GEOTEAM

FUGRO

FIELD REPORT

2D SEISMIC SURVEY

for

SEISMIC AUSTRALIA

R/V GEO ARCTIC

Report No. 34860 / 34861

Client Reference	
Date of Field Work	28TH OCTOBER – 19TH DECEMBER 2001
Date of Report	19TH DECEMBER 2001
Responsible Manager	FRANK WIKMARK
Checked by	FRANK WIKMARK
Party Chief	DAVID M FARRANT
Revision No.	

FUGRO-GEOTEAM AS, P.O.Box 490 Skøyen, N-0213 OSLO, NORWAY, Tel. +47 22 13 46 00, Fax. +47 22 13 46 46

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1 INTRODUCTION

Section 1 and 2 in this Field Report are the planning of the survey. Section 3 and forward to are describing the performance, except for section 7 and 8, which are general technical information about the vessel and it's equipment.

Fugro-Geoteam AS undertook a non exclusive 2D seismic survey in the Deepwater Otway/ Sorell Basin off Tasmania and Victoria, Australia. The survey also also covered some of block T30P off Victoria and Tasmania. This was a continuation of a similar survey carried out in May and June 2001. The operators for the survey were Seismic Australia. Woodside Origin had pre-committed to purchase some of the data and were also involved in the survey design and specifications. The vessel used was the RV Geo Arctic. Specifications for the vessel are found in Appendix 7.

This survey was labelled as Phase II of the Otway / Sorell Basin surveys. A change to the original program was received on 02nd November 2001 where several new lines were added to the program and other line shortened. The total km for the Phase II survey were 4148.489km with 1687.060km defined as Woodside Origin lines.
The Project Plan was the guideline for the performance of this project.
Included in this manual was also the MEDEVAC and Emergency Response Plan.
A separate HSE manual was been made for this project, and was forwarded to the authorities in Tasmania and Victoria.

1.1 SCOPE OF WORK

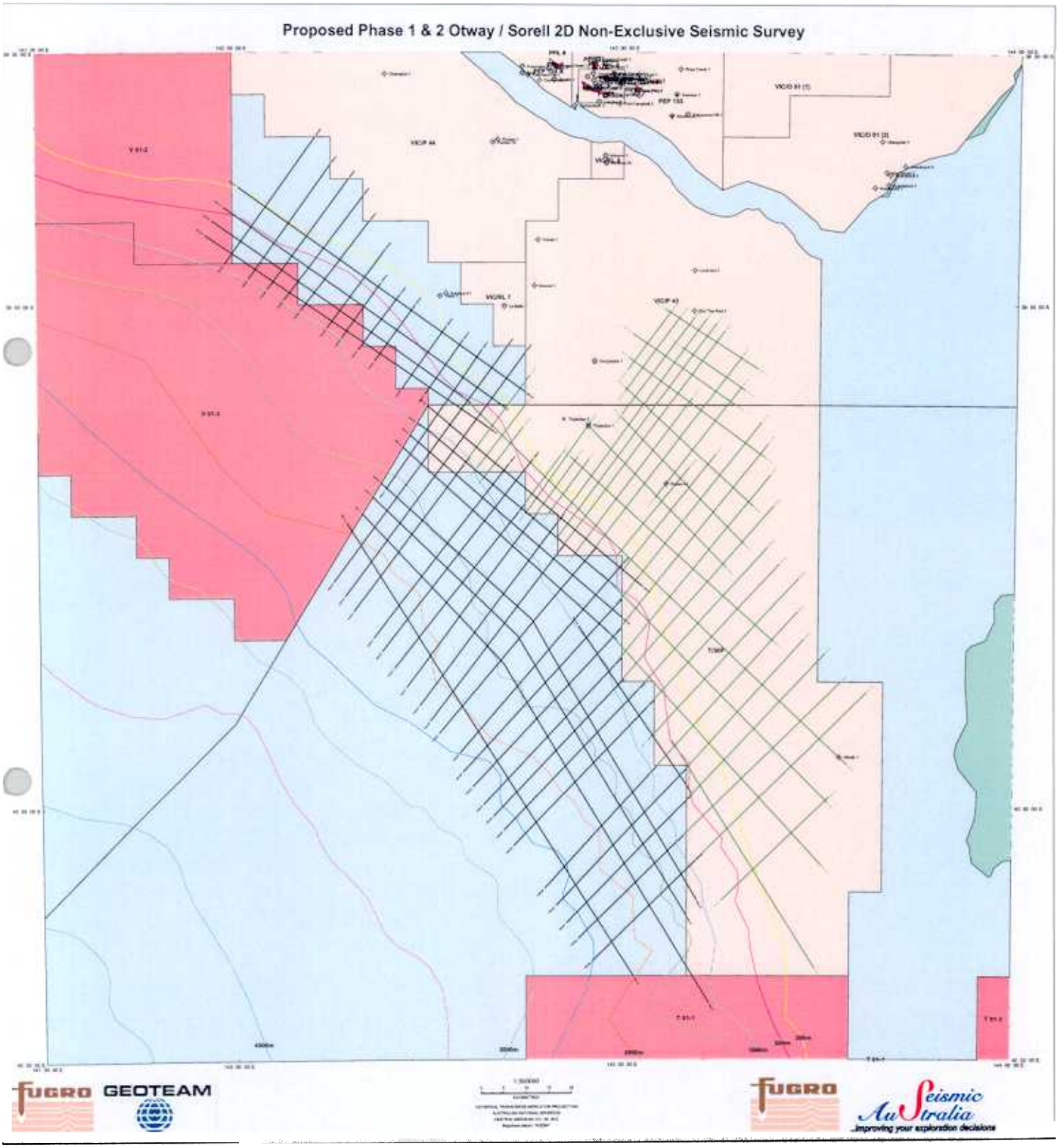
2D seismic survey acquisition:

Client:	Seismic Australia.
Location:	Otway/Sorell
Project no:	34860 Seismic Australia 34861 Woodside / Origin
Survey size:	Total Phase II: 4148.489km Seismic Australia lines: 2148.09km Woodside Origin Lines: 1882.61km
Vessel:	RV Geo Arctic
Water depth:	40 - 3000m
Fixed obstructions:	None known.
Number of lines:	Seismic Australia : 27 Woodside Origin : 23 Combined SA/WO lines : 20

1.2 WORKING AREA / SURVEY PROGRAM

Original survey design 26/10/01

Proposed Phase 1 & 2 Otway / Sorell 2D Non-Exclusive Seismic Survey



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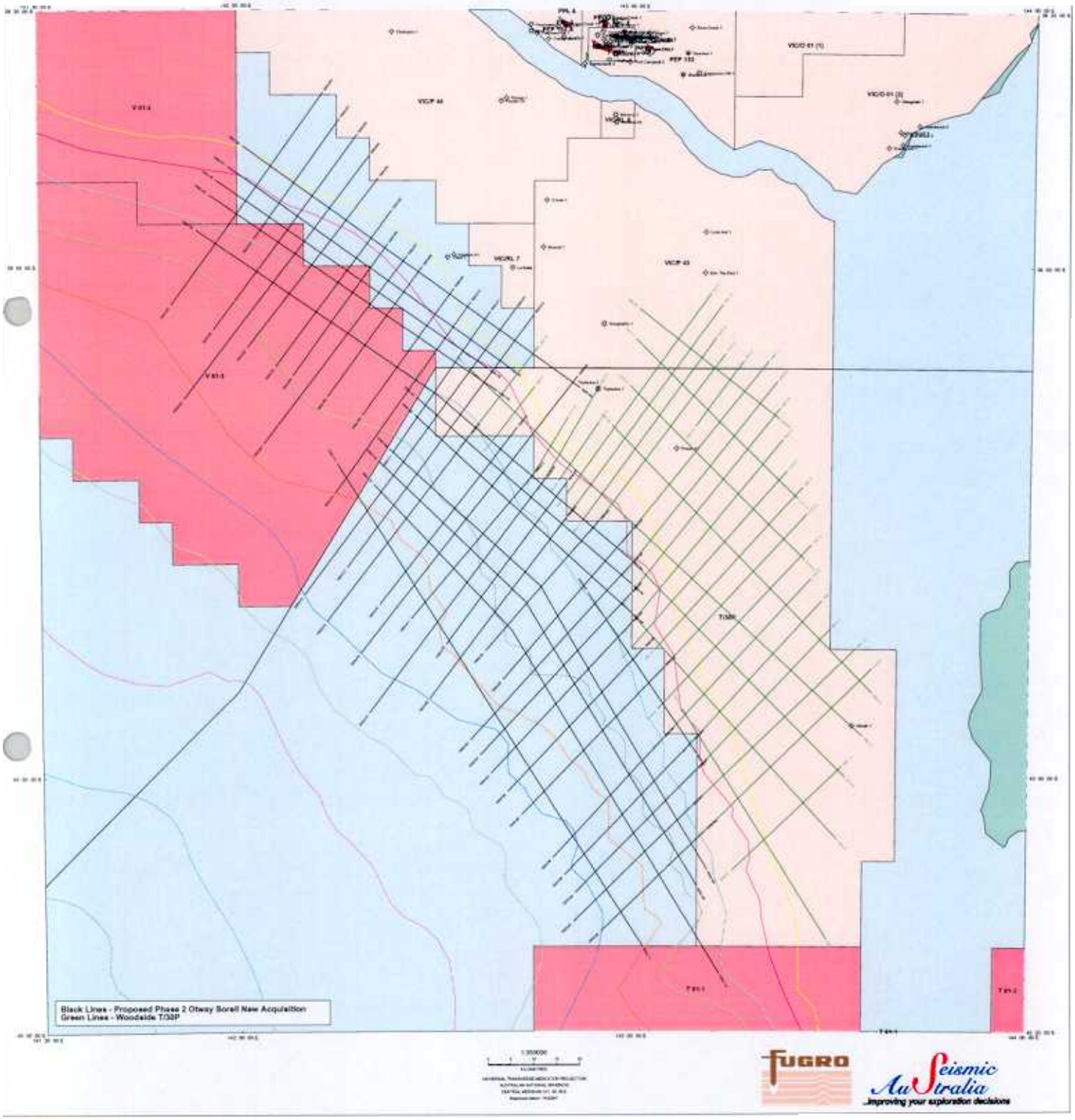
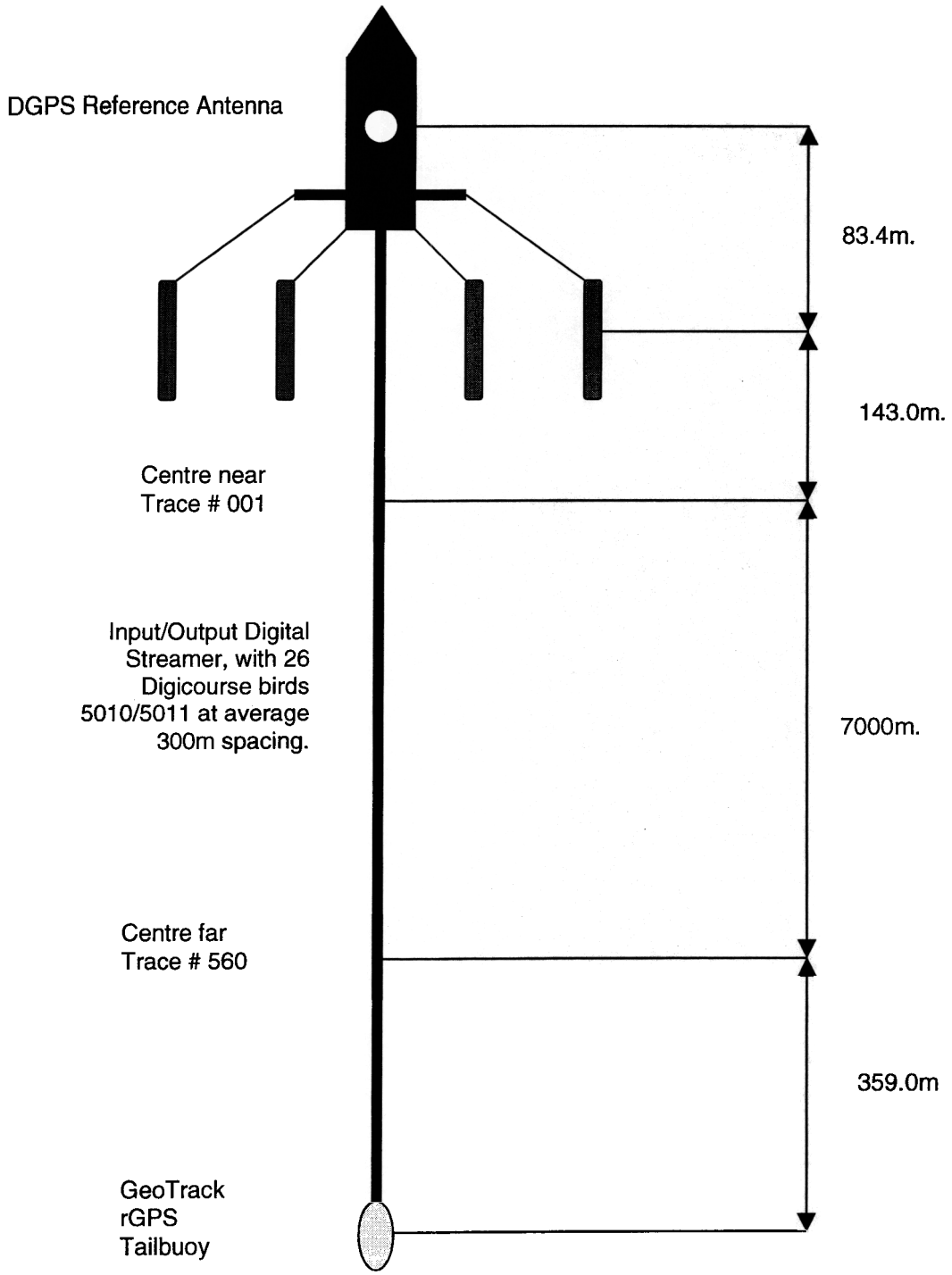
FUGRO Seismic AuStralia ...improving your exploration decisions

Final survey design 14/05/01

Proposed Phase 2 Otway / Sorell 2D Non-Exclusive Seismic Survey (~2,801 km)



1.3 SYSTEM LAYOUT



All Dimensions are Nominal

1.4 PLANNING AND PREPARATION – TIME SCHEDULE

Planned start up for the survey was on or around 27th October 2001 in Burnie, Tasmania. The vessel arrived in Burnie on the 28th October and sailed for the prospect on the 29th October.

All of the survey area was within Australian waters. Nearest major ports are Burnie, Tasmania, Portland and Melbourne, Victoria. Fugro-Geoteam AS planned to use either Burnie or Portland for logistical port-calls during the survey. The distance to Burnie and Portland from the centre of the survey area is approximately 150 miles and 80 miles.

The acquisition phase of the survey was planned to take 40 days, allowing for some delays for weather.

Demobilisation was planned in Burnie on or around 16th December.

The planned duration of the work required the need for a crew-change in the latter part of the survey. The crew onboard the RV Geo Arctic are working a 42 day rotation. The first planned crew change was 07th November 2001. The preferred method for crew changes was by helicopter.

In the case of an emergency port call instructions and guidelines were located in the MEDEVAC Plan specifically made for this project.

1.5 OTHER DOCUMENTATION

The following documentation was referred to directly or indirectly and was available throughout the survey, to ensure that all information, specifications, guidelines and agreements for this project were available :

- QC Specifications
- HSE Plan
- MEDEVAC Plan
- Fugro-Geoteam AS' QA and HSE documentation.
- Health, Safety and Environmental related documents according to contract.

2 ACQUISITION PARAMETERS

Fugro-Geoteam AS ensured that the equipment in use met the manufacturers' specifications, and also met Fugro-Geoteam's quality requirement.

2.1 DEFINITIONS

Acquisition mode	Single vessel
Configuration	Single streamer, single source
Shot interval	Seismic Australia 37.5 m Woodside Origin 25.0 m
CDP spacing	6.25 m
Coverage	93 full fold

2.2 SEISMIC PARAMETERS SUMMARY

2.2.1 Seismic recording systems

Recording type	:	I/O MSX
Recording length	:	Seismic Australia 12 seconds Woodside Origin 8 seconds
Sampling rate	:	2ms
Low-cut filter	:	4Hz, 12dB/Oct
Hi-cut filter	:	206Hz , 264dB/Oct
Format	:	SEG-D Demux
Tape media	:	3590
Source type	:	Sodera G guns.
Recording mode	:	Single source

2.2.2 Seismic streamer

Streamer type	:	I/O MSX 24 bit digital
Streamer length	:	7000m
Nominal streamer depth	:	Seismic Australia 8 – 12 m Woodside Origin 8 – 10 m
Near offset		143m
No of groups		560
Group interval		12,5m
Group length		17,55m
No of birds		26

2.2.3 Energy source

Source type	G Guns
Air pressure	2000 psi
Volume	3660 cubic inch
No of subarrays	4
Source depth	6m.
Source width	27m
Source length	15m
Peak-peak	132 bar-m
P/b ratio	17.7 : 1.0

2.2.4 Gravity and magnetomer

Gavity and Magnetic data, was recorded by Fugro-LCT.

2.3 GEODETIC PARAMETERS

2.3.1 Survey datum.

Datum	AGD 84
Ellipsoid	Australian National Spheroid
Semi Major Axis (a)	6378160
Inverse Flattening (1/f)	298.25
Projection System	Universal Transverse Mercator (UTM)
Projection Zone	54 South
Central Meridian	141º East
Scale Factor at CM	0.9996
Latitude at Origin	0º (Equator)
False Easting	500,000
False Northing	10,000,000
Grid Units	Meters

2.3.2 World Geodetic System 84 (WGS-84)

Ellipsoid	:	WGS84
Semi Major Axis (a)	:	6378137.0m
Inverse Flattening (1/f)	:	298.257224

2.3.3 Datum shift WGS-84 to Local datum

X-shift	-116
Y-shift	-50.47
Z-shift	141.69
X-axis rotation	0.23
Y-axis rotation	0.39
Z-axis rotation	0.344
Scale correction	0.0983

2.4 LINE NAME CONVENTION

The line naming convention for the Seismic Australia lines was as follows:
DS02-NNNR
Where DS02 is the Prefix, and NNN is the line number. R is the re-shoot code. R=A for the first re-shoot, R=B for the second re-shoot, etc. Shotpoint numbering to be continuous across re-shoots.

The line naming convention for the Woodside Origin lines was generally as follows:
OR01-NNR
Reshoot coding was the same method as the Seismic Australia lines.

Several lines were continuous between the Seismic Australia and the Woodside Origin sections. For these lines a combined line name was created. e.g.:
DS02-NNN and OR01-BB would be combined as ORBBDSNNN

2.5 COVERAGE

A run-out and overlap of 3675m was used to give full fold seismic coverage over the complete survey line.

2.6 POSITION SYSTEMS

Primary Vessel Positioning

System: STARFIX-Spot DGPS with Starfix reference stations.
Optus satellite delivering RTCM Type 1 and 3 differential corrections.
Recommended set-up "weighted mean".

Equipment: Trimble 4000 DS GPS Receiver
Trimble antenna
Starfix 6500 MK II demodulator
Allison Spot antenna (Corrections also received via Ashtech combined GPS/GLONASS antenna)
Pentium computer running MRDGPS software

Reference Stations Optus:

Station	ID	Lat	Long	Distance km
Melbourne	385	S 38 27 53.375	E 144 54 46.909	237
Bathurst	336	S 33 25 46.902	E 149 34 01.960	936
Pt Augusta	326	S 32 29 55.166	E 137 46 31.459	956
Brisbane	275	S 27 28 38.507	E 153 01 37.338	1671

Secondary Vessel Positioning

System: STARFIX-MN8 DGPS with Starfix reference stations.
POR Inmarsat satellite delivering RTCM Type 1 and 3 differential corrections.

Equipment: Trimble 4000 DS GPS Receiver
Trimble antenna
Saturn-B Inmarsat receiver
Pentium computer running MRDGPS software

Reference Stations Inmarsat:

Station	ID	Lat	Long	Distance km
Melbourne	385	S 38 27 53.375	E 144 54 46.909	237
Dunedin	26	S 45 52 10.214	E 170 30 39.315	2322
Townsville	195	S 19 15 52.647	E 146 48 44.108	2336
Auckland	22	S 36 47 33.480	E 174 45 50.207	2779

2.7 IN SEA POSITION SYSTEMS

Tailbuoy
A Tail-Buoy (TB) was deployed in the tail of the streamer for positioning.
The TB was fitted with Geo-Track - relative GPS, and radar reflector.

Relevant work book :WB.NAV.002 Tail Buoy Nav. Work Book

Relevant work instruction :WI.NAV.109 Work Instruction for STARFIX/GEOTRACK Operators

Source Positioning
N/A

Magnetic Compasses and birds
The compasses and birds were mounted at no more than 300m intervals on the streamer.
A total of 26 depth controllers/compasses were mounted on the active streamer.
The depth controllers / compasses were Digicourse model 5010 / 5011.
Extra compass birds were be mounted in the front and tail of the streamer for redundancy.

Magnetic Declination

The value at the centre of the survey, 40 00 S, 143 00 E is calculated at 11.26 deg.
This is the average value of the IGRF 2000 and WMM 2000 models.

2.8 NAVIGATION PROCESSING

This was performed onboard, using the latest version of QCPro software from ECL.

FINAL data format	UKOOA P190
Final data medium	Exabyte
Relevant Procedure	TP.304

2.9 SEISMIC RECORDING SYSTEMS

Recording type	I/O MSX
Record length	Seismic Australia 12 sec. Woodside Origin 8 sec.
Sampling rate	2 ms
Lo-cut filter	4 Hz, 18 dB/Oct.
Hi-cut filter	206 Hz, 264 dB/Oct.
Format	SEG-D, Demux
Tape media	3590

2.10 SEISMIC STREAMER

Streamer type	I/O MSX 24 bit digital
No. of streamers	1
Streamer length	7000 m
Nominal streamer depth	8m to 12m
Near offset (inline)	143m
No. of groups	560
Group interval	12.5 m
Group length	12.5 m
Number of depth controllers	26
Number of compasses	11 (part of depth controllers)

2.11 ENERGY SOURCE

Source type	G-guns
Air pressure	2000 psi
Volume	3660cuin.
No. of subarrays	4
Source depth	6 m ± 0.5 m
Source length	15 m (outer arrays) 11 m (inner arrays) 27m (outer spread)
Source layout	132 barm
Peak-peak (4.0/18-206.0/264 I/O MSX)	17.7
P/b ratio (4.0/18-206.0/264 I/O MSX)	See Appendix 4
Drop-out spec.	

2.12 ON-BOARD PROCESSING

Onboard processing with velocity analysis shall be done on every line for QC purposes. One operator was provided and the Disco/Focus processing system was used.

2.13 GRAVITY

Gravity and Magnetometer data, was recorded by Fugro-LCT.
Gravity data was recorded from port to port. Magnetometer data was recorded on the survey lines.

2.14 VESSEL PERMANENT NAVIGATION EQUIPMENT

Survey-Gyro (Primary)	C-Plath
Ships-Gyro (secondary)	SG Brown
Speed Log	Krupp Atlas Do-Log 22D Doppler speed log.
Echo Sounder	Krupp Atlas Deso 25 33kHz/210 kHz.
	Simrad EA-500, 12KHz and 27 KHz, max depth 6000m.

3 FIELD WORK SUMMARY

3.1 MOBILISATION

The vessel arrived in Burnie, Tasmania at 08:30 UTC on 28th October 2001 where the mobilisation began. A full Australian maritime crew arrived onboard to work alongside the existing Russian crew. Stores were loaded and preparations for the survey took place including a pre-project kick-off meeting. A full safety Audit was carried out for a future client during the mobilisation period.
The Geo Arctic departed Burnie at 07:00 UTC on 29th October and began the transit to the survey area in rough seas. At 19:00 it was decided to shelter from the bad weather in the lee of King Island. The mobilisation was suspended until the weather improved at 19:00 01st November.
The equipment deployment, configuration and testing then began. All equipment was operational and fully tested by 14:29 on 02nd November when the first production began.

3.2 ACCEPTANCE TEST

After the MSX recording system had passed its monthly and daily tests, and all systems had been simultaneously tested at sea, the vessel was declared ready for production.

3.3 CALIBRATION

Instruments test
A full set of I/O MSX instrument tests were performed on site 02nd November 2001 with the equipment ready to start production. After replacing sections with bad channels or crossfeed all parameters were found to be within specification. Results were displayed on paper printout and stored to tape cartridge.

Gyro calibration
The most recent check on the gyro calibration was carried out in Japan on 17/07/01, and December '00 in Capetown.
Previous C-O values:

Nov.-97	-0.72º
Mar.-98	-0.96º
Apr.-98	-0.83º
Jun.-00	-0.56º
Dec.-00	-0.82º
Jul.-01	-0.82°

DGPS Systems verification
On the 31st December 2000 Underwater Surveys Ltd. Pty. performed an independed survey of the position of the GPS navgation antennas and tailbuoy tracking system.
A report showing that all equipment was within specification was received on the 27th December.
A check on the system was performed in July 2001 in Japan by an independent surveyor and all systems were found to be positioned and operating correctly.

Draught measurement
An echosounder bar check was completed when the vessel left a Cape Town dry dock on the 19th December 2000.

Laser measurement
N/A

Gravity verification :
Fugro LCT Ltd. performed a gravity still reading in Bunie on the 28th November and 19th December. This will be tied in to a known value in the future.

Sound velocity :
Nominal 1500 m/s was used.

3.4 SURVEY SUMMARY AND PERFORMANCE

Survey summary
All times are UTC

Week 44, 29th Oct – 4th Nov :
The vessel departed Burnie Tasmania at 07:00 on the 29th Oct. Rough weather was soon encountered and shelter was sought in the lee of King Island East of the survey area. Weather standby lasted until 01st Nov when the vessel headed back to the Eastern side of the area and began the equipment deployment. Three streamer sections were changed during the deployment to get rid of any bad channels. The first line OR01-45 began in marginal conditions at 14:29 on 02nd Nov. Production continued on the Woodside Origin lines for the remainder of the week. A total of 324.525km was acquired in Week 44.

Week 45, 5th Nov – 11th Nov :
Due to the planned start of the fishing season on 14th Nov the lines running over the prime fishing grounds were prioritised. The two areas were known as 'Big Reef' and 'Western Banks'. On the 6th Nov a building swell made the conditions very marginal and swell noise began to affect the data. A small delay for weather was experienced on the 6th Nov when the shooting direction was changed to run across the swell to give quieter seismic data. On the 6th Nov during a line turn the streamer struck an unidentified submerged object causing damage to two sections. The streamer was recovered on 07th Nov to replace the two damaged sections, which were badly holed and scraped. Production recommenced on line DS02-212 at 01:28 on 08th Nov. Production continued until 14:30 on 09th Nov when the wind had increased sufficiently to stop production. The guns and streamer were both recovered. A small weather window was forecast so the streamer was deployed again on the morning of 10th Nov. Soon after deployment the streamer parted leaving 6.2km a drift. Rough weather prevented immediate attempts to recover the drifting streamer.
A total of 491.675km of data were acquired in week 45.

Week 46, 12th Nov - 18th Nov :
The tailbuoy was eventually hooked by grapple at 00:55 on 12th Nov and the streamer was recovered backwards onto the winches. Production recommenced at 10:36 on 13th Nov and continued until 17:21 on 15th Nov when the equipment was recovered to head for port. A part crew change and Russian Registry inspection was scheduled for the 16th Nov. The vessel arrived in Portland, Victoria at 04:50 and departed at 14:05. Production restarted on DS02-101 at 04:47 on 17th Nov in very marginal weather. At 16:30 the guns were recovered as all shooting directions had too much swell noise. At 21:08 on 18th Nov during weather standby another streamer break occurred leaving 6.1km adrift.
A total of 450.262km of data were acquired in week 46.

Week 47, 19th Nov - 25th Nov :
The tailbuoy was hooked at 01:00 on the 19th Nov and backwards recovery was completed by 05:00. During the streamer redeployment several sections and electronics modules were changed out as intermittent streamer power problems were present. Production recommenced at 15:21 on 21st Nov. Production continued on the shorter lines in the North-West of the area but a lot of crayfish pots caused problems with several snags on the streamer. The streamer was partially recovered on two occasions on 24th Nov to free the snagged fishing pots from the streamer. Three complete sets of crayfish pots and ropes were removed from the streamer. Production suffered due to the time spent freeing the fishing equipment.
A total of 338.662km of data were acquired during Week 47.

Week 48, 26th Nov – 02nd Dec :
After repairing the damage caused by the fishing equipment production recommenced at 22.08 on 25th Nov. Two more snags were observed on 26th Nov but production continued as only a small amount of excess noise was observed. Due to the problems encountered with unco-operative crayfish fishermen a scouting boat 'Perfect Lady' was hired. She arrived on location at 07:00 on 27th Nov and began communicating with the fishing boats and scouting ahead of the Arctic. On the 28th November all lines passing into the Blue Whale Feeding Ground permit area were completed. Work continued on the remaining lines near the 'Big Reef' while the scouting boat was present. The 'Perfect Lady' left the location at 07:00 on 29th Nov.
Production continued with only a small delay on 30th Nov for a helicopter crew change of some maritime crew. The weather increased to unworkable levels at 20:54 on 02nd Dec.
A total of 700.938km of data were acquired in Week 48.

Week 49, 03rd Dec – 09th Dec :
Weather delayed production until 21:12 on 03rd Dec. Another scouting boat 'Breakwater Bay' arrived at 19:00 on 05th Dec to co-ordinate the survey of line OR01-19A which passed over the heavily fished 'Big Reef'. 'Breakwater Bay' remained on location until 06:00 on 09th Dec scouting the few remaining lines in the shallow water. At 15:32 on 09th Dec the weather again halted production.
A total of 808.525km of data were acquired in Week 49.

Week 50, 10th Dec – 16th Dec :
Bad weather remained until 15:24 on 11th Dec when production recommenced on line DS02-107. A heavy swell from the SW made working on the NW-SE lines the only possibility. With time available running out, the remaining Woodside lines needed to be completed. The re-run of OR01-35, OR01-33, OR01-31 and OR01-27 were completed but were affected badly by swell noise. Line DS02-110 was completed before the final Woodside line was acquired, OR01-47. Lines DS02-233 and DS02-232 were shot in the remainder of the week.
A total of 774.063km of data were acquired in Week 50.

Week 51, 17th Dec – 18th Dec :
Lines DS02-231, 230 and 229 were completed before the equipment was recovered to head to Burnie for demobilisation. Five lines remaining outstanding on the survey:-
DS02-104, DS02-106, DS02-109, DS02-111 and DS02-112. Unfortunately time constraints did not allow these lines to be completed. The vessel arrived alongside in Burnie at 24:00 on 18th December.

3.5 DATA QUALITY

Surface navigation and position
Navigation data quality was of a high standard. During marginal weather the compass readings from the birds suffered from excess noise. The noisy data was filtered out during post processing. All navigation data was processed to final UKOOA P190 and P294 format using the latest version of ECL's QCPRO software onboard the vessel.

Seismic system
Generally the seismic data was of variable quality. A large number of lines were acquired in marginal sea conditions giving swell noise on the records. The swell noise was rarely seen in the top 3 seconds of the data record. The predominant swell was from the SW, causing lines run in the SW-NE directions to be more badly affected. Two lines were aborted due to increasing swell noise and two lines were rejected after QC processing due to swell noise. The final data set was of reasonable quality.

Analogue systems
The echosounder data was reliable throughout the survey. However during lines run across the swell in marginal weather frequent drop outs were observed. During post processing the data was filtered to provide a true reflection of the bathymetry.

3.6 POSITION PROCESSING

All navigation data was processed to final UKOOA P190 and P294 format using the latest version of ECL's QCPRO software onboard the vessel.

3.7 SEISMIC PROCESSING

Seismic processing will be done at Robertson Research Australia

3.8 WEATHER

The survey was significantly affected by poor weather conditions. The predominant winds and swells were from the South-West. Very changeable conditions were experienced with some single days experiencing a wide range of wind and sea conditions. Several periods of weather standby occurred during the survey period where production could not take place:
19:00 29th Oct – 19:00 01st Nov
04:17 06th Nov – 07:16 06th Nov
14:30 09th Nov – 04:30 14th Nov
16:30 17th Nov – 05:00 19th Nov
16:17 02nd Dec – 21:12 03rd Dec
15:32 09th Dec – 15:24 11th Dec

3.9 TIDES AND CURRENTS

No significant tides or currents were experienced. The streamer feathering angle was always within the specifications for the survey.

3.10 OBSTRUCTIONS AND SHALLOWS

No fixed obstructions were present in the survey area. A wave rider buoy was repositioned on the 26th November onto the western end of line OR01-08 in position 39°13.352S 142°53.660E. Fortunately the line had previously been completed. Some line turns were extended to avoid the buoy.
The area known as the 'Big Reef' was in fairly shallow water, 25m. It was a popular location for the Cray fishermen and survey work had to be carefully co-ordinated in that area.

3.11 SEISMIC ACTIVITY

The Geco Resolution was working north of the survey area. A daily communication was established via email to exchange information and avoids seismic interference causing a timeshare situation. No data was adversely affected by seismic interference.

3.12 FISHING AND SHIPPING ACTIVITIES

Until the 14th November very little fishing activity had been seen. The cray fish season opened on the 14th Nov and many small vessels came out to the northern parts of the survey area. A meeting was set up with the fisheries liason officers in Portland during the portcall and a daily communication was established to try and minimise any problems. The majority of the boats were centred on the 'Big Reef' which had been completed except for one remaining line, OR01-19A. The Cray fishermen have lines of pots on the seabed with a very small marker buoy on the surface. With any chop on the sea the buoys could not be spotted until it was too late to take avoiding action. Several snags of fishing equipment occurred around lines DS02-209 and DS02-210. The two fishing boats who owned the pots openly admitted they were not prepared to co-operate and took no notice of the shooting plan which had been passed to them. Three complete sets of cray pots were recovered during streamer repairs and several other snags occurred onto the streamer.
A total of 35 hours of production was lost removing or repairing damage caused by fishing equipment.
Several trawlers were also present in the area and on the whole were co-operative and altered course when asked. On the 21st November a trawler was on a course to run over the streamer and could not be contacted by any means. Speed was increased to try and pull the tailbuoy ahead of the trawler. A very near miss occurred with the trawler missing the tailbuoy by only a few metres. It was logged in the safety reporting system and the shore authorities were also informed as it was considered a danger to other shipping.

3.13 ENVIRONMENTAL ISSUES AND DIVING ACTIVITY

The north-western area of the survey was under strict permit conditions from Environment Australia with regards to the Blue Whale Feeding Grounds. The guns were not permitted to be fired in that area after 30th November. All lines passing into the Blue Whale Feeding Grounds were completed before the deadline expired.
A full cetacean watch and log keeping was maintained by the bridge crews.

3.14 THIRD PARTY INTERFERENCE

No third party interference took place through the survey duration.

3.15 DEMOBILISATION

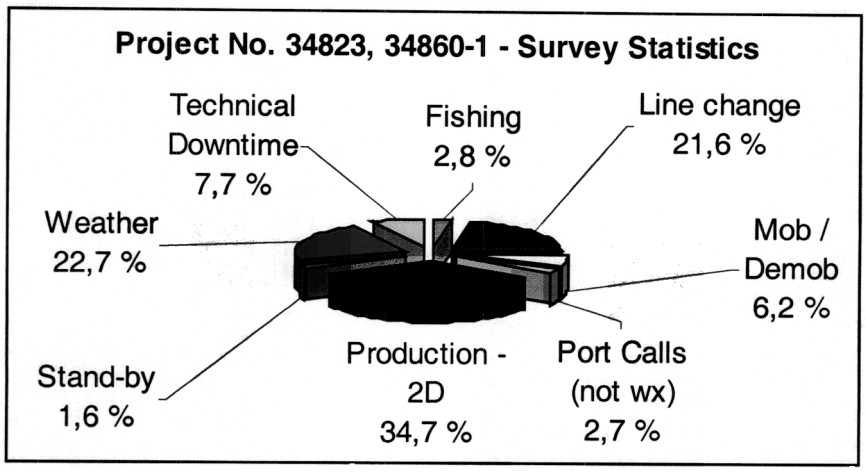
Demobilisation commenced at 01:28 on the 18th December when the streamer was recovered to head for port. The vessel arrived alongside in Burnie, Tasmania at 24:00 on 18th December to begin mobilising for another client.

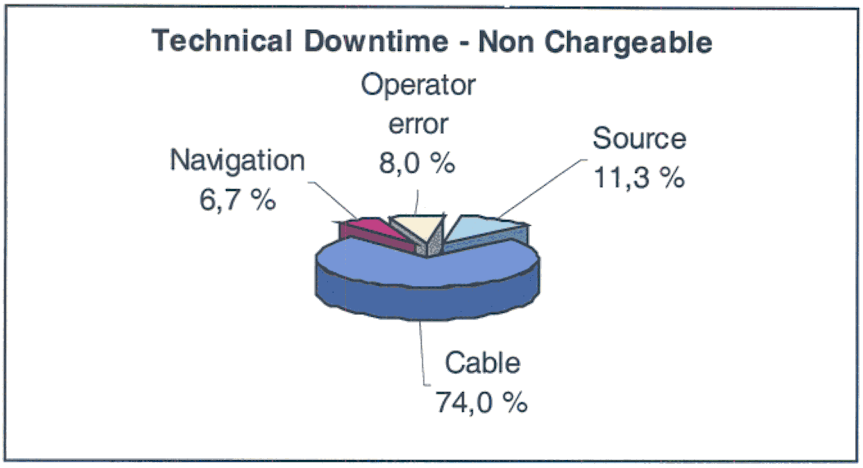
3.16 SURVEY STATISTICS

Chargeable :-	Accumulated Hours	
Fishing	35.00	2.82%
Line change	268.30	21.65%
Mob / Demob	76.52	6.17%
Port Calls (not wx)	32.90	2.65%
Production - 2D	430.31	34.72%
Stand-by	19.48	1.57%
Weather	281.23	22.69%
Total =	**1143.74**	**92.28%**

Non Chargeable :-	Accumulated Hours	
Cable	70.85	5.72%
Navigation	6.40	0.52%
Operator error	7.65	0.62%
Source	10.85	0.88%
Total =	**95.75**	**7.72%**

Total time on this Project = **1239.5** hours or **51.65** days


Project No. 34823, 34860-1 - Survey Statistics
Technical Downtime 7,7 %
Fishing 2,8 %
Line change 21,6 %
Weather 22,7 %
Mob / Demob 6,2 %
Stand-by 1,6 %
Production - 2D 34,7 %
Port Calls (not wx) 2,7 %


Technical Downtime - Non Chargeable
Operator error 8,0 %
Navigation 6,7 %
Source 11,3 %
Cable 74,0 %

4 HEALTH, SAFETY AND ENVIRONMENTAL

The contractual commitments and instructions regarding HSE for this project is found in Contract 1100000159 Section IV Appendix I, Health, Safety and Environmental standards. The following documentation is referred to and forms a part of the requirements / specifications :

- E&P Forum 1993, Health Management Guidelines for Remote Land-Based Geophysical Operations. Report No. 6.30/190
- E&P Forum 1994, Health, Safety and Environmental Schedules for Marine Geophysical Operations. Report No. 6.34/206
- E&P Forum 1995, Health, Safety and Environmental Schedules for Land Geophysical Operations. Report No. 6.35/207
- E&P Forum 1994, Health, Safety and Environmental Schedules for Marine Geophysical Operations. Report No. 6.34/206 and Shell Health, Safety and Environmental Committee documents :
- SHSEC, 1991, Management Guidelines for hearling conservation
- SHSEC, 1992, Guide for Safety Performance Reporting
- SHSEC, 1993, Guide for Health Performance Monitoring
- SHSEC, 1993, Incident Investigation and Analysis Guide
- SHSEC, 1994, Medical Emergency Guidelines for Management
- IAGC, 1991b, Marine geophysical Operations Safety Manual.

4.1 SAFETY OVERVIEW

Safety meetings.
Safety meetings took place on
09/10/01
23/10/01
14/12/01

Safety audit
A Safety Audit for another client took place during mobilisation in Burnie on 28th October 2001. All points raised were added to the minutes of the safety meetings and dealt with when possible. The Fugro-Geoteam AS crew onboard maintain a Safety Action Point Register where all safety related issues are noted and a completion target date set.

4.2 ACCIDENTS AND NEAR MISS

Accidents
10th November 2001 - Geo Arctic-27-2001
Streamer parted due to failure of a single kevlar rope. 6.2km of cable was adrift. Increasing weather conditions delayed recovery of the drifting streamer for a further two days.

18th November 2001 - Geo Arctic-28-2001
Streamer parted due to failure of a bulkhead connecting clip. 6km of cable was adrift.

05th December 2001 - Geo Arctic-30-2001
A crewmember was loosening a stiff bolt in a restricted space. The spanner slipped off the nut causing the crewmember's elbow to bang against a nearby pipe.

08th December 2001 - Geo Arctic-31-2001
The workboat was being used to pass some snagged fishing equipment back to the scouting boat. The workboat ran under the stabilising booms of the scouting boat causing damage to the workboat mast.

Near miss
21st November 2001 – Geo Arctic-29-2001
A fishing vessel under transit was picked up by the radar at a distance of 8 miles. The vessel was on a course to pass over the back of the streamer. All attempts were made to raise the trawler, including lights, horn and radios without success. The Arctic increased speed to a dangerous level to try and pull the tailbuoy in front of the fishing vessel. The trawler missed the tailbuoy by only a few metres. Shore authorities were contacted to follow up the incident as the apparently unmanned trawler was considered a danger to other shipping.

4.3 ENVIRONMENTAL

No environmental incidents occurred during the survey period.
A full cetacean watch was performed and the results sent to Environment Australia on completion of the project.

5 PERSONNEL

5.1 GENERAL

As a requirement for working in Australian waters, a full Australian maritime crew was required. The Australian crew worked alongside the existing Russian crew doubling up on many positions. A crew change for four of the Fugro-Geoteam AS personnel and one Russian observer, took place in Portland on the 16th November when the vessel was alongside for a Russian Registry inspection.
Seven of the Australian Maritime crew were crew changed by helicopter on 01st December.
A full crew change took place on completion of the survey.

5.2 CREW LIST

28th October to 16th November 2001

	Name		Rank
1	Pidzhakov	Konstantin	Master
2	Dixon	Richard A.	Master
3	Isaev	Nikolay A.	Chief Mate
4	Birch	Peter J.	Chief Mate
5	Ashmore	Bob	Second Mate
6	Tsygankov	Nikolay A.	Second Mate
7	Namanyuk	Sergey M.	3rd Officer
8	Iljashevich	Fedor M.	Radio Officer
9	Warne	Jason	Boatswain
10	Matsepula	Vladimir	Boatswain
11	Gilder	Peter S	A.B.
12	Grishenkov	Vladimir N.	A.B.
13	Smith	Desmond R	A.B.
14	England	Darren J	A.B.
15	Zelinskiy	Vladimir	A.B.
16	Ward	Alan	Chief Engineer
17	Pankratov	Robert I.	Chief Engineer
18	Ciechanowicz	Gregory J	2nd Engineer
19	Karakosov	Evgeny	2nd Engineer
20	Cashman	Dennis R	3rd Engineer
21	Vasyutin	Oleg M.	3rd Engineer
22	Karachev	Sergey	Motorman
23	Kurochkin	Alexsey	Motorman
24	Shamarin	Victor A.	1st Elec. Eng.
25	Malyshev	Vasiliy P.	2nd Elec. Eng.
26	Griffith	Peter	1st Cook
27	Myers	Shane L	2nd Cook
28	Romaniv	Galina Y.	Stewardess
29	Ushmaeva	Antonina	Stewardess
30	Paice	Andrew J	Steward
31	Medvedev	Viktor S.	Chief Observer
32	Polev	Nikolay F.	Chief Observer
33	Zhuravlev	Viktor N.	Observer
34	Zhuravlev	Vladimir Y.	Observer
35	Svetlichniy	Alexey P.	Chief Navigator
36	Tjutikov	Nikolay	Navigator
37	Nikulin	Ilija B.	Chief Gun Mech.
38	Teterkin	Alexandr N.	Chief Gun Mech.
39	Mogilevskiy	Genadiy	Gun Mech.
40	Egorov	Vasily V.	Gun Mech.
41	Polozov	Nikolay I	Chief Compressor Man
42	Gusev	Anatoliy V.	Compressor Man

43 Farrant	David	Party Chief
44 Jones	Tony	Instrument Supervisor
45 Taylor	Kevin	Navigation Supervisor
46 Beckett	Paul	Mechanical Supervisor
47 Sopivnik	Vladimir	Seismic Processor
48 Alaaraji	Wathik	Seismic Processor
49 Salter	Shawn	Gravity Eng.
50 Wafer	Kevin	Chief Steward
Total number of persons on board		50

16th November to 1st December 2001

	Name		Rank
1	Pidzhakov	Konstantin	Master
2	Dixon	Richard A.	Master
3	Birch	Peter J.	Chief Mate
4	Isaev	Nikolay A.	Chief Mate
5	Ashmore	Bob	Second Mate
6	Tsygankov	Nikolay A.	Second Mate
7	Namanyuk	Sergey M.	3rd Officer
8	Iljashevich	Fedor M.	Radio Officer
9	Warne	Jason	Boatswain
10	Matsepula	Vladimir	Boatswain
11	Gilder	Peter S	A.B.
12	Grishenkov	Vladimir N.	A.B.
13	Smith	Desmond R	A.B.
14	England	Darren J	A.B.
15	Zelinskiy	Vladimir	A.B.
16	Ward	Alan	Chief Engineer
17	Pankratov	Robert I.	Chief Engineer
18	Ciechanowicz	Gregory J	2nd Engineer
19	Karakosov	Evgeny	2nd Engineer
20	Vasyutin	Oleg M.	3rd Engineer
21	Cashman	Dennis R	3rd Engineer
22	Karachev	Sergey	Motorman
23	Kurochkin	Alexsey	Motorman
24	Shamarin	Victor A.	1st Elec. Eng.
25	Malyshev	Vasiliy P.	2nd Elec. Eng.
26	Griffith	Peter	1st Cook
27	Myers	Shane L	2nd Cook
28	Romaniv	Galina Y.	Stewardess
29	Ushmaeva	Antonina	Stewardess
30	Paice	Andrew J	Steward
31	Polev	Nikolay F.	Chief Observer
32	Medvedev	Viktor S.	Chief Observer
33	Zhuravlev	Vladimir Y.	Observer
34	Lavrushkin	Vladimir	Observer
35	Svetlichniy	Alexey P.	Chief Navigator
36	Tjutikov	Nikolay	Navigator
37	Nikulin	Ilija B.	Chief Gun Mech.
38	Teterkin	Alexandr N.	Chief Gun Mech.
39	Egorov	Vasily V.	Gun Mech.
40	Mogilevskiy	Genadiy	Gun Mech.
41	Polozov	Nikolay I	Chief Compressor Man
42	Gusev	Anatoliy V.	Compressor Man

43	Farrant	David	Party Chief
44	Shaislamov	Firdavis	Instrument Supervisor
45	Adriaenssens	Paul	Navigation Supervisor
46	Ytterland	Kare	Mechanical Supervisor
47	Zakharenko	Valery	Seismic Processor
48	Salter	Shawn	Gravity Eng.
49	Wafer	Kevin	Chief Steward

Total number of persons on board 49

1st December to 19th December 2001

	Name		Rank
1	Pidzhakov	Konstantin	Master
2	Birch	Peter J.	Master
3	Isaev	Nikolay A.	Chief Mate
4	Bisset	Gary	Chief Mate
5	Ashmore	Bob	Second Mate
6	Tsygankov	Nikolay A.	Second Mate
7	Namanyuk	Sergey M.	3rd Officer
8	Iljashevich	Fedor M.	Radio Officer
9	Smith	Desmond R	Boatswain
10	Matsepula	Vladimir	Boatswain
11	Conrick	Shane	A.B.
12	Wardle	Brad	A.B.
13	Zelinskiy	Vladimir	A.B.
14	Smith	Wayne	A.B.
15	Grishenkov	Vladimir N.	A.B.
16	Pankratov	Robert I.	Chief Engineer
17	Ward	Alan	Chief Engineer
18	Karakosov	Evgeny	2nd Engineer
19	McKay	Peter	2nd Engineer
20	Vasyutin	Oleg M.	3rd Engineer
21	Adams	Travis	3rd Engineer
22	Kurochkin	Alexsey	Motorman
23	Karachev	Sergey	Motorman
24	Shamarin	Victor A.	1st Elec. Eng.
25	Malyshev	Vasiliy P.	2nd Elec. Eng.
26	Griffith	Peter	1st Cook
27	Myers	Shane L	2nd Cook
28	Ushmaeva	Antonina	Stewardess
29	Wylob	Mark	Steward
30	Romaniv	Galina Y.	Stewardess
31	Polev	Nikolay F.	Chief Observer
32	Medvedev	Viktor S.	Chief Observer
33	Lavrushkin	Vladimir	Observer
34	Zhuravlev	Vladimir Y.	Observer
35	Svetlichniy	Alexey P.	Chief Navigator
36	Tjutikov	Nikolay	Navigator
37	Teterkin	Alexandr N.	Chief Gun Mech.
38	Nikulin	Ilija B.	Chief Gun Mech.
39	Mogilevskiy	Genadiy	Gun Mech.
40	Egorov	Vasily V.	Gun Mech.
41	Polozov	Nikolay I	Chief Compressor Man
42	Gusev	Anatoliy V.	Compressor Man
43	Farrant	David	Party Chief
44	Shaislamov	Firdavis	Instrument Supervisor
45	Adriaenssens	Paul	Navigation Supervisor
46	Ytterland	Kare	Mechanical Supervisor
47	Zakharenko	Valery	Seismic Processor
48	Salter	Shawn	Gravity Eng.
49	Wafer	Kevin	Chief Steward

Total number of persons on board 49

6 DEPARTMENT REPORTS

6.1 POSITION REPORT

6.1.1 Introduction

Vessel mobilisation took place in Burnie from the 28th October 2001 – 29th October 2001. Differential corrections in the survey area were available through P.O.R satellite, which was tuned to through the inmarsat system, and Optus satellite which was tuned to through the Spotbeam system.
This was a dual client Survey for Seismic Australia and Woodside Origin. The survey was generally a continuation of a 2D Non Exclusive Seismic Survey which was started earlier in year by the "Geo Arctic" for Seismic Australia. During this Phase however some lines and part lines were shot exclusively for Woodside Origin.

Scope of Work	2D Seismic Survey
Client	Seismic Australia/Woodside
Project Number	34860_1
Project Name	Otway/Sorell Basin Phase 2
Location	Deep water Ottway/Sorell basin Bass strait Australia

6.1.2 Navigation Systems

Navigation System	StarfixSeis suite 3.1 (Fugro Survey Pty Ltd)
Primary Navigation	Fugro Starfix Spot Differential GPS.
Demodulator	Starfix M2 Demodulator
GPS Receiver	Trimble 4000DS 9 channel, nav version 7.29
Secondary Navigation	Fugro Starfix MN8 Differential GPS
Demodulator	Starfix M2 Demodulator
GPS Receiver	Trimble 510 Survey receiver 9 channel, nav version 7.29
Tailbuoy Positioning	Fugro Geotrack Tailbuoy Tracking System
Source Positioning	
Acoustics	
Binning	
Navigation processing	QCPro
Seismic Recording	Input/Output, 24 bit system
Bird Controller	Digicourse 5010/5011
Gun Controller	Hydrapulse 200X
Echosounder	Simrad EA 500 12 & 27 kHz
Speed log	
CTD Probe	
Gyro (main)	C.Plath, Navigat 2. DHI. Interfaced via Lekmkuhl Digital Gyro repeater with RS232 output to StarfixSeis
Gyro (secondary)	SG Brown 1000B

6.1.3 Survey Information

Survey Datum and Datum shift parameters

GPS Datum	:	WGS 84
Ellipsoid	:	WGS 84
Semi-major Axis	:	6378137
Inverse flattening	:	298.257

Survey Datum	AGD 84
Ellipsoid	Australian National Spheroid
Semi-major Axis	6378160
Inverse flattening:	298.25

Shift Parameters	
X-shift	116
Y-shift	50.47
Z-shift	-141.69
X-rotation *	-0.23
Y-rotation *	-0.39
Z-rotation *	-0.344
Scale correction	0.0983

(*Bursa Wolf sign convention)

Projection parameters

Projection	Universal Transverse Mercator (UTM)
UTM Zone	54 South
Central meridian	141°
Latitude of origin	0° (Equator)
False Easting	500000
False Northing	10000000
Scale Factor	0.9996

6.1.4 Survey Parameters

Definition

Acquisition mode	Single vessel
Configuration	Single streamer single source
Shot interval	37.5m / 25m Lines shot exclusively for Seismic Australia shot with 37.5m shot point spacing. Lines shot for Woodside shot with 25m shotpoint spacing. On dogleg lines shared by both clients Woodsides 25m spacing to be used.

Source

Source type	G-guns
Air pressure	2000psi
No. of sub-arrays	4
Source depth	6m
Source width	27m
Source length	27m
Source layout	

Streamers

Streamer type	I/O MSX 24 bit digital
No. of streamers	1
Streamer active length	7000m
Streamer separation	
Streamer depth	8-10m
Near offset (inline)	150m
No. of groups	560
Group interval / length	12.5m/17.55m
No. of depth controllers	26
Number of compasses	14
Magnetic variation	11.26°

6.1.5 Survey Area

Phase 2 of Otway/Sorell Basin Survey in the Bass Strait Australia. Survey shot for two clients. Seismic Australia and Woodside Origin. Lines starting with a prefix of DS02 were shot exclusively for Seismic Australia. Lines starting with a prefix of OR1 were shot exclusively for Woodside Origin. Lines that combined the two prefixes were dogleg lines where part of the line was shot for Seismic Australia and part for Woodside Origin. These joint lines were shot with the Woodside Origin specs.

6.1.6 Naming convention

The line naming convention followed was

DS02-NNNR

Where DS02 is the Prefix for Exclusive Seismic Australia lines, and
NNN is the line number. R is the reshoot code. R=A for the first reshoot, R=B for the second reshoot, etc. Shotpoint numbering was continuous across reshoots.

OR01-NNNR

Where OR01 is the prefix for exclusive Woodside Origin lines, and
NNN is the line number. R is the reshoot code. R=A for the first reshoot, R=B for the second reshoot, etc. Shotpoint numbering was continuous across reshoots.

ORNNDSNNNR

Combination lines
Where ORNN is the Woodside Origin Prefix and line number, DSNNN is the Seismic Australia Prefix and line number and R is the reshoot code

Preplots

Line Name	Latitude	Longitude	Eastings	Northings
DS02-100	384554.6S	1420055.0E	588207	5708777
	391027.5S	1424459.9E	651166	5662406
DS02-101	384817.1S	1415840.6E	584916	5704421
	391155.9S	1424111.3E	645630	5659785
DS02-102	384953.4S	1415653.9E	582311	5701479
	391103.9S	1423522.6E	637292	5661539
DS02-103	385136.0S	1415549.1E	580715	5698333
	391443.0S	1423922.5E	642925	5654683
DS02-104	391206.1S	1422955.2E	629405	5659755
	393340.1S	1430307.8E	676296	5618922
DS02-105	391407.6S	1422819.7E	627055	5656047
	391502.7S	1423004.0E	629527	5654307
	393301.4S	1425756.0E	668881	5620284
DS02-106	391533.5S	1422713.2E	625417	5653424
	393726.0S	1430002.2E	671711	5612059
DS02-107	391659.7S	1422604.6E	623732	5650793
	393915.9S	1425806.4E	668876	5608730
DS02-108	395712.1S	1430953.4E	684924	5575160
	393826.5S	1425318.6E	662050	5610401
DS02-109	392116.9S	1422242.2E	618762	5642941
	393742.9S	1424609.1E	651838	5611954
	394144.2S	1424904.9E	655879	5604432
	401058.3S	1431131.5E	686623	5549628
DS02-110	392255.9S	1422124.4E	616854	5639916
	393934.0S	1424349.4E	648441	5608595
	401254.4S	1431001.4E	684406	5546101
DS02-111	392458.3S	1421948.0E	614492	5636177
	394251.7S	1424142.6E	645304	5602557
	402311.3S	1431325.8E	688759	5526956
DS02-112	392602.5S	1421725.1E	611046	5634248
	402000.4S	1430146.0E	672394	5533240
DS02-200	384001.0S	1421239.0E	605339	5719471
	385503.2S	1415847.7E	584953	5691902
DS02-201	385648.2S	1420228.6E	590234	5688604
	384315.5S	1421500.0E	608666	5713430
DS02-202	385808.1S	1420517.2E	594265	5686095
	384500.0S	1421745.9E	612627	5710153
DS02-203	384701.7S	1422000.2E	615814	5706355
	385924.4S	1420752.5E	597973	5683698
DS02-204	390041.0S	1421024.1E	601590	5681289
	385000.0S	1422059.9E	617173	5700838
DS02-205	390248.4S	1421424.7E	607322	5677287
	385329.2S	1422319.6E	620444	5694338
DS02-206	390358.4S	1421639.7E	610538	5675081
	385725.5S	1422242.8E	619446	5687068
DS02-207	385851.1S	1422537.8E	623617	5684363
	390521.6S	1421914.9E	614229	5672464
DS02-208	390642.7S	1422145.3E	617806	5669910
	390008.0S	1422756.3E	626911	5681940

Line Name	Latitude	Longitude	Eastings Northings
DS02-209	391000.1S	1422556.5E	623742 5663732
	390241.8S	1423244.7E	633767 5677085
DS02-210	390419.6S	1423519.8E	637445 5674005
	391041.4S	1422929.4E	628830 5662378
DS02-211	392157.6S	1422327.9E	619836 5641669
	390526.7S	1423817.2E	641671 5671862
DS02-212	393304.3S	1421525.4E	608002 5621284
	390506.3S	1424208.3E	647233 5672387
DS02-213	390545.7S	1424458.4E	651298 5671094
	393449.3S	1421709.4E	610438 5618013
DS02-214	393637.5S	1421830.3E	612319 5614648
	391903.8S	1423531.7E	637252 5646740
DS02-215	393948.0S	1422131.7E	616556 5608711
	391900.1S	1424227.8E	647219 5646673
DS02-216	394119.8S	1422252.6E	618442 5605851
	391828.0S	1424607.4E	652497 5647563
DS02-217	394321.7S	1422444.0E	621035 5602051
	392447.8S	1424357.3E	649155 5635912
DS02-218	394537.5S	1422638.3E	623689 5597820
	392602.6S	1424543.9E	651661 5633558
DS02-219	392558.7S	1425001.2E	657815 5633555
	394749.8S	1422836.5E	626435 5593698
DS02-220	394939.4S	1423017.4E	628778 5590277
	392941.1S	1425003.8E	657736 5626695
DS02-221	395108.7S	1423138.6E	630660 5587491
	392959.0S	1425456.3E	664711 5625998
DS02-222	395328.5S	1423451.5E	635170 5583103
	393105.8S	1425957.9E	671871 5623783
DS02-223	395544.8S	1423520.3E	635778 5578886
	393606.8S	1425854.2E	670144 5614537
DS02-224	395729.8S	1423651.5E	637883 5575609
	393934.7S	1425847.6E	669846 5608130
DS02-225	395937.5S	1423832.5E	640207 5571630
	394303.1S	1425851.2E	669790 5601701
DS02-226	400103.1S	1424004.0E	642330 5568949
	394528.6S	1425919.1E	670355 5597202
DS02-227	400242.8S	1424141.1E	644572 5565832
	394555.5S	1430234.8E	674994 5596268
DS02-228	400433.4S	1424310.3E	646620 5562383
	394757.8S	1430402.2E	676985 5592450
DS02-229	400934.4S	1424800.8E	653313 5552965
	395555.3S	1430424.0E	677163 5577715
DS02-230	401137.8S	1424946.0E	655722 5549108
	395609.1S	1430901.5E	683740 5577131
DS02-231	401341.8S	1425124.3E	657968 5545237
	395912.7S	1430954.7E	684864 5571442
DS02-232	401533.3S	1425313.6E	660478 5541745
	400408.5S	1430828.4E	682598 5562370
DS02-233	401813.8S	1425522.0E	663404 5536731
	400619.3S	1431120.9E	686584 5558236

Line Name	Latitude	Longitude	Eastings Northings
OR01-01	392343.0S	1424500.1E	650695 5637882
	391756.1S	1425035.4E	658934 5648417
OR01-02	390624.3S	1430100.8E	674392 5669424
	391814.0S	1432148.8E	703799 5646821
OR01-03	392459.6S	1424501.4E	650681 5635521
	391358.8S	1425508.5E	665633 5655598
OR01-04	390953.2S	1430022.6E	673332 5663007
	392406.6S	1432004.6E	701022 5636015
OR01-05	392457.1S	1424645.5E	653172 5635547
	391811.8S	1425305.8E	662527 5647859
OR01-06	391325.1S	1425943.4E	672246 5656493
	392837.5S	1431842.2E	698837 5627713
OR01-07	392457.5S	1424838.5E	655876 5635482
	391824.6S	1425455.0E	665136 5647410
OR01-08	391409.8S	1425421.3E	664493 5655281
	393122.3S	1431558.6E	694798 5622730
OR01-09	392558.7S	1425001.2E	657815 5633555
	390144.8S	1431249.3E	691620 5677647
OR01-10	391808.6S	1425155.6E	660848 5647993
	394014.7S	1432314.7E	704776 5606046
OR01-11	392751.3S	1425000.7E	657731 5630083
	390215.7S	1431419.6E	693767 5676640
OR01-12	391200.3S	1423637.5E	639058 5659770
	395454.4S	1433436.0E	720231 5578471
OR01-13	392941.1S	1425003.8E	657736 5626695
	390312.0S	1431535.4E	695548 5674860
OR01-14	393437.5S	1425957.6E	671717 5617256
	395926.3S	1433138.9E	715786 5570205
OR01-15	392958.3S	1425230.4E	661227 5626093
	391108.3S	1431043.6E	688179 5660346
OR01-16	394056.6S	1430004.1E	671612 5605563
	400656.8S	1433045.8E	714134 5556351
OR01-17	392959.0S	1425456.3E	664711 5625998
	390613.3S	1431816.1E	699268 5669172
OR01-18	395159.3S	1430744.5E	682094 5584879
	401906.8S	1432943.4E	712024 5533882
OR01-19A	392306.1S	1430500.0E	679427 5638411
	390950.7S	1431810.8E	698972 5662473
OR01-19B	392959.0S	1425914.8E	670888 5625866
	391928.8S	1431014.6E	687114 5644931
OR01-21	393151.0S	1430000.5E	671902 5622389
	391752.1S	1431416.8E	692988 5647770
OR01-23	393503.1S	1425959.1E	671735 5616465
	391403.0S	1432115.5E	703201 5654581
OR01-25	393831.2S	1425952.9E	671446 5610052
	391638.7S	1432213.7E	704473 5649742
OR01-27	394200.4S	1425957.4E	671410 5603602
	392021.7S	1432237.3E	704857 5642853
OR01-29	394427.3S	1430027.8E	672032 5599056
	392403.9S	1432308.7E	705427 5635981

Line Name	Latitude	Longitude	Eastings Northings
OR01-31	394455.3S	1430345.1E	676709 5598086
	392857.0S	1432217.3E	703960 5626978
OR01-33	394706.9S	1430502.5E	678457 5593984
	393059.8S	1432404.4E	706418 5623122
OR01-35	395202.0S	1430401.8E	676801 5584919
	393241.8S	1432702.4E	710582 5619863
OR01-37	395457.8S	1430531.7E	678811 5579448
	393644.9S	1432651.4E	710117 5612375
OR01-39	395520.7S	1430958.2E	685122 5578592
	393958.6S	1432751.2E	711379 5606365
OR01-41	394237.8S	1432955.1E	714194 5601374
	395912.6S	1430954.7E	684864 5571442
OR01-43	400311.6S	1430943.6E	684421 5564080
	394508.8S	1433324.9E	719058 5596576
OR01-45	394713.6S	1433615.7E	723012 5592612
	400619.3S	1431120.8E	686584 5558236
OR01-47	395844.7S	1433151.4E	716119 5571481
	401104.7S	1431520.8E	692042 5549295
OR01-W01	391826.5S	1423607.8E	638137 5647876
	390833.0S	1424540.2E	652201 5665916
OR01-W03	391932.5S	1423731.7E	640110 5645806
	391158.2S	1424506.0E	651258 5659608
OR01-W05	392028.4S	1423848.7E	641921 5644047
	391437.7S	1424444.0E	650636 5654700
ORV01-03	390750.6S	1430047.8E	674020 5666771
	390042.1S	1430732.1E	684038 5679762
ORV01-05	391026.0S	1430021.0E	673272 5661996
	390124.5S	1430852.8E	685947 5678409
ORV01-06	390330.0S	1430131.3E	675243 5674784
	391201.3S	1431715.8E	697550 5658481
ORV01-07	391310.4S	1425953.0E	672488 5656941
	390134.2S	1431057.9E	688949 5678038
ORV01-08	390506.7S	1430859.3E	685941 5671556
	391014.6S	1431844.8E	699767 5661716
ORV01-10	390030.5S	1430621.4E	682344 5680159
	390744.2S	1432039.9E	702650 5666281

Vessel
The vessel datum x=0,y=0,z=0, is defined as the ships main mast projected down to sea level. All vessel offsets such as primary and secondary gps antennas are offset from this point.

Source
Vessel operated in single source mode with the nominal offset from stern to centre of source being 49.85m.

Streamer
Single streamer with nominal head of streamer defined as 180.35m from stern, first trace 192.85m from stern.

Tailbuoy
One active tailbouy deployed on the end of the streamer.

Digicourse Birds
26 Digicourse birds mounted on the streamer 22 of which were compass birds.

Gun Arrays
Four subarrays 2 each side.

6.1.7 Calibration / Validations

Underwater Surveys (Pty) Lld, performed a Gyro calibration and position verification of the R/V Geo Arctic navigation equipment, in Cape town, South Africa, 18th and 31st December 2000. Full details of the results are contained in Underwater Surveys (Pty) Ltd, Report No. PSA202Gyro December 2000, which is summarised in **Table 1** and **Table 2** below :

Table1

Gyro Calibrations		
	Survey Gyro 1 C. Plath (°)	**Ship's Gyro 2 SG Brown (°)**
True azimuth	131.68°	131.68°
Gyro reading	132.50°	132.50°
C-O	**-0.82°**	**-0.82°**

Table2

GPS and RGPS Systems verification		
DGPS	**Latitude**	**Longitude**
Calculated position	33° 54' 57.212 S	18° 27' 15.837 E
Observed position	33° 54' 57.262 S	18° 27' 15.933 E
C-O	-0.05"	-0.096"
GeoTrack	**Northing**	**Easting**
Difference	-0.41 m	-1.70 m

Sound Velocity
Using Default value of 1500 m/s

6.1.8 Position equipment performance

MRDGPS

STARFIX-Spot

Starfix Spot was used as the vessels Primary position, d/t diff stations available on Spotbeam being closer than ref stns available on MN8. The correction stations used for Spotbeam were;

Station Name	Station ID	Distance
Melbourne	385	237km
Bathurst	336	936km
Port Augusta	326	956km
Brisbane	275	1671km

Starfix Spot performed well during most of the survey. We had to abort seq. 16 due to lack of common satellites visible onboard and on the Ref. stations.

STARFIX MN8

The coverage available on the P.O.R satellite was not particularly good for this area. Ref station Melbourne was the only station within normal range for a diff station. Reference stations used were;

Station Name	Station ID	Distance
Melbourne	385	237km
Dunedin	026	2322km
Aukland	022	2779km

The MN8 system was in close agreement with Spotbeam solution and proved to be useful secondary system. We had some short periods of lost position due to lost corrections via Inmarsat. As this is the secondary system, it caused no problems for the production.

Tailbuoy tracking

Performed very well throughout the survey. Although, we had a few gap in the data.
Seq. 064: 60 sec, seq. 072: 32 sec, seq. 078: 404 sec, seq: 080: 55 sec.

Starfix suit software

Once we had to abort the line (seq. 035) due to a software problem. Time.exe failed and caused erratic shot interval.

Echosounder

The Echosounder depths were logged online and written to the P294 file. The transducers used were Simrad EA500 12 kHz and 27 kHz. Water depths were draft corrected, nominal velocity of sound used was 1500 m/s. The transducer performed well throughout the survey, but in marginal weather conditions we saw increasing number faulty readings. The following lines have very poor ES data: seq.: 012. seq.: 026, seq.: 033 and seq.: 071.

Streamer compass
Due to the long swell in the survey area, data from the Streamer compasses were generally noisy during the whole survey.
From seq.24 compass 10 was disabled in Digicourse, for the rest of the survey.
Some small gaps in data caused by observers operation Digicourse when on line.

Acoustics N/A

C-Plath, S.G Brown 1000B
The survey gyro performed well throughout the survey.
The secondary gyro (brigde gyro) works ok, but the digital output to the navigation system failed during seq. 080. The problem could not be repaired at site. That means only one gyro was logged from seq. 080 to end of survey.

6.1.9 Downtime

Positioning systems:

Nav Software:	6.40 Hrs
Operator:	6.97 Hrs

6.2 INSTRUMENT REPORT

6.2.1 Seismic Equipment

6.2.1.1 Seismic recording equipment

Type : MSX 24 bit digital seismic data acquisition system.

Settings

Record length	8,0 / 12,0 sec.
Sample rate	2 ms
Filters:	
Low cut	4 Hz , 18 db / Octave
High cut	206Hz , 266 db / Octave
Seismic channels	560
Preamplifier gain	6 dB
Dynamic range	
Polarity	SEG convention, first arrival of energy (+ve pressure) at the hydrophone gives a negative voltage at the A/D converter, negative numbers on tape and down deflection on trace plotter.
Aux Channels	16 ch's recorded with nearfield hydrophones.
QC	MSX automated testing A pre-defined test set contains the configuration parameters for daily, semimonthly and monthly tests as well as shipboard and cable acceptance tests.

6.2.1.2 Recording medium

Model	IBM 3590 Magstar Microcode.
Tape format	16 Track , 8058 - IEEE
Capacity	10GB

6.2.1.3 Streamer general

Streamer Cable

Manufacturer	Input Output MSX
Section Cable length	99.5 m
Groups per section	8
Group spacing	12.5 m center to center
Data Telemetry	Dual fiber optic

Environmental

Operating temperature	- 20 to + 50°C
Maximum depth electronics	610 m
Maximum operating depth	100 m
Maximum depth, phones	150 m

Streamer electronics	
Instantaneous Dynamic Range	>114 dB
resolution (including sign)	24 bits
THD @ maximum input	< 0.0005%
Preamp gain	6 dB
Max. input signal, RMS	1.448 V 103 mBar
Input noise, RMS	2.9 µV
(input shorted)	0.21 µBar
Channel to channel	
Gain accuracy	4%
Low cut filter	**-3dB @ 2.5Hz**
(due to hydrophone)	6dB / Octave

6.2.1.4 Trace Specification

Array and type	Tapered array, center weighted, 17.55m overall length, 29% overlap of adjacent groups
Arrays per section	**8**
Voltage sensitivity	14 V/ Bar
Phones per group	14

6.2.1.5 Hydrophone specification

Manufacturer	Input / Output
Model	WM1 - 018B
Temperature opr. range	0 - 50°C
Sensitivity	-197.1 dB ±1.5dB re 1V/µPa (14.0 V/Bar) at 10Hz and 20psi

6.2.1.6 Depth controllers / Compasses

Manufacturer	Digicourse,
Model	5011, 19 each 5010, 9 each
Compasses	0.34 ° res.

6.2.1.7 Retrievers

Manufacturer	Concord

6.2.1.8 Tailbuoy

Type	Partner plaits
Equipment	Active GPS receiver and flash-lights.

6.2.2 Instrument room recording system specifications

6.2.2.1 General information

Rack mounted hardware that can be configured to accept data from 4 streamers, one configured at the moment.
Up to 960 channels can be recorded @ 1, 2 or 4 milliseconds,
All data recorded on 3590 or compatible cartridge tape drives,
Improved seismic quality control (QC) functions, faster plotting, AGC-gained plots, distortion, noise, spectral analysis,
Improved digital FIR anti alias filters and IIR low-cut filters,
Extensive use of colour graphics monitors for cable functions/status, as well as seismic displays on a shot by shot basis.

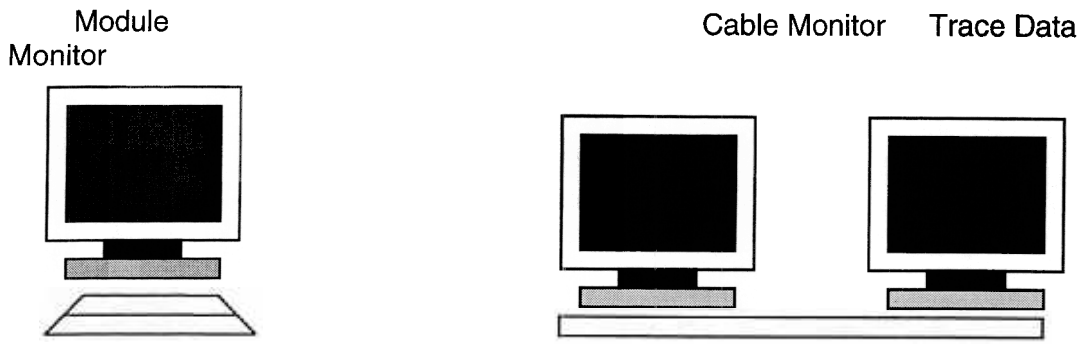
6.2.2.2 Cable Monitor

Seismic real-time display
Configurable selections of default, noise, signal, and user defined 128 millisecond windows.
RMS, tar, agc, and average peak selections
low-cut display selections
Microbars or millivolt display of 128 millisecond windows
Data snooping results (weak, dead, spiking traces) highlighted
Streamer module status in 2D or 3D.

6.2.2.3 Brief system description

The MSX is a marine 24-bit digital seismic data acquisition system that features a new small-diameter digital streamer. The system blends the use of 24-bit resolution data and extended cables of up to 12000m active length to provide exceptional data quality and recording features. This recording system supports seismic data recording on 3590 cartridge tape drives.
It is controlled from the Operator Console Module and other monitors, as described below

Operator Console



6.2.2.4 OCM

The operator Console Module (OCM) is a bench mounted 19-in colour graphic monitor and workstation. The OCM uses a Graphical User Interface (GUI) that has a Motif-based look and feel. The GUI provides a consistent, centralised presentation of system configuration options. System cycling events and real-time exceptions are displayed in a user-definable format to accommodate custom operator presentations.

6.2.2.5 Cable monitor

This screen is used for the cable performance display. It shows the status of the in sea electronics parts of the streamers. Operator can select what information he wants displayed.

6.2.2.6 Trace Data Monitor

This shows shot records. Various filter settings and display parameters can be selected in order to determine the quality of the seismic data. It is capable of showing four streamers at a time. Various parts of the cable can be shown in detail by using the zoom utility.

6.2.3 Processing

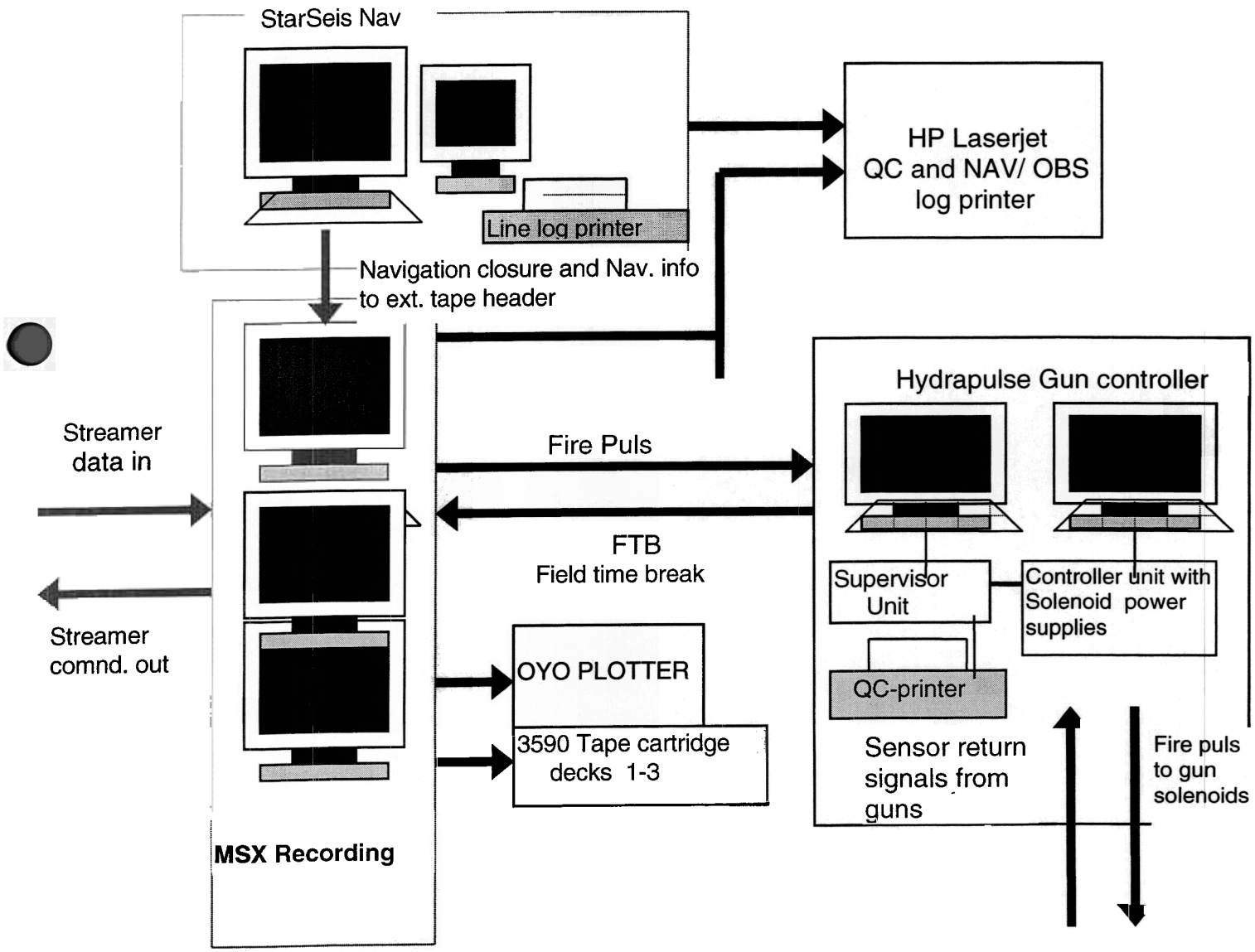
6.2.3.1 On line QC

Mainly consisted of shot plot records, shots plotted on screen and the various on screen status displays for the electronic modules. A trace monitor provided the means for zooming-in on various parts of a shot record. An oscilloscope displayed all channels in real time.

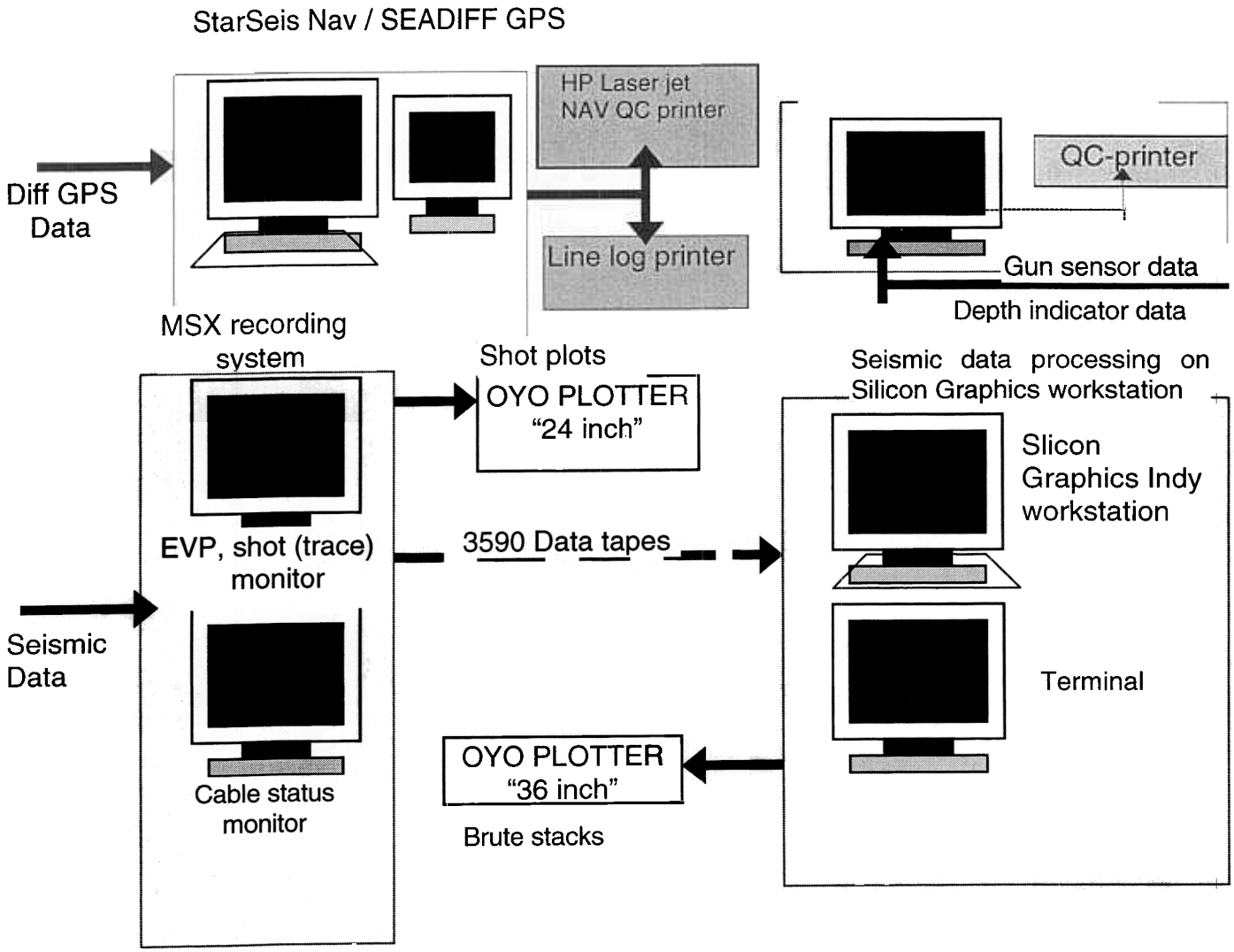
6.2.3.2 Off line QC

Daily tests and monthly tests performed to verify status of recording system.
Focus software running on a Silicon Graphics workstation was used to play back tapes and produce brute stacks of 288 traces. This way a check on that the tape's could be read reliably was done. The brute stacks were produced on an OYO plotter for data quality assessment.

6.2.4 Seismic data and control flow chart



6.2.5 QC data flow



6.2.6 Job and equipment parameters

6.2.6.1 Job description

Work area	Otway /Sorell Basin, Offshore Australia
Shot point interval	25,0 and 37,5 m

Streamer length	:	**7000 m**
Group Interval	:	12.5m
Group sensitivity	:	14 V/B
No. of groups	:	560
Streamer Depth	:	10,0 (+/- 1,0) m and 12,0 (+/- 1,0) m
Offset	:	143 m
Gun Vol	:	3660 in^3
Gun Depth	:	6.0 m
Navigation	:	Spotbeam DGPS (Prim) , Starfix DGPS (Secondary)

6.2.6.2 Initial preparations

Equipment tests, calibration and setup took place during mobilisation. These included:

MSX 24bit recording system	Acceptance test , parameter setup
Streamer	Polarity check, offset and balance.
Digibirds	Battery check, function test.
Gun	Depth transducers checked
Inventory	Inventory checked for necessary levels of stationary, cartridges and consumables

Equipment Set-up

MSX 24 bit recording system

Sample Rate	Record Length	Hi-cut Filter	Low-cut Filter	Pre-Amp gain
2ms	8.0 / 12.0 s	206 Hz	4 Hz	6 db

Notch	No. of Channels	Bad Channels
	560	See Logs

Number of primary 3590 drives	Files per output tape	Starting tape No.
3	900 / 650	1

MONTHLY TEST ACCEPTANCE

DATA REC. ON TAPE / PAPER	Sign. Instrument Supervisor

Hydrapulse Gun Controller

STARBOARD SQ# /SQL	PORT SQL / SQL
1	1

Offset guns- different from zero	Polarity of signature
0	OK

Timebreak - Time	Total number of guns	Guns not in use
90ms	3660 cuin / 33	See drawings

ON-LINE MONITORING

Shot plots	Depth	Compass	Feather	Processing
Every 40 SP	To Tape	To Tape	Every SP	N/A

OFF-LINE PROCESSING

Done on Silicon Graphics workstation. Brute stack and filtered stack produced every line.

ON-LINE MONITORING

Length / No. of Active sections	No. of Channels	Offset to source	Towing depth
7000m / 70	560	143 m	10.0 / 12.0 m
o/c on channels	Leakage on ch.	No. of birds	Birds with compasses
See Obs. logs	See logs	26	19

6.2.7 Production

6.2.7.1 Production

The vessel departed from Burnie to the new location on the 28th of October 2001 after demobilisation of the previous job.
Production started on the 2nd of May 2001.
We completed Otway / Sorrel Basin in Australia on the xx/xx/xxx. Instruments have been working well. Production has been limited by weather and prospect design.
In this project two time (11/10/2001 and 19/10/2001) loss the streamer and several times caughted the fishing gears.

6.2.7.2 Technical downtime explanation

Downtime tie to with breakaway and repairing streamer and with removing from cable fishing gears.

6.3 SOURCE REPORT

6.3.1 Introduction

Scope of work	2D Deepwater Seismic Survey
Client	Woodside / Seismic Australia
Project number	34860 / 34861
Location	South Western Bass Strait Australia

6.3.2 Source system

Main systems

Source type	G-Gun
Gun controller	Hydrapulse 200X Minipulse
Compressor	1 LMF 31/138-D and 4 EK 30 A

Source

Array volume	3660cu.in.
Air pressure	2000 psi.
Number of sub arrays	4
Configuration	Single Source
Sizes of guns	40, 70, 100, 150 and 250 cu.in.
Depth transducers	12 transducers, 3 each sub array
Source depth	6m
Source length	15m
Source, centre-centre	
Source, inner-outer	9m
Back deck to centre source	49.85m
Shot interval	25m / 37.5m
Source synchronisation	+/- 1 ms

6.3.3 Calibration and checks

Prior to start of job following calibrations and checks were carried out:
All guns solenoid and sensor were checked.
A Click test to verify that the gun positions corresponded to gun controller.
All depth sensors were calibrated.
Depth ropes were checked for correct length.
All near field Hydrophones were tap tested.

6.3.4 Source equipment performance

Source

Some problems with timing errors, mostly due to broken solenoid springs. Otherwise the G-guns performed well.
Two towing links broke in heavy seas. This was due to a change to the towing rope connection done during rebuilding of umbilicals.
One octopus was changed out.

Compressor
Compressor performance was good during all survey. No problems with either LMF or EK's.

Back deck performance
Back deck performance was good.

Hydraulic
One hydraulic hose was changed out aft gun deck. Otherwise all equipment functioned very well.

6.3.5 Downtime

Total downtime for this project was 11,53 hours or 0,88%. This includes 0,68 hours which was due to operator error (flooded guns).
1,42 hours were lost due to a bad octopus which had to be changed out.
1,02 hours caused by guns (solenoid springs).
8,41 hours of downtime was caused by the two broken towing links.

6.4 SEISMIC PROCESSING REPORT

6.4.1 Introduction

This report concerns a 2nd phase of a non-exclusive 2D Seismic Survey for Seismic Australia in the Deep-Water Otway / Sorell Basin area, project numbers 34860 & 34861. 3917 line km of 2D seismic data was acquired along 77 lines, in 87 sequences. The length of the lines varied between 17 to 127 km, with water depths varying from 95 to 2500 m. Data was acquired between 1st November and 18th December 2001.

6.4.2 Hardware

Processing was carried out using the following hardware:

Computer	2 x SGI O200; 4 CPU's
Terminals	1 x SGI O2, 1 x SGI Indy
Storage	176Gb GB disks space, 2 x IBM 3590 tape drives
PC	ICS ADVENT 2 x 750MHz Pentium III / 256 Mb RAM / 89GB HD / CD / WINDOWS NT

6.4.3 Software

Software	FOCUS (version 4.3) and DISCO (version 12.3) running on SGI IRIX64 v6.5

6.4.4 Testing

N/A

6.4.5 QC processing

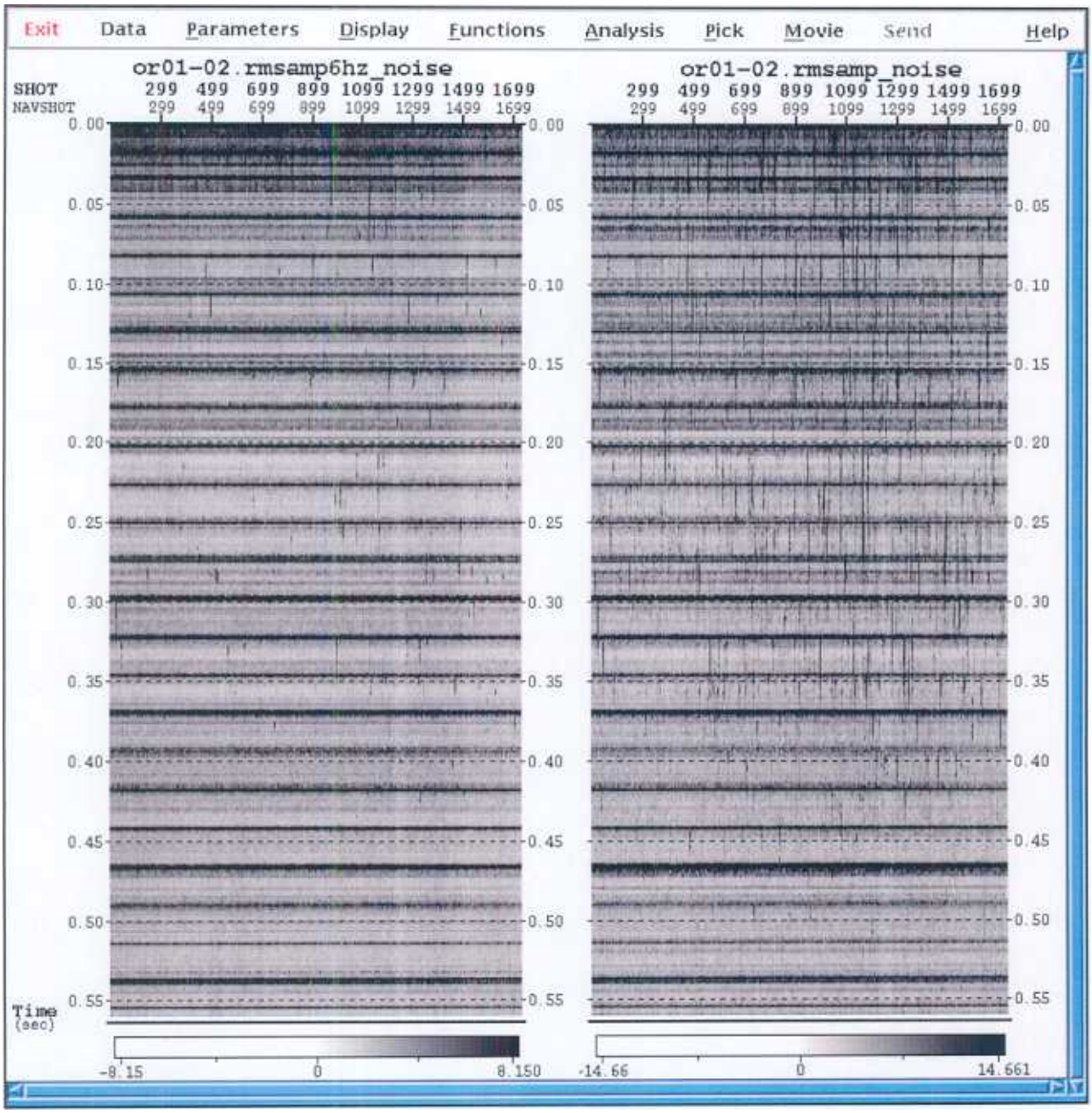
The QC processing sequence consisted of:

1. Reformatting from SEG-D to internal Disco format and resample from 2 to 4ms. CDP sorting.
2. Visual inspection of water break channels.
3. Visual inspection of all shot gathers.
4. Auxiliary channels analysis (visual inspection).
5. Mean amplitude noise plots and EXCEL graphs for averaged channels and shots.
6. Velocity picking at 2 km intervals along the line.
7. 2:1 trace summation.
8. 140 (94) fold stack.

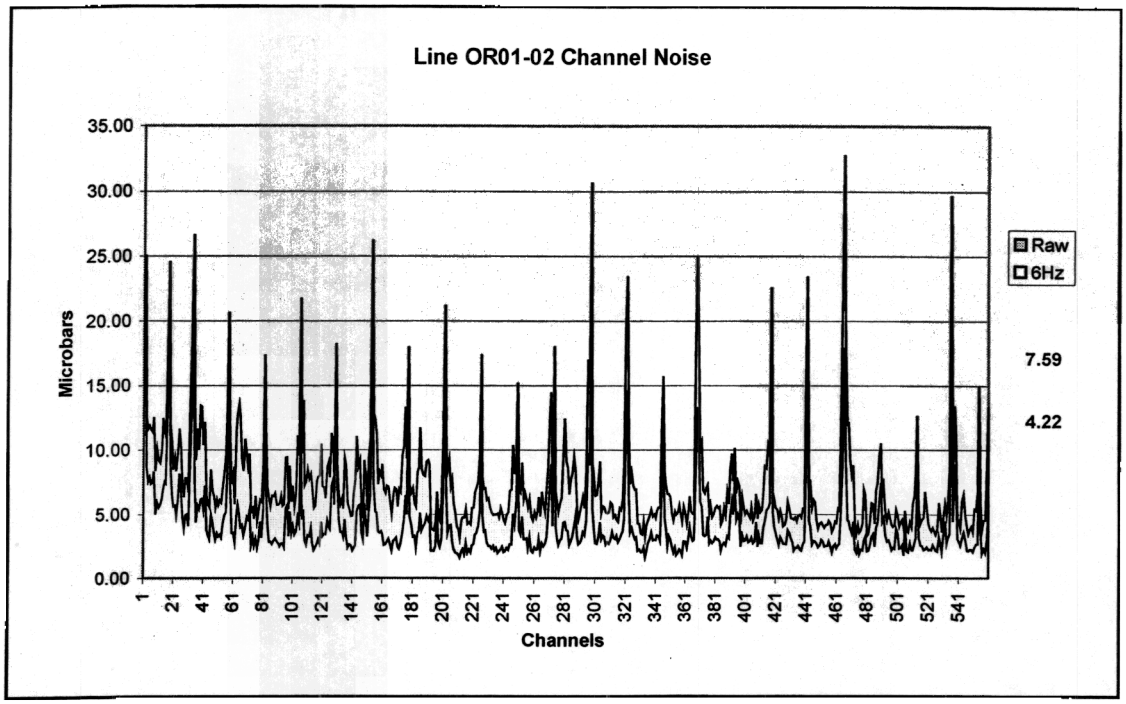
The main QC priority was to produce brute stacks for every line. This was used in identifying noise and acquisition related problems.

6.4.5.1 RMS Noise Analysis

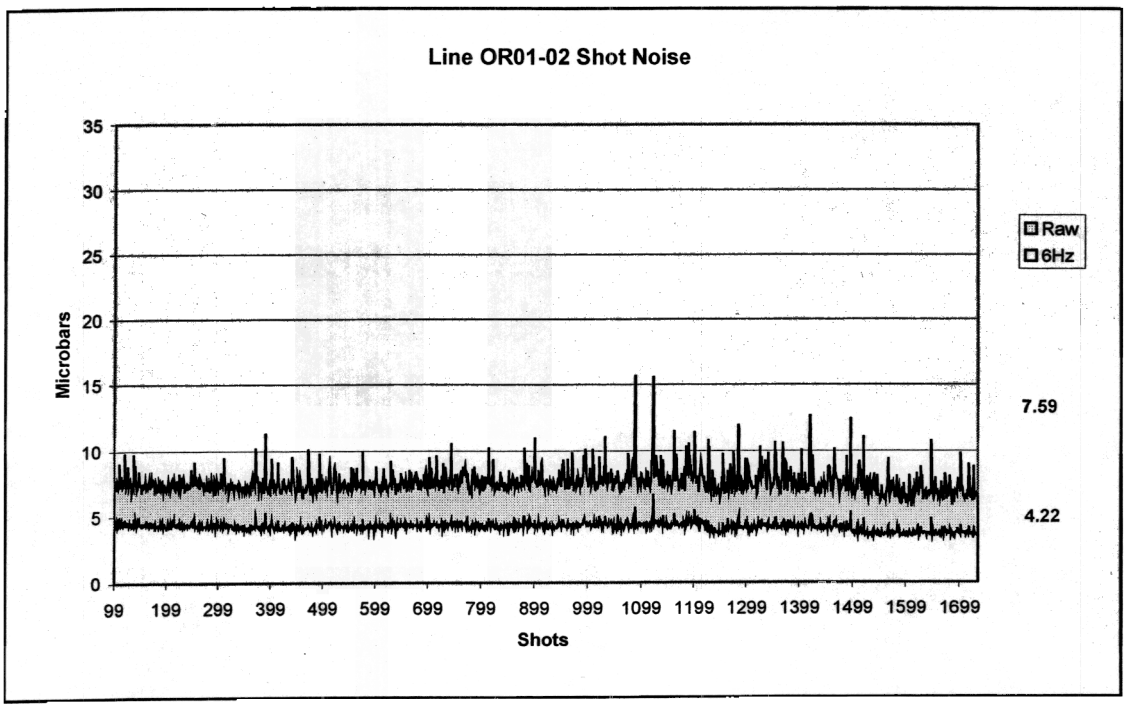
RMS amplitude analysis was performed in one time window. The window was designed between 7500-8000 ms or 11500-12000 ms. A 6 Hz low cut filter was also applied for comparison. EXCEL noise graphs were produced for all lines, showing noise statistics along the line on Shots and Channels. To get a general idea of noise impact on acquired data the EXCEL graphs of Line by Line Comparison of Average Noise Levels were created (see App 3).



PIC 1. RMS channel amplitude versus shot.



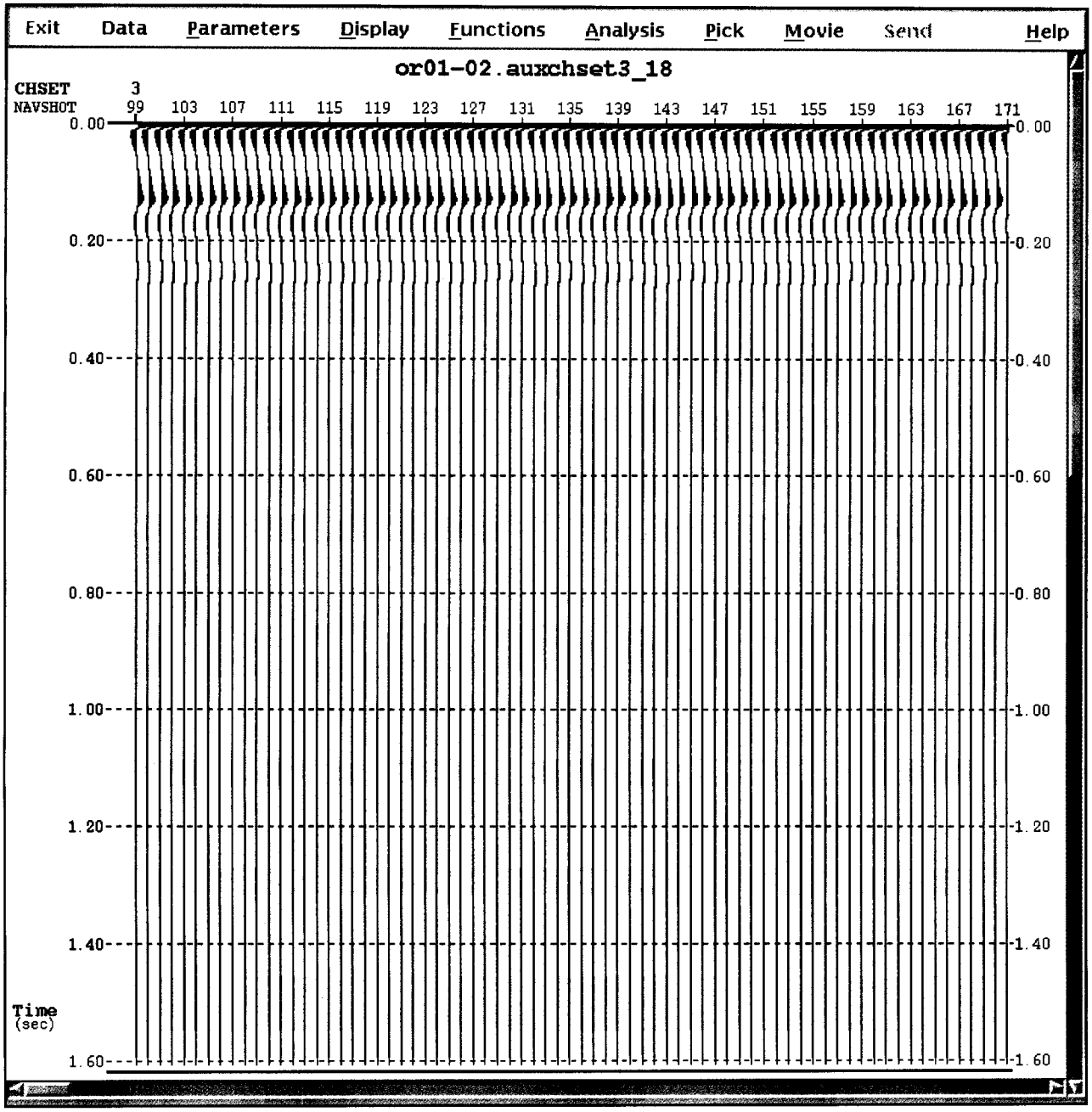
PIC 2. Averaged RMS channel noise in micro bar.



PIC 3. Averaged RMS shot noise in micro bar.

6.4.5.2 Auxiliary channels

Near field hydrophones were used to check airgun performance and to monitor misfires, auto-fires and air pressure drops (air leaks). These auxiliary channels were examined closely after reformatting.



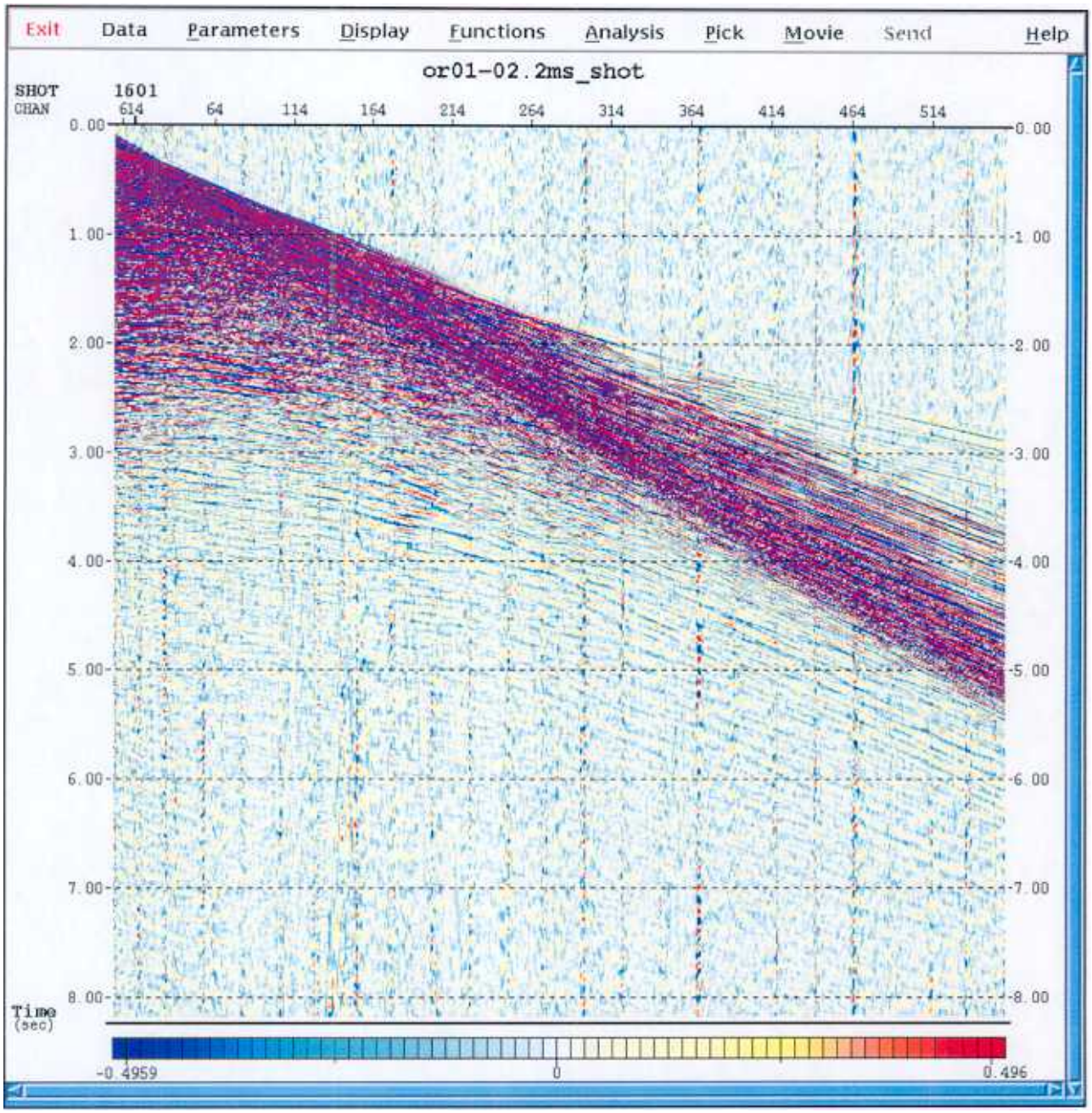
PIC 4. Gun onset on near field hydrophones.

6.4.5.3 Near trace

Near trace plots were produced for all lines. This was useful for identifying the amount of swell noise and ship noise in the data. Near trace stacks were also used in order to perform a separate mis-tie QC for the vessel Geo Arctic, a procedure called for internally by FGAS, Oslo.

6.4.5.4 Shot gathers

Examination of the shots was performed for identifying the amount of swell noise and ship noise in the data as well. In addition the FSP and LSP were subject to FK analysis when requested.



PIC 5. Example of shot gather.

6.4.5.5 Velocity analysis

Velocity analysis was mainly carried out at 2 km intervals using FOCUS interactive procedure. CDP sorted gathers for the velocity analyses (11 gathers at 160 CDP interval) were selected at reformatting stage.

6.4.5.6 Raw Stacks

Raw stacks (140 (94) - fold) were produced after:

1. NMO correction with velocity field after 2 km analysis
2. Front mute following water bottom
3. Output to disk and plot.

6.4.5.7 Reporting and backup procedures

QC envelopes were filed in sequential order and made available for the onboard client representative (Party Chief) in the processing room. Processed data were backed up on 3590 tapes when QC was finished and thereafter removed from the system.

6.4.5.8 QC processing sequence

1. SEG-D input, 560 channels, 8192 (12288) ms at 2ms.
2. Output 2ms every 500th shot to disk
3. Band pass filtering, 181 filter points, Zero Phase
   Low cut 6 Hz 18 dB/oct
   High cut 90 Hz 72 dB/oct
4. Resample from 2 to 4 ms
5. 2:1 trace summation (stackhz)
6. Gain recovery using spherical divergence compensation with function T**2
7. Application of geometry
8. Output shots to disk
9. CDP sort to 140(94) fold
10. Normal move out correction (pvel)
11. Straight outside trace mute

Chan	Mute time (ms)
1	0
280	6000

12. 140(94) fold stack with norm option
13. Gun and cable depth static correction 10ms
14. Output brute stack to disk
15. Navigation merge
16. SEG-Y output
17. Time-Variant Filtering, static WB shift apply
    TV filter

Time (ms)	Low Cut (Hz(dB/Oct))	High cut (Hz(dB/Oct))
1000	8 (18)	90 (72)
2000	8 (18)	70 (72)
3000	6 (12)	50 (72)
4000	4 (12)	30 (48)

    TVF & scale plot
    Static WB shift remove
18. Brute stack plot

6.4.6 Production processing

N/A

6.4.7 Conclusions

Noise levels differed significantly during the data acquisition (see App. 3 graphs). Open sea water area, unfavourable weather conditions and deep-penetrated swell contributed significantly in noise level on data acquired. Normally lines with 6 Hz filtered RMS noise exceeding 25 uBar were re-shot.

During the data acquisition some telemetry errors were reported on MSX Observer Logs. All such occurrences were examined on reformatted shots. In few cases strong wavelets were revealed on such shots (hardcopies applied). In most cases the telemetry errors did not visually effect the seismic data.

The project area was not very favourable for CMP 2D seismic. Rugged bottom and sub-bottom topography and small sediment thickness resulted in complicated wave pattern, with abundance of diffractions, side reflections and multiples. The application of TVF BP filter together with CMP stacking partly improved signal/noise ratio, but not enough. Obviously, more subtle techniques are required to extract useful information from the acquired seismic data.

The separate mis-tie QC which was called for by the Fugro-Geoteam Oslo office proved no mis-ties after inspection of intersection points of near trace sections onboard. The near trace sections are sent to Oslo for further QC utilising Charisma and checking all intersections. Please see the separate report (finished Feb 02 at latest) for the final results.

6.4.8 Personnel

Point of contact/ Oslo office: Paul Keane/John Ege

Onboard QC Processing Manager; j.ege@fugro.geoteam.no

Processing supervisors onboard:
Vladimir Sopivnik and Wathik Alaaraji, 27th October to 16th November, 2001
Valery Zakharenko 16th November to 19th December, 2001

6.4.9 Deliverables

For each sequence, the following deliverables were submitted into a QC envelope and sent to the processing centre:

1. Near trace plot
2. RMS amplitude noise plot (screen hardcopy)
3. Residual Shot Noise EXCEL graph
4. Residual Channel Noise EXCEL graph
5. TVF & TVF Stack plot

In addition the following digital QC results were delivered:

1. Brute stacks with merged navigation in SEG-Y format, on one IBM 3590 tape
2. SEG-Y header listing (ASCII format, 3.5" floppy)
3. Picked velocities (DISCO format, ASCII files, 3.5" floppy)

6.5 POSITION PROCESSING REPORT

6.5.1 Introduction

The vessel mobilised for the survey in Burnie, Australia on the 29th October2001. The Survey was finished on the 19th December 2001. Onboard Navigation Processing was finished on the 19th December 2001.

The survey consisted of 70 prime lines with the total length of 4148.5 km. A total of 087 sequences were shot, 1 of which was not to be processed.

For information regarding onboard systems and survey set-ups and definitions: please review Navigation Report. For line-specific information please review production log in Appendix 9.

6.5.2 Processing/QC

Observation data was logged by the online navigation system Starfix.Seis v.3.1, using the UKOOA P2/94 Exchange Format for Raw Marine Positioning Data. The observation data was QC'ed and a final navigation solution was created, using the QC/Processing software-package QCPro v4.2.1 Final positioning data was logged using UKOOA P1/90 Post Plot Data Exchange Tape Format.

For each sequence the following steps were taken to create the final navigation data, and to ensure the quality of the data set:

P2/94 format/header check:
At the start of the survey the header is checked to ensure that it gives a correct picture of the survey parameters. It is also checked that the header does not contain formal errors. On all subsequent lines, the header is compared to the previous one, to ensure there are no unwanted changes.

Inspection and editing of logged data:
A preliminary check yielding various summary statistics is performed. This gives a good indication of what to expect when examining each observation. Filtering/smoothing* of the data is performed using values based on experience, but within given bounds.
The time-series of each observation is then inspected, and at this stage outliers are removed, small gaps are interpolated, and the dataset re-filtered if the initial filter parameters is inappropriate. Bad data is removed/disabled.

Processing
The accepted data is processed to obtain the positions of the various navigation nodes and the streamer shape**. Since 2D navigation data generally does not include any networks, the processing does not yield any processing statistics. Some general statistics are computed: Feather angle, Rotation angle, and Shotpoint interval. This data is used to identify possible problems in the processing.
The centre of source and the centre near receiver is positioned by the nominal offset, and rotated using the first compass.

Verification of processed solution and final P1/90 file
The processed solution is compared to the online generated P1/90. The two data-sets should be very similar. In addition the offsets in the final P1/90 are checked.
The final file is checked for content (i.e. the correct number of shots, and records per shot) by calculating the exact number of bytes it should contain, compared to the actual file size.

***Filtering methods in QCPro:**
- Cubic Spline Filter: Applied in filtering and interpolating satellite fixes.
- Five Point Median Filter: Applied in filtering and interpolating all other observations, such as compass bearings, and rGPS Range/Bearings.

****Streamer Shape Calculation in QCPro:**
The streamer shape is computed in two stages:
1) Open traverse using compass bearings and distances between each two successive compasses, where the grid co-ordinates of the towpoints are used as start points.
2) Fitting a polynomial of degree m (m<n-1), where n is the number of points to, using the Least Squares adjustment.

6.5.3 Observations

DGPS
Starfix Spotbeam and Starfix MN8 were used for positioning. Spotbeam was the preferred system since closer reference stations were available on the Optus satellite tuned to through the Spotbeam antenna.

RGPS
Starfix.RGPS Version 2.04.02 were used for tailbuoy tracking. The system performed well during the survey. We saw some small gaps in data on four lines. The longes one was 400 sec. The data were interpolated for this periode.

Compasses
22 Digicourse compass birds were attached to the streamer the offsets of the compasses along the streamer are summarized below.

Node ID	Serial Number	Local Offset	Clipped-on or Inserted
9000	22789	-12.5	Clipped-on
9001	20478	-112.5	Clipped-on
9002	15348	-412.5	Clipped-on
9003	16062	-712.5	Clipped-on
9004	21785	-1312.5	Clipped-on
9005	22790	-1612.5	Clipped-on
9006	22750	-1912.5	Clipped-on
9007	22722	-2212.5	Clipped-on * changed to depth bird after seq018
9008	17814	-2512.5	Clipped-on
9009	21750	-2812.5	Clipped-on
9010	21509	-3112.5	Clipped-on
9011	19983	-3712.5	Clipped-on
9012	21505	-4061.5	Clipped-on
9013	22722	-4361.5	Clipped-on
9014	20908	-4661.5	Clipped-on
9015	13128	-4961.5	Clipped-on
9016	20135	-5261.5	Clipped-on
9017	21454	-5561.5	Clipped-on * changed to depth bird after seq 018
9018	20150	-6161.5	Clipped-on
9019	15237	-6461.5	Clipped-on
9020	15492	-6761.5	Clipped-on
9021	13723	-7061.5	Clipped-on

Compass data were generally noisy due to long swell in the survey area.

Gyro(s)

Two gyros were in use on the vessel the primary Gyro a C.Plath is situated in the instrument room and interfaced via a Lemkuhl digital gyro repeater, and an SG. Brown 1000B which is situated on the bridge and interfaced directly into Starfix.
Calibration value for both gyro's are: C-O: -0.82°
Both Gyro's were recorded in the P294.
The primary gyro, C.Plath performed well throughout the survey. For the secondary gyro the digital output to Starfix Seis failed during seq. 80. The rest of the survey had no data from the secondary gyro.

Echosounder(s)

Two echosounder transducers were logged online and written to the P294 file. The transducers used were Simrad EA500 12 and 27 kHz. Water depths were draft corrected nominal velocity of sound used was 1500 m/s. Both transducers performed well throughout the survey , but some spikes had to be removed during processing.. The 12kHz transducer was used as primary.

6.5.4 Processing comments

Three dummy shots were used at start and end of line for filtering purpose.

6.5.5 Deliverables

Raw Navigation data, UKOOA P2/94:
Media: Exabyte
Format: tar

Processed Navigation data, UKOOA P1/90:
Content: All positions and groups, included records: V,S,E,T, R.
Media: Exabyte
Format: tar

Shotpoint Location Map
Scale: 1:100,000
Based on: CMP-positions

6.6 MAGNETIC AND GRAVITY REPORT

To be completed by Fugro-LCT.

6.7 FISHERY REPORT

No fisheries representative sailed with the Geo Arctic, but co-ordination services were established with representatives ashore.
Andrew Leavings of Victoria Seafood Industries was the main contact with regards to fisheries requirements, and John Guiderra was used as a representative of the cray fishermen working in Victorian waters.
The fishing season did not open until 15th November and until that date no problems were encountered. During the port call in Portland on 16th November a meeting was set up with Andrew Leavings and John Guiderra to discuss the best methods of avoiding conflicts with fishing vessels as well as establishing communications lines.
On the 25th November the first two snags with fishing equipment occurred on line DS02-206. No boats were in the area so the very small fishing pot marker buoys had been left unattended. The buoys were barely above the water surface and could not be seen until less than 100m away leaving no room for manoeuvre. The streamer was recovered to free the snags losing 8 hours of production.
Later the same day two more snags occurred on line DS02-208. A small fishing vessel 'Gwen Kane' was spotted on the radar moving erratically. She was contacted on the radio and our plan for the next few lines were passed. 'Gwen Kane' then moved onto our next line and began to lay pots despite being warned of where we were going. Needless to say, another snag occurred on line DS02-209.
With three sets of pots dragging the streamer deep 22 hours were lost freeing the pots and ropes and replacing the holed streamer sections. Two complete sets of crayfish pots were recovered.
On the following day, 26th November, another snag occurred on DS02-210. We received written confirmation that the 'Gwen Kane' was not prepared to co-operate and would not move away from the survey lines to let us past. A similar message was received from another Cray boat the 'Aquatrice'.
On the 27th November a scouting boat 'Perfect Lady' was hired to help look for the small buoys. No more snags occurred with the scouting boat running one line ahead of us. The 'Perfect Lady' departed the location on 29th November due to increasing weather.
During the weather standby the streamer was recovered and the snag from the 26th November was removed. Another complete set of cray pots was recovered.
To help us complete the remaining shallow water lines another scouting boat, 'Breakwater Bay', operated by John Guiderra was hired. He arrived on the 06th December and began scouting the last remaining line near the Big Reef. Due to the large number of cray fish pots on line OR01-19A the line was doglegged to the East to clear all of the equipment. The northern end of the line was completed 1km east of the preplot position. All of the recovered pots, ropes and buoys were passed to the the 'Breakwater Bay' on 07th December to be returned to their owners.
On the 8th December the streamer was holed after contact with an unknown solid object in deep water. This was a hard contact as the hard case of a retriever device was significantly dented.
The 'Breakwater Bay' departed on 09th December after scouting the remaining shallow water lines and reporting no visible buoys. All remaining lines were completed without incident.
Many trawlers were seen during the survey, all except one boat were co-operative and altered course when asked. One trawler, Corvina' could not be contacted by any means on the 21st November. She was on course to run over the tail of the streamer. The speed was increased to a dangerous level to try and pull the tailbuoy ahead of the trawler which ended up passing ahead of the trawler by only a few metres. A near miss incident was reported and followed up by authorities ashore.
Generally the fisheries co-ordination was successful, but all snags were suspected to be from the two vessels which were not prepared to co-operate. In future work in the area it would be advantageous to have a fisheries representative sail with the vessel.

Diary of fishing interaction

R/v Geo Arctic
Sorell / Otway Phase II Survey
FGAS Project No. 34860/1
Oct 28 – Dec 19 2001

28th October
Pre-survey meeting – Informed of start of fishing season on 15th November. Shooting order planned to try and complete the areas of heavy fishing activities before this date. The areas discussed were the 'Big Reef' and the 'Western Banks'.

29th October to 15th November
No interaction with fishing boats up to this date. Bad weather delays means a few lines close to the Big Reef remain.
Informed of Shore Fisheries representatives contact details John Guidera and Michael Craven. Email and fax no given. First vessel contact with Victoria Seafood Industries contact Andrew Leavings.
Incoming
Informed by Andrew Leavings 'Gwen Kane' working at 142.2°E in 100m depth.
Informed by Andrew Leavings 'Aquatrice working at 142.1°E in similar depth.
Informed by Andrew Leavings 'Otway Hunter' working at 141.5°E between 80 & 130m depth.

16th November
Alongside in Portland. Meeting with Andrew Leavings, Michael Craven, John Guidera and Carol. Communication lines established and working information exchanged.

17th November
Outgoing
Passed on shooting plan for 24 hours and onwards intentions.
Incoming
Received information that 'Aquatrice' and 'Otway Hunter' were no longer at original co-ordinates. Informed 'Gwen Kane' was not contactable and Michael had passed on the information to the skipper's father.

18th November
Outgoing
Passed on no shooting for the day due to bad weather. Standby near Eastern end of DS01-102
Incoming
No information

19th November
Outgoing
Informed there will be no production today and the Arctic will not be in water less than 300m.
Incoming
No new information

20th November
Outgoing
Informed of planned start-up time for DS02-102 from E-W and informed onwards intentions to run the short DS02-200, 201…etc. from West to East.
Asked for information on any boats in that area.
Incoming
'Gwen Kane' was made aware of our planning and co-ordinates. He confirmed he has pots in the area but would not say where.
'Aquatrice' could not be contacted, but also was likely to have pots in that area.
Confirmed fishermen have our plans for the next couple of days.

21st November
Outgoing
Informed that start-up was delayed due to streamer problems. A time would be given when known. Estimated time given.
Near miss with Trawler 'Corvina'. No response on all contact methods.
Radio contact with Lobster vessel 'Tiki II' near the W end of DS02-102. Vessel was co-operative but was not aware of our survey.
Incoming
No new information

22nd November
Outgoing
Informed Michael of our plans for the day and future shooting plans. Informed about our near miss with 'Corvina'.
Incoming
Told Michael was visiting the trawlers to inform them of the survey.
Informed he also visited the 'Corvina' and told us the incident was an honest mistake.
Asked what working frequencies we operate on.

23rd November
Outgoing
Thanked Michael for talking with trawlers, and informed that they are usually very co-operative with us.
Informed Michael that we passed close to Lobster boat 'Tiki II' and saw another white hulled fishing boat under transit.
Gave plan for the next 24 hours and ongoing intentions.
Regarding the frequencies informed we always listen on VHF16 and do not have a set working channel being a single boat operation.
Confirmed no sightings of any pots at this stage.
Incoming
No pot positions received

24th November
Outgoing
Informed that we have not had any snags so far and were running DS02-207. Passed on plan for the rest of the day and a broader plan for the coming week. Confirmed to Michael a lot of boats seen on radar near the big reef and asked for any pot positions to be sent to the ship.
Incoming
Telephone conversation about general areas boats were working but no details of any positions.

25th November
Snag with buoys in posn 38°57.5'S 142°22.0'E, at the northern end of DS02-206. One small red buoy and one small white buoy joined together. Letters not visible.
Buoys were not spotted until 200m away due to small size and choppy seas.
'Gwen Kane' was immediately called being the only vessel within 12 miles. Gwen Kane reported on VHF that she did not have pots in that position so they were not hers.
Approx 8 hours of production lost while recovering to position of snag. Buoys freed themselves as recovery approached the position of the snag.
Two more snags occurred in close succession at the north of line DS02-208 in position 39°00'S 142°28'E.
During line DS02-208 we could see the 'Gwen Kane' moving erratically on our radar near the north of line DS02-209 even though we had passed on our intentions to run this line next.
Incoming
Telephone conversation with Andrew Leavings. Passed on three positions of the Gwen Kanes pots that lied between lines DS02-208 and DS02-209. The most southerly position was very close to the northern end posn of line DS02-209.
Incoming
Geco Resolution passed on their known positions of 'Gwen Kane' pots:-
39 00.41S 142 28.8E
39 00.42 S 142 31 14E
39 00.307S 142 27.926E
39 02.800S 142 33.856E
These lay very close to the positions, which were supplied by Andrew and were based on sightings from the Resolutions scouting boat 'Perfect Lady'.
Line turn onto DS02-209 was extended north to pass well clear of the positions supplied by Andrew and the Resolution. The line DS02-209 was started at first light passing between two of the supplied co-ordinates. A snag occurred close to the northern end in approx posn 39°03'S 142°26'E.
3 sets of gear were now on the streamer and damage was caused necessitating recovery. On recovery two full sets of buoys, ropes and pots were recovered. Identification on the buoys reads XSY.
Outgoing
Full information on the snags prior to recovery of the streamer.

26th November
Streamer repairs, approx 22 hours production lost.
Outgoing
Three day detailed survey plan with SOL & EOL times.
Details of yesterdays snags including photos.
Incoming
Received notification about boat 'Gwen Kane'. Quote " He has made it clear he is not moving for anyone. He says that as far as he is concerned people can work around him"
More co-ordinates of his cray pots
39°02.856'S 142°33.873E
38°58.704'S 142°31.507E
Co-ordinates for his longline of pots
39°02.695'S 142°32.546E
39°01.824'S 142°31.113'E
These plotted mainly close to the positions already supplied and the longlines a little further east. Position also given of waverider buoy.
One confirmed snag on line DS02-210 in approx position 39°04.70'S 142°30.00'E. Darkness so not sure of buoy markings.
One confirmed snag on line DS02-209 (A) rerun in position 39°01.80'S 142°33.58'E

Single white, partially submerged float observed with letters XSY5. Very difficult to spot as it was only visible in the troughs of the swells.
Avoiding action by veering offline was taken to avoid a single red partially submerged buoy in position 39°02.67'S 142°32.80'E. This was close to the position supplied as Gwen Kanes longline. We were aware of the position of this buoy and are pretty confident this buoy was missed as streamer was feathering to the other side of the vessel.

27th November
Outgoing
Full details on the snags yesterday and a revised full four day shooting plan.
Incoming
Informed 'Aquatrice' is not being co-operative either.
Informed 9 boats working on the Big Reef and 2 to the West.
No names of boats or positions of buoys supplied.
Advised not to run OR01-19A by Michael, and later informed by Steve Dorland that it is an important tie-line and may have to be shortened to the north.
Scouting boat 'Perfect Lady' arrives at 18:00 to run one line ahead looking for buoys. As we start line OR01-03 from the SW end Perfect Lady begins scouting on the northern half of the line and the run up to the next line ORV01-03. During daylight she will be working generally one line ahead.
Incoming
Telephone from Steve Dorland. Sad to hear Michael Craven was getting aggrivation from some of the fishing community ashore.

28th November
Outgoing
Revised detailed 4 day shooting plan leaving out line OR01-19A until further notice.
Incoming
Informed 'Jane K' working near 'Big Reef' will pass on other boat information to our scouting boat 'Perfect Lady'
Scouting boat 'Perfect Lady' persuaded 'Ruby H' to stay clear of our lines in West of Big Reef. Ruby H confirmed she knows about the survey and has positions for our lines.
Approximately 9 boats visually observed close to Big Reef. Too small for radar fixes.
Incoming
Telephone call with Andrew Leavings enquiring as to whether 'Perfect Lady' needs any more information. He mentioned the recent rig move of the Ocean Bounty may also have run over some fishing pots.

29th November
Outgoing
Times updated on 4 day shooting plan. Informed this will change on 1st Dec due to crew change and bad weather forecast. Asked for any information on lines between 'Big Reef' and 'Western Banks'
Incoming
None
Perfect Lady left location at 07:00 UTC

30th November
Incoming
Telephone conversation with John Guiderrea.

01st December
Outgoing
Full shooting plan
Incoming
None

02nd December
Radio contact with trawlers – no problems.
Incoming
Advice not to run OR01-19A without scouting boat

03rd December
Fishing pot removed from streamer. (From snag on 26th Nov)
Outgoing
Telephone conversation with John Guiderra advising we will be either on wetahr standby or working in deep water for the next few days.
Incoming
No new information. Question "do we need any stores bringing out?".

04th December
Outgoing
Full five day shooting plan
Incoming
None

05th December
Incoming
Fax asking for ETA position with'Breakwater Bay'. Advice she has left port.
Outgoing
Telephone conversions with Carol Guiderra advising ETA position and time. No luck raising the Breakwater Bay direct.
Full shooting plan issued.

07th December
Scouting boat 'Breakwater Bay' arrives.
Line OR01-19A doglegged to avoid pots on information passed from Breakwater Bay.

08th December
All snagged equipment transferred to Breakwater Bay.
Streamer impact with solid object not thought to be controlled fishing gear as hit occurred in deep water. Time lost repairing two damaged sections.

09th December
Breakwater Bay left location due to increasing weather.
Outgoing
Radio'd to 'Breakwater Bay' Advised we will be down on weather and / or in deep water for the next few days.

10th December
Incoming
Mail from Andrew Leavings informing that Gwen Kane was claiming for 16 pots and a shark boat claiming lost catch as he couldn't follow a school of shark.
Very surprised at the number of pots claimed. I believe it to be a gross exageration judging by the number of contacts observed on the streamer. We observed six snags in total only.

11th & 12th December
No incoming or outgoing information. Arctic in deep water running lines on a line by line basis due to swell noises.

13th December
VHF radio contact with cray boat 'Gwen Kane' who was angry and threatened to come and take action if we went near his pots again. He was reassured when I confirmed we were not coming shallower than 500m in the area of concern.
Incoming
Telephone conversation with Steve Dorland about keeping contacts regular. I informed Steve that we have been running on a line by line basis and could not make a plan more than 1 line ahead due to changeable swell conditions. Also that we were only in deep water and in no danger of running into problems with cray boats. Informed Steve that for several weeks we had not received any update on any fishing boat working areas.
Outgoing
Shooting plan for next few days. Passed information we had been in contact with Gwen Kane.

14th December
Incoming
Fax saying boats had moved east and working in 90-180 fathoms, but still no positions. Advised not to run any shallow lines in NW-SE directions, and that if we see any boats we must turn offline.
Outgoing
Informed shooting plan sent yesterday was still valid.

15th December
No contacts

16th December
Outgoing
Shooting plan issued.

17th December
Fisheries services cancelled as last few lines in deep water.

7 VESSEL SPECIFICATION

7.1 VESSEL GENERAL

Name	R/V Geo Arctic
Owner	Amige SE, Murmansk
Operator	Amige SE, Murmansk
Type	2D Seismic survey vessel
Port of Registration	Murmansk
Flag	Russian
Class	KM ULI A2
Class registration no.:	M-42019
Call Sign	UGXK
IMO no.	8409018
MMSI	273458600
Year Built/Rebuilt	1988 Poland / 1997 Norway
Length overall	81.85 m
Breadth	14.8 m
Draught, loaded	5.23 m
Tonnage	3225 T, 967 Net T
Cruising Speed	Max 14.5 knot, cruising 12.5 knot
Operation Range	60 days cruising, NM
Endurance seismic	72 days
Main Engine	Zgoda-Zulcer, Type 6ZL 40/48, 4200 HP,(3090 Kw)
Gearbox	Zamech MA90-10, ratio 505/222,6
Propulsion	Zamen, Controllable pitch. LN 13 NM, 4 blade Stainless steel,
Rudder	Traditionally
Steering gear	Zamech M200-11-2
Azimuth thruster	N/A
Bow Thruster	Brunvoll FU-45-LTC-1225, electrical, 600 HP / 441 Kw
Main engine monitoring	Polish
Electrical Power	Total power 2200 Kw Voltage: 3 x 380 (220) VAC, 50 Hz. Shaft generator,1 x 1200 Kw Generator 2 x 500 Kw
Emergency generator:	217 PMa-39H6. 121 Kw
Clean power:	Rotation generators and several small UPS.
Fuel capacity	1000 m^3
Fuel consumption	Sailing 12.0 t, working 10.0 t, in port 2.8 t
Fresh water capacity	200 ton
Fresh water generator:	VY 125 AD. 12 ton full speed.
Fresh water generator	10 ton full speed, 1 ton in port
Sewage treatment plant	LK-30(2)
Incinerator	Yes
Black water	9,9 m^3
Grey water	N/A
Bilge water	12,0 m^3
Sludge	13,1 m^3
Waste water	3,2 m^3
Lub oil	16,9 m^3

Dirty oil	11,0 m^3
Stabilising system	N/Al
Deck Machinery	
Crane	4 ton, 12.5 m max., 2.5 m min.
	1 x provisions crane front deck
	1 x 1 ton folding crane, aft Helideck
A-frame	N/A
Winch	2 x Streamer, 7000m aft reel, 3000m fwd reel.
	Spare streamer, 2 x 2000m
	Gravity / FF Magnetometer
Paravane	N/A
Gate valve	N/A
Hydraulic power pack:	Hydrakraft A/S. 2 x 45 Kw. 2 x 130 l/min. 220 Bar.
Accommodation	Single cabins 17 + 2 hospital
	Double cabins18
	Total capacity 55 persons
Galley stores:	2 x Deep freeze 16,2 and 12,2 m^3
	2 x Cool room 14,1 and 21 m^3
	1 x Dry store 28,5 m^3
	1 x Vegetable 13,5 m^3
Mess:	Seating capacity: 31
	Size 42 m^2
Day room:	1 x Smoking / 1 x Non-smoking 17,2 m^2 and 15,9 m^2
Exercise room	20,7 m^2
Air condition:	Tropical
Helicopter landing zone:	Superpuma 9.8 ton

7.2 VESSEL NAVIGATION AIDS

Auto Pilot	Polish (TS-75)
GPS	Furuno GP50 MK II
Differential GPS	Starfix MN8 DGPS & Starfix SPOT DGPS
Radar no.: 1	1 x Kelvin Hughes; 6000, Nucleus 2, ARPA, 10 cm
Radar no.: 2	1 x Furuno FR 2015, 3 cm.
Gyro no.: 1	1 x Plath, Navigat II with Lehmkuhl LR40 gyro repeater.
Gyro no.: 2	1 x SG Brown 1000G
Speedlog	1 x Atlas Dolog
	1 x IEL-2M (Russian)
VHF direction finder	PGK-2 (Russian)
Wind sensor	Aanderaa 3017 Speed, direction and temperature
Nav. Echo Sounder	GEL-3
Electronic chart:	N/A
Navtex	Furuno NX-500
Weather fax	None

7.3 VESSEL COMMUNICATION AIDS

GMDSS	A1, A2 and A3
Satellite Fixed line:	Telenor Sealink Light. NorSat. Phone, modem and fax.
Inmarsat	Saturn B, Phone, high speed data modem; 64 KB and fax
GSM	Phone
WAN	Data modem
M/F, H/F	Skanti TRP 7201 Brig-2, Russian
VHF stationary	Skanti VHF 3000 Sailor VHF RT2047D Sailor VHF RM2042. (GMDSS) Reid-1
VHF portable	3 x Tron VHF Max 4W Band 156-162 MHz 3 x Tron GMDSS VHF Max 4W band 150-163 MHz
UHF portable	None
UHF helicopter communication	Jotron TR-7510
Non-directional beacon	AS Tele Supply TS-20B
Watchkeeper	Sailor GMDSS A3
Internal communication	Stationary all rooms.
Telephone numbers	
GSM Bridge	+ 47 9076 4256
Inmarsat FGAS	+ 871/872/873 3273 18612
Inmarsat Bridge	+ 871/872/873 3273 18610
Inmarsat Client	+ 871/872/873 3273 18611
NorSat FGAS	+ 47 22134789 Tel/Fax
NorSat Bridge	+ 47 22134791 Tel/Fax
NorSat Vessel	N/A
NorSat Client	N/A
Fax numbers	
Inmarsat	+ 871/872/873 3273 18613
Norsat	+ 47 2213 4789

7.4 VESSEL SAFETY

Safety manning level:	55 persons
Covered lifeboat:	JY-QFN-8.50 63 persons
Rescue /MOB Boat	63 Persons (Covered lifeboat)
Work boat	Norpower 22, 6 persons
Inflatable Life Rafts	11 x 10 persons
Man overboard Liferaft	2 x 6 man life-rafts (2 x Jonbuoy as backup)
Survival Suits	100 % (60)
Life Jackets	100 % (60)
Life rings	8
Smoke hoods	100 %
Work vest	4 x Crewsaver
Emergency radios	Sailor GMDSS A3
Emergency beacons	1 x Jotron TRON 40S
Radar transponders	2 x Jotron TronSart

Fire detector system:	INCO UCPP-20
Fire pumps	1 x 100 t Electrical driven
	1 x 40 t, Electrical driven
Fire suits	4
Halon systems	Engine room
CO2 systems	Compressor room and streamer store
Foam systems	Streamer deck, Helideck.

8 EQUIPMENT SPECIFICATION

8.1 SEISMIC RECORDING INSTRUMENT

Type	Input / Output, MSX, 24 bit system
Number of Channels	720 channels @ 1 mS sample rate. 9000 m streamer
Number of waterbreaks	4 channels
Number of auxiliary	16 channels
Sample Rate	1, 2 and 4 ms
Filters	Low cut, high cut
Low Cut	Out, 2 Hz, 6dB/octave 2 Hz, 12 dB/octave 4 Hz, 12 dB/octave 6 Hz, 12 dB/octave 8 Hz, 18 dB/octave
High Cut	1 mS: 412 Hz, 264 dB/octave 2 mS: 206 Hz, 264 dB/octave 4 mS: 103 Hz, 264 dB/octave
Recording Format	SEG-D
Recording Medium	4 x IBM Magstar 3590
QC System	All QC data, QC plots - AGC or fixed gain; harmonic distortion analyses; noise analyses; spectral analysis;
On-line Display	Oyo GS 624-2
Single channel recorder	Ultra 200
Processing	
Hardware	SGI Origin 200 with dual MIPS 10 000 64 bit processor SCSI Raid disc controller rack with 40 GB capacity (160 GB). Oyo 36" thermal plotter.
Software	Paradigm Disco/Focus v. 5.0.
Capacity	Full 2D processing at acquisition speed
Tape drives	2 x Magstar IBM 3590 tape drive
Data compression software	N/A

8.2 STREAMER

Type	Input / Output, MSX digital
Max. length	9000 m
Max. outer separation	N/A
Available Group interval	12.5 / 25 m
Section length	99.5 m
Group pr. Section	8
Hydrophone type	Input / Output, Preseis WM1-018B
No. of Hydrophones /Group	14 hydrophones (2.5 m), tapered array, centre weighted. 29 % overlap, total group length 17.55 m
Streamer diameter	63.5 mm
Streamer sensitivity	14 V/Bar
Fault locator	Input / Output
Depth Controller / Compass	Input / Output DigiBIRD 5010/5011
Acoustic	N/A
Cable oil clean:	2250 + 960 ltr.
Cable oil dirty:	1.920 ltr.

8.3 ENERGY SOURCE

Type	Sodera G-gun
Size of guns:	40, 70, 100, 150, and 250 cu. Inch.
Max volume:	3660 Cu. Inch
Max output. 5 m depth. 0-128 Hz:	3660: 103,3 Barm
Number of Sub. Arrays	4
Configuration:	Single source
Tow width	30 m
Firing control	HydraSystems Minipulse / 200 X
QC	HydraSystems
Depth transducers	4 x 2
Tow system:	Norwegian buoys
Offset	144m with 6000m streamer. 250m with 9000m streamer
Compressor	1 x LMF, 1100 SCFM 4 x EKA, each 390 SCFM
Compressor capacity	2660 SCFM
Pressure:	2000 PSI

8.4 NAVIGATION EQUIPMENT

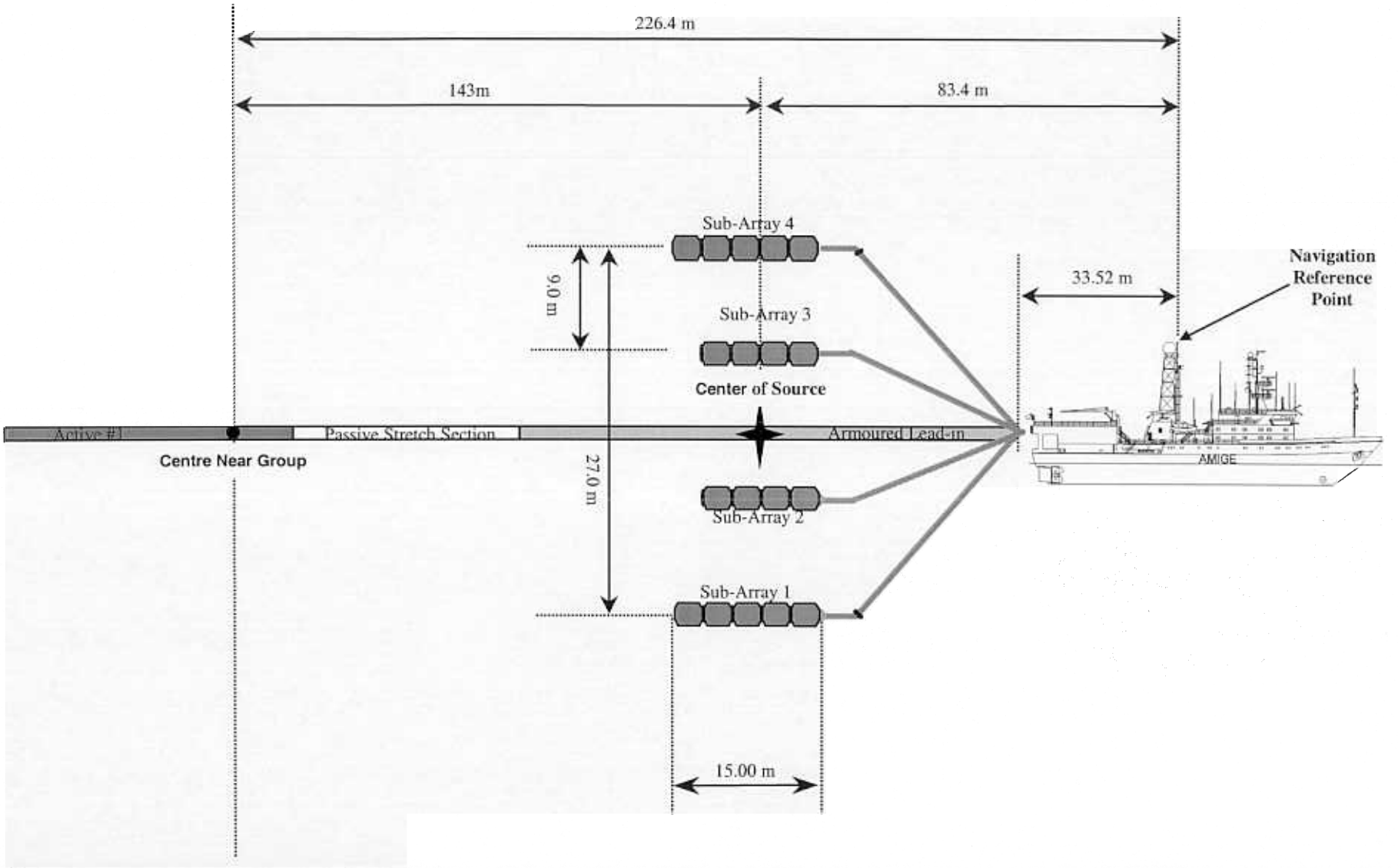
On-line Navigation System	Starfix.Seis. (Fugro system)
Primary Navigation	Starfix MN8, Differential GPS
GPS receiver	Trimble 4000DS 9 channels nav ver. 7.28
Secondary navigation	Starfix SPOT, Differential GPS. Fugro
Demodulator	Fugro 3000LR
GPS receiver:	Trimble 4000DS 9 channels nav ver. 7.28
Tail buoy tracking	Geotrack RGPS (Fugro) and radar.
Gun array tracking:	Time/Acoustic measurement. Optional RGPS
Laser	N/A
VRU:	Seatex MRU-5
Navigation processing	QC Pro
Binning	N/A
Multi beam echosounder	N/A
Echosounder	Simrad EA500
Echosounder transducer	Simrad 27-26/21. 27 khz Simrad 12-16. 12 khz. Maximum range 3000 / 11000 meter
Streamer Control	Input / Output DigiBIRD 5011 Compass birds
Speed log:	Atlas Dolog
CTD probe	N/A
SVP probe	N/A
Water level recorder	N/A

8.5 GRAVITY AND MAGNETICS

N/A

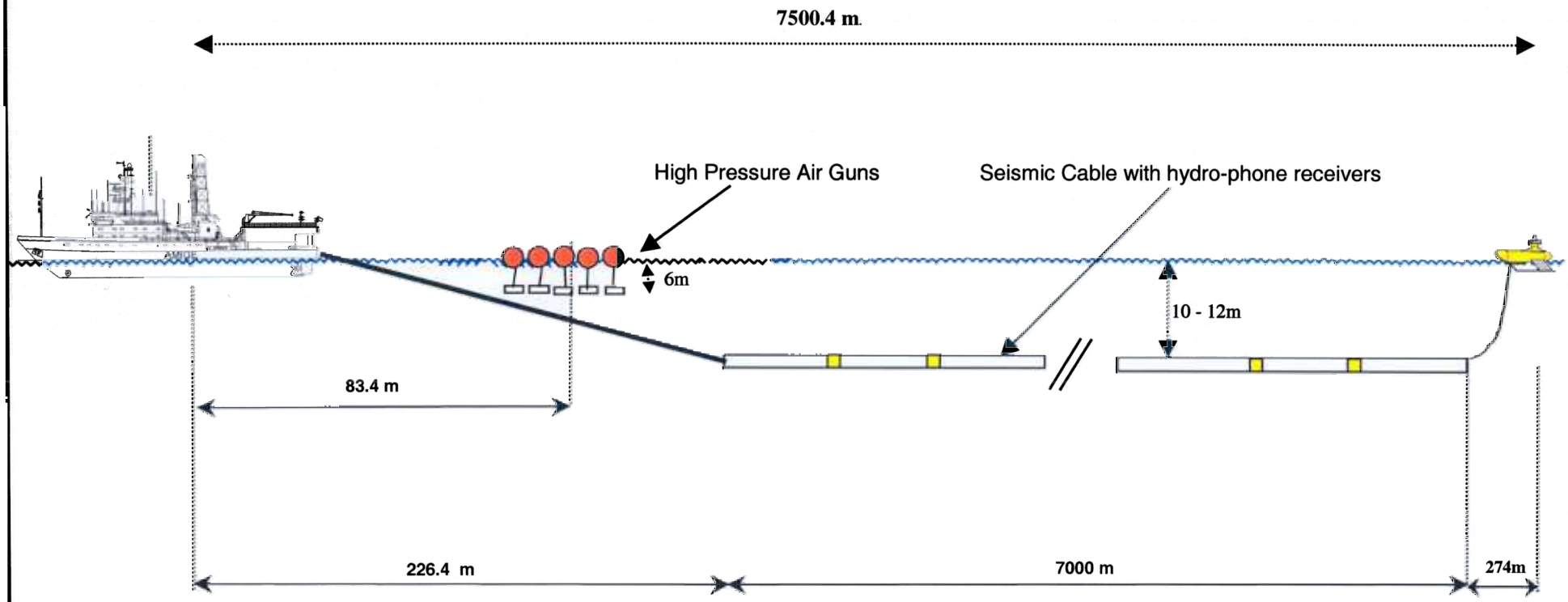
9 DRAWINGS

9.1 GUN AND STREAMER OFFSETS



Client : Seismic Australia / Woodside Origin Area : Sorell / Otway Phase II Vessel : RV Geo Arctic Contractor : Fugro-Geoteam AS	Gun and Streamer Offsets Diagram 9.1	Diagram Valid For	From date 28/10/01	From Seq. 01
		All measurements in metres. Drawing Not to Scale.	To date 19/12/01	To Seq. 86

9.2 OFFSET DIAGRAM

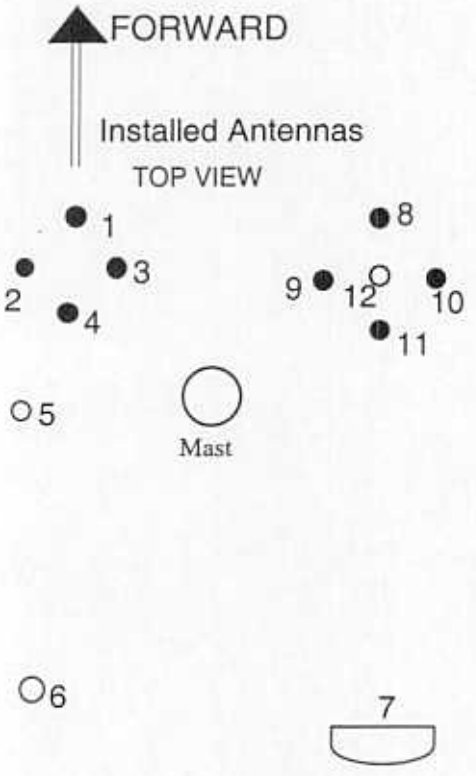


Client : Seismic Australia / Woodside Origin Area : Sorell / Otway Phase II Vessel : RV Geo Arctic Contractor : Fugro-Geoteam AS	Offset Diagram Diagram 9.2	Diagram Valid For	From date 28/10/01	From Seq. 01
		All measurements in metres. Drawing Not to Scale.	To date 19/12/01	To Seq. 86

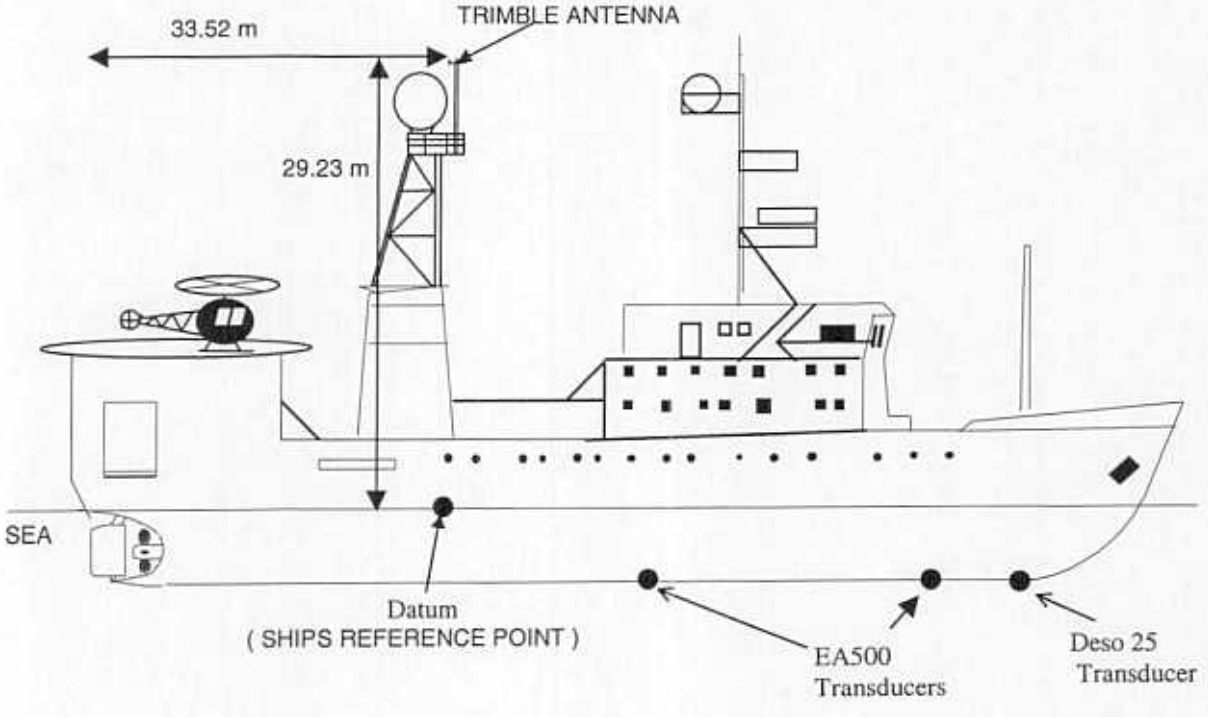
9.3 VESSEL OFFSET

R/V Geo Arctic. (updated 27 April 2001)

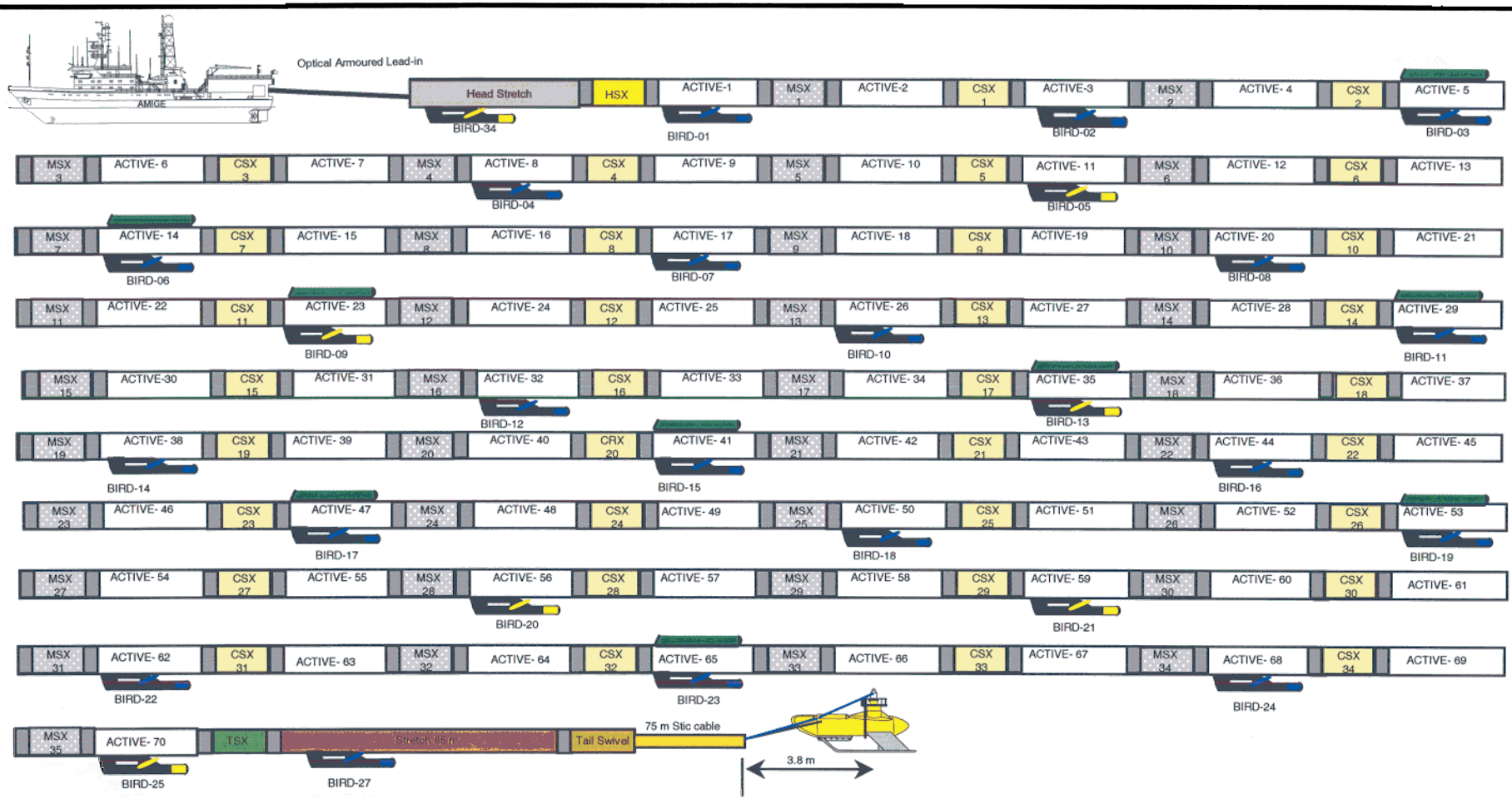
ANTENNA OFFSET



		X m	Y m	Z m
	Datum. Mast S/L	0.0	0.0	0.0
	Mid. stern	0.0	-33.52	0.0
	EA500 27 kHz tran	-1.21	18.53	-4.97
	EA500 12 kHz tran	-0.64	31.61	-4.98
	Deso 25 transducer	0.01	35.73	-4.99
	Survey Gyro	-2.4	9.60	1.0
1	Primary Trimble	-1.51	1.07	29.23
2	Secondary Trimble	-1.86	0.72	29.23
3	Spare Trimble	-1.16	0.72	29.23
4	Glonass	-1.51	0.37	29.23
5	VHF antenna			
6	Seatrack Wipe ant.			
7	Seatrack Panel ant.			
8	Norsat GPS	1.51	1.07	29.23
9	Spotbeam	1.16	0.72	29.23
10		1.86	0.72	29.23
11	Spotbeam	1.51	0.37	29.23
12		1.51	0.72	n/a

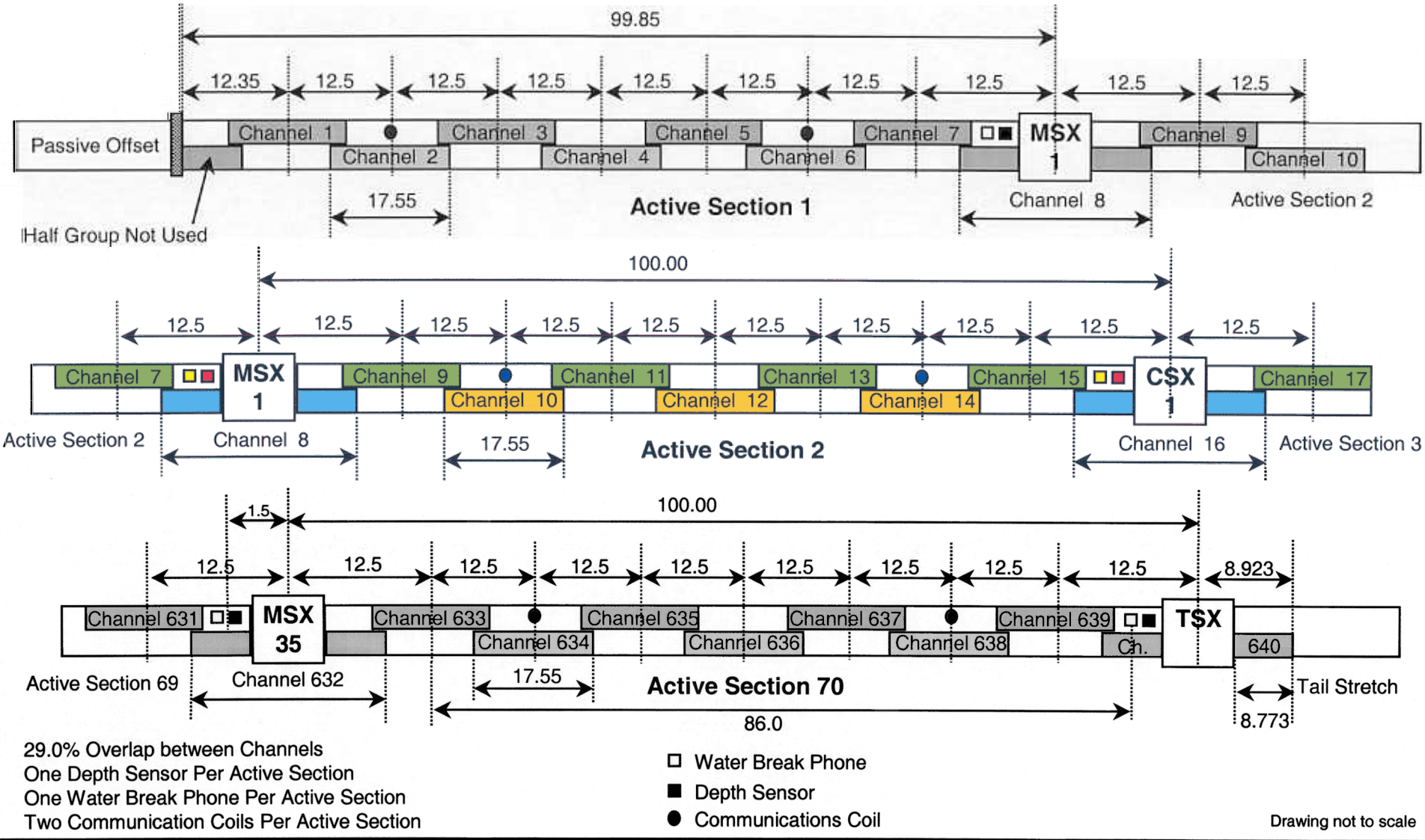


9.4 STREAMER CONFIGURATION



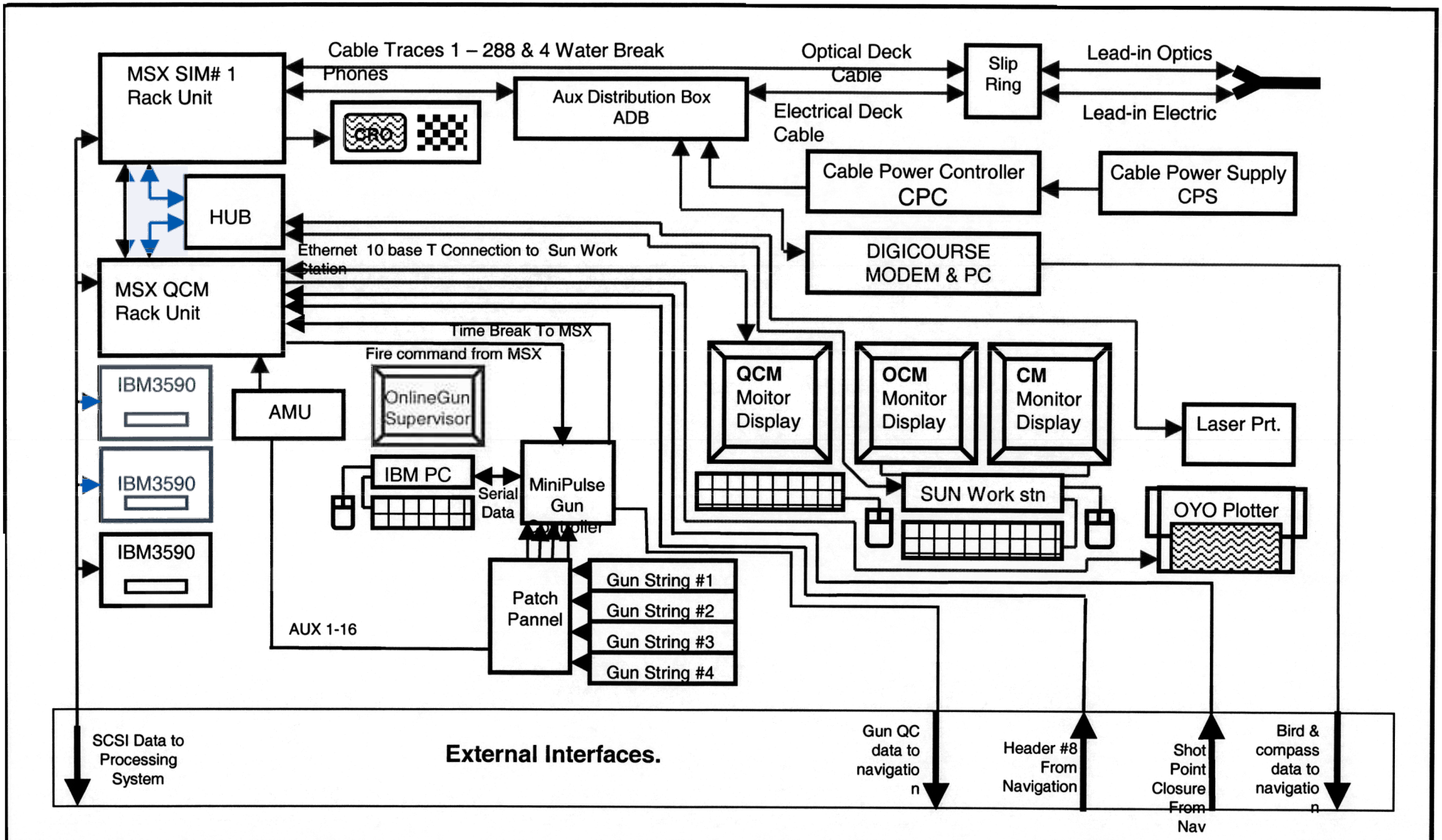
Client : Seismic Australia / Woodside Origin Area : Sorell / Otway Phase II Vessel : RV Geo Arctic Contractor : Fugro-Geoteam AS	Streamer Configuration Diagram Diagram 9.4	Diagram Valid For All measurements in metres. Drawing Not to Scale.	From date 28/10/01 To date 19/12/01	From Seq. 01 To Seq. 86

9.5 HYDROPHONE GROUP CONFIGURATION



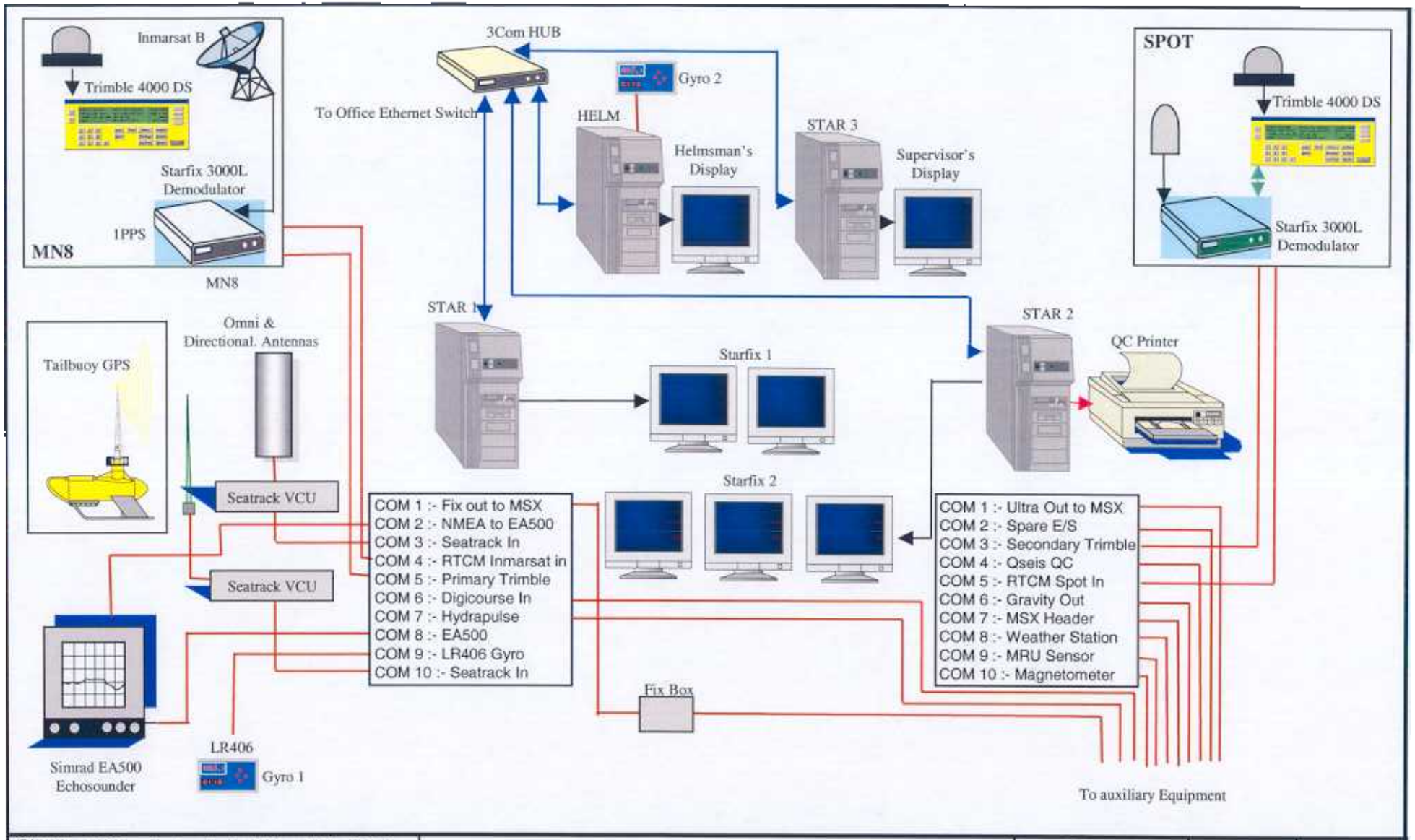
Client : Seismic Australia / Woodside Origin Area : Sorell / Otway Phase II Vessel : RV Geo Arctic Contractor : Fugro-Geoteam AS	I/O MSX Digital Fibre Optic Streamer Hydrophone Group Configuration Diagram 9.5	Diagram Valid For	From date 28/10/01	From Seq. 01
		All measurements in metres. Drawing Not to Scale.	To date 19/12/01	To Seq. 86

9.6 INSTRUMENTATION LAYOUT



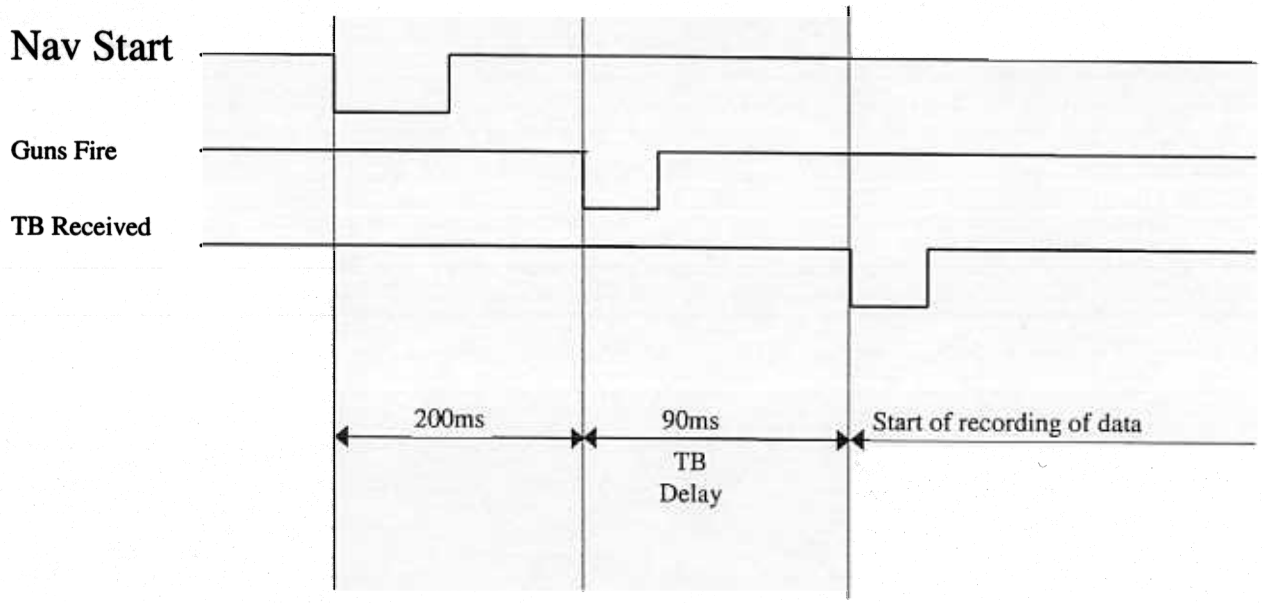
Client : Seismic Australia / Woodside Origin Area : Sorell / Otway Phase II Vessel : RV Geo Arctic Contractor : Fugro-Geoteam AS	**INSTRUMENTATION LAYOUT BLOCK DIAGRAM - 9.6**	Diagram Valid For	From date 28/10/01	From Seq. 01
		All measurements in metres. Drawing Not to Scale.	To date 19/12/01	To Seq. 86

9.7 NAVIGATION LAYOUT



Client : Seismic Australia / Woodside Origin Area : Sorell / Otway Phase II Vessel : RV Geo Arctic Contractor : Fugro-Geoteam AS	**NAVIGATION LAYOUT BLOCK DIAGRAM - 9.7**	Diagram Valid For	From date 28/10/01	From Seq. 01
		All measurements in metres. Drawing Not to Scale.	To date 19/12/01	To Seq. 86

9.8 SYSTEM TIMING



Client : Seismic Australia / Woodside Origin Area : Sorell / Otway Phase II Vessel : RV Geo Arctic Contractor : Fugro-Geoteam AS	Recording System: Input / Output MSX 24 Bit Integrated Navigation System: Starfix.Seis Source Synchroniser: Hydrapulse Depth Controllers: Digicourse	Diagram Valid For	From date 28/10/01	From Seq. 01
		All measurements in metres. Drawing Not to Scale.	To date 19/12/01	To Seq. 86
	Diagram 9.8 - System Timing			

9.9 SOURCE LAYOUT

Client : Seismic Australia / Woodside Origin
Area : Sorell / Otway Phase II
Vessel : RV Geo Arctic
Contractor : Fugro-Geoteam AS

3660 Cubic Inch Source Array Gun Volumes

Diagram 9.9

Diagram Valid For

All measurements in metres. Drawing Not to Scale.

From date 28/10/01

To date 19/12/01

From Seq. 01

To Seq. 86

APPENDICES

GENERAL

1. DAILY LOGS
2. LINE SUMMARY
3. LINE QC
4. ENERGY SOURCE DROP OUT SPECIFICATION
5. ORIGINAL DATA ACQUISITION PROGRAM
6. WEATHER REPORTS
7. SAFETY ACCIDENTS / NEAR MISS REPORTS

POSITION

8. NAVIGATION PROCESSING LOG
9. NAVIGATION PRODUCTION LOG

SEISMIC PROCESSING

10. 14EDIT TABLE
11. QC STATUS LOG
12. LINE BY LINE COMPARISON OF AVERAGE NOISE LEVELS

1. DAILY LOGS

Time Zone: UTC + 11 hours

28 October 2001

Start	End	Charge	Hrs.	Activity	Details
08:30	23:59	Yes	15.50	Mob / Demob	Mobilisation alongside in Burnie

29 October 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	07:00	Yes	7.00	Mob / Demob	Mobilisation alongside Burnie
07:00	19:00	Yes	12.00	Mob / Demob	Transit to work Area, West of King Island
19:00	23:59	Yes	5.00	Weather	Ship slowed in heavy seas

30 October 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	03:00	Yes	3.00	Weather	Waiting on weather at location
03:00	13:00	Yes	10.00	Weather	Heading for shelter East of King Island
13:00	23:59	Yes	11.00	Weather	Sheltering from weather East of King Island

31 October 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	22:00	Yes	22.00	Weather	Sheltering from weather off King Island
22:00	23:59	Yes	2.00	Weather	Heading back to location

01 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	19:00	Yes	19.00	Weather	Waiting for seas to decrease
19:00	23:59	Yes	5.00	Mob / Demob	Deploying streamer

02 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	08:50	Yes	8.83	Mob / Demob	Continue streamer deployment
08:50	09:40	Yes	0.83	Mob / Demob	Deployment of guns
09:40	14:15	Yes	4.58	Mob / Demob	Heading for line and equipment testing
14:15	14:29	Yes	0.23	Mob / Demob	Soft start on guns
14:29	20:34	Yes	6.08	Production -	Line OR01-45, sp 101 - 2251
20:34	23:51	Yes	3.28	Line change	
23:51	23:59	Yes	0.15	Production -	Line OR01-43, sp 101 - 152

03 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	05:20	Yes	5.33	Production -	Line OR01-43, sp 152 - 2147
05:20	08:33	Yes	3.22	Line change	
08:33	13:24	Yes	4.85	Production -	Line OR01-41, sp 101 - 1924
13:24	18:24	Yes	5.00	Line change	Gun maintennance on turn
18:24	22:51	Yes	4.45	Production -	Line OR01-39, sp 101 - 1776
22:51	23:59	Yes	1.15	Line change	

04 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	02:31	Yes	2.52	Line change	
02:31	07:53	Yes	5.37	Production -	Line OR01-37, sp 101 - 2065
07:53	10:57	Yes	3.07	Line change	
10:57	15:27	Yes	4.50	Production -	Line OR01-04, sp 101 - 1794
15:27	18:44	Yes	3.28	Line change	
18:44	23:03	Yes	4.32	Production -	Line OR01-02, sp 101 - 1731
23:03	23:59	Yes	0.95	Line change	

05 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	02:52	Yes	2.87	Line change	
02:52	06:09	Yes	3.28	Production -	Line ORV01-06, sp 101 - 1353
06:09	08:50	Yes	2.68	Line change	
08:50	11:51	Yes	3.02	Production -	Line ORV01-10, sp 101 - 1265
11:51	14:49	Yes	2.97	Line change	
14:49	16:59	Yes	2.17	Production -	Line ORV01-08, sp 101 - 926
16:59	21:53	Yes	4.90	Line change	
21:53	23:59	Yes	2.12	Production -	Line ORV01-07, sp 101 - 924

06 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	01:11	Yes	1.18	Production -	Line ORV01-07, sp 924 - 1318
01:11	04:10	Yes	2.98	Line change	Try opposite course, too noisy.
04:10	07:16	Yes	3.10	Weather	Turn to try lines across heavy swell
07:16	12:04	Yes	4.80	Production -	Line OR01-06, sp 101 - 1815
12:04	15:11	Yes	3.12	Line change	
15:11	20:27	Yes	5.27	Production -	Line OR01-08, sp 101 - 2026
20:27	23:59	Yes	3.55	Line change	

07 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	00:40	Yes	0.67	Line change	
00:40	09:10	Yes	8.50	Production -	Line DS02-100, sp 101 - 2284
09:10	10:45	Yes	1.58	Stand-by	Turn into wind to recover equipment. Streamer damaged
10:45	11:35	Yes	0.83	Stand-by	Recover guns
11:35	15:35	Yes	4.00	Stand-by	Recover streamer to bird 15
15:35	17:01	Yes	1.43	Stand-by	Repairs and replacements for damaged sections
17:01	19:31	Yes	2.50	Stand-by	Redeployment of streamer
19:31	19:45	Yes	0.23	Stand-by	Cable testing and instrument tests
19:45	21:10	No	1.42	Source	Problems with gun array, not ready to deploy
21:10	21:49	Yes	0.65	Stand-by	Deployment of guns
21:49	23:59	Yes	2.18	Line change	Head for line DS02-212

08 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	01:28	Yes	1.47	Line change	
01:28	08:51	Yes	7.38	Production -	Line DS02-212, sp 101 - 1917
08:51	12:05	Yes	3.23	Line change	
12:05	16:44	Yes	4.65	Production -	Line ORW01DS214, sp 101 - 1784, Dogleg posn
16:44	17:10	Yes	0.43	Production -	Line ORW01DS214, sp 1784 - 1952, abtd due nav
17:10	22:16	No	5.10	Navigation	Circle back to rejoin line
22:16	22:41	No	0.42	Navigation	Line ORW01DS214A, sp 1801 - 1950, overlap
22:41	23:59	Yes	1.32	Production -	Line ORW01DS214A, sp 1950 - 2437

09 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	01:06	Yes	1.10	Production -	Line ORW01DS214A, sp 2437 - 2846
01:06	04:30	Yes	3.40	Line change	
04:30	12:07	Yes	7.62	Production -	Line DS02-213, sp 101 - 1986
12:07	14:30	Yes	2.38	Line change	Head for OR01DS217
14:30	15:05	Yes	0.58	Weather	Wind and seas increasing, noise high. Turn to weather
15:05	22:00	Yes	6.92	Weather	Recovery of guns and streamer
22:00	23:59	Yes	2.00	Weather	Wait on Weather

10 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	09:30	Yes	9.50	Weather	Wait on Weather
09:30	16:25	Yes	6.92	Weather	Deployment of streamer.
16:25	16:26	Yes	0.02	Weather	Streamer parts between birds 4 & 5
16:26	17:45	Yes	1.32	Weather	Recover of approx 1500m up to break.
17:45	19:00	Yes	1.25	Weather	Head towards tailbuoy awaiting daylight
19:00	19:30	Yes	0.50	Weather	Visual sighting of tailbuoy & retrievers.
19:30	23:59	Yes	4.50	Weather	Weather too poor to attempt recovery

11 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	21:10	Yes	21.17	Weather	Standby close to drifting tailbuoy.
21:10	23:59	Yes	2.83	Weather	Grappling attempts on tailbuoy

12 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	00:55	Yes	0.92	Weather	Grappling for tailbuoy.
00:55	11:15	Yes	10.33	Weather	Recovering streamer backwards onto winch.
11:15	21:30	Yes	10.25	Weather	Standby on weather
21:30	23:59	Yes	2.50	Weather	Redeploying streamer

13 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	04:30	Yes	4.50	Weather	Redeploying streamer. Weather improving
04:30	07:15	No	2.75	Cable	Extra time for reconfiguration. Streamer deployed
07:15	08:25	No	1.17	Cable	Deploying guns
08:25	10:36	No	2.18	Cable	Heading for line
10:36	21:59	Yes	11.38	Production -	Line OR23DS223, sp 101 - 4305
21:59	23:59	Yes	2.02	Line change	

14 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	02:15	Yes	2.25	Line change	
02:15	08:39	Yes	6.40	Production -	Line OR01-17, sp 101 - 2460
08:39	11:42	Yes	3.05	Line change	
11:42	18:25	Yes	6.72	Production -	Line OR01-11, sp 101 - 2603
18:25	21:52	Yes	3.45	Line change	
21:52	23:59	Yes	2.13	Production -	Line OR01-13, sp 101 - 882

15 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	04:53	Yes	4.88	Production -	Line OR01-13, sp 882 - 2697
04:53	09:19	Yes	4.43	Line change	
09:19	17:21	Yes	8.03	Production -	Line DS02-103, sp 101 - 2226
17:21	23:59	Yes	6.65	Port Calls (not	Recover equipment for port call

16 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	00:29	Yes	0.48	Port Calls (not	Streamer fully recovered. Begin steam to Portland
00:29	04:50	Yes	4.35	Port Calls (not	Passage to Portland
04:50	14:05	Yes	9.25	Port Calls (not	Alongside Portland, Class inpection & part crew change
14:05	19:00	Yes	4.92	Port Calls (not	Transit back to deployment area
19:00	23:59	Yes	5.00	Port Calls (not	Equipment deployment

17 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	00:47	Yes	0.78	Port Calls (not	Complete streamer deployment
00:47	02:15	Yes	1.47	Port Calls (not	Deployment of guns
02:15	04:47	Yes	2.53	Line change	Heading for line
04:47	13:13	Yes	8.43	Production -	Line DS02-101, sp 101 - 2209
13:13	16:30	Yes	3.28	Line change	Gun maintennance on line turn
16:30	20:56	Yes	4.43	Weather	Extra circle to line assessing weather noise
20:56	23:59	Yes	3.07	Weather	Recover guns, heavy seas.

18 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	00:05	Yes	0.08	Weather	Complete recovery of guns
00:05	21:08	Yes	21.05	Weather	Wait-on-weather with streamer deployed.
21:08	21:16	Yes	0.13	Weather	Streamer parts 900m from head
21:16	22:45	Yes	1.48	Weather	Recovery of 900m streamer
22:45	23:20	Yes	0.58	Weather	Head back to tailbuoy
23:20	23:59	Yes	0.67	Weather	Begin grapple attempts to hook tailbuoy

19 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	01:00	Yes	1.00	Weather	Grappling for tailbuoy
01:00	05:00	Yes	4.00	Weather	Backwards recovery of streamer
05:00	06:00	No	1.00	Cable	Weather judged OK for production. Rotating 3km of cable
06:00	10:30	No	4.50	Cable	Complete recovery of streamer
10:30	14:00	No	3.50	Cable	Transit back to deployment posn. Preparing deployment
14:00	23:59	No	10.00	Cable	Deploying and configuring streamer

20 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	01:15	No	1.25	Cable	Complete streamer deployment
01:15	11:45	No	10.50	Cable	Intermittent streamer power problem fault
11:45	23:45	No	12.00	Cable	Continue fault finding on redeployment.
23:45	23:59	No	0.25	Cable	Heading for line DS02-102

21 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	01:30	No	1.50	Cable	Deploy guns.
01:30	02:05	No	0.58	Cable	Streamer fault re-appears, checking tow-leader
02:05	09:00	No	6.92	Cable	Fault finding on streamer
09:00	12:30	No	3.50	Cable	Fault located. Redeploy streamer
12:30	13:35	No	1.08	Cable	Deploying guns
13:35	15:21	No	1.77	Cable	Heading for line and soft start
15:21	23:11	Yes	7.83	Production -	Line DS02-102, sp 101 - 2077
23:11	23:59	Yes	0.82	Line change	

22 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	03:51	Yes	3.85	Line change	Gun maintennance on turn
03:51	08:00	Yes	4.15	Production -	Line DS02-200, sp 101 - 1114
08:00	10:48	Yes	2.80	Line change	
10:48	14:23	Yes	3.58	Production -	Line DS02-201, sp 101 - 1024
14:23	17:50	Yes	3.45	Line change	
17:50	21:08	Yes	3.30	Production -	Line DS02-202, sp 101 - 1006
21:08	23:59	Yes	2.87	Line change	

23 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	00:20	Yes	0.33	Line change	
00:20	03:47	Yes	3.45	Production -	Line DS02-203, sp 101 - 968
03:47	07:22	Yes	3.58	Line change	Gun maintenance on turn
07:22	10:21	Yes	2.98	Production -	Line DS02-204, sp 101 - 866
10:21	12:59	Yes	2.63	Line change	
12:59	15:40	Yes	2.68	Production -	Line DS02-205, sp 101 - 775
15:40	18:48	Yes	3.13	Line change	
18:48	20:52	Yes	2.07	Production -	Line DS02-206, sp 101 - 597
20:52	23:44	Yes	2.87	Line change	
23:44	23:59	Yes	0.27	Production -	Line DS02-207, sp 101 - 163

24 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	01:46	Yes	1.77	Production -	Line DS02-207, sp 163 - 603
01:46	04:46	Yes	3.00	Line change	Recover streamer to bird 8. Fishing snag. Est. line change
04:46	06:45	Yes	1.98	Fishing	Continue recovery to bird 8.
06:45	11:00	Yes	4.25	Fishing	Redeployment of equipment. Delays due to heavy seas
11:00	12:48	Yes	1.80	Fishing	Head for line and soft start.
12:48	14:58	Yes	2.17	Production -	Line DS02-208, sp 101 - 601
14:58	18:17	Yes	3.32	Line change	Extended to avoid known pot locations. New snags
18:17	19:10	No	0.88	Navigation	Line DS02-209, sp 101 - 302. Abtd due to bad nav
19:10	23:59	Yes	4.83	Fishing	Recovering streamer to free several fishing snags

25 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	16:33	Yes	16.55	Fishing	Streamer repairs due to damage caused by fishing
16:33	17:32	Yes	0.98	Fishing	Deployment of magnetometer and guns
17:32	22:08	Yes	4.60	Fishing	Transit to line and soft start
22:08	23:59	Yes	1.87	Production -	Line DS02-210, sp 101 - 511

26 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	00:19	Yes	0.32	Production -	Line DS02-210, sp 511 - 585
00:19	04:17	Yes	3.97	Line change	Gun maintennance on line turn
04:17	06:34	Yes	2.28	Production -	Line DS02-209A, sp 101 - 644
06:34	09:31	Yes	2.95	Line change	
09:31	14:29	Yes	4.97	Production -	Line DS02-211, sp 101 - 1193
14:29	18:26	Yes	3.95	Line change	
18:26	20:55	Yes	2.48	Production -	Line OR01-W03, sp 101 - 957
20:55	23:59	Yes	3.08	Line change	

27 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	01:07	Yes	1.12	Line change	
01:07	03:06	Yes	1.98	Production -	Line OR01-W05, sp 101 - 798
03:06	06:55	Yes	3.82	Line change	Gun maintennance on line turn
06:55	10:06	Yes	3.18	Production -	Line OR01-03, sp 101 - 1249
10:06	11:16	Yes	1.17	Line change	
11:16	13:26	Yes	2.17	Production -	Line ORV01-03, sp 101 - 904
13:26	16:30	Yes	3.07	Weather	
16:30	19:51	Yes	3.35	Weather	Line ORV01-07A, sp 101 - 1318. Re-run for weather
19:51	23:35	Yes	3.73	Line change	
23:35	23:59	Yes	0.42	Production -	Line ORV01-05, sp 101 - 247

28 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	02:17	Yes	2.28	Production -	Line ORV01-05, sp 247 - 1077
02:17	05:20	Yes	3.05	Line change	
05:20	11:48	Yes	6.47	Production -	Line OR01-09, sp 101 - 2470
11:48	14:42	Yes	2.90	Line change	
14:42	19:54	Yes	5.20	Production -	Line OR01-15, sp 101 - 1991
19:54	23:59	Yes	4.10	Line change	

29 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	00:24	Yes	0.40	Line change	
00:24	02:28	Yes	2.07	Production -	Line OR01-07, sp 101 - 852
02:28	05:46	Yes	3.30	Line change	
05:46	07:48	Yes	2.03	Production -	Line OR01-05, sp 101 - 866
07:48	10:52	Yes	3.07	Line change	
10:52	18:00	Yes	7.13	Production -	Line OR01-10, sp 101 - 2677
18:00	23:59	Yes	6.00	Line change	Guns onboard for maintennance

30 November 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	00:14	Yes	0.23	Line change	
00:14	00:21	No	0.12	Source	Line OR01-05, sp 98 - 140, Guns not in spec.
00:21	01:02	No	0.68	Operator error	Line OR01-05, sp 140 - 377, Low cut filter set at 6Hz
01:02	05:58	Yes	4.93	Production -	Line OR01-05, sp 377 - 2191
05:58	10:25	Yes	4.45	Line change	
10:25	12:31	Yes	2.10	Production -	Line DS02-108, sp 101 - 610. Abtd Gun tow snapped
12:31	17:27	No	4.93	Source	Replacement outer gun towing rope fitted.
17:27	21:41	Yes	4.23	Production -	Line OR01-16, sp 101 - 1599. Abtd for Helicopter Ops
21:41	22:45	Yes	1.07	Stand-by	Turn for best heading. 1st Helicopter landing.
22:45	23:55	Yes	1.17	Stand-by	2nd Helicopter landing.
23:55	23:59	Yes	0.08	Stand-by	Heading back to rejoin line.

01 December 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	05:33	Yes	5.55	Stand-by	Heading to line after Helicopter crew-x
05:33	05:56	Yes	0.38	Stand-by	Line OR01-16A, sp 1451 - 1600 (Overlap)
05:56	09:17	Yes	3.35	Production -	Line OR01-16A, sp 1600 - 2849
09:17	15:00	Yes	5.72	Line change	Guns onboard for maintennance
15:00	17:57	No	2.95	Source	Towing connection failed on outer stbd array
17:57	23:59	Yes	6.05	Production -	Line OR01-18, sp 101 - 2271

02 December 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	00:58	Yes	0.97	Production -	Line OR01-18, sp 2271 - 2613
00:58	05:02	Yes	4.07	Line change	
05:02	05:27	No	0.42	Source	Line DS02-108A, sp 510 - 611. Overlap.
05:27	08:28	Yes	3.02	Production -	Line DS02-108A, sp 611 - 1320
08:28	13:46	Yes	5.30	Line change	
13:46	16:17	Yes	2.52	Production -	Line DS02-107, sp 101 - 700
16:17	20:54	Yes	4.62	Weather	Line DS02-107, sp 1785 - 1815. High Wx noise.
20:54	23:15	Yes	2.35	Weather	Recovery of guns & magnetometer
23:15	23:59	Yes	0.75	Weather	Waiting for improvement in weather

03 December 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	03:25	Yes	3.42	Weather	Turn into wind to do streamer work
03:25	07:40	Yes	4.25	Weather	Add retrievers and remove fish ropes to bird 8.
07:40	11:40	Yes	4.00	Weather	Trying different line headings
11:40	16:56	Yes	5.27	Weather	Wait on Weather
16:56	21:12	Yes	4.27	Weather	Deploy guns and soft start
21:12	23:59	Yes	2.80	Production -	Line DS02-215, sp 101 - 795

04 December 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	02:52	Yes	2.87	Production -	Line DS02-215, sp 795 - 1501
02:52	05:27	Yes	2.58	Line change	
05:27	11:17	Yes	5.83	Production -	Line DS02-218, sp 101 - 1477
11:17	13:41	Yes	2.40	Line change	
13:41	19:57	Yes	6.27	Production -	Line DS02-216, sp 101 - 1636
19:57	23:59	Yes	4.05	Line change	Ext. Turn to OR01DS217 around waverider buoy

05 December 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	01:01	Yes	1.02	Line change	
01:01	02:28	Yes	1.45	Production -	Line OR01DS217, sp 101 - 637. WO section.
02:28	07:51	Yes	5.38	Production -	Line OR01DS217, sp 637 - 2643. SA section.
07:51	10:39	Yes	2.80	Line change	
10:39	16:09	Yes	5.50	Production -	Line DS02-219, sp 101 -1552
16:09	18:36	Yes	2.45	Line change	
18:36	23:59	Yes	5.40	Production -	Line DS02-220, sp 101 - 1429

06 December 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	00:02	Yes	0.03	Production -	Line DS02-220, sp 1429 - 1440
00:02	02:49	Yes	2.78	Line change	
02:49	08:59	Yes	6.17	Production -	Line DS02-222, sp 101 - 1661
08:59	11:12	Yes	2.22	Line change	
11:12	16:55	Yes	5.72	Production -	Line DS02-221, sp 101 - 1570
16:55	20:07	Yes	3.20	Line change	
20:07	23:59	Yes	3.88	Production -	Line OR25DS224, sp 101 - 1531

07 December 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	01:20	Yes	1.33	Production -	Line OR25DS224, sp 1531 - 2025. SA Section.
01:20	07:11	Yes	5.85	Production -	Line OR25DS224, sp 2025 - 4237. WO section
07:11	09:43	Yes	2.53	Line change	
09:43	13:44	Yes	4.02	Production -	Line OR01-21, sp 101 - 1567
13:44	17:05	Yes	3.35	Line change	
17:05	20:50	Yes	3.75	Production -	Line OR01-19A, sp 101 - 1491
20:50	23:59	Yes	3.17	Line change	

08 December 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	00:28	Yes	0.47	Line change	
00:28	03:34	Yes	3.10	Production -	Line OR01-19B, sp 101 - 1249
03:34	07:34	Yes	4.00	Line change	Recover guns & streamer to bird 5 for repairs
07:34	13:58	No	6.40	Cable	Extra time for streamer repairs
13:58	19:11	Yes	5.22	Production -	Line DS02-225, sp 101 - 1391
19:11	23:11	Yes	4.00	Line change	Guns onboard for maintennance
23:11	23:59	No	0.82	Source	Extra time for gun maintennance

09 December 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	00:12	No	0.20	Source	Extra time for gun maintennance
00:12	10:27	Yes	10.25	Production -	Line OR29DS226, sp 101 - 3931
10:27	13:33	Yes	3.10	Line change	
13:33	15:32	Yes	1.98	Production -	Line OR01-27, sp 101 - 800
15:32	16:01	Yes	0.48	Weather	Line OR01-27, sp 800 - 953 - Rejected for weather
16:01	17:41	Yes	1.67	Weather	Abort line due to weather - Recover guns
17:41	23:59	Yes	6.32	Weather	Trying different line headings

10 December 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	23:59	Yes	24.00	Weather	Standby on weather - streamer still deployed

11 December 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	06:00	Yes	6.00	Weather	Trying line direction for OR01-35A
06:00	11:50	Yes	5.83	Weather	Trying line direction for DS02-107A
11:50	12:50	Yes	1.00	Weather	Deploying guns
12:50	15:00	Yes	2.17	Weather	Run-in and soft start
15:00	15:24	Yes	0.40	Weather	Line DS02-107A, sp 600 - 701. Overlap
15:24	20:36	Yes	5.20	Production -	Line DS02-107A, sp 701 - 1956
20:36	23:15	Yes	2.65	Line change	
23:15	23:59	Yes	0.75	Production -	Line OR14DS105, sp 101 - 366

12 December 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	05:43	Yes	5.72	Production -	Line OR14DS105, sp 366 - 2469. SA section.
05:43	13:01	Yes	7.30	Production -	Line OR14DS105, sp 2469 - 5193. WO section
13:01	16:11	Yes	3.17	Line change	Gun maintennance on line turn
16:11	21:03	Yes	4.87	Production -	Line OR01-12, sp 101 - 1866
21:03	21:58	No	0.92	Operator error	Line OR01-12, sp 1866 - 2200. Nav logging inoperative
21:58	23:59	No	2.03	Operator error	Circle back to rejoin line

13 December 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	03:37	No	3.62	Operator error	Circle back for full fold overlap after nav error
03:37	04:01	No	0.40	Operator error	Line OR01-12A, sp 1718 - 1867. Overlap
04:01	11:58	Yes	7.95	Production -	Line OR01-12A, sp 1867 - 4843
11:58	16:46	Yes	4.80	Line change	Guns onboard for maintennance
16:46	23:59	Yes	7.23	Production -	Line DS02-110, sp 101 - 1877

14 December 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	01:05	Yes	1.08	Production -	Line DS02-110, sp 1877 - 2141. Abtd for priority lines
01:05	02:54	Yes	1.82	Line change	
02:54	08:34	Yes	5.67	Production -	Line OR01-35A, sp 101 - 2191
08:34	11:05	Yes	2.52	Line change	
11:05	15:36	Yes	4.52	Production -	Line OR33DS228, sp 101 - 1716. WO section.
15:36	21:05	Yes	5.48	Production -	Line OR33DS228, sp 1716 - 3657. SA section.
21:05	23:59	Yes	2.92	Line change	

15 December 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	00:20	Yes	0.33	Line change	
00:20	05:25	Yes	5.08	Production -	Line OR31DS227, sp 101 - 1923. SA section.
05:25	10:10	Yes	4.75	Production -	Line OR31DS227, sp 1923 - 3657. WO section
10:10	12:46	Yes	2.60	Line change	
12:46	13:12	Yes	0.43	Weather	Line OR01-27A, sp 652 - 801. Overlap section.
13:12	17:30	Yes	4.30	Production -	Line OR01-27A, sp 801 - 2310
17:30	20:12	Yes	2.70	Line change	
20:12	20:35	Yes	0.38	Production -	Line DS02-110A, sp 2041 - 2142. Overlap section
20:35	23:59	Yes	3.42	Production -	Line DS02-110A, sp 2142 - 2951.

16 December 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	01:30	Yes	1.50	Production -	Line DS02-110A, sp 2951 - 3308
01:30	04:33	Yes	3.05	Line change	
04:33	08:38	Yes	4.08	Production -	Line OR01-47, sp 101 - 1557
08:38	13:57	Yes	5.32	Line change	Guns onboard for maintennance
13:57	17:56	Yes	3.98	Production -	Line DS02-233, sp 101 - 1043
17:56	21:53	Yes	3.95	Line change	Guns onboard for maintennance
21:53	23:59	Yes	2.12	Production -	Line DS02-232, sp 101 - 673

17 December 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	01:41	Yes	1.68	Production -	Line DS02-232, sp 673 - 1073
01:41	04:50	Yes	3.15	Line change	
04:50	09:33	Yes	4.72	Production -	Line DS02-231, sp 101 - 1201
09:33	12:09	Yes	2.60	Line change	
12:09	17:14	Yes	5.08	Production -	Line DS02-230, sp 101 - 1310
17:14	20:57	Yes	3.72	Line change	Guns onboard for maintennance
20:57	23:59	Yes	3.05	Production -	Line DS02-229, sp 101 - 832

18 December 2001

Start	End	Charge	Hrs.	Activity	Details
00:00	01:28	Yes	1.47	Production -	Line Ds02-229, sp 832 - 1180
01:28	01:50	Yes	0.37	Mob / Demob	Turning to wind to recover streamer
01:50	10:00	Yes	8.17	Mob / Demob	Recovery of all equipment
10:00	23:59	Yes	14.00	Mob / Demob	Transit to Burnie

2. LINE SUMMARY

Production :- From 28/10/01 to 18/12/01

Seq.	Line	Dir	Type	FSP	FCSP	LCSP	LSP	Chargeable	Non Chargeable	Status
1	OR01-45	45	2D	98	101	2251	2254	53.750	0.150	COMPLETED
2	OR01-43	225	2D	98	101	152	152	1.275	0.075	Midnight SP
2	OR01-43	225	2D	152	152	2147	2150	49.875	0.075	COMPLETED
3	OR01-41	43	2D	98	101	1924	1927	45.575	0.150	COMPLETED
4	OR01-39	222	2D	98	101	1776	1779	41.875	0.150	COMPLETED
5	OR01-37	42	2D	98	101	2065	2068	49.100	0.150	COMPLETED
6	OR01-04	313	2D	98	101	1794	1797	42.325	0.150	COMPLETED
7	OR01-02	126	2D	98	101	1731	1734	40.750	0.150	COMPLETED
8	ORV01-06	304	2D	98	101	1353	1356	31.300	0.150	COMPLETED
9	ORV01-10	122	2D	98	101	1265	1268	29.100	0.150	COMPLETED
10	ORV01-08	304	2D	98	101	926	929	20.625	0.150	COMPLETED
11	ORV01-07	217	2D	98	101	924	924	20.575	0.075	Midnight SP
11	ORV01-07	217	2D	924	924	1318	1321	9.850	0.075	COMPLETED
12	OR01-06	136	2D	98	101	1815	1818	42.850	0.150	COMPLETED
13	OR01-08	316	2D	98	101	2026	2029	48.125	0.150	COMPLETED
14	DS02-100	305	2D	98	101	2284	2287	81.862	0.225	COMPLETED
15	DS02-212	216	2D	98	101	1917	1920	68.100	0.225	COMPLETED
16	ORW01DS214	38	2D	98	101	1949	1952	46.200	0.150	Aborted
17	ORW01DS214A	37	2D	1801	1950	2437	2437	12.175	3.725	Midnight SP
17	ORW01DS214A	37	2D	2437	2437	2846	2849	10.225	0.075	COMPLETED
18	DS02-213	216	2D	98	101	1986	1988	70.688	0.188	COMPLETED
19	OR23DS233	43	2D	98	101	4305	4308	105.100	0.150	COMPLETED
20	OR01-17	217	2D	98	101	2460	2463	58.975	0.150	COMPLETED
21	OR01-11	37	2D	98	101	2603	2606	62.550	0.150	COMPLETED
22	OR01-13	217	2D	98	101	882	882	19.525	0.075	Midnight SP
22	OR01-13	217	2D	882	882	2697	2700	45.375	0.075	COMPLETED
23	DS02-103	304	2D	98	101	2226	2229	79.688	0.225	COMPLETED
24	DS02-101	126	2D	98	101	2209	2212	79.050	0.225	COMPLETED
25	DS02-102	305	2D	98	101	2077	2080	74.100	0.225	COMPLETED
26	DS02-200	36	2D	98	101	1114	1116	37.987	0.188	COMPLETED
27	DS02-201	216	2D	98	101	1024	1027	34.612	0.225	COMPLETED
28	DS02-202	37	2D	98	101	1006	1009	33.938	0.225	COMPLETED
29	DS02-203	217	2D	98	101	968	971	32.513	0.225	COMPLETED
30	DS02-204	38	2D	98	101	866	869	28.688	0.225	COMPLETED
31	DS02-205	217	2D	98	101	775	776	25.275	0.150	COMPLETED
32	DS02-206	36	2D	98	101	597	600	18.600	0.225	COMPLETED
33	DS02-207	217	2D	98	101	163	163	2.325	0.112	Midnight SP
33	DS02-207	217	2D	163	163	603	606	16.500	0.113	COMPLETED
34	DS02-208	36	2D	98	101	601	604	18.750	0.225	COMPLETED
35	DS02-209	216	2D	98	0	0	302	0.000	7.650	NTBP
36	DS02-210	215	2D	98	101	511	511	15.375	0.113	Midnight SP
36	DS02-210	215	2D	511	511	585	588	2.775	0.113	COMPLETED
37	DS02-209A	36	2D	98	101	644	647	20.363	0.225	COMPLETED
38	DS02-211	215	2D	98	101	1193	1196	40.950	0.225	COMPLETED
39	OR01-W03	38	2D	98	101	957	960	21.400	0.150	COMPLETED
40	OR01-W05	218	2D	98	101	798	801	17.425	0.150	COMPLETED
41	OR01-03	36	2D	98	101	1249	1252	28.700	0.150	COMPLETED
42	ORV01-03	36	2D	98	101	904	907	20.075	0.150	COMPLETED
43	ORV01-07A	217	2D	98	101	1318	1321	30.425	0.150	COMPLETED
44	ORV01-05	36	2D	98	101	247	247	3.650	0.075	Midnight SP
44	ORV01-05	36	2D	247	247	1077	1080	20.750	0.075	COMPLETED
45	OR01-09	216	2D	98	101	2470	2473	59.225	0.150	COMPLETED
46	OR01-15	37	2D	98	101	1991	1994	47.250	0.150	COMPLETED
47	OR01-07	217	2D	98	101	852	855	18.775	0.150	COMPLETED

Seq.	Line	Dir	Type	FSP	FCSP	LCSP	LSP	Chargeable	Non Chargeable	Status
48	OR01-05	36	2D	98	101	866	869	19.125	0.150	COMPLETED
49	OR01-10	132	2D	98	101	2677	2680	64.400	0.150	COMPLETED
50	OR01-35	223	2D	98	377	2191	2194	45.350	7.050	COMPLETED
51	DS02-108	326	2D	98	101	610	610	19.087	0.113	Aborted
52	OR01-16	138	2D	98	101	1599	1609	37.450	0.325	Interrupted
53	OR01-16A	138	2D	1451	1600	2849	2852	31.225	3.800	COMPLETED
54	OR01-18	328	2D	98	101	2271	2271	54.250	0.075	Midnight SP
54	OR01-18	328	2D	2271	2271	2613	2616	8.550	0.075	COMPLETED
55	DS02-108A	326	2D	510	611	1320	1323	26.587	3.900	COMPLETED
56	DS02-107	312	2D	98	101	700	1815	22.462	41.925	Aborted
57	DS02-215	38	2D	98	101	795	795	26.025	0.113	Midnight SP
57	DS02-215	38	2D	795	795	1501	1504	26.475	0.112	COMPLETED
58	DS02-218	217	2D	98	101	1477	1480	51.600	0.225	COMPLETED
59	DS02-216	38	2D	98	101	1636	1639	57.563	0.225	COMPLETED
60	OR01DS217	217	2D	98	101	2643	2646	63.550	0.150	COMPLETED
61	DS02-219	37	2D	98	101	1552	1555	54.413	0.225	COMPLETED
62	DS02-220	217	2D	98	101	1429	1429	49.800	0.113	Midnight SP
62	DS02-220	217	2D	1429	1429	1440	1440	0.412	0.000	COMPLETED
63	DS02-222	41	2D	98	101	1661	1664	58.500	0.225	COMPLETED
64	DS02-221	220	2D	98	101	1570	1573	55.087	0.225	COMPLETED
65	OR25DS224	44	2D	98	101	1531	1531	35.750	0.075	Midnight SP
65	OR25DS224	44	2D	1531	1531	4237	4240	67.650	0.075	COMPLETED
66	OR01-21	218	2D	98	101	1567	1570	36.650	0.150	COMPLETED
67	OR01-19A	38	2D	98	101	1491	1494	34.750	0.150	COMPLETED
68	OR01-19B	219	2D	98	101	1249	1252	28.700	0.150	COMPLETED
69	DS02-225	223	2D	98	101	1391	1394	48.375	0.225	COMPLETED
70	OR29DS226	44	2D	98	101	3931	3934	95.750	0.150	COMPLETED
71	OR01-27	219	2D	98	101	800	953	17.475	3.900	Aborted
72	DS02-107A	312	2D	600	701	1956	1959	47.063	3.900	COMPLETED
73	OR14DS105	130	2D	98	101	366	366	6.625	0.075	Midnight SP
73	OR14DS105	130	2D	366	366	5193	5193	120.675	0.000	COMPLETED
74	OR01-12	313	2D	98	101	1866	2200	44.125	8.425	Aborted
75	OR01-12A	313	2D	1718	1867	4843	4846	74.400	3.800	COMPLETED
76	DS02-110	134	2D	98	101	1877	1877	66.600	0.113	Midnight SP
76	DS02-110	149	2D	1877	1877	2141	2144	9.900	0.112	Not Complete
77	OR01-35A	43	2D	98	101	2191	2194	52.250	0.150	COMPLETED
78	OR33DS228	224	2D	98	101	3657	3660	88.900	0.150	COMPLETED
79	OR31D227	44	2D	98	101	3657	3660	88.900	0.150	COMPLETED
80	OR01-27A	219	2D	652	801	2310	2313	37.725	3.800	COMPLETED
81	DS02-110A	149	2D	2041	2142	2951	2951	30.337	3.788	Midnight SP
81	DS02-110A	149	2D	2951	2951	3308	3311	13.387	0.113	COMPLETED
82	OR01-47	46	2D	98	101	1557	1560	36.400	0.150	COMPLETED
83	DS02-233	226	2D	98	101	1043	1046	35.325	0.225	COMPLETED
84	DS02-232	46	2D	98	101	673	673	21.450	0.113	Midnight SP
84	DS02-232	46	2D	673	673	1073	1076	15.000	0.113	COMPLETED
85	DS02-231	224	2D	98	101	1201	1204	41.250	0.225	COMPLETED
86	DS02-230	44	2D	98	101	1310	1313	45.337	0.225	COMPLETED
87	DS02-229	223	2D	98	101	832	832	27.413	0.112	Midnight SP
87	DS02-229	223	2D	832	832	1180	1183	13.050	0.112	COMPLETED

Production total for the period = 3990.013 109.300 km

3. LINE QC

GEOTEAM

NAVIGATION QC LOG

FUGRO

CLIENT:	Seismic Australia/ Woodside	VESSEL:	RV Geo Arctic	NAV. SYSTEM 1:	Starfix Spot
PROJECT:	2D survey	AREA:	Deep water Ottway/Sorell, Bass Strait Australia	NAV. SYSTEM 2:	Starfix MN8
NAV PROG.:	Starfix Suite 3.1	PROJECT NO.:	34860_1	REF. STATS:	385,336,326,275,026,195,022

Line Number	Sequence	Cross Course				Shot Point Interval				Satellites	PDOP			Fthr<°		Speed	Comments
DS02/OR01		Min	Max	Mean	SD	Min	Max	Mean	SD	Mean	Max	Mean	SD	Min	Max	Mean	
OR01-45	001	-7.0	7.0	0.0	-	24.72	25.24	25.0	.04	7.7	3.3	2.1	0.4	-2.1	4.5	4.7	Complete
OR01-43	002	-8.66	7.10	-0.76	2.51	24.80	25.18	25.0	0.04	8.4	5.0	1.5	0.4	-6.0	2.1	5.03	Complete
OR01-45	003	-7.63	6.79	-0.41	2.56	24.77	25.19	25.0	0.04	6.8	4.4	2.4	0.6	0.1	6.8	5.06	Complete
OR01-39	004	-8.35	7.56	-1.02	2.97	24.89	25.09	25.0	0.02	6.9	5.3	2.5	0.7	-3.5	3.6	5.08	Complete
OR01-37	005	-7.66	7.18	0.01	2.42	24.86	25.13	25.0	0.02	8.7	2.6	1.5	0.2	-1.6	5.8	4.95	Complete
OR01-04	006	-7.36	9.58	-0.01	2.92	24.90	25.06	25.0	0.01	7.7	3.9	2.0	0.4	2.3	7.4	5.08	Complete
OR01-02	007	-5.80	4.50	-0.15	1.85	24.92	25.07	25.0	0.01	6.9	5.2	2.5	0.7	-0.3	6.0	5.11	Complete
ORV01-06	008	-17.8	28.7	1.24	5.67	24.87	25.11	25.0	0.02	8.9	2.4	1.9	0.1	-4.1	4.4	5.16	Complete
ORV01-10	009	-9.07	8.70	-0.72	2.57	24.83	25.16	25.0	0.03	6.7	4.0	2.3	0.6	-4.5	4.3	5.21	Complete
ORV01-08	010	-8.41	10.57	0.06	3.44	24.91	25.08	25.0	0.02	8.3	2.8	1.9	0.4	1.8	8.7	5.14	Complete
ORV01-07	011	-23.56	22.63	-1.12	6.28	24.66	25.42	25.0	0.08	7.1	3.1	2.1	0.4	-1.4	9.9	4.52	Complete
OR01-06	012	-23.52	27.15	-1.72	6.90	24.59	25.40	25.0	0.07	6.8	4.5	2.3	0.5	-1.0	7.0	4.84	Complete
OR01-08	013	-17.66	14.63	-1.25	5.40	24.80	25.22	25.0	0.04	7.5	3.2	2.1	0.4	-9.9	9.2	4.94	Complete
DS02-100	014	-13.85	13.00	-0.40	3.76	37.33	37.75	37.50	0.03	8.3	3.1	2.0	0.3	-3.0	2.3	5.19	Complete
DS02-212	015	-25.26	14.05	0.40	4.77	37.30	37.72	37.50	0.04	8.4	2.7	1.9	0.2	-5.0	4.6	4.99	Complete
ORW01DS214	016	-11.63	12.05	0.76	4.26	4.04	45.10	25.00	0.67	7.9	4.4	2.0	0.5	-1.0	3.3	4.90	Incomplete d/t Gps lack of common sats
ORW01DS214A	017	-9.80	10.01	0.51	3.42	24.83	25.18	25.00	0.03	7.4	4.0	2.0	0.4	-4.0	0.5	4.96	Complete
DS02-213	018	-14.22	26.25	-0.43	3.84	37.21	37.71	37.50	0.04	7.6	4.0	2.1	0.5	-1.3	5.2	5.02	Complete
OR23DS223	019	-7.09	14.15	0.89	2.93	24.68	25.34	25.00	0.05	7.4	5.3	2.2	0.6	-5.2	2.1	4.99	Complete
OR01-17	020	-17.21	10.59	-0.32	3.49	24.70	25.30	25.00	0.05	8.3	2.7	2.0	0.2	-3.1	9.4	4.99	Complete
OR01-11	021	-11.01	9.00	0.27	3.16	24.65	25.29	25.00	0.06	7.7	3.9	2.0	0.4	-6.0	0.5	5.03	Complete
OR01-13	022	-11.08	9.78	-0.09	2.93	24.76	25.18	25.00	0.04	8.3	6.1	1.9	0.3	-1.9	4.5	4.99	Complete
DS02-103	023	-12.28	7.85	-0.84	2.88	37.40	37.62	37.50	0.02	7.6	4.0	2.1	0.5	-3.5	5.4	5.36	Complete
DS02-101	024	-14.74	12.38	0.05	3.30	37.32	37.68	37.50	0.03	7.4	4.1	2.2	0.5	-4.8	4.6	5.05	Complete
DS02-102	025	-10.75	9.08	-0.21	3.31	37.39	37.62	37.50	0.02	7.0	5.3	1.4	0.6	-4.1	1.1	5.11	Complete
DS02-200	026	-17.50	16.79	-0,26	4.83	37.30	37.77	37.50	0.05	8.0	2.9	1.6	0.2	-7.5	-2.1	4.96	Complete
DS02-201	027	-17.05	10.13	-1.18	4.20	37.31	37.68	37.50	0.04	7.7	3.1	2.1	0.4	1.7	6.4	5.23	Complete
DS02-202	028	-14.09	14.08	-1.26	4.10	37.37	37.64	37.50	0.03	6.7	5.3	1.6	0.8	-2.4	0.8	5.05	Complete
DS02-203	029	-9.57	10.77	-1.05	3.61	37.37	37.63	37.50	0.03	8.9	2.5	1.9	0.2	0.9	5.2	5.10	Complete
DS02-204	030	-12.07	9.98	0.22	3.19	37.38	37.62	37.50	0.02	6.8	4.2	2.3	0.6	-2.4	0.5	5.18	Complete

GEOTEAM

NAVIGATION QC LOG

FUGRO

CLIENT:	Seismic Australia/ Woodside	VESSEL:	RV Geo Arctic	NAV. SYSTEM 1:	Starfix Spot
PROJECT:	2D survey	AREA:	Deep water Ottway/Sorell, Bass Strait Australia	NAV. SYSTEM 2:	Starfix MN8
NAV PROG.:	Starfix Suite 3.1	PROJECT NO.:	34860_1	REF. STATS:	385,336,326,275,026,195,022

Line Number	Sequence	Cross Course				Shot Point Interval				Satellites	PDOP			Fthr<°		Speed	Comments
DS02/OR01		Min	Max	Mean	SD	Min	Max	Mean	SD	Mean	Max	Mean	SD	Min	Max	Mean	
DS02-205	031	-9.00	8.45	-0.92	3.57	37.42	37.58	37.50	0.02	8.2	2.7	1.9	0.3	-0-9	2.5	5.07	Complete
DS02-206	032	-12.67	20.15	0.69	5.45	37.36	37.64	37.50	0.03	5.2	6.0	3.3	1.1	-4.6	5.8	4.88	Complete
DS02-207	033	-10.56	12.59	1.01	4.22	37.39	37.62	37.50	0.03	8.5	3.0	2.0	0.4	-6.9	-3.4	5.00	Complete
DS02-208	034	-14.14	11.35	-1.11	4.73	37.32	37.74	37.50	0.04	8.4	2.7	1.9	0.3	-5.5	8.6	4.68	Complete
DS02-209	035																NTBP!
DS02-210	036	-20.01	11.85	-0.78	5.44	37.23	37.66	37.50	0.05	7.9	3.1	2.0	0.4	-6-5	-4.4	4.49	Complete
DS02-209A	037	-10.71	43.68	1.86	8.12	37.33	37.64	37.50	0.03	8.4	2.8	2.0	0.3	-2.1	6.6	4.83	Complete. High CC to avoid fishing gear.
DS02-211	038	-11.21	13.40	0.18	4.17	37.32	37.84	37.50	0.05	7.8	3.1	2.0	0.4	-7.5	2.2	4.45	Complete
OR01-W03	039	-12.07	12.42	-0.96	3.33	24.83	25.16	25.00	0.04	6.3	5.3	2.9	0.9	2.5	7.2	4.62	Complete
OR01-W05	040	-11.79	14.09	0.12	4.85	24.74	25.25	25.00	0.05	8.8	2.4	2.0	0.2	-3.4	-1.5	4.77	Complete
OR01-03	041	-6.23	6.54	-0.14	2.51	24.76	25.22	25.00	0.04	6.9	4.2	2.3	0.6	0.0	4.6	4.86	Complete
ORV01-03	042	-6.99	5.65	-0.26	2.82	24.70	25.21	25.00	0.04	8.4	3.0	1.8	0.3	-2.4	-0.1	4.99	Complete
ORV01-7A	043	-17.15	7.27	-0.15	3.37	24.84	25.19	25.00	0.04	6.8	5.3	2.5	0.8	-2-9	-0.7	4.91	Complete
ORV01-05	044	-6.46	6.17	-0.79	2.70	24.62	25.39	25.00	0.09	8.7	3.1	1.9	0.3	-3.3	0.1	4.86	Complete
OR01-09	045	-9.59	7.49	-0.50	2.63	24.75	25.19	25.00	0.04	7.1	5.7	2.2	0.6	-2.5	1.1	4.95	Complete
OR01-15	046	-6.41	8.73	0.12	2.49	24.59	25.34	25.00	0.06	7.0	5.1	2.4	0.8	-1.4	2.2	4.91	Complete
OR01-07	047	-9.93	7.31	-0.97	3.37	24.82	25.22	25.00	0.04	8.9	2.6	1.8	0.2	-2.6	0.6	4.92	Complete
OR01-05	048	-8.15	6.65	-0.01	3.08	24.71	25.25	25.00	0.05	6.9	2.7	2.2	0.3	0.9	2.1	5.07	Complete
OR01-10	049	-12.04	12.24	-0.37	4.51	24.87	25.11	25.00	0.02	7.8	4.4	2.0	0.4	-4.1	2.6	4.88	Complete
OR01-35	050	-15.42	13.74	-0.77	4.48	24.60	25.34	25.00	0.06	8.8	2.6	1.9	0.2	-2.0	1.6	4.92	Rejected d/t swell noise.
DS02-108	051	-9.99	13.81	0.01	4.15	37.36	37.66	37.00	0.04	7.6	3.1	2.1	0.5	1.6	3.8	4.89	Part 1. Line aborted d/t gun problem.
OR01-16	052	-26.83	13.27	-0.89	5.30	24.86	25.17	25.00	0.03	6.6	5.3	2.5	1.0	-2.1	1.3	4.79	Part 1. Line aborted d/t Helicopter arrival.
OR01-16A	053	-13.22	10.41	-0.15	4.61	24.81	25.15	25.00	0.03	6.6	4.8	2.4	0.6	0.6	6.8	5.06	Part 2. Line complete.
OR01-18	054	-14.93	50.82	-1.61	6.03	24.79	25.23	25.00	0.04	7.3	5.7	2.3	0.8	-0.7	2.2	4.85	Complete
DS02-108A	055	-14.14	8.11	-2.83	3.73	37.35	37.69	37.50	0.04	7.0	4.8	2.2	0.4	-4.0	0.04	4.80	Part 2. Line complete.
DS02-107	056	-15.79	16.13	-1.30	5.10	37.21	37.84	37.50	0.06	6.9	5.3	2.4	0.8	-7.8	6.6	4.88	Part 1. Line aborted d/t weather.
DS02-215	057	-11.89	10.48	0.10	3.43	37.29	37.78	37.50	0.05	8.3	4.1	1.9	0.3	-3.2	1.9	5.00	Complete
DS02-218	058	-7.17	9.53	0.80	2.99	37.25	37.75	37.50	0.05	6.9	4.5	2.3	0.5	0.5	7.8	4.78	Complete
DS02-216	059	-12.81	11.08	0.00	3.78	37.30	37.73	37.50	0.04	7.0	5.3	2.4	0.7	-7.5	-0.1	4.95	Complete
OR01DS217	060	-9.93	9.00	-0.64	3.44	24.83	25.14	25.00	0.03	8.1	2.8	2.0	0.3	-5.9	4.0	5.02	Complete

GEOTEAM

NAVIGATION QC LOG

FUGRO

CLIENT:	Seismic Australia/ Woodside	VESSEL:	RV Geo Arctic	NAV. SYSTEM 1:	Starfix Spot
PROJECT:	2D survey	AREA:	Deep water Ottway/Sorell, Bass Strait Australia	NAV. SYSTEM 2:	Starfix MN8
NAV PROG.:	Starfix Suite 3.1	PROJECT NO.:	34860_1	REF. STATS:	385,336,326,275,026,195,022

Line Number	Sequence	Cross Course				Shot Point Interval				Satellites	PDOP			Fthr<°		Speed	Comments
DS02/OR01		Min	Max	Mean	SD	Min	Max	Mean	SD	Mean	Max	Mean	SD	Min	Max	Mean	
DS02-219	061	-10.46	8.29	-0.32	3.22	37.35	37.73	37.50	0.03	8.0	3.0	1.9	0.3	-12.2	0.4	5.34	Complete
DS02-220	062	-8.21	7.73	0.06	3.13	37.37	37.69	37.50	0.03	7.2	5.2	2.3	0.7	-2.1	6.6	4.99	Complete
DS02-220	063	-9.49	10.48	0.47	2.72	37.30	37.66	37.50	0.03	7.6	4.4	2.2	0.5	-6.4	-0.3	5.13	Complete
DS02-224	064	-9.03	11.13	0.04	3.59	37.29	37.66	37.50	0.03	8.0	3.2	2.0	0.3	-1.9	5.1	5.20	Complete
OR25DS224	065	-13.84	10.35	1.16	3.40	24.66	25.34	25.00	0.05	8.1	4.3	2.0	0.3	-6.3	0.0	5.04	Complete
OR01-21	066	-12.03	11.91	-2.04	3.74	24.69	25.27	25.00	0.07	8.1	3.4	2.0	0.4	-4.1	5.2	4.94	Complete
OR01-19A	067	-7.31	571.7	42.82	119.8	22.98	27.05	25.00	0.09	6.5	5.2	2.6	0.8	-8.8	-2.8	5.01	Complete. High CC at eol d/t fishing equipment.
OR01-19B	068	-8.29	15.00	0.68	4.27	24.82	25.21	25.00	0.05	8.9	2.4	1.9	0.2	-4.6	0.5	5.01	Complete
DS02-225	069	-7.29	6.71	0.25	2.86	37.29	37.68	37.50	0.04	7.0	5.3	2.4	0.7	-2.7	3.9	5.00	Complete
OR29DS226	070	-10.14	16.05	1.56	3.26	24.70	25.26	25.00	0.06	7.8	4.4	2.1	0.5	-2.5	1.8	5.04	Complete
OR01-27	071	-19.13	17.29	0.10	5.57	23.72	26.20	25.00	0.25	7.5	2.9	2.0	0.3	-3.9	-2.3	4.68	Part 1. Line aborted d/t weather.
DS02-107A	072	-10.26	9.96	0.13	3.64	37.26	37.73	37.50	0.04	6.6	5.2	2.6	0.7	-2.4	1.2	4.91	Part 2. LIne complete
OR14DS105	073	-21.95	13.42	0.97	4.07	24.80	25.21	25.00	0.03	8.0	5.0	2.1	0.5	-5.5	2.2	5.00	Complete
OR01-12	074	-8.21	10.00	1.80	n/a	24.87	25.13	25.00	0.02	6.5	5.2	2.6	0.8	-1.0	3.8	4.92	Part 1. Line aborted. Operator failure / logging prob
OR01-12A	075	-10.85	12.03	0.24	3.39	24.87	25.11	25.00	0.02	7.4	4.7	2.2	0.6	-8.2	4.8	5.05	Part 2. Line complete
DS02-110	076	-8.19	44.41	1.98	4.35	37.01	37.95	37.50	0.03	7.4	5.0	2.2	0.6	-1.3	3.7	4.98	Part 1. Line aborted for operational reasons. High CC to make smooth curve in dogleg.
OR01-35A	077	-11.45	9.25	-0.27	3.53	24.47	25.32	25.00	0.07	7.5	4.7	2.2	0.5	-0.3	5.0	4.97	Complete. Rerun of OR01-35.
OR33DS228	078	-13.51	12.28	1.48	3.79	24.72	25.31	25.00	0.05	7.3	5.2	2.2	0.5	-1.1	7.6	4.80	Complete
OR31DS227	079	-8.37	11.44	1.07	2.99	24.49	25.47	25.00	0.06	7.8	4.5	2.1	0.5	-2.7	4.6	4.89	Complete
OR01-27A	080	-12.57	14.15	0.38	4.27	24.69	25.26	25.00	0.06	7.4	3.3	2.1	0.4	-0.3	7.9	4.73	Part 2. Line complete.
DS02-110A	081	-12.11	8.92	-0.49	3.32	37.29	37.68	37.50	0.04	8.2	3.9	1.9	0.3	-2.4	1.9	4.85	Part 2. Line complete
OR01-47	082	-10.49	14.62	0.74	3.58	24.67	25.32	25.00	0.07	6.9	4.5	2.3	0.6	-0.3	5.1	4.82	Complete
DS02-233	083	-11.46	11.42	0.34	4.53	37.14	37.81	37.50	0.07	7.1	4.3	2.2	0.4	-1.7	2.4	4.80	Complete
DS02-232	084	-8.48	7.25	0.07	2.68	37.19	37.83	37.50	0.06	8.7	3.6	1.9	0.3	-1.0	0.3	4.77	Complete
DS02-231	085	-10.45	14.79	0.27	3.94	37.26	37.78	37.50	0.06	6.8	5.1	2.3	0.6	-3.8	1.0	4.73	Complete
DS02-230	086	-16.04	10.66	-0.65	3.99	37.23	37.83	37.50	0.05	7.5	3.2	2.1	0.4	-1.5	0.8	4.82	Complete
DS02-229	087	-9.98	8.56	0.30	3.19	37.29	37.70	37.50	0.04	8.4	6.2	1.9	0.3	-1.9	4.3	4.85	Complete

SEISMIC QC , LINE SUMMARY

r/v Geo Arctic

Client :	SEISMIC AUSTRALIA	**Project :**	2D non-exclusive	**Group Interval :**	12.5m
Project #:	34860/1	**Date Commenced :**	29.10.2001	**Group Number :**	560
Area:	Sorell/Otway II	**Date Completed :**	19.12.2001	**Cable Length :**	7000m
SP Interval:	25m / 37.5m	**Array :**	3660 cu in.	**Cable Depth :**	10 - 12m

Seq.	Date (UTC)	Line I.D.	DIR	FSP	FCSP	LCSP	LSP	Charg'ble km	Gun Timing % in spec.	SOL 6Hz Noise uB	SOL Feather	EOL Feather	EOL 6Hz Noise uB	Cable Depth (m)	Depth % in spec.	Status
1	02.Nov	OR01-45	45	98	101	2251	2254	**53.750**	99.9%	8.2	2.8	-0.9	11.1	12	99.8%	COMPLETED
2	02.Nov	OR01-43	225	98	101	2147	2150	**51.150**	99.6%	11.5	2.0	-6.0	15.3	10	99.8%	COMPLETED
3	03.Nov	OR01-41	43	98	101	1924	1927	**45.575**	98.2%	16.0	3.5	0.2	16.0	10	99.8%	COMPLETED
4	03.Nov	OR01-39	222	98	101	1776	1779	**41.875**	99.9%	5.7	3.5	-3.5	2.8	10	100.0%	COMPLETED
5	04.Nov	OR01-37	42	98	101	2065	2068	**49.100**	99.9%	3.9	4.6	0.0	4.0	10	100.0%	COMPLETED
6	04.Nov	OR01-04	313	98	101	1794	1797	**42.325**	99.6%	3.9	2.6	3.0	2.6	8	99.9%	COMPLETED
7	04.Nov	OR01-02	126	98	101	1731	1734	**40.750**	100.0%	4.0	5.8	2.0	3.0	8	100.0%	COMPLETED
8	05.Nov	ORV01-06	305	98	101	1353	1356	**31.300**	100.0%	3.8	4.3	-3.8	3.2	8	99.7%	COMPLETED
9	05.Nov	ORV01-10	122	98	101	1265	1268	**29.100**	100.0%	4.3	4.2	-4.5	3.2	9	99.9%	COMPLETED
10	05.Nov	ORV01-08	304	98	101	926	929	**20.625**	100.0%	9.2	8.5	2.0	3.4	8	99.5%	COMPLETED
11	05.Nov	ORV01-07	217	98	101	1318	1321	**30.425**	99.9%	42.6	9.8	-1.1	57.4	10	97.1%	NTBP
12	06.Nov	OR01-06	136	98	101	1815	1818	**42.850**	99.6%	12.6	4.7	-0.9	15.5	10	97.4%	COMPLETED
13	06.Nov	OR01-08	316	98	101	2026	2029	**48.125**	99.3%	19.8	9.1	-9.8	22.5	10	99.1%	COMPLETED
14	07.Nov	DS02-100	305	98	101	2284	2287	**81.863**	99.3%	8.1	-0.4	-2.7	8.0	12	90.8%	COMPLETED
15	08.Nov	DS02-212	216	98	101	1917	1920	**68.100**	99.8%	8.9	-1.4	2.2	9.3	12	99.5%	COMPLETED
16	08.Nov	ORW01DS214	38	98	101	1949	1952	**46.200**	99.9%	8.1	-0.9	3.0	5.8	12 - 10	99.5%	INCOMPLETE
17	08.Nov	ORW01DS214A	37	1801	1950	2846	2849	**22.400**	100.0%	4.5	-0.4	0.4	3.5	10	99.8%	COMPLETED
18	09.Nov	DS02-213	216	98	101	1986	1988	**70.688**	100.0%	5.2	-1.1	-0.5	17.4	10	99.7%	COMPLETED
19	13.Nov	OR23DS223	43	98	101	4305	4308	**105.100**	99.9%	22.0	1.7	0.3	13.6	10	99.6%	COMPLETED
20	14.Nov	OR01-17	218	98	101	2460	2463	**58.975**	99.1%	12.6	6.9	-0.9	17.7	10	99.1%	COMPLETED
21	14.Nov	OR01-11	37	98	101	2603	2606	**62.550**	99.6%	32.0	-1.7	0.5	23.2	10	98.0%	COMPLETED
22	14.Nov	OR01-13	217	98	101	2697	2700	**64.900**	100.0%	16.8	-1.6	3.9	13.3	10	99.6%	COMPLETED
23	15.Nov	DS02-103	304	98	101	2226	2229	**79.688**	100.0%	3.4	2.4	-1.6	3.5	10	99.8%	COMPLETED
24	17.Nov	DS02-101	126	98	101	2209	2212	**79.050**	99.7%	4.2	4.4	-4.8	4.5	10	94.1%	COMPLETED
25	21.Nov	DS02-102	305	98	101	2077	2080	**74.100**	99.8%	3.2	0.0	-3.0	3.5	10	100.0%	COMPLETED

Seq.	Line I.D.	Comments and deviations from Specification.	Status
1	OR01-45	Marginal noise. Streamer depth 12m. Noise was above acceptable levels at 10m depth.	COMPLETED
2	OR01-43	Marginal due to swell noise	COMPLETED
3	OR01-41	Marginal due to swell noise	COMPLETED
4	OR01-39		COMPLETED
5	OR01-37		COMPLETED
6	OR01-04		COMPLETED
7	OR01-02	No communication with birds sp 1534 - 1700. Compass data interpolated between these shots.	COMPLETED
8	ORV01-06		COMPLETED
9	ORV01-10		COMPLETED
10	ORV01-08		COMPLETED
11	ORV01-07	Rejected due to excessive swell noise	NTBP
12	OR01-06	Echosounder unstable due to sea conditions	COMPLETED
13	OR01-08		COMPLETED
14	DS02-100	Birds 13 and 14 pulled deep after strike with suspected fishing gear	COMPLETED
15	DS02-212		COMPLETED
16	ORW01DS214	Streamer depth raised to 10m at dogleg, sp 1784. Line aborted due to navigation problem	INCOMPLETE
17	ORW01DS214A		COMPLETED
18	DS02-213		COMPLETED
19	OR23DS223	Swell noise	COMPLETED
20	OR01-17	Swell noise	COMPLETED
21	OR01-11	Swell noise	COMPLETED
22	OR01-13		COMPLETED
23	DS02-103		COMPLETED
24	DS02-101		COMPLETED
25	DS02-102		COMPLETED

Seq.	Date (UTC)	Line I.D.	DIR	FSP	FCSP	LCSP	LSP	Charg'ble km	Gun Timing % in spec.	SOL 6Hz Noise uB	SOL Feather	EOL Feather	EOL 6Hz Noise uB	Cable Depth (m)	Depth % in spec.	Status
26	22.Nov	DS02-200	36	98	101	1114	1116	**37.988**	99.9%	5.4	-3.9	-2.3	4.0	10	99.2%	COMPLETED
27	22.Nov	DS02-201	216	98	101	1024	1027	**34.613**	100.0%	4.5	3.8	4.6	6.2	10	99.8%	COMPLETED
28	22.Nov	DS02-202	37	98	101	1006	1009	**33.938**	100.0%	5.3	-0.3	-0.3	4.0	10	100.0%	COMPLETED
29	23.Nov	DS02-203	217	98	101	968	971	**32.513**	98.7%	3.3	1.0	3.5	5.3	10	100.0%	COMPLETED
30	23.Nov	DS02-204	38	98	101	866	869	**28.688**	100.0%	3.5	-1.3	0.5	3.7	10	100.0%	COMPLETED
31	23.Nov	DS02-205	217	98	101	775	776	**25.275**	100.0%	3.6	-0.4	4.0	4.3	10	100.0%	COMPLETED
32	23.Nov	DS02-206	36	98	101	597	600	**18.600**	99.6%	3.7	-4.0	3.4	3.8	10	99.9%	COMPLETED
33	23.Nov	DS02-207	217	98	101	603	606	**18.825**	100.0%	3.4	-3.7	-6.6	7.2	10	98.1%	COMPLETED
34	24.Nov	DS02-208	36	98	101	601	604	**18.750**	99.6%	12.0	-5.1	4.6	5.1	12	99.5%	COMPLETED
35	24.Nov	DS02-209	216	98	0	0	302	**0.000**	99.0%	13.7	-5.2	-4.3	12.1	12	93.3%	NTBP
36	25.Nov	DS02-210	216	98	101	585	588	**18.150**	99.6%	5.4	-4.4	-5.9	8.4	10	96.5%	COMPLETED
37	26.Nov	DS02-209A	36	98	101	644	647	**20.363**	99.5%	8.4	-1.5	2.1	5.3	12	99.6%	COMPLETED
38	26.Nov	DS02-211	215	98	101	1193	1196	**40.950**	99.5%	6.6	-1.2	2.2	7.2	12	98.6%	COMPLETED
39	26.Nov	OR01-W03	38	98	101	957	960	**21.400**	99.9%	28.1	2.9	2.7	18.1	10	94.0%	COMPLETED
40	27.Nov	OR01-W05	218	98	101	798	801	**17.425**	98.9%	20.7	-3.1	-2.8	28.1	10	99.4%	COMPLETED
41	27.Nov	OR01-03	36	98	101	1249	1252	**28.700**	99.7%	6.7	3.8	0.2	13.6	10	99.7%	COMPLETED
42	27.Nov	ORV01-03	36	98	101	904	907	**20.075**	99.8%	7.1	-0.2	-2.2	8.8	10	99.6%	COMPLETED
43	27.Nov	ORV01-07A	217	98	101	1318	1321	**30.425**	99.8%	-	-0.9	-2.4	9.8	10	99.8%	COMPLETED
44	27.Nov	ORV01-05	36	98	101	1077	1080	**24.400**	98.6%	17.4	0.0	-3.2	10.0	10	98.7%	COMPLETED
45	28.Nov	OR01-09	216	98	101	2470	2473	**59.225**	99.8%	13.7	0.8	-0.2	22.0	10	98.6%	COMPLETED
46	28.Nov	OR01-15	37	98	101	1991	1994	**47.250**	99.4%	16.6	-0.7	1.1	9.2	10	98.8%	COMPLETED
47	29.Nov	OR01-07	217	98	101	852	855	**18.775**	99.7%	15.6	0.5	-1.5	20.6	10	98.8%	COMPLETED
48	29.Nov	OR01-05	36	98	101	866	869	**19.125**	100.0%	10.5	1.8	0.9	11.5	10	99.4%	COMPLETED
49	29.Nov	OR01-10	132	98	101	2677	2680	**64.400**	100.0%	4.0	-3.7	1.8	3.7	10	99.3%	COMPLETED
50	30.Nov	OR01-35	222	98	377	2191	2194	**45.350**	97.6%	-	1.0	-1.1	31.6	10	99.0%	NTBP
51	30.Nov	DS02-108	326	98	101	610	610	**19.088**	99.0%	6.5	1.9	3.0	5.0	10	99.2%	INCOMPLETE
52	30.Nov	OR01-16	138	98	101	1599	1609	**37.450**	99.1%	5.5	1.2	-	13.0	10	98.6%	INCOMPLETE
53	01.Dec	OR01-16A	138	1451	1600	2849	2852	**31.225**	97.5%	18.9	6.6	0.7	6.2	10	99.1%	COMPLETED
54	01.Dec	OR01-18	328	98	101	2613	2616	**62.800**	99.8%	5.5	0.5	-0.3	7.3	10	99.1%	COMPLETED
55	02.Dec	DS02-108A	326	510	611	1320	1323	**26.588**	98.9%	7.5	-0.1	-3.3	6.2	10	99.9%	COMPLETED
56	02.Dec	DS02-107	312	98	101	700	1815	**22.463**	98.3%	5.7	6.1	-7.7	141.2	12	85.9%	INCOMPLETE
57	03.Dec	DS02-215	38	98	101	1501	1504	**52.500**	99.6%	12.1	-3.2	-1.9	6.8	12	97.8%	COMPLETED
58	04.Dec	DS02-218	217	98	101	1477	1480	**51.600**	99.5%	10.5	7.3	4.7	6.7	12	99.0%	COMPLETED
59	04.Dec	DS02-216	38	98	101	1636	1639	**57.563**	99.6%	4.2	-0.5	-7.2	4.0	12	98.0%	COMPLETED

Seq.	Line I.D.	Comments and deviations from Specification.	Status
26	DS02-200		COMPLETED
27	DS02-201		COMPLETED
28	DS02-202		COMPLETED
29	DS02-203		COMPLETED
30	DS02-204		COMPLETED
31	DS02-205		COMPLETED
32	DS02-206		COMPLETED
33	DS02-207		COMPLETED
34	DS02-208		COMPLETED
35	DS02-209	Aborted and Rejected due to Navigation timing problem	NTBP
36	DS02-210		COMPLETED
37	DS02-209A	Small deviation offline Shots 519 - 554 avoiding fishing buoys. Rerun for line with navigation timing errors.	COMPLETED
38	DS02-211		COMPLETED
39	OR01-W03	Swell noise	COMPLETED
40	OR01-W05	Swell noise	COMPLETED
41	OR01-03		COMPLETED
42	ORV01-03		COMPLETED
43	ORV01-07A	Rerun for line previously affected by weather noise	COMPLETED
44	ORV01-05		COMPLETED
45	OR01-09	Navigation dead reckoning shots 700, 701, 702 & 703.	COMPLETED
46	OR01-15		COMPLETED
47	OR01-07		COMPLETED
48	OR01-05		COMPLETED
49	OR01-10		COMPLETED
50	OR01-35	Sp 101 - 140 guns out of spec. Sp 101 - 376 Low cut filter set to 6Hz. Swell noise. Rejected for Swell Noise.	NTBP
51	DS02-108	Aborted due to gun towing connection breakage	INCOMPLETE
52	OR01-16	Aborted for helicopter landings. Gun pressure < 1800 psi sp 1600 - 1609.	INCOMPLETE
53	OR01-16A		COMPLETED
54	OR01-18	Side seas causing unstable steering. Max offtrack 50m.	COMPLETED
55	DS02-108A	Continuation of line previously aborted for guns.	COMPLETED
56	DS02-107	Swell noise increasing along line. Aborted due to weather.	INCOMPLETE
57	DS02-215		COMPLETED
58	DS02-218		COMPLETED
59	DS02-216		COMPLETED

Seq.	Date (UTC)	Line I.D.	DIR	FSP	FCSP	LCSP	LSP	Charg'ble km	Gun Timing % in spec.	SOL 6Hz Noise uB	SOL Feather	EOL Feather	EOL 6Hz Noise uB	Cable Depth (m)	Depth % in spec.	Status
60	05.Dec	OR01DS217	217	98	101	2643	2646	63.550	99.8%	5.2	-5.6	1.0	4.0	10	98.6%	COMPLETED
61	05.Dec	DS02-219	37	98	101	1552	1555	54.413	100.0%	3.7	-11.4	-4.3	3.6	10	99.1%	COMPLETED
62	05.Dec	DS02-220	217	98	101	1440	1443	50.213	99.9%	3.5	5.8	4.4	3.8	10	97.3%	COMPLETED
63	06.Dec	DS02-222	41	98	101	1661	1664	58.500	100.0%	3.8	-4.4	-5.6	4.9	10	98.9%	COMPLETED
64	06.Dec	DS02-221	220	98	101	1570	1573	55.088	99.8%	3.9	-1.7	1.3	5.5	10	97.9%	COMPLETED
65	06.Dec	OR25DS224	44	98	101	4237	4240	103.400	99.7%	4.5	-2.9	-4.9	12.3	10	95.4%	COMPLETED
66	07.Dec	OR01-21	218	98	101	1567	1570	36.650	99.1%	22.4	4.3	-3.5	10.1	10	93.0%	COMPLETED
67	07.Dec	OR01-19A	37.8	98	101	1491	1494	34.750	98.6%	10.5	-3.2	-8.9	7.4	10	95.6%	COMPLETED
68	08.Dec	OR01-19B	219	98	101	1249	1252	28.700	99.1%	10.4	0.5	-4.2	11.1	10	96.5%	COMPLETED
69	08.Dec	DS02-225	223	98	101	1391	1393	48.375	96.5%	5.8	-2.6	-1.0	10.3	10 - 12	99.2%	COMPLETED
70	09.Dec	OR29DS226	44	98	101	3931	3934	95.750	99.7%	9.2	-1.7	-2.0	4.5	10	99.8%	COMPLETED
71	09.Dec	OR01-27	219	98	101	800	953	17.475	97.9%	6.0	-3.0	-3.4	29.6	10	88.6%	INCOMPLETE
72	11.Dec	DS02-107A	312	600	701	1956	1959	47.063	99.9%	7.0	-0.8	0.1	4.2	12	99.2%	COMPLETED
73	11.Dec	OR14DS105	130	98	101	5193	5196	127.300	99.9%	5.3	1.3	-1.2	4.0	10	98.5%	COMPLETED
74	12.Dec	OR01-12	313	98	101	1866	2200	44.125	99.9%	3.5	-0.7	3.2	3.4	10	99.9%	INCOMPLETE
75	13.Dec	OR01-12A	313	1718	1867	4843	4846	74.400	100.0%	3.7	-6.9	2.6	3.3	10	99.0%	COMPLETED
76	13.Dec	DS02-110	134	98	101	2141	2144	76.500	99.9%	3.5	-0.8	0.8	4.5	12	99.4%	INCOMPLETE
77	14.Dec	OR01-35A	43	98	101	2191	2194	52.250	97.2%	45.9	1.3	0.9	19.6	10	97.8%	COMPLETED
78	14.Dec	OR33DS228	224	98	101	3657	3660	88.900	99.7%	45.9	0.7	0.6	23.2	10-10.5-12	98.0%	COMPLETED
79	15.Dec	OR31DS227	44	98	101	3657	3660	88.900	97.6%	-	-2.2	1.8	28.4	12 - 10.5	95.1%	COMPLETED
80	15.Dec	OR01-27A	219	652	801	2310	2313	37.725	99.1%	33.0	0.0	4.0	81.0	10	96.2%	COMPLETED
81	15.Dec	DS02-110A	149	2041	2142	3308	3311	43.725	99.4%	9.1	-2.2	-0.8	3.9	12	99.8%	COMPLETED
82	16.Dec	OR01-47	46	98	101	1557	1560	36.400	96.6%	37.4	0.2	4.7	49.5	10.5	86.9%	COMPLETED
83	16.Dec	DS02-233	226	98	101	1043	1046	35.325	95.1%	51.0	-1.7	1.3	27.1	12	98.1%	COMPLETED
84	16.Dec	DS02-232	46	98	101	1073	1076	36.450	98.8%	11.5	-0.3	-0.4	28.3	12	94.7%	COMPLETED
85	17.Dec	DS02-231	224	98	101	1201	1204	41.250	99.9%	19.3	-0.6	-0.7	25.1	12	99.4%	COMPLETED
86	17.Dec	DS02-230	44	98	101	1310	1313	45.338	98.7%	13.5	-0.2	-0.4	10.7	10	98.5%	COMPLETED
87	17.Dec	DS02-229	223	98	101	1180	1183	40.463	99.9%	10.1	4.2	-1.1	8.7	12	99.8%	COMPLETED
							Total =	3990.013 kms								

Seq.	Line I.D.	Comments and deviations from Specification.	Status
60	OR01DS217		COMPLETED
61	DS02-219	High Feather at SOL (Max -11.4). Shots 1328 - 1335 not logged (8 consecutive).	COMPLETED
62	DS02-220		COMPLETED
63	DS02-222		COMPLETED
64	DS02-221		COMPLETED
65	OR25DS224	Bird 5 approx 1m deep for whole line.	COMPLETED
66	OR01-21	Bird 5 approx 1m deep for whole line.	COMPLETED
67	OR01-19A	Bird 5 approx 1m deep for whole line. Dogleg added in line (sp 1141) to avoid fishing pots. Additional 4° offline at sp 1293 avoiding pots.	COMPLETED
68	OR01-19B	Bird 5 approx 1m deep for whole line.	COMPLETED
69	DS02-225	Streamer lowered from 10m to 12m at sp 275	COMPLETED
70	OR29DS226		COMPLETED
71	OR01-27	Line aborted due to bad weather. Echosounder unstable due to heavy seas.	INCOMPLETE
72	DS02-107A	Continuation of line previously aborted for weather.	COMPLETED
73	OR14DS105		COMPLETED
74	OR01-12	Aborted as navigation computer harddisk full	INCOMPLETE
75	OR01-12A		COMPLETED
76	DS02-110	Aborted to turn onto priority lines	INCOMPLETE
77	OR01-35A	Large swell noise.	COMPLETED
78	OR33DS228	Large swell noise. Streamer depth 10m sp 101 - 1082, 10.5m sp 1082 - 1862, 12m sp 1862 - 3657	COMPLETED
79	OR31DS227	Large swell noise. Streamer depth 12m sp 101 - 1923, 10.5m sp 1923 - 3657	COMPLETED
80	OR01-27A	Large swell noise. Line previously aborted for weather.	COMPLETED
81	DS02-110A		COMPLETED
82	OR01-47	Large swell noise.	COMPLETED
83	DS02-233	Large swell noise.	COMPLETED
84	DS02-232	Swell noise.	COMPLETED
85	DS02-231	Swell noise.	COMPLETED
86	DS02-230		COMPLETED
87	DS02-229		COMPLETED

Lines accepted by Client Representative.....

4. ENERGY SOURCE DROP OUT SPECIFICATION

- All one gun drop outs are acceptable
- All two gun drop outs are acceptable except when 250 cu. Inch guns are dropped in different clusters.

5. ORIGINAL DATA ACQUISITION PROGRAM

Line Name	Latitude	Longitude	Eastings	Northings
DS02-100	384554.6S	1420055.0E	588207	5708777
	391027.5S	1424459.9E	651166	5662406
DS02-101	384817.1S	1415840.6E	584916	5704421
	391155.9S	1424111.3E	645630	5659785
DS02-102	384953.4S	1415653.9E	582311	5701479
	391103.9S	1423522.6E	637292	5661539
DS02-103	385136.0S	1415549.1E	580715	5698333
	391443.0S	1423922.5E	642925	5654683
DS02-104	391206.1S	1422955.2E	629405	5659755
	393340.1S	1430307.8E	676296	5618922
DS02-105	391407.6S	1422819.7E	627055	5656047
	391502.7S	1423004.0E	629527	5654307
	393301.4S	1425756.0E	668881	5620284
DS02-106	391533.5S	1422713.2E	625417	5653424
	393726.0S	1430002.2E	671711	5612059
DS02-107	391659.7S	1422604.6E	623732	5650793
	393915.9S	1425806.4E	668876	5608730
DS02-108	395712.1S	1430953.4E	684924	5575160
	393826.5S	1425318.6E	662050	5610401
DS02-109	392116.9S	1422242.2E	618762	5642941
	393742.9S	1424609.1E	651838	5611954
	394144.2S	1424904.9E	655879	5604432
	401058.3S	1431131.5E	686623	5549628
DS02-110	392255.9S	1422124.4E	616854	5639916
	393934.0S	1424349.4E	648441	5608595
	401254.4S	1431001.4E	684406	5546101
DS02-111	392458.3S	1421948.0E	614492	5636177
	394251.7S	1424142.6E	645304	5602557
	402311.3S	1431325.8E	688759	5526956
DS02-112	392602.5S	1421725.1E	611046	5634248
	402000.4S	1430146.0E	672394	5533240
DS02-200	384001.0S	1421239.0E	605339	5719471
	385503.2S	1415847.7E	584953	5691902
DS02-201	385648.2S	1420228.6E	590234	5688604
	384315.5S	1421500.0E	608666	5713430
DS02-202	385808.1S	1420517.2E	594265	5686095
	384500.0S	1421745.9E	612627	5710153
DS02-203	384701.7S	1422000.2E	615814	5706355
	385924.4S	1420752.5E	597973	5683698
DS02-204	390041.0S	1421024.1E	601590	5681289
	385000.0S	1422059.9E	617173	5700838
DS02-205	390248.4S	1421424.7E	607322	5677287
	385329.2S	1422319.6E	620444	5694338
DS02-206	390358.4S	1421639.7E	610538	5675081
	385725.5S	1422242.8E	619446	5687068
DS02-207	385851.1S	1422537.8E	623617	5684363
	390521.6S	1421914.9E	614229	5672464
DS02-208	390642.7S	1422145.3E	617806	5669910
	390008.0S	1422756.3E	626911	5681940

Line Name	Latitude	Longitude	Eastings	Northings
DS02-209	391000.1S	1422556.5E	623742	5663732
	390241.8S	1423244.7E	633767	5677085
DS02-210	390419.6S	1423519.8E	637445	5674005
	391041.4S	1422929.4E	628830	5662378
DS02-211	392157.6S	1422327.9E	619836	5641669
	390526.7S	1423817.2E	641671	5671862
DS02-212	393304.3S	1421525.4E	608002	5621284
	390506.3S	1424208.3E	647233	5672387
DS02-213	390545.7S	1424458.4E	651298	5671094
	393449.3S	1421709.4E	610438	5618013
DS02-214	393637.5S	1421830.3E	612319	5614648
	391903.8S	1423531.7E	637252	5646740
DS02-215	393948.0S	1422131.7E	616556	5608711
	391900.1S	1424227.8E	647219	5646673
DS02-216	394119.8S	1422252.6E	618442	5605851
	391828.0S	1424607.4E	652497	5647563
DS02-217	394321.7S	1422444.0E	621035	5602051
	392447.8S	1424357.3E	649155	5635912
DS02-218	394537.5S	1422638.3E	623689	5597820
	392602.6S	1424543.9E	651661	5633558
DS02-219	392558.7S	1425001.2E	657815	5633555
	394749.8S	1422836.5E	626435	5593698
DS02-220	394939.4S	1423017.4E	628778	5590277
	392941.1S	1425003.8E	657736	5626695
DS02-221	395108.7S	1423138.6E	630660	5587491
	392959.0S	1425456.3E	664711	5625998
DS02-222	395328.5S	1423451.5E	635170	5583103
	393105.8S	1425957.9E	671871	5623783
DS02-223	395544.8S	1423520.3E	635778	5578886
	393606.8S	1425854.2E	670144	5614537
DS02-224	395729.8S	1423651.5E	637883	5575609
	393934.7S	1425847.6E	669846	5608130
DS02-225	395937.5S	1423832.5E	640207	5571630
	394303.1S	1425851.2E	669790	5601701
DS02-226	400103.1S	1424004.0E	642330	5568949
	394528.6S	1425919.1E	670355	5597202
DS02-227	400242.8S	1424141.1E	644572	5565832
	394555.5S	1430234.8E	674994	5596268
DS02-228	400433.4S	1424310.3E	646620	5562383
	394757.8S	1430402.2E	676985	5592450
DS02-229	400934.4S	1424800.8E	653313	5552965
	395555.3S	1430424.0E	677163	5577715
DS02-230	401137.8S	1424946.0E	655722	5549108
	395609.1S	1430901.5E	683740	5577131
DS02-231	401341.8S	1425124.3E	657968	5545237
	395912.7S	1430954.7E	684864	5571442
DS02-232	401533.3S	1425313.6E	660478	5541745
	400408.5S	1430828.4E	682598	5562370
DS02-233	401813.8S	1425522.0E	663404	5536731
	400619.3S	1431120.9E	686584	5558236

Line Name	Latitude	Longitude	Eastings	Northings
OR01-01	392343.0S	1424500.1E	650695	5637882
	391756.1S	1425035.4E	658934	5648417
OR01-02	390624.3S	1430100.8E	674392	5669424
	391814.0S	1432148.8E	703799	5646821
OR01-03	392459.6S	1424501.4E	650681	5635521
	391358.8S	1425508.5E	665633	5655598
OR01-04	390953.2S	1430022.6E	673332	5663007
	392406.6S	1432004.6E	701022	5636015
OR01-05	392457.1S	1424645.5E	653172	5635547
	391811.8S	1425305.8E	662527	5647859
OR01-06	391325.1S	1425943.4E	672246	5656493
	392837.5S	1431842.2E	698837	5627713
OR01-07	392457.5S	1424838.5E	655876	5635482
	391824.6S	1425455.0E	665136	5647410
OR01-08	391409.8S	1425421.3E	664493	5655281
	393122.3S	1431558.6E	694798	5622730
OR01-09	392558.7S	1425001.2E	657815	5633555
	390144.8S	1431249.3E	691620	5677647
OR01-10	391808.6S	1425155.6E	660848	5647993
	394014.7S	1432314.7E	704776	5606046
OR01-11	392751.3S	1425000.7E	657731	5630083
	390215.7S	1431419.6E	693767	5676640
OR01-12	391200.3S	1423637.5E	639058	5659770
	395454.4S	1433436.0E	720231	5578471
OR01-13	392941.1S	1425003.8E	657736	5626695
	390312.0S	1431535.4E	695548	5674860
OR01-14	393437.5S	1425957.6E	671717	5617256
	395926.3S	1433138.9E	715786	5570205
OR01-15	392958.3S	1425230.4E	661227	5626093
	391108.3S	1431043.6E	688179	5660346
OR01-16	394056.6S	1430004.1E	671612	5605563
	400656.8S	1433045.8E	714134	5556351
OR01-17	392959.0S	1425456.3E	664711	5625998
	390613.3S	1431816.1E	699268	5669172
OR01-18	395159.3S	1430744.5E	682094	5584879
	401906.8S	1432943.4E	712024	5533882
OR01-19A	392306.1S	1430500.0E	679427	5638411
	390950.7S	1431810.8E	698972	5662473
OR01-19B	392959.0S	1425914.8E	670888	5625866
	391928.8S	1431014.6E	687114	5644931
OR01-21	393151.0S	1430000.5E	671902	5622389
	391752.1S	1431416.8E	692988	5647770
OR01-23	393503.1S	1425959.1E	671735	5616465
	391403.0S	1432115.5E	703201	5654581
OR01-25	393831.2S	1425952.9E	671446	5610052
	391638.7S	1432213.7E	704473	5649742
OR01-27	394200.4S	1425957.4E	671410	5603602
	392021.7S	1432237.3E	704857	5642853
OR01-29	394427.3S	1430027.8E	672032	5599056
	392403.9S	1432308.7E	705427	5635981

Line Name	Latitude	Longitude	Eastings	Northings
OR01-31	394455.3S	1430345.1E	676709	5598086
	392857.0S	1432217.3E	703960	5626978
OR01-33	394706.9S	1430502.5E	678457	5593984
	393059.8S	1432404.4E	706418	5623122
OR01-35	395202.0S	1430401.8E	676801	5584919
	393241.8S	1432702.4E	710582	5619863
OR01-37	395457.8S	1430531.7E	678811	5579448
	393644.9S	1432651.4E	710117	5612375
OR01-39	395520.7S	1430958.2E	685122	5578592
	393958.6S	1432751.2E	711379	5606365
OR01-41	394237.8S	1432955.1E	714194	5601374
	395912.6S	1430954.7E	684864	5571442
OR01-43	400311.6S	1430943.6E	684421	5564080
	394508.8S	1433324.9E	719058	5596576
OR01-45	394713.6S	1433615.7E	723012	5592612
	400619.3S	1431120.8E	686584	5558236
OR01-47	395844.7S	1433151.4E	716119	5571481
	401104.7S	1431520.8E	692042	5549295
OR01-W01	391826.5S	1423607.8E	638137	5647876
	390833.0S	1424540.2E	652201	5665916
OR01-W03	391932.5S	1423731.7E	640110	5645806
	391158.2S	1424506.0E	651258	5659608
OR01-W05	392028.4S	1423848.7E	641921	5644047
	391437.7S	1424444.0E	650636	5654700
ORV01-03	390750.6S	1430047.8E	674020	5666771
	390042.1S	1430732.1E	684038	5679762
ORV01-05	391026.0S	1430021.0E	673272	5661996
	390124.5S	1430852.8E	685947	5678409
ORV01-06	390330.0S	1430131.3E	675243	5674784
	391201.3S	1431715.8E	697550	5658481
ORV01-07	391310.4S	1425953.0E	672488	5656941
	390134.2S	1431057.9E	688949	5678038
ORV01-08	390506.7S	1430859.3E	685941	5671556
	391014.6S	1431844.8E	699767	5661716
ORV01-10	390030.5S	1430621.4E	682344	5680159
	390744.2S	1432039.9E	702650	5666281

6. WEATHER REPORTS

Date	Time	WIND Speed - m/s	WIND Direction - Degs	SEA State Code	PRESSURE mBar
28-Oct-01	06:00				1000
	12:00				1009
	18:00				1008
	24:00				1008
29-Oct-01	06:00	10	316	3	1004
	12:00	11	280	5	1003
	18:00	16	310	6	1002
	24:00	18	270	6	1002
30-Oct-01	06:00	18	250	7	1003
	12:00	15	300	7	1003
	18:00	15	310	5	1002
	24:00	16	290	5	1002
31-Oct-01	06:00	10	310	6	1011
	12:00	10	290	6	1011
	18:00	15	280	7	1010
	24:00	15	335	7	1010
01-Nov-01	06:00	15	260	7	1010
	12:00	10	250	6	1014
	18:00	10	260	5	1016
	24:00	8	300	4	1016
02-Nov-01	06:00	7	280	4	1019
	12:00	6	260	4	1020
	18:00	5	200	4	1021
	24:00	4	210	3	1021
03-Nov-01	06:00	8	45	3	1019
	12:00	10	100	3	1018
	18:00	7	65	3	1015
	24:00	12	60	3	1015
04-Nov-01	06:00	7	40	3	1010
	12:00	6	40	3	1010
	18:00	5	190	2	1012
	24:00	3	40	2	1012
05-Nov-01	06:00	6	160	2	1013
	12:00	6	190	2	1013
	18:00	9	190	3	1013
	24:00	15	190	4	1013
06-Nov-01	06:00	17	200	6	1017
	12:00	12	210	6	1017
	18:00	13	200	6	1017
	24:00	15	180	7	1017
07-Nov-01	06:00	9	160	5	1020
	12:00	10	130	5	1019
	18:00	8	130	4	1018
	24:00	10	85	4	1018

Date	Time	WIND Speed - m/s	WIND Direction - Degs	SEA State Code	PRESSURE mBar
08-Nov-01	06:00	12	110	5	1013
	12:00	12	100	6	1012
	18:00	7	100	4	1009
	24:00	5	110	3	1009
09-Nov-01	06:00	11	240	4	1010
	12:00	15	260	7	1010
	18:00	15	245	7	1009
	24:00	15	245	7	1009
10-Nov-01	06:00	6	190	6	1011
	12:00	12	260	6	1013
	18:00	13	200	6	1013
	24:00	15	200	7	1013
11-Nov-01	06:00	16	230	7	1015
	12:00	15	200	6	1014
	18:00	15	220	6	1014
	24:00	14	225	6	1014
12-Nov-01	06:00	14	190	6	1018
	12:00	10	190	5	1018
	18:00	12	190	5	1020
	24:00	10	230	5	1020
13-Nov-01	06:00	10	220	5	1024
	12:00	7	240	4	1024
	18:00	8	230	3	1025
	24:00	6	260	3	1025
14-Nov-01	06:00	5	180	3	1024
	12:00	5	330	3	1023
	18:00	4	var	3	1020
	24:00	4	var	3	1020
15-Nov-01	06:00	10	250	3	1019
	12:00	8	230	3	1020
	18:00	6	195	3	1022
	24:00	8	130	3	1022
16-Nov-01	06:00	0		0	0
	12:00	0		0	0
	18:00	6	50	3	1012
	24:00	9	46	4	1012
17-Nov-01	06:00	8	120	4	1005
	12:00	18	180	5	1002
	18:00	16	170	6	1005
	24:00	18	190	6	1005
18-Nov-01	06:00	16	170	7	1019
	12:00	18	180	8	1021
	18:00	16	180	7	1022
	24:00	12	180	6	1022
19-Nov-01	06:00	12	150	6	1025
	12:00	12	225	5	1026
	18:00	7	180	4	1026
	24:00	6	180	4	1026
20-Nov-01	06:00	6	90	3	1025
	12:00	6	130	3	1025
	18:00	6	130	3	1023
	24:00	6	120	3	1023

Date	Time	WIND Speed - m/s	WIND Direction - Degs	SEA State Code	PRESSURE mBar
21-Nov-01	06:00	6	120	2	1020
	12:00	9	110	2	1019
	18:00	11	120	3	1016
	24:00	12	100	3	1016
22-Nov-01	06:00	8	120	4	1009
	12:00	10	100	4	1005
	18:00	8	115	4	1003
	24:00	8	115	3	1003
23-Nov-01	06:00	7	70	2	999
	12:00	8	350	3	997
	18:00	14	0	4	998
	24:00	10	0	5	998
24-Nov-01	06:00	12	340	6	1001
	12:00	13	350	6	1001
	18:00	15	320	6	1001
	24:00	15	350	7	1001
25-Nov-01	06:00	10	290	6	1005
	12:00	15	300	6	1007
	18:00	13	280	6	1007
	24:00	13	240	5	1007
26-Nov-01	06:00	10	215	5	1014
	12:00	10	250	5	1016
	18:00	8	230	4	1016
	24:00	8	230	4	1016
27-Nov-01	06:00	6	215	3	1020
	12:00	6	200	3	1019
	18:00	6	var	3	1017
	24:00	3	180	3	1017
28-Nov-01	06:00	6	200	3	1019
	12:00	6	215	3	1020
	18:00	3	var	3	1017
	24:00	3	180	3	1017
29-Nov-01	06:00	10	310	3	1007
	12:00	12	240	4	1016
	18:00	9	270	4	1005
	24:00	8	240	4	1005
30-Nov-01	06:00	11	290	6	1006
	12:00	12	300	6	1007
	18:00	15	290	6	1006
	24:00	16	280	6	1006
01-Dec-01	06:00	8	290	6	1010
	12:00	6	280	6	1011
	18:00	3	var	5	1010
	24:00	5	50	5	1010
02-Dec-01	06:00	18	120	5	1007
	12:00	15	155	7	1008
	18:00	17	160	8	1008
	24:00	18	160	7	1008
03-Dec-01	06:00	13	160	7	1016
	12:00	10	165	6	1018
	18:00	10	165	5	1018
	24:00	6	100	4	1018

Date	Time	WIND Speed - m/s	WIND Direction - Degs	SEA State Code	PRESSURE mBar
04-Dec-01	06:00	7	130	4	1021
	12:00	7	170	4	1018
	18:00	11	120	4	1017
	24:00	11	100	5	1017
05-Dec-01	06:00	10	120	3	1013
	12:00	10	135	4	1011
	18:00	10	135	4	1007
	24:00	10	120	4	1007
06-Dec-01	06:00	9	190	3	1002
	12:00	10	185	4	1002
	18:00	11	200	4	1002
	24:00	11	190	3	1002
07-Dec-01	06:00	11	200	4	1007
	12:00	11	200	5	1010
	18:00	10	190	4	1011
	24:00	10	190	4	1011
08-Dec-01	06:00	5	200	3	1013
	12:00	5	130	3	1013
	18:00	4	50	3	1011
	24:00	2	80	2	1011
09-Dec-01	06:00	8	280	3	1007
	12:00	15	320	5	1005
	18:00	18	260	7	1002
	24:00	16	260	6	1002
10-Dec-01	06:00	19	260	8	1004
	12:00	15	230	7	1006
	18:00	15	220	7	1007
	24:00	13	220	7	1007
11-Dec-01	06:00	8	220	6	1016
	12:00	8	220	5	1017
	18:00	8	220	5	1018
	24:00	8	260	5	1018
12-Dec-01	06:00	4	290	4	1020
	12:00	5	250	4	1020
	18:00	9	245	4	1019
	24:00	8	260	4	1019
13-Dec-01	06:00	6	260	3	1020
	12:00	6	220	3	1020
	18:00	4	300	3	1018
	24:00	4	290	3	1018
14-Dec-01	06:00	6	240	4	1017
	12:00	6	240	4	1017
	18:00	7	240	4	1015
	24:00	10	210	4	1015
15-Dec-01	06:00	6	210	3	1015
	12:00	8	220	4	1015
	18:00	8	250	4	1014
	24:00	8	260	4	1014
16-Dec-01	06:00	6	260	4	1012
	12:00	7	260	4	1013
	18:00	9	230	5	1014
	24:00	5	240	4	1014
17-Dec-01	06:00	5	240	3	1014
	12:00	4	220	3	1014
	18:00	5	220	3	1014
	24:00	8	210	4	1014

7 SAFETY ACCIDENTS / NEAR MISS REPORTS

Incidents summary,

For further details, please see individual reports received by the client rep.

Minor Incident Personnel

ARC-30 Motorman was loosening a stiff bolt in the water treatment room. The space was very confined making access to the bolt difficult. The spanner slipped off the bolt under pressure causing Mr Karachev's elbow to bang against a pipe.

Near Miss Equipment

ARC-29 Fishing vessel under transit was picked up on the radar at 8 nmiles, on a closing course with the streamer, passing down our starboard side and closing on the tailbuoy. Contact was attempted on VHF16 and also all known fishing frequencies VHF and HF, with no response. At a distance of 5 nmiles the Aldis light was flashed in the boats direction and two large searchlights were directed at him. When the approach was less than 3 nmiles the ships horn was sounded repeatedly. Through the binoculars it could be seen no one was either on the bridge or on the deck. No ships name was painted on the bow and no visible callsign letters were on the superstructure. The Geo Arctic increased speed to 5.5kts to try and get the tailbuoy ahead of the fishing vessel's course. The fishing vessel passed a few metres astern of the tailbuoy after a 'last second' course change and almost immediately returned to her original course. Continued attempts to contact by radio, after the near miss, were unsuccessful.

MRCC Canberra and Melbourne radio were informed of this near miss, as a large fishing vessel travelling apparently unmanned at 11.6 kts was considered a danger to other shipping.

Visibility at the time of the near miss was excellent and sea conditions were good. Towing / Restricted manoeuvrability beacons were being used, and navigation warnings for the area have been regularly issued to warn them of our positions.

Minor Incident Equipment

ARC-27 7km Streamer was deployed and soon snapped close to the tail of a section while heading for a line. 800m remained attached to the winch and 6.2km drifted free. At the time of the snap, weather conditions were within normal survey limits and vessel speed was 5 knots. No other external factors contributed to the breakage.

Increasing weather prevented recovery for a further two days. Eventually streamer - tailbuoy cable was hooked by grappling in poor weather as possibility of tailbuoy battery expiring and increased difficulty in locating drifting streamer.

ARC-28 Streamer parted at the head of section 10. Upon recovery it appears the retaining clip at the clamp off point has come away from the groove. Weather conditions at the time were F6, Sea 2m, Swell 3m. Position 39d20mS 141d35mE. Vessel speed had just increased from 4.5 to 5.4 knots. Streamer was recovered by grappling from the stern and recovering backwards.

ARC-31 Workboat was launched to pass some snagged fishing equipment to the scouting boat 'Breakwater Bay'. Weather conditions at the time were Winds F4-5, Sea 1m, Swell estimated 1.5m. The small size of the scouting boat meant it had booms deployed with stabilisers hanging into the sea from the ends of its booms. During the transfer of the fishing pots the workboat passed under a boom damaging the workboat's mast and GPS cable. Due to the small size of both crafts involved the sea induced motion between the two boats was relatively large. With the scouting boats booms deployed it left very little room for manoeuvre to pass the pots between the vessels. On recovery of the workboat Sergey Namanyuk, the workboat helmsman, stated the swell was up to 3m observed from the lower viewpoint of the workboat.

8. NAVIGATION PROCESSING LOG

Client: Seismic Australia / Woodside Job#: 34860_1
Area: Deep water Ottway/Sorell Basin Phase II

Line Name	Seq #	P190 file name Sp range	P294 file Sp range	Status/Comments
OR01-45	001	or01-45.p1 Sp 101-2251	Or01-45.294 Sp98-2254	OK Compasses noisy d/t swell.
OR01-43	002	or01-43.p1 Sp101-2147	Or01-43.294 Sp98-2150	OK compasses noisy d/t swell
OR01-41	003	or01-41.p1 Sp101-1924	Or01-41.294 Sp98-1927	OK
OR01-39	004	or01-39.p1 sp 1011776	Or01-39.294 sp 98-1779	OK
OR01-37	005	or01-37.p1 sp 101-2065	Or01-39.294 sp 98-2068	OK
OR01-04	006	or01-04.p1 sp 101-1794	Or01-04.294 sp 98-1797	OK
OR01-02	007	or01-02.p1 sp 101-1731	Or01-02.294 sp 98-1734	OK missing compass datasp 1530-1700, data interpolated
ORV01-06	008	orv01-06.p1 sp 101-1353	Orv01-06.294 sp 98-1356	OK
ORV01-10	009	orv01-10.p1 sp 101-1265	Orv01-10.294 Sp 98-1268	OK
ORV01-08	010	orv01-08.p1 sp 101-926	Orv01-08.294 sp 98-929	OK
ORV01-07	011	orv01-07.p1 sp 101-1318	Orv01-07.294 sp 98-1321	Line to be reshot, due to noisy seismic data.
OR01-06	012	or01-06.p1 sp 101-1815	Or01-06.294 sp 98-1818	OK compasses noisy, echo sounder data noisy
OR01-08	013	or01-08.p1 sp 101-2026	Or01-08.294 sp 98-2029	OK compasses noisy
DS02-100	014	ds02-100.p1 sp 101-2283	Ds02-100.294 sp 98-2286	OK
DS02-212	015	ds02-212.p1 sp 101-1917	Ds02-212.294 sp 98-1920	OK
ORW01DS214	016	orw01ds214.p1 sp 101-1949	ORW01DS214.294 sp 98-1952	OK aborted d/t gps satellite coverage, minimal no of visible sats common to boat and stns
ORW01DS214A	017	orw01ds214a.p1 sp 1801-2846	ORW01DS214A.294 sp 1801-2849	OK
DS02-213	018	ds02-213.p1 sp101-1986	DS02-213.294 sp 98-1988	OK
OR23DS223	019	or23ds223.p1 sp 101-4305	OR23DS223 sp 98-4308	OK compass 11 set passive,
OR01-17	020	or01-17.p1 sp 101-2460	Or01-17.294 sp 98 - 2463	OK compasses noisy
OR01-11	021	or01-11.p1 sp 101-2603	OR01-11.001.294 sp 98-2606	OK Compass 10 set passive all other compasses noisy.
OR01-11	022	or01-13.p1 sp 101-2697	Or01-13.294 sp 98-2700	OK all compasses noisy
DS02-103	023	ds02-103.p1 sp 101-2226	DS02-103.294 sp 98-2229	OK
DS02-101	024	ds02-101.p1 sp 101 - 2209	DS02-101.294 sp 98 - 2212	OK
DS02-102	025	ds02-102.p1 sp 101 - 2077	DS02-102.294 sp 98 – 2080	OK
DS02-200	026	ds02-200.p1 sp 101 - 1114	DS-102.294 sp 98 – 1116	OK

Line Name	Seq #	P190 file name Sp range	P294 file Sp range	Status/Comments
DS02-201	027	ds02-201.p1 sp 101 - 1024	DS02-201.294 sp 98 - 1027	OK
DS02-202	028	ds02-202.p1 sp 101 - 1006	DS02-202.294 sp 98 - 1009	OK
DS02-203	029	ds02-203.p1 sp 101 – 968	DS02-203.294 sp 98 - 971	OK
DS02-204	030	ds02-204.p1 sp 101 - 866	DS02-204.294 sp 98 – 869	OK
DS02-205	031	ds02-205.p1 sp 101 – 776	DS02-205.294 sp 98 – 776	OK
DS02-206	032	ds02-206.p1 sp 101 – 597	DS02-206.294 sp 98 - 600	OK
DS02-207	033	ds02-207.p1 sp 101 – 603	DS02-207.294 sp 98 - 606	OK
DS02-208	034	ds02-208.p1 sp 101 – 601	DS02-208.294 sp 98 – 604	OK
DS02-209	035			NTBP!
DS02-210	036	ds02-210.p1 sp 101 – 585	DS02-210.294 sp 98 – 588	OK
DS02-209A	037	ds02-209A.p1 sp 101- 644	DS02-209A.294 sp 98 – 647	OK
DS02-211	038	ds02-211.p1 sp 101 – 1193	DS02-211.294 sp 98 – 1196	OK
OR01-W03	039	or01-w03.p1 sp 101 - 957	OR01-W03.294 sp 98 - 960	OK
OR01-W05	040	or01-w05.p1 sp 101 – 798	OR01-W05.294 sp 98 – 798	OK
OR01-03	041	or01-03.p1 sp 101 - 1249	OR01-03.294 sp 98 - 1252	OK
ORV01-03	042	orv01-03.p1 sp 101 – 904	ORV01-01.294 sp 98 – 907	OK
ORV01-07A	043	orv01-07a.p1 sp 101 – 1318	ORV01-07A.294 sp 98 - 1321	OK
ORV01-05	044	orv01-05.p1 sp 101 - 1077	ORV01-05.294 sp 98 - 1080	OK
OR01-09	045	or01-09.p1 sp 101 – 2470	OR01-09.294 sp 98 - 273	OK
OR01-15	046	or01-15.p1 sp 101 – 1991	OR01-19.294 sp 98 - 1994	OK
OR01-07	047	or01-07.p1 sp 101 – 852	OR01-07.294 sp 98 - 855	OK
OR01-05	048	or01-05.p1 sp 101 – 866	OR01-05.294 sp 98 - 869	OK
OR01-10	049	or01-10.p1 sp 101 – 2677	OR01-10.294 sp 98 – 2680	OK
OR01-35	050	or01-35.p1 sp 140 – 2191	OR01-35.294 sp 98 – 2194	OK Line rejected d/t swell noise
OS02-108	051	os02-108.p1 sp 101- 601	OS01-108.294 sp 98 - 610	OK
OR01-16	052	or01-16.p1 sp 101 – 1599	OR01-16.294 sp 98 – 1609	OK
OR01-16A	053	or01-16A.p1 sp 1454 – 2849	OR01-16A.294 sp 1451 - 2852	OK. *.p1 file incl. overlap
OR01-18	054	or01-18.p1 sp 101 – 2613	OR01-18.294 sp 98 - 2616	OK
DS02-108A	055	ds02-108a.p1 sp 513 – 1320	DS02-108A.294 sp 510 - 1323	OK *.p1 file incl. overlap

Line Name	Seq #	P190 file name Sp range	P294 file Sp range	Status/Comments
DS02-107	056	ds02-107.p1 sp 101 – 1785	DS02-107.294 sp 98 - 1815	OK
DS02-215	057	ds02-215.p1 sp 101 – 1501	DS02-215 sp 98 - 1504	OK
DS02-218	058	ds02-218.p1 sp 101 – 1477	DS02-218.294 sp 98 – 1480	OK
DS02-216	059	ds02-216.p1 sp 101 – 1636	DS02-216.294 sp 98 - 1639	OK
OR01DS217	060	or01ds217.p1 sp 101 – 2643	OR01DS217.294 sp 98 - 2646	????
DS02-219	061	ds02-219.p1 sp 101 – 1552	DS02-219.294 sp 98 – 1555	OK
DS02-220	062	ds02-220.p1 sp 101 – 1440	DS02-220.294 sp 98 - 1443	OK
DS02-222	063	ds02-222.p1 sp 101 – 1661	DS02-222.294 sp 98 - 1664	OK
DS02-221	064	ds02-221.p1 sp 101 – 1570	DS02-221.294 sp 98 - 1573	OK
OR25DS224	065	or25ds224.p1 sp 101 – 4237	OR25DS224.294 sp 98 - 4240	????
OR01-21	066	or01-21.p1 sp 101 – 1567	OR01-21.294 sp 98 - 1570	OK
OR01-19A	067	or01-19a.p1 sp 101 - 1491	OR01-19A.294 sp 98 - 1494	OK
OR01-19B	068	or01-19b.p1 sp 101 - 1249	OR01-29B.294 sp 98 – 1252	OK
DS02-225	069	ds02-225.p1 sp 101 – 1391	DS02-225.294 sp 98 – 1394	OK
OR29DS226	070	or29ds226.p1 sp 101 – 3931	OR29DS226.294 sp 98 - 3934	OK
OR01-27	071	or01-27.p1 sp 101 – 800	OR01-27.294 sp 98 - 953	OK
DS02-107A	072	ds02-107a.p1 sp 603 - 1956	DS02-107A.294 sp 600 – 1957	OK *.p1 file includes overlap.
OR14DS105	073	or14ds105.p1 sp 101 – 5193	OR14DS105.294 sp 98 - 5196	OK Streamer comp. and depth interpolated. (25 sp's)
OR01-12	074	or01-12.p1 sp101 – 1866	OR01-12.294 sp 98 – 1866	OK
OR01-12A	075	or01-12a.p1 sp 1720 – 4843	OR01-12A.294 sp 1718 - 4846	OK
DS02-110	076	ds02-110.p1 sp 101 – 2141	DS02-110.294 sp 98 - 2144	OK Bad shot 1288 (Dogleg).
OR01-35A	077	or01-35a.p1 sp 101 – 2191	OR01-35A.294 sp 98 - 2194	OK
OR33DS228	078	or33ds228.p1 sp 101 – 3657	OR33DS228.294 sp 98 - 3660	OK Interpolated Tailbouy data.
OR31DS227	079	or01ds227.p1 sp 101 - 3657	OR31DS227.294 sp 98 - 3660	OK
OR01-27A	080	or01-27a.p1 sp 655 – 2310	OR01-27A.294 sp 652 - 2313	OK
DS02-110A	081	ds02-110a.p1 sp 2044 – 3308	DS02-110A.294 sp 2041 - 3311	OK
OR01-47	082	or01-47.p1 sp 101 – 1557	OR01-47.294 sp 98 - 1560	OK
DS02-233	083	ds02-233.p1 sp 101- 1043	DS02-233.294 sp 98 - 1046	OK

Line Name	Seq #	P190 file name Sp range	P294 file Sp range	Status/Comments
DS02-232	084	ds02-232.p1 sp 101 - 1073	DS02-232.294 sp 98 - 1076	OK
DS02-231	085	ds02-231.p1 sp 101 – 1201	DS02-231.294 sp 98 - 1204	OK
DS02-230	086	ds02-230.p1 sp 101 – 1310	DS02-231.294 sp 98 - 1313	OK
DS02-229	087	ds02-229.p1 sp 101 – 1180	DS02-229.294 sp 98 - 1183	OK

9. NAVIGATION PRODUCTION LOG

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NAVIGATION PRODUCTION LOG

Otway/Sorell Basin Phase II- 2DSeismic Survey

FUGRO

SEQ	DATE	LINE NAME	FILE NAME	DIR	TIME UTC		FSP	LSP	FCSP	LCSP	Prod Km	REMARKS
				deg.	START	END						
001	2.11.01	OR01-45	PC306_06.RAW	45.2	14:28	20:34	98	2254	101	2251	53.75	Complete, this line is the Woodside section of line OR45DS233. Shot individually d/t time constraints for shooting in this area
002	2.11.01	OR01-43	PC306_22.RAW	225.2	23:51	05:21	98	2150	101	2147	51.150	Complete, this line is the Woodside section of line OR43DS232. Shot individually d/t time constraints for shooting in this area
003	3.11.01	OR01-41	PC307_04.RAW	43.0	08:32	13:25	98	1927	101	1924	45.575	Complete, woodside line only
004	3.11.01	OR01-39	PC307_05.RAW	221.8	18:23	22:51	98	1779	101	1776	41.875	Complete,Woodside line only
005	4.11.01	OR01-37	PC308_01.RAW	42.2	02:31	07:53	98	2068	101	2065	49.10	Complete Woodside line only
006	4.11.01	OR01-04	PC308_02.RAW	312.8	10:56	15:27	98	1797	101	1794	42.325	Complete
007	4.11.01	OR01-02	PC308_07.RAW	126.3	18:44	23:04	98	1734	101	1731	40.749	Complete
008	5.11.01	ORV01-06	PC309_01.RAW	304.7	02:51	06:09	98	1356	101	1353	31.30	Complete
009	5.11.01	ORV01-10	PC309_02.RAW	121.8	08:49	11:51	98	1268	101	1265	29.10	Complete
010	5.11.01	ORV01-08	PC309_03.RAW	304.0	14:48	16:59	98	929	101	926	20.625	Complete
011	5.11.01	ORV01-07	PC309_04.RAW	216.6	21:32	01:12	98	1321				Noisy seismic, to be rerun.
012	6.11.01	OR01-06	PC310_01.RAW	136.0	07:15	12:04	98	1818	101	1815	42.850	Complete
013	6.11.01	OR01-08	PC310_02.RAW	315.6	15:10	20:27	98	2029	101	2026	48.125	Complete
014	7.11.01	DS02-100	PC311_01.RAW	305.3	00:39	09:11	98	2287	101	2284	81.862	Complete
015	8.11.01	DS02-212	PC312_01.RAW	216.4	01:28	08:51	98	1920	101	1917	68.10	Complete
016	8.11.01	ORW01DS214	PC312_02.RAW	37.8	12:04	17:11	98	1952	101	1952	46.20	Incomplete d/t gps lack of common satellite probs
017	8.11.01	ORW01DS214 A	PC312_04.RAW	36.9	22:16	01:07	1801	2849	1950	2846	22.40	Complete
018	9.11.01	DS02-213	PC313_01.RAW	216.5	04:30	12:08	98	1988	101	1986	70.688	Complete
019	13.11.01	OR23DS223	PC317_02.RAW	42.7	10:36	21:59	98	4308	101	4305	105.100	Complete

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NAVIGATION PRODUCTION LOG

Otway/Sorell Basin Phase II- 2DSeismic Survey

FUGRO

SEQ	DATE	LINE NAME	FILE NAME	DIR	TIME UTC		FSP	LSP	FCSP	LCSP	Prod Km	REMARKS
				deg.	START	END						
020	14.11.01	OR01-17	PC318_01.RAW	217.9	02:15	08:39	98	2463	101	2460	58.975	Complete
021	14.11.01	OR01-11	PC318_02.RAW	36.6	11:41	18:25	98	2606	101	2603	62.550	Complete
022	14.11.01	OR01-13	PC318_03.RAW	216.7	21:51	04:54	98	2700	101	2697	64.900	Complete
023	15.11.01	DS02-103	PC319_01.RAW	304.0	09:18	17:22	98	2229	101	2226	79.687	Complete
024	17.11.01	DS02-101	PC321_01.RAW DS02-101.294	125.7	04:46	13:14	98	2212	101	2209	79.050	Complete
025	21.11.01	DS02-102	PC325_01.RAW DS02-101.294	305.3	15:20	23:11	98	2080	101	2077	74.100	Complete
026	22.11.01	DS02-200	PC326_01.RAW DS02-200.294	35.9	03:51	08:00	98	1116	101	1114	37.988	Complete
027	22.11.01	DS02-201	PC326_02.RAW DS02-201.294	215.8	10:48	14:23	98	1027	101	1024	34.612	Complete
028	22.11.01	DS02-202	PC326_03.RAW DS02-202.294	36.7	17:29	21:09	98	1009	101	1006	33.937	Complete
029	23.11.01	DS02-203	PC327_01.RAW DS02-203.294	217.4	00:20	03:48	98	971	101	968	32.512	Complete
030	23.11.01	DS02-204	PC327_02.RAW DS02-204.294	37.8	07:21	10:22	98	869	101	866	28.688	Complete
031	23.11.01	DS02-205	PC327_03.RAW DS02-205.294	216.7	12:59	15:41	98	776	101	773	25.200	Complete
032	23.11.01	DS02-206	PC327_04.RAW DS02-206.294	35.8	18:48	20:53	98	600	101	597	18.600	Complete
033	23.11.01	DS02-207	PC327_05.RAW DS02-207.294	217.4	23:44	01:47	98	606	101	603	18.825	Complete
034	24.11.01	DS02-208	PC328_01.RAW DS02-208.294	36.3	12:48	14:59	98	604	101	601	18.750	Complete
035	24.11.01	DS02-209	PC328_02.RAW DS02-209.294	215.9	18:16	19:10						NTBP! Aborted d/t Nav software prob. Timing problem.
036	25.11.01	DS02-210	PC329_01.RAW DS02-210.294	215.5	22:07	00:20	98	588	101	585	18.150	Complete

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NAVIGATION PRODUCTION LOG

Otway/Sorell Basin Phase II- 2DSeismic Survey

FUGRO

SEQ	DATE	LINE NAME	FILE NAME	DIR	TIME UTC		FSP	LSP	FCSP	LCSP	Prod Km	REMARKS
				deg.	START	END						
037	26.11.01	DS02-209A	PC330_01.RAW DS02-209A.294	36.0	04:17	06:35	98	647	101	644	20.363	Complete
038	26.11.01	DS02-211	PC330_02.RAW DS02.211.294	214.8	09:30	14:30	98	1196	101	1193	40.950	Complete
039	26.11.01	OR01-W03	PC330_03.RAW OR01-W03.294	37.9	18:25	20:56	98	960	101	957	21.400	Complete
040	27.11.01	OR01-W05	PC331_01.RAW OR01-W05.294	218.2	01:07	03:06	98	801	101	798	17.425	Complete
041	27.11.01	OR01-03	PC331_03.RAW OR01-03.294	35.6	06:54	10:07	98	1252	101	1249	28.700	Complete
042	27.11.01	ORV01-03	PC331_04.RAW ORV01-03.294	36.4	11:15	13:26	98	907	101	904	20.075	Complete
043	27.11.01	ORV01-07A	PC331_05.RAW ORV01-07A.294	216.6	16:30	19:52	98	1321	101	1318	30.425	Complete
044	27.11.01	ORV01-05	PC331_06.RAW ORV01-05.294	36.4	23:34	02:18	98	1080	101	1077	24.400	Complete
045	28.11.01	OR01-09	PC332_01.RAW ORV01-09.294	216.1	05:19	11:48	98	2473	101	2470	59.225	Complete
046	28.11.01	OR01-15	PC332_02.RAW OR01-15.294	37.0	14:42	19:54	98	1994	101	1991	47.250	Complete
047	29.11.01	OR01-07	PC333_01.RAW OR01-07.294	216.6	00:24	02:28	98	855	101	852	18.775	Complete
048	29.11.01	OR01-05	PC333_02.RAW OR01-05.294	36.1	05:45	07:48	98	869	101	866	19.125	Complete
049	29.11.01	OR01-10	PC333_03.RAW OR01-10.294	132.5	10:51	18:00	98	2680	101	2677	64.400	Complete
050	30.11.01	OR01-35	PC334_01.RAW OR01-35.294	222.6	00:14	05:59	98	2194				Line rejected d/t swell noise.
051	30.11.01	DS02-108	PC334_02.RAW OS02-108.294	325.6	10:24	12:31	98	610	101	610	19.088	Part 1. Line aborted d/t guns.
052	30.11.01	OR01-16	PC334_03RAW OR01-16.294	137.9	17:27	21:42	98	1609	101	1599	37.450	Part 1. Line aborted d/t Helicopter arrival.

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NAVIGATION PRODUCTION LOG

Otway/Sorell Basin Phase II- 2DSeismic Survey

FUGRO

SEQ	DATE	LINE NAME	FILE NAME	DIR	TIME UTC		FSP	LSP	FCSP	LCSP	Prod Km	REMARKS
				deg.	START	END						
053	01.112.01	OR01-16A	PC335_01.RAW OR01-16A.294	137.9	05:33	09:17	1451	2852	1600	2849	31.225	Part 2. Line complete.
054	01.12.01	OR01-18	PC335_02.RAW OR01-18.294	328.0	17:57	00:58	98	2616	101	2613	62.800	Complete
055	02.12.01	DS02-108A	PC336_01.RAW DS02-108A.294	325.6	05:02	08:28	510	1323	611	1320	26.588	Part 2. Line complete.
056	02.12.01	DS02-107	PC336-02.RAW DS02-107.294	312.1	13:46	20:54	98	1815	101	700	22.463	Part 1, line aborte d/t weather.
057	03.01.01	DS02-215	PC337_01.RAW DS02-215.294	38.1	21:11	02:52	98	1504	101	1501	52.500	Complete
058	04.12.01	DS02-218	PC338_01.RAW DS02-218.294	216.9	05:26	11:18	98	1480	101	1477	51.600	Complete
059	04.12.01	DS02-216	PC338_02.RAW DS02-216.294	38.4	13:40	19:58	98	1639	101	1636	57.562	Complete
060	05.12.01	OR01DS217	PC339_01.RAW OR01DS217.294	216.9	01:01	07:52	98	2646	101	2643	63.550	Complete
061	05.12.01	DS02-219	PC339_02.RAW DS02-219.294	37.3	10:38	16:10	98	1555	101	1552	54.412	Complete
062	05.12.01	DS02-220	PC339_03.RAW DS02-220.294	217.3	18:35	00:03	98	1443	101	1440	50.212	Complete
063	06.12.01	DS02-222	PC340_01.RAW DS02-222.294	41.0	02:48	08:59	98	1664	101	1661	58.500	Complete
064	06.12.01	DS02-221	PC340_02.RAW DS02-221.294	220.3	11:11	16:56	98	1572	101	1570	55.087	Complete
065	06.12.01	OR25DS224	PC340_03.RAW OR25DS224.294	44.3	20:06	07:12	98	4240	101	4237	103.400	Complete
066	07.12.01	OR01-21	PC341_01.RAW OR01-21.294	218.3	09:43	13:44	98	1570	101	1567	36.650	Complete
067	07.12.01	OR01-19A	PC341_02.RAW OR01-19A.294	37.8	17:05	20:51	98	1494	101	1491	34.750	Complete
068	08.12.01	OR01-19B	PC342_01.RAW OR01-19B.294	219	00:28	03:34	98	1252	101	1249	28.700	Complete

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NAVIGATION PRODUCTION LOG

Otway/Sorell Basin Phase II- 2DSeismic Survey

FUGRO

SEQ	DATE	LINE NAME	FILE NAME	DIR	TIME UTC		FSP	LSP	FCSP	LCSP	Prod Km	REMARKS
				deg.	START	END						
069	08.12.01	DS02-225	PC342_02.RAWDS02-225.294	223.0	13:57	19:12	98	1394	101	1391	48.375	Complete
070	09.12.01	OR29DS226	PC343_01.RAWOR29DS226.294	43.6	00:12	10:28	98	3934	101	3931	95.750	Complete
071	09.12.01	OR01-27	PC343_02.RAWOR01-27.294	218.9	13:52	16:01	98	953	101	800	17.475	Part 1. Line aborted d/t weather.
072	11.12.01	DS02-107A	PC345_01.RAWDS02-107A.294	312.1	15:00	20:36	600	1959	701	1956	47.063?	Part 2. Line complete
073	12.12.01	OR14DS105	PC345_02.RAWOR14DS105.294	130.3	23:15	13:02	98	5196	101	5193	127.300	Complete
074	12.12.01	OR01-12	PC346_02.RAWOR01-12.294	313.4	16:11	21:58	98	2200	101	1866	44.125	Part 1. Line aborted d/t operator failure. Datalogging chrashed.
075	13.12.01	OR01-12A	PC347_02.RAWOR01-12A.294	313.4	03:37	11:59	1718	4846	1867	4843	74.425	Part 2. Line complete
076	13.12.01	DS02-110	PC347_03.RAWDS02-110.294	133.8	16:46	01:05	98	2144	101	2141	76.500	Part 1. Line aborted for operational reasons.
077	14.12.01	OR01-35A	PC348_01.RAWOR01-35A.294	42.7	02:53	08:35	98	2194	101	2191	52.250	Complete. Rerun of line OR01-35.
078	14.12.01	OR33DS228	PC348_02.RAWOR33DS228.294	223.8	11:05	21:06	98	3660	101	3657	88.900	Complete
079	15.12.01	OR31DS227	PC349_01.RAWOR31DS227.294	43.8	00:20	10:10	98	3660	101	3657	88.900	Complete
080	15.12.01	OR01-27A	PC349_02.RAWOR01-27A.294	218.9	12:46	17:31	652	2313	801	2310	37.725	Part 2. Line complete
081	15.12.01	DS02-110A	PC349_04.RAWDS02-110A.294	149.0	20:12	01:30	2041	3311	2142	3308	43.725	Part 2. Line complete
082	16.12.01	OR01-47	PC350_01.RAWOR01-47.294	45.9	04:32	08:38	98	1560	101	1557	36.400	Complete
083	16.12.01	DS02-233	PC350_02.RAWDS02-233.294	225.7	13:57	17:57	98	1046	101	1043	35.325	Complete
084	16.12.01	DS02-232	PC350_03.RAWDS02-232.294	45.8	21:33	01:42	98	1076	101	1073	36.450	Complete

GEOTEAM

NAVIGATION PRODUCTION LOG

Otway/Sorell Basin Phase II- 2DSeismic Survey

FUGRO

SEQ	DATE	LINE NAME	FILE NAME	DIR	TIME UTC		FSP	LSP	FCSP	LCSP	Prod Km	REMARKS
				deg.	START	END						
085	17.12.01	DS02-231	PC351_01.RAW DS02-231.294	224.4	04:49	09:33	98	1204	101	1201	41.250	Complete
086	17.12.01	DS02-230	PC351_02.RAW DS02-230.294	43.7	12:09	17:15	98	1313	101	1310	45.338	Complete
087	17.12.01	DS02-229	PC351_03.RAW DS02-229.294	222.6	20:56	01:28	98	1183	101	1180	40.462	Complete

PROCESSING

10. EDIT TABLE

Line No.	Lost SP	Bad Shots	Bad/Noisy Channels	Additional Comment
OR01-45				Moderate noise (35/12 uB);
OR01-43				Noisy line (57/22 uB); noise increasing to EOL
OR01-41		472-496**	**	**Cable caught in fishing gear, chan.#274+40
OR01-39				
OR01-37				
OR01-04				
OR01-02				
ORV01-06				
ORV01-10				
ORV01-08				
ORV01-07	193			Noisy line (124/50 uB)
OR01-06	183, 185, 187, 726	98		Medium noise, increasing to EOL. (56/18 uB)
OR01-08	229, 764, 1064, 1065	1059-1063**		Noisy line (62/21 uB) **telemetry errors
DS02-100	1261		311, 312	
DS02-212				
ORW01DS214	754			
ORW01DS214A			274	
DS02-213			274	Low noise, increasing to EOL (SP 1050 - 1988)
OR23DS223				Noisy line (47/16 uB)
OR01-17				Noisy line (68/25 uB)
OR01-11				Noisy line (77/29 uB)
OR01-13			466	Noisy line (58/21 uB)
DS02-103	2193, 2195	2193*	466, 522	*File 2193 corrupted d/t failed recording.
DS02-101			466	
DS02-102				
DS02-200				
DS02-201				
DS02-202				
DS02-203				
DS02-204		114*		*Telemetry error
DS02-205				
DS02-206				
DS02-207			**	**Cable caught fishing gear at SP 187. Noisy ch. 105-150
DS02-208			**	**Cable caught fishing gear at SP 512. Noisy ch. 125-215
DS02-209				NTBP
DS02-210				
DS02-209A			154**	**Cable caught fishing gear at SP 330. Noisy ch. 154+

Line No.	Lost SP	Bad Shots	Bad/Noisy Channels	Additional Comment
DS02-211			154**	Swell noise increasing to EOL
OR01-W03			108, 154, 467	Noisy line (66/24 uB)
OR01-W05			316, 320, 465, 154, 126, 319	Noisy line (68/25 uB)
OR01-03			154, 108	
OV01-03			154	
ORV01-07a			154	
ORV01-05			108, 154, 39, 36, 166, 38, 34	Swell noise. Noise from by-passing boat at SP 920 through 1063.
OR01-09			33,34,39,120-129,154,316 (over 70 uBar)	Noisy line (61/25 uB)
OR01-09			38,39,108,154 (over 70 uBar)	Noisy line (54/20 uB)
OR01-07			33, 39, 108, 125, 126, 127, 154, 265, 266, 267, 316, 318, 319, 320 (over 80 uBar)	Noisy line (72/29 uB)
OR01-05	789		108, 154	
OR01-10			154, 155	
OR01-35	376, 1022		33, 108, 154, 316, 390 (over 70 uBar)	Noisy line (66/25 uB)
DS02-108			154	Air leak Hyd # 11 SP 546-600
OR01-16			154	
OR01-16a			154	
OR01-18			154	
DS02-108a			154	
DS02-107			33-39, 108	Noisy line. Noise level acceptable from SOL to SP 700
DS02-215			33	
DS02-218				
DS02-216				
OR01DS217				
DS02-219		1328-1335		Telemetry errors SP 1328-1335
DS02-220				
DS02-222			456	
DS02-221		859-862	456	Telemetry errors SP 859-862
OR25DS224			456 (killed)	
OR01-21	184		456 (killed) 33 (over 60 uB)	Noisy line (56/20 uB)
OR01-19a			456 (killed)	
OR01-19b			456 (killed)	
DS02-225	935		456 (killed)	
OR29DS226	1250, 1251, 1253	1250, 1251*	456 (killed)	*Failed recording. EOD mark is put after SP 1249/Ffid1246
OR01-27			456 (killed)	Aborted d/t swell. Noise level acceptable from SOL to SP 800
DS02-107a	606, 609, 610	608	456 (killed)	
OR14DS105			456 (killed)	

Line No.	Lost SP	Bad Shots	Bad/Noisy Channels	Additional Comment
OR01-12			456 (killed)	
OR01-12a			456 (killed)	
DS02-110	1288		456 (killed)	
OR01-35a		***		***Very Noisy Line (113/47 uB)
OR33DS228		***		***Noisy line (71/30 uB)
OR31DS227	3377, 3382, 3388	***		***Noisy line (93/39 uB)
OR01-27a		***		***Very Noisy Line (142/65 uB)
DS02-110a			456	
OR01-47		***		***Very Noisy Line (122/51 uB)
DS02-233		***		***Very Noisy Line (101/43 uB)
DS02-232		***	456 (killed)	***Very Noisy Line (83/32 uB)
DS02-231			456 (killed)	Noisy Line (73/28 uB)
DS02-230			456 (killed)	
DS02-229			456	

11. QC STATUS LOG

GEOTEAM

QC PROCESSING LOG

FUGRO

CLIENT: Seismic Australia | **AREA:** Western Bass Straight | **R/V** 'Geo Arctic'

PROJECT No : 34860 / 34861

ACQUISITION							PROCESSING			COMMENTS
Date	Line	Seq #	Dir.	FGSP	LGSP	km	Ref.	Vels	Stack	
02.11.2001	OR01-45	1	45.2	101	2251	53.78	x	x	x	
02.11.2001	OR01-43	2	225.2	101	2147	51.18	x	x	x	
03.11.2001	OR01-41	3	43	101	1924	45.60	x	x	x	Bad SP 472-496 (Cable caught in fishing gear)
03.11.2001	OR01-39	4	221.8	101	1779	41.98	x	x	x	
04.11.2001	OR01-37	5	42.2	101	2065	49.13	x	x	x	
04.11.2001	OR01-04	6	312.8	101	1794	42.35	x	x	x	
04.11.2001	OR01-02	7	126.3	101	1731	40.78	x	x	x	
05.11.2001	ORV01-06	8	304.7	101	1353	31.33	x	x	x	
05.11.2001	ORV01-10	9	121.8	101	1265	29.13	x	x	x	
05.11.2001	ORV01-08	10	304	101	926	20.65	x	x	x	
05.01.1900	ORV01-07	11	216.6	101	1318	30.45	x	x	x	Lost SP 193 Swell noise.
06.11.2001	OR01-06	12	136	101	1815	42.88	x	x	x	Lost SP 183, 185, 187, 726 Swell noise.
06.11.2001	OR01-08	13	315.6	101	2026	48.15	x	x	x	Lost SP 229, 764, 1064, 1065. Bad SP 1059-1063
07.11.2001	DS02-100	14	305.5	101	2284	81.90	x	x	x	Lost SP 1261
08.11.2001	DS02-212	15	216	101	1917	68.14	x	x	x	
08.11.2001	ORW01DS214	16	37.8	101	1949	46.23	x	x	x	Lost SP 754
08.11.2001	ORW01DS214a	17	36.9	1950	2846	22.43	x	x	x	
09.11.2001	DS02-213	18	216.5	101	1985	70.69	x	x	x	
13.11.2001	OR23DS223	19	43.7	101	4305	105.13	x	x	x	
14.11.2001	OR01-17	20	217.2	101	2460	59.00	x	x	x	Swell noise
14.11.2001	OR01-11	21	36.6	101	2603	62.58	x	x	x	
14.11.2001	OR01-13	22	216.7	101	2697	64.93	x	x	x	
15.11.2001	DS02-103	23	304	101	2226	79.73	x	x	x	Lost SP 2193, 2195. Bad SP/Ffid 2193
17.11.2001	DS02-101	24	125.7	101	2209	79.09	x	x	x	
21.11.2001	DS02-102	25	305.3	101	2077	74.14	x	x	x	
22.11.2001	DS02-200	26	35.9	101	1113	37.99	x	x	x	
22.11.2001	DS02-201	27	215.8	101	1024	34.65	x	x	x	
22.11.2001	DS02-202	28	36.7	101	1006	33.98	x	x	x	
22.11.2001	DS02-203	29	217.4	101	968	32.55	x	x	x	
23.11.2001	DS02-204	30	37.8	101	866	28.73	x	x	x	Bad SP 114.

CLIENT: Seismic Australia	AREA: Western Bass Straight	R/V 'Geo Arctic'

PROJECT No : 34860 / 34861

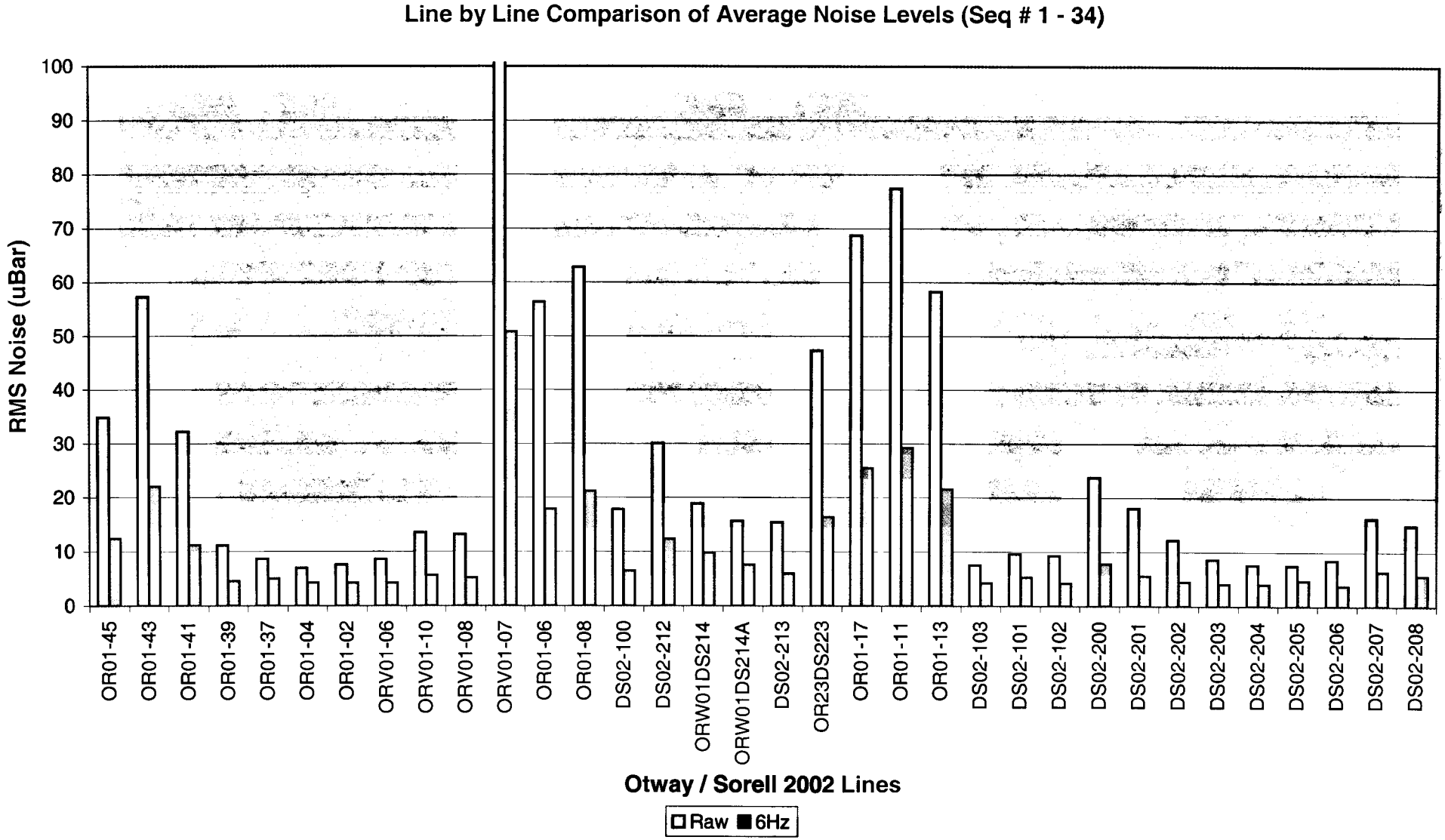
ACQUISITION							PROCESSING			COMMENTS
Date	Line	Seq #	Dir.	FGSP	LGSP	km	Ref.	Vels	Stack	
23.11.2001	DS02-205	31	216.7	101	773	25.24	x	x	x	
23.11.2001	DS02-206	32	35.8	101	597	18.64	x	x	x	
23.11.2001	DS02-207	33	217.4	101	603	18.86	x	x	x	Cable caught fishing gear at SP 183-187, Noisy Ch.# 105-150
24.11.2001	DS02-208	34	36.3	101	601	18.79	x	x	x	Cable caught fishing gear at SP 512, Noisy Ch.# 125-215
24.11.2001	DS02-209	35	215.9	101	270	0.00	x	*	*	Line aborted d/t Nav. problem. NTBP
25.11.2001	DS02-210	36	215.5	101	585	18.19	x	x	x	
25.11.2001	DS02-209a	37	36	101	644	20.40	x	x	x	Cable caught fishing gear at SP 330, Noisy Ch.# 154+
26.11.2001	DS02-211	38	214.8	101	1193	40.99	x	x	x	
26.11.2001	OR01-w03	39	37.9	101	957	21.43	x	x	x	Swell noise
27.11.2001	OR01-w05	40	218.2	101	798	17.45	x	x	x	Swell noise
27.11.2001	OR01-03	41	36.5	101	1249	28.73	x	x	x	
27.11.2001	ORV01-03	42	36.4	101	904	20.10	x	x	x	
27.11.2001	ORV01-07a	43	216.6	101	1318	0.00	x	x	x	Reshot lLine
27.11.2001	ORV01-05	44	36.4	101	1077	24.43	x	x	x	Swell noise & noise from by-passing boat
28.11.2001	OR01-09	45	216.1	101	2470	59.25	x	x	x	Swell noise
28.11.2001	OR01-15	46	37	101	1991	47.28	x	x	x	Swell noise
28.11.2001	OR01-07	47	216.6	101	852	18.80	x	x	x	Swell noise
29.11.2001	OR01-05	48	36.1	101	866	19.15	x	x	x	Lost SP 789
29.11.2001	OR01-10	49	132.5	101	2677	64.43	x	x	x	
30.11.2001	OR01-35	50	222.5	101	2191	52.28	x	x	x	Lost SP 376, 1022
30.11.2001	DS02-108	51	325.6	101	610	19.13	x	x	x	Line aborted d/t Guns problem
30.11.2001	OR01-16	52	137.9	101	1599	37.48	x	x	x	Line aborted d/t Air pressure out of spec
01.12.2001	OR01-16a	53	137.9	1600	2849	31.25	x	x	x	Line completed
01.12.2001	OR01-18	54	328	101	2613	62.83	x	x	x	
02.12.2001	DS02-108a	55	325.6	611	1320	26.63	x	x	x	Line completed
02.12.2001	DS02-107	56	312.1	101	700	22.50	x	x	x	Line aborted d/t swell noise LGSP 700
03.12.2001	DS02-215	57	38.1	101	1501	52.54	x	x	x	
04.12.2001	DS02-218	58	216.9	101	1477	51.64	x	x	x	
04.12.2001	DS02-216	59	38.4	101	1636	57.60	x	x	x	
05.12.2001	OR01DS217	60	216.8	101	2643	63.58	x	x	x	
05.12.2001	DS02-219	61	37.3	101	1552	54.45	x	x	x	8 bad SP d/t telemetry error.
05.12.2001	DS02-220	62	217.3	101	1440	50.25	x	x	x	
06.12.2001	DS02-222	63	41	101	1661	58.54	x	x	x	
06.12.2001	DS02-221	64	220.3	101	1570	55.13	x	x	x	4 bad SP d/t telemetry error.

CLIENT: Seismic Australia	AREA: Western Bass Straight	R/V 'Geo Arctic'

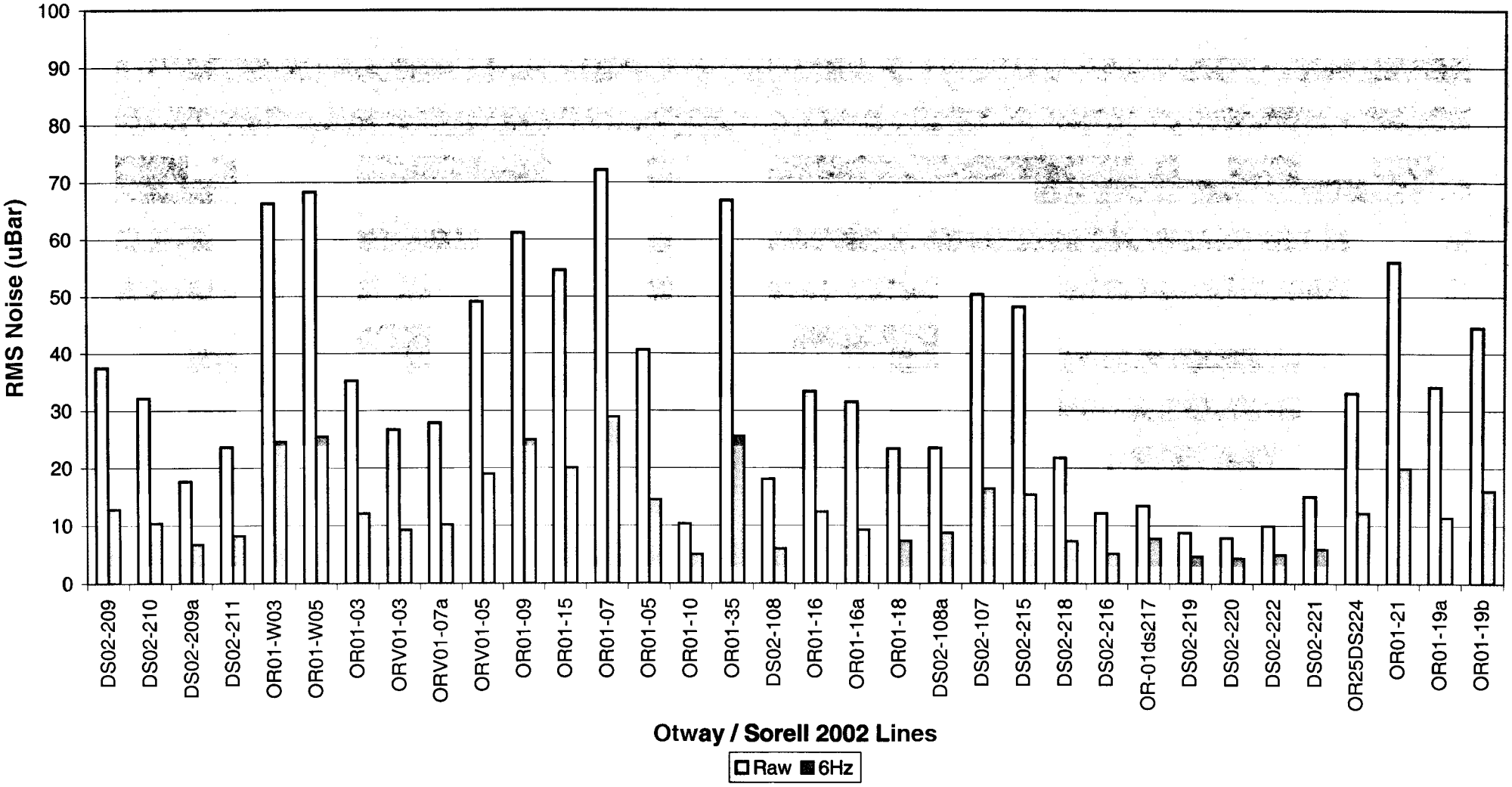
PROJECT No : 34860 / 34861

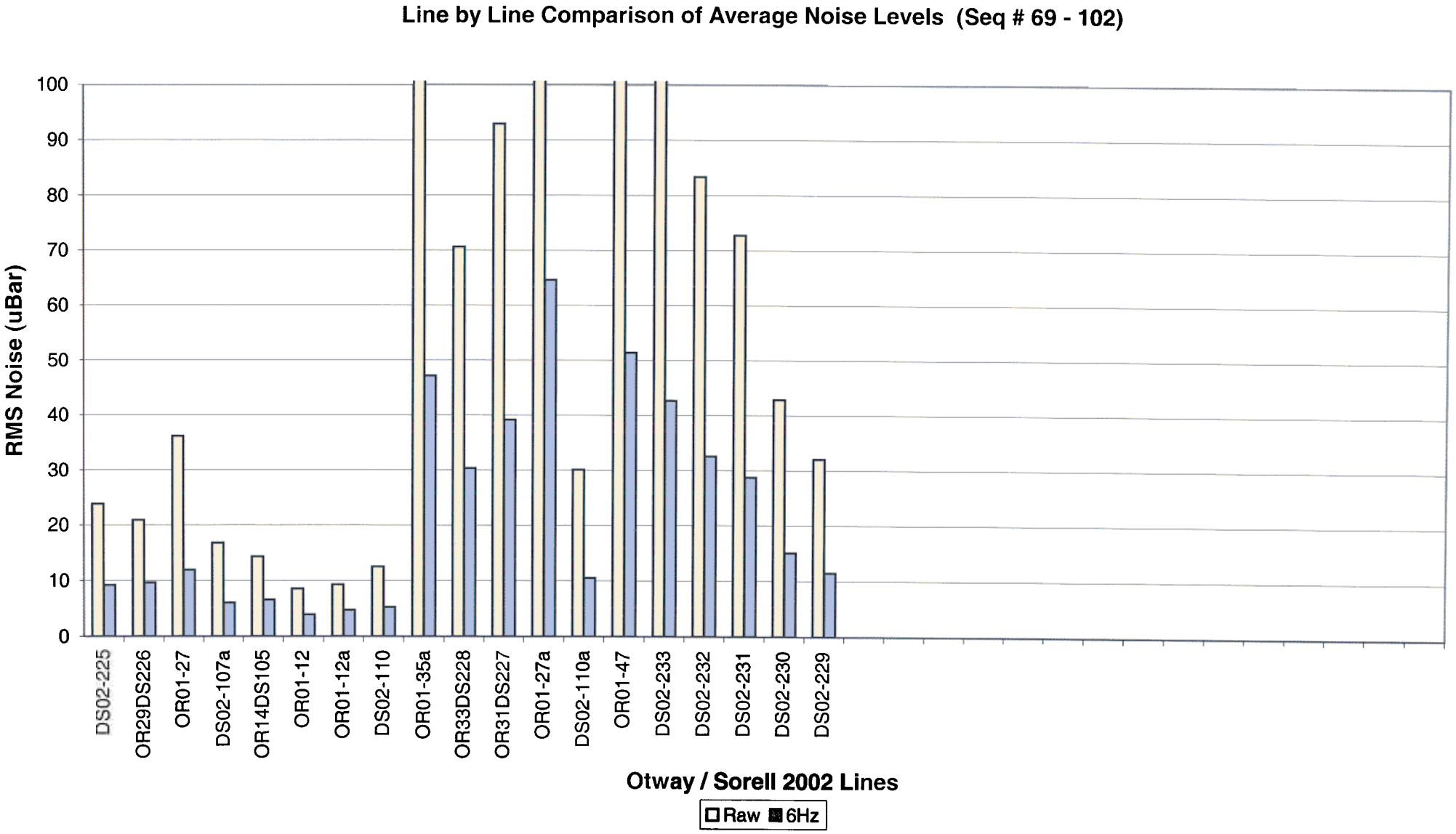
ACQUISITION							PROCESSING			COMMENTS
Date	Line	Seq #	Dir.	FGSP	LGSP	km	Ref.	Vels	Stack	
06.12.2001	OR25DS224	65	44.3	101	4237	103.43	x	x	x	
07.12.2001	OR01-21	66	218.3	101	1567	36.68	x	x	x	Lost SP 184
07.12.2001	OR01-19a	67	37.8	101	1491	34.78	x	x	x	
08.12.2001	OR01-19b	68	219	101	1249	28.73	x	x	x	
08.12.2001	DS02-225	69	223	101	1391	48.41	x	x	x	Lost SP 935
09.12.2001	OR29DS226	70	43.6	101	3931	95.78	x	x	x	Lost SP 1253; Bad SP/Ffid 1250/1247, 1251/1248
09.12.2001	OR01-27	71	218.9	101	800	17.50	x	x	x	Line aborted d/t swell noise LGSP 800
11.12.2001	DS02-107a	72	312.1	701	1956	47.10	x	x	x	Lost SP 606,609,610. Lost Ffid 608. Line completed.
11.12.2001	OR14DS105	73	130.3	101	5193	127.33	x	x	x	
12.12.2001	OR01-12	74	313.4	101	1886	44.65	x	x	x	Line aborted d/t Nav. problem. LGSP 1866
13.12.2001	OR01-12a	75	313.4	1887	4843	73.93	x	x	x	Line completed
13.12.2001	DS02-110	76	133.8	101	2141	76.54	x	x	x	Line interrupted. LGSP 2141. Lost SP 1288
14.12.2001	OR01-35a	77	42.7	101	2191	0.00	x	x	x	Re-shooting
14.12.2001	OR33DS228	78	223.8	101	3657	88.93	x	x	x	
15.12.2001	OR31DS227	79	43.8	101	3657	88.93	x	x	x	Lost SP 3377, 3382, 3388
15.12.2001	OR01-27a	80	218.9	801	2310	37.75	x	x	x	Line completed
15.12.2001	DS02-110a	81	149	2142	3308	43.76	x	x	x	Line completed
16.12.2001	OR01-47	82	45.9	101	1557	36.43	x	x	x	
16.12.2001	DS02-233	83	225.7	101	1043	35.36	x	x	x	
16.12.2001	DS02-232	84	45.8	101	1073	36.49	x	x	x	
17.12.2001	DS02-231	85	224.4	101	1201	41.29	x	x	x	
17.12.2001	DS02-230	86	43.7	101	1310	45.38	x	x	x	
17.12.2001	DS02-229	87	222.6	101	1180	40.50	x	x	x	

12. LINE BY LINE COMPARISON OF AVERAGE NOISE LEVELS


Line by Line Comparison of Average Noise Levels (Seq # 1 - 34)
RMS Noise (uBar)
100
90
80
70
60
50
40
30
20
10
0
OR01-45
OR01-43
OR01-41
OR01-39
OR01-37
OR01-04
OR01-02
ORV01-06
ORV01-10
ORV01-08
ORV01-07
OR01-06
OR01-08
DS02-100
DS02-212
ORW01DS214
ORW01DS214A
DS02-213
OR23DS223
OR01-17
OR01-11
OR01-13
DS02-103
DS02-101
DS02-102
DS02-200
DS02-201
DS02-202
DS02-203
DS02-204
DS02-205
DS02-206
DS02-207
DS02-208
Otway / Sorell 2002 Lines
Raw
6Hz

Line by Line Comparison of Average Noise Levels (Seq # 35 - 68)




Line by Line Comparison of Average Noise Levels (Seq # 69 - 102)
RMS Noise (uBar)
100
90
80
70
60
50
40
30
20
10
0
DS02-225
OR29DS226
OR01-27
DS02-107a
OR14DS105
OR01-12
OR01-12a
DS02-110
OR01-35a
OR33DS228
OR31DS227
OR01-27a
DS02-110a
OR01-47
DS02-233
DS02-232
DS02-231
DS02-230
DS02-229
Otway / Sorell 2002 Lines
Raw
6Hz