

DATA ACQUISITION SUPERVISION REPORT

For the

2D MARINE SEISMIC SURVEY

Conducted by

3D OIL LIMITED

In The Exploration Licence Area

BLOCK T/41P OFFSHORE TASMANIA

SURVEY START DATE 18th April 2008
SURVEY COMPLETION DATE 04th May 2008



VOLUME 1 SEISMIC DATA ACQUISITION

Compiled by Bill Lloyd

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1 INTRODUCTION

1.1 OBJECTIVES

To carry out a high quality 2D seismic survey,. The survey consists of some 2207.97 full fold kilometres comprising of 65 lines over the T41P block for 3D Oil. The survey is located in the Bass Basin offshore Tasmania.

The seismic survey vessel was the M/V Pacific Titan owned and operated by Swire Pacific Offshore Operations (Pte) Ltd who provided the marine crew. The vessel was on lease by CGGVeritas, who supplied the seismic personnel, data processing and logistics.

1.2 SURVEY PARAMETRES

The following is a summary of the survey parameters:

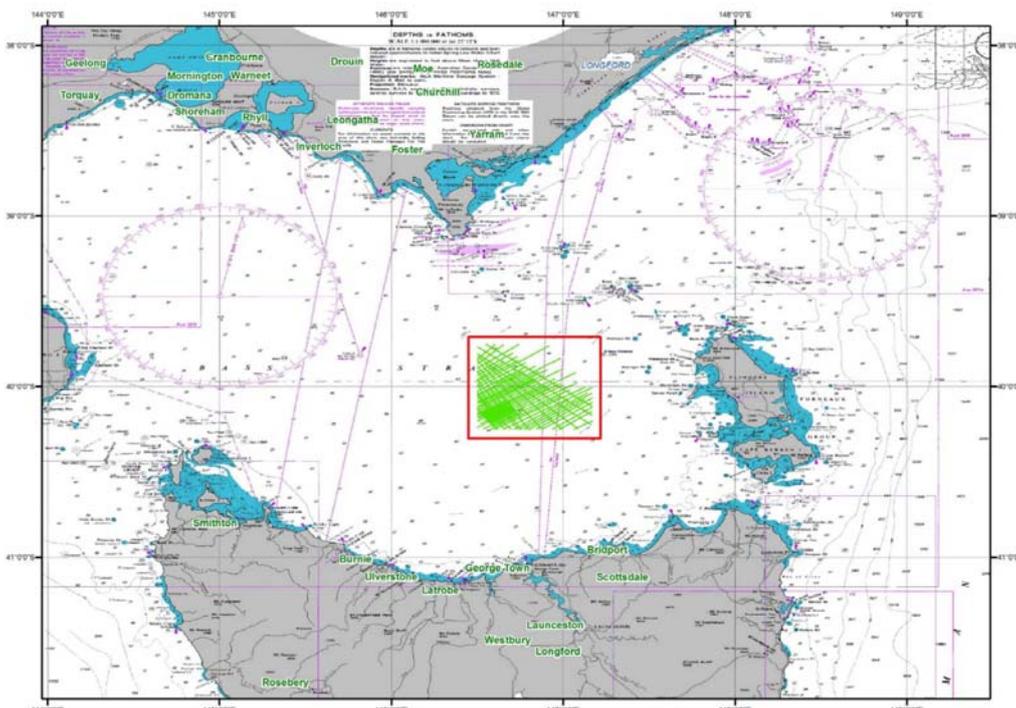
Survey type	: 2D
Client	: 3D Oil
Survey name	: Tasmania T41P 2D
SP interval	: 25m
Source	: 3040in ³ . Bolt guns
Streamer Length	: 6000 metres
Groups	: 480
Primary Positioning	: SPM2 SPM 5.16 HP
Secondary Positioning	: SPM1 SPM 5.16 XP
Third Positioning	: MULTIFIX 5 Ver 1.01 XP
Water depth	: 100m to 1550m
Number of lines	: 65
Full fold sail line km	: 2207.97Kms
Port of supply	: Burnie, Tasmania
Contractor	: CGGVeritas
Vessel	: Pacific Titan
Client representation	: Enquest Pty. Limited

1.3 ACQUISITION PARAMETERS

Recording System	: Sercel SEAL system rev. 5.1
Number of Channels	: 480
Record Length	: 6000ms
Sample Interval	: 2ms
Low Cut Filter	: 4.7Hz at 12db/Oct
High Cut Filter	: 200Hz at 370dB/Oct
Tape Format	: SEG-D 8058
Digital Filter Delay	: off
Energy Source Type	: Bolt 1500LL and 1900LLX
Total Capacity	: 3040 cubic inches
Number of Arrays	: 1

Number of sub-arrays	: 3
Array Length	: 14.7m
Sub Array Separation	: 10.0m
Total Number of Guns	: 21 active
Capacity of each Sub-Array	: 1110 in ³ starboard, 1020 in ³ inner, 910in ³ port.
Typical Output	: 106.2 bar/metres pk-pk (at 6 metres)
Primary / bubble ratio	: 22.9 (full array, at 6 metres)
Pressure	: 2000psi +/- 10%
Depth	: 6.0 metres
Firing Delay from Time Zero	: 50ms
Shot Interval	: 25.0 metres
Number Of Groups	: 480
Group Length	: 12.5 metres
Group Interval	: 12.5 metres
Group Sensitivity	: 21.5v/ bar
Hydrophones per Group	: 8 in parallel connection (8 per 12.5m base group)
Streamer depth	: 8 metres +/- 1.0m
Typical Noise	: 3.5 to 8.0 microbars
Offset (In-line)	: 145.0m
Nav Ref.-Cent. Source	: 180.00m
Primary Positioning	: SPM2 SPM 5.16 HP
Secondary Positioning	: SPM1 SPM 5.16 XP
Third Positioning	: MULTIFIX 5 Ver 1.01 XP
Integrated Navigation System	: SPECTRA
Echo Sounder	: Kongsberg-Simrad EA600, 12 kHz

1.4 LOCATION MAP



1.5 LINE LENGTHS AND CO-ORDINATES

Line	FSP	LSP	Line Length	Azimuth	Grid Azimuth
TDOB08-01	1001	1667	16650.00	323.821	323.572
TDOB08-02	1001	1414	10325.00	57.865	57.906
TDOB08-03	1001	1669	16700.00	319.311	319.114
TDOB08-04	1001	1809	20200.00	54.706	54.688
TDOB08-05	1001	2018	25425.00	328.481	328.260
TDOB08-06	1001	1964	24075.00	53.879	53.838
TDOB08-07	1001	1553	13800.00	331.455	331.183
TDOB08-08	1001	2222	30525.00	54.774	54.694
TDOB08-09	1001	2063	26550.00	336.537	336.297
TDOB08-10	1001	2378	34425.00	53.595	53.495
TDOB08-100	1001	1708	17675.00	46.232	45.914
TDOB08-102	1001	1512	12775.00	41.526	41.207
TDOB08-11	1001	2516	37875.00	327.522	327.354
TDOB08-12	1001	2343	33550.00	54.732	54.605
TDOB08-13	1001	2741	43500.00	330.264	330.104
TDOB08-14	1001	2625	40600.00	55.029	54.883
TDOB08-15	1001	2933	48300.00	327.927	327.799
TDOB08-16	1001	2637	40900.00	54.804	54.640
TDOB08-17	1001	3204	55075.00	324.351	324.271
TDOB08-18	1001	2316	32875.00	54.946	54.761
TDOB08-19	1001	3265	56600.00	317.806	317.802
TDOB08-20	1001	3057	51400.00	58.464	58.240
TDOB08-21	1001	3739	68450.00	313.140	313.196
TDOB08-22	1001	3097	52400.00	58.636	58.379
TDOB08-23	1001	3914	72825.00	309.059	309.164
TDOB08-24	1001	2649	41200.00	58.405	58.130
TDOB08-25	1001	3887	72150.00	307.850	307.958
TDOB08-26	1001	1649	16200.00	57.962	57.697
TDOB08-27	1001	3649	66200.00	307.368	307.476
TDOB08-28	1001	2979	49450.00	59.261	58.963
TDOB08-30	1001	1608	15175.00	59.440	59.166
TDOB08-32	1001	3007	50150.00	59.180	58.905
TDOB08-34	1001	1601	15000.00	58.546	58.267
TDOB08-36	1001	3022	50525.00	56.923	56.601
TDOB08-38	1001	1611	15250.00	56.772	56.489
TDOB08-40	1001	1604	15075.00	57.213	56.928
TDOB08-42	1001	2865	46600.00	56.568	56.257
TDOB08-44	1001	1606	15125.00	57.374	57.086
TDOB08-46	1001	1612	15275.00	58.697	58.405
TDOB08-48	1001	2641	41000.00	58.223	57.903
TDOB08-50	1001	1631	15750.00	59.300	59.003
TDOB08-52	1001	3253	56300.00	58.278	57.963
TDOB08-54	1001	1746	18625.00	59.348	59.027
TDOB08-56	1001	2470	36725.00	59.303	58.995
TDOB08-58	1001	2792	44775.00	58.468	58.147
TDOB08-60	1001	1704	17575.00	59.016	58.694
TDOB08-62	1001	2442	36025.00	58.965	58.645
TDOB08-64	1001	2990	49725.00	57.813	57.494
TDOB08-66	1001	2359	33950.00	57.986	57.665

Line	FSP	LSP	Line Length	Azimuth	Grid Azimuth
TDOB08-68	1001	2522	38025.00	58.403	58.081
TDOB08-70	1001	2247	31150.00	59.382	59.067
TDOB08-72	1001	2636	40875.00	58.228	57.907
TDOB08-74	1001	2447	36150.00	57.690	57.369
TDOB08-76	1001	2949	48700.00	57.678	57.357
TDOB08-78	1001	2113	27800.00	57.931	57.610
TDOB08-80	1001	2367	34150.00	57.651	57.330
TDOB08-82	1001	1630	15725.00	57.369	57.114
TDOB08-84	1001	2173	29300.00	56.728	56.407
TDOB08-86	1001	2148	28675.00	56.114	55.794
TDOB08-88	1001	2747	43650.00	54.681	54.361
TDOB08-90	1001	1980	24475.00	55.680	55.358
TDOB08-92	1001	1981	24500.00	53.603	53.283
TDOB08-94	1001	1627	15650.00	55.913	55.593
TDOB08-96	1001	1858	21425.00	54.501	54.182
TDOB08-98	1001	2018	25425.00	53.336	53.016

Line	SP	Latitude	Longitude	Eastings	Northings
TDOB08-01	1001	401501.902S	1463654.894E	467278.00	5544365.00
TDOB08-01	1667	400745.972S	1462959.753E	457394.90	5557756.60
TDOB08-02	1001	401500.118S	1470351.287E	505464.00	5544489.00
TDOB08-02	1414	401201.896S	1471000.962E	514207.65	5549972.54
TDOB08-03	1001	401501.072S	1464142.610E	474075.00	5544417.00
TDOB08-03	1669	400810.271S	1463402.700E	463148.21	5557037.58
TDOB08-04	1001	401502.993S	1465822.218E	497690.00	5544402.00
TDOB08-04	1809	400844.020S	1470958.759E	514166.99	5556073.46
TDOB08-05	1001	401458.773S	1463924.671E	470816.00	5544476.00
TDOB08-05	2018	400315.695S	1463003.876E	457445.74	5566090.13
TDOB08-06	1001	401500.575S	1465613.453E	494648.00	5544475.00
TDOB08-06	1964	400719.638S	1470954.761E	514077.24	5558675.26
TDOB08-07	1001	400832.898S	1463438.343E	463995.00	5556344.00
TDOB08-07	1553	400159.770S	1463000.211E	457345.78	5568430.47
TDOB08-08	1001	401501.468S	1465234.016E	489464.00	5544442.00
TDOB08-08	2222	400529.291S	1471006.633E	514364.68	5562076.84
TDOB08-09	1001	401231.351S	1463736.822E	468249.00	5549011.00
TDOB08-09	2063	395921.485S	1463011.250E	457580.18	5573312.01
TDOB08-10	1001	401459.581S	1465041.467E	486805.00	5544496.00
TDOB08-10	2378	400355.545S	1471010.636E	514464.99	5564966.95
TDOB08-100	1001	395157.916S	1463007.880E	457424.00	5586987.00
TDOB08-100	1708	394521.150S	1463904.076E	470114.94	5599279.52
TDOB08-102	1001	395022.509S	1463004.908E	457337.00	5589928.00
TDOB08-102	1512	394512.257S	1463600.676E	465749.66	5599535.45
TDOB08-11	1001	401458.239S	1464416.531E	477711.00	5544516.00
TDOB08-11	2516	395741.437S	1462959.621E	457287.11	5576395.01
TDOB08-12	1001	401505.678S	1464811.858E	483271.00	5544301.00
TDOB08-12	2343	400436.013S	1470727.946E	510609.37	5563725.66
TDOB08-13	1001	401501.076S	1464507.781E	478922.00	5544432.00
TDOB08-13	2741	395435.452S	1462959.367E	457248.94	5582129.01
TDOB08-14	1001	401457.997S	1464628.301E	480824.00	5544532.00
TDOB08-14	2625	400221.167S	1470951.660E	514020.83	5567877.58
TDOB08-15	1001	401503.657S	1464805.726E	483126.00	5544363.00
TDOB08-15	2933	395255.290S	1463006.353E	457397.59	5585217.95

Line	SP	Latitude	Longitude	Easting	Northings
TDOB08-16	1001	401501.386S	1464446.192E	478412.00	5544421.00
TDOB08-16	2637	400214.693S	1470815.984E	511753.87	5568081.02
TDOB08-17	1001	401457.735S	1465231.357E	489401.00	5544557.00
TDOB08-17	3204	395044.522S	1463001.192E	457252.48	5589248.85
TDOB08-18	1001	401500.884S	1464248.476E	475631.00	5544428.00
TDOB08-18	2316	400447.157S	1470144.333E	502470.96	5563389.08
TDOB08-19	1001	401501.479S	1465938.793E	499499.00	5544449.00
TDOB08-19	3265	395218.838S	1463259.153E	461496.26	5586363.54
TDOB08-20	1001	401455.369S	1463914.233E	470569.00	5544580.00
TDOB08-20	3057	400019.634S	1471001.250E	514255.14	5571624.08
TDOB08-21	1001	401446.055S	1470510.848E	507344.00	5544921.00
TDOB08-21	3739	394923.231S	1463010.614E	457462.44	5591756.30
TDOB08-22	1001	401500.868S	1463608.210E	466175.00	5544392.00
TDOB08-22	3097	400012.353S	1470734.569E	510777.77	5571854.29
TDOB08-23	1001	401322.088S	1470940.017E	513708.00	5547501.00
TDOB08-23	3914	394827.465S	1463002.739E	457265.65	5593474.50
TDOB08-24	1001	401502.041S	1463429.407E	463841.00	5544345.00
TDOB08-24	2649	400319.577S	1465910.039E	498816.33	5566089.59
TDOB08-25	1001	401007.291S	1471000.738E	514209.00	5553506.00
TDOB08-25	3887	394605.006S	1463007.066E	457344.11	5597867.06
TDOB08-26	1001	401357.884S	1463522.325E	465082.00	5546329.00
TDOB08-26	1649	400918.854S	1464502.575E	478769.38	5554982.95
TDOB08-27	1001	400654.797S	1470957.690E	514148.00	5559441.00
TDOB08-27	3649	394506.201S	1463307.660E	461631.59	5599702.67
TDOB08-28	1001	401449.167S	1463214.463E	460651.00	5544726.00
TDOB08-28	2979	400105.844S	1470206.753E	503004.64	5570212.16
TDOB08-30	1001	401307.518S	1463429.657E	463830.00	5547876.00
TDOB08-30	1608	400857.006S	1464341.742E	476855.04	5555650.94
TDOB08-32	1001	401243.297S	1463422.744E	463663.00	5548622.00
TDOB08-32	3007	395846.298S	1470437.848E	506590.04	5574512.22
TDOB08-34	1001	401228.371S	1463403.378E	463203.00	5549080.00
TDOB08-34	1601	400814.248S	1464303.903E	475955.61	5556966.46
TDOB08-36	1001	401423.121S	1463001.536E	457506.00	5545512.00
TDOB08-36	3022	395925.276S	1465946.112E	499670.65	5573313.33
TDOB08-38	1001	401212.506S	1463344.994E	462766.00	5549567.00
TDOB08-38	1611	400741.223S	1464243.786E	475476.26	5557983.13
TDOB08-40	1001	401156.082S	1463333.002E	462480.00	5550072.00
TDOB08-40	1604	400731.067S	1464228.260E	475107.78	5558295.05
TDOB08-42	1001	401258.478S	1463104.943E	458990.00	5548130.00
TDOB08-42	2865	395902.851S	1465824.060E	497724.64	5574004.37
TDOB08-44	1001	401133.048S	1463314.669E	462043.00	5550780.00
TDOB08-44	1606	400708.311S	1464212.622E	474735.32	5558995.43
TDOB08-46	1001	401112.466S	1463252.940E	461526.00	5551412.00
TDOB08-46	1612	400654.790S	1464204.083E	474531.81	5559411.62
TDOB08-48	1001	401206.105S	1463012.990E	457753.00	5549738.00
TDOB08-48	2641	400023.486S	1465442.504E	492472.57	5571514.98
TDOB08-50	1001	401039.037S	1463222.887E	460810.00	5552439.00
TDOB08-50	1631	400617.942S	1464154.690E	474305.62	5560546.95
TDOB08-52	1001	401110.813S	1463037.710E	458328.00	5551446.00
TDOB08-52	3253	395506.165S	1470414.224E	506035.08	5581299.45
TDOB08-54	1001	401047.785S	1463007.345E	457606.00	5552152.00
TDOB08-54	1746	400539.377S	1464123.754E	473569.08	5561733.42
TDOB08-56	1001	400947.926S	1463120.115E	459317.00	5554007.00

Line	SP	Latitude	Longitude	Easting	Northings
TDOB08-56	2470	395937.952S	1465331.296E	490782.60	5572916.95
TDOB08-58	1001	401002.211S	1463006.494E	457578.00	5553557.00
TDOB08-58	2792	395719.902S	1465654.350E	495595.19	5577177.40
TDOB08-60	1001	400934.310S	1462957.018E	457349.00	5554416.00
TDOB08-60	1704	400440.490S	1464032.943E	472359.33	5563544.70
TDOB08-62	1001	400849.280S	1463009.563E	457638.00	5555806.00
TDOB08-62	2442	395845.068S	1465150.493E	488389.77	5574544.12
TDOB08-64	1001	400807.929S	1463017.767E	457825.00	5557082.00
TDOB08-64	2990	395345.364S	1465949.198E	499743.49	5583792.94
TDOB08-66	1001	400729.272S	1463003.724E	457486.00	5558272.00
TDOB08-66	2359	395743.977S	1465016.639E	486160.29	5576423.86
TDOB08-68	1001	400653.846S	1463001.998E	457439.00	5559364.00
TDOB08-68	2522	395605.664S	1465246.100E	489702.02	5579460.50
TDOB08-70	1001	400548.408S	1463035.883E	458230.00	5561386.00
TDOB08-70	2247	395712.499S	1464925.244E	484939.06	5577392.04
TDOB08-72	1001	400542.762S	1463004.798E	457493.00	5561556.00
TDOB08-72	2636	395402.390S	1465427.656E	492108.37	5583263.96
TDOB08-74	1001	400508.916S	1463000.864E	457394.00	5562599.00
TDOB08-74	2447	395440.466S	1465127.242E	487826.25	5582084.43
TDOB08-76	1001	400412.592S	1463004.358E	457467.00	5564336.00
TDOB08-76	2949	395004.740S	1465855.151E	498458.66	5590594.58
TDOB08-78	1001	400319.621S	1463003.183E	457430.00	5565969.00
TDOB08-78	2113	395519.885S	1464635.209E	480895.93	5580854.93
TDOB08-80	1001	400245.298S	1463001.745E	457390.00	5567027.00
TDOB08-80	2367	395251.077S	1465015.887E	486126.03	5585454.02
TDOB08-82	1001	395903.209S	1463608.719E	466055.00	5573918.00
TDOB08-82	1630	395427.915S	1464526.263E	479254.93	5582452.89
TDOB08-84	1001	400130.600S	1463001.530E	457372.00	5569330.00
TDOB08-84	2173	395248.145S	1464712.459E	481769.00	5585535.26
TDOB08-86	1001	400010.378S	1463006.586E	457478.00	5571804.00
TDOB08-86	2148	395130.816S	1464648.064E	481183.70	5587917.90
TDOB08-88	1001	395917.650S	1463001.698E	457353.00	5573429.00
TDOB08-88	2747	394536.764S	1465457.972E	492813.61	5598852.95
TDOB08-90	1001	395809.704S	1462955.574E	457196.00	5575523.00
TDOB08-90	1980	395041.419S	1464405.822E	477324.31	5589430.33
TDOB08-92	1001	395721.020S	1463003.348E	457372.00	5577025.00
TDOB08-92	1981	394928.842S	1464352.610E	477003.61	5591666.93
TDOB08-94	1001	395600.140S	1463006.590E	457435.00	5579519.00
TDOB08-94	1627	395115.398S	1463911.841E	470342.02	5588358.88
TDOB08-96	1001	395459.548S	1463005.976E	457410.00	5581387.00
TDOB08-96	1858	394815.521S	1464219.229E	474776.36	5593920.41
TDOB08-98	1001	395324.280S	1463004.939E	457369.00	5584324.00
TDOB08-98	2018	394511.154S	1464421.652E	477670.86	5599613.39

1.6 PROGRAM MAP



2 SYNOPSIS

2.1 OVERVIEW

The survey consisted of 65 pre-plotted lines with a total of 2202.97 full fold kilometres in the T/41P block situated in the Bass Strait offshore Tasmania. A final total of 2219.275 kilometres of surface coverage equivalent to 2007.97 full fold kilometres were recorded in 69 sequences.

18th April 2008

Vessel arrived at the 3D Oil survey at 15:00 Hrs position 040°10'32S 146°18'10E this was the midpoint between the Cue Energy survey and the 3d Oil survey. Problems with the vane delayed the start survey The first line recorded was TDOB08-044-001 this was the only line recorded up to midnight.

19th April 2008

A reasonable day's production with lines TDOB08-030, 022, 036 completed and line 050 up till midnight. There was however a circle on line TDOB08-036-004 due to a recording system lockup

20th April 2008

Another good day's production with lines TDOB08-050, 034, 046, 058 & 064 completed and line 042 up to midnight.

21st April 2008

Another good day's production with lines TDOB08-042, 026, 040, 007, 001 & 016 completed for the day.

22nd April 2008

Production down a little today due to a circle on line TDOB08-066 due to a recording system lockup lines completed were TDOB08-052, 066 & 070.

23rd April 2008

Another good day's production with lines TDOB08-080, 090, 098, 092 & 005 completed and line 014 recorded up to midnight. On the line change between lines TDOB08-092 & 005 the output of V1G3 changed from SPM2 to SPM1, new offsets for V1G3 DG_V_XP_EXP was X=4.20, Y=1.05 new offsets are X=5.25, Y=0.0 changed to the STBD antenna..

24th April 2008

A very good day's production with lines TDOB08-014, 028 & 20 completed and line 032 up to midnight.

25th April 2008

A good day's production with lines TDOB08-032, 056, 062 & 072 completed and line 084 up till midnight.

26th April 2008

Production down today due to a circle on line TDOB08-003 this was caused by an autofiring gun. Lines completed today were TDOB08- 084, 078 003 with line 012 up to midnight. Line TDOB08-012 was recorded with the streamer depth set to 9m due to the sea state.

27th April 2008

A good day's production with lines TDOB08-012, 024 039,060 & 074 completed and line 082 recorded up to midnight. Lines TDOB08-012 & 024 were recorded with a streamer depth set to 9m due to sea state.

28th April 2008

Another good day's production with lines TDOB08-082, 009, 018 & 048 completed and line 058 up to midnight. Lines TDOB08-048 & 058 were affected by swell bursts during the line but within acceptable limits.

29th April 2008

A good day's production with lines TDOB08-058, 068, 076 & 088 completed and line 096 recorded up to midnight.

30th April 2008

Very good day's production with lines TDOB08-096, 094, 100, 102, 011 & 010 being completed .and line 006 up to midnight.

01st May 2008

Lines TDOB08-006, 015 & 019 completed line 017 recorded up to midnight. Weather conditions deteriorated in the evening consequently line TDOB08-017 was recorded with the streamer depth at 9m.

02nd May 2008

Good day's production with lines DTOB08-017, 013, 008, 004 & 002 completed and line 027 up to midnight. The weather conditions were very rough throughout the day. Lines 017, 013, 004, 002 & 0027 recorded with a streamer depth set to 9m due to sea state. On line DTOB08-027 there were numerous gun string depth errors recorded but nothing less than 4.9m and nothing over 7.2m this was also due to weather conditions.

03rd May 2008

Production was slightly down today due to an extended line change and a circle on line DTOB08-023. Lines complete were DTOB08-027 & 023 and line 025 up to midnight. Line TDOB08-023 had numerous false autofires due to leakage on the sensor line of gun 3-7 these were confirmed by the Seis QC and the gun was disabled at SP3648 and spare gun 1-4 enabled array volume remained at 3040cu ins.

04th May 2008

Lines DTOB08- 025 & 021 completed this completes the lines for the 3D Oil survey. Mid way point between 3dD Oil and Bass Strait surveys at 18:40 Hrs at position 040°12'11"S 147°12'24"E, this completes the 3D Oil survey.

2.2 SURVEY PRODUCTION BY LINE

Seq	Line Identifier	Hdg.	FSP	LSP	Surface Kms	Full Fold Kilometres
001	TDOB08-044-001	057	1001	1606	15.15000	12.15000
002	TDOB08-030-002	239	1608	1001	15.20000	12.22500
003	TDOB08-022-003	057	1001	3097	52.42500	49.42500
004	TDOB08-036-004	236	3022	1354	41.72500	41.72500
005	TDOB08-036-005	236	1353	1001	8.82500	5.82500
006	TDOB08-050-006	059	1001	1059	1.47500	1.47500
006	TDOB08-050-006	059	1060	1631	14.30000	11.30000
007	TDOB08-034-007	238	1601	1001	15.02500	12.02500
008	TDOB08-046-008	058	1001	1612	15.30000	12.30000
009	TDOB08-054-009	239	1746	1001	18.65000	15.65000
010	TDOB08-064-010	057	1001	2990	49.75000	46.75000
011	TDOB08-042-011	236	2665	2039	15.67500	15.67500
011	TDOB08-042-011	236	2038	1001	25.95000	22.95000
012	TDOB08-026-012	058	1001	1649	16.22500	13.22500
013	TDOB08-040-013	237	1604	1001	15.10000	12.10000
014	TDOB08-007-014	331	1001	1553	13.82500	10.82500
015	TDOB08-001-015	143	1667	1001	16.67500	13.67500
016	TDOB08-016-016	054	1001	2637	40.92500	37.92500
017	TDOB08-052-017	237	3253	1001	56.32500	53.32500
019	TDOB08-066-019	058	1001	2359	33.97500	30.97500
020	TDOB08-070-020	239	2247	1001	31.17500	28.17500
021	TDOB08-080-021	057	1001	2367	34.17500	31.17500
022	TDOB08-090-022	235	1980	1001	24.50000	21.50000
023	TDOB08-098-023	053	1001	2018	25.45000	22.45000
024	TDOB08-092-024	233	1981	1001	24.52500	21.52500
025	TDOB08-005-025	148	2018	1001	25.45000	22.45000
026	TDOB08-014-026	055	1001	1051	1.27500	1.27500
026	TDOB08-014-026	055	1052	2625	39.35000	36.35000
027	TDOB08-028-027	239	2979	1001	49.47500	46.47500
028	TDOB08-020-028	058	1001	3057	51.42500	48.42500
029	TDOB08-032-029	238	1751	1001	18.77500	15.77500
029	TDOB08-032-029	238	3007	1752	31.40000	31.40000
030	TDOB08-056-030	059	1001	2470	36.75000	33.75000
031	TDOB08-062-031	238	2442	1001	36.05000	33.05000
032	TDOB08-072-032	058	1001	2636	40.90000	37.90000
033	TDOB08-084-033	236	2173	1609	14.12500	14.12500
033	TDOB08-084-033	236	1608	1001	15.20000	12.20000
034	TDOB08-086-034	055	1001	2148	28.70000	25.70000
035	TDOB08-078-035	237	2113	1001	27.82500	24.82500
036	TDOB08-003-036	139	1669	1220	11.25000	11.25000

Seq	Line Identifier	Hdg.	FSP	LSP	Surface Kms	Full Fold Kilometres
037	TDOB08-003-037	139	1219	1001	5.47500	2.47500
038	TDOB08-012-038	238	1001	2181	29.52500	29.52500
038	TDOB08-012-038	054	2182	2343	4.05000	1.05000
039	TDOB08-024-039	238	2649	1001	41.22500	38.22500
040	TDOB08-038-040	056	1001	1611	15.27500	12.27500
041	TDOB08-060-041	238	1704	1001	17.60000	14.60000
042	TDOB08-074-042	057	1001	2447	36.17500	33.17500
043	TDOB08-082-043	237	1630	1030	15.02500	12.75000
043	TDOB08-082-043	237	1029	1001	0.72500	0.00000
044	TDOB08-009-044	156	2063	1001	26.57500	23.57500
045	TDOB08-018-045	054	1001	2316	32.90000	29.90000
046	TDOB08-048-046	237	2641	1001	41.02500	38.02500
047	TDOB08-058-047	058	1001	2613	40.32500	40.32500
047	TDOB08-058-047	058	2614	2792	4.47500	1.47500
048	TDOB08-068-048	238	2522	1001	38.05000	35.05000
049	TDOB08-076-049	057	1001	2949	48.72500	45.72500
050	TDOB08-088-050	234	2747	1001	43.67500	40.67500
051	TDOB08-096-051	054	1001	1665	16.62500	16.62500
051	TDOB08-096-051	054	1666	1858	4.82500	1.82500
052	TDOB08-094-052	235	1627	1001	15.67500	12.67500
053	TDOB08-100-053	046	1001	1708	17.70000	14.70000
054	TDOB08-102-054	221	1512	1001	12.80000	9.80000
055	TDOB08-011-055	147	2516	1001	37.90000	34.90000
056	TDOB08-010-056	053	1001	2378	34.45000	31.45000
057	TDOB08-006-057	233	1964	1001	24.10000	21.10000
057	TDOB08-006-057	233	1787	1001	19.67500	16.67500
058	TDOB08-015-058	327	1001	2933	48.32500	45.32500
059	TDOB08-019-059	138	3265	1001	56.62500	53.62500
060	TDOB08-017-060	324	1001	2475	36.87500	36.87500
060	TDOB08-017-060	324	2476	3204	18.22500	15.22500
061	TDOB08-013-061	150	2741	1001	43.52500	40.52500
062	TDOB08-008-062	054	1001	2222	30.55000	27.55000
063	TDOB08-004-063	234	1809	1001	20.22500	17.22500
064	TDOB08-002-064	057	1001	1414	10.35000	7.35000
065	TDOB08-027-065	307	1001	1213	5.32500	5.32500
065	TDOB08-027-065	307	1214	3649	60.90000	57.90000
067	TDOB08-023-067	129	3914	1001	72.85000	69.85000
068	TDOB08-025-068	307	1001	1068	1.70000	1.70000
068	TDOB08-025-068	307	1069	3887	70.47500	67.47500
069	TDOB08-021-069	133	3739	1001	68.47500	65.47500

Total Survey Production

KM	KMFF
2219.27500	2021.30000

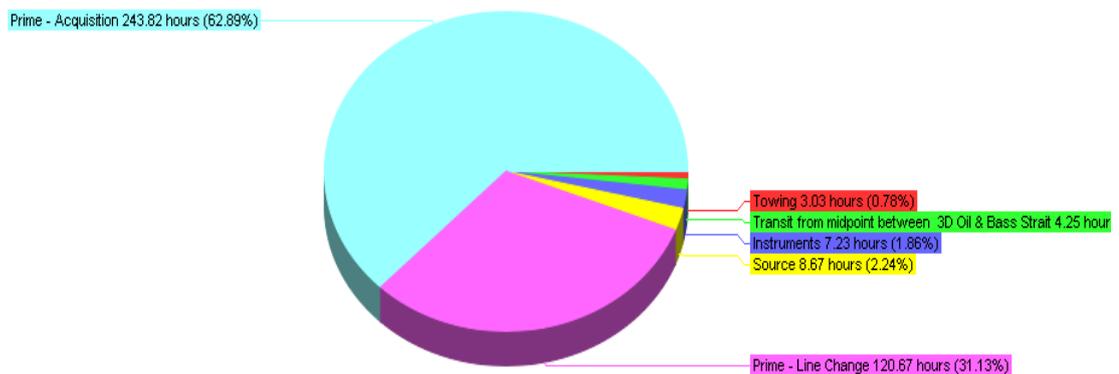
2.3 STATISTICAL SUMMARY**Total Survey Timing**

Code	Description	Duration
01	Prime - Acquisition	243.82
02	Prime - Line Change	120.67
19	Transit from midpoint between 3D Oil & Bass Strait	4.25
30	Source	8.67
35	Instruments	7.23
38	Towing	3.03

Total Time = 387.670 Hours

Timing Breakdown

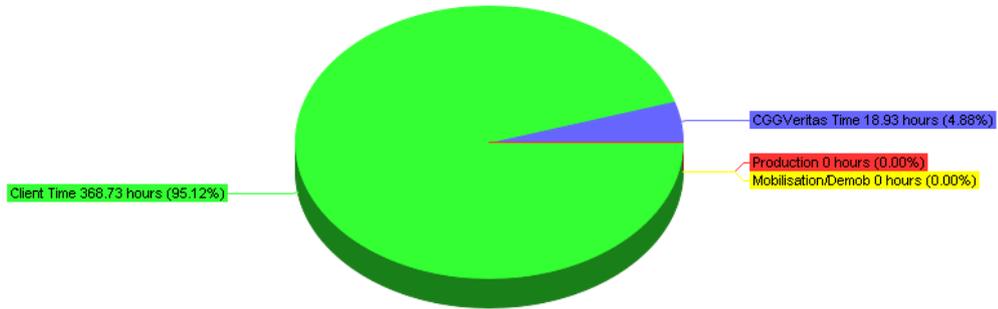
3D Oil T41P 2D - Timing Breakdown



created with ChartDirector from www.advsofteng.com

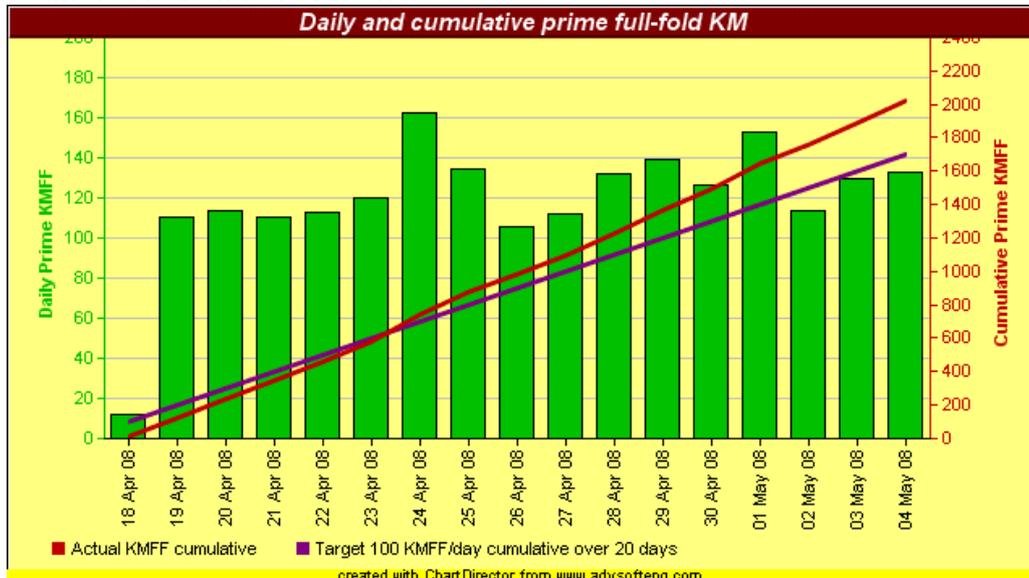
Category Timing

3D Oil T41P 2D - Category Timing between 18 Apr 08 and 04 May 08 (Total = 387.67 hours)



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Daily and Cumulative Full Fold Kilometres



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Acquisition Speed



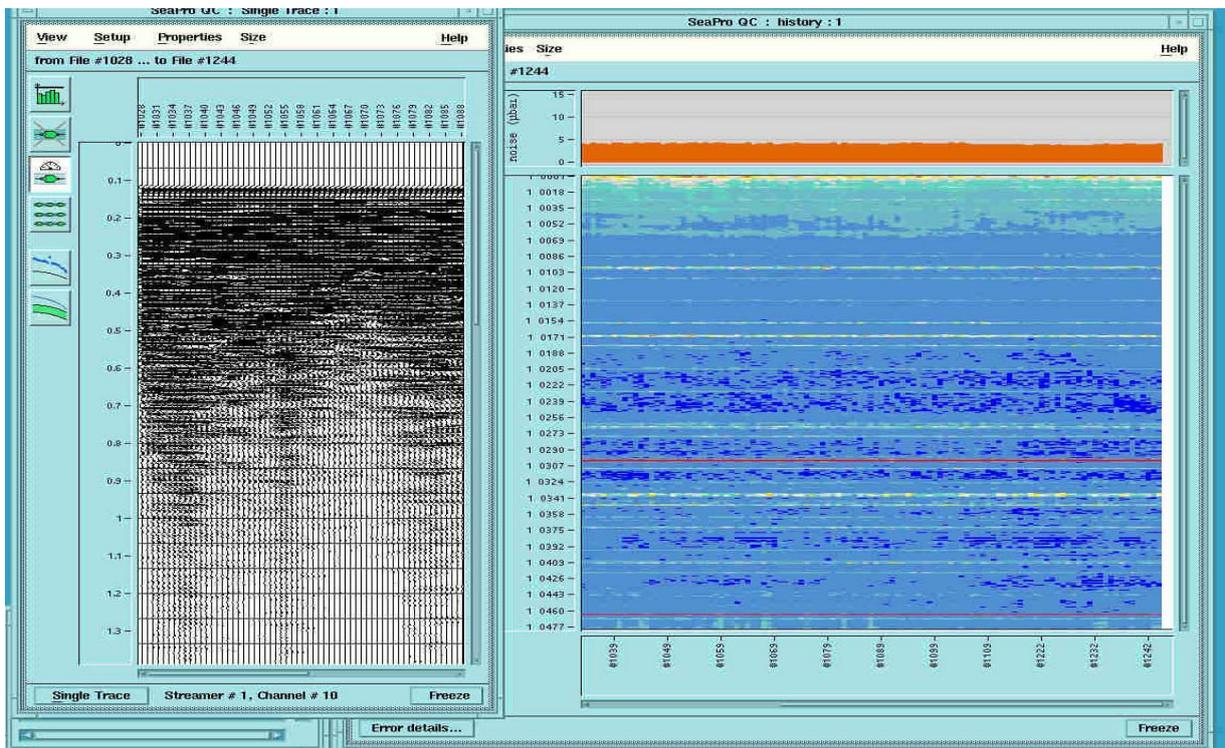
created with ChartDirector from www.advsofteng.com

2.4 TECHNICAL SUMMARY

The following is a brief description of individual equipment performance throughout the survey:

Recording Instruments

The Pacific Titan is fitted with a Sercel 24 bit SEAL system. This was a brand new system for the Pacific Titan and relatively new to the market. It has been used extensively in China on land crews, proving to be robust and operator friendly. The Sercel system provided a comprehensive array of real time on screen displays, showing auxiliary channels, Streamer channel display and single trace display. The last 20 records could be accessed and displayed for QC evaluation. A shot display similar to the old oscilloscope display but greatly expanded and colour coded to indicate noise strength was also available. All displays could be manipulated to improve data quality control. The figure below shows a sample screen shot from the Seal recording system.



A full set of daily tests was automatically carried out each day showing the recording system and streamer were within contract specification. The system operated faultlessly during the survey.

Observer's reports were automatically generated using CGGVeritas standard Obslog package. Faults from the recording system and array logging system were automatically generated at the completion of each line. The quality of the Observers logs was acceptable. There could have been more detail regarding streamer control and weather observations in regard to the streamer and data.

Streamer

The Sercel solid digital streamer worked extremely well with only one problem experienced during the survey. The streamer developed a ground fault that required it to be retrieved for repairs. A section was replaced and the streamer was tested and re-deployed. Streamer depths were maintained at 8 metres. Noise levels on the data were monitored closely during QC processing.

Energy Source

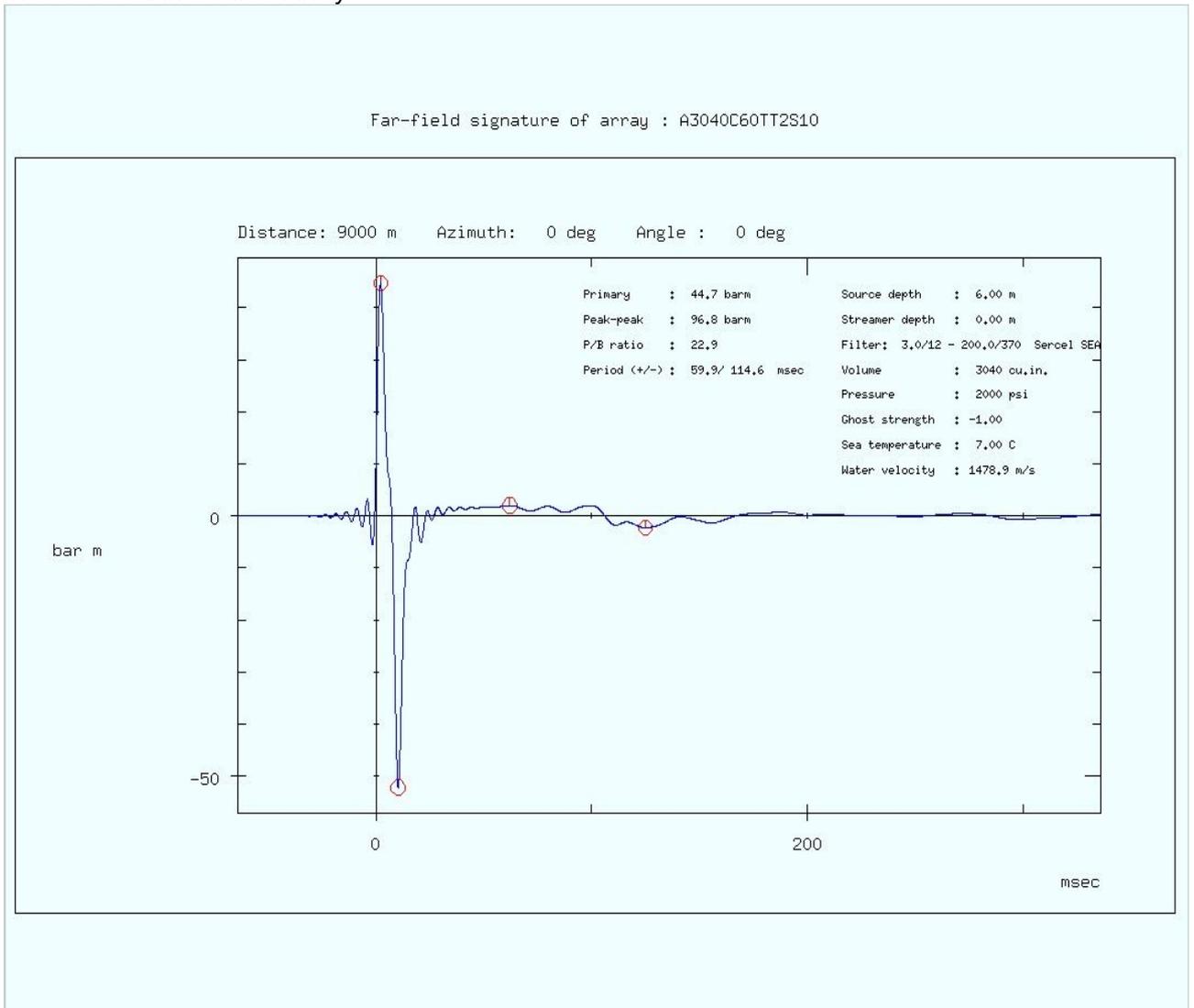
Over the past few years the Pacific Titan was used primarily as a source vessel so the arrays and the attached infrastructure were in good condition. A new Sealink 2000, onboard source controller and hydrophone data acquisition system was installed early 2004. A twin screen graphical interface allows for simple operator monitoring and control as well as showing deterioration of gun performance

A rigorous maintenance schedule was maintained on the array strings and individual elements were replaced at the specified time regardless of their performance.

The three sub arrays were equipped with a total of 26 array elements. The drop out spec was generated by CGGVeritas. A total of 8.67 Hrs were lost to the source arrays. A 3040 cu³ inch array was used through out the survey.

The Titan has three compressors, one compressor comfortably maintained air pressure with the others one being rotated through to allow maintenance to be carried out. The 25.0m recording intervals was easily within the scope of the compressors.

The 3040 cu in Source Array



Streamer Details

Seismic data were acquired during this survey using the SEAL Digital Solid Streamer, manufactured by Sercel, Inc.

Item	Description	Type	Amount	Remark
Streamers	24 bit, digital distributed electronic	SEAL Sercel	2D, Up to 12 km active	
Depth Control	Digicourse	5011	Up to 40	
Buoyancy		Foam		
Retrievers	Concord	SRD	12	3 each 3 km
Streamer skin	Polyurethane	3.5mm		
Hydrophones	SSAS	Radial		
Section Length	150 m			
Section diameter	50 mm			
Lead-in	300 m			
Group Length	12.5 m			
No of hydrophones per group	8			21.5V/bar sensitivity
Max number of channels	960			12.5m @ 2ms
Telemetry data link	Dual twisted pair with CRC control	AWG 22		
Power lines	Dual	AWG 14		
Connectors	28 pin			
Acquisition	Sercel	SEAL	1	
Format	SEG D rev.2	8058		
Recording	3590 cartridge	IBM comp.	3	
Computer	Sun	Blade 2000	1	
Bird Controller	Digicourse	System	1	
Sampling				¼, 1/2, 1,2,4 ms
Aux channels			40	max 100
Plotter	Isys	24"	1	online
Printer	HP	830 A4		Logs, tests etc.
Network	TCP/IP	100kb		Ethernet coax

2.5 VESSEL

The Pacific Titan was built in Japan in 1982 and since that time has been through a number of transformations, from anchor handler to seismic boat, back to anchor handler before being refitted once more as a seismic vessel. A major refit in Seattle in the 90's had the vessel widened and fitted out as a multi streamer 3D vessel.

Although the vessel is set up as a 3D vessel, she was a good 2D platform. The 3D capacity meant that it was possible to make use of active floats on the tail buoy and sub arrays thus providing a higher degree of positioning accuracy than would normally be found on a 2D survey vessel. The latest refit saw a Sercel Solid digital streamer installed along with an Argus tape management system where data is written to a hard drive before being transferred to tape. This allows more time for system communications and greatly reduces the possibility of tape errors.

The vessel has been poorly maintained over the years and needs to have a general tidy up to be comfortable. For the size of the vessel the cabins for both seismic and marine crews are small and cramped. Conditions are reminiscent of 20 years ago. Extended surveys on this vessel could



become a serious OHS issue. There are adequate numbers of showers and toilets available and although the steward worked hard to keep them clean, they are in a poor state and need to be completely refitted to a standard fitting the current OHS standards expected of crews and vessels. The same argument could be applied to the quarters for the seismic crew.

Swire Pacific Offshore supplied the vessel marine personnel. All seismic personnel were from various countries and contracted to CGGVeritas

The instrument room while not large was well laid out with plenty of working space for all personnel. The back deck areas are split with the streamer reels above the array deck. Both areas were spacious with plenty of safe working space for both array mechanics and streamer handling. The galley and mess areas were adequate. House keeping on the whole was adequate

Communications are through Norsat and Inmarsat. The client has an office next to the instrument room with a network connection but no phone.

Vessel Specifications

Name	: M/V Pacific Titan
Owner	: Swire Pacific Offshore Operations (Pte) Ltd
Port of Registry	: Singapore
Date Built	: 1981
Date Refit	: 2000
IMO Number	: 8208385
Radio Call Sign	: 9V5935
Classifications	
Flag	: Singapore
Class	: A1 (E) Seismic Research AMS ACCU
Designation	: Seismic Research Vessel
Dimensions	
Length, overall	: 64.50 meters
Beam	: 18.50 meters
Draft	: 6.00 meters
GRT	: 3211 tonnes (gross registered tonnage)
NRT	: 963 tonnes (net registered tonnage)
Machinery	
Main Engines	: 4 x 1600 bhp, 6Z-ST, total 6400 bhp @ 680 rpm
Propulsion	: 2 x variable pitch, in Kort Nozzles
Bow Thruster	: Yanmar 6LAAL-DTN, 420 bhp, 5 tonnes thrust
Generators	: 3 x 280 kW, 440v, 60 Hz alternators, driven by Yanmar 6LAAL-DTN diesel engines.
Capacities	
Fuel Oil Capacity	: 1300 cubic meters
Lubricating Oil Capacity	: 5.0 cubic meters
Cable Oil Capacity	: 48.0 cubic meters
Fresh Water Capacity	: 154.0 cubic meters
Water Maker	: 2 x RO Machines, producing 20.0 cubic meters per day
Operating Capabilities	
Speed	: 12 knots (Maximum), 10 knots (Cruising)
Fuel Consumption	: 9.0 cubic meters per day (average)
Endurance	: 45 days, while conducting 2D survey
Bridge Equipment	
Radar	: Kelvin Hughes Nucleus 6000A ARPA with slave in instrument room
Secondary Radar	: JRC JMA 3210 Daylight
Echo Sounder	: Simrad ED-162
GPS	: Furuno GP 30
Communications	: G.M.D.S.S. (Global Maritime Distress & Safety System)
	: 1x Skanti SSB
	: 2 x VHF
	: 2 x Inmarsat C 456304540/456304550 with
	: Thrane and Thrane telex facility
	: 3 x VHF (portable GMDSS)
	: 2 x SART
	: 1 x EPIRB
	: 1 x Navtex
	: 1 x Jotron TR-6102 Airband Transceiver
Satcom B	: NERA Inmarsat phone / fax
	: Tel: (874) 335 385 510
	: Fax: (874) 335 385 513
Satcom C	: TeleNor C-Link phone / fax
High Speed data link	: TeleNor C-Link
Weather Fax	: Furuno 207

Safety Equipment

Fire monitoring, and detection of all accommodation, machinery and office spaces.
Foam deluge system covering streamer winches, streamer storage reels and helideck.
Six man solid Man overboard boat on quick release davit.
7.5 metre, 210hp. Rigid NorSafe Fast Rescue Boat Certified for 10 people.
LSA equipment for 45 persons excluding survival suits.

2.6 SAFETY SUMMARY

The vessel fully adheres to the health and safety requirements as set out by SOLAS. All machinery and seismic equipment is maintained on a computerised planned maintenance system. HSE audit recommendations are implemented through the IMGC-QHSE System which highlights deficiencies identified during audits and sets target dates for the completion of work along with whom or which department is responsible. Regular cross audits are held to improve and bring to attention any problems in operations or work practises. All emergency exits and routes to exits are adequately marked. A fully integrated alarm system is in place and is tested on a regular basis. Flashing lights are fitted to alert personnel when equipment on the gun deck is either being pressurised or test fired. Fire fighting equipment is positioned at all necessary locations about the vessel. The streamer reel is covered by a foam deluge system. The streamer reels are fitted with a 'save-all'. There is no obvious drainage to the waste kerosene tank. Nearly all-lifting equipment on the gun deck consists of stainless steel chains and shackles. Lifting points on deck heads were not used unless they had been rated. All certification is current. More than adequate abandonment equipment is carried on board.

Emergency procedures are laid down and prominently displayed about the vessel. Vessel plans showing emergency escape routes along with the location of all emergency equipment are also prominently displayed. Emergency fire/boat and man-overboard drills are held on a weekly basis. Current policy, hazards, near misses and topics arising are dealt with during the HSE meetings held for all crew.

Procedures for handling trailing gear during deployment and recovery were clearly laid down and followed closely. Procedures are under constant review as both the equipment and therefore the handling techniques change. Procedures are also in place for two-boat operations, helicopter operations and at-sea personnel transfers. Safety 'toolbox' meetings were held with all personnel involved prior to any operation. A Permit to Work system was in place for all hot work (burning, welding, and cutting), confined space entry, work aloft, work on high-pressure systems and electrical systems.

Comprehensive first aid and medical supplies are carried onboard. Medical advice was on hand through the ISOS Sydney (+61 2 9372 2468), Frontier Medical (27 7 6840 3344), AUSSAR (Australian Search and Rescue) & Victoria Air Ambulance 000/ 1300 883 200.

All seismic personnel have completed an offshore survival course, which covers survival at sea; fire fighting, first aid and helicopter underwater escape training. The Master, Chief Officer and some senior seismic personnel have undertaken advanced first aid and HSE management courses.

The waste management system in place onboard consisted of all food waste being separated prior to incineration. All glass and metal were separated for disposal ashore. Dirty oil, PVC and plastic refuse was also stored separately for disposal onshore in line with MARPOL regulations.

The standard of accommodation was adequate to poor. The general housekeeping was adequate.

Pacific Titan Crew List				Date:	2nd. April	2008
No	Name	Rank	D.O.B.	Citizen	Passport no.	Exp.date
1	Bruce Wallis	Captain	24.08.53	Australian	L8924123	25.01.11
2	Raymond Smith	Chief Officer	23.04.61	Australian	M6763702	17.04.17
3	William Shelley	2nd Mate	26.02.72	Australian	E3022159	
4	Tommy Boughton	Chief Engineer	30.03.55	Australian	M7065567	01.06.17
5	Peter Caple	1st Engineer	02.05.65	Australian	E3052135	16.10.17
6	P.Golatkar	2nd Engineer	25.06.59	Indian	B5713039	02.08.11
7	C.Herangi	G.P.	04.08.56	New Zealander	AA390623	28.05.12
8	K.Robertson	G.P.	10.06.48	Australian	M6535274	15.11.16
9	Bjorn Thomasson	G.P.	11.10.52	New Zealander	AA528860	
10	Lionel Hall	G.P.	03.01.58	Australian	M5337014	22.05.16
11	Jamie Dent	Chief Stwd	21.09.61	Australian	L89494325	22.05.10
12	Bruce Maher	Stwd	05.03.53	Australian	L3042947	29.11.11
13	David Ferrier	Chief Cook	12.03.58	Australian	M5091479	11.04.16
14	Nathan Bartlett	2nd. Cook	01.05.80	Australian	M1664811	28.10.14
15	Kenneth Stephens	Comp. Mech	17.09.51	Australian	M1851206	27.09.14
16	David Billington	Comp. Mech	09.11.49	Australian	M2858580	30.06.15
CGG VERITAS GEOPHYSICAL						
17	Haydn Brook	Party Chief	10.07.73	Australian	E1024451	10.03.15
18	Tyrone Hackett	Chief Observer	19.12.71	Canadian	BD106336	16.06.10
19	John Shannon Gracey	Observer	18.07.59	British	039872219	27.10.10
20	Steven Ryan	Ch Nav	10.08.81	Australian	M5358989	04.01.12
21	Ralph Bennett	Chief Mechanic	26.03.58	British	102069928	18.12.10
22	Regis Derrien	SL Mechanic	15.02.69	French	02YD55942	06.08.12
23	William Agcaoili	SL Mechanic	18.11.51	Filipino	ZZ206521	29.11.11
24	Paulo Goncalves	Mechanic	07.09.71	French	05AT81090	14.02.16
25	Ivar Almhjell	Mechanic	24.01.75	Norweign	26128623	06.08.17
26	Aleil Aliman	Medic	08.03.75	Filipino	SS0907185	06.04.11
27	Ingvild Bostad	Observer	04.02.79	Norwegian	20874534	09.05.15
28	Tommy Timenes	Chief Field-Geo	02.09.73	Norwegian	26335444	23.08.08
29	Isabelle Nicolas	Field Geo.	16.05.79	Filipino	ZZ213750	22.01.12
30	Jared Smith	Navigator	03.03.78	New Zealander	F017116	16.05.10
31	Donald Hutchings	SL Navigator	16.03.59	Canadian	BD106848	18.08.12
32	Slavomir Korybalski	SL Observer	01.03.75	Polish	AT8339985	30.08.17
33	William Lloyd	Client Rep	21.10.48	Australian	E1022292	14.03.15
34	Debbie Glasgow	MMO	25.11.57	New Zealand	N466526	01.12.08

HSE Details for Survey

Incidents/Accidents		Exposure Hours	
Type	Cumulative	Group	Cumulative
Fatality	0	Client	408
Lost Time Incident	0	Maritime	6528
Medical Treatment Case	0	Seismic	6528
First Aid Case	0	3rd Party	408
Restricted Work Case	0		
Material Loss or Damage	0		
Environmental Incident/Damage	0		
Near Miss	0		
Hazard	0		
Unsafe Act	0		
Total Incidents	0	Total Hours	13872
		Total Man Days	578

Activity	Cumulative
Safety Drills	2
Safety Meetings	0
Boat Launches	0
Boat Transfers	0
Toolbox Meetings	117
Helicopter Landings	0
Safety Audit - Internal	0
Safety Audit - External	0

2.7 RECOMMENDATIONS & CONCLUSION

- Showers and toilets need renewing, they are in a very poor state and unhygienic
- The overall appearance of the vessel is poor, this reflects on both the contractor and the Company.
- With the overall OH&S performance expected of and delivered by both the Marine Crew and the Seismic Crew. The acceptance of a vessel in the Pacific Titans condition is a let down the hard work done by the crew in maintaining a safe and comfortable work environment.

The over all performance of the crew was excellent, work was carried out in a professional manner, any problems encountered were quickly brought to the client's attention.

Safety standards by both marine and seismic crew were high, closer cooperation during drills would be an advantage and improve teamwork.

3 NAVIGATION

3.1 NAVIGATION HARDWARE AND SOFTWARE

System	Hardware (Type and Serial No.)	Software version
Concepts Spectra Concepts Reflex SeisPos processing External Header Compass System TS-meter Echo Sounder Multifix 5	RTN μ (30/207P & 30/208P) Linux Workstations Windows Workstation Digicourse System 3 5011 Birds Saiv AS STD/CTD model SD204 SIMRAD EA600 Windows Workstation	Spectra v 10.9.01.10 Reflex v 1.9.4 (Not in use) Red Hat v 7.3 v 13.15 CGG LABO v 5.01 v 3.5.9.97 v 2.1.1.0 v 1.09

System Timing

Spectra issued closures to the source firing system and recording system 50 milliseconds before the predicted time of peak pressure. Spectra received the time break back from the GunLink source controller and all Spectra system positions are output for this time.

An additional trigger was issued from Spectra 500 milliseconds after time zero. This was sent to the recording system as a timing verification. The trigger was 5 milliseconds in duration.

3.2 SURVEY POSITIONING METHOD USED

This survey was carried out using CGGVeritas standard mode of operation for single streamer, single source surveys.

Positioning of the vessel was by Single frequency differential DGPS with delivery of differential correction data in RTCM 104 format and recorded in the P2/94 files.

The source was positioned relative to the vessel using a network consisting of rGPS units mounted on all 3 sub-arrays.

The centre last group of the streamer was positioned using a network consisting of one rGPS system unit mounted on the tail buoy and streamer mounted compass heading units.

The streamer shape was modelled by up to 23 Digicourse series 5011 combined streamer depth control and magnetic compass units on the streamer.

Least squares condition equations for the streamer assuming circular arcs between compasses and relating the tracking nodes, compasses, tension corrected distances between compasses, rotation bias and scale were used to compute scale, rotation and individual compass corrections. The streamer shape was then computed by the circular arc method.

3.3 SURFACE POSITIONING

General

All survey and positioning work was carried out using the D_GDA_1994 Spheroid and datum.

Grid co-ordinates were based on the Universal Transverse Mercator projection zone 55 S. Central Meridian for zone 55 is 147°E.

Common Offshore datum shift parameters for WGS84 were as specified in the contract.

For WGS 84, the following parameters were entered into Spectra INS:

Semi-Major Axis: 6378137.000
Inverse Flattening: 298.25722360

Datum Shift Parameters

For transformation of WGS84

DX (m)	DY (m)	DZ (m)	Rot X (sec)	Rot Y (sec)	Rot Z (sec)	Scale (ppm)
0	0	0	0	0.000	0.000	0.000

Vessel Navigation

Summary

The SPM2000 with SPM 5.16 software provides single and dual frequency GPS positioning, using corrections generated by the Fugro Starfix network of reference stations broadcast via geostationary communication satellites.

The standard single frequency service is Starfix and the dual frequency services are Starfix.Plus, Skyfix.XP and Starfix.HP (High Performance).

Both, Starfix and Starfix.Plus are sub-metre level accuracy services. Starfix.Plus is the recommended service for equatorial regions where the standard service cannot achieve metre level accuracy during any peak of the solar cycle.

Starfix.HP is the Fugro positioning service with decimetre level accuracy at distances up to 1000 km from Starfix.HP reference stations making this system ideal for offshore applications requiring very precise horizontal and vertical positioning. The HP engine is now aided with the Starfix.XP engine to provide more robust and accurate position.

Skyfix.XP is Fugro's Positioning service based purely on State Space corrections.

Differential Correction Systems:

Fugro Skyfix via Spot Beam (OCSAT) satellite and Fugro Starfix via Inmarsat (IOR) and NTrip (Corrections received via VSAT)

All systems had the same accuracy and were set to have the same weight in the solution.

Fugro Multifix is a multiple reference station DGPS system tailored for the specific needs of seismic surveying. Algorithms combine reference station data and pseudo range measurements into the best position estimates.

By employing a correlation model for weighting the multiple range corrections in a least squares estimation process, the optimum pseudo-range corrections are obtained. W-testing and F-testing techniques detect and reject correction outliers.

Quality control is based upon UKOOA's recommended DGPS quality indicators - the precision and reliability of the fix are displayed as an Error Ellipse and Marginally Detectable Errors (MDE).

The differential corrections were transmitted to, and received on-board the vessel by three independent means and provided a high degree of redundancy to ensure continuous vessel positioning.

DGPS Reference Stations

Ref. St. Name	Latitude	Longitude	Height (m)
Melbourne	037°48' 29.0050"S	144°57' 48.030"E	82.05
Bathurst	033°25' 46.787"S	149°34' 01.970"E	939.97
Cobar	031°29' 57.430"S	145°50' 20.346"E	207.17
Ceduna	032°07' 03.047"S	133°41' 22.852"E	7.27
Brisbane	027°28' 38.486"S	153°01' 37.353"E	93.15

By employing a correlation model for weighting the multiple range corrections in a least squares estimation process, the optimum pseudo-range corrections are obtained. W-testing and F-testing techniques detect and reject correction outliers.

Quality control is based upon UKOOA's recommended DGPS quality indicators - the precision and reliability of the fix are displayed as an Error Ellipse and Marginally Detectable Errors (MDE).

The differential corrections were transmitted to, and received on-board the vessel by two independent means and provided a high degree of redundancy to ensure continuous vessel positioning.

Float Navigation

Float (tailbuoy, headbuoy and source) surface navigation was provided by Kongsberg-Seatex Seatrack relative GPS. The in-sea units incorporated a GPS receiver and interfacing for direct data transmission of the raw satellite pseudo-range data via UHF link to the vessel.

On board the vessel, the raw pseudo-range data from the float unit was matched with simultaneously received data at the vessel's GPS receiver to compute a vector describing the location of the float unit relative to the vessel, from which the float position was derived.

Streamer Compasses

23 series 5011 Digicourse combined magnetic compass and streamer depth controllers were attached to the streamers. All compasses were used for positioning and shaping the streamers.

Compass Sampling Rate = 2 second
Averaging constant = 14 seconds

Compass performance was monitored on a line-to-line basis throughout the acquisition phase of the survey.

Gyro Compass

The gyro compass used during the survey was:

Gyro 1 (NEMA) - Simrad HS50 GPS

The gyro correction values as computed at the last calibration were as follows:

Gyro 1 -- plus 1.4 degrees

Gyro 2 – plus 2.2 degrees

Magnetic Declination

Model: IGRF2005

Date: 2008-04-18

Position: 40°05"S 146.75"E

Magnetic Declination: 13.16"E

Velocity of Sound in Water

CTD/CTD Velocity Profiler Model SD204 is programmed to measure data at one-metre intervals. The probe is allowed to free-fall and is then recovered. Speed of sound and depth are computed by the program, which decodes the stored information from the probe. The raw data is entered into a spreadsheet where the Medwin formula is used to calculate velocity. **Velocity calculated at 1526.5 m/s.**

3.4 ECHO SOUNDER

Primary Echo Sounder: Simrad Model EA600 200/12KHz

The echo sounder speed of sound was set to 1500 m/s. A draught correction of zero was entered in the echo sounder. Depth data was recorded throughout the survey using a dual transducer/dual frequency (12 KHz/ 200 KHz) Simrad EA600 Echo sounder.

Echo Sounder Verification

A verification was performed, alongside in Burnie, Tasmania. This was done using a lead line, and also depth reading from the calibrated TS probe.

All depths recorded are based on the position of the Fathometer's transducer on the vessel's Hull. Depths are NOT draught corrected. Diagram and explanation in Appendix "A"

3.5 INTEGRATED NAVIGATION SYSTEM

The integrated navigation system used for this survey was Spectra from Concept Systems Ltd. UK. Spectra is an integrated navigation and data management system designed to handle environments of multi-vessel operations such as under shooting of obstructions as rigs. Spectra delivers data management, positioning techniques and flexibility with the following key benefits:

- Navigation acquisition and validation with real-time source and streamer positioning for marine seismic surveys ranging from simple 2D and high resolution requirements to extensive 3D multi-streamer, multi-vessel configurations.
- Distributed data server provides simple connectivity to easily configure multi-vessel surveys.

- Real-time data acquisition units with integrated GPS receiver provide triggering to 50 microseconds, allowing remote synchronization of seismic and acoustic systems.
- Real-time binning, CMP and offset distribution with simultaneous bin expansion capabilities.
- Data logging to UKOOA P1/90 and P2/94 standards with full redundancy providing confidence in data integrity.
- Quality control process providing alarm and audit facilities meeting UKOOA guidelines. Extensive online graphical analysis facilities and end of line reporting facilities.
- Positioning using Kalman Filtering with advanced data snooping statistical testing techniques.
- DGPS and RGPS real-time recomputation.
- Autopilot interface controlled from instrument room leaving the navigator in charge of steering. This facility is fully integrated with a comprehensive turn planning utility providing optimum efficiency on line changes

CGGVeritas implementation of Spectra runs on work stations based on the IBM Pentium-4 PC architecture, and on the LINUX operating system.

NAVIGATION SUMMARY

Daily drop outs of positions generated by SPM 2. SPM 1 remained stable throughout the survey and thus always provided 2 solutions. In the attempt at further troubleshooting problems with SPM2 the raw GPS feed into Multifix position (V1G3) was changed from SPM2 to SPM1 before commencing seq #025. Required offsets were changed in online navigation system to reflect use of different antenna

Navigation processing was efficient; files are included in the attached CD.

ECHO SOUNDER

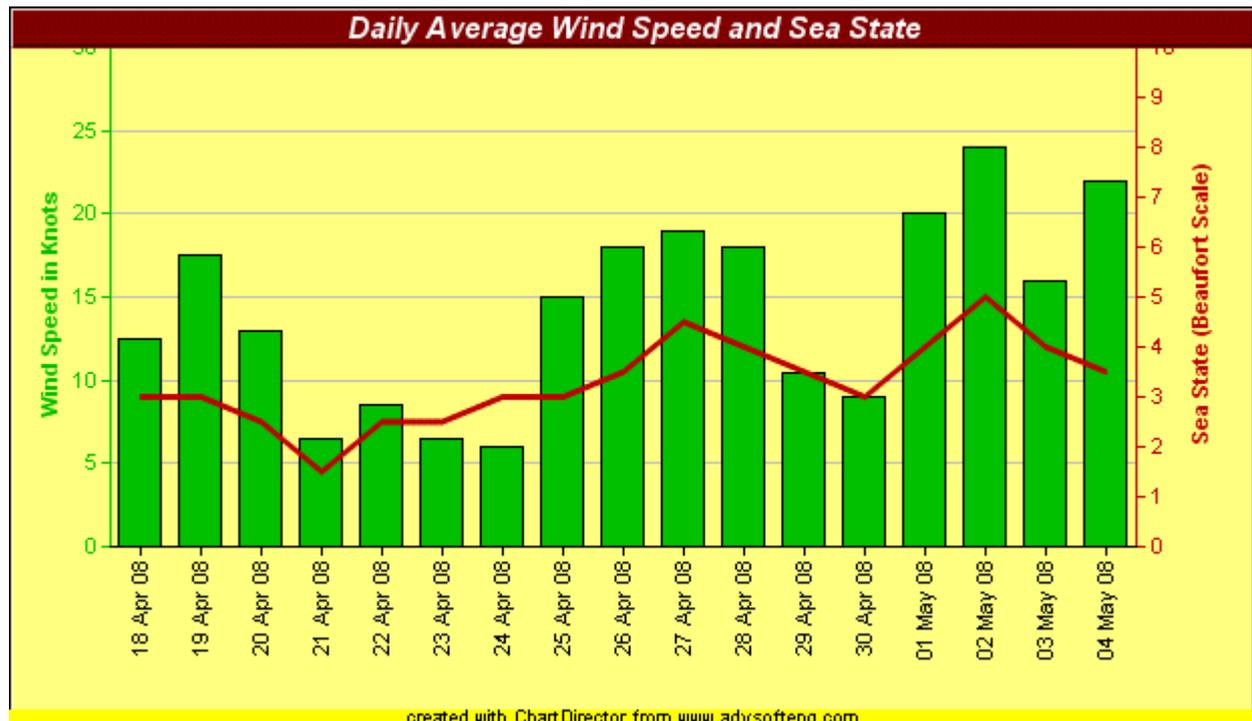
Echo Sounder data was very good throughout the survey.

4 ENVIRONMENT

4.1 WEATHER

It was possible, via the 'World Wide Web', to access data about local environmental conditions from www.buoyweather.com. Information was reported daily with a 7 day forecast. The local weather conditions were broadcast on VHF by Maritime Radio. Wind direction and weather forecasts were also available from the NavTex system. Further information was gained from the admiralty pilot for the area.

The diagram shown below gives the average wind speed and sea state for the survey period.



4.2 TIDES, CURRENT AND FEATHER

There were very small feathers in the survey area mainly affected by tidal movements which were quite small.

4.3 NAVIGATION HAZARDS

The survey was conducted in open waters of around 60 to 100 metres depth. Very few vessels were seen during the survey and those that were, were readily contacted and kept clear of the survey area.

4.4 ENVIRONMENTAL

In keeping with modern survey practice environmental protection played an important role in the operating practices of CGGVeritas in line with 3D Oil own environmental concerns and the contract requirements. Survey operations were carried out under procedures designed to minimise any environmental impact at all times.

There was no off shore refuelling during the survey. The M/V Titan has a Sercel solid digital streamer, which contains no fluids.

Great care was taken to follow International Maritime Regulations with regard to the disposal of garbage and waste. The Pacific Titan was equipped with an incinerator so that where possible most of the waste could be burnt. Ash from the incinerator was stored for proper disposal ashore. Putrescibles were discharged over the side in compliance with MARPOL regulations. Garbage that was unsuitable for burning was segregated and stored on board the vessel for proper disposal ashore. In addition the ship operates a garbage separation scheme to separate plastics, glass and metal waste. Hazardous wastes such as lithium batteries and chemicals were stored for proper disposal under the manufacturer's guidelines.

The overall environmental performance of the crew was up to modern industry standards with no garbage disposal to the sea.

4.5 CETACEAN REPORTING

On all lines, the acoustic energy source was gradually brought up to maximum capacity over a 20-minute period (soft start) to give sufficient notice to any marine life that might have been in the area. A low volume array element was run during all line changes. Soft starts and production were terminated immediately whales were observed approaching closer than 2.0 kilometres. Acquisition was not resumed until all whale activity had been observed to move outside the 3.0 kilometre zone for a period of a further 30 minutes. There were no sightings of cetaceans during this survey causing the termination of two lines during this survey. There was an MMO Debra Glasgow onboard and he will produce a separate MMO report.

4.6 FISHING

There was no fishing activity observed during this survey. The Pacific Titan broadcast the position and intent at regular intervals during the day.

4.7 CORAL REEFS

The vessel operated in water depths ranging from 60 to 100 metres with the streamer towed at a maximum depth of 7-9 metres and the source arrays at 6 metres. There were no reefs in the survey area.

4.8 CONCLUSION

The Pacific Titan and associated operations had no detrimental impact on the local environment during the seismic survey.

The only discharges into the sea were small quantities of food scraps and treated sewage waste, which fell within MARPOL guidelines.

5 INSTRUMENT TESTS

Before the beginning of the survey a complete set of instrument tests was performed. These tests were as follows:

- . Instrument Noise
- . Instrument Distortion
- . Instrument Crosstalk
- . Instrument Gain/Phase
- . Instrument Common Mode
- . Field Hydrophone Leakage
- . Field Capacitance
- . Field Cut Off
- . Field Noise

The start of contract tests were recorded to tape, and sent to the processing centre together with the seismic data. The result of the Start of Job Instrument tests showed all system tests well in specification and no bad seismic hydrophone groups on the streamer.

Instrument Noise Test

This test is to measure the noise of the ADC converter in the FDU. The converter's input is connected to the internal test network. A DFT is performed and the noise spectral power below 3Hz is computed. As the total energy of the output signal is known, the total noise within the bandwidth can be deduced.

Instrument Gain and Phase Test

This test is used to check for any drift of the gain and phase of the FDU's built in ADC converter within the band from DC to the filter's cut-off frequency.

The ADC supplies a pulse with known amplitude and width to the internal test network. The ADC input is connected to the internal test network. The voltage across the internal test network is measured. A DFT is computed on the DSP's output signal (for different test frequencies) and compared to a model computed with the same frequencies. The error is computed in terms of difference in amplitude and phase with respect to the model.

The test returns the maximum error computed in amplitude and phase.

Instrument Distortion Test

This test is used to check the FDU's built in ADC converter for linear response. A sine wave with known amplitude and frequency is applied to its input via the internal test network. The test returns the ratio of the spectral power of the output signal to the spectral power of all harmonics within the bandwidth determined by the selected filter.

Instrument CMRR Test

This test is used to measure the Common Mode Rejection Ratio of the FDU's built in ADC converter. A sine wave with known amplitude and frequency is applied to both of its inputs via the internal test network. The test returns the ratio of the RMS value of the output voltage, relative to the input, to the common mode voltage.

Instrument Cross Talk Test

This test is used to measure cross talk between FDU's. The test includes two sequences:

During the first sequence, the test generator applies a sine wave to the test network in each even FDU. The ADC converter in each odd FDU measures the resulting voltage across its own test network. (The test generator in odd FDU's is disabled).

Conversely, during the second test sequence, the test sine wave is fed to each odd FDU and the resulting voltage is measured across the test network in each even FDU.

The ratio of the measured voltage to the theoretical value of the test signal is computed and displayed as Instrument Cross talk for each FDU.

Sensor Capacitance Test

This test is used to measure the capacitance of the seismic sensor connected on the channel input. The DAC supplies a sine wave with known frequency and amplitude to the channel input. The DftCorr of the output from the ADC is computed at the test frequency. Knowing the current supplied to the sensor, the total impedance can be computed.

The capacitance can finally be computed by using the imaginary part of the impedance.

Sensor Cut-off Frequency Test

With hydrophones as input sensors, measuring the cut-off frequency of the seismic channel is equivalent to determining the pulse response for the channel. The DAC supplies a pulse (with known amplitude and width) to the channel input. From the resulting voltage, measured by the ADC, the cut-off frequency of the channel is computed using a least-squares method.

Sensor Leakage Test

This test is used to measure the global leakage resistance between the seismic channel and the earth ground. During this test, the test generator creates a leak current at precisely determined points in the test network, via the FDU's earth resistance. The resulting voltage at particular points in the network is measured. As the output current of the test generator is known, the measurements allow the system to determine the leakage resistance on the positive and negative input paths of the channel. Finally the total resistance to ground can then be calculated.

End of Job Test

At the end of the survey a complete set of instrument tests was performed. These tests were as follows:

1. DCO/Noise/Range
2. Streamer RMS Noise
3. Channel Gain Accuracy
4. HD Harmonic Distortion
4. Common Mode Rejection
5. Impulse Response
6. Crosstalk Isolation Odd
7. Crosstalk Isolation Even
8. Hydrophone Response and Leakage

The result of the End of Job instrument tests verified the system. Comparing results from all the instrument tests showed that the system was stable and in specification throughout the survey.

6 DIARY

Time	Category	Comment
April 18th 15:00	SB	Commenced the 3D Oil survey at the midpoint of the transit from the Cue Energy survey add the 3D Oil survey at 040°10'32S 146°18'10E at 15:00 Hrs local.
17:45	SB	Commenced line TDOB08-044-001, completed within spec, compass V1C20 knocked out in SPECTRA due to high bias.
19:35	SB	Nominal line change to line TDOB08-030.
21:50	DT	Line change to line TDOB08-030 extended while repairs are being made to the towing vane harness.
April 19th 00:00	DT	Line change to line TDOB08-030 extended while repairs are being made to the towing vane harness.
00:52	SB	Commenced line TDOB08-030-002, completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
02:39	SB	Line change to line TDOB08-022-003.
04:45	SB	Commenced line TDOB08-022-003, completed within spec compass S1C20 knocked out in SPECTRA due to high bias, SP 1421 to EOL no GPS tailbuoy data.
11:06	SB	Line change to line TDOB08-036-004.
13:00	SB	Commenced line TDOB08-036-004, line terminated early due to recording system lockup circling around to complete the line. LGSP1354.
17:38	DT	Circling around back to line TDOB08-036-005 after recording system lockup.
21:23	SB	Commenced line TDOB08-036-005, completed within spec, compass S1C20 knocked out in SPECTRA due to high bias. No GPS data from tailbuoy.
22:19	SB	Line change to line TDOB08-050-006.
23:50	SB	Commenced line TDOB08-050-006, MSP 1059 compass S1C20 knocked out in SPECTRA due to high bias, no GPS data from tailbuoy.
April 20th 00:00	SB	Continuation line TDOB08-050-006, completed within spec compass S1C20 knocked out in SPECTRA due to high bias, no GPS data from tailbuoy.
01:33	SB	Line change to line TDOB08-034-007.
03:29	SB	Commenced line TDOB08-034-007, completed within spec compass S1C20 knocked out in SPECTRA due to high bias, no GPS data from tailbuoy.
05:08	SB	Line change to line TDOB08-046-008.
07:17	SB	Commenced line TDOB08-046-008, completed within spec compass S1C20 knocked out in SPECTRA due to high bias, no GPS data from tailbuoy.
09:07	SB	Line change to line TDOB08-054-009.
11:13	SB	Commenced line TDOB08-054-009, completed within spec compass S1C20 knocked out in SPECTRA due to high bias, no GPS data from tailbuoy.
13:12	SB	Line change to line TDOB08-064-010.
14:53	SB	Commenced line TDOB08-064-010, completed within spec compass S1C20 knocked out in SPECTRA due to high bias and no GPS data from the tailbuoy.
20:11	SB	Line change to line TDOB08-042-011.

21:51	SB	Commenced line TDOB08-042-011, MSP 2039 compass S1C20 knocked out in SPECTRA due to high bias, no GPS data from tailbuoy.
April 21st 00:00	Category SB	Comment Continuation line TDOB08-042-011, completed compass S1C20 knocked out in SPECTRA due to high bias, no GPS data from tailbuoy.
02:51	SB	Line change to line TDOB08-026-012.
04:25	SB	Commenced line TDOB08-026-012, completed within spec compass S1C20 knocked out in SPECTRA due to high bias and no GPS data from the tailbuoy.
06:12	SB	Line change to line TDOB08-040-013.
08:03	SB	Commenced line TDOB08-040-013, completed within spec compass S1C20 knocked out in SPECTRA due to high bias and no GPS data from the tailbuoy.
09:40	SB	Line change to line TDOB08-007-014.
11:42	SB	Commenced line TDOB08-007-014, completed within spec compass S1C20 knocked out in SPECTRA due to high bias and no GPS data from the tailbuoy.
13:11	SB	Line change to line TDOB08-001-015.
15:05	SB	Commenced line TDOB08-001-015, completed within spec compass S1C20 knocked out in SPECTRA due to high bias and no GPS data from the tailbuoy.
17:00	SB	Line change to line TDOB08-016-016.
18:29	SB	Commenced line TDOB08-016-016, completed within spec compass S1C20 knocked out in SPECTRA due to high bias and no GPS data from the tailbuoy.
23:10	SB	Line change to line TDOB08-052-017.
April 22nd 00:00	Category SB	Comment Line change to line TDOB08-052-017.
02:07	SB	Commenced line TDOB08-052-017, completed within spec compass S1C20 knocked out in SPECTRA due to high bias and no GPS data from the tailbuoy.
08:26	SB	Line change to line TDOB08-066-018.
10:17	DT	Commenced line TDOB08-066-018, terminated due to recording system crash no usable data collected D.N.P. Circling around to try again.
10:38	DT	Circling around due to recording system lockup.
13:46	SB	Commenced line TDOB08-066-019, completed within spec compass S1C20 knocked out in SPECTRA due to high bias and no GPS data from the tailbuoy.
17:22	SB	Line change to line TDOB08-070-020.
19:23	SB	Commenced line TDOB08-070-020, completed within spec compass S1C20 knocked out in SPECTRA due to high bias and no GPS data from the tailbuoy.
22:46	SB	Line change to line TDOB08-080-021.
April 23rd 00:00	Category SB	Comment Line change to line TDOB08-080-021.
00:35	SB	Commenced line TDOB08-080-021, completed within spec compass S1C20 knocked out in SPECTRA due to high bias and no GPS data from the tailbuoy.
04:16	SB	Line change to line TDOB08-090-022.
06:10	SB	Commenced line TDOB08-090-022, completed within spec compass S1C20 knocked out in SPECTRA due to high bias and no GPS data from the tailbuoy.
08:55	SB	Line change to line TDOB08-098-023.

10:40	SB	Commenced line TDOB08-098-023, completed within spec compass S1C20 knocked out in SPECTRA due to high bias and no GPS data from the tailbuoy.
13:38	SB	Line change to line TDOB08-092-024.
15:15	SB	Commenced line TDOB08-092-024, completed within spec compass S1C20 knocked out in SPECTRA due to high bias and no GPS data from the tailbuoy.
18:04	SB	Line change to line TDOB08-005-025. Output of V1G3 changed from SPM2 to SPM1. New offsets for V1G3 DG_V_XP_EXP was X=4.20 Y=1.05 new offsets X=5.25 Y=0.0 changed to STBD antenna.
19:33	SB	Commenced line TDOB08-005-025, completed within spec compass S1C20 knocked out in SPECTRA due to high bias and no GPS data from the tailbuoy. V1G3 not available from SOL.
21:22	SB	Line change to line TDOB08-014-026.
23:51	SB	Commenced line TDOB08-014-026, MSP 1051 compass S1C20 knocked out in SPECTRA due to high bias and no GPS data from the tailbuoy. V1G3 not available from SOL.
April 24th	Category	Comment
00:00	SB	Continuation line TDOB08-014-026, MSP 1051 compass S1C20 knocked out in SPECTRA due to high bias and no GPS data from the tailbuoy. V1G3 not available from SOL.
04:27	SB	Line change to line TDOB08-028-027.
06:22	SB	Commenced line TDOB08-028-027, MSP 1051 compass S1C20 knocked out in SPECTRA due to high bias and no GPS data from the tailbuoy. V1G3 not available from SOL.
11:42	SB	Line change to line TDOB08-020-028.
13:27	SB	Commenced line TDOB08-020-028, completed within spec compass S1C20 knocked out in SPECTRA due to high bias and no GPS data from the tailbuoy. V1G3 not available from SOL.
18:57	SB	Line change to line TDOB08-032-029. Problem with V1G3 resolved.
20:42	SB	Commenced line TDOB08-032-029, MSP 1752 compass S1C20 knocked out in SPECTRA due to high bias.
April 25th	Category	Comment
00:00	SB	Continuation line TDOB08-032-029, completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
01:59	SB	Line change to line TDOB08-056-030.
04:13	SB	Commenced line TDOB08-056-030, Completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
08:08	SB	Line change to line TDOB08-062-031.
10:06	SB	Commenced line TDOB08-062-031, Completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
14:01	SB	Line change to line TDOB08-072-032.
16:01	DT	Line change extended due to source maintenance.
16:23	SB	Commenced line TDOB08-072-032, Completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
20:35	SB	Line change to line TDOB08-084-033.
22:29	SB	Commenced line TDOB08-084-033, MSP 1609 compass S1C20 knocked out in SPECTRA due to high bias.
April 26th	Category	Comment
00:00	SB	Continuation line TDOB08-084-033, completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
01:36	SB	Line change to line TDOB08-086-034.
03:32	SB	Commenced line TDOB08-086-034, Completed within spec compass S1C20 knocked out in SPECTRA due to high bias.

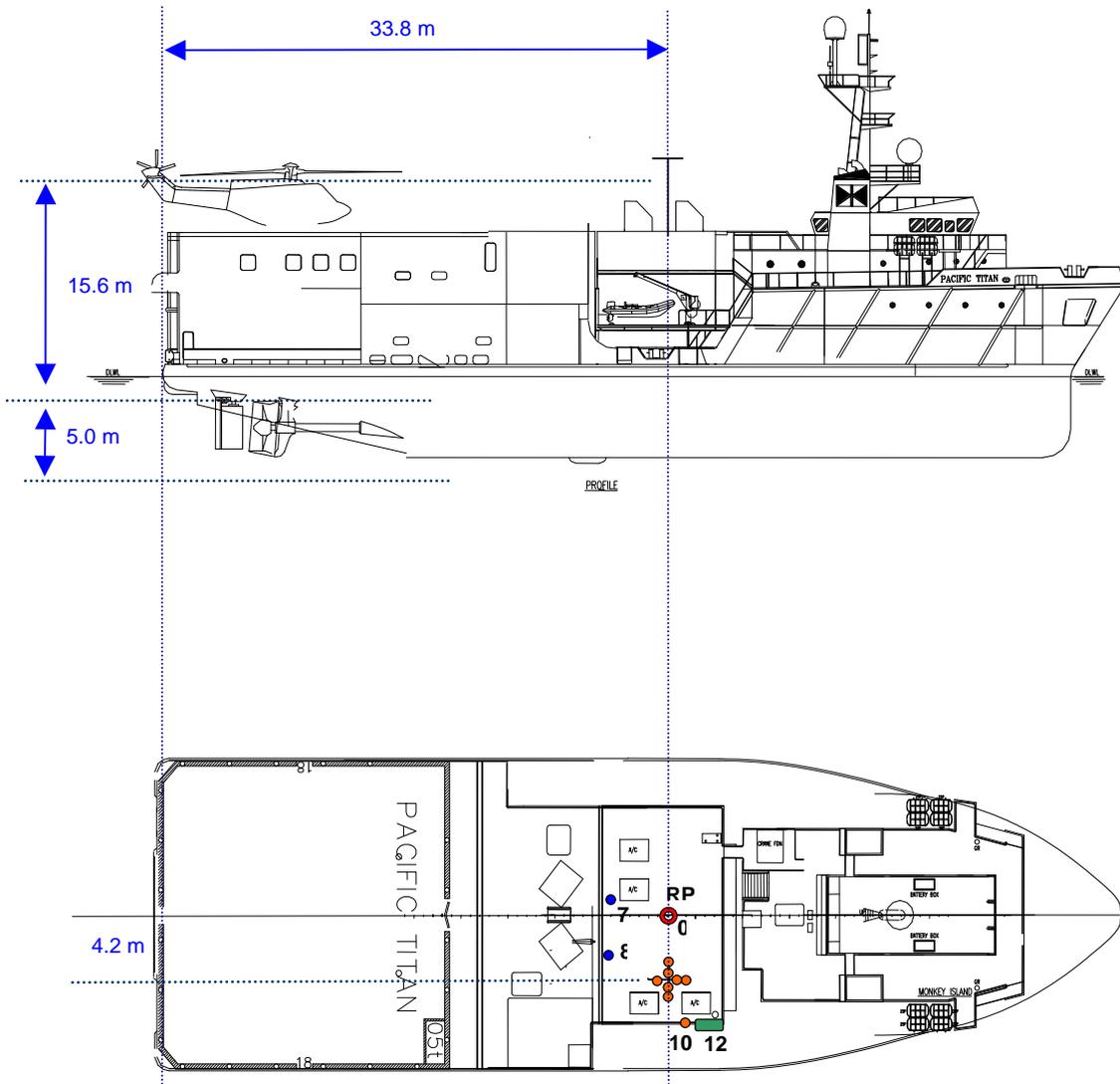
06:37	SB	Line change to line TDOB08-078-035.
08:37	SB	Commenced line TDOB08-078-035, Completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
11:45	SB	Line change to line TDOB-08-003-036.
13:36	SB	Commenced line TDOB08-003-036, terminated early due to gun 23 autofiring LGSP 1200. Compass S1C20 knocked out in SPECTRA due to high bias. Circling around to complete the line.
14:48	DT	Circling back around to complete line TDOB08-003 after gun 23 kept autofiring.
18:38	SB	Commenced line TDOB08-003-037, Completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
19:14	SB	Line change to line TDOB08-012-038.
20:40	SB	Commenced line TDOB08-012-038, MSP 2181 compass S1C20 knocked out in SPECTRA due to high bias. Streamer depth set to 9m due to sea state.
April 27th	Category	Comment
00:00	SB	Continuation line TDOB08-012-038, completed within spec compass S1C20 knocked out in SPECTRA due to high bias. Streamer depth at 9m due to sea state.
00:28	SB	Line change to line TDOB08-024-039.
02:33	SB	Commenced line TDOB08-024-039, completed within spec compass S1C20 knocked out in SPECTRA due to high bias. Streamer depth set to 9m due to sea state.
07:25	SB	Line change to line TDOB08-038-040.
09:13	SB	Commenced line TDOB08-038-040, completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
10:52	SB	Line change to line TDOB08-060-041.
13:00	SB	Commenced line TDOB08-060-041, completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
14:57	SB	Line change to line TDOB08-074-042
16:41	SB	Commenced line TDOB08-074-042, completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
20:28	SB	Line change to line TDOB08-082-043.
22:08	SB	Commenced line TDOB08-082-043, MSP 1121 compass S1C20 knocked out in SPECTRA due to high bias.
April 28th	Category	Comment
00:00	SB	Continuation of line TDOB08-082-043, completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
00:05	SB	Line change to line TDOB08-009-044.
02:44	SB	Commenced line TDOB08-009-044, completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
05:39	SB	Line change to line TDOB08-018-045.
07:28	SB	Commenced line TDOB08-018-045, completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
11:00	SB	Line change to line TDOB08-048-046.
13:18	SB	Commenced line TDOB08-048-046, completed within spec compass S1C20 knocked out in SPECTRA due to high bias. RGPS1 out at SOL.
17:59	SB	Line change to line TDOB08-058-047.
19:44	SB	Commenced line TDOB08-058-047, MSP 2613 compass S1C20 knocked out in SPECTRA due to high bias. RGPS1 out at SOL.
April 29th	Category	Comment
00:00	SB	Continuation line TDOB08-058-047, completed within spec compass S1C20 knocked out in SPECTRA due to high bias. RGPS1 out at SOL
00:29	SB	Line change to line TDOB08-068-048.

02:10	SB	Commenced line TDOB08-068-048, completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
06:19	SB	Line change to line TDOB08-076-049.
08:01	SB	Commenced line TDOB08-076-049, completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
13:22	SB	Line change to line TDOB08-088-050.
15:50	SB	Commenced line TDOB08-088-050, completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
20:39	SB	Line change to line TDOB08-096-051.
22:16	SB	Commenced line TDOB08-096-051, MSP 1665 compass S1C20 knocked out in SPECTRA due to high bias.
April 30th	Category	Comment
00:00	SB	Continuation line TDOB08-096-051, completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
00:31	SB	Line change to line TDOB08-094-052.
02:31	SB	Commenced line TDOB08-094-052, completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
04:17	SB	Line change to line TDOB08-100-053.
05:50	SB	Commenced line TDOB08-100-053, completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
07:46	SB	Line change to line TDOB08-102-054.
09:32	SB	Commenced line TDOB08-102-054, completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
11:00	SB	Line change to line TDOB08-011-055.
12:44	SB	Commenced line TDOB08-011-055, completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
16:41	SB	Line change to line TDOB08-010-056.
18:06	SB	Commenced line TDOB08-010-056, completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
21:51	SB	Line change to line TDOB08-006-057.
23:29	SB	Commenced line TDOB08-006-057, MSP 1788 compass S1C20 knocked out in SPECTRA due to high bias.
May 1st	Category	Comment
00:00	SB	Continuation of line TDOB08-006-057, completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
02:09	SB	Line change to line TDOB08-015-058.
04:03	SB	Commenced line TDOB08-015-058, completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
09:34	SB	Line change to line TDOB08-019-059.
11:16	SB	Recording line TDOB08-019-059, completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
17:20	SB	Line change to line TDOB08-017-060.
19:25	SB	Recording line TDOB08-017-060, MSP 2475 compass S1C20 knocked out in SPECTRA due to high bias. Streamer depth set to 9m due to sea state.
May 2nd	Category	Comment
00:00	SB	Continuation of line TDOB08-017-060, completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
02:20	SB	Line change to line TDOB08-013-061.
04:07	SB	Recording line TDOB08-013-061, completed within spec compass S1C20 knocked out in SPECTRA due to high bias. Streamer depth set to 9m due to sea state.
08:58	SB	Line change to line TDOB08-008-062.
10:29	SB	Recording line TDOB08-008-062, completed within spec compass S1C20 knocked out in SPECTRA due to high bias.

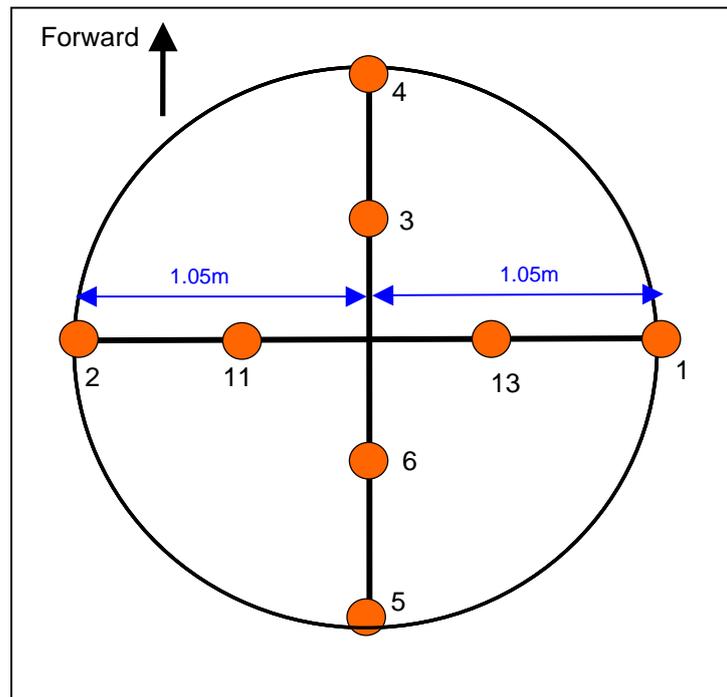
13:54	SB	Line change to line TDOB08-004-063.
15:49	DT	Extended line change to line TDOB08-004 due to problems with Gun 1 source string 1.
16:22	SB	Recording line TDOB08-004-063, completed within spec compass S1C20 knocked out in SPECTRA due to high bias. Streamer depth set to 9m due to sea state.
18:47	SB	Line change to line TDOB08-002-064.
20:15	SB	Recording line TDOB08-002-064, completed within spec compass S1C20 knocked out in SPECTRA due to high bias. Streamer depth set to 9m due to sea state.
21:29	SB	Line change to line TDOB08-027-065.
23:20	SB	Recording line TDOB08-027-065, MSP 1213 compass S1C20 knocked out in SPECTRA due to high bias. Streamer depth set to 9m due to sea state.
May 3rd	Category	Comment
00:00	SB	Continuation line TDOB08-027-065, completed within spec compass S1C20 knocked out in SPECTRA due to high bias. Streamer depth set to 9m due to sea state.
07:28	SB	Line change to line TDOB08-023-066.
09:34	DT	Commenced line TDOB08-023-066, terminated due to an airleak no usable data collected D.N.P. Circling around to reshoot the line.
10:00	DT	Circling around to line TDOB08-023-067 after previous line terminated for an airleak.
13:29	SB	Commenced line TDOB08-023-067, completed within spec compass S1C20 knocked out in SPECTRA due to high bias. Streamer depth set to 9m due to sea state.
21:23	SB	Line change to line TDOB08-025-068.
23:48	SB	Commenced line TDOB08-025-068, MSP 1068 compass S1C20 knocked out in SPECTRA due to high bias.
May 4th	Category	Comment
00:00	SB	Continuation of line TDOB08-025-068, completed within spec compass S1C20 knocked out in SPECTRA due to high bias.
08:06	SB	Line change to line TDOB08-021-069
09:48	SB	Commenced line TDOB08-021-069, completed within spec compass S1C20 knocked out in SPECTRA due to high bias. This completes the lines in the 3D Oil survey
17:10	SB	Mid way point between 3D Oil and Bass Strait surveys at 18:40 position 040°12'11S 147°12'24E this completes the 3D Oil Survey.

7 MEASUREMENTS

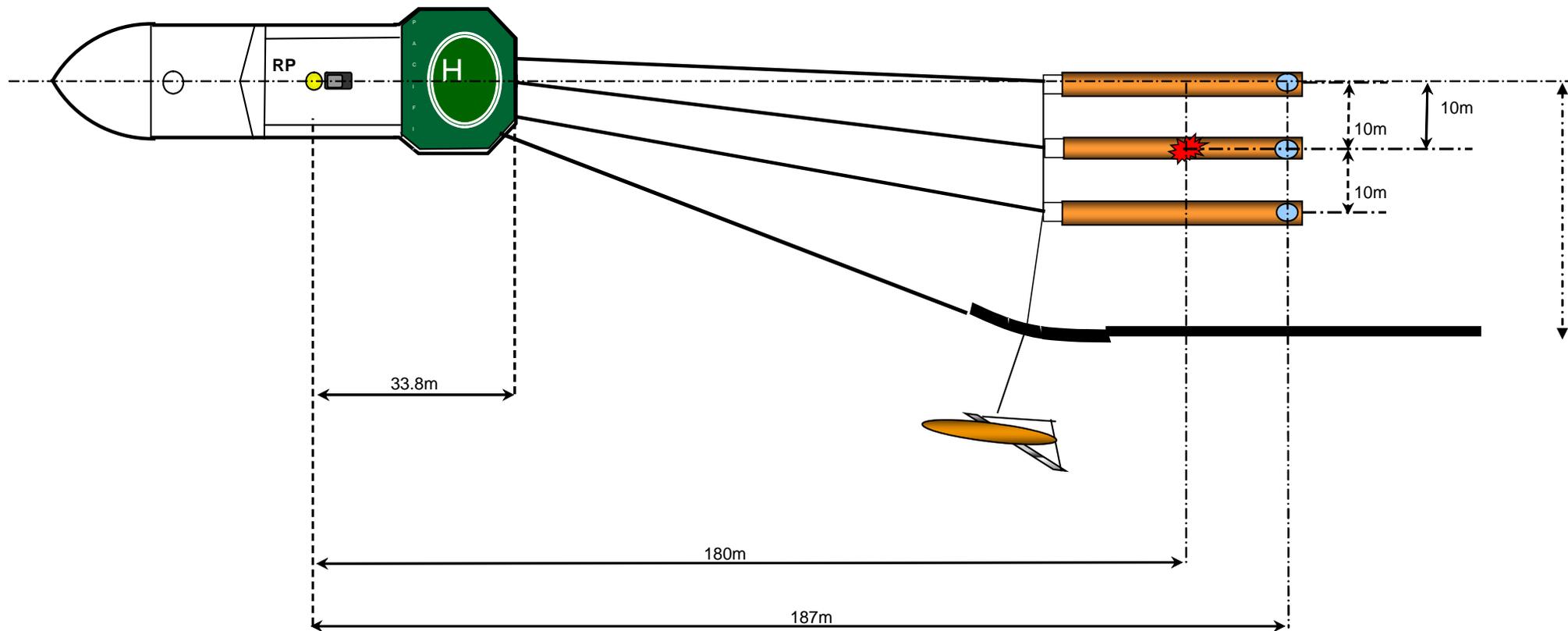
7.1 GPS ANTENNA POSITION



No	Spectra ID	X	Y	Z	Description	Cable Id
0	V1	0.00	0.00	0.00	Vessel ref point	
		0.00	-33.80	0.00	Vessel centre Stern from ref point	
1	V1G1,V1G5	5.25	0.00	15.60	SPM1 XP,HP. Alison 940D	2 Red Rings
2		3.15	0.00	15.60	Alison 940D	5 Red Rings
3					motorola UHF Radio antenna	
4	V1G2, V1G3, V1G4	4.20	1.05	15.60	SPM2 XP,HP Multifix. Alison 940D	3 Red Rings
5					Seatex Yagi VCU, UHF antenna	4 Red Rings
6					Seatex Omni VCU, UHF antenna	1 Red Ring
7	V1E1	-1.30	-5.80	-5.00	Simrad EA 600, 200kHz tranceducer	
8	V1E2	1.50	-6.10	-5.00	Simrad EA 600, 12kHz tranceducer	
9	Speedlan					
10	Runt 1				Trimble Bullet	
11					Sailor VHF Antenna	2 Green Rings
12	V1GY1				Simrad GPS Gyro	
13	Gun deck re-rad				Gun deck re-rad	



-  Centre of Source
-  RGPS pod
-  RP Reference Point
Vessel Centre Stern at sea level



8 APPENDICES

8.1 CONVENTIONS AND TERMINOLOGY

Glossary:

Active	: 150m active streamer section (40 used in streamer)
BCU	: Bird Compass Unit, Digicourse series depth / compass unit
Module	: Streamer electronics module
DGPS	: Differential Global Positioning System. Satellite navigation systems.
MOB	: Man overboard boat. A fast rescue craft designed for emergencies.
SEAL 24	: Data acquisition, streamer interface and recording system
Inmarsat B	: Telecom satellite communication system
DNP	: Do Not Process. Data acquired but not accepted.
RGPS	: Relative GPS system used for positioning source and tailbuoys
RU	: Remote unit commonly known as either a bird or compass unit
SPU	: Source Positioning Unit. RGPS units situated on sub-arrays
Skyfix	: Fugro RTCM delivery system
Spectra	: Real Time navigation system
SPECTRA	: Seismic processing system
SEALINK	: Digital energy source timing system
SEISPOS	: Navigation QC system

8.2 LINE AND SHOT POINT NUMBER CONVENTION

Line/Job prefix VCUE

Sail Line Format: Sail line numbers had the format TP06--xxx- yy, where:

CUE	= Origin Exploration Limited's identifier
08	= Year of acquisition
xxx	= Sail line number.
yy	= sequence number

Shot Point numbers : Started used incremented and decrementing shotpoints depending on line heading.

8.3 DESCRIPTION OF LINE LOG CONTENTS

The following provides details of the data recorded for each line in the Observers Line Logs. All items appear on the individual Line Logs found on the CD accompanying this report.

Line Statistics

Seq.	: Sequence number of line (Order in which lines were shot)
Sail Line	: Client specified line number
Date	: Date on which line was started
Dir.	: Nominal line heading
Start Time	: Time of start of line, local time
End Time	: Time of end of line, local time.
SOL	: Start of line column heading
EOL	: End of line column heading
FSP	: First Shotpoint
LSP	: Last Shotpoint
KM	: Total kilometres recorded
KMFF	: Total kilometres full fold
CMP	: Na.
SQKMFF	: Na
Vessel Speed	: Vessels speed in knots at the start and end of the line.

Environment

Wind Speed	: Average wind speed in knots
Wind Dir.	: Average direction of wind
Water Depth	: Water depth below the transducer at the start and end of line
Swell	: Average swell height at the Start and End of line.
Sea State	: Sea conditions i.e. slight, moderate or rough at BOL/EOL

Streamers

SOL noise	: Ambient RMS streamer noise calculated at start of line
EOL noise	: Ambient RMS streamer noise calculated at end of line
Bad Channels	: The number of defective channels on the streamer. These can be classed as bad for several reasons, dead, noisy, spiking, leaking etc.
Feather	: The angle the streamer deviates off the line heading, negative numbers indicate port, positive numbers indicate starboard

Summary

Status	: Whether line complete or incomplete
Comments	: General summary of line quality and any particular aspect of the line which may require special attention.
Bad Records	: The number of bad shots or records on the line.

8.4 ECHO SOUNDER CALIBRATION

ECHOSOUNDER CALIBRATION - m/v. PACIFIC TITAN

Alongside:- **Burnie Port, Australia (during bunkering)**
 Taken in position : **41° 01' 43.8" S 145° 54' 19.0" E**

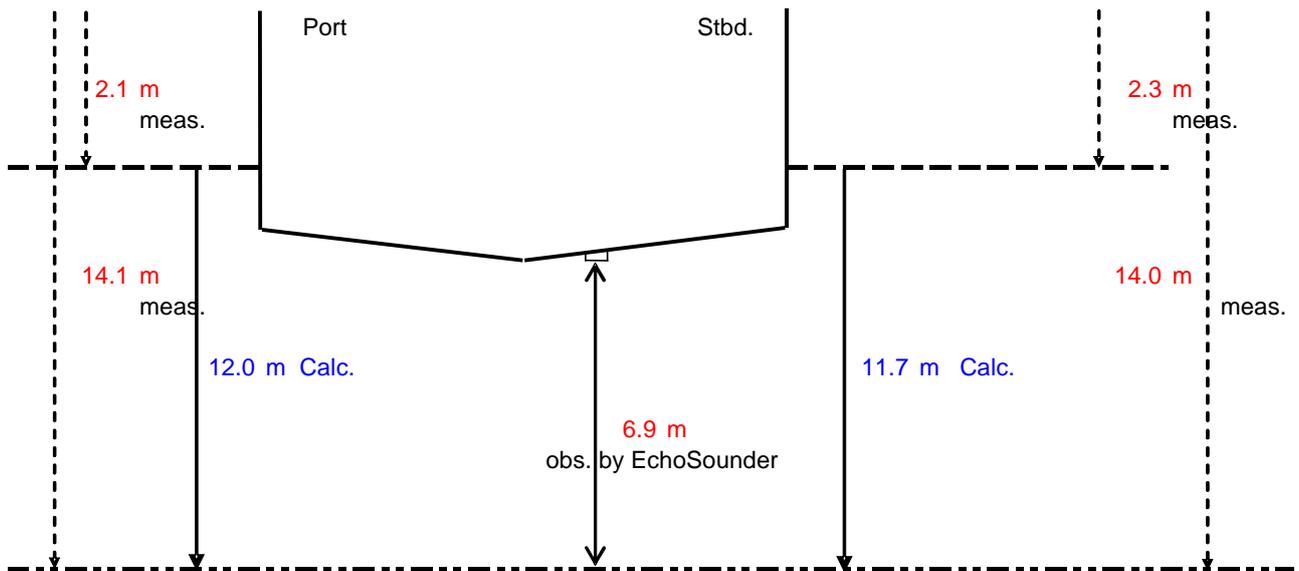
Date: **3 Mar 08**

Time: **3:00** GMT **14:00** Local Time

Job: **6374**

Client: **Santos**

Measurements taken:-	metres		
Port Freeboard		2.1	Stbd Freeboard
Port Lead-Line		14.1	Stbd Lead-Line
EchoSunder Reading		6.9	Fwd Draught marks:
Time		2:55	Aft Draught marks:



Draught Marks:
 Aft : 5.2 m
 Forward : 4.6 m
 Theoretical Draught = 4.9 m

Electronic Depth + Theoret. Draught = 11.8 m
 True Measured Water depth = 11.9 m

Difference = 0.0 m

TEXT = Measured
 TEXT = Calculated
 TEXT = Observed
 TEXT = Results