ 1925'	1954.00	63.10	304.00	1555.45	777.05	642.54	-519.94	826.56	321.02	2.88	-2.13	-2.15
	2048.00	60.50	302.70	1599.87	859.82	688.09	-589.13	905.83	319.43	3.02	-2.77	-1.38
	2143.00	59.40	301.80	1647.44	942.03	731.97	-658.67	984.69	318.02	1.42	-1.16	-0.95
	2300.00	58.60	299.40	1728.31	1076.59	800.47	-774.48	1113.82	315.95	1.41	-0.51	-1.53
	2423.00	58.60	298.90	1792.40	1181.51	851.61	-866.17	1214.70	314.51	0.35	0.00	-0.41
	2518.00	60.20	297.50	1840.75	1263.17	890.24	-938.24	1293.38	313.50	2.11	1.68	-1.47
	2644.00	63.40	296.40	1900.29	1373.91	940.55	-1037.22	1400.16	312.20	2.65	2.54	-0.87
	2738.00	62.70	296.40	1942.89	1457.42	977.80	-1112.27	1480.96	311.32	0.74	-0.74	0.00
	2831.00	62.60	296.20	1985.62	1539.74	1014.40	-1186.32	1560.89	310.53	0.22	-0.11	-0.22
	2988.00	63.10	296.00	2057.26	1678.91	1075.86	-1311.78	1696.54	309.36	0.34	0.32	-0.13
	3145.00	64.20	297.40	2126.95	1819.18	1139.08	-1437.45	1834.06	308.39	1.06	0.70	0.89
	3271.00	63.60	297.40	2182.38	1932.09	1191.15	-1537.91	1945.25	307.76	0.48	-0.48	0.00
	3429.00	63.10	296.70	2253.25	2072.95	1255.37	-1663.67	2084.17	307.04	0.51	-0.32	-0.44
	3554.00	62.60	296.40	2310.29	2183.83	1305.09	-1763.17	2193.63	306.51	0.45	-0.40	-0.24
	3680.00	63.30	295.70	2367.59	2295.61	1354.37	-1863.99	2304.08	306.00	0.74	0.56	-0.56
3838.00	62.67	296.00	2439.36	2435.78	1415.74	-1990.66	2442.76	305.42	0.43	-0.40	0.19	
3995.00	63.40	297.10	2510.55	2575.27	1478.29	-2115.83	2581.10	304.94	0.78	0.46	0.70	
4153.00	62.70	298.00	2582.16	2715.84	1543.43	-2240.70	2720.83	304.56	0.67	-0.44	0.57	
4309.00	62.70	297.70	2653.71	2854.25	1608.19	-2363.27	2858.55	304.23	0.17	0.00	-0.19	
4466.00	62.40	296.70	2726.08	2993.25	1671.87	-2487.18	2996.87	303.91	0.60	-0.19	-0.64	
4560.00	62.20	296.00	2769.78	3076.19	1708.81	-2561.76	3079.39	303.71	0.69	-0.21	-0.74	
4717.00	63.70	297.70	2841.18	3215.62	1771.97	-2686.50	3218.25	303.41	1.36	0.96	1.08	
4747.00	63.30	296.70	2854.56	3242.41	1784.24	-2710.38	3244.95	303.36	3.27	-1.33	-3.33	
DD BHA No. 4 f/ 4828'	4842.00	62.50	295.70	2897.84	3326.67	1821.58	-2786.25	3328.87	303.18	1.26	-0.84	-1.05
	4943.00	62.60	295.30	2944.40	3415.87	1860.17	-2867.15	3417.72	302.97	0.37	0.10	-0.40
	5030.00	63.10	296.00	2984.10	3492.93	1893.68	-2936.94	3494.51	302.81	0.92	0.57	0.80
	5125.00	63.60	297.40	3026.71	3577.59	1931.83	-3012.79	3578.95	302.67	1.42	0.53	1.47

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LO 16-25 ST MWD Survey Report

<p>Report Date: October 6, 2002 Client: Petro-Tech Peruana S.A. Field: Lobitos Structure / Slot: Platform LO16 (WGS84) / Slot #25 Well: Well LO16-25 Borehole: Sidetrack #1 UWIAPI#: Survey Name / Date: LO 16-25 ST MWD SURVEYS / September 23, 2002 Tort / AHD / DDI / ERD ratio: 134.937° / 4893.23 ft / 6.067 / 1.322 Grid Coordinate System: UTM Zone 17S - WGS84, Meters Location Lat/Long: S 4 28 9.181, W 81 21 55.642 Location Grid N/E Y/X: N 9505997.130 m, E 459456.430 m Grid Convergence Angle: +0.02847801° Grid Scale Factor: 0.99962035</p>	<p>Survey / DLS Computation Method: Minimum Curvature / Lubinski Vertical Section Azimuth: 301.090° Vertical Section Origin: N 0.000 ft, E 0.000 ft TVD Reference Datum: RKB TVD Reference Elevation: 50.0 ft relative to MSL Sea Bed / Ground Level Elevation: 0.000 ft relative to MSL Magnetic Declination: 1.384° Total Field Strength: 28760.566 nT Magnetic Dip: 14.710° Declination Date: September 23, 2002 Magnetic Declination Model: BGGM 2001 North Reference: True North Total Corr Mag North -> True North: +1.384° Local Coordinates Referenced To: Well Head</p>
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Comments	Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (deg)	DLS (deg/100 ft)
Tie-In	1828.00	65.79	306.71	1501.10	663.72	576.75	-427.27	717.78	323.47	0.00
DD BHA No. 5 ff 1920'	1954.00	62.80	300.90	1555.78	777.04	639.93	-521.50	825.52	320.82	4.78
	1985.00	62.40	299.50	1570.05	804.56	653.78	-545.29	851.33	320.17	4.21
	2016.00	61.80	299.30	1584.55	831.95	667.23	-569.15	877.00	319.54	2.02
	2048.00	61.30	298.80	1599.80	860.06	680.89	-593.75	903.41	318.91	2.08
	2079.00	61.40	298.00	1614.66	887.24	693.83	-617.68	928.94	318.32	2.29
	2109.00	61.20	296.70	1629.07	913.49	705.92	-641.05	953.56	317.76	3.86
	2140.00	61.10	296.00	1644.02	940.55	717.97	-665.38	978.88	317.18	2.00
	2172.00	60.70	296.00	1659.59	968.40	730.23	-690.51	1005.01	316.60	1.25
	2203.00	60.80	296.70	1674.73	995.36	742.23	-714.75	1030.43	316.08	2.00
	2235.00	61.20	297.40	1690.25	1023.28	754.96	-739.68	1056.92	315.59	2.29
	2267.00	62.23	298.10	1705.41	1051.41	768.08	-764.61	1083.78	315.13	3.75
	2298.00	63.00	297.40	1719.67	1078.89	780.90	-788.97	1110.08	314.71	3.19
	2359.00	63.00	296.70	1747.37	1133.10	805.61	-837.38	1161.99	313.89	1.02
	2423.00	62.80	297.30	1776.52	1189.93	831.48	-888.14	1216.62	313.11	0.89
	2486.00	63.50	296.00	1804.98	1245.97	856.69	-938.38	1270.62	312.39	2.15
	2549.00	63.40	295.20	1833.14	1302.06	881.04	-989.20	1324.67	311.69	1.15
	2612.00	63.50	295.60	1861.30	1358.14	905.21	-1040.11	1378.85	311.03	0.59
	2675.00	63.00	295.50	1889.65	1414.14	929.47	-1090.87	1433.15	310.43	0.81
	2738.00	62.10	295.30	1918.69	1469.77	953.46	-1141.37	1487.21	309.87	1.46
	2800.00	62.43	294.80	1947.55	1524.34	976.69	-1191.08	1540.33	309.35	0.89
	2864.00	63.00	293.20	1976.89	1580.78	999.82	-1243.04	1595.24	308.81	2.39
	2926.00	63.60	293.24	2004.74	1635.65	1021.66	-1293.95	1648.66	308.29	0.97
	2989.00	63.97	293.67	2032.57	1691.67	1044.16	-1345.80	1703.36	307.81	0.85
	3052.00	64.00	293.20	2060.21	1747.78	1066.67	-1397.74	1758.26	307.35	0.67
	3115.00	64.20	293.90	2087.72	1803.96	1089.32	-1449.69	1813.35	306.92	1.05
	3176.00	64.50	296.10	2114.13	1858.64	1112.56	-1499.53	1867.18	306.57	3.29
	3239.00	64.50	296.20	2141.25	1915.29	1137.62	-1550.57	1923.13	306.27	0.14
	3301.00	64.20	296.00	2168.09	1970.96	1162.20	-1600.76	1978.17	305.98	0.56
	3364.00	63.90	296.00	2195.66	2027.39	1187.04	-1651.67	2033.98	305.70	0.48
	3427.00	63.70	296.00	2223.48	2083.69	1211.82	-1702.48	2089.72	305.44	0.32
	3490.00	63.10	296.90	2251.68	2139.84	1236.91	-1752.91	2145.38	305.21	1.59
	3553.00	63.03	297.86	2280.22	2195.89	1262.74	-1802.79	2201.03	305.01	1.36
	3616.00	62.50	298.17	2309.05	2251.82	1289.05	-1852.24	2256.64	304.84	0.95
	3709.00	62.67	298.32	2351.87	2334.28	1328.12	-1924.97	2338.67	304.60	0.23
	3804.00	62.00	297.46	2395.98	2418.28	1367.47	-1999.33	2422.25	304.37	1.07
	3899.00	61.70	297.10	2440.80	2501.86	1405.87	-2073.78	2505.40	304.13	0.46
	3993.00	62.60	297.40	2484.72	2584.78	1443.92	-2147.66	2587.93	303.91	1.00
	4087.00	62.90	297.40	2527.76	2668.18	1482.38	-2221.86	2670.97	303.71	0.32
	4182.00	62.60	298.10	2571.25	2752.49	1521.70	-2296.60	2754.98	303.53	0.73

GEOSCIENCES
Central File

Comments	Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (deg)	DLS (deg/100 ft)
	4277.00	62.23	297.40	2615.25	2836.55	1560.91	-2371.11	2838.77	303.36	0.76
	4372.00	62.80	297.40	2659.09	2920.65	1599.69	-2445.94	2922.61	303.19	0.60
	4434.00	62.50	296.00	2687.57	2975.56	1624.44	-2495.13	2977.33	303.07	2.06
DD BHA No. 6 ft 4505'	4562.00	61.50	295.40	2747.67	3088.07	1673.45	-2596.97	3089.44	302.80	0.88
	4656.00	61.50	296.70	2792.52	3170.36	1709.73	-2671.18	3171.49	302.62	1.22
	4751.00	61.30	297.90	2838.00	3253.58	1747.98	-2745.30	3254.55	302.49	1.13
	4845.00	61.50	297.30	2883.00	3335.96	1786.21	-2818.43	3336.79	302.36	0.60
	4939.00	60.82	298.10	2928.34	3418.15	1824.49	-2891.34	3418.86	302.25	1.04
	5033.00	60.80	298.60	2974.18	3500.12	1863.46	-2963.56	3500.74	302.16	0.46
	5127.00	61.45	298.68	3019.58	3582.36	1902.91	-3035.80	3582.90	302.08	0.70
	5220.00	61.50	300.20	3063.99	3664.03	1943.07	-3106.96	3664.52	302.02	1.44
	5315.00	60.70	299.80	3109.90	3747.19	1984.65	-3178.98	3747.64	301.98	0.92
	5408.00	60.40	300.20	3155.62	3828.16	2025.15	-3249.12	3828.57	301.93	0.49
	5503.00	60.60	300.60	3202.41	3910.83	2066.99	-3320.43	3911.23	301.90	0.42
	5598.00	60.40	301.60	3249.19	3993.52	2109.69	-3391.23	3993.90	301.89	0.94
	5691.00	61.10	299.50	3294.63	4074.65	2150.93	-3461.10	4075.01	301.86	2.11
	5785.00	61.20	300.20	3339.99	4156.96	2191.91	-3532.51	4157.30	301.82	0.66
	5879.00	61.40	301.00	3385.13	4239.41	2233.88	-3603.48	4239.73	301.80	0.78
	5973.00	61.70	301.00	3429.91	4322.06	2276.45	-3674.32	4322.37	301.78	0.32
	6068.00	61.10	301.10	3475.39	4405.46	2319.47	-3745.78	4405.77	301.77	0.64
	6162.00	61.50	301.40	3520.53	4487.91	2362.24	-3816.27	4488.22	301.76	0.51
	6255.00	61.40	301.80	3564.97	4569.60	2405.05	-3885.85	4569.91	301.75	0.39
	6350.00	61.50	302.20	3610.38	4653.04	2449.27	-3956.62	4653.36	301.76	0.38
	6444.00	61.00	301.10	3655.59	4735.45	2492.51	-4026.77	4735.77	301.76	1.16
	6538.00	60.60	300.90	3701.45	4817.50	2534.77	-4097.10	4817.81	301.74	0.46

LO 16-25 S2 Survey Report

Report Date: October 21, 2002 Client: Petro-Tech Peruana S.A. Field: Lobitos Structure / Slot: Platform LO16 (WGS84) / Slot #25 Well: Well LO16-25 Borehole: Sidetrack #2 UWI/API#: Survey Name / Date: LO 16-25 S2 SURVEYS / October 11, 2002 Tort / AHD / DDI / ERD ratio: 140.511° / 4364.99 ft / 6.009 / 1.196 Grid Coordinate System: UTM Zone 17S - WGS84, Meters Location Lat/Long: S 4 28 9.181, W 81 21 55.642 Location Grid N/E Y/X: N 9505997.130 m, E 459456.430 m Grid Convergence Angle: +0.02847801° Grid Scale Factor: 0.99962035	Survey / DLS Computation Method: Minimum Curvature / Lubinski Vertical Section Azimuth: 301.090° Vertical Section Origin: N 0.000 ft, E 0.000 ft TVD Reference Datum: TVD Reference Elevation: 50.0 ft relative to MSL Sea Bed / Ground Level Elevation: 0.000 ft relative to MSL Magnetic Declination: 1.378° Total Field Strength: 28757.435 nT Magnetic Dip: 14.710° Declination Date: October 11, 2002 Magnetic Declination Model: BGGM 2001 North Reference: True North Total Corr Mag North -> True North: +1.378° Local Coordinates Referenced To: Well Head
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Comments	Measured Depth (ft)	Inclination (deg)	Azimuth (deg)	TVD (ft)	Vertical Section (ft)	NS (ft)	EW (ft)	Closure (ft)	Closure Azimuth (deg)	DLS (deg/100 ft)	Build Rate (deg/100 ft)	Walk Rate (deg/100 ft)
Tie-In	4505.00	61.94	295.67	2720.66	3038.11	1651.81	-2551.67	3039.66	302.92	0.00	0.00	0.00
DD BHA No. 7 ft 4535'	4565.00	61.00	297.50	2749.32	3090.66	1675.40	-2598.81	3092.05	302.81	3.11	-1.57	3.05
	4658.00	61.70	298.50	2793.91	3172.15	1713.71	-2670.87	3173.38	302.69	1.21	0.75	1.08
DD BHA No. 8 ft 4651'	4753.00	57.20	300.20	2842.19	3253.90	1753.78	-2742.17	3255.03	302.60	4.98	-4.74	1.79
	4847.00	57.00	299.50	2893.25	3332.81	1793.06	-2810.62	3333.87	302.54	0.66	-0.21	-0.74
	4941.00	56.60	299.50	2944.72	3411.43	1831.79	-2879.08	3412.41	302.47	0.43	-0.43	0.00
	5035.00	56.40	299.30	2996.60	3489.78	1870.27	-2947.37	3490.69	302.40	0.28	-0.21	-0.21
	5129.00	53.90	300.30	3050.31	3566.90	1908.60	-3014.31	3567.75	302.34	2.80	-2.66	1.06
	5223.00	53.30	298.80	3106.09	3642.52	1945.91	-3080.12	3643.31	302.28	1.43	-0.64	-1.60
	5317.00	51.70	298.80	3163.32	3717.04	1981.84	-3145.47	3717.75	302.21	1.70	-1.70	0.00
	5411.00	51.70	298.10	3221.58	3790.73	2016.98	-3210.33	3791.36	302.14	0.58	0.00	-0.74
	5507.00	49.90	298.90	3282.25	3865.04	2052.47	-3275.71	3865.61	302.07	1.98	-1.87	0.83
	5599.00	50.10	298.10	3341.38	3935.44	2086.10	-3337.65	3935.95	302.01	0.70	0.22	-0.87
	5694.00	49.50	298.80	3402.70	4007.93	2120.66	-3401.44	4008.37	301.94	0.85	-0.63	0.74
	5789.00	48.40	300.10	3465.09	4079.54	2155.88	-3463.83	4079.94	301.90	1.55	-1.16	1.37
	5881.00	48.70	299.50	3525.99	4148.48	2190.15	-3523.67	4148.85	301.86	0.59	0.33	-0.65
	5976.00	49.00	299.50	3588.51	4219.98	2225.37	-3585.93	4220.33	301.82	0.32	0.32	0.00
	6069.00	48.10	300.20	3650.07	4289.67	2260.06	-3646.39	4289.99	301.79	1.12	-0.97	0.75

Survey Type: Raw Survey

Survey Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma

Surveying Prog:

MD From (ft)

4505.00

MD To (ft) EOU Freq Survey Tool Type

6069.00 Act-Stns SLB_MWD-STD

**GEOSCIENCES
Central File**



SCHLUMBERGER DRILLING CONTROL SHEET

Oct/24/02 11:13

Company : Petrotech Peruana
 Location : Talara - Offshore -Peru
 Well : Lobitos LO 16-25

Service: DD Bit-D&I dist 57.19
 DD Eng: Donoso/Torres/Beouti BHA length 501.23
 MWD Eng: Mojala/Sakalima/Laguna Kelly length 40

BHA # 1
 From 586 ft to 1087 ft
 Page 1 of 19

BHA NO: 1 BHA DESCRIPTION: 17" Hughes Bit (3x18,1x16), A958SP4530 (16 3/4" Sleeve, 1.5), FS, SNMDC, UBHO, NMDC (Slim-1), NMDC, 2DC7 3/4", XO, 4DC61/4", XO, 06HW5, 6 1/2" HEJar, 14HW5"

RIG PEPESA

Drilling		Time			Avg	TF	Survey D&I = 57.5				SWOB	RPM	Torque	Pump control			TALLY CONTROL				Result/Comments							
FROM	TO	D/S	Start	Finish	Min	ROP	set	Depth	Inclination	Azimuth	DLS	Klbs	rotary	Rt	2.93 #1	2.93 #2	0 #3	GPM	psi off	Diff	joint	sum dp	dp+bha	Kelly D	ck	date/Midnight depth		
586.00								513.00	1.71	308.13												29.90	29.90	531.13	571.13			
601.00	15	S	19:34	19:55	21	42.9		603.00	2.84	332.32		20			106	108		627	650	100	30.80	60.70	561.93	601.93				
631.00	30	S	20:03	20:38	35	51.4						20			105	110		630	650	100	29.48	90.18	591.41	631.41				
661.00	30	S	20:50	21:25	35	51.4						20			106	108		627	650	100	30.40	120.58	621.81	661.81				
661.00	0	C	21:40	21:50	10	0.0									110	110					29.65	150.23	651.46	691.46				
666.00	5	S	21:55	22:05	10	30.0						20			108	109		636	650	100	30.30	180.53	681.76	721.76				
673.00	7	R	22:53	23:00	7	60.0						20	40		108	109					29.43	209.96	711.19	751.19				
691.00	18	S	23:00	23:30	30	36.0						20			108	109		636	650	100	30.76	240.72	741.95	781.95		HIGH VISC. PILL		
704.00	13	D	23:45	23:55	10	78.0						20	44		114	114		668	650	100	30.82	271.54	772.77	812.77		GYRO		
721.00	17	S	23:55	0:25	30	34.0						20			114	114		668	850	150	29.08	300.62	801.85	841.85		TF=356		
721.00	0	C	0:35	0:40	5	0.0		723.81	7.50	343.10					114	114					30.54	331.16	832.39	872.39		Ws=80		
728.00	7	D	0:45	0:51	6	70.0		724.00	7.66	344.90		20	40		114	114		668	800	150	29.22	360.38	861.61	901.61		Wup=90 Wb=75		
751.00	23	S	0:51	1:20	29	47.6						35			115	115		674	900	150	29.90	390.28	891.51	931.51				
751.00	0	C	1:25	1:30	5	0.0									116	113		671	900	150	30.15	420.43	921.66	961.66		Ws=85 Wup=95		
759.00	8	D	1:43	1:51	8	60.0		775.00	10.37	343.78		20	42		113	114		665	900	150	31.40	451.83	953.06	993.06				
781.00	22	S	1:51	2:25	34	38.8						25			113	114		665	900	150	31.60	483.43	984.66	1,024.66				
786.00	5	D	3:03	3:08	5	60.0						20	32		114	112		662	900	150	31.40	514.83	1,016.06	1,056.06				
812.00	26	S	5:10	5:38	28	55.7						25			112	114		662	1050	100	31.67	546.50	1,047.73	1,087.73				
812.00	0	C	5:42	5:57	15	0.0		834.00	14.18	339.44											31.25	577.75	1,078.98	1,118.98				
842.00	30	S	5:57	6:27	30	60.0	45L					35			116	118		686	1250	150								
872.00	30	S	6:53	7:18	25	72.0	45L					36			117	116		683	1200	200								
901.00	29	S	7:35	8:11	36	48.3	70L					30			118	117		689	1300	200								
931.00	30	S	8:52	9:16	24	75.0	70L					30			121	121		709	1350	250								
962.00	31	S	9:48	10:15	27	68.9	50L					30			123	124		724	1400	200								
993.00	31	S	10:55	11:40	45	41.3	60L					30			122	123		718	1400	200								
1,017.00	24	S	12:00	12:25	25	57.6						30			121	124		718	1450	150								
1,024.00	7	D	12:25	12:34	9	46.7		1021.00				22	60	280	121	124		718	1450	100								
1,024.00	0	C	12:36	13:05	29	0.0									121	124												
1,046.00	22	S	13:06	13:30	24	55.0	15L					30/40			120	122		709	1450	200								
1,056.00	10	D	13:30	13:41	11	54.5						30			120	122		709	1450	200								
1,077.00	21	S	14:00	14:18	18	70.0						35			120	120		703	1450	250								
1,087.00	10	D	14:20	14:28	8	75.0						35	40		120	120		703	1450	250								
1,087.00	0	C													120	120												

Sliding ft or m	434.00
Sliding percent	88%

Sliding Time	506.0
ROP	51.46

Rotating ft or m	60
Rotating percent	12%

Rotating time	57
ROP	63.16

Ream Hrs	0
Ream ft or m	7

GEO SCIENCES
Central File



SCHLUMBERGER DRILLING CONTROL SHEET

Oct/24/02 11:13

Company : Petrotech Peruana
 Location : Talara - Offshore -Peru
 Well : Lobitos LO 16-25

Service: DD Bit-D&I dist 57.19
 DD Eng: Donoso/Torres/Beouti BHA length 501.23
 MWD Eng: Mejia/Sakalima/Laguna Kelly length 40

BHA # 1
 From 1087 ft to 1527 ft
 Page 2 of 19

BHA NO: 1 BHA DESCRIPTION: 17" Hughes Bit (3x18,1x16), A958SP4530 (16 3/4" Sleeve, 1.5), FS, SNMDC, UBHO, NMDC (Slim-1), NMDC, 2DC7 3/4", XO,4DC61/4", XO,06HW5, 6 1/2" HEJar, 14HW5"

RIG PEPESA

Drilling		Time			Avg	TF	Survey D&I = 57.5				SWOB	RPM	Torque	Pump control			TALLY CONTROL				Result/Comments						
FROM	TO	D/S	Start	Finish	Min	ROP	set	Depth	Inclination	Azimuth	DLS	Kbs	rotary	Rt	2.93 #1	2.93 #2	0 #3	GPM	psi off	Diff	joint	sum dp	dp+bha	Kelly D	ck	date/Midnight depth	
1,087.00								1053.00	31.20	328.30												31.25	577.75	1,078.98	1,118.98		
1,107.00	20	S	16:23	16:40	17	70.6						30			122	119		706	1450	250	31.24	608.99	1,110.22	1,150.22			
1,119.00	12	D	16:45	16:54	9	80.0		1084.00	33.20	329.30		20	40		121	116		894	1450	100	31.38	840.37	1,141.60	1,181.60			
1,139.00	20	S	17:25	17:45	20	60.0	10L	1116.00	35.76	330.09		30			121	122		712	1450	150	31.52	671.89	1,173.12	1,213.12		Pumps Failure	
1,150.00	11	D	17:52	17:59	7	94.3		1147.00	37.27	330.68		30	50		122	117		700	1450	150	31.44	703.33	1,204.58	1,244.58		POOH to Shoe	
1,171.00	21	S	9:52	10:17	25	50.4	10L	1178.30	39.25	330.89		35			119	120		700	1450	200	30.93	734.26	1,235.49	1,275.49			
1,181.00	10	D	10:26	10:36	10	60.0						20	60		123	120		712	1450	150	31.45	765.71	1,266.94	1,306.94			
1,199.00	18	S	11:02	11:32	30	36.0	30L					30			122	121		712	1450	150	31.55	797.26	1,298.49	1,338.49			
1,213.00	14	D	11:40	11:51	11	76.4		1210.00	41.06	330.46		20	45	110	122	120		709	1450	200	31.50	829.76	1,329.99	1,369.99			
1,234.00	21	S	12:25	12:55	30	42.0	25L					30-35			120	122		709	1500	200	31.29	860.05	1,361.28	1,401.28		Ws=85	
1,244.00	10	D	13:04	13:14	10	60.0		1241.00	43.06	330.09		20	60	100	120	121		706	1450	150	31.42	891.47	1,392.70	1,432.70		Wup=100	
1,266.00	22	S	13:42	14:06	24	55.0	30L					30-35			122	121		712	1500	200	31.58	923.05	1,424.28	1,464.28			
1,275.00	9	D	14:11	14:18	7	77.1		1273.00	44.76	330.12		20	60	110	118	122		703	1500	200	31.55	954.60	1,455.83	1,495.83			
1,296.00	21	S	14:45	15:07	22	57.3	30L					30			120	123		712	1500	200	31.09	985.69	1,486.92	1,526.92			
1,307.00	11	D	15:13	15:20	7	94.3						20	55	120	120	120		703	1500	150							
1,326.00	19	S	15:46	16:10	24	47.5	48L					30			123	121		715	1500	200							
1,338.00	12	D	16:14	16:56	42	17.1		1335.00	48.28	330.02		20	55	100	121	122		712	1500	150							
1,360.00	22	S	17:25	17:52	27	48.9	60L					30			122	122		715	1500	200							
1,370.00	10	D	17:59	18:07	8	75.0						20	55	110	124	122		721	1500	200							
1,391.00	21	S	18:33	19:01	28	45.0	70L	1399.00	51.39	328.12		35			120	122		709	1600	150							
1,401.00	10	D	19:04	19:13	9	66.7						25	60	110	120	122		709	1600	200							
1,423.00	22	S	19:40	20:06	26	50.8	90L					35/40			122	121		712	1650	200							
1,432.00	9	D	20:10	20:21	11	49.1						25	50	120	122	121		712	1650	150							
1,464.00	32	S	20:48	21:24	36	53.3	90L					35			122	121		712	1600	200							
1,464.00	0	C	21:24	22:00	36	0.0																					
1,495.00	31	S	1:20	2:17	57	32.6						35			120	120		703	1600	100							
1,527.00	32	S	2:40	3:46	66	29.1						35			120	120		703	1600	150							

Sliding ft or m 322.00
 Sliding percent 73%

Sliding Time 432.0
 ROP 44.72

Rotating ft or m 118
 Rotating percent 27%

Rotating time 131
 ROP 54.05

Ream Hrs 0
 Ream ft or m 0

SCHLUMBERGER DRILLING CONTROL SHEET

Oct/24/02 11:13



Company: Petrotech Peruana
 Location: Talara - Offshore -Paru
 Well: Lobitos LO 16-25

Service: DD
 JD Eng: Donoso/Torres/Beouti
 MWD Eng: Mejia/Sakalima/Laguna

Bit-D&I dist: 61.75
 BHA length: 1136.14
 Kelly length: 40

BHA # 2
 From 1483 ft to 1916 ft
 Page 3 of 19

BHA NO: 2 | BHA DESCRIPTION: 17" Hughes Bit (3x20,1x16),XO,A800M4553XP (16 13/16" Sleeve, 1.59), FS, SNMDC, UBHO, NMDC (Slim-1), NMDC, 2DC7 3/4",XO,4DC61/4", XO,06HW5, 6 1/2" HEJar, 21HW5"

RIG PEPESA

Drilling		Time			Avg	TF	Survey D&I = 57.5				SWOB	RPM	Torque	Pump control			TALLY CONTROL				Result/Comments date/Midnight depth					
FROM	TO	D/S	Start	Finish	Min	ROP	set	Depth	Inclination	Azimuth	DLS	Klbs	rotary	Rt	#1	#2	#3	GPM	psi off	Diff		joint	sum dp	dp+bha	Kelly D	ck
1,483.00								1483.00	54.15	326.89												31.40	31.40	1,167.54	1,207.54	
1,526.00	43	R	11:44	12:02	18	143.3																31.60	63.00	1,199.14	1,239.14	
1,547.00	21	S	12:02	12:29	27	46.7	70L	1545.00	57.20	322.15					121	120		706	1850	150-200	31.40	94.40	1,230.54	1,270.54		
1,553.00	6	S	12:39	12:55	16	22.5	80L								119	118		694	1800	200	31.67	126.07	1,262.21	1,302.21	Pumps Failure	
1,584.00	31	S	13:40	14:24	44	42.3	100L								120	119		700	1800	200	31.25	157.32	1,293.46	1,333.46	POOH to Shoe	
1,615.00	31	S	14:55	15:40	45	41.3	80L	1609.00							120	118		697	1800	250	31.24	188.56	1,324.70	1,364.70		
1,637.00	22	S	16:12	16:46	34	38.8	100L								119	118		694	1800	200	31.38	219.94	1,356.08	1,396.08		
1,647.00	10	D	16:49	17:09	20	30.0							15/20	70	100-110	119	120		700	1800	250	31.52	251.46	1,387.60	1,427.60	
1,671.00	24	S	17:47	18:34	47	30.6	100L								118	119		694	1800	250	31.44	282.90	1,419.04	1,459.04		
1,678.00	7	D	18:43	18:55	12	35.0							20	65	110	118	116	686	1850	150	30.93	313.83	1,449.97	1,489.97	Ws=85	
1,700.00	22	S	19:24	20:17	53	24.9	110L	1702.00	66.07	310.60					119	116		689	1850	250	31.45	345.28	1,481.42	1,521.42	Wup=100	
1,710.00	10	D	20:27	20:46	19	31.6							25	65	110	119	119	697	1950	200	31.55	376.83	1,512.97	1,552.97	Wup=97 Ws=85 Wdown=75	
1,718.00	8	S	21:03	21:48	45	10.7	100L								119	120		700	1900	200	31.50	408.33	1,544.47	1,584.47	Pumps failure	
1,728.00	10	D	22:20	23:00	40	15.0							20	55	100	121	120	706	1900	150	31.29	439.62	1,575.76	1,615.76	Change of pump cilندر	
1,733.00	5	S	23:05	23:20	15	20.0	100L	1734.00	66.75	309.19					118	118		691	1900	250	31.42	471.04	1,607.18	1,647.18		
1,741.00	8	S	23:50	0:36	46	10.4	120L								119	119		697	1900	150	31.58	502.62	1,638.76	1,678.76		
1,748.00	7	D	1:05	1:20	15	28.0							20	55	110	118	119	694	1900	200	31.55	534.17	1,670.31	1,710.31		
1,772.00	24	S	1:30	3:20	110	13.1	150L	1765.00	66.70	308.36					119	119		697	1900	150	31.09	565.26	1,701.40	1,741.40		
1,782.00	10	D	3:50	4:04	14	42.9							30	55	110	119	117	691	1900	200	31.33	596.59	1,732.73	1,772.73		
1,804.00	22	S	4:10	5:15	65	20.3	170L	1797.00	66.34	307.66					119	117		691	1900	150	31.55	628.14	1,764.28	1,804.28		
1,814.00	10	D	5:40	6:04	24	25.0							20	65	100	119	118	694	1900	150	31.00	659.14	1,795.28	1,835.28		
1,835.00	21	S	6:04	7:11	67	18.8	117L	1828.00	64.50	304.00					119	119		697	1900	150	31.50	690.64	1,826.78	1,866.78		
1,835.00	0	C	7:15	7:38	23	0.0																31.65	722.29	1,858.43	1,898.43	Reacond/Circ/Survey
1,845.00	10	D	7:38	8:13	35	17.1							25	68	300	120	119				31.60	753.89	1,890.03	1,930.03		
1,855.00	10	S	8:13	8:41	28	21.4	150L															31.52	785.41	1,921.55	1,961.55	pump shut down
1,855.00	0	C	8:41	9:35	54	0.0							45			121	120	706	1900	200	31.54	816.95	1,953.09	1,993.09	pump shut down	
1,867.00	12	S	9:35	10:18	43	16.7	140L								119	121		703	1900	150						
1,867.00	0	C	10:23	10:43	20	0.0																				survey
1,876.00	9	D	10:43	11:01	18	30.0							20	70	300	119	121									
1,898.00	22	S	11:01	12:00	59	22.4	150L								118	120		697	2000	150						
1,916.00	18	D	12:28	13:15	47	23.0							20	70	300	118	120									

Sliding ft or m	289.00	Sliding Time	744.0	Rotating ft or m	101	Rotating time	244	Ream Hrs	0
Sliding percent	74%	ROP	23.31	Rotating percent	26%	ROP	24.84	Ream ft or m	43

GEOSCIENCES
 Lateral File
 DATE

SCHLUMBERGER DRILLING CONTROL SHEET

Oct/24/02 11:13



Company: Petrotech Peruana
 Location: Talara - Offshore - Peru
 Well: Lobitos LO 16-25

Service: DD BIT-D&I dist: 65.82
 DD Eng: Torres/Soto BHA length: 1140.21
 MWD Eng: Mejia/Sakalima/Laguna Kelly length: 40

BHA # 3
 From 1925 ft to 2550 ft
 Page 4 of 19

BHA NO: 3 BHA DESCRIPTION: 12.25" Smith Bit (7x13, 2 x14), A800M453XP (12 1/16" Sleeve, 1.22), FS, STAB 11 15/16, SNMDC, UBHO, NMDC (Slim-1), NMDC, 2DC7 3/4", XO, 4DC6 1/4", XO, 06HW5, 6 1/2" HE.

RIG PEPESA

Drilling		Time			Avg	TF	Survey D&I = 65.82				SWOB	RPM	Torque	2.93			0			Pump control			TALLY CONTROL				Result/Comments
FROM	TO	D/S	Start	Finish	Min	ROP	set	Depth	Inclination	Azimuth	DLS	Klbs	rotary	Rt	#1	#2	#3	GPM	psi off	Diff	joint	sum dp	dp+bha	Kelly D	ck	date/Midnight depth	
1,925.00																											
1,934.00	9	S	1:13	1:23	10	54.0	115L					25			119	119		697	1350	150	31.65	722.29	1,862.50	1,902.50	X		
1,950.00	16	D	1:34	1:39	5	192.0						10	50	100	119	116		689	1350	200	31.60	753.89	1,894.10	1,934.10	X	Wup=100 Ws=84 Wdown=70	
1,965.00	15	S	1:42	1:48	6	150.0	135L					30			120	116		691	1350	150	31.52	785.41	1,925.62	1,965.62	X		
1,980.00	15	D	1:59	2:06	7	128.6						10	50	100	119	116		689	1350	200	31.54	816.95	1,957.16	1,997.16	X		
1,997.00	17	S	2:12	2:36	24	42.5	110L					30			120	116		691	1350	150	31.00	847.95	1,988.16	2,028.16	X	Fixing Geolograph	
2,016.00	19	D	2:47	2:52	5	228.0						10	50	100	119	116		689	1350	200	31.65	879.60	2,019.81	2,059.81	X		
2,028.00	12	S	2:54	3:06	12	60.0	125L					30			120	116		691	1350	200	31.40	911.00	2,051.21	2,091.21	X		
2,059.00	31	D	3:34	3:43	9	206.7						10	60	100	119	116		689	1350	200	31.40	942.40	2,082.61	2,122.61	X		
2,091.00	32	D	3:56	4:04	8	240.0						10	60	100	120	116		691	1350	200	31.65	974.05	2,114.26	2,154.26	X		
2,122.00	31	D	4:12	4:23	11	169.1						10	60	100	119	116		689	1350	200	31.50	1005.55	2,145.76	2,185.76	X		
2,134.00	12	S	4:48	5:01	13	56.4	75L					25			120	116		691	1350	200	31.65	1037.20	2,177.41	2,217.41	X		
2,154.00	20	D	5:02	5:10	8	150.0						10	60	100	119	116		689	1350	200	31.58	1068.78	2,208.99	2,248.99	X		
2,166.00	12	S	5:23	5:34	11	65.5	75L					20			120	116		691	1350	200	31.65	1100.43	2,240.64	2,280.64	X		
2,185.00	19	D	5:36	5:42	6	190.0						10	60	100	119	116		689	1400	150	30.78	1131.21	2,271.42	2,311.42	X		
2,197.00	12	S	5:51	6:04	13	55.4	60L					30			120	116		691	1400	150	31.37	1162.58	2,302.79	2,342.79	X		
2,217.00	20	D	6:05	6:12	7	171.4						15	60	100	119	116		689	1400	150	31.20	1193.78	2,333.99	2,373.99	X		
2,248.00	31	D	6:32	6:46	14	132.9						15	60	110	120	116		691	1400	150	31.53	1225.31	2,365.52	2,405.52	X		
2,261.00	13	S	6:58	7:18	20	39.0	20L					20			118	119		694	1400	150	30.93	1256.24	2,396.45	2,436.45	X	Wup=120 Ws=85 Wdown=68	
2,280.00	19	D	7:20	7:26	6	190.0						10	60	110	118	119		694	1400	150	31.35	1287.59	2,427.80	2,467.80	X	SHORT TRIP	
2,292.00	12	S	7:44	8:00	16	45.0	10L					20			118	119		694	1500	100	30.80	1318.39	2,458.60	2,498.60	X		
2,311.00	19	D	8:01	8:11	10	114.0						10	60	110	118	119		694	1550	100	31.50	1349.89	2,490.10	2,530.10	X		
2,343.00	32	D	8:23	8:38	15	128.0						10	60	110	118	119		694	1500	100	31.42	1412.81	2,553.02	2,593.02	X		
2,374.00	31	D	8:50	9:04	14	132.9						10	60	110	118	119		694	1500	100							
2,389.00	15	S	9:25	9:57	32	28.1	10L					25			118	119		694	1500	100							
2,406.00	17	D	9:59	10:06	7	145.7						15	65	115	118	119		694	1500	100							
2,421.00	15	S	10:21	10:44	23	39.1	H/S					20			118	119		694	1500	100							
2,436.00	15	D	10:47	11:04	17	52.9						15	65	115	118	119		694	1500	100							
2,451.00	15	S	11:23	11:34	11	81.8	30L					20			118	119		694	1600	150							
2,468.00	17	D	11:36	11:40	4	255.0						15	65	115	120	119		700	1600	150							
2,483.00	15	S	11:55	12:05	10	90.0	20L					20			118	116		686	1600	150							
2,499.00	16	D	12:07	12:13	6	160.0						15	65	110	120	119		700	1600	150							
2,499.00	0	C	12:13	12:43	30	0.0									118	119		694	1600	150							
2,519.00	20	S	13:47	13:59	12	100.0	30L					20			118	120		697	1650	150							
2,530.00	11	D	14:02	14:06	4	165.0						15	65	110	122	119		706	1650	150							
2,550.00	20	S	14:19	14:36	17	70.6	H/S					15			118	119		694	1650	150							

Sliding ft or m: 214.00
 Sliding percent: 34%

Sliding Time: 230.0
 ROP: 56.83

Rotating ft or m: 411
 Rotating percent: 68%

Rotating time: 163
 ROP: 151.29

Ream Hrs: 0
 Ream ft or m: 0

GEO SCIENCES
 DATA FILE

SCHLUMBERGER DRILLING CONTROL SHEET

Oct/24/02 11:13



Company: Petrotech Peruana
 Location: Talara - Offshore -Peru
 Well: Lobitos LO 16-25

Service: DD BIT-D&I dist 65.82
DD Eng:Torres/Soto BHA length 1140.21
MWD Eng:Mejia/Sakalima/Laguna Kelly length 40

BHA # 3
 From 2550 ft to 3251 ft
 Page 5 of 19

BHA NO: 3 BHA DESCRIPTION: 12.25" Smith Bit (7x13, 2 x14), A800M4553XP (12 1/16" Sleeve, 1.22), FS,STAB 11 15/16, SNMDC, UBHO, NMDC (Slim-1), NMDC, 2DC7 3/4", XO,4DC61/4", XO,06HW5, 6 1/2" HE.

RIG PEPESA

Drilling			Time			Avg	TF	Survey D&I = 65.82				SWOB	RPM	Torque	Pump control			TALLY CONTROL				Result/Comments					
FROM	TO	D/S	Start	Finish	Min	ROP	set	Depth	Inclination	Azimuth	DLS	Kbs	rotary	Rt	#1	#2	#3	GPM	psi off	Diff	Joint	sum dp	dp+bha	Kelly D	ck	date/Midnight depth	
2,550.00																											
2,561.00	11	D	14:38	14:43	5	132.0						10	60	110	122	119		706	1650	150	31.50	1349.89	2,490.10	2,530.10	X		
2,581.00	20	S	14:57	15:11	14	85.7	10L					15			116	121		694	1650	150	31.50	1381.39	2,521.60	2,561.60	X	Reamed once	
2,593.00	12	D	15:13	15:17	4	180.0						10	60	110	116	121		694	1650	150	31.18	1443.99	2,584.20	2,624.20	X	WUp=125 Ws=85 Wdown=68	
2,608.00	15	S	15:36	15:44	8	112.5	H/S					15			116	121		694	1650	150	31.32	1475.31	2,615.52	2,655.52	X		
2,624.00	16	D	15:45	15:51	6	160.0						10	70	120	118	121		700	1650	150	31.50	1506.81	2,647.02	2,687.02	X		
2,637.00	13	S	16:02	16:13	11	70.9	H/S	2644.00	63.40	296.40		15			116	119		689	1650	150	31.00	1537.81	2,678.02	2,718.02	X		
2,655.52	18.5	D	16:15	16:24	9	123.5						10	70	120	118	121		700	1600	150	31.56	1569.37	2,709.58	2,749.58	X		
2,687.02	31.5	D	16:32	16:43	11	171.8						10	70	120	116	121		694	1600	150	31.30	1600.67	2,740.88	2,780.88	X		
2,718.02	31	D	16:53	17:03	10	186.0						10	70	120	116	121		694	1600	150	31.37	1632.04	2,772.25	2,812.25	X		
2,749.58	31.6	D	17:23	17:32	9	210.4		2738.00	62.70	296.40		10	70	120	116	121		694	1600	150	31.40	1663.44	2,803.65	2,843.65	X		
2,780.88	31.3	D	17:44	17:53	9	208.7						10	70	120	116	121		694	1600	150	31.60	1694.94	2,835.15	2,875.15	X		
2,812.25	31.4	D	18:02	18:27	25	75.3						10	70	120	116	121		694	1750	150	29.95	1724.89	2,865.10	2,905.10	X		
2,825.00	12.8	S	18:44	18:56	12	63.8	H/S	2831.00	62.80	296.20		20			116	121		694	1750	150	31.48	1756.37	2,896.58	2,936.58	X		
2,843.00	18	D	18:57	19:06	9	120.0						10	80	120	119	120		700	1750	150	31.53	1787.90	2,928.11	2,968.11	X		
2,856.00	13	S	19:19	19:31	12	65.0	10R		64.20	297.40		20			116	121		694	1750	150	31.30	1819.20	2,959.41	2,999.41	X		
2,875.15	19.2	D	19:32	19:42	10	114.9		2988.00	63.10	296.00		10	80	110	118	116		686	1750	150	31.58	1850.78	2,990.99	3,030.99	X		
2,905.10	29.9	D	19:53	20:06	13	138.2						10	80	110	118	116		686	1750	150	31.64	1882.42	3,022.63	3,062.63	X		
2,920.00	14.9	S	20:26	20:47	21	42.6	15R					20			116	121		694	1750	150	31.02	1913.44	3,053.65	3,093.65	X		
2,936.00	16	D	20:48	20:55	7	137.1						10	80	110	118	116		686	1750	150	31.32	1944.76	3,084.97	3,124.97	X		
2,949.00	13	S	21:08	21:22	14	55.7	H/S					20			116	121		694	1750	150	31.63	1976.39	3,116.60	3,156.60	X	WUp=125 Ws=85 Wdown=70	
2,968.11	19.1	D	21:24	21:31	7	163.8						10	80	110	118	116		686	1750	150	31.53	2007.92	3,148.13	3,188.13	X		
2,999.41	31.3	D	21:40	21:55	15	125.2						10	80	110	118	116		686	1750	150	31.72	2039.64	3,179.85	3,219.85	X		
3,009.00	9.59	S	22:06	22:17	11	52.3	30R					20			116	121		694	1750	150	31.58	2071.22	3,211.43	3,251.43			
3,030.00	21	D	22:18	22:27	9	140.0						10	80	110	118	116		686	1800	150							
3,042.00	12	S	22:39	22:57	18	40.0	H/S					20			116	121		694	1800	150							
3,062.63	20.6	D	22:58	23:15	17	72.8						10	80	110	118	116		686	1800	150							
3,093.65	31	D	23:37	23:52	15	124.1						10	80	110	118	116		686	1800	150							
3,108.00	14.3	S	1:15	1:30	15	57.4	25R					20			116	121		694	1800	150							
3,125.00	17	D	1:31	1:41	10	102.0						10	80	110	118	116		686	1800	150							
3,137.00	12	S	1:52	2:04	12	60.0	15R	3145.00	64.20	297.40		20			116	121		694	1900	150							
3,156.00	19	D	2:05	2:11	6	190.0						10	80	110	118	116		686	1900	150							
3,168.00	12	S	2:24	2:32	8	90.0	20R					20			116	121		694	1900	150							
3,188.13	20.1	D	2:33	2:41	8	151.0						10	80	110	118	116		686	1900	150							
3,219.85	31.7	D	2:49	3:04	15	126.9						10	80	110	118	116		686	1900	150							
3,251.43	31.6	D																									

Sliding ft or m 161.59
 Sliding percent 23%

Sliding Time 156.0
 ROP 62.15

Rotating ft or m 540
 Rotating percent 77%

Rotating time 229
 ROP 141.44

Ream Hrs 0
 Ream ft or m 0

SCHLUMBERGER DRILLING CONTROL SHEET

Oct/24/02 11:13



Company: Petrotech Peruana
 Location: Talara - Offshore - Paru
 Well: Lobitos LO 16-25

Service: DD BIT-D&I dist 65.82
 DD Eng: Torres/Soto BHA length 1140.21
 MWD Eng: Mejia/Sakallma/Laguna Kelly length 40

BHA # 3
 From 3219 ft to 3691 ft
 Page 6 of 19

BHA NO: 3 BHA DESCRIPTION: 12.25" Smith Bit (7x13, 2 x14), A800M4553XP (12 1/16" Sleeve, 1.22), FS,STAB 11 15/16, SNMDC, UBHO, NMDC (Slim-1), NMDC, 2DC7 3/4", XO,4DC81/4", XO,06HW5, 6 1/2" HE.

RIG PEPESA

Drilling		Time			Avg	TF	Survey D&I = 65.82				SWOB	RPM	Torque	Pump control			TALLY CONTROL				Result/Comments						
FROM	TO	D/S	Start	Finish	Min	ROP	set	Depth	Inclination	Azimuth	DLS	Klbs	rotary	Rt	#1	#2	#3	GPM	psi off	Diff	joint	sum dp	dp+bha	Kelly D	ck	date/Midnight depth	
3,219.85																											
3,251.43	31.6	D	3:18	3:30	12	157.9		3271.00	63.60	297.40		10	80	120	118	119		694	1900	150	31.53	2007.92	3,148.13	3,188.13	X		
3,282.97	31.5	D	3:39	3:53	14	135.2						10	80	120	118	119		694	1900	150	31.72	2039.64	3,179.85	3,219.85	X	Wup=135 Ws=90 Wdown=70	
3,314.62	31.7	D	4:01	4:18	17	111.7						10	80	120	118	119		694	1900	150	31.58	2071.22	3,211.43	3,251.43	X		
3,345.32	30.7	D	4:27	4:46	19	96.9		3838.00	62.67	296.00		10	80	120	118	119		694	1900	150	31.54	2102.76	3,242.97	3,282.97	X		
3,376.77	31.4	D	5:00	5:16	16	117.9						10	80	120	118	119		694	1900	150	31.85	2134.41	3,274.62	3,314.62	X		
3,388.00	11.2	S	5:30	5:42	12	56.2	H/S	3429.00	63.10	296.70		15			118	119		694	1900	150	30.70	2165.11	3,305.32	3,345.32	X		
3,408.00	20	D	5:43	5:52	9	133.3						10	80	120	118	119		694	2000	150	31.45	2196.56	3,336.77	3,376.77	X		
3,423.00	15	S	6:16	6:35	19	47.4	15L					15			118	119		694	2000	150	31.50	2228.06	3,368.27	3,408.27	X		
3,439.00	16	D	6:36	6:49	13	73.8						10	80	120	118	119		694	2000	150	31.66	2269.62	3,399.83	3,439.83	X		
3,451.00	12	S	7:02	7:14	12	60.0	H/S					15			118	119		694	2000	150	31.68	2291.30	3,431.51	3,471.51	X		
3,471.51	20.5	D	7:15	7:27	12	102.6						10	80	120	118	119		694	2000	150	31.55	2322.85	3,463.06	3,503.06	X		
3,503.06	31.5	D	7:39	7:59	20	94.6						10	80	120	116	116		680	2000	150	31.66	2354.41	3,494.62	3,534.62	X		
3,534.62	31.6	D	8:12	8:24	12	157.8						10	80	120	118	119		694	2000	150	30.85	2385.26	3,525.47	3,565.47	X		
3,549.00	14.4	S	8:40	9:02	22	39.2	H/S	3554.00	62.60	296.40		15			113	120		683	2100	150	31.35	2416.61	3,556.82	3,596.82	X		
3,565.00	16	D	9:06	9:13	7	137.1						10	80	120	118	119		694	2100	150	31.35	2447.96	3,588.17	3,628.17	X		
3,578.00	13	S	9:29	9:43	14	55.7	H/S					15			118	119		694	2100	150	31.70	2479.66	3,619.87	3,659.87	X		
3,597.00	19	D	9:44	9:54	10	114.0						10	65	120	117	119		691	2100	150	31.60	2511.26	3,651.47	3,691.47	X		
3,628.17	31.2	D	10:02	10:20	18	103.9						10	65	120	118	114		680	2100	150	31.67	2542.93	3,683.14	3,723.14	X		
3,628.17	0	C	10:20	10:50	30	0.0									117	119					31.54	2574.47	3,714.68	3,754.68	X		
3,643.00	14.8	S	12:13	12:33	20	44.5	30L					15			118	116		686	2150	150	31.67	2606.14	3,746.35	3,786.35	X		
3,660.00	17	D	12:37	12:47	10	102.0						10	65	120	116	119		689	2150	150	31.48	2637.62	3,777.83	3,817.83	X		
3,673.00	13	S	13:06	13:18	12	65.0	20L	3680.00	63.30	295.70		15			118	117		689	2150	150	31.54	2669.16	3,809.37	3,849.37	X		
3,691.00	18	D	13:20	13:27	7	154.3						10	67	120	118	115		683	2150	150	31.55	2700.71	3,840.92	3,880.92	X		
3,723.14	32.1																				31.60	2732.31	3,872.52	3,912.52	X		
3,754.68	31.5																				31.37	2763.68	3,903.89	3,943.89	X		
																					31.48	2795.16	3,935.37	3,975.37	X		
																					31.60	2826.76	3,966.97	4,006.97	X		
																					31.25	2858.01	3,998.22	4,038.22	X		
																					31.56	2889.57	4,029.78	4,069.78	X		
																					31.27	2920.84	4,061.05	4,101.05	X		
																					31.50	2952.34	4,092.55	4,132.55	X		
																					31.24	2983.58	4,123.79	4,163.79	X		

Sliding ft or m 93.44
 Sliding percent 20%

Sliding Time 111.0
 ROP 50.51

Rotating ft or m 378
 Rotating percent 80%

Rotating time 196
 ROP 115.63

Ream Hrs 0
 Ream ft or m 0

SCHLUMBERGER DRILLING CONTROL SHEET

Oct/24/02 11:13



Company: Petrotech Peruana
 Location: Talara - Offshore -Paru
 Well: Lobitos LO 16-25

Service: DD Bit-D&I dist: 65.82
 DD Eng: Torres/Soto BHA length: 1140.21
 MWD Eng: Mejia/Sakalina/Laguna Kelly length: 40

BHA # 3
 From 4384 ft to 4828 ft
 Page 8 of 19

BHA NO: 3 BHA DESCRIPTION: 12.25" Smith Bit (7x13, 2 x14), A800M4553XP (12 1/16" Sleeve, 1.22), FS,STAB 11 15/16, SNMDC, UBHO, NMDC (Slim-1), NMDC, 2DC7 3/4", XO,4DC81/4", XO,06HW5, 6 1/2" HE.

RIG PEPESA

Drilling		Time			Avg	TF	Survey D&I = 65.82				SWOB	RPM	Torque	Pump control			TALLY CONTROL				Result/Comments						
FROM	TO	D/S	Start	Finish	Min	ROP	set	Depth	Inclination	Azimuth	DLS	Klbs	rotary	Rt	#1	#2	#3	GPM	psi off	Diff	joint	sum dp	dp+bha	Kelly D	ck	date/Midnight depth	
4,384.00																						31.24	2983.58	4,123.79	4,163.79	X	
4,388.00	4	S	10:10	10:18	8	30.0	20R					20			118	114		680	2250	100	31.70	3015.28	4,155.49	4,195.49	X	reparing pumps	
4,399.00	11	S	11:18	11:35	17	38.8	40L					20			118	114		680	2250	100	31.60	3048.88	4,187.09	4,227.09	X		
4,415.00	16	D	11:37	11:50	13	73.8						15	60	130	118	114		680	2250	100	31.35	3078.23	4,218.44	4,258.44	X		
4,446.00	31	D	12:04	12:21	17	109.4						15	60	130	118	114		680	2250	100	31.55	3109.78	4,249.99	4,289.99	X		
4,448.00	2	S	12:35	12:40	5	24.0	H/S					20			118	114		680	2300	150	31.27	3141.05	4,281.26	4,321.26	X		
4,459.00	11	S	12:58	13:19	21	31.4	30R					20			118	114		680	2300	150	31.59	3172.64	4,312.85	4,352.85	X		
4,472.00	13	D	13:21	13:37	16	48.8		4466.00	62.40	296.70		15	60	130	118	114		680	2300	150	30.92	3203.56	4,343.77	4,383.77	X	Wup=160 Ws=93 Wdown=70	
4,509.00	37	D	13:47	14:01	14	158.6						15	60	130	118	114		680	2300	150	31.00	3234.56	4,374.77	4,414.77	X		
4,522.00	13	S	14:15	14:30	15	52.0	BOR/30L					20			117	114		677	2300	150	31.46	3266.02	4,406.23	4,446.23	X		
4,541.00	19	D	14:32	14:41	9	128.7						15	60	130	118	114		680	2300	150	31.49	3297.51	4,437.72	4,477.72	X		
4,556.00	15	S	14:58	15:21	23	39.1	H/S	4560.00	62.20	296.00		20			118	115		683	2400	150	31.54	3329.05	4,469.26	4,509.26	X		
4,572.00	16	D	15:23	15:33	10	96.0						15	60	130	117	114		677	2400	150	31.70	3360.75	4,500.96	4,540.96	X		
4,603.00	31	D	15:45	16:08	23	80.9						15	60	130	118	114		680	2400	150	31.10	3391.85	4,532.06	4,572.06	X		
4,610.00	7	S	16:24	16:40	16	26.2	H/S					20			118	114		680	2400	150	31.45	3423.30	4,563.51	4,603.51	X		
4,618.00	8	S	17:40	17:54	14	34.3	20R					20			119	116		689	2400	150	30.95	3454.25	4,594.46	4,634.46	X	reparing pump	
4,634.00	16	D	17:58	18:08	10	96.0						15	60	130	119	116		689	2400	150	31.15	3485.40	4,625.61	4,665.61	X	SHORT TRIP	
4,649.00	15	S	18:27	18:44	17	52.9	40R					20			118	116		686	2400	150	31.25	3516.65	4,656.86	4,696.86	X		
4,665.61	16.6	D	18:45	19:05	20	49.8						15	60	130	119	116		689	2400	150	31.45	3548.10	4,688.31	4,728.31	X		
4,665.61	0	C	19:05	19:35	30	0.0									119	116		689	2400	150	31.63	3579.73	4,719.94	4,759.94	X		
4,680.00	14.4	S	20:36	20:48	12	72.0	40R					20			118	116		686	2400	150	31.35	3611.08	4,751.29	4,791.29	X		
4,696.00	16	D	20:49	21:03	14	68.6						15	60	130	119	116		689	2400	150	31.58	3642.66	4,782.87	4,822.87	X	Pooh @ 4828 ft	
4,711.00	15	S	21:20	21:58	38	23.7	H/S	4717.00	63.70	297.70					119	116		689	2400	150	30.20	3672.86	4,813.07	4,853.07			
4,728.00	17	D	21:59	22:22	23	44.3		4747.00	63.30	296.70		15	60	130	117	116		683	2400	150	31.56	3704.42	4,844.63	4,884.63			
4,759.00	31	D	22:39	22:44	5	372.0						15	60	130	119	116		689	2400	150	31.52	3735.94	4,876.15	4,916.15			
4,764.00	5	S	22:45	23:49	64	4.7	10R					30			119	116		689	2400	150	31.68	3767.62	4,907.83	4,947.83			
4,791.00	27	D	23:50	1:01	71	22.8						15	60	130	115	116		677	2400	150							
4,796.00	5	S	1:20	2:14	54	5.6	H/S					30			119	114		683	2400	150							
4,799.00	3	D	2:15	2:30	15	12.0						15	60	130	119	116		689	2400	150							
4,802.00	3	S	2:31	3:27	56	3.2	20R					30			117	115		680	2400	100							
4,816.00	14	D	3:28	4:01	33	25.5						15	60	130	119	116		689	2400	100							
4,819.00	3	S	4:09	4:23	14	12.9	40R					30			116	117		683	2400	100							
4,822.00	3	D	4:24	4:34	10	18.0						15	60	130	118	116		686	2400	100							
4,828.00	6	S	4:44	5:49	65	5.5	20R					30			119	118		694	2400	150							

Sliding ft or m	137.39	Sliding Time	439.0	Rotating ft or m	307	Rotating time	303	Ream Hrs	0
Sliding percent	31%	ROP	18.78	Rotating percent	69%	ROP	60.71	Ream ft or m	0



SCHLUMBERGER DRILLING CONTROL SHEET

Oct/24/02 11:13

Company: Petrotech Peruana
 Location: Talara - Offshore -Peru
 Well: Lobitos LO 16-25

Service: DD Bit-D&I dist 63.91
 DD Eng: Torres/Soto BHA length 1138.3
 MWD Eng: Moja/Sakalima/Laguna Kelly length 40

BHA # 4
 From 4828 ft to 5202 ft
 Page 9 of 19

BHA NO.: 4 BHA DESCRIPTION: 12.25" Smith Bit (1x15, 8 x14), A800M78XP (12 1/16" Sleeve, 1.15), FS, SNMDC, STB 11 15/16, UBHO, NMDC (Slim-1), NMDC, 2DC7 3/4", XO,4DC61/4", XO,06HW5, 6 1/2" H&J,

RIG PEPESA

Drilling			Time				Avg	TF	Survey D&I = 63.91				SWOB	RPM	Torque	Pump control			TALLY CONTROL				Result/Comments				
FROM	TO	D/S	Start	Finish	Min	ROP	set	Depth	Inclination	Azimuth	DLS	Klbs	rotary	Rt	#1	#2	#3	GPM	psi off	Diff	Joint	sum dp	dp+bha	Kelly D	ck	date/Midnight depth	
4,828.00																					31.63	3579.73	4,718.03	4,758.03	X		
4,844.00	16	S	19:18	20:16	58	16.6	H/S	4842.00	62.50	295.70		10			116	114		674	2250	100	31.35	3611.08	4,749.38	4,789.38	X		
4,851.00	7	D	20:50	20:58	8	52.5						10	70	130	115	116		677	2250	100	31.58	3642.66	4,780.96	4,820.96	X	Wup=190 Ws=100 Wdown=70	
4,882.00	31	D	21:10	21:37	27	68.9						10	65	135				0	2250	100	30.20	3672.86	4,811.16	4,851.16	X		
4,914.00	32	D	21:55	22:16	21	91.4						10	65	135				0	2250	100	31.56	3704.42	4,842.72	4,882.72	X		
4,926.00	12	S	23:00	23:41	41	17.6	H/S	4943.00	62.60	295.30		20			111	109		645	2250	100	31.52	3735.94	4,874.24	4,914.24	X		
4,945.00	19	D	23:42	0:03	21	54.3						10	65	135	108	116		656	2250	100	31.68	3767.62	4,905.92	4,945.92	X	Pump problems	
4,950.00	5	S	0:41	1:00	19	15.8	17R					20			111	109		645	2250	100	31.60	3799.22	4,937.52	4,977.52	X		
4,950.00	0	C	1:01	1:48	47	0.0									111	108		642	2250	100	31.60	3830.82	4,969.12	5,009.12	X		
4,957.00	7	S	1:49	2:32	43	9.8	20R					20			111	109		645	2250	100	31.48	3862.30	5,000.60	5,040.60	X	Pump problems	
4,977.00	20	D	2:33	2:51	18	66.7						10	65	135	111	109		645	2250	100	31.50	3893.80	5,032.10	5,072.10	X		
5,000.00	23	D	3:04	3:30	26	53.1						10	65	135	111	107		639	2250	100	31.00	3924.80	5,063.10	5,103.10	X	Circ. To check samples (bottom up)	
5,007.00	7	S	3:45	4:11	26	16.2	40R					20			111	109		645	2250	100	31.43	3956.23	5,094.53	5,134.53	X		
5,007.00	0	C	4:12	4:58	46	0.0									111	109		645	2250	100	31.50	3987.73	5,126.03	5,166.03	X		
5,012.00	5	S	4:59	5:15	16	18.8	60R	5030.00	63.10	296.00		20			107	109		633	2400	150	31.45	4019.18	5,157.48	5,197.48	X	Pool to set 9 5/8" CSG @ 5202 ft	
5,040.00	28	D	5:16	5:35	19	88.4						10	65	135	111	109		645	2250	100	31.35	4050.53	5,188.83	5,228.83	X		
5,052.00	12	S	5:52	6:23	31	23.2	45R					30			111	109		645	2250	100	31.40	4081.93	5,220.23	5,260.23	X		
5,072.00	20	D	6:24	6:36	12	100.0						10	65	135	108	107		530	2300	100							
5,103.00	31	D	6:50	7:11	21	88.6						10	65	135	111	109		645	2250	100							
5,103.00	0	C	7:30	9:15	105	0.0									111	109		645	2250	100							
5,116.00	13	S	9:15	10:01	46	17.0	75R	5125.00	63.60	297.40		30			111	109		645	2250	100							
5,134.00	18	D	10:05	10:16	11	98.2						10	65	135	108	109		636	2350	100							
5,155.00	21	D	10:28	10:42	14	90.0						10	65	135	111	114		659	2250	150							
5,155.00	0	C	10:42	12:12	90	0.0									111	109		645	2250	150							
5,166.00	11	D	12:12	12:18	6	110.0						10	65	135	107	114		648	2250	150							
5,186.00	20	D	12:30	12:46	16	75.0						10	65	135	111	109		645	2250	100							
5,186.00	0	C	12:46	13:03	17	0.0									111	109		645	2250	100							
5,197.00	11	D	13:03	13:08	5	132.0						10	65	135	112	111		653	2250	150							
5,202.00	5	D	13:24	13:27	3	100.0						10	65	135	112	111		653	2250	150							

Sliding ft or m	77.00	Sliding Time	280.0	Rotating ft or m	297	Rotating time	228	Ream Hrs	0
Sliding percent	21%	ROP	16.50	Rotating percent	79%	ROP	78.16	Ream ft or m	0

GEOSCIENCES
 ADULTAL FILE



SCHLUMBERGER DRILLING CONTROL SHEET

Oct/24/02 11:13

Company : Petrotech Peruana
 Location : Talara - Offshore -Peru
 Well : Lobitos LO 16-25 Sidetrack 1

Service: DD / MWD Bit-D&I dist 63.91
 DD Eng: Torres/Soto BHA length 1138.3
 MWD Eng: PM/SS/VLCA Kelly length 40

BHA # 5
 From 1922 ft to 2464 ft
 Page 10 of 19

BHA NO: 5 S1 BHA DESCRIPTION: 12.25" Smith Bit (1x15, 8 x14), A800M78XP (12 1/16" Sleeve, 1.50), FS, SNMDC, STB 11 15/16, UBHO, NMDC (Slim-1), NMDC, 2DC7 3/4", XO,4DC61/4", XO,06HW5, 6 1/2" HEJar,

RIG PEPESA

Drilling	Time			Avg ROP	TF set	Survey D&I = 63.91				SWOB Kbs	RPM rotary	Torque Rt	Pump control			TALLY CONTROL				Result/Comments date/Midnight depth						
	TO	D/S	Start			Finish	Min	Depth	Inclination				Azimuth	DLS	#1	#2	#3	GPM	psi off		Diff	Joint	sum dp	dp+bha	Kelly D	ck
1,922.00																										
1,923.00	1	S	18:06	19:03	57	1.1	50L								109	108	636	1650	0	31:60	753.89	1,892.19	1,932.19	X		
1,925.00	2	S	19:03	20:00	57	2.1	50L								109	108	636	1650	0	31:52	785.41	1,923.71	1,963.71	X	Wup=95 Ws=75 Wdown=72 k lb	
1,927.00	2	S	20:00	20:38	38	3.2	50L								109	108	636	1650	0	31:54	818.95	1,955.25	1,995.25	X		
1,932.00	5	S	20:38	21:39	61	4.9	50L								109	110	642	1650	50	31:00	847.95	1,986.25	2,026.25	X		
1,952.00	20	S	22:13	2:07	234	5.1	50L								109	110	642	1650	100	31:51	879.46	2,017.76	2,057.76	X		
1,963.00	11	S	2:07	2:37	30	22.0	84L								109	110	642	1650	100	31:15	910.61	2,048.91	2,088.91	X		
1,984.00	21	S	4:07	5:10	63	20.0	75L							10-15	109	110	642	1650	100	31:50	942.11	2,080.41	2,120.41	X		
1,999.00	15	D	5:48	6:05	17	52.9								5	60	80	109	110	642	30:95	973.46	2,111.76	2,151.76	X	100% formation	
2,010.00	11	S	6:32	6:50	18	38.7	70L	2016.00	61.80	299.30				10-15	109	110	642	1650	100	30:20	1004.41	2,142.71	2,182.71	X	Clean mud pump filters	
2,026.00	16	D	6:53	7:01	8	120.0		2048.00	61.30	298.80				5	60	80	109	110	642	30:20	1034.61	2,172.91	2,212.91	X		
2,058.00	32	D	7:41	8:19	38	50.5								5	60	80	109	110	642	31:43	1066.04	2,204.34	2,244.34	X		
2,068.00	10	D	8:36	8:45	9	66.7		2079.00	61.40	298.00				5	60	80	109	110	642	31:60	1097.54	2,235.84	2,275.84	X		
2,089.00	21	S	8:50	9:43	53	23.8	80L							15-20	109	110	642	1650	100	31:48	1129.02	2,267.32	2,307.32	X		
2,104.00	15	S	10:00	10:24	24	37.5	45L	2109.00	61.20	296.70				15-20	109	109	642	1650	100	31:60	1160.62	2,298.92	2,338.92	X		
2,120.00	16	D	10:26	10:46	21	45.7								5	60	80	110	109	642	31:55	1192.17	2,330.47	2,370.47	X		
2,135.00	15	S	11:10	11:41	31	29.0	35L	2140.00	61.10	296.00				15-20	110	109	642	1650	100	31:60	1223.77	2,362.07	2,402.07	X		
2,151.00	16	D	11:42	12:04	22	43.6		2172.00	60.70	296.00				5	60	80	110	109	642	31:15	1254.92	2,393.22	2,433.22	X		
2,182.00	31	D	12:30	13:00	30	62.0								5	60	80	110	109	642	31:35	1286.27	2,424.57	2,464.57	X	Short Trip	
2,192.00	10	S	13:20	13:36	16	37.5	H/S	2203.00	60.80	296.70				15-20	110	109	642	1650	100	31:05	1317.32	2,455.62	2,495.62	X		
2,212.00	20	D	13:37	13:56	19	63.2								5	60	90	110	109	642	31:70	1349.02	2,487.32	2,527.32	X		
2,227.00	15	S	14:45	15:06	21	42.9	25R	2235.00	61.20	297.40				15-20	110	109	642	1650	100	31:50	1380.52	2,518.82	2,558.82	X		
2,243.00	16	D	15:07	15:19	12	80.0								5	64	90	110	109	642	31:60	1412.12	2,550.42	2,590.42	X		
2,263.00	20	S	15:40	15:55	15	80.0	35R	2267.00	62.23	298.10				15-20	111	110	648	1650	100							
2,275.00	12	D	15:56	16:06	10	72.0		2298.00	63.00	297.40				5	70	100	111	110	648							
2,295.00	20	S	16:31	16:52	21	57.1	H/S							15-20	111	110	648	1650	150							
2,307.00	12	D	16:53	17:04	11	65.5								5	70	100	111	110	648							
2,322.00	15	S	17:22	17:49	27	33.3	40L							15-20	111	110	648	1650	150							
2,338.00	16	D	17:50	18:03	13	73.8								5	70	100	111	110	648							
2,353.00	15	S	18:25	18:42	17	52.9	50L	2359.00	63.00	296.70				15-20	111	110	648	1650	150							
2,370.00	17	D	18:43	19:07	24	42.5								5	70	100	111	110	648							
2,402.00	32	D	19:31	19:50	19	101.1								5	70	100	111	110	648							
2,433.00	31	D	20:02	20:17	15	124.0								10	70	100	111	110	648							
2,448.00	15	S	20:34	20:50	16	58.3	10L							15-20	111	110	648	1650	150							
2,464.00	16	D	20:51	21:07	16	60.0								10	70	100	111	110	648							#
2,464.00	0	C	21:08	21:44	36	0.0									111	110	648	1651	151							

Sliding ft or m	234.00
Sliding percent	43%

Sliding Time	799.0
ROP	17.57

Rotating ft or m	308
Rotating percent	57%

Rotating time	284
ROP	65.07

Ream Hrs	0
Ream ft or m	0



SCHLUMBERGER DRILLING CONTROL SHEET

Oct/24/02 11:13

Company : Petrotech Peruana
 Location : Talara - Offshore -Peru
 Well : Lobitos LO 16-25 Sidetrack 1

Service: DD / MWD Bit-D&I dist 65.91
 DD Eng: Torres/Soto BHA length 1138.3
 MWD Eng: PM/SS/VJCA Kelly length 40

BHA # 5
 From 2464 ft to 3202 ft
 Page 11 of 19

BHA NO: 5 S1 BHA DESCRIPTION: 12.25" Smith Bit (1x15, 8 x14), A800M78XP (12 1/16" Sleeve, 1.50), FS, SNMDC, STB 11 15/16, UBHO, NMDC (Slim-1), NMDC, 2DC7 3/4", XO,4DC61/4", XO,06HW5, 6 1/2" HEJar,

RIG PEPESA

Drilling	Time			Avg ROP	TF set	Survey D&I = 65.91				SWOB Klbs	RPM rotary	Torque Rt	Pump control			TALLY CONTROL				Result/Comments date/Midnight depth					
	TO	D/S	Start			Finish	Min	Depth	Inclination				Azimuth	DLS	GPM	psi off	Diff	Joint	sum dp		dp+bha	Kelly D	ck		
2,464.00																									
2,479.00	15	S	23:10	23:25	15	60.0							118	119		894	1900	100	31.35	1286.27	2,424.57	2,464.57	X		
2,495.00	16	D	23:26	23:36	10	96.0							117	116		883	1900	100	31.05	1317.32	2,455.62	2,495.62	X		
2,527.00	32	D	23:57	0:12	15	128.0							117	116		883	1900	100	31.70	1349.02	2,487.32	2,527.32	X		
2,542.00	15	S	0:25	0:51	26	34.6	30L	2549.00	63.40	295.20						0	1900	100	31.50	1380.52	2,518.82	2,558.82	X		
2,558.00	16	D	0:52	1:03	11	87.3							117	116		883	1900	100	31.60	1412.12	2,550.42	2,590.42	X		
2,590.00	32	D	1:26	1:45	19	101.1		2612.00	63.50	295.60			117	116		883	1900	100	30.80	1442.92	2,581.22	2,621.22	X		
2,621.00	31	D	1:53	2:14	21	88.6							117	116		883	1900	100	31.64	1474.56	2,612.86	2,652.86	X		
2,631.00	10	S	2:45	3:07	22	27.3	75R									0	1900	100	31.25	1505.81	2,644.11	2,684.11	X		
2,652.00	21	D	3:08	3:22	14	90.0		2675.00	63.00	295.50			117	116		883	1900	100	31.53	1537.34	2,676.64	2,715.64	X		
2,684.00	32	D	3:39	4:02	23	83.5							117	116		883	1900	100	31.50	1568.84	2,707.14	2,747.14	X		
2,715.00	31	D	4:26	4:49	23	80.9							117	116		883	1900	100	31.48	1600.32	2,738.62	2,778.62	X		
2,715.00	0	C	5:05	5:29	24	0.0		2738.00	62.10	295.30			117	116		883	1900	100	31.30	1631.62	2,769.92	2,809.92	X	Wup=95 Ws=75 Wdown=72 k lb	
2,747.00	32	D	5:30	5:56	26	73.8							117	116		883	1900	100	31.50	1663.12	2,801.42	2,841.42	X		
2,757.00	10	S	6:22	6:35	13	46.2	H/S						117	116		883	1900	100	31.68	1694.80	2,833.10	2,873.10	X		
2,778.00	21	D	6:36	6:48	12	105.0		2800.00	62.43	294.80			117	116		883	1900	100	31.51	1726.31	2,864.61	2,904.61	X		
2,810.00	32	D	6:53	7:05	12	160.0							117	116		883	1900	100	31.42	1757.73	2,896.03	2,936.03	X		
2,825.00	15	S	7:30	7:40	10	90.0	45L						117	116		883	1950	150	31.65	1789.38	2,927.68	2,967.68	X		
2,841.00	16	D	7:41	7:48	7	137.1							117	116		883	1950	150	31.40	1820.78	2,959.08	2,999.08	X		
2,856.00	15	S	8:20	8:27	7	128.6	30L	2864.00	63.00	293.20			117	116		883	1950	150	31.30	1852.08	2,990.38	3,030.38	X		
2,873.00	17	D	8:29	8:39	10	102.0							117	116		883	1950	150	31.45	1883.53	3,021.83	3,061.83	X		
2,904.00	31	D	8:57	9:11	14	132.9							117	116		883	1950	150	31.35	1914.88	3,053.18	3,093.18	X		
2,914.00	10	S	9:30	9:36	6	100.0	80R	2926.00	63.60	293.24			117	116		883	1950	150	31.43	1946.31	3,084.61	3,124.61	X		
2,936.00	22	D	9:37	9:43	6	220.0							117	116		883	1950	150	31.46	1977.77	3,116.07	3,156.07	X		
2,968.00	32	D	10:02	10:18	16	120.0		2989.00	63.97	293.67			117	116		883	1950	150	31.04	2008.81	3,147.11	3,187.11	X		
2,999.00	31	D	10:29	10:40	11	169.1							114	120		886	1950	150							
3,009.00	10	S	11:00	11:07	7	85.7	80R						114	120		886	2100	100							
3,030.00	21	D	11:08	11:16	8	157.5		3052.00	64.00	293.20			114	120		886	2100	100							
3,061.00	31	D	13:16	13:28	12	155.0							114	120		886	2100	100							
3,071.00	10	S	13:46	13:53	7	85.7	80R						114	120		886	2100	100							
3,093.00	22	D	15:18	15:29	11	120.0							114	120		886	2100	100							
3,124.00	31	D	15:40	16:15	35	53.1		3115.00	64.20	293.90			114	120		886	2100	100							
3,134.00	10	S	16:17	16:22	5	120.0	80R						114	120		886	2100	100							
3,156.00	22	D	16:23	16:28	5	264.0		3176.00	64.50	296.10			114	120		886	2100	100							
3,187.00	31	D	16:37	16:46	9	206.7							114	120		886	2100	100							
3,202.00	15	S	17:17	17:27	10	90.0	90R						114	120		886	2100	100							

Sliding ft or m	135.00
Sliding percent	18%

Sliding Time	128.0
ROP	63.28

Rotating ft or m	603
Rotating percent	82%

Rotating time	330
ROP	109.64

Ream Hrs	0
Ream ft or m	0



SCHLUMBERGER DRILLING CONTROL SHEET

Oct/24/02 11:13

Company: Petrotech Peruana
 Location: Talara - Offshore -Peru
 Well: Lobitos LO 16-25 Sidetrack 1

Service: DD / MWD Bit-D&I dist 65.91
DD Eng:Festus/Soto BHA length 1138.3
MWD Eng:PMSS/VLCA Kelly length 40

BHA # 5
 From 3202 ft to 3978 ft
 Page 12 of 19

BHA NO: 5 S1 BHA DESCRIPTION: 12.25" Smith Bit (1x15, 8 x14), A800M78XP (12 1/16" Sleeve, 1.50), FS, SNMDC, STB 11 15/16, UBHO, NMDC (Slim-1), NMDC, 2DC7 3/4", XO, 4DC61/4", XO, 06HW5, 6 1/2" HEJar.

RIG PEPESA

Drilling		Time			Avg	TF	Survey D&I = 65.91				SWOB	RPM	Torque	Pump control			TALLY CONTROL				Result/Comments				
TO	D/S	Start	Finish	Min	ROP	set	Depth	Inclination	Azimuth	DLS	Klbs	rotary	Rt	#1	#2	#3	GPM	psi off	Diff	Joint	sum dp	dp+bha	Kelly D	ck	date/Midnight depth
3,202.00																				31.46	1977.77	3,116.07	3,156.07	X	
3,218.00	16	D	17:30	17:37	7		3239.00	64.50	296.20		15	65	100	118	118		691	2100	100	31.04	2008.81	3,147.11	3,187.11	X	Wup=150 Ws=85 Wdown=70 k lb
3,250.36	32.4	D	18:10	18:20	10						15	65	100	118	115		683	2100	100	31.60	2040.41	3,178.71	3,218.71	X	
3,281.74	31.4	D	18:30	18:54	24		3301.00	64.20	296.00		15	65	100	118	118		691	2100	100	31.65	2072.06	3,210.36	3,250.36	X	
3,313.36	31.6	D	19:02	19:23	21						15	65	100	116	118		686	2100	100	31.38	2103.44	3,241.74	3,281.74	X	
3,344.81	31.4	D	19:43	19:55	12		3364.00	63.90	296.00		15	65	100	118	118		691	2100	100	31.62	2135.06	3,273.36	3,313.36	X	
3,376.26	31.5	D	20:10	20:30	20						15	65	100	118	117		689	2100	100	31.45	2166.51	3,304.81	3,344.81	X	
3,380.00	3.74	D	20:48	20:53	5						15	65	100	118	118		691	2100	100	31.45	2197.96	3,336.26	3,376.26	X	
3,386.26	6.26	S	20:58	21:15	17	80R	3427.00	63.70	296.00		20-25			115	118		683	2200	150	31.28	2229.24	3,367.54	3,407.54	X	
3,407.54	21.3	D	21:16	21:25	9						15	65	100	115	116		677	2200	150	31.28	2260.52	3,398.82	3,438.82	X	Wup=155 Ws=88 Wdown=65 k lb
3,438.82	31.3	D	21:39	21:49	10						15	65	100	115	116		677	2200	150	31.54	2292.06	3,430.36	3,470.36	X	
3,470.36	31.5	D	22:11	22:36	25		3490.00	63.10	296.90		15	65	100	115	116		677	2200	150	31.58	2323.64	3,461.94	3,501.94	X	
3,501.94	31.6	D	22:50	23:12	22						15	70	100	115	116		677	2200	150	31.31	2354.95	3,493.25	3,533.25	X	SHORT TRIP
3,533.25	31.3	D	23:28	23:49	21						15	70	100	115	116		677	2200	150	31.55	2386.50	3,524.80	3,564.80	X	Working on pump#2
3,533.25	0	C	23:49	0:30	41									125			366	1200		31.15	2417.65	3,555.95	3,595.95		
3,548.00	14.8	S	4:45	5:15	30	90R					20-25						0	2200	150	31.45	2449.10	3,587.40	3,627.40		
3,548.00	0	C	5:15	7:29	134		3553.00	63.03	297.86					125			366	1200	150	31.60	2480.70	3,619.00	3,659.00		
3,564.80	16.8	D	7:29	7:38	9						18	60	100	110	110		650	2150	150	31.35	2512.05	3,650.35	3,690.35		
3,596.00	31.2	D	8:10	8:22	12						18	60	100	110	110		650	2150	150	31.55	2543.60	3,681.90	3,721.90		
3,627.00	31	D	9:02	9:15	13		3616.00	62.50	298.17		18	60	100	110	110		650	2150	150	31.80	2575.40	3,713.70	3,753.70		
3,659.00	32	D	9:41	9:58	17						18	60	100	110	110		650	2150	150	31.20	2606.60	3,744.90	3,784.90		
3,690.00	31	D	10:18	10:32	14						18	60	100	110	110		650	2150	150	31.35	2637.95	3,776.25	3,816.25		
3,705.00	15	S	10:58	11:07	9	HS					25-30			110	110		650	2250	150	31.05	2669.00	3,807.30	3,847.30		
3,721.00	16	D	11:09	11:18	9		3709.00	62.67	298.32		18	60	100	110	110		650	2250	150	31.33	2700.33	3,838.63	3,878.63		
3,752.00	31	D	11:35	11:47	12						18	60	100	110	110		650	2250	150	31.42	2731.75	3,870.05	3,910.05		
3,783.00	31	D	12:05	12:16	11						18	60	100	110	110		650	2250	150	31.33	2763.08	3,901.38	3,941.38		
3,815.00	32	D	12:38	12:52	14		3804.00	62.00	297.46		18	60	100	110	110		650	2250	150	31.45	2794.53	3,932.83	3,972.83		
3,847.00	32	D	13:14	13:27	13						18	60	100	110	110		650	2250	150	31.70	2826.23	3,964.53	4,004.53		
3,878.00	31	D	13:46	13:57	11						18	60	100	110	110		650	2250	150	31.50	2857.73	3,996.03	4,036.03		
3,893.00	15	S	14:27	14:38	11	20L					30-35			110	110		650	2250	150	31.55	2889.28	4,027.58	4,067.58		
3,910.00	17	D	14:40	14:48	8		3899.00	61.70	297.10		18	60	100	110	110		650	2250	150	31.52	2920.80	4,059.10	4,099.10		
3,941.00	31	D	15:15	15:30	15						18	60	100	105	105		610	2300	150	31.62	2952.42	4,090.72	4,130.72		
3,973.00	32	D	15:45	15:57	12						18	60	100	105	105		610	2300	150	30.80	2983.22	4,121.52	4,161.52		
3,973.00	0	C	16:00	16:32	32									105	105		610	2300	150						
3,978.00	5	S	16:34	16:38	4	20R					30-35			105	105		610	2350	150						
3,978.00	0	C	16:38	16:50	12									105	105		610	2350	150						

Sliding ft or m 56.01
 Sliding percent 7%

Sliding Time 71.0
 ROP 47.33

Rotating ft or m 720
 Rotating percent 93%

Rotating time 356
 ROP 121.35

Ream Hrs 0
 Ream ft or m 0

SCHLUMBERGER DRILLING CONTROL SHEET

Oct/24/02 11:13



Company : Petrotech Peruana
 Location : Talara - Offshore -Peru
 Well : Lobitos LO 16-25 Sidetrack 1

Service: DD / MWD/LWD BIT-D&I dist 67.27
DD Eng:Festus/Soto BHA length 1046.57
MWD Eng:PMSS/CA Kelly length 40

BHA # 6
 From 4511 ft to 5421 ft
 Page 14 of 19

BHA NO: 6 S1 BHA DESCRIPTION: 8.5" Bit (3x15, 3x14), A67545XP (8 3/8" Sleeve, 1.15), XO,FS, STB 8 15/16", PNMD,UBHO, NMDC (Slim-1), NMDC, 2DC7 3/4",XO,4DC61/4", XO,12HW5, 6 1/2" HEJar, 14HW5"

RIG PEPESA

Drilling	Time			Avg ROP	TF set	Survey D&I = 67.27				SWOB Klbs	RPM rotary	Torque Rt	Pump control			TALLY CONTROL				Result/Comments date/Midnight depth						
	TO	D/S	Start			Finish	Min	Depth	Inclination				Azimuth	DLS	GPM	psi off	Diff	joint	sum dp		dp+bha	Kelly D	ck			
4,511.00																										
4,542.00	31	D	1:36	2:11	35	53.1	4530.00				10	30	90					31.62	3393.57	4,440.14	4,480.14	X				
4,574.00	32	D	2:27	2:55	28	68.6	4562.00	61.50	295.40		10	30	90			129	528	1650	200	31.30	3424.87	4,471.44	4,511.44	X	Ws=92Klb Wup=155Klb Wd=65Klb	
4,606.00	32	D	3:03	3:26	23	83.5					10	50	100			129	528	1650	200	31.50	3456.37	4,502.94	4,542.94	X		
4,637.00	31	D	3:47	4:15	28	66.4					10	60	100			129	528	1650	200	31.70	3488.07	4,534.64	4,574.64	X		
4,649.00	12	S	4:35	5:09	34	21.2	35R 4656.00	61.50	296.70		15-20					120	491	1500	150	31.45	3519.52	4,566.09	4,606.09	X		
4,669.00	20	D	5:10	5:28	18	66.7					10	60	110			129	528	1650	200	31.50	3551.02	4,597.59	4,637.59	X		
4,700.00	31	D	5:40	6:05	25	74.4					10	60	110			129	528	1650	200	31.65	3582.67	4,629.24	4,669.24	X		
4,732.00	32	D	6:25	6:40	15	128.0					10	60	110			129	528	1650	200	31.50	3614.17	4,660.74	4,700.74	X		
4,742.00	10	S	7:26	7:40	14	42.9	35R 4751.00	61.30	297.30		20					120	491	1500	150	31.45	3645.62	4,692.19	4,732.19	X		
4,763.00	21	D	7:41	7:56	15	84.0					8-12	60	110			130	532	1700	300	31.50	3677.12	4,723.69	4,763.69	X		
4,795.00	32	D	8:02	8:23	21	91.4					8-12	60	110			130	532	1700	300	31.62	3708.74	4,755.31	4,795.31	X		
4,826.00	31	D	8:38	8:50	12	155.0	4845.00	61.50	297.30		8-12	60	110			130	532	1700	300	31.43	3740.17	4,786.74	4,826.74	X		
4,858.00	32	D	9:23	9:40	17	112.9					8-12	60	110			130	532	1700	300	31.34	3771.51	4,818.08	4,858.08	X		
4,889.00	31	D	20:00	20:25	25	74.4					15-17	60	110			129	528	1800	300	31.32	3802.83	4,849.40	4,889.40	X		
4,921.00	32	D	20:37	21:00	23	83.5	4939.00	60.82	298.10		15-17	60	110			129	528	1800	300	31.63	3834.46	4,881.03	4,921.03	X	Ws=94Klb Wup=155Klb Wd=63Klb	
4,952.00	31	D	21:15	21:31	16	116.3					15-17	60	110			129	528	1800	300	31.51	3865.97	4,912.54	4,952.54	X		
4,982.00	30	D	21:46	22:05	19	94.7					10-12	60	120			130	532	1800	300	30.21	3896.18	4,942.75	4,982.75	X		
5,014.00	32	D	22:16	22:38	22	87.3					10-12	60	120			130	532	1800	300	31.50	3927.68	4,974.25	5,014.25	X		
5,027.00	13	S	23:10	23:45	35	22.3	10L 5033.00	60.80	298.60		25									31.80	3959.48	5,006.05	5,046.05	X	Pump problem	
5,046.00	19	D	23:47	0:15	28	40.7					12	60	120			129	528	1850	300	31.30	3990.78	5,037.35	5,077.35	X		
5,077.00	31	D	0:25	0:42	17	109.4					12	60	120			129	528	1850	300	31.50	4022.28	5,068.85	5,108.85	X		
5,108.00	31	D	0:55	1:11	16	116.3					12	60	120			129	528	1850	300	31.25	4053.53	5,100.10	5,140.10	X		
5,121.00	13	S	1:35	2:15	40	19.5	20L 5127.00	61.45	298.68		25					129	528	1850	300	31.38	4084.91	5,131.48	5,171.48	X		
5,140.00	19	D	2:16	2:35	19	60.0					12	60	120			128	524	1850	300	31.58	4116.49	5,163.06	5,203.06	X		
5,171.00	31	D	2:48	3:08	20	93.0					12	60	120			128	524	1850	300	31.31	4147.80	5,194.37	5,234.37	X		
5,203.00	32	D	3:20	3:38	18	108.7					12	60	120			128	524	1850	300	31.10	4178.90	5,225.47	5,265.47	X	SHORT TRIP	
5,234.00	31	D	4:01	4:27	26	71.5	5220.00	61.50	300.20		12	60	120			128	524	1850	300	30.30	4209.20	5,255.77	5,295.77	X		
5,265.00	31	D	4:37	4:59	22	84.5					12	60	120			128	524	1850	300	31.35	4240.55	5,287.12	5,327.12	X		
5,295.00	30	D	6:45	6:58	13	135.5					12	60	120			128	524	1800	300	31.65	4272.20	5,318.77	5,358.77	X		
5,300.00	5	D	7:17	7:20	3	100.0					12	60	120			125	511	1800	300	31.55	4303.75	5,350.32	5,390.32	X		
5,300.00	0	C	7:20	7:27	7	0.0					12	60	120			125	511	1800	300	31.57	4335.32	5,381.89	5,421.89	X		
5,327.00	27	D	7:28	7:42	14	115.7	5315.00	60.70	299.80		12	60	120			125	511	1800	300	31.28	4366.60	5,413.17	5,453.17	X		
5,358.00	31	D	7:52	8:07	15	124.0					12	60	120			123	503	1800	300	31.40	4398.00	5,444.57	5,484.57	X		
5,390.00	32	D	8:18	8:34	16	120.0					12	60	120			120	491	1750	250							
5,421.00	31	D	8:58	9:14	16	116.3					12	60	120			120	491	1750	250							

Sliding ft or m : 48.00
 Sliding percent : 5%

Sliding Time : 123.0
 ROP : 23.41

Rotating ft or m : 862
 Rotating percent : 95%

Rotating time : 585
 ROP : 88.41

Ream Hrs : 0
 Ream ft or m : 0

GEO SCIENCES
Central File

SCHLUMBERGER DRILLING CONTROL SHEET

Oct/24/02 11:13



Company : Petrotech Peruana
 Location : Talara - Offshore -Peru
 Well : Lobitos LO 16-25 Sidetrack 1

Service: DD / MWD/LWD Bit-D&I dist 67.27
DD Eng:Festus/Soto BHA length 1046.57
MWD Eng:PM/SS/CA Kelly length 40

BHA # 6
 From 5421 ft to 6269 ft
 Page 15 of 19

BHA NO: 6 S1 BHA DESCRIPTION: 8.5" Bit (3x15, 3x14), A67545XP (8 3/8" Sleeve, 1.15), XO,FS, STB 8 15/16", PNMD,UBHO, NMDC (Slim-1), NMDC, 2DC7 3/4", XO,4DC61/4", XO,12HW5, 6 1/2" HEJar, 14HW5"

RIG PEPESA

Drilling		Time			Avg	TF	Survey D&I = 67.27				SWOB	RPM	Torque	Pump control			TALLY CONTROL				Result/Comments			
TO	D/S	Start	Finish	Min	ROP	set	Depth	Inclination	Azimuth	DLS	Klbs	rotary	Rt	GPM	psi off	Diff	joint	sum dp	dp+bha	Kelly D	ck	date/Midnight depth		
5,421.00							5408.00	60.40	300.20															
5,453.00	32	D	9:26	9:45	19	101.1					12	60	120				491	1750	250	31.57	4335.32	5,381.89	5,421.89	
5,484.00	31	S	9:59	10:16	17	109.4					30						491	1750	300	31.28	4366.60	5,413.17	5,453.17	
5,502.00	18	D	10:47	11:03	16	67.5	HS				12	60	120				491	1750	300	31.40	4398.00	5,444.57	5,484.57	
5,516.00	14	D	11:06	11:14	8	105.0		5503.00	60.60	300.60	12	60	120				491	1750	300	31.62	4429.62	5,476.19	5,516.19	
5,547.00	31	D	11:28	11:43	15	124.0					12	60	120				491	1750	300	31.45	4461.07	5,507.64	5,547.64	
5,579.00	32	D	11:51	12:11	20	98.0					12	60	120				491	1750	300	31.54	4492.61	5,539.18	5,579.18	
5,610.00	31	D	12:26	12:40	14	132.9		5598.00	60.40	301.60	12	60	120				491	1800	300	31.30	4523.91	5,570.48	5,610.48	
5,641.00	31	D	12:51	13:07	16	116.2					12	60	120				491	1800	300	31.42	4555.33	5,601.90	5,641.90	
5,673.00	32	D	13:19	13:38	19	101.1					12	60	120				491	1800	300	31.45	4586.78	5,633.35	5,673.35	
5,673.00	0	C	13:38	14:20	42	0.0					12	60	120				491	1800	300	31.58	4618.36	5,664.93	5,704.93	
5,690.00	17	S	15:25	16:05	40	25.5	40L	5691.00	61.10	299.50	30						491	1800	300	30.85	4649.21	5,695.78	5,735.78	
5,705.00	15	D	16:08	16:23	15	60.0					12	60	120				491	1800	300	31.60	4680.71	5,727.28	5,767.28	Circulate and Short Trip
5,735.00	30	D	16:35	16:50	15	120.0					12	60	120				491	1800	300	31.05	4711.76	5,758.33	5,798.33	
5,767.00	32	D	17:00	17:12	12	160.0					12	60	120				491	1800	300	31.30	4743.06	5,789.63	5,829.63	
5,799.00	32	D	17:28	17:42	14	137.1		5785.00	61.20	300.20	12	60	120				491	1800	300	31.50	4774.56	5,821.13	5,861.13	
5,829.00	30	D	17:56	18:11	15	120.0					12	60	120				491	1800	300	31.60	4806.16	5,852.73	5,892.73	
5,861.00	32	D	18:20	18:33	13	147.7		5879.00	61.40	301.00	12	60	120				491	1800	300	31.35	4837.51	5,884.08	5,924.08	
5,876.00	15	S	19:52	20:10	18	50.0					30						491	1800	200	31.40	4868.91	5,915.48	5,955.48	
5,892.00	16	D	20:11	20:30	19	50.5					12	60	120				491	1800	300	30.83	4899.74	5,946.31	5,986.31	
5,924.00	32	D	20:37	21:00	23	83.5					12	60	120				491	1800	300	31.35	4931.09	5,977.66	6,017.66	
5,955.00	31	D	21:15	21:32	17	109.4		5973.00	61.70	301.00	12	60	120				491	1800	300	31.44	4962.53	6,009.10	6,049.10	
5,986.00	31	D	21:58	22:19	21	88.6					12	60	120				491	1800	300	31.66	4994.19	6,040.76	6,080.76	
6,017.00	31	D	22:30	22:59	29	64.1					12	60	120				491	1800	300	31.39	5025.58	6,072.15	6,112.15	
6,049.00	32	D	23:12	23:32	20	96.0		6068.00	61.10	301.10	12	60	120				491	1800	300	31.63	5057.21	6,103.78	6,143.78	
6,080.00	31	D	23:54	0:34	40	46.5					12	60	120				491	1800	300	31.24	5088.45	6,135.02	6,175.02	
6,080.00	0	C	0:34	1:00	26	0.0											491	1800	300	31.68	5120.13	6,166.70	6,206.70	
6,112.00	32	D	1:36	2:21	45	42.7					12	60	120				491	1850	300	31.50	5151.63	6,198.20	6,238.20	
6,143.00	31	D	2:32	3:14	42	44.3					12	60	120				491	1850	300	31.52	5183.15	6,229.72	6,269.72	
6,163.00	10	S	3:43	4:13	30	20.0		6162.00	61.50	301.40	30						491	1850	150					
6,175.00	22	D	4:14	4:30	16	82.5					12	60	120				491	1850	300					
6,206.00	31	D	4:41	5:12	31	60.0					12	60	120				491	1850	300					
6,238.00	32	D	5:20	6:09	49	39.2					12	60	120				491	1850	300					
6,269.00	31	D	6:28	6:56	28	68.4					12	60	120				491	1850	300					

Sliding ft or m 73.00
 Sliding percent 9%

Sliding Time 105.0
 ROP 41.71

Rotating ft or m 775
 Rotating percent 91%

Rotating time 591
 ROP 78.68

Ream Hrs 0
 Ream ft or m 0

SCHLUMBERGER DRILLING CONTROL SHEET

Oct/24/02 11:13



Company : Petrotech Peruana
 Location : Talara - Offshore -Peru
 Well : Lobitos LO 16-25 Sidetrack 1

Service: DD / MWD/LWD Bit-D&I dist 67.27
 DD Eng:Festus/Soto BHA length 1046.57
 MWD Eng:PMSS/CA Kelly length 40

BHA # 6
 From 6269 ft to 6647 ft
 Page 16 of 19

BHA NO: 6 S1 BHA DESCRIPTION: 8.5" Bit (3x15, 3 x14), A67545XP (8 3/8" Sleeve, 1.15), XO,FS, STB 8 15/16", PNMDC,UBHO, NMDC (Slim-1), NMDC, 2DC7 3/4",XO,4DC61/4", XO,12HW5, 6 1/2" HEJar, 14HW5"

RIG PEPESA


Drilling		Time			Avg	TF	Survey D&I = 67.27				SWOB	RPM	Torque	Pump control			TALLY CONTROL				Result/Comments					
TO	D/S	Start	Finish	Min	ROP	set	Depth	Inclination	Azimuth	DLS	Klbs	rotary	Rt	#1	#2	#3	GPM	psi off	Diff	joint	sum dp	dp+bha	Kelly D	ck	date/Midnight depth	
6,269.00							6255.00	61.40	301.80																	
6,301.00	32	D	7:09	7:34	25	76.8					15	60	120		120		491	1850	300	31.68	5120.13	6,166.70	6,206.70	X		
6,332.00	31	D	7:49	8:23	34	54.7					15	60	120		120		491	1850	300	31.50	5151.63	6,198.20	6,238.20	X		
6,364.00	32	D	8:45	9:27	42	45.7	6350.00	61.50	302.20		15	60	120		120		491	1900	250	31.52	5183.15	6,229.72	6,269.72	X		
6,395.00	31	D	9:43	10:27	44	42.3					15	60	120		120		491	1900	250	31.30	5214.45	6,261.02	6,301.02	X		
6,427.00	32	D	10:43	11:07	24	80.0					15	60	120		120		491	1900	250	31.85	5246.10	6,292.67	6,332.67	X		
6,447.00	20	S	11:38	12:35	57	21.1	90L 6444.00	61.00	301.10		35				120		491	1900	250	31.46	5277.56	6,324.13	6,364.13	X		
6,458.00	11	D	12:42	12:54	12	55.0					15	60	120		115		470	1900	200	31.50	5309.06	6,355.63	6,395.63	X		
6,490.00	32	D	13:03	13:27	24	80.0					15	60	120		115		470	1900	200	31.55	5340.61	6,387.18	6,427.18	X		
6,521.00	31	D	13:43	14:13	30	62.0					15	60	120		115		470	1950	200	31.40	5372.01	6,418.58	6,458.58	X	Wup=180-190Klb	
6,553.00	32	D	14:38	15:09	31	61.9	6538.00	60.60	300.90		15	60	120		115		470	1950	200	31.60	5403.61	6,450.18	6,490.18	X	Ws= 100 klb	
6,584.00	31	D	15:23	15:58	35	53.1					15	60	120		115		470	1950	200	31.60	5435.21	6,481.78	6,521.78	X		
6,616.00	32	D	16:14	16:50	36	53.3					15	60	120		115		470	1950	200	31.55	5466.76	6,513.33	6,553.33	X		
6,647.00	31	D	17:13	17:46	33	56.4					15	60	120		110		450	1900	250	31.10	5497.86	6,544.43	6,584.43	X		
6,647.00	0	C	17:46	18:46	60	0.0									110		450	1900	250	31.60	5529.46	6,576.03	6,616.03	X	SHORT TRIP	
																				31.58	5561.04	6,607.61	6,647.61	X		
																				31.58	5592.62	6,639.19	6,679.19			
																				31.35	5624.00	6,670.57	6,710.57			
																				31.50	5655.50	6,702.07	6,742.07			

Sliding ft or m	20.00	Sliding Time	57.0	Rotating ft or m	326	Rotating time	345	Ream Hrs	0
Sliding percent	6%	ROP	21.05	Rotating percent	94%	ROP	56.70	Ream ft or m	0

GEO SCIENCES
Central File

Schlumberger

PETROTECH PERUANA S.A.

PETRO-TECH 
PERUANA S.A.

END OF WELL REPORT: **LO16-25,ST1& ST2**

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2.2. BHA COMMENTS

BHA In: 586' Out: 1527' Petro-Tech Peruana S.A. - Well LO16-25

BHA # 1	BHA NO. 1 17" Hole
Field	Lobitos
Structure	Platform LO16 (WGS84)

Date	September 11, 2002
Well	Well LO16-25
Borehole	Borehole LO16-25

Item	Name	Vendor/ Model	Serial #	Fish Neck OD (in)/ Length (ft)	OD (in)/ ID (in)	Max OD (in)	Bottom/ Top Connection	Length (ft)	Cum. Length (ft)	
1	17" Bit	Hughes Christensen	S65DJ		10 1/5	17		1.33	1.33	
		GTXC1			3 3/4		7.63 Reg Pin			
2	A962M5630SP (1.5 deg)	Anadrill	01092	9 3/8	9 9/16	16 3/4	7.63 Reg Box	26.06	27.39	
		A962M5630SP		1.67	7 22/25		6.63 Reg Box			
3	Float Sub	Anadrill	14128-10	8.00	8	8	6.63 Reg Pin	2.58	29.97	
					2 13/16		6.63 Reg Box			
4	Non-Magnetic Short Drill Collar	Anadrill	876-1	8.06	8 1/16	8 1/16	6.63 Reg Pin	9.52	39.49	
					2 7/8		6.63 Reg Box			
5	UBHO Sub	Anadrill	12689-7		8	8	6.63 Reg Pin	2.22	41.71	
					2 13/16		6.63 Reg Box			
6	NMDC w/ Slim-1	Anadrill	8585	8.00	8	8	6.63 Reg Pin	30.48	72.19	
		Slim-1			4 19/50		6.63 Reg Box			
7	8" Non-Magnetic Drill Collar	Anadrill	H-872		8	8	6.63 Reg Pin	30.71	102.90	
					2 13/16		6.63 Reg Box			
8	7 3/4" Collar (2 joints)			7.69	7 11/16	7 11/16	6.63 Reg Pin	60.50	163.40	
					2 47/50		6.63 Reg Box			
9	Crossover			6 1/2	7 1/2	7 1/2	6.63 Reg Pin	2.25	165.65	
				0.80	2 13/16		4.50 NC46(XH)			
10	6 1/4" Collar (4 joints)			6.13	6 1/8	6 1/8	4.50 NC46(XH)	120.00	285.65	
					2 13/16		4.50 NC46(XH)			
11	Crossover				6 1/32	6 1/32	4.50 NC46(XH)	2.94	288.59	
					2 13/16		4.50 NC50(IF) Box			
12	5" HWDP (6 joints)				5	6 1/4	4.50 NC50(IF) Pin	180.56	469.15	
					3		4.50 NC50(IF) Box			
13	Hydraulic Jar	HE	03378	6 7/16	6 1/2	6 1/2	4.50 NC50(IF) Pin	32.08	501.23	
		Hydra-Jar		2.52	2 3/4		4.50 NC50(IF) Box			
14	5" HWDP (14 joints)				5	6 1/2	4.50 NC50(IF) Pin	420.43	921.66	
					3		4.50 NC50(IF) Box			
							Total Weight (lbf)	66305	Total Len	921.66
							Below Jar (lbf)	43267.9		

BHA Comments: Bha used to start KOP @ 586 ft due northwest. A 6.5 deg/100 ft was necessary in order to build curve.

Stabilizer	
Blade Length (ft)	Mid-PL To Bit (ft)
1.50	3.68
Bent To Bottom	
Bent Housing Angle (deg)	Connection (ft)
1.50	7.78

Sensor	
Type	Distance To Bit (ft)
D&I	71.41
D&I	71.41

Bit Nozzles	
Count	Size(1/32 in)
1	16.00
3	20.00
TFA (in2)	1.12
Quality Control	
Created By:	jbeouts
Checked By:	

**GEOSCIENCES
Central File**

BHA In: 4828' Out: 5202' Petro-Tech Peruana S.A. - Well LO16-25

BHA # 4	BHA NO. 4 12 1/4" Hole	Date	September 16, 2002
Field	Lobitos	Well	Well LO16-25
Structure	Platform LO16 (WGS84)	Borehole	Borehole LO16-25

Item	Name	Vendor/ Model	Serial #	Fish Neck OD (in)/ Length (ft)	OD (in)/ ID (in)	Max OD (in)	Bottom/ Top Connection	Length (ft)	Cum. Length (ft)	
1	12 1/4" Bit	Smith International	JS7794		8	12 1/4		0.88	0.88	
		S987BHPX			3 1/4		6.63 Reg Pin			
2	A800M7840XP (1.15 deg)	Anadrill	01125	8.00	8 1/4	12 1/8	6.63 Reg Box	27.25	28.13	
		A800M7840XP		1.29	6 1/4		6.63 Reg Box			
3	Float Sub	Anadrill	14128-10	8.00	8	8	6.63 Reg Pin	2.58	30.71	
					2 13/16		6.63 Reg Box			
4	Non-Magnetic Short Drill Collar	Anadrill	876-1	8.06	8 1/16	8 1/16	6.63 Reg Pin	9.52	40.23	
					2 7/8		6.63 Reg Box			
5	Stabilizer	Anadrill	15845-1	8.00	8	11 15/16	6.63 Reg Pin	5.98	46.21	
				2.58	2 13/16		6.63 Reg Box			
6	UBHO Sub	Anadrill	12689-7		8	8	6.63 Reg Pin	2.22	48.43	
					2 13/16		6.63 Reg Box			
7	NMDC w/ Slim-1	Anadrill	8585	8.00	8	8	6.63 Reg Pin	30.48	78.91	
		Slim-1			4 19/50		6.63 Reg Box			
8	8" Non-Magnetic Drill Collar	Anadrill	H-872		7 7/8	7 7/8	6.63 Reg Pin	30.71	109.62	
					2 7/8		6.63 Reg Box			
9	7 3/4" Collar (2 joints)			7.69	7 11/16	7 11/16	6.63 Reg Pin	60.50	170.12	
					2 47/50		6.63 Reg Box			
10	Crossover				8	8	6.63 Reg Pin	2.25	172.37	
					2 13/16		4.50 NC46(XH)			
11	6 1/4" Collar (4 joints)			6.13	6 1/8	6 1/8	4.50 NC46(XH)	120.00	292.37	
					2 13/16		4.50 NC46(XH)			
12	Crossover				6 1/2	6 1/2	4.50 NC46(XH)	2.94	295.31	
					2 13/16		4.50 NC50(IF) Box			
13	5" HWDP (6 joints)				5	6 1/2	4.50 NC50(IF) Pin	180.56	475.87	
					3		4.50 NC50(IF) Box			
14	Hydraulic Jar	HE	03378	6.44	6 7/16	6 7/16	4.50 NC50(IF) Pin	32.08	507.95	
		Hydra-Jar		2.52	2 3/4		4.50 NC50(IF) Box			
15	5" HWDP (21 joints)				5	6 1/2	4.50 NC50(IF) Pin	630.35	1138.30	
					3		4.50 NC50(IF) Box			
							Total Weight (lbf)	76307	Total Len.	1138.30
							Below Jar (lbf)	42645.2		

BHA Comments: 374 ft were drilled successfully. Only 20% sliding was necessary to correct well path. Reached 9 5/8" csg point. Unfortunately due to tight hole problems 9 5/8" csg could not be set.

Stabilizer	
Blade Length (ft)	Mid-Pt. To Bit (ft)
1.33	2.89
2.00	42.73
Bent Housing Angle (deg)	
1.15	7.06
Bent To Bottom Connection (ft)	

Sensor	
Type	Distance To Bit (ft)
D&I	63.91

Bit Nozzles	
Count	Size(1/32 in)
8	14.00
1	15.00
TFA (in2)	1.38
Quality Control	
Created By:	Torres/Soto
Checked By:	Gilbert

GEOSCIENCES
Central File

BHA In: 1922' Out: 4504' Petro-Tech Peruana S.A. - Well LO16-25 ST

BHA #5	BHA NO. 5 12 1/4" ST#1
Field	Lobitos
Structure	Platform LO16 (WGS84)

Date	September 23, 2002
Well	Well LO16-25
Benhole	Sidetrack #1

Item	Name	Vendor/ Model	Serial #	Fish Neck OD (in)/ Length (ft)	OD (in)/ ID (in)	Max OD (in)	Bottom/ Top Connection	Length (ft)	Cum. Length (ft)	
1	12 1/4" Bit	Smith International	JS7794		8	12 1/4		0.88	0.88	
		S987BHPX			3 1/4		6.63 Reg Pin			
2	A800M7840XP (1.5 deg)	Anadrill	01125	8.00	8 1/4	12 1/8	6.63 Reg Box	27.25	28.13	
		A800M7840XP		1.29	6 1/4		6.63 Reg Box			
3	Float Sub	Anadrill	14128-10	8.00	8	8	6.63 Reg Pin	2.58	30.71	
					2 13/16		6.63 Reg Box			
4	Non-Magnetic Short Drill Collar	Anadrill	876-1	8.06	8 1/16	8 1/16	6.63 Reg Pin	9.52	40.23	
					2 7/8		6.63 Reg Box			
5	Stabilizer	Anadrill	15845-1	8.00	8	11 15/16	6.63 Reg Pin	5.98	46.21	
				2.58	2 13/16		6.63 Reg Box			
6	UBHO Sub	Anadrill	12689-7		8	8	6.63 Reg Pin	2.22	48.43	
					2 13/16		6.63 Reg Box			
7	NMDC w/ Slim-1	Anadrill	8585	8.00	8	8	6.63 Reg Pin	30.48	78.91	
		Slim-1			4 19/50		6.63 Reg Box			
8	8" Non-Magnetic Drill Collar	Anadrill	H-872		7 7/8	7 7/8	6.63 Reg Pin	30.71	109.62	
					2 7/8		6.63 Reg Box			
9	7 3/4" Collar (2 joints)			7.69	7 11/16	7 11/16	6.63 Reg Pin	60.50	170.12	
					2 47/50		6.63 Reg Box			
10	Crossover				8	8	6.63 Reg Pin	2.25	172.37	
					2 13/16		4.50 NC46(XH)			
11	6 1/4" Collar (4 joints)			6.13	6 1/8	6 1/8	4.50 NC46(XH)	120.00	292.37	
					2 13/16		4.50 NC46(XH)			
12	Crossover				6 1/2	6 1/2	4.50 NC46(XH)	2.94	295.31	
					2 13/16		4.50 NC50(IF) Box			
13	5" HWDP (6 joints)				5	6 1/2	4.50 NC50(IF) Pin	180.56	475.87	
					3		4.50 NC50(IF) Box			
14	Hydraulic Jar	HE	03378	6.44	6 7/16	6 7/16	4.50 NC50(IF) Pin	32.08	507.95	
		Hydra-Jar		2.52	2 3/4		4.50 NC50(IF) Box			
15	5" HWDP (21 joints)				5	6 1/2	4.50 NC50(IF) Pin	630.35	1138.30	
					3		4.50 NC50(IF) Box			
							Total Weight (lbf)	76307	Total Len:	1138.30
							Below Jar (lbf)	42645.2		

BHA Comments: Bha used to start side track #1 with a BUR 0.8 deg/100 and a TR de -0.6 deg /100ft.

Stabilizer	
Blade Length (ft)	Mid-Pl. To Bit (ft)
1.33	2.89
2.00	42.73
Bent To Bottom	
Bent Housing Angle (deg)	Connection (ft)
1.50	7.06

Sensor	
Type	Distance To Bit (ft)
D&I	63.91

Bit Nozzles	
Count	Size(1/32 in)
8	14.00
1	15.00
TFA (in2)	1.38

GEOSCIENCES Central File	Quality Control
	Created By: dec
	Checked By:
DATE	

BHA In: 4535' Out: 4651' Petro-Tech Peruana S.A. - Well LO16-25

BHA # 7	BHA NO. 7 81/2" ST#2 Hole
Field	Lobitos
Structure	Platform LO16 (WGS84)

Date	October 11, 2002
Well	Well LO16-25
Borehole	Sidetrack #2

Item	Name	Vendor/ Model	Serial #	Fish. Neck OD (in)/ Length (ft)	OD (in)/ ID (in)	Max OD (in)	Bottom/ Top Connection	Length (ft)	Cum. Length (ft)	
1	8 1/2" Bit	Geodiamond	M88PX		6	8 1/2		0.90	0.90	
		JR5253			2 1/4		4.50 Reg Pin			
2	A675 78XP (1.5 deg)	Anadrill	1434	6 5/8	6 3/4	8 3/8	4.50 Reg Box	25.25	26.15	
		A675S780XP	8375	1.33	5 1/2		4.50 NC50(IF) Box			
3	Crossover	Anadrill			6 13/16	6 13/16	4.50 NC50(IF) Pin	2.65	28.80	
					2 7/8		4.50 NC46(XH)			
4	Float Sub	Anadrill	20998-6		6 1/2	6 3/4	4.50 NC46(XH)	2.67	31.47	
					2 13/16		4.50 NC46(XH)			
5	8 1/16" String Stabilizer	Anadrill	12557-4	6 3/4	6 3/4	8 1/16	4.50 NC46(XH)	4.79	36.26	
				1.79	2 13/16		4.50 NC46(XH)			
6	UBHO Sub	Anadrill	14637-1		6 1/2	6 3/4	4.50 NC46(XH)	2.07	38.33	
					2 13/16		4.50 NC46(XH)			
7	Non-Magnetic Short Drill Collar	Anadrill	395-2	6 1/2	6 1/2	6 1/2	4.50 NC46(XH)	8.02	46.35	
					2 7/8		4.50 NC46(XH)			
8	NMDC & Slim-1 w/SGR	Anadrill	10097		6 9/16	6 9/16	4.50 NC46(XH)	30.70	77.05	
		Slim-1 w/SGR			2 7/8		4.50 NC46(XH)			
9	Non-Magnetic Drill Collar	Anadrill	K-870	6 9/16	6 5/16	6 5/16	4.50 NC46(XH)	30.62	107.67	
					2 7/8		4.50 NC46(XH)			
10	6 1/4" Collar x 4 jts (4 joints)				6 1/2	6 1/2	4.50 NC46(XH)	120.88	228.55	
					2 13/16		4.50 NC46(XH)			
11	Crossover				6 1/2	6 1/2	4.50 NC46(XH)	2.94	231.49	
					2 13/16		4.50 NC50(IF) Box			
12	5" HWDP x 6 joints (6 joints)				5	6 1/2	4.50 NC50(IF) Pin	180.56	412.05	
					3		4.50 NC50(IF) Box			
13	Hydraulic Jar	HE		6 1/2	6 1/2	6 1/2	4.50 NC50(IF) Pin	32.15	444.20	
		Hydra-Jar	3377	2.52	2 3/4		4.50 NC50(IF) Box			
14	5" HWDP x 20 joints (20 joints)				5	6 1/2	4.50 NC50(IF) Pin	600.88	1045.08	
					3		4.50 NC50(IF) Box			
							Total Weight (lbf)	62345	Total Len:	1045.08
							Below Jar (lbf)	30163.4		

BHA Comments: Bha was used to start side track #2, however due to cement hardness and hole instability could not side track very well making the bha to be pooh and run a bha to clean out hole.

Stabilizer	
Blade Length (ft)	Mid-Pt. To Bit (ft)
1.17	2.65
1.60	33.97
Bend To Bottom	
Bent Housing Angle (deg)	Connection (ft)
1.50	6.44

Sensor	
Type	Distance To Bit (ft)
Gamma Ra	53.05
D&I	62.05

Bit Nozzles	
Count	Size (1/32 in)
6	16.00
TFA (in2)	
1.18	
Quality Control	
Created By	F.H. G.S.
Checked By	


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3. CONCLUSIONS

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In the build up section a 1.5deg of bent housing angle (PDM A962M630SP 16 3/4" brg stabilizer) helped us to keep flow rates of 650 GPM without lost Build Up Rate & consequently hole stability was not compromised.

In build up section 73 % sliding was necessary, drilling at 30 ft/h (sliding mode) & 45 ft/hr (rotary mode). Flow rate was the necessary for hole cleaning at these ROP's.


12 1/4" BHA held inclination & azimuth at good ROP=75 ft/hr. Only 20% sliding was necessary to correct well path. No problems encountered while sliding with PDC bit. Unfortunately due to tight hole problems 9 5/8" csg could not be set.

For Sidetrack 1 a 1.5deg of bent housing angle PDM A800M7840XP 12 1/8" brg stabilizer was used. A BUR of 0.8 deg/100ft and a TR of -0.6 deg/100 ft was accomplished reaching 9 5/8" csg point.


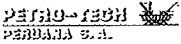
In 8 1/2" section GR log started logging while drilling down to 6647 ft. However due to hole inestablity and hole tightness bha got stuck and lost in the hole.

For sidetrack #2 a cement and a hole inestabilty problem was experienced making it very difficult to sidetrack and it had to be POOH and run a bha to clean out hole.


A 1.5deg of bent housing angle PDM A675M7850XP 8 3/16" brg stabilizer was used to continue with sidetrack 2 creating a DR of -0.3 deg/100ft and a turn rate of 0.2 deg/100 ft. and being able to reached target.

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4. RECOMMENDATIONS

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- 4.1 To continue with this 400 ft short trips, because flow rate is normally not enough to remove all cuttings when having high instantaneous penetration rates (350 ft/hr).
- 4.2 To run a gyro before kicking off the well, because of magnetic interference due to proximity of neighbor wells, therefore preventing collision.

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ATTACHEMENTS

Schlumberger	PETROTECH PERUANA S.A.	PETRO-TECH  PERUANA S.A.
	END OF WELL REPORT: LO16-25,ST1& ST2	Page 14

**ATTACHED A.
ANTICOLLISION REPORTS**

ANTI-COLLISION REPORT

Analysis Method:	3D Least Distance	Distance Unit:	ft
Depth Interval:	Every 100.00ft Measured Depth	Azimuth Unit:	degrees
Step-down Trajectory:	Subject Trajectory	Azimuth Reference:	North
Date:	October 21, 2002		

NOTE: Measured Depth is referenced to individual borehole elevation
 TVD, NS, EW are referenced to the subject trajectory's wellhead location and borehole elevation.

Subject Trajectory Summary

Client:	Petro-Tech Peruana S.A.		
Field:	Lobitos	Well:	Well LO16-25
Structure:	Platform LO16 (WGS84)	Borehole:	Borehole LO16-25
Slot:	Slot #25	Trajectory:	LO 16-25 Gyro + MWD Surveys
		Type:	DEF SVY

Coordinate System: UTM Zone 17S - WGS84, Meters

Reference Point:					
Northing (m)	Easting (m)	Elevation (ft)	Structure Unc. (ft)	Slot Unc. (ft)	Hole Diameter (ft)
N 9505997.130	E 459456.430	50.00 above MSL	0.000	0.000	2.500

Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma

Surveying Prog:					
	MD From (ft)	MD To (ft)	EOU Freq	Survey Tool Type	
	0.00	730.00	Act-Stns	SLB_NSG+MSHOT	
	730.00	5125.00	Act-Stns	SLB_MWD-STD	

Offset Trajectories Summary

Offset Selection Criteria
 Wellhead distance scan: Not performed!
 Selection filters: no filters used

Trajectory	Borehole	Well	Type
LO16-07 SS Survey	Borehole LO16-07	Well LO16-07	DEF SVY
LO16-08 Gyro + SS	Borehole LO16-08	Well LO16-08	DEF SVY
LO16-09 Gyro + SS	Borehole LO16-09	Well LO16-09	DEF SVY
LO16-10 Gyro + SS	Borehole LO16-10	Well LO16-10	DEF SVY
LO16-11 SS Survey	Borehole LO16-11	Well LO16-11	DEF SVY
LO16-12 SS Survey	Borehole LO16-12	Well LO16-12	DEF SVY
LO16-13 SS Survey	Borehole LO16-13	Well LO16-13	DEF SVY
LO16-14 MWD Survey	Borehole LO16-14	Well LO16-14	DEF SVY
LO16-15 S1 SS Survey	Borehole LO16-15 S1	Well LO16-15	DEF SVY
LO16-16 Gyro + SS	Borehole LO16-16	Well LO16-16	DEF SVY
LO16-17 Gyro + SS	Borehole LO16-17	Well LO16-17	DEF SVY
LO16-18 Gyro + SS	Borehole LO16-18	Well LO16-18	DEF SVY
LO16-19 SS Survey	Borehole LO16-19	Well LO16-19	DEF SVY
LO16-20 MWD Survey	Borehole LO16-20	Well LO16-20	DEF SVY
LO16-21 SS Survey	Borehole LO16-21	Well LO16-21	DEF SVY
LO16-22 Gyro + SS	Borehole LO16-22	Well LO16-22	DEF SVY
LO16-23 Gyro + MWD	Borehole LO16-23	Well LO16-23	DEF SVY
LO16-24 MWD Survey	Borehole LO16-24	Well LO16-24	DEF SVY
LO16-24 S1 MWD Survey	Borehole LO16-24 S1	Well LO16-24	DEF SVY
LO16-26 Gyro + MWD	Borehole LO16-26	Well LO16-26	DEF SVY

Major EOU radii used. All local minima indicated.

Results highlighted: Separation Factor <= 1.50

Anti-Collision Rules Used

Alert Rule Type:	Separation Factor Based
EOU Confidence level:	3-D 95.00% Confidence 2.7955 sigma
Allowable deviation based-on:	Minor Risk - Alert Radius NOT Added
Wellbore Diameter:	2.50 ft diameter included in results
Major Risk:	Separation Factor 1.00
Minor Risk:	Separation Factor 1.50
Alert Zone:	Separation Factor 5.00

GEOSCIENCES
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Individual Offset Trajectories Details														
Field:	Lobitos				Well:	Well LO16-07								
Structure:	Platform LO16 (WGS84)				Borehole:	Borehole LO16-07								
Slot:	Slot #07				Trajectory:	LO16-07 SS Survey								
					Type:	DEF SVY								
Coordinate System:	UTM Zone 17S - WGS84, Meters													
Reference Point:														
Northing (m)	Easting (m)			Elevation (ft)			Structure Unc. (ft)			Slot Unc. (ft)		Hole Diameter (ft)		
N 9505998.340	E 459456.980			50.00 above MSL			0.000			0.000		2.500		
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma													
Surveying Prog:														
	MD From (ft)			MD To (ft)			EOU Freq			Survey Tool Type				
	0.00			8240.00			Act-Stns			SLB_MWD-POOR				
Subject Trajectory				Offset Trajectory				Ct-Ct		EOU		Sep	Inter.	
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle		
Major EOU radii used. All local minima indicated.														
Results highlighted: Separation Factor <= 1.50														
0.00	0.00	N 0.00	E 0.00	1.01	0.98	N 3.73	E 1.78	25.46	4.24	1.60	1.60	14.00		
100.00	100.00	S 0.71	E 0.31	98.17	95.23	S 19.64	W 1.36	185.01	19.59	14.14	3.59	13.64		
200.00	199.99	S 0.60	W 0.69	195.10	189.24	S 43.07	W 4.60	185.56	43.98	38.41	7.90	14.57		
300.00	299.96	N 0.38	W 2.63	291.77	282.95	S 66.56	W 7.96	184.76	69.27	63.52	12.03	14.65		
400.00	399.91	N 2.15	W 5.29	388.17	376.37	S 90.10	W 11.43	184.27	95.40	89.07	15.07	15.08		
500.00	499.86	N 3.89	W 7.99	484.52	469.70	S 113.74	W 15.02	183.76	121.64	114.70	17.52	15.34		
600.00	599.79	N 6.50	W 10.44	580.56	562.70	S 137.43	W 18.72	183.71	148.86	141.43	20.04	16.79		
700.00	699.50	N 13.32	W 13.24	675.22	654.31	S 160.89	W 22.82	183.87	180.23	172.09	22.14	20.22		
800.00	798.25	N 28.18	W 17.63	766.38	742.47	S 183.62	W 27.56	184.34	219.24	210.79	25.92	25.94		
900.00	894.55	N 52.85	W 27.78	851.74	824.83	S 205.41	W 32.85	185.25	267.55	258.83	30.69	32.67		
1000.00	986.23	N 87.40	W 47.35	930.34	900.47	S 226.01	W 38.48	186.15	325.05	315.77	35.02	39.76		
1100.00	1071.99	N 131.23	W 74.02	1001.56	968.84	S 245.06	W 44.33	186.22	391.30	381.14	38.52	46.87		
1200.00	1151.22	N 184.29	W 104.01	1064.33	1028.97	S 262.12	W 50.15	186.67	465.97	455.18	43.18	52.85		
1300.00	1223.77	N 243.95	W 138.18	1120.99	1083.14	S 277.68	W 56.03	188.41	546.47	534.34	45.06	58.15		
1400.00	1289.41	N 308.83	W 176.59	1171.21	1131.05	S 291.49	W 61.92	191.59	631.36	617.55	45.71	62.42		
1500.00	1349.46	N 376.07	W 219.81	1216.71	1174.40	S 304.02	W 67.83	194.24	718.52	702.80	45.69	64.96		
1600.00	1403.36	N 441.99	W 272.09	1258.24	1213.91	S 315.45	W 73.62	200.57	805.60	787.64	44.85	67.23		
1700.00	1449.13	N 503.82	W 335.85	1294.74	1248.62	S 325.47	W 78.80	205.43	891.06	870.60	43.55	70.56		
1800.00	1489.72	N 561.30	W 406.87	1328.74	1280.95	S 334.77	W 83.66	203.19	975.20	952.26	42.52	70.48		
1900.00	1531.50	N 615.06	W 480.10	1365.55	1315.96	S 344.83	W 88.98	196.87	1058.69	1033.49	42.01	67.75		
2000.00	1576.72	N 665.16	W 553.88	1407.17	1355.55	S 356.16	W 95.06	190.67	1141.29	1113.90	41.66	64.83		
2100.00	1625.71	N 712.30	W 627.20	1453.64	1399.74	S 368.78	W 101.92	185.71	1222.99	1193.34	41.24	62.56		
2200.00	1676.58	N 757.47	W 700.50	1502.79	1446.48	S 382.07	W 109.27	182.56	1304.24	1272.33	40.87	61.32		
2300.00	1728.31	N 800.47	W 774.48	1553.61	1494.82	S 395.77	W 116.94	180.01	1384.87	1351.13	41.05	60.29		
2400.00	1780.41	N 842.11	W 849.00	1605.60	1544.26	S 409.73	W 124.88	178.13	1465.34	1429.59	40.99	60.06		
2500.00	1831.77	N 883.01	W 924.42	1657.53	1593.65	S 423.64	W 132.89	177.99	1546.14	1508.40	40.97	60.79		
2600.00	1880.21	N 923.03	W 1002.21	1707.51	1641.19	S 436.97	W 140.68	179.21	1627.56	1587.77	40.90	62.62		
2700.00	1925.55	N 962.77	W 1081.98	1755.11	1686.46	S 449.63	W 148.17	178.38	1709.99	1668.24	40.96	63.06		
2800.00	1971.36	N 1002.24	W 1161.63	1803.62	1732.60	S 462.49	W 155.87	176.31	1792.76	1749.12	41.09	62.59		
2900.00	2017.25	N 1041.43	W 1241.36	1852.83	1779.38	S 475.52	W 163.81	175.02	1875.86	1830.13	41.02	62.58		
3000.00	2062.68	N 1080.57	W 1321.39	1902.08	1826.18	S 488.54	W 171.89	174.03	1959.44	1911.61	40.97	62.78		
3100.00	2107.25	N 1120.59	W 1401.47	1950.65	1872.32	S 501.38	W 179.99	173.37	2044.01	1993.99	40.87	63.59		
3200.00	2151.00	N 1161.84	W 1481.37	2004.10	1923.11	S 515.40	W 189.03	171.88	2129.60	2077.42	40.81	63.53		
3300.00	2195.29	N 1203.08	W 1560.98	2059.46	1975.74	S 529.68	W 198.50	169.96	2215.17	2160.92	40.83	62.85		
3400.00	2240.15	N 1243.72	W 1640.57	2116.58	2030.11	S 544.16	W 208.38	168.40	2300.40	2244.09	40.85	62.17		
3500.00	2285.53	N 1283.70	W 1720.21	2169.84	2080.83	S 557.47	W 217.70	166.92	2385.24	2326.85	40.85	61.58		
3600.00	2331.37	N 1323.19	W 1799.83	2221.06	2129.60	S 570.21	W 226.73	166.12	2469.89	2409.39	40.83	61.42		
3700.00	2376.59	N 1362.12	W 1880.08	2272.17	2178.29	S 582.89	W 235.79	165.74	2554.61	2492.02	40.81	61.56		
3800.00	2421.96	N 1400.95	W 1960.29	2323.73	2227.39	S 595.63	W 245.00	164.27	2639.40	2574.72	40.81	61.16		
3900.00	2467.68	N 1440.11	W 2040.14	2386.33	2287.05	S 610.88	W 256.23	163.19	2724.24	2657.32	40.71	61.20		
4000.00	2512.79	N 1480.33	W 2119.81	2449.46	2347.33	S 625.85	W 267.60	162.37	2809.63	2740.49	40.64	61.55		
4100.00	2557.95	N 1521.40	W 2199.02	2513.33	2408.39	S 640.56	W 279.15	160.65	2895.23	2823.86	40.56	61.04		
4200.00	2603.71	N 1563.01	W 2277.59	2577.55	2469.88	S 654.96	W 290.84	159.45	2980.69	2907.01	40.46	60.59		

4300.00	2649.58	N 1604.47	W 2356.19	2642.19	2531.76	S 669.26	W 302.88	158.78	3065.91	2989.88	40.32	60.23	
4400.00	2695.57	N 1645.38	W 2435.00	2708.42	2595.13	S 683.74	W 315.53	158.17	3150.72	3072.29	40.17	59.59	
4500.00	2741.85	N 1685.35	W 2514.12	2776.65	2660.40	S 698.47	W 328.89	157.58	3234.88	3154.09	40.04	58.88	
4600.00	2788.32	N 1724.47	W 2593.56	2838.84	2719.87	S 711.74	W 341.31	157.20	3318.50	3235.23	39.85	58.94	
4700.00	2833.62	N 1764.91	W 2673.00	2897.76	2776.22	S 724.21	W 353.20	157.01	3403.02	3317.23	39.67	60.02	
4800.00	2878.56	N 1805.27	W 2752.69	2956.84	2832.72	S 736.61	W 365.21	156.48	3487.60	3399.49	39.58	58.83	
4900.00	2924.60	N 1843.81	W 2832.67	3018.14	2891.34	S 749.38	W 377.79	155.96	3571.01	3480.52	39.46	58.22	
5000.00	2970.49	N 1882.01	W 2912.88	3077.92	2948.49	S 761.78	W 390.21	155.64	3654.31	3561.34	39.31	58.49	
5100.00	3015.57	N 1921.60	W 2992.88	3135.91	3003.83	S 773.94	W 402.55	155.01	3738.44	3642.96	39.15	59.22	
5125.00	3026.71	N 1931.83	W 3012.79	3150.24	3017.49	S 776.98	W 405.64	154.82	3759.64	3663.54	39.12	59.42	
Field:	Lobitos			Well:	Well LO16-08								
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-08								
Slot:	Slot #08			Trajectory:	LO16-08 Gyro + SS								
				Type:	DEF SVY								
Coordinate System:	UTM Zone 17S - WGS84, Meters												
Reference Point:													
Northing (m)	Easting (m)			Elevation (ft)				Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505997.540	E 459460.690			50.00 above MSL				0.000		0.000		2.500	
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma												
Surveying Prog:													
MD From (ft)	MD To (ft)			EOU Freq				Survey Tool Type					
0.00	2017.16			Act-Stns				SLB_NSG+MSHOT					
2017.16	8226.00			Act-Stns				SLB_MWD-POOR					
Subject Trajectory				Offset Trajectory				Ct-Ct	EOU	Sep	Inter.		
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle	
Major EOU radii used. All local minima indicated.													
Results highlighted: Separation Factor <= 1.50													
0.00	0.00	N 0.00	E 0.00	2.60	2.52	N 0.89	E 13.54	86.24	13.80	11.30	5.52	14.00	
100.00	100.00	S 0.71	E 0.31	99.69	96.75	S 15.91	W 2.80	191.54	15.85	12.02	4.14	13.67	
200.00	199.99	S 0.60	W 0.69	196.93	191.14	S 32.81	W 18.88	209.75	38.03	34.10	9.67	13.51	
300.00	299.96	N 0.38	W 2.63	294.02	285.40	S 49.84	W 34.73	212.81	61.37	56.66	13.04	13.81	
400.00	399.91	N 2.15	W 5.29	391.52	380.07	S 67.18	W 50.32	213.46	85.02	79.03	14.20	13.32	
500.00	499.86	N 3.89	W 7.99	489.45	475.33	S 84.40	W 65.18	213.31	108.02	100.72	14.79	13.35	
600.00	599.79	N 6.50	W 10.44	587.36	570.69	S 101.14	W 79.71	213.35	131.27	122.79	15.48	14.15	
700.00	699.50	N 13.32	W 13.24	684.01	664.92	S 117.38	W 93.83	212.90	157.40	147.56	16.01	16.80	
800.00	798.25	N 28.18	W 17.63	777.43	755.95	S 133.05	W 107.82	211.97	189.52	178.75	17.60	21.73	
900.00	894.55	N 52.85	W 27.78	866.43	842.48	S 148.36	W 121.87	210.46	228.14	216.51	19.62	27.43	
1000.00	986.23	N 87.40	W 47.35	949.83	923.34	S 163.21	W 135.91	208.34	273.14	260.37	21.39	33.87	
1100.00	1071.99	N 131.23	W 74.02	1026.41	997.37	S 177.46	W 149.36	206.20	326.40	312.23	23.03	41.04	
1200.00	1151.22	N 184.29	W 104.01	1096.54	1064.98	S 190.84	W 162.30	204.59	389.30	373.97	25.38	46.83	
1300.00	1223.77	N 243.95	W 138.18	1158.04	1124.13	S 202.79	W 174.19	204.30	459.14	442.14	27.02	52.40	
1400.00	1289.41	N 308.83	W 176.59	1211.50	1175.39	S 213.60	W 184.83	204.97	534.79	515.92	28.34	57.05	
1500.00	1349.46	N 376.07	W 219.81	1263.00	1224.68	S 224.25	W 195.32	204.81	613.64	592.64	29.22	59.72	
1600.00	1403.36	N 441.99	W 272.09	1311.30	1270.86	S 234.27	W 205.32	206.09	692.34	668.96	29.61	61.88	
1700.00	1449.13	N 503.82	W 335.85	1352.50	1310.19	S 242.91	W 214.02	207.33	769.26	743.27	29.60	65.18	
1800.00	1489.72	N 561.30	W 406.87	1391.03	1346.88	S 251.19	W 222.39	204.11	845.33	816.76	29.59	65.10	
1900.00	1531.50	N 615.06	W 480.10	1433.14	1386.86	S 260.44	W 231.82	197.99	921.45	890.46	29.74	62.30	
2000.00	1576.72	N 665.16	W 553.88	1482.26	1433.38	S 271.36	W 243.23	191.99	997.06	963.66	29.86	59.16	
2100.00	1625.71	N 712.30	W 627.20	1536.49	1484.57	S 283.52	W 256.33	187.15	1071.98	1036.07	29.86	56.72	
2200.00	1676.58	N 757.47	W 700.50	1593.55	1538.34	S 296.37	W 270.44	183.87	1146.57	1108.19	29.87	55.40	
2300.00	1728.31	N 800.47	W 774.48	1652.14	1593.49	S 309.58	W 285.17	181.13	1220.59	1180.25	30.26	54.29	
2400.00	1780.41	N 842.11	W 849.00	1711.55	1649.35	S 323.01	W 300.28	179.13	1294.51	1252.02	30.46	54.05	
2500.00	1831.77	N 883.01	W 924.42	1775.69	1709.60	S 337.47	W 316.89	178.36	1368.79	1324.07	30.61	54.48	
2600.00	1880.21	N 923.03	W 1002.21	1838.23	1768.26	S 351.45	W 333.49	178.73	1443.61	1396.67	30.75	56.03	
2700.00	1925.55	N 962.77	W 1081.98	1897.04	1823.36	S 364.52	W 349.32	177.57	1519.52	1470.45	30.96	56.37	
2800.00	1971.36	N 1002.24	W 1161.63	1964.57	1886.59	S 379.37	W 367.82	175.28	1595.67	1544.53	31.20	55.52	
2900.00	2017.25	N 1041.43	W 1241.36	2032.90	1950.49	S 394.02	W 387.09	173.70	1671.75	1618.51	31.40	55.17	
3000.00	2062.68	N 1080.57	W 1321.39	2088.18	2002.13	S 405.83	W 402.86	172.73	1748.36	1693.24	31.72	55.53	
3100.00	2107.25	N 1120.59	W 1401.47	2145.96	2056.08	S 418.27	W 419.42	172.05	1826.23	1769.10	31.96	56.36	
3200.00	2151.00	N 1161.84	W 1481.37	2212.33	2117.88	S 432.55	W 438.93	170.63	1905.22	1846.12	32.24	56.07	
3300.00	2195.29	N 1203.08	W 1560.98	2280.90	2181.52	S 447.26	W 459.79	168.91	1984.04	1923.05	32.53	55.14	

3400.00	2240.15	N 1243.72	W 1640.57	2351.99	2247.27	S 462.46	W 482.16	167.47	2062.29	1999.43	32.81	54.18			
3500.00	2285.53	N 1283.70	W 1720.21	2422.86	2312.57	S 477.55	W 505.19	166.10	2139.87	2074.97	32.98	53.32			
3600.00	2331.37	N 1323.19	W 1799.83	2488.35	2372.86	S 491.38	W 526.72	165.30	2217.02	2149.77	32.96	53.08			
3700.00	2376.59	N 1362.12	W 1880.08	2554.00	2433.29	S 505.10	W 548.39	164.83	2294.15	2224.55	32.96	53.12			
3800.00	2421.96	N 1400.95	W 1960.29	2626.70	2500.21	S 520.08	W 572.52	163.53	2371.16	2298.94	32.83	52.54			
3900.00	2467.68	N 1440.11	W 2040.14	2705.55	2572.80	S 535.87	W 598.96	162.67	2447.96	2372.96	32.64	52.45			
4000.00	2512.79	N 1480.33	W 2119.81	2784.75	2645.71	S 551.22	W 625.83	162.05	2525.24	2447.53	32.49	52.69			
4100.00	2557.95	N 1521.40	W 2199.02	2863.77	2718.54	S 565.89	W 652.73	160.79	2602.61	2522.02	32.29	52.21			
4200.00	2603.71	N 1563.01	W 2277.59	2943.81	2792.61	S 579.81	W 679.68	159.84	2679.67	2596.22	32.11	51.81			
4300.00	2649.58	N 1604.47	W 2356.19	2994.77	2839.92	S 588.23	W 696.66	159.45	2756.48	2670.58	32.09	52.03			
4400.00	2695.57	N 1645.38	W 2435.00	3020.18	2863.54	S 592.62	W 704.90	159.25	2833.75	2745.69	32.18	52.38			
4500.00	2741.85	N 1685.35	W 2514.12	3059.58	2900.16	S 599.83	W 717.54	158.94	2911.15	2820.74	32.20	52.31			
4600.00	2788.32	N 1724.47	W 2593.56	3097.39	2935.22	S 607.11	W 729.65	158.85	2988.65	2895.83	32.20	52.93			
4700.00	2833.62	N 1764.91	W 2673.00	3132.44	2967.73	S 614.11	W 740.75	159.06	3067.79	2972.55	32.21	54.63			
4800.00	2878.56	N 1805.27	W 2752.69	3166.63	2999.44	S 621.17	W 751.43	158.64	3147.59	3050.10	32.29	53.94			
4900.00	2924.60	N 1843.81	W 2832.67	3200.98	3031.29	S 628.48	W 762.00	158.32	3226.64	3126.89	32.35	53.85			
5000.00	2970.49	N 1882.01	W 2912.88	3234.65	3062.51	S 635.86	W 772.23	158.30	3306.14	3204.10	32.40	54.71			
5100.00	3015.57	N 1921.60	W 2992.88	3290.54	3114.30	S 648.34	W 789.10	157.92	3386.89	3282.07	32.31	55.67			
5125.00	3026.71	N 1931.83	W 3012.79	3304.74	3127.46	S 651.53	W 793.40	157.80	3407.28	3301.77	32.29	55.92			
Field:	Lobitos			Well:	Well LO16-09										
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-09										
Slot:	Slot #09			Trajectory:	LO16-09 Gyro + SS										
				Type:	DEF SVY										
Coordinate System:	UTM Zone 17S - WGS84, Meters														
Reference Point:															
Northing (m)	Easting (m)			Elevation (ft)			Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)				
N 9505995.230	E 459463.240			50.00 above MSL			0.000		0.000		2.500				
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma														
Surveying Prog:															
MD From (ft)	MD To (ft)			EOU Freq		Survey Tool Type									
0.00	2017.16			Act-Stns		SLB_NSG+MSHOT									
2017.16	7995.00			Act-Stns		SLB_MWD-POOR									
Subject Trajectory	Offset Trajectory											Ct-Ct	EOU	Sep	Inter.
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle			
Major EOU radii used. All local minima indicated.															
Results highlighted: Separation Factor <= 1.50															
0.00	0.00	N 0.00	E 0.00	4.72	4.58	S 6.58	E 21.26	107.21	22.72	20.22	9.09	14.00			
100.00	100.00	S 0.71	E 0.31	101.86	98.85	S 13.05	W 1.24	187.17	12.49	8.66	3.26	13.87			
200.00	199.99	S 0.60	W 0.69	199.35	193.52	S 18.38	W 23.92	232.80	29.96	26.02	7.61	12.83			
300.00	299.96	N 0.38	W 2.63	296.87	288.24	S 22.99	W 46.67	242.23	51.22	47.01	12.18	13.15			
400.00	399.91	N 2.15	W 5.29	394.92	383.55	S 27.93	W 69.17	245.12	72.48	67.26	13.87	11.93			
500.00	499.86	N 3.89	W 7.99	494.24	480.31	S 32.14	W 91.12	246.87	92.69	86.48	14.93	11.72			
600.00	599.79	N 6.50	W 10.44	592.63	576.29	S 33.42	W 112.71	249.26	112.28	105.18	15.83	11.77			
700.00	699.50	N 13.32	W 13.24	691.33	672.63	S 34.55	W 134.14	249.69	132.78	124.59	16.21	12.15			
800.00	798.25	N 28.18	W 17.63	789.32	768.41	S 35.30	W 154.82	247.65	154.08	145.19	17.32	14.31			
900.00	894.55	N 52.85	W 27.78	885.15	862.09	S 35.79	W 175.00	242.83	174.89	165.36	18.36	17.97			
1000.00	986.23	N 87.40	W 47.35	978.18	952.91	S 35.95	W 195.19	235.65	195.40	184.98	18.74	22.85			
1100.00	1071.99	N 131.23	W 74.02	1066.37	1038.69	S 35.10	W 215.62	228.55	220.97	209.34	19.00	29.06			
1200.00	1151.22	N 184.29	W 104.01	1148.64	1118.33	S 34.17	W 236.24	222.20	257.48	244.89	20.45	34.45			
1300.00	1223.77	N 243.95	W 138.18	1227.26	1193.96	S 32.95	W 257.65	216.97	303.04	288.93	21.47	39.09			
1400.00	1289.41	N 308.83	W 176.59	1303.68	1267.09	S 31.20	W 279.77	212.41	356.04	340.09	22.32	42.62			
1500.00	1349.46	N 376.07	W 219.81	1376.31	1336.35	S 29.09	W 301.51	208.03	413.53	395.51	22.95	45.05			
1600.00	1403.36	N 441.99	W 272.09	1445.56	1402.37	S 27.00	W 322.33	203.65	471.67	451.32	23.18	47.58			
1700.00	1449.13	N 503.82	W 335.85	1509.73	1463.63	S 25.10	W 341.33	199.75	529.15	506.23	23.09	51.76			
1800.00	1489.72	N 561.30	W 406.87	1573.93	1525.05	S 23.07	W 359.95	193.89	587.32	561.84	23.06	52.24			
1900.00	1531.50	N 615.06	W 480.10	1638.82	1587.24	S 20.61	W 378.30	187.14	646.19	618.36	23.22	49.98			
2000.00	1576.72	N 665.16	W 553.88	1703.93	1649.75	S 18.05	W 396.32	181.24	704.94	674.85	23.43	47.59			
2100.00	1625.71	N 712.30	W 627.20	1771.90	1715.10	S 15.37	W 414.83	176.44	763.29	730.87	23.55	45.65			
2200.00	1676.58	N 757.47	W 700.50	1843.44	1783.90	S 12.59	W 434.19	172.69	821.84	787.14	23.69	44.73			
2300.00	1728.31	N 800.47	W 774.48	1921.60	1859.13	S 9.08	W 455.11	169.19	880.05	843.57	24.13	43.93			
2400.00	1780.41	N 842.11	W 849.00	2032.80	1966.28	N 0.17	W 483.31	165.10	936.55	897.97	24.28	43.19			

2500.00	1831.77	N 883.01	W 924.42	2100.73	2031.73	N 7.18	W 500.06	163.33	993.56	953.18	24.60	44.50	
2600.00	1880.21	N 923.03	W 1002.21	2166.35	2094.98	N 13.55	W 516.38	162.30	1053.24	1010.95	24.91	46.90	
2700.00	1925.55	N 962.77	W 1081.98	2229.50	2155.83	N 19.31	W 532.22	160.52	1115.97	1071.86	25.30	47.64	
2800.00	1971.36	N 1002.24	W 1161.63	2292.91	2216.94	N 24.74	W 548.26	158.36	1179.85	1134.02	25.75	47.33	
2900.00	2017.25	N 1041.43	W 1241.36	2359.62	2281.21	N 30.12	W 565.28	156.59	1244.79	1197.19	26.15	47.46	
3000.00	2062.68	N 1080.57	W 1321.39	2428.49	2347.54	N 35.62	W 583.02	154.99	1310.82	1261.43	26.54	47.71	
3100.00	2107.25	N 1120.59	W 1401.47	2496.86	2413.34	N 41.05	W 600.78	153.64	1378.47	1327.12	26.84	48.36	
3200.00	2151.00	N 1161.84	W 1481.37	2564.69	2478.58	N 46.47	W 618.49	152.11	1447.73	1394.51	27.20	48.37	
3300.00	2195.29	N 1203.08	W 1560.98	2633.17	2544.45	N 51.96	W 636.46	150.53	1517.14	1462.13	27.58	47.85	
3400.00	2240.15	N 1243.72	W 1640.57	2705.64	2614.09	N 57.85	W 655.57	149.11	1586.31	1529.42	27.88	47.35	
3500.00	2285.53	N 1283.70	W 1720.21	2782.16	2687.57	N 64.40	W 675.90	147.68	1654.97	1596.08	28.10	46.71	
3600.00	2331.37	N 1323.19	W 1799.83	2859.82	2762.07	N 71.44	W 696.68	146.55	1723.17	1662.24	28.28	46.49	
3700.00	2376.59	N 1362.12	W 1880.08	2937.64	2836.64	N 78.88	W 717.66	145.61	1791.52	1728.56	28.45	46.59	
3800.00	2421.96	N 1400.95	W 1960.29	3013.32	2909.10	N 86.53	W 738.11	144.33	1859.76	1794.56	28.52	46.10	
3900.00	2467.68	N 1440.11	W 2040.14	3089.31	2981.83	N 94.69	W 758.54	143.30	1927.95	1860.52	28.59	46.16	
4000.00	2512.79	N 1480.33	W 2119.81	3164.97	3054.24	N 103.27	W 778.77	142.41	1996.96	1927.32	28.68	46.50	
4100.00	2557.95	N 1521.40	W 2199.02	3240.93	3126.90	N 112.35	W 798.97	141.26	2066.22	1994.35	28.75	45.97	
4200.00	2603.71	N 1563.01	W 2277.59	3311.83	3194.71	N 121.18	W 817.69	140.41	2135.28	2061.10	28.78	45.77	
4300.00	2649.58	N 1604.47	W 2356.19	3381.72	3261.57	N 130.10	W 835.96	139.78	2204.40	2127.91	28.82	45.83	
4400.00	2695.57	N 1645.38	W 2435.00	3451.57	3328.42	N 139.20	W 854.04	139.21	2273.43	2194.59	28.83	45.71	
4500.00	2741.85	N 1685.35	W 2514.12	3521.51	3395.38	N 148.53	W 871.96	138.65	2342.13	2260.98	28.86	45.57	
4600.00	2788.32	N 1724.47	W 2593.56	3593.24	3464.07	N 158.32	W 890.17	138.08	2410.61	2326.98	28.83	45.85	
4700.00	2833.62	N 1764.91	W 2673.00	3664.36	3532.17	N 168.27	W 908.08	137.50	2480.36	2394.20	28.79	46.81	
4800.00	2878.56	N 1805.27	W 2752.69	3735.13	3599.95	N 178.43	W 925.76	137.03	2550.43	2461.93	28.82	46.16	
4900.00	2924.60	N 1843.81	W 2832.67	3806.74	3668.52	N 188.95	W 943.50	136.49	2619.33	2528.46	28.82	45.91	
5000.00	2970.49	N 1882.01	W 2912.88	3881.37	3739.98	N 200.22	W 961.84	135.90	2688.33	2594.91	28.78	46.25	
5100.00	3015.57	N 1921.60	W 2992.88	3958.96	3814.23	N 212.45	W 980.75	135.11	2758.20	2662.12	28.71	46.66	
5125.00	3026.71	N 1931.83	W 3012.79	3978.29	3832.71	N 215.59	W 985.44	134.90	2775.84	2679.09	28.69	46.76	
Field:	Lobitos			Well:	Well LO16-10								
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-10								
Slot:	Slot #10			Trajectory:	LO16-10 Gyro + SS								
				Type:	DEF SVY								
Coordinate System:	UTM Zone 17S - WGS84, Meters												
Reference Point:													
Northing (m)	Easting (m)			Elevation (ft)				Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505992.100	E 459464.350			50.00 above MSL				0.000		0.000		2.500	
Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma													
Surveying Prog:													
MD From (ft)	MD To (ft)			EOU Freq				Survey Tool Type					
0.00	4017.16			Act-Stns				SLB_NSG+MSHOT					
4017.16	6602.00			Act-Stns				SLB_MWD-POOR					
Subject Trajectory				Offset Trajectory				Ct-Ct	EOU	Sep	Inter.		
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle	
Major EOU radii used. All local minima indicated.													
Results highlighted: Separation Factor <= 1.50													
0.00	0.00	N 0.00	E 0.00	6.76	6.56	S 16.30	E 24.36	123.79	30.04	27.52	11.91	14.00	
100.00	100.00	S 0.71	E 0.31	103.93	100.85	S 12.30	E 1.25	175.39	11.66	7.82	3.04	14.17	
200.00	199.99	S 0.60	W 0.69	201.44	195.47	S 6.10	W 21.48	255.34	21.98	18.04	5.58	12.84	
300.00	299.96	N 0.38	W 2.63	298.80	289.92	N 0.82	W 44.07	270.71	42.64	38.38	10.01	13.18	
400.00	399.91	N 2.15	W 5.29	396.06	384.21	N 6.63	W 67.19	274.32	64.02	58.72	12.09	12.55	
500.00	499.86	N 3.89	W 7.99	492.23	477.17	N 12.81	W 91.03	276.37	86.55	80.14	13.52	13.92	
600.00	599.79	N 6.50	W 10.44	586.09	567.33	N 19.59	W 116.23	277.71	111.43	104.01	15.01	15.30	
700.00	699.50	N 13.32	W 13.24	677.26	653.90	N 27.97	W 143.55	278.20	138.84	130.16	16.00	16.60	
800.00	798.25	N 28.18	W 17.63	764.71	735.51	N 38.42	W 173.14	277.65	168.00	158.43	17.56	17.77	
900.00	894.55	N 52.85	W 27.78	850.85	813.83	N 51.52	W 206.49	275.71	196.10	185.65	18.76	17.07	
1000.00	986.23	N 87.40	W 47.35	939.60	892.57	N 67.80	W 244.03	272.39	218.73	207.00	18.66	15.90	
1100.00	1071.99	N 131.23	W 74.02	1029.51	970.50	N 87.20	W 284.45	268.83	237.74	224.36	17.77	17.98	
1200.00	1151.22	N 184.29	W 104.01	1118.58	1045.70	N 109.54	W 326.80	264.48	257.43	242.57	17.33	20.01	
1300.00	1223.77	N 243.95	W 138.18	1207.28	1118.36	N 134.98	W 370.65	259.67	277.54	260.54	16.33	21.46	
1400.00	1289.41	N 308.83	W 176.59	1295.04	1188.02	N 162.75	W 416.22	254.18	298.40	278.93	15.33	22.51	

1500.00	1349.46	N 376.07	W 219.81	1382.21	1255.07	N 192.19	W 463.50	248.37	319.55	297.33	14.38	22.18	
1600.00	1403.36	N 441.99	W 272.09	1470.01	1319.94	N 223.79	W 513.52	240.16	335.94	310.61	13.26	19.66	
1700.00	1449.13	N 503.82	W 335.85	1559.44	1382.54	N 258.19	W 567.29	232.17	343.99	315.19	11.94	19.22	
1800.00	1489.72	N 561.30	W 406.87	1651.16	1442.71	N 295.83	W 625.36	225.45	347.02	314.64	10.72	15.98	
1900.00	1531.50	N 615.06	W 480.10	1746.70	1500.80	N 337.26	W 688.89	220.48	348.87	313.00	9.73	10.46	
2000.00	1576.72	N 665.16	W 553.88	1846.35	1558.23	N 382.12	W 756.85	217.12	348.79	309.42	8.86	6.51	
2100.00	1625.71	N 712.30	W 627.20	1946.55	1615.19	N 427.70	W 825.54	215.05	347.05	304.13	8.09	4.69	
2200.00	1676.58	N 757.47	W 700.50	2048.80	1673.29	N 474.61	W 895.38	213.27	343.51	297.07	7.40	4.62	
2300.00	1728.31	N 800.47	W 774.48	2151.00	1731.44	N 522.27	W 964.62	211.53	336.99	287.61	6.82	5.79	
2400.00	1780.41	N 842.11	W 849.00	2250.22	1789.55	N 568.08	W 1030.71	210.01	328.93	276.52	6.28	6.91	
2500.00	1831.77	N 883.01	W 924.42	2349.53	1849.07	N 613.37	W 1096.04	207.44	320.09	264.66	5.77	9.20	
2600.00	1880.21	N 923.03	W 1002.21	2449.06	1909.69	N 658.66	W 1160.69	203.85	309.63	251.05	5.28	12.40	
2700.00	1925.55	N 962.77	W 1081.98	2546.90	1970.35	N 703.14	W 1223.26	199.67	298.96	237.31	4.85	13.94	
2800.00	1971.36	N 1002.24	W 1161.63	2643.34	2031.05	N 746.72	W 1284.23	195.39	289.63	225.06	4.49	14.21	
2900.00	2017.25	N 1041.43	W 1241.36	2740.46	2092.86	N 790.27	W 1345.17	190.62	282.09	214.47	4.17	14.92	
3000.00	2062.68	N 1080.57	W 1321.39	2840.57	2157.02	N 836.01	W 1406.93	185.23	275.73	204.92	3.89	15.92	
3100.00	2107.25	N 1120.59	W 1401.47	2937.14	2218.91	N 880.76	W 1466.04	180.18	272.31	198.26	3.68	16.00	
3200.00	2151.00	N 1161.84	W 1481.37	3032.29	2279.54	N 924.42	W 1524.95	175.00	273.48	196.35	3.55	15.38	
3300.00	2195.29	N 1203.08	W 1560.98	3133.83	2344.08	N 971.85	W 1587.36	169.28	276.22	195.89	3.44	15.93	
3400.00	2240.15	N 1243.72	W 1640.57	3238.46	2410.80	N 1023.80	W 1648.95	162.75	278.50	194.84	3.33	18.36	
3500.00	2285.53	N 1283.70	W 1720.21	3342.40	2477.69	N 1080.60	W 1704.59	155.15	280.03	192.97	3.22	22.63	
3600.00	2331.37	N 1323.19	W 1799.83	3438.27	2540.09	N 1137.80	W 1749.56	146.78	283.65	193.33	3.14	26.71	
3700.00	2376.59	N 1362.12	W 1880.08	3529.92	2599.75	N 1194.85	W 1789.38	138.23	293.27	199.69	3.13	28.53	
3800.00	2421.96	N 1400.95	W 1960.29	3625.85	2660.69	N 1257.29	W 1829.21	129.63	307.92	210.94	3.18	29.70	
3900.00	2467.68	N 1440.11	W 2040.14	3713.80	2715.07	N 1317.39	W 1863.36	122.05	327.89	227.64	3.27	31.61	
4000.00	2512.79	N 1480.33	W 2119.81	3782.80	2757.54	N 1366.26	W 1886.59	116.30	356.80	253.79	3.46	35.63	
4100.00	2557.95	N 1521.40	W 2199.02	3851.10	2800.42	N 1416.37	W 1905.07	110.72	395.26	289.42	3.73	37.95	
4200.00	2603.71	N 1563.01	W 2277.59	3923.86	2845.66	N 1470.62	W 1922.45	105.32	439.55	330.71	4.04	39.22	
4300.00	2649.58	N 1604.47	W 2356.19	3991.92	2888.00	N 1521.84	W 1937.20	100.78	489.11	377.34	4.38	40.50	
4400.00	2695.57	N 1645.38	W 2435.00	4066.60	2934.74	N 1578.07	W 1952.33	96.46	542.87	428.57	4.75	40.95	
4500.00	2741.85	N 1685.35	W 2514.12	4147.05	2985.10	N 1638.49	W 1969.24	92.49	598.55	481.94	5.13	40.81	
4600.00	2788.32	N 1724.47	W 2593.56	4215.98	3028.51	N 1690.01	W 1983.79	89.41	656.27	537.79	5.54	41.30	
4700.00	2833.62	N 1764.91	W 2673.00	4284.37	3072.10	N 1740.84	W 1997.73	86.60	716.55	596.15	5.95	41.33	
4800.00	2878.56	N 1805.27	W 2752.69	4351.06	3115.15	N 1790.06	W 2010.81	84.96	778.84	656.51	6.37	42.39	
4900.00	2924.60	N 1843.81	W 2832.67	4416.29	3157.90	N 1837.77	W 2023.12	83.31	842.52	718.17	6.78	43.10	
5000.00	2970.49	N 1882.01	W 2912.88	4480.41	3200.49	N 1884.28	W 2034.72	81.55	907.79	781.33	7.18	43.55	
5100.00	3015.57	N 1921.60	W 2992.88	4543.61	3242.50	N 1930.25	W 2045.52	79.87	974.20	845.54	7.57	43.52	
5125.00	3026.71	N 1931.83	W 3012.79	4559.33	3252.93	N 1941.72	W 2048.10	79.49	990.90	861.69	7.67	43.47	
Field:	Lobitos			Well:	Well LO16-11								
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-11								
Slot:	Slot #11			Trajectory:	LO16-11 SS Survey								
				Type:	DEF SVY								
Coordinate System:	UTM Zone 17S - WGS84, Meters												
Reference Point:													
Northing (m)	Easting (m)			Elevation (ft)				Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505988.350	E 459463.650			50.00 above MSL				0.000		0.000		2.500	
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma												
Surveying Prog:													
MD From (ft)	MD To (ft)			EOU Freq		Survey Tool Type							
0.00	8010.00			Act-Stns		SLB_MWD-POOR							
Subject Trajectory				Offset Trajectory				Ct-Ct	EOU	Sep	Inter.		
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle	
Major EOU radii used. All local minima indicated.													
Results highlighted: Separation Factor <= 1.50													
0.00	0.00	N 0.00	E 0.00	9.58	9.25	S 27.10	E 21.90	141.06	36.06	33.35	13.34	14.98	
100.00	100.00	S 0.71	E 0.31	105.96	102.40	S 9.90	E 4.13	157.41	10.24	4.67	1.84	15.16	
200.00	199.99	S 0.60	W 0.69	202.91	196.20	N 7.16	W 13.49	301.19	15.44	9.85	2.76	13.41	
300.00	299.96	N 0.38	W 2.63	300.35	290.56	N 24.05	W 30.95	309.84	38.09	32.33	6.61	13.45	
400.00	399.91	N 2.15	W 5.29	398.19	385.41	N 40.75	W 48.24	311.84	59.53	53.21	9.42	12.27	
500.00	499.86	N 3.89	W 7.99	498.22	482.58	N 58.32	W 64.03	314.14	80.01	73.10	11.58	11.49	
600.00	599.79	N 6.50	W 10.44	599.21	580.86	N 80.75	W 68.91	321.86	96.39	88.99	13.03	11.21	

700.00	699.50	N 13.32	W 13.24	695.40	674.53	N 101.45	W 75.25	325.18	110.62	102.21	13.16	7.21
800.00	798.25	N 28.18	W 17.63	793.36	769.71	N 118.74	W 90.55	321.76	119.72	110.59	13.11	6.08
900.00	894.55	N 52.85	W 27.78	893.41	866.91	N 135.94	W 106.86	316.86	117.99	107.59	11.35	7.39
1000.00	986.23	N 87.40	W 47.35	991.74	962.52	N 153.04	W 122.17	311.31	102.32	90.66	8.78	14.18
1100.00	1071.99	N 131.23	W 74.02	1086.83	1054.99	N 169.54	W 137.02	300.63	75.67	62.46	5.73	21.46
1200.00	1151.22	N 184.29	W 104.01	1177.85	1143.52	N 185.07	W 151.38	270.16	48.00	33.52	3.31	27.70
1300.00	1223.77	N 243.95	W 138.18	1263.91	1227.33	N 199.52	W 164.50	215.98	51.76	35.49	3.18	33.67
1400.00	1289.41	N 308.83	W 176.59	1344.49	1305.85	N 212.99	W 176.63	186.66	97.24	78.98	5.32	38.67
1500.00	1349.46	N 376.07	W 219.81	1420.70	1380.11	N 225.74	W 188.04	174.46	156.68	136.26	7.67	42.17
1600.00	1403.36	N 441.99	W 272.09	1491.81	1449.44	N 237.65	W 198.47	168.24	222.03	199.21	9.73	46.91
1700.00	1449.13	N 503.82	W 335.85	1555.69	1511.74	N 248.36	W 207.63	163.91	292.60	267.14	11.49	52.85
1800.00	1489.72	N 561.30	W 406.87	1614.50	1569.13	N 258.22	W 215.94	158.35	366.91	338.83	13.07	54.01
1900.00	1531.50	N 615.06	W 480.10	1673.84	1627.05	N 268.14	W 224.19	152.48	441.56	411.08	14.49	52.23
2000.00	1576.72	N 665.16	W 553.88	1734.86	1686.64	N 278.32	W 232.49	147.66	514.80	482.04	15.72	50.18
2100.00	1625.71	N 712.30	W 627.20	1798.13	1748.47	N 288.86	W 240.77	143.87	586.26	551.17	16.71	48.62
2200.00	1676.58	N 757.47	W 700.50	1864.91	1813.77	N 299.98	W 249.21	141.08	657.10	619.73	17.59	47.99
2300.00	1728.31	N 800.47	W 774.48	1937.25	1884.43	N 312.40	W 258.48	138.65	727.22	688.11	18.59	47.28
2400.00	1780.41	N 842.11	W 849.00	2008.70	1954.12	N 325.11	W 267.82	136.41	797.01	755.98	19.43	47.15
2500.00	1831.77	N 883.01	W 924.42	2078.38	2022.02	N 337.92	W 276.86	135.09	867.56	824.64	20.21	48.51
2600.00	1880.21	N 923.03	W 1002.21	2152.71	2094.34	N 352.07	W 286.51	133.94	940.25	895.24	20.89	50.50
2700.00	1925.55	N 962.77	W 1081.98	2237.52	2176.50	N 369.31	W 298.57	131.87	1014.36	967.17	21.50	50.07
2800.00	1971.36	N 1002.24	W 1161.63	2314.65	2250.86	N 386.18	W 310.21	129.89	1087.46	1038.24	22.09	49.30
2900.00	2017.25	N 1041.43	W 1241.36	2392.98	2326.04	N 404.63	W 322.12	128.22	1160.12	1108.77	22.59	49.08
3000.00	2062.68	N 1080.57	W 1321.39	2468.08	2397.85	N 423.35	W 333.66	126.72	1232.84	1179.21	22.99	49.12
3100.00	2107.25	N 1120.59	W 1401.47	2543.39	2469.62	N 442.90	W 345.38	125.09	1306.10	1250.10	23.32	49.30
3200.00	2151.00	N 1161.84	W 1481.37	2619.85	2542.27	N 463.44	W 357.51	123.70	1379.82	1321.43	23.63	48.86
3300.00	2195.29	N 1203.08	W 1560.98	2698.29	2616.57	N 485.03	W 370.38	122.59	1452.79	1392.07	23.93	48.03
3400.00	2240.15	N 1243.72	W 1640.57	2773.73	2687.83	N 506.30	W 383.09	121.73	1524.95	1460.96	23.83	47.57
3500.00	2285.53	N 1283.70	W 1720.21	2843.06	2753.18	N 526.36	W 394.65	120.93	1596.68	1530.42	24.09	47.32
3600.00	2331.37	N 1323.19	W 1799.83	2912.56	2818.58	N 546.97	W 405.98	120.22	1668.15	1600.65	24.72	47.50
3700.00	2376.59	N 1362.12	W 1880.08	2986.23	2887.75	N 569.36	W 417.84	119.50	1740.09	1670.23	24.91	47.83
3800.00	2421.96	N 1400.95	W 1960.29	3062.01	2958.73	N 592.91	W 430.09	118.53	1811.79	1739.54	25.08	47.22
3900.00	2467.68	N 1440.11	W 2040.14	3134.05	3026.03	N 615.79	W 441.78	117.59	1883.08	1808.53	25.26	47.17
4000.00	2512.79	N 1480.33	W 2119.81	3195.16	3083.08	N 635.43	W 451.46	116.75	1955.12	1878.40	25.49	47.64
4100.00	2557.95	N 1521.40	W 2199.02	3255.92	3139.82	N 655.11	W 460.76	116.03	2027.45	1948.56	25.70	47.31
4200.00	2603.71	N 1563.01	W 2277.59	3316.71	3196.57	N 674.94	W 469.75	115.48	2099.62	2018.58	25.91	47.27
4300.00	2649.58	N 1604.47	W 2356.19	3399.45	3273.92	N 701.27	W 482.68	114.99	2171.54	2087.86	25.95	46.56
4400.00	2695.57	N 1645.38	W 2435.00	3434.91	3307.40	N 711.26	W 488.72	115.04	2243.87	2158.12	26.17	47.17
4500.00	2741.85	N 1685.35	W 2514.12	3469.53	3340.36	N 720.09	W 494.55	115.16	2317.02	2229.26	26.40	47.76
4600.00	2788.32	N 1724.47	W 2593.56	3519.01	3387.79	N 731.57	W 502.79	114.94	2390.93	2301.03	26.60	48.38
4700.00	2833.62	N 1764.91	W 2673.00	3580.44	3446.69	N 745.83	W 512.85	114.17	2465.90	2373.76	26.76	49.27
4800.00	2878.56	N 1805.27	W 2752.69	3647.33	3510.81	N 761.56	W 523.61	114.61	2541.24	2446.96	26.95	48.82
4900.00	2924.60	N 1843.81	W 2832.67	3719.17	3579.57	N 778.89	W 535.09	114.60	2615.70	2519.18	27.10	48.56
5000.00	2970.49	N 1882.01	W 2912.88	3783.59	3641.18	N 794.70	W 545.31	114.16	2690.25	2591.48	27.24	48.92
5100.00	3015.57	N 1921.60	W 2992.88	3846.52	3701.36	N 810.22	W 555.20	113.30	2765.46	2664.44	27.38	49.29
5125.00	3026.71	N 1931.83	W 3012.79	3862.18	3716.33	N 814.09	W 557.65	113.07	2784.35	2682.78	27.41	49.37
Field:	Lobitos			Well:	Well LO16-12							
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-12							
Slot:	Slot #12			Trajectory:	LO16-12 SS Survey							
				Type:	DEF SVY							
Coordinate System:	UTM Zone 17S - WGS84, Meters											
Reference Point:												
Northing (m)	Easting (m)			Elevation (ft)			Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505985.730	E 459461.170			50.00 above MSL			0.000		0.000		2.500	
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma											
Surveying Prog:												
MD From (ft)	MD To (ft)			EOU Freq		Survey Tool Type						
0.00	7729.00			Act-Stns		SLB_MWD-POOR						
Subject Trajectory				Offset Trajectory				Ct-Ct	EOU	Sep	Inter.	
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle

Major EOU radii used. All local minima indicated.												
Results highlighted: Separation Factor <= 1.50												
0.00	0.00	N 0.00	E 0.00	10.34	9.99	S 34.84	E 14.86	156.90	39.17	36.40	14.14	14.93
100.00	100.00	S 0.71	E 0.31	106.60	103.15	S 11.34	E 8.83	141.26	13.98	8.49	2.55	14.73
200.00	199.99	S 0.60	W 0.69	203.71	197.40	N 11.36	E 3.28	18.09	12.86	7.27	2.30	12.88
300.00	299.96	N 0.38	W 2.63	301.58	292.66	N 33.22	W 1.79	1.30	33.65	27.87	5.82	12.29
400.00	399.91	N 2.15	W 5.29	400.10	388.81	N 54.20	W 6.34	358.51	53.22	46.87	8.38	11.11
500.00	499.86	N 3.89	W 7.99	499.05	485.63	N 74.21	W 10.36	357.84	71.78	64.82	10.31	10.34
600.00	599.79	N 6.50	W 10.44	598.41	583.09	N 93.26	W 13.84	357.55	88.42	80.97	11.87	8.39
700.00	699.50	N 13.32	W 13.24	697.82	680.70	N 111.87	W 16.56	357.83	100.39	92.24	12.33	4.97
800.00	798.25	N 28.18	W 17.63	797.79	778.90	N 130.48	W 18.44	359.23	104.12	95.64	12.29	2.84
900.00	894.55	N 52.85	W 27.78	895.96	875.29	N 148.98	W 20.33	3.94	98.32	89.50	11.14	9.34
1000.00	986.23	N 87.40	W 47.35	990.70	967.88	N 168.96	W 22.42	15.95	87.23	77.73	9.18	16.39
1100.00	1071.99	N 131.23	W 74.02	1082.01	1056.35	N 191.45	W 24.36	36.72	79.60	69.10	7.58	21.52
1200.00	1151.22	N 184.29	W 104.01	1171.94	1142.52	N 217.09	W 26.16	61.75	84.92	73.65	7.53	25.49
1300.00	1223.77	N 243.95	W 138.18	1260.34	1226.22	N 245.44	W 28.17	82.06	110.05	97.46	8.74	29.32
1400.00	1289.41	N 308.83	W 176.59	1347.85	1307.78	N 277.05	W 30.74	94.62	150.40	136.21	10.61	32.53
1500.00	1349.46	N 376.07	W 219.81	1430.48	1383.89	N 309.11	W 33.35	101.66	201.09	185.10	12.57	36.31
1600.00	1403.36	N 441.99	W 272.09	1507.27	1454.45	N 339.32	W 35.48	104.68	262.94	244.87	14.55	43.11
1700.00	1449.13	N 503.82	W 335.85	1575.43	1517.08	N 366.16	W 37.36	105.60	335.65	315.27	16.47	50.25
1800.00	1489.72	N 561.30	W 406.87	1636.26	1572.97	N 390.11	W 39.00	106.95	414.21	391.50	18.24	52.61
1900.00	1531.50	N 615.06	W 480.10	1694.79	1626.75	N 413.18	W 40.24	108.37	493.26	468.43	19.86	51.90
2000.00	1576.72	N 665.16	W 553.88	1754.07	1681.22	N 436.56	W 41.11	108.92	571.06	544.18	21.24	50.69
2100.00	1625.71	N 712.30	W 627.20	1817.72	1739.68	N 461.71	W 41.75	108.63	646.95	617.87	22.25	49.46
2200.00	1676.58	N 757.47	W 700.50	1882.67	1799.30	N 487.46	W 42.31	108.05	721.92	690.56	23.02	49.28
2300.00	1728.31	N 800.47	W 774.48	1947.45	1858.73	N 513.25	W 42.80	107.50	796.79	763.53	23.96	49.46
2400.00	1780.41	N 842.11	W 849.00	2012.35	1918.25	N 539.12	W 43.25	106.39	871.79	836.24	24.52	49.61
2500.00	1831.77	N 883.01	W 924.42	2076.28	1976.87	N 564.61	W 43.70	105.49	947.68	910.25	25.31	51.25
2600.00	1880.21	N 923.03	W 1002.21	2136.98	2032.54	N 588.81	W 44.12	104.31	1026.08	986.64	26.02	53.78
2700.00	1925.55	N 962.77	W 1081.98	2192.34	2083.31	N 610.88	W 44.42	103.42	1106.91	1065.56	26.77	54.70
2800.00	1971.36	N 1002.24	W 1161.63	2247.62	2134.01	N 632.92	W 44.59	102.77	1187.70	1144.54	27.52	54.58
2900.00	2017.25	N 1041.43	W 1241.36	2304.00	2185.71	N 655.40	W 44.63	102.04	1268.69	1223.66	28.17	54.86
3000.00	2062.68	N 1080.57	W 1321.39	2363.19	2240.06	N 678.85	W 44.76	101.20	1350.05	1303.16	28.79	55.09
3100.00	2107.25	N 1120.59	W 1401.47	2422.23	2294.34	N 702.05	W 45.04	99.78	1431.81	1382.95	29.30	55.28
3200.00	2151.00	N 1161.84	W 1481.37	2479.70	2347.24	N 724.51	W 45.42	99.11	1513.84	1463.11	29.84	55.15
3300.00	2195.29	N 1203.08	W 1560.98	2537.13	2400.11	N 746.95	W 45.82	99.05	1595.53	1543.02	30.38	54.81
3400.00	2240.15	N 1243.72	W 1640.57	2594.84	2453.23	N 769.49	W 46.21	99.12	1676.99	1622.71	30.90	54.69
3500.00	2285.53	N 1283.70	W 1720.21	2650.03	2504.03	N 791.06	W 46.56	99.13	1758.28	1702.17	31.34	54.56
3600.00	2331.37	N 1323.19	W 1799.83	2702.08	2551.92	N 811.45	W 46.72	99.04	1839.54	1781.54	31.72	54.94
3700.00	2376.59	N 1362.12	W 1880.08	2752.93	2598.68	N 831.43	W 46.69	98.83	1921.53	1861.65	32.09	55.62
3800.00	2421.96	N 1400.95	W 1960.29	2803.36	2645.04	N 851.30	W 46.47	98.55	2003.64	1941.88	32.44	55.38
3900.00	2467.68	N 1440.11	W 2040.14	2854.41	2711.24	N 879.73	W 46.24	97.77	2085.42	2021.73	32.74	54.88
4000.00	2512.79	N 1480.33	W 2119.81	2904.32	2783.74	N 910.87	W 46.75	96.83	2166.86	2101.23	33.02	54.42
4100.00	2557.95	N 1521.40	W 2199.02	3011.73	2836.51	N 933.47	W 47.48	96.55	2247.74	2180.28	33.32	53.83
4200.00	2603.71	N 1563.01	W 2277.59	3063.79	2884.42	N 953.83	W 48.04	96.43	2328.26	2259.01	33.62	53.71
4300.00	2649.58	N 1604.47	W 2356.19	3115.46	2932.03	N 973.90	W 48.47	96.44	2408.94	2337.91	33.91	53.95
4400.00	2695.57	N 1645.38	W 2435.00	3162.99	2975.86	N 992.28	W 48.70	96.77	2489.88	2416.98	34.15	54.28
4500.00	2741.85	N 1685.35	W 2514.12	3209.21	3018.49	N 1010.15	W 48.71	97.16	2571.13	2496.38	34.40	54.63
4600.00	2788.32	N 1724.47	W 2593.56	3258.49	3063.94	N 1029.20	W 48.47	96.87	2652.71	2576.07	34.61	55.05
4700.00	2833.62	N 1764.91	W 2673.00	3306.66	3109.66	N 1048.11	W 48.35	95.51	2734.56	2655.82	34.73	54.98
4800.00	2878.56	N 1805.27	W 2752.69	3353.70	3149.29	N 1067.89	W 48.54	96.65	2816.38	2735.89	34.99	55.17
4900.00	2924.60	N 1843.81	W 2832.67	3395.24	3189.93	N 1082.35	W 48.43	97.20	2898.66	2816.53	35.30	56.06
5000.00	2970.49	N 1882.01	W 2912.88	3406.21	3200.06	N 1086.55	W 48.16	96.77	2981.96	2898.16	35.58	57.14
5100.00	3015.57	N 1921.60	W 2992.88	3416.66	3209.72	N 1090.52	W 47.76	95.47	3066.30	2980.78	35.86	57.97
5125.00	3026.71	N 1931.83	W 3012.79	3419.20	3212.07	N 1091.48	W 47.64	95.11	3087.50	3001.57	35.93	58.15
Field:	Lobitos					Well:	Well LO16-13					
Structure:	Platform LO16 (WGS84)					Borehole:	Borehole LO16-13					
Slot:	Slot #13					Trajectory:	LO16-13 SS Survey					
						Type:	DEF SVY					
Coordinate System:	UTM Zone 17S - WGS84, Meters											
Reference Point:												

GEOSCIENCES
Central File

Northing (m)		Easting (m)		Elevation (ft)		Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)			
N 9505988.390		E 459459.410		50.00 above MSL		0.000		0.000		2.500			
Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma													
Surveying Prog:													
MD From (ft)		MD To (ft)		EOU Freq		Survey Tool Type							
0.00		8682.00		Act-Stns		SLB_MWD-POOR							
Subject Trajectory				Offset Trajectory				Ct-Ct		EOU		Sep	
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Inter. Angle	
Major EOU radii used. All local minima indicated.													
Results highlighted: Separation Factor <= 1.50													
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 28.69	E 9.77	161.20	30.31	27.81	12.12	0.00	
100.00	100.00	S 0.71	E 0.31	99.99	99.99	S 28.65	E 9.90	161.07	29.54	24.44	5.79	0.51	
200.00	199.99	S 0.60	W 0.69	199.98	199.98	S 28.53	E 10.30	158.53	30.01	24.78	5.74	1.46	
300.00	299.96	N 0.38	W 2.63	299.93	299.93	S 28.32	E 10.96	154.67	31.76	26.35	5.87	1.26	
400.00	399.91	N 2.15	W 5.29	399.83	399.83	S 28.04	E 11.90	150.36	34.74	28.76	5.81	2.42	
500.00	499.86	N 3.89	W 7.99	499.82	499.80	S 27.65	E 13.06	146.31	37.92	31.30	5.72	1.99	
600.00	599.79	N 6.50	W 10.44	600.04	600.02	S 26.86	E 13.85	143.94	41.26	34.06	5.73	2.45	
700.00	699.50	N 13.32	W 13.24	700.16	700.13	S 25.56	E 14.05	144.86	47.50	39.53	5.96	5.28	
800.00	798.25	N 28.18	W 17.63	799.58	799.53	S 23.76	E 13.69	148.69	60.66	52.31	7.27	10.73	
900.00	894.55	N 52.85	W 27.78	897.03	896.95	S 21.50	E 12.77	151.26	84.72	76.06	9.78	17.70	
1000.00	986.23	N 87.40	W 47.35	990.38	990.25	S 18.89	E 11.37	151.34	121.50	112.23	13.10	25.38	
1100.00	1071.99	N 131.23	W 74.02	1070.59	1070.45	S 18.42	E 10.27	150.81	171.76	161.54	16.81	34.99	
1200.00	1151.22	N 184.29	W 104.01	1141.36	1141.19	S 20.15	E 10.85	150.70	234.71	223.80	21.51	42.94	
1300.00	1223.77	N 243.95	W 138.18	1200.84	1200.57	S 23.30	E 12.42	150.90	307.64	295.48	25.30	50.62	
1400.00	1289.41	N 308.83	W 176.59	1250.31	1249.83	S 27.43	E 14.04	152.42	388.55	374.85	28.36	57.24	
1500.00	1349.46	N 376.07	W 219.81	1291.61	1290.87	S 31.68	E 15.98	154.83	474.65	459.19	30.71	62.00	
1600.00	1403.36	N 441.99	W 272.09	1325.53	1324.49	S 35.65	E 18.05	165.09	564.40	546.91	32.27	67.61	
1700.00	1449.13	N 503.82	W 335.85	1350.95	1349.64	S 38.67	E 20.19	176.55	656.47	636.70	33.19	73.78	
1800.00	1489.72	N 561.30	W 406.87	1370.04	1368.49	S 41.02	E 22.06	178.79	749.31	727.26	33.98	75.39	
1900.00	1531.50	N 615.06	W 480.10	1388.63	1386.82	S 43.39	E 24.06	174.42	841.83	817.71	34.91	73.88	
2000.00	1576.72	N 665.16	W 553.88	1408.36	1406.24	S 46.02	E 26.38	169.60	933.57	907.48	35.79	72.05	
2100.00	1625.71	N 712.30	W 627.20	1430.72	1428.19	S 49.11	E 29.24	165.61	1024.54	996.43	36.44	70.70	
2200.00	1676.58	N 757.47	W 700.50	1456.50	1453.47	S 52.79	E 32.73	163.58	1115.31	1085.21	37.05	70.28	
2300.00	1728.31	N 800.47	W 774.48	1481.99	1478.43	S 56.52	E 36.34	162.39	1205.95	1174.42	38.24	70.13	
2400.00	1780.41	N 842.11	W 849.00	1506.82	1502.70	S 60.24	E 40.01	161.14	1296.81	1263.63	39.09	70.53	
2500.00	1831.77	N 883.01	W 924.42	1528.72	1524.08	S 63.61	E 43.39	162.93	1388.32	1353.51	39.88	72.21	
2600.00	1880.21	N 923.03	W 1002.21	1546.93	1541.82	S 66.47	E 46.32	166.92	1480.89	1444.35	40.53	74.95	
2700.00	1925.55	N 962.77	W 1081.98	1562.22	1556.89	S 68.93	E 48.87	167.50	1574.58	1536.38	41.23	75.98	
2800.00	1971.36	N 1002.24	W 1161.63	1577.11	1571.15	S 71.36	E 51.43	165.82	1668.62	1628.88	41.99	75.96	
2900.00	2017.25	N 1041.43	W 1241.36	1591.37	1584.99	S 73.73	E 53.95	165.41	1763.03	1721.64	42.60	76.47	
3000.00	2062.68	N 1080.57	W 1321.39	1604.71	1597.91	S 75.98	E 56.38	165.32	1857.92	1814.85	43.14	77.14	
3100.00	2107.25	N 1120.59	W 1401.47	1616.89	1609.70	S 78.06	E 58.65	164.94	1953.52	1908.66	43.55	78.18	
3200.00	2151.00	N 1161.84	W 1481.37	1628.01	1620.44	S 79.98	E 60.76	163.66	2049.82	2003.31	44.07	78.51	
3300.00	2195.29	N 1203.08	W 1560.98	1639.15	1631.20	S 81.93	E 62.92	162.02	2146.28	2098.18	44.62	78.32	
3400.00	2240.15	N 1243.72	W 1640.57	1652.14	1643.73	S 84.27	E 65.45	161.18	2242.73	2193.06	45.16	78.11	
3500.00	2285.53	N 1283.70	W 1720.21	1665.24	1656.34	S 86.71	E 67.99	160.00	2339.14	2287.88	45.63	77.85	
3600.00	2331.37	N 1323.19	W 1799.83	1678.39	1668.99	S 89.25	E 70.53	160.08	2435.56	2382.68	46.05	77.99	
3700.00	2376.59	N 1362.12	W 1880.08	1690.89	1681.00	S 91.74	E 72.92	161.07	2532.15	2477.63	46.45	78.44	
3800.00	2421.96	N 1400.95	W 1960.29	1703.23	1692.84	S 94.28	E 75.28	159.01	2628.85	2572.70	46.82	78.19	
3900.00	2467.68	N 1440.11	W 2040.14	1715.52	1704.63	S 96.88	E 77.61	157.72	2725.70	2667.92	47.18	78.50	
4000.00	2512.79	N 1480.33	W 2119.81	1727.09	1715.71	S 99.40	E 79.80	156.71	2822.97	2763.58	47.53	79.10	
4100.00	2557.95	N 1521.40	W 2199.02	1738.38	1726.51	S 101.92	E 81.92	153.55	2920.47	2859.43	47.85	78.84	
4200.00	2603.71	N 1563.01	W 2277.59	1749.76	1737.38	S 104.53	E 84.05	151.93	3018.04	2955.36	48.15	78.76	
4300.00	2649.58	N 1604.47	W 2356.19	1760.97	1748.08	S 107.16	E 86.13	152.03	3115.66	3051.34	48.44	78.86	
4400.00	2695.57	N 1645.38	W 2435.00	1772.06	1758.64	S 109.82	E 88.18	152.79	3213.26	3147.26	48.68	78.74	
4500.00	2741.85	N 1685.35	W 2514.12	1783.17	1769.22	S 112.55	E 90.23	153.61	3310.76	3243.10	48.93	78.58	
4600.00	2788.32	N 1724.47	W 2593.56	1794.24	1779.73	S 115.33	E 92.26	153.90	3408.19	3338.80	49.12	78.94	
4700.00	2833.62	N 1764.91	W 2673.00	1804.29	1789.28	S 117.91	E 94.09	153.13	3506.07	3434.87	49.25	80.14	
4800.00	2878.56	N 1805.27	W 2752.69	1813.94	1798.43	S 120.43	E 95.84	154.76	3604.05	3531.22	49.48	79.38	
4900.00	2924.60	N 1843.81	W 2832.67	1824.20	1808.14	S 123.16	E 97.70	155.30	3701.69	3627.16	49.67	79.09	
5000.00	2970.49	N 1882.01	W 2912.88	1833.78	1817.20	S 125.75	E 99.42	155.29	3799.37	3723.08	49.81	79.62	
5100.00	3015.57	N 1921.60	W 2992.88	1842.04	1825.01	S 128.02	E 100.91	152.82	3897.43	3819.34	49.91	80.47	

5125.00	3026.71	N 1931.83	W 3012.79	1843.99	1826.84	S 128.55	E 101.27	151.91	3922.01	3843.48	49.94	80.68			
Field:		Lobitos				Well:		Well LO16-14							
Structure:		Platform LO16 (WGS84)				Borehole:		Borehole LO16-14							
Slot:		Slot #14				Trajectory:		LO16-14 MWD Survey							
						Type:		DEF SVY							
Coordinate System:		UTM Zone 17S - WGS84, Meters													
Reference Point:															
Northing (m)		Easting (m)		Elevation (ft)		Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)					
N 9505988.500		E 459455.660		50.00 above MSL		0.000		0.000		2.500					
Trajectory Error Model:		SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma													
Surveying Prog:															
MD From (ft)		MD To (ft)		EOU Freq		Survey Tool Type									
0.00		9558.00		Act-Stns		SLB_MWD-STD									
Subject Trajectory				Offset Trajectory				Ct-Ct		EOU		Sep		Inter.	
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle			
Major EOU radii used. All local minima indicated.															
Results highlighted: Separation Factor <= 1.50															
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 28.32	W 2.54	185.13	28.44	25.94	11.37	0.00			
100.00	100.00	S 0.71	E 0.31	99.84	99.84	S 28.59	W 2.76	186.28	28.05	22.93	5.49	0.38			
200.00	199.99	S 0.60	W 0.69	199.67	199.66	S 29.37	W 3.40	185.40	28.90	23.64	5.50	1.27			
300.00	299.96	N 0.38	W 2.63	299.47	299.45	S 30.69	W 4.47	183.41	31.13	25.66	5.69	1.39			
400.00	399.91	N 2.15	W 5.29	399.22	399.17	S 32.52	W 5.97	181.16	34.69	28.63	5.72	2.23			
500.00	499.86	N 3.89	W 7.99	498.94	498.84	S 34.88	W 7.89	179.91	38.79	32.10	5.80	2.57			
600.00	599.79	N 6.50	W 10.44	598.56	598.40	S 37.77	W 10.24	179.82	44.29	37.10	6.16	4.25			
700.00	699.50	N 13.32	W 13.24	697.56	697.29	S 41.21	W 13.12	180.05	54.57	46.66	6.90	8.15			
800.00	798.25	N 28.18	W 17.63	793.69	793.17	S 46.11	W 17.97	180.92	74.46	66.17	8.98	15.25			
900.00	894.55	N 52.85	W 27.78	883.67	882.41	S 54.33	W 25.83	181.27	107.88	99.26	12.51	23.95			
1000.00	986.23	N 87.40	W 47.35	966.70	963.83	S 65.65	W 37.39	181.42	155.00	145.73	16.71	32.36			
1100.00	1071.99	N 131.23	W 74.02	1049.92	1044.66	S 77.98	W 52.86	181.24	212.05	201.83	20.74	38.32			
1200.00	1151.22	N 184.29	W 104.01	1125.17	1117.07	S 89.35	W 69.85	181.92	277.87	266.96	25.46	43.81			
1300.00	1223.77	N 243.95	W 138.18	1199.41	1187.79	S 100.10	W 89.73	183.46	349.30	337.12	28.68	47.84			
1400.00	1289.41	N 308.83	W 176.59	1275.79	1259.51	S 109.98	W 114.00	185.63	424.52	410.75	30.83	49.66			
1500.00	1349.46	N 376.07	W 219.81	1351.96	1329.83	S 118.08	W 142.11	187.10	500.61	484.88	31.84	50.14			
1600.00	1403.36	N 441.99	W 272.09	1414.49	1386.31	S 124.48	W 168.15	190.42	576.17	557.77	31.31	50.47			
1700.00	1449.13	N 503.82	W 335.85	1475.15	1440.18	S 131.30	W 195.20	192.39	650.56	629.70	31.19	52.02			
1800.00	1489.72	N 561.30	W 406.87	1548.35	1503.98	S 139.43	W 230.13	189.25	722.82	699.22	30.83	49.67			
1900.00	1531.50	N 615.06	W 480.10	1638.53	1580.24	S 148.53	W 277.38	184.00	791.54	765.26	30.12	44.20			
2000.00	1576.72	N 665.16	W 553.88	1722.94	1649.30	S 156.07	W 325.30	180.11	855.54	826.33	29.29	39.94			
2100.00	1625.71	N 712.30	W 627.20	1805.10	1714.51	S 163.81	W 374.67	177.63	916.09	884.48	28.98	37.12			
2200.00	1676.58	N 757.47	W 700.50	1880.13	1772.62	S 171.70	W 421.47	176.35	974.90	940.66	28.48	35.86			
2300.00	1728.31	N 800.47	W 774.48	1940.32	1818.40	S 179.00	W 459.85	175.47	1032.71	996.51	28.53	35.60			
2400.00	1780.41	N 842.11	W 849.00	1992.52	1857.60	S 186.93	W 493.40	175.16	1091.48	1053.22	28.53	36.80			
2500.00	1831.77	N 883.01	W 924.42	2093.16	1932.79	S 203.07	W 558.31	175.26	1150.57	1109.97	28.34	35.82			
2600.00	1880.21	N 923.03	W 1002.21	2181.72	1998.81	S 215.99	W 615.90	175.89	1208.57	1165.58	28.11	36.48			
2700.00	1925.55	N 962.77	W 1081.98	2261.54	2058.35	S 227.40	W 667.82	175.53	1267.15	1221.94	28.02	36.76			
2800.00	1971.36	N 1002.24	W 1161.63	2341.36	2117.98	S 238.80	W 719.65	174.64	1325.52	1278.19	28.00	36.48			
2900.00	2017.25	N 1041.43	W 1241.36	2427.13	2182.15	S 250.94	W 775.25	174.08	1383.72	1334.03	27.84	36.29			
3000.00	2062.68	N 1080.57	W 1321.39	2520.33	2251.58	S 263.59	W 836.13	173.64	1441.50	1389.19	27.56	36.02			
3100.00	2107.25	N 1120.59	W 1401.47	2608.09	2316.80	S 274.91	W 893.75	173.67	1499.70	1444.67	27.25	36.79			
3200.00	2151.00	N 1161.84	W 1481.37	2688.99	2376.77	S 285.28	W 947.06	173.28	1559.04	1501.45	27.07	37.00			
3300.00	2195.29	N 1203.08	W 1560.98	2770.83	2437.19	S 295.81	W 1001.23	172.58	1618.17	1558.05	26.92	36.51			
3400.00	2240.15	N 1243.72	W 1640.57	2854.34	2498.50	S 306.63	W 1056.90	171.94	1676.61	1613.94	26.75	35.85			
3500.00	2285.53	N 1283.70	W 1720.21	2936.93	2558.81	S 317.39	W 1112.28	171.35	1734.29	1669.06	26.58	35.33			
3600.00	2331.37	N 1323.19	W 1799.83	3032.64	2628.54	S 329.59	W 1176.70	170.98	1791.17	1723.20	26.35	34.66			
3700.00	2376.59	N 1362.12	W 1880.08	3119.12	2691.32	S 340.23	W 1235.21	170.80	1847.40	1776.79	26.16	34.49			
3800.00	2421.96	N 1400.95	W 1960.29	3203.39	2752.19	S 350.65	W 1292.55	170.35	1903.42	1830.16	25.98	34.26			
3900.00	2467.68	N 1440.11	W 2040.14	3284.95	2811.02	S 360.75	W 1348.13	170.31	1959.55	1883.77	25.86	34.72			
4000.00	2512.79	N 1480.33	W 2119.81	3364.66	2868.73	S 370.58	W 1402.23	170.47	2016.80	1938.60	25.79	35.54			
4100.00	2557.95	N 1521.40	W 2199.02	3443.64	2926.13	S 380.28	W 1455.59	170.12	2074.76	1994.21	25.76	35.69			
4200.00	2603.71	N 1563.01	W 2277.59	3522.90	2983.98	S 389.97	W 1508.91	169.87	2132.97	2050.08	25.73	35.73			
4300.00	2649.58	N 1604.47	W 2356.19	3602.86	3042.47	S 399.71	W 1562.55	169.69	2191.11	2105.85	25.70	35.65			

4400.00	2695.57	N 1645.38	W 2435.00	3680.87	3099.74	S 409.19	W 1614.67	169.34	2248.90	2161.23	25.65	35.26			
4500.00	2741.85	N 1685.35	W 2514.12	3758.64	3157.17	S 418.56	W 1666.26	168.95	2306.03	2215.99	25.61	34.84			
4600.00	2788.32	N 1724.47	W 2593.56	3836.25	3214.85	S 427.85	W 1717.35	168.90	2362.66	2270.20	25.56	35.18			
4700.00	2833.62	N 1764.91	W 2673.00	3912.60	3271.96	S 436.91	W 1767.21	169.40	2420.87	2325.98	25.51	36.69			
4800.00	2878.56	N 1805.27	W 2752.69	3986.46	3327.61	S 445.59	W 1815.00	168.58	2479.38	2382.23	25.52	35.59			
4900.00	2924.60	N 1843.81	W 2832.67	4060.44	3383.87	S 454.18	W 1862.26	168.08	2536.41	2436.98	25.51	35.25			
5000.00	2970.49	N 1882.01	W 2912.88	4133.92	3440.27	S 462.60	W 1908.60	168.08	2593.55	2491.81	25.49	35.97			
5100.00	3015.57	N 1921.60	W 2992.88	4205.79	3495.93	S 470.73	W 1953.32	168.32	2652.29	2548.23	25.49	37.40			
5125.00	3026.71	N 1931.83	W 3012.79	4223.49	3509.73	S 472.71	W 1964.24	168.39	2667.32	2562.68	25.49	37.78			
Field:	Lobitos			Well:	Well LO16-15										
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-15 S1										
Slot:	Slot #15			Trajectory:	LO16-15 S1 SS Survey										
				Type:	DEF SVY										
Coordinate System:	UTM Zone 17S - WGS84, Meters														
Reference Point:															
Northing (m)	Easting (m)			Elevation (ft)			Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)				
N 9505989.510	E 459454.620			50.00 above MSL			0.000		0.000		2.500				
Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma															
Surveying Prog:															
	MD From (ft)			MD To (ft)			EOU Freq		Survey Tool Type						
	0.00			7482.00			Act-Stns		SLB_MWD-POOR						
Subject Trajectory						Offset Trajectory						Ct-Ct	EOU	Sep	Inter.
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle			
Major EOU radii used. All local minima indicated.															
Results highlighted: Separation Factor <= 1.50															
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 25.01	W 5.95	193.39	25.71	23.21	10.28	0.00			
100.00	100.00	S 0.71	E 0.31	100.02	100.02	S 25.00	W 5.76	194.03	25.04	19.93	4.90	0.48			
200.00	199.99	S 0.60	W 0.69	200.03	200.03	S 24.98	W 5.17	190.41	24.79	19.55	4.73	1.62			
300.00	299.96	N 0.38	W 2.63	300.00	299.99	S 24.94	W 4.19	183.52	25.38	19.94	4.67	1.50			
400.00	399.91	N 2.15	W 5.29	399.90	399.89	S 24.90	W 2.81	174.77	27.16	21.15	4.51	2.75			
500.00	499.86	N 3.89	W 7.99	499.77	499.74	S 24.84	W 1.05	166.44	29.55	22.92	4.45	2.56			
600.00	599.79	N 6.50	W 10.44	599.72	599.67	S 24.74	E 0.93	160.02	33.24	26.09	4.65	3.22			
700.00	699.50	N 13.32	W 13.24	699.66	699.60	S 24.45	E 1.85	158.21	40.67	32.75	5.14	5.99			
800.00	798.25	N 28.18	W 17.63	798.79	798.73	S 23.76	E 2.11	159.13	55.57	47.27	6.70	11.48			
900.00	894.55	N 52.85	W 27.78	895.69	895.63	S 22.69	E 1.85	158.82	81.14	72.51	9.40	18.57			
1000.00	986.23	N 87.40	W 47.35	988.03	987.95	S 21.66	E 1.02	156.94	119.32	110.02	12.84	26.41			
1100.00	1071.99	N 131.23	W 74.02	1074.77	1074.68	S 20.83	W 0.31	155.02	169.01	158.75	16.48	33.52			
1200.00	1151.22	N 184.29	W 104.01	1155.28	1155.17	S 20.18	W 2.01	154.34	228.53	217.57	20.86	39.46			
1300.00	1223.77	N 243.95	W 138.18	1229.42	1229.28	S 19.68	W 3.99	154.26	295.87	283.65	24.21	45.17			
1400.00	1289.41	N 308.83	W 176.59	1296.37	1296.20	S 19.30	W 5.96	155.01	369.90	356.10	26.80	50.28			
1500.00	1349.46	N 376.07	W 219.81	1357.71	1357.51	S 18.96	W 7.70	156.03	448.45	432.85	28.75	53.82			
1600.00	1403.36	N 441.99	W 272.09	1413.04	1412.82	S 18.66	W 9.22	161.09	530.46	512.78	30.00	58.46			
1700.00	1449.13	N 503.82	W 335.85	1460.46	1460.23	S 18.42	W 10.47	166.04	615.41	595.40	30.76	63.88			
1800.00	1489.72	N 561.30	W 406.87	1498.90	1498.65	S 18.33	W 11.49	165.88	701.70	679.38	31.43	65.14			
1900.00	1531.50	N 615.06	W 480.10	1535.44	1535.18	S 18.73	W 12.59	162.35	787.57	763.14	32.24	63.34			
2000.00	1576.72	N 665.16	W 553.88	1574.01	1573.71	S 19.72	W 13.92	158.69	872.14	845.69	32.98	61.16			
2100.00	1625.71	N 712.30	W 627.20	1613.58	1613.22	S 21.39	W 15.47	155.73	955.35	926.83	33.50	59.54			
2200.00	1676.58	N 757.47	W 700.50	1653.80	1653.31	S 23.88	W 17.28	154.15	1038.19	1007.65	34.00	58.93			
2300.00	1728.31	N 800.47	W 774.48	1681.04	1680.42	S 26.18	W 18.62	153.60	1121.15	1089.18	35.06	59.40			
2400.00	1780.41	N 842.11	W 849.00	1703.51	1702.75	S 28.55	W 19.40	153.05	1205.12	1171.50	35.85	60.63			
2500.00	1831.77	N 883.01	W 924.42	1724.07	1723.14	S 31.10	W 19.84	154.40	1290.60	1255.36	36.62	62.93			
2600.00	1880.21	N 923.03	W 1002.21	1742.03	1740.93	S 33.62	W 20.01	157.09	1378.14	1341.16	37.27	66.17			
2700.00	1925.55	N 962.77	W 1081.98	1757.54	1756.26	S 36.01	W 19.99	157.57	1467.67	1429.04	37.99	67.68			
2800.00	1971.36	N 1002.24	W 1161.63	1781.87	1780.24	S 40.10	W 19.81	156.20	1557.80	1517.60	38.75	67.71			
2900.00	2017.25	N 1041.43	W 1241.36	1809.80	1807.71	S 45.09	W 19.65	155.51	1648.34	1606.45	39.35	68.09			
3000.00	2062.68	N 1080.57	W 1321.39	1836.88	1834.30	S 50.25	W 19.57	155.03	1739.44	1695.83	39.89	68.65			
3100.00	2107.25	N 1120.59	W 1401.47	1862.58	1859.47	S 55.43	W 19.56	154.17	1831.41	1785.99	40.32	69.69			
3200.00	2151.00	N 1161.84	W 1481.37	1886.73	1883.06	S 60.61	W 19.65	152.99	1924.26	1877.14	40.83	70.00			
3300.00	2195.29	N 1203.08	W 1560.98	1910.83	1906.52	S 66.10	W 19.86	151.86	2017.23	1968.50	41.39	69.75			
3400.00	2240.15	N 1243.72	W 1640.57	1934.96	1929.95	S 71.91	W 20.17	151.37	2110.17	2059.84	41.93	69.54			

3500.00	2285.53	N 1283.70	W 1720.21	1966.02	1959.95	S 79.89	W 20.83	150.54	2203.02	2151.05	42.39	69.04	
3600.00	2331.37	N 1323.19	W 1799.83	2006.22	2000.45	S 91.63	W 22.55	150.29	2295.64	2241.97	42.78	68.67	
3700.00	2376.59	N 1362.12	W 1880.08	2052.61	2042.87	S 104.49	W 24.99	150.53	2388.24	2332.87	43.13	68.60	
3800.00	2421.96	N 1400.95	W 1960.29	2118.33	2105.34	S 124.29	W 29.79	148.82	2480.61	2423.48	43.42	67.48	
3900.00	2467.68	N 1440.11	W 2040.14	2197.25	2179.93	S 148.81	W 37.83	147.55	2572.29	2513.37	43.65	66.74	
4000.00	2512.79	N 1480.33	W 2119.81	2255.70	2234.78	S 167.60	W 45.13	146.75	2664.07	2603.41	43.92	66.87	
4100.00	2557.95	N 1521.40	W 2199.02	2547.84	2503.33	S 266.03	W 103.48	145.11	2754.85	2691.81	43.70	61.33	
4200.00	2603.71	N 1563.01	W 2277.59	2604.04	2553.96	S 285.19	W 118.61	144.80	2842.45	2776.57	43.14	61.06	
4300.00	2649.58	N 1604.47	W 2356.19	2660.93	2604.86	S 305.00	W 134.51	145.08	2929.84	2861.11	42.63	60.83	
4400.00	2695.57	N 1645.38	W 2435.00	2709.89	2648.38	S 322.42	W 148.61	145.53	3016.96	2945.16	42.02	60.43	
4500.00	2741.85	N 1685.35	W 2514.12	2758.40	2691.26	S 340.05	W 162.88	145.99	3103.73	3029.03	41.55	59.98	
4600.00	2788.32	N 1724.47	W 2593.56	2824.01	2748.53	S 364.81	W 183.18	146.34	3190.08	3111.52	40.61	59.98	
4700.00	2833.62	N 1764.91	W 2673.00	2892.87	2807.51	S 392.02	W 206.05	146.50	3277.02	3194.09	39.51	61.02	
4800.00	2878.56	N 1805.27	W 2752.69	2965.56	2869.45	S 420.80	W 230.90	147.21	3363.77	3276.43	38.51	59.37	
4900.00	2924.60	N 1843.81	W 2832.67	3042.59	2934.89	S 451.20	W 257.87	147.61	3449.16	3357.60	37.67	58.36	
5000.00	2970.49	N 1882.01	W 2912.88	3109.63	2991.62	S 477.66	W 281.88	147.88	3534.22	3437.99	36.73	58.59	
5100.00	3015.57	N 1921.60	W 2992.88	3175.61	3047.18	S 503.83	W 305.98	147.61	3619.83	3519.25	35.99	59.50	
5125.00	3026.71	N 1931.83	W 3012.79	3191.87	3060.84	S 510.30	W 311.99	147.50	3641.36	3539.74	35.83	59.75	
Field:	Lobitos			Well:	Well LO16-16								
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-16								
Slot:	Slot #16			Trajectory:	LO16-16 Gyro + SS								
				Type:	DEF SVY								
Coordinate System:	UTM Zone 17S - WGS84, Meters												
Reference Point:													
Northing (m)	Easting (m)			Elevation (ft)				Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505993.530	E 459454.500			50.00 above MSL				0.000		0.000		2.500	
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma												
Surveying Prog:													
MD From (ft)	MD To (ft)			EOU Freq				Survey Tool Type					
0.00	2017.00			Act-Stns				SLB_NSG+MSHOT					
2017.00	7655.00			Act-Stns				SLB_MWD-POOR					
Subject Trajectory	Offset Trajectory								Ct-Ct	EOU	Sep	Inter.	
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle	
Major EOU radii used. All local minima indicated.													
Results highlighted: Separation Factor <= 1.50													
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 11.81	W 6.34	208.22	13.41	10.91	5.36	0.00	
100.00	100.00	S 0.71	E 0.31	99.99	99.99	S 11.82	W 6.39	211.11	12.98	9.25	3.49	0.48	
200.00	199.99	S 0.60	W 0.69	199.97	199.97	S 11.85	W 6.59	207.68	12.70	8.86	3.31	1.08	
300.00	299.96	N 0.38	W 2.63	299.93	299.93	S 11.95	W 6.88	199.02	13.05	8.84	3.10	0.84	
400.00	399.91	N 2.15	W 5.29	399.89	399.89	S 12.13	W 7.08	187.13	14.39	9.22	2.78	1.93	
500.00	499.86	N 3.89	W 7.99	499.88	499.88	S 12.13	W 7.12	176.92	16.05	10.20	2.74	1.55	
600.00	599.79	N 6.50	W 10.44	599.85	599.85	S 11.92	W 7.22	170.11	18.69	12.52	3.03	2.60	
700.00	699.50	N 13.32	W 13.24	699.62	699.62	S 11.62	W 7.61	167.32	25.57	18.58	3.66	5.87	
800.00	798.25	N 28.18	W 17.63	798.52	798.51	S 11.32	W 8.64	167.28	40.51	32.82	5.27	11.56	
900.00	894.55	N 52.85	W 27.78	895.15	895.13	S 10.97	W 10.25	165.22	66.18	57.86	7.95	18.68	
1000.00	986.23	N 87.40	W 47.35	987.55	987.51	S 10.60	W 12.24	161.62	104.11	94.84	11.24	26.38	
1100.00	1071.99	N 131.23	W 74.02	1074.24	1074.17	S 10.17	W 14.36	158.60	153.49	143.01	14.64	33.53	
1200.00	1151.22	N 184.29	W 104.01	1154.41	1154.31	S 9.80	W 16.40	157.22	212.97	201.57	18.68	39.57	
1300.00	1223.77	N 243.95	W 138.18	1228.04	1227.91	S 9.49	W 18.28	156.62	280.40	267.56	21.83	45.36	
1400.00	1289.41	N 308.83	W 176.59	1295.43	1295.28	S 9.13	W 19.96	156.97	354.49	339.91	24.32	50.38	
1500.00	1349.46	N 376.07	W 219.81	1357.05	1356.89	S 8.71	W 21.46	157.63	432.96	416.45	26.23	53.86	
1600.00	1403.36	N 441.99	W 272.09	1412.52	1412.33	S 8.37	W 22.86	162.37	514.80	496.10	27.53	58.48	
1700.00	1449.13	N 503.82	W 335.85	1459.98	1459.78	S 8.10	W 24.06	167.02	599.49	578.36	28.37	63.91	
1800.00	1489.72	N 561.30	W 406.87	1502.32	1502.11	S 7.85	W 25.08	166.26	685.46	661.92	29.11	65.01	
1900.00	1531.50	N 615.06	W 480.10	1545.83	1545.61	S 7.60	W 26.10	162.05	770.73	744.98	29.93	62.97	
2000.00	1576.72	N 665.16	W 553.88	1592.75	1592.51	S 7.35	W 27.20	157.83	854.35	826.50	30.67	60.54	
2100.00	1625.71	N 712.30	W 627.20	1643.99	1643.74	S 7.09	W 28.40	154.28	936.17	906.09	31.12	58.61	
2200.00	1676.58	N 757.47	W 700.50	1697.70	1697.43	S 6.88	W 29.57	152.02	1017.10	984.82	31.51	57.82	
2300.00	1728.31	N 800.47	W 774.48	1754.09	1753.81	S 6.08	W 30.72	150.23	1097.43	1063.52	32.36	57.22	
2400.00	1780.41	N 842.11	W 849.00	1812.26	1811.96	S 5.21	W 31.92	148.36	1177.52	1141.80	32.96	57.08	
2500.00	1831.77	N 883.01	W 924.42	1870.95	1870.62	S 4.06	W 33.16	147.92	1258.07	1220.53	33.51	58.21	

2600.00	1880.21	N 923.03	W 1002.21	1926.09	1925.74	S 2.71	W 34.37	148.32	1340.06	1300.60	33.96	60.48		
2700.00	1925.55	N 962.77	W 1081.98	1973.72	1973.34	S 1.45	W 35.39	147.39	1423.85	1382.55	34.47	61.23		
2800.00	1971.36	N 1002.24	W 1161.63	2021.91	2021.50	S 0.13	W 36.36	145.64	1507.80	1464.78	35.04	60.32		
2900.00	2017.25	N 1041.43	W 1241.36	2072.29	2071.85	N 1.30	W 37.37	144.38	1591.99	1547.18	35.53	61.04		
3000.00	2062.68	N 1080.57	W 1321.39	2122.39	2121.92	N 2.76	W 38.42	143.25	1676.66	1630.04	35.96	61.35		
3100.00	2107.25	N 1120.59	W 1401.47	2171.83	2171.32	N 4.24	W 39.50	141.79	1762.19	1713.64	36.30	61.97		
3200.00	2151.00	N 1161.84	W 1481.37	2220.64	2220.10	N 5.74	W 40.60	140.36	1848.56	1798.22	36.72	61.95		
3300.00	2195.29	N 1203.08	W 1560.98	2270.22	2269.64	N 7.31	W 41.75	139.15	1934.79	1882.74	37.17	61.46		
3400.00	2240.15	N 1243.72	W 1640.57	2320.56	2319.94	N 8.94	W 42.97	138.35	2020.74	1967.00	37.60	61.09		
3500.00	2285.53	N 1283.70	W 1720.21	2371.64	2370.97	N 10.63	W 44.24	137.46	2106.39	2050.92	37.97	60.66		
3600.00	2331.37	N 1323.19	W 1799.83	2423.39	2422.67	N 12.40	W 45.58	136.94	2191.79	2134.56	38.30	60.64		
3700.00	2376.59	N 1362.12	W 1880.08	2474.69	2473.92	N 14.19	W 46.95	136.65	2277.45	2218.46	38.61	60.95		
3800.00	2421.96	N 1400.95	W 1960.29	2526.34	2525.53	N 16.03	W 48.37	135.47	2363.09	2302.33	38.90	60.48		
3900.00	2467.68	N 1440.11	W 2040.14	2578.59	2577.72	N 17.95	W 49.85	134.38	2448.65	2386.14	39.17	60.54		
4000.00	2512.79	N 1480.33	W 2119.81	2630.48	2629.55	N 19.89	W 51.36	133.32	2534.76	2470.51	39.45	60.88		
4100.00	2557.95	N 1521.40	W 2199.02	2683.35	2682.36	N 21.88	W 52.99	132.03	2620.97	2555.05	39.76	60.33		
4200.00	2603.71	N 1563.01	W 2277.59	2737.19	2736.13	N 23.88	W 54.75	131.24	2706.93	2639.33	40.05	60.00		
4300.00	2649.58	N 1604.47	W 2356.19	2791.45	2790.32	N 25.88	W 56.65	130.94	2792.78	2723.53	40.32	59.90		
4400.00	2695.57	N 1645.38	W 2435.00	2842.21	2841.02	N 27.73	W 58.52	130.98	2878.48	2807.51	40.56	59.71		
4500.00	2741.85	N 1685.35	W 2514.12	2877.54	2876.30	N 28.88	W 59.78	131.19	2964.07	2891.45	40.81	59.79		
4600.00	2788.32	N 1724.47	W 2593.56	2912.41	2911.14	N 29.84	W 60.94	131.00	3049.76	2975.44	41.04	60.31		
4700.00	2833.62	N 1764.91	W 2673.00	2945.96	2944.66	N 30.58	W 61.97	130.08	3136.52	3060.46	41.24	61.52		
4800.00	2878.56	N 1805.27	W 2752.69	2978.72	2977.40	N 31.15	W 62.89	130.90	3223.71	3146.12	41.55	61.09		
4900.00	2924.60	N 1843.81	W 2832.67	3011.69	3010.36	N 31.56	W 63.74	131.14	3310.37	3231.24	41.83	61.05		
5000.00	2970.49	N 1882.01	W 2912.88	3044.05	3042.72	N 31.80	W 64.49	130.77	3397.33	3316.66	42.12	61.66		
5100.00	3015.57	N 1921.60	W 2992.88	3075.38	3074.03	N 31.89	W 65.14	129.45	3485.12	3402.83	42.35	62.45		
5125.00	3026.71	N 1931.83	W 3012.79	3083.05	3081.70	N 31.89	W 65.29	129.06	3507.21	3424.48	42.39	62.65		
Field:	Lobitos			Well:	Well LO16-17									
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-17									
Slot:	Slot #17			Trajectory:	LO16-17 Gyro + SS									
				Type:	DEF SVY									
Coordinate System:	UTM Zone 17S - WGS84, Meters													
Reference Point:														
Northing (m)	Easting (m)			Elevation (ft)		Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)				
N 9505994.820	E 459455.750			50.00 above MSL		0.000		0.000		2.500				
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma													
Surveying Prog:														
MD From (ft)	MD To (ft)		EOU Freq		Survey Tool Type									
0.00	2017.00		Act-Stns		SLB_NSG+MSHOT									
2017.00	8200.00		Act-Stns		SLB_MWD-POOR									
Subject Trajectory				Offset Trajectory				Ct-Ct		EOU		Sep		Inter.
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle		
Major EOU radii used. All local minima indicated.														
Results highlighted: Separation Factor <= 1.50														
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 7.58	W 2.24	196.43	7.90	5.40	3.16	0.00		
100.00	100.00	S 0.71	E 0.31	100.00	100.00	S 7.58	W 2.16	199.80	7.31	3.58	1.96	0.45		
200.00	199.99	S 0.60	W 0.69	199.99	199.99	S 7.60	W 1.87	189.60	7.09	3.25	1.85	1.42		
300.00	299.96	N 0.38	W 2.63	299.96	299.95	S 7.60	W 1.28	170.41	8.10	3.98	1.96	1.32		
400.00	399.91	N 2.15	W 5.29	399.88	399.88	S 7.53	W 0.35	152.95	10.87	5.78	2.14	2.41		
500.00	499.86	N 3.89	W 7.99	499.88	499.86	S 7.21	E 0.49	142.63	13.97	7.96	2.32	1.75		
600.00	599.79	N 6.50	W 10.44	599.91	599.89	S 6.48	E 0.90	138.85	17.23	10.61	2.60	2.39		
700.00	699.50	N 13.32	W 13.24	699.72	699.70	S 5.42	E 1.03	142.63	23.56	15.88	3.07	5.55		
800.00	798.25	N 28.18	W 17.63	798.79	798.76	S 4.16	E 0.99	149.84	37.32	28.83	4.39	11.15		
900.00	894.55	N 52.85	W 27.78	895.87	895.83	S 2.59	E 0.44	152.96	62.21	52.90	6.68	18.16		
1000.00	986.23	N 87.40	W 47.35	988.96	988.89	S 0.66	W 0.62	152.42	99.73	89.72	9.97	25.75		
1100.00	1071.99	N 131.23	W 74.02	1083.27	1083.09	N 2.67	W 3.32	151.42	147.14	136.36	13.65	30.14		
1200.00	1151.22	N 184.29	W 104.01	1181.31	1180.40	N 10.26	W 12.09	152.42	198.96	187.65	17.59	32.17		
1300.00	1223.77	N 243.95	W 138.18	1283.47	1280.20	N 22.06	W 30.25	154.73	253.12	240.63	20.27	33.53		
1400.00	1289.41	N 308.83	W 176.59	1380.58	1373.08	N 37.56	W 53.98	157.04	309.23	295.15	21.97	35.34		
1500.00	1349.46	N 376.07	W 219.81	1474.77	1461.73	N 54.93	W 80.58	158.57	367.59	351.58	22.97	36.16		
1600.00	1403.36	N 441.99	W 272.09	1573.58	1552.94	N 75.45	W 112.52	159.62	426.84	408.15	22.85	36.66		

1700.00	1449.13	N 503.82	W 335.85	1682.01	1650.45	N 101.91	W 151.84	158.45	485.71	463.66	22.03	37.55	
1800.00	1489.72	N 561.30	W 406.87	1793.44	1747.12	N 133.87	W 197.08	154.94	541.26	515.51	21.02	34.74	
1900.00	1531.50	N 615.06	W 480.10	1903.42	1840.54	N 172.96	W 239.54	150.33	590.61	561.68	20.41	35.07	
2000.00	1576.72	N 665.16	W 553.88	1985.53	1910.12	N 206.68	W 266.97	146.53	635.36	603.35	19.85	30.14	
2100.00	1625.71	N 712.30	W 627.20	2073.65	1983.95	N 236.66	W 304.59	144.09	677.23	642.65	19.58	26.95	
2200.00	1676.58	N 757.47	W 700.50	2164.48	2059.91	N 267.49	W 343.69	141.98	717.17	680.35	19.48	26.42	
2300.00	1728.31	N 800.47	W 774.48	2253.95	2134.76	N 298.43	W 381.69	139.91	756.00	714.95	18.41	26.46	
2400.00	1780.41	N 842.11	W 849.00	2341.99	2208.58	N 329.46	W 418.28	138.11	794.77	748.48	17.17	26.96	
2500.00	1831.77	N 883.01	W 924.42	2429.09	2281.76	N 360.73	W 453.67	136.40	834.79	784.25	16.52	28.88	
2600.00	1880.21	N 923.03	W 1002.21	2519.34	2357.55	N 393.34	W 490.26	134.76	877.79	821.48	15.59	31.05	
2700.00	1925.55	N 962.77	W 1081.98	2608.30	2432.02	N 425.38	W 526.87	133.02	923.83	862.25	15.00	31.49	
2800.00	1971.36	N 1002.24	W 1161.63	2697.84	2506.78	N 457.92	W 563.90	131.30	969.66	902.09	14.35	31.09	
2900.00	2017.25	N 1041.43	W 1241.36	2787.39	2581.33	N 490.97	W 600.89	129.75	1015.58	942.45	13.89	31.23	
3000.00	2062.68	N 1080.57	W 1321.39	2870.47	2650.46	N 521.94	W 635.01	128.43	1062.38	983.25	13.43	31.79	
3100.00	2107.25	N 1120.59	W 1401.47	2952.83	2719.07	N 552.82	W 668.50	127.33	1110.82	1026.04	13.10	32.44	
3200.00	2151.00	N 1161.84	W 1481.37	3034.47	2787.17	N 583.64	W 701.34	126.24	1160.81	1070.21	12.81	32.64	
3300.00	2195.29	N 1203.08	W 1560.98	3115.96	2855.21	N 614.73	W 733.65	125.16	1210.83	1114.64	12.59	32.53	
3400.00	2240.15	N 1243.72	W 1640.57	3197.18	2923.10	N 646.04	W 765.39	124.11	1260.79	1159.32	12.43	32.62	
3500.00	2285.53	N 1283.70	W 1720.21	3279.70	2992.11	N 678.23	W 797.18	123.07	1310.67	1203.30	12.21	32.58	
3600.00	2331.37	N 1323.19	W 1799.83	3362.04	3060.97	N 710.74	W 828.49	122.09	1360.49	1247.46	12.04	32.96	
3700.00	2376.59	N 1362.12	W 1880.08	3443.46	3129.07	N 743.30	W 859.03	121.13	1411.28	1292.87	11.92	33.66	
3800.00	2421.96	N 1400.95	W 1960.29	3525.19	3197.41	N 776.39	W 889.27	120.19	1462.36	1338.38	11.79	33.46	
3900.00	2467.68	N 1440.11	W 2040.14	3607.26	3265.97	N 810.18	W 919.16	119.31	1513.50	1383.87	11.68	33.66	
4000.00	2512.79	N 1480.33	W 2119.81	3688.73	3333.96	N 844.27	W 948.36	118.50	1565.62	1430.60	11.60	34.04	
4100.00	2557.95	N 1521.40	W 2199.02	3772.73	3403.93	N 880.04	W 978.01	117.71	1617.99	1477.19	11.49	33.60	
4200.00	2603.71	N 1563.01	W 2277.59	3857.37	3474.26	N 916.80	W 1007.48	116.97	1669.92	1523.46	11.40	33.46	
4300.00	2649.58	N 1604.47	W 2356.19	3935.26	3538.84	N 951.24	W 1034.12	116.29	1722.03	1570.19	11.34	33.91	
4400.00	2695.57	N 1645.38	W 2435.00	4010.89	3601.54	N 985.23	W 1059.27	115.62	1774.60	1611.27	10.86	34.41	
4500.00	2741.85	N 1685.35	W 2514.12	4096.45	3672.36	N 1024.21	W 1087.31	114.84	1827.23	1658.80	10.85	34.54	
4600.00	2788.32	N 1724.47	W 2593.56	4181.81	3742.83	N 1063.53	W 1115.13	114.05	1879.81	1706.38	10.84	34.80	
4700.00	2833.62	N 1764.91	W 2673.00	4257.80	3805.46	N 1098.92	W 1139.63	113.34	1933.71	1755.65	10.86	35.50	
4800.00	2878.56	N 1805.27	W 2752.69	4331.89	3866.52	N 1133.75	W 1163.03	112.79	1988.47	1813.32	11.35	35.81	
4900.00	2924.60	N 1843.81	W 2832.67	4408.98	3930.04	N 1170.30	W 1186.92	112.13	2042.80	1863.34	11.38	36.05	
5000.00	2970.49	N 1882.01	W 2912.88	4492.73	3999.00	N 1210.17	W 1212.81	111.38	2097.49	1913.46	11.40	36.19	
5100.00	3015.57	N 1921.60	W 2992.88	4576.54	4067.92	N 1250.15	W 1238.78	110.63	2152.94	1964.36	11.42	36.04	
5125.00	3026.71	N 1931.83	W 3012.79	4597.54	4085.18	N 1260.19	W 1245.29	110.46	2166.91	1977.20	11.42	35.98	
Field:	Lobitos			Well:	Well LO16-18								
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-18								
Slot:	Slot #18			Trajectory:	LO16-18 Gyro + SS								
				Type:	DEF SVY								
Coordinate System:	UTM Zone 17S - WGS84, Meters												
Reference Point:													
Northing (m)	Easting (m)			Elevation (ft)				Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505994.720	E 459459.520			50.00 above MSL				0.000		0.000		2.500	
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma												
Surveying Prog:													
MD From (ft)	MD To (ft)			EOU Freq				Survey Tool Type					
0.00	2017.00			Act-Stns				SLB_NSG+MSHOT					
2017.00	6738.00			Act-Stns				SLB_MWD-POOR					
Subject Trajectory	Offset Trajectory				Ct-Ct		EOU		Sep		Inter.		
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle	
Major EOU radii used. All local minima indicated.													
Results highlighted: Separation Factor <= 1.50													
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 7.91	E 10.14	127.98	12.86	10.36	5.14	0.00	
100.00	100.00	S 0.71	E 0.31	99.95	99.95	S 7.78	E 10.43	124.96	12.34	8.61	3.31	0.71	
200.00	199.99	S 0.60	W 0.69	199.86	199.85	S 7.25	E 11.53	118.55	13.92	10.07	3.62	1.97	
300.00	299.96	N 0.38	W 2.63	299.76	299.74	S 6.50	E 13.22	113.48	17.28	13.02	4.05	1.75	
400.00	399.91	N 2.15	W 5.29	399.89	399.85	S 5.94	E 14.43	112.32	21.32	15.92	3.95	2.08	
500.00	499.86	N 3.89	W 7.99	500.24	500.19	S 4.69	E 14.34	111.04	23.92	17.87	3.95	1.02	
600.00	599.79	N 6.50	W 10.44	601.45	601.29	S 0.89	E 11.81	108.46	23.50	16.37	3.30	1.63	
700.00	699.50	N 13.32	W 13.24	701.76	701.27	N 4.25	E 5.52	116.01	20.91	13.43	2.79	3.52	

800.00	798.25	N 28.18	W 17.63	801.33	800.44	N 9.41	W 1.68	139.60	24.73	17.16	3.26	8.34
900.00	894.55	N 52.85	W 27.78	899.81	898.46	N 15.06	W 9.35	154.00	42.23	34.35	5.36	14.26
1000.00	986.23	N 87.40	W 47.35	995.75	993.82	N 21.64	W 17.55	156.09	72.59	63.74	8.20	21.08
1100.00	1071.99	N 131.23	W 74.02	1087.94	1085.32	N 28.92	W 26.17	155.57	113.73	103.45	11.06	27.60
1200.00	1151.22	N 184.29	W 104.01	1175.82	1172.41	N 36.73	W 34.96	155.71	164.30	152.80	14.29	32.96
1300.00	1223.77	N 243.95	W 138.18	1259.88	1255.58	N 45.14	W 43.78	155.76	222.37	209.11	16.77	37.92
1400.00	1289.41	N 308.83	W 176.59	1343.93	1338.53	N 54.92	W 53.11	155.93	286.58	271.27	18.72	41.39
1500.00	1349.46	N 376.07	W 219.81	1435.97	1428.67	N 70.65	W 62.83	154.99	352.43	334.77	19.96	42.13
1600.00	1403.36	N 441.99	W 272.09	1520.40	1510.60	N 89.37	W 70.90	154.60	419.90	399.87	20.96	46.04
1700.00	1449.13	N 503.82	W 335.85	1594.64	1582.08	N 108.40	W 77.22	153.42	490.83	468.20	21.69	51.79
1800.00	1489.72	N 561.30	W 406.87	1663.48	1647.89	N 127.93	W 82.30	149.90	564.07	538.88	22.39	53.29
1900.00	1531.50	N 615.06	W 480.10	1732.26	1713.14	N 149.29	W 86.46	145.31	636.30	608.78	23.12	51.87
2000.00	1576.72	N 665.16	W 553.88	1801.03	1777.83	N 172.40	W 89.52	141.10	706.32	676.57	23.74	50.39
2100.00	1625.71	N 712.30	W 627.20	1870.24	1842.38	N 197.30	W 91.43	137.42	774.09	742.06	24.17	49.39
2200.00	1676.58	N 757.47	W 700.50	1938.69	1905.67	N 223.35	W 92.24	134.44	841.28	807.03	24.56	49.65
2300.00	1728.31	N 800.47	W 774.48	2004.99	1966.38	N 249.97	W 91.86	131.86	908.68	872.78	25.31	50.47
2400.00	1780.41	N 842.11	W 849.00	2093.68	2046.24	N 288.50	W 89.99	128.27	976.34	938.14	25.56	50.60
2500.00	1831.77	N 883.01	W 924.42	2282.45	2209.35	N 383.11	W 94.18	121.68	1040.08	999.85	25.85	46.53
2600.00	1880.21	N 923.03	W 1002.21	2428.83	2332.42	N 460.63	W 110.25	117.50	1101.77	1059.29	25.94	44.50
2700.00	1925.55	N 962.77	W 1081.98	2533.22	2418.11	N 518.07	W 126.19	114.74	1163.58	1119.14	26.18	44.37
2800.00	1971.36	N 1002.24	W 1161.63	2627.84	2493.66	N 573.19	W 140.56	112.32	1224.53	1178.18	26.42	44.29
2900.00	2017.25	N 1041.43	W 1241.36	2735.33	2576.19	N 640.20	W 156.33	109.57	1284.80	1236.11	26.39	44.47
3000.00	2062.68	N 1080.57	W 1321.39	2844.92	2656.53	N 712.82	W 173.04	106.80	1344.11	1292.77	26.18	44.48
3100.00	2107.25	N 1120.59	W 1401.47	2932.86	2718.70	N 773.56	W 186.38	104.52	1403.83	1349.80	25.98	44.56
3200.00	2151.00	N 1161.84	W 1481.37	2997.00	2763.18	N 818.83	W 195.71	103.03	1464.70	1408.33	25.98	44.87
3300.00	2195.29	N 1203.08	W 1560.98	3058.45	2805.59	N 862.50	W 204.04	101.82	1526.35	1467.77	26.06	45.28
3400.00	2240.15	N 1243.72	W 1640.57	3118.64	2846.95	N 905.57	W 211.62	100.68	1586.86	1528.13	26.16	45.98
3500.00	2285.53	N 1283.70	W 1720.21	3171.22	2882.95	N 943.41	W 217.68	99.74	1652.37	1589.62	26.33	46.72
3600.00	2331.37	N 1323.19	W 1799.83	3221.60	2917.38	N 979.82	W 222.83	98.78	1717.05	1652.29	26.51	47.76
3700.00	2376.59	N 1362.12	W 1880.08	3279.06	2956.57	N 1021.52	W 228.05	97.62	1783.70	1716.55	26.56	48.67
3800.00	2421.96	N 1400.95	W 1960.29	3347.65	3003.20	N 1071.45	W 234.18	96.39	1850.92	1781.56	26.69	48.31
3900.00	2467.68	N 1440.11	W 2040.14	3406.97	3043.47	N 1114.70	W 239.36	95.18	1918.39	1846.94	26.85	48.25
4000.00	2512.79	N 1480.33	W 2119.81	3466.03	3083.56	N 1157.79	W 244.27	93.91	1986.82	1913.31	27.03	48.23
4100.00	2557.95	N 1521.40	W 2199.02	3525.09	3123.65	N 1200.91	W 248.94	93.05	2055.62	1980.01	27.19	47.80
4200.00	2603.71	N 1563.01	W 2277.59	3572.35	3155.76	N 1235.42	W 252.35	92.43	2124.54	2047.05	27.42	48.06
4300.00	2649.58	N 1604.47	W 2356.19	3618.21	3186.97	N 1268.89	W 255.21	91.84	2194.43	2115.07	27.65	48.74
4400.00	2695.57	N 1645.38	W 2435.00	3664.96	3218.83	N 1303.01	W 257.69	91.44	2265.33	2184.33	27.97	49.60
4500.00	2741.85	N 1685.35	W 2514.12	3715.41	3253.08	N 1339.99	W 259.95	91.02	2337.08	2254.20	28.20	50.46
4600.00	2788.32	N 1724.47	W 2593.56	3764.50	3286.21	N 1376.16	W 261.77	90.22	2409.66	2324.88	28.42	51.07
4700.00	2833.62	N 1764.91	W 2673.00	3815.36	3320.33	N 1413.85	W 263.29	88.74	2483.31	2396.58	28.63	51.20
4800.00	2878.56	N 1805.27	W 2752.69	3865.51	3353.75	N 1451.21	W 264.48	88.92	2557.81	2469.30	28.90	52.23
4900.00	2924.60	N 1843.81	W 2832.67	3914.30	3386.08	N 1487.76	W 265.34	88.66	2632.66	2542.33	29.14	52.95
5000.00	2970.49	N 1882.01	W 2912.88	3950.14	3409.68	N 1514.73	W 265.71	87.87	2708.38	2616.30	29.41	53.56
5100.00	3015.57	N 1921.60	W 2992.88	3981.42	3430.14	N 1538.38	W 265.66	86.68	2785.04	2691.23	29.69	53.58
5125.00	3026.71	N 1931.83	W 3012.79	3989.17	3435.20	N 1544.26	W 265.59	86.37	2804.31	2710.06	29.76	53.54

Field: Lobitos Well: Well LO16-19
Structure: Platform LO16 (WGS84) Borehole: Borehole LO16-19
Slot: Slot #19 Trajectory: LO16-19 SS Survey
Type: DEF SVY

Coordinate System: UTM Zone 17S - WGS84, Meters

Reference Point:

Northing (m)	Easting (m)	Elevation (ft)	Structure Unc. (ft)	Slot Unc. (ft)	Hole Diameter (ft)
N 9505993.660	E 459460.560	50.00 above MSL	0.000	0.000	2.500

Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma

Surveying Prog:

MD From (ft)	MD To (ft)	EOU Freq	Survey Tool Type
0.00	8550.00	Act-Stns	SLB_MWD-STD

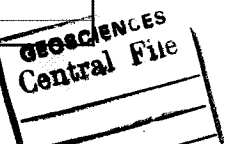
Subject Trajectory

Offset Trajectory

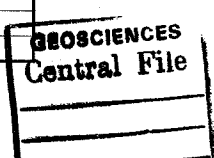
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	EOU	Sep	Inter.
								Dist (ft)	Dist (ft)	Factor	Angle	

Major EOU radii used. All local minima indicated.

Results highlighted: Separation Factor <= 1.50													
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 11.40	E 13.55	130.07	17.70	15.20	7.08	0.00	
100.00	100.00	S 0.71	E 0.31	99.97	99.97	S 11.31	E 13.71	128.35	17.08	11.98	3.35	0.56	
200.00	199.99	S 0.60	W 0.69	199.93	199.93	S 11.05	E 14.21	125.04	18.19	12.97	3.48	1.51	
300.00	299.96	N 0.38	W 2.63	299.85	299.85	S 10.61	E 15.03	121.91	20.80	15.38	3.84	1.33	
400.00	399.91	N 2.15	W 5.29	399.73	399.71	S 10.00	E 16.17	119.52	24.67	18.69	4.12	2.51	
500.00	499.86	N 3.89	W 7.99	499.63	499.61	S 9.23	E 17.61	117.13	28.77	22.15	4.35	2.11	
600.00	599.79	N 6.50	W 10.44	599.67	599.63	S 8.51	E 18.75	117.17	32.82	25.64	4.57	2.76	
700.00	699.50	N 13.32	W 13.24	699.54	699.50	S 7.91	E 19.37	122.90	38.92	30.99	4.91	5.92	
800.00	798.25	N 28.18	W 17.63	798.56	798.51	S 7.42	E 19.50	133.30	51.45	43.16	6.21	11.62	
900.00	894.55	N 52.85	W 27.78	896.00	895.95	S 6.21	E 19.15	140.88	75.44	66.82	8.75	18.20	
1000.00	986.23	N 87.40	W 47.35	988.71	988.64	S 4.34	E 18.43	143.88	112.91	103.64	12.17	26.05	
1100.00	1071.99	N 131.23	W 74.02	1076.26	1076.17	S 2.63	E 17.54	144.85	162.23	152.00	15.86	32.97	
1200.00	1151.22	N 184.29	W 104.01	1170.91	1170.62	N 2.64	E 15.48	145.80	218.29	207.32	19.89	35.32	
1300.00	1223.77	N 243.95	W 138.18	1257.94	1256.96	N 13.43	E 15.35	145.27	278.95	266.65	22.69	39.40	
1400.00	1289.41	N 308.83	W 176.59	1341.93	1339.56	N 28.26	E 18.38	144.18	345.32	331.41	24.82	43.33	
1500.00	1349.46	N 376.07	W 219.81	1437.34	1432.02	N 51.29	E 22.79	142.43	413.71	397.93	26.21	44.07	
1600.00	1403.36	N 441.99	W 272.09	1524.42	1515.11	N 77.15	E 25.69	142.12	484.02	466.09	27.00	48.70	
1700.00	1449.13	N 503.82	W 335.85	1594.25	1580.90	N 100.43	E 28.41	141.65	559.25	538.95	27.54	55.24	
1800.00	1489.72	N 561.30	W 406.87	1657.39	1639.80	N 122.95	E 31.36	139.36	637.75	615.07	28.12	57.17	
1900.00	1531.50	N 615.06	W 480.10	1720.74	1698.28	N 147.05	E 34.83	135.98	715.55	690.70	28.80	56.02	
2000.00	1576.72	N 665.16	W 553.88	1785.19	1757.12	N 173.03	E 38.91	132.64	791.29	764.35	29.37	54.57	
2100.00	1625.71	N 712.30	W 627.20	1852.02	1817.41	N 201.46	E 43.72	129.45	864.78	835.66	29.70	53.49	
2200.00	1676.58	N 757.47	W 700.50	1913.98	1872.66	N 229.04	E 48.78	127.03	937.60	906.34	29.99	53.76	
2300.00	1728.31	N 800.47	W 774.48	1973.77	1925.46	N 256.56	E 54.31	125.00	1010.75	977.86	30.73	54.49	
2400.00	1780.41	N 842.11	W 849.00	2033.01	1977.25	N 284.65	E 60.37	122.70	1084.64	1049.80	31.13	55.05	
2500.00	1831.77	N 883.01	W 924.42	2090.36	2026.92	N 312.61	E 66.71	121.08	1160.08	1123.33	31.56	57.06	
2600.00	1880.21	N 923.03	W 1002.21	2143.37	2072.41	N 339.09	E 72.97	119.64	1238.52	1199.69	31.89	59.82	
2700.00	1925.55	N 962.77	W 1081.98	2191.67	2113.51	N 363.74	E 79.02	117.93	1319.88	1278.95	32.25	60.90	
2800.00	1971.36	N 1002.24	W 1161.63	2239.29	2153.69	N 388.51	E 85.31	116.16	1401.70	1358.77	32.65	61.01	
2900.00	2017.25	N 1041.43	W 1241.36	2285.89	2192.68	N 413.19	E 91.78	114.55	1484.16	1439.14	32.97	61.56	
3000.00	2062.68	N 1080.57	W 1321.39	2334.02	2232.60	N 439.16	E 98.76	112.83	1567.51	1520.25	33.16	62.07	
3100.00	2107.25	N 1120.59	W 1401.47	2382.21	2272.20	N 465.67	E 105.96	110.39	1651.81	1601.81	33.04	62.30	
3200.00	2151.00	N 1161.84	W 1481.37	2429.87	2310.98	N 492.37	E 113.30	108.60	1736.88	1684.61	33.23	62.29	
3300.00	2195.29	N 1203.08	W 1560.98	2470.35	2343.67	N 515.37	E 119.71	107.68	1821.99	1768.15	33.84	62.29	
3400.00	2240.15	N 1243.72	W 1640.57	2505.08	2371.76	N 535.01	E 125.38	107.22	1907.40	1851.69	34.24	62.61	
3500.00	2285.53	N 1283.70	W 1720.21	2539.16	2399.37	N 554.13	E 131.10	106.72	1993.14	1935.54	34.61	62.79	
3600.00	2331.37	N 1323.19	W 1799.83	2574.42	2428.04	N 573.75	E 137.17	106.19	2079.18	2019.78	35.00	63.26	
3700.00	2376.59	N 1362.12	W 1880.08	2608.65	2455.95	N 592.62	E 143.17	105.65	2166.09	2104.37	35.09	63.97	
3800.00	2421.96	N 1400.95	W 1960.29	2642.45	2483.62	N 611.09	E 149.19	104.81	2253.35	2189.83	35.47	63.75	
3900.00	2467.68	N 1440.11	W 2040.14	2676.18	2511.32	N 629.34	E 155.30	103.52	2340.77	2276.01	36.15	63.77	
4000.00	2512.79	N 1480.33	W 2119.81	2713.56	2542.11	N 649.39	E 162.17	101.90	2428.74	2362.21	36.51	63.83	
4100.00	2557.95	N 1521.40	W 2199.02	2758.10	2578.86	N 673.18	E 170.36	100.79	2516.72	2448.36	36.81	63.15	
4200.00	2603.71	N 1563.01	W 2277.59	2799.30	2612.89	N 695.13	E 177.93	100.09	2604.40	2534.19	37.10	62.94	
4300.00	2649.58	N 1604.47	W 2356.19	2828.76	2637.18	N 710.85	E 183.49	99.86	2692.33	2620.26	37.36	63.43	
4400.00	2695.57	N 1645.38	W 2435.00	2857.31	2660.64	N 726.14	E 189.07	100.16	2780.64	2706.66	37.59	64.00	
4500.00	2741.85	N 1685.35	W 2514.12	2884.91	2683.23	N 740.98	E 194.65	100.58	2869.27	2792.78	37.51	64.59	
4600.00	2788.32	N 1724.47	W 2593.56	2915.66	2708.30	N 757.60	E 201.06	99.96	2958.23	2879.66	37.65	65.10	
4700.00	2833.62	N 1764.91	W 2673.00	2947.12	2733.80	N 774.75	E 207.78	97.65	3047.83	2967.09	37.75	65.48	
4800.00	2878.56	N 1805.27	W 2752.69	2979.15	2759.61	N 792.39	E 214.78	99.27	3137.84	3055.80	38.25	65.99	
4900.00	2924.60	N 1843.81	W 2832.67	3010.46	2784.68	N 809.78	E 221.77	99.77	3227.76	3143.69	38.39	66.40	
5000.00	2970.49	N 1882.01	W 2912.88	3042.25	2810.05	N 827.54	E 228.99	98.68	3317.98	3231.80	38.50	66.67	
5100.00	3015.57	N 1921.60	W 2992.88	3073.77	2835.14	N 845.18	E 236.23	96.27	3408.58	3321.30	39.06	66.49	
5125.00	3026.71	N 1931.83	W 3012.79	3081.68	2841.43	N 849.61	E 238.06	95.61	3431.26	3343.50	39.10	66.42	
Field:	Lobitos			Well:	Well LO16-20								
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-20								
Slot:	Slot #20			Trajectory:	LO16-20 MWD Survey								
				Type:	DEF SVY								
Coordinate System:	UTM Zone 17S - WGS84, Meters												
Reference Point:													
Northing (m)	Easting (m)	Elevation (ft)			Structure Unc. (ft)			Slot Unc. (ft)		Hole Diameter (ft)			



N 9505989.680		E 459460.680		50.00 above MSL				0.000		0.000		2.500	
Trajectory Error Model:		SLB ISCSA 3-D 95.00% Confidence 2.7955 sigma											
Surveying Prog:													
MD From (ft)		MD To (ft)		EOU Freq		Survey Tool Type							
0.00		8809.00		Act-Stms		SLB_MWD-STD							
Subject Trajectory				Offset Trajectory				Ct-Ct	EOU	Sep	Inter.		
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle	
Major EOU radii used. All local minima indicated.													
Results highlighted: Separation Factor <= 1.50													
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 24.46	E 13.94	150.33	28.15	25.65	11.26	0.00	
100.00	100.00	S 0.71	E 0.31	99.95	99.95	S 24.60	E 13.86	150.45	27.46	22.36	5.38	0.36	
200.00	199.99	S 0.60	W 0.69	199.90	199.90	S 25.02	E 13.62	149.63	28.30	23.07	5.41	1.24	
300.00	299.96	N 0.38	W 2.63	299.82	299.82	S 25.72	E 13.23	148.72	30.54	25.12	5.64	1.09	
400.00	399.91	N 2.15	W 5.29	399.71	399.70	S 26.70	E 12.68	148.09	34.00	28.00	5.67	2.05	
500.00	499.86	N 3.89	W 7.99	499.51	499.49	S 27.96	E 11.99	147.92	37.60	31.00	5.69	2.13	
600.00	599.79	N 6.50	W 10.44	598.84	598.79	S 30.40	E 11.62	149.12	43.00	35.85	6.01	4.55	
700.00	699.50	N 13.32	W 13.24	696.56	696.30	S 35.74	E 8.56	155.97	53.78	45.87	6.80	10.51	
800.00	798.25	N 28.18	W 17.63	791.87	790.95	S 45.22	E 2.78	164.58	76.53	68.22	9.21	18.26	
900.00	894.55	N 52.85	W 27.78	879.58	877.48	S 57.99	W 3.66	169.28	114.71	106.07	13.28	27.34	
1000.00	986.23	N 87.40	W 47.35	957.53	953.77	S 72.97	W 9.06	170.82	168.04	158.78	18.14	36.99	
1100.00	1071.99	N 131.23	W 74.02	1026.31	1020.52	S 88.73	W 14.17	170.97	233.70	223.52	22.95	45.79	
1200.00	1151.22	N 184.29	W 104.01	1082.48	1074.61	S 103.38	W 17.95	171.56	309.88	299.05	28.60	53.50	
1300.00	1223.77	N 243.95	W 138.18	1128.84	1118.90	S 116.71	W 21.18	173.58	393.40	381.36	32.66	60.30	
1400.00	1289.41	N 308.83	W 176.59	1165.63	1153.75	S 128.12	W 24.05	178.11	482.29	468.75	35.62	65.88	
1500.00	1349.46	N 376.07	W 219.81	1193.76	1180.20	S 137.43	W 26.34	183.59	574.25	559.00	37.65	69.74	
1600.00	1403.36	N 441.99	W 272.09	1218.06	1202.92	S 145.83	W 28.31	196.91	667.18	649.92	38.65	72.92	
1700.00	1449.13	N 503.82	W 335.85	1238.83	1222.26	S 153.20	W 29.98	207.35	759.41	739.88	38.88	76.64	
1800.00	1489.72	N 561.30	W 406.87	1258.48	1240.51	S 160.30	W 31.57	206.29	850.69	828.88	39.00	76.70	
1900.00	1531.50	N 615.06	W 480.10	1284.27	1264.42	S 169.71	W 33.78	198.60	941.49	917.58	39.38	73.84	
2000.00	1576.72	N 665.16	W 553.88	1315.65	1293.42	S 181.31	W 36.84	190.99	1031.55	1005.42	39.47	70.59	
2100.00	1625.71	N 712.30	W 627.20	1349.11	1324.17	S 193.94	W 40.62	185.32	1120.84	1092.62	39.71	68.25	
2200.00	1676.58	N 757.47	W 700.50	1381.70	1353.97	S 206.53	W 44.62	182.38	1209.76	1179.41	39.86	67.13	
2300.00	1728.31	N 800.47	W 774.48	1409.41	1379.16	S 217.53	W 48.17	180.56	1298.37	1266.45	40.67	66.46	
2400.00	1780.41	N 842.11	W 849.00	1435.25	1402.50	S 228.08	W 51.51	179.48	1387.13	1353.44	41.18	66.78	
2500.00	1831.77	N 883.01	W 924.42	1460.85	1425.52	S 238.79	W 54.74	180.97	1476.42	1441.00	41.68	67.93	
2600.00	1880.21	N 923.03	W 1002.21	1489.79	1451.49	S 251.06	W 58.32	184.24	1566.27	1528.92	41.93	69.87	
2700.00	1925.55	N 962.77	W 1081.98	1516.24	1475.17	S 262.39	W 61.56	184.30	1656.84	1617.70	42.33	70.54	
2800.00	1971.36	N 1002.24	W 1161.63	1548.78	1504.25	S 276.44	W 65.58	182.08	1747.73	1706.69	42.59	70.16	
2900.00	2017.25	N 1041.43	W 1241.36	1582.32	1534.18	S 290.99	W 69.77	181.03	1838.84	1796.08	43.00	70.22	
3000.00	2062.68	N 1080.57	W 1321.39	1615.52	1563.75	S 305.46	W 74.03	180.38	1930.26	1885.62	43.24	70.51	
3100.00	2107.25	N 1120.59	W 1401.47	1645.11	1590.09	S 318.39	W 77.83	180.32	2022.40	1975.83	43.43	71.60	
3200.00	2151.00	N 1161.84	W 1481.37	1673.24	1615.14	S 330.70	W 81.40	179.11	2115.36	2066.99	43.73	71.90	
3300.00	2195.29	N 1203.08	W 1560.98	1701.53	1640.32	S 343.09	W 84.94	177.17	2208.46	2158.39	44.10	71.56	
3400.00	2240.15	N 1243.72	W 1640.57	1731.61	1667.09	S 356.28	W 88.67	175.73	2301.48	2249.68	44.43	71.13	
3500.00	2285.53	N 1283.70	W 1720.21	1762.63	1694.68	S 369.93	W 92.53	174.15	2394.35	2340.78	44.69	70.71	
3600.00	2331.37	N 1323.19	W 1799.83	1794.15	1722.70	S 383.83	W 96.47	173.59	2487.13	2431.77	44.92	70.61	
3700.00	2376.59	N 1362.12	W 1880.08	1825.38	1750.43	S 397.63	W 100.37	173.74	2579.95	2522.80	45.14	70.78	
3800.00	2421.96	N 1400.95	W 1960.29	1857.16	1778.65	S 411.71	W 104.36	171.93	2672.84	2613.81	45.28	70.53	
3900.00	2467.68	N 1440.11	W 2040.14	1889.12	1807.00	S 425.89	W 108.37	171.06	2765.90	2705.00	45.42	70.89	
4000.00	2512.79	N 1480.33	W 2119.81	1920.01	1834.40	S 439.63	W 112.26	170.65	2859.50	2796.75	45.58	71.57	
4100.00	2557.95	N 1521.40	W 2199.02	1950.46	1861.39	S 453.19	W 116.09	168.49	2953.43	2888.94	45.79	71.44	
4200.00	2603.71	N 1563.01	W 2277.59	1981.07	1888.51	S 466.84	W 119.96	167.19	3047.49	2981.14	45.93	71.35	
4300.00	2649.58	N 1604.47	W 2356.19	2011.76	1915.69	S 480.55	W 123.84	166.84	3141.54	3073.36	46.07	71.29	
4400.00	2695.57	N 1645.38	W 2435.00	2042.75	1943.13	S 494.42	W 127.76	166.56	3235.47	3165.40	46.17	70.90	
4500.00	2741.85	N 1685.35	W 2514.12	2074.38	1971.12	S 508.60	W 131.77	166.30	3329.12	3257.18	46.28	70.45	
4600.00	2788.32	N 1724.47	W 2593.56	2106.23	1999.28	S 522.92	W 135.84	166.31	3422.53	3348.67	46.34	70.68	
4700.00	2833.62	N 1764.91	W 2673.00	2136.48	2025.98	S 536.59	W 139.76	166.70	3516.61	3440.78	46.37	71.99	
4800.00	2878.56	N 1805.27	W 2752.69	2166.47	2052.40	S 550.21	W 143.69	166.23	3610.78	3533.14	46.51	70.80	
4900.00	2924.60	N 1843.81	W 2832.67	2198.17	2080.29	S 564.67	W 147.91	165.82	3704.26	3624.76	46.60	70.25	
5000.00	2970.49	N 1882.01	W 2912.88	2229.91	2108.16	S 579.24	W 152.20	165.85	3797.73	3716.33	46.66	70.71	
5100.00	3015.57	N 1921.60	W 2992.88	2256.38	2131.38	S 593.43	W 155.80	165.25	3891.81	3808.52	46.73	71.82	
5125.00	3026.71	N 1931.83	W 3012.79	2262.49	2136.73	S 594.26	W 156.63	165.02	3915.46	3831.70	46.75	72.12	



Field:	Lobitos				Well:	Well LO16-21									
Structure:	Platform LO16 (WGS84)				Borehole:	Borehole LO16-21									
Slot:	Slot #21				Trajectory:	LO16-21 SS Survey									
					Type:	DEF SVY									
Coordinate System:	UTM Zone 17S - WGS84, Meters														
Reference Point:															
Northing (m)	Easting (m)			Elevation (ft)			Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)				
N 9505985.770	E 459456.930			50.00 above MSL			0.000		0.000		2.500				
Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma															
Surveying Prog:															
MD From (ft)			MD To (ft)			EOU Freq		Survey Tool Type							
0.00			7800.00			Act-Stns		SLB_MWD-STD							
Subject Trajectory				Offset Trajectory				Ct-Ct		EOU		Sep		Inter.	
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle			
Major EOU radii used. All local minima indicated.															
Results highlighted: Separation Factor <= 1.50															
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 37.29	E 1.62	177.51	37.32	34.82	14.93	0.00			
100.00	100.00	S 0.71	E 0.31	100.06	100.06	S 37.20	E 1.67	177.88	36.51	31.39	7.12	0.56			
200.00	199.99	S 0.60	W 0.69	200.11	200.11	S 36.94	E 1.81	176.08	36.42	31.12	6.87	1.24			
300.00	299.96	N 0.38	W 2.63	300.14	300.14	S 36.51	E 2.04	172.80	37.18	31.65	6.72	0.93			
400.00	399.91	N 2.15	W 5.29	400.15	400.15	S 35.90	E 2.36	168.64	38.82	32.67	6.31	1.98			
500.00	499.86	N 3.89	W 7.99	500.15	500.15	S 35.12	E 2.77	164.59	40.47	33.67	5.95	1.59			
600.00	599.79	N 6.50	W 10.44	600.15	600.14	S 34.17	E 3.28	161.37	42.92	35.60	5.86	2.48			
700.00	699.50	N 13.32	W 13.24	699.98	699.96	S 33.05	E 3.87	159.73	49.43	41.39	6.15	5.63			
800.00	798.25	N 28.18	W 17.63	798.95	798.92	S 31.77	E 4.55	159.65	63.93	55.57	7.65	11.38			
900.00	894.55	N 52.85	W 27.78	895.61	895.57	S 30.36	E 5.31	158.54	89.55	80.92	10.36	18.75			
1000.00	986.23	N 87.40	W 47.35	987.85	987.79	S 28.95	E 5.84	156.23	127.95	118.65	13.77	26.66			
1100.00	1071.99	N 131.23	W 74.02	1074.45	1074.38	S 27.66	E 5.97	154.00	177.91	167.65	17.35	33.73			
1200.00	1151.22	N 184.29	W 104.01	1154.83	1154.75	S 26.49	E 5.76	153.06	237.68	226.72	21.68	39.65			
1300.00	1223.77	N 243.95	W 138.18	1228.83	1228.74	S 25.44	E 5.29	152.76	305.25	293.02	24.96	45.36			
1400.00	1289.41	N 308.83	W 176.59	1296.06	1295.97	S 24.50	E 4.64	153.37	379.46	365.66	27.50	50.43			
1500.00	1349.46	N 376.07	W 219.81	1357.50	1357.40	S 23.63	E 4.00	154.35	458.17	442.56	29.34	53.97			
1600.00	1403.36	N 441.99	W 272.09	1412.86	1412.75	S 22.85	E 3.44	159.49	540.44	522.74	30.52	58.72			
1700.00	1449.13	N 503.82	W 335.85	1460.16	1460.04	S 22.18	E 2.96	164.61	625.77	605.72	31.22	64.22			
1800.00	1489.72	N 561.30	W 406.87	1502.27	1502.15	S 21.58	E 2.54	164.28	712.41	690.04	31.84	65.34			
1900.00	1531.50	N 615.06	W 480.10	1545.54	1545.40	S 20.95	E 2.12	160.39	798.28	773.78	32.59	63.31			
2000.00	1576.72	N 665.16	W 553.88	1592.18	1592.04	S 20.28	E 1.66	156.39	882.44	855.92	33.27	60.91			
2100.00	1625.71	N 712.30	W 627.20	1642.54	1642.40	S 19.55	E 1.18	153.02	964.75	936.14	33.72	58.99			
2200.00	1676.58	N 757.47	W 700.50	1694.74	1694.59	S 18.78	E 0.69	150.92	1046.20	1015.56	34.14	58.21			
2300.00	1728.31	N 800.47	W 774.48	1747.78	1747.59	S 18.00	E 0.19	149.35	1127.12	1094.99	35.08	57.72			
2400.00	1780.41	N 842.11	W 849.00	1800.17	1800.00	S 17.29	W 0.33	147.74	1207.97	1174.12	35.69	57.73			
2500.00	1831.77	N 883.01	W 924.42	1851.83	1851.65	S 16.72	W 0.92	147.63	1289.48	1253.93	36.26	59.02			
2600.00	1880.21	N 923.03	W 1002.21	1900.65	1900.47	S 16.31	W 1.54	148.38	1372.62	1335.26	36.73	61.41			
2700.00	1925.55	N 962.77	W 1081.98	1946.48	1946.29	S 16.03	W 2.18	147.57	1457.55	1418.45	37.28	62.10			
2800.00	1971.36	N 1002.24	W 1161.63	1992.79	1992.60	S 15.85	W 2.89	145.89	1542.60	1501.88	37.89	61.75			
2900.00	2017.25	N 1041.43	W 1241.36	2039.20	2039.00	S 15.78	W 3.66	144.79	1627.90	1585.46	38.36	61.92			
3000.00	2062.68	N 1080.57	W 1321.39	2067.24	2067.03	S 15.89	W 4.10	144.31	1713.91	1669.75	38.81	62.82			
3100.00	2107.25	N 1120.59	W 1401.47	2090.23	2090.02	S 16.30	W 4.34	143.49	1801.33	1755.36	39.18	64.14			
3200.00	2151.00	N 1161.84	W 1481.37	2112.72	2112.50	S 16.99	W 4.45	142.60	1890.08	1842.42	39.65	64.76			
3300.00	2195.29	N 1203.08	W 1560.98	2140.45	2140.21	S 18.20	W 4.55	141.76	1979.14	1929.85	40.16	64.64			
3400.00	2240.15	N 1243.72	W 1640.57	2167.91	2167.62	S 19.78	W 4.69	141.41	2068.29	2017.40	40.64	64.63			
3500.00	2285.53	N 1283.70	W 1720.21	2198.59	2198.22	S 21.93	W 4.88	140.84	2157.47	2104.94	41.07	64.48			
3600.00	2331.37	N 1323.19	W 1799.83	2229.22	2228.75	S 24.40	W 5.09	140.75	2246.69	2192.49	41.45	64.73			
3700.00	2376.59	N 1362.12	W 1880.08	2260.76	2260.14	S 27.36	W 5.43	140.96	2336.35	2280.47	41.81	65.18			
3800.00	2421.96	N 1400.95	W 1960.29	2295.85	2295.02	S 31.20	W 6.04	139.88	2426.16	2368.59	42.14	64.86			
3900.00	2467.68	N 1440.11	W 2040.14	2334.78	2333.66	S 35.91	W 6.94	138.90	2516.04	2456.77	42.45	65.06			
4000.00	2512.79	N 1480.33	W 2119.81	2372.99	2371.52	S 40.89	W 8.03	137.97	2606.47	2545.52	42.76	65.58			
4100.00	2557.95	N 1521.40	W 2199.02	2410.81	2408.96	S 46.09	W 9.24	136.60	2697.10	2634.43	43.04	65.27			
4200.00	2603.71	N 1563.01	W 2277.59	2448.91	2446.65	S 51.53	W 10.53	135.90	2787.64	2723.26	43.30	65.13			
4300.00	2649.58	N 1604.47	W 2356.19	2486.93	2484.23	S 57.14	W 11.89	135.89	2878.20	2812.11	43.55	65.17			
4400.00	2695.57	N 1645.38	W 2435.00	2524.97	2521.80	S 62.94	W 13.32	136.27	2968.68	2900.83	43.75	64.97			

4500.00	2741.85	N 1685.35	W 2514.12	2566.32	2562.60	S 69.46	W 14.98	136.67	3058.95	2989.36	43.96	64.67	
4600.00	2788.32	N 1724.47	W 2593.56	2608.70	2604.38	S 76.33	W 16.80	136.58	3149.03	3077.66	44.12	64.90	
4700.00	2833.62	N 1764.91	W 2673.00	2649.79	2644.85	S 83.20	W 18.71	135.65	3239.82	3166.62	44.26	66.01	
4800.00	2878.56	N 1805.27	W 2752.69	2687.94	2682.38	S 89.77	W 20.60	136.71	3330.77	3255.90	44.49	65.12	
4900.00	2924.60	N 1843.81	W 2832.67	2725.68	2719.45	S 96.56	W 22.62	137.08	3421.04	3344.47	44.68	64.76	
5000.00	2970.49	N 1882.01	W 2912.88	2763.23	2756.26	S 103.63	W 24.78	136.80	3511.38	3433.06	44.83	65.22	
5100.00	3015.57	N 1921.60	W 2992.88	2798.70	2790.98	S 110.59	W 26.96	135.40	3602.35	3522.25	44.97	66.07	
5125.00	3026.71	N 1931.83	W 3012.79	2806.58	2798.68	S 112.17	W 27.45	134.97	3625.21	3544.66	45.01	66.30	
Field:		Lobitos		Well:		Well LO16-22							
Structure:		Platform LO16 (WGS84)		Borehole:		Borehole LO16-22							
Slot:		Slot #22		Trajectory:		LO16-22 Gyro + SS							
				Type:		DEF SVY							
Coordinate System:				UTM Zone 17S - WGS84, Meters									
Reference Point:													
Northing (m)		Easting (m)		Elevation (ft)		Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)			
N 9505992.250		E 459451.760		50.00 above MSL		0.000		0.000		2.500			
Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma													
Surveying Prog:													
MD From (ft)				MD To (ft)		EOU Freq		Survey Tool Type					
0.00				2017.00		Act-Stns		SLB_NSG+MSHOT					
2017.00				8002.00		Act-Stns		SLB_MWD-POOR					
Subject Trajectory				Offset Trajectory				Ct-Ct		EOU		Sep	Inter.
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle	
Major EOU radii used. All local minima indicated.													
Results highlighted: Separation Factor <= 1.50													
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 16.01	W 15.34	223.77	22.17	19.67	8.87	0.00	
100.00	100.00	S 0.71	E 0.31	100.16	100.16	S 15.89	W 15.02	225.30	21.58	17.86	5.80	0.70	
200.00	199.99	S 0.60	W 0.69	200.31	200.30	S 15.43	W 13.81	221.49	19.81	15.97	5.16	2.05	
300.00	299.96	N 0.38	W 2.63	300.27	300.24	S 14.76	W 12.00	211.74	17.81	13.60	4.23	1.82	
400.00	399.91	N 2.15	W 5.29	400.11	400.06	S 14.23	W 10.22	196.72	17.10	12.00	3.35	2.77	
500.00	499.86	N 3.89	W 7.99	500.05	499.98	S 13.66	W 8.49	181.66	17.56	11.37	2.84	2.26	
600.00	599.79	N 6.50	W 10.44	599.93	599.86	S 13.09	W 7.07	170.27	19.88	12.75	2.79	2.91	
700.00	699.50	N 13.32	W 13.24	699.80	699.71	S 12.31	W 6.18	164.62	26.58	18.45	3.27	5.74	
800.00	798.25	N 28.18	W 17.63	798.75	798.66	S 11.29	W 5.86	163.43	41.19	32.56	4.77	11.42	
900.00	894.55	N 52.85	W 27.78	895.89	895.79	S 10.18	W 6.58	161.79	66.51	56.71	6.79	18.16	
1000.00	986.23	N 87.40	W 47.35	990.26	990.06	S 8.79	W 10.69	160.20	103.01	93.27	10.58	24.75	
1100.00	1071.99	N 131.23	W 74.02	1076.37	1075.84	S 8.51	W 18.02	159.76	150.60	140.39	14.76	32.60	
1200.00	1151.22	N 184.29	W 104.01	1151.89	1150.75	S 11.15	W 27.13	161.00	210.02	199.57	20.10	40.19	
1300.00	1223.77	N 243.95	W 138.18	1219.24	1217.12	S 16.14	W 37.41	162.94	279.01	267.59	24.43	46.97	
1400.00	1289.41	N 308.83	W 176.59	1283.21	1279.72	S 22.35	W 49.00	165.73	355.04	342.02	27.28	51.69	
1500.00	1349.46	N 376.07	W 219.81	1343.97	1338.74	S 29.02	W 61.83	168.43	434.94	420.10	29.30	54.32	
1600.00	1403.36	N 441.99	W 272.09	1403.22	1395.72	S 36.06	W 76.41	174.43	516.61	499.63	30.44	56.08	
1700.00	1449.13	N 503.82	W 335.85	1457.61	1447.46	S 43.07	W 91.66	179.10	598.93	579.58	30.94	58.76	
1800.00	1489.72	N 561.30	W 406.87	1514.31	1500.74	S 50.97	W 109.35	177.56	680.82	659.06	31.29	57.75	
1900.00	1531.50	N 615.06	W 480.10	1573.94	1556.30	S 59.47	W 129.27	173.06	760.72	736.77	31.77	54.54	
2000.00	1576.72	N 665.16	W 553.88	1636.65	1614.52	S 68.37	W 150.80	168.97	837.84	811.79	32.17	51.43	
2100.00	1625.71	N 712.30	W 627.20	1703.07	1676.10	S 77.82	W 173.83	165.88	912.34	884.13	32.34	49.09	
2200.00	1676.58	N 757.47	W 700.50	1767.59	1735.88	S 86.94	W 196.35	164.11	985.24	954.95	32.52	48.00	
2300.00	1728.31	N 800.47	W 774.48	1844.32	1806.96	S 97.48	W 223.24	162.49	1056.58	1024.71	33.15	46.55	
2400.00	1780.41	N 842.11	W 849.00	1915.89	1873.25	S 107.07	W 248.44	161.29	1127.04	1093.38	33.48	46.28	
2500.00	1831.77	N 883.01	W 924.42	1994.34	1945.88	S 117.24	W 276.32	161.01	1197.31	1161.81	33.73	46.60	
2600.00	1880.21	N 923.03	W 1002.21	2059.20	2005.89	S 125.39	W 299.54	161.62	1268.36	1230.77	33.75	48.62	
2700.00	1925.55	N 962.77	W 1081.98	2116.10	2058.58	S 132.79	W 319.68	161.06	1341.29	1300.77	33.10	49.51	
2800.00	1971.36	N 1002.24	W 1161.63	2186.71	2124.05	S 142.09	W 344.45	159.56	1414.42	1371.57	33.01	48.98	
2900.00	2017.25	N 1041.43	W 1241.36	2270.85	2202.07	S 152.30	W 374.23	158.36	1486.97	1442.59	33.51	48.47	
3000.00	2062.68	N 1080.57	W 1321.39	2356.69	2281.68	S 161.63	W 404.97	157.31	1559.11	1512.68	33.58	48.18	
3100.00	2107.25	N 1120.59	W 1401.47	2430.55	2350.15	S 168.91	W 431.68	156.62	1631.65	1582.41	33.14	48.85	
3200.00	2151.00	N 1161.84	W 1481.37	2494.90	2409.76	S 175.30	W 455.08	155.76	1705.34	1653.31	32.78	49.02	
3300.00	2195.29	N 1203.08	W 1560.98	2559.64	2469.67	S 181.88	W 478.71	154.78	1778.95	1724.32	32.57	48.58	
3400.00	2240.15	N 1243.72	W 1640.57	2624.94	2530.04	S 188.65	W 502.65	154.00	1852.18	1795.06	32.42	48.15	

3500.00	2285.53	N 1283.70	W 1720.21	2697.26	2596.82	S 196.26	W 529.36	153.16	1924.92	1864.77	32.00	47.51
3600.00	2331.37	N 1323.19	W 1799.83	2773.24	2666.83	S 204.21	W 557.79	152.62	1997.04	1933.77	31.57	47.15
3700.00	2376.59	N 1362.12	W 1880.08	2849.70	2737.12	S 212.16	W 586.81	152.30	2069.03	2002.78	31.23	47.09
3800.00	2421.96	N 1400.95	W 1960.29	2930.12	2810.91	S 220.40	W 617.72	151.43	2140.69	2071.28	30.84	46.46
3900.00	2467.68	N 1440.11	W 2040.14	3015.86	2889.58	S 228.49	W 650.81	150.83	2211.88	2139.13	30.40	46.37
4000.00	2512.79	N 1480.33	W 2119.81	3101.85	2968.55	S 235.77	W 684.07	150.38	2283.44	2207.49	30.07	46.60
4100.00	2557.95	N 1521.40	W 2199.02	3178.52	3038.99	S 241.64	W 713.76	149.58	2354.94	2275.90	29.80	46.20
4200.00	2603.71	N 1563.01	W 2277.59	3246.37	3101.37	S 246.74	W 739.98	149.08	2426.33	2344.31	29.58	46.09
4300.00	2649.58	N 1604.47	W 2356.19	3314.22	3163.77	S 251.82	W 766.12	148.81	2497.70	2412.77	29.41	46.07
4400.00	2695.57	N 1645.38	W 2435.00	3382.20	3226.32	S 256.90	W 792.24	148.54	2568.86	2481.02	29.25	45.77
4500.00	2741.85	N 1685.35	W 2514.12	3457.86	3295.98	S 262.43	W 821.25	148.23	2639.45	2548.51	29.02	45.29
4600.00	2788.32	N 1724.47	W 2593.56	3535.91	3367.88	S 267.80	W 851.14	148.00	2709.44	2615.36	28.80	45.40
4700.00	2833.62	N 1764.91	W 2673.00	3613.03	3438.97	S 272.77	W 880.63	147.90	2780.50	2683.30	28.61	46.49
4800.00	2878.56	N 1805.27	W 2752.69	3693.16	3512.88	S 277.51	W 911.20	147.49	2851.57	2751.38	28.46	45.30
4900.00	2924.60	N 1843.81	W 2832.67	3777.15	3590.50	S 281.73	W 943.01	147.07	2920.99	2817.72	28.29	44.67
5000.00	2970.49	N 1882.01	W 2912.88	3861.59	3668.68	S 285.19	W 974.75	146.78	2990.09	2883.75	28.12	44.94
5100.00	3015.57	N 1921.60	W 2992.88	3943.62	3744.74	S 287.83	W 1005.36	146.40	3059.99	2950.63	27.98	45.62
5125.00	3026.71	N 1931.83	W 3012.79	3963.72	3763.38	S 288.39	W 1012.83	146.30	3077.64	2967.54	27.95	45.80
Field:	Lobitos			Well:	Well LO16-23							
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-23							
Slot:	Slot #23			Trajectory:	LO16-23 Gyro + MWD							
				Type:	DEF SVY							
Coordinate System:	UTM Zone 17S - WGS84, Meters											
Reference Point:												
Northing (m)	Easting (m)		Elevation (ft)		Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)			
N 9505997.420	E 459458.220		50.00 above MSL		0.000		0.000		2.500			
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma											
Surveying Prog:												
MD From (ft)	MD To (ft)		EOU Freq		Survey Tool Type							
0.00	2017.00		Act-Stns		SLB_NSG+MSHOT							
2017.00	10004.00		Act-Stns		SLB_MWD-STD							
Subject Trajectory	Offset Trajectory							Ct-Ct	EOU	Sep	Inter.	
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle
Major EOU radii used. All local minima indicated.												
Results highlighted: Separation Factor <= 1.50												
0.00	0.00	N 0.00	E 0.00	0.00	0.00	N 0.95	E 5.88	80.83	5.95	3.45	2.38	0.00
100.00	100.00	S 0.71	E 0.31	100.06	100.05	N 0.73	E 5.47	74.38	5.35	1.63	1.44	0.69
200.00	199.99	S 0.60	W 0.69	200.11	200.09	S 0.11	E 3.89	83.90	4.60	0.76	1.20	1.18
300.00	299.96	N 0.38	W 2.63	300.08	300.03	S 1.37	E 1.66	112.28	4.64	0.33	1.08	1.29
400.00	399.91	N 2.15	W 5.29	400.01	399.93	S 2.80	W 0.33	134.97	7.01	1.54	1.28	1.93
500.00	499.86	N 3.89	W 7.99	499.98	499.87	S 4.21	W 2.19	144.44	9.97	3.46	1.53	1.67
600.00	599.79	N 6.50	W 10.44	599.93	599.80	S 5.06	W 3.76	149.99	13.35	5.95	1.80	2.93
700.00	699.50	N 13.32	W 13.24	699.69	699.55	S 5.69	W 5.30	157.30	20.59	12.32	2.49	6.15
800.00	798.25	N 28.18	W 17.63	798.46	798.31	S 6.00	W 6.80	162.43	35.85	26.97	4.04	11.90
900.00	894.55	N 52.85	W 27.78	894.85	894.69	S 6.24	W 8.12	162.02	62.27	52.82	6.59	19.11
1000.00	986.23	N 87.40	W 47.35	986.84	986.67	S 6.42	W 9.48	159.15	101.18	90.94	9.88	26.92
1100.00	1071.99	N 131.23	W 74.02	1072.94	1072.76	S 6.50	W 10.71	156.47	151.59	140.22	13.34	34.12
1200.00	1151.22	N 184.29	W 104.01	1152.47	1152.28	S 6.60	W 11.85	155.35	211.97	199.71	17.29	40.16
1300.00	1223.77	N 243.95	W 138.18	1225.38	1225.19	S 6.71	W 12.92	154.92	280.22	266.52	20.45	45.96
1400.00	1289.41	N 308.83	W 176.59	1291.36	1291.16	S 6.85	W 13.92	155.47	355.13	339.68	22.98	51.08
1500.00	1349.46	N 376.07	W 219.81	1352.19	1351.98	S 7.00	W 14.88	156.35	434.45	417.09	25.03	54.55
1600.00	1403.36	N 441.99	W 272.09	1407.40	1407.19	S 7.11	W 15.82	161.47	517.08	497.57	26.50	59.10
1700.00	1449.13	N 503.82	W 335.85	1454.15	1453.93	S 7.20	W 16.69	166.53	602.52	580.52	27.39	64.46
1800.00	1489.72	N 561.30	W 406.87	1495.80	1495.56	S 7.34	W 17.53	166.00	689.19	664.73	28.17	65.48
1900.00	1531.50	N 615.06	W 480.10	1540.11	1539.86	S 7.58	W 18.56	161.77	775.10	748.34	28.97	63.17
2000.00	1576.72	N 665.16	W 553.88	1590.57	1590.29	S 8.13	W 20.36	157.46	859.15	830.18	29.65	60.23
2100.00	1625.71	N 712.30	W 627.20	1644.94	1644.58	S 9.11	W 23.14	153.99	941.11	909.83	30.09	57.77
2200.00	1676.58	N 757.47	W 700.50	1701.08	1700.55	S 10.87	W 27.05	151.97	1021.98	988.44	30.47	56.44
2300.00	1728.31	N 800.47	W 774.48	1760.57	1759.72	S 13.70	W 32.50	150.51	1102.00	1066.73	31.25	55.15
2400.00	1780.41	N 842.11	W 849.00	1825.29	1823.80	S 18.20	W 40.36	149.06	1181.49	1144.26	31.73	54.23
2500.00	1831.77	N 883.01	W 924.42	1916.70	1913.34	S 27.05	W 56.29	148.72	1260.36	1221.01	32.03	52.98

2600.00	1880.21	N 923.03	W 1002.21	2005.51	1998.63	S 38.80	W 78.01	149.43	1339.13	1297.52	32.18	53.04	
2700.00	1925.55	N 962.77	W 1081.98	2130.21	2113.94	S 60.62	W 119.90	148.95	1417.19	1374.01	32.82	50.24	
2800.00	1971.36	N 1002.24	W 1161.63	2209.25	2183.66	S 78.03	W 152.77	148.63	1493.27	1448.47	33.34	49.20	
2900.00	2017.25	N 1041.43	W 1241.36	2276.85	2241.08	S 95.63	W 183.77	148.93	1568.92	1522.35	33.69	49.29	
3000.00	2062.68	N 1080.57	W 1321.39	2336.69	2290.22	S 113.22	W 213.04	149.42	1644.80	1596.41	33.99	49.91	
3100.00	2107.25	N 1120.59	W 1401.47	2402.44	2342.71	S 134.39	W 246.48	149.98	1721.74	1671.31	34.14	51.18	
3200.00	2151.00	N 1161.84	W 1481.37	2480.48	2401.86	S 162.06	W 289.18	150.59	1799.15	1746.66	34.27	51.49	
3300.00	2195.29	N 1203.08	W 1560.98	2553.19	2454.97	S 189.18	W 330.78	151.12	1875.95	1821.37	34.37	51.08	
3400.00	2240.15	N 1243.72	W 1640.57	2626.82	2507.35	S 217.43	W 374.13	151.83	1951.99	1895.37	34.47	50.56	
3500.00	2285.53	N 1283.70	W 1720.21	2707.62	2564.15	S 248.51	W 422.48	152.48	2027.17	1968.37	34.48	49.61	
3600.00	2331.37	N 1323.19	W 1799.83	2789.37	2621.70	S 279.28	W 471.70	153.34	2101.46	2040.48	34.46	48.88	
3700.00	2376.59	N 1362.12	W 1880.08	2858.22	2670.33	S 304.82	W 513.22	154.20	2175.60	2112.54	34.50	48.69	
3800.00	2421.96	N 1400.95	W 1960.29	2927.53	2719.47	S 330.29	W 554.93	154.36	2249.61	2184.46	34.53	48.46	
3900.00	2467.68	N 1440.11	W 2040.14	2989.51	2763.60	S 352.94	W 592.11	154.75	2323.65	2256.42	34.56	48.96	
4000.00	2512.79	N 1480.33	W 2119.81	3048.95	2806.13	S 374.61	W 627.53	155.26	2398.70	2329.41	34.62	49.80	
4100.00	2557.95	N 1521.40	W 2199.02	3107.66	2848.33	S 395.99	W 662.29	155.16	2474.32	2402.96	34.67	50.01	
4200.00	2603.71	N 1563.01	W 2277.59	3176.34	2897.89	S 420.92	W 702.78	155.38	2550.01	2476.41	34.65	49.90	
4300.00	2649.58	N 1604.47	W 2356.19	3251.23	2951.94	S 447.87	W 747.06	155.87	2625.41	2549.51	34.59	49.53	
4400.00	2695.57	N 1645.38	W 2435.00	3322.14	3003.13	S 473.17	W 789.12	156.28	2700.33	2622.04	34.49	48.89	
4500.00	2741.85	N 1685.35	W 2514.12	3389.67	3051.87	S 497.21	W 829.20	156.60	2774.64	2693.97	34.40	48.27	
4600.00	2788.32	N 1724.47	W 2593.56	3457.03	3100.49	S 521.16	W 869.20	157.07	2848.47	2765.41	34.30	48.41	
4700.00	2833.62	N 1764.91	W 2673.00	3519.36	3145.51	S 543.33	W 906.16	157.79	2923.53	2838.08	34.21	49.81	
4800.00	2878.56	N 1805.27	W 2752.69	3581.46	3190.43	S 565.43	W 942.91	157.81	2998.81	2911.15	34.21	48.49	
4900.00	2924.60	N 1843.81	W 2832.67	3646.76	3237.72	S 588.68	W 981.46	157.93	3072.78	2982.84	34.16	47.85	
5000.00	2970.49	N 1882.01	W 2912.88	3713.98	3286.54	S 612.52	W 1021.05	158.34	3146.68	3054.38	34.09	48.27	
5100.00	3015.57	N 1921.60	W 2992.88	3779.82	3334.49	S 635.77	W 1059.72	158.68	3221.64	3126.98	34.03	49.47	
5125.00	3026.71	N 1931.83	W 3012.79	3795.61	3346.00	S 641.33	W 1068.98	158.74	3240.60	3145.34	34.02	49.81	
Field:	Lobitos			Well:	Well LO16-24								
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-24								
Slot:	Slot #24			Trajectory:	LO16-24 MWD Survey								
				Type:	DEF SVY								
Coordinate System:	UTM Zone 17S - WGS84, Meters												
Reference Point:													
Northing (m)	Easting (m)			Elevation (ft)				Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505990.930	E 459463.390			50.00 above MSL				0.000		0.000		2.500	
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma												
Surveying Prog:													
MD From (ft)	MD To (ft)			EOU Freq		Survey Tool Type							
0.00	10147.00			Act-Stns		SLB_MWD-STD							
Subject Trajectory				Offset Trajectory				Ct-Ct	EOU	Sep	Inter.		
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle	
Major EOU radii used. All local minima indicated.													
Results highlighted: Separation Factor <= 1.50													
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 20.36	E 22.83	131.72	30.59	28.09	12.24	0.00	
100.00	100.00	S 0.71	E 0.31	99.90	99.90	S 20.48	E 22.94	131.15	30.05	24.94	5.88	0.32	
200.00	199.99	S 0.60	W 0.69	199.78	199.78	S 20.85	E 23.28	130.20	31.37	26.12	5.97	1.57	
300.00	299.96	N 0.38	W 2.63	299.63	299.63	S 21.46	E 23.84	129.54	34.31	28.66	6.29	1.46	
400.00	399.91	N 2.15	W 5.29	399.42	399.40	S 22.31	E 24.62	129.29	38.65	32.60	6.39	2.66	
500.00	499.86	N 3.89	W 7.99	499.17	499.15	S 23.41	E 25.62	129.09	43.30	36.63	6.49	2.56	
600.00	599.79	N 6.50	W 10.44	598.87	598.83	S 24.75	E 26.84	129.93	48.65	41.48	6.78	3.90	
700.00	699.50	N 13.32	W 13.24	698.57	698.52	S 25.94	E 28.31	133.19	57.17	49.27	7.23	6.92	
800.00	798.25	N 28.18	W 17.63	796.54	796.46	S 27.48	E 29.65	139.09	73.05	64.76	8.82	13.47	
900.00	894.55	N 52.85	W 27.78	889.68	889.52	S 31.07	E 30.47	144.54	102.28	93.66	11.87	22.38	
1000.00	986.23	N 87.40	W 47.35	975.69	975.30	S 37.40	E 30.29	148.03	147.39	138.14	15.93	31.68	
1100.00	1071.99	N 131.23	W 74.02	1049.51	1048.68	S 45.33	E 30.25	149.35	206.37	196.19	20.26	41.11	
1200.00	1151.22	N 184.29	W 104.01	1113.38	1111.88	S 54.61	E 30.48	150.64	276.96	266.09	25.48	48.80	
1300.00	1223.77	N 243.95	W 138.18	1167.61	1165.28	S 63.98	E 30.67	152.15	356.02	343.91	29.40	55.80	
1400.00	1289.41	N 308.83	W 176.59	1211.98	1208.80	S 72.67	E 30.73	155.13	441.61	427.98	32.39	61.78	
1500.00	1349.46	N 376.07	W 219.81	1248.71	1244.66	S 80.57	E 30.73	159.27	531.30	515.93	34.56	65.89	
1600.00	1403.36	N 441.99	W 272.09	1278.37	1273.50	S 87.52	E 30.55	173.15	623.56	606.17	35.85	70.12	
1700.00	1449.13	N 503.82	W 335.85	1301.39	1295.78	S 93.31	E 30.22	187.08	717.00	697.33	36.45	74.76	

1800.00	1489.72	N 561.30	W 406.87	1320.05	1313.76	S 98.27	E 29.82	188.98	810.37	788.43	36.93	75.39			
1900.00	1531.50	N 615.06	W 480.10	1339.04	1331.98	S 103.59	E 29.29	183.54	903.19	879.19	37.62	73.17			
2000.00	1576.72	N 665.16	W 553.88	1360.35	1352.31	S 109.91	E 28.53	177.88	995.14	969.16	38.31	70.71			
2100.00	1625.71	N 712.30	W 627.20	1386.63	1377.23	S 118.18	E 27.36	173.37	1086.23	1058.22	38.77	68.76			
2200.00	1676.58	N 757.47	W 700.50	1417.16	1405.98	S 128.30	E 25.58	171.19	1176.86	1146.86	39.22	67.68			
2300.00	1728.31	N 800.47	W 774.48	1448.89	1435.62	S 139.39	E 23.25	169.86	1267.05	1235.59	40.28	66.76			
2400.00	1780.41	N 842.11	W 849.00	1495.22	1478.46	S 156.47	E 18.87	168.26	1357.03	1323.88	40.94	65.96			
2500.00	1831.77	N 883.01	W 924.42	1595.00	1569.46	S 194.44	E 3.79	167.79	1446.13	1411.16	41.36	63.72			
2600.00	1880.21	N 923.03	W 1002.21	2210.53	2108.34	S 357.95	W 197.04	160.92	1530.11	1489.17	37.37	42.89			
2700.00	1925.55	N 962.77	W 1081.88	2364.62	2217.62	S 397.13	W 298.16	161.92	1596.57	1551.53	35.45	40.82			
2800.00	1971.36	N 1002.24	W 1161.63	2507.42	2308.14	S 434.21	W 402.15	162.74	1659.40	1611.06	34.33	38.94			
2900.00	2017.25	N 1041.43	W 1241.36	2603.93	2365.40	S 458.77	W 475.86	163.62	1719.83	1668.60	33.57	38.57			
3000.00	2062.68	N 1080.57	W 1321.39	2680.44	2410.26	S 478.38	W 534.65	164.42	1780.47	1726.57	33.03	38.84			
3100.00	2107.25	N 1120.59	W 1401.47	2750.80	2451.16	S 496.78	W 588.87	165.44	1842.40	1785.74	32.52	40.19			
3200.00	2151.00	N 1161.84	W 1481.37	2819.65	2490.74	S 515.24	W 642.09	166.02	1905.89	1846.66	32.18	40.86			
3300.00	2195.29	N 1203.08	W 1560.98	2907.11	2540.38	S 538.98	W 710.07	166.41	1969.24	1907.25	31.77	40.37			
3400.00	2240.15	N 1243.72	W 1640.57	2999.62	2592.05	S 563.79	W 782.68	166.86	2031.48	1966.72	31.37	39.59			
3500.00	2285.53	N 1283.70	W 1720.21	3089.56	2641.51	S 587.66	W 853.92	167.26	2092.65	2025.05	30.96	39.00			
3600.00	2331.37	N 1323.19	W 1799.83	3178.83	2689.86	S 611.16	W 925.17	167.67	2152.96	2082.52	30.56	38.52			
3700.00	2376.59	N 1362.12	W 1880.08	3265.70	2736.32	S 633.92	W 994.96	168.59	2212.92	2139.63	30.20	38.18			
3800.00	2421.96	N 1400.95	W 1960.29	3341.86	2776.59	S 653.87	W 1056.45	168.87	2272.66	2196.68	29.91	38.38			
3900.00	2467.68	N 1440.11	W 2040.14	3406.92	2810.65	S 671.33	W 1109.06	169.45	2332.96	2254.44	29.71	39.27			
4000.00	2512.79	N 1480.33	W 2119.81	3472.37	2844.59	S 689.38	W 1162.03	170.23	2394.80	2313.78	29.56	40.34			
4100.00	2557.95	N 1521.40	W 2199.02	3559.89	2889.94	S 713.50	W 1232.89	170.58	2457.32	2373.60	29.35	40.37			
4200.00	2603.71	N 1563.01	W 2277.59	3647.86	2935.79	S 737.25	W 1304.11	171.02	2519.74	2433.36	29.17	40.15			
4300.00	2649.58	N 1604.47	W 2356.19	3727.92	2977.77	S 758.48	W 1368.90	171.48	2581.86	2492.93	29.03	39.85			
4400.00	2695.57	N 1645.38	W 2435.00	3801.20	3016.51	S 777.85	W 1428.00	171.69	2643.70	2552.26	28.91	39.30			
4500.00	2741.85	N 1685.35	W 2514.12	3875.08	3055.92	S 797.37	W 1487.38	171.83	2704.94	2611.04	28.81	38.68			
4600.00	2788.32	N 1724.47	W 2593.56	3949.48	3095.94	S 817.00	W 1546.95	172.33	2765.70	2669.31	28.69	38.76			
4700.00	2833.62	N 1764.91	W 2673.00	4022.93	3135.78	S 836.36	W 1605.53	173.42	2827.97	2729.07	28.59	40.01			
4800.00	2878.56	N 1805.27	W 2752.69	4096.35	3175.93	S 855.69	W 1663.88	173.02	2890.45	2789.21	28.55	38.85			
4900.00	2924.60	N 1843.81	W 2832.67	4174.81	3219.18	S 876.33	W 1726.00	172.98	2951.38	2847.69	28.46	38.00			
5000.00	2970.49	N 1882.01	W 2912.88	4297.77	3282.59	S 909.17	W 1826.06	173.76	3011.53	2904.42	28.12	38.46			
5100.00	3015.57	N 1921.60	W 2992.88	4418.23	3336.69	S 942.08	W 1928.51	175.02	3071.92	2961.47	27.81	40.15			
5125.00	3026.71	N 1931.83	W 3012.79	4447.68	3348.67	S 950.22	W 1954.15	175.37	3087.16	2975.91	27.75	40.67			
Field:	Lobitos			Well:	Well LO16-24										
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-24 S1										
Slot:	Slot #24			Trajectory:	LO16-24 S1 MWD Survey										
				Type:	DEF SVY										
Coordinate System:	UTM Zone 17S - WGS84, Meters														
Reference Point:															
Northing (m)	Easting (m)			Elevation (ft)			Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)				
N 9505990.930	E 459463.390			50.00 above MSL			0.000		0.000		2.500				
Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma															
Surveying Prog:															
MD From (ft)			MD To (ft)			EOU Freq		Survey Tool Type							
0.00			11051.00			Act-Stns		SLB_MWD-STD							
Subject Trajectory						Offset Trajectory						Ct-Ct	EOU	Sep	Inter.
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle			
Major EOU radii used. All local minima indicated.															
Results highlighted: Separation Factor <= 1.50															
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 20.36	E 22.83	131.72	30.59	28.09	12.24	0.00			
100.00	100.00	S 0.71	E 0.31	99.90	99.90	S 20.48	E 22.94	131.15	30.05	24.94	5.88	0.32			
200.00	199.99	S 0.60	W 0.69	199.78	199.78	S 20.85	E 23.28	130.20	31.37	26.12	5.97	1.57			
300.00	299.96	N 0.38	W 2.63	299.63	299.63	S 21.46	E 23.84	129.54	34.31	28.86	6.29	1.46			
400.00	399.91	N 2.15	W 5.29	399.42	399.40	S 22.31	E 24.62	129.29	38.65	32.60	6.39	2.66			
500.00	499.86	N 3.89	W 7.99	499.17	499.15	S 23.41	E 25.62	129.09	43.30	36.63	6.49	2.56			
600.00	599.79	N 6.50	W 10.44	598.87	598.83	S 24.75	E 26.84	129.93	48.65	41.48	6.78	3.90			
700.00	699.50	N 13.32	W 13.24	698.57	698.52	S 25.94	E 28.31	133.19	57.17	49.27	7.23	6.92			
800.00	798.25	N 28.18	W 17.63	796.54	796.46	S 27.48	E 29.65	139.09	73.05	64.76	8.82	13.47			
900.00	894.55	N 52.85	W 27.78	889.68	889.52	S 31.07	E 30.47	144.54	102.28	93.66	11.87	22.38			

GEOSCIENCES
Central File

1000.00	986.23	N 87.40	W 47.35	975.69	975.30	S 37.40	E 30.29	148.03	147.39	138.14	15.93	31.68	
1100.00	1071.99	N 131.23	W 74.02	1049.51	1048.68	S 45.33	E 30.25	149.35	206.37	196.19	20.26	41.11	
1200.00	1151.22	N 184.29	W 104.01	1113.38	1111.88	S 54.61	E 30.48	150.64	276.96	266.09	25.48	48.80	
1300.00	1223.77	N 243.95	W 138.18	1167.61	1165.28	S 63.98	E 30.67	152.15	356.02	343.91	29.40	55.80	
1400.00	1289.41	N 308.83	W 176.59	1211.98	1208.80	S 72.67	E 30.73	155.13	441.61	427.98	32.39	61.78	
1500.00	1349.46	N 376.07	W 219.81	1248.71	1244.66	S 80.57	E 30.73	159.27	531.30	515.93	34.56	65.89	
1600.00	1403.36	N 441.99	W 272.09	1278.37	1273.50	S 87.52	E 30.55	173.15	623.56	606.17	35.85	70.12	
1700.00	1449.13	N 503.82	W 335.85	1301.39	1295.78	S 93.31	E 30.22	187.08	717.00	697.33	36.45	74.76	
1800.00	1489.72	N 561.30	W 406.87	1320.05	1313.76	S 98.27	E 29.82	188.98	810.37	788.43	36.93	75.39	
1900.00	1531.50	N 615.06	W 480.10	1339.04	1331.98	S 103.59	E 29.29	183.54	903.19	879.19	37.62	73.17	
2000.00	1576.72	N 665.16	W 553.88	1360.35	1352.31	S 109.91	E 28.53	177.88	995.14	969.16	38.31	70.71	
2100.00	1625.71	N 712.30	W 627.20	1386.63	1377.23	S 118.18	E 27.36	173.37	1086.23	1058.22	38.77	68.76	
2200.00	1676.58	N 757.47	W 700.50	1417.16	1405.98	S 128.30	E 25.58	171.19	1176.86	1146.86	39.22	67.68	
2300.00	1728.31	N 800.47	W 774.48	1448.89	1435.82	S 139.39	E 23.25	169.86	1267.05	1235.59	40.28	66.76	
2400.00	1780.41	N 842.11	W 849.00	1495.22	1478.46	S 156.47	E 18.87	168.26	1357.03	1323.88	40.94	65.96	
2500.00	1831.77	N 883.01	W 924.42	1595.00	1569.46	S 194.44	E 3.79	167.79	1446.13	1411.16	41.36	63.72	
2600.00	1880.21	N 923.03	W 1002.21	2210.53	2108.34	S 357.95	W 197.04	160.92	1530.11	1489.17	37.37	42.89	
2700.00	1925.55	N 962.77	W 1081.98	2364.62	2217.62	S 397.13	W 298.16	161.92	1596.57	1551.53	35.45	40.82	
2800.00	1971.36	N 1002.24	W 1161.63	2507.42	2308.14	S 434.21	W 402.15	162.74	1659.40	1611.06	34.33	38.94	
2900.00	2017.25	N 1041.43	W 1241.36	2603.93	2365.40	S 458.77	W 475.86	163.62	1719.83	1668.60	33.57	38.57	
3000.00	2062.68	N 1080.57	W 1321.39	2680.44	2410.26	S 478.38	W 534.65	164.42	1780.47	1726.57	33.03	38.84	
3100.00	2107.25	N 1120.59	W 1401.47	2750.80	2451.16	S 496.78	W 588.87	165.44	1842.40	1785.74	32.52	40.19	
3200.00	2151.00	N 1161.84	W 1481.37	2819.65	2490.74	S 515.24	W 642.09	166.02	1905.89	1846.66	32.18	40.86	
3300.00	2195.29	N 1203.08	W 1560.98	2907.11	2540.38	S 538.98	W 710.07	166.41	1969.24	1907.25	31.77	40.37	
3400.00	2240.15	N 1243.72	W 1640.57	2999.62	2592.05	S 563.79	W 782.68	166.86	2031.48	1966.72	31.37	39.59	
3500.00	2285.53	N 1283.70	W 1720.21	3089.56	2641.51	S 587.66	W 853.92	167.26	2092.65	2025.05	30.96	39.00	
3600.00	2331.37	N 1323.19	W 1799.83	3178.83	2689.86	S 611.16	W 925.17	167.87	2152.98	2082.52	30.56	38.52	
3700.00	2376.59	N 1362.12	W 1880.08	3265.70	2736.32	S 633.92	W 994.96	168.59	2212.92	2139.63	30.20	38.18	
3800.00	2421.96	N 1400.95	W 1960.29	3341.86	2776.59	S 653.87	W 1056.45	168.87	2272.66	2196.68	29.91	38.38	
3900.00	2467.68	N 1440.11	W 2040.14	3406.92	2810.65	S 671.33	W 1109.06	169.45	2332.96	2254.44	29.71	39.27	
4000.00	2512.79	N 1480.33	W 2119.81	3472.37	2844.59	S 689.38	W 1162.03	170.23	2394.80	2313.78	29.56	40.34	
4100.00	2557.95	N 1521.40	W 2199.02	3559.89	2889.94	S 713.50	W 1232.89	170.58	2457.32	2373.60	29.35	40.37	
4200.00	2603.71	N 1563.01	W 2277.59	3647.86	2935.79	S 737.25	W 1304.11	171.02	2519.74	2433.36	29.17	40.15	
4300.00	2649.58	N 1604.47	W 2356.19	3727.92	2977.77	S 758.48	W 1368.90	171.48	2581.86	2492.93	29.03	39.85	
4400.00	2695.57	N 1645.38	W 2435.00	3801.20	3016.51	S 777.85	W 1428.00	171.69	2643.70	2552.26	28.91	39.30	
4500.00	2741.85	N 1685.35	W 2514.12	3875.08	3055.92	S 797.37	W 1487.38	171.83	2704.94	2611.04	28.81	38.88	
4600.00	2788.32	N 1724.47	W 2593.56	3949.48	3095.94	S 817.00	W 1546.95	172.33	2765.70	2669.31	28.69	38.76	
4700.00	2833.62	N 1764.91	W 2673.00	4022.93	3135.78	S 836.36	W 1605.53	173.42	2827.97	2729.07	28.59	40.01	
4800.00	2878.56	N 1805.27	W 2752.69	4096.35	3175.93	S 855.69	W 1663.88	173.02	2890.45	2789.21	28.55	38.65	
4900.00	2924.60	N 1843.81	W 2832.67	4174.81	3219.18	S 876.33	W 1728.00	172.98	2951.38	2847.69	28.46	38.00	
5000.00	2970.49	N 1882.01	W 2912.88	4297.77	3282.59	S 909.17	W 1826.06	173.76	3011.53	2904.42	28.12	38.46	
5100.00	3015.57	N 1921.60	W 2992.88	4418.23	3336.69	S 942.08	W 1928.51	175.02	3071.92	2961.47	27.81	40.15	
5125.00	3026.71	N 1931.83	W 3012.79	4447.68	3348.67	S 950.22	W 1954.15	175.37	3087.16	2975.91	27.75	40.67	
Field:	Lobitos			Well:	Well LO16-26								
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-26								
Slot:	Slot #26			Trajectory:	LO16-26 Gyro + MWD								
				Type:	DEF SVY								
Coordinate System:	UTM Zone 17S - WGS84, Meters												
Reference Point:													
Northing (m)	Easting (m)			Elevation (ft)				Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505990.430	E 459452.050			50.00 above MSL				0.000		0.000		2.500	
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma												
Surveying Prog:													
MD From (ft)	MD To (ft)			EOU Freq		Survey Tool Type							
0.00	2000.00			Act-Stns		SLB_NSG+MSHOT							
2000.00	8095.00			Act-Stns		SLB_MWD-STD							
Subject Trajectory				Offset Trajectory				Ct-Ct	EOU	Sep	Inter.		
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle	
Major EOU radii used. All local minima indicated.													
Results highlighted: Separation Factor <= 1.50													

0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 21.98	W 14.39	213.20	26.27	23.77	10.51	0.00
100.00	100.00	S 0.71	E 0.31	100.24	100.24	S 21.74	W 13.91	214.08	25.39	21.66	6.82	0.86
200.00	199.99	S 0.60	W 0.69	200.43	200.41	S 21.00	W 12.47	209.99	23.56	19.72	6.14	2.19
300.00	299.96	N 0.38	W 2.63	300.42	300.37	S 20.15	W 10.19	200.22	21.89	17.62	5.13	2.11
400.00	399.91	N 2.15	W 5.29	400.08	400.01	S 19.58	W 7.89	186.81	21.89	16.85	4.35	3.07
500.00	499.86	N 3.89	W 7.99	499.93	499.84	S 19.45	W 5.87	174.83	23.44	17.48	3.93	2.48
600.00	599.79	N 6.50	W 10.44	600.33	600.21	S 18.74	W 4.21	166.15	26.00	19.16	3.80	2.51
700.00	699.50	N 13.32	W 13.24	701.42	701.21	S 14.52	W 4.04	161.71	29.37	21.41	3.69	2.82
800.00	798.25	N 28.18	W 17.63	803.31	802.70	S 6.19	W 6.60	162.20	36.37	27.80	4.24	4.96
900.00	894.55	N 52.85	W 27.78	907.24	904.95	N 11.80	W 10.01	156.54	45.92	36.62	4.94	7.77
1000.00	986.23	N 87.40	W 47.35	1012.52	1005.40	N 42.82	W 14.06	143.49	58.85	49.00	5.98	10.56
1100.00	1071.99	N 131.23	W 74.02	1122.55	1104.75	N 87.94	W 27.11	134.54	71.74	60.82	6.57	6.66
1200.00	1151.22	N 184.29	W 104.01	1234.25	1197.72	N 142.58	W 55.69	134.69	78.97	66.92	6.56	4.00
1300.00	1223.77	N 243.95	W 138.18	1341.75	1279.99	N 198.23	W 96.69	141.00	83.50	69.76	6.08	6.91
1400.00	1289.41	N 308.83	W 176.59	1446.84	1355.30	N 255.58	W 142.28	147.48	91.40	75.41	5.72	6.95
1500.00	1349.46	N 376.07	W 219.81	1553.97	1426.10	N 318.13	W 192.73	151.58	99.81	80.34	5.13	5.75
1600.00	1403.36	N 441.99	W 272.09	1661.62	1490.12	N 383.26	W 249.64	149.98	107.14	84.11	4.65	3.66
1700.00	1449.13	N 503.82	W 335.85	1767.66	1546.15	N 448.85	W 311.27	143.94	114.18	86.95	4.19	7.73
1800.00	1489.72	N 561.30	W 406.87	1866.50	1595.94	N 511.96	W 368.77	135.01	123.16	91.92	3.94	11.58
1900.00	1531.50	N 615.06	W 480.10	1962.68	1644.75	N 574.84	W 422.71	125.10	133.18	98.32	3.82	15.21
2000.00	1576.72	N 665.16	W 553.88	2059.01	1693.69	N 639.55	W 474.65	114.43	143.58	107.67	4.00	16.05
2100.00	1625.71	N 712.30	W 627.20	2153.46	1741.96	N 703.82	W 524.24	104.17	155.52	117.56	4.10	17.59
2200.00	1676.58	N 757.47	W 700.50	2251.25	1791.94	N 769.96	W 576.13	94.55	170.09	129.90	4.23	17.24
2300.00	1728.31	N 800.47	W 774.48	2350.88	1842.78	N 835.57	W 631.21	86.12	186.71	144.63	4.44	16.74
2400.00	1780.41	N 842.11	W 849.00	2451.85	1893.79	N 900.26	W 689.58	79.37	204.08	159.63	4.59	15.78
2500.00	1831.77	N 883.01	W 924.42	2550.36	1942.43	N 962.91	W 748.00	73.22	223.06	176.06	4.75	16.54
2600.00	1880.21	N 923.03	W 1002.21	2648.20	1990.50	N 1024.87	W 806.51	68.12	246.65	195.99	4.87	17.17
2700.00	1925.55	N 962.77	W 1081.98	2748.95	2039.17	N 1088.04	W 868.08	64.57	272.69	218.86	5.07	16.72
2800.00	1971.36	N 1002.24	W 1161.63	2847.65	2085.80	N 1149.43	W 929.71	61.76	297.57	240.53	5.22	16.36
2900.00	2017.25	N 1041.43	W 1241.36	2944.82	2131.47	N 1209.73	W 990.70	59.23	322.80	263.52	5.44	16.38
3000.00	2062.68	N 1080.57	W 1321.39	3041.38	2176.44	N 1269.65	W 1051.63	57.10	348.52	285.95	5.57	16.36
3100.00	2107.25	N 1120.59	W 1401.47	3136.94	2221.02	N 1328.91	W 1111.89	55.77	374.42	308.58	5.69	15.73
3200.00	2151.00	N 1161.84	W 1481.37	3232.40	2265.65	N 1388.20	W 1171.95	54.79	400.15	331.16	5.80	15.53
3300.00	2195.29	N 1203.08	W 1560.98	3330.95	2311.62	N 1449.46	W 1233.95	53.71	425.65	353.37	5.89	15.28
3400.00	2240.15	N 1243.72	W 1640.57	3428.02	2356.93	N 1509.37	W 1295.45	52.53	450.91	375.29	5.96	15.51
3500.00	2285.53	N 1283.70	W 1720.21	3523.98	2401.73	N 1568.64	W 1356.16	51.45	476.68	397.75	6.04	15.82
3600.00	2331.37	N 1323.19	W 1799.83	3616.61	2444.84	N 1626.11	W 1414.64	50.27	503.00	420.81	6.12	16.51
3700.00	2376.59	N 1362.12	W 1880.08	3704.43	2486.35	N 1680.95	W 1469.24	49.23	531.50	446.16	6.23	17.68
3800.00	2421.96	N 1400.95	W 1960.29	3794.57	2529.43	N 1737.97	W 1524.19	48.72	561.53	472.97	6.34	17.95
3900.00	2467.68	N 1440.11	W 2040.14	3890.89	2575.54	N 1798.96	W 1582.76	48.20	591.28	499.27	6.43	17.42
4000.00	2512.79	N 1480.33	W 2119.81	3983.51	2619.83	N 1857.62	W 1639.13	47.88	620.38	525.02	6.51	17.18
4100.00	2557.95	N 1521.40	W 2199.02	4076.49	2664.10	N 1917.07	W 1695.26	47.79	649.30	550.58	6.58	16.66
4200.00	2603.71	N 1563.01	W 2277.59	4176.34	2711.67	N 1980.84	W 1755.59	47.45	677.29	575.03	6.62	16.30
4300.00	2649.58	N 1604.47	W 2356.19	4271.94	2757.04	N 2041.60	W 1813.81	46.91	704.84	599.12	6.67	16.50
4400.00	2695.57	N 1645.38	W 2435.00	4358.61	2798.37	N 2096.98	W 1866.11	46.29	733.58	624.59	6.73	17.68
4500.00	2741.85	N 1685.35	W 2514.12	4448.11	2841.31	N 2155.00	W 1919.03	45.62	764.59	652.30	6.81	18.65
4600.00	2788.32	N 1724.47	W 2593.56	4543.33	2887.04	N 2216.59	W 1975.45	45.09	796.24	680.44	6.88	18.65
4700.00	2833.62	N 1764.91	W 2673.00	4636.04	2931.75	N 2276.63	W 2030.15	45.00	827.49	708.24	6.94	18.01
4800.00	2878.56	N 1805.27	W 2752.69	4725.14	2974.75	N 2334.53	W 2082.46	44.37	859.41	736.92	7.02	19.49
4900.00	2924.60	N 1843.81	W 2832.67	4825.47	3023.14	N 2399.65	W 2141.48	43.81	892.42	766.39	7.08	19.61
5000.00	2970.49	N 1882.01	W 2912.88	4931.20	3074.17	N 2467.71	W 2204.26	43.48	925.17	795.38	7.13	18.68
5100.00	3015.57	N 1921.60	W 2992.88	5014.33	3114.26	N 2521.32	W 2253.55	43.71	957.09	824.04	7.19	18.42
5125.00	3026.71	N 1931.83	W 3012.79	5043.74	3128.34	N 2540.37	W 2270.99	43.79	964.83	830.77	7.20	17.79

ANTI-COLLISION REPORT

Analysis Method:	3D Least Distance	Distance Unit:	ft
Depth Interval:	Every 100.00ft Measured Depth	Azimuth Unit:	degrees
Step-down Trajectory:	Subject Trajectory	Azimuth Reference:	North
Date:	October 21, 2002		

NOTE: Measured Depth is referenced to individual borehole elevation
 TVD, NS, EW are referenced to the subject trajectory's wellhead location and borehole elevation.

Subject Trajectory Summary

Client:	Petro-Tech Peruana S.A.		
Field:	Lobitos	Well:	Well LO16-25
Structure:	Platform LO16 (WGS84)	Borehole:	Sidetrack #1
Slot:	Slot #25	Trajectory:	LO 16-25 ST MWD SURVEYS
		Type:	RAW SVY

Coordinate System: UTM Zone 17S - WGS84, Meters

Reference Point:					
Northing (m)	Easting (m)	Elevation (ft)	Structure Unc. (ft)	Slot Unc. (ft)	Hole Diameter (ft)
N 9505997.130	E 459456.430	50.00 above MSL	0.000	0.000	2.500

Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma

Surveying Prog:

MD From (ft)	MD To (ft)	EOU Freq	Survey Tool Type
0.00	730.00	Act-Stns	SLB_NSG+MSHOT
730.00	6538.00	Act-Stns	SLB_MWD-STD

Offset Trajectories Summary

Offset Selection Criteria
 Wellhead distance scan: Not performed!
 Selection filters: no filters used

Trajectory	Borehole	Well	Type
LO16-07 SS Survey	Borehole LO16-07	Well LO16-07	DEF SVY
LO16-08 Gyro + SS	Borehole LO16-08	Well LO16-08	DEF SVY
LO16-09 Gyro + SS	Borehole LO16-09	Well LO16-09	DEF SVY
LO16-10 Gyro + SS	Borehole LO16-10	Well LO16-10	DEF SVY
LO16-11 SS Survey	Borehole LO16-11	Well LO16-11	DEF SVY
LO16-12 SS Survey	Borehole LO16-12	Well LO16-12	DEF SVY
LO16-13 SS Survey	Borehole LO16-13	Well LO16-13	DEF SVY
LO16-14 MWD Survey	Borehole LO16-14	Well LO16-14	DEF SVY
LO16-15 S1 SS Survey	Borehole LO16-15 S1	Well LO16-15	DEF SVY
LO16-16 Gyro + SS	Borehole LO16-16	Well LO16-16	DEF SVY
LO16-17 Gyro + SS	Borehole LO16-17	Well LO16-17	DEF SVY
LO16-18 Gyro + SS	Borehole LO16-18	Well LO16-18	DEF SVY
LO16-19 SS Survey	Borehole LO16-19	Well LO16-19	DEF SVY
LO16-20 MWD Survey	Borehole LO16-20	Well LO16-20	DEF SVY
LO16-21 SS Survey	Borehole LO16-21	Well LO16-21	DEF SVY
LO16-22 Gyro + SS	Borehole LO16-22	Well LO16-22	DEF SVY
LO16-23 Gyro + MWD	Borehole LO16-23	Well LO16-23	DEF SVY
LO16-24 MWD Survey	Borehole LO16-24	Well LO16-24	DEF SVY
LO16-24 S1 MWD Survey	Borehole LO16-24 S1	Well LO16-24	DEF SVY
LO 16-25 Gyro + MWD Surveys	Borehole LO16-25	Well LO16-25	DEF SVY
LO16-26 Gyro + MWD	Borehole LO16-26	Well LO16-26	DEF SVY

Major EOU radii used. All local minima indicated.

Results highlighted: Separation Factor <= 1.50

Anti-Collision Rules Used

Alert Rule Type:	Separation Factor Based
EOU Confidence level:	3-D 95.00% Confidence 2.7955 sigma
Allowable deviation based-on:	Minor Risk - Alert Radius NOT Added
Wellbore Diameter:	2.50 ft diameter included in results
Major Risk:	Separation Factor 1.00
Minor Risk:	Separation Factor 1.50

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Alert Zone:	Separation Factor 5.00											
Individual Offset Trajectories Details												
Field:	Lobitos				Well:	Well LO16-07						
Structure:	Platform LO16 (WGS84)				Borehole:	Borehole LO16-07						
Slot:	Slot #07				Trajectory:	LO16-07 SS Survey						
					Type:	DEF SVY						
Coordinate System:	UTM Zone 17S - WGS84, Meters											
Reference Point:												
Northing (m)	Easting (m)			Elevation (ft)			Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505998.340	E 459456.980			50.00 above MSL			0.000		0.000		2.500	
Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma												
Surveying Prog:												
MD From (ft)			MD To (ft)			EOU Freq		Survey Tool Type				
0.00			8240.00			Act-Stns		SLB_MWD-POOR				
Subject Trajectory				Offset Trajectory				Ct-Ct		EOU	Sep	Inter.
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle
Major EOU radii used. All local minima indicated.												
Results highlighted: Separation Factor <= 1.50												
0.00	0.00	N 0.00	E 0.00	1.01	0.98	N 3.73	E 1.78	25.46	4.24	1.60	1.60	14.00
100.00	100.00	S 0.71	E 0.31	98.17	95.23	S 19.64	W 1.36	185.01	19.59	14.14	3.59	13.64
200.00	199.99	S 0.60	W 0.69	195.10	189.24	S 43.07	W 4.60	185.56	43.98	38.41	7.90	14.57
300.00	299.96	N 0.38	W 2.63	291.77	282.95	S 66.56	W 7.96	184.76	69.27	63.52	12.03	14.65
400.00	399.91	N 2.15	W 5.29	388.17	376.37	S 90.10	W 11.43	184.27	95.40	89.07	15.07	15.08
500.00	499.86	N 3.89	W 7.99	484.52	469.70	S 113.74	W 15.02	183.76	121.64	114.70	17.52	15.34
600.00	599.79	N 6.50	W 10.44	580.56	562.70	S 137.43	W 18.72	183.71	148.86	141.43	20.04	16.79
700.00	699.50	N 13.32	W 13.24	675.22	654.31	S 160.89	W 22.82	183.87	180.23	172.09	22.14	20.22
800.00	798.25	N 28.18	W 17.63	766.38	742.47	S 183.62	W 27.56	184.34	219.24	210.79	25.92	25.94
900.00	894.55	N 52.85	W 27.78	851.74	824.83	S 205.41	W 32.85	185.25	267.55	258.83	30.69	32.67
1000.00	986.23	N 87.40	W 47.35	930.34	900.47	S 226.01	W 38.48	186.15	325.05	315.77	35.02	39.76
1100.00	1071.99	N 131.23	W 74.02	1001.56	968.84	S 245.06	W 44.33	186.22	391.30	381.14	38.52	46.87
1200.00	1151.22	N 184.29	W 104.01	1064.33	1028.97	S 262.12	W 50.15	186.67	465.97	455.18	43.18	52.85
1300.00	1223.77	N 243.95	W 138.18	1120.99	1083.14	S 277.68	W 56.03	188.41	546.47	534.34	45.06	58.15
1400.00	1289.41	N 308.83	W 176.59	1171.21	1131.05	S 291.49	W 61.92	191.59	631.36	617.55	45.71	62.42
1500.00	1349.46	N 376.07	W 219.81	1216.71	1174.40	S 304.02	W 67.83	194.24	718.52	702.80	45.69	64.96
1600.00	1403.36	N 441.99	W 272.09	1258.24	1213.91	S 315.45	W 73.62	200.57	805.60	787.64	44.85	67.23
1700.00	1449.13	N 503.82	W 335.85	1294.74	1248.62	S 325.47	W 78.80	205.43	891.06	870.60	43.55	70.56
1800.00	1489.72	N 561.30	W 406.87	1328.74	1280.95	S 334.77	W 83.66	203.19	975.20	952.26	42.52	70.48
1900.00	1531.62	N 614.22	W 480.63	1365.98	1316.37	S 344.95	W 89.05	196.26	1058.14	1032.88	41.89	67.04
2000.00	1577.03	N 660.31	W 556.85	1409.30	1357.57	S 356.74	W 95.37	190.36	1138.20	1110.65	41.31	63.90
2100.00	1624.73	N 702.35	W 634.02	1456.54	1402.50	S 369.56	W 102.35	186.51	1216.98	1187.07	40.68	62.28
2200.00	1673.27	N 741.06	W 712.41	1505.98	1449.52	S 382.93	W 109.75	183.52	1294.84	1263.20	40.92	61.59
2300.00	1720.58	N 781.72	W 790.56	1553.75	1494.95	S 395.81	W 116.96	184.12	1375.21	1341.49	40.79	63.79
2400.00	1766.02	N 822.13	W 869.94	1600.24	1539.17	S 408.30	W 124.06	181.84	1456.62	1420.93	40.81	63.48
2500.00	1811.22	N 862.16	W 949.65	1646.96	1583.61	S 420.81	W 131.25	180.67	1538.70	1501.18	41.01	63.57
2600.00	1855.94	N 900.58	W 1030.42	1694.14	1628.47	S 433.41	W 138.59	178.81	1620.69	1581.25	41.09	63.39
2700.00	1901.07	N 939.04	W 1110.95	1742.00	1673.99	S 446.15	W 146.10	176.00	1703.30	1662.09	41.34	62.47
2800.00	1947.55	N 976.69	W 1191.08	1791.71	1721.27	S 459.33	W 153.97	174.19	1785.77	1742.80	41.56	61.98
2900.00	1993.13	N 1012.48	W 1272.57	1841.91	1769.00	S 472.63	W 162.04	173.92	1867.90	1822.91	41.52	62.21
3000.00	2037.40	N 1048.12	W 1354.85	1891.41	1816.05	S 485.72	W 170.13	173.18	1950.70	1903.61	41.43	62.77
3100.00	2081.19	N 1083.86	W 1437.34	1940.90	1863.06	S 498.80	W 178.35	171.94	2034.08	1984.97	41.43	62.84
3200.00	2124.46	N 1122.09	W 1518.98	1993.77	1913.28	S 512.70	W 187.27	170.39	2119.10	2067.79	41.30	63.71
3300.00	2167.66	N 1161.81	W 1599.95	2048.36	1965.19	S 526.83	W 196.59	168.65	2204.98	2151.62	41.32	63.16
3400.00	2211.53	N 1201.20	W 1680.72	2104.72	2018.82	S 541.18	W 206.32	166.81	2290.60	2235.23	41.37	62.53
3500.00	2256.21	N 1240.95	W 1760.86	2159.01	2070.52	S 554.77	W 215.80	164.37	2376.20	2318.75	41.36	62.02
3600.00	2301.68	N 1282.35	W 1839.72	2209.18	2118.30	S 567.26	W 224.63	162.40	2462.36	2402.79	41.33	61.83
3700.00	2347.74	N 1324.32	W 1917.93	2259.94	2166.64	S 579.86	W 233.62	161.50	2548.65	2486.95	41.31	61.83
3800.00	2394.11	N 1365.84	W 1996.20	2311.42	2215.66	S 592.59	W 242.79	160.46	2634.72	2570.93	41.31	60.91
3900.00	2441.28	N 1406.27	W 2074.56	2372.13	2273.51	S 607.46	W 253.68	159.48	2720.08	2654.12	41.24	60.28
4000.00	2487.94	N 1446.78	W 2153.18	2436.44	2334.89	S 622.80	W 265.26	159.48	2805.50	2737.21	41.08	60.97
4100.00	2533.68	N 1487.71	W 2232.12	2500.61	2396.22	S 637.67	W 276.85	158.84	2891.24	2820.58	40.92	60.96

GEOSCIENCES
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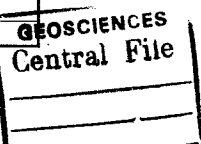
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4200.00	2579.55	N 1529.21	W 2310.70	2565.12	2457.97	S 652.19	W 288.56	157.44	2976.97	2903.98	40.78	60.51
4300.00	2625.94	N 1570.28	W 2389.19	2630.49	2520.55	S 666.69	W 300.68	156.88	3062.19	2986.85	40.64	59.88
4400.00	2671.92	N 1611.02	W 2468.09	2696.77	2583.98	S 681.21	W 313.28	156.83	3147.27	3069.54	40.49	59.67
4500.00	2718.31	N 1649.90	W 2547.69	2765.57	2649.80	S 696.09	W 326.70	155.99	3231.28	3151.29	40.39	58.39
4600.00	2765.80	N 1687.91	W 2627.07	2830.69	2712.08	S 710.01	W 339.68	154.80	3314.37	3231.99	40.23	57.78
4700.00	2813.55	N 1727.26	W 2705.62	2892.35	2771.05	S 723.07	W 352.10	153.50	3397.79	3312.94	40.04	57.94
4800.00	2861.49	N 1768.00	W 2783.35	2954.19	2830.19	S 736.06	W 364.67	152.87	3481.57	3394.29	39.89	57.89
4900.00	2909.41	N 1808.52	W 2861.21	3016.59	2889.86	S 749.06	W 377.47	152.08	3565.18	3475.50	39.75	57.51
5000.00	2958.09	N 1849.70	W 2938.25	3078.17	2948.73	S 761.83	W 390.26	151.08	3648.62	3556.46	39.59	57.27
5100.00	3006.63	N 1891.54	W 3015.01	3138.83	3006.61	S 774.56	W 403.18	151.00	3732.26	3637.58	39.42	57.63
5200.00	3054.44	N 1934.27	W 3091.74	3198.95	3063.87	S 787.35	W 416.31	150.11	3816.45	3719.17	39.24	58.06
5300.00	3102.57	N 1978.14	W 3167.63	3231.74	3095.03	S 794.48	W 423.61	149.48	3900.92	3801.55	39.26	57.69
5400.00	3151.68	N 2021.65	W 3243.10	3249.76	3112.10	S 798.62	W 427.65	148.91	3985.25	3884.02	39.37	57.90
5500.00	3200.93	N 2065.66	W 3318.18	3263.21	3124.82	S 801.84	W 430.61	148.69	4070.18	3967.12	39.49	58.74
5600.00	3250.17	N 2110.60	W 3392.71	3275.40	3136.33	S 804.87	W 433.23	147.78	4155.89	4050.96	39.61	59.43
5700.00	3298.98	N 2154.81	W 3467.96	3284.91	3145.30	S 807.31	W 435.23	149.89	4242.08	4135.50	39.80	59.97
5800.00	3347.21	N 2198.53	W 3543.87	3294.06	3153.92	S 809.72	W 437.09	149.35	4328.86	4220.47	39.94	60.87
5900.00	3395.17	N 2243.38	W 3619.29	3302.79	3162.15	S 812.09	W 438.82	148.95	4416.52	4306.31	40.07	61.82
6000.00	3442.75	N 2288.69	W 3694.68	3317.23	3175.74	S 816.11	W 441.60	148.94	4504.84	4392.80	40.21	62.30
6100.00	3490.82	N 2333.97	W 3769.77	3333.56	3191.11	S 820.71	W 444.65	148.48	4593.28	4479.42	40.34	62.47
6200.00	3538.67	N 2379.68	W 3844.74	3349.36	3205.97	S 825.23	W 447.53	148.28	4682.22	4566.51	40.47	63.17
6300.00	3586.50	N 2425.93	W 3919.40	3364.69	3220.39	S 829.67	W 450.24	147.80	4771.58	4654.01	40.58	63.66
6400.00	3634.34	N 2472.46	W 3993.87	3379.61	3234.42	S 834.05	W 452.81	147.99	4861.28	4741.91	40.72	63.68
6500.00	3682.84	N 2517.74	W 4068.69	3394.52	3248.44	S 838.48	W 455.30	148.20	4950.70	4829.61	40.88	63.38
6538.00	3701.45	N 2534.77	W 4097.10	3400.16	3253.74	S 840.17	W 456.22	148.13	4984.65	4862.90	40.94	63.34
Field:	Lobitos					Well:	Well LO16-08					
Structure:	Platform LO16 (WGS84)					Borehole:	Borehole LO16-08					
Slot:	Slot #08					Trajectory:	LO16-08 Gyro + SS					
						Type:	DEF SVY					
Coordinate System:	UTM Zone 17S - WGS84, Meters											
Reference Point:												
Northing (m)	Easting (m)			Elevation (ft)			Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505997.540	E 459460.690			50.00 above MSL			0.000		0.000		2.500	
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma											
Surveying Prog:												
	MD From (ft)			MD To (ft)			EOU Freq		Survey Tool Type			
	0.00			2017.16			Act-Stns		SLB_NSG+MSHOT			
	2017.16			8226.00			Act-Stns		SLB_MWD-POOR			
Subject Trajectory					Offset Trajectory				Ct-Ct	EOU	Sep	Inter.
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle
Major EOU radii used. All local minima indicated.												
Results highlighted: Separation Factor <= 1.50												
0.00	0.00	N 0.00	E 0.00	2.60	2.52	N 0.89	E 13.54	86.24	13.80	11.30	5.52	14.00
100.00	100.00	S 0.71	E 0.31	99.69	96.75	S 15.91	W 2.80	191.54	15.85	12.02	4.14	13.67
200.00	199.99	S 0.60	W 0.69	196.93	191.14	S 32.81	W 18.88	209.75	38.03	34.10	9.67	13.51
300.00	299.96	N 0.38	W 2.63	294.02	285.40	S 49.84	W 34.73	212.81	61.37	56.66	13.04	13.81
400.00	399.91	N 2.15	W 5.29	391.52	380.07	S 67.18	W 50.32	213.46	85.02	79.03	14.20	13.32
500.00	499.86	N 3.89	W 7.99	489.45	475.33	S 84.40	W 65.18	213.31	108.02	100.72	14.79	13.35
600.00	599.79	N 6.50	W 10.44	587.36	570.69	S 101.14	W 79.71	213.35	131.27	122.79	15.48	14.15
700.00	699.50	N 13.32	W 13.24	684.01	664.92	S 117.38	W 93.83	212.90	157.40	147.56	16.01	16.80
800.00	798.25	N 28.18	W 17.63	777.43	755.95	S 133.05	W 107.82	211.97	189.52	178.75	17.60	21.73
900.00	894.55	N 52.85	W 27.78	866.43	842.48	S 148.36	W 121.87	210.46	228.14	216.51	19.62	27.43
1000.00	986.23	N 87.40	W 47.35	949.83	923.34	S 163.21	W 135.91	208.34	273.14	260.37	21.39	33.87
1100.00	1071.99	N 131.23	W 74.02	1026.41	997.37	S 177.46	W 149.36	206.20	326.40	312.23	23.03	41.04
1200.00	1151.22	N 184.29	W 104.01	1096.54	1064.98	S 190.84	W 162.30	204.59	389.30	373.97	25.38	46.83
1300.00	1223.77	N 243.95	W 138.18	1158.04	1124.13	S 202.79	W 174.19	204.30	459.14	442.14	27.02	52.40
1400.00	1289.41	N 308.83	W 176.59	1211.50	1175.39	S 213.60	W 184.83	204.97	534.79	515.92	28.34	57.05
1500.00	1349.46	N 376.07	W 219.81	1263.00	1224.68	S 224.25	W 195.32	204.81	613.64	592.64	29.22	59.72
1600.00	1403.36	N 441.99	W 272.09	1311.30	1270.66	S 234.27	W 205.32	206.09	692.34	668.96	29.61	61.88
1700.00	1449.13	N 503.82	W 335.85	1352.50	1310.19	S 242.91	W 214.02	207.33	769.26	743.27	29.60	65.18
1800.00	1489.72	N 561.30	W 406.87	1391.03	1346.88	S 251.19	W 222.39	204.11	845.33	816.76	29.59	65.10

1900.00	1531.62	N 614.22	W 480.63	1433.56	1387.25	S 260.53	W 231.91	197.27	920.81	889.76	29.66	61.57
2000.00	1577.03	N 660.31	W 556.85	1484.37	1435.36	S 271.83	W 243.72	191.20	993.47	959.91	29.60	58.13
2100.00	1624.73	N 702.35	W 634.02	1539.53	1487.44	S 284.21	W 257.08	187.10	1065.00	1028.82	29.44	56.28
2200.00	1673.27	N 741.06	W 712.41	1597.19	1541.77	S 297.19	W 271.35	183.98	1135.69	1097.57	29.80	55.51
2300.00	1720.58	N 781.72	W 790.56	1653.18	1594.46	S 309.82	W 285.43	183.96	1209.34	1169.02	30.00	57.67
2400.00	1766.02	N 822.13	W 869.94	1707.83	1645.86	S 322.17	W 299.33	181.57	1284.31	1241.86	30.26	57.35
2500.00	1811.22	N 862.16	W 949.65	1766.82	1701.27	S 335.48	W 314.56	179.88	1360.06	1315.55	30.56	57.18
2600.00	1855.94	N 900.58	W 1030.42	1827.38	1758.08	S 349.03	W 330.58	177.76	1435.58	1388.98	30.81	56.75
2700.00	1901.07	N 939.04	W 1110.95	1886.53	1813.51	S 362.19	W 346.48	175.06	1511.71	1463.18	31.15	55.75
2800.00	1947.55	N 976.69	W 1191.08	1953.59	1876.32	S 376.98	W 364.77	173.01	1587.54	1537.03	31.43	54.93
2900.00	1993.13	N 1012.48	W 1272.57	2025.62	1943.68	S 392.47	W 385.02	172.01	1662.55	1609.96	31.62	54.68
3000.00	2037.40	N 1048.12	W 1354.85	2081.28	1995.69	S 404.35	W 400.89	171.25	1738.23	1683.79	31.93	55.39
3100.00	2081.19	N 1083.86	W 1437.34	2138.73	2049.33	S 416.71	W 417.33	170.06	1814.71	1758.44	32.25	55.53
3200.00	2124.46	N 1122.09	W 1518.98	2206.39	2112.36	S 431.28	W 437.16	168.74	1892.99	1834.69	32.47	56.18
3300.00	2167.66	N 1161.81	W 1599.95	2275.09	2176.14	S 446.02	W 458.00	167.14	1972.11	1911.95	32.78	55.36
3400.00	2211.53	N 1201.20	W 1680.72	2346.38	2242.09	S 461.26	W 480.37	165.53	2050.74	1988.75	33.08	54.46
3500.00	2256.21	N 1240.95	W 1760.86	2417.87	2307.99	S 476.49	W 503.55	163.63	2129.11	2065.11	33.27	53.77
3600.00	2301.68	N 1282.35	W 1839.72	2482.23	2367.23	S 490.09	W 524.70	162.18	2207.96	2141.59	33.27	53.62
3700.00	2347.74	N 1324.32	W 1917.93	2547.23	2427.06	S 503.69	W 546.15	161.44	2286.85	2218.10	33.26	53.58
3800.00	2394.11	N 1365.84	W 1996.20	2618.32	2492.50	S 518.37	W 569.73	160.43	2365.33	2294.02	33.17	52.45
3900.00	2441.28	N 1406.27	W 2074.56	2697.73	2565.60	S 534.33	W 596.33	159.56	2442.65	2368.58	32.98	51.60
4000.00	2487.94	N 1446.78	W 2153.18	2778.08	2639.56	S 549.95	W 623.55	159.53	2519.86	2442.95	32.77	52.13
4100.00	2533.68	N 1487.71	W 2232.12	2857.18	2712.45	S 564.70	W 650.49	159.02	2597.29	2517.41	32.51	52.09
4200.00	2579.55	N 1529.21	W 2310.70	2936.53	2785.86	S 578.58	W 677.24	157.99	2674.61	2591.80	32.30	51.69
4300.00	2625.94	N 1570.28	W 2389.19	2992.56	2837.86	S 587.85	W 695.93	157.59	2751.29	2666.00	32.26	51.55
4400.00	2671.92	N 1611.02	W 2468.09	3017.59	2861.14	S 592.16	W 704.07	157.81	2828.71	2741.28	32.35	52.34
4500.00	2718.31	N 1649.90	W 2547.69	3056.73	2897.51	S 599.30	W 716.62	157.24	2905.82	2816.13	32.40	51.71
4600.00	2765.80	N 1687.91	W 2627.07	3095.58	2933.55	S 606.76	W 729.08	156.51	2982.62	2890.61	32.42	51.74
4700.00	2813.55	N 1727.26	W 2705.62	3132.02	2967.34	S 614.03	W 740.62	155.78	3060.48	2966.10	32.43	52.58
4800.00	2861.49	N 1768.00	W 2783.35	3167.50	3000.24	S 621.35	W 751.70	155.46	3139.40	3042.71	32.47	53.14
4900.00	2909.41	N 1808.52	W 2861.21	3202.30	3032.51	S 628.76	W 762.41	154.95	3218.77	3119.78	32.52	53.37
5000.00	2958.09	N 1849.70	W 2938.25	3236.56	3064.28	S 636.28	W 772.80	154.28	3298.57	3197.31	32.58	53.78
5100.00	3006.63	N 1891.54	W 3015.01	3295.75	3119.13	S 649.51	W 790.68	154.28	3378.94	3274.87	32.47	54.26
5200.00	3054.44	N 1934.27	W 3091.74	3353.75	3172.83	S 662.54	W 808.29	153.64	3460.00	3353.05	32.35	54.90
5300.00	3102.57	N 1978.14	W 3167.63	3407.33	3222.45	S 674.62	W 824.54	152.97	3541.40	3431.71	32.28	54.37
5400.00	3151.68	N 2021.65	W 3243.10	3461.52	3272.65	S 686.83	W 840.89	152.36	3622.31	3509.91	32.23	54.19
5500.00	3200.93	N 2065.66	W 3318.18	3522.09	3328.79	S 700.47	W 859.05	152.11	3703.39	3588.15	32.14	54.48
5600.00	3250.17	N 2110.60	W 3392.71	3729.46	3521.83	S 742.19	W 922.22	151.04	3783.60	3662.94	31.36	52.46
5700.00	3298.98	N 2154.81	W 3467.96	3870.75	3652.36	S 768.37	W 969.53	152.06	3861.61	3736.55	30.88	51.06
5800.00	3347.21	N 2198.53	W 3543.87	3923.07	3700.33	S 778.33	W 987.86	151.73	3939.49	3811.46	30.77	51.59
5900.00	3395.17	N 2243.38	W 3619.29	3952.37	3727.17	S 784.06	W 998.16	151.55	4018.20	3887.66	30.78	52.51
6000.00	3442.75	N 2288.69	W 3694.68	3966.03	3739.66	S 786.90	W 1002.90	151.56	4097.93	3965.23	30.88	53.22
6100.00	3490.82	N 2333.97	W 3769.77	4281.15	4026.59	S 848.74	W 1117.37	151.00	4177.55	4035.75	29.46	49.52
6200.00	3538.67	N 2379.68	W 3844.74	4413.54	4145.92	S 871.23	W 1170.11	150.92	4253.32	4106.32	28.93	48.94
6300.00	3586.50	N 2425.93	W 3919.40	4509.57	4231.88	S 887.27	W 1209.80	150.75	4328.47	4177.05	28.59	48.70
6400.00	3634.34	N 2472.46	W 3993.87	4590.43	4304.12	S 900.64	W 1243.58	150.77	4403.47	4248.04	28.33	48.16
6500.00	3682.84	N 2517.74	W 4068.69	4673.08	4377.85	S 914.19	W 1278.38	150.70	4477.38	4318.05	28.10	47.28
6538.00	3701.45	N 2534.77	W 4097.10	4707.59	4408.60	S 919.81	W 1292.99	150.64	4505.24	4344.34	28.00	47.00

Field:	Lobitos			Well:	Well LO16-09		
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-09		
Slot:	Slot #09			Trajectory:	LO16-09 Gyro + SS		
				Type:	DEF SVY		
Coordinate System:	UTM Zone 17S - WGS84, Meters						
Reference Point:							
Northing (m)	Easting (m)	Elevation (ft)	Structure Unc. (ft)	Slot Unc. (ft)	Hole Diameter (ft)		
N 9505995.230	E 459463.240	50.00 above MSL	0.000	0.000	2.500		
Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma							
Surveying Prog:							
MD From (ft)	MD To (ft)	EOU Freq	Survey Tool Type				
0.00	2017.16	Act-Stns	SLB_NSG+MSHOT				

2017.16				7995.00				Act-Stns SLB_MWD-POOR							
Subject Trajectory				Offset Trajectory				Ct-Ct		EOU		Sep	Inter.		
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle			
Major EOU radii used. All local minima indicated.															
Results highlighted: Separation Factor <= 1.50															
0.00	0.00	N 0.00	E 0.00	4.72	4.58	S 6.58	E 21.26	107.21	22.72	20.22	9.09	14.00			
100.00	100.00	S 0.71	E 0.31	101.86	98.85	S 13.05	W 1.24	187.17	12.49	8.66	3.26	13.87			
200.00	199.99	S 0.60	W 0.69	199.35	193.52	S 18.38	W 23.92	232.80	29.96	26.02	7.61	12.83			
300.00	299.96	N 0.38	W 2.63	296.87	288.24	S 22.99	W 46.67	242.23	51.22	47.01	12.18	13.15			
400.00	399.91	N 2.15	W 5.29	394.92	383.55	S 27.93	W 69.17	245.12	72.48	67.26	13.87	11.93			
500.00	499.86	N 3.89	W 7.99	494.24	480.31	S 32.14	W 91.12	246.87	92.69	86.48	14.93	11.72			
600.00	599.79	N 6.50	W 10.44	592.63	576.29	S 33.42	W 112.71	249.26	112.28	105.18	15.83	11.77			
700.00	699.50	N 13.32	W 13.24	691.33	672.63	S 34.55	W 134.14	249.69	132.78	124.59	16.21	12.15			
800.00	798.25	N 28.18	W 17.63	789.32	768.41	S 35.30	W 154.82	247.65	154.08	145.19	17.32	14.31			
900.00	894.55	N 52.85	W 27.78	885.15	862.09	S 35.79	W 175.00	242.83	174.89	165.36	18.36	17.97			
1000.00	986.23	N 87.40	W 47.35	978.18	952.91	S 35.95	W 195.19	235.65	195.40	184.98	18.74	22.85			
1100.00	1071.99	N 131.23	W 74.02	1066.37	1038.69	S 35.10	W 215.62	228.55	220.97	209.34	19.00	29.06			
1200.00	1151.22	N 184.29	W 104.01	1148.64	1118.33	S 34.17	W 236.24	222.20	257.48	244.89	20.45	34.45			
1300.00	1223.77	N 243.95	W 138.18	1227.26	1193.96	S 32.95	W 257.65	216.97	303.04	288.93	21.47	39.09			
1400.00	1289.41	N 308.83	W 176.59	1303.68	1267.09	S 31.20	W 279.77	212.41	356.04	340.09	22.32	42.62			
1500.00	1349.46	N 376.07	W 219.81	1376.31	1336.35	S 29.09	W 301.51	208.03	413.53	395.51	22.95	45.05			
1600.00	1403.36	N 441.99	W 272.09	1445.56	1402.37	S 27.00	W 322.33	203.65	471.67	451.32	23.18	47.58			
1700.00	1449.13	N 503.82	W 335.85	1509.73	1463.63	S 25.10	W 341.33	199.75	529.15	506.23	23.09	51.76			
1800.00	1489.72	N 561.30	W 406.87	1573.93	1525.05	S 23.07	W 359.95	193.89	587.32	561.84	23.06	52.24			
1900.00	1531.62	N 614.22	W 480.63	1639.05	1587.45	S 20.61	W 378.36	186.49	645.43	617.55	23.15	49.53			
2000.00	1577.03	N 660.31	W 556.85	1704.83	1650.61	S 18.01	W 396.57	180.22	700.87	670.63	23.18	47.35			
2100.00	1624.73	N 702.35	W 634.02	1772.42	1715.59	S 15.35	W 414.97	175.58	755.87	723.21	23.14	46.38			
2200.00	1673.27	N 741.06	W 712.41	1842.74	1783.24	S 12.62	W 434.00	171.78	810.94	776.55	23.58	45.91			
2300.00	1720.58	N 781.72	W 790.56	1915.60	1853.36	S 9.37	W 453.51	169.93	870.09	833.67	23.89	48.13			
2400.00	1766.02	N 822.13	W 869.94	2022.57	1956.42	S 0.92	W 480.81	165.20	930.10	891.56	24.14	47.40			
2500.00	1811.22	N 862.16	W 949.65	2086.01	2017.55	N 5.69	W 496.41	162.90	990.72	950.52	24.65	48.02			
2600.00	1855.94	N 900.58	W 1030.42	2148.99	2078.25	N 11.90	W 512.05	160.52	1052.56	1010.59	25.08	48.05			
2700.00	1901.07	N 939.04	W 1110.95	2212.21	2139.17	N 17.77	W 527.87	157.91	1115.98	1072.38	25.60	47.25			
2800.00	1947.55	N 976.69	W 1191.08	2276.39	2201.02	N 23.36	W 544.07	155.87	1179.71	1134.49	26.09	47.06			
2900.00	1993.13	N 1012.48	W 1272.57	2341.69	2263.95	N 28.69	W 560.69	154.53	1244.17	1197.24	26.51	47.90			
3000.00	2037.40	N 1048.12	W 1354.85	2409.80	2329.54	N 34.13	W 578.19	152.99	1310.24	1261.53	26.90	48.42			
3100.00	2081.19	N 1083.86	W 1437.34	2477.77	2394.96	N 39.53	W 595.81	151.34	1377.41	1326.95	27.30	48.50			
3200.00	2124.46	N 1122.09	W 1518.98	2545.35	2459.99	N 44.92	W 613.43	149.67	1446.68	1394.29	27.61	48.88			
3300.00	2167.66	N 1161.81	W 1599.95	2613.01	2525.05	N 50.34	W 631.16	148.18	1517.12	1462.97	28.02	48.50			
3400.00	2211.53	N 1201.20	W 1680.72	2682.81	2592.16	N 55.97	W 649.54	146.69	1587.38	1531.46	28.38	47.97			
3500.00	2256.21	N 1240.95	W 1760.86	2758.48	2664.85	N 62.33	W 669.59	144.91	1657.41	1599.48	28.61	47.09			
3600.00	2301.68	N 1282.35	W 1839.72	2835.49	2738.74	N 69.19	W 690.15	143.43	1727.51	1667.52	28.80	46.44			
3700.00	2347.74	N 1324.32	W 1917.93	2913.72	2813.72	N 76.55	W 711.20	142.46	1797.30	1735.24	28.96	46.22			
3800.00	2394.11	N 1365.84	W 1996.20	2990.83	2887.57	N 84.21	W 732.05	141.55	1866.59	1802.36	29.06	45.39			
3900.00	2441.28	N 1406.27	W 2074.56	3067.72	2961.17	N 92.32	W 752.75	140.70	1934.92	1868.48	29.12	44.95			
4000.00	2487.94	N 1446.78	W 2153.18	3144.43	3034.59	N 100.89	W 773.29	140.17	2003.58	1934.83	29.14	45.78			
4100.00	2533.68	N 1487.71	W 2232.12	3220.61	3107.46	N 109.88	W 793.58	139.47	2072.94	2001.84	29.15	45.92			
4200.00	2579.55	N 1529.21	W 2310.70	3293.15	3176.84	N 118.84	W 812.78	138.56	2142.36	2068.90	29.17	45.59			
4300.00	2625.94	N 1570.28	W 2389.19	3363.29	3243.94	N 127.73	W 831.16	138.04	2211.41	2135.66	29.19	45.48			
4400.00	2671.92	N 1611.02	W 2468.09	3432.96	3310.61	N 136.76	W 849.24	137.69	2280.80	2202.72	29.21	45.83			
4500.00	2718.31	N 1649.90	W 2547.69	3502.81	3377.47	N 146.02	W 867.19	137.09	2349.52	2269.22	29.26	45.22			
4600.00	2765.80	N 1687.91	W 2627.07	3574.60	3446.22	N 155.75	W 885.45	136.24	2417.38	2334.74	29.25	44.77			
4700.00	2813.55	N 1727.26	W 2705.62	3647.54	3516.06	N 165.90	W 903.86	135.32	2485.51	2400.40	29.20	44.68			
4800.00	2861.49	N 1768.00	W 2783.35	3720.62	3586.05	N 176.32	W 922.14	134.74	2553.92	2466.38	29.18	44.68			
4900.00	2909.41	N 1808.52	W 2861.21	3793.65	3655.98	N 187.01	W 940.27	134.12	2622.34	2532.39	29.15	44.39			
5000.00	2958.09	N 1849.70	W 2938.25	3869.44	3728.56	N 198.39	W 958.92	133.41	2690.39	2597.94	29.10	44.06			
5100.00	3006.63	N 1891.54	W 3015.01	3949.95	3805.60	N 211.00	W 978.56	133.00	2758.56	2663.43	29.00	44.41			
5200.00	3054.44	N 1934.27	W 3091.74	4030.08	3882.23	N 224.16	W 997.95	132.28	2827.31	2729.43	28.88	44.50			
5300.00	3102.57	N 1978.14	W 3167.63	4110.82	3959.38	N 238.01	W 1017.30	131.77	2895.87	2795.37	28.82	43.73			
5400.00	3151.68	N 2021.65	W 3243.10	4201.29	4045.72	N 254.09	W 1039.04	131.20	2963.35	2860.01	28.68	42.99			
5500.00	3200.93	N 2065.66	W 3318.18	4274.29	4115.28	N 267.28	W 1056.84	130.82	3030.49	2924.50	28.59	43.15			
5600.00	3250.17	N 2110.60	W 3392.71	4330.27	4168.70	N 277.32	W 1070.23	130.32	3098.15	2989.68	28.56	43.26			



5700.00	3298.98	N 2154.81	W 3467.96	4402.68	4237.85	N 290.33	W 1087.31	130.72	3166.27	3055.27	28.52	44.07
5800.00	3347.21	N 2198.53	W 3543.87	4474.47	4306.42	N 303.42	W 1104.10	130.22	3234.81	3121.13	28.45	44.19
5900.00	3395.17	N 2243.38	W 3619.29	4548.25	4376.88	N 317.08	W 1121.19	129.78	3303.77	3187.32	28.37	44.39
6000.00	3442.75	N 2288.69	W 3694.68	4641.15	4465.39	N 335.61	W 1142.43	129.44	3372.58	3253.11	28.23	44.30
6100.00	3490.82	N 2333.97	W 3769.77	4666.27	4489.37	N 340.88	W 1147.78	129.25	3441.57	3320.08	28.33	44.87
6200.00	3538.67	N 2379.68	W 3844.74	4723.04	4543.68	N 352.82	W 1159.20	128.94	3511.45	3387.54	28.34	45.31
6300.00	3586.50	N 2425.93	W 3919.40	4785.95	4603.90	N 366.08	W 1171.62	128.56	3581.67	3455.24	28.33	45.40
6400.00	3634.34	N 2472.46	W 3993.87	4854.52	4669.57	N 380.53	W 1185.09	128.43	3652.00	3523.03	28.32	45.24
6500.00	3682.84	N 2517.74	W 4068.69	4884.23	4698.06	N 386.66	W 1190.86	128.48	3722.11	3591.18	28.43	45.45
6538.00	3701.45	N 2534.77	W 4097.10	4891.05	4704.62	N 388.04	W 1192.12	128.46	3748.83	3617.24	28.49	45.64
Field:	Lobitos			Well:	Well LO16-10							
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-10							
Slot:	Slot #10			Trajectory:	LO16-10 Gyro + SS							
				Type:	DEF SVY							
Coordinate System:	UTM Zone 17S - WGS84, Meters											
Reference Point:												
Northing (m)	Easting (m)			Elevation (ft)			Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505992.100	E 459464.350			50.00 above MSL			0.000		0.000		2.500	
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma											
Surveying Prog:												
MD From (ft)	MD To (ft)			EOU Freq		Survey Tool Type						
0.00	4017.16			Act-Stns		SLB_NSG+MSHOT						
4017.16	6602.00			Act-Stns		SLB_MWD-POOR						
Subject Trajectory	Offset Trajectory							Ct-Ct	EOU	Sep	Inter.	
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle
Major EOU radii used. All local minima indicated.												
Results highlighted: Separation Factor <= 1.50												
0.00	0.00	N 0.00	E 0.00	6.76	6.56	S 16.30	E 24.36	123.79	30.04	27.52	11.91	14.00
100.00	100.00	S 0.71	E 0.31	103.93	100.85	S 12.30	E 1.25	175.39	11.66	7.82	3.04	14.17
200.00	199.99	S 0.60	W 0.69	201.44	195.47	S 6.10	W 21.48	255.34	21.98	18.04	5.58	12.84
300.00	299.96	N 0.38	W 2.63	298.80	289.92	N 0.82	W 44.07	270.71	42.64	38.36	10.01	13.18
400.00	399.91	N 2.15	W 5.29	396.06	384.21	N 6.63	W 67.19	274.32	64.02	58.72	12.09	12.55
500.00	499.86	N 3.89	W 7.99	492.23	477.17	N 12.81	W 91.03	276.37	86.55	80.14	13.52	13.92
600.00	599.79	N 6.50	W 10.44	586.09	567.33	N 19.59	W 116.23	277.71	111.43	104.01	15.01	15.30
700.00	699.50	N 13.32	W 13.24	677.26	653.90	N 27.97	W 143.55	278.20	138.84	130.16	16.00	16.60
800.00	798.25	N 28.18	W 17.63	764.71	735.51	N 38.42	W 173.14	277.65	168.00	158.43	17.56	17.77
900.00	894.55	N 52.85	W 27.78	850.85	813.83	N 51.52	W 206.49	275.71	196.10	185.65	18.76	17.07
1000.00	986.23	N 87.40	W 47.35	939.60	892.57	N 67.80	W 244.03	272.39	218.73	207.00	18.66	15.90
1100.00	1071.99	N 131.23	W 74.02	1029.51	970.50	N 87.20	W 284.45	268.83	237.74	224.36	17.77	17.98
1200.00	1151.22	N 184.29	W 104.01	1118.58	1045.70	N 109.54	W 326.60	264.48	257.43	242.57	17.33	20.01
1300.00	1223.77	N 243.95	W 138.18	1207.28	1118.36	N 134.98	W 370.65	259.67	277.54	260.54	16.33	21.46
1400.00	1289.41	N 308.83	W 176.59	1295.04	1188.02	N 162.75	W 416.22	254.18	298.40	278.93	15.33	22.51
1500.00	1349.46	N 376.07	W 219.81	1382.21	1255.07	N 192.19	W 463.50	248.37	319.55	297.33	14.38	22.18
1600.00	1403.36	N 441.99	W 272.09	1470.01	1319.94	N 223.79	W 513.52	240.16	335.94	310.61	13.26	19.66
1700.00	1449.13	N 503.82	W 335.85	1559.44	1382.54	N 258.19	W 567.29	232.17	343.99	315.19	11.94	19.22
1800.00	1489.72	N 561.30	W 406.87	1651.16	1442.71	N 295.83	W 625.36	225.45	347.02	314.64	10.72	15.98
1900.00	1531.62	N 614.22	W 480.63	1746.75	1500.83	N 337.28	W 688.92	219.53	347.90	311.97	9.68	10.13
2000.00	1577.03	N 660.31	W 556.85	1846.35	1558.23	N 382.12	W 756.85	215.14	343.14	303.62	8.68	7.66
2100.00	1624.73	N 702.35	W 634.02	1946.11	1614.94	N 427.50	W 825.24	212.30	334.97	291.81	7.76	8.12
2200.00	1673.27	N 741.06	W 712.41	2047.39	1672.48	N 473.96	W 894.42	210.50	323.22	277.10	7.01	8.38
2300.00	1720.58	N 781.72	W 790.56	2148.63	1730.07	N 521.16	W 963.02	208.61	312.61	263.29	6.34	10.23
2400.00	1766.02	N 822.13	W 869.94	2246.39	1787.27	N 566.32	W 1028.17	205.60	301.54	249.19	5.76	11.31
2500.00	1811.22	N 862.16	W 949.65	2344.07	1845.77	N 610.88	W 1092.46	201.39	291.08	235.87	5.27	13.07
2600.00	1855.94	N 900.58	W 1030.42	2442.08	1905.41	N 655.49	W 1156.19	197.11	279.88	221.65	4.81	13.95
2700.00	1901.07	N 939.04	W 1110.95	2539.30	1965.60	N 699.69	W 1218.43	192.56	270.19	209.11	4.42	14.08
2800.00	1947.55	N 976.69	W 1191.08	2635.41	2026.02	N 743.15	W 1279.24	187.43	261.67	197.77	4.09	14.71
2900.00	1993.13	N 1012.48	W 1272.57	2731.12	2086.89	N 786.07	W 1339.34	180.88	253.99	187.15	3.80	16.68
3000.00	2037.40	N 1048.12	W 1354.85	2829.74	2150.07	N 831.01	W 1400.29	174.44	248.79	178.80	3.55	17.83
3100.00	2081.19	N 1083.86	W 1437.34	2925.68	2211.57	N 875.44	W 1459.01	167.68	246.80	173.75	3.38	17.89
3200.00	2124.46	N 1122.09	W 1518.98	3020.16	2271.83	N 918.87	W 1517.40	162.69	251.03	174.66	3.30	16.33
3300.00	2167.66	N 1161.81	W 1599.95	3119.32	2334.85	N 964.94	W 1578.54	156.46	259.17	179.88	3.27	16.86

GEOSCIENCES
Central File

3400.00	2211.53	N 1201.20	W 1680.72	3219.64	2398.77	N 1014.14	W 1638.17	150.06	268.07	185.58	3.25	18.56
3500.00	2256.21	N 1240.95	W 1760.86	3318.79	2462.44	N 1067.20	W 1692.55	143.63	278.18	192.38	3.24	21.38
3600.00	2301.68	N 1282.35	W 1839.72	3411.34	2522.51	N 1121.34	W 1737.51	137.11	291.78	202.75	3.28	24.65
3700.00	2347.74	N 1324.32	W 1917.93	3502.28	2581.79	N 1177.47	W 1777.56	130.25	309.92	217.62	3.36	25.97
3800.00	2394.11	N 1365.84	W 1996.20	3597.99	2643.23	N 1238.81	W 1817.84	122.88	331.68	236.00	3.47	27.58
3900.00	2441.28	N 1406.27	W 2074.56	3687.08	2698.66	N 1298.86	W 1853.29	116.24	356.01	257.08	3.60	29.81
4000.00	2487.94	N 1446.78	W 2153.18	3759.85	2743.40	N 1349.91	W 1879.46	111.05	386.74	284.82	3.79	33.56
4100.00	2533.68	N 1487.71	W 2232.12	3821.62	2781.96	N 1394.66	W 1897.50	106.66	426.93	322.26	4.08	37.43
4200.00	2579.55	N 1529.21	W 2310.70	3894.16	2827.25	N 1448.36	W 1915.57	102.01	473.31	365.56	4.39	38.48
4300.00	2625.94	N 1570.28	W 2389.19	3962.61	2869.72	N 1499.76	W 1931.01	97.94	523.77	413.13	4.73	40.11
4400.00	2671.92	N 1611.02	W 2468.09	4030.53	2912.15	N 1550.93	W 1945.00	94.32	578.75	465.32	5.10	41.55
4500.00	2718.31	N 1649.90	W 2547.69	4110.42	2962.17	N 1611.01	W 1961.44	90.76	636.14	520.52	5.50	41.50
4600.00	2765.80	N 1687.91	W 2627.07	4184.53	3008.64	N 1666.54	W 1977.22	87.86	694.07	576.46	5.90	41.02
4700.00	2813.55	N 1727.26	W 2705.62	4253.37	3052.28	N 1717.84	W 1991.47	85.53	753.05	633.60	6.30	40.30
4800.00	2861.49	N 1768.00	W 2783.35	4322.09	3096.37	N 1768.73	W 2005.19	83.63	812.84	691.49	6.70	40.40
4900.00	2909.41	N 1808.52	W 2861.21	4389.37	3140.18	N 1818.14	W 2018.10	82.16	874.18	750.79	7.08	40.46
5000.00	2958.09	N 1849.70	W 2938.25	4456.66	3184.68	N 1867.06	W 2030.49	80.93	935.77	810.32	7.46	40.19
5100.00	3006.63	N 1891.54	W 3015.01	4522.71	3228.61	N 1915.02	W 2042.02	79.57	998.27	870.62	7.82	40.91
5200.00	3054.44	N 1934.27	W 3091.74	4587.63	3271.70	N 1962.40	W 2052.65	78.46	1061.93	931.99	8.17	40.76
5300.00	3102.57	N 1978.14	W 3167.63	4655.93	3316.94	N 2012.47	W 2063.19	77.95	1125.57	993.33	8.51	40.85
5400.00	3151.68	N 2021.65	W 3243.10	4725.02	3362.63	N 2063.27	W 2073.44	77.31	1189.26	1054.69	8.84	40.78
5500.00	3200.93	N 2065.66	W 3318.18	4793.75	3408.02	N 2113.95	W 2083.23	76.44	1253.12	1116.19	9.15	40.90
5600.00	3250.17	N 2110.60	W 3392.71	4862.52	3453.33	N 2164.81	W 2092.63	75.88	1316.98	1177.56	9.45	40.44
5700.00	3298.98	N 2154.81	W 3467.96	4930.03	3497.62	N 2214.99	W 2101.46	74.85	1382.18	1240.40	9.75	42.64
5800.00	3347.21	N 2198.53	W 3543.87	4996.19	3540.82	N 2264.43	W 2109.74	74.15	1448.64	1304.36	10.04	42.48
5900.00	3395.17	N 2243.38	W 3619.29	5057.89	3580.90	N 2310.75	W 2117.09	73.49	1515.14	1368.43	10.33	42.61
6000.00	3442.75	N 2288.69	W 3694.68	5112.02	3615.82	N 2351.69	W 2122.91	73.05	1582.53	1433.56	10.62	43.39
6100.00	3490.82	N 2333.97	W 3769.77	5165.00	3649.75	N 2392.08	W 2127.94	72.85	1650.53	1499.43	10.92	43.87
6200.00	3538.67	N 2379.68	W 3844.74	5216.80	3682.66	N 2431.84	W 2132.23	72.31	1719.35	1566.61	11.26	44.43
6300.00	3586.50	N 2425.93	W 3919.40	5268.31	3715.15	N 2471.65	W 2135.87	71.96	1788.75	1634.30	11.58	44.79
6400.00	3634.34	N 2472.46	W 3993.87	5321.01	3748.30	N 2512.49	W 2139.05	71.80	1858.75	1698.72	11.62	45.54
6500.00	3682.84	N 2517.74	W 4068.69	5372.28	3780.54	N 2552.27	W 2141.64	71.84	1929.83	1768.16	11.94	46.37
6538.00	3701.45	N 2534.77	W 4097.10	5391.47	3792.60	N 2567.18	W 2142.49	71.83	1957.01	1794.72	12.06	46.56
Field:	Lobitos			Well:	Well LO16-11							
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-11							
Slot:	Slot #11			Trajectory:	LO16-11 SS Survey							
				Type:	DEF SVY							
Coordinate System:	UTM Zone 17S - WGS84, Meters											
Reference Point:												
Northing (m)	Easting (m)			Elevation (ft)			Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505988.350	E 459463.650			50.00 above MSL			0.000		0.000		2.500	
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma											
Surveying Prog:												
MD From (ft)	MD To (ft)			EOU Freq		Survey Tool Type						
0.00	8010.00			Act-Stns		SLB_MWD-POOR						
Subject Trajectory				Offset Trajectory				Ct-Ct	EOU	Sep	Inter.	
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle
Major EOU radii used. All local minima indicated.												
Results highlighted: Separation Factor <= 1.50												
0.00	0.00	N 0.00	E 0.00	9.58	9.25	S 27.10	E 21.90	141.06	36.06	33.35	13.34	14.98
100.00	100.00	S 0.71	E 0.31	105.96	102.40	S 9.90	E 4.13	157.41	10.24	4.67	1.84	15.16
200.00	199.99	S 0.60	W 0.69	202.91	196.20	N 7.16	W 13.49	301.19	15.44	9.85	2.76	13.41
300.00	299.96	N 0.38	W 2.63	300.35	290.56	N 24.05	W 30.95	309.84	38.09	32.33	6.61	13.45
400.00	399.91	N 2.15	W 5.29	398.19	385.41	N 40.75	W 48.24	311.84	59.53	53.21	9.42	12.27
500.00	499.86	N 3.89	W 7.99	498.22	482.58	N 58.32	W 64.03	314.14	80.01	73.10	11.58	11.49
600.00	599.79	N 6.50	W 10.44	599.21	580.86	N 80.75	W 68.91	321.86	96.39	88.99	13.03	11.21
700.00	699.50	N 13.32	W 13.24	695.40	674.53	N 101.45	W 75.25	325.18	110.62	102.21	13.16	7.21
800.00	798.25	N 28.18	W 17.63	793.36	769.71	N 118.74	W 90.55	321.76	119.72	110.59	13.11	6.08
900.00	894.55	N 52.85	W 27.78	893.41	866.91	N 135.94	W 106.86	316.86	117.99	107.59	11.35	7.39
1000.00	986.23	N 87.40	W 47.35	991.74	962.52	N 153.04	W 122.17	311.31	102.32	90.66	8.78	14.18

1100.00	1071.99	N 131.23	W 74.02	1086.83	1054.99	N 169.54	W 137.02	300.63	75.67	62.46	5.73	21.46
1200.00	1151.22	N 184.29	W 104.01	1177.85	1143.52	N 185.07	W 151.38	270.16	48.00	33.52	3.31	27.70
1300.00	1223.77	N 243.95	W 138.18	1263.91	1227.33	N 199.52	W 164.50	215.98	51.76	35.49	3.18	33.67
1400.00	1289.41	N 308.83	W 176.59	1344.49	1305.85	N 212.99	W 176.63	186.66	97.24	78.98	5.32	38.67
1500.00	1349.46	N 376.07	W 219.81	1420.70	1380.11	N 225.74	W 188.04	174.46	156.68	136.26	7.67	42.17
1600.00	1403.36	N 441.99	W 272.09	1491.81	1449.44	N 237.65	W 198.47	168.24	222.03	199.21	9.73	46.91
1700.00	1449.13	N 503.82	W 335.85	1555.69	1511.74	N 248.36	W 207.63	163.91	292.60	267.14	11.49	52.65
1800.00	1489.72	N 561.30	W 406.87	1614.50	1569.13	N 258.22	W 215.94	158.35	366.91	338.83	13.07	54.01
1900.00	1531.62	N 614.22	W 480.63	1673.89	1627.09	N 268.15	W 224.20	152.73	441.18	410.64	14.45	52.16
2000.00	1577.03	N 660.31	W 556.85	1734.75	1686.53	N 278.30	W 232.47	148.12	512.97	480.06	15.59	50.79
2100.00	1624.73	N 702.35	W 634.02	1796.46	1746.83	N 288.58	W 240.56	144.42	583.89	548.56	16.53	50.44
2200.00	1673.27	N 741.06	W 712.41	1860.10	1809.07	N 299.17	W 248.60	140.77	654.85	617.80	17.68	50.11
2300.00	1720.58	N 781.72	W 790.56	1927.85	1875.25	N 310.76	W 257.26	138.36	728.10	689.06	18.65	51.91
2400.00	1766.02	N 822.13	W 869.94	1993.31	1939.11	N 322.34	W 265.81	135.75	802.95	762.00	19.61	51.61
2500.00	1811.22	N 862.16	W 949.65	2057.05	2001.24	N 333.96	W 274.10	134.24	878.33	835.64	20.57	52.31
2600.00	1855.94	N 900.58	W 1030.42	2120.62	2063.14	N 345.88	W 282.29	132.23	954.11	909.57	21.42	52.29
2700.00	1901.07	N 939.04	W 1110.95	2204.46	2144.52	N 362.44	W 293.71	129.67	1029.37	982.85	22.13	50.32
2800.00	1947.55	N 976.69	W 1191.08	2285.87	2223.15	N 379.73	W 305.85	127.92	1102.70	1054.22	22.74	49.49
2900.00	1993.13	N 1012.48	W 1272.57	2362.60	2296.92	N 397.31	W 317.49	126.93	1175.97	1125.45	23.28	50.28
3000.00	2037.40	N 1048.12	W 1354.85	2436.90	2368.07	N 415.48	W 328.85	125.24	1249.90	1197.17	23.71	50.50
3100.00	2081.19	N 1083.86	W 1437.34	2510.08	2437.90	N 434.16	W 340.17	123.69	1324.06	1269.16	24.12	50.36
3200.00	2124.46	N 1122.09	W 1518.98	2584.63	2508.84	N 453.91	W 351.88	121.43	1398.69	1341.41	24.42	49.86
3300.00	2167.66	N 1161.81	W 1599.95	2661.31	2581.57	N 474.78	W 364.26	120.39	1473.18	1413.61	24.73	49.18
3400.00	2211.53	N 1201.20	W 1680.72	2739.95	2655.95	N 496.71	W 377.38	119.36	1546.77	1484.96	25.02	48.34
3500.00	2256.21	N 1240.95	W 1760.86	2809.00	2721.09	N 516.44	W 389.00	118.15	1619.58	1554.49	24.88	47.45
3600.00	2301.68	N 1282.35	W 1839.72	2878.22	2786.26	N 536.72	W 400.41	117.12	1691.86	1625.50	25.50	46.81
3700.00	2347.74	N 1324.32	W 1917.93	2949.83	2853.60	N 558.23	W 411.98	116.45	1763.71	1693.94	25.28	46.75
3800.00	2394.11	N 1365.84	W 1996.20	3026.94	2925.91	N 581.94	W 424.41	116.15	1835.16	1764.06	25.81	46.15
3900.00	2441.28	N 1406.27	W 2074.56	3105.08	2998.98	N 606.54	W 437.08	115.66	1905.77	1832.30	25.94	45.75
4000.00	2487.94	N 1446.78	W 2153.18	3169.28	3058.93	N 627.10	W 447.40	115.02	1976.77	1901.01	26.09	46.74
4100.00	2533.68	N 1487.71	W 2232.12	3230.35	3115.94	N 646.81	W 456.89	114.51	2048.81	1970.75	26.25	47.19
4200.00	2579.55	N 1529.21	W 2310.70	3291.07	3172.63	N 666.56	W 466.00	113.94	2121.04	2040.76	26.42	46.99
4300.00	2625.94	N 1570.28	W 2389.19	3385.40	3260.74	N 697.05	W 480.28	113.55	2193.05	2110.08	26.43	46.06
4400.00	2671.92	N 1611.02	W 2468.09	3421.35	3294.57	N 707.56	W 486.42	113.60	2265.17	2180.16	26.65	47.13
4500.00	2718.31	N 1649.90	W 2547.69	3456.44	3327.88	N 716.86	W 492.36	113.89	2338.06	2251.12	26.89	47.32
4600.00	2765.80	N 1687.91	W 2627.07	3496.18	3365.90	N 726.31	W 499.01	113.64	2411.11	2322.18	27.11	47.35
4700.00	2813.55	N 1727.26	W 2705.62	3559.31	3426.42	N 740.91	W 509.41	112.89	2484.32	2393.23	27.27	47.18
4800.00	2861.49	N 1768.00	W 2783.35	3625.38	3489.77	N 756.36	W 520.09	112.60	2557.45	2464.17	27.42	47.19
4900.00	2909.41	N 1808.52	W 2861.21	3699.01	3560.29	N 773.98	W 531.88	112.38	2630.54	2534.98	27.53	46.76
5000.00	2958.09	N 1849.70	W 2938.25	3768.40	3626.65	N 790.97	W 542.91	112.00	2702.87	2605.06	27.63	46.36
5100.00	3006.63	N 1891.54	W 3015.01	3834.51	3689.87	N 807.25	W 553.32	111.74	2775.32	2675.25	27.73	46.83
5200.00	3054.44	N 1934.27	W 3091.74	3900.00	3752.50	N 823.45	W 563.53	111.13	2848.34	2745.93	27.81	46.91
5300.00	3102.57	N 1978.14	W 3167.63	3960.19	3810.06	N 838.40	W 572.77	111.19	2921.10	2816.56	27.94	46.43
5400.00	3151.68	N 2021.65	W 3243.10	4019.64	3866.95	N 853.25	W 581.65	111.09	2993.34	2886.71	28.07	46.18
5500.00	3200.93	N 2065.66	W 3318.18	4078.87	3923.63	N 868.14	W 590.24	110.85	3065.62	2956.85	28.18	46.46
5600.00	3250.17	N 2110.60	W 3392.71	4137.81	3980.05	N 883.03	W 598.54	110.49	3138.00	3027.05	28.28	46.31
5700.00	3298.98	N 2154.81	W 3467.96	4196.72	4036.46	N 897.99	W 606.60	111.13	3211.05	3098.09	28.42	47.51
5800.00	3347.21	N 2198.53	W 3543.87	4259.20	4096.29	N 913.94	W 614.96	110.72	3284.79	3169.64	28.53	47.59
5900.00	3395.17	N 2243.38	W 3619.29	4335.26	4169.11	N 933.45	W 625.00	110.34	3358.67	3241.19	28.59	47.55
6000.00	3442.75	N 2288.69	W 3694.68	4483.58	4310.64	N 972.17	W 646.61	110.27	3431.79	3311.30	28.48	46.25
6100.00	3490.82	N 2333.97	W 3769.77	4552.15	4375.86	N 990.39	W 657.40	110.24	3503.62	3380.85	28.54	45.95
6200.00	3538.67	N 2379.68	W 3844.74	4610.80	4431.64	N 1006.14	W 666.36	110.05	3575.77	3450.77	28.61	46.27
6300.00	3586.50	N 2425.93	W 3919.40	4751.05	4564.97	N 1043.14	W 689.21	109.92	3647.41	3519.11	28.43	45.09
6400.00	3634.34	N 2472.46	W 3993.87	4877.86	4685.04	N 1076.71	W 712.37	110.14	3717.58	3586.24	28.30	44.06
6500.00	3682.84	N 2517.74	W 4068.69	5000.74	4799.62	N 1115.30	W 734.12	110.29	3785.94	3651.84	28.23	43.25
6538.00	3701.45	N 2534.77	W 4097.10	5006.94	4805.32	N 1117.52	W 735.07	110.33	3811.87	3677.15	28.29	43.48

Field:	Lobitos	Well:	Well LO16-12
Structure:	Platform LO16 (WGS84)	Borehole:	Borehole LO16-12
Slot:	Slot #12	Trajectory:	LO16-12 SS Survey
		Type:	DEF SVY

Coordinate System: UTM Zone 17S - WGS84, Meters

GEO SCIENCES
Central File

Reference Point:															
Northing (m)		Easting (m)		Elevation (ft)		Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)					
N 9505985.730		E 459461.170		50.00 above MSL		0.000		0.000		2.500					
Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma															
Surveying Prog:															
MD From (ft)		MD To (ft)		EOU Freq		Survey Tool Type									
0.00		7729.00		Act-Stns		SLB_MWD-POOR									
Subject Trajectory				Offset Trajectory				Ct-Ct		EOU		Sep		Inter.	
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle			
Major EOU radii used. All local minima indicated.															
Results highlighted: Separation Factor <= 1.50															
0.00	0.00	N 0.00	E 0.00	10.34	9.99	S 34.84	E 14.86	156.90	39.17	36.40	14.14	14.93			
100.00	100.00	S 0.71	E 0.31	106.60	103.15	S 11.34	E 8.83	141.26	13.98	8.49	2.55	14.73			
200.00	199.99	S 0.60	W 0.69	203.71	197.40	N 11.36	E 3.28	18.09	12.86	7.27	2.30	12.88			
300.00	299.96	N 0.38	W 2.63	301.58	292.66	N 33.22	W 1.79	1.30	33.65	27.87	5.82	12.29			
400.00	399.91	N 2.15	W 5.29	400.10	388.81	N 54.20	W 6.34	358.51	53.22	46.87	8.38	11.11			
500.00	499.86	N 3.89	W 7.99	499.05	485.63	N 74.21	W 10.36	357.84	71.78	64.82	10.31	10.34			
600.00	599.79	N 6.50	W 10.44	598.41	583.09	N 93.26	W 13.84	357.55	88.42	80.97	11.87	8.39			
700.00	699.50	N 13.32	W 13.24	697.82	680.70	N 111.87	W 16.56	357.83	100.39	92.24	12.33	4.97			
800.00	798.25	N 28.18	W 17.63	797.79	778.90	N 130.48	W 18.44	359.23	104.12	95.64	12.29	2.84			
900.00	894.55	N 52.85	W 27.78	895.96	875.29	N 148.98	W 20.33	3.94	98.32	89.50	11.14	9.34			
1000.00	986.23	N 87.40	W 47.35	990.70	967.88	N 168.96	W 22.42	15.95	87.23	77.73	9.18	16.39			
1100.00	1071.99	N 131.23	W 74.02	1082.01	1056.35	N 191.45	W 24.36	36.72	79.60	69.10	7.58	21.52			
1200.00	1151.22	N 184.29	W 104.01	1171.94	1142.52	N 217.09	W 26.16	61.75	84.92	73.65	7.53	25.49			
1300.00	1223.77	N 243.95	W 138.18	1260.34	1226.22	N 245.44	W 28.17	82.06	110.05	97.46	8.74	29.32			
1400.00	1289.41	N 308.83	W 176.59	1347.85	1307.78	N 277.05	W 30.74	94.62	150.40	136.21	10.61	32.53			
1500.00	1349.46	N 376.07	W 219.81	1430.48	1383.89	N 309.11	W 33.35	101.66	201.09	185.10	12.57	36.31			
1600.00	1403.36	N 441.99	W 272.09	1507.27	1454.45	N 339.32	W 35.48	104.68	262.94	244.87	14.55	43.11			
1700.00	1449.13	N 503.82	W 335.85	1575.43	1517.08	N 366.16	W 37.36	105.60	335.65	315.27	16.47	50.25			
1800.00	1489.72	N 561.30	W 406.87	1636.26	1572.97	N 390.11	W 39.00	106.95	414.21	391.50	18.24	52.61			
1900.00	1531.62	N 614.22	W 480.63	1694.58	1626.56	N 413.10	W 40.24	109.19	493.36	468.47	19.82	52.35			
2000.00	1577.03	N 660.31	W 556.85	1752.56	1679.83	N 435.96	W 41.10	110.10	571.75	544.72	21.15	52.42			
2100.00	1624.73	N 702.35	W 634.02	1812.96	1735.31	N 459.83	W 41.70	109.50	649.52	620.22	22.17	52.63			
2200.00	1673.27	N 741.06	W 712.41	1873.26	1790.67	N 483.73	W 42.24	107.76	727.42	696.41	23.46	52.43			
2300.00	1720.58	N 781.72	W 790.56	1933.08	1845.55	N 507.52	W 42.70	105.32	806.28	773.18	24.36	54.17			
2400.00	1766.02	N 822.13	W 869.94	1991.33	1898.97	N 530.74	W 43.11	104.27	886.70	851.37	25.10	54.18			
2500.00	1811.22	N 862.16	W 949.65	2049.30	1952.14	N 553.85	W 43.51	103.80	967.47	930.30	26.03	55.21			
2600.00	1855.94	N 900.58	W 1030.42	2106.19	2004.30	N 576.53	W 43.91	102.91	1048.92	1009.89	26.88	55.33			
2700.00	1901.07	N 939.04	W 1110.95	2162.02	2055.50	N 598.79	W 44.27	102.32	1130.22	1089.48	27.74	54.70			
2800.00	1947.55	N 976.69	W 1191.08	2217.23	2106.13	N 620.81	W 44.51	101.94	1210.96	1168.51	28.53	54.89			
2900.00	1993.13	N 1012.48	W 1272.57	2270.58	2155.06	N 642.08	W 44.61	101.87	1292.79	1248.53	29.21	56.47			
3000.00	2037.40	N 1048.12	W 1354.85	2325.99	2205.90	N 664.13	W 44.66	100.57	1375.66	1329.54	29.83	56.85			
3100.00	2081.19	N 1083.86	W 1437.34	2382.62	2257.92	N 686.50	W 44.83	99.66	1458.84	1410.95	30.46	56.84			
3200.00	2124.46	N 1122.09	W 1518.98	2440.00	2310.70	N 709.00	W 45.15	97.30	1541.91	1492.11	30.97	56.14			
3300.00	2167.66	N 1161.81	W 1599.95	2495.83	2362.09	N 730.81	W 45.53	97.23	1624.74	1573.19	31.52	55.92			
3400.00	2211.53	N 1201.20	W 1680.72	2552.16	2413.94	N 752.82	W 45.92	97.13	1707.21	1653.94	32.05	55.55			
3500.00	2256.21	N 1240.95	W 1760.86	2609.36	2466.60	N 775.17	W 46.31	96.52	1789.11	1734.04	32.49	54.52			
3600.00	2301.68	N 1282.35	W 1839.72	2663.38	2516.32	N 796.29	W 46.62	95.98	1870.16	1813.20	32.83	53.85			
3700.00	2347.74	N 1324.32	W 1917.93	2716.00	2564.73	N 816.92	W 46.73	95.74	1950.87	1891.97	33.12	53.99			
3800.00	2394.11	N 1365.84	W 1996.20	2768.23	2612.75	N 837.45	W 46.64	96.41	2031.69	1970.90	33.42	53.92			
3900.00	2441.28	N 1406.27	W 2074.56	2824.20	2664.18	N 859.52	W 46.34	96.61	2112.41	2049.77	33.72	53.87			
4000.00	2487.94	N 1446.78	W 2153.18	2904.99	2738.41	N 891.40	W 46.33	95.74	2193.17	2128.47	33.90	53.99			
4100.00	2533.68	N 1487.71	W 2232.12	2980.78	2808.05	N 921.30	W 47.10	95.41	2273.86	2207.11	34.06	53.73			
4200.00	2579.55	N 1529.21	W 2310.70	3033.00	2856.08	N 941.81	W 47.73	95.23	2354.26	2285.65	34.31	53.43			
4300.00	2625.94	N 1570.28	W 2389.19	3085.07	2904.02	N 962.11	W 48.23	95.55	2434.61	2364.24	34.60	53.67			
4400.00	2671.92	N 1611.02	W 2468.09	3135.14	2950.18	N 981.51	W 48.59	95.70	2515.49	2443.30	34.84	54.37			
4500.00	2718.31	N 1649.90	W 2547.69	3181.17	2992.63	N 999.30	W 48.73	96.55	2596.79	2522.85	35.12	54.44			
4600.00	2765.80	N 1687.91	W 2627.07	3227.11	3035.00	N 1017.07	W 48.85	96.47	2677.82	2602.11	35.37	54.18			
4700.00	2813.55	N 1727.26	W 2705.62	3292.79	3095.56	N 1042.49	W 48.33	95.56	2758.56	2680.90	35.52	53.46			
4800.00	2861.49	N 1768.00	W 2783.35	3377.50	3173.58	N 1075.47	W 48.53	95.24	2838.36	2758.69	35.63	52.83			
4900.00	2909.41	N 1808.52	W 2861.21	3389.61	3184.74	N 1080.18	W 48.51	95.27	2918.49	2837.17	35.89	53.44			

5000.00	2958.09	N 1849.70	W 2938.25	3401.39	3195.61	N 1084.71	W 48.30	95.03	2998.90	2915.92	36.14	53.84
5100.00	3006.63	N 1891.54	W 3015.01	3412.70	3206.06	N 1089.02	W 47.93	94.62	3080.16	2995.50	36.38	55.05
5200.00	3054.44	N 1934.27	W 3091.74	3423.47	3216.02	N 1093.08	W 47.41	93.71	3162.54	3076.09	36.58	55.64
5300.00	3102.57	N 1978.14	W 3167.63	3451.73	3242.21	N 1103.58	W 45.72	94.16	3245.10	3156.91	36.80	55.56
5400.00	3151.68	N 2021.65	W 3243.10	3488.79	3276.65	N 1117.06	W 43.37	94.24	3327.49	3237.54	36.99	55.43
5500.00	3200.93	N 2065.66	W 3318.18	3526.79	3312.08	N 1130.55	W 40.82	93.89	3409.97	3318.21	37.16	55.75
5600.00	3250.17	N 2110.60	W 3392.71	3574.29	3356.46	N 1147.16	W 37.52	93.48	3492.39	3398.73	37.29	55.40
5700.00	3298.98	N 2154.81	W 3467.96	3620.82	3399.99	N 1163.27	W 34.21	94.36	3575.47	3480.06	37.47	56.89
5800.00	3347.21	N 2198.53	W 3543.87	3665.98	3442.29	N 1178.72	W 30.94	93.81	3659.20	3561.59	37.49	56.89
5900.00	3395.17	N 2243.38	W 3619.29	3710.39	3484.02	N 1193.55	W 27.70	93.27	3742.94	3643.77	37.74	57.06
6000.00	3442.75	N 2288.69	W 3694.68	3754.19	3525.33	N 1207.79	W 24.49	93.31	3826.94	3725.90	37.88	57.29
6100.00	3490.82	N 2333.97	W 3769.77	3793.36	3562.34	N 1220.25	W 21.59	93.49	3910.80	3807.91	38.01	57.19
6200.00	3538.67	N 2379.68	W 3844.74	3829.14	3596.14	N 1231.65	W 18.76	93.17	3994.92	3890.13	38.12	57.53
6300.00	3586.50	N 2425.93	W 3919.40	3864.55	3629.56	N 1242.98	W 15.78	92.98	4079.15	3972.43	38.22	57.83
6400.00	3634.34	N 2472.46	W 3993.87	3899.56	3662.57	N 1254.21	W 12.66	93.49	4163.53	4054.95	38.35	57.80
6500.00	3682.84	N 2517.74	W 4068.69	3934.22	3695.22	N 1265.38	W 9.39	94.35	4248.11	4137.74	38.49	57.82
6538.00	3701.45	N 2534.77	W 4097.10	3947.34	3707.57	N 1269.61	W 8.11	94.54	4280.25	4169.21	38.55	57.80
Field:	Lobitos			Well:	Well LO16-13							
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-13							
Slot:	Slot #13			Trajectory:	LO16-13 SS Survey							
				Type:	DEF SVY							
Coordinate System:	UTM Zone 17S - WGS84, Meters											
Reference Point:												
Northing (m)	Easting (m)			Elevation (ft)			Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505988.390	E 459459.410			50.00 above MSL			0.000		0.000		2.500	
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma											
Surveying Prog:												
MD From (ft)	MD To (ft)			EOU Freq		Survey Tool Type						
0.00	8682.00			Act-Stns		SLB_MWD-POOR						
Subject Trajectory	Offset Trajectory											
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Ct-Ct Dist (ft)	EOU Dist (ft)	Sep Factor	Inter. Angle
Major EOU radii used. All local minima indicated.												
Results highlighted: Separation Factor <= 1.50												
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 28.69	E 9.77	161.20	30.31	27.81	12.12	0.00
100.00	100.00	S 0.71	E 0.31	99.99	99.99	S 28.65	E 9.90	161.07	29.54	24.44	5.79	0.51
200.00	199.99	S 0.60	W 0.69	199.98	199.98	S 28.53	E 10.30	158.53	30.01	24.78	5.74	1.46
300.00	299.96	N 0.38	W 2.63	299.93	299.93	S 28.32	E 10.96	154.67	31.76	26.35	5.87	1.26
400.00	399.91	N 2.15	W 5.29	399.83	399.83	S 28.04	E 11.90	150.36	34.74	28.76	5.81	2.42
500.00	499.86	N 3.89	W 7.99	499.82	499.80	S 27.65	E 13.06	146.31	37.92	31.30	5.72	1.99
600.00	599.79	N 6.50	W 10.44	600.04	600.02	S 26.86	E 13.85	143.94	41.26	34.06	5.73	2.45
700.00	699.50	N 13.32	W 13.24	700.16	700.13	S 25.56	E 14.05	144.86	47.50	39.53	5.96	5.28
800.00	798.25	N 28.18	W 17.63	799.58	799.53	S 23.76	E 13.69	148.69	60.66	52.31	7.27	10.73
900.00	894.55	N 52.85	W 27.78	897.03	896.95	S 21.50	E 12.77	151.26	84.72	76.06	9.78	17.70
1000.00	986.23	N 87.40	W 47.35	990.38	990.25	S 18.89	E 11.37	151.34	121.50	112.23	13.10	25.38
1100.00	1071.99	N 131.23	W 74.02	1070.59	1070.45	S 18.42	E 10.27	150.81	171.76	161.54	16.81	34.99
1200.00	1151.22	N 184.29	W 104.01	1141.36	1141.19	S 20.15	E 10.85	150.70	234.71	223.80	21.51	42.94
1300.00	1223.77	N 243.95	W 138.18	1200.84	1200.57	S 23.30	E 12.42	150.90	307.64	295.48	25.30	50.62
1400.00	1289.41	N 308.83	W 176.59	1250.31	1249.83	S 27.43	E 14.04	152.42	388.55	374.85	28.36	57.24
1500.00	1349.46	N 376.07	W 219.81	1291.61	1290.87	S 31.68	E 15.98	154.83	474.65	459.19	30.71	62.00
1600.00	1403.36	N 441.99	W 272.09	1325.53	1324.49	S 35.65	E 18.05	165.09	564.40	546.91	32.27	67.61
1700.00	1449.13	N 503.82	W 335.85	1350.95	1349.64	S 38.67	E 20.19	176.55	656.47	636.70	33.19	73.78
1800.00	1489.72	N 561.30	W 406.87	1370.04	1368.49	S 41.02	E 22.06	178.79	749.31	727.26	33.98	75.39
1900.00	1531.62	N 614.22	W 480.63	1388.74	1386.93	S 43.41	E 24.07	175.28	841.51	817.33	34.81	73.62
2000.00	1577.03	N 660.31	W 556.85	1408.76	1406.63	S 46.07	E 26.43	172.25	931.78	905.55	35.52	72.16
2100.00	1624.73	N 702.35	W 634.02	1430.36	1427.84	S 49.06	E 29.20	170.16	1021.39	993.03	36.01	71.78
2200.00	1673.27	N 741.06	W 712.41	1454.58	1451.59	S 52.51	E 32.46	167.54	1110.74	1080.94	37.28	71.69
2300.00	1720.58	N 781.72	W 790.56	1476.70	1473.25	S 55.74	E 35.58	169.06	1202.08	1170.58	38.16	74.32
2400.00	1766.02	N 822.13	W 869.94	1496.47	1492.59	S 58.68	E 38.46	167.33	1294.52	1261.38	39.06	74.51
2500.00	1811.22	N 862.16	W 949.65	1515.26	1510.94	S 61.53	E 41.30	168.10	1387.57	1352.93	40.06	75.35
2600.00	1855.94	N 900.58	W 1030.42	1531.32	1526.61	S 64.01	E 43.80	167.07	1480.83	1444.58	40.85	75.70
2700.00	1901.07	N 939.04	W 1110.95	1546.88	1541.77	S 66.47	E 46.31	164.27	1574.61	1536.90	41.76	75.22

2800.00	1947.55	N 976.69	W 1191.08	1562.61	1557.07	S 68.99	E 48.94	163.43	1668.40	1629.24	42.60	75.33			
2900.00	1993.13	N 1012.48	W 1272.57	1577.16	1571.20	S 71.37	E 51.44	165.97	1762.32	1721.59	43.27	76.46			
3000.00	2037.40	N 1048.12	W 1354.85	1590.25	1583.90	S 73.54	E 53.75	166.12	1856.86	1814.47	43.80	77.42			
3100.00	2081.19	N 1083.86	W 1437.34	1602.47	1595.74	S 75.60	E 55.97	165.51	1951.92	1907.92	44.37	77.89			
3200.00	2124.46	N 1122.09	W 1518.98	1613.73	1606.85	S 77.52	E 58.05	162.09	2047.98	2002.26	44.79	78.66			
3300.00	2167.66	N 1161.81	W 1599.95	1624.41	1616.97	S 79.36	E 60.07	160.82	2144.63	2097.36	45.37	78.61			
3400.00	2211.53	N 1201.20	W 1680.72	1635.04	1627.23	S 81.21	E 62.12	159.05	2241.31	2192.52	45.94	78.43			
3500.00	2256.21	N 1240.95	W 1760.86	1647.44	1639.19	S 83.42	E 64.54	154.37	2338.11	2287.72	46.41	77.97			
3600.00	2301.68	N 1282.35	W 1839.72	1660.65	1651.92	S 85.85	E 67.10	150.22	2435.18	2383.15	46.80	77.73			
3700.00	2347.74	N 1324.32	W 1917.93	1673.92	1664.69	S 88.38	E 69.67	149.14	2532.35	2478.65	47.16	77.91			
3800.00	2394.11	N 1365.84	W 1996.20	1687.11	1677.37	S 90.98	E 72.20	149.34	2629.51	2574.18	47.52	77.37			
3900.00	2441.28	N 1406.27	W 2074.56	1700.60	1690.32	S 93.73	E 74.78	149.12	2726.46	2669.53	47.89	77.16			
4000.00	2487.94	N 1446.78	W 2153.18	1713.46	1702.66	S 96.44	E 77.22	149.88	2823.63	2764.99	48.15	78.23			
4100.00	2533.68	N 1487.71	W 2232.12	1725.43	1714.12	S 99.04	E 79.48	149.70	2921.13	2860.72	48.36	78.61			
4200.00	2579.55	N 1529.21	W 2310.70	1737.17	1725.35	S 101.65	E 81.69	147.17	3018.76	2956.65	48.60	78.45			
4300.00	2625.94	N 1570.28	W 2389.19	1749.02	1736.67	S 104.36	E 83.91	148.07	3116.32	3052.59	48.90	78.36			
4400.00	2671.92	N 1611.02	W 2468.09	1760.38	1747.51	S 107.02	E 86.02	150.18	3213.99	3148.59	49.15	78.71			
4500.00	2718.31	N 1649.90	W 2547.89	1771.92	1758.51	S 109.79	E 88.16	150.95	3311.41	3244.45	49.45	78.03			
4600.00	2765.80	N 1687.91	W 2627.07	1783.95	1769.96	S 112.75	E 90.37	148.83	3408.60	3340.04	49.72	77.70			
4700.00	2813.55	N 1727.26	W 2705.62	1795.79	1781.21	S 115.73	E 92.54	144.67	3506.00	3435.74	49.90	77.90			
4800.00	2861.49	N 1768.00	W 2783.35	1807.37	1792.19	S 118.71	E 94.65	143.45	3603.60	3531.63	50.07	78.07			
4900.00	2909.41	N 1808.52	W 2861.21	1818.71	1802.94	S 121.69	E 96.71	142.07	3701.25	3627.56	50.23	77.93			
5000.00	2958.09	N 1849.70	W 2938.25	1830.17	1813.79	S 124.77	E 98.77	139.31	3798.87	3723.46	50.37	77.86			
5100.00	3006.63	N 1891.54	W 3015.01	1840.05	1823.12	S 127.47	E 100.55	139.16	3896.64	3819.42	50.46	78.49			
5200.00	3054.44	N 1934.27	W 3091.74	1849.24	1831.80	S 130.00	E 102.22	134.96	3994.68	3915.57	50.49	79.03			
5300.00	3102.57	N 1978.14	W 3167.63	1858.27	1840.31	S 132.51	E 103.87	134.11	4092.78	4011.89	50.60	78.52			
5400.00	3151.68	N 2021.65	W 3243.10	1867.57	1849.07	S 135.13	E 105.58	132.52	4190.72	4108.06	50.70	78.31			
5500.00	3200.93	N 2065.66	W 3318.18	1876.67	1857.63	S 137.71	E 107.26	131.10	4288.70	4204.23	50.77	78.68			
5600.00	3250.17	N 2110.60	W 3392.71	1885.47	1865.90	S 140.23	E 108.90	127.30	4386.77	4300.44	50.82	78.77			
5700.00	3298.98	N 2154.81	W 3467.96	1893.90	1873.83	S 142.66	E 110.48	135.70	4484.94	4396.91	50.95	79.32			
5800.00	3347.21	N 2198.53	W 3543.87	1901.91	1881.34	S 144.99	E 111.99	132.74	4583.25	4493.37	50.99	79.68			
5900.00	3395.17	N 2243.38	W 3619.29	1909.52	1888.47	S 147.22	E 113.43	130.08	4681.70	4589.96	51.03	80.13			
6000.00	3442.75	N 2288.69	W 3694.68	1916.73	1895.22	S 149.35	E 114.80	130.00	4780.27	4686.70	51.08	80.31			
6100.00	3490.82	N 2333.97	W 3769.77	1924.00	1902.02	S 151.51	E 116.19	128.97	4878.79	4783.40	51.15	80.16			
6200.00	3538.67	N 2379.68	W 3844.74	1930.98	1908.54	S 153.60	E 117.53	127.49	4977.39	4880.16	51.19	80.54			
6300.00	3586.50	N 2425.93	W 3919.40	1937.74	1914.86	S 155.63	E 118.83	125.48	5076.04	4976.95	51.23	80.70			
6400.00	3634.34	N 2472.46	W 3993.87	1944.33	1921.01	S 157.63	E 120.11	127.21	5174.72	5073.84	51.30	80.54			
6500.00	3682.84	N 2517.74	W 4068.69	1950.80	1927.04	S 159.61	E 121.37	129.77	5273.29	5170.68	51.39	80.10			
6538.00	3701.45	N 2534.77	W 4097.10	1952.63	1928.75	S 160.17	E 121.72	129.99	5310.71	5207.45	51.43	79.98			
Field:	Lobitos			Well:	Well LO16-14										
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-14										
Slot:	Slot #14			Trajectory:	LO16-14 MWD Survey										
				Type:	DEF SVY										
Coordinate System:	UTM Zone 17S - WGS84, Meters														
Reference Point:															
Northing (m)	Easting (m)			Elevation (ft)				Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)			
N 9505988.500	E 459455.660			50.00 above MSL				0.000		0.000		2.500			
Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma															
Surveying Prog:															
	MD From (ft)			MD To (ft)			EOU Freq		Survey Tool Type						
	0.00			9558.00			Act-Stns		SLB_MWD-STD						
Subject Trajectory						Offset Trajectory									
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Ct-Ct	EOU	Sep	Inter.			
								Dist (ft)	Dist (ft)	Factor	Angle				
Major EOU radii used. All local minima indicated.															
Results highlighted: Separation Factor <= 1.50															
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 28.32	W 2.54	185.13	28.44	25.94	11.37	0.00			
100.00	100.00	S 0.71	E 0.31	99.84	99.84	S 28.59	W 2.76	186.28	28.05	22.93	5.49	0.38			
200.00	199.99	S 0.60	W 0.69	199.67	199.66	S 29.37	W 3.40	185.40	28.90	23.64	5.50	1.27			
300.00	299.96	N 0.38	W 2.63	299.47	299.45	S 30.69	W 4.47	183.41	31.13	25.66	5.69	1.39			
400.00	399.91	N 2.15	W 5.29	399.22	399.17	S 32.52	W 5.97	181.16	34.69	28.63	5.72	2.23			

500.00	499.86	N 3.89	W 7.99	498.94	498.84	S 34.88	W 7.89	179.91	38.79	32.10	5.80	2.57	
600.00	599.79	N 6.50	W 10.44	598.56	598.40	S 37.77	W 10.24	179.82	44.29	37.10	6.16	4.25	
700.00	699.50	N 13.32	W 13.24	697.56	697.29	S 41.21	W 13.12	180.05	54.57	46.66	6.90	8.15	
800.00	798.25	N 28.18	W 17.63	793.69	793.17	S 46.11	W 17.97	180.92	74.46	66.17	8.98	15.25	
900.00	894.55	N 52.85	W 27.78	883.67	882.41	S 54.33	W 25.83	181.27	107.88	99.26	12.51	23.95	
1000.00	986.23	N 87.40	W 47.35	966.70	963.83	S 65.65	W 37.39	181.42	155.00	145.73	16.71	32.36	
1100.00	1071.99	N 131.23	W 74.02	1049.92	1044.66	S 77.98	W 52.86	181.24	212.05	201.83	20.74	38.32	
1200.00	1151.22	N 184.29	W 104.01	1125.17	1117.07	S 89.35	W 69.85	181.92	277.87	266.96	25.46	43.81	
1300.00	1223.77	N 243.95	W 138.18	1199.41	1187.79	S 100.10	W 89.73	183.46	349.30	337.12	28.68	47.84	
1400.00	1289.41	N 308.83	W 176.59	1275.79	1259.51	S 109.98	W 114.00	185.63	424.52	410.75	30.83	49.86	
1500.00	1349.46	N 376.07	W 219.81	1351.96	1329.83	S 118.08	W 142.11	187.10	500.61	484.88	31.84	50.14	
1600.00	1403.36	N 441.99	W 272.09	1414.49	1386.31	S 124.48	W 168.15	190.42	576.17	557.77	31.31	50.47	
1700.00	1449.13	N 503.82	W 335.85	1475.15	1440.18	S 131.30	W 195.20	192.39	650.56	629.70	31.19	52.02	
1800.00	1489.72	N 561.30	W 406.87	1548.35	1503.98	S 139.43	W 230.13	189.25	722.82	699.22	30.63	49.67	
1900.00	1531.62	N 614.22	W 480.63	1639.16	1580.76	S 148.59	W 277.73	183.50	790.86	764.52	30.02	43.14	
2000.00	1577.03	N 660.31	W 556.85	1725.53	1651.39	S 156.31	W 326.82	179.30	851.65	822.58	29.30	38.00	
2100.00	1624.73	N 702.35	W 634.02	1808.79	1717.39	S 164.17	W 376.94	176.88	908.59	876.69	28.49	35.22	
2200.00	1673.27	N 741.06	W 712.41	1886.25	1777.30	S 172.38	W 425.35	175.48	963.11	929.12	28.33	34.48	
2300.00	1720.58	N 781.72	W 790.56	1944.85	1821.82	S 179.63	W 462.76	176.34	1020.73	984.51	28.19	37.53	
2400.00	1766.02	N 822.13	W 869.94	1996.42	1860.52	S 187.58	W 495.90	175.64	1080.90	1042.62	28.24	38.59	
2500.00	1811.22	N 862.16	W 949.65	2097.81	1936.26	S 203.76	W 561.33	174.80	1141.32	1100.82	28.18	37.07	
2600.00	1855.94	N 900.58	W 1030.42	2185.19	2001.40	S 216.48	W 618.17	173.91	1199.56	1156.80	28.05	36.56	
2700.00	1901.07	N 939.04	W 1110.95	2265.47	2061.29	S 227.96	W 670.38	172.72	1257.64	1212.84	28.07	35.91	
2800.00	1947.55	N 976.69	W 1191.08	2346.24	2121.63	S 239.49	W 722.82	171.90	1314.79	1267.97	28.08	35.43	
2900.00	1993.13	N 1012.48	W 1272.57	2434.44	2187.61	S 251.96	W 780.00	171.40	1370.86	1321.72	27.90	34.87	
3000.00	2037.40	N 1048.12	W 1354.85	2528.81	2257.88	S 264.71	W 841.69	171.12	1426.70	1374.94	27.56	35.03	
3100.00	2081.19	N 1083.86	W 1437.34	2617.16	2323.53	S 276.07	W 899.72	170.60	1482.30	1427.99	27.29	34.98	
3200.00	2124.46	N 1122.09	W 1518.98	2699.52	2384.56	S 286.63	W 954.01	170.80	1539.91	1482.95	27.04	36.61	
3300.00	2167.66	N 1161.81	W 1599.95	2782.09	2445.48	S 297.26	W 1008.71	170.17	1598.64	1539.17	26.88	36.19	
3400.00	2211.53	N 1201.20	W 1680.72	2866.04	2507.05	S 308.15	W 1064.74	169.57	1656.78	1594.80	26.73	35.73	
3500.00	2256.21	N 1240.95	W 1760.86	2948.74	2567.42	S 318.94	W 1120.21	169.08	1714.80	1650.25	26.57	35.84	
3600.00	2301.68	N 1282.35	W 1839.72	3044.58	2637.22	S 331.06	W 1184.75	168.78	1773.32	1706.02	26.35	35.71	
3700.00	2347.74	N 1324.32	W 1917.93	3128.98	2698.45	S 341.44	W 1241.91	168.72	1831.61	1761.66	26.18	35.75	
3800.00	2394.11	N 1365.84	W 1996.20	3212.30	2758.61	S 351.75	W 1298.63	168.18	1889.34	1816.75	26.03	34.74	
3900.00	2441.28	N 1406.27	W 2074.56	3293.24	2817.01	S 361.77	W 1353.76	167.88	1945.94	1870.89	25.93	34.32	
4000.00	2487.94	N 1446.78	W 2153.18	3373.10	2874.85	S 371.62	W 1407.94	168.32	2002.91	1925.35	25.82	35.20	
4100.00	2533.68	N 1487.71	W 2232.12	3452.13	2932.32	S 381.32	W 1461.32	168.34	2060.66	1980.64	25.75	35.51	
4200.00	2579.55	N 1529.21	W 2310.70	3531.45	2990.23	S 391.01	W 1514.66	168.11	2118.87	2036.42	25.70	35.85	
4300.00	2625.94	N 1570.28	W 2389.19	3611.67	3048.93	S 400.79	W 1568.45	167.85	2176.61	2091.83	25.67	35.22	
4400.00	2671.92	N 1611.02	W 2468.09	3689.20	3105.87	S 410.19	W 1620.22	167.79	2234.40	2147.23	25.63	35.15	
4500.00	2718.31	N 1649.90	W 2547.69	3767.12	3163.46	S 419.58	W 1671.87	167.10	2290.84	2201.40	25.61	34.15	
4600.00	2765.80	N 1687.91	W 2627.07	3845.21	3221.54	S 428.91	W 1723.23	166.73	2346.40	2254.64	25.57	34.10	
4700.00	2813.55	N 1727.26	W 2705.62	3922.55	3279.43	S 438.08	W 1773.68	166.74	2402.97	2308.85	25.53	35.01	
4800.00	2861.49	N 1768.00	W 2783.35	3996.53	3335.23	S 446.77	W 1821.46	166.68	2460.66	2364.23	25.52	35.43	
4900.00	2909.41	N 1808.52	W 2861.21	4069.98	3391.16	S 455.28	W 1868.31	166.41	2518.47	2419.75	25.51	35.55	
5000.00	2958.09	N 1849.70	W 2938.25	4142.86	3447.16	S 463.62	W 1914.20	166.21	2576.69	2475.68	25.51	35.96	
5100.00	3006.63	N 1891.54	W 3015.01	4214.78	3502.93	S 471.74	W 1958.87	166.37	2635.68	2532.38	25.51	36.67	
5200.00	3054.44	N 1934.27	W 3091.74	4287.07	3559.47	S 479.79	W 2003.20	166.44	2695.87	2590.16	25.50	37.74	
5300.00	3102.57	N 1978.14	W 3167.63	4359.48	3616.48	S 487.78	W 2047.13	165.96	2756.88	2648.88	25.53	37.41	
5400.00	3151.68	N 2021.65	W 3243.10	4430.08	3672.45	S 495.47	W 2089.47	165.66	2817.44	2707.21	25.56	37.50	
5500.00	3200.93	N 2065.66	W 3318.18	4505.39	3732.64	S 503.55	W 2133.99	165.65	2878.52	2765.95	25.57	37.97	
5600.00	3250.17	N 2110.60	W 3392.71	4631.24	3832.84	S 516.29	W 2209.06	165.44	2939.57	2823.97	25.43	37.42	
5700.00	3298.98	N 2154.81	W 3467.96	4758.20	3932.70	S 527.93	W 2286.59	165.56	2999.05	2880.59	25.32	35.87	
5800.00	3347.21	N 2198.53	W 3543.87	4868.59	4017.89	S 537.82	W 2356.10	165.59	3057.49	2936.05	25.18	35.78	
5900.00	3395.17	N 2243.38	W 3619.29	5032.99	4140.90	S 552.08	W 2464.21	165.77	3115.27	2990.06	24.88	34.84	
6000.00	3442.75	N 2288.69	W 3694.68	5155.85	4229.57	S 562.17	W 2548.64	165.90	3171.73	3043.21	24.68	34.23	
6100.00	3490.82	N 2333.97	W 3769.77	5239.76	4289.57	S 569.01	W 2606.89	165.87	3227.63	3096.35	24.59	34.14	
6200.00	3538.67	N 2379.68	W 3844.74	5318.83	4346.12	S 575.46	W 2661.77	166.10	3283.94	3149.96	24.51	34.57	
6300.00	3586.50	N 2425.93	W 3919.40	5394.77	4400.70	S 581.62	W 2714.22	166.21	3340.77	3204.14	24.45	34.93	
6400.00	3634.34	N 2472.46	W 3993.87	5482.97	4464.45	S 588.54	W 2774.78	166.16	3397.80	3258.45	24.38	34.41	
6500.00	3682.84	N 2517.74	W 4068.69	5571.98	4529.17	S 595.10	W 2835.54	165.93	3453.50	3311.52	24.32	33.57	
6538.00	3701.45	N 2534.77	W 4097.10	5604.39	4552.79	S 597.42	W 2857.61	165.87	3474.44	3331.45	24.30	33.39	

Field:	Lobitos				Well:	Well LO16-15						
Structure:	Platform LO16 (WGS84)				Borehole:	Borehole LO16-15 S1						
Slot:	Slot #15				Trajectory:	LO16-15 S1 SS Survey						
					Type:	DEF SVY						
Coordinate System:	UTM Zone 17S - WGS84, Meters											
Reference Point:												
Northing (m)	Easting (m)		Elevation (ft)		Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)			
N 9505989.510	E 459454.620		50.00 above MSL		0.000		0.000		2.500			
Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma												
Surveying Prog:												
MD From (ft)		MD To (ft)		EOU Freq		Survey Tool Type						
0.00		7482.00		Act-Stns		SLB_MWD-POOR						
Subject Trajectory				Offset Trajectory				Ct-Ct		EOU	Sep	Inter.
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle
Major EOU radii used. All local minima indicated.												
Results highlighted: Separation Factor <= 1.50												
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 25.01	W 5.95	193.39	25.71	23.21	10.28	0.00
100.00	100.00	S 0.71	E 0.31	100.02	100.02	S 25.00	W 5.76	194.03	25.04	19.93	4.90	0.48
200.00	199.99	S 0.60	W 0.69	200.03	200.03	S 24.98	W 5.17	190.41	24.79	19.55	4.73	1.62
300.00	299.96	N 0.38	W 2.63	300.00	299.99	S 24.94	W 4.19	183.52	25.38	19.94	4.67	1.50
400.00	399.91	N 2.15	W 5.29	399.90	399.89	S 24.90	W 2.81	174.77	27.16	21.15	4.51	2.75
500.00	499.86	N 3.89	W 7.99	499.77	499.74	S 24.84	W 1.05	166.44	29.55	22.92	4.45	2.56
600.00	599.79	N 6.50	W 10.44	599.72	599.67	S 24.74	E 0.93	160.02	33.24	26.09	4.65	3.22
700.00	699.50	N 13.32	W 13.24	699.66	699.60	S 24.45	E 1.85	158.21	40.67	32.75	5.14	5.99
800.00	798.25	N 28.18	W 17.63	798.79	798.73	S 23.76	E 2.11	159.13	55.57	47.27	6.70	11.48
900.00	894.55	N 52.85	W 27.78	895.69	895.63	S 22.69	E 1.85	158.82	81.14	72.51	9.40	18.57
1000.00	986.23	N 87.40	W 47.35	988.03	987.95	S 21.66	E 1.02	156.94	119.32	110.02	12.84	26.41
1100.00	1071.99	N 131.23	W 74.02	1074.77	1074.68	S 20.83	W 0.31	155.02	169.01	158.75	16.48	33.52
1200.00	1151.22	N 184.29	W 104.01	1155.28	1155.17	S 20.18	W 2.01	154.34	228.53	217.57	20.86	39.46
1300.00	1223.77	N 243.95	W 138.18	1229.42	1229.28	S 19.68	W 3.99	154.26	295.87	283.65	24.21	45.17
1400.00	1289.41	N 308.83	W 176.59	1296.37	1296.20	S 19.30	W 5.96	155.01	369.90	356.10	26.80	50.28
1500.00	1349.46	N 376.07	W 219.81	1357.71	1357.51	S 18.96	W 7.70	156.03	448.45	432.85	28.75	53.82
1600.00	1403.36	N 441.99	W 272.09	1413.04	1412.82	S 18.66	W 9.22	161.09	530.46	512.78	30.00	58.46
1700.00	1449.13	N 503.82	W 335.85	1460.46	1460.23	S 18.42	W 10.47	166.04	615.41	595.40	30.76	63.88
1800.00	1489.72	N 561.30	W 406.87	1498.90	1498.65	S 18.33	W 11.49	165.88	701.70	679.38	31.43	65.14
1900.00	1531.62	N 614.22	W 480.63	1535.57	1535.30	S 18.73	W 12.60	163.04	787.21	762.72	32.15	63.09
2000.00	1577.03	N 660.31	W 556.85	1574.47	1574.17	S 19.73	W 13.94	160.40	870.17	843.58	32.72	61.25
2100.00	1624.73	N 702.35	W 634.02	1613.44	1613.07	S 21.39	W 15.46	158.37	952.12	923.36	33.10	60.56
2200.00	1673.27	N 741.06	W 712.41	1652.63	1652.15	S 23.80	W 17.22	156.08	1033.80	1003.56	34.20	60.22
2300.00	1720.58	N 781.72	W 790.56	1678.64	1678.03	S 25.95	W 18.52	156.71	1118.12	1086.17	35.00	63.42
2400.00	1766.02	N 822.13	W 869.94	1698.47	1697.74	S 27.98	W 19.25	155.80	1204.58	1170.99	35.86	64.37
2500.00	1811.22	N 862.16	W 949.65	1716.74	1715.88	S 30.15	W 19.71	156.57	1292.32	1257.22	36.83	65.83
2600.00	1855.94	N 900.58	W 1030.42	1733.59	1732.58	S 32.40	W 19.95	156.01	1380.84	1344.13	37.62	66.73
2700.00	1901.07	N 939.04	W 1110.95	1749.43	1748.24	S 34.73	W 20.02	154.35	1470.27	1432.11	38.52	66.76
2800.00	1947.55	N 976.69	W 1191.08	1767.40	1765.98	S 37.63	W 19.91	153.93	1559.96	1520.33	39.37	67.19
2900.00	1993.13	N 1012.48	W 1272.57	1795.99	1794.14	S 42.58	W 19.72	155.38	1649.97	1608.75	40.03	68.06
3000.00	2037.40	N 1048.12	W 1354.85	1823.19	1820.87	S 47.61	W 19.60	154.89	1740.80	1697.87	40.55	68.91
3100.00	2081.19	N 1083.66	W 1437.34	1849.60	1846.76	S 52.78	W 19.56	154.02	1832.22	1787.65	41.11	69.29
3200.00	2124.46	N 1122.09	W 1518.98	1874.60	1871.22	S 57.97	W 19.59	150.90	1924.79	1878.46	41.55	70.23
3300.00	2167.66	N 1161.81	W 1599.95	1898.85	1894.87	S 63.33	W 19.74	149.97	2018.03	1970.12	42.12	70.08
3400.00	2211.53	N 1201.20	W 1680.72	1923.22	1918.56	S 69.05	W 20.01	148.78	2111.24	2061.77	42.68	69.85
3500.00	2256.21	N 1240.95	W 1760.86	1948.09	1942.65	S 75.21	W 20.39	145.83	2204.50	2153.41	43.15	69.58
3600.00	2301.68	N 1282.35	W 1839.72	1989.57	1982.58	S 86.37	W 21.71	143.20	2297.91	2245.10	43.51	69.08
3700.00	2347.74	N 1324.32	W 1917.93	2034.85	2025.92	S 99.28	W 23.94	142.52	2391.11	2336.56	43.83	68.88
3800.00	2394.11	N 1365.84	W 1996.20	2085.71	2074.38	S 114.38	W 27.20	142.72	2484.00	2427.72	44.14	67.69
3900.00	2441.28	N 1406.27	W 2074.56	2181.87	2165.43	S 143.96	W 36.08	142.47	2575.79	2517.71	44.35	65.92
4000.00	2487.94	N 1446.78	W 2153.18	2243.62	2223.48	S 163.67	W 43.53	142.78	2667.23	2607.32	44.52	66.36
4100.00	2533.68	N 1487.71	W 2232.12	2545.69	2501.39	S 265.30	W 102.91	142.94	2758.20	2695.77	44.18	61.18
4200.00	2579.55	N 1529.21	W 2310.70	2602.89	2552.92	S 284.79	W 118.29	142.42	2845.69	2780.37	43.57	60.94
4300.00	2625.94	N 1570.28	W 2389.19	2661.35	2605.23	S 305.15	W 134.62	142.99	2932.70	2864.52	43.01	60.40
4400.00	2671.92	N 1611.02	W 2468.09	2710.90	2649.28	S 322.78	W 148.90	143.90	3019.73	2948.49	42.39	60.38

DATE

4500.00	2718.31	N 1649.90	W 2547.89	2760.63	2693.23	S 340.87	W 163.55	144.33	3106.11	3032.04	41.93	59.34
4600.00	2765.80	N 1687.91	W 2627.07	2831.69	2755.16	S 367.80	W 185.66	143.96	3191.63	3113.61	40.91	58.81
4700.00	2813.55	N 1727.26	W 2705.62	2905.80	2818.54	S 397.15	W 210.43	143.22	3277.06	3194.45	39.67	59.09
4800.00	2861.49	N 1768.00	W 2783.35	2981.59	2883.09	S 427.14	W 236.46	143.37	3362.40	3275.30	38.60	58.87
4900.00	2909.41	N 1808.52	W 2861.21	3057.03	2947.13	S 456.88	W 263.00	143.41	3447.34	3355.91	37.70	58.37
5000.00	2958.09	N 1849.70	W 2938.25	3124.39	3004.07	S 483.50	W 287.23	143.11	3531.84	3435.80	36.78	58.29
5100.00	3006.63	N 1891.54	W 3015.01	3191.88	3060.85	S 510.31	W 311.99	143.64	3616.37	3516.00	36.03	58.59
5200.00	3054.44	N 1934.27	W 3091.74	3272.44	3128.38	S 542.25	W 342.14	143.34	3701.21	3595.21	34.92	59.00
5300.00	3102.57	N 1978.14	W 3167.63	3356.21	3198.51	S 575.08	W 374.07	143.46	3785.78	3674.45	34.01	58.00
5400.00	3151.68	N 2021.65	W 3243.10	3417.36	3249.66	S 598.84	W 397.72	143.37	3869.46	3753.74	33.44	57.75
5500.00	3200.93	N 2065.66	W 3318.18	3461.77	3286.77	S 616.16	W 414.89	143.45	3953.31	3833.78	33.07	58.24
5600.00	3250.17	N 2110.60	W 3392.71	3505.34	3323.16	S 633.26	W 431.69	142.90	4037.54	3914.29	32.76	58.77
5700.00	3298.98	N 2154.81	W 3467.96	3548.77	3359.40	S 650.39	W 448.40	145.08	4121.96	3995.23	32.53	58.35
5800.00	3347.21	N 2198.53	W 3543.87	3608.92	3409.56	S 674.21	W 471.51	144.91	4206.68	4075.33	32.03	58.76
5900.00	3395.17	N 2243.38	W 3619.29	3714.83	3497.80	S 715.62	W 512.94	145.14	4291.35	4152.95	31.01	58.60
6000.00	3442.75	N 2288.69	W 3694.68	3823.68	3588.37	S 757.30	W 556.62	145.73	4375.70	4230.60	30.16	57.94
6100.00	3490.82	N 2333.97	W 3769.77	3892.47	3645.57	S 783.28	W 584.85	145.76	4459.39	4308.83	29.62	57.61
6200.00	3538.67	N 2379.68	W 3844.74	3961.51	3702.97	S 809.17	W 612.94	145.99	4543.16	4387.29	29.15	57.79
6300.00	3586.50	N 2425.93	W 3919.40	4030.48	3760.33	S 834.84	W 641.36	146.03	4626.92	4465.84	28.73	57.79
6400.00	3634.34	N 2472.46	W 3993.87	4098.92	3817.61	S 859.76	W 669.34	146.47	4710.61	4544.32	28.33	57.13
6500.00	3682.84	N 2517.74	W 4068.69	4169.92	3877.55	S 884.84	W 697.95	146.86	4793.47	4622.08	27.97	56.13
6538.00	3701.45	N 2534.77	W 4097.10	4188.97	3893.72	S 891.46	W 705.56	146.87	4824.79	4651.81	27.89	55.98
Field:		Lobitos		Well:		Well LO16-16						
Structure:		Platform LO16 (WGS84)		Borehole:		Borehole LO16-16						
Slot:		Slot #16		Trajectory:		LO16-16 Gyro + SS						
				Type:		DEF SVY						
Coordinate System:		UTM Zone 17S - WGS84, Meters										
Reference Point:												
Northing (m)		Easting (m)		Elevation (ft)		Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)		
N 9505993.530		E 459454.500		50.00 above MSL		0.000		0.000		2.500		
Trajectory Error Model:		SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma										
Surveying Prog:												
MD From (ft)		MD To (ft)		EOU Freq		Survey Tool Type						
0.00		2017.00		Act-Stns		SLB_NSG+MSHOT						
2017.00		7655.00		Act-Stns		SLB_MWD-POOR						
Subject Trajectory				Offset Trajectory				Ct-Ct		EOU	Sep	Inter.
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle
Major EOU radii used. All local minima indicated.												
Results highlighted: Separation Factor <= 1.50												
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 11.81	W 6.34	208.22	13.41	10.91	5.36	0.00
100.00	100.00	S 0.71	E 0.31	99.99	99.99	S 11.82	W 6.39	211.11	12.98	9.25	3.49	0.48
200.00	199.99	S 0.60	W 0.69	199.97	199.97	S 11.85	W 6.59	207.66	12.70	8.86	3.31	1.08
300.00	299.96	N 0.38	W 2.63	299.93	299.93	S 11.95	W 6.88	199.02	13.05	8.84	3.10	0.84
400.00	399.91	N 2.15	W 5.29	399.89	399.89	S 12.13	W 7.08	187.13	14.39	9.22	2.78	1.93
500.00	499.86	N 3.89	W 7.99	499.88	499.88	S 12.13	W 7.12	176.92	16.05	10.20	2.74	1.55
600.00	599.79	N 6.50	W 10.44	599.85	599.85	S 11.92	W 7.22	170.11	18.69	12.52	3.03	2.60
700.00	699.50	N 13.32	W 13.24	699.62	699.62	S 11.62	W 7.61	167.32	25.57	18.58	3.66	5.87
800.00	798.25	N 28.18	W 17.63	798.52	798.51	S 11.32	W 8.64	167.28	40.51	32.82	5.27	11.56
900.00	894.55	N 52.85	W 27.78	895.15	895.13	S 10.97	W 10.25	165.22	66.18	57.86	7.95	18.68
1000.00	986.23	N 87.40	W 47.35	987.55	987.51	S 10.60	W 12.24	161.62	104.11	94.84	11.24	26.38
1100.00	1071.99	N 131.23	W 74.02	1074.24	1074.17	S 10.17	W 14.36	158.60	153.49	143.01	14.64	33.53
1200.00	1151.22	N 184.29	W 104.01	1154.41	1154.31	S 9.80	W 16.40	157.22	212.97	201.57	18.68	39.57
1300.00	1223.77	N 243.95	W 138.18	1228.04	1227.91	S 9.49	W 18.28	156.62	280.40	267.56	21.83	45.36
1400.00	1289.41	N 308.83	W 176.59	1295.43	1295.28	S 9.13	W 19.96	156.97	354.49	339.91	24.32	50.38
1500.00	1349.46	N 376.07	W 219.81	1357.05	1356.89	S 8.71	W 21.46	157.63	432.96	416.45	26.23	53.86
1600.00	1403.36	N 441.99	W 272.09	1412.52	1412.33	S 8.37	W 22.86	162.37	514.80	496.10	27.53	58.48
1700.00	1449.13	N 503.82	W 335.85	1459.98	1459.78	S 8.10	W 24.06	167.02	599.49	578.36	28.37	63.91
1800.00	1489.72	N 561.30	W 406.87	1502.32	1502.11	S 7.85	W 25.08	166.26	685.46	661.91	29.11	65.01
1900.00	1531.62	N 614.22	W 480.63	1545.96	1545.73	S 7.60	W 26.10	162.69	770.36	744.55	29.85	62.76
2000.00	1577.03	N 660.31	W 556.85	1593.10	1592.86	S 7.35	W 27.21	159.41	852.37	824.36	30.44	60.79

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2100.00	1624.73	N 702.35	W 634.02	1643.09	1642.84	S 7.09	W 28.38	156.66	932.97	902.65	30.77	59.94
2200.00	1673.27	N 741.06	W 712.41	1694.43	1694.17	S 6.71	W 29.50	153.69	1012.90	980.93	31.69	59.49
2300.00	1720.58	N 781.72	W 790.56	1745.93	1745.65	S 6.18	W 30.55	152.75	1094.99	1061.14	32.34	61.64
2400.00	1766.02	N 822.13	W 869.94	1796.93	1796.63	S 5.46	W 31.60	150.44	1178.41	1142.76	33.05	61.40
2500.00	1811.22	N 862.16	W 949.65	1848.57	1848.25	S 4.53	W 32.68	149.55	1262.28	1224.96	33.83	61.88
2600.00	1855.94	N 900.58	W 1030.42	1900.46	1900.12	S 3.37	W 33.81	147.66	1346.22	1307.12	34.43	61.74
2700.00	1901.07	N 939.04	W 1110.95	1949.49	1949.12	S 2.10	W 34.88	145.32	1430.37	1389.63	35.11	60.89
2800.00	1947.55	N 976.69	W 1191.08	1998.04	1997.65	S 0.79	W 35.89	144.04	1514.08	1471.70	35.73	60.73
2900.00	1993.13	N 1012.48	W 1272.57	2047.06	2046.64	N 0.58	W 36.86	144.24	1598.06	1553.96	36.24	61.66
3000.00	2037.40	N 1048.12	W 1354.85	2095.86	2095.40	N 1.98	W 37.86	143.01	1682.92	1637.03	36.67	62.22
3100.00	2081.19	N 1083.86	W 1437.34	2144.35	2143.86	N 3.41	W 38.89	141.66	1768.32	1720.70	37.13	62.33
3200.00	2124.46	N 1122.09	W 1518.98	2192.56	2192.04	N 4.87	W 39.96	138.73	1854.79	1805.31	37.48	62.57
3300.00	2167.66	N 1161.81	W 1599.95	2240.91	2240.35	N 6.38	W 41.06	137.63	1941.76	1890.60	37.95	62.22
3400.00	2211.53	N 1201.20	W 1680.72	2290.15	2289.55	N 7.95	W 42.23	136.42	2028.44	1975.63	38.41	61.74
3500.00	2256.21	N 1240.95	W 1760.86	2340.43	2339.79	N 9.59	W 43.46	134.24	2114.88	2060.34	38.78	60.96
3600.00	2301.68	N 1282.35	W 1839.72	2391.78	2391.10	N 11.31	W 44.76	132.40	2201.23	2144.91	39.08	60.42
3700.00	2347.74	N 1324.32	W 1917.93	2443.96	2443.22	N 13.11	W 46.12	131.62	2287.37	2229.25	39.36	60.37
3800.00	2394.11	N 1365.84	W 1996.20	2496.65	2495.86	N 14.97	W 47.54	131.55	2373.28	2313.40	39.63	59.70
3900.00	2441.28	N 1406.27	W 2074.56	2550.37	2549.53	N 16.91	W 49.04	131.20	2458.61	2397.00	39.91	59.32
4000.00	2487.94	N 1446.78	W 2153.18	2603.78	2602.87	N 18.88	W 50.58	130.77	2544.22	2480.76	40.09	60.16
4100.00	2533.68	N 1487.71	W 2232.12	2656.94	2655.98	N 20.89	W 52.16	130.27	2630.36	2565.06	40.28	60.31
4200.00	2579.55	N 1529.21	W 2310.70	2710.89	2709.87	N 22.90	W 53.88	129.27	2716.47	2649.43	40.52	59.87
4300.00	2625.94	N 1570.28	W 2389.19	2765.71	2764.62	N 24.93	W 55.73	129.31	2802.21	2733.53	40.80	59.62
4400.00	2671.92	N 1611.02	W 2468.09	2820.42	2819.25	N 26.94	W 57.70	129.57	2888.08	2817.72	41.04	59.83
4500.00	2718.31	N 1649.90	W 2547.69	2861.15	2859.93	N 28.37	W 59.21	129.92	2973.54	2901.61	41.33	59.34
4600.00	2765.80	N 1687.91	W 2627.07	2896.90	2895.64	N 29.43	W 60.44	129.24	3058.59	2985.06	41.59	59.12
4700.00	2813.55	N 1727.26	W 2705.62	2932.28	2931.00	N 30.30	W 61.56	127.79	3143.97	3068.78	41.81	59.29
4800.00	2861.49	N 1768.00	W 2783.35	2967.24	2965.93	N 30.97	W 62.58	127.31	3229.68	3152.88	42.05	59.55
4900.00	2909.41	N 1808.52	W 2861.21	3001.63	3000.31	N 31.45	W 63.49	126.89	3315.64	3237.27	42.31	59.52
5000.00	2958.09	N 1849.70	W 2938.25	3035.98	3034.64	N 31.76	W 64.31	126.06	3401.51	3321.63	42.58	59.49
5100.00	3006.63	N 1891.54	W 3015.01	3069.70	3068.36	N 31.88	W 65.03	125.82	3487.77	3406.32	42.82	60.22
5200.00	3054.44	N 1934.27	W 3091.74	3102.39	3101.05	N 31.84	W 65.65	124.54	3574.72	3492.29	43.36	60.72
5300.00	3102.57	N 1978.14	W 3167.63	3136.37	3135.01	N 31.64	W 66.21	124.40	3661.80	3577.35	43.36	60.29
5400.00	3151.68	N 2021.65	W 3243.10	3182.97	3181.61	N 31.33	W 66.87	123.97	3748.43	3662.32	43.53	59.95
5500.00	3200.93	N 2065.66	W 3318.18	3229.57	3228.20	N 31.11	W 67.42	123.51	3835.05	3747.30	43.70	60.17
5600.00	3250.17	N 2110.60	W 3392.71	3275.98	3274.62	N 30.99	W 67.86	122.50	3921.74	3832.29	43.84	60.06
5700.00	3298.98	N 2154.81	W 3467.96	3321.85	3320.48	N 30.96	W 68.19	124.53	4008.70	3917.53	43.97	60.80
5800.00	3347.21	N 2198.53	W 3543.87	3367.03	3365.66	N 31.03	W 68.41	123.67	4096.00	4002.60	43.85	60.97
5900.00	3395.17	N 2243.38	W 3619.29	3416.22	3414.85	N 31.20	W 68.55	122.92	4183.53	4088.75	44.14	61.20
6000.00	3442.75	N 2288.69	W 3694.68	3473.25	3471.88	N 31.58	W 68.70	122.84	4271.20	4174.75	44.29	61.14
6100.00	3490.82	N 2333.97	W 3769.77	3531.31	3529.94	N 32.18	W 68.87	122.59	4358.49	4260.17	44.33	60.73
6200.00	3538.67	N 2379.68	W 3844.74	3589.56	3588.18	N 32.99	W 69.05	122.18	4445.81	4345.57	44.35	60.83
6300.00	3586.50	N 2425.93	W 3919.40	3648.23	3646.84	N 34.03	W 69.25	121.71	4533.04	4430.87	44.37	60.69
6400.00	3634.34	N 2472.46	W 3993.87	3707.37	3705.96	N 35.28	W 69.47	122.07	4620.16	4516.12	44.41	60.35
6500.00	3682.84	N 2517.74	W 4068.69	3762.47	3761.05	N 36.66	W 69.69	122.64	4706.79	4600.96	44.48	59.84
6538.00	3701.45	N 2534.77	W 4097.10	3778.33	3776.91	N 37.10	W 69.72	122.69	4739.61	4633.12	44.51	59.72

Field:	Lobitos			Well:	Well LO16-17		
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-17		
Slot:	Slot #17			Trajectory:	LO16-17 Gyro + SS		
				Type:	DEF SVY		
Coordinate System:	UTM Zone 17S - WGS84, Meters						
Reference Point:							
Northing (m)	Easting (m)	Elevation (ft)	Structure Unc. (ft)	Slot Unc. (ft)	Hole Diameter (ft)		
N 9505994.820	E 459455.750	50.00 above MSL	0.000	0.000	2.500		
Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma							
Surveying Prog:							
	MD From (ft)	MD To (ft)	EOU Freq	Survey Tool Type			
	0.00	2017.00	Act-Stns	SLB_NSG+MSHOT			
	2017.00	8200.00	Act-Stns	SLB_MWD-POOR			
Subject Trajectory		Offset Trajectory		Ct-Ct	EOU	Sep	
						Inter.	

MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle
Major EOU radii used. All local minima indicated.												
Results highlighted: Separation Factor <= 1.50												
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 7.58	W 2.24	196.43	7.90	5.40	3.16	0.00
100.00	100.00	S 0.71	E 0.31	100.00	100.00	S 7.58	W 2.16	199.80	7.31	3.58	1.96	0.45
200.00	199.99	S 0.60	W 0.69	199.99	199.99	S 7.60	W 1.87	189.60	7.09	3.25	1.85	1.42
300.00	299.96	N 0.38	W 2.63	299.96	299.95	S 7.60	W 1.28	170.41	8.10	3.98	1.96	1.32
400.00	399.91	N 2.15	W 5.29	399.88	399.88	S 7.53	W 0.35	152.95	10.87	5.78	2.14	2.41
500.00	499.86	N 3.89	W 7.99	499.88	499.86	S 7.21	E 0.49	142.63	13.97	7.96	2.32	1.75
600.00	599.79	N 6.50	W 10.44	599.91	599.89	S 6.48	E 0.90	138.85	17.23	10.61	2.60	2.39
700.00	699.50	N 13.32	W 13.24	699.72	699.70	S 5.42	E 1.03	142.63	23.56	15.88	3.07	5.55
800.00	798.25	N 28.18	W 17.63	798.79	798.76	S 4.16	E 0.99	149.84	37.32	28.83	4.39	11.15
900.00	894.55	N 52.85	W 27.78	895.87	895.83	S 2.59	E 0.44	152.96	62.21	52.90	6.68	18.16
1000.00	986.23	N 87.40	W 47.35	988.96	988.89	S 0.66	W 0.62	152.42	99.73	89.72	9.97	25.75
1100.00	1071.99	N 131.23	W 74.02	1083.27	1083.09	N 2.67	W 3.32	151.42	147.14	136.36	13.65	30.14
1200.00	1151.22	N 184.29	W 104.01	1181.31	1180.40	N 10.26	W 12.09	152.42	198.96	187.65	17.59	32.17
1300.00	1223.77	N 243.95	W 138.18	1283.47	1280.20	N 22.06	W 30.25	154.73	253.12	240.63	20.27	33.53
1400.00	1289.41	N 308.83	W 176.59	1380.58	1373.08	N 37.56	W 53.98	157.04	309.23	295.15	21.97	35.34
1500.00	1349.46	N 376.07	W 219.81	1474.77	1461.73	N 54.93	W 80.58	158.57	367.59	351.58	22.96	36.16
1600.00	1403.36	N 441.99	W 272.09	1573.58	1552.94	N 75.45	W 112.52	159.62	426.84	408.15	22.85	36.66
1700.00	1449.13	N 503.82	W 335.85	1682.01	1650.45	N 101.91	W 151.84	158.45	485.71	463.66	22.03	37.55
1800.00	1489.72	N 561.30	W 406.87	1793.44	1747.12	N 133.87	W 197.08	154.94	541.26	515.51	21.02	34.74
1900.00	1531.62	N 614.22	W 480.63	1903.30	1840.43	N 172.91	W 239.50	149.94	590.14	561.15	20.36	35.36
2000.00	1577.03	N 660.31	W 556.85	1985.17	1909.82	N 206.55	W 266.83	145.49	633.05	600.90	19.69	31.20
2100.00	1624.73	N 702.35	W 634.02	2072.42	1982.91	N 236.24	W 304.06	142.49	674.11	639.28	19.36	29.03
2200.00	1673.27	N 741.06	W 712.41	2161.15	2057.12	N 266.35	W 342.26	139.92	713.93	677.42	19.55	28.82
2300.00	1720.58	N 781.72	W 790.56	2247.78	2129.60	N 296.27	W 379.09	138.33	756.47	715.73	18.57	31.12
2400.00	1766.02	N 822.13	W 869.94	2331.62	2199.88	N 325.77	W 414.02	136.25	801.54	756.66	17.47	31.46
2500.00	1811.22	N 862.16	W 949.65	2414.52	2269.51	N 355.46	W 447.81	134.31	847.71	797.80	16.98	32.76
2600.00	1855.94	N 900.58	W 1030.42	2501.64	2342.70	N 386.95	W 483.04	132.30	894.64	839.32	16.17	32.58
2700.00	1901.07	N 939.04	W 1110.95	2590.46	2417.11	N 418.96	W 519.49	130.40	941.59	881.34	15.63	31.44
2800.00	1947.55	N 976.69	W 1191.08	2680.02	2491.91	N 451.40	W 556.53	128.70	987.38	921.20	14.92	31.30
2900.00	1993.13	N 1012.48	W 1272.57	2768.78	2565.86	N 484.06	W 593.21	127.04	1033.82	962.13	14.42	32.54
3000.00	2037.40	N 1048.12	W 1354.85	2851.54	2634.70	N 514.87	W 627.26	125.67	1081.90	1004.36	13.95	33.20
3100.00	2081.19	N 1083.86	W 1437.34	2932.48	2702.11	N 545.17	W 660.26	124.34	1131.19	1048.17	13.63	33.54
3200.00	2124.46	N 1122.09	W 1518.98	3013.07	2769.31	N 575.53	W 692.78	123.32	1182.02	1093.30	13.32	33.44
3300.00	2167.66	N 1161.81	W 1599.95	3093.31	2836.29	N 606.05	W 724.71	122.29	1233.68	1139.37	13.08	33.47
3400.00	2211.53	N 1201.20	W 1680.72	3173.39	2903.21	N 636.84	W 756.14	121.31	1285.21	1185.64	12.91	33.34
3500.00	2256.21	N 1240.95	W 1760.86	3254.62	2971.14	N 668.40	W 787.56	120.41	1336.51	1231.26	12.70	32.62
3600.00	2301.68	N 1282.35	W 1839.72	3336.77	3039.85	N 700.72	W 818.93	119.65	1387.51	1276.51	12.50	32.10
3700.00	2347.74	N 1324.32	W 1917.93	3419.00	3108.62	N 733.48	W 849.90	118.94	1438.30	1321.78	12.34	32.27
3800.00	2394.11	N 1365.84	W 1996.20	3501.24	3177.39	N 766.64	W 880.45	118.23	1489.11	1367.14	12.21	32.15
3900.00	2441.28	N 1406.27	W 2074.56	3584.12	3246.65	N 800.60	W 910.78	117.49	1539.43	1411.74	12.06	32.21
4000.00	2487.94	N 1446.78	W 2153.18	3666.29	3315.24	N 834.82	W 940.36	116.77	1590.55	1457.28	11.93	33.19
4100.00	2533.68	N 1487.71	W 2232.12	3749.41	3384.53	N 870.04	W 969.82	116.07	1642.82	1503.78	11.82	33.56
4200.00	2579.55	N 1529.21	W 2310.70	3833.74	3454.65	N 906.47	W 999.29	115.39	1695.11	1550.29	11.71	33.24
4300.00	2625.94	N 1570.28	W 2389.19	3913.93	3521.16	N 941.75	W 1026.89	114.75	1747.09	1596.85	11.63	33.60
4400.00	2671.92	N 1611.02	W 2468.09	3988.22	3582.75	N 974.99	W 1051.80	114.13	1800.01	1638.17	11.12	34.57
4500.00	2718.31	N 1649.90	W 2547.69	4070.85	3651.19	N 1012.50	W 1078.93	113.42	1853.05	1686.33	11.11	34.54
4600.00	2765.80	N 1687.91	W 2627.07	4156.34	3721.82	N 1051.75	W 1106.84	112.67	1905.19	1733.52	11.10	34.06
4700.00	2813.55	N 1727.26	W 2705.62	4236.18	3787.64	N 1088.82	W 1132.71	112.01	1957.17	1780.79	11.10	33.63
4800.00	2861.49	N 1768.00	W 2783.35	4311.87	3850.02	N 1124.30	W 1156.75	111.45	2009.32	1835.67	11.57	33.83
4900.00	2909.41	N 1808.52	W 2861.21	4387.75	3912.55	N 1160.21	W 1180.37	110.92	2062.00	1884.09	11.59	33.79
5000.00	2958.09	N 1849.70	W 2938.25	4474.32	3983.85	N 1201.39	W 1207.11	110.35	2114.08	1931.49	11.58	33.19
5100.00	3006.63	N 1891.54	W 3015.01	4561.13	4055.26	N 1242.80	W 1234.00	109.76	2166.21	1978.99	11.57	33.42
5200.00	3054.44	N 1934.27	W 3091.74	4645.17	4124.30	N 1283.01	W 1260.05	109.25	2218.98	2027.12	11.57	33.13
5300.00	3102.57	N 1978.14	W 3167.63	4727.40	4191.78	N 1322.84	W 1285.33	108.91	2271.37	2075.07	11.57	32.68
5400.00	3151.68	N 2021.65	W 3243.10	4805.29	4255.62	N 1360.43	W 1309.05	108.56	2323.03	2122.50	11.58	32.38
5500.00	3200.93	N 2065.66	W 3318.18	4872.34	4310.81	N 1392.71	W 1329.22	108.23	2375.01	2170.60	11.62	32.68
5600.00	3250.17	N 2110.60	W 3392.71	4936.10	4363.62	N 1423.00	W 1348.16	107.99	2427.50	2219.31	11.66	32.51
5700.00	3298.98	N 2154.81	W 3467.96	4992.92	4411.16	N 1449.30	W 1364.83	107.74	2481.50	2269.96	11.73	34.38
5800.00	3347.21	N 2198.53	W 3543.87	5048.58	4458.18	N 1474.31	W 1380.96	107.48	2537.11	2322.17	11.80	34.69
5900.00	3395.17	N 2243.38	W 3619.29	5102.20	4503.77	N 1498.19	W 1396.04	107.24	2593.68	2375.57	11.89	35.33

6000.00	3442.75	N 2288.69	W 3694.68	5154.86	4548.70	N 1521.70	W 1410.23	107.07	2651.44	2430.23	11.99	36.03
6100.00	3490.82	N 2333.97	W 3769.77	5236.30	4618.44	N 1557.77	W 1431.86	106.88	2709.21	2484.10	12.04	35.61
6200.00	3538.67	N 2379.68	W 3844.74	5306.83	4679.03	N 1588.47	W 1450.86	106.85	2767.15	2538.49	12.10	35.87
6300.00	3586.50	N 2425.93	W 3919.40	5359.35	4724.34	N 1611.17	W 1464.63	106.51	2825.67	2594.00	12.20	36.30
6400.00	3634.34	N 2472.46	W 3993.87	5411.14	4769.21	N 1633.47	W 1477.73	106.50	2884.93	2650.35	12.30	36.81
6500.00	3682.84	N 2517.74	W 4068.69	5466.17	4817.09	N 1657.01	W 1491.21	106.53	2944.62	2707.23	12.40	37.07
6538.00	3701.45	N 2534.77	W 4097.10	5486.98	4835.25	N 1665.85	W 1496.21	106.53	2967.35	2728.91	12.44	37.13
Field:		Lobitos		Well:		Well LO16-18						
Structure:		Platform LO16 (WGS84)				Borehole:		Borehole LO16-18				
Slot:		Slot #18		Trajectory:		LO16-18 Gyro + SS						
				Type:		DEF SVY						
Coordinate System:		UTM Zone 17S - WGS84, Meters										
Reference Point:												
Northing (m)		Easting (m)		Elevation (ft)		Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)		
N 9505994.720		E 459459.520		50.00 above MSL		0.000		0.000		2.500		
Trajectory Error Model:		SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma										
Surveying Prog:												
MD From (ft)		MD To (ft)		EOU Freq		Survey Tool Type						
0.00		2017.00		Act-Stns		SLB_NSG+MSHOT						
2017.00		6738.00		Act-Stns		SLB_MWD-POOR						
Subject Trajectory				Offset Trajectory				Ct-Ct		EOU	Sep	Inter.
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle
Major EOU radii used. All local minima indicated.												
Results highlighted: Separation Factor <= 1.50												
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 7.91	E 10.14	127.98	12.86	10.36	5.14	0.00
100.00	100.00	S 0.71	E 0.31	99.95	99.95	S 7.78	E 10.43	124.96	12.34	8.61	3.31	0.71
200.00	199.99	S 0.60	W 0.69	199.86	199.85	S 7.25	E 11.53	118.55	13.92	10.07	3.62	1.97
300.00	299.96	N 0.38	W 2.63	299.76	299.74	S 6.50	E 13.22	113.48	17.28	13.02	4.05	1.75
400.00	399.91	N 2.15	W 5.29	399.89	399.85	S 5.94	E 14.43	112.32	21.32	15.92	3.95	2.08
500.00	499.86	N 3.89	W 7.99	500.24	500.19	S 4.69	E 14.34	111.04	23.92	17.87	3.95	1.02
600.00	599.79	N 6.50	W 10.44	601.45	601.29	S 0.89	E 11.81	108.46	23.50	16.37	3.30	1.63
700.00	699.50	N 13.32	W 13.24	701.76	701.27	N 4.25	E 5.52	116.01	20.91	13.43	2.79	3.52
800.00	798.25	N 28.18	W 17.63	801.33	800.44	N 9.41	W 1.68	139.60	24.73	17.16	3.26	8.34
900.00	894.55	N 52.85	W 27.78	899.81	898.46	N 15.06	W 9.35	154.00	42.23	34.35	5.36	14.26
1000.00	986.23	N 87.40	W 47.35	995.75	993.82	N 21.64	W 17.55	156.09	72.59	63.74	8.20	21.08
1100.00	1071.99	N 131.23	W 74.02	1087.94	1085.32	N 28.92	W 26.17	155.57	113.73	103.45	11.06	27.60
1200.00	1151.22	N 184.29	W 104.01	1175.82	1172.41	N 36.73	W 34.96	155.71	164.30	152.80	14.29	32.96
1300.00	1223.77	N 243.95	W 138.18	1259.88	1255.58	N 45.14	W 43.78	155.76	222.37	209.11	16.77	37.92
1400.00	1289.41	N 308.83	W 176.59	1343.93	1338.53	N 54.92	W 53.11	155.93	286.58	271.27	18.72	41.39
1500.00	1349.46	N 376.07	W 219.81	1435.97	1428.67	N 70.65	W 62.83	154.99	352.43	334.77	19.96	42.13
1600.00	1403.36	N 441.99	W 272.09	1520.40	1510.60	N 89.37	W 70.90	154.60	419.90	399.87	20.96	46.04
1700.00	1449.13	N 503.82	W 335.85	1594.64	1582.08	N 108.40	W 77.22	153.42	490.83	468.20	21.69	51.79
1800.00	1489.72	N 561.30	W 406.87	1663.48	1647.89	N 127.93	W 82.30	149.90	564.07	538.88	22.39	53.29
1900.00	1531.62	N 614.22	W 480.63	1732.11	1713.00	N 149.25	W 86.45	145.61	635.98	608.40	23.06	52.16
2000.00	1577.03	N 680.31	W 556.85	1799.61	1776.50	N 171.91	W 89.47	141.66	704.81	674.93	23.58	51.89
2100.00	1624.73	N 702.35	W 634.02	1865.54	1838.01	N 195.56	W 91.34	138.14	772.54	740.28	23.95	52.39
2200.00	1673.27	N 741.06	W 712.41	1928.97	1896.72	N 219.56	W 92.19	134.61	840.57	806.66	24.79	52.69
2300.00	1720.58	N 781.72	W 790.56	1989.74	1952.47	N 243.73	W 92.05	131.99	911.66	875.84	25.45	55.03
2400.00	1766.02	N 822.13	W 869.94	2058.80	2015.09	N 272.82	W 90.81	128.73	985.30	947.23	25.89	55.28
2500.00	1811.22	N 862.16	W 949.65	2239.01	2172.56	N 360.16	W 91.57	121.65	1057.77	1017.76	26.44	51.26
2600.00	1855.94	N 900.58	W 1030.42	2374.67	2287.20	N 431.70	W 103.09	117.11	1125.07	1083.03	26.76	47.33
2700.00	1901.07	N 939.04	W 1110.95	2496.28	2388.05	N 497.37	W 120.49	113.80	1188.79	1144.92	27.10	44.64
2800.00	1947.55	N 976.69	W 1191.08	2587.62	2461.83	N 549.37	W 134.50	111.58	1250.38	1204.78	27.42	44.90
2900.00	1993.13	N 1012.48	W 1272.57	2681.90	2535.63	N 606.32	W 148.50	109.30	1312.56	1264.94	27.57	46.89
3000.00	2037.40	N 1048.12	W 1354.85	2797.74	2622.41	N 681.06	W 165.76	106.15	1375.10	1324.88	27.38	46.66
3100.00	2081.19	N 1083.86	W 1437.34	2885.69	2685.59	N 740.73	W 179.26	103.88	1437.29	1384.58	27.27	46.88
3200.00	2124.46	N 1122.09	W 1518.98	2961.22	2738.39	N 793.53	W 190.58	101.73	1499.83	1444.61	27.16	45.78
3300.00	2167.66	N 1161.81	W 1599.95	3021.19	2779.90	N 835.98	W 199.06	100.54	1563.17	1505.78	27.24	46.26
3400.00	2211.53	N 1201.20	W 1680.72	3080.14	2820.52	N 877.99	W 206.83	99.42	1627.16	1567.66	27.34	46.57
3500.00	2256.21	N 1240.95	W 1760.86	3136.86	2859.44	N 918.66	W 213.80	98.31	1691.50	1629.87	27.45	45.99

3600.00	2301.68	N 1282.35	W 1839.72	3188.04	2894.45	N 955.55	W 219.47	97.36	1755.96	1692.28	27.58	45.72
3700.00	2347.74	N 1324.32	W 1917.93	3238.39	2928.85	N 991.99	W 224.41	96.46	1821.03	1755.30	27.71	46.32
3800.00	2394.11	N 1365.84	W 1996.20	3304.97	2974.20	N 1040.37	W 230.36	95.71	1886.96	1818.76	27.67	46.71
3900.00	2441.28	N 1406.27	W 2074.56	3371.79	3019.59	N 1089.04	W 236.32	94.80	1953.00	1882.66	27.76	46.92
4000.00	2487.94	N 1446.78	W 2153.18	3431.92	3060.40	N 1132.89	W 241.46	93.48	2020.13	1947.60	27.86	47.46
4100.00	2533.68	N 1487.71	W 2232.12	3491.24	3100.67	N 1176.18	W 246.29	92.50	2088.55	2013.82	27.95	47.76
4200.00	2579.55	N 1529.21	W 2310.70	3545.49	3137.51	N 1215.80	W 250.47	91.79	2157.34	2080.54	28.09	47.60
4300.00	2625.94	N 1570.28	W 2389.19	3591.45	3168.75	N 1249.35	W 253.59	91.37	2226.75	2148.10	28.31	48.47
4400.00	2671.92	N 1611.02	W 2468.09	3636.10	3199.16	N 1281.95	W 256.21	90.82	2297.54	2217.28	28.63	49.63
4500.00	2718.31	N 1649.90	W 2547.69	3683.84	3231.67	N 1316.82	W 258.58	90.77	2369.50	2287.45	28.88	50.52
4600.00	2765.80	N 1687.91	W 2627.07	3732.90	3264.91	N 1352.85	W 260.64	90.23	2441.59	2357.74	29.12	50.55
4700.00	2813.55	N 1727.26	W 2705.62	3782.54	3298.33	N 1389.50	W 262.35	89.25	2513.70	2427.98	29.32	49.97
4800.00	2861.49	N 1768.00	W 2783.35	3834.54	3333.14	N 1428.12	W 263.78	88.54	2585.77	2498.20	29.53	50.13
4900.00	2909.41	N 1808.52	W 2861.21	3885.54	3367.05	N 1466.19	W 264.87	88.04	2658.50	2569.08	29.73	50.23
5000.00	2958.09	N 1849.70	W 2938.25	3933.01	3398.42	N 1501.82	W 265.58	87.48	2730.94	2639.71	29.93	50.06
5100.00	3006.63	N 1891.54	W 3015.01	3966.45	3420.36	N 1527.05	W 265.73	86.80	2804.03	2711.08	30.17	50.86
5200.00	3054.44	N 1934.27	W 3091.74	3998.96	3441.56	N 1551.69	W 265.47	85.97	2878.20	2783.43	30.37	50.78
5300.00	3102.57	N 1978.14	W 3167.63	4031.04	3462.34	N 1576.12	W 264.84	86.07	2952.49	2855.94	30.58	51.16
5400.00	3151.68	N 2021.65	W 3243.10	4070.41	3487.68	N 1606.23	W 263.60	85.84	3027.03	2928.33	30.67	51.26
5500.00	3200.93	N 2065.66	W 3318.18	4125.75	3523.19	N 1648.63	W 261.62	85.08	3101.66	3000.53	30.67	51.18
5600.00	3250.17	N 2110.60	W 3392.71	4181.35	3558.79	N 1691.28	W 259.49	84.44	3176.18	3072.60	30.66	50.53
5700.00	3298.98	N 2154.81	W 3467.96	4234.15	3592.58	N 1731.80	W 257.32	84.10	3251.67	3145.83	30.72	52.53
5800.00	3347.21	N 2198.53	W 3543.87	4285.58	3625.56	N 1771.20	W 255.07	83.32	3328.10	3219.90	30.76	52.15
5900.00	3395.17	N 2243.38	W 3619.29	4337.44	3658.89	N 1810.86	W 252.66	82.54	3404.53	3293.95	30.79	51.90
6000.00	3442.75	N 2288.69	W 3694.68	4389.33	3692.31	N 1850.48	W 250.12	82.11	3481.29	3368.40	30.84	52.05
6100.00	3490.82	N 2333.97	W 3769.77	4441.18	3725.76	N 1889.99	W 247.44	81.92	3557.97	3442.84	30.90	51.90
6200.00	3538.67	N 2379.68	W 3844.74	4480.90	3751.46	N 1920.20	W 245.24	81.38	3634.95	3517.69	31.00	52.05
6300.00	3586.50	N 2425.93	W 3919.40	4518.52	3775.89	N 1948.71	W 242.92	81.03	3712.16	3592.82	31.11	52.06
6400.00	3634.34	N 2472.46	W 3993.87	4555.72	3800.14	N 1976.82	W 240.40	81.10	3789.68	3668.45	31.26	52.56
6500.00	3682.84	N 2517.74	W 4068.69	4592.05	3823.90	N 2004.16	W 237.72	81.46	3867.81	3744.91	31.47	53.11
6538.00	3701.45	N 2534.77	W 4097.10	4605.71	3832.86	N 2014.42	W 236.66	81.53	3897.57	3774.10	31.57	53.21
Field:	Lobitos			Well:	Well LO16-19							
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-19							
Slot:	Slot #19			Trajectory:	LO16-19 SS Survey							
				Type:	DEF SVY							
Coordinate System:	UTM Zone 17S - WGS84, Meters											
Reference Point:												
Northing (m)	Easting (m)			Elevation (ft)			Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505993.660	E 459460.560			50.00 above MSL			0.000		0.000		2.500	
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma											
Surveying Prog:												
MD From (ft)	MD To (ft)			EOU Freq		Survey Tool Type						
0.00	8550.00			Act-Stns		SLB_MWD-STD						
Subject Trajectory				Offset Trajectory				Ct-Ct	EOU	Sep	Inter.	
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle
Major EOU radii used. All local minima indicated.												
Results highlighted: Separation Factor <= 1.50												
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 11.40	E 13.55	130.07	17.70	15.20	7.08	0.00
100.00	100.00	S 0.71	E 0.31	99.97	99.97	S 11.31	E 13.71	128.35	17.08	11.98	3.35	0.56
200.00	199.99	S 0.60	W 0.69	199.93	199.93	S 11.05	E 14.21	125.04	18.19	12.97	3.48	1.51
300.00	299.96	N 0.38	W 2.63	299.85	299.85	S 10.61	E 15.03	121.91	20.80	15.38	3.84	1.33
400.00	399.91	N 2.15	W 5.29	399.73	399.71	S 10.00	E 16.17	119.52	24.67	18.69	4.12	2.51
500.00	499.86	N 3.89	W 7.99	499.63	499.61	S 9.23	E 17.61	117.13	28.77	22.15	4.35	2.11
600.00	599.79	N 6.50	W 10.44	599.67	599.63	S 8.51	E 18.75	117.17	32.82	25.64	4.57	2.76
700.00	699.50	N 13.32	W 13.24	699.54	699.50	S 7.91	E 19.37	122.90	38.92	30.99	4.91	5.92
800.00	798.25	N 28.18	W 17.63	798.56	798.51	S 7.42	E 19.50	133.30	51.45	43.16	6.21	11.62
900.00	894.55	N 52.85	W 27.78	896.00	895.95	S 6.21	E 19.15	140.88	75.44	66.82	8.75	18.20
1000.00	986.23	N 87.40	W 47.35	988.71	988.64	S 4.34	E 18.43	143.88	112.91	103.64	12.17	26.05
1100.00	1071.99	N 131.23	W 74.02	1076.26	1076.17	S 2.63	E 17.54	144.85	162.23	152.00	15.86	32.97
1200.00	1151.22	N 184.29	W 104.01	1170.91	1170.62	N 2.64	E 15.48	145.80	218.29	207.32	19.89	35.32
1300.00	1223.77	N 243.95	W 138.18	1257.94	1256.96	N 13.43	E 15.35	145.27	278.95	266.65	22.69	39.40

GEOSCIENCES
Central File

DATE

1400.00	1289.41	N 308.83	W 176.59	1341.93	1339.56	N 28.26	E 18.38	144.18	345.32	331.41	24.82	43.33
1500.00	1349.46	N 376.07	W 219.81	1437.34	1432.02	N 51.29	E 22.79	142.43	413.71	397.93	26.21	44.07
1600.00	1403.36	N 441.99	W 272.09	1524.42	1515.11	N 77.15	E 25.69	142.12	484.02	466.09	27.00	48.70
1700.00	1449.13	N 503.82	W 335.85	1594.25	1580.90	N 100.43	E 28.41	141.65	559.25	538.95	27.54	55.24
1800.00	1489.72	N 561.30	W 406.87	1657.39	1639.80	N 122.95	E 31.36	139.36	637.75	615.07	28.12	57.17
1900.00	1531.62	N 614.22	W 480.63	1720.45	1698.02	N 146.93	E 34.82	136.67	715.35	690.44	28.72	56.52
2000.00	1577.03	N 660.31	W 556.85	1783.00	1755.14	N 172.12	E 38.76	133.95	790.44	763.35	29.18	56.47
2100.00	1624.73	N 702.35	W 634.02	1845.55	1811.61	N 198.64	E 43.23	131.03	864.47	835.12	29.46	56.90
2200.00	1673.27	N 741.06	W 712.41	1902.35	1862.33	N 223.79	E 47.78	127.91	938.72	907.80	30.36	57.08
2300.00	1720.58	N 781.72	W 790.56	1956.50	1910.26	N 248.52	E 52.65	125.25	1015.52	982.73	30.97	59.01
2400.00	1766.02	N 822.13	W 869.94	2008.12	1955.54	N 272.75	E 57.77	122.86	1094.70	1060.06	31.60	59.38
2500.00	1811.22	N 862.16	W 949.65	2059.07	1999.88	N 297.27	E 63.20	121.43	1174.97	1138.57	32.28	60.79
2600.00	1855.94	N 900.58	W 1030.42	2107.80	2041.94	N 321.25	E 68.73	119.43	1256.32	1218.01	32.79	61.23
2700.00	1901.07	N 939.04	W 1110.95	2155.77	2083.00	N 345.37	E 74.49	117.45	1338.20	1298.08	33.35	60.90
2800.00	1947.55	N 976.69	W 1191.08	2203.07	2123.16	N 369.63	E 80.49	116.06	1419.96	1377.94	33.80	61.38
2900.00	1993.13	N 1012.48	W 1272.57	2247.56	2160.64	N 392.86	E 86.43	115.57	1502.96	1458.96	34.16	63.28
3000.00	2037.40	N 1048.12	W 1354.85	2289.88	2196.01	N 415.33	E 92.35	113.64	1587.44	1541.38	34.46	63.89
3100.00	2081.19	N 1083.86	W 1437.34	2334.02	2232.60	N 439.16	E 98.76	111.87	1672.77	1624.58	34.71	64.16
3200.00	2124.46	N 1122.09	W 1518.98	2379.25	2269.77	N 464.02	E 105.51	108.10	1758.73	1707.89	34.60	63.25
3300.00	2167.66	N 1161.81	W 1599.95	2424.77	2306.85	N 489.49	E 112.50	106.99	1844.96	1792.00	34.83	63.28
3400.00	2211.53	N 1201.20	W 1680.72	2464.97	2339.33	N 512.32	E 118.84	106.00	1931.14	1876.65	35.44	63.20
3500.00	2256.21	N 1240.95	W 1760.86	2498.81	2366.68	N 531.47	E 124.34	104.40	2017.31	1960.93	35.78	62.35
3600.00	2301.68	N 1282.35	W 1839.72	2533.29	2394.62	N 550.85	E 130.11	102.90	2103.32	2044.99	36.06	61.70
3700.00	2347.74	N 1324.32	W 1917.93	2569.38	2423.94	N 570.96	E 136.30	102.00	2189.34	2129.14	36.37	61.84
3800.00	2394.11	N 1365.84	W 1996.20	2605.47	2453.36	N 590.88	E 142.61	102.37	2275.65	2213.11	36.39	62.04
3900.00	2441.28	N 1406.27	W 2074.56	2641.08	2482.50	N 610.34	E 148.94	102.23	2362.03	2297.72	36.73	62.23
4000.00	2487.94	N 1446.78	W 2153.18	2675.89	2511.08	N 629.19	E 155.25	100.90	2449.05	2383.43	37.32	62.97
4100.00	2533.68	N 1487.71	W 2232.12	2714.05	2542.51	N 649.65	E 162.26	100.07	2536.83	2469.28	37.56	63.22
4200.00	2579.55	N 1529.21	W 2310.70	2759.59	2580.09	N 673.98	E 170.64	99.12	2624.59	2555.14	37.79	62.68
4300.00	2625.94	N 1570.28	W 2389.19	2800.30	2613.73	N 695.66	E 178.11	99.22	2712.23	2640.96	38.06	62.98
4400.00	2671.92	N 1611.02	W 2468.09	2829.01	2637.39	N 710.98	E 183.53	99.32	2800.43	2727.27	38.28	63.94
4500.00	2718.31	N 1649.90	W 2547.69	2856.47	2659.95	N 725.69	E 188.90	100.42	2889.03	2814.10	38.56	64.37
4600.00	2765.80	N 1687.91	W 2627.07	2883.51	2682.09	N 740.23	E 194.36	99.99	2977.51	2900.14	38.48	64.23
4700.00	2813.55	N 1727.26	W 2705.62	2914.46	2707.33	N 756.95	E 200.80	98.20	3065.96	2986.54	38.61	63.72
4800.00	2861.49	N 1768.00	W 2783.35	2947.38	2734.01	N 774.89	E 207.84	97.45	3154.32	3072.81	38.70	63.82
4900.00	2909.41	N 1808.52	W 2861.21	2981.14	2761.20	N 793.48	E 215.22	97.04	3242.95	3160.06	39.13	63.75
5000.00	2958.09	N 1849.70	W 2938.25	3015.42	2788.64	N 812.54	E 222.89	96.18	3331.25	3246.26	39.20	63.39
5100.00	3006.63	N 1891.54	W 3015.01	3050.80	2816.86	N 832.32	E 230.94	95.23	3419.68	3333.43	39.65	63.77
5200.00	3054.44	N 1934.27	W 3091.74	3085.68	2844.61	N 851.86	E 238.99	93.48	3508.48	3420.18	39.73	63.40
5300.00	3102.57	N 1978.14	W 3167.63	3120.99	2872.63	N 871.68	E 247.25	93.75	3597.02	3506.78	39.66	63.09
5400.00	3151.68	N 2021.65	W 3243.10	3156.38	2900.66	N 891.59	E 255.64	93.49	3685.27	3593.12	39.99	62.80
5500.00	3200.93	N 2065.66	W 3318.18	3190.30	2927.51	N 910.65	E 263.78	92.68	3773.49	3679.42	40.11	62.82
5600.00	3250.17	N 2110.60	W 3392.71	3224.08	2954.36	N 929.46	E 271.95	91.73	3861.65	3765.62	40.21	62.27
5700.00	3298.98	N 2154.81	W 3467.96	3260.29	2983.24	N 949.44	E 280.78	92.76	3950.40	3852.55	40.37	64.05
5800.00	3347.21	N 2198.53	W 3543.87	3354.59	3058.55	N 1001.55	E 303.26	91.26	4039.37	3939.13	40.30	63.00
5900.00	3395.17	N 2243.38	W 3619.29	3420.52	3111.21	N 1038.24	E 318.34	90.05	4127.71	4025.27	40.29	62.50
6000.00	3442.75	N 2288.69	W 3694.68	3438.46	3125.54	N 1048.21	E 322.49	89.87	4216.29	4111.99	40.42	62.90
6100.00	3490.82	N 2333.97	W 3769.77	3456.13	3139.65	N 1057.98	E 326.68	89.92	4304.93	4198.79	40.56	62.95
6200.00	3538.67	N 2379.68	W 3844.74	3473.39	3153.44	N 1067.48	E 330.88	89.28	4393.87	4285.88	40.68	63.27
6300.00	3586.50	N 2425.93	W 3919.40	3490.37	3167.00	N 1076.77	E 335.11	88.82	4482.97	4373.09	40.80	63.37
6400.00	3634.34	N 2472.46	W 3993.87	3507.01	3180.29	N 1085.84	E 339.35	89.35	4572.27	4460.57	40.93	63.78
6500.00	3682.84	N 2517.74	W 4068.69	3523.16	3193.19	N 1094.60	E 343.58	90.39	4661.86	4548.42	41.09	64.13
6538.00	3701.45	N 2534.77	W 4097.10	3534.05	3201.90	N 1100.47	E 346.43	90.59	4695.93	4581.81	41.15	64.10
Field:	Lobitos					Well:			Well LO16-20			
Structure:	Platform	LO16 (WGS84)				Borehole:			Borehole LO16-20			
Slot:	Slot #20					Trajectory:			LO16-20 MWD Survey			
						Type:			DEF SVY			
Coordinate System:			UTM Zone 17S - WGS84, Meters									
Reference Point:												
Northing (m)		Easting (m)		Elevation (ft)		Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)		

N 9505989.680				E 459460.680				50.00 above MSL				0.000				0.000				2.500			
Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma																							
Surveying Prog:																							
MD From (ft)				MD To (ft)				EOU Freq				Survey Tool Type											
0.00				8809.00				Act-Stns				SLB_MWD-STD											
Subject Trajectory				Offset Trajectory				Ct-Ct				EOU				Sep				Inter.			
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Dist (ft)	Factor	Angle										
Major EOU radii used. All local minima indicated.																							
Results highlighted: Separation Factor <= 1.50																							
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 24.46	E 13.94	150.33	28.15	25.65	11.26	0.00											
100.00	100.00	S 0.71	E 0.31	99.95	99.95	S 24.60	E 13.86	150.45	27.46	22.36	5.38	0.36											
200.00	199.99	S 0.60	W 0.69	199.90	199.90	S 25.02	E 13.62	149.63	28.30	23.07	5.41	1.24											
300.00	299.96	N 0.38	W 2.63	299.82	299.82	S 25.72	E 13.23	148.72	30.54	25.12	5.64	1.09											
400.00	399.91	N 2.15	W 5.29	399.71	399.70	S 26.70	E 12.68	148.09	34.00	28.00	5.67	2.05											
500.00	499.86	N 3.89	W 7.99	499.51	499.49	S 27.96	E 11.99	147.92	37.60	31.00	5.69	2.13											
600.00	599.79	N 6.50	W 10.44	598.84	598.79	S 30.40	E 11.62	149.12	43.00	35.85	6.01	4.55											
700.00	699.50	N 13.32	W 13.24	696.56	696.30	S 35.74	E 8.56	155.97	53.78	45.87	6.80	10.51											
800.00	798.25	N 28.18	W 17.63	791.87	790.95	S 45.22	E 2.78	164.58	76.53	68.22	9.21	18.26											
900.00	894.55	N 52.85	W 27.78	879.58	877.48	S 57.99	W 3.66	169.28	114.71	106.07	13.28	27.34											
1000.00	986.23	N 87.40	W 47.35	957.53	953.77	S 72.97	W 9.06	170.82	168.04	158.78	18.14	36.99											
1100.00	1071.99	N 131.23	W 74.02	1026.31	1020.52	S 88.73	W 14.17	170.97	233.70	223.52	22.95	45.79											
1200.00	1151.22	N 184.29	W 104.01	1082.48	1074.61	S 103.38	W 17.95	171.56	309.88	299.05	28.60	53.50											
1300.00	1223.77	N 243.95	W 138.18	1128.84	1118.90	S 116.71	W 21.18	173.58	393.40	381.36	32.66	60.30											
1400.00	1289.41	N 308.83	W 176.59	1165.63	1153.75	S 128.12	W 24.05	178.11	482.29	468.75	35.62	65.88											
1500.00	1349.46	N 376.07	W 219.81	1193.76	1180.20	S 137.43	W 26.34	183.59	574.25	559.00	37.65	69.74											
1600.00	1403.36	N 441.99	W 272.09	1218.06	1202.92	S 145.83	W 28.31	196.91	667.18	649.92	38.65	72.92											
1700.00	1449.13	N 503.82	W 335.85	1238.83	1222.26	S 153.20	W 29.98	207.35	759.41	739.88	38.88	76.64											
1800.00	1489.72	N 561.30	W 406.87	1258.48	1240.51	S 160.30	W 31.57	206.29	850.69	828.88	39.00	76.70											
1900.00	1531.62	N 614.22	W 480.63	1284.74	1264.86	S 169.88	W 33.82	198.05	941.07	917.10	39.26	73.08											
2000.00	1577.03	N 660.31	W 556.85	1317.93	1295.53	S 182.16	W 37.09	191.30	1029.15	1002.87	39.17	69.44											
2100.00	1624.73	N 702.35	W 634.02	1352.43	1327.22	S 195.21	W 41.02	187.38	1116.15	1087.66	39.17	67.60											
2200.00	1673.27	N 741.06	W 712.41	1385.25	1357.20	S 207.91	W 45.07	184.55	1202.41	1172.33	39.98	67.05											
2300.00	1720.58	N 781.72	W 790.56	1411.16	1380.73	S 218.23	W 48.40	186.81	1290.81	1258.90	40.46	69.63											
2400.00	1766.02	N 822.13	W 869.94	1433.95	1401.33	S 227.55	W 51.34	185.20	1380.19	1346.53	41.00	69.79											
2500.00	1811.22	N 862.16	W 949.65	1455.57	1420.78	S 236.57	W 54.08	185.29	1470.27	1435.02	41.70	70.28											
2600.00	1855.94	N 900.58	W 1030.42	1482.82	1445.24	S 248.10	W 57.46	183.83	1560.38	1523.38	42.17	70.36											
2700.00	1901.07	N 939.04	W 1110.95	1509.79	1469.40	S 259.62	W 60.77	180.85	1651.05	1612.41	42.72	69.78											
2800.00	1947.55	N 976.69	W 1191.08	1542.28	1498.44	S 273.63	W 64.76	179.17	1741.72	1701.32	43.11	69.38											
2900.00	1993.13	N 1012.48	W 1272.57	1577.40	1529.78	S 288.85	W 69.15	179.83	1832.04	1789.95	43.53	69.46											
3000.00	2037.40	N 1048.12	W 1354.85	1611.67	1560.32	S 303.78	W 73.53	179.55	1922.76	1878.79	43.73	70.12											
3100.00	2081.19	N 1083.86	W 1437.34	1642.78	1588.02	S 317.37	W 77.53	178.62	2013.89	1968.17	44.04	70.43											
3200.00	2124.46	N 1122.09	W 1518.98	1671.91	1613.95	S 330.11	W 81.23	177.22	2106.33	2058.74	44.26	71.86											
3300.00	2167.66	N 1161.81	W 1599.95	1700.03	1638.98	S 342.43	W 84.75	175.60	2199.56	2150.29	44.64	71.63											
3400.00	2211.53	N 1201.20	W 1680.72	1729.89	1665.56	S 355.53	W 88.46	173.67	2292.77	2241.81	44.99	71.31											
3500.00	2256.21	N 1240.95	W 1760.86	1760.56	1692.84	S 369.01	W 92.27	170.43	2386.12	2333.39	45.26	71.17											
3600.00	2301.68	N 1282.35	W 1839.72	1790.96	1719.86	S 382.42	W 96.07	167.72	2479.98	2425.44	45.48	71.23											
3700.00	2347.74	N 1324.32	W 1917.93	1821.45	1746.94	S 395.89	W 99.88	166.85	2573.98	2517.63	45.67	71.37											
3800.00	2394.11	N 1365.84	W 1996.20	1852.69	1774.68	S 409.73	W 103.79	165.80	2667.87	2609.66	45.83	70.50											
3900.00	2441.28	N 1406.27	W 2074.56	1885.20	1803.53	S 424.16	W 107.88	164.97	2761.34	2701.29	45.98	70.08											
4000.00	2487.94	N 1446.78	W 2153.18	1917.21	1831.92	S 438.38	W 111.90	165.89	2855.00	2792.99	46.05	71.02											
4100.00	2533.68	N 1487.71	W 2232.12	1948.24	1859.42	S 452.20	W 115.81	165.70	2949.01	2885.13	46.17	71.29											
4200.00	2579.55	N 1529.21	W 2310.70	1979.01	1886.69	S 465.92	W 119.70	163.96	3043.21	2977.41	46.25	71.22											
4300.00	2625.94	N 1570.28	W 2389.19	2010.35	1914.44	S 479.92	W 123.66	163.82	3137.23	3069.61	46.40	70.86											
4400.00	2671.92	N 1611.02	W 2468.09	2041.46	1941.99	S 493.84	W 127.60	164.63	3231.28	3161.80	46.51	70.67											
4500.00	2718.31	N 1649.90	W 2547.69	2073.75	1970.56	S 508.32	W 131.69	163.91	3324.77	3253.52	46.66	69.83											
4600.00	2765.80	N 1687.91	W 2627.07	2107.09	2000.03	S 523.30	W 135.95	162.30	3417.83	3344.73	46.76	69.52											
4700.00	2813.55	N 1727.26	W 2705.62	2139.91	2029.00	S 538.14	W 140.20	160.27	3511.26	3436.26	46.82	70.02											
4800.00	2861.49	N 1768.00	W 2783.35	2172.16	2057.41	S 552.80	W 144.45	159.57	3605.06	3528.18	46.89	70.17											
4900.00	2909.41	N 1808.52	W 2861.21	2204.46	2085.82	S 567.55	W 148.76	158.51	3698.84	3620.09	46.97	70.00											
5000.00	2958.09	N 1849.70	W 2938.25	2236.80	2114.21	S 582.41	W 153.14	156.92	3792.64	3712.01	47.04	70.05											
5100.00	3006.63	N 1891.54	W 3015.01	2263.53	2137.65	S 594.74	W 156.77	157.22	3886.68	3804.17	47.11	70.65											
5200.00	3054.44	N 1934.27	W 3091.74	2289.17	2160.10	S 606.61	W 160.24	155.64	3981.16	3896.69	47.13	71.47											

5300.00	3102.57	N 1978.14	W 3167.63	2314.26	2182.07	S 618.26	W 163.61	154.45	4075.88	3989.57	47.22	70.99	
5400.00	3151.68	N 2021.65	W 3243.10	2339.86	2204.46	S 630.19	W 167.02	153.25	4170.33	4082.20	47.32	70.87	
5500.00	3200.93	N 2065.66	W 3318.18	2367.05	2228.22	S 642.90	W 170.63	152.78	4264.91	4174.89	47.38	71.27	
5600.00	3250.17	N 2110.60	W 3392.71	2403.71	2260.25	S 660.05	W 175.52	150.83	4359.67	4267.65	47.38	71.47	
5700.00	3298.98	N 2154.81	W 3467.96	2440.68	2292.55	S 677.35	W 180.51	155.16	4454.36	4360.50	47.45	71.15	
5800.00	3347.21	N 2198.53	W 3543.87	2477.69	2324.87	S 694.67	W 185.56	154.02	4549.07	4453.21	47.46	71.52	
5900.00	3395.17	N 2243.38	W 3619.29	2513.51	2356.13	S 711.42	W 190.50	153.19	4644.03	4546.18	47.46	71.96	
6000.00	3442.75	N 2288.69	W 3694.68	2544.93	2383.56	S 726.11	W 194.86	153.19	4739.16	4639.43	47.52	72.02	
6100.00	3490.82	N 2333.97	W 3769.77	2576.79	2411.38	S 741.00	W 199.27	152.38	4834.16	4732.57	47.58	71.83	
6200.00	3538.67	N 2379.68	W 3844.74	2608.27	2438.87	S 755.71	W 203.62	152.05	4929.30	4825.81	47.63	72.18	
6300.00	3586.50	N 2425.93	W 3919.40	2639.44	2466.10	S 770.26	W 207.93	151.24	5024.53	4919.14	47.68	72.34	
6400.00	3634.34	N 2472.46	W 3993.87	2670.49	2493.22	S 784.75	W 212.23	151.60	5119.81	5012.57	47.75	71.99	
6500.00	3682.84	N 2517.74	W 4068.69	2702.73	2521.40	S 799.79	W 216.68	151.98	5214.68	5105.68	47.84	71.30	
6538.00	3701.45	N 2534.77	W 4097.10	2715.13	2532.23	S 805.56	W 218.38	151.86	5250.65	5140.99	47.88	71.12	
Field:	Lobitos			Well:	Well LO16-21								
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-21								
Slot:	Slot #21			Trajectory:	LO16-21 SS Survey								
				Type:	DEF SVY								
Coordinate System:	UTM Zone 17S - WGS84, Meters												
Reference Point:													
Northing (m)	Easting (m)			Elevation (ft)				Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505985.770	E 459456.930			50.00 above MSL				0.000		0.000		2.500	
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma												
Surveying Prog:													
MD From (ft)	MD To (ft)			EOU Freq				Survey Tool Type					
0.00	7800.00			Act-Stns				SLB_MWD-STD					
Subject Trajectory				Offset Trajectory				Ct-Ct	EOU	Sep	Inter.		
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle	
Major EOU radii used. All local minima indicated.													
Results highlighted: Separation Factor <= 1.50													
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 37.29	E 1.62	177.51	37.32	34.82	14.93	0.00	
100.00	100.00	S 0.71	E 0.31	100.06	100.06	S 37.20	E 1.67	177.88	36.51	31.39	7.12	0.56	
200.00	199.99	S 0.60	W 0.69	200.11	200.11	S 36.94	E 1.81	176.08	36.42	31.12	6.87	1.24	
300.00	299.96	N 0.38	W 2.63	300.14	300.14	S 36.51	E 2.04	172.80	37.18	31.65	6.72	0.93	
400.00	399.91	N 2.15	W 5.29	400.15	400.15	S 35.90	E 2.36	168.64	38.82	32.67	6.31	1.98	
500.00	499.86	N 3.89	W 7.99	500.15	500.15	S 35.12	E 2.77	164.59	40.47	33.67	5.95	1.59	
600.00	599.79	N 6.50	W 10.44	600.15	600.14	S 34.17	E 3.28	161.37	42.92	35.60	5.86	2.48	
700.00	699.50	N 13.32	W 13.24	699.98	699.96	S 33.05	E 3.87	159.73	49.43	41.39	6.15	5.83	
800.00	798.25	N 28.18	W 17.63	798.95	798.92	S 31.77	E 4.55	159.65	63.93	55.57	7.65	11.38	
900.00	894.55	N 52.85	W 27.78	895.61	895.57	S 30.36	E 5.31	158.54	89.55	80.92	10.38	18.75	
1000.00	986.23	N 87.40	W 47.35	987.85	987.79	S 28.95	E 5.84	156.23	127.95	118.65	13.77	26.66	
1100.00	1071.99	N 131.23	W 74.02	1074.45	1074.38	S 27.66	E 5.97	154.00	177.91	167.65	17.35	33.73	
1200.00	1151.22	N 184.29	W 104.01	1154.83	1154.75	S 26.49	E 5.76	153.06	237.68	226.72	21.68	39.65	
1300.00	1223.77	N 243.95	W 138.18	1228.83	1228.74	S 25.44	E 5.29	152.76	305.25	293.02	24.96	45.36	
1400.00	1289.41	N 308.83	W 176.59	1296.06	1295.97	S 24.50	E 4.64	153.37	379.46	365.66	27.50	50.43	
1500.00	1349.46	N 376.07	W 219.81	1357.50	1357.40	S 23.63	E 4.00	154.35	458.17	442.56	29.34	53.97	
1600.00	1403.36	N 441.99	W 272.09	1412.86	1412.75	S 22.85	E 3.44	159.49	540.44	522.74	30.52	58.72	
1700.00	1449.13	N 503.82	W 335.85	1460.16	1460.04	S 22.18	E 2.96	164.61	625.77	605.72	31.22	64.22	
1800.00	1489.72	N 561.30	W 406.87	1502.27	1502.15	S 21.58	E 2.54	164.28	712.41	690.04	31.84	65.34	
1900.00	1531.62	N 614.22	W 480.63	1545.65	1545.51	S 20.95	E 2.12	161.12	797.92	773.37	32.50	63.13	
2000.00	1577.03	N 660.31	W 556.85	1592.45	1592.31	S 20.27	E 1.66	158.13	880.54	853.87	33.02	61.22	
2100.00	1624.73	N 702.35	W 634.02	1641.48	1641.34	S 19.56	E 1.19	155.58	961.73	932.87	33.33	60.39	
2200.00	1673.27	N 741.06	W 712.41	1691.30	1691.15	S 18.83	E 0.72	152.74	1042.26	1011.92	34.36	59.93	
2300.00	1720.58	N 781.72	W 790.56	1739.90	1739.74	S 18.11	E 0.26	151.95	1124.94	1082.85	35.06	62.14	
2400.00	1766.02	N 822.13	W 869.94	1786.01	1785.84	S 17.47	W 0.18	149.90	1209.05	1175.25	35.77	62.01	
2500.00	1811.22	N 862.16	W 949.65	1831.74	1831.56	S 16.93	W 0.68	149.34	1293.73	1258.36	36.57	62.62	
2600.00	1855.94	N 900.58	W 1030.42	1877.01	1876.83	S 16.49	W 1.23	147.73	1378.66	1341.60	37.20	62.61	
2700.00	1901.07	N 939.04	W 1110.95	1922.72	1922.53	S 16.16	W 1.84	145.49	1463.89	1425.30	37.94	61.76	
2800.00	1947.55	N 976.69	W 1191.08	1969.77	1969.57	S 15.92	W 2.53	144.30	1548.68	1508.57	38.60	61.54	
2900.00	1993.13	N 1012.48	W 1272.57	2015.99	2015.79	S 15.80	W 3.27	144.72	1633.71	1591.95	39.13	62.44	

3000.00	2037.40	N 1048.12	W 1354.85	2054.42	2054.22	S 15.79	W 3.92	143.83	1719.65	1676.17	39.55	63.25
3100.00	2081.19	N 1083.86	W 1437.34	2077.47	2077.26	S 16.04	W 4.22	143.19	1806.55	1761.44	40.05	64.01
3200.00	2124.46	N 1122.09	W 1518.98	2099.30	2099.08	S 16.54	W 4.39	140.65	1895.02	1848.15	40.43	64.98
3300.00	2167.66	N 1161.81	W 1599.95	2123.87	2123.64	S 17.43	W 4.48	140.01	1984.45	1936.00	40.96	65.10
3400.00	2211.53	N 1201.20	W 1680.72	2151.35	2151.09	S 18.78	W 4.60	139.12	2073.97	2023.96	41.47	64.98
3500.00	2256.21	N 1240.95	W 1760.86	2179.98	2179.66	S 20.59	W 4.76	136.91	2163.62	2111.96	41.89	64.64
3600.00	2301.68	N 1282.35	W 1839.72	2210.77	2210.36	S 22.87	W 4.96	135.01	2253.50	2200.16	42.24	64.51
3700.00	2347.74	N 1324.32	W 1917.93	2242.12	2241.60	S 25.54	W 5.20	134.44	2343.48	2288.43	42.56	64.77
3800.00	2394.11	N 1365.84	W 1996.20	2276.34	2275.63	S 29.00	W 5.67	134.74	2433.48	2376.74	42.89	64.20
3900.00	2441.28	N 1406.27	W 2074.56	2315.26	2314.29	S 33.50	W 6.46	134.68	2523.11	2464.70	43.20	63.89
4000.00	2487.94	N 1446.78	W 2153.18	2355.33	2354.02	S 38.54	W 7.50	134.58	2613.05	2552.86	43.41	64.86
4100.00	2533.68	N 1487.71	W 2232.12	2394.19	2392.51	S 43.78	W 8.70	134.34	2703.52	2641.50	43.59	65.15
4200.00	2579.55	N 1529.21	W 2310.70	2432.65	2430.57	S 49.19	W 9.97	133.33	2794.08	2730.27	43.79	64.95
4300.00	2625.94	N 1570.28	W 2389.19	2471.46	2468.94	S 54.83	W 11.33	133.76	2884.42	2818.93	44.05	64.77
4400.00	2671.92	N 1611.02	W 2468.09	2509.79	2506.81	S 60.60	W 12.74	134.55	2974.95	2907.73	44.25	65.02
4500.00	2718.31	N 1649.90	W 2547.69	2550.25	2546.74	S 66.90	W 14.32	135.15	3065.10	2996.23	44.50	64.22
4600.00	2765.80	N 1687.91	W 2627.07	2594.10	2589.99	S 73.94	W 16.16	134.30	3154.66	3084.10	44.71	63.76
4700.00	2813.55	N 1727.26	W 2705.62	2638.01	2633.25	S 81.21	W 18.15	132.52	3244.32	3172.01	44.87	63.87
4800.00	2861.49	N 1768.00	W 2783.35	2680.19	2674.76	S 88.41	W 20.20	132.03	3334.08	3260.05	45.03	63.95
4900.00	2909.41	N 1808.52	W 2861.21	2719.58	2713.45	S 95.44	W 22.28	131.60	3423.89	3348.12	45.19	63.75
5000.00	2958.09	N 1849.70	W 2938.25	2759.28	2752.39	S 102.87	W 24.54	130.65	3513.48	3435.97	45.33	63.66
5100.00	3006.63	N 1891.54	W 3015.01	2797.65	2789.94	S 110.38	W 26.89	130.59	3603.26	3524.00	45.46	64.24
5200.00	3054.44	N 1934.27	W 3091.74	2831.28	2822.81	S 117.20	W 29.03	129.15	3693.56	3612.45	45.53	64.86
5300.00	3102.57	N 1978.14	W 3167.63	2864.55	2855.26	S 124.18	W 31.20	129.03	3783.93	3701.07	45.67	64.37
5400.00	3151.68	N 2021.65	W 3243.10	2898.20	2888.04	S 131.46	W 33.44	128.61	3873.93	3789.34	45.80	64.21
5500.00	3200.93	N 2065.66	W 3318.18	2934.26	2923.10	S 139.52	W 35.92	128.25	3963.99	3877.63	45.90	64.60
5600.00	3250.17	N 2110.60	W 3392.71	2972.97	2960.64	S 148.55	W 38.78	127.12	4054.19	3965.97	45.96	64.75
5700.00	3298.98	N 2154.81	W 3467.96	3011.23	2997.62	S 157.85	W 41.83	130.09	4144.58	4054.67	46.10	65.04
5800.00	3347.21	N 2198.53	W 3543.87	3048.87	3033.89	S 167.37	W 45.05	129.25	4235.26	4143.50	46.16	65.45
5900.00	3395.17	N 2243.38	W 3619.29	3085.70	3069.27	S 177.05	W 48.40	128.58	4326.19	4232.57	46.21	65.94
6000.00	3442.75	N 2288.69	W 3694.68	3129.50	3111.19	S 188.98	W 52.66	128.78	4417.36	4321.87	46.26	66.02
6100.00	3490.82	N 2333.97	W 3769.77	3180.29	3159.64	S 203.27	W 58.04	128.74	4508.24	4410.89	46.31	65.73
6200.00	3538.67	N 2379.68	W 3844.74	3230.07	3206.93	S 217.73	W 63.77	128.59	4599.17	4499.93	46.34	66.00
6300.00	3586.50	N 2425.93	W 3919.40	3272.07	3246.73	S 230.14	W 68.81	128.27	4690.12	4588.98	46.37	66.12
6400.00	3634.34	N 2472.46	W 3993.87	3313.96	3286.40	S 242.62	W 73.92	128.99	4781.08	4678.11	46.43	65.80
6500.00	3682.84	N 2517.74	W 4068.69	3356.94	3327.04	S 255.52	W 79.26	129.93	4871.66	4766.93	46.52	65.17
6538.00	3701.45	N 2534.77	W 4097.10	3373.49	3342.68	S 260.51	W 81.34	130.07	4905.99	4800.59	46.55	64.99
Field:	Lobitos			Well:	Well LO16-22							
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-22							
Slot:	Slot #22			Trajectory:	LO16-22 Gyro + SS							
				Type:	DEF SVY							
Coordinate System:	UTM Zone 17S - WGS84, Meters											
Reference Point:												
Northing (m)	Easting (m)		Elevation (ft)		Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)			
N 9505992.250	E 459451.760		50.00 above MSL		0.000		0.000		2.500			
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma											
Surveying Prog:												
MD From (ft)	MD To (ft)		EOU Freq		Survey Tool Type							
0.00	2017.00		Act-Stns		SLB_NSG+MSHOT							
2017.00	8002.00		Act-Stns		SLB_MWD-POOR							
Subject Trajectory					Offset Trajectory				Ct-Ct	EOU	Sep	Inter.
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle
Major EOU radii used. All local minima indicated.												
Results highlighted: Separation Factor <= 1.50												
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 16.01	W 15.34	223.77	22.17	19.67	8.87	0.00
100.00	100.00	S 0.71	E 0.31	100.16	100.16	S 15.89	W 15.02	225.30	21.58	17.86	5.80	0.70
200.00	199.99	S 0.60	W 0.69	200.31	200.30	S 15.43	W 13.81	221.49	19.81	15.97	5.16	2.05
300.00	299.96	N 0.38	W 2.63	300.27	300.24	S 14.76	W 12.00	211.74	17.81	13.60	4.23	1.82
400.00	399.91	N 2.15	W 5.29	400.11	400.06	S 14.23	W 10.22	196.72	17.10	12.00	3.35	2.77
500.00	499.86	N 3.89	W 7.99	500.05	499.98	S 13.66	W 8.49	181.66	17.56	11.37	2.84	2.26
600.00	599.79	N 6.50	W 10.44	599.93	599.86	S 13.09	W 7.07	170.27	19.88	12.75	2.79	2.91

700.00	699.50	N 13.32	W 13.24	699.80	699.71	S 12.31	W 6.18	164.62	26.58	18.45	3.27	5.74
800.00	798.25	N 28.18	W 17.63	798.75	798.66	S 11.29	W 5.86	163.43	41.19	32.56	4.77	11.42
900.00	894.55	N 52.85	W 27.78	895.89	895.79	S 10.18	W 6.58	161.79	66.51	56.71	6.79	18.16
1000.00	986.23	N 87.40	W 47.35	990.26	990.06	S 8.79	W 10.69	160.20	103.01	93.27	10.58	24.75
1100.00	1071.99	N 131.23	W 74.02	1076.37	1075.84	S 8.51	W 18.02	159.76	150.60	140.39	14.76	32.60
1200.00	1151.22	N 184.29	W 104.01	1151.89	1150.75	S 11.15	W 27.13	161.00	210.02	199.57	20.10	40.19
1300.00	1223.77	N 243.95	W 138.18	1219.24	1217.12	S 16.14	W 37.41	162.94	279.01	267.59	24.43	46.97
1400.00	1289.41	N 308.83	W 176.59	1283.21	1279.72	S 22.35	W 49.00	165.73	355.04	342.02	27.28	51.69
1500.00	1349.46	N 376.07	W 219.81	1343.97	1338.74	S 29.02	W 61.83	168.43	434.94	420.10	29.30	54.32
1600.00	1403.36	N 441.99	W 272.09	1403.22	1395.72	S 36.06	W 76.41	174.43	516.61	499.63	30.44	58.08
1700.00	1449.13	N 503.82	W 335.85	1457.61	1447.46	S 43.07	W 91.66	179.10	598.93	579.58	30.94	58.76
1800.00	1489.72	N 561.30	W 406.87	1514.31	1500.74	S 50.97	W 109.35	177.56	680.82	659.06	31.29	57.75
1900.00	1531.62	N 614.22	W 480.83	1574.37	1556.70	S 59.53	W 129.41	173.09	760.21	736.20	31.67	53.75
2000.00	1577.03	N 660.31	W 556.85	1638.63	1616.36	S 68.65	W 151.48	169.29	835.01	808.81	31.87	50.33
2100.00	1624.73	N 702.35	W 634.02	1706.17	1678.97	S 78.25	W 174.91	166.59	907.22	878.76	31.87	48.58
2200.00	1673.27	N 741.06	W 712.41	1771.74	1739.72	S 87.53	W 197.79	164.35	977.65	947.65	32.58	48.05
2300.00	1720.58	N 781.72	W 790.56	1845.33	1807.90	S 97.61	W 223.60	164.09	1049.90	1018.05	32.96	49.94
2400.00	1766.02	N 822.13	W 869.94	1912.42	1870.04	S 106.61	W 247.22	162.36	1123.01	1089.37	33.38	49.60
2500.00	1811.22	N 862.16	W 949.65	1985.88	1938.05	S 116.17	W 273.29	161.33	1196.10	1160.77	33.85	49.35
2600.00	1855.94	N 900.58	W 1030.42	2050.83	1998.13	S 124.33	W 296.55	159.99	1268.55	1231.32	34.08	49.28
2700.00	1901.07	N 939.04	W 1110.95	2107.95	2051.03	S 131.71	W 316.81	158.31	1341.51	1301.65	33.66	48.83
2800.00	1947.55	N 976.69	W 1191.08	2176.03	2114.15	S 140.72	W 340.69	157.13	1414.05	1371.55	33.27	48.40
2900.00	1993.13	N 1012.48	W 1272.57	2260.72	2192.66	S 151.13	W 370.63	156.58	1485.70	1442.01	34.01	48.17
3000.00	2037.40	N 1048.12	W 1354.85	2346.25	2272.00	S 160.55	W 401.21	155.58	1557.35	1511.66	34.08	48.26
3100.00	2081.19	N 1083.86	W 1437.34	2423.14	2343.28	S 168.18	W 428.99	154.52	1628.82	1580.56	33.75	48.14
3200.00	2124.46	N 1122.09	W 1518.98	2488.13	2403.49	S 174.62	W 452.61	153.48	1701.90	1650.75	33.27	49.17
3300.00	2167.66	N 1161.81	W 1599.95	2552.68	2463.23	S 181.16	W 476.17	152.60	1775.90	1722.18	33.06	48.85
3400.00	2211.53	N 1201.20	W 1680.72	2617.80	2523.45	S 187.90	W 500.03	151.69	1849.57	1793.38	32.92	48.45
3500.00	2256.21	N 1240.95	W 1760.86	2688.92	2589.13	S 195.38	W 526.26	150.41	1923.05	1863.92	32.52	47.96
3600.00	2301.68	N 1282.35	W 1839.72	2764.20	2658.51	S 203.27	W 554.39	149.40	1996.61	1934.33	32.06	47.60
3700.00	2347.74	N 1324.32	W 1917.93	2840.52	2728.69	S 211.21	W 583.30	148.97	2069.83	2004.51	31.69	47.42
3800.00	2394.11	N 1365.84	W 1996.20	2920.00	2801.62	S 219.39	W 613.82	148.49	2142.43	2074.02	31.32	46.27
3900.00	2441.28	N 1406.27	W 2074.56	3006.05	2880.58	S 227.60	W 647.02	148.03	2213.68	2141.93	30.85	45.46
4000.00	2487.94	N 1446.78	W 2153.18	3092.83	2960.26	S 235.05	W 680.57	148.04	2284.78	2209.71	30.44	46.02
4100.00	2533.68	N 1487.71	W 2232.12	3171.71	3032.74	S 241.13	W 711.12	147.78	2356.14	2277.85	30.09	46.07
4200.00	2579.55	N 1529.21	W 2310.70	3239.61	3095.15	S 246.23	W 737.37	147.22	2427.64	2346.28	29.84	45.94
4300.00	2625.94	N 1570.28	W 2389.19	3307.88	3157.93	S 251.35	W 763.68	147.01	2498.73	2414.48	29.66	45.66
4400.00	2671.92	N 1611.02	W 2468.09	3375.85	3220.47	S 256.42	W 789.81	147.04	2570.01	2482.87	29.49	45.79
4500.00	2718.31	N 1649.90	W 2547.69	3450.92	3289.59	S 261.93	W 818.59	146.60	2640.31	2550.18	29.30	44.76
4600.00	2765.80	N 1687.91	W 2627.07	3529.84	3362.29	S 267.39	W 848.82	145.98	2709.46	2616.27	29.07	44.24
4700.00	2813.55	N 1727.26	W 2705.62	3608.93	3435.19	S 272.51	W 879.06	145.38	2778.82	2682.56	28.87	44.40
4800.00	2861.49	N 1766.00	W 2783.35	3690.74	3510.65	S 277.37	W 910.28	145.06	2848.40	2749.06	28.67	44.33
4900.00	2909.41	N 1808.52	W 2861.21	3775.19	3588.69	S 281.64	W 942.27	144.64	2917.62	2815.18	28.48	43.90
5000.00	2958.09	N 1849.70	W 2938.25	3860.61	3667.77	S 285.16	W 974.38	144.14	2986.31	2880.81	28.31	43.59
5100.00	3006.63	N 1891.54	W 3015.01	3944.55	3745.60	S 287.86	W 1005.70	144.06	3055.02	2946.49	28.15	43.91
5200.00	3054.44	N 1934.27	W 3091.74	4027.01	3822.13	S 289.95	W 1036.33	143.65	3124.29	3012.68	27.99	44.28
5300.00	3102.57	N 1978.14	W 3167.63	4121.73	3910.08	S 291.64	W 1071.45	143.21	3193.43	3078.67	27.83	43.26
5400.00	3151.68	N 2021.65	W 3243.10	4233.87	4014.11	S 292.46	W 1113.33	142.79	3261.11	3143.01	27.61	42.30
5500.00	3200.93	N 2065.66	W 3318.18	4448.65	4212.62	S 286.73	W 1195.03	142.35	3326.41	3203.52	27.07	40.27
5600.00	3250.17	N 2110.60	W 3392.71	4490.90	4251.55	S 284.79	W 1211.34	142.05	3391.02	3265.73	27.06	40.86
5700.00	3298.98	N 2154.81	W 3467.96	4512.76	4271.78	S 284.08	W 1229.59	142.62	3456.84	3329.59	27.16	41.98
5800.00	3347.21	N 2198.53	W 3543.87	4533.96	4291.48	S 283.85	W 1227.40	142.45	3524.05	3394.70	27.24	43.11
5900.00	3395.17	N 2243.38	W 3619.29	4554.47	4310.62	S 283.47	W 1234.78	142.33	3592.90	3461.43	27.33	44.31
6000.00	3442.75	N 2288.69	W 3694.68	4574.32	4329.20	S 283.52	W 1241.76	142.30	3663.18	3529.63	27.43	45.17
6100.00	3490.82	N 2333.97	W 3769.77	4593.72	4347.42	S 283.79	W 1248.42	142.12	3734.12	3598.52	27.54	45.71
6200.00	3538.67	N 2379.68	W 3844.74	4612.54	4365.14	S 284.25	W 1254.73	142.05	3806.27	3668.60	27.65	46.76
6300.00	3586.50	N 2425.93	W 3919.40	4675.05	4424.17	S 286.17	W 1275.21	141.82	3879.29	3739.03	27.66	46.96
6400.00	3634.34	N 2472.46	W 3993.87	4792.52	4535.18	S 288.38	W 1313.58	141.72	3951.93	3808.48	27.55	45.98
6500.00	3682.84	N 2517.74	W 4068.69	4941.09	4675.08	S 289.14	W 1363.57	141.53	4022.53	3875.54	27.37	44.29
6538.00	3701.45	N 2534.77	W 4097.10	5009.66	4739.53	S 288.48	W 1386.98	141.39	4048.84	3900.35	27.27	43.56
Field:	Lobitos				Well:		Well LO16-23					

**GEOSCIENCES
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DATE

Structure: Platform LO16 (WGS84)		Borehole:		Borehole LO16-23									
Slot:	Slot #23	Trajectory:		LO16-23 Gyro + MWD									
		Type:		DEF SVY									
Coordinate System:				UTM Zone 17S - WGS84, Meters									
Reference Point:													
Northing (m)		Easting (m)		Elevation (ft)		Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)			
N 9505997.420		E 459458.220		50.00 above MSL		0.000		0.000		2.500			
Trajectory Error Model:				SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma									
Surveying Prog:													
MD From (ft)		MD To (ft)		EOU Freq		Survey Tool Type							
0.00		2017.00		Act-Stns		SLB_NSG+MSHOT							
2017.00		10004.00		Act-Stns		SLB_MWD-STD							
Subject Trajectory				Offset Trajectory				Ct-Ct		EOU		Sep	
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Inter. Angle	
Major EOU radii used. All local minima indicated.													
Results highlighted: Separation Factor <= 1.50													
0.00	0.00	N 0.00	E 0.00	0.00	0.00	N 0.95	E 5.88	80.83	5.95	3.45	2.38	0.00	
100.00	100.00	S 0.71	E 0.31	100.06	100.05	N 0.73	E 5.47	74.38	5.35	1.63	1.44	0.69	
200.00	199.99	S 0.60	W 0.69	200.11	200.09	S 0.11	E 3.89	83.90	4.60	0.76	1.20	1.18	
300.00	299.96	N 0.38	W 2.63	300.06	300.03	S 1.37	E 1.66	112.28	4.64	0.33	1.08	1.29	
400.00	399.91	N 2.15	W 5.29	400.01	399.93	S 2.80	W 0.33	134.97	7.01	1.54	1.28	1.93	
500.00	499.86	N 3.89	W 7.99	499.98	499.87	S 4.21	W 2.19	144.44	9.97	3.46	1.53	1.67	
600.00	599.79	N 6.50	W 10.44	599.93	599.80	S 5.06	W 3.76	149.99	13.35	5.95	1.80	2.93	
700.00	699.50	N 13.32	W 13.24	699.69	699.55	S 5.69	W 5.30	157.30	20.59	12.32	2.49	6.15	
800.00	798.25	N 28.18	W 17.63	798.46	798.31	S 6.00	W 6.80	162.43	35.85	26.97	4.04	11.90	
900.00	894.55	N 52.85	W 27.78	894.85	894.69	S 6.24	W 8.12	162.02	62.27	52.82	6.59	19.11	
1000.00	986.23	N 87.40	W 47.35	986.84	986.67	S 6.42	W 9.48	159.15	101.18	90.94	9.88	26.92	
1100.00	1071.99	N 131.23	W 74.02	1072.94	1072.76	S 6.50	W 10.71	156.47	151.59	140.22	13.34	34.12	
1200.00	1151.22	N 184.29	W 104.01	1152.47	1152.28	S 6.60	W 11.85	155.35	211.97	199.71	17.29	40.16	
1300.00	1223.77	N 243.95	W 138.18	1225.38	1225.19	S 6.71	W 12.92	154.92	280.22	266.52	20.45	45.96	
1400.00	1289.41	N 308.83	W 176.59	1291.36	1291.16	S 6.85	W 13.92	155.47	355.13	339.68	22.98	51.08	
1500.00	1349.46	N 376.07	W 219.81	1352.19	1351.98	S 7.00	W 14.88	156.35	434.45	417.09	25.02	54.55	
1600.00	1403.36	N 441.99	W 272.09	1407.40	1407.19	S 7.11	W 15.82	161.47	517.08	497.57	26.50	59.10	
1700.00	1449.13	N 503.82	W 335.85	1454.15	1453.93	S 7.20	W 16.69	166.53	602.52	580.52	27.39	64.46	
1800.00	1489.72	N 561.30	W 406.87	1495.80	1495.56	S 7.34	W 17.53	166.00	689.19	664.73	28.17	65.48	
1900.00	1531.62	N 614.22	W 480.63	1540.26	1540.01	S 7.58	W 18.57	162.46	774.73	747.92	28.89	62.94	
2000.00	1577.03	N 660.31	W 556.85	1591.12	1590.83	S 8.13	W 20.39	159.09	857.20	828.08	29.43	60.37	
2100.00	1624.73	N 702.35	W 634.02	1644.61	1644.24	S 9.11	W 23.12	156.36	937.94	906.42	29.75	58.87	
2200.00	1673.27	N 741.06	W 712.41	1699.27	1698.75	S 10.80	W 26.91	153.54	1017.77	984.54	30.63	57.82	
2300.00	1720.58	N 781.72	W 790.56	1755.24	1754.43	S 13.39	W 31.95	152.81	1099.47	1064.26	31.23	59.37	
2400.00	1766.02	N 822.13	W 869.94	1812.17	1810.84	S 17.16	W 38.59	150.84	1182.18	1145.04	31.83	58.46	
2500.00	1811.22	N 862.16	W 949.65	1896.27	1893.46	S 24.82	W 52.18	149.70	1264.50	1225.40	32.34	56.60	
2600.00	1855.94	N 900.58	W 1030.42	1986.74	1980.78	S 36.03	W 72.90	148.08	1345.24	1303.99	32.62	54.26	
2700.00	1901.07	N 939.04	W 1110.95	2119.76	2104.52	S 58.55	W 115.87	146.36	1423.64	1380.91	33.32	49.74	
2800.00	1947.55	N 976.69	W 1191.08	2207.65	2182.27	S 77.65	W 152.07	146.34	1498.76	1454.51	33.87	48.33	
2900.00	1993.13	N 1012.48	W 1272.57	2279.91	2243.63	S 96.48	W 185.23	147.44	1573.17	1527.22	34.24	48.16	
3000.00	2037.40	N 1048.12	W 1354.85	2342.01	2294.53	S 114.87	W 215.69	147.91	1648.13	1600.37	34.50	49.11	
3100.00	2081.19	N 1083.86	W 1437.34	2417.46	2354.38	S 139.50	W 254.44	148.35	1723.52	1673.85	34.70	49.30	
3200.00	2124.46	N 1122.09	W 1518.98	2499.77	2416.09	S 169.18	W 300.10	148.57	1799.46	1747.59	34.69	50.99	
3300.00	2167.66	N 1161.81	W 1599.95	2575.05	2470.68	S 197.49	W 343.53	149.24	1875.66	1821.73	34.78	50.63	
3400.00	2211.53	N 1201.20	W 1680.72	2652.25	2525.22	S 227.29	W 389.31	149.84	1951.08	1895.09	34.85	50.17	
3500.00	2256.21	N 1240.95	W 1760.86	2732.90	2581.93	S 258.10	W 437.87	149.98	2025.85	1967.71	34.84	49.99	
3600.00	2301.68	N 1282.35	W 1839.72	2808.46	2635.17	S 286.38	W 483.22	150.24	2100.52	2040.22	34.83	50.09	
3700.00	2347.74	N 1324.32	W 1917.93	2875.26	2682.39	S 311.10	W 523.48	150.91	2175.10	2112.69	34.85	50.13	
3800.00	2394.11	N 1365.84	W 1996.20	2942.35	2730.01	S 335.71	W 563.84	151.42	2249.39	2184.92	34.89	49.07	
3900.00	2441.28	N 1406.27	W 2074.56	3002.33	2772.76	S 357.62	W 599.77	151.85	2322.97	2256.44	34.92	48.69	
4000.00	2487.94	N 1446.78	W 2153.18	3061.88	2815.41	S 379.33	W 635.20	152.83	2397.12	2328.44	34.90	49.54	
4100.00	2533.68	N 1487.71	W 2232.12	3120.65	2857.70	S 400.72	W 669.95	153.39	2472.16	2401.30	34.89	49.85	
4200.00	2579.55	N 1529.21	W 2310.70	3192.87	2909.82	S 426.89	W 712.54	153.55	2547.46	2474.24	34.79	49.78	
4300.00	2625.94	N 1570.28	W 2389.19	3268.31	2964.27	S 453.98	W 757.18	154.09	2622.13	2546.63	34.73	49.05	
4400.00	2671.92	N 1611.02	W 2468.09	3337.26	3014.04	S 478.55	W 798.09	154.85	2696.72	2618.84	34.63	48.73	

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4500.00	2718.31	N 1649.90	W 2547.69	3405.56	3063.33	S 502.86	W 838.63	154.96	2770.26	2690.10	34.56	47.53	
4600.00	2765.80	N 1687.91	W 2627.07	3472.87	3111.92	S 526.79	W 878.59	154.91	2842.86	2760.41	34.48	47.39	
4700.00	2813.55	N 1727.26	W 2705.62	3536.67	3158.03	S 549.49	W 916.41	154.88	2916.08	2831.32	34.40	48.31	
4800.00	2861.49	N 1768.00	W 2783.35	3599.55	3203.52	S 571.87	W 953.60	155.14	2989.98	2902.95	34.36	48.59	
4900.00	2909.41	N 1808.52	W 2861.21	3665.14	3251.05	S 595.21	W 992.29	155.23	3063.90	2974.55	34.29	48.52	
5000.00	2958.09	N 1849.70	W 2938.25	3731.34	3299.17	S 618.66	W 1031.26	155.22	3137.80	3048.14	34.23	48.75	
5100.00	3006.63	N 1891.54	W 3015.01	3796.42	3346.59	S 641.62	W 1069.45	155.80	3212.11	3118.10	34.17	49.18	
5200.00	3054.44	N 1934.27	W 3091.74	3859.51	3392.72	S 663.79	W 1106.35	155.92	3287.27	3190.78	34.07	50.15	
5300.00	3102.57	N 1978.14	W 3167.63	3921.97	3438.53	S 685.65	W 1142.74	155.80	3362.86	3264.04	34.03	49.72	
5400.00	3151.68	N 2021.65	W 3243.10	3985.05	3485.03	S 707.58	W 1179.28	155.76	3437.90	3336.73	33.98	49.61	
5500.00	3200.93	N 2065.66	W 3318.18	4048.01	3531.87	S 729.19	W 1215.39	156.05	3513.18	3409.61	33.92	49.93	
5600.00	3250.17	N 2110.60	W 3392.71	4112.94	3580.59	S 751.17	W 1252.26	155.93	3588.93	3482.89	33.84	50.35	
5700.00	3298.98	N 2154.81	W 3467.96	4183.24	3633.80	S 774.54	W 1291.82	157.29	3664.54	3556.11	33.80	49.34	
5800.00	3347.21	N 2198.53	W 3543.87	4254.48	3688.18	S 797.77	W 1331.54	157.38	3740.11	3629.16	33.71	49.75	
5900.00	3395.17	N 2243.38	W 3619.29	4328.43	3745.04	S 821.41	W 1372.48	157.57	3816.21	3702.65	33.60	50.14	
6000.00	3442.75	N 2288.69	W 3694.68	4402.44	3802.29	S 844.62	W 1413.23	157.82	3892.55	3776.42	33.52	50.01	
6100.00	3490.82	N 2333.97	W 3769.77	4471.25	3855.68	S 865.98	W 1451.04	157.75	3968.54	3849.95	33.46	49.86	
6200.00	3538.67	N 2379.68	W 3844.74	4539.71	3908.76	S 887.18	W 1488.71	157.98	4044.78	3923.70	33.41	50.18	
6300.00	3586.50	N 2425.93	W 3919.40	4593.05	3950.13	S 903.70	W 1518.06	157.99	4121.29	3997.89	33.40	50.57	
6400.00	3634.34	N 2472.46	W 3993.87	4639.18	3986.03	S 918.04	W 1543.22	158.09	4198.20	4072.61	33.43	50.40	
6500.00	3682.84	N 2517.74	W 4068.69	4685.68	4022.35	S 932.57	W 1568.36	158.06	4274.52	4146.81	33.47	49.89	
6538.00	3701.45	N 2534.77	W 4097.10	4705.16	4037.61	S 938.67	W 1578.83	158.02	4303.43	4174.89	33.48	49.78	
Field:	Lobitos			Well:	Well LO16-24								
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-24								
Slot:	Slot #24			Trajectory:	LO16-24 MWD Survey								
				Type:	DEF SVY								
Coordinate System:	UTM Zone 17S - WGS84, Meters												
Reference Point:													
Northing (m)	Easting (m)			Elevation (ft)				Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505990.930	E 459463.390			50.00 above MSL				0.000		0.000		2.500	
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma												
Surveying Prog:													
MD From (ft)	MD To (ft)			EOU Freq				Survey Tool Type					
0.00	10147.00			Act-Stns				SLB_MWD-STD					
Subject Trajectory				Offset Trajectory				Ct-Ct	EOU	Sep	Inter.		
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle	
Major EOU radii used. All local minima indicated.													
Results highlighted: Separation Factor <= 1.50													
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 20.36	E 22.83	131.72	30.59	28.09	12.24	0.00	
100.00	100.00	S 0.71	E 0.31	99.90	99.90	S 20.48	E 22.94	131.15	30.05	24.94	5.88	0.32	
200.00	199.99	S 0.60	W 0.69	199.78	199.78	S 20.85	E 23.28	130.20	31.37	26.12	5.97	1.57	
300.00	299.96	N 0.38	W 2.63	299.63	299.63	S 21.46	E 23.84	129.54	34.31	28.86	6.29	1.46	
400.00	399.91	N 2.15	W 5.29	399.42	399.40	S 22.31	E 24.62	129.29	38.65	32.60	6.39	2.66	
500.00	499.86	N 3.89	W 7.99	499.17	499.15	S 23.41	E 25.62	129.09	43.30	36.63	6.49	2.56	
600.00	599.79	N 6.50	W 10.44	598.87	598.83	S 24.75	E 26.84	129.93	48.65	41.48	6.78	3.90	
700.00	699.50	N 13.32	W 13.24	698.57	698.52	S 25.94	E 28.31	133.19	57.17	49.27	7.23	6.92	
800.00	798.25	N 28.18	W 17.63	796.54	796.46	S 27.48	E 29.65	139.09	73.05	64.76	8.82	13.47	
900.00	894.55	N 52.85	W 27.78	889.68	889.52	S 31.07	E 30.47	144.54	102.28	93.66	11.87	22.38	
1000.00	986.23	N 87.40	W 47.35	975.69	975.30	S 37.40	E 30.29	148.03	147.39	138.14	15.93	31.68	
1100.00	1071.99	N 131.23	W 74.02	1049.51	1048.68	S 45.33	E 30.25	149.35	206.37	196.19	20.26	41.11	
1200.00	1151.22	N 184.29	W 104.01	1113.38	1111.88	S 54.61	E 30.48	150.64	276.96	266.09	25.48	48.80	
1300.00	1223.77	N 243.95	W 138.18	1167.61	1165.28	S 63.98	E 30.67	152.15	356.02	343.91	29.40	55.80	
1400.00	1289.41	N 308.83	W 176.59	1211.98	1208.80	S 72.67	E 30.73	155.13	441.61	427.98	32.39	61.78	
1500.00	1349.46	N 376.07	W 219.81	1248.71	1244.66	S 80.57	E 30.73	159.27	531.30	515.93	34.56	65.89	
1600.00	1403.36	N 441.99	W 272.09	1278.37	1273.50	S 87.52	E 30.55	173.15	623.56	606.17	35.85	70.12	
1700.00	1449.13	N 503.82	W 335.85	1301.39	1295.78	S 93.31	E 30.22	187.08	717.00	697.33	36.45	74.76	
1800.00	1489.72	N 561.30	W 406.87	1320.05	1313.76	S 98.27	E 29.82	188.98	810.37	788.43	36.93	75.39	
1900.00	1531.62	N 614.22	W 480.63	1339.30	1332.22	S 103.67	E 29.28	183.94	902.84	878.78	37.52	72.56	
2000.00	1577.03	N 660.31	W 556.85	1361.65	1353.55	S 110.31	E 28.48	179.82	993.18	967.05	38.01	69.95	
2100.00	1624.73	N 702.35	W 634.02	1388.81	1379.29	S 118.89	E 27.25	177.14	1082.56	1054.30	38.30	68.57	
2200.00	1673.27	N 741.06	W 712.41	1419.87	1408.52	S 129.23	E 25.40	174.48	1171.26	1141.55	39.42	67.92	

2300.00	1720.58	N 781.72	W 790.56	1449.59	1436.27	S 139.64	E 23.20	176.35	1261.72	1230.29	40.14	70.15	
2400.00	1766.02	N 822.13	W 869.94	1489.48	1473.17	S 154.32	E 19.49	173.95	1352.89	1319.77	40.85	69.30	
2500.00	1811.22	N 862.16	W 949.65	1594.17	1568.70	S 194.13	E 3.95	171.05	1443.57	1408.75	41.45	65.82	
2600.00	1855.94	N 900.58	W 1030.42	2223.49	2118.12	S 361.13	W 204.93	159.55	1530.38	1489.51	37.44	42.62	
2700.00	1901.07	N 939.04	W 1110.95	2384.47	2230.67	S 402.35	W 312.19	159.76	1595.61	1550.77	35.58	39.66	
2800.00	1947.55	N 976.69	W 1191.08	2535.16	2324.82	S 441.29	W 423.16	160.79	1656.11	1607.98	34.41	37.41	
2900.00	1993.13	N 1012.48	W 1272.57	2620.90	2375.37	S 463.10	W 488.89	161.74	1713.95	1663.12	33.72	36.48	
3000.00	2037.40	N 1048.12	W 1354.85	2698.22	2420.64	S 482.99	W 548.34	162.64	1772.46	1718.94	33.12	37.21	
3100.00	2081.19	N 1083.86	W 1437.34	2771.27	2462.97	S 502.22	W 604.68	163.22	1831.59	1775.48	32.64	37.72	
3200.00	2124.46	N 1122.09	W 1518.98	2845.55	2505.52	S 522.30	W 662.16	164.21	1892.97	1834.16	32.18	40.06	
3300.00	2167.66	N 1161.81	W 1599.95	2938.77	2558.16	S 547.51	W 734.84	164.71	1955.17	1893.55	31.73	39.48	
3400.00	2211.53	N 1201.20	W 1680.72	3031.27	2609.54	S 572.21	W 807.68	165.16	2016.33	1951.95	31.32	39.04	
3500.00	2256.21	N 1240.95	W 1760.86	3121.88	2659.09	S 596.19	W 879.65	165.56	2077.00	2009.79	30.90	39.46	
3600.00	2301.68	N 1282.35	W 1839.72	3208.49	2705.79	S 618.94	W 948.96	166.12	2138.14	2068.08	30.52	40.05	
3700.00	2347.74	N 1324.32	W 1917.93	3293.56	2751.10	S 641.20	W 1017.43	166.87	2199.29	2126.39	30.17	40.14	
3800.00	2394.11	N 1365.84	W 1996.20	3361.77	2787.05	S 659.16	W 1072.54	167.00	2260.13	2184.64	29.94	39.60	
3900.00	2441.28	N 1406.27	W 2074.56	3426.40	2820.78	S 676.65	W 1124.82	167.30	2320.47	2242.49	29.76	39.60	
4000.00	2487.94	N 1446.78	W 2153.18	3499.22	2858.47	S 696.83	W 1183.77	168.43	2381.62	2300.98	29.53	40.25	
4100.00	2533.68	N 1487.71	W 2232.12	3586.71	2903.90	S 720.79	W 1254.61	169.21	2443.38	2359.93	29.28	40.07	
4200.00	2579.55	N 1529.21	W 2310.70	3674.60	2949.78	S 744.37	W 1325.76	169.66	2505.26	2419.11	29.08	40.05	
4300.00	2625.94	N 1570.28	W 2389.19	3749.98	2989.40	S 764.32	W 1386.71	169.98	2566.59	2477.97	28.96	39.48	
4400.00	2671.92	N 1611.02	W 2468.09	3823.16	3028.19	S 783.66	W 1445.67	170.50	2628.07	2536.97	28.85	39.05	
4500.00	2718.31	N 1649.90	W 2547.69	3897.53	3067.95	S 803.29	W 1505.37	170.30	2688.28	2594.80	28.76	37.94	
4600.00	2765.80	N 1687.91	W 2627.07	3972.47	3108.37	S 823.06	W 1565.31	170.41	2747.67	2651.80	28.66	38.00	
4700.00	2813.55	N 1727.26	W 2705.62	4046.58	3148.68	S 842.59	W 1624.35	170.89	2808.13	2709.84	28.57	39.09	
4800.00	2861.49	N 1768.00	W 2783.35	4119.81	3188.83	S 861.86	W 1682.47	171.29	2869.71	2769.04	28.51	39.37	
4900.00	2909.41	N 1808.52	W 2861.21	4212.89	3239.68	S 886.41	W 1756.47	171.57	2931.24	2827.78	28.33	39.51	
5000.00	2958.09	N 1849.70	W 2938.25	4335.96	3300.61	S 919.54	W 1858.10	172.24	2992.12	2885.29	28.01	40.52	
5100.00	3006.63	N 1891.54	W 3015.01	4455.72	3351.85	S 952.44	W 1961.18	173.47	3052.53	2942.43	27.72	41.65	
5200.00	3054.44	N 1934.27	W 3091.74	4559.47	3389.73	S 981.32	W 2053.34	174.69	3113.09	2999.87	27.49	43.35	
5300.00	3102.57	N 1978.14	W 3167.63	4623.33	3413.46	S 998.87	W 2109.97	174.82	3174.57	3058.81	27.43	42.39	
5400.00	3151.68	N 2021.65	W 3243.10	4689.19	3440.61	S 1016.50	W 2167.31	175.11	3235.92	3117.64	27.36	41.73	
5500.00	3200.93	N 2065.66	W 3318.18	4756.43	3471.08	S 1033.99	W 2224.64	175.71	3297.97	3177.13	27.29	41.32	
5600.00	3250.17	N 2110.60	W 3392.71	4824.57	3504.73	S 1051.15	W 2281.35	176.07	3361.04	3237.57	27.22	41.42	
5700.00	3298.98	N 2154.81	W 3467.96	4894.48	3542.07	S 1068.11	W 2337.95	176.61	3423.92	3297.98	27.19	39.43	
5800.00	3347.21	N 2198.53	W 3543.87	4965.60	3582.91	S 1084.67	W 2393.77	176.99	3486.79	3358.23	27.12	39.74	
5900.00	3395.17	N 2243.38	W 3619.29	5039.44	3628.16	S 1101.09	W 2449.74	177.37	3550.72	3419.52	27.06	40.18	
6000.00	3442.75	N 2288.69	W 3694.68	5123.56	3681.08	S 1119.27	W 2512.55	177.52	3615.02	3481.21	27.01	40.06	
6100.00	3490.82	N 2333.97	W 3769.77	5208.19	3734.94	S 1137.18	W 2575.33	177.44	3679.02	3542.61	26.97	39.90	
6200.00	3538.67	N 2379.68	W 3844.74	5292.88	3789.44	S 1154.72	W 2637.73	177.72	3743.23	3604.22	26.93	40.12	
6300.00	3586.50	N 2425.93	W 3919.40	5377.55	3844.54	S 1171.88	W 2699.69	177.83	3807.68	3666.06	26.89	40.29	
6400.00	3634.34	N 2472.46	W 3993.87	5457.36	3897.08	S 1187.70	W 2757.64	177.69	3872.22	3728.09	26.87	39.82	
6500.00	3682.84	N 2517.74	W 4068.69	5536.57	3949.98	S 1203.11	W 2814.56	177.33	3935.59	3789.02	26.85	39.05	
6538.00	3701.45	N 2534.77	W 4097.10	5566.85	3970.39	S 1208.92	W 2836.15	177.22	3959.49	3812.00	26.85	38.89	
Field:	Lobitos			Well:	Well LO16-24								
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-24 S1								
Slot:	Slot #24			Trajectory:	LO16-24 S1 MWD Survey								
				Type:	DEF SVY								
Coordinate System:	UTM Zone 17S - WGS84, Meters												
Reference Point:													
Northing (m)	Easting (m)			Elevation (ft)				Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505990.930	E 459463.390			50.00 above MSL				0.000		0.000		2.500	
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma												
Surveying Prog:													
MD From (ft)	MD To (ft)			EOU Freq				Survey Tool Type					
0.00	11051.00			Act-Stns				SLB_MWD-STD					
Subject Trajectory				Offset Trajectory				Ct-Ct	EOU	Sep	Inter.		
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle	
Major EOU radii used. All local minima indicated.													
Results highlighted: Separation Factor <= 1.50													

0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 20.36	E 22.83	131.72	30.59	28.09	12.24	0.00	
100.00	100.00	S 0.71	E 0.31	99.90	99.90	S 20.48	E 22.94	131.15	30.05	24.94	5.88	0.32	
200.00	199.99	S 0.60	W 0.69	199.78	199.78	S 20.85	E 23.28	130.20	31.37	26.12	5.97	1.57	
300.00	299.96	N 0.38	W 2.63	299.63	299.63	S 21.46	E 23.84	129.54	34.31	28.86	6.29	1.46	
400.00	399.91	N 2.15	W 5.29	399.42	399.40	S 22.31	E 24.62	129.29	38.65	32.60	6.39	2.66	
500.00	499.86	N 3.89	W 7.99	499.17	499.15	S 23.41	E 25.62	129.09	43.30	36.63	6.49	2.56	
600.00	599.79	N 6.50	W 10.44	598.87	598.83	S 24.75	E 26.84	129.93	48.65	41.48	6.78	3.90	
700.00	699.50	N 13.32	W 13.24	698.57	698.52	S 25.94	E 28.31	133.19	57.17	49.27	7.23	6.92	
800.00	798.25	N 28.18	W 17.63	796.54	796.46	S 27.48	E 29.65	139.09	73.05	64.76	8.82	13.47	
900.00	894.55	N 52.85	W 27.78	889.68	889.52	S 31.07	E 30.47	144.54	102.28	93.66	11.87	22.38	
1000.00	986.23	N 87.40	W 47.35	975.69	975.30	S 37.40	E 30.29	148.03	147.39	138.14	15.93	31.68	
1100.00	1071.99	N 131.23	W 74.02	1049.51	1048.68	S 45.33	E 30.25	149.35	206.37	196.19	20.26	41.11	
1200.00	1151.22	N 184.29	W 104.01	1113.38	1111.88	S 54.61	E 30.48	150.64	276.96	266.09	25.48	48.80	
1300.00	1223.77	N 243.95	W 138.18	1167.61	1165.28	S 63.98	E 30.67	152.15	356.02	343.91	29.40	55.80	
1400.00	1289.41	N 308.83	W 176.59	1211.98	1208.80	S 72.67	E 30.73	155.13	441.61	427.98	32.39	61.78	
1500.00	1349.46	N 376.07	W 219.81	1248.71	1244.66	S 80.57	E 30.73	159.27	531.30	515.93	34.56	65.89	
1600.00	1403.36	N 441.99	W 272.09	1278.37	1273.50	S 87.52	E 30.55	173.15	623.56	606.17	35.85	70.12	
1700.00	1449.13	N 503.82	W 335.85	1301.39	1295.78	S 93.31	E 30.22	187.08	717.00	697.33	36.45	74.76	
1800.00	1489.72	N 561.30	W 406.87	1320.05	1313.76	S 98.27	E 29.82	188.98	810.37	788.43	36.93	75.39	
1900.00	1531.62	N 614.22	W 480.63	1339.30	1332.22	S 103.67	E 29.28	183.94	902.84	878.78	37.52	72.56	
2000.00	1577.03	N 680.31	W 556.85	1361.65	1353.55	S 110.31	E 28.48	179.82	993.18	967.05	38.01	69.95	
2100.00	1624.73	N 702.35	W 634.02	1388.81	1379.29	S 118.89	E 27.25	177.14	1082.56	1054.30	38.30	68.57	
2200.00	1673.27	N 741.06	W 712.41	1419.87	1408.52	S 129.23	E 25.40	174.48	1171.26	1141.55	39.42	67.92	
2300.00	1720.58	N 781.72	W 790.56	1449.59	1436.27	S 139.64	E 23.20	176.35	1261.72	1230.29	40.14	70.15	
2400.00	1766.02	N 822.13	W 869.94	1489.48	1473.17	S 154.32	E 19.49	173.95	1352.89	1319.77	40.85	69.30	
2500.00	1811.22	N 862.16	W 949.65	1594.17	1568.70	S 194.13	E 3.95	171.05	1443.57	1408.75	41.45	65.82	
2600.00	1855.94	N 900.58	W 1030.42	2223.49	2118.12	S 361.13	W 204.93	159.55	1530.38	1489.51	37.44	42.62	
2700.00	1901.07	N 939.04	W 1110.95	2384.47	2230.67	S 402.35	W 312.19	159.76	1595.61	1550.77	35.58	39.66	
2800.00	1947.55	N 976.69	W 1191.08	2535.16	2324.82	S 441.29	W 423.16	160.79	1656.11	1607.98	34.41	37.41	
2900.00	1993.13	N 1012.48	W 1272.57	2620.90	2375.37	S 463.10	W 488.89	161.74	1713.95	1663.12	33.72	36.48	
3000.00	2037.40	N 1048.12	W 1354.85	2698.22	2420.64	S 482.99	W 548.34	162.64	1772.46	1718.94	33.12	37.21	
3100.00	2081.19	N 1083.86	W 1437.34	2771.27	2462.97	S 502.22	W 604.68	163.22	1831.59	1775.48	32.64	37.72	
3200.00	2124.46	N 1122.09	W 1518.98	2845.55	2505.52	S 522.30	W 662.16	164.21	1892.97	1834.16	32.18	40.06	
3300.00	2167.66	N 1161.81	W 1599.95	2938.77	2558.16	S 547.51	W 734.84	164.71	1955.17	1893.55	31.73	39.48	
3400.00	2211.53	N 1201.20	W 1680.72	3031.27	2609.54	S 572.21	W 807.68	165.16	2016.33	1951.95	31.32	39.04	
3500.00	2256.21	N 1240.95	W 1760.86	3121.88	2659.09	S 596.19	W 879.65	165.56	2077.00	2009.79	30.90	39.46	
3600.00	2301.68	N 1282.35	W 1839.72	3208.49	2705.79	S 618.94	W 948.96	166.12	2138.14	2068.08	30.52	40.05	
3700.00	2347.74	N 1324.32	W 1917.93	3293.56	2751.10	S 641.20	W 1017.43	166.87	2199.29	2126.39	30.17	40.14	
3800.00	2394.11	N 1365.84	W 1996.20	3361.77	2787.05	S 659.16	W 1072.54	167.00	2260.13	2184.64	29.94	39.60	
3900.00	2441.28	N 1406.27	W 2074.56	3426.40	2820.78	S 676.65	W 1124.82	167.30	2320.47	2242.49	29.76	39.60	
4000.00	2487.94	N 1446.78	W 2153.18	3499.22	2858.47	S 696.83	W 1183.77	168.43	2381.62	2300.98	29.53	40.25	
4100.00	2533.68	N 1487.71	W 2232.12	3586.71	2903.90	S 720.79	W 1254.61	169.21	2443.38	2359.93	29.28	40.07	
4200.00	2579.55	N 1529.21	W 2310.70	3674.60	2949.78	S 744.37	W 1325.76	169.66	2505.26	2419.11	29.08	40.05	
4300.00	2625.94	N 1570.28	W 2389.19	3749.98	2989.40	S 764.32	W 1386.71	169.98	2566.59	2477.97	28.96	39.48	
4400.00	2671.92	N 1611.02	W 2468.09	3823.16	3028.19	S 783.66	W 1445.67	170.50	2628.07	2536.97	28.85	39.05	
4500.00	2718.31	N 1649.90	W 2547.69	3897.53	3067.95	S 803.29	W 1505.37	170.30	2688.28	2594.80	28.76	37.94	
4600.00	2765.80	N 1687.91	W 2627.07	3972.47	3108.37	S 823.06	W 1565.31	170.41	2747.67	2651.80	28.66	38.00	
4700.00	2813.55	N 1727.26	W 2705.62	4046.58	3148.68	S 842.59	W 1624.35	170.89	2808.13	2709.84	28.57	39.09	
4800.00	2861.49	N 1768.00	W 2783.35	4119.81	3188.83	S 861.86	W 1682.47	171.29	2869.71	2769.04	28.51	39.37	
4900.00	2909.41	N 1808.52	W 2861.21	4212.89	3239.68	S 886.41	W 1756.47	171.57	2931.24	2827.78	28.33	39.51	
5000.00	2958.09	N 1849.70	W 2938.25	4335.96	3300.61	S 919.54	W 1858.10	172.24	2992.12	2885.29	28.01	40.52	
5100.00	3006.63	N 1891.54	W 3015.01	4455.72	3351.85	S 952.44	W 1961.18	173.47	3052.53	2942.43	27.72	41.65	
5200.00	3054.44	N 1934.27	W 3091.74	4559.47	3389.73	S 981.32	W 2053.34	174.69	3113.09	2999.87	27.49	43.35	
5300.00	3102.57	N 1978.14	W 3167.63	4623.33	3413.46	S 998.87	W 2109.97	174.82	3174.57	3058.81	27.43	42.39	
5400.00	3151.68	N 2021.65	W 3243.10	4689.19	3440.61	S 1016.50	W 2167.31	175.11	3235.92	3117.64	27.36	41.73	
5500.00	3200.93	N 2065.66	W 3318.18	4756.43	3471.08	S 1033.99	W 2224.64	175.71	3297.97	3177.13	27.29	41.32	
5600.00	3250.17	N 2110.60	W 3392.71	4824.57	3504.73	S 1051.15	W 2281.35	176.07	3361.04	3237.57	27.22	41.42	
5700.00	3298.98	N 2154.81	W 3467.96	4894.48	3542.07	S 1068.11	W 2337.95	176.61	3423.92	3297.98	27.19	39.43	
5800.00	3347.21	N 2198.53	W 3543.87	4965.60	3582.91	S 1084.67	W 2393.77	176.99	3486.79	3358.23	27.12	39.74	
5900.00	3395.17	N 2243.38	W 3619.29	5039.44	3628.16	S 1101.09	W 2449.74	177.37	3550.72	3419.52	27.06	40.18	
6000.00	3442.75	N 2288.69	W 3694.68	5123.56	3681.08	S 1119.27	W 2512.55	177.52	3615.02	3481.21	27.01	40.06	
6100.00	3490.82	N 2333.97	W 3769.77	5208.19	3734.94	S 1137.18	W 2575.33	177.44	3679.02	3542.61	26.97	39.90	

DATE

6200.00	3538.67	N 2379.68	W 3844.74	5292.88	3789.44	S 1154.72	W 2637.73	177.72	3743.23	3604.22	26.93	40.12
6300.00	3586.50	N 2425.93	W 3919.40	5377.55	3844.54	S 1171.88	W 2699.69	177.83	3807.68	3666.06	26.89	40.29
6400.00	3634.34	N 2472.46	W 3993.87	5457.36	3897.08	S 1187.70	W 2757.64	177.69	3872.22	3728.09	26.87	39.82
6500.00	3682.84	N 2517.74	W 4068.69	5536.57	3949.98	S 1203.11	W 2814.56	177.33	3935.59	3789.02	26.85	39.05
6538.00	3701.45	N 2534.77	W 4097.10	5566.85	3970.39	S 1208.92	W 2836.15	177.22	3959.49	3812.00	26.85	38.89
Field:	Lobitos			Well:	Well LO16-25							
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-25							
Slot:	Slot #25			Trajectory:	LO 16-25 Gyro + MWD Surveys							
				Type:	DEF SVY							
Coordinate System:	UTM Zone 17S - WGS84, Meters											
Reference Point:												
Northing (m)	Easting (m)			Elevation (ft)			Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505997.130	E 459456.430			50.00 above MSL			0.000		0.000		2.500	
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma											
Surveying Prog:												
MD From (ft)	MD To (ft)			EOU Freq		Survey Tool Type						
0.00	730.00			Act-Stns		SLB_NSG+MSHOT						
730.00	5125.00			Act-Stns		SLB_MWD-STD						
Subject Trajectory				Offset Trajectory				Ct-Ct	EOU	Sep	Inter.	
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle
Major EOU radii used. All local minima indicated.												
Results highlighted: Separation Factor <= 1.50												
0.00	0.00	N 0.00	E 0.00	0.00	0.00	N 0.00	E 0.00	0.00	0.00	-2.50	0.00	0.00
100.00	100.00	S 0.71	E 0.31	100.00	100.00	S 0.71	E 0.31	0.00	0.00	-3.71	0.00	0.00
200.00	199.99	S 0.60	W 0.69	200.00	199.99	S 0.60	W 0.69	0.00	0.00	-3.84	0.00	0.00
300.00	299.96	N 0.38	W 2.63	300.00	299.96	N 0.38	W 2.63	0.00	0.00	-4.09	0.00	0.00
400.00	399.91	N 2.15	W 5.29	400.00	399.91	N 2.15	W 5.29	0.00	0.00	-5.11	0.00	0.00
500.00	499.86	N 3.89	W 7.99	500.00	499.86	N 3.89	W 7.99	0.00	0.00	-6.21	0.00	0.00
600.00	599.79	N 6.50	W 10.44	600.00	599.79	N 6.50	W 10.44	0.00	0.00	-7.06	0.00	0.00
700.00	699.50	N 13.32	W 13.24	700.00	699.50	N 13.32	W 13.24	0.00	0.00	-8.30	0.00	0.00
800.00	798.25	N 28.18	W 17.63	800.00	798.25	N 28.18	W 17.63	0.00	0.00	-8.75	0.00	0.00
900.00	894.55	N 52.85	W 27.78	900.00	894.55	N 52.85	W 27.78	0.00	0.00	-9.10	0.00	0.00
1000.00	986.23	N 87.40	W 47.35	1000.00	986.23	N 87.40	W 47.35	0.00	0.00	-10.07	0.00	0.00
1100.00	1071.99	N 131.23	W 74.02	1100.00	1071.99	N 131.23	W 74.02	0.00	0.00	-11.65	0.00	0.00
1200.00	1151.22	N 184.29	W 104.01	1200.00	1151.22	N 184.29	W 104.01	0.00	0.00	-12.77	0.00	0.00
1300.00	1223.77	N 243.95	W 138.18	1300.00	1223.77	N 243.95	W 138.18	0.00	0.00	-15.03	0.00	0.00
1400.00	1289.41	N 308.83	W 176.59	1400.00	1289.41	N 308.83	W 176.59	0.00	0.00	-17.90	0.00	N/A
1500.00	1349.46	N 376.07	W 219.81	1500.00	1349.46	N 376.07	W 219.81	0.00	0.00	-21.24	0.00	0.00
1600.00	1403.36	N 441.99	W 272.09	1600.00	1403.36	N 441.99	W 272.09	0.00	0.00	-25.16	0.00	0.00
1700.00	1449.13	N 503.82	W 335.85	1700.00	1449.13	N 503.82	W 335.85	0.00	0.00	-29.62	0.00	N/A
1800.00	1489.72	N 561.30	W 406.87	1800.00	1489.72	N 561.30	W 406.87	0.00	0.00	-34.09	0.00	0.00
1900.00	1531.62	N 614.22	W 480.63	1900.00	1531.50	N 615.06	W 480.10	26.81	1.00	-37.20	0.03	1.59
2000.00	1577.03	N 660.31	W 556.85	1999.97	1576.71	N 665.15	W 553.86	27.58	5.70	-36.44	0.14	3.51
2100.00	1624.73	N 702.35	W 634.02	2099.91	1625.67	N 712.26	W 627.14	34.68	12.10	-34.10	0.26	4.66
2200.00	1673.27	N 741.06	W 712.41	2199.83	1676.50	N 757.39	W 700.37	39.30	20.55	-28.96	0.42	4.09
2300.00	1720.58	N 781.72	W 790.56	2300.06	1728.34	N 800.50	W 774.53	48.84	25.88	-26.66	0.49	4.74
2400.00	1766.02	N 822.13	W 869.94	2399.87	1780.35	N 842.06	W 848.90	59.20	32.33	-23.39	0.58	4.58
2500.00	1811.22	N 862.16	W 949.65	2500.62	1832.08	N 883.26	W 924.89	65.28	38.64	-20.14	0.66	3.95
2600.00	1855.94	N 900.58	W 1030.42	2602.10	1881.18	N 923.86	W 1003.86	67.11	43.41	-18.66	0.70	1.59
2700.00	1901.07	N 939.04	W 1110.95	2702.58	1926.72	N 963.79	W 1084.04	66.02	44.66	-20.45	0.69	0.93
2800.00	1947.55	N 976.69	W 1191.08	2802.47	1972.50	N 1003.21	W 1163.60	63.50	45.62	-22.43	0.67	1.31
2900.00	1993.13	N 1012.48	W 1272.57	2902.58	2018.43	N 1042.44	W 1243.42	60.15	48.86	-22.34	0.69	2.62
3000.00	2037.40	N 1048.12	W 1354.85	3002.66	2063.88	N 1081.61	W 1323.52	58.80	52.96	-21.54	0.71	2.41
3100.00	2081.19	N 1083.86	W 1437.34	3102.25	2108.24	N 1121.50	W 1403.27	56.78	57.53	-20.29	0.74	2.97
3200.00	2124.46	N 1122.09	W 1518.98	3201.90	2151.83	N 1162.63	W 1482.88	56.77	60.79	-20.36	0.75	1.27
3300.00	2167.66	N 1161.81	W 1599.95	3301.76	2196.08	N 1203.80	W 1562.37	56.77	63.11	-21.12	0.75	1.33
3400.00	2211.53	N 1201.20	W 1680.72	3401.94	2241.02	N 1244.50	W 1642.12	56.88	65.07	-22.19	0.75	0.95
3500.00	2256.21	N 1240.95	W 1760.86	3501.97	2286.43	N 1284.49	W 1721.78	57.87	65.85	-24.55	0.73	0.55
3600.00	2301.68	N 1282.35	W 1839.72	3602.32	2332.43	N 1324.10	W 1801.69	59.70	64.30	-29.31	0.69	1.76
3700.00	2347.74	N 1324.32	W 1917.93	3702.78	2377.84	N 1363.20	W 1882.31	60.89	60.71	-36.15	0.63	2.35
3800.00	2394.11	N 1365.84	W 1996.20	3802.34	2423.03	N 1401.86	W 1962.16	61.29	57.37	-42.68	0.57	1.59

3900.00	2441.28	N 1406.27	W 2074.56	3902.02	2468.60	N 1440.91	W 2041.75	60.71	54.98	-48.23	0.53	1.38
4000.00	2487.94	N 1446.78	W 2153.18	4001.73	2513.56	N 1481.03	W 2121.19	59.74	53.42	-53.06	0.50	0.78
4100.00	2533.68	N 1487.71	W 2232.12	4101.11	2558.45	N 1521.86	W 2199.89	59.19	53.09	-56.73	0.48	0.20
4200.00	2579.55	N 1529.21	W 2310.70	4200.86	2604.11	N 1563.36	W 2278.27	59.30	53.12	-60.00	0.47	0.18
4300.00	2625.94	N 1570.28	W 2389.19	4300.99	2650.03	N 1604.88	W 2356.97	58.28	53.07	-63.25	0.46	0.43
4400.00	2671.92	N 1611.02	W 2468.09	4401.33	2696.18	N 1645.92	W 2436.05	57.84	53.23	-66.39	0.44	0.34
4500.00	2718.31	N 1649.90	W 2547.69	4501.71	2742.65	N 1686.02	W 2515.48	56.52	54.17	-68.63	0.44	0.74
4600.00	2765.80	N 1687.91	W 2627.07	4601.81	2789.15	N 1725.19	W 2595.00	55.06	54.43	-71.61	0.43	1.20
4700.00	2813.55	N 1727.26	W 2705.62	4701.37	2834.24	N 1765.48	W 2674.09	52.86	53.70	-75.71	0.41	2.16
4800.00	2861.49	N 1768.00	W 2783.35	4802.10	2879.52	N 1806.09	W 2754.37	50.23	51.15	-81.45	0.39	1.93
4900.00	2909.41	N 1808.52	W 2861.21	4902.41	2925.71	N 1844.73	W 2834.60	49.26	47.81	-88.04	0.35	2.50
5000.00	2958.09	N 1849.70	W 2938.25	5002.18	2971.48	N 1882.86	W 2914.64	47.70	42.85	-96.28	0.31	3.16
5100.00	3006.63	N 1891.54	W 3015.01	5101.41	3016.20	N 1922.17	W 2994.01	44.07	38.35	-104.12	0.27	2.63
5200.00	3054.44	N 1934.27	W 3091.74	5125.00	3026.71	N 1931.83	W 3012.79	43.32	83.72	-60.91	0.58	3.05
5300.00	3102.57	N 1978.14	W 3167.63	5125.00	3026.71	N 1931.83	W 3012.79	45.67	178.54	32.26	1.22	3.53
5400.00	3151.68	N 2021.65	W 3243.10	5125.00	3026.71	N 1931.83	W 3012.79	47.48	277.00	129.08	1.87	4.00
5500.00	3200.93	N 2065.66	W 3318.18	5125.00	3026.71	N 1931.83	W 3012.79	45.55	376.20	226.59	2.51	4.12
5600.00	3250.17	N 2110.60	W 3392.71	5125.00	3026.71	N 1931.83	W 3012.79	45.69	475.64	324.29	3.14	4.86
5700.00	3298.98	N 2154.81	W 3467.96	5125.00	3026.71	N 1931.83	W 3012.79	40.73	575.36	422.40	3.76	3.14
5800.00	3347.21	N 2198.53	W 3543.87	5125.00	3026.71	N 1931.83	W 3012.79	37.07	675.20	520.50	4.36	3.51
5900.00	3395.17	N 2243.38	W 3619.29	5125.00	3026.71	N 1931.83	W 3012.79	32.60	775.03	618.56	4.95	3.84
6000.00	3442.75	N 2288.69	W 3694.68	5125.00	3026.71	N 1931.83	W 3012.79	31.68	874.88	716.65	5.53	3.83
6100.00	3490.82	N 2333.97	W 3769.77	5125.00	3026.71	N 1931.83	W 3012.79	37.10	974.75	814.80	6.09	4.12
6200.00	3538.67	N 2379.68	W 3844.74	5125.00	3026.71	N 1931.83	W 3012.79	32.58	1074.63	912.92	6.65	4.27
6300.00	3586.50	N 2425.93	W 3919.40	5125.00	3026.71	N 1931.83	W 3012.79	32.86	1174.50	1011.00	7.18	4.61
6400.00	3634.34	N 2472.46	W 3993.87	5125.00	3026.71	N 1931.83	W 3012.79	37.79	1274.37	1109.16	7.71	4.42
6500.00	3682.84	N 2517.74	W 4068.69	5125.00	3026.71	N 1931.83	W 3012.79	53.34	1374.31	1207.45	8.24	4.25
6538.00	3701.45	N 2534.77	W 4097.10	5125.00	3026.71	N 1931.83	W 3012.79	58.80	1412.29	1244.80	8.43	4.31
Field:	Lobitos			Well:	Well LO16-26							
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-26							
Slot:	Slot #26			Trajectory:	LO16-26 Gyro + MWD							
				Type:	DEF SVY							
Coordinate System:	UTM Zone 17S - WGS84, Meters											
Reference Point:												
Northing (m)	Easting (m)		Elevation (ft)		Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)			
N 9505990.430	E 459452.050		50.00 above MSL		0.000		0.000		2.500			
Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma												
Surveying Prog:												
	MD From (ft)		MD To (ft)		EOU Freq		Survey Tool Type					
	0.00		2000.00		Act-Stns		SLB_NSG+MSHOT					
	2000.00		8095.00		Act-Stns		SLB_MWD-STD					
Subject Trajectory				Offset Trajectory				Ct-Ct	EOU	Sep	Inter.	
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle
Major EOU radii used. All local minima indicated.												
Results highlighted: Separation Factor <= 1.50												
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 21.98	W 14.39	213.20	26.27	23.77	10.51	0.00
100.00	100.00	S 0.71	E 0.31	100.24	100.24	S 21.74	W 13.91	214.08	25.39	21.66	6.82	0.86
200.00	199.99	S 0.60	W 0.69	200.43	200.41	S 21.00	W 12.47	209.99	23.56	19.72	6.14	2.19
300.00	299.96	N 0.38	W 2.63	300.42	300.37	S 20.15	W 10.19	200.22	21.89	17.62	5.13	2.11
400.00	399.91	N 2.15	W 5.29	400.08	400.01	S 19.58	W 7.89	186.81	21.89	16.85	4.35	3.07
500.00	499.86	N 3.89	W 7.99	499.93	499.84	S 19.45	W 5.87	174.83	23.44	17.48	3.93	2.48
600.00	599.79	N 6.50	W 10.44	600.33	600.21	S 18.74	W 4.21	166.15	26.00	19.16	3.80	2.51
700.00	699.50	N 13.32	W 13.24	701.42	701.21	S 14.52	W 4.04	161.71	29.37	21.41	3.69	2.82
800.00	798.25	N 28.18	W 17.63	803.31	802.70	S 6.19	W 6.60	162.20	36.37	27.80	4.24	4.96
900.00	894.55	N 52.85	W 27.78	907.24	904.95	N 11.80	W 10.01	156.54	45.92	36.62	4.94	7.77
1000.00	986.23	N 87.40	W 47.35	1012.52	1005.40	N 42.82	W 14.06	143.49	58.85	49.00	5.98	10.56
1100.00	1071.99	N 131.23	W 74.02	1122.55	1104.75	N 87.94	W 27.11	134.54	71.74	60.82	6.57	6.66
1200.00	1151.22	N 184.29	W 104.01	1234.25	1197.72	N 142.58	W 55.69	134.69	78.97	66.92	6.56	4.00
1300.00	1223.77	N 243.95	W 138.18	1341.75	1279.99	N 198.23	W 96.69	141.00	83.50	69.76	6.08	6.91
1400.00	1289.41	N 308.83	W 176.59	1446.84	1355.30	N 255.58	W 142.28	147.48	91.40	75.41	5.72	6.95

1500.00	1349.46	N 376.07	W 219.81	1553.97	1426.10	N 318.13	W 192.73	151.58	99.81	80.34	5.13	5.75
1600.00	1403.36	N 441.99	W 272.09	1661.62	1490.12	N 383.26	W 249.64	149.98	107.14	84.11	4.65	3.66
1700.00	1449.13	N 503.82	W 335.85	1767.66	1546.15	N 448.85	W 311.27	143.94	114.18	86.95	4.19	7.73
1800.00	1489.72	N 561.30	W 406.87	1866.50	1595.94	N 511.96	W 368.77	135.01	123.16	91.92	3.94	11.58
1900.00	1531.62	N 614.22	W 480.63	1962.45	1644.63	N 574.69	W 422.59	123.87	133.05	98.15	3.81	16.60
2000.00	1577.03	N 660.31	W 556.85	2057.50	1692.92	N 638.53	W 473.85	110.64	144.20	108.14	4.00	19.51
2100.00	1624.73	N 702.35	W 634.02	2149.63	1740.00	N 701.21	W 522.24	98.60	160.56	122.37	4.20	22.26
2200.00	1673.27	N 741.06	W 712.41	2244.78	1788.63	N 765.62	W 572.63	88.20	182.89	143.03	4.59	21.27
2300.00	1720.58	N 781.72	W 790.56	2343.42	1838.98	N 830.72	W 627.00	81.01	207.78	165.78	4.95	19.33
2400.00	1766.02	N 822.13	W 869.94	2443.92	1889.82	N 895.21	W 684.93	75.81	234.31	189.94	5.28	18.00
2500.00	1811.22	N 862.16	W 949.65	2542.02	1938.33	N 957.62	W 743.03	71.19	260.69	213.92	5.57	18.76
2600.00	1855.94	N 900.58	W 1030.42	2638.68	1985.84	N 1018.87	W 800.77	67.65	289.15	239.67	5.84	18.59
2700.00	1901.07	N 939.04	W 1110.95	2739.81	2034.81	N 1082.33	W 862.43	64.78	316.52	263.28	5.95	17.60
2800.00	1947.55	N 976.69	W 1191.08	2838.98	2081.72	N 1144.05	W 924.28	61.76	342.34	286.00	6.08	17.63
2900.00	1993.13	N 1012.48	W 1272.57	2935.01	2126.88	N 1203.65	W 984.52	58.48	370.68	312.20	6.34	19.02
3000.00	2037.40	N 1048.12	W 1354.85	3030.63	2171.43	N 1262.98	W 1044.85	56.45	400.29	338.55	6.48	18.71
3100.00	2081.19	N 1083.86	W 1437.34	3124.69	2215.30	N 1321.31	W 1104.18	54.83	430.54	365.72	6.64	18.66
3200.00	2124.46	N 1122.09	W 1518.98	3219.05	2259.41	N 1379.89	W 1163.56	54.59	459.34	391.33	6.75	16.73
3300.00	2167.66	N 1161.81	W 1599.95	3316.50	2304.88	N 1440.51	W 1224.83	53.62	487.05	415.83	6.84	16.60
3400.00	2211.53	N 1201.20	W 1680.72	3413.96	2350.36	N 1500.69	W 1286.55	52.78	514.14	439.61	6.90	16.32
3500.00	2256.21	N 1240.95	W 1760.86	3509.60	2395.04	N 1559.75	W 1347.07	52.53	540.49	462.65	6.94	15.37
3600.00	2301.68	N 1282.35	W 1839.72	3603.24	2438.58	N 1617.80	W 1406.25	52.29	564.94	483.80	6.96	14.69
3700.00	2347.74	N 1324.32	W 1917.93	3691.76	2480.33	N 1673.00	W 1461.44	51.70	589.52	505.17	6.99	15.20
3800.00	2394.11	N 1365.84	W 1996.20	3780.81	2522.85	N 1729.25	W 1515.83	50.84	615.95	528.42	7.04	16.47
3900.00	2441.28	N 1406.27	W 2074.56	3877.54	2569.15	N 1790.52	W 1574.63	49.99	643.37	552.44	7.08	16.69
4000.00	2487.94	N 1446.78	W 2153.18	3971.37	2614.03	N 1849.90	W 1631.76	49.23	671.03	576.61	7.11	16.74
4100.00	2533.68	N 1487.71	W 2232.12	4063.36	2657.85	N 1908.67	W 1687.34	48.69	699.58	601.70	7.15	17.02
4200.00	2579.55	N 1529.21	W 2310.70	4162.43	2705.06	N 1971.99	W 1747.15	48.48	727.59	626.14	7.17	16.30
4300.00	2625.94	N 1570.28	W 2389.19	4259.61	2751.19	N 2033.75	W 1806.32	47.75	755.14	650.21	7.20	16.69
4400.00	2671.92	N 1611.02	W 2468.09	4347.10	2792.86	N 2089.59	W 1859.23	46.97	783.81	675.61	7.24	17.85
4500.00	2718.31	N 1649.90	W 2547.69	4432.48	2833.80	N 2144.87	W 1909.80	46.26	815.63	704.31	7.33	19.35
4600.00	2765.80	N 1687.91	W 2627.07	4529.25	2880.28	N 2207.49	W 1967.11	45.95	847.71	732.95	7.39	18.92
4700.00	2813.55	N 1727.26	W 2705.82	4621.18	2924.57	N 2267.01	W 2021.39	46.07	878.54	760.43	7.44	17.91
4800.00	2861.49	N 1768.00	W 2783.35	4711.34	2968.11	N 2325.52	W 2074.38	45.81	906.20	786.79	7.48	17.98
4900.00	2909.41	N 1808.52	W 2861.21	4810.82	3016.07	N 2390.15	W 2132.85	45.55	938.19	813.24	7.51	17.50
5000.00	2958.09	N 1849.70	W 2938.25	4917.99	3067.78	N 2459.27	W 2196.37	45.46	966.43	837.72	7.51	16.19
5100.00	3006.63	N 1891.54	W 3015.01	5000.94	3107.83	N 2512.62	W 2245.66	45.12	993.92	861.99	7.53	16.84
5200.00	3054.44	N 1934.27	W 3091.74	5114.08	3161.85	N 2585.55	W 2313.22	45.24	1020.69	884.71	7.51	14.88
5300.00	3102.57	N 1978.14	W 3167.63	5204.99	3205.00	N 2644.11	W 2367.75	45.11	1045.85	906.46	7.50	15.20
5400.00	3151.68	N 2021.65	W 3243.10	5300.24	3250.16	N 2705.59	W 2424.79	44.98	1071.03	928.14	7.50	14.98
5500.00	3200.93	N 2065.66	W 3318.18	5385.48	3290.99	N 2760.85	W 2475.24	44.84	1096.34	950.14	7.50	15.12
5600.00	3250.17	N 2110.60	W 3392.71	5487.90	3340.25	N 2827.39	W 2535.53	45.03	1121.00	971.05	7.48	13.99
5700.00	3298.98	N 2154.81	W 3467.96	5603.47	3396.21	N 2901.14	W 2604.71	43.66	1145.28	991.39	7.44	14.77
5800.00	3347.21	N 2198.53	W 3543.87	5702.30	3443.66	N 2963.93	W 2664.47	43.76	1169.82	1012.20	7.42	14.11
5900.00	3395.17	N 2243.38	W 3619.29	5793.46	3486.85	N 3022.15	W 2719.77	43.82	1193.33	1032.16	7.40	13.80
6000.00	3442.75	N 2288.69	W 3694.68	5884.08	3530.73	N 3080.10	W 2773.88	43.69	1217.36	1052.73	7.39	13.98
6100.00	3490.82	N 2333.97	W 3769.77	5984.48	3580.76	N 3143.59	W 2833.42	43.76	1241.10	1072.83	7.38	13.59
6200.00	3538.67	N 2379.68	W 3844.74	6086.35	3631.65	N 3207.77	W 2894.00	43.83	1264.24	1092.24	7.35	13.10
6300.00	3586.50	N 2425.93	W 3919.40	6195.72	3687.15	N 3275.70	W 2959.30	44.04	1286.10	1110.14	7.31	12.20
6400.00	3634.34	N 2472.46	W 3993.87	6296.76	3737.66	N 3338.45	W 3020.30	43.87	1307.07	1127.35	7.27	12.37
6500.00	3682.84	N 2517.74	W 4068.69	6406.10	3791.52	N 3406.41	W 3086.90	43.55	1328.70	1145.10	7.24	12.37
6538.00	3701.45	N 2534.77	W 4097.10	6451.25	3813.82	N 3434.16	W 3114.68	43.49	1336.67	1151.51	7.22	12.07

ANTI-COLLISION REPORT

Analysis Method:	3D Least Distance	Distance Unit:	ft
Depth Interval:	Every 100.00ft Measured Depth	Azimuth Unit:	degrees
Step-down Trajectory:	Subject Trajectory	Azimuth Reference:	North
Date:	October 21, 2002		

NOTE: Measured Depth is referenced to individual borehole elevation
TVD, NS, EW are referenced to the subject trajectory's wellhead location and borehole elevation.

Subject Trajectory Summary

Client:	Petro-Tech Peruana S.A.		
Field:	Lobitos	Well:	Well LO16-25
Structure:	Platform LO16 (WGS84)	Borehole:	Sidetrack #2
Slot:	Slot #25	Trajectory:	LO 16-25 S2 SURVEYS
		Type:	RAW SVY

Coordinate System: UTM Zone 17S - WGS84, Meters

Reference Point:

Northing (m)	Easting (m)	Elevation (ft)	Structure Unc. (ft)	Slot Unc. (ft)	Hole Diameter (ft)
N 9505997.130	E 459456.430	50.00 above MSL	0.000	0.000	2.500

Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma

Surveying Prog:

MD From (ft)	MD To (ft)	EOU Freq	Survey Tool Type
0.00	730.00	Act-Stns	SLB_NSG+MSHOT
730.00	6069.00	Act-Stns	SLB_MWD-STD

Offset Trajectories Summary

Offset Selection Criteria
Wellhead distance scan: Not performed!
Selection filters: no filters used

Trajectory	Borehole	Well	Type
LO16-07 SS Survey	Borehole LO16-07	Well LO16-07	DEF SVY
LO16-08 Gyro + SS	Borehole LO16-08	Well LO16-08	DEF SVY
LO16-09 Gyro + SS	Borehole LO16-09	Well LO16-09	DEF SVY
LO16-10 Gyro + SS	Borehole LO16-10	Well LO16-10	DEF SVY
LO16-11 SS Survey	Borehole LO16-11	Well LO16-11	DEF SVY
LO16-12 SS Survey	Borehole LO16-12	Well LO16-12	DEF SVY
LO16-13 SS Survey	Borehole LO16-13	Well LO16-13	DEF SVY
LO16-14 MWD Survey	Borehole LO16-14	Well LO16-14	DEF SVY
LO16-15 S1 SS Survey	Borehole LO16-15 S1	Well LO16-15	DEF SVY
LO16-16 Gyro + SS	Borehole LO16-16	Well LO16-16	DEF SVY
LO16-17 Gyro + SS	Borehole LO16-17	Well LO16-17	DEF SVY
LO16-18 Gyro + SS	Borehole LO16-18	Well LO16-18	DEF SVY
LO16-19 SS Survey	Borehole LO16-19	Well LO16-19	DEF SVY
LO16-20 MWD Survey	Borehole LO16-20	Well LO16-20	DEF SVY
LO16-21 SS Survey	Borehole LO16-21	Well LO16-21	DEF SVY
LO16-22 Gyro + SS	Borehole LO16-22	Well LO16-22	DEF SVY
LO16-23 Gyro + MWD	Borehole LO16-23	Well LO16-23	DEF SVY
LO16-24 MWD Survey	Borehole LO16-24	Well LO16-24	DEF SVY
LO16-24 S1 MWD Survey	Borehole LO16-24 S1	Well LO16-24	DEF SVY
LO 16-25 Gyro + MWD Surveys	Borehole LO16-25	Well LO16-25	DEF SVY
LO 16-25 ST MWD SURVEYS	Sidetrack #1	Well LO16-25	RAW SVY
LO16-26 Gyro + MWD	Borehole LO16-26	Well LO16-26	DEF SVY

Major EOU radii used. All local minima indicated.

Results highlighted: Separation Factor <= 1.50

Anti-Collision Rules Used

Alert Rule Type:	Separation Factor Based
EOU Confidence level:	3-D 95.00% Confidence 2.7955 sigma
Allowable deviation based-on:	Minor Risk - Alert Radius NOT Added
Wellbore Diameter:	2.50 ft diameter included in results
Major Risk:	Separation Factor 1.00

Minor Risk:		Separation Factor 1.50																					
Alert Zone:		Separation Factor 5.00																					
Individual Offset Trajectories Details																							
Field:	Lobitos										Well:	Well LO16-07											
Structure:	Platform LO16 (WGS84)										Borehole:	Borehole LO16-07											
Slot:	Slot #07										Trajectory:	LO16-07 SS Survey											
											Type:	DEF SVY											
Coordinate System:	UTM Zone 17S - WGS84, Meters																						
Reference Point:																							
Northing (m)	Easting (m)				Elevation (ft)				Structure Unc. (ft)				Slot Unc. (ft)				Hole Diameter (ft)						
N 9505998.340	E 459456.980				50.00 above MSL				0.000				0.000				2.500						
Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma																							
Surveying Prog:																							
MD From (ft)				MD To (ft)				EOU Freq				Survey Tool Type											
0.00				8240.00				Act-Stns				SLB_MWD-POOR											
Subject Trajectory										Offset Trajectory										Ct-Ct	EOU	Sep	Inter.
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle											
Major EOU radii used. All local minima indicated.																							
Results highlighted: Separation Factor <= 1.50																							
0.00	0.00	N 0.00	E 0.00	1.01	0.98	N 3.73	E 1.78	25.46	4.24	1.60	1.60	14.00											
100.00	100.00	S 0.71	E 0.31	98.17	95.23	S 19.64	W 1.36	185.01	19.59	14.14	3.59	13.64											
200.00	199.99	S 0.60	W 0.69	195.10	189.24	S 43.07	W 4.60	185.56	43.98	38.41	7.90	14.57											
300.00	299.96	N 0.38	W 2.63	291.77	282.95	S 66.56	W 7.96	184.76	69.27	63.52	12.03	14.65											
400.00	399.91	N 2.15	W 5.29	388.17	376.37	S 90.10	W 11.43	184.27	95.40	89.07	15.07	15.08											
500.00	499.86	N 3.89	W 7.99	484.52	469.70	S 113.74	W 15.02	183.76	121.64	114.70	17.52	15.34											
600.00	599.79	N 6.50	W 10.44	580.56	562.70	S 137.43	W 18.72	183.71	148.86	141.43	20.04	16.79											
700.00	699.50	N 13.32	W 13.24	675.22	654.31	S 160.89	W 22.82	183.87	180.23	172.09	22.14	20.22											
800.00	798.25	N 28.18	W 17.63	766.38	742.47	S 183.62	W 27.56	184.34	219.24	210.79	25.92	25.94											
900.00	894.55	N 52.85	W 27.78	851.74	824.83	S 205.41	W 32.85	185.25	267.55	258.83	30.69	32.67											
1000.00	986.23	N 87.40	W 47.35	930.34	900.47	S 226.01	W 38.48	186.15	325.05	315.77	35.02	39.76											
1100.00	1071.99	N 131.23	W 74.02	1001.56	968.84	S 245.06	W 44.33	186.22	391.30	381.14	38.52	46.87											
1200.00	1151.22	N 184.29	W 104.01	1064.33	1028.97	S 262.12	W 50.15	186.67	465.97	455.18	43.18	52.85											
1300.00	1223.77	N 243.95	W 138.18	1120.99	1083.14	S 277.68	W 56.03	188.41	546.47	534.34	45.06	58.15											
1400.00	1289.41	N 308.83	W 176.59	1171.21	1131.05	S 291.49	W 61.92	191.59	631.36	617.55	45.71	62.42											
1500.00	1349.46	N 376.07	W 219.81	1216.71	1174.40	S 304.02	W 67.83	194.24	718.52	702.80	45.69	64.96											
1600.00	1403.36	N 441.99	W 272.09	1258.24	1213.91	S 315.45	W 73.62	200.57	805.60	787.64	44.84	67.23											
1700.00	1449.13	N 503.82	W 335.85	1294.74	1248.62	S 325.47	W 78.80	205.43	891.06	870.60	43.55	70.56											
1800.00	1489.72	N 561.30	W 406.87	1328.74	1280.95	S 334.77	W 83.66	203.19	975.20	952.26	42.52	70.48											
1900.00	1531.62	N 614.22	W 480.63	1365.98	1316.37	S 344.95	W 89.05	196.26	1058.14	1032.88	41.89	67.04											
2000.00	1577.03	N 660.31	W 556.85	1409.30	1357.57	S 356.74	W 95.37	190.36	1138.20	1110.65	41.31	63.90											
2100.00	1624.73	N 702.35	W 634.02	1456.54	1402.50	S 369.56	W 102.35	186.51	1216.98	1187.07	40.68	62.28											
2200.00	1673.27	N 741.06	W 712.41	1505.98	1449.52	S 382.93	W 109.75	183.52	1294.84	1263.20	40.92	61.59											
2300.00	1720.58	N 781.72	W 790.56	1553.75	1494.95	S 395.81	W 116.96	184.12	1375.21	1341.49	40.79	63.79											
2400.00	1766.02	N 822.13	W 869.94	1600.24	1539.17	S 408.30	W 124.06	181.84	1456.62	1420.93	40.81	63.48											
2500.00	1811.22	N 862.16	W 949.65	1646.96	1583.61	S 420.81	W 131.25	180.67	1538.70	1501.18	41.01	63.57											
2600.00	1855.94	N 900.58	W 1030.42	1694.14	1628.47	S 433.41	W 138.59	178.81	1620.69	1581.24	41.09	63.39											
2700.00	1901.07	N 939.04	W 1110.95	1742.00	1673.99	S 446.15	W 146.10	176.00	1703.30	1662.09	41.34	62.47											
2800.00	1947.55	N 976.69	W 1191.08	1791.71	1721.27	S 459.33	W 153.97	174.19	1785.77	1742.80	41.56	61.98											
2900.00	1993.13	N 1012.48	W 1272.57	1841.91	1769.00	S 472.63	W 162.04	173.92	1867.90	1822.91	41.52	62.21											
3000.00	2037.40	N 1048.12	W 1354.85	1891.41	1816.05	S 485.72	W 170.13	173.18	1950.70	1903.61	41.42	62.77											
3100.00	2081.19	N 1083.86	W 1437.34	1940.90	1863.06	S 498.80	W 178.35	171.94	2034.08	1984.97	41.43	62.84											
3200.00	2124.46	N 1122.09	W 1518.98	1993.77	1913.28	S 512.70	W 187.27	170.39	2119.10	2067.79	41.30	63.71											
3300.00	2167.66	N 1161.81	W 1599.95	2048.36	1965.19	S 526.83	W 196.59	168.65	2204.98	2151.62	41.32	63.16											
3400.00	2211.53	N 1201.20	W 1680.72	2104.72	2018.82	S 541.18	W 206.32	166.81	2290.60	2235.23	41.37	62.53											
3500.00	2256.21	N 1240.95	W 1760.86	2159.01	2070.52	S 554.77	W 215.80	164.37	2376.20	2318.75	41.36	62.02											
3600.00	2301.68	N 1282.35	W 1839.72	2209.18	2118.30	S 567.26	W 224.63	162.40	2462.36	2402.79	41.33	61.83											
3700.00	2347.74	N 1324.32	W 1917.93	2259.94	2166.64	S 579.86	W 233.62	161.50	2548.65	2486.95	41.31	61.83											
3800.00	2394.11	N 1365.84	W 1996.20	2311.42	2215.66	S 592.59	W 242.79	160.46	2634.72	2570.93	41.31	60.91											
3900.00	2441.28	N 1406.27	W 2074.56	2372.13	2273.51	S 607.46	W 253.68	159.48	2720.08	2654.12	41.24	60.28											
4000.00	2487.94	N 1446.78	W 2153.18	2436.44	2334.89	S 622.80	W 265.26	159.48	2805.50	2737.21	41.08	60.97											

4100.00	2533.68	N 1487.71	W 2232.12	2500.61	2396.22	S 637.67	W 276.85	158.84	2891.24	2820.58	40.92	60.96	
4200.00	2579.55	N 1529.21	W 2310.70	2565.12	2457.97	S 652.19	W 288.56	157.44	2976.97	2903.98	40.78	60.51	
4300.00	2625.94	N 1570.28	W 2389.19	2630.49	2520.55	S 666.69	W 300.68	156.88	3062.19	2986.85	40.64	59.88	
4400.00	2671.92	N 1611.02	W 2468.09	2696.77	2583.98	S 681.21	W 313.28	156.83	3147.27	3069.54	40.49	59.67	
4500.00	2718.31	N 1649.90	W 2547.69	2765.57	2649.80	S 696.09	W 326.70	155.99	3231.28	3151.29	40.39	58.39	
4600.00	2766.22	N 1689.64	W 2625.95	2830.47	2711.87	S 709.96	W 339.64	153.59	3314.86	3232.35	40.18	58.13	
4700.00	2814.46	N 1731.39	W 2702.95	2891.73	2770.45	S 722.94	W 351.97	151.05	3398.93	3313.93	39.99	56.91	
4800.00	2867.68	N 1773.53	W 2776.36	2958.08	2833.91	S 736.87	W 365.47	148.54	3480.76	3393.33	39.81	54.49	
4900.00	2922.20	N 1814.92	W 2849.26	3026.48	2899.32	S 751.11	W 379.51	148.29	3561.56	3471.76	39.66	53.92	
5000.00	2977.25	N 1855.98	W 2921.95	3093.38	2963.25	S 765.01	W 393.47	147.96	3641.84	3549.59	39.48	53.46	
5100.00	3033.38	N 1896.77	W 2993.95	3161.15	3027.88	S 779.29	W 408.01	146.40	3721.34	3626.63	39.29	51.82	
5200.00	3092.37	N 1936.97	W 3063.98	3220.47	3084.33	S 791.98	W 421.09	146.04	3798.96	3702.02	39.19	50.46	
5300.00	3152.81	N 1975.40	W 3133.76	3246.52	3109.03	S 797.86	W 428.93	145.40	3875.54	3776.86	39.27	49.56	
5400.00	3214.76	N 2012.91	W 3202.72	3263.43	3125.02	S 801.89	W 430.66	145.51	3951.65	3851.41	39.42	49.79	
5500.00	3277.75	N 2049.88	W 3271.02	3278.42	3139.17	S 805.63	W 433.87	144.34	4027.72	3925.95	39.58	49.21	
5600.00	3342.03	N 2086.46	W 3338.32	3290.97	3151.01	S 808.90	W 436.47	144.70	4103.70	4000.52	39.77	49.76	
5700.00	3406.60	N 2122.86	W 3405.44	3303.20	3162.53	S 812.21	W 438.90	144.00	4180.26	4075.62	39.95	50.14	
5800.00	3472.39	N 2160.00	W 3470.95	3325.09	3183.14	S 818.31	W 443.08	142.97	4257.00	4150.88	40.11	50.20	
5900.00	3538.53	N 2197.18	W 3536.10	3348.28	3204.96	S 824.92	W 447.33	143.41	4334.14	4226.56	40.29	50.85	
6000.00	3604.29	N 2234.30	W 3601.65	3370.86	3226.19	S 831.47	W 451.31	143.33	4412.09	4303.00	40.44	51.44	
6069.00	3650.07	N 2260.06	W 3646.39	3386.23	3240.64	S 836.01	W 453.92	142.74	4466.00	4355.88	40.56	51.37	
Field:	Lobitos			Well:	Well LO16-08								
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-08								
Slot:	Slot #08			Trajectory:	LO16-08 Gyro + SS								
				Type:	DEF SVY								
Coordinate System:	UTM Zone 17S - WGS84, Meters												
Reference Point:													
Northing (m)	Easting (m)			Elevation (ft)				Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505997.540	E 459460.690			50.00 above MSL				0.000		0.000		2.500	
Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma													
Surveying Prog:													
	MD From (ft)			MD To (ft)			EOU Freq		Survey Tool Type				
	0.00			2017.16			Act-Stns		SLB_NSG+MSHOT				
	2017.16			8226.00			Act-Stns		SLB_MWD-POOR				
Subject Trajectory				Offset Trajectory				Ct-Ct	EOU	Sep	Inter.		
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle	
Major EOU radii used. All local minima indicated.													
Results highlighted: Separation Factor <= 1.50													
0.00	0.00	N 0.00	E 0.00	2.60	2.52	N 0.89	E 13.54	86.24	13.80	11.30	5.52	14.00	
100.00	100.00	S 0.71	E 0.31	99.69	96.75	S 15.91	W 2.80	191.54	15.85	12.02	4.14	13.67	
200.00	199.99	S 0.60	W 0.69	196.93	191.14	S 32.81	W 18.88	209.75	38.03	34.10	9.67	13.51	
300.00	299.96	N 0.38	W 2.63	294.02	285.40	S 49.84	W 34.73	212.81	61.37	56.66	13.04	13.81	
400.00	399.91	N 2.15	W 5.29	391.52	380.07	S 67.18	W 50.32	213.46	85.02	79.03	14.20	13.32	
500.00	499.86	N 3.89	W 7.99	489.45	475.33	S 84.40	W 65.18	213.31	108.02	100.72	14.79	13.35	
600.00	599.79	N 6.50	W 10.44	587.36	570.69	S 101.14	W 79.71	213.35	131.27	122.79	15.48	14.15	
700.00	699.50	N 13.32	W 13.24	684.01	664.92	S 117.38	W 93.83	212.90	157.40	147.56	16.01	16.80	
800.00	798.25	N 28.18	W 17.63	777.43	755.95	S 133.05	W 107.82	211.97	189.52	178.75	17.60	21.73	
900.00	894.55	N 52.85	W 27.78	866.43	842.48	S 148.36	W 121.87	210.46	228.14	216.51	19.62	27.43	
1000.00	986.23	N 87.40	W 47.35	949.83	923.34	S 163.21	W 135.91	208.34	273.14	260.37	21.39	33.87	
1100.00	1071.99	N 131.23	W 74.02	1026.41	997.37	S 177.46	W 149.36	206.20	326.40	312.23	23.03	41.04	
1200.00	1151.22	N 184.29	W 104.01	1096.54	1064.98	S 190.84	W 162.30	204.59	389.30	373.97	25.38	46.83	
1300.00	1223.77	N 243.95	W 138.18	1158.04	1124.13	S 202.79	W 174.19	204.30	459.14	442.14	27.02	52.40	
1400.00	1289.41	N 308.83	W 176.59	1211.50	1175.39	S 213.60	W 184.83	204.97	534.79	515.92	28.34	57.05	
1500.00	1349.46	N 376.07	W 219.81	1263.00	1224.68	S 224.25	W 195.32	204.81	613.64	592.64	29.22	59.72	
1600.00	1403.36	N 441.99	W 272.09	1311.30	1270.86	S 234.27	W 205.32	206.09	692.34	668.96	29.61	61.88	
1700.00	1449.13	N 503.82	W 335.85	1352.50	1310.19	S 242.91	W 214.02	207.33	769.26	743.27	29.60	65.18	
1800.00	1489.72	N 561.30	W 406.87	1391.03	1346.88	S 251.19	W 222.39	204.11	845.33	816.76	29.58	65.10	
1900.00	1531.62	N 614.22	W 480.63	1433.56	1387.25	S 260.53	W 231.91	197.27	920.81	889.76	29.66	61.57	
2000.00	1577.03	N 660.31	W 556.85	1484.37	1435.36	S 271.83	W 243.72	191.20	993.47	959.91	29.60	58.13	
2100.00	1624.73	N 702.35	W 634.02	1539.53	1487.44	S 284.21	W 257.08	187.10	1065.00	1028.82	29.44	56.28	
2200.00	1673.27	N 741.06	W 712.41	1597.19	1541.77	S 297.19	W 271.35	183.98	1135.69	1097.57	29.80	55.51	

2300.00	1720.58	N 781.72	W 790.56	1653.18	1594.46	S 309.82	W 285.43	183.96	1209.34	1169.02	30.00	57.67
2400.00	1766.02	N 822.13	W 869.94	1707.83	1645.86	S 322.17	W 299.33	181.57	1284.31	1241.86	30.26	57.35
2500.00	1811.22	N 862.16	W 949.65	1766.82	1701.27	S 335.48	W 314.56	179.88	1360.06	1315.55	30.56	57.18
2600.00	1855.94	N 900.58	W 1030.42	1827.38	1758.08	S 349.03	W 330.58	177.76	1435.58	1388.98	30.81	56.75
2700.00	1901.07	N 939.04	W 1110.95	1886.53	1813.51	S 362.19	W 346.48	175.06	1511.71	1463.18	31.15	55.75
2800.00	1947.55	N 976.69	W 1191.08	1953.59	1876.32	S 376.98	W 364.77	173.01	1587.54	1537.03	31.43	54.93
2900.00	1993.13	N 1012.48	W 1272.57	2025.62	1943.68	S 392.47	W 385.02	172.01	1662.55	1609.98	31.62	54.68
3000.00	2037.40	N 1048.12	W 1354.85	2081.28	1995.69	S 404.35	W 400.89	171.25	1738.23	1683.79	31.93	55.39
3100.00	2081.19	N 1083.86	W 1437.34	2138.73	2049.33	S 416.71	W 417.33	170.06	1814.71	1758.44	32.25	55.53
3200.00	2124.46	N 1122.09	W 1518.98	2206.39	2112.36	S 431.28	W 437.16	168.74	1892.99	1834.69	32.47	56.18
3300.00	2167.66	N 1161.81	W 1599.95	2275.09	2176.14	S 446.02	W 458.00	167.14	1972.11	1911.95	32.78	55.36
3400.00	2211.53	N 1201.20	W 1680.72	2346.38	2242.09	S 461.26	W 480.37	165.53	2050.74	1988.75	33.08	54.46
3500.00	2256.21	N 1240.95	W 1760.86	2417.87	2307.99	S 476.49	W 503.55	163.63	2129.11	2065.11	33.27	53.77
3600.00	2301.68	N 1282.35	W 1839.72	2482.23	2367.23	S 490.09	W 524.70	162.18	2207.96	2141.59	33.27	53.82
3700.00	2347.74	N 1324.32	W 1917.93	2547.23	2427.06	S 503.69	W 546.15	161.44	2286.85	2218.10	33.26	53.58
3800.00	2394.11	N 1365.84	W 1996.20	2618.32	2492.50	S 518.37	W 569.73	160.43	2365.33	2294.02	33.17	52.45
3900.00	2441.28	N 1406.27	W 2074.56	2697.73	2565.80	S 534.33	W 596.33	159.56	2442.65	2368.58	32.98	51.60
4000.00	2487.94	N 1446.78	W 2153.18	2778.08	2639.56	S 549.95	W 623.55	159.53	2519.86	2442.95	32.77	52.13
4100.00	2533.68	N 1487.71	W 2232.12	2857.18	2712.45	S 564.70	W 650.49	159.02	2597.29	2517.41	32.51	52.09
4200.00	2579.55	N 1529.21	W 2310.70	2936.53	2785.86	S 578.58	W 677.24	157.99	2674.61	2591.80	32.30	51.69
4300.00	2625.94	N 1570.28	W 2389.19	2992.56	2837.86	S 587.85	W 695.93	157.59	2751.29	2666.00	32.26	51.55
4400.00	2671.92	N 1611.02	W 2468.09	3017.59	2861.14	S 592.16	W 704.07	157.81	2828.71	2741.28	32.35	52.34
4500.00	2718.31	N 1649.90	W 2547.69	3056.73	2897.51	S 599.30	W 716.62	157.24	2905.82	2816.13	32.40	51.71
4600.00	2766.22	N 1689.64	W 2625.95	3095.40	2933.38	S 606.72	W 729.02	155.76	2983.21	2891.09	32.38	52.21
4700.00	2814.46	N 1731.39	W 2702.95	3131.53	2966.88	S 613.93	W 740.46	153.91	3061.88	2967.36	32.40	51.74
4800.00	2867.68	N 1773.53	W 2776.36	3168.91	3001.55	S 621.65	W 752.13	151.83	3138.83	3042.01	32.42	50.09
4900.00	2922.20	N 1814.92	W 2849.26	3206.25	3036.18	S 629.62	W 763.61	151.67	3215.38	3116.33	32.46	50.15
5000.00	2977.25	N 1855.98	W 2921.95	3247.82	3074.71	S 638.79	W 776.19	151.44	3292.06	3190.71	32.48	50.22
5100.00	3033.38	N 1896.77	W 2993.95	3313.16	3135.26	S 653.42	W 795.95	150.01	3368.24	3264.10	32.35	48.82
5200.00	3092.37	N 1936.97	W 3063.98	3378.00	3195.28	S 668.01	W 815.66	149.58	3442.59	3335.77	32.23	47.47
5300.00	3152.81	N 1975.40	W 3133.76	3441.63	3254.21	S 682.34	W 834.90	148.88	3515.48	3405.99	32.11	46.12
5400.00	3214.76	N 2012.91	W 3202.72	3506.33	3314.18	S 696.93	W 854.33	148.89	3587.20	3475.08	31.99	45.72
5500.00	3277.75	N 2049.88	W 3271.02	3724.91	3517.59	S 741.35	W 920.78	147.78	3656.79	3539.40	31.15	42.19
5600.00	3342.03	N 2086.46	W 3338.32	3876.66	3657.78	S 769.48	W 971.59	147.98	3722.57	3600.81	30.57	40.77
5700.00	3406.60	N 2122.86	W 3405.44	3940.10	3715.93	S 781.64	W 993.85	147.55	3787.81	3663.20	30.40	40.70
5800.00	3472.39	N 2160.00	W 3470.95	3960.74	3734.82	S 785.78	W 1001.08	146.91	3853.15	3726.58	30.44	41.16
5900.00	3538.53	N 2197.18	W 3536.10	4052.19	3818.32	S 805.45	W 1032.73	147.27	3919.30	3789.13	30.11	41.00
6000.00	3604.29	N 2234.30	W 3601.65	4383.66	4119.08	S 866.19	W 1157.99	147.61	3981.15	3841.64	28.54	37.48
6069.00	3650.07	N 2260.06	W 3646.39	4474.58	4200.59	S 881.44	W 1195.27	147.43	4022.45	3879.61	28.16	36.70
Field:	Lobitos					Well:	Well LO16-09					
Structure:	Platform LO16 (WGS84)					Borehole:	Borehole LO16-09					
Slot:	Slot #09					Trajectory:	LO16-09 Gyro + SS					
						Type:	DEF SVY					
Coordinate System:	UTM Zone 17S - WGS84, Meters											
Reference Point:												
Northing (m)	Easting (m)			Elevation (ft)			Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505995.230	E 459463.240			50.00 above MSL			0.000		0.000		2.500	
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma											
Surveying Prog:												
	MD From (ft)			MD To (ft)			EOU Freq		Survey Tool Type			
	0.00			2017.16			Act-Stns		SLB_NSG+MSHOT			
	2017.16			7995.00			Act-Stns		SLB_MWD-POOR			
Subject Trajectory					Offset Trajectory				Ct-Ct	EOU	Sep	Inter.
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle
Major EOU radii used. All local minima indicated.												
Results highlighted: Separation Factor <= 1.50												
0.00	0.00	N 0.00	E 0.00	4.72	4.58	S 6.58	E 21.26	107.21	22.72	20.22	9.09	14.00
100.00	100.00	S 0.71	E 0.31	101.86	98.85	S 13.05	W 1.24	187.17	12.49	8.66	3.26	13.87
200.00	199.99	S 0.60	W 0.69	199.35	193.52	S 18.38	W 23.92	232.80	29.96	26.02	7.61	12.83
300.00	299.96	N 0.38	W 2.63	296.87	288.24	S 22.99	W 46.67	242.23	51.22	47.01	12.18	13.15
400.00	399.91	N 2.15	W 5.29	394.92	383.55	S 27.93	W 69.17	245.12	72.48	67.26	13.87	11.93

DATE

500.00	499.86	N 3.89	W 7.99	494.24	480.31	S 32.14	W 91.12	246.87	92.69	86.48	14.93	11.72
600.00	599.79	N 6.50	W 10.44	592.63	576.29	S 33.42	W 112.71	249.26	112.28	105.18	15.83	11.77
700.00	699.50	N 13.32	W 13.24	691.33	672.63	S 34.55	W 134.14	249.69	132.78	124.59	16.21	12.15
800.00	798.25	N 28.18	W 17.63	789.32	768.41	S 35.30	W 154.82	247.65	154.08	145.19	17.32	14.31
900.00	894.55	N 52.85	W 27.78	885.15	862.09	S 35.79	W 175.00	242.83	174.89	165.36	18.36	17.97
1000.00	986.23	N 87.40	W 47.35	978.18	952.91	S 35.95	W 195.19	235.65	195.40	184.98	18.74	22.85
1100.00	1071.99	N 131.23	W 74.02	1066.37	1038.69	S 35.10	W 215.62	228.55	220.97	209.34	19.00	29.06
1200.00	1151.22	N 184.29	W 104.01	1148.64	1118.33	S 34.17	W 236.24	222.20	257.48	244.88	20.45	34.45
1300.00	1223.77	N 243.95	W 138.18	1227.26	1193.96	S 32.95	W 257.65	216.97	303.04	288.93	21.47	39.09
1400.00	1289.41	N 308.83	W 176.59	1303.68	1267.09	S 31.20	W 279.77	212.41	356.04	340.09	22.32	42.62
1500.00	1349.46	N 376.07	W 219.81	1376.31	1336.35	S 29.09	W 301.51	208.03	413.53	395.51	22.95	45.05
1600.00	1403.36	N 441.99	W 272.09	1445.56	1402.37	S 27.00	W 322.33	203.65	471.67	451.32	23.18	47.58
1700.00	1449.13	N 503.82	W 335.85	1509.73	1463.63	S 25.10	W 341.33	199.75	529.15	506.23	23.09	51.76
1800.00	1489.72	N 561.30	W 406.87	1573.93	1525.05	S 23.07	W 359.95	193.89	587.32	561.84	23.06	52.24
1900.00	1531.62	N 614.22	W 480.83	1639.05	1587.45	S 20.61	W 378.36	186.49	645.43	617.55	23.15	49.53
2000.00	1577.03	N 660.31	W 556.85	1704.83	1650.61	S 18.01	W 396.57	180.22	700.87	670.63	23.18	47.35
2100.00	1624.73	N 702.35	W 634.02	1772.42	1715.59	S 15.35	W 414.97	175.58	755.87	723.21	23.14	46.38
2200.00	1673.27	N 741.06	W 712.41	1842.74	1783.24	S 12.62	W 434.00	171.78	810.94	776.55	23.58	45.91
2300.00	1720.58	N 781.72	W 790.56	1915.60	1853.36	S 9.37	W 453.51	169.93	870.09	833.67	23.89	48.13
2400.00	1766.02	N 822.13	W 869.94	2022.57	1956.42	S 0.92	W 480.81	165.20	930.10	891.56	24.14	47.40
2500.00	1811.22	N 862.16	W 949.65	2086.01	2017.55	N 5.69	W 496.41	162.90	990.72	950.52	24.65	48.02
2600.00	1855.94	N 900.58	W 1030.42	2148.99	2078.25	N 11.90	W 512.05	160.52	1052.56	1010.59	25.08	48.05
2700.00	1901.07	N 939.04	W 1110.95	2212.21	2139.17	N 17.77	W 527.87	157.91	1115.98	1072.38	25.60	47.25
2800.00	1947.55	N 976.69	W 1191.08	2276.39	2201.02	N 23.36	W 544.07	155.87	1179.71	1134.49	26.09	47.06
2900.00	1993.13	N 1012.48	W 1272.57	2341.69	2263.95	N 28.69	W 560.69	154.53	1244.17	1197.24	26.51	47.90
3000.00	2037.40	N 1048.12	W 1354.85	2409.80	2329.54	N 34.13	W 578.19	152.99	1310.24	1261.53	26.90	48.42
3100.00	2081.19	N 1083.86	W 1437.34	2477.77	2394.96	N 39.53	W 595.81	151.34	1377.41	1326.95	27.30	48.50
3200.00	2124.46	N 1122.09	W 1518.98	2545.35	2459.99	N 44.92	W 613.43	149.67	1446.68	1394.29	27.61	48.88
3300.00	2167.66	N 1161.81	W 1599.95	2613.01	2525.05	N 50.34	W 631.16	148.18	1517.12	1462.97	28.02	48.50
3400.00	2211.53	N 1201.20	W 1680.72	2682.81	2592.16	N 55.97	W 649.54	146.69	1587.38	1531.46	28.38	47.97
3500.00	2256.21	N 1240.95	W 1760.86	2758.48	2664.85	N 62.33	W 669.59	144.91	1657.41	1599.48	28.61	47.09
3600.00	2301.68	N 1282.35	W 1839.72	2835.49	2738.74	N 69.19	W 690.15	143.43	1727.51	1667.52	28.80	46.44
3700.00	2347.74	N 1324.32	W 1917.93	2913.72	2813.72	N 76.55	W 711.20	142.46	1797.30	1735.24	28.96	46.22
3800.00	2394.11	N 1365.84	W 1996.20	2990.83	2887.57	N 84.21	W 732.05	141.55	1866.59	1802.36	29.06	45.39
3900.00	2441.28	N 1406.27	W 2074.56	3067.72	2961.17	N 92.32	W 752.75	140.70	1934.92	1868.48	29.12	44.95
4000.00	2487.94	N 1446.78	W 2153.18	3144.43	3034.59	N 100.89	W 773.29	140.17	2003.58	1934.83	29.14	45.78
4100.00	2533.68	N 1487.71	W 2232.12	3220.61	3107.46	N 109.88	W 793.58	139.47	2072.94	2001.84	29.15	45.92
4200.00	2579.55	N 1529.21	W 2310.70	3293.15	3176.84	N 118.84	W 812.78	138.56	2142.36	2068.90	29.17	45.59
4300.00	2625.94	N 1570.28	W 2389.19	3363.29	3243.94	N 127.73	W 831.16	138.04	2211.41	2135.66	29.19	45.48
4400.00	2671.92	N 1611.02	W 2468.09	3432.96	3310.61	N 136.76	W 849.24	137.69	2280.80	2202.72	29.21	45.83
4500.00	2718.31	N 1649.90	W 2547.69	3502.81	3377.47	N 146.02	W 867.19	137.09	2349.52	2269.22	29.26	45.22
4600.00	2766.22	N 1689.64	W 2625.95	3574.96	3446.57	N 155.80	W 885.55	135.75	2417.55	2334.78	29.21	44.52
4700.00	2814.46	N 1731.39	W 2702.95	3648.34	3516.83	N 166.01	W 904.06	134.52	2485.91	2400.64	29.15	42.96
4800.00	2867.68	N 1773.53	W 2776.36	3725.74	3590.95	N 177.07	W 923.42	133.45	2550.53	2462.83	29.08	40.36
4900.00	2922.20	N 1814.92	W 2849.26	3804.17	3666.06	N 188.57	W 942.87	133.10	2613.94	2523.88	29.03	40.04
5000.00	2977.25	N 1855.98	W 2921.95	3886.63	3745.01	N 201.03	W 963.13	132.71	2676.80	2584.26	28.93	39.68
5100.00	3033.38	N 1896.77	W 2993.95	3973.90	3828.52	N 214.87	W 984.38	131.92	2738.50	2643.35	28.78	37.75
5200.00	3092.37	N 1936.97	W 3063.98	4063.87	3914.53	N 229.88	W 1006.07	131.52	2797.33	2699.67	28.64	36.45
5300.00	3152.81	N 1975.40	W 3133.76	4158.97	4005.36	N 246.53	W 1028.82	130.98	2854.22	2753.96	28.47	34.80
5400.00	3214.76	N 2012.91	W 3202.72	4255.75	4097.61	N 263.93	W 1052.33	130.65	2909.04	2806.12	28.26	34.28
5500.00	3277.75	N 2049.88	W 3271.02	4319.11	4158.04	N 275.32	W 1067.59	130.12	2962.95	2857.81	28.18	32.98
5600.00	3342.03	N 2086.46	W 3338.32	4400.96	4236.21	N 290.02	W 1086.90	129.93	3015.90	2908.36	28.04	33.17
5700.00	3406.60	N 2122.86	W 3405.44	4485.06	4316.53	N 305.36	W 1106.57	129.48	3068.56	2958.54	27.89	32.51
5800.00	3472.39	N 2160.00	W 3470.95	4590.15	4416.85	N 325.18	W 1130.81	128.95	3120.07	3007.25	27.66	31.25
5900.00	3538.53	N 2197.18	W 3536.10	4654.83	4478.44	N 338.47	W 1145.40	128.83	3170.75	3055.75	27.57	32.25
6000.00	3604.29	N 2234.30	W 3601.65	4709.22	4530.45	N 349.91	W 1156.44	128.62	3223.00	3105.98	27.54	32.87
6069.00	3650.07	N 2260.06	W 3646.39	4758.62	4577.74	N 360.32	W 1166.25	128.33	3258.94	3140.40	27.49	32.34
Field:	Lobitos			Well:	Well LO16-10							
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-10							
Slot:	Slot #10			Trajectory:	LO16-10 Gyro + SS							
				Type:	DEF SVY							

Coordinate System: UTM Zone 17S - WGS84, Meters															
Reference Point:															
Northing (m)		Easting (m)		Elevation (ft)		Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)					
N 9505992.100		E 459464.350		50.00 above MSL		0.000		0.000		2.500					
Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma															
Surveying Prog:															
MD From (ft)		MD To (ft)		EOU Freq		Survey Tool Type									
0.00		4017.16		Act-Stns		SLB_NSG+MSHOT									
4017.16		6602.00		Act-Stns		SLB_MWD-POOR									
Subject Trajectory				Offset Trajectory				Ct-Ct		EOU		Sep		Inter.	
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle			
Major EOU radii used. All local minima indicated.															
Results highlighted: Separation Factor <= 1.50															
0.00	0.00	N 0.00	E 0.00	6.76	6.56	S 16.30	E 24.36	123.79	30.04	27.52	11.91	14.00			
100.00	100.00	S 0.71	E 0.31	103.93	100.85	S 12.30	E 1.25	175.39	11.66	7.82	3.04	14.17			
200.00	199.99	S 0.60	W 0.69	201.44	195.47	S 6.10	W 21.48	255.34	21.98	18.04	5.58	12.84			
300.00	299.96	N 0.38	W 2.63	298.80	289.92	N 0.82	W 44.07	270.71	42.64	38.38	10.01	13.18			
400.00	399.91	N 2.15	W 5.29	396.06	384.21	N 6.63	W 67.19	274.32	64.02	58.72	12.09	12.55			
500.00	499.86	N 3.89	W 7.99	492.23	477.17	N 12.81	W 91.03	276.37	86.55	80.14	13.52	13.92			
600.00	599.79	N 6.50	W 10.44	586.09	567.33	N 19.59	W 116.23	277.71	111.43	104.01	15.01	15.30			
700.00	699.50	N 13.32	W 13.24	677.26	653.90	N 27.97	W 143.55	278.20	138.84	130.16	16.00	16.60			
800.00	798.25	N 28.18	W 17.63	764.71	735.51	N 38.42	W 173.14	277.65	168.00	158.43	17.56	17.77			
900.00	894.55	N 52.85	W 27.78	850.85	813.83	N 51.52	W 206.49	275.71	196.10	185.65	18.76	17.07			
1000.00	986.23	N 87.40	W 47.35	939.60	892.57	N 67.80	W 244.03	272.39	218.73	207.00	18.66	15.90			
1100.00	1071.99	N 131.23	W 74.02	1029.51	970.50	N 87.20	W 284.45	268.83	237.74	224.36	17.77	17.98			
1200.00	1151.22	N 184.29	W 104.01	1118.58	1045.70	N 109.54	W 326.60	264.48	257.43	242.57	17.33	20.01			
1300.00	1223.77	N 243.95	W 138.18	1207.28	1118.36	N 134.98	W 370.65	259.67	277.54	260.54	16.33	21.46			
1400.00	1289.41	N 308.83	W 176.59	1295.04	1188.02	N 162.75	W 416.22	254.18	298.40	278.93	15.33	22.51			
1500.00	1349.46	N 376.07	W 219.81	1382.21	1255.07	N 192.19	W 463.50	248.37	319.55	297.33	14.38	22.18			
1600.00	1403.36	N 441.99	W 272.09	1470.01	1319.94	N 223.79	W 513.52	240.16	335.94	310.61	13.26	19.66			
1700.00	1449.13	N 503.82	W 335.85	1559.44	1382.54	N 258.19	W 567.29	232.17	343.99	315.19	11.94	19.22			
1800.00	1489.72	N 561.30	W 406.87	1651.16	1442.71	N 295.83	W 625.36	225.45	347.02	314.64	10.72	15.98			
1900.00	1531.62	N 614.22	W 480.63	1746.75	1500.83	N 337.28	W 688.92	219.53	347.90	311.97	9.68	10.13			
2000.00	1577.03	N 660.31	W 556.85	1846.35	1558.23	N 382.12	W 756.85	215.14	343.14	303.62	8.68	7.66			
2100.00	1624.73	N 702.35	W 634.02	1946.11	1614.94	N 427.50	W 825.24	212.30	334.97	291.81	7.76	8.12			
2200.00	1673.27	N 741.06	W 712.41	2047.39	1672.48	N 473.96	W 894.42	210.50	323.22	277.10	7.01	8.38			
2300.00	1720.58	N 781.72	W 790.56	2148.63	1730.07	N 521.16	W 963.02	208.61	312.61	263.29	6.34	10.23			
2400.00	1766.02	N 822.13	W 869.94	2246.39	1787.27	N 566.32	W 1028.17	205.60	301.54	249.19	5.76	11.31			
2500.00	1811.22	N 862.16	W 949.65	2344.07	1845.77	N 610.88	W 1092.46	201.39	291.08	235.87	5.27	13.07			
2600.00	1855.94	N 900.58	W 1030.42	2442.08	1905.41	N 655.49	W 1156.19	197.11	279.88	221.65	4.81	13.95			
2700.00	1901.07	N 939.04	W 1110.95	2539.30	1965.60	N 699.69	W 1218.43	192.56	270.19	209.11	4.42	14.08			
2800.00	1947.55	N 976.69	W 1191.08	2635.41	2026.02	N 743.15	W 1279.24	187.43	261.67	197.77	4.09	14.71			
2900.00	1993.13	N 1012.48	W 1272.57	2731.12	2086.89	N 786.07	W 1339.34	180.88	253.99	187.15	3.80	16.68			
3000.00	2037.40	N 1048.12	W 1354.85	2829.74	2150.07	N 831.01	W 1400.29	174.44	248.79	178.80	3.55	17.83			
3100.00	2081.19	N 1083.86	W 1437.34	2925.68	2211.57	N 875.44	W 1459.01	167.68	246.80	173.75	3.38	17.89			
3200.00	2124.46	N 1122.09	W 1518.98	3020.16	2271.83	N 918.87	W 1517.40	162.69	251.03	174.86	3.30	16.33			
3300.00	2167.66	N 1161.81	W 1599.95	3119.32	2334.85	N 964.94	W 1578.54	156.46	259.17	179.88	3.27	16.86			
3400.00	2211.53	N 1201.20	W 1680.72	3219.64	2398.77	N 1014.14	W 1638.17	150.06	268.07	185.58	3.25	18.56			
3500.00	2256.21	N 1240.95	W 1760.86	3318.79	2462.44	N 1067.20	W 1692.55	143.63	278.18	192.38	3.24	21.38			
3600.00	2301.68	N 1282.35	W 1839.72	3411.34	2522.51	N 1121.34	W 1737.51	137.11	291.78	202.75	3.28	24.65			
3700.00	2347.74	N 1324.32	W 1917.93	3502.28	2581.79	N 1177.47	W 1777.56	130.25	309.92	217.62	3.36	25.97			
3800.00	2394.11	N 1365.84	W 1996.20	3597.99	2643.23	N 1238.81	W 1817.84	122.88	331.68	236.00	3.47	27.58			
3900.00	2441.28	N 1406.27	W 2074.56	3687.08	2698.66	N 1298.86	W 1853.29	116.24	356.01	257.08	3.60	29.81			
4000.00	2487.94	N 1446.78	W 2153.18	3759.85	2743.40	N 1349.91	W 1879.46	111.05	386.74	284.82	3.79	33.56			
4100.00	2533.68	N 1487.71	W 2232.12	3821.62	2781.96	N 1394.66	W 1897.50	106.66	426.93	322.26	4.08	37.43			
4200.00	2579.55	N 1529.21	W 2310.70	3894.16	2827.25	N 1448.36	W 1915.57	102.01	473.31	365.56	4.39	38.48			
4300.00	2625.94	N 1570.28	W 2389.19	3962.61	2869.72	N 1499.76	W 1931.01	97.94	523.77	413.13	4.73	40.11			
4400.00	2671.92	N 1611.02	W 2468.09	4030.53	2912.15	N 1550.93	W 1945.00	94.32	578.75	465.32	5.10	41.55			
4500.00	2718.31	N 1649.90	W 2547.69	4110.42	2962.17	N 1611.01	W 1961.44	90.76	636.14	520.52	5.50	41.50			
4600.00	2766.22	N 1689.64	W 2625.95	4185.73	3009.39	N 1667.44	W 1977.47	88.01	692.93	575.19	5.89	39.40			
4700.00	2814.46	N 1731.39	W 2702.95	4256.18	3054.07	N 1719.93	W 1992.05	86.41	750.28	630.67	6.27	38.00			

4800.00	2867.68	N 1773.53	W 2776.36	4328.07	3100.23	N 1773.14	W 2006.36	85.40	804.35	682.86	6.62	36.72	
4900.00	2922.20	N 1814.92	W 2849.26	4398.97	3146.49	N 1825.14	W 2019.90	83.78	859.22	735.77	6.96	37.15	
5000.00	2977.25	N 1855.98	W 2921.95	4469.23	3193.05	N 1876.17	W 2032.74	82.39	915.25	789.82	7.30	37.51	
5100.00	3033.38	N 1896.77	W 2993.95	4538.33	3238.99	N 1926.39	W 2044.64	81.75	971.77	844.27	7.62	36.97	
5200.00	3092.37	N 1936.97	W 3063.98	4607.37	3284.78	N 1976.85	W 2055.75	80.91	1027.20	897.71	7.93	37.77	
5300.00	3152.81	N 1975.40	W 3133.76	4679.88	3332.79	N 2030.06	W 2066.79	80.10	1083.42	951.81	8.23	37.87	
5400.00	3214.76	N 2012.91	W 3202.72	4751.83	3380.35	N 2083.02	W 2077.31	78.86	1139.69	1005.99	8.52	38.60	
5500.00	3277.75	N 2049.88	W 3271.02	4823.21	3427.45	N 2135.71	W 2087.31	78.25	1196.22	1060.42	8.81	37.93	
5600.00	3342.03	N 2086.46	W 3338.32	4894.40	3474.27	N 2188.48	W 2096.84	76.99	1252.68	1114.73	9.08	38.91	
5700.00	3406.60	N 2122.86	W 3405.44	4964.77	3520.33	N 2240.92	W 2105.85	76.08	1309.89	1169.77	9.35	38.57	
5800.00	3472.39	N 2160.00	W 3470.95	5035.33	3566.27	N 2293.77	W 2114.46	75.40	1366.30	1224.02	9.60	37.89	
5900.00	3538.53	N 2197.18	W 3536.10	5094.12	3604.30	N 2338.12	W 2121.06	74.36	1423.56	1279.39	9.87	39.27	
6000.00	3604.29	N 2234.30	W 3601.65	5151.15	3640.90	N 2381.49	W 2126.69	73.52	1482.74	1336.64	10.15	40.03	
6069.00	3650.07	N 2260.06	W 3646.39	5189.90	3665.60	N 2411.15	W 2130.08	73.30	1523.89	1376.88	10.37	40.07	
Field:	Lobitos			Well:	Well LO16-11								
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-11								
Slot:	Slot #11			Trajectory:	LO16-11 SS Survey								
				Type:	DEF SVY								
Coordinate System:	UTM Zone 17S - WGS84, Meters												
Reference Point:													
Northing (m)	Easting (m)			Elevation (ft)				Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505988.350	E 459463.650			50.00 above MSL				0.000		0.000		2.500	
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma												
Surveying Prog:													
MD From (ft)	MD To (ft)			EOU Freq		Survey Tool Type							
0.00	8010.00			Act-Stns		SLB_MWD-POOR							
Subject Trajectory				Offset Trajectory				Ct-Ct	EOU	Sep	Inter.		
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle	
Major EOU radii used. All local minima indicated.													
Results highlighted: Separation Factor <= 1.50													
0.00	0.00	N 0.00	E 0.00	9.58	9.25	S 27.10	E 21.90	141.06	36.06	33.35	13.34	14.98	
100.00	100.00	S 0.71	E 0.31	105.96	102.40	S 9.90	E 4.13	157.41	10.24	4.67	1.84	15.16	
200.00	199.99	S 0.60	W 0.69	202.91	196.20	N 7.16	W 13.49	301.19	15.44	9.85	2.76	13.41	
300.00	299.96	N 0.38	W 2.63	300.35	290.56	N 24.05	W 30.95	309.84	38.09	32.33	6.61	13.45	
400.00	399.91	N 2.15	W 5.29	398.19	385.41	N 40.75	W 48.24	311.84	59.53	53.21	9.42	12.27	
500.00	499.86	N 3.89	W 7.99	498.22	482.58	N 58.32	W 64.03	314.14	80.01	73.10	11.58	11.49	
600.00	599.79	N 6.50	W 10.44	599.21	580.86	N 80.75	W 68.91	321.86	96.39	88.99	13.03	11.21	
700.00	699.50	N 13.32	W 13.24	695.40	674.53	N 101.45	W 75.25	325.18	110.62	102.21	13.16	7.21	
800.00	798.25	N 28.18	W 17.63	793.36	769.71	N 118.74	W 90.55	321.76	119.72	110.59	13.11	6.08	
900.00	894.55	N 52.85	W 27.78	893.41	866.91	N 135.94	W 106.86	316.86	117.99	107.59	11.35	7.39	
1000.00	986.23	N 87.40	W 47.35	991.74	962.52	N 153.04	W 122.17	311.31	102.32	90.66	8.78	14.18	
1100.00	1071.99	N 131.23	W 74.02	1086.83	1054.99	N 169.54	W 137.02	300.63	75.67	62.46	5.73	21.46	
1200.00	1151.22	N 184.29	W 104.01	1177.85	1143.52	N 185.07	W 151.38	270.16	48.00	33.52	3.31	27.70	
1300.00	1223.77	N 243.95	W 138.18	1263.91	1227.33	N 199.52	W 164.50	215.98	51.76	35.49	3.18	33.67	
1400.00	1289.41	N 308.83	W 176.59	1344.49	1305.85	N 212.99	W 176.63	186.66	97.24	78.98	5.32	38.67	
1500.00	1349.46	N 376.07	W 219.81	1420.70	1380.11	N 225.74	W 188.04	174.46	156.68	136.26	7.67	42.17	
1600.00	1403.36	N 441.99	W 272.09	1491.81	1449.44	N 237.85	W 198.47	168.24	222.03	199.21	9.73	46.91	
1700.00	1449.13	N 503.82	W 335.85	1555.69	1511.74	N 248.36	W 207.63	163.91	292.60	267.14	11.49	52.65	
1800.00	1489.72	N 561.30	W 406.87	1614.50	1569.13	N 258.22	W 215.94	158.35	366.91	338.83	13.07	54.01	
1900.00	1531.62	N 614.22	W 480.63	1673.89	1627.09	N 268.15	W 224.20	152.73	441.18	410.64	14.45	52.16	
2000.00	1577.03	N 660.31	W 556.85	1734.75	1686.53	N 278.30	W 232.47	148.12	512.97	480.06	15.59	50.79	
2100.00	1624.73	N 702.35	W 634.02	1796.46	1746.83	N 288.58	W 240.56	144.42	583.89	548.56	16.53	50.44	
2200.00	1673.27	N 741.06	W 712.41	1860.10	1809.07	N 299.17	W 248.60	140.77	654.85	617.80	17.68	50.11	
2300.00	1720.58	N 781.72	W 790.56	1927.85	1875.25	N 310.76	W 257.26	138.36	728.10	689.06	18.65	51.91	
2400.00	1766.02	N 822.13	W 869.94	1993.31	1939.11	N 322.34	W 265.81	135.75	802.95	762.00	19.61	51.61	
2500.00	1811.22	N 862.16	W 949.65	2057.05	2001.24	N 333.96	W 274.10	134.24	878.33	835.64	20.57	52.31	
2600.00	1855.94	N 900.58	W 1030.42	2120.62	2063.14	N 345.88	W 282.29	132.23	954.11	909.57	21.42	52.29	
2700.00	1901.07	N 939.04	W 1110.95	2204.46	2144.52	N 362.44	W 293.71	129.67	1029.37	982.85	22.13	50.32	
2800.00	1947.55	N 976.69	W 1191.08	2285.87	2223.15	N 379.73	W 305.85	127.92	1102.70	1054.22	22.74	49.49	
2900.00	1993.13	N 1012.48	W 1272.57	2362.60	2296.92	N 397.31	W 317.49	126.93	1175.97	1125.45	23.28	50.28	

3000.00	2037.40	N 1048.12	W 1354.85	2436.90	2368.07	N 415.48	W 328.85	125.24	1249.90	1197.17	23.71	50.50
3100.00	2081.19	N 1083.86	W 1437.34	2510.08	2437.90	N 434.16	W 340.17	123.69	1324.06	1269.16	24.12	50.36
3200.00	2124.46	N 1122.09	W 1518.98	2584.63	2508.84	N 453.91	W 351.88	121.43	1398.69	1341.41	24.42	49.86
3300.00	2167.66	N 1161.81	W 1599.95	2661.31	2581.57	N 474.78	W 364.26	120.39	1473.18	1413.61	24.73	49.18
3400.00	2211.53	N 1201.20	W 1680.72	2739.95	2655.95	N 496.71	W 377.38	119.36	1546.77	1484.96	25.02	48.34
3500.00	2256.21	N 1240.95	W 1760.86	2809.00	2721.09	N 516.44	W 389.00	118.15	1619.58	1554.49	24.88	47.45
3600.00	2301.68	N 1282.35	W 1839.72	2878.22	2786.28	N 536.72	W 400.41	117.12	1691.86	1625.50	25.50	46.81
3700.00	2347.74	N 1324.32	W 1917.93	2949.83	2853.60	N 558.23	W 411.98	116.45	1763.71	1693.94	25.28	46.75
3800.00	2394.11	N 1365.84	W 1996.20	3026.94	2925.91	N 581.94	W 424.41	116.15	1835.16	1764.06	25.81	46.15
3900.00	2441.28	N 1406.27	W 2074.56	3105.08	2998.98	N 606.54	W 437.08	115.66	1905.77	1832.30	25.94	45.75
4000.00	2487.94	N 1446.78	W 2153.18	3169.28	3058.93	N 627.10	W 447.40	115.02	1976.77	1901.01	26.09	46.74
4100.00	2533.68	N 1487.71	W 2232.12	3230.35	3115.94	N 646.81	W 456.89	114.51	2048.81	1970.75	26.25	47.19
4200.00	2579.55	N 1529.21	W 2310.70	3291.07	3172.63	N 666.56	W 466.00	113.94	2121.04	2040.76	26.42	46.99
4300.00	2625.94	N 1570.28	W 2389.19	3385.40	3260.74	N 697.05	W 480.28	113.55	2193.05	2110.08	26.43	46.06
4400.00	2671.92	N 1611.02	W 2468.09	3421.35	3294.57	N 707.56	W 486.42	113.60	2265.17	2180.16	26.65	47.13
4500.00	2718.31	N 1649.90	W 2547.69	3456.44	3327.88	N 716.86	W 492.36	113.89	2338.06	2251.12	26.89	47.32
4600.00	2766.22	N 1689.64	W 2625.95	3496.76	3366.45	N 726.44	W 499.10	112.91	2410.71	2321.65	27.07	46.82
4700.00	2814.46	N 1731.39	W 2702.95	3560.61	3427.67	N 741.21	W 509.62	112.44	2483.38	2392.12	27.21	45.20
4800.00	2867.68	N 1773.53	W 2776.36	3631.99	3496.11	N 757.92	W 521.15	112.47	2551.93	2458.49	27.31	42.59
4900.00	2922.20	N 1814.92	W 2849.26	3711.90	3572.61	N 777.11	W 533.93	112.50	2619.32	2523.65	27.38	42.21
5000.00	2977.25	N 1855.98	W 2921.95	3785.03	3642.55	N 795.06	W 545.54	112.45	2686.17	2588.33	27.45	41.97
5100.00	3033.38	N 1896.77	W 2993.95	3857.15	3711.52	N 812.84	W 556.86	112.37	2752.12	2652.12	27.52	40.17
5200.00	3092.37	N 1936.97	W 3063.98	3929.24	3780.47	N 830.70	W 568.05	112.59	2815.48	2713.46	27.60	39.23
5300.00	3152.81	N 1975.40	W 3133.76	3996.68	3844.97	N 847.51	W 578.25	112.67	2877.82	2773.87	27.69	38.11
5400.00	3214.76	N 2012.91	W 3202.72	4064.61	3909.98	N 864.54	W 588.19	112.68	2939.02	2833.18	27.77	38.19
5500.00	3277.75	N 2049.88	W 3271.02	4132.77	3975.22	N 881.75	W 597.84	112.51	2999.48	2891.74	27.84	36.68
5600.00	3342.03	N 2086.46	W 3338.32	4202.59	4042.08	N 899.48	W 607.39	112.50	3058.92	2949.35	27.92	37.10
5700.00	3406.60	N 2122.86	W 3405.44	4276.97	4113.29	N 918.48	W 617.31	112.23	3118.27	3006.81	27.98	36.43
5800.00	3472.39	N 2160.00	W 3470.95	4400.88	4231.82	N 950.47	W 634.15	111.87	3176.02	3062.20	27.90	34.47
5900.00	3538.53	N 2197.18	W 3536.10	4528.66	4353.52	N 984.13	W 653.73	111.72	3231.68	3115.45	27.81	34.09
6000.00	3604.29	N 2234.30	W 3601.65	4599.32	4420.72	N 1003.05	W 664.63	111.57	3287.65	3169.48	27.82	34.30
6069.00	3650.07	N 2260.06	W 3646.39	4687.17	4504.26	N 1026.55	W 678.28	111.42	3325.79	3205.75	27.71	32.96
Field:	Lobitos			Well:	Well LO16-12							
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-12							
Slot:	Slot #12			Trajectory:	LO16-12 SS Survey							
				Type:	DEF SVY							
Coordinate System:	UTM Zone 17S - WGS84, Meters											
Reference Point:												
Northing (m)	Easting (m)			Elevation (ft)			Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505985.730	E 459461.170			50.00 above MSL			0.000		0.000		2.500	
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma											
Surveying Prog:												
MD From (ft)	MD To (ft)			EOU Freq		Survey Tool Type						
0.00	7729.00			Act-Stns		SLB_MWD-POOR						
Subject Trajectory				Offset Trajectory				Ct-Ct	EOU	Sep	Inter.	
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle
Major EOU radii used. All local minima indicated.												
Results highlighted: Separation Factor <= 1.50												
0.00	0.00	N 0.00	E 0.00	10.34	9.99	S 34.84	E 14.86	156.90	39.17	36.40	14.14	14.93
100.00	100.00	S 0.71	E 0.31	106.60	103.15	S 11.34	E 8.83	141.26	13.98	8.49	2.55	14.73
200.00	199.99	S 0.60	W 0.69	203.71	197.40	N 11.36	E 3.28	18.09	12.86	7.27	2.30	12.88
300.00	299.96	N 0.38	W 2.63	301.58	292.66	N 33.22	W 1.79	1.30	33.65	27.87	5.82	12.29
400.00	399.91	N 2.15	W 5.29	400.10	388.81	N 54.20	W 6.34	358.51	53.22	46.87	8.38	11.11
500.00	499.86	N 3.89	W 7.99	499.05	485.63	N 74.21	W 10.36	357.84	71.78	64.82	10.31	10.34
600.00	599.79	N 6.50	W 10.44	598.41	583.09	N 93.26	W 13.84	357.55	88.42	80.97	11.87	8.39
700.00	699.50	N 13.32	W 13.24	697.82	680.70	N 111.87	W 16.56	357.83	100.39	92.24	12.33	4.97
800.00	798.25	N 28.18	W 17.63	797.79	778.90	N 130.48	W 18.44	359.23	104.12	95.64	12.29	2.84
900.00	894.55	N 52.85	W 27.78	895.96	875.29	N 148.98	W 20.33	3.94	98.32	89.50	11.14	9.34
1000.00	986.23	N 87.40	W 47.35	990.70	967.88	N 168.96	W 22.42	15.95	87.23	77.73	9.18	16.39
1100.00	1071.99	N 131.23	W 74.02	1082.01	1056.35	N 191.45	W 24.36	36.72	79.60	69.10	7.58	21.52
1200.00	1151.22	N 184.29	W 104.01	1171.94	1142.52	N 217.09	W 26.16	61.75	84.92	73.65	7.53	25.49

1300.00	1223.77	N 243.95	W 138.18	1260.34	1226.22	N 245.44	W 28.17	82.06	110.05	97.46	8.74	29.32
1400.00	1289.41	N 308.83	W 176.59	1347.85	1307.78	N 277.05	W 30.74	94.62	150.40	136.21	10.61	32.53
1500.00	1349.46	N 376.07	W 219.81	1430.48	1383.89	N 309.11	W 33.35	101.66	201.09	185.10	12.57	36.31
1600.00	1403.36	N 441.99	W 272.09	1507.27	1454.45	N 339.32	W 35.48	104.68	262.94	244.87	14.55	43.11
1700.00	1449.13	N 503.82	W 335.85	1575.43	1517.08	N 366.16	W 37.36	105.60	335.65	315.27	16.47	50.25
1800.00	1489.72	N 561.30	W 406.87	1636.26	1572.97	N 390.11	W 39.00	106.95	414.21	391.50	18.24	52.61
1900.00	1531.62	N 614.22	W 480.63	1694.58	1628.56	N 413.10	W 40.24	109.19	493.36	468.47	19.82	52.35
2000.00	1577.03	N 660.31	W 556.85	1752.56	1679.83	N 435.96	W 41.10	110.10	571.75	544.72	21.15	52.42
2100.00	1624.73	N 702.35	W 634.02	1812.96	1735.31	N 459.83	W 41.70	109.50	649.52	620.22	22.17	52.63
2200.00	1673.27	N 741.06	W 712.41	1873.26	1790.67	N 483.73	W 42.24	107.76	727.42	696.41	23.46	52.43
2300.00	1720.58	N 781.72	W 790.56	1933.08	1845.55	N 507.52	W 42.70	105.32	806.28	773.18	24.36	54.17
2400.00	1766.02	N 822.13	W 869.94	1991.33	1898.97	N 530.74	W 43.11	104.27	886.70	851.37	25.10	54.18
2500.00	1811.22	N 862.16	W 949.65	2049.30	1952.14	N 553.85	W 43.51	103.80	967.47	930.30	26.03	55.21
2600.00	1855.94	N 900.58	W 1030.42	2106.19	2004.30	N 576.53	W 43.91	102.91	1048.92	1009.89	26.88	55.33
2700.00	1901.07	N 939.04	W 1110.95	2162.02	2055.50	N 598.79	W 44.27	102.32	1130.22	1089.48	27.74	54.70
2800.00	1947.55	N 976.69	W 1191.08	2217.23	2106.13	N 620.81	W 44.51	101.94	1210.96	1168.51	28.52	54.89
2900.00	1993.13	N 1012.48	W 1272.57	2270.58	2155.06	N 642.08	W 44.61	101.87	1292.79	1248.53	29.21	56.47
3000.00	2037.40	N 1048.12	W 1354.85	2325.99	2205.90	N 664.13	W 44.66	100.57	1375.66	1329.54	29.83	56.85
3100.00	2081.19	N 1083.86	W 1437.34	2382.62	2257.92	N 686.50	W 44.83	99.66	1458.84	1410.95	30.46	56.84
3200.00	2124.46	N 1122.09	W 1518.98	2440.00	2310.70	N 709.00	W 45.15	97.30	1541.91	1492.11	30.97	56.14
3300.00	2167.66	N 1161.81	W 1599.95	2495.83	2362.09	N 730.81	W 45.53	97.23	1624.74	1573.19	31.52	55.92
3400.00	2211.53	N 1201.20	W 1680.72	2552.16	2413.94	N 752.82	W 45.92	97.13	1707.21	1653.94	32.04	55.55
3500.00	2256.21	N 1240.95	W 1760.86	2609.36	2466.60	N 775.17	W 46.31	96.52	1789.11	1734.04	32.49	54.52
3600.00	2301.68	N 1282.35	W 1839.72	2663.38	2516.32	N 796.29	W 46.62	95.98	1870.16	1813.20	32.83	53.85
3700.00	2347.74	N 1324.32	W 1917.93	2716.00	2564.73	N 816.92	W 46.73	95.74	1950.87	1891.97	33.12	53.99
3800.00	2394.11	N 1365.84	W 1996.20	2768.23	2612.75	N 837.45	W 46.64	96.41	2031.69	1970.90	33.42	53.92
3900.00	2441.28	N 1406.27	W 2074.56	2824.20	2664.18	N 859.52	W 46.34	96.61	2112.41	2049.77	33.72	53.87
4000.00	2487.94	N 1446.78	W 2153.18	2904.99	2738.41	N 891.40	W 46.33	95.74	2193.17	2128.47	33.90	53.99
4100.00	2533.68	N 1487.71	W 2232.12	2980.78	2808.05	N 921.30	W 47.10	95.41	2273.86	2207.11	34.06	53.73
4200.00	2579.55	N 1529.21	W 2310.70	3033.00	2858.08	N 941.81	W 47.73	95.23	2354.26	2285.65	34.31	53.43
4300.00	2625.94	N 1570.28	W 2389.19	3085.07	2904.02	N 962.11	W 48.23	95.55	2434.61	2364.24	34.60	53.67
4400.00	2671.92	N 1611.02	W 2468.09	3135.14	2950.18	N 981.51	W 48.59	95.70	2515.49	2443.30	34.84	54.37
4500.00	2718.31	N 1649.90	W 2547.69	3181.17	2992.63	N 999.30	W 48.73	96.55	2596.79	2522.85	35.12	54.44
4600.00	2766.22	N 1689.64	W 2625.95	3227.94	3035.76	N 1017.39	W 48.64	95.49	2677.14	2601.29	35.30	53.24
4700.00	2814.46	N 1731.39	W 2702.95	3296.34	3098.83	N 1043.87	W 48.32	95.49	2756.91	2679.09	35.42	51.16
4800.00	2867.68	N 1773.53	W 2776.36	3379.10	3175.05	N 1076.10	W 48.54	96.35	2832.30	2752.52	35.50	48.23
4900.00	2922.20	N 1814.92	W 2849.26	3392.50	3187.41	N 1081.30	W 48.47	96.62	2907.40	2826.08	35.75	49.13
5000.00	2977.25	N 1855.98	W 2921.95	3405.43	3199.34	N 1086.26	W 48.18	96.80	2983.34	2900.48	36.00	49.92
5100.00	3033.38	N 1896.77	W 2993.95	3418.02	3210.98	N 1091.03	W 47.69	97.31	3059.61	2975.21	36.25	49.07
5200.00	3092.37	N 1936.97	W 3063.98	3439.60	3230.96	N 1099.10	W 46.46	98.15	3134.75	3048.88	36.50	49.10
5300.00	3152.81	N 1975.40	W 3133.76	3483.23	3271.47	N 1115.06	W 43.73	98.78	3209.76	3122.34	36.72	48.30
5400.00	3214.76	N 2012.91	W 3202.72	3528.73	3313.89	N 1131.23	W 40.69	99.04	3284.15	3195.21	36.93	48.59
5500.00	3277.75	N 2049.88	W 3271.02	3585.45	3366.89	N 1151.04	W 36.73	99.21	3358.04	3267.52	37.09	47.03
5600.00	3342.03	N 2086.46	W 3338.32	3642.79	3420.56	N 1170.81	W 32.62	99.35	3431.07	3339.02	37.28	47.50
5700.00	3406.60	N 2122.86	W 3405.44	3699.32	3473.61	N 1189.89	W 28.50	99.13	3504.09	3410.52	37.45	46.77
5800.00	3472.39	N 2160.00	W 3470.95	3756.77	3527.76	N 1208.62	W 24.30	98.94	3575.97	3480.90	37.61	45.64
5900.00	3538.53	N 2197.18	W 3536.10	3806.58	3574.83	N 1224.46	W 20.57	98.95	3647.80	3551.22	37.77	46.42
6000.00	3604.29	N 2234.30	W 3601.65	3853.03	3618.69	N 1239.29	W 16.77	98.81	3720.43	3622.27	37.90	46.72
6089.00	3650.07	N 2260.06	W 3646.39	3885.04	3648.89	N 1249.55	W 13.98	98.81	3770.35	3671.12	37.99	46.20
Field:	Lobitos			Well:	Well LO16-13							
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-13							
Slot:	Slot #13			Trajectory:	LO16-13 SS Survey							
				Type:	DEF SVY							
Coordinate System:	UTM Zone 17S - WGS84, Meters											
Reference Point:												
Northing (m)	Easting (m)			Elevation (ft)			Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505988.390	E 459459.410			50.00 above MSL			0.000		0.000		2.500	
Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma												
Surveying Prog:												
MD From (ft)			MD To (ft)			EOU Freq		Survey Tool Type				

GEOSCIENCES
Central File

0.00				8682.00				Act-Stns SLB_MWD-POOR																				
Subject Trajectory				Offset Trajectory				Ct-Ct				EOU				Sep				Intf.								
MD (ft)		TVD (ft)		NS (ft)		EW (ft)		MD (ft)		TVD (ft)		NS (ft)		EW (ft)		TC Azim		Dist (ft)		Dist (ft)		Factor		Angle		DATE		
Major EOU radii used. All local minima indicated.																												
Results highlighted: Separation Factor <= 1.50																												
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 28.69	E 9.77	161.20	30.31	27.81	12.12	0.00																
100.00	100.00	S 0.71	E 0.31	99.99	99.99	S 28.65	E 9.90	161.07	29.54	24.44	5.79	0.51																
200.00	199.99	S 0.60	W 0.69	199.98	199.98	S 28.53	E 10.30	158.53	30.01	24.78	5.74	1.46																
300.00	299.96	N 0.38	W 2.63	299.93	299.93	S 28.32	E 10.96	154.67	31.76	26.35	5.87	1.26																
400.00	399.91	N 2.15	W 5.29	399.83	399.83	S 28.04	E 11.90	150.36	34.74	28.76	5.81	2.42																
500.00	499.86	N 3.89	W 7.99	499.82	499.80	S 27.65	E 13.06	146.31	37.92	31.30	5.72	1.99																
600.00	599.79	N 6.50	W 10.44	600.04	600.02	S 26.86	E 13.85	143.94	41.26	34.06	5.73	2.45																
700.00	699.50	N 13.32	W 13.24	700.16	700.13	S 25.56	E 14.05	144.86	47.50	39.53	5.96	5.28																
800.00	798.25	N 28.18	W 17.63	799.58	799.53	S 23.76	E 13.69	148.69	60.66	52.31	7.27	10.73																
900.00	894.55	N 52.85	W 27.78	897.03	896.95	S 21.50	E 12.77	151.26	84.72	78.06	9.78	17.70																
1000.00	986.23	N 87.40	W 47.35	990.36	990.25	S 18.89	E 11.37	151.34	121.50	112.23	13.10	25.38																
1100.00	1071.99	N 131.23	W 74.02	1070.59	1070.45	S 18.42	E 10.27	150.81	171.76	161.54	16.81	34.99																
1200.00	1151.22	N 184.29	W 104.01	1141.36	1141.19	S 20.15	E 10.85	150.70	234.71	223.80	21.51	42.94																
1300.00	1223.77	N 243.95	W 138.18	1200.84	1200.57	S 23.30	E 12.42	150.90	307.64	295.48	25.30	50.82																
1400.00	1289.41	N 308.83	W 176.59	1250.31	1249.83	S 27.43	E 14.04	152.42	388.55	374.85	28.36	57.24																
1500.00	1349.46	N 376.07	W 219.81	1291.61	1290.87	S 31.68	E 15.98	154.83	474.65	459.19	30.71	62.00																
1600.00	1403.36	N 441.99	W 272.09	1325.53	1324.49	S 35.65	E 18.05	165.09	564.40	546.91	32.27	67.61																
1700.00	1449.13	N 503.82	W 335.85	1350.95	1349.84	S 38.67	E 20.19	176.55	656.47	636.70	33.19	73.78																
1800.00	1489.72	N 561.30	W 406.87	1370.04	1368.49	S 41.02	E 22.06	178.79	749.31	727.26	33.98	75.39																
1900.00	1531.62	N 614.22	W 480.63	1388.74	1386.93	S 43.41	E 24.07	175.28	841.51	817.33	34.81	73.62																
2000.00	1577.03	N 660.31	W 556.85	1408.76	1406.63	S 46.07	E 26.43	172.25	931.78	905.55	35.52	72.16																
2100.00	1624.73	N 702.35	W 634.02	1430.36	1427.84	S 49.06	E 29.20	170.16	1021.39	993.03	36.01	71.78																
2200.00	1673.27	N 741.06	W 712.41	1454.58	1451.59	S 52.51	E 32.46	167.54	1110.74	1080.94	37.28	71.69																
2300.00	1720.58	N 781.72	W 790.56	1476.70	1473.25	S 55.74	E 35.58	169.06	1202.08	1170.58	38.16	74.32																
2400.00	1766.02	N 822.13	W 869.94	1496.47	1492.59	S 58.68	E 38.46	167.33	1294.52	1261.38	39.06	74.51																
2500.00	1811.22	N 862.16	W 949.65	1515.26	1510.94	S 61.53	E 41.30	168.10	1387.57	1352.93	40.05	75.35																
2600.00	1855.94	N 900.58	W 1030.42	1531.32	1526.61	S 64.01	E 43.80	167.07	1480.83	1444.58	40.85	75.70																
2700.00	1901.07	N 939.04	W 1110.95	1546.88	1541.77	S 66.47	E 46.31	164.27	1574.61	1536.90	41.76	75.22																
2800.00	1947.55	N 976.69	W 1191.08	1562.61	1557.07	S 68.99	E 48.94	163.43	1668.40	1629.24	42.60	75.33																
2900.00	1993.13	N 1012.48	W 1272.57	1577.16	1571.20	S 71.37	E 51.44	165.97	1762.32	1721.59	43.27	76.46																
3000.00	2037.40	N 1048.12	W 1354.85	1590.25	1583.90	S 73.54	E 53.75	166.12	1856.86	1814.47	43.80	77.42																
3100.00	2081.19	N 1083.86	W 1437.34	1602.47	1595.74	S 75.60	E 55.97	165.51	1951.92	1907.92	44.37	77.89																
3200.00	2124.46	N 1122.09	W 1518.98	1613.73	1606.65	S 77.52	E 58.05	162.09	2047.98	2002.26	44.79	78.66																
3300.00	2167.66	N 1161.81	W 1599.95	1624.41	1616.97	S 79.36	E 60.07	160.82	2144.63	2097.36	45.37	78.61																
3400.00	2211.53	N 1201.20	W 1680.72	1635.04	1627.23	S 81.21	E 62.12	159.05	2241.31	2192.52	45.94	78.43																
3500.00	2256.21	N 1240.95	W 1760.86	1647.44	1639.19	S 83.42	E 64.54	154.37	2338.11	2287.72	46.41	77.97																
3600.00	2301.68	N 1282.35	W 1839.72	1660.65	1651.92	S 85.85	E 67.10	150.22	2435.18	2383.15	46.80	77.73																
3700.00	2347.74	N 1324.32	W 1917.93	1673.92	1664.69	S 88.38	E 69.67	149.14	2532.35	2478.65	47.16	77.91																
3800.00	2394.11	N 1365.84	W 1996.20	1687.11	1677.37	S 90.98	E 72.20	149.34	2629.51	2574.18	47.52	77.37																
3900.00	2441.28	N 1406.27	W 2074.56	1700.60	1690.32	S 93.73	E 74.78	149.12	2726.46	2669.53	47.89	77.16																
4000.00	2487.94	N 1446.78	W 2153.18	1713.46	1702.66	S 96.44	E 77.22	149.88	2823.63	2764.99	48.15	78.23																
4100.00	2533.68	N 1487.71	W 2232.12	1725.43	1714.12	S 99.04	E 79.48	149.70	2921.13	2860.72	48.36	78.61																
4200.00	2579.55	N 1529.21	W 2310.70	1737.17	1725.35	S 101.65	E 81.69	147.17	3018.76	2956.65	48.60	78.45																
4300.00	2625.94	N 1570.28	W 2389.19	1749.02	1736.67	S 104.36	E 83.91	148.07	3116.32	3052.59	48.90	78.36																
4400.00	2671.92	N 1611.02	W 2468.09	1760.38	1747.51	S 107.02	E 86.02	150.18	3213.99	3148.59	49.15	78.71																
4500.00	2718.31	N 1649.90	W 2547.69	1771.92	1758.51	S 109.79	E 88.16	150.95	3311.41	3244.45	49.45	78.03																
4600.00	2766.22	N 1689.64	W 2625.95	1784.05	1770.05	S 112.77	E 90.39	143.09	3408.75	3340.06	49.63	77.71																
4700.00	2814.46	N 1731.39	W 2702.95	1795.96	1781.37	S 115.77	E 92.57	136.51	3506.31	3435.89	49.79	76.47																
4800.00	2867.68	N 1773.53	W 2776.36	1810.51	1795.17	S 119.53	E 95.22	132.29	3602.77	3530.66	49.96	74.14																
4900.00	2922.20	N 1814.92	W 2849.26	1825.56	1809.43	S 123.53	E 97.94	132.80	3698.90	3625.16	50.16	73.96																
5000.00	2977.25	N 1855.98	W 2921.95	1839.50	1822.60	S 127.32	E 100.45	132.80	3794.94	3719.52	50.31	73.85																
5100.00	3033.38	N 1896.77	W 2993.95	1853.21	1835.54	S 131.10	E 102.94	130.18	3890.74	3813.61	50.44	72.37																
5200.00	3092.37	N 1936.97	W 3063.98	1868.08	1849.56	S 135.27	E 105.68	131.11	3985.66	3906.91	50.61	71.29																
5300.00	3152.81	N 1975.40	W 3133.76	1883.48	1864.04	S 139.66	E 108.53	130.88	4080.05	3999.70	50.78	70.06																
5400.00	3214.76	N 20																										

5700.00	3406.60	N 2122.86	W 3405.44	1947.90	1924.34	S 158.72	E 120.80	129.32	4453.88	4367.28	51.43	68.59
5800.00	3472.39	N 2160.00	W 3470.95	1960.06	1935.66	S 162.46	E 123.18	127.20	4546.77	4458.60	51.56	68.09
5900.00	3538.53	N 2197.18	W 3536.10	1971.40	1946.19	S 166.01	E 125.43	128.14	4639.72	4550.00	51.72	68.66
6000.00	3604.29	N 2234.30	W 3601.65	1982.30	1956.29	S 169.48	E 127.62	127.87	4733.02	4641.73	51.85	69.00
6069.00	3650.07	N 2260.06	W 3646.39	1989.78	1963.21	S 171.89	E 129.14	126.84	4797.34	4704.99	51.94	68.63
Field:	Lobitos			Well:	Well LO16-14							
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-14							
Slot:	Slot #14			Trajectory:	LO16-14 MWD Survey							
				Type:	DEF SVY							
Coordinate System:	UTM Zone 17S - WGS84, Meters											
Reference Point:												
Northing (m)	Easting (m)			Elevation (ft)			Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505988.500	E 459455.660			50.00 above MSL			0.000		0.000		2.500	
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma											
Surveying Prog:												
MD From (ft)	MD To (ft)			EOU Freq			Survey Tool Type					
0.00	9558.00			Act-Stns			SLB_MWD-STD					
Subject Trajectory				Offset Trajectory				Ct-Ct	EOU	Sep	Inter.	
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle
Major EOU radii used. All local minima indicated.												
Results highlighted: Separation Factor <= 1.50												
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 28.32	W 2.54	185.13	28.44	25.94	11.37	0.00
100.00	100.00	S 0.71	E 0.31	99.84	99.84	S 28.59	W 2.76	186.28	28.05	22.93	5.49	0.38
200.00	199.99	S 0.60	W 0.69	199.67	199.66	S 29.37	W 3.40	185.40	28.90	23.64	5.50	1.27
300.00	299.96	N 0.38	W 2.63	299.47	299.45	S 30.69	W 4.47	183.41	31.13	25.66	5.69	1.39
400.00	399.91	N 2.15	W 5.29	399.22	399.17	S 32.52	W 5.97	181.16	34.69	28.63	5.72	2.23
500.00	499.86	N 3.89	W 7.99	498.94	498.84	S 34.88	W 7.89	179.91	38.79	32.10	5.80	2.57
600.00	599.79	N 6.50	W 10.44	598.56	598.40	S 37.77	W 10.24	179.82	44.29	37.10	6.16	4.25
700.00	699.50	N 13.32	W 13.24	697.56	697.29	S 41.21	W 13.12	180.05	54.57	46.66	6.90	8.15
800.00	798.25	N 28.18	W 17.63	793.69	793.17	S 46.11	W 17.97	180.92	74.46	66.17	8.98	15.25
900.00	894.55	N 52.85	W 27.78	883.67	882.41	S 54.33	W 25.83	181.27	107.88	99.26	12.51	23.95
1000.00	986.23	N 87.40	W 47.35	966.70	963.83	S 65.65	W 37.39	181.42	155.00	145.73	16.71	32.36
1100.00	1071.99	N 131.23	W 74.02	1049.92	1044.66	S 77.98	W 52.86	181.24	212.05	201.83	20.74	38.32
1200.00	1151.22	N 184.29	W 104.01	1125.17	1117.07	S 89.35	W 69.85	181.92	277.87	266.96	25.46	43.81
1300.00	1223.77	N 243.95	W 138.18	1199.41	1187.79	S 100.10	W 89.73	183.46	349.30	337.12	28.68	47.84
1400.00	1289.41	N 308.83	W 176.59	1275.79	1259.51	S 109.98	W 114.00	185.63	424.52	410.75	30.83	49.86
1500.00	1349.46	N 376.07	W 219.81	1351.96	1329.83	S 118.08	W 142.11	187.10	500.61	484.88	31.84	50.14
1600.00	1403.36	N 441.99	W 272.09	1414.49	1386.31	S 124.48	W 168.15	190.42	576.17	557.77	31.31	50.47
1700.00	1449.13	N 503.82	W 335.85	1475.15	1440.18	S 131.30	W 195.20	192.39	650.56	629.70	31.19	52.02
1800.00	1489.72	N 561.30	W 406.87	1548.35	1503.98	S 139.43	W 230.13	189.25	722.82	699.22	30.63	49.67
1900.00	1531.62	N 614.22	W 480.63	1639.16	1580.76	S 148.59	W 277.73	183.50	790.86	764.52	30.02	43.14
2000.00	1577.03	N 660.31	W 556.85	1725.53	1651.39	S 156.31	W 326.82	179.30	851.65	822.58	29.30	38.00
2100.00	1624.73	N 702.35	W 634.02	1808.79	1717.39	S 164.17	W 376.94	176.88	908.59	876.69	28.49	35.22
2200.00	1673.27	N 741.06	W 712.41	1886.25	1777.30	S 172.38	W 425.35	175.48	963.11	929.12	28.33	34.48
2300.00	1720.58	N 781.72	W 790.56	1944.85	1821.82	S 179.63	W 462.76	176.34	1020.73	984.51	28.19	37.53
2400.00	1766.02	N 822.13	W 869.94	1996.42	1860.52	S 187.58	W 495.90	175.64	1080.90	1042.62	28.24	38.59
2500.00	1811.22	N 862.16	W 949.65	2097.81	1936.26	S 203.76	W 561.33	174.80	1141.32	1100.82	28.18	37.07
2600.00	1855.94	N 900.58	W 1030.42	2185.19	2001.40	S 216.48	W 618.17	173.91	1199.56	1156.80	28.05	36.56
2700.00	1901.07	N 939.04	W 1110.95	2265.47	2061.29	S 227.96	W 670.38	172.72	1257.64	1212.84	28.07	35.91
2800.00	1947.55	N 976.69	W 1191.08	2346.24	2121.63	S 239.49	W 722.82	171.90	1314.79	1267.97	28.08	35.43
2900.00	1993.13	N 1012.48	W 1272.57	2434.44	2187.61	S 251.96	W 780.00	171.40	1370.86	1321.72	27.90	34.87
3000.00	2037.40	N 1048.12	W 1354.85	2528.81	2257.88	S 264.71	W 841.69	171.12	1426.70	1374.94	27.56	35.03
3100.00	2081.19	N 1083.86	W 1437.34	2617.16	2323.53	S 276.07	W 899.72	170.60	1482.30	1427.99	27.29	34.98
3200.00	2124.46	N 1122.09	W 1518.98	2699.52	2384.56	S 286.63	W 954.01	170.80	1539.91	1482.95	27.04	36.61
3300.00	2167.66	N 1161.81	W 1599.95	2782.09	2445.48	S 297.26	W 1008.71	170.17	1598.64	1539.17	26.88	36.19
3400.00	2211.53	N 1201.20	W 1680.72	2866.04	2507.05	S 308.15	W 1064.74	169.57	1656.78	1594.80	26.73	35.73
3500.00	2256.21	N 1240.95	W 1760.86	2948.74	2567.42	S 318.94	W 1120.21	169.08	1714.80	1650.25	26.57	35.84
3600.00	2301.68	N 1282.35	W 1839.72	3044.58	2637.22	S 331.06	W 1184.75	168.78	1773.32	1706.02	26.35	35.71
3700.00	2347.74	N 1324.32	W 1917.93	3128.98	2698.45	S 341.44	W 1241.91	168.72	1831.61	1761.66	26.18	35.75
3800.00	2394.11	N 1365.84	W 1996.20	3212.30	2758.61	S 351.75	W 1298.63	168.18	1889.34	1816.75	26.03	34.74
3900.00	2441.28	N 1406.27	W 2074.56	3293.24	2817.01	S 361.77	W 1353.76	167.88	1945.94	1870.89	25.93	34.32

4000.00	2487.94	N 1446.78	W 2153.18	3373.10	2874.85	S 371.62	W 1407.94	168.32	2002.91	1925.35	25.82	35.20		
4100.00	2533.68	N 1487.71	W 2232.12	3452.13	2932.32	S 381.32	W 1461.32	168.34	2060.66	1980.64	25.75	35.51		
4200.00	2579.55	N 1529.21	W 2310.70	3531.45	2990.23	S 391.01	W 1514.66	168.11	2118.87	2036.42	25.70	35.85		
4300.00	2625.94	N 1570.28	W 2389.19	3611.67	3048.93	S 400.79	W 1568.45	167.85	2176.61	2091.83	25.67	35.22		
4400.00	2671.92	N 1611.02	W 2468.09	3689.20	3105.87	S 410.19	W 1620.22	167.79	2234.40	2147.23	25.63	35.15		
4500.00	2718.31	N 1649.90	W 2547.69	3767.12	3163.46	S 419.58	W 1671.87	167.10	2290.84	2201.40	25.61	34.15		
4600.00	2766.22	N 1689.64	W 2625.95	3844.63	3221.10	S 428.84	W 1722.84	166.92	2347.44	2255.56	25.55	35.15		
4700.00	2814.46	N 1731.39	W 2702.95	3921.10	3278.34	S 437.91	W 1772.74	166.18	2405.48	2311.23	25.52	35.06		
4800.00	2867.68	N 1773.53	W 2776.36	3996.13	3334.93	S 446.72	W 1821.20	165.00	2461.74	2365.21	25.50	33.87		
4900.00	2922.20	N 1814.92	W 2849.26	4071.31	3392.17	S 455.43	W 1869.15	164.89	2517.14	2418.41	25.50	33.59		
5000.00	2977.25	N 1855.98	W 2921.95	4146.35	3449.85	S 464.02	W 1916.38	164.79	2572.34	2471.42	25.49	33.47		
5100.00	3033.38	N 1896.77	W 2993.95	4221.28	3508.00	S 472.47	W 1962.88	164.04	2627.10	2524.01	25.48	32.80		
5200.00	3092.37	N 1936.97	W 3063.98	4298.61	3568.53	S 481.07	W 2010.23	163.56	2680.30	2575.12	25.48	31.61		
5300.00	3152.81	N 1975.40	W 3133.76	4377.13	3630.43	S 489.71	W 2057.77	163.00	2731.78	2624.51	25.47	30.55		
5400.00	3214.76	N 2012.91	W 3202.72	4454.30	3691.76	S 498.09	W 2103.85	162.92	2782.11	2672.81	25.46	30.14		
5500.00	3277.75	N 2049.88	W 3271.02	4560.26	3776.48	S 509.25	W 2166.50	162.41	2831.58	2719.88	25.35	29.07		
5600.00	3342.03	N 2086.46	W 3338.32	4697.22	3884.90	S 522.48	W 2249.13	162.58	2878.82	2764.42	25.16	27.77		
5700.00	3406.60	N 2122.86	W 3405.44	4820.91	3981.33	S 533.50	W 2325.78	162.62	2924.42	2807.32	24.97	27.39		
5800.00	3472.39	N 2160.00	W 3470.95	4968.03	4092.87	S 546.61	W 2420.82	162.78	2968.75	2848.57	24.70	27.03		
5900.00	3538.53	N 2197.18	W 3536.10	5121.40	4204.92	S 559.36	W 2524.74	163.39	3010.89	2887.43	24.39	26.42		
6000.00	3604.29	N 2234.30	W 3601.65	5211.90	4269.66	S 566.74	W 2587.55	163.75	3052.37	2926.40	24.23	26.55		
6069.00	3650.07	N 2260.06	W 3646.39	5274.04	4314.07	S 571.81	W 2630.71	163.83	3080.91	2953.24	24.13	26.67		
Field:	Lobitos					Well:	Well LO16-15							
Structure:	Platform LO16 (WGS84)					Borehole:	Borehole LO16-15 S1							
Slot:	Slot #15					Trajectory:	LO16-15 S1 SS Survey							
						Type:	DEF SVY							
Coordinate System:	UTM Zone 17S - WGS84, Meters													
Reference Point:														
Northing (m)	Easting (m)			Elevation (ft)			Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)			
N 9505989.510	E 459454.620			50.00 above MSL			0.000		0.000		2.500			
Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma														
Surveying Prog:														
	MD From (ft)			MD To (ft)			EOU Freq		Survey Tool Type					
	0.00			7482.00			Act-Stns		SLB_MWD-POOR					
Subject Trajectory				Offset Trajectory				Ct-Ct		EOU		Sep		Inter.
MD (ft)		TVD (ft)		NS (ft)		EW (ft)		TC Azim	Dist (ft)	Dist (ft)	Factor	Angle		
Major EOU radii used. All local minima indicated.														
Results highlighted: Separation Factor <= 1.50														
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 25.01	W 5.95	193.39	25.71	23.21	10.28	0.00		
100.00	100.00	S 0.71	E 0.31	100.02	100.02	S 25.00	W 5.76	194.03	25.04	19.93	4.90	0.48		
200.00	199.99	S 0.60	W 0.69	200.03	200.03	S 24.98	W 5.17	190.41	24.79	19.55	4.73	1.62		
300.00	299.96	N 0.38	W 2.63	300.00	299.99	S 24.94	W 4.19	183.52	25.38	19.94	4.67	1.50		
400.00	399.91	N 2.15	W 5.29	399.90	399.89	S 24.90	W 2.81	174.77	27.16	21.15	4.51	2.75		
500.00	499.86	N 3.89	W 7.99	499.77	499.74	S 24.84	W 1.05	166.44	29.55	22.92	4.45	2.56		
600.00	599.79	N 6.50	W 10.44	599.72	599.67	S 24.74	E 0.93	160.02	33.24	26.09	4.65	3.22		
700.00	699.50	N 13.32	W 13.24	699.66	699.60	S 24.45	E 1.85	158.21	40.67	32.75	5.14	5.99		
800.00	798.25	N 28.18	W 17.63	798.79	798.73	S 23.76	E 2.11	159.13	55.57	47.27	6.70	11.48		
900.00	894.55	N 52.85	W 27.78	895.69	895.63	S 22.69	E 1.85	158.82	81.14	72.51	9.40	18.57		
1000.00	986.23	N 87.40	W 47.35	988.03	987.95	S 21.66	E 1.02	156.94	119.32	110.02	12.84	26.41		
1100.00	1071.99	N 131.23	W 74.02	1074.77	1074.68	S 20.83	W 0.31	155.02	169.01	158.75	16.48	33.52		
1200.00	1151.22	N 184.29	W 104.01	1155.28	1155.17	S 20.18	W 2.01	154.34	228.53	217.57	20.86	39.46		
1300.00	1223.77	N 243.95	W 138.18	1229.42	1229.28	S 19.68	W 3.99	154.26	295.87	283.65	24.21	45.17		
1400.00	1289.41	N 308.83	W 176.59	1296.37	1296.20	S 19.30	W 5.96	155.01	369.90	356.10	26.80	50.28		
1500.00	1349.46	N 376.07	W 219.81	1357.71	1357.51	S 18.96	W 7.70	156.03	448.45	432.85	28.75	53.82		
1600.00	1403.36	N 441.99	W 272.09	1413.04	1412.82	S 18.66	W 9.22	161.09	530.46	512.78	30.00	58.46		
1700.00	1449.13	N 503.82	W 335.85	1460.46	1460.23	S 18.42	W 10.47	166.04	615.41	595.40	30.76	63.88		
1800.00	1489.72	N 561.30	W 406.87	1498.90	1498.65	S 18.33	W 11.49	165.88	701.70	679.38	31.43	65.14		
1900.00	1531.62	N 614.22	W 480.63	1535.57	1535.30	S 18.73	W 12.60	163.04	787.21	762.72	32.15	63.09		
2000.00	1577.03	N 660.31	W 556.85	1574.47	1574.17	S 19.73	W 13.94	160.40	870.17	843.58	32.72	61.25		
2100.00	1624.73	N 702.35	W 634.02	1613.44	1613.07	S 21.39	W 15.46	158.37	952.12	923.36	33.10	60.56		

2200.00	1673.27	N 741.06	W 712.41	1652.63	1652.15	S 23.80	W 17.22	156.08	1033.80	1003.56	34.19	60.22			
2300.00	1720.58	N 781.72	W 790.56	1678.64	1678.03	S 25.95	W 18.52	156.71	1118.12	1086.17	35.00	63.42			
2400.00	1766.02	N 822.13	W 869.94	1698.47	1697.74	S 27.98	W 19.25	155.80	1204.58	1170.99	35.86	64.37			
2500.00	1811.22	N 862.16	W 949.65	1716.74	1715.88	S 30.15	W 19.71	156.57	1292.32	1257.22	36.83	65.83			
2600.00	1855.94	N 900.58	W 1030.42	1733.59	1732.58	S 32.40	W 19.95	156.01	1380.84	1344.13	37.62	66.73			
2700.00	1901.07	N 939.04	W 1110.95	1749.43	1748.24	S 34.73	W 20.02	154.35	1470.27	1432.11	38.52	66.76			
2800.00	1947.55	N 976.69	W 1191.08	1767.40	1765.98	S 37.63	W 19.91	153.93	1559.96	1520.33	39.37	67.19			
2900.00	1993.13	N 1012.48	W 1272.57	1795.99	1794.14	S 42.58	W 19.72	155.38	1649.97	1608.75	40.02	68.06			
3000.00	2037.40	N 1048.12	W 1354.85	1823.19	1820.87	S 47.61	W 19.60	154.89	1740.80	1697.87	40.55	68.91			
3100.00	2081.19	N 1083.86	W 1437.34	1849.60	1846.76	S 52.78	W 19.56	154.02	1832.22	1787.65	41.11	69.29			
3200.00	2124.46	N 1122.09	W 1518.98	1874.60	1871.22	S 57.97	W 19.59	150.90	1924.79	1878.46	41.55	70.23			
3300.00	2167.66	N 1161.81	W 1599.95	1898.85	1894.87	S 63.33	W 19.74	149.97	2018.03	1970.12	42.12	70.08			
3400.00	2211.53	N 1201.20	W 1680.72	1923.22	1918.56	S 69.05	W 20.01	148.78	2111.24	2061.77	42.68	69.85			
3500.00	2256.21	N 1240.95	W 1760.86	1948.09	1942.65	S 75.21	W 20.39	145.83	2204.50	2153.41	43.15	69.58			
3600.00	2301.68	N 1282.35	W 1839.72	1989.57	1982.58	S 86.37	W 21.71	143.20	2297.91	2245.10	43.51	69.08			
3700.00	2347.74	N 1324.32	W 1917.93	2034.85	2025.92	S 99.28	W 23.94	142.52	2391.11	2336.56	43.83	68.88			
3800.00	2394.11	N 1365.84	W 1996.20	2085.71	2074.38	S 114.38	W 27.20	142.72	2484.00	2427.72	44.14	67.69			
3900.00	2441.28	N 1406.27	W 2074.56	2181.87	2165.43	S 143.96	W 36.08	142.47	2575.79	2517.71	44.35	65.92			
4000.00	2487.94	N 1446.78	W 2153.18	2243.62	2223.48	S 163.67	W 43.53	142.78	2667.23	2607.32	44.52	66.36			
4100.00	2533.68	N 1487.71	W 2232.12	2545.69	2501.39	S 265.30	W 102.91	142.94	2758.20	2695.77	44.18	61.18			
4200.00	2579.55	N 1529.21	W 2310.70	2602.89	2552.92	S 284.79	W 118.29	142.42	2845.69	2780.37	43.57	60.94			
4300.00	2625.94	N 1570.28	W 2389.19	2661.35	2605.23	S 305.15	W 134.62	142.99	2932.70	2864.52	43.01	60.40			
4400.00	2671.92	N 1611.02	W 2468.09	2710.90	2649.28	S 322.78	W 148.90	143.90	3019.73	2948.49	42.39	60.38			
4500.00	2718.31	N 1649.90	W 2547.69	2760.63	2693.23	S 340.87	W 163.55	144.33	3106.11	3032.04	41.93	59.34			
4600.00	2766.22	N 1689.64	W 2625.95	2830.75	2754.35	S 367.43	W 185.36	142.33	3191.89	3113.77	40.86	59.61			
4700.00	2814.46	N 1731.39	W 2702.95	2903.21	2816.33	S 396.12	W 209.55	140.72	3277.70	3195.04	39.65	58.76			
4800.00	2867.68	N 1773.53	W 2776.36	2982.55	2883.90	S 427.51	W 236.79	139.51	3360.69	3273.45	38.52	56.63			
4900.00	2922.20	N 1814.92	W 2849.26	3062.20	2951.51	S 458.92	W 264.84	140.19	3442.45	3350.78	37.55	55.86			
5000.00	2977.25	N 1855.98	W 2921.95	3134.31	3012.44	S 487.44	W 290.84	140.64	3523.58	3427.26	36.58	55.39			
5100.00	3033.38	N 1896.77	W 2993.95	3209.83	3075.90	S 517.45	W 318.66	139.98	3603.81	3502.91	35.72	54.14			
5200.00	3092.37	N 1936.97	W 3063.98	3304.65	3155.36	S 554.92	W 354.34	140.56	3681.79	3574.96	34.46	52.27			
5300.00	3152.81	N 1975.40	W 3133.76	3397.66	3233.19	S 591.19	W 390.10	140.71	3757.86	3645.63	33.48	50.57			
5400.00	3214.76	N 2012.91	W 3202.72	3451.36	3278.08	S 612.10	W 410.87	141.20	3832.63	3716.42	32.98	50.19			
5500.00	3277.75	N 2049.88	W 3271.02	3505.38	3323.19	S 633.27	W 431.71	140.55	3906.80	3786.72	32.54	49.50			
5600.00	3342.03	N 2086.46	W 3338.32	3559.73	3368.55	S 654.73	W 452.61	141.20	3980.22	3856.47	32.16	49.33			
5700.00	3406.60	N 2122.86	W 3405.44	3659.33	3451.57	S 694.03	W 491.09	141.21	4053.43	3923.31	31.15	48.82			
5800.00	3472.39	N 2160.00	W 3470.95	3789.49	3559.94	S 744.31	W 542.78	141.18	4125.15	3987.54	29.98	47.91			
5900.00	3538.53	N 2197.18	W 3536.10	3886.94	3640.97	S 781.20	W 582.39	142.06	4195.90	4051.99	29.16	47.46			
6000.00	3604.29	N 2234.30	W 3601.65	3972.94	3712.48	S 813.44	W 617.65	142.48	4266.70	4117.00	28.50	47.32			
6069.00	3650.07	N 2260.06	W 3646.39	4032.85	3762.31	S 835.72	W 642.34	142.37	4315.18	4161.55	28.09	46.91			
Field:	Lobitos			Well:	Well LO16-16										
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-16										
Slot:	Slot #16			Trajectory:	LO16-16 Gyro + SS										
				Type:	DEF SVY										
Coordinate System:	UTM Zone 17S - WGS84, Meters														
Reference Point:															
Northing (m)	Easting (m)			Elevation (ft)			Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)				
N 9505993.530	E 459454.500			50.00 above MSL			0.000		0.000		2.500				
Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma															
Surveying Prog:															
	MD From (ft)			MD To (ft)			EOU Freq		Survey Tool Type						
	0.00			2017.00			Act-Stns		SLB_NSG+MSHOT						
	2017.00			7655.00			Act-Stns		SLB_MWD-POOR						
Subject Trajectory						Offset Trajectory						Ct-Ct	EOU	Sep	Inter.
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle			
Major EOU radii used. All local minima indicated.															
Results highlighted: Separation Factor <= 1.50															
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 11.81	W 6.34	208.22	13.41	10.91	5.36	0.00			
100.00	100.00	S 0.71	E 0.31	99.99	99.99	S 11.82	W 6.39	211.11	12.98	9.25	3.49	0.48			
200.00	199.99	S 0.60	W 0.69	199.97	199.97	S 11.85	W 6.59	207.68	12.70	8.86	3.31	1.08			
300.00	299.96	N 0.38	W 2.63	299.93	299.93	S 11.95	W 6.88	199.02	13.05	8.84	3.10	0.84			

400.00	399.91	N 2.15	W 5.29	399.89	399.89	S 12.13	W 7.08	187.13	14.39	9.22	2.78	1.93
500.00	499.86	N 3.89	W 7.99	499.88	499.88	S 12.13	W 7.12	176.92	16.05	10.20	2.74	1.55
600.00	599.79	N 6.50	W 10.44	599.85	599.85	S 11.92	W 7.22	170.11	18.69	12.52	3.03	2.60
700.00	699.50	N 13.32	W 13.24	699.62	699.62	S 11.62	W 7.61	167.32	25.57	18.58	3.66	5.87
800.00	798.25	N 28.18	W 17.63	798.52	798.51	S 11.32	W 8.64	167.28	40.51	32.82	5.27	11.56
900.00	894.55	N 52.85	W 27.78	895.15	895.13	S 10.97	W 10.25	165.22	66.18	57.86	7.95	18.68
1000.00	986.23	N 87.40	W 47.35	987.55	987.51	S 10.60	W 12.24	161.62	104.11	94.84	11.24	26.38
1100.00	1071.99	N 131.23	W 74.02	1074.24	1074.17	S 10.17	W 14.36	158.60	153.49	143.01	14.64	33.53
1200.00	1151.22	N 184.29	W 104.01	1154.41	1154.31	S 9.80	W 16.40	157.22	212.97	201.57	18.68	39.57
1300.00	1223.77	N 243.95	W 138.18	1228.04	1227.91	S 9.49	W 18.28	156.62	280.40	267.56	21.83	45.36
1400.00	1289.41	N 308.83	W 176.59	1295.43	1295.28	S 9.13	W 19.96	156.97	354.49	339.91	24.32	50.38
1500.00	1349.46	N 376.07	W 219.81	1357.05	1356.89	S 8.71	W 21.46	157.63	432.96	416.45	26.23	53.86
1600.00	1403.36	N 441.99	W 272.09	1412.52	1412.33	S 8.37	W 22.86	162.37	514.80	496.10	27.53	58.48
1700.00	1449.13	N 503.82	W 335.85	1459.98	1459.78	S 8.10	W 24.06	167.02	599.49	578.36	28.37	63.91
1800.00	1489.72	N 561.30	W 406.87	1502.32	1502.11	S 7.85	W 25.08	166.26	685.46	661.91	29.11	65.01
1900.00	1531.62	N 614.22	W 480.63	1545.96	1545.73	S 7.60	W 26.10	162.69	770.36	744.55	29.85	62.76
2000.00	1577.03	N 660.31	W 556.85	1593.10	1592.86	S 7.35	W 27.21	159.41	852.37	824.36	30.44	60.79
2100.00	1624.73	N 702.35	W 634.02	1643.09	1642.84	S 7.09	W 28.38	156.66	932.97	902.65	30.77	59.94
2200.00	1673.27	N 741.06	W 712.41	1694.43	1694.17	S 6.71	W 29.50	153.69	1012.90	980.93	31.68	59.49
2300.00	1720.58	N 781.72	W 790.56	1745.93	1745.65	S 6.18	W 30.55	152.75	1094.99	1061.14	32.34	61.64
2400.00	1766.02	N 822.13	W 869.94	1796.93	1796.63	S 5.46	W 31.60	150.44	1178.41	1142.76	33.05	61.40
2500.00	1811.22	N 862.16	W 949.65	1848.57	1848.25	S 4.53	W 32.68	149.55	1262.28	1224.96	33.83	61.88
2600.00	1855.94	N 900.58	W 1030.42	1900.46	1900.12	S 3.37	W 33.81	147.66	1346.22	1307.12	34.43	61.74
2700.00	1901.07	N 939.04	W 1110.95	1949.49	1949.12	S 2.10	W 34.88	145.32	1430.37	1389.63	35.11	60.89
2800.00	1947.55	N 976.69	W 1191.08	1998.04	1997.65	S 0.79	W 35.89	144.04	1514.08	1471.70	35.72	60.73
2900.00	1993.13	N 1012.48	W 1272.57	2047.06	2046.64	N 0.58	W 36.86	144.24	1598.06	1553.96	36.24	61.66
3000.00	2037.40	N 1048.12	W 1354.85	2095.86	2095.40	N 1.98	W 37.86	143.01	1682.92	1637.03	36.67	62.22
3100.00	2081.19	N 1083.86	W 1437.34	2144.35	2143.86	N 3.41	W 38.89	141.66	1768.32	1720.70	37.13	62.33
3200.00	2124.46	N 1122.09	W 1518.98	2192.56	2192.04	N 4.87	W 39.96	138.73	1854.79	1805.30	37.48	62.57
3300.00	2167.66	N 1161.81	W 1599.95	2240.91	2240.35	N 6.38	W 41.06	137.63	1941.76	1890.60	37.95	62.22
3400.00	2211.53	N 1201.20	W 1680.72	2290.15	2289.55	N 7.95	W 42.23	136.42	2028.44	1975.63	38.40	61.74
3500.00	2256.21	N 1240.95	W 1760.86	2340.43	2339.79	N 9.59	W 43.46	134.24	2114.88	2060.34	38.78	60.96
3600.00	2301.68	N 1282.35	W 1839.72	2391.78	2391.10	N 11.31	W 44.76	132.40	2201.23	2144.91	39.08	60.42
3700.00	2347.74	N 1324.32	W 1917.93	2443.96	2443.22	N 13.11	W 46.12	131.62	2287.37	2229.25	39.36	60.37
3800.00	2394.11	N 1365.84	W 1996.20	2496.65	2495.86	N 14.97	W 47.54	131.55	2373.28	2313.40	39.63	59.70
3900.00	2441.28	N 1406.27	W 2074.56	2550.37	2549.53	N 16.91	W 49.04	131.20	2458.61	2397.00	39.90	59.32
4000.00	2487.94	N 1446.78	W 2153.18	2603.78	2602.87	N 18.88	W 50.58	130.77	2544.22	2480.76	40.09	60.16
4100.00	2533.68	N 1487.71	W 2232.12	2656.94	2655.98	N 20.89	W 52.16	130.27	2630.36	2565.06	40.28	60.31
4200.00	2579.55	N 1529.21	W 2310.70	2710.89	2709.87	N 22.90	W 53.88	129.27	2716.47	2649.43	40.52	59.87
4300.00	2625.94	N 1570.28	W 2389.19	2765.71	2764.62	N 24.93	W 55.73	129.31	2802.21	2733.53	40.80	59.62
4400.00	2671.92	N 1611.02	W 2468.09	2820.42	2819.25	N 26.94	W 57.70	129.57	2888.08	2817.72	41.04	59.83
4500.00	2718.31	N 1649.90	W 2547.69	2861.15	2859.93	N 28.37	W 59.21	129.92	2973.54	2901.61	41.34	59.34
4600.00	2766.22	N 1689.64	W 2625.95	2897.20	2895.94	N 29.44	W 60.45	127.52	3058.58	2984.92	41.52	58.87
4700.00	2814.46	N 1731.39	W 2702.95	2932.92	2931.63	N 30.31	W 61.58	125.83	3143.92	3068.58	41.73	57.58
4800.00	2867.68	N 1773.53	W 2776.36	2971.40	2970.09	N 31.04	W 62.69	124.85	3226.57	3149.67	41.96	55.28
4900.00	2922.20	N 1814.92	W 2849.26	3010.14	3008.82	N 31.54	W 63.70	124.98	3308.67	3230.33	42.23	55.26
5000.00	2977.25	N 1855.98	W 2921.95	3048.65	3047.31	N 31.82	W 64.59	124.95	3390.72	3311.01	42.54	55.27
5100.00	3033.38	N 1896.77	W 2993.95	3087.27	3085.93	N 31.88	W 65.37	124.22	3472.34	3391.11	42.75	53.78
5200.00	3092.37	N 1936.97	W 3063.98	3127.19	3125.84	N 31.71	W 66.06	124.58	3552.27	3470.16	43.26	52.86
5300.00	3152.81	N 1975.40	W 3133.76	3182.96	3181.60	N 31.33	W 66.87	124.53	3631.26	3547.67	43.44	51.50
5400.00	3214.76	N 2012.91	W 3202.72	3241.52	3240.16	N 31.07	W 67.54	124.75	3709.14	3624.23	43.68	51.28
5500.00	3277.75	N 2049.88	W 3271.02	3300.87	3299.50	N 30.96	W 68.05	124.06	3786.23	3699.93	43.88	49.69
5600.00	3342.03	N 2086.46	W 3338.32	3361.22	3359.85	N 31.01	W 68.39	124.36	3862.34	3774.17	43.81	49.83
5700.00	3406.60	N 2122.86	W 3405.44	3428.30	3426.93	N 31.26	W 68.58	123.76	3938.25	3849.11	44.18	49.15
5800.00	3472.39	N 2160.00	W 3470.95	3506.10	3504.73	N 31.90	W 68.79	123.01	4013.05	3922.48	44.31	47.99
5900.00	3538.53	N 2197.18	W 3536.10	3584.79	3583.41	N 32.92	W 69.03	123.20	4087.37	3995.26	44.38	48.16
6000.00	3604.29	N 2234.30	W 3601.65	3663.51	3662.12	N 34.33	W 69.31	123.02	4161.81	4068.11	44.42	48.01
6069.00	3650.07	N 2260.06	W 3646.39	3718.59	3717.18	N 35.55	W 69.52	122.67	4212.71	4117.93	44.45	47.23

Field: Lobitos Well: Well LO16-17
Structure: Platform LO16 (WGS84) Borehole: Borehole LO16-17
Slot: Slot #17 Trajectory: LO16-17 Gyro + SS

GEOSCIENCES
Central File

Type:										DEF SVY			
Coordinate System:										UTM Zone 17S - WGS84, Meters			
Reference Point:													
Northing (m)		Easting (m)		Elevation (ft)		Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)			
N 9505994.820		E 459455.750		50.00 above MSL		0.000		0.000		2.500			
Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma													
Surveying Prog:													
MD From (ft)		MD To (ft)		EOU Freq		Survey Tool Type							
0.00		2017.00		Act-Stns		SLB_NSG+MSHOT							
2017.00		8200.00		Act-Stns		SLB_MWD-POOR							
Subject Trajectory				Offset Trajectory				Ct-Ct	EOU	Sep	Inter.		
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle	
Major EOU radii used. All local minima indicated.													
Results highlighted: Separation Factor <= 1.50													
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 7.58	W 2.24	196.43	7.90	5.40	3.16	0.00	
100.00	100.00	S 0.71	E 0.31	100.00	100.00	S 7.58	W 2.16	199.80	7.31	3.58	1.96	0.45	
200.00	199.99	S 0.60	W 0.69	199.99	199.99	S 7.60	W 1.87	189.60	7.09	3.25	1.85	1.42	
300.00	299.96	N 0.38	W 2.63	299.96	299.95	S 7.60	W 1.28	170.41	8.10	3.98	1.96	1.32	
400.00	399.91	N 2.15	W 5.29	399.88	399.88	S 7.53	W 0.35	152.95	10.87	5.78	2.14	2.41	
500.00	499.86	N 3.89	W 7.99	499.88	499.86	S 7.21	E 0.49	142.63	13.97	7.96	2.32	1.75	
600.00	599.79	N 6.50	W 10.44	599.91	599.89	S 6.48	E 0.90	138.85	17.23	10.61	2.60	2.39	
700.00	699.50	N 13.32	W 13.24	699.72	699.70	S 5.42	E 1.03	142.63	23.56	15.88	3.07	5.55	
800.00	798.25	N 28.18	W 17.63	798.79	798.76	S 4.16	E 0.99	149.84	37.32	28.83	4.39	11.15	
900.00	894.55	N 52.85	W 27.78	895.87	895.83	S 2.59	E 0.44	152.96	62.21	52.90	6.68	18.16	
1000.00	986.23	N 87.40	W 47.35	988.96	988.89	S 0.66	W 0.62	152.42	99.73	89.72	9.97	25.75	
1100.00	1071.99	N 131.23	W 74.02	1083.27	1083.09	N 2.67	W 3.32	151.42	147.14	136.36	13.65	30.14	
1200.00	1151.22	N 184.29	W 104.01	1181.31	1180.40	N 10.26	W 12.09	152.42	198.96	187.65	17.59	32.17	
1300.00	1223.77	N 243.95	W 138.18	1283.47	1280.20	N 22.06	W 30.25	154.73	253.12	240.63	20.27	33.53	
1400.00	1289.41	N 308.83	W 176.59	1380.58	1373.08	N 37.56	W 53.98	157.04	309.23	295.15	21.97	35.34	
1500.00	1349.46	N 376.07	W 219.81	1474.77	1461.73	N 54.93	W 80.58	158.57	367.59	351.58	22.96	36.16	
1600.00	1403.36	N 441.99	W 272.09	1573.58	1552.94	N 75.45	W 112.52	159.62	426.84	408.15	22.85	36.66	
1700.00	1449.13	N 503.82	W 335.85	1682.01	1650.45	N 101.91	W 151.84	158.45	485.71	463.66	22.03	37.55	
1800.00	1489.72	N 561.30	W 406.87	1793.44	1747.12	N 133.87	W 197.08	154.94	541.26	515.51	21.02	34.74	
1900.00	1531.62	N 614.22	W 480.63	1903.30	1840.43	N 172.91	W 239.50	149.94	590.14	561.15	20.36	35.36	
2000.00	1577.03	N 660.31	W 556.85	1985.17	1909.82	N 206.55	W 266.83	145.49	633.05	600.90	19.69	31.20	
2100.00	1624.73	N 702.35	W 634.02	2072.42	1982.91	N 236.24	W 304.06	142.49	674.11	639.28	19.36	29.03	
2200.00	1673.27	N 741.06	W 712.41	2161.15	2057.12	N 266.35	W 342.26	139.92	713.93	677.42	19.55	28.82	
2300.00	1720.58	N 781.72	W 790.56	2247.78	2129.60	N 296.27	W 379.09	138.33	756.47	715.73	18.57	31.12	
2400.00	1766.02	N 822.13	W 869.94	2331.62	2199.88	N 325.77	W 414.02	136.25	801.54	755.65	17.47	31.46	
2500.00	1811.22	N 862.16	W 949.65	2414.52	2269.51	N 355.46	W 447.81	134.31	847.71	797.80	16.98	32.76	
2600.00	1855.94	N 900.58	W 1030.42	2501.64	2342.70	N 386.95	W 483.04	132.30	894.64	839.32	16.17	32.58	
2700.00	1901.07	N 939.04	W 1110.95	2590.46	2417.11	N 418.96	W 519.49	130.40	941.59	881.34	15.63	31.44	
2800.00	1947.55	N 976.69	W 1191.08	2680.02	2491.91	N 451.40	W 556.53	128.70	987.38	921.20	14.92	31.30	
2900.00	1993.13	N 1012.48	W 1272.57	2768.78	2565.86	N 484.06	W 593.21	127.04	1033.82	962.13	14.42	32.54	
3000.00	2037.40	N 1048.12	W 1354.85	2851.54	2634.70	N 514.87	W 627.26	125.67	1081.90	1004.36	13.95	33.20	
3100.00	2081.19	N 1083.86	W 1437.34	2932.48	2702.11	N 545.17	W 660.26	124.34	1131.19	1048.17	13.63	33.54	
3200.00	2124.46	N 1122.09	W 1518.98	3013.07	2769.31	N 575.53	W 692.78	123.32	1182.02	1093.30	13.32	33.44	
3300.00	2167.66	N 1161.81	W 1599.95	3093.31	2836.29	N 606.05	W 724.71	122.29	1233.68	1139.37	13.08	33.47	
3400.00	2211.53	N 1201.20	W 1680.72	3173.39	2903.21	N 636.84	W 756.14	121.31	1285.21	1185.64	12.91	33.34	
3500.00	2256.21	N 1240.95	W 1760.86	3254.62	2971.14	N 668.40	W 787.56	120.41	1336.51	1231.26	12.70	32.62	
3600.00	2301.68	N 1282.35	W 1839.72	3336.77	3039.85	N 700.72	W 818.93	119.65	1387.51	1276.51	12.50	32.10	
3700.00	2347.74	N 1324.32	W 1917.93	3419.00	3108.62	N 733.48	W 849.90	118.94	1438.30	1321.78	12.34	32.27	
3800.00	2394.11	N 1365.84	W 1996.20	3501.24	3177.39	N 766.64	W 880.45	118.23	1489.11	1367.13	12.21	32.15	
3900.00	2441.28	N 1406.27	W 2074.56	3584.12	3246.65	N 800.60	W 910.78	117.49	1539.43	1411.74	12.06	32.21	
4000.00	2487.94	N 1446.78	W 2153.18	3666.29	3315.24	N 834.82	W 940.36	116.77	1590.55	1457.28	11.93	33.19	
4100.00	2533.68	N 1487.71	W 2232.12	3749.41	3384.53	N 870.04	W 969.82	116.07	1642.82	1503.78	11.82	33.56	
4200.00	2579.55	N 1529.21	W 2310.70	3833.74	3454.65	N 906.47	W 999.29	115.39	1695.11	1550.29	11.71	33.24	
4300.00	2625.94	N 1570.28	W 2389.19	3913.93	3521.16	N 941.75	W 1026.89	114.75	1747.09	1596.85	11.63	33.60	
4400.00	2671.92	N 1611.02	W 2468.09	3988.22	3582.75	N 974.99	W 1051.80	114.13	1800.01	1638.17	11.12	34.57	
4500.00	2718.31	N 1649.90	W 2547.69	4070.85	3651.19	N 1012.50	W 1078.93	113.42	1853.05	1686.33	11.11	34.54	
4600.00	2766.22	N 1689.64	W 2625.95	4157.15	3722.49	N 1052.13	W 1107.11	112.73	1904.67	1732.84	11.08	33.03	

4700.00	2814.46	N 1731.39	W 2702.95	4237.84	3789.00	N 1089.59	W 1133.24	112.27	1955.92	1779.32	11.08	31.32
4800.00	2867.68	N 1773.53	W 2776.36	4316.87	3854.14	N 1126.66	W 1158.32	111.97	2002.39	1828.46	11.51	29.15
4900.00	2922.20	N 1814.92	W 2849.26	4398.01	3921.00	N 1165.09	W 1183.53	111.47	2048.06	1869.79	11.49	29.31
5000.00	2977.25	N 1855.98	W 2921.95	4488.55	3995.56	N 1208.17	W 1211.52	110.92	2093.37	1910.42	11.44	29.06
5100.00	3033.38	N 1896.77	W 2993.95	4579.76	4070.58	N 1251.70	W 1239.78	110.54	2137.52	1949.95	11.40	27.21
5200.00	3092.37	N 1936.97	W 3063.98	4668.57	4143.51	N 1294.25	W 1267.26	110.08	2178.57	1986.54	11.34	26.71
5300.00	3152.81	N 1975.40	W 3133.76	4756.29	4215.46	N 1336.63	W 1294.15	109.62	2218.42	2022.03	11.30	25.92
5400.00	3214.76	N 2012.91	W 3202.72	4833.60	4278.88	N 1374.11	W 1317.59	109.12	2257.01	2056.69	11.27	26.24
5500.00	3277.75	N 2049.88	W 3271.02	4905.76	4338.45	N 1408.65	W 1339.17	108.84	2295.27	2091.21	11.25	24.89
5600.00	3342.03	N 2086.46	W 3338.32	4970.15	4392.05	N 1438.85	W 1358.17	108.43	2333.01	2125.61	11.25	25.54
5700.00	3406.60	N 2122.86	W 3405.44	5032.90	4444.89	N 1467.34	W 1376.44	108.19	2371.62	2160.93	11.26	24.93
5800.00	3472.39	N 2160.00	W 3470.95	5094.04	4496.82	N 1494.55	W 1393.78	108.03	2409.75	2196.07	11.28	24.34
5900.00	3538.53	N 2197.18	W 3536.10	5154.30	4548.22	N 1521.44	W 1410.08	107.71	2448.68	2232.11	11.31	25.62
6000.00	3604.29	N 2234.30	W 3601.65	5245.04	4625.94	N 1561.60	W 1434.21	107.31	2488.80	2268.43	11.29	25.31
6069.00	3650.07	N 2260.06	W 3646.39	5300.88	4673.91	N 1585.89	W 1449.27	107.16	2515.97	2293.23	11.30	24.59
Field:	Lobitos			Well:	Well LO16-18							
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-18							
Slot:	Slot #18			Trajectory:	LO16-18 Gyro + SS							
				Type:	DEF SVY							
Coordinate System:	UTM Zone 17S - WGS84, Meters											
Reference Point:												
Northing (m)	Easting (m)			Elevation (ft)			Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505994.720	E 459459.520			50.00 above MSL			0.000		0.000		2.500	
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma											
Surveying Prog:												
MD From (ft)	MD To (ft)			EOU Freq		Survey Tool Type						
0.00	2017.00			Act-Stns		SLB_NSG+MSHOT						
2017.00	6738.00			Act-Stns		SLB_MWD-POOR						
Subject Trajectory				Offset Trajectory				Ct-Ct	EOU	Sep	Inter.	
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle
Major EOU radii used. All local minima indicated.												
Results highlighted: Separation Factor <= 1.50												
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 7.91	E 10.14	127.98	12.86	10.36	5.14	0.00
100.00	100.00	S 0.71	E 0.31	99.95	99.95	S 7.78	E 10.43	124.96	12.34	8.61	3.31	0.71
200.00	199.99	S 0.60	W 0.69	199.86	199.85	S 7.25	E 11.53	118.55	13.92	10.07	3.62	1.97
300.00	299.96	N 0.38	W 2.63	299.76	299.74	S 6.50	E 13.22	113.48	17.28	13.02	4.05	1.75
400.00	399.91	N 2.15	W 5.29	399.89	399.85	S 5.94	E 14.43	112.32	21.32	15.92	3.95	2.08
500.00	499.86	N 3.89	W 7.99	500.24	500.19	S 4.69	E 14.34	111.04	23.92	17.87	3.95	1.02
600.00	599.79	N 6.50	W 10.44	601.45	601.29	S 0.89	E 11.81	108.46	23.50	16.37	3.30	1.63
700.00	699.50	N 13.32	W 13.24	701.76	701.27	N 4.25	E 5.52	116.01	20.91	13.43	2.79	3.52
800.00	798.25	N 28.18	W 17.63	801.33	800.44	N 9.41	W 1.68	139.60	24.73	17.16	3.26	8.34
900.00	894.55	N 52.85	W 27.78	899.81	898.46	N 15.06	W 9.35	154.00	42.23	34.35	5.36	14.26
1000.00	986.23	N 87.40	W 47.35	995.75	993.82	N 21.64	W 17.55	156.09	72.59	63.74	8.20	21.08
1100.00	1071.99	N 131.23	W 74.02	1087.94	1085.32	N 28.92	W 26.17	155.57	113.73	103.45	11.06	27.60
1200.00	1151.22	N 184.29	W 104.01	1175.82	1172.41	N 36.73	W 34.96	155.71	164.30	152.80	14.29	32.96
1300.00	1223.77	N 243.95	W 138.18	1259.88	1255.58	N 45.14	W 43.78	155.76	222.37	209.11	16.77	37.92
1400.00	1289.41	N 308.83	W 176.59	1343.93	1338.53	N 54.92	W 53.11	155.93	286.58	271.27	18.72	41.39
1500.00	1349.46	N 376.07	W 219.81	1435.97	1428.67	N 70.65	W 62.83	154.99	352.43	334.77	19.96	42.13
1600.00	1403.36	N 441.99	W 272.09	1520.40	1510.60	N 89.37	W 70.90	154.60	419.90	399.87	20.96	46.04
1700.00	1449.13	N 503.82	W 335.85	1594.64	1582.08	N 108.40	W 77.22	153.42	490.83	468.20	21.69	51.79
1800.00	1489.72	N 561.30	W 406.87	1663.48	1647.89	N 127.93	W 82.30	149.90	564.07	538.88	22.39	53.29
1900.00	1531.62	N 614.22	W 480.63	1732.11	1713.00	N 149.25	W 86.45	145.61	635.98	608.40	23.06	52.16
2000.00	1577.03	N 660.31	W 556.85	1799.61	1776.50	N 171.91	W 89.47	141.66	704.81	674.93	23.58	51.89
2100.00	1624.73	N 702.35	W 634.02	1865.54	1838.01	N 195.56	W 91.34	138.14	772.54	740.28	23.95	52.39
2200.00	1673.27	N 741.06	W 712.41	1928.97	1896.72	N 219.56	W 92.19	134.61	840.57	806.66	24.79	52.69
2300.00	1720.58	N 781.72	W 790.56	1989.74	1952.47	N 243.73	W 92.05	131.99	911.66	875.84	25.45	55.03
2400.00	1766.02	N 822.13	W 869.94	2058.80	2015.09	N 272.82	W 90.81	128.73	985.30	947.23	25.89	55.28
2500.00	1811.22	N 862.16	W 949.65	2239.01	2172.56	N 360.16	W 91.57	121.65	1057.77	1017.76	26.44	51.26
2600.00	1855.94	N 900.58	W 1030.42	2374.67	2287.20	N 431.70	W 103.09	117.11	1125.07	1083.03	26.76	47.33
2700.00	1901.07	N 939.04	W 1110.95	2496.28	2388.05	N 497.37	W 120.49	113.80	1188.79	1144.92	27.10	44.64
2800.00	1947.55	N 976.69	W 1191.08	2587.62	2461.83	N 549.37	W 134.50	111.58	1250.38	1204.78	27.42	44.90

2900.00	1993.13	N 1012.48	W 1272.57	2681.90	2535.63	N 606.32	W 148.50	109.30	1312.56	1264.94	27.57	46.89		
3000.00	2037.40	N 1048.12	W 1354.85	2797.74	2622.41	N 681.06	W 165.76	106.15	1375.10	1324.88	27.38	46.66		
3100.00	2081.19	N 1083.86	W 1437.34	2885.69	2685.59	N 740.73	W 179.26	103.88	1437.29	1384.58	27.27	46.88		
3200.00	2124.46	N 1122.09	W 1518.98	2961.22	2738.39	N 793.53	W 190.58	101.73	1499.83	1444.61	27.16	45.78		
3300.00	2167.66	N 1161.81	W 1599.95	3021.19	2779.90	N 835.98	W 199.06	100.54	1563.17	1505.78	27.24	46.26		
3400.00	2211.53	N 1201.20	W 1680.72	3080.14	2820.52	N 877.99	W 206.83	99.42	1627.16	1567.66	27.34	46.57		
3500.00	2256.21	N 1240.95	W 1760.86	3136.86	2859.44	N 918.66	W 213.80	98.31	1691.50	1629.87	27.45	45.99		
3600.00	2301.68	N 1282.35	W 1839.72	3188.04	2894.45	N 955.55	W 219.47	97.36	1755.96	1692.28	27.58	45.72		
3700.00	2347.74	N 1324.32	W 1917.93	3238.39	2928.85	N 991.99	W 224.41	96.46	1821.03	1755.30	27.71	46.32		
3800.00	2394.11	N 1365.84	W 1996.20	3304.97	2974.20	N 1040.37	W 230.36	95.71	1886.96	1818.76	27.67	46.71		
3900.00	2441.28	N 1406.27	W 2074.56	3371.79	3019.59	N 1089.04	W 236.32	94.80	1953.00	1882.66	27.76	46.92		
4000.00	2487.94	N 1446.78	W 2153.18	3431.92	3060.40	N 1132.89	W 241.46	93.48	2020.13	1947.60	27.86	47.46		
4100.00	2533.68	N 1487.71	W 2232.12	3491.24	3100.67	N 1176.18	W 246.29	92.50	2088.55	2013.82	27.95	47.76		
4200.00	2579.55	N 1529.21	W 2310.70	3545.49	3137.51	N 1215.80	W 250.47	91.79	2157.34	2080.53	28.09	47.60		
4300.00	2625.94	N 1570.28	W 2389.19	3591.45	3168.75	N 1249.35	W 253.59	91.37	2226.75	2148.10	28.31	48.47		
4400.00	2671.92	N 1611.02	W 2468.09	3636.10	3199.16	N 1281.95	W 256.21	90.82	2297.54	2217.28	28.63	49.63		
4500.00	2718.31	N 1649.90	W 2547.69	3683.84	3231.67	N 1316.82	W 258.58	90.77	2369.50	2287.45	28.88	50.52		
4600.00	2766.22	N 1689.64	W 2625.95	3734.06	3265.69	N 1353.71	W 260.68	89.83	2440.66	2356.68	29.06	48.99		
4700.00	2814.46	N 1731.39	W 2702.95	3785.44	3300.29	N 1391.66	W 262.43	89.65	2511.48	2425.59	29.24	47.63		
4800.00	2867.68	N 1773.53	W 2776.36	3841.03	3337.47	N 1432.96	W 263.94	90.09	2578.55	2490.85	29.40	46.32		
4900.00	2922.20	N 1814.92	W 2849.26	3895.94	3373.94	N 1473.99	W 265.05	89.68	2645.46	2556.00	29.57	46.87		
5000.00	2977.25	N 1855.98	W 2921.95	3942.11	3404.40	N 1508.67	W 265.66	89.32	2712.73	2621.61	29.77	47.44		
5100.00	3033.38	N 1896.77	W 2993.95	3977.66	3427.69	N 1535.53	W 265.69	89.61	2780.18	2687.49	29.99	46.99		
5200.00	3092.37	N 1936.97	W 3063.98	4012.87	3450.60	N 1562.28	W 265.25	89.93	2846.33	2752.17	30.23	47.87		
5300.00	3152.81	N 1975.40	W 3133.76	4046.83	3472.52	N 1588.19	W 264.39	90.23	2912.98	2817.10	30.38	48.33		
5400.00	3214.76	N 2012.91	W 3202.72	4101.58	3507.69	N 1630.11	W 262.50	89.83	2979.47	2881.48	30.41	48.94		
5500.00	3277.75	N 2049.88	W 3271.02	4160.06	3545.17	N 1674.94	W 260.33	89.69	3045.71	2945.57	30.41	48.02		
5600.00	3342.03	N 2086.46	W 3338.32	4217.72	3582.06	N 1719.20	W 258.01	89.16	3111.40	3009.20	30.45	48.72		
5700.00	3406.60	N 2122.86	W 3405.44	4274.09	3618.19	N 1762.40	W 255.59	88.63	3177.46	3073.20	30.47	48.04		
5800.00	3472.39	N 2160.00	W 3470.95	4331.51	3655.08	N 1806.33	W 252.94	88.22	3242.53	3136.24	30.51	46.99		
5900.00	3538.53	N 2197.18	W 3536.10	4389.27	3692.26	N 1850.43	W 250.12	87.59	3307.80	3199.55	30.56	47.59		
6000.00	3604.29	N 2234.30	W 3601.65	4446.52	3729.21	N 1894.06	W 247.16	86.97	3374.02	3263.82	30.62	47.57		
6069.00	3650.07	N 2260.06	W 3646.39	4476.49	3748.61	N 1916.86	W 245.49	86.89	3419.59	3308.15	30.69	47.17		
Field:	Lobitos			Well:	Well LO16-19									
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-19									
Slot:	Slot #19			Trajectory:	LO16-19 SS Survey									
				Type:	DEF SVY									
Coordinate System:	UTM Zone 17S - WGS84, Meters													
Reference Point:														
Northing (m)	Easting (m)			Elevation (ft)			Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)			
N 9505993.660	E 459460.560			50.00 above MSL			0.000		0.000		2.500			
Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma														
Surveying Prog:														
MD From (ft)			MD To (ft)			EOU Freq		Survey Tool Type						
0.00			8550.00			Act-Stns		SLB_MWD-STD						
Subject Trajectory				Offset Trajectory				Ct-Ct		EOU		Sep		Inter.
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle		
Major EOU radii used. All local minima indicated.														
Results highlighted: Separation Factor <= 1.50														
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 11.40	E 13.55	130.07	17.70	15.20	7.08	0.00		
100.00	100.00	S 0.71	E 0.31	99.97	99.97	S 11.31	E 13.71	128.35	17.08	11.98	3.35	0.56		
200.00	199.99	S 0.60	W 0.69	199.93	199.93	S 11.05	E 14.21	125.04	18.19	12.97	3.48	1.51		
300.00	299.96	N 0.38	W 2.63	299.85	299.85	S 10.61	E 15.03	121.91	20.80	15.38	3.84	1.33		
400.00	399.91	N 2.15	W 5.29	399.73	399.71	S 10.00	E 16.17	119.52	24.67	18.69	4.12	2.51		
500.00	499.86	N 3.89	W 7.99	499.63	499.61	S 9.23	E 17.61	117.13	28.77	22.15	4.35	2.11		
600.00	599.79	N 6.50	W 10.44	599.67	599.63	S 8.51	E 18.75	117.17	32.82	25.64	4.57	2.76		
700.00	699.50	N 13.32	W 13.24	699.54	699.50	S 7.91	E 19.37	122.90	38.92	30.99	4.91	5.92		
800.00	798.25	N 28.18	W 17.63	798.56	798.51	S 7.42	E 19.50	133.30	51.45	43.16	6.21	11.62		
900.00	894.55	N 52.85	W 27.78	896.00	895.95	S 6.21	E 19.15	140.88	75.44	66.82	8.75	18.20		
1000.00	986.23	N 87.40	W 47.35	988.71	988.64	S 4.34	E 18.43	143.88	112.91	103.64	12.17	26.05		

1100.00	1071.99	N 131.23	W 74.02	1076.26	1076.17	S 2.63	E 17.54	144.85	162.23	152.00	15.86	32.97	
1200.00	1151.22	N 184.29	W 104.01	1170.91	1170.62	N 2.64	E 15.48	145.80	218.29	207.32	19.89	35.32	
1300.00	1223.77	N 243.95	W 138.18	1257.94	1256.96	N 13.43	E 15.35	145.27	278.95	266.65	22.69	39.40	
1400.00	1289.41	N 308.83	W 176.59	1341.93	1339.56	N 28.26	E 18.38	144.18	345.32	331.41	24.82	43.33	
1500.00	1349.46	N 376.07	W 219.81	1437.34	1432.02	N 51.29	E 22.79	142.43	413.71	397.93	26.21	44.07	
1600.00	1403.36	N 441.99	W 272.09	1524.42	1515.11	N 77.15	E 25.69	142.12	484.02	466.09	27.00	48.70	
1700.00	1449.13	N 503.82	W 335.85	1594.25	1580.90	N 100.43	E 28.41	141.65	559.25	538.95	27.54	55.24	
1800.00	1489.72	N 561.30	W 406.87	1657.39	1639.80	N 122.95	E 31.36	139.36	637.75	615.07	28.12	57.17	
1900.00	1531.62	N 614.22	W 480.63	1720.45	1698.02	N 146.93	E 34.82	136.67	715.35	690.44	28.72	56.52	
2000.00	1577.03	N 660.31	W 556.85	1783.00	1755.14	N 172.12	E 38.76	133.95	790.44	763.35	29.18	56.47	
2100.00	1624.73	N 702.35	W 634.02	1845.55	1811.61	N 198.64	E 43.23	131.03	864.47	835.12	29.46	56.90	
2200.00	1673.27	N 741.06	W 712.41	1902.35	1862.33	N 223.79	E 47.78	127.91	938.72	907.80	30.36	57.08	
2300.00	1720.58	N 781.72	W 790.56	1956.50	1910.26	N 248.52	E 52.65	125.25	1015.52	982.73	30.97	59.01	
2400.00	1766.02	N 822.13	W 869.94	2008.12	1955.54	N 272.75	E 57.77	122.86	1094.70	1060.06	31.60	59.38	
2500.00	1811.22	N 862.16	W 949.65	2059.07	1999.88	N 297.27	E 63.20	121.43	1174.97	1138.57	32.28	60.79	
2600.00	1855.94	N 900.58	W 1030.42	2107.80	2041.94	N 321.25	E 68.73	119.43	1256.32	1218.01	32.79	61.23	
2700.00	1901.07	N 939.04	W 1110.95	2155.77	2083.00	N 345.37	E 74.49	117.45	1338.20	1298.08	33.35	60.90	
2800.00	1947.55	N 976.69	W 1191.08	2203.07	2123.16	N 369.63	E 80.49	116.06	1419.96	1377.94	33.80	61.38	
2900.00	1993.13	N 1012.48	W 1272.57	2247.56	2160.64	N 392.86	E 86.43	115.57	1502.96	1458.96	34.16	63.28	
3000.00	2037.40	N 1048.12	W 1354.85	2289.88	2196.01	N 415.33	E 92.35	113.64	1587.44	1541.37	34.46	63.89	
3100.00	2081.19	N 1083.86	W 1437.34	2334.02	2232.60	N 439.16	E 98.76	111.87	1672.77	1624.58	34.71	64.16	
3200.00	2124.46	N 1122.09	W 1518.98	2379.25	2269.77	N 464.02	E 105.51	108.10	1758.73	1707.89	34.60	63.25	
3300.00	2167.66	N 1161.81	W 1599.95	2424.77	2306.85	N 489.49	E 112.50	106.99	1844.96	1792.00	34.83	63.28	
3400.00	2211.53	N 1201.20	W 1680.72	2464.97	2339.33	N 512.32	E 118.84	106.00	1931.14	1876.65	35.44	63.20	
3500.00	2256.21	N 1240.95	W 1760.86	2498.81	2366.68	N 531.47	E 124.34	104.40	2017.31	1960.93	35.78	62.35	
3600.00	2301.68	N 1282.35	W 1839.72	2533.29	2394.62	N 550.85	E 130.11	102.90	2103.32	2044.99	36.06	61.70	
3700.00	2347.74	N 1324.32	W 1917.93	2569.38	2423.94	N 570.96	E 136.30	102.00	2189.34	2129.14	36.37	61.84	
3800.00	2394.11	N 1365.84	W 1996.20	2605.47	2453.36	N 590.88	E 142.61	102.37	2275.65	2213.11	36.39	62.04	
3900.00	2441.28	N 1406.27	W 2074.56	2641.08	2482.50	N 610.34	E 148.94	102.23	2362.03	2297.72	36.73	62.23	
4000.00	2487.94	N 1446.78	W 2153.18	2675.89	2511.08	N 629.19	E 155.25	100.90	2449.05	2383.43	37.32	62.97	
4100.00	2533.68	N 1487.71	W 2232.12	2714.05	2542.51	N 649.65	E 162.26	100.07	2536.83	2469.28	37.56	63.22	
4200.00	2579.55	N 1529.21	W 2310.70	2759.59	2580.09	N 673.98	E 170.64	99.12	2624.59	2555.14	37.79	62.68	
4300.00	2625.94	N 1570.28	W 2389.19	2800.30	2613.73	N 695.66	E 178.11	99.22	2712.23	2640.96	38.06	62.98	
4400.00	2671.92	N 1611.02	W 2468.09	2829.01	2637.39	N 710.98	E 183.53	99.32	2800.43	2727.27	38.28	63.94	
4500.00	2718.31	N 1649.90	W 2547.69	2856.47	2659.95	N 725.69	E 188.90	100.42	2889.03	2814.10	38.56	64.37	
4600.00	2766.22	N 1689.64	W 2625.95	2884.45	2682.85	N 740.73	E 194.55	98.15	2977.02	2899.51	38.41	62.96	
4700.00	2814.46	N 1731.39	W 2702.95	2917.08	2709.45	N 758.36	E 201.35	97.49	3064.76	2985.16	38.50	61.34	
4800.00	2867.68	N 1773.53	W 2776.36	2954.77	2739.97	N 778.95	E 209.44	98.17	3149.68	3068.68	38.88	59.37	
4900.00	2922.20	N 1814.92	W 2849.26	2993.75	2771.32	N 800.48	E 218.03	98.21	3234.21	3151.16	38.94	59.65	
5000.00	2977.25	N 1855.98	W 2921.95	3033.31	2802.92	N 822.54	E 226.95	98.06	3318.73	3233.61	38.99	59.76	
5100.00	3033.38	N 1896.77	W 2993.95	3073.78	2835.15	N 845.19	E 236.23	98.20	3402.82	3316.66	39.49	58.33	
5200.00	3092.37	N 1936.97	W 3063.98	3115.62	2868.38	N 868.66	E 245.99	98.99	3485.30	3397.39	39.64	58.16	
5300.00	3152.81	N 1975.40	W 3133.76	3157.11	2901.24	N 892.01	E 255.82	99.50	3567.39	3477.74	39.80	57.58	
5400.00	3214.76	N 2012.91	W 3202.72	3197.19	2932.98	N 914.50	E 265.44	99.63	3648.84	3557.55	39.97	57.86	
5500.00	3277.75	N 2049.88	W 3271.02	3237.29	2964.88	N 936.77	E 275.17	99.54	3729.92	3636.98	40.13	56.45	
5600.00	3342.03	N 2086.46	W 3338.32	3317.38	3028.83	N 980.93	E 294.52	99.20	3810.23	3715.43	40.19	56.51	
5700.00	3406.60	N 2122.86	W 3405.44	3416.74	3108.19	N 1036.14	E 317.49	98.13	3889.75	3792.91	40.17	55.03	
5800.00	3472.39	N 2160.00	W 3470.95	3440.39	3127.08	N 1049.28	E 322.94	97.77	3968.20	3869.85	40.35	54.18	
5900.00	3538.53	N 2197.18	W 3536.10	3463.66	3145.67	N 1062.13	E 328.50	97.72	4046.95	3947.13	40.54	55.15	
6000.00	3604.29	N 2234.30	W 3601.65	3486.25	3163.71	N 1074.52	E 334.07	97.43	4126.64	4025.29	40.72	55.50	
6069.00	3650.07	N 2260.06	W 3646.39	3501.75	3176.09	N 1082.98	E 338.00	97.35	4181.57	4079.19	40.84	55.06	
Field:	Lobitos			Well:	Well LO16-20								
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-20								
Slot:	Slot #20			Trajectory:	LO16-20 MWD Survey								
				Type:	DEF SVY								
Coordinate System:	UTM Zone 17S - WGS84, Meters												
Reference Point:													
Northing (m)	Easting (m)			Elevation (ft)			Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)		
N 9505989.680	E 459460.680			50.00 above MSL			0.000		0.000		2.500		
Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma													

Surveying Prog:				MD To (ft)				EOU Freq		Survey Tool Type					
MD From (ft)				8809.00				Act-Stns		SLB_MWD-STD					
0.00															
Subject Trajectory				Offset Trajectory				Ct-Ct		EOU		Sep		Inter.	
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle			
Major EOU radii used. All local minima indicated.															
Results highlighted: Separation Factor <= 1.50															
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 24.46	E 13.94	150.33	28.15	25.65	11.26	0.00			
100.00	100.00	S 0.71	E 0.31	99.95	99.95	S 24.60	E 13.86	150.45	27.46	22.36	5.38	0.36			
200.00	199.99	S 0.60	W 0.69	199.90	199.90	S 25.02	E 13.62	149.63	28.30	23.07	5.41	1.24			
300.00	299.96	N 0.38	W 2.63	299.82	299.82	S 25.72	E 13.23	148.72	30.54	25.12	5.64	1.09			
400.00	399.91	N 2.15	W 5.29	399.71	399.70	S 26.70	E 12.68	148.09	34.00	28.00	5.67	2.05			
500.00	499.86	N 3.89	W 7.99	499.51	499.49	S 27.96	E 11.99	147.92	37.60	31.00	5.69	2.13			
600.00	599.79	N 6.50	W 10.44	598.84	598.79	S 30.40	E 11.62	149.12	43.00	35.85	6.01	4.55			
700.00	699.50	N 13.32	W 13.24	696.56	696.30	S 35.74	E 8.56	155.97	53.78	45.87	6.80	10.51			
800.00	798.25	N 28.18	W 17.63	791.87	790.95	S 45.22	E 2.78	164.58	76.53	68.22	9.21	18.26			
900.00	894.55	N 52.85	W 27.78	879.58	877.48	S 57.99	W 3.66	169.28	114.71	106.07	13.28	27.34			
1000.00	986.23	N 87.40	W 47.35	957.53	953.77	S 72.97	W 9.06	170.82	168.04	158.78	18.14	36.99			
1100.00	1071.99	N 131.23	W 74.02	1026.31	1020.52	S 88.73	W 14.17	170.97	233.70	223.52	22.95	45.79			
1200.00	1151.22	N 184.29	W 104.01	1082.48	1074.61	S 103.38	W 17.95	171.56	309.88	299.05	28.60	53.50			
1300.00	1223.77	N 243.95	W 138.18	1128.84	1118.90	S 116.71	W 21.18	173.58	393.40	381.36	32.66	60.30			
1400.00	1289.41	N 308.83	W 176.59	1165.63	1153.75	S 128.12	W 24.05	178.11	482.29	468.74	35.62	65.88			
1500.00	1349.46	N 376.07	W 219.81	1193.76	1180.20	S 137.43	W 26.34	183.59	574.25	559.00	37.65	69.74			
1600.00	1403.36	N 441.99	W 272.09	1218.06	1202.92	S 145.83	W 28.31	196.91	667.18	649.92	38.65	72.92			
1700.00	1449.13	N 503.82	W 335.85	1238.83	1222.26	S 153.20	W 29.98	207.35	759.41	739.88	38.88	76.64			
1800.00	1489.72	N 561.30	W 406.87	1258.48	1240.51	S 160.30	W 31.57	206.29	850.69	828.88	39.00	76.70			
1900.00	1531.62	N 614.22	W 480.63	1284.74	1264.86	S 169.88	W 33.82	198.05	941.07	917.10	39.26	73.08			
2000.00	1577.03	N 660.31	W 556.85	1317.93	1295.53	S 182.16	W 37.09	191.30	1029.15	1002.87	39.17	69.44			
2100.00	1624.73	N 702.35	W 634.02	1352.43	1327.22	S 195.21	W 41.02	187.38	1116.15	1087.65	39.17	67.60			
2200.00	1673.27	N 741.06	W 712.41	1385.25	1357.20	S 207.91	W 45.07	184.55	1202.41	1172.33	39.98	67.05			
2300.00	1720.58	N 781.72	W 790.56	1411.16	1380.73	S 218.23	W 48.40	186.81	1290.81	1258.90	40.46	69.63			
2400.00	1766.02	N 822.13	W 869.94	1433.95	1401.33	S 227.55	W 51.34	185.20	1380.19	1346.53	41.00	69.79			
2500.00	1811.22	N 862.16	W 949.65	1455.57	1420.78	S 236.57	W 54.08	185.29	1470.27	1435.02	41.70	70.28			
2600.00	1855.94	N 900.58	W 1030.42	1482.82	1445.24	S 248.10	W 57.46	183.83	1560.38	1523.37	42.17	70.36			
2700.00	1901.07	N 939.04	W 1110.95	1509.79	1469.40	S 259.62	W 60.77	180.85	1651.05	1612.40	42.72	69.78			
2800.00	1947.55	N 976.69	W 1191.08	1542.28	1498.44	S 273.63	W 64.76	179.17	1741.72	1701.32	43.11	69.38			
2900.00	1993.13	N 1012.48	W 1272.57	1577.40	1529.78	S 288.85	W 69.15	179.83	1832.04	1789.95	43.53	69.46			
3000.00	2037.40	N 1048.12	W 1354.85	1611.67	1560.32	S 303.78	W 73.53	179.55	1922.76	1878.79	43.73	70.12			
3100.00	2081.19	N 1083.86	W 1437.34	1642.78	1588.02	S 317.37	W 77.53	178.62	2013.89	1968.17	44.04	70.43			
3200.00	2124.46	N 1122.09	W 1518.98	1671.91	1613.95	S 330.11	W 81.23	177.22	2106.33	2058.74	44.26	71.66			
3300.00	2167.66	N 1161.81	W 1599.95	1700.03	1638.98	S 342.43	W 84.75	175.60	2199.56	2150.29	44.64	71.83			
3400.00	2211.53	N 1201.20	W 1680.72	1729.89	1665.56	S 355.53	W 88.46	173.67	2292.77	2241.81	44.99	71.31			
3500.00	2256.21	N 1240.95	W 1760.86	1760.56	1692.84	S 369.01	W 92.27	170.43	2386.12	2333.39	45.26	71.17			
3600.00	2301.68	N 1282.35	W 1839.72	1790.96	1719.86	S 382.42	W 96.07	167.72	2479.98	2425.44	45.48	71.23			
3700.00	2347.74	N 1324.32	W 1917.93	1821.45	1746.94	S 395.89	W 99.88	166.85	2573.98	2517.63	45.67	71.37			
3800.00	2394.11	N 1365.84	W 1996.20	1852.69	1774.68	S 409.73	W 103.79	165.80	2667.87	2609.66	45.83	70.50			
3900.00	2441.28	N 1406.27	W 2074.56	1885.20	1803.53	S 424.16	W 107.88	164.97	2761.34	2701.29	45.98	70.08			
4000.00	2487.94	N 1446.78	W 2153.18	1917.21	1831.92	S 438.38	W 111.90	165.89	2855.00	2792.99	46.04	71.02			
4100.00	2533.68	N 1487.71	W 2232.12	1948.24	1859.42	S 452.20	W 115.81	165.70	2949.01	2885.13	46.17	71.29			
4200.00	2579.55	N 1529.21	W 2310.70	1979.01	1886.69	S 465.92	W 119.70	163.96	3043.21	2977.41	46.25	71.22			
4300.00	2625.94	N 1570.28	W 2389.19	2010.35	1914.44	S 479.92	W 123.66	163.82	3137.23	3069.61	46.40	70.86			
4400.00	2671.92	N 1611.02	W 2468.09	2041.46	1941.99	S 493.84	W 127.60	164.63	3231.28	3161.80	46.50	70.87			
4500.00	2718.31	N 1649.90	W 2547.69	2073.75	1970.56	S 508.32	W 131.69	163.91	3324.77	3253.52	46.66	69.83			
4600.00	2766.22	N 1689.64	W 2625.95	2106.56	1999.57	S 523.07	W 135.88	159.74	3418.23	3345.01	46.69	70.15			
4700.00	2814.46	N 1731.39	W 2702.95	2138.56	2027.81	S 537.53	W 140.03	155.09	3512.18	3437.03	46.74	69.39			
4800.00	2867.68	N 1773.53	W 2776.36	2174.06	2059.08	S 553.66	W 144.70	150.62	3604.90	3527.90	46.82	67.41			
4900.00	2922.20	N 1814.92	W 2849.26	2210.81	2091.39	S 570.46	W 149.61	150.64	3697.08	3618.28	46.92	67.01			
5000.00	2977.25	N 1855.98	W 2921.95	2246.10	2122.36	S 586.69	W 154.41	150.42	3789.03	3708.45	47.02	66.76			
5100.00	3033.38	N 1896.77	W 2993.95	2277.91	2150.24	S 601.39	W 158.72	147.70	3880.63	3798.29	47.13	65.59			
5200.00	3092.37	N 1936.97	W 3063.98	2311.39	2179.56	S 616.92	W 163.22	147.46	3971.14	3887.13	47.27	64.33			
5300.00	3152.81	N 1975.40	W 3133.76	2346.15	2209.96	S 633.12	W 167.86	146.51	4060.78	3975.11	47.40	63.08			
5400.00	3214.76	N 2012.91	W 3202.72	2391.49	2249.58	S 654.33	W 173.89	146.93	4149.65	4062.28	47.50	62.58			

5500.00	3277.75	N 2049.88	W 3271.02	2445.05	2296.36	S 679.40	W 181.11	145.01	4237.88	4148.75	47.55	61.36		
5600.00	3342.03	N 2086.46	W 3338.32	2500.28	2344.58	S 705.23	W 188.67	145.84	4325.36	4234.54	47.63	61.02		
5700.00	3406.60	N 2122.86	W 3405.44	2550.96	2388.83	S 728.93	W 195.69	144.77	4412.60	4320.17	47.74	60.76		
5800.00	3472.39	N 2160.00	W 3470.95	2601.12	2432.63	S 752.37	W 202.63	143.24	4499.43	4405.43	47.87	60.38		
5900.00	3538.53	N 2197.18	W 3536.10	2651.56	2476.68	S 775.91	W 209.61	144.09	4586.10	4490.56	48.00	60.43		
6000.00	3604.29	N 2234.30	W 3601.65	2701.78	2520.56	S 799.34	W 216.55	144.10	4672.94	4575.82	48.12	60.49		
6069.00	3650.07	N 2260.06	W 3646.39	2736.60	2551.01	S 815.54	W 221.32	143.31	4732.69	4634.52	48.21	60.12		
Field:		Lobitos			Well:		Well LO16-21							
Structure:		Platform LO16 (WGS84)			Borehole:		Borehole LO16-21							
Slot:		Slot #21			Trajectory:		LO16-21 SS Survey							
				Type:		DEF SVY								
Coordinate System:		UTM Zone 17S - WGS84, Meters												
Reference Point:														
Northing (m)		Easting (m)		Elevation (ft)		Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)				
N 9505985.770		E 459456.930		50.00 above MSL		0.000		0.000		2.500				
Trajectory Error Model:		SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma												
Surveying Prog:														
MD From (ft)		MD To (ft)		EOU Freq		Survey Tool Type								
0.00		7800.00		Act-Stns		SLB_MWD-STD								
Subject Trajectory				Offset Trajectory				Ct-Ct		EOU		Sep		Inter.
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle		
Major EOU radii used. All local minima indicated.														
Results highlighted: Separation Factor <= 1.50														
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 37.29	E 1.62	177.51	37.32	34.82	14.93	0.00		
100.00	100.00	S 0.71	E 0.31	100.06	100.06	S 37.20	E 1.67	177.88	36.51	31.39	7.12	0.56		
200.00	199.99	S 0.60	W 0.69	200.11	200.11	S 36.94	E 1.81	176.08	36.42	31.12	6.87	1.24		
300.00	299.96	N 0.38	W 2.63	300.14	300.14	S 36.51	E 2.04	172.80	37.18	31.65	6.72	0.93		
400.00	399.91	N 2.15	W 5.29	400.15	400.15	S 35.90	E 2.36	168.64	38.82	32.67	6.31	1.98		
500.00	499.86	N 3.89	W 7.99	500.15	500.15	S 35.12	E 2.77	164.59	40.47	33.67	5.95	1.59		
600.00	599.79	N 6.50	W 10.44	600.15	600.14	S 34.17	E 3.28	161.37	42.92	35.60	5.86	2.48		
700.00	699.50	N 13.32	W 13.24	699.98	699.96	S 33.05	E 3.87	159.73	49.43	41.39	6.15	5.63		
800.00	798.25	N 28.18	W 17.63	798.95	798.92	S 31.77	E 4.55	159.65	63.93	55.57	7.65	11.38		
900.00	894.55	N 52.85	W 27.78	895.61	895.57	S 30.36	E 5.31	158.54	89.55	80.92	10.38	18.75		
1000.00	986.23	N 87.40	W 47.35	987.85	987.79	S 28.95	E 5.84	156.23	127.95	118.65	13.77	26.66		
1100.00	1071.99	N 131.23	W 74.02	1074.45	1074.38	S 27.66	E 5.97	154.00	177.91	167.65	17.35	33.73		
1200.00	1151.22	N 184.29	W 104.01	1154.83	1154.75	S 26.49	E 5.76	153.06	237.68	226.72	21.68	39.65		
1300.00	1223.77	N 243.95	W 138.18	1228.83	1228.74	S 25.44	E 5.29	152.76	305.25	293.02	24.96	45.36		
1400.00	1289.41	N 308.83	W 176.59	1296.06	1295.97	S 24.50	E 4.64	153.37	379.46	365.66	27.50	50.43		
1500.00	1349.46	N 376.07	W 219.81	1357.50	1357.40	S 23.63	E 4.00	154.35	458.17	442.56	29.34	53.97		
1600.00	1403.36	N 441.99	W 272.09	1412.86	1412.75	S 22.85	E 3.44	159.49	540.44	522.74	30.52	58.72		
1700.00	1449.13	N 503.82	W 335.85	1460.16	1460.04	S 22.18	E 2.96	164.61	625.77	605.72	31.22	64.22		
1800.00	1489.72	N 561.30	W 406.87	1502.27	1502.15	S 21.58	E 2.54	164.28	712.41	690.04	31.84	65.34		
1900.00	1531.62	N 614.22	W 480.63	1545.65	1545.51	S 20.95	E 2.12	161.12	797.92	773.37	32.50	63.13		
2000.00	1577.03	N 660.31	W 556.85	1592.45	1592.31	S 20.27	E 1.66	158.13	880.54	853.87	33.02	61.22		
2100.00	1624.73	N 702.35	W 634.02	1641.48	1641.34	S 19.56	E 1.19	155.58	961.73	932.87	33.33	60.39		
2200.00	1673.27	N 741.06	W 712.41	1691.30	1691.15	S 18.83	E 0.72	152.74	1042.26	1011.92	34.36	59.93		
2300.00	1720.58	N 781.72	W 790.56	1739.90	1739.74	S 18.11	E 0.26	151.95	1124.94	1092.85	35.06	62.14		
2400.00	1766.02	N 822.13	W 869.94	1786.01	1785.84	S 17.47	W 0.18	149.90	1209.05	1175.25	35.77	62.01		
2500.00	1811.22	N 862.16	W 949.65	1831.74	1831.56	S 16.93	W 0.68	149.34	1293.73	1258.36	36.57	62.62		
2600.00	1855.94	N 900.58	W 1030.42	1877.01	1876.83	S 16.49	W 1.23	147.73	1378.66	1341.60	37.20	62.61		
2700.00	1901.07	N 939.04	W 1110.95	1922.72	1922.53	S 16.16	W 1.84	145.49	1463.89	1425.30	37.94	61.76		
2800.00	1947.55	N 976.69	W 1191.08	1969.77	1969.57	S 15.92	W 2.53	144.30	1548.68	1508.57	38.60	61.54		
2900.00	1993.13	N 1012.48	W 1272.57	2015.99	2015.79	S 15.80	W 3.27	144.72	1633.71	1591.95	39.13	62.44		
3000.00	2037.40	N 1048.12	W 1354.85	2054.42	2054.22	S 15.79	W 3.92	143.83	1719.65	1676.17	39.55	63.25		
3100.00	2081.19	N 1083.86	W 1437.34	2077.47	2077.26	S 16.04	W 4.22	143.19	1806.55	1761.44	40.05	64.01		
3200.00	2124.46	N 1122.09	W 1518.98	2099.30	2099.08	S 16.54	W 4.39	140.65	1895.02	1848.15	40.43	64.98		
3300.00	2167.66	N 1161.81	W 1599.95	2123.87	2123.64	S 17.43	W 4.48	140.01	1984.45	1936.00	40.96	65.10		
3400.00	2211.53	N 1201.20	W 1680.72	2151.35	2151.09	S 18.78	W 4.60	139.12	2073.97	2023.96	41.47	64.98		
3500.00	2256.21	N 1240.95	W 1760.86	2179.98	2179.66	S 20.59	W 4.76	136.91	2163.62	2111.96	41.89	64.64		
3600.00	2301.68	N 1282.35	W 1839.72	2210.77	2210.36	S 22.87	W 4.96	135.01	2253.50	2200.16	42.24	64.51		
3700.00	2347.74	N 1324.32	W 1917.93	2242.12	2241.60	S 25.54	W 5.20	134.44	2343.48	2288.43	42.56	64.77		

3800.00	2394.11	N 1365.84	W 1996.20	2276.34	2275.63	S 29.00	W 5.67	134.74	2433.48	2376.74	42.89	64.20	
3900.00	2441.28	N 1406.27	W 2074.56	2315.26	2314.29	S 33.50	W 6.46	134.68	2523.11	2464.70	43.20	63.89	
4000.00	2487.94	N 1446.78	W 2153.18	2355.33	2354.02	S 38.54	W 7.50	134.58	2613.05	2552.86	43.41	64.86	
4100.00	2533.68	N 1487.71	W 2232.12	2394.19	2392.51	S 43.78	W 8.70	134.34	2703.52	2641.50	43.59	65.15	
4200.00	2579.55	N 1529.21	W 2310.70	2432.65	2430.57	S 49.19	W 9.97	133.33	2794.08	2730.27	43.79	64.95	
4300.00	2625.94	N 1570.28	W 2389.19	2471.46	2468.94	S 54.83	W 11.33	133.76	2884.42	2818.93	44.04	64.77	
4400.00	2671.92	N 1611.02	W 2468.09	2509.79	2506.81	S 60.60	W 12.74	134.55	2974.95	2907.73	44.25	65.02	
4500.00	2718.31	N 1649.90	W 2547.69	2550.25	2546.74	S 66.90	W 14.32	135.15	3065.10	2996.23	44.50	64.22	
4600.00	2766.22	N 1689.64	W 2625.95	2594.18	2590.07	S 73.95	W 16.16	131.95	3154.73	3084.04	44.63	63.84	
4700.00	2814.46	N 1731.39	W 2702.95	2638.09	2633.33	S 81.22	W 18.15	129.65	3244.46	3172.00	44.78	62.53	
4800.00	2867.68	N 1773.53	W 2776.36	2684.46	2678.96	S 89.15	W 20.42	128.29	3331.73	3257.58	44.93	60.13	
4900.00	2922.20	N 1814.92	W 2849.26	2729.15	2722.85	S 97.20	W 22.81	128.62	3418.30	3342.51	45.11	59.86	
5000.00	2977.25	N 1855.98	W 2921.95	2774.06	2766.86	S 105.73	W 25.43	128.74	3504.62	3427.21	45.27	59.65	
5100.00	3033.38	N 1896.77	W 2993.95	2816.29	2808.17	S 114.13	W 28.07	127.83	3590.39	3511.35	45.43	58.19	
5200.00	3092.37	N 1936.97	W 3063.98	2858.31	2849.18	S 122.85	W 30.79	128.36	3674.54	3593.98	45.61	57.05	
5300.00	3152.81	N 1975.40	W 3133.76	2901.22	2890.98	S 132.12	W 33.64	128.39	3757.78	3675.71	45.78	55.79	
5400.00	3214.76	N 2012.91	W 3202.72	2949.84	2938.22	S 143.11	W 37.04	128.89	3840.10	3756.52	45.94	55.54	
5500.00	3277.75	N 2049.88	W 3271.02	3001.58	2988.30	S 155.47	W 41.04	128.15	3921.75	3836.63	46.07	54.25	
5600.00	3342.03	N 2086.46	W 3338.32	3054.05	3038.87	S 168.71	W 45.50	128.83	4002.54	3915.96	46.23	54.30	
5700.00	3406.60	N 2122.86	W 3405.44	3107.87	3090.51	S 183.04	W 50.51	128.33	4083.21	3995.10	46.34	54.04	
5800.00	3472.39	N 2160.00	W 3470.95	3179.30	3158.70	S 202.99	W 57.93	127.69	4163.03	4073.38	46.43	53.41	
5900.00	3538.53	N 2197.18	W 3536.10	3247.40	3223.36	S 222.84	W 65.84	128.39	4242.47	4151.29	46.53	53.56	
6000.00	3604.29	N 2234.30	W 3601.65	3308.30	3281.04	S 240.93	W 73.23	128.55	4322.15	4229.43	46.61	53.64	
6069.00	3650.07	N 2260.06	W 3646.39	3350.57	3321.02	S 253.60	W 78.46	128.29	4376.86	4283.08	46.67	53.20	
Field:	Lobitos			Well:	Well LO16-22								
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-22								
Slot:	Slot #22			Trajectory:	LO16-22 Gyro + SS								
				Type:	DEF SVY								
Coordinate System:	UTM Zone 17S - WGS84, Meters												
Reference Point:													
Northing (m)	Easting (m)			Elevation (ft)				Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505992.250	E 459451.760			50.00 above MSL				0.000		0.000		2.500	
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma												
Surveying Prog:													
MD From (ft)	MD To (ft)			EOU Freq		Survey Tool Type							
0.00	2017.00			Act-Stns		SLB_NSG+MSHOT							
2017.00	8002.00			Act-Stns		SLB_MWD-POOR							
Subject Trajectory				Offset Trajectory				Ct-Ct	EOU	Sep	Inter.		
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle	
Major EOU radii used. All local minima indicated.													
Results highlighted: Separation Factor <= 1.50													
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 16.01	W 15.34	223.77	22.17	19.67	8.87	0.00	
100.00	100.00	S 0.71	E 0.31	100.16	100.16	S 15.89	W 15.02	225.30	21.58	17.86	5.80	0.70	
200.00	199.99	S 0.60	W 0.69	200.31	200.30	S 15.43	W 13.81	221.49	19.81	15.97	5.16	2.05	
300.00	299.96	N 0.38	W 2.63	300.27	300.24	S 14.76	W 12.00	211.74	17.81	13.60	4.23	1.82	
400.00	399.91	N 2.15	W 5.29	400.11	400.06	S 14.23	W 10.22	196.72	17.10	12.00	3.35	2.77	
500.00	499.86	N 3.89	W 7.99	500.05	499.98	S 13.66	W 8.49	181.66	17.56	11.37	2.84	2.26	
600.00	599.79	N 6.50	W 10.44	599.93	599.86	S 13.09	W 7.07	170.27	19.88	12.75	2.79	2.91	
700.00	699.50	N 13.32	W 13.24	699.80	699.71	S 12.31	W 6.18	164.62	26.58	18.45	3.27	5.74	
800.00	798.25	N 28.18	W 17.63	798.75	798.66	S 11.29	W 5.86	163.43	41.19	32.56	4.77	11.42	
900.00	894.55	N 52.85	W 27.78	895.89	895.79	S 10.18	W 6.58	161.79	66.51	56.71	6.79	18.16	
1000.00	986.23	N 87.40	W 47.35	990.26	990.06	S 8.79	W 10.69	160.20	103.01	93.27	10.58	24.75	
1100.00	1071.99	N 131.23	W 74.02	1076.37	1075.84	S 8.51	W 18.02	159.76	150.60	140.39	14.76	32.60	
1200.00	1151.22	N 184.29	W 104.01	1151.89	1150.75	S 11.15	W 27.13	161.00	210.02	199.57	20.10	40.19	
1300.00	1223.77	N 243.95	W 138.18	1219.24	1217.12	S 16.14	W 37.41	162.94	279.01	267.59	24.43	46.97	
1400.00	1289.41	N 308.83	W 176.59	1283.21	1279.72	S 22.35	W 49.00	165.73	355.04	342.02	27.28	51.69	
1500.00	1349.46	N 376.07	W 219.81	1343.97	1338.74	S 29.02	W 61.83	168.43	434.94	420.10	29.30	54.32	
1600.00	1403.36	N 441.99	W 272.09	1403.22	1395.72	S 36.06	W 76.41	174.43	516.61	499.63	30.44	56.08	
1700.00	1449.13	N 503.82	W 335.85	1457.61	1447.46	S 43.07	W 91.66	179.10	598.93	579.57	30.94	58.76	
1800.00	1489.72	N 561.30	W 406.87	1514.31	1500.74	S 50.97	W 109.35	177.56	680.82	659.06	31.29	57.75	
1900.00	1531.62	N 614.22	W 480.63	1574.37	1556.70	S 59.53	W 129.41	173.09	760.21	736.20	31.67	53.75	

2000.00	1577.03	N 660.31	W 556.85	1638.63	1616.36	S 68.65	W 151.48	169.29	835.01	808.81	31.87	50.33			
2100.00	1624.73	N 702.35	W 634.02	1706.17	1678.97	S 78.25	W 174.91	166.59	907.22	878.76	31.87	48.58			
2200.00	1673.27	N 741.06	W 712.41	1771.74	1739.72	S 87.53	W 197.79	164.35	977.65	947.65	32.58	48.05			
2300.00	1720.58	N 781.72	W 790.56	1845.33	1807.90	S 97.61	W 223.60	164.09	1049.90	1018.05	32.96	49.94			
2400.00	1766.02	N 822.13	W 869.94	1912.42	1870.04	S 106.61	W 247.22	162.36	1123.01	1089.37	33.38	49.60			
2500.00	1811.22	N 862.16	W 949.65	1985.88	1938.05	S 116.17	W 273.29	161.33	1196.10	1160.77	33.85	49.35			
2600.00	1855.94	N 900.58	W 1030.42	2050.83	1998.13	S 124.33	W 296.55	159.99	1268.55	1231.32	34.08	49.28			
2700.00	1901.07	N 939.04	W 1110.95	2107.95	2051.03	S 131.71	W 316.81	158.31	1341.51	1301.65	33.66	48.83			
2800.00	1947.55	N 976.69	W 1191.08	2176.03	2114.15	S 140.72	W 340.69	157.13	1414.05	1371.55	33.27	48.40			
2900.00	1993.13	N 1012.48	W 1272.57	2260.72	2192.68	S 151.13	W 370.63	156.58	1485.70	1442.01	34.01	48.17			
3000.00	2037.40	N 1048.12	W 1354.85	2346.25	2272.00	S 160.55	W 401.21	155.58	1557.35	1511.66	34.08	48.26			
3100.00	2081.19	N 1083.86	W 1437.34	2423.14	2343.28	S 168.18	W 428.99	154.52	1628.82	1580.56	33.75	48.14			
3200.00	2124.46	N 1122.09	W 1518.98	2488.13	2403.49	S 174.62	W 452.61	153.48	1701.90	1650.75	33.27	49.17			
3300.00	2167.66	N 1161.81	W 1599.95	2552.68	2463.23	S 181.16	W 476.17	152.60	1775.90	1722.18	33.06	48.85			
3400.00	2211.53	N 1201.20	W 1680.72	2617.80	2523.45	S 187.90	W 500.03	151.69	1849.57	1793.38	32.92	48.45			
3500.00	2256.21	N 1240.95	W 1760.86	2688.92	2589.13	S 195.38	W 526.26	150.41	1923.05	1863.92	32.52	47.96			
3600.00	2301.68	N 1282.35	W 1839.72	2764.20	2658.51	S 203.27	W 554.39	149.40	1996.61	1934.33	32.06	47.60			
3700.00	2347.74	N 1324.32	W 1917.93	2840.52	2728.69	S 211.21	W 583.30	148.97	2069.83	2004.51	31.69	47.42			
3800.00	2394.11	N 1365.84	W 1996.20	2920.00	2801.62	S 219.39	W 613.82	148.49	2142.43	2074.02	31.32	46.27			
3900.00	2441.28	N 1406.27	W 2074.56	3006.05	2880.58	S 227.60	W 647.02	148.03	2213.68	2141.93	30.85	45.46			
4000.00	2487.94	N 1446.78	W 2153.18	3092.83	2960.26	S 235.05	W 680.57	148.04	2284.78	2209.71	30.44	46.02			
4100.00	2533.68	N 1487.71	W 2232.12	3171.71	3032.74	S 241.13	W 711.12	147.78	2356.14	2277.85	30.09	46.07			
4200.00	2579.55	N 1529.21	W 2310.70	3239.61	3095.15	S 246.23	W 737.37	147.22	2427.64	2346.28	29.84	45.94			
4300.00	2625.94	N 1570.28	W 2389.19	3307.88	3157.93	S 251.35	W 763.68	147.01	2498.73	2414.48	29.66	45.66			
4400.00	2671.92	N 1611.02	W 2468.09	3375.85	3220.47	S 256.42	W 789.81	147.04	2570.01	2482.87	29.49	45.79			
4500.00	2718.31	N 1649.90	W 2547.69	3450.92	3289.59	S 261.93	W 818.59	146.60	2640.31	2550.18	29.30	44.76			
4600.00	2766.22	N 1689.64	W 2625.95	3529.67	3362.13	S 267.38	W 848.75	145.50	2709.89	2616.57	29.04	44.59			
4700.00	2814.46	N 1731.39	W 2702.95	3608.44	3434.74	S 272.48	W 878.88	144.32	2779.83	2683.43	28.83	43.39			
4800.00	2867.68	N 1773.53	W 2776.36	3693.98	3513.64	S 277.55	W 911.51	143.15	2846.38	2746.88	28.61	40.94			
4900.00	2922.20	N 1814.92	W 2849.26	3783.49	3596.36	S 282.02	W 945.40	143.04	2911.42	2808.84	28.38	40.28			
5000.00	2977.25	N 1855.98	W 2921.95	3874.16	3680.32	S 285.64	W 979.45	142.87	2975.59	2870.00	28.18	39.71			
5100.00	3033.38	N 1896.77	W 2993.95	3963.87	3763.52	S 288.40	W 1012.89	142.12	3038.53	2929.96	27.99	37.97			
5200.00	3092.37	N 1936.97	W 3063.98	4055.64	3848.72	S 290.55	W 1046.94	141.84	3098.76	2987.33	27.81	36.39			
5300.00	3152.81	N 1975.40	W 3133.76	4170.43	3955.28	S 292.16	W 1089.59	141.40	3156.64	3042.02	27.54	34.32			
5400.00	3214.76	N 2012.91	W 3202.72	4408.18	4175.33	S 288.65	W 1179.44	141.14	3211.47	3092.01	26.88	31.28			
5500.00	3277.75	N 2049.88	W 3271.02	4483.88	4245.07	S 285.08	W 1208.65	140.65	3262.07	3140.06	26.74	29.98			
5600.00	3342.03	N 2086.46	W 3338.32	4509.72	4268.97	S 284.17	W 1218.45	140.68	3312.54	3188.78	26.77	30.92			
5700.00	3406.60	N 2122.86	W 3405.44	4535.08	4292.53	S 283.63	W 1227.80	140.46	3364.25	3238.68	26.79	31.49			
5800.00	3472.39	N 2160.00	W 3470.95	4560.06	4315.84	S 283.46	W 1236.76	140.13	3416.66	3289.31	26.83	31.84			
5900.00	3538.53	N 2197.18	W 3536.10	4584.54	4338.80	S 283.64	W 1245.29	140.25	3470.26	3341.17	26.88	33.01			
6000.00	3604.29	N 2234.30	W 3601.65	4608.43	4361.27	S 284.13	W 1253.37	140.22	3525.61	3394.74	26.94	34.04			
6069.00	3650.07	N 2260.06	W 3646.39	4639.59	4390.68	S 285.14	W 1263.61	140.00	3564.29	3432.03	26.95	33.96			
Field:	Lobitos			Well:	Well LO16-23										
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-23										
Slot:	Slot #23			Trajectory:	LO16-23 Gyro + MWD										
				Type:	DEF SVY										
Coordinate System:	UTM Zone 17S - WGS84, Meters														
Reference Point:															
Northing (m)	Easting (m)			Elevation (ft)			Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)				
N 9505997.420	E 459458.220			50.00 above MSL			0.000		0.000		2.500				
Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma															
Surveying Prog:															
	MD From (ft)			MD To (ft)			EOU Freq		Survey Tool Type						
	0.00			2017.00			Act-Stns		SLB_NSG+MSHOT						
	2017.00			10004.00			Act-Stns		SLB_MWD-STD						
Subject Trajectory						Offset Trajectory						Ct-Ct	EOU	Sep	Inter.
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle			
Major EOU radii used. All local minima indicated.															
Results highlighted: Separation Factor <= 1.50															
0.00	0.00	N 0.00	E 0.00	0.00	0.00	N 0.95	E 5.88	80.83	5.95	3.45	2.38	0.00			

100.00	100.00	S 0.71	E 0.31	100.06	100.05	N 0.73	E 5.47	74.38	5.35	1.63	1.44	0.69
200.00	199.99	S 0.60	W 0.69	200.11	200.09	S 0.11	E 3.89	83.90	4.60	0.76	1.20	1.18
300.00	299.96	N 0.38	W 2.63	300.08	300.03	S 1.37	E 1.66	112.28	4.64	0.33	1.08	1.29
400.00	399.91	N 2.15	W 5.29	400.01	399.93	S 2.80	W 0.33	134.97	7.01	1.54	1.28	1.93
500.00	499.86	N 3.89	W 7.99	499.98	499.87	S 4.21	W 2.19	144.44	9.97	3.46	1.53	1.67
600.00	599.79	N 6.50	W 10.44	599.93	599.80	S 5.06	W 3.76	149.99	13.35	5.95	1.80	2.93
700.00	699.50	N 13.32	W 13.24	699.69	699.55	S 5.69	W 5.30	157.30	20.59	12.32	2.49	6.15
800.00	798.25	N 28.18	W 17.63	798.46	798.31	S 6.00	W 6.80	162.43	35.85	26.97	4.04	11.90
900.00	894.55	N 52.85	W 27.78	894.85	894.69	S 6.24	W 8.12	162.02	62.27	52.82	6.59	19.11
1000.00	986.23	N 87.40	W 47.35	986.84	986.67	S 6.42	W 9.48	159.15	101.18	90.94	9.88	26.92
1100.00	1071.99	N 131.23	W 74.02	1072.94	1072.76	S 6.50	W 10.71	156.47	151.59	140.22	13.34	34.12
1200.00	1151.22	N 184.29	W 104.01	1152.47	1152.28	S 6.60	W 11.85	155.35	211.97	199.71	17.29	40.16
1300.00	1223.77	N 243.95	W 138.18	1225.38	1225.19	S 6.71	W 12.92	154.92	280.22	266.52	20.45	45.96
1400.00	1289.41	N 308.83	W 176.59	1291.36	1291.16	S 6.85	W 13.92	155.47	355.13	339.68	22.98	51.08
1500.00	1349.46	N 376.07	W 219.81	1352.19	1351.98	S 7.00	W 14.88	156.35	434.45	417.09	25.02	54.55
1600.00	1403.36	N 441.99	W 272.09	1407.40	1407.19	S 7.11	W 15.82	161.47	517.08	497.57	26.50	59.10
1700.00	1449.13	N 503.82	W 335.85	1454.15	1453.93	S 7.20	W 16.69	166.53	602.52	580.52	27.39	64.46
1800.00	1489.72	N 561.30	W 406.87	1495.80	1495.56	S 7.34	W 17.53	166.00	689.19	664.72	28.17	65.48
1900.00	1531.62	N 614.22	W 480.63	1540.26	1540.01	S 7.58	W 18.57	162.46	774.73	747.92	28.89	62.94
2000.00	1577.03	N 660.31	W 556.85	1591.12	1590.83	S 8.13	W 20.39	159.09	857.20	828.08	29.43	60.37
2100.00	1624.73	N 702.35	W 634.02	1644.61	1644.24	S 9.11	W 23.12	156.36	937.94	906.42	29.75	58.87
2200.00	1673.27	N 741.06	W 712.41	1699.27	1698.75	S 10.80	W 26.91	153.54	1017.77	984.54	30.63	57.82
2300.00	1720.58	N 781.72	W 790.56	1755.24	1754.43	S 13.39	W 31.95	152.81	1099.47	1064.26	31.22	59.37
2400.00	1766.02	N 822.13	W 869.94	1812.17	1810.84	S 17.16	W 38.59	150.84	1182.18	1145.04	31.83	58.46
2500.00	1811.22	N 862.16	W 949.65	1896.27	1893.46	S 24.82	W 52.18	149.70	1264.50	1225.40	32.34	56.60
2600.00	1855.94	N 900.58	W 1030.42	1986.74	1980.78	S 36.03	W 72.90	148.08	1345.24	1303.99	32.62	54.26
2700.00	1901.07	N 939.04	W 1110.95	2119.76	2104.52	S 58.55	W 115.87	146.36	1423.64	1380.91	33.32	49.74
2800.00	1947.55	N 976.69	W 1191.08	2207.65	2182.27	S 77.65	W 152.07	146.34	1498.76	1454.51	33.87	48.33
2900.00	1993.13	N 1012.48	W 1272.57	2279.91	2243.63	S 96.48	W 185.23	147.44	1573.17	1527.22	34.24	48.16
3000.00	2037.40	N 1048.12	W 1354.85	2342.01	2294.53	S 114.87	W 215.69	147.91	1648.13	1600.37	34.50	49.11
3100.00	2081.19	N 1083.86	W 1437.34	2417.46	2354.38	S 139.50	W 254.44	148.35	1723.52	1673.85	34.70	49.30
3200.00	2124.46	N 1122.09	W 1518.98	2499.77	2416.09	S 169.18	W 300.10	148.57	1799.46	1747.59	34.69	50.99
3300.00	2167.66	N 1161.81	W 1599.95	2575.05	2470.68	S 197.49	W 343.53	149.24	1875.66	1821.73	34.78	50.63
3400.00	2211.53	N 1201.20	W 1680.72	2652.25	2525.22	S 227.29	W 389.31	149.84	1951.08	1895.09	34.85	50.17
3500.00	2256.21	N 1240.95	W 1760.86	2732.90	2581.93	S 258.10	W 437.67	149.98	2025.85	1967.71	34.84	49.99
3600.00	2301.68	N 1282.35	W 1839.72	2808.46	2635.17	S 286.38	W 483.22	150.24	2100.52	2040.22	34.83	50.09
3700.00	2347.74	N 1324.32	W 1917.93	2875.26	2682.39	S 311.10	W 523.48	150.91	2175.10	2112.69	34.85	50.13
3800.00	2394.11	N 1365.84	W 1996.20	2942.35	2730.01	S 335.71	W 563.84	151.42	2249.39	2184.92	34.89	49.07
3900.00	2441.28	N 1406.27	W 2074.56	3002.33	2772.76	S 357.62	W 599.77	151.85	2322.97	2256.44	34.92	48.69
4000.00	2487.94	N 1446.78	W 2153.18	3061.88	2815.41	S 379.33	W 635.20	152.83	2397.12	2328.44	34.90	49.54
4100.00	2533.68	N 1487.71	W 2232.12	3120.65	2857.70	S 400.72	W 669.95	153.39	2472.16	2401.30	34.89	49.85
4200.00	2579.55	N 1529.21	W 2310.70	3192.87	2909.82	S 426.89	W 712.54	153.55	2547.46	2474.24	34.79	49.78
4300.00	2625.94	N 1570.28	W 2389.19	3268.31	2964.27	S 453.98	W 757.18	154.09	2622.13	2546.63	34.73	49.05
4400.00	2671.92	N 1611.02	W 2468.09	3337.26	3014.04	S 478.55	W 798.09	154.85	2696.72	2618.84	34.63	48.73
4500.00	2718.31	N 1649.90	W 2547.69	3405.56	3063.33	S 502.86	W 838.63	154.96	2770.26	2690.10	34.56	47.53
4600.00	2766.22	N 1689.64	W 2625.95	3471.94	3111.25	S 526.46	W 878.04	154.36	2843.47	2760.91	34.44	48.60
4700.00	2814.46	N 1731.39	W 2702.95	3534.40	3156.38	S 548.68	W 915.06	153.42	2917.56	2832.67	34.37	48.64
4800.00	2867.68	N 1773.53	W 2776.36	3598.01	3202.40	S 571.33	W 952.69	152.25	2989.34	2902.22	34.31	47.57
4900.00	2922.20	N 1814.92	W 2849.26	3665.10	3251.03	S 595.19	W 992.28	152.66	3060.26	2970.92	34.25	47.12
5000.00	2977.25	N 1855.98	W 2921.95	3733.49	3300.74	S 619.42	W 1032.52	153.01	3130.84	3039.29	34.20	46.81
5100.00	3033.38	N 1896.77	W 2993.95	3801.63	3350.40	S 643.45	W 1072.50	152.37	3200.81	3107.01	34.13	46.16
5200.00	3092.37	N 1936.97	W 3063.98	3869.87	3400.31	S 667.42	W 1112.40	152.41	3268.99	3173.02	34.06	44.90
5300.00	3152.81	N 1975.40	W 3133.76	3939.74	3451.59	S 691.86	W 1153.07	152.23	3335.66	3237.52	33.99	43.81
5400.00	3214.76	N 2012.91	W 3202.72	4011.06	3504.34	S 716.55	W 1194.25	152.64	3401.14	3300.80	33.90	43.08
5500.00	3277.75	N 2049.88	W 3271.02	4083.36	3558.34	S 741.20	W 1235.51	152.16	3465.85	3363.33	33.80	42.43
5600.00	3342.03	N 2086.46	W 3338.32	4164.13	3619.29	S 768.23	W 1281.10	152.77	3529.63	3424.86	33.69	41.68
5700.00	3406.60	N 2122.86	W 3405.44	4246.54	3682.10	S 795.20	W 1327.13	152.77	3593.09	3486.03	33.56	41.49
5800.00	3472.39	N 2160.00	W 3470.95	4333.13	3748.67	S 822.90	W 1375.08	152.60	3656.04	3546.64	33.42	41.32
5900.00	3538.53	N 2197.18	W 3536.10	4419.21	3815.31	S 849.83	W 1422.44	153.26	3718.66	3606.98	33.30	40.89
6000.00	3604.29	N 2234.30	W 3601.65	4499.32	3877.45	S 874.68	W 1466.48	153.62	3781.44	3667.52	33.19	40.95
6069.00	3650.07	N 2260.06	W 3646.39	4554.67	3920.35	S 891.81	W 1496.96	153.50	3824.58	3709.14	33.13	40.87

Field:	Lobitos				Well:	Well LO16-24									
Structure:	Platform LO16 (WGS84)				Borehole:	Borehole LO16-24									
Slot:	Slot #24				Trajectory:	LO16-24 MWD Survey									
					Type:	DEF SVY									
Coordinate System:	UTM Zone 17S - WGS84, Meters														
Reference Point:															
Northing (m)	Easting (m)			Elevation (ft)			Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)				
N 9505990.930	E 459463.390			50.00 above MSL			0.000		0.000		2.500				
Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma															
Surveying Prog:															
MD From (ft)			MD To (ft)			EOU Freq		Survey Tool Type							
0.00			10147.00			Act-Stns		SLB_MWD-STD							
Subject Trajectory					Offset Trajectory					Ct-Ct	EOU	Sep	Inter.		
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle			
Major EOU radii used. All local minima indicated.															
Results highlighted: Separation Factor <= 1.50															
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 20.36	E 22.83	131.72	30.59	28.09	12.24	0.00			
100.00	100.00	S 0.71	E 0.31	99.90	99.90	S 20.48	E 22.94	131.15	30.05	24.94	5.88	0.32			
200.00	199.99	S 0.60	W 0.69	199.78	199.78	S 20.85	E 23.28	130.20	31.37	26.12	5.97	1.57			
300.00	299.96	N 0.38	W 2.63	299.63	299.63	S 21.46	E 23.84	129.54	34.31	28.86	6.29	1.46			
400.00	399.91	N 2.15	W 5.29	399.42	399.40	S 22.31	E 24.62	129.29	38.65	32.60	6.39	2.66			
500.00	499.86	N 3.89	W 7.99	499.17	499.15	S 23.41	E 25.62	129.09	43.30	36.63	6.49	2.56			
600.00	599.79	N 6.50	W 10.44	598.87	598.83	S 24.75	E 26.84	129.93	48.65	41.48	6.78	3.90			
700.00	699.50	N 13.32	W 13.24	698.57	698.52	S 25.94	E 28.31	133.19	57.17	49.27	7.23	6.92			
800.00	798.25	N 28.18	W 17.63	796.54	796.46	S 27.48	E 29.65	139.09	73.05	64.76	8.82	13.47			
900.00	894.55	N 52.85	W 27.78	889.68	889.52	S 31.07	E 30.47	144.54	102.28	93.66	11.87	22.38			
1000.00	986.23	N 87.40	W 47.35	975.69	975.30	S 37.40	E 30.29	148.03	147.39	138.14	15.93	31.68			
1100.00	1071.99	N 131.23	W 74.02	1049.51	1048.68	S 45.33	E 30.25	149.35	206.37	196.19	20.26	41.11			
1200.00	1151.22	N 184.29	W 104.01	1113.38	1111.88	S 54.61	E 30.48	150.64	276.96	266.09	25.48	48.80			
1300.00	1223.77	N 243.95	W 138.18	1167.61	1165.28	S 63.98	E 30.67	152.15	356.02	343.91	29.40	55.80			
1400.00	1289.41	N 308.83	W 176.59	1211.98	1208.80	S 72.67	E 30.73	155.13	441.61	427.98	32.39	61.78			
1500.00	1349.46	N 376.07	W 219.81	1248.71	1244.66	S 80.57	E 30.73	159.27	531.30	515.93	34.56	65.89			
1600.00	1403.36	N 441.99	W 272.09	1278.37	1273.50	S 87.52	E 30.55	173.15	623.56	606.17	35.85	70.12			
1700.00	1449.13	N 503.82	W 335.85	1301.39	1295.78	S 93.31	E 30.22	187.08	717.00	697.33	36.45	74.76			
1800.00	1489.72	N 561.30	W 406.87	1320.05	1313.76	S 98.27	E 29.82	188.98	810.37	788.43	36.93	75.39			
1900.00	1531.62	N 614.22	W 480.63	1339.30	1332.22	S 103.67	E 29.28	183.94	902.84	878.78	37.52	72.56			
2000.00	1577.03	N 680.31	W 556.85	1361.65	1353.55	S 110.31	E 28.48	179.82	993.18	967.05	38.01	69.95			
2100.00	1624.73	N 702.35	W 634.02	1388.81	1379.29	S 118.89	E 27.25	177.14	1082.56	1054.30	38.30	68.57			
2200.00	1673.27	N 741.06	W 712.41	1419.87	1408.52	S 129.23	E 25.40	174.48	1171.26	1141.55	39.42	67.92			
2300.00	1720.58	N 781.72	W 790.56	1449.59	1436.27	S 139.64	E 23.20	176.35	1261.72	1230.29	40.14	70.15			
2400.00	1766.02	N 822.13	W 869.94	1489.48	1473.17	S 154.32	E 19.49	173.95	1352.89	1319.77	40.85	69.30			
2500.00	1811.22	N 862.16	W 949.65	1594.17	1568.70	S 194.13	E 3.95	171.05	1443.57	1408.75	41.45	65.82			
2600.00	1855.94	N 900.58	W 1030.42	2223.49	2118.12	S 361.13	W 204.93	159.55	1530.38	1489.51	37.44	42.62			
2700.00	1901.07	N 939.04	W 1110.95	2384.47	2230.67	S 402.35	W 312.19	159.76	1595.61	1550.77	35.58	39.66			
2800.00	1947.55	N 976.69	W 1191.08	2535.16	2324.82	S 441.29	W 423.16	160.79	1656.11	1607.98	34.41	37.41			
2900.00	1993.13	N 1012.48	W 1272.57	2620.90	2375.37	S 463.10	W 488.89	161.74	1713.95	1663.12	33.72	36.48			
3000.00	2037.40	N 1048.12	W 1354.85	2698.22	2420.64	S 482.99	W 548.34	162.64	1772.46	1718.94	33.12	37.21			
3100.00	2081.19	N 1083.86	W 1437.34	2771.27	2462.97	S 502.22	W 604.68	163.22	1831.59	1775.48	32.64	37.72			
3200.00	2124.46	N 1122.09	W 1518.98	2845.55	2505.52	S 522.30	W 662.16	164.21	1892.97	1834.16	32.18	40.06			
3300.00	2167.66	N 1161.81	W 1599.95	2938.77	2558.16	S 547.51	W 734.84	164.71	1955.17	1893.55	31.73	39.48			
3400.00	2211.53	N 1201.20	W 1680.72	3031.27	2609.54	S 572.21	W 807.68	165.16	2016.33	1951.95	31.32	39.04			
3500.00	2256.21	N 1240.95	W 1760.86	3121.88	2659.09	S 596.19	W 879.65	165.56	2077.00	2009.79	30.90	39.46			
3600.00	2301.68	N 1282.35	W 1839.72	3208.49	2705.79	S 618.94	W 948.96	166.12	2138.14	2068.08	30.52	40.05			
3700.00	2347.74	N 1324.32	W 1917.93	3293.56	2751.10	S 641.20	W 1017.43	166.87	2199.29	2126.39	30.17	40.14			
3800.00	2394.11	N 1365.84	W 1996.20	3361.77	2787.05	S 659.16	W 1072.54	167.00	2260.13	2184.64	29.94	39.60			
3900.00	2441.28	N 1406.27	W 2074.56	3426.40	2820.78	S 676.65	W 1124.82	167.30	2320.47	2242.49	29.76	39.60			
4000.00	2487.94	N 1446.78	W 2153.18	3499.22	2858.47	S 696.83	W 1183.77	168.43	2381.62	2300.98	29.53	40.25			
4100.00	2533.68	N 1487.71	W 2232.12	3586.71	2903.90	S 720.79	W 1254.61	169.21	2443.38	2359.93	29.28	40.07			
4200.00	2579.55	N 1529.21	W 2310.70	3674.60	2949.78	S 744.37	W 1325.76	169.66	2505.26	2419.11	29.08	40.05			
4300.00	2625.94	N 1570.28	W 2389.19	3749.98	2989.40	S 764.32	W 1386.71	169.98	2566.59	2477.97	28.96	39.48			
4400.00	2671.92	N 1611.02	W 2468.09	3823.16	3028.19	S 783.66	W 1445.67	170.50	2628.07	2536.97	28.85	39.05			

4500.00	2718.31	N 1649.90	W 2547.69	3897.53	3067.95	S 803.29	W 1505.37	170.30	2688.28	2594.80	28.76	37.94	
4600.00	2766.22	N 1689.64	W 2625.95	3971.41	3107.80	S 822.78	W 1564.46	170.54	2748.76	2652.79	28.64	39.56	
4700.00	2814.46	N 1731.39	W 2702.95	4044.01	3147.27	S 841.91	W 1622.30	170.12	2810.77	2712.36	28.56	40.22	
4800.00	2867.68	N 1773.53	W 2776.36	4116.40	3186.96	S 860.97	W 1679.77	169.13	2871.42	2770.67	28.50	40.00	
4900.00	2922.20	N 1814.92	W 2849.26	4205.63	3235.84	S 884.48	W 1750.62	169.55	2931.24	2827.89	28.36	39.86	
5000.00	2977.25	N 1855.98	W 2921.95	4325.63	3295.81	S 916.73	W 1849.39	170.33	2989.95	2883.39	28.06	40.70	
5100.00	3033.38	N 1896.77	W 2993.95	4441.40	3346.16	S 948.48	W 1948.66	170.48	3047.28	2937.64	27.79	42.56	
5200.00	3092.37	N 1936.97	W 3063.98	4548.57	3385.94	S 978.28	W 2043.58	170.95	3102.59	2990.14	27.59	43.57	
5300.00	3152.81	N 1975.40	W 3133.76	4614.81	3410.14	S 996.55	W 2102.47	170.89	3156.30	3041.54	27.50	42.01	
5400.00	3214.76	N 2012.91	W 3202.72	4684.33	3438.51	S 1015.22	W 2163.12	171.38	3209.42	3092.35	27.41	40.06	
5500.00	3277.75	N 2049.88	W 3271.02	4757.06	3471.38	S 1034.15	W 2225.17	171.23	3262.29	3142.87	27.32	39.16	
5600.00	3342.03	N 2086.46	W 3338.32	4832.85	3509.00	S 1053.19	W 2288.13	171.80	3314.84	3193.11	27.23	37.08	
5700.00	3406.60	N 2122.86	W 3405.44	4911.72	3551.71	S 1072.19	W 2351.65	172.05	3367.47	3243.38	27.14	36.21	
5800.00	3472.39	N 2160.00	W 3470.95	4992.71	3599.21	S 1090.79	W 2414.54	172.10	3420.48	3294.03	27.05	35.59	
5900.00	3538.53	N 2197.18	W 3536.10	5081.27	3654.40	S 1110.18	W 2481.03	172.68	3473.50	3344.75	26.98	34.58	
6000.00	3604.29	N 2234.30	W 3601.65	5173.62	3712.87	S 1129.91	W 2549.74	173.11	3526.50	3395.42	26.90	34.35	
6069.00	3650.07	N 2260.06	W 3646.39	5237.65	3753.83	S 1143.33	W 2597.09	173.09	3562.99	3430.31	26.86	34.34	
Field:	Lobitos			Well:	Well LO16-24								
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-24 S1								
Slot:	Slot #24			Trajectory:	LO16-24 S1 MWD Survey								
				Type:	DEF SVY								
Coordinate System:	UTM Zone 17S - WGS84, Meters												
Reference Point:													
Northing (m)	Easting (m)			Elevation (ft)			Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)		
N 9505990.930	E 459463.390			50.00 above MSL			0.000		0.000		2.500		
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma												
Surveying Prog:													
	MD From (ft)			MD To (ft)			EOU Freq		Survey Tool Type				
	0.00			11051.00			Act-Stns		SLB_MWD-STD				
Subject Trajectory	Offset Trajectory												
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Ct-Ct	EOU	Sep	Inter.	
									Dist (ft)	Dist (ft)	Factor	Angle	
Major EOU radii used. All local minima indicated.													
Results highlighted: Separation Factor <= 1.50													
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 20.36	E 22.83	131.72	30.59	28.09	12.24	0.00	
100.00	100.00	S 0.71	E 0.31	99.90	99.90	S 20.48	E 22.94	131.15	30.05	24.94	5.88	0.32	
200.00	199.99	S 0.60	W 0.69	199.78	199.78	S 20.85	E 23.28	130.20	31.37	26.12	5.97	1.57	
300.00	299.96	N 0.38	W 2.63	299.63	299.63	S 21.46	E 23.84	129.54	34.31	28.86	6.29	1.46	
400.00	399.91	N 2.15	W 5.29	399.42	399.40	S 22.31	E 24.62	129.29	38.65	32.60	6.39	2.66	
500.00	499.86	N 3.89	W 7.99	499.17	499.15	S 23.41	E 25.62	129.09	43.30	36.63	6.49	2.56	
600.00	599.79	N 6.50	W 10.44	598.87	598.83	S 24.75	E 26.84	129.93	48.65	41.48	6.78	3.90	
700.00	699.50	N 13.32	W 13.24	698.57	698.52	S 25.94	E 28.31	133.19	57.17	49.27	7.23	6.92	
800.00	798.25	N 28.18	W 17.63	796.54	796.46	S 27.48	E 29.65	139.09	73.05	64.76	8.82	13.47	
900.00	894.55	N 52.85	W 27.78	898.68	898.52	S 31.07	E 30.47	144.54	102.28	93.66	11.87	22.38	
1000.00	986.23	N 87.40	W 47.35	975.69	975.30	S 37.40	E 30.29	148.03	147.39	138.14	15.93	31.68	
1100.00	1071.99	N 131.23	W 74.02	1049.51	1048.68	S 45.33	E 30.25	149.35	206.37	196.19	20.26	41.11	
1200.00	1151.22	N 184.29	W 104.01	1113.38	1111.88	S 54.61	E 30.48	150.64	276.96	266.09	25.48	48.80	
1300.00	1223.77	N 243.95	W 138.18	1167.61	1165.28	S 63.98	E 30.67	152.15	356.02	343.91	29.40	55.80	
1400.00	1289.41	N 308.83	W 176.59	1211.98	1208.80	S 72.67	E 30.73	155.13	441.61	427.98	32.39	61.78	
1500.00	1349.46	N 376.07	W 219.81	1248.71	1244.66	S 80.57	E 30.73	159.27	531.30	515.93	34.56	65.89	
1600.00	1403.36	N 441.99	W 272.09	1278.37	1273.50	S 87.52	E 30.55	173.15	623.56	606.17	35.85	70.12	
1700.00	1449.13	N 503.82	W 335.85	1301.39	1295.78	S 93.31	E 30.22	187.08	717.00	697.33	36.45	74.76	
1800.00	1489.72	N 561.30	W 406.87	1320.05	1313.76	S 98.27	E 29.82	188.98	810.37	788.43	36.93	75.39	
1900.00	1531.62	N 614.22	W 480.63	1339.30	1332.22	S 103.67	E 29.28	183.94	902.84	878.78	37.52	72.56	
2000.00	1577.03	N 660.31	W 556.85	1361.65	1353.55	S 110.31	E 28.48	179.82	993.18	967.05	38.01	69.95	
2100.00	1624.73	N 702.35	W 634.02	1388.81	1379.29	S 118.89	E 27.25	177.14	1082.56	1054.30	38.30	68.57	
2200.00	1673.27	N 741.06	W 712.41	1419.87	1408.52	S 129.23	E 25.40	174.48	1171.26	1141.55	39.42	67.92	
2300.00	1720.58	N 781.72	W 790.56	1449.59	1436.27	S 139.64	E 23.20	176.35	1261.72	1230.29	40.14	70.15	
2400.00	1766.02	N 822.13	W 869.94	1489.48	1473.17	S 154.32	E 19.49	173.95	1352.89	1319.77	40.85	69.30	
2500.00	1811.22	N 862.16	W 949.65	1594.17	1568.70	S 194.13	E 3.95	171.05	1443.57	1408.75	41.45	65.82	
2600.00	1855.94	N 900.58	W 1030.42	2223.49	2118.12	S 361.13	W 204.93	159.55	1530.38	1489.51	37.44	42.62	
2700.00	1901.07	N 939.04	W 1110.95	2384.47	2230.67	S 402.35	W 312.19	159.76	1595.61	1550.77	35.58	39.66	

2800.00	1947.55	N 976.69	W 1191.08	2535.16	2324.82	S 441.29	W 423.16	160.79	1656.11	1607.98	34.41	37.41
2900.00	1993.13	N 1012.48	W 1272.57	2620.90	2375.37	S 463.10	W 488.89	161.74	1713.95	1663.12	33.72	36.48
3000.00	2037.40	N 1048.12	W 1354.85	2698.22	2420.64	S 482.99	W 548.34	162.64	1772.46	1718.94	33.12	37.21
3100.00	2081.19	N 1083.86	W 1437.34	2771.27	2462.97	S 502.22	W 604.68	163.22	1831.59	1775.48	32.64	37.72
3200.00	2124.46	N 1122.09	W 1518.98	2845.55	2505.52	S 522.30	W 662.16	164.21	1892.97	1834.16	32.18	40.06
3300.00	2167.66	N 1161.81	W 1599.95	2938.77	2558.16	S 547.51	W 734.84	164.71	1955.17	1893.55	31.73	39.48
3400.00	2211.53	N 1201.20	W 1680.72	3031.27	2609.54	S 572.21	W 807.68	165.16	2016.33	1951.95	31.32	39.04
3500.00	2256.21	N 1240.95	W 1760.86	3121.88	2659.09	S 596.19	W 879.65	165.56	2077.00	2009.79	30.90	39.46
3600.00	2301.68	N 1282.35	W 1839.72	3208.49	2705.79	S 618.94	W 948.96	166.12	2138.14	2068.08	30.52	40.05
3700.00	2347.74	N 1324.32	W 1917.93	3293.56	2751.10	S 641.20	W 1017.43	166.87	2199.29	2126.39	30.17	40.14
3800.00	2394.11	N 1365.84	W 1996.20	3361.77	2787.05	S 659.16	W 1072.54	167.00	2260.13	2184.64	29.94	39.80
3900.00	2441.28	N 1406.27	W 2074.56	3426.40	2820.78	S 676.65	W 1124.82	167.30	2320.47	2242.49	29.76	39.60
4000.00	2487.94	N 1446.78	W 2153.18	3499.22	2858.47	S 696.83	W 1183.77	168.43	2381.62	2300.98	29.53	40.25
4100.00	2533.68	N 1487.71	W 2232.12	3586.71	2903.90	S 720.79	W 1254.61	169.21	2443.38	2359.93	29.28	40.07
4200.00	2579.55	N 1529.21	W 2310.70	3674.60	2949.78	S 744.37	W 1325.76	169.66	2505.26	2419.11	29.08	40.05
4300.00	2625.94	N 1570.28	W 2389.19	3749.98	2989.40	S 764.32	W 1386.71	169.98	2566.59	2477.97	28.96	39.48
4400.00	2671.92	N 1611.02	W 2468.09	3823.16	3028.19	S 783.66	W 1445.67	170.50	2628.07	2536.97	28.85	39.05
4500.00	2718.31	N 1649.90	W 2547.69	3897.53	3067.95	S 803.29	W 1505.37	170.30	2688.28	2594.80	28.76	37.94
4600.00	2766.22	N 1689.64	W 2625.95	3971.41	3107.80	S 822.78	W 1564.46	170.54	2748.76	2652.79	28.64	39.56
4700.00	2814.46	N 1731.39	W 2702.95	4044.01	3147.27	S 841.91	W 1622.30	170.12	2810.77	2712.36	28.56	40.22
4800.00	2867.68	N 1773.53	W 2776.36	4116.40	3186.96	S 860.97	W 1679.77	169.13	2871.42	2770.67	28.50	40.00
4900.00	2922.20	N 1814.92	W 2849.26	4205.63	3235.84	S 884.48	W 1750.62	169.55	2931.24	2827.89	28.36	39.86
5000.00	2977.25	N 1855.98	W 2921.95	4325.63	3295.81	S 916.73	W 1849.39	170.33	2989.95	2883.39	28.06	40.70
5100.00	3033.38	N 1896.77	W 2993.95	4441.40	3346.16	S 948.48	W 1948.66	170.48	3047.28	2937.64	27.79	42.56
5200.00	3092.37	N 1938.97	W 3063.98	4548.57	3385.94	S 978.28	W 2043.58	170.95	3102.59	2990.14	27.59	43.57
5300.00	3152.81	N 1975.40	W 3133.76	4614.81	3410.14	S 996.55	W 2102.47	170.89	3156.30	3041.54	27.50	42.01
5400.00	3214.76	N 2012.91	W 3202.72	4684.33	3438.51	S 1015.22	W 2163.12	171.38	3209.42	3092.35	27.41	40.06
5500.00	3277.75	N 2049.88	W 3271.02	4757.06	3471.38	S 1034.15	W 2225.17	171.23	3262.29	3142.87	27.32	39.16
5600.00	3342.03	N 2086.46	W 3338.32	4832.85	3509.00	S 1053.19	W 2288.13	171.80	3314.84	3193.11	27.23	37.08
5700.00	3406.60	N 2122.86	W 3405.44	4911.72	3551.71	S 1072.19	W 2351.65	172.05	3367.47	3243.38	27.14	36.21
5800.00	3472.39	N 2160.00	W 3470.95	4992.71	3599.21	S 1090.79	W 2414.54	172.10	3420.48	3294.03	27.05	35.59
5900.00	3538.53	N 2197.18	W 3536.10	5081.27	3654.40	S 1110.18	W 2481.03	172.68	3473.50	3344.75	26.98	34.58
6000.00	3604.29	N 2234.30	W 3601.65	5173.62	3712.87	S 1129.91	W 2549.74	173.11	3526.50	3395.42	26.90	34.35
6089.00	3650.07	N 2260.06	W 3646.39	5237.65	3753.83	S 1143.33	W 2597.09	173.09	3562.99	3430.31	26.86	34.34
Field:	Lobitos					Well:	Well LO16-25					
Structure:	Platform LO16 (WGS84)					Borehole:	Borehole LO16-25					
Slot:	Slot #25					Trajectory:	LO 16-25 Gyro + MWD Surveys					
						Type:	DEF SVY					
Coordinate System:	UTM Zone 17S - WGS84, Meters											
Reference Point:												
Northing (m)	Easting (m)			Elevation (ft)			Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505997.130	E 459456.430			50.00 above MSL			0.000		0.000		2.500	
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma											
Surveying Prog:												
MD From (ft)	MD To (ft)			EOU Freq		Survey Tool Type						
0.00	730.00			Act-Stns		SLB_NSG+MSHOT						
730.00	5125.00			Act-Stns		SLB_MWD-STD						
Subject Trajectory				Offset Trajectory				Ct-Ct	EOU	Sep	Inter.	
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle
Major EOU radii used. All local minima indicated.												
Results highlighted: Separation Factor <= 1.50												
0.00	0.00	N 0.00	E 0.00	0.00	0.00	N 0.00	E 0.00	0.00	0.00	-2.50	0.00	0.00
100.00	100.00	S 0.71	E 0.31	100.00	100.00	S 0.71	E 0.31	0.00	0.00	-3.71	0.00	0.00
200.00	199.99	S 0.60	W 0.69	200.00	199.99	S 0.60	W 0.69	0.00	0.00	-3.84	0.00	0.00
300.00	299.96	N 0.38	W 2.63	300.00	299.96	N 0.38	W 2.63	0.00	0.00	-4.09	0.00	0.00
400.00	399.91	N 2.15	W 5.29	400.00	399.91	N 2.15	W 5.29	0.00	0.00	-5.11	0.00	0.00
500.00	499.86	N 3.89	W 7.99	500.00	499.86	N 3.89	W 7.99	0.00	0.00	-6.21	0.00	0.00
600.00	599.79	N 6.50	W 10.44	600.00	599.79	N 6.50	W 10.44	0.00	0.00	-7.06	0.00	0.00
700.00	699.50	N 13.32	W 13.24	700.00	699.50	N 13.32	W 13.24	0.00	0.00	-8.30	0.00	0.00
800.00	798.25	N 28.18	W 17.63	800.00	798.25	N 28.18	W 17.63	0.00	0.00	-8.75	0.00	0.00
900.00	894.55	N 52.85	W 27.78	900.00	894.55	N 52.85	W 27.78	0.00	0.00	-9.10	0.00	0.00

1000.00	986.23	N 87.40	W 47.35	1000.00	986.23	N 87.40	W 47.35	0.00	0.00	-10.07	0.00	0.00
1100.00	1071.99	N 131.23	W 74.02	1100.00	1071.99	N 131.23	W 74.02	0.00	0.00	-11.65	0.00	0.00
1200.00	1151.22	N 184.29	W 104.01	1200.00	1151.22	N 184.29	W 104.01	0.00	0.00	-12.77	0.00	0.00
1300.00	1223.77	N 243.95	W 138.18	1300.00	1223.77	N 243.95	W 138.18	0.00	0.00	-15.03	0.00	0.00
1400.00	1289.41	N 308.83	W 176.59	1400.00	1289.41	N 308.83	W 176.59	0.00	0.00	-17.90	0.00	N/A
1500.00	1349.46	N 376.07	W 219.81	1500.00	1349.46	N 376.07	W 219.81	0.00	0.00	-21.24	0.00	0.00
1600.00	1403.36	N 441.99	W 272.09	1600.00	1403.36	N 441.99	W 272.09	0.00	0.00	-25.16	0.00	0.00
1700.00	1449.13	N 503.82	W 335.85	1700.00	1449.13	N 503.82	W 335.85	0.00	0.00	-29.62	0.00	N/A
1800.00	1489.72	N 561.30	W 406.87	1800.00	1489.72	N 561.30	W 406.87	0.00	0.00	-34.09	0.00	0.00
1900.00	1531.62	N 614.22	W 480.63	1900.00	1531.50	N 615.06	W 480.10	26.81	1.00	-37.20	0.03	1.59
2000.00	1577.03	N 660.31	W 556.85	1999.97	1576.71	N 665.15	W 553.86	27.58	5.70	-36.44	0.14	3.51
2100.00	1624.73	N 702.35	W 634.02	2099.91	1625.67	N 712.26	W 627.14	34.68	12.10	-34.10	0.26	4.66
2200.00	1673.27	N 741.06	W 712.41	2199.83	1676.50	N 757.39	W 700.37	39.30	20.55	-28.96	0.42	4.09
2300.00	1720.58	N 781.72	W 790.56	2300.06	1728.34	N 800.50	W 774.53	48.84	25.88	-26.66	0.49	4.74
2400.00	1766.02	N 822.13	W 869.94	2399.87	1780.35	N 842.06	W 848.90	59.20	32.33	-23.39	0.58	4.58
2500.00	1811.22	N 862.16	W 949.65	2500.62	1832.08	N 883.26	W 924.89	65.28	38.64	-20.14	0.66	3.95
2600.00	1855.94	N 900.58	W 1030.42	2602.10	1881.18	N 923.86	W 1003.86	67.11	43.41	-18.66	0.70	1.59
2700.00	1901.07	N 939.04	W 1110.95	2702.58	1926.72	N 963.79	W 1084.04	66.02	44.66	-20.46	0.69	0.93
2800.00	1947.55	N 976.69	W 1191.08	2802.47	1972.50	N 1003.21	W 1163.60	63.50	45.62	-22.43	0.67	1.31
2900.00	1993.13	N 1012.48	W 1272.57	2902.58	2018.43	N 1042.44	W 1243.42	60.15	48.86	-22.34	0.69	2.62
3000.00	2037.40	N 1048.12	W 1354.85	3002.66	2063.88	N 1081.61	W 1323.52	58.80	52.96	-21.54	0.71	2.41
3100.00	2081.19	N 1083.86	W 1437.34	3102.25	2108.24	N 1121.50	W 1403.27	56.78	57.53	-20.29	0.74	2.97
3200.00	2124.46	N 1122.09	W 1518.98	3201.90	2151.83	N 1162.63	W 1482.88	56.77	60.79	-20.36	0.75	1.27
3300.00	2167.66	N 1161.81	W 1599.95	3301.76	2196.08	N 1203.80	W 1562.37	56.77	63.11	-21.12	0.75	1.33
3400.00	2211.53	N 1201.20	W 1680.72	3401.94	2241.02	N 1244.50	W 1642.12	56.88	65.07	-22.19	0.75	0.95
3500.00	2256.21	N 1240.95	W 1760.86	3501.97	2286.43	N 1284.49	W 1721.78	57.87	65.85	-24.55	0.73	0.55
3600.00	2301.68	N 1282.35	W 1839.72	3602.32	2332.43	N 1324.10	W 1801.69	59.70	64.30	-29.31	0.69	1.76
3700.00	2347.74	N 1324.32	W 1917.93	3702.78	2377.84	N 1363.20	W 1882.31	60.89	60.71	-36.15	0.63	2.35
3800.00	2394.11	N 1365.84	W 1996.20	3802.34	2423.03	N 1401.86	W 1962.16	61.29	57.37	-42.68	0.57	1.59
3900.00	2441.28	N 1406.27	W 2074.56	3902.02	2468.60	N 1440.91	W 2041.75	60.71	54.98	-48.23	0.53	1.38
4000.00	2487.94	N 1446.78	W 2153.18	4001.73	2513.56	N 1481.03	W 2121.19	59.74	53.42	-53.06	0.50	0.78
4100.00	2533.68	N 1487.71	W 2232.12	4101.11	2558.45	N 1521.86	W 2199.89	59.19	53.09	-56.73	0.48	0.20
4200.00	2579.55	N 1529.21	W 2310.70	4200.86	2604.11	N 1563.36	W 2278.27	59.30	53.12	-60.00	0.47	0.18
4300.00	2625.94	N 1570.28	W 2389.19	4300.99	2650.03	N 1604.88	W 2356.97	58.28	53.07	-63.25	0.46	0.43
4400.00	2671.92	N 1611.02	W 2468.09	4401.33	2696.18	N 1645.92	W 2436.05	57.84	53.23	-66.40	0.44	0.34
4500.00	2718.31	N 1649.90	W 2547.69	4501.71	2742.65	N 1686.02	W 2515.48	56.52	54.17	-68.63	0.44	0.74
4600.00	2766.22	N 1689.64	W 2625.95	4601.80	2789.14	N 1725.18	W 2594.99	56.71	52.42	-73.76	0.42	1.83
4700.00	2814.46	N 1731.39	W 2702.95	4701.36	2834.23	N 1765.48	W 2674.08	55.23	48.84	-80.71	0.38	4.12
4800.00	2867.68	N 1773.53	W 2776.36	4801.50	2879.25	N 1805.86	W 2753.89	46.26	41.03	-91.67	0.31	6.58
4900.00	2922.20	N 1814.92	W 2849.26	4901.17	2925.13	N 1844.25	W 2833.60	32.96	33.38	-102.44	0.25	6.75
5000.00	2977.25	N 1855.98	W 2921.95	5000.27	2970.61	N 1882.12	W 2913.10	12.24	28.38	-110.59	0.20	7.17
5100.00	3033.38	N 1896.77	W 2993.95	5098.72	3015.00	N 1921.08	W 2991.86	346.47	30.55	-111.60	0.21	9.15
5200.00	3092.37	N 1936.97	W 3063.98	5125.00	3026.71	N 1931.83	W 3012.79	338.90	83.42	-60.59	0.58	10.27
5300.00	3152.81	N 1975.40	W 3133.76	5125.00	3026.71	N 1931.83	W 3012.79	342.35	180.09	34.69	1.24	11.67
5400.00	3214.76	N 2012.91	W 3202.72	5125.00	3026.71	N 1931.83	W 3012.79	340.43	279.30	132.52	1.90	11.92
5500.00	3277.75	N 2049.88	W 3271.02	5125.00	3026.71	N 1931.83	W 3012.79	2.44	378.99	230.81	2.56	13.62
5600.00	3342.03	N 2086.46	W 3338.32	5125.00	3026.71	N 1931.83	W 3012.79	355.34	478.86	329.35	3.20	13.52
5700.00	3406.60	N 2122.86	W 3405.44	5125.00	3026.71	N 1931.83	W 3012.79	16.40	578.78	427.88	3.84	14.22
5800.00	3472.39	N 2160.00	W 3470.95	5125.00	3026.71	N 1931.83	W 3012.79	39.80	678.68	526.42	4.46	15.32
5900.00	3538.53	N 2197.18	W 3536.10	5125.00	3026.71	N 1931.83	W 3012.79	32.76	778.60	625.01	5.07	14.94
6000.00	3604.29	N 2234.30	W 3601.65	5125.00	3026.71	N 1931.83	W 3012.79	32.79	878.55	723.57	5.67	14.95
6069.00	3650.07	N 2260.06	W 3646.39	5125.00	3026.71	N 1931.83	W 3012.79	49.11	947.50	791.58	6.08	15.67

Field: Lobitos Well: Well LO16-25
Structure: Platform LO16 (WGS84) Borehole: Sidetrack #1
Slot: Slot #25 Trajectory: LO 16-25 ST MWD SURVEYS
Type: RAW SVY

Coordinate System: UTM Zone 17S - WGS84, Meters

Reference Point:
Northing (m) Easting (m) Elevation (ft) Structure Unc. (ft) Slot Unc. (ft) Hole Diameter (ft)
N 9505997.130 E 459456.430 50.00 above MSL 0.000 0.000 2.500

Trajectory Error Model: SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma															
Surveying Prog:															
MD From (ft)				MD To (ft)				EOU Freq		Survey Tool Type					
0.00				730.00				Act-Stns		SLB_NSG+MSHOT					
730.00				1797.00				Act-Stns		SLB_MWD-STD					
1797.00				1828.00				Act-Stns		SLB_UNKNOWN (none assigned-default tool used)					
1828.00				6538.00				Act-Stns		SLB_MWD-STD					
Subject Trajectory				Offset Trajectory				Ct-Ct		EOU		Sep		Inter.	
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle			
Major EOU radii used. All local minima indicated.															
Results highlighted: Separation Factor <= 1.50															
0.00	0.00	N 0.00	E 0.00	0.00	0.00	N 0.00	E 0.00	0.00	0.00	-2.50	0.00	0.00			
100.00	100.00	S 0.71	E 0.31	100.00	100.00	S 0.71	E 0.31	0.00	0.00	-3.71	0.00	0.00			
200.00	199.99	S 0.60	W 0.69	200.00	199.99	S 0.60	W 0.69	0.00	0.00	-3.84	0.00	0.00			
300.00	299.96	N 0.38	W 2.63	300.00	299.96	N 0.38	W 2.63	0.00	0.00	-4.09	0.00	0.00			
400.00	399.91	N 2.15	W 5.29	400.00	399.91	N 2.15	W 5.29	0.00	0.00	-5.11	0.00	0.00			
500.00	499.86	N 3.89	W 7.99	500.00	499.86	N 3.89	W 7.99	0.00	0.00	-6.21	0.00	0.00			
600.00	599.79	N 6.50	W 10.44	600.00	599.79	N 6.50	W 10.44	0.00	0.00	-7.06	0.00	0.00			
700.00	699.50	N 13.32	W 13.24	700.00	699.50	N 13.32	W 13.24	0.00	0.00	-8.30	0.00	0.00			
800.00	798.25	N 28.18	W 17.63	800.00	798.25	N 28.18	W 17.63	0.00	0.00	-8.75	0.00	0.00			
900.00	894.55	N 52.85	W 27.78	900.00	894.55	N 52.85	W 27.78	0.00	0.00	-9.10	0.00	0.00			
1000.00	986.23	N 87.40	W 47.35	1000.00	986.23	N 87.40	W 47.35	0.00	0.00	-10.07	0.00	0.00			
1100.00	1071.99	N 131.23	W 74.02	1100.00	1071.99	N 131.23	W 74.02	0.00	0.00	-11.65	0.00	0.00			
1200.00	1151.22	N 184.29	W 104.01	1200.00	1151.22	N 184.29	W 104.01	0.00	0.00	-12.77	0.00	0.00			
1300.00	1223.77	N 243.95	W 138.18	1300.00	1223.77	N 243.95	W 138.18	0.00	0.00	-15.03	0.00	0.00			
1400.00	1289.41	N 308.83	W 176.59	1400.00	1289.41	N 308.83	W 176.59	0.00	0.00	-17.90	0.00	N/A			
1500.00	1349.46	N 376.07	W 219.81	1500.00	1349.46	N 376.07	W 219.81	0.00	0.00	-21.24	0.00	0.00			
1600.00	1403.36	N 441.99	W 272.09	1600.00	1403.36	N 441.99	W 272.09	0.00	0.00	-25.16	0.00	0.00			
1700.00	1449.13	N 503.82	W 335.85	1700.00	1449.13	N 503.82	W 335.85	0.00	0.00	-29.62	0.00	N/A			
1800.00	1489.72	N 561.30	W 406.87	1800.00	1489.72	N 561.30	W 406.87	0.00	0.00	-34.07	0.00	0.00			
1900.00	1531.62	N 614.22	W 480.63	1900.00	1531.62	N 614.22	W 480.63	0.00	0.00	-43.05	0.00	0.00			
2000.00	1577.03	N 660.31	W 556.85	2000.00	1577.03	N 660.31	W 556.85	0.00	0.00	-47.80	0.00	0.00			
2100.00	1624.73	N 702.35	W 634.02	2100.00	1624.73	N 702.35	W 634.02	0.00	0.00	-49.86	0.00	0.00			
2200.00	1673.27	N 741.06	W 712.41	2200.00	1673.27	N 741.06	W 712.41	0.00	0.00	-51.48	0.00	0.00			
2300.00	1720.58	N 781.72	W 790.56	2300.00	1720.58	N 781.72	W 790.56	0.00	0.00	-53.39	0.00	N/A			
2400.00	1766.02	N 822.13	W 869.94	2400.00	1766.02	N 822.13	W 869.94	0.00	0.00	-55.37	0.00	0.00			
2500.00	1811.22	N 862.16	W 949.65	2500.00	1811.22	N 862.16	W 949.65	0.00	0.00	-57.20	0.00	0.00			
2600.00	1855.94	N 900.58	W 1030.42	2600.00	1855.94	N 900.58	W 1030.42	0.00	0.00	-59.32	0.00	0.00			
2700.00	1901.07	N 939.04	W 1110.95	2700.00	1901.07	N 939.04	W 1110.95	0.00	0.00	-61.35	0.00	0.00			
2800.00	1947.55	N 976.69	W 1191.08	2800.00	1947.55	N 976.69	W 1191.08	0.00	0.00	-63.43	0.00	0.00			
2900.00	1993.13	N 1012.48	W 1272.57	2900.00	1993.13	N 1012.48	W 1272.57	0.00	0.00	-65.62	0.00	0.00			
3000.00	2037.40	N 1048.12	W 1354.85	3000.00	2037.40	N 1048.12	W 1354.85	0.00	0.00	-68.09	0.00	0.00			
3100.00	2081.19	N 1083.86	W 1437.34	3100.00	2081.19	N 1083.86	W 1437.34	0.00	0.00	-70.58	0.00	0.00			
3200.00	2124.46	N 1122.09	W 1518.98	3200.00	2124.46	N 1122.09	W 1518.98	0.00	0.00	-73.37	0.00	0.00			
3300.00	2167.66	N 1161.81	W 1599.95	3300.00	2167.66	N 1161.81	W 1599.95	0.00	0.00	-75.98	0.00	0.00			
3400.00	2211.53	N 1201.20	W 1680.72	3400.00	2211.53	N 1201.20	W 1680.72	0.00	0.00	-78.57	0.00	0.00			
3500.00	2256.21	N 1240.95	W 1760.86	3500.00	2256.21	N 1240.95	W 1760.86	0.00	0.00	-81.32	0.00	0.00			
3600.00	2301.68	N 1282.35	W 1839.72	3600.00	2301.68	N 1282.35	W 1839.72	0.00	0.00	-84.26	0.00	0.00			
3700.00	2347.74	N 1324.32	W 1917.93	3700.00	2347.74	N 1324.32	W 1917.93	0.00	0.00	-87.12	0.00	0.00			
3800.00	2394.11	N 1365.84	W 1996.20	3800.00	2394.11	N 1365.84	W 1996.20	0.00	0.00	-90.00	0.00	0.00			
3900.00	2441.28	N 1406.27	W 2074.56	3900.00	2441.28	N 1406.27	W 2074.56	0.00	0.00	-92.81	0.00	0.00			
4000.00	2487.94	N 1446.78	W 2153.18	4000.00	2487.94	N 1446.78	W 2153.18	0.00	0.00	-95.85	0.00	0.00			
4100.00	2533.68	N 1487.71	W 2232.12	4100.00	2533.68	N 1487.71	W 2232.12	0.00	0.00	-98.93	0.00	N/A			
4200.00	2579.55	N 1529.21	W 2310.70	4200.00	2579.55	N 1529.21	W 2310.70	0.00	0.00	-102.02	0.00	0.00			
4300.00	2625.94	N 1570.28	W 2389.19	4300.00	2625.94	N 1570.28	W 2389.19	0.00	0.00	-104.99	0.00	0.00			
4400.00	2671.92	N 1611.02	W 2468.09	4400.00	2671.92	N 1611.02	W 2468.09	0.00	0.00	-108.01	0.00	0.00			
4500.00	2718.31	N 1649.90	W 2547.69	4500.00	2718.31	N 1649.90	W 2547.69	0.00	0.00	-110.91	0.00	0.00			
4600.00	2766.22	N 1689.64	W 2625.95	4599.98	2765.79	N 1687.90	W 2627.05	220.33	2.10	-111.93	0.02	1.73			
4700.00	2814.46	N 1731.39	W 2702.95	4700.01	2813.55	N 1727.26	W 2705.63	220.17	5.01	-112.18	0.04	2.42			
4800.00	2867.68	N 1773.53	W 2776.36	4799.77	2861.38	N 1767.90	W 2783.18	250.00	10.86	-109.36	0.09	4.72			
4900.00	2922.20	N 1814.92	W 2849.26	4899.53	2909.18	N 1808.33	W 2860.85	261.48	18.64	-104.57	0.15	4.58			
5000.00	2977.25	N 1855.98	W 2921.95	4999.44	2957.81	N 1849.47	W 2937.82	268.01	25.92	-100.31	0.21	4.41			

5100.00	3033.38	N 1896.77	W 2993.95	5098.86	3006.08	N 1891.06	W 3014.13	273.92	34.43	-94.82	0.27	6.68	
5200.00	3092.37	N 1936.97	W 3063.98	5198.12	3053.55	N 1933.45	W 3090.31	279.24	47.04	-85.19	0.36	8.06	
5300.00	3152.81	N 1975.40	W 3133.76	5297.63	3101.42	N 1977.11	W 3165.83	285.35	60.61	-74.58	0.45	8.90	
5400.00	3214.76	N 2012.91	W 3202.72	5396.94	3150.16	N 2020.31	W 3240.80	289.34	75.35	-62.78	0.55	8.89	
5500.00	3277.75	N 2049.88	W 3271.02	5495.37	3198.66	N 2063.60	W 3314.71	293.06	91.39	-49.71	0.65	10.65	
5600.00	3342.03	N 2086.46	W 3338.32	5594.07	3247.25	N 2107.90	W 3388.32	295.64	109.28	-34.77	0.76	10.69	
5700.00	3406.60	N 2122.86	W 3405.44	5690.61	3294.44	N 2150.76	W 3460.80	297.83	128.16	-18.71	0.87	11.68	
5800.00	3472.39	N 2160.00	W 3470.95	5788.08	3341.47	N 2193.27	W 3534.85	298.78	149.43	-0.38	1.00	12.77	
5900.00	3538.53	N 2197.18	W 3536.10	5885.06	3388.03	N 2236.62	W 3608.05	299.12	171.41	18.65	1.12	12.72	
6000.00	3604.29	N 2234.30	W 3601.65	5981.90	3434.13	N 2280.48	W 3681.04	299.93	193.36	37.64	1.24	12.92	
6069.00	3650.07	N 2260.06	W 3646.39	6050.65	3467.02	N 2311.62	W 3732.77	300.51	208.87	51.09	1.32	13.13	
Field:	Lobitos			Well:	Well LO16-26								
Structure:	Platform LO16 (WGS84)			Borehole:	Borehole LO16-26								
Slot:	Slot #26			Trajectory:	LO16-26 Gyro + MWD								
				Type:	DEF SVY								
Coordinate System:	UTM Zone 17S - WGS84, Meters												
Reference Point:													
Northing (m)	Easting (m)			Elevation (ft)				Structure Unc. (ft)		Slot Unc. (ft)		Hole Diameter (ft)	
N 9505990.430	E 459452.050			50.00 above MSL				0.000		0.000		2.500	
Trajectory Error Model:	SLB ISCWSA 3-D 95.00% Confidence 2.7955 sigma												
Surveying Prog:													
	MD From (ft)			MD To (ft)			EOU Freq		Survey Tool Type				
	0.00			2000.00			Act-Stns		SLB_NSG+MSHOT				
	2000.00			8095.00			Act-Stns		SLB_MWD-STD				
Subject Trajectory	Offset Trajectory							Ct-Ct	EOU	Sep	Inter.		
MD (ft)	TVD (ft)	NS (ft)	EW (ft)	MD (ft)	TVD (ft)	NS (ft)	EW (ft)	TC Azim	Dist (ft)	Dist (ft)	Factor	Angle	
Major EOU radii used. All local minima indicated.													
Results highlighted: Separation Factor <= 1.50													
0.00	0.00	N 0.00	E 0.00	0.00	0.00	S 21.98	W 14.39	213.20	26.27	23.77	10.51	0.00	
100.00	100.00	S 0.71	E 0.31	100.24	100.24	S 21.74	W 13.91	214.08	25.39	21.66	6.82	0.86	
200.00	199.99	S 0.60	W 0.69	200.43	200.41	S 21.00	W 12.47	209.99	23.56	19.72	6.14	2.19	
300.00	299.96	N 0.38	W 2.63	300.42	300.37	S 20.15	W 10.19	200.22	21.89	17.62	5.13	2.11	
400.00	399.91	N 2.15	W 5.29	400.08	400.01	S 19.58	W 7.89	186.81	21.89	16.85	4.35	3.07	
500.00	499.86	N 3.89	W 7.99	499.93	499.84	S 19.45	W 5.87	174.83	23.44	17.48	3.93	2.48	
600.00	599.79	N 6.50	W 10.44	600.33	600.21	S 18.74	W 4.21	166.15	26.00	19.16	3.80	2.51	
700.00	699.50	N 13.32	W 13.24	701.42	701.21	S 14.52	W 4.04	161.71	29.37	21.41	3.69	2.82	
800.00	798.25	N 28.18	W 17.63	803.31	802.70	S 6.19	W 6.60	162.20	36.37	27.80	4.24	4.96	
900.00	894.55	N 52.85	W 27.78	907.24	904.95	N 11.80	W 10.01	156.54	45.92	36.62	4.94	7.77	
1000.00	986.23	N 87.40	W 47.35	1012.52	1005.40	N 42.82	W 14.06	143.49	58.85	49.00	5.98	10.56	
1100.00	1071.99	N 131.23	W 74.02	1122.55	1104.75	N 87.94	W 27.11	134.54	71.74	60.82	6.57	6.66	
1200.00	1151.22	N 184.29	W 104.01	1234.25	1197.72	N 142.58	W 55.69	134.69	78.97	66.92	6.56	4.00	
1300.00	1223.77	N 243.95	W 138.18	1341.75	1279.99	N 198.23	W 96.69	141.00	83.50	69.76	6.08	6.91	
1400.00	1289.41	N 308.83	W 176.59	1446.84	1355.30	N 255.58	W 142.28	147.48	91.40	75.41	5.72	6.95	
1500.00	1349.46	N 376.07	W 219.81	1553.97	1426.10	N 318.13	W 192.73	151.58	99.81	80.34	5.13	5.75	
1600.00	1403.36	N 441.99	W 272.09	1661.62	1490.12	N 383.26	W 249.64	149.98	107.14	84.11	4.65	3.66	
1700.00	1449.13	N 503.82	W 335.85	1767.66	1546.15	N 448.85	W 311.27	143.94	114.18	86.95	4.19	7.73	
1800.00	1489.72	N 561.30	W 406.87	1866.50	1595.94	N 511.96	W 368.77	135.01	123.16	91.92	3.94	11.58	
1900.00	1531.62	N 614.22	W 480.63	1962.45	1644.63	N 574.69	W 422.59	123.87	133.05	98.15	3.81	16.60	
2000.00	1577.03	N 660.31	W 556.85	2057.50	1692.92	N 638.53	W 473.85	110.64	144.20	108.14	4.00	19.51	
2100.00	1624.73	N 702.35	W 634.02	2149.63	1740.00	N 701.21	W 522.24	98.60	160.56	122.37	4.20	22.26	
2200.00	1673.27	N 741.06	W 712.41	2244.78	1788.63	N 765.62	W 572.63	88.20	182.89	143.03	4.59	21.27	
2300.00	1720.58	N 781.72	W 790.56	2343.42	1838.98	N 830.72	W 627.00	81.01	207.78	165.78	4.95	19.33	
2400.00	1766.02	N 822.13	W 869.94	2443.92	1889.82	N 895.21	W 684.93	75.81	234.31	189.94	5.28	18.00	
2500.00	1811.22	N 862.16	W 949.65	2542.02	1938.33	N 957.62	W 743.03	71.19	260.69	213.92	5.57	18.76	
2600.00	1855.94	N 900.58	W 1030.42	2638.68	1985.84	N 1018.87	W 800.77	67.65	289.15	239.67	5.84	18.59	
2700.00	1901.07	N 939.04	W 1110.95	2739.81	2034.81	N 1082.33	W 862.43	64.78	316.52	263.28	5.95	17.60	
2800.00	1947.55	N 976.69	W 1191.08	2838.98	2081.72	N 1144.05	W 924.28	61.76	342.34	286.00	6.08	17.63	
2900.00	1993.13	N 1012.48	W 1272.57	2935.01	2126.88	N 1203.65	W 984.52	58.48	370.68	312.20	6.34	19.02	
3000.00	2037.40	N 1048.12	W 1354.85	3030.63	2171.43	N 1262.98	W 1044.85	56.45	400.29	338.55	6.48	18.71	
3100.00	2081.19	N 1083.86	W 1437.34	3124.69	2215.30	N 1321.31	W 1104.18	54.83	430.54	365.72	6.64	18.66	
3200.00	2124.46	N 1122.09	W 1518.98	3219.05	2259.41	N 1379.89	W 1163.56	54.59	459.34	391.33	6.75	16.73	

3300.00	2167.66	N 1161.81	W 1599.95	3316.50	2304.88	N 1440.51	W 1224.83	53.62	487.05	415.83	6.84	16.60
3400.00	2211.53	N 1201.20	W 1680.72	3413.96	2350.36	N 1500.69	W 1286.55	52.78	514.14	439.61	6.90	16.32
3500.00	2256.21	N 1240.95	W 1760.86	3509.60	2395.04	N 1559.75	W 1347.07	52.53	540.49	462.65	6.94	15.37
3600.00	2301.68	N 1282.35	W 1839.72	3603.24	2438.58	N 1617.80	W 1406.25	52.29	564.94	483.80	6.96	14.69
3700.00	2347.74	N 1324.32	W 1917.93	3691.76	2480.33	N 1673.00	W 1461.44	51.70	589.52	505.17	6.99	15.20
3800.00	2394.11	N 1365.84	W 1996.20	3780.81	2522.85	N 1729.25	W 1515.83	50.84	615.95	528.42	7.04	16.47
3900.00	2441.28	N 1406.27	W 2074.56	3877.54	2569.15	N 1790.52	W 1574.63	49.99	643.37	552.44	7.08	16.69
4000.00	2487.94	N 1446.78	W 2153.18	3971.37	2614.03	N 1849.90	W 1631.76	49.23	671.03	576.61	7.11	16.74
4100.00	2533.68	N 1487.71	W 2232.12	4063.36	2657.85	N 1908.67	W 1687.34	48.69	699.58	601.70	7.15	17.02
4200.00	2579.55	N 1529.21	W 2310.70	4162.43	2705.06	N 1971.99	W 1747.15	48.48	727.59	626.14	7.17	16.30
4300.00	2625.94	N 1570.28	W 2389.19	4259.61	2751.19	N 2033.75	W 1806.32	47.75	755.14	650.21	7.20	16.69
4400.00	2671.92	N 1611.02	W 2468.09	4347.10	2792.86	N 2089.59	W 1859.23	46.97	783.81	675.61	7.24	17.85
4500.00	2718.31	N 1649.90	W 2547.69	4432.48	2833.80	N 2144.87	W 1909.80	46.26	815.63	704.31	7.33	19.35
4600.00	2766.22	N 1689.64	W 2625.95	4529.89	2880.58	N 2207.90	W 1967.49	46.87	845.72	730.83	7.36	17.20
4700.00	2814.46	N 1731.39	W 2702.95	4622.72	2925.31	N 2268.00	W 2022.30	47.43	873.80	755.51	7.39	16.10
4800.00	2867.68	N 1773.53	W 2776.36	4713.65	2969.23	N 2327.03	W 2075.74	47.63	898.63	777.06	7.39	16.21
4900.00	2922.20	N 1814.92	W 2849.26	4814.42	3017.81	N 2392.49	W 2134.97	46.72	923.55	798.53	7.39	16.21
5000.00	2977.25	N 1855.98	W 2921.95	4922.09	3069.76	N 2461.89	W 2198.82	45.85	947.95	819.28	7.37	15.67
5100.00	3033.38	N 1896.77	W 2993.95	5005.72	3110.13	N 2515.73	W 2248.48	45.78	971.97	840.22	7.38	16.48
5200.00	3092.37	N 1936.97	W 3063.98	5116.89	3163.19	N 2587.36	W 2314.91	44.61	994.55	859.14	7.35	16.95
5300.00	3152.81	N 1975.40	W 3133.76	5206.80	3205.85	N 2645.28	W 2368.83	43.79	1018.17	879.61	7.35	18.14
5400.00	3214.76	N 2012.91	W 3202.72	5300.45	3250.26	N 2705.72	W 2424.91	42.52	1042.23	900.47	7.35	18.70
5500.00	3277.75	N 2049.88	W 3271.02	5384.49	3290.51	N 2760.20	W 2474.65	42.14	1067.20	922.45	7.37	19.22
5600.00	3342.03	N 2086.46	W 3338.32	5483.21	3337.99	N 2824.36	W 2532.76	40.68	1092.45	944.44	7.38	19.53
5700.00	3406.60	N 2122.86	W 3405.44	5597.45	3393.30	N 2897.32	W 2601.08	39.74	1116.67	964.96	7.36	18.48
5800.00	3472.39	N 2160.00	W 3470.95	5693.11	3439.29	N 2958.09	W 2658.91	39.18	1139.06	984.07	7.35	18.68
5900.00	3538.53	N 2197.18	W 3536.10	5783.43	3482.07	N 3015.73	W 2713.71	37.83	1161.69	1003.59	7.35	18.97
6000.00	3604.29	N 2234.30	W 3601.65	5872.78	3525.18	N 3072.90	W 2767.16	36.90	1185.70	1024.53	7.36	18.43
6069.00	3650.07	N 2260.06	W 3646.39	5943.56	3560.29	N 3117.77	W 2809.15	36.50	1201.95	1038.51	7.35	17.83