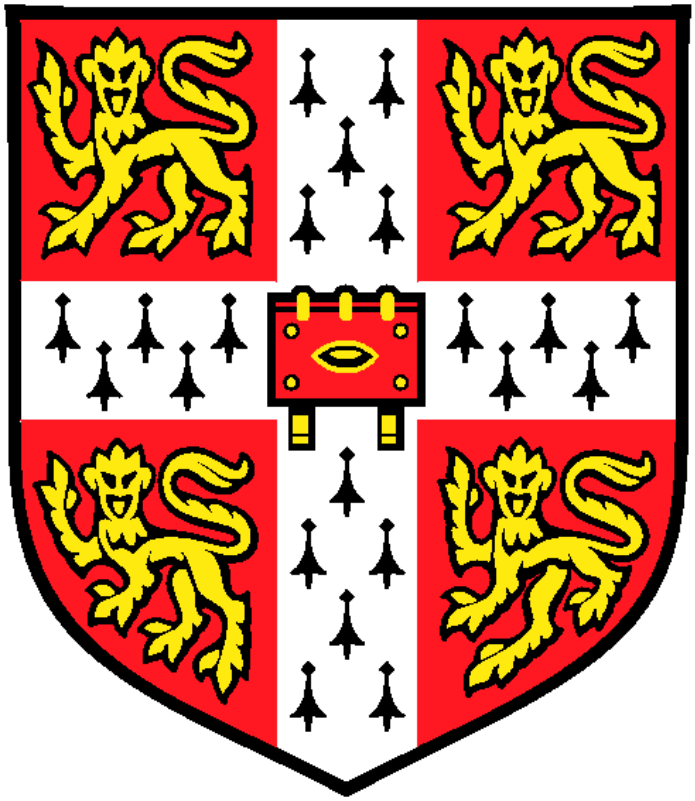
RRS James Cook JC050

Cruise Report

V-Shaped Ridges Experiment (VRE)



18th July - 13th August 2010

Reykjavik, Iceland - Birkenhead, UK

Trials

5th July - 18th July 2010

Vigo, Spain - Reykjavik, Iceland

Dr N. J. White
Bullard Laboratories
Department of Earth Sciences
Madingley Rise
Madingley Road
Cambridge
CB3 0EZ, UK
njw10@cam.ac.uk
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Cruise Personnel

Scientific Party

Nicky White (PI)
Tim Henstock
Bramley Murton
Stephen Jones
Gareth Roberts
Francis Boait
Sarah Nixon
Ross Parnell Turner
Ross Hartley
Oliver Shorttle
Katy Sheen
Gemma Smith
York Zheng
Genyang Tang
Jonathan Paul

Technical Party

Colin Day (JC049T only)
Leighton Rolley
Adam Cox
Darren Young
Neil Sloan

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1 Summary

We carried out a marine geophysical survey of the V-shaped ridges, which straddle the Reykjanes mid-oceanic ridge south of Iceland, on board *RRS James Cook* (JC050). The data are of excellent quality and include multi-channel seismic reflection profiles, sonobuoy wide-angle seismic profiles, gravity and magnetic profiles, together with swath and other bathymetric traverses. We also acquired underway hydrographic data which will enable us to interrogate the seismic and thermohaline structure of the water column. Although the primary purpose of acquiring this dataset is related to a prospective IODP proposal, it also constitutes a new and important source of information concerning the geometry and origin of the well-known V-shaped ridges. Importantly, we acquired two long seismic reflection flowlines which traverse the entire oceanic basin. In general, the equipment worked well throughout the cruise. The biggest problem concerned the airgun array. During the early part of the cruise, the two airguns repeated collided and damaged each other and one of them had to be permanently shut down to ensure a successful acquisition programme. We also had problems with the successful functioning of the gravimeter and the magnetometer. On the whole, the cruise was very successful thanks to the clement weather conditions and to the dedicated professionalism of the technical party. A number of recommendations are made based upon our experience, concerning long-term equipment provision for seismic reflection acquisition programmes.

2 Introduction

The V-shaped ridges, which straddle the mid-oceanic ridges either side of Iceland, are the world's best window into transient convective circulation of the mantle (Vogt, 1971; Figure 1). Since Vogt's important insight, it has been widely recognized that these ridges transgress magnetic anomalies and enable the temporal and spatial evolution of the Icelandic plume to be determined (e.g. White et al., 1995; Ito, 2001; Jones et al., 2002). Adjacent to the Reykjanes Ridge, these V-shaped ridges have a clear bathymetric and gravitational expression which reflects crustal thickness changes at depth. Indeed, limited wide-angle seismic data show that V-shaped ridges and troughs are produced by small (2 km) changes in crustal thickness which probably reflect temperature variations within the spreading plume (White et al., 1995). The inferred chronology of these temperature changes supports the notion that the Icelandic plume has played a central role in varying regional uplift, which in turn moderates Neogene overflow of North Atlantic Deep Water across the Greenland-Scotland Ridge (Wright & Miller, 1996; Poore et al., 2006). Despite their potential significance, these reconstructions rely on very old, poor quality, seismic reflection profiles (Talwani et al., 1971). Furthermore, V-shaped ridge formation is still debated: are they generated by radial or channelized flow? Do they represent primarily compositional or temperature variations? These debates together with the palaeoceanographic angle have prompted an IODP proposal whose cornerstone is a set of drill sites located along a flowline which crosses a series

of V-shaped ridges and troughs (Murton et al., 2004).

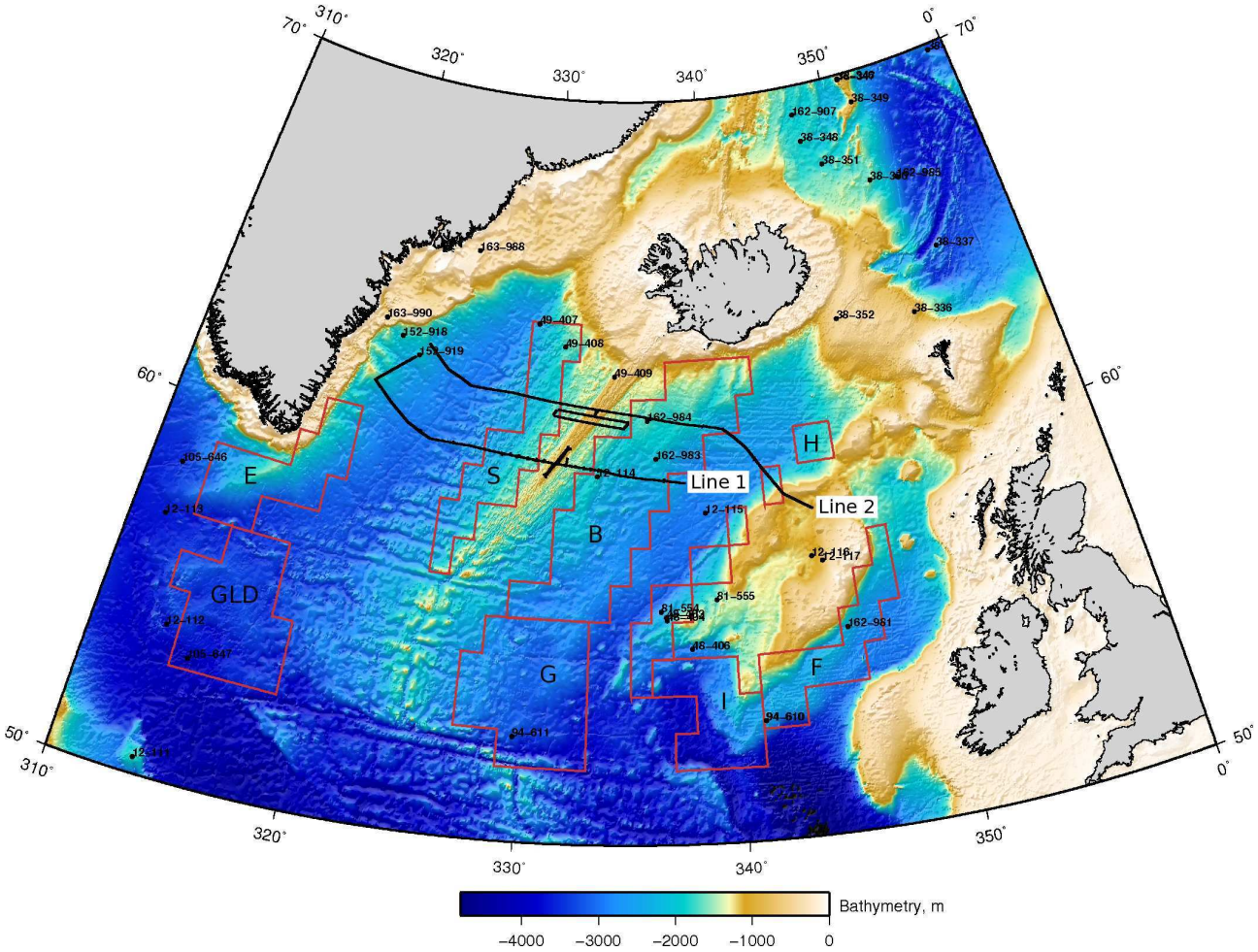

Figure 1: Bathymetric map of the North Atlantic Ocean which shows cruise location and ship tracks. Labelled thin black lines = seismic reflection profiles acquired during JC050; labelled red boxes = locations of principal sedimentary contourite deposits; E = Eirik; GLD = Gloria; S = Snorri; B = Bjorn; G = Gloria; H = Hatton; F = Feni; I = Irminger; labelled solid circles = locations of DSDP/ODP boreholes.

The purpose of this cruise is to acquire 1400–2800 km of high resolution seismic reflection profiles in support of this IODP proposal (Figures 1 & 2). The survey configuration serves two related purposes. First, orthogonal crossline coverage is provided at key drilling sites. Secondly, long flowlines, which cross the oceanic basin, will be used to analyse the basement structure of Neogene and older V-shaped ridges. The resultant modern seismic images will constrain the thickness and internal structure of sedimentary rocks which drape older V-shaped ridges and infill intervening troughs. The structure of the sediment-basement interface within the drilling corridor can then be mapped. We will carefully distinguish between the effects of normal faulting and expected crustal thickness variations using the

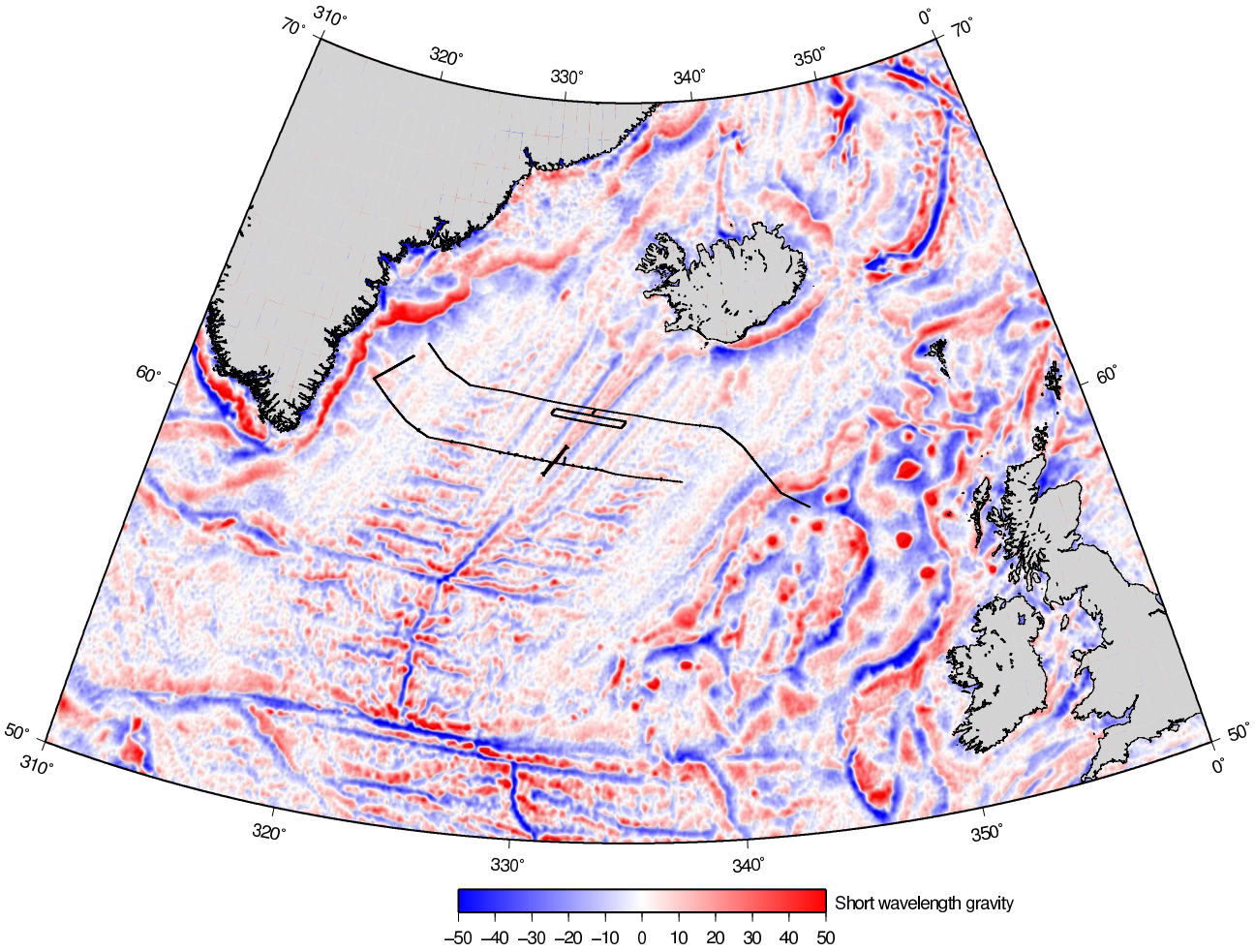

Figure 2: Free-air gravity anomaly map of the North Atlantic Ocean which shows cruise location and ship tracks. Thin black lines = seismic reflection profiles acquired during JC050.

methodology of Poore (2008), who combined the sediment-basement interface mapped from legacy seismic profiles with free-air gravity anomaly profiles. Residual depth profiles will be calculated from the seismic profiles. Changes in residual depth with time are caused by changes in crustal thickness which in turn are caused by changes in the temperature and/or composition of asthenospheric flow which sweeps beneath the mid-oceanic ridge. The predicted changes in crustal thickness will be compared with those determined from geochemical modelling of rocks dredged at the mid-oceanic ridge (Murton et al., 2002). Multibeam bathymetry, gravity and magnetic data will be acquired and integrated with the results of seismic reflection imaging. Our site survey proposal is significantly complemented by a comprehensive dredging expedition funded by the Marine Institute of Ireland and carried out in April-May 2008. A combined study of seismic profiles, dredged rocks and legacy data will transform our understanding of the chronology and formation of the V-shaped ridges. In this way, the longstanding debate about the palaeoceanographic significance of temporal variations within the Icelandic plume can be tackled.

The wider scientific issue concerns the temporal dynamics of the Earth's convecting mantle about which little is known. The IODP Initial Science Plan (2003–2013) has identified the investigation of transient processes associated with plumes and large igneous provinces as a high priority (see also Neal et al. (2007) IODP Workshop Report). Plume-ridge interactions are a key objective since they enable us to infer temperature and compositional variations associated with upwelling plumes. The Iceland-Reykjanes system is regarded as the type example of plume-ridge interaction by the Inter-Ridge community. This recognition has led to formulation of an IODP proposal to drill basement rocks along and across the V-shaped ridges which flank the Reykjanes Ridge. An improved understanding of Icelandic plume dynamics has a wider significance: vertical motion of Greenland-Scotland Ridge is now recognized as having played an important role in modulating palaeoceanography of the North Atlantic and Arctic Oceans (e.g. Haley et al., 2008). Although this proposal was formulated with the IODP proposal in mind, it will also play a key role in estimating transient vertical motion associated with the plume. (Figure 3) Recent attempts to analyze legacy seismic profiles in conjunction with gravity anomalies are compromised by the poor quality of acoustic imaging, especially of the detailed structure of the sediment-basement interface (Figure 4; Poore, 2008). Modern seismic imaging will transform this analysis and place the history of transient motion on a more solid basis. The results of this cruise will act as a scientific stimulus which will help to draw together disciplines ranging from igneous petrology to palaeoceanography.

3 Pre-Cruise Objectives

1. Acquire and process a high resolution seismic reflection survey which fulfils both the site survey requirements of IODP and also address wider scientific objectives.

2. Acquire and process other geophysical and geological datasets which aid sub-surface

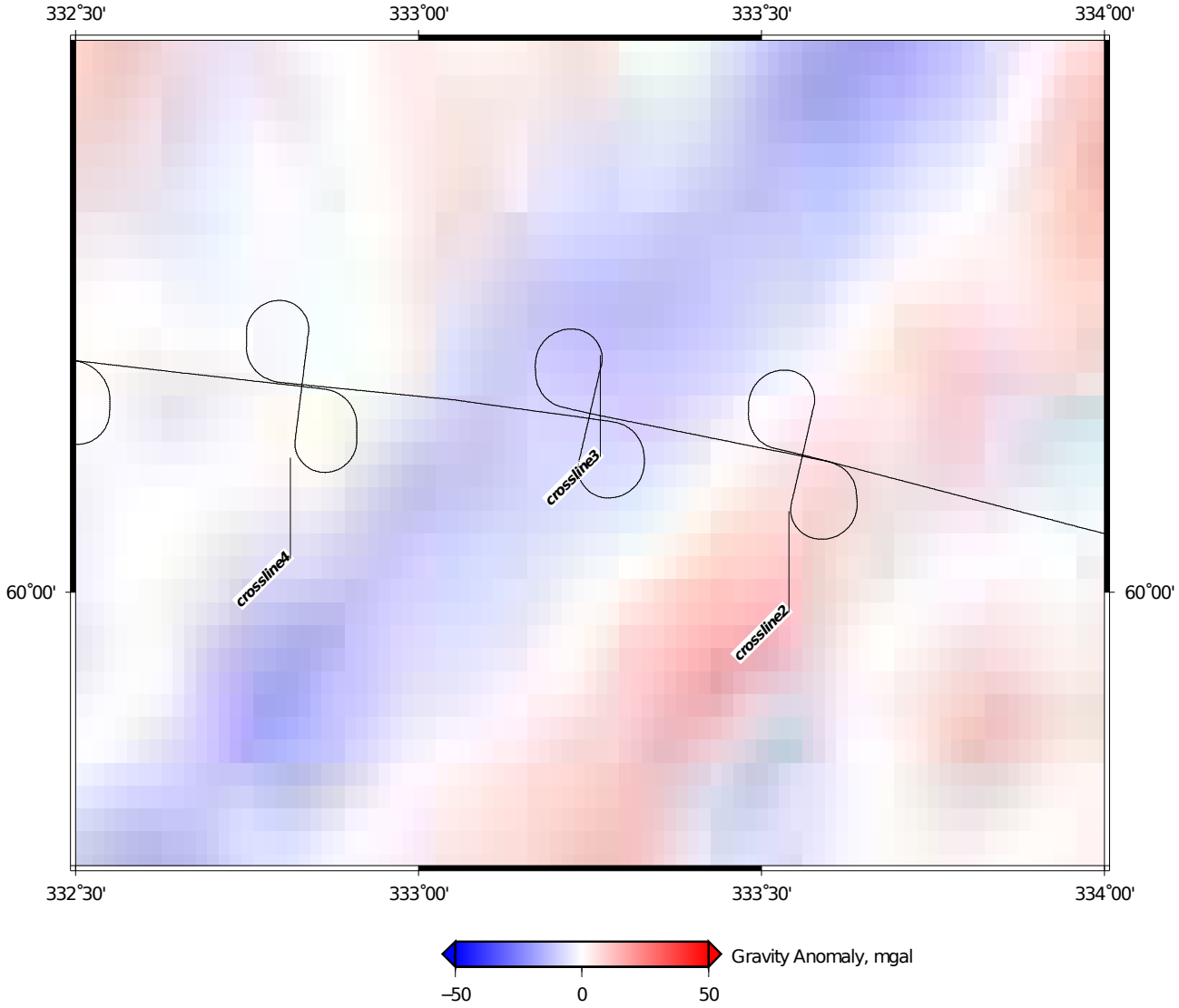

Figure 3: Detailed free-air gravity anomaly map which shows geometry of crosslines 2–4. This geometry is typical of all crosslines and ensured that two orthogonal lines were acquired at each potential IODP drilling target. Usually, a sonobuoy was deployed as the vessel turned to port after crossing the midpoint. Disposable hydrographic probes were launched as several positions during crossline manoeuvre.

characterization (e.g. nature of seabed, presence of unconformities, nature of basement).

3. Carry out detailed mapping of sedimentary structure and interpreted velocity analyses.

4. Map normal faulting and sediment-basement interface.

5. Infer temperature and compositional anomalies associated with Icelandic plume by combining residual bathymetric estimates with geochemistry of dredged samples.

6. Compare a revised plume chronology with estimated Neogene overflow of Northern Component Water.

7. Develop dynamical model of plume evolution.

8. Exploit fresh understanding in fringing sedimentary basins and margins of North Atlantic realm.

The cruise party from the Universities of Cambridge and Southampton and from the National Oceanographic Centre, Southampton have considerable experience in these fields and expect to be able to deliver all objectives. The main technological issue is the ability of a high resolution seismic acquisition system to image the sedimentary structure and the sediment-basement interface. The seismic acquisition system consists of a 1650 m, 132 channel digital streamer and an airgun array of two Generator-Injector (GI) guns. The troughs between the V-shaped ridges have sedimentary strata which vary in thickness from 100–300 m. Occasionally, on the east side of the Reykjanes Ridge, strata are up to 500 m thick. This system system will be ideal for imaging the sediment-basement interfaces through several kilometres of sediment and can easily fulfill the technological requirements of an IODP site survey.

4 Cruise Beneficiaries

The most direct and obvious beneficiary will be the IODP community. We will acquire, process, interpret and evaluate the required geophysical datasets to fulfil IODP requirements. The most important component is a set of modern, crossing seismic reflection profiles at each of the proposed drillings locations (Murton et al., 2004). These profiles will image the sediment-basement interface as well as the detailed structure of the sedimentary section. They will be complemented by swath bathymetric surveys, by gravity and magnetic data, by sonobuoy wide-angle seismic data, and by hydrographic data. The final data pack will be forwarded to IODP. Secondly, there is increasing awareness in the hydrocarbon industry of the importance of understanding the temporal and spatial history of convective circulation within the Earth's mantle. In the North Atlantic realm, there is excellent evidence that convective flow has generated periodic, rapid transient uplift/subsidence events. These events punctuate otherwise uniform thermally driven subsidence, generating disconformities

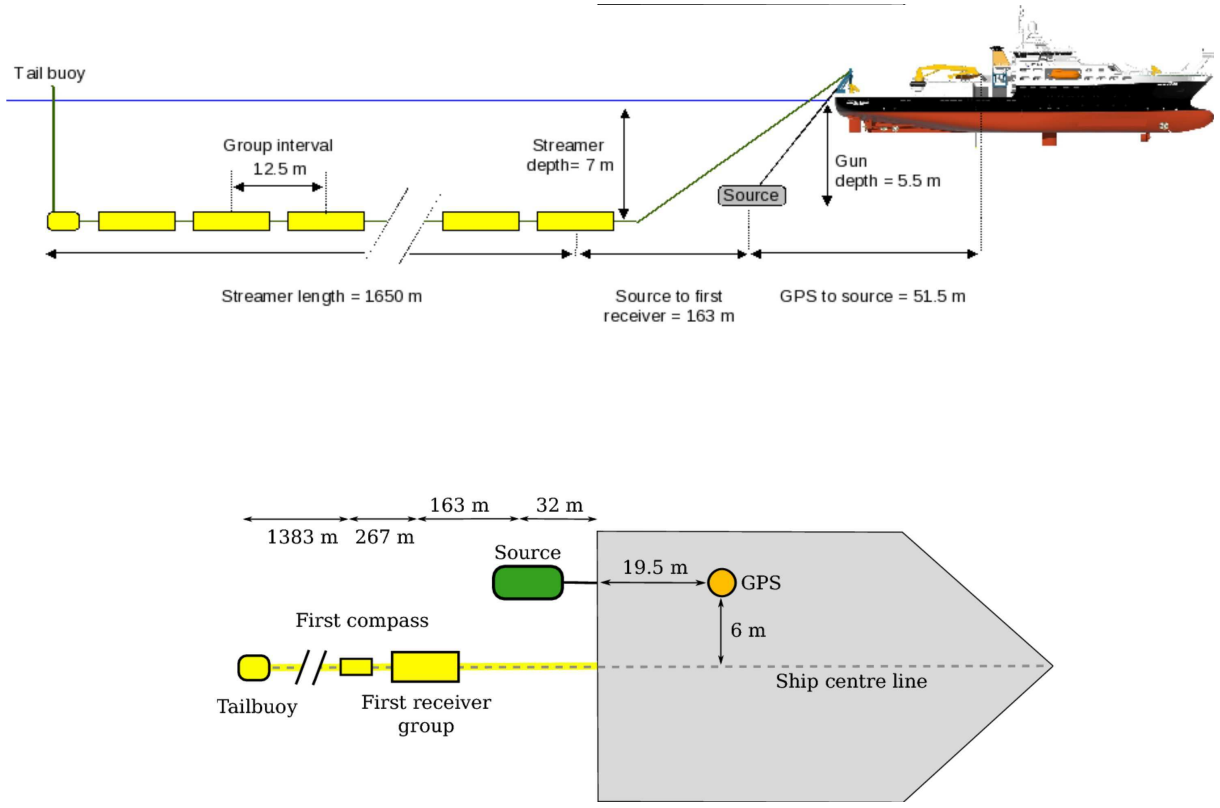

Figure 4: Geometric configuration of seismic source and streamer for JC050 seismic experiment. Yellow boxes = stylized receiver groups; grey box = airgun array. See text for further details.

and clastic deposition. Within the hydrocarbon-producing Paleogene strata of the Faroe-Shetland and northern North Sea basins, there is excellent evidence for a series of transient events whose magnitude, duration and cause is of direct interest to industry. BP Exploration are funding a separate project to investigate these events throughout the North Atlantic and Arctic Oceans. Our study of the V-shaped ridges will have a direct impact upon this work, hence BP and Schlumberger interest. Thirdly, analysis of the V-shaped ridges associated with the Icelandic plume will be of direct relevance to the wider academic community. We lack direct observations which would help to constrain the temporal variation of convection on timescales of 110 million years. Recently, it has become increasingly clear that the Phanerozoic stratigraphic record contains important albeit indirect information about the details of time-dependent convective circulation. (Rudge et al., 2008). An understanding of the Neogene behaviour of the Icelandic plume will considerably improve our ability to interpret plume related transient events in the fringing sedimentary basins and margins. This approach will benefit stratigraphers and convection modellers alike. Our results will also help to constrain Neogene overflow of Northern Component Water across the Greenland-Scotland Ridge and we anticipate close collaboration with palaeoceanographic colleagues.

5 Pre-Cruise Plan

The seismic reflection survey will comprise at least one flowline which traverses the Neogene V-shaped ridges on either side of the Reykjanes Ridge. A series of shorter profiles will be shot at right angles to this flowline at each of the proposed drill sites. If conditions are good, it may be possible to acquire a second flowline. We will image the sediment-basement interface within the corridor of interest. Basement topography is generated in two ways. First, temperature and compositional variations within the plume conduit sweep southward within the convecting asthenosphere and, through the process of seafloor spreading, give rise to diachronous changes in crustal thickness. Isostatic considerations mean that the primary manifestations of crustal thickness changes are medium wavelength basement swells and depressions. Secondly, basement topography at shorter wavelengths is generated by normal faulting. Using Poore's (2008) method, combined modelling of the seismic and gravity observations will be used to isolate the component of basement topographic undulation which is generated by variation of crustal thickness. We will calculate the water-loaded basement subsidence and then remove the well known age-depth cooling relationship. A low-pass filter will be used to remove the effects of faulting. The calculated crustal thickness variation will be calibrated using legacy spot measurements of crustal thickness (Poore, 2008). This result will be used to calibrate free-air gravity anomalies along the length of the Reykjanes Ridge. In order to obtain the temporal variation, the residual depth curve will be compared with intersecting magnetic anomaly data which will be placed on an astronomical timescale. The crustal thickness variation predicted from residual depth profiles will be exploited in two ways. First, we shall link this variation with the petrological and geochemical understanding of the V-shaped ridges (Poore, 2008). The key datasets are rock samples dredged by Murton et al. (2002), by the April-May 2008 cruise led by Jones and Murton, and by the proposed

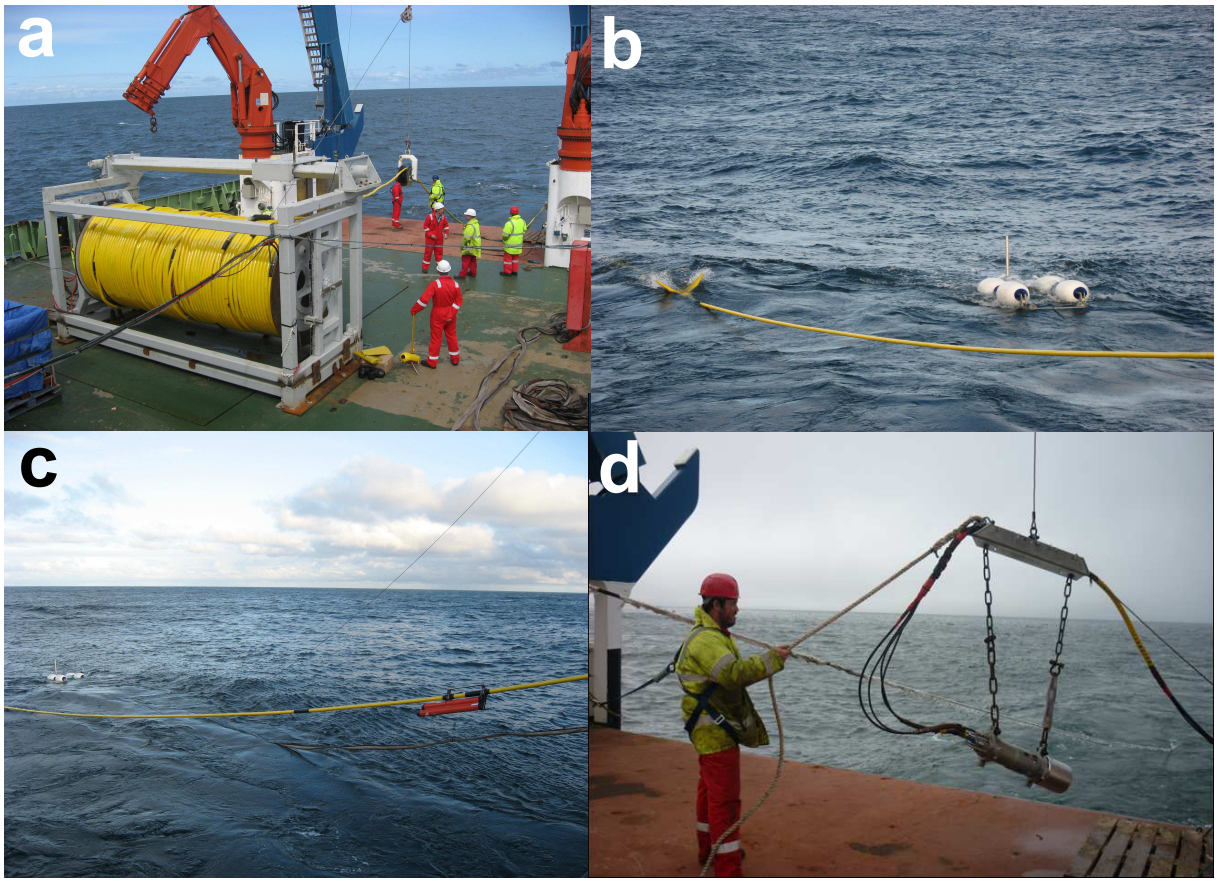

Figure 5: Set of photographs which show components of seismic equipment in process of deployment during JC050. (a) Winch with streamer which is being deployed by technicians, one of whom is holding an unattached bird; (b) Streamer in water with visible bird and float for airgun array; (c) Streamer with attached compass and airgun array float; (d) Single GI suspended from Sercel beam with umbilicals.

cruise. Our experience in April-May shows that off-axis dredging of the V-shaped ridges is both viable and productive. Major, trace element and isotopic data place important constraints upon the composition and temperature of the source region flowing beneath the Reykjanes Ridge. We will use a quantitative melting model to analyze the relationship between predicted crustal thickness, melt geochemistry and vertical motion. This seismic experiment will help to determine the origin of the V-shaped ridges and troughs: Are they related to ridge jumps on Iceland? Are they related to the migration of convection cells driven by deep mantle flow away from Iceland? What is the dominant mechanism of flow away from Iceland: along-axis transport or radial flow? What is the flux within, and the width of, the plume conduit? What is relationship between Iceland itself and Reykjanes Ridge?

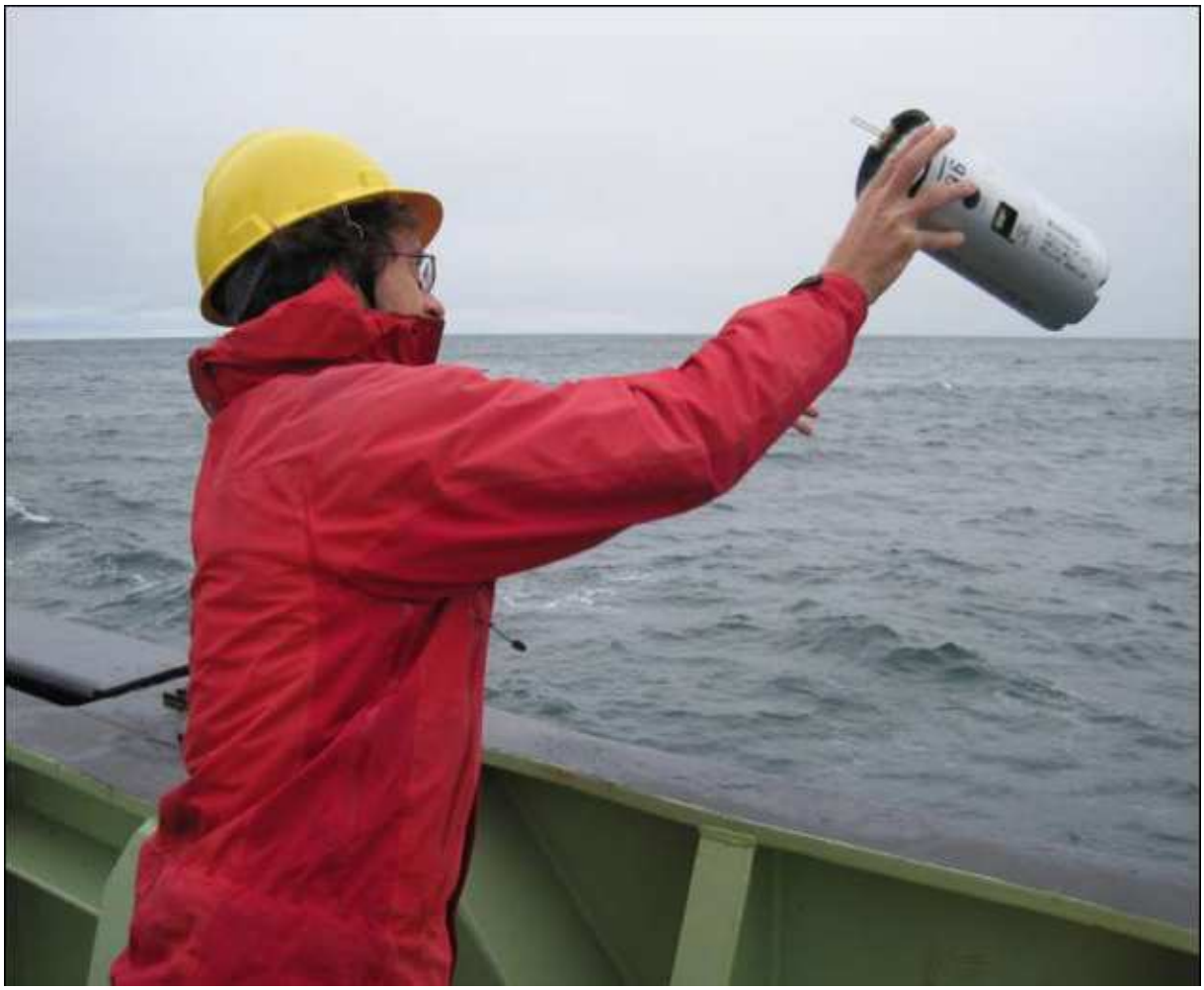

Figure 6: Deployment of disposable sonobuoy from aft starboard deck. Parachute has previously been removed. On impact with water, hydrophone and floating transmitter separate.

The methodology and approach described above is contingent upon successful acoustic

imaging of the subsurface from the seabed down to the sediment-basement interface. Previous experience shows that a high resolution seismic acquisition system provides excellent signal penetration through several kilometres of sedimentary cover. In the site survey areas, strata are generally much thinner (100–300 m). The streamer has 132 channels with 12.25 m spacing. The water depth is 12 km (i.e. 13 s two-way travel time) and if we record 3 s two-way travel time below the seabed (i.e. 3 km) then we need a record length of 6 two-way travel time. The gun recycling time is 2 seconds. If our speed is 5 kts these values constrain the shot point interval to be 20 m which yields a fold of cover of 15. This coverage will yield excellent records down to, and below, the sediment-basement interface. The airgun array should be towed at 6 m depth and the streamer at 12 m. In both cases, these towing depths ensure a broadband frequency range. To optimize the detailed structure of strata and of the sediment-basement interface, careful processing will be carried out using Schlumberger's Omega-2 processing package. The salient aspects of our processing sequence will be decided once data have been acquired but will include filtering, gain, source signature deconvolution, dense velocity analysis, source/signature deghosting, and poststack migration. If possible, source signature deconvolution will be applied by using a farfield recorded source signature. In the absence of a farfield source signature for each shot, this form of deterministic deconvolution should successfully remove the bubble pulse and considerably reduce reverberation if we opt for the sleeve gun array. The use of GI guns will reduce bubble pulse reverberation. A low-cut filter will help to reduce low-frequency noise. Velocity analyses will be carried out every kilometre. Deghosting will be applied after normal move-out correction and standard multiple energy suppression by assuming a constant source/receiver depth and a flat sea surface. A standard spherical divergence correction will remove amplitude transmission losses but otherwise we do not anticipate applying automatic gain control. We will experiment with pre-stack depth migration but suspect that a post-stack Stolt fk migration followed by vertical stretch will suffice. This simple migration algorithm should successfully remove all significant diffraction events and enable us to image detailed faulting of the sediment-basement interface. The final aspect of this research project is integration of the seismic reflection survey with the ancillary data acquired during the cruise and with legacy datasets. We shall acquire swath bathymetry, gravity and magnetic data. The swath data will help to some extent during seismic processing although its principal value will be for the site survey planning. Gravity and magnetic data will enhance existing databanks and be used to isolate crustal thickness variation from normal faulting, as well as help to date V-shaped ridges. Dredged rock samples of basalts constitute an important resource in its own right which will be of interest to igneous petrologists and geochemists elsewhere. We expect to collaborate with other groups in order to ensure that these samples are analyzed for major, trace and rare Earth elements and for isotopes such as Pb, Sr and Nd. Melt models of these geochemical analyses and those from the April-May 2008 dredging cruise will play a crucial role in separating and quantifying the effects of temperature and composition on V-shaped ridge formation. The major scientific question is whether V-shaped ridges are generated by compositional variation, by temperature variation, or by both. We will address this question in two ways. Our first task will be calculating the crustal thickness

variation associated with the V-shaped ridges from the calculated residual bathymetry using Poore's (2008) technique where she calibrated residual bathymetry against measured crustal thickness from wide-angle seismic experiments which are mostly concentrated close to the mid-oceanic ridge. We will then determine the source compositions and asthenospheric temperatures required to match the geochemical measurements from V-shaped ridges where they intersect the midoceanic ridge and where they have been sampled off axis. Our preliminary attempts to model the geochemical variability along the midoceanic ridge does suggest that temperature fluctuations are more important than source compositional variability although we freely acknowledge that this may not be the case off axis. In our view, the key to unravelling source and temperature effects relies on closely integrating geophysical and geochemical measurements in a single quantitative model. We hope that any predictions we make about source and temperature changes through time can be tested by comparison with Icelandic basaltic geochemistry and volume fluxes.

6 Intra-Cruise Changes to Scientific Plan

There were two main sets of changes. First, as a result of problems with the gun array we were unable to use both GI guns for this cruise. Instead, a single gun was used throughout which did not materially affect our ability to image the primary objective (i.e. the sediment-basement interface). Secondly, the generally good weather combined with the fact that we found that we could acquire seismic reflection data at a faster speed of 5.5 kts meant that we were able to acquire a much larger volume of seismic reflection data than expected. During the cruise, our acquisition programme was repeatedly revised in the light of weather and speed. Consequently, we have address a much greater range of geological targets than expected.

7 Mobilization and Trials

Geophysical cruises are equipment- and people-intensive, involving the mobilization and operation of a wide variety of interdependent equipment which is expensive and difficult to ship. Since the seismic system obtained by barter agreement with CSIC, University of Barcelona, was being used for the first time on a NERC research vessel, it was deemed prudent for the scientific party to take part fully in the seismic trials cruise JC049 which directly preceded JC050. The technical and scientific parties, together with all seismic and other equipment, were mobilized from Vigo, Spain. This trials cruise enabled the seismic reflection and other equipment to be fully tested under operational conditions *en route* to Reykjavik, Iceland. Trials commenced as soon as we entered international waters after leaving Vigo. A narrative of activities undertaken during the trials is documented below. From the perspective of JC050, the critical trials activities centred on deployment, testing and recovery of the 2 km streamer and GI airgun array.

Figure 7: Launching of XBT-T5 probe from aft starboard deck.

8 Acquisition Programme

The original aim of JC050 was to acquire seismic reflection and other geophysical data at a series of $\sim$ 10 potential drilling sites along a flow line which extended from the Reykjanes Ridge to the East Greenland coastline. As the cruise progressed, our faster speed combined with clement weather conditions meant that a much more extensive programme of research was possible. Two long flow lines were acquired and 19 potential drilling sites were surveys with crossing seismic lines.

8.1 Navigation

The primary navigation system using during JC050 was an Applanix PoSMV 320 Global Positioning System (GPS) which integrates two GPS receivers with a motion reference unit. This digital Global Positioning System produced locations every second with an accuracy of $\sim$ 2 m. The system takes differential corrections from a Fugro Seastar 3510LR spot beam receiver on the bridge. These data were logged by the UKORS Level A-C system and were input to an underway track chart plotting system during seismic acquisition.

8.2 Multichannel Seismic Reflection Profiling

Seismic reflection profiling constituted the most important part of the cruise. The source array consisted of two Generator-Injector airguns, each with a capacity of 355 cubic inches. This array is optimal for high resolution imaging of near-surface sedimentary rocks down to about 2 km beneath the seabed. The array was towed on a Sercel parallel beam at a depth of 7 m and at a distance of 32 m portside astern. The array was operated at 3000 pounds per square inch and it was fired every 14 seconds. High pressure air was supplied by 2 compressors through umbilical hoses. The streamer was deployed from an automatic winch and stern A-frame.

Originally, we planned to acquired data at a speed of 4.5 kts. During the JC049 trials cruise, we found that excellent quality data could be obtained at a greater speed of 5.5 kts, which had the added advantage of minimizing streamer feathering and depth changes. The consequent reduction in fold was not a problem and we generally had a fold of cover of $\sim$ 20. An industry standard shot firing system, Big Shot, was used to synchronize shot firing with the seismic recording. This system is also used to monitor the component parts of the shot firing system for quality control and preventative maintenance. The system logs all parameters to an electronic database and enables the guns to be turned on and off by means of a user-friendly interface. The streamer comprises a tailbuoy with GPS system, light and radio transmitter, a 50 m isolator section, and an active streamer which was 1650 m long and comprised 132 groups at 12.5 m separation. 5 steerable Sercel Nautilus depth controllers (i.e. birds) with in-built depth sensors and compasses were attached at regular intervals along the length of the streamer. At the front end of the streamer, a 1 m water-break section containing a hydrophone used to measure streamer offset via the direct arrival from the gun array was attached. An elastic section and tow cable were a combined length of 195 m. The

maximum source receiver offset was 1813 m. With a nominal ship speed of 5.0 knots (9.3 km/hr), a time interval of 14 seconds between shots produced a shot spacing of 40 m. The 21-fold seismic data were recorded in SEGD format with a sampling interval of 1 ms over a trace length of 14 s.

On board, recorded seismic data were processed using a ProMax system installed on a UNIX platform which was supplied by the University of Southampton. This quality control of seismic data formed part of normal watch-keeping duties and ensured that good quality seismic data were being recorded onto the field tapes in a readable manner. Quality control included: (i) investigation of bad traces; (ii) anaysis of noise levels; (iii) frequency analysis; (iv) velocity picking; (v) generation of stacked data. In this way, we were able to ensure that the seismic acquisitions programme could proceed in a flexible fashion and stacked profiles played a key role in forward planning.

Later, at Cambridge, seismic processing was carried out using *Omega 2010.1* software. A minimum-phase bandpass filter of 12 Hz with roll-off 24 dB/octave was applied to attenuate incoherent noise and minimize source signature reverberation. The data were then stacked using a normal move-out (NMO) velocity model derived from semblance analysis and constant velocity stack (CVS) panels. Velocities were picked at a spacing of 1.25 km. Post-stack frequency-domain FK Stolt migration was carried out using a constant (water) velocity of 1480 m s^{-1}.

8.3 Gravity and Magnetic Recording

Gravity data were acquired using a Lacoste-Romberg air-sea gravimeter, which was mounted on a gyrostabilized platform. The sensor is comprised of a highly damped invar beam and changes in g were obtained by time-averaging the beam motions to eliminate accelerations caused by ship motion. Base station measurements were carried out before and after JC 049 and JC050 to calibrate the underway data. Details of these measurements are given in Appendix A. The magnetometer could only be deployed intermittently.

8.4 Sonobuoy Deployment and Recording

16 disposable sonobuoys were deployed close to the centre of each cross line along VRE-A in order to determine the velocity structure of the local sedimentary pile. We used The sonobuoys were recorded on a dedicated laptop which ran Audacity recording software. Radio signals were picked up via a pair of VHF aerials which were installed above the bridge on the port and starboard sides. A Low-loss coaxial cable was run from each aerial down to the scientific lab where the laptop was positioned. We typically recorded signal out to a range of ~ 20 km.

8.5 Swath Bathymetry

The oblique spreading direction, lack of axial valley and flanking chevron-shaped ridges make the Reykjanes Ridge unique amongst slow-spreading centres. These characteristics are

Figure 8: Launching of Sound Velocity Probe (SVP) from starboard midships.

Figure 9: Calibration of gravimeter beside vessel prior to measurement of gravity field at nearby base station.

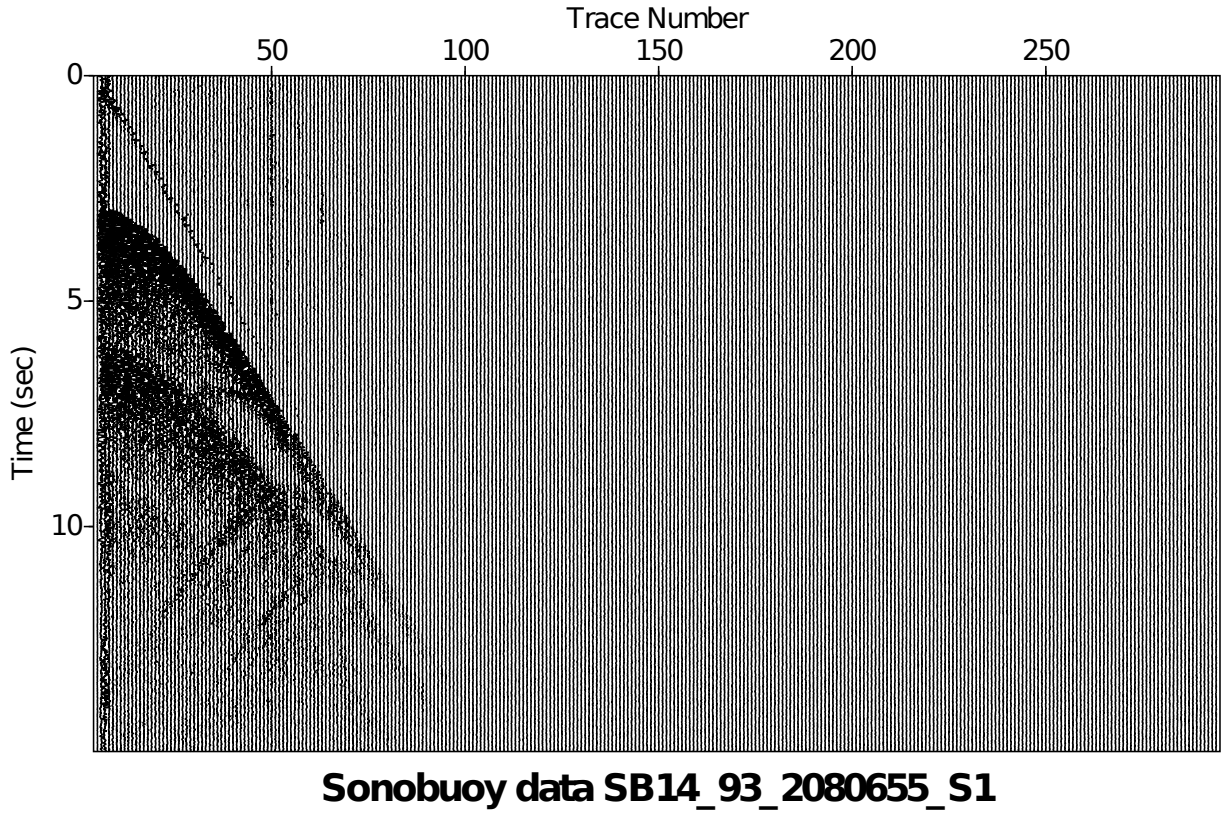

Figure 10: Typical seismic record from disposable sonobuoy. Visible arrivals occur out to about 22 km which enables velocity structure of the sedimentary section to be constrained. Note linear direct arrival, hyperbolic arrival of seabed and its multiple.

attributed to its interaction with the Iceland plume (Vogt, 1971). Observations of present day axial morphology can reveal the mechanisms by which these two systems interact, and give us indications of the magnitude and timescales over which this takes place. Axial Volcanic Ridges (AVRs) are common features of slow-spreading mid-ocean ridges. They provide an accessible record of mid-ocean ridge volcanism and its variation over time and space, although the time-scale of their development is poorly constrained. They are built by fissure and other volcanism, and appear to be episodic in their evolution. Since seafloor tectonism accounts for only a small proportion of the total extension at these MORs (**?**), most melt injected into the crust must eventually lead to surface eruptions, which are mostly concentrated in the AVRs. Axial volcanic ridges and thus hold an important record of the nature and fluxes of melt from the mantle.

8.6 Swath Bathymetry Processing

The swath data was acquired using a Simrad EM120 multibeam echosounder, which operates at a frequency of 12 kHz with angular coverage sector of up to 150 degrees and 191 beams per ping. This geometry yields a swath width of six times water depth. Beams are automatically adjusted to be equidistant horizontally. Data were recorded in two hour segments. In water depths of 1 km (typical at the mid-Atlantic ridge) each data point represents a patch of seafloor approximately 30 m.

For calibration purposes, a total of 87 sound velocity profiles were taken, using hydrographic devices deployed during the cruise. These comprised of 63 expendable bathythermographs (XBTs), 12 expendable conductivity-temperature-depth (XCTD) profilers, 10 expendable sound velocimeters (XSVs) and two sound velocity profiles using a retrievable Midas SVP sensor. Navigation data (position, roll and pitch, heave and true heading) was gained from the ship's primary Applanix PoSMV 320 Global Positioning System (GPS). This is the primary scientific positioning and attitude instrument, integrating two GPS receivers with a motion reference unit. Position accuracy, with differential corrections is 0.5 - 2 m (one sigma, depending on quality of differential corrections). The system takes differential corrections from a Fugro Seastar 3510LR spot beam receiver on the bridge.

Bathymetry data processing was carried out using Caris HIPS version 7.1 software. Firstly, sound velocity corrections were calculated; travel time and angle information are applied to across-track and depth values. The process combines the orientation and positioning of the transducer on the ship with sound velocity profile data, and then applies a raytracing algorithm. Velocity profiles nearest in distance to the swath were selected for the correction process. An example sound velocity profile is shown in Figure **??**.

Tide data was taken from the Icelandic Hydrographic Service tide meter in the Old Harbor in Reykjavik. Tide data is used to generate final depths relative to the tide datum by subtracting the tide from sounding depth. Next, spurious points are removed from the attitude, navigation and bathymetric data. The weather during the cruise was mostly good, with a maximum swell of up to 6 m only for a short period. Attitude and navigation data were manually edited for erroneous points using the Caris graphical interface. Next, total propagated uncertainty (TPU) is derived from the combination of all individual error

sources. As no calibration patch test was performed, calibration results from installation were used. These are:

Roll error = -0.07°
Pitch error = 0.01°
Gyro error = 0.01°

A filter was then applied which compares the horizontal and depth TPU values for each sounding against the depth and horizontal error limits for the International Hydrographic Organization (IHO) S-44 survey Second Order. All soundings with TPU values outside those limits (set by the IHO) are rejected. Further remaining erroneous soundings were removed manually using the 3D subset editor in Caris. Surfaces gridded at 30 m were then produced, and output to ASCII xyz files.

8.7 Preliminary Swath Bathymetry Results

The gross morphology of the Reykjanes Ridge in this region is dominated by an axial high striking 036°, topped by a series of en-echelon Axial Volcanic Ridges (AVRs) and numerous seamounts (Figure 11). The ridge crest is at an average depth of approximately 950 m, shoaling to a depth of less than 460 m. Two AVRs, spaced approximately 40 km apart along-axis, have been imaged in great detail. The have an average relief of 500 m (excluding individual seamounts), and a width of roughly 5 km. They consist of discrete linear volcanic features 300-400 m in width, punctuated by multiple seamounts. Linear, parallel volcanic ridges may be associated with fissure swarms, analogous to those seen in Iceland. Where seamounts and faulting are absent, the surface of AVRs is characterised by a hummocky texture, which may be due to the coalescence of small mounds or pillows. On-axis faults are common, sub-parallel to the oblique trend of AVRs, and are regularly spaced 300 m to 700 m apart. They have vertical throw of 50-160 m, and for the most part do not affect seamounts. The well defined linear tectonic fabric appears to control the focus of volcanism at the ridge. Faults away from AVR crests do appear to have displaced seamounts. This suggests they are either contemporaneous with or post-date active volcanism. Off-axis there is little evidence for linear volcanic features or seamounts, probably due to a combination of erosion and subsequent burial beneath sediments.

Large, flat-topped, near-circular volcanic edifices are concentrated at the crests and flanks of AVRs. They have an average basal diameter of 800 m, and a relief of roughly 375 m. The largest of these (see Figure 11) has a diameter of 1760 m and a relief of 384 m at its peak. Cratered seamounts are more common towards the southern end of the ridge, south of the crossing line just north of 60°N . The example shown in Figure 11 has a basal diameter of 1500 m, and a summit diameter of approximately 430 m. The crater itself sits 75 m below the crater rim which has 375 m relief. Cratered seamounts appear unaffected by faulting.

8.8 3.5 kHz and EK60 Profiling

Throughout the cruise, we acquired 3.5 kHz sub-bottom profiling data which yields useful high resolution images of contourite deposits which complement the deeply penetrating but lower resultion seismic reflection data. EK60 (i.e. fish-finder profiling) was also carried out on a routine basis. The Acoustic Doppler Current Profer (ADCP) was run at frequencies of 75 and 150 kHz. Although all of these shallow profiling techniques were not central to the success of the cruise, they do provide very useful ancillary data which will enhance our geological and geophysical interpretations.

8.9 Hydrography

We were particularly interested in acquiring underway hydrographic data. First, these data are an important means for calibrating the seabed depth which enable crisper swath bathymetric images to be obtained. They also help to depth-convert the seabed on seismic reflection and sonobuoy data. Secondly, hydrographic data are an essential means for calibrating thermohaline structure observed on seismic reflection images. We intend to process the seismic profiles in order to obtain information about thermohaline circulation.

A total of 87 sound velocity profiles were made, mostly using hydrographic devices deployed during the cruise. These comprised of 63 expendable bathythermographs (XBTs), 12 expendable conductivity-temperature-depth (XCTD) profilers, 10 expendable sound velocimeters (XSVs) and two sound velocity profiles using a retrievable Midas SVP sensor.

8.10 Meteorology

The weather during JC050 was generally good. The days were generally overcast and sometimes wet. We had two periods of sustained bad weather with subsequent heavy swells which prevented seismic acquisition. Meteorological data acquired during the cruise include sea-surface temperature, air pressure, wind direction and humidity. For weather forecasting purposes, we used a range of online forecasts which generally proved reliable. See Cruise Narrative for day-to-day weather reports.

9 Trials Cruise and Cruise Narrative

9.1 Trial Cruise JC049T

Julian Day 186: Scientific party joined the RRS James Cook at 15:00 having flown London, Stansted, to Oporto and then travelled by Taxi to Vigo. First orientation meeting for scientific party was organized.

JD 187: Discussion about gravity base station location. Leighton Rolley has already measured gravity value but ship elevation correction needs to be done. At 15:00, we had an orientation meeting with the purser Anthony Stevens. At 18:30, vessel moved across the

dock for bunkering.

JD 188: Bunkering scheduled for 7:00–11:00 but finished early so planned to depart at 10:30. We then had a delay due to a faulty radar system. Departure time postponed by 24 hours. Vessel moved back to its original berth.

JD 189: Members of scientific party remeasured gravity at base station adjacent to dock at 8:30 and estimated height correction.

JD 190: Further delay to departure. Spare parts for radar system arrived scheduled to arrive at 8:30 but additional delay. Gareth Roberts and Leighton Rolley started to set up sonobuoy recording system. An aerial was attached to monkey deck above the bridge on the starboard side. Mugshot sheet of scientific party was made and watch keeping schedule was planned. Radar was fixed by 12:00 and pilot arrived at 14:45. We finally set sail at 15:30 on a breezy but sunny afternoon. We passed Cape Finisterre at 10 kts and headed out into the ocean. Weather in evening continued to be pleasant with a slight swell.

JD 191: A cloudy morning with good sea state. Force 2–3 and a slight swell. At 10:30, a general meeting with Colin Day was organized. The radar problem is now fully resolved but due to the delay, two extra days have been added to schedule so that we now dock in Birkenhead on 12th August. Seismic trials planned for the next 8 days to shake down the Spanish streamer and test out the GI airguns. The weather forecast looks good for this period. We have a new containerized winch and the Spanish CSIC streamer on the back deck. We will continue passage today and expect to reach international waters at 8:30 tomorrow morning. As well as testing the seismic equipment, we hope also to test out the SHRIMP in a separate activity as well as the sound velocity profiler, both of which require testing. The formal risk assessment must be signed by everybody. When the streamer is deployed, we will test turning rates since they will be crucial during JC050. The master, Roger Chamberlain, continued the meeting and reminded us that all datasets would need to be archived in an appropriate format with BODC after the cruise. We then had a MMO meeting between scientists, designated MMOs and Colin day. The EIA was discussed and protocols for MMOs outlined. We agreed that the MMO would start to observe from bridge with high-powered binoculars and range finder half an hour before scheduled start of shooting. Soft-start would be employed and full pressure introduced 20 minutes after soft start. Once airguns were firing, they would not be stopped even if marine mammals approach vessel. Finally, night starts would be carried out since hours of darkness at latitudes close to Iceland are very short. In early afternoon, weather started to deteriorate with cloudy sky and larger swell as we sailed through several minor frontal systems. We continued to sail on a bearing of 330° and planned to deploy seismic equipment at 8:30 in the morning.

JD 192: Trial started and 1400 m of streamer was deployed. Recording time was 15 s and speed was 4 kts. Leighton Rowly discussed logging procedures with scientific party. The

main systems need to be monitored every 15 minutes for state of health. The key machine is the Techsas in the room across the corridor. We also need to monitor the EM710, the EK60, the ADCP, the gravimeter and the magnetometer. The seismic firing and recording system will be monitored separately. At 9:15, gun testing was started. The active streamer is 1200 m long with 4 birds deployed. At 14:45, the streamer was now deployed out a reasonable distance but weather started to close in. By 15:30, the streamer was fully deployed and airguns also deployed. There were some issues with the bird compasses but seismic data were recorded for 30 minutes. The data were very noisy. At the end of line, the weather had considerably worsened to Force 6–7 and 3–4 m swell. Back half of streamer floated towards the surface and was very noisy. Stopped shooting at 18:20. A total of 120 shots were recorded.

JD 193: Weather is good with calm sea state. We are steaming at 12 kts towards 330°. Poorer weather is expected: there is a deep, fast-moving depression ahead. Colin Day has indicated that the extra streamer sections (about 400 m) can be deployed since it will all fit on the winch if the winding is tighter. Total active streamer will now be 1550 m. Waypoints for first half of JC050 were finalized. Seismic data from the first trial was processed using Promax on a stand-alone Linux machine.

JD 194: Choppy sea state with a strong breeze. Overcast sky. The guns were deployed at 7:45 and streamer deployed. Meanwhile, scientific log sheets were finalized. Started to record a second trial line. At noon, shooting stopped and airguns were taken on board. The new seismic data were quickly processed and quality was much improved. In the afternoon, streamer manoeuvres and turns were carried out at different rates. We deployed a sonobuoy off the starboard aft deck to test the recording system. The aerial had been placed at about 25 m elevation above the bridge and a coaxial cable was run down to the scientific lab (about 80 m). Sonobuoy data were recorded using Audacity freeware on a dedicated laptop. Shot instant was recorded on the Audacity trace. It is important to set the correct channel number before deployment and not to alter the gain during 6 hour recording. During deployment, it is important to cut off the parachute and to set the depth and recording time to 140 m and 6 hours. The sonobuoy must not get wet before deployment. It is thrown bottom first into the water. The test deployment was successful. However, airguns failed after 10 minutes due to tangling. Shooting stopped and the streamer was brought on board at 18:30.

JD 195: Good sea state and making headway at 10.5 kts. Brute stack of seismic data which looks good. Deployed guns for testing. Shock hydrophone failed at 10:30 which is surprising. Brought in guns for repair. SHRIMP deployed for testing at 13:15. It worked down to 1600 m and excellent images of bottom sedimentary structures were obtained. Gun failure means that we may have to await spare parts in Reykjavik. Worked out a contingency plan to shoot some lines close to Iceland.

JD 196: Good sea state with slight swell. Overcast. Gun repairs were carried out with the hope of another seismic trial after lunch. At 13:00, we deployed an XBT-T5 and an XBT-T7

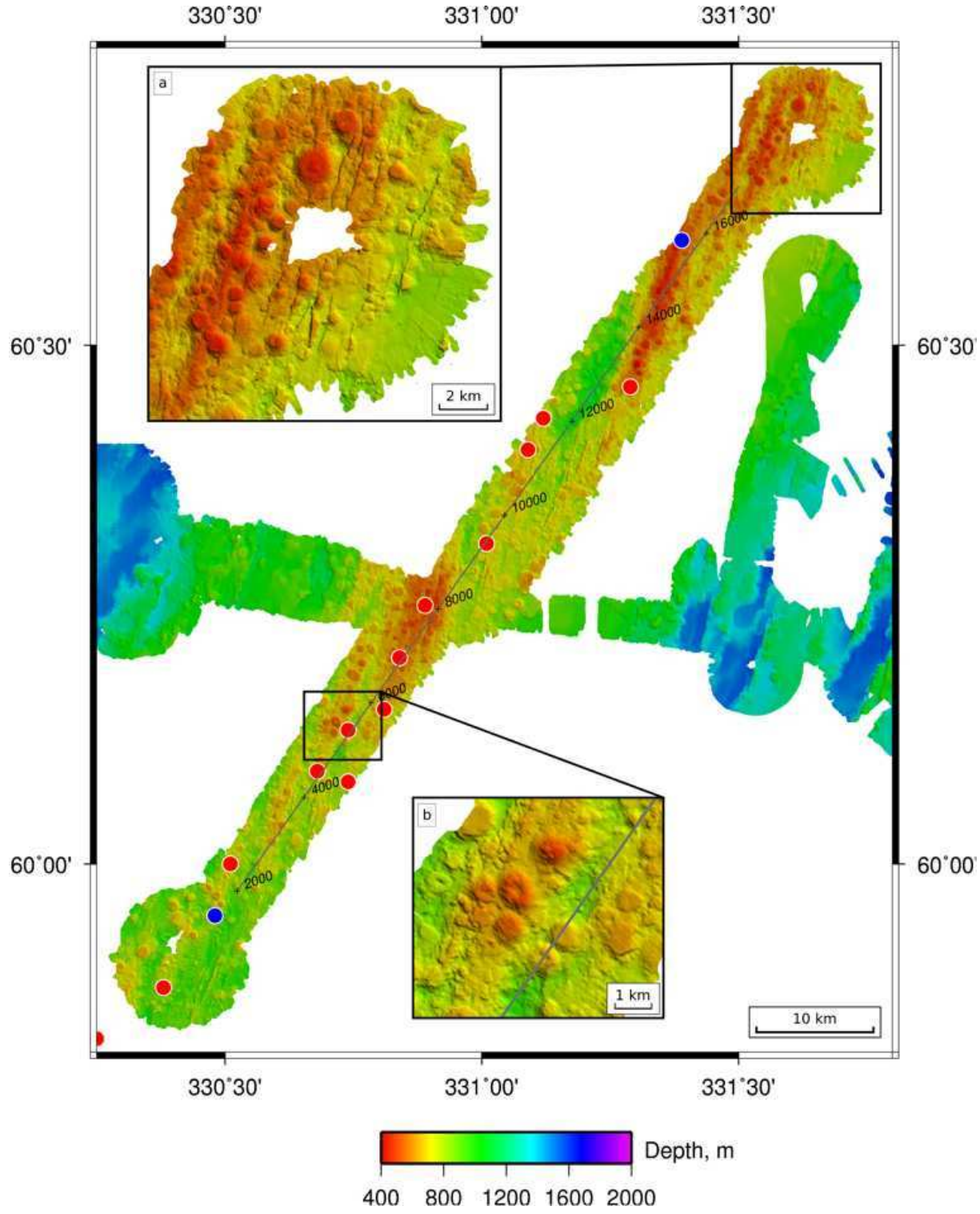

Figure 11: Processed swath bathymetric survey in vicinity of mid-oceanic ridge where an active V-shaped ridge is forming. Note scale bar for bathymetry. Along the mid-oceanic ridge, volcanic craters and normal faults are clearly visible. Red circles = locations where Nb/Y trace elemental ratios are low which is indicative of hotter asthenosphere in the source region; blue circles = locations where Nb/Y elemental ratios are high. (a) and (b) Zoomed boxes which show details of volcanism and faulting.

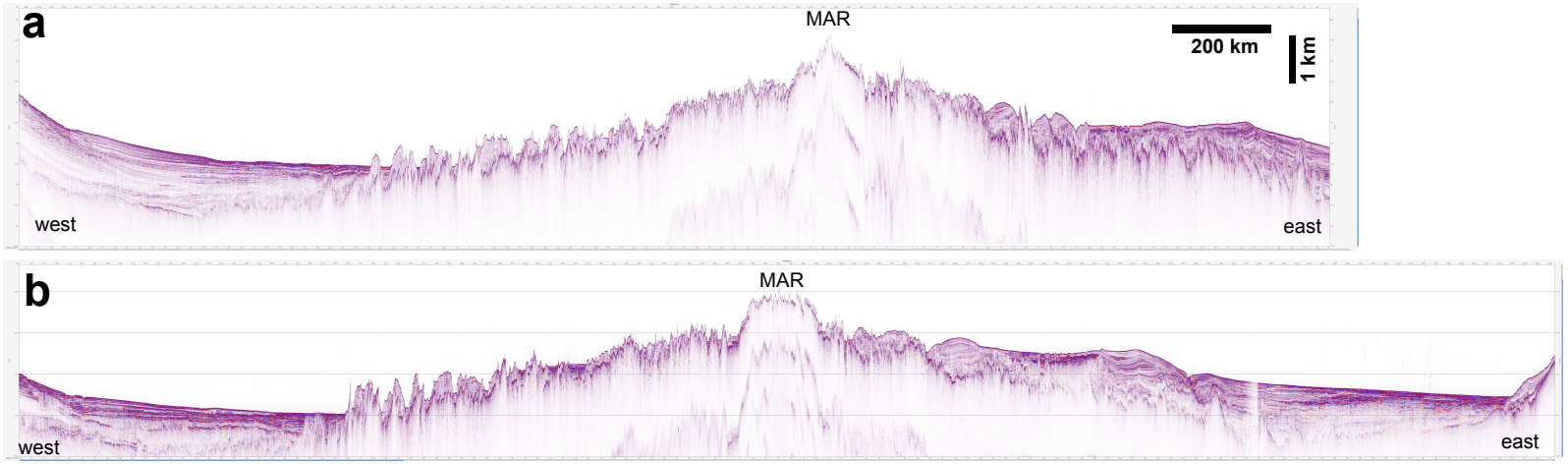

Figure 12: (a) Line VRE-A, which is a flowline at right angles to seafloor spreading direction and which traverses the entire oceanic basin. Note sediment-basement interface, which can be mapped along whole line, and quality of imaging within contourite deposits. (b) Line VRE-B.

to 1800 and 700 m, respectively. Both yielded rather poor results with spiky artefacts. A single gun was deployed at 13:10 and then streamer. All equipment out at 16:00 and ready to shoot. Started gun testing and tuning at 15:00. We turned to 280° in order to shoot a flow line starting at 60.95 N, 22.40 W. Stopped at 20:00 when we reached 60.966 N, 22.6 W. In 1923 m.

JD 197: Gun testing carried out from 8:00 GMT yesterday. We got one gun going with large component of generator and a smaller component of injector. Resultant gun signature had a good shape and system is now working much better. The idea today is to try out various other combinations including both guns. We have ordered spares from Sercel via Department of Earth Sciences (Cambridge). Gun tests lasted until 12:00 and then steamed to Reykjavik. Crossed WOCE Line AR7. Continued steaming towards Reykjavik due north. Rough swell, especially in the late afternoon.

JD 198: Reached Reykjavik at 8:20. Beautiful sunny calm morning. Colin Day requires an email concerning 24 hour delivery of the third package. On docking, gravimeter was calibrated at a measurement made at the base station located beside the church at 42 Skolavordustigur.

JD 199: Waiting for package of Sercel spares to arrive by airfreight from Houston. Finally arrived at 11:30 just in time for sailing. Excellent news. Discussions between PIs to update scientific party on progress. Checked inventory of hydrographic probes (60 XBTs, 12 XCTDs and 12 XSVs). In terms of navigation, we are in UTM 24-27. Good progress steaming all day with calm seas this evening.

9.2 Cruise JC050

JD 200: Good weather conditions. NJW and TH finalized logs this morning and OS wrote script for dynamic navigation at site survey crossing line locations. The recording system is being triggered by the gun firing pulse which entails a 50 ms time shift which should be incorporated into the data (including sonobuoys). Science and protocol meeting at 10:00. Discuss plan for logging and for crossing line location procedures using pigs-ear.bash script. The streamer was deployed after lunch. By 15:15, all birds were deployed and the streamer was mostly out. Guns and magnetometer were deployed. All gear in the water by 16:00. 150 bar pressure attained by 16:20. Start of Line (SOL) is 19:45. An XCTD was deployed and it failed. We must launch XCTDs immediately after loading in the launching gun otherwise they tend to fail. An XBT (T7) was successfully launched. We also need to be careful when launching expendable bathythermographs in the wet since they operate at 60 v. Weather remains good: slightly choppy with small white caps (Force 2). Some problems with the NAS drive which is not writing due to a failed RAID disk but Adam Cox thinks that it has recovered at 10:00.

JD 201: Shooting Line 1 on approach to S1, the first crossing line site, at 1:30. Speed is 5 kts. 10′ to go which equals 10 nm or 18.52 km or 2 hours. NJW has probably overestimated and the bridge suggests that there is just 1 hour to go. At 3:00, we deployed a successful XBT-T5 which reached an excellent 2240 m. Turned to starboard and broke the line. S1 turn started. At 7:30, a sonobuoy was deployed successfully. It was still recording after 1.3 hours. Unfortunately the second FM receiver is very noisy and thus no good. The fault is probably a cabling problem. Still recording at 1 hour 50 mins. The sonobuoy data is good out to 20 km which is excellent news. The common offset stack is also looking good. At 15:30, we are half-way up to S2 and a T5 was deployed which reveals detailed thermohaline structure. The near trace gather of the reflection data continues to look very encouraging.

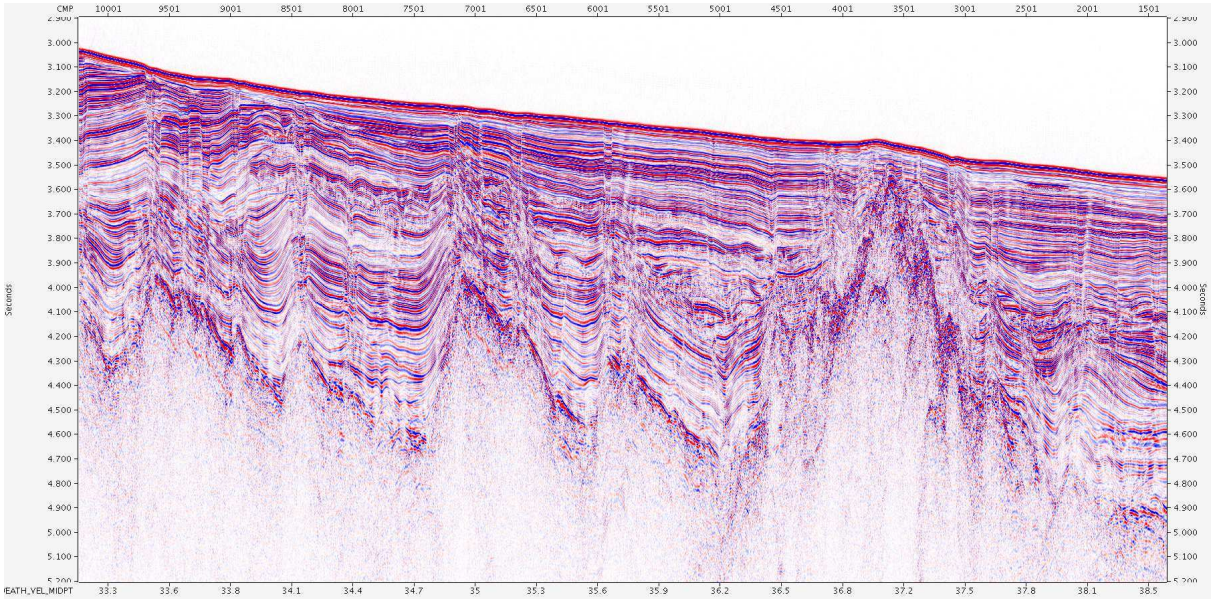

Figure 13: Portion of seismic profile VRE-B which shows prominent V-shaped ridge and a series of fault-bounded blocks on oceanic crust which is 30–40 Myrs old.

JD 202: Acquisition is going well with 4 hours until S2. Terabyte box NJW-2 is dedicated to seismic processing images and work flows. At 3:15, successful deployment of XBT-T5 at centre of S2. Then the start of the turn. At 7:15, a sonobuoy was successfully deployed. Intermittent problems with Gun 1. State of Health (SOH) suggests that it is way down on power but in fact we think that it is actually ok. It can probably be checked at the next crossing line location (Pig's Ear). Master has alerted us to approaching bad weather. 9:00 Management Meeting which includes technical staff and senior crew members. Discussion of weather and of the threshold for bringing equipment back on board. We need about 3 hours warning. May be able to recover faster on a turn. Discussion of sinking streamer scenario which it is agreed is very unlikely. Cruise timetable issues and arrival in Birkenhead. We are not expected alongside until 1:00 which means that we may be able to gain an extra day. 11:00 magnetometer failed and was retrieved with brief pause in gun firing. It is an unknown

fault and so the office in Canada is contacted to identify problem. 11:30 XCTD deployed at centre of S3. Different weather websites were consulted including magicseaweed.com and buoyweather.com. minor swell at moment which will increase to 5 m by Friday morning. At 15:15, sonobuoy was deployed (channel number 93). Always check that the turn is about 20° before deployment to ensure that sonobuoy does not snag the streamer. In this case, sonobuoy did drift to port-side. Excellent data on sonobuoy. An XBT was deployed (one that did not make contact to launch probe earlier). Good data. NJW-1 Terabyte disk is being used to archive the test data from JC049T. S1 took a total of 5 hours which equates to 3°/min. S3 took 6 hours and 17 minutes. We are now using 1 gun only since gun 2 failed due to a leak. We are also travelling faster so that the fold is lower. At 20:30, sonobuoy was successfully deployed. S4 was finished at 21:00. At 20:45, gun 1 suffered a pressure loss.

JD 203: By 1:00, weather has freshened with a stiff breeze. Deployed XBT at centre of S5. The forecast is bad from Friday midday for several days. Pass through centre of crossing lines at 2:30 and then deployed XBT-T5 which was slow to exit the launcher so the top section of the data may be problematic. Additional weather sites consulted include oceanweather.inc and opc.ncep.noaa.gov which is very good. S6 was successful and sonobuoy deployed with success. At 9:15, the guns appear to be tangled in the front end of the streamer. Discussion about plan of action. Guns disabled and investigation took place. Guns were tangled in streamer which occurred as we steamed in a straight line. We suspect that tangling was caused by a strong current flowing to south. This current was evident when we deployed the last sonobuoy which drifted markedly to port. We require a solution which keeps the guns away from the streamer. The Master states that he mentioned this issue on trail cruise and that he wants this matter stated in cruise report. We require major downtime to fix gun 2 which is very battered and has solenoid plug-in damage. We also need to separate streamer and guns spatially in order to avoid similar entanglement problems in future. 15:30, guns are fixed are are being redeployed. Weather is a little rough but there has been no significant change since lunchtime. NJW overrode the MMO to ensure a quick start-up again. Weather continued to deteriorate and Adam Cox decided to stop at 19:30. Conditions worsened so it was the correct call.

JD 204: Bad weather overnight which continued into the morning. Conditions gradually improved but were replaced by a significant swell (5 m and sometimes up to 9 m). All day wasted but it was used to develop a plan for acquiring seismic data across the Axial Volcanic Ridges (AVRs) at the mid-oceanic ridge. and also to finalize the rest of the Pig's Ears (crossing line sites). We decided not to fire Gun 2 any more since it appears to bounce around behind Gun 1 far too much thus causing damage to itself. This problem is not known to Sercel and they are reluctant to engage in constructive discussion. Gun 2 has been left on the beam but placed in reverse minus its umbilicals and shot hydrophone. the air pressure was kept at 3000 psi. In the meantime, we acquired useful fill-in swath bathymetry.

JD 205: At 1:00, we are still waiting for the swell to decrease. Weather is misty with no

wind. We got an extra day's cruise from the National Marine Facility so will now arrive in Birkenhead at 14:00 on 13/8/10. Looking at passageweather.com which suggests improved conditions over the next few days. By 3:30, the swell had died down sufficiently. Started to steam onto the lead-in line at 4:00. Deployment commenced but was halted by a broken (wet?) scroller unit on the winch. Currently being fixed but might take several hours. Typed in all of the remaining Pig's Ears. Streamer finally deployed and we are shooting a test line at 10:00. Continued on S7 vertical cross-line. A sonobuoy was deployed and 3 XBTs were successfully deployed. S8 started.

JD 206: Good weather conditions with a little mist. Excellent swath bathymetry in two tracks along the mid-oceanic ridge where we can see AVRs and many volcanic cones. there is the possibility of looking at differences between older (Searle) swath bathymetry and the current survey. It might be possible to detect fault movement and volcanic flows. This region is very seismically active. Interesting data on Cross-Line 3 where a deeper reflection can be seen within the crust. This reflection must be real because it produces a peg-leg multiple which would be impossible if it was side-swipe. We have now processed all of Line 1 up to S7 and the cross-lines. We are still on S8 which is probably a bit more than we should have tried to do. 1:15 at 60° 6′ N we are crossing a prominent AVR. At 2:10, just over 1 hour until the sonobuoy deployment. According to NJW's calculations, we have 15 days of shooting left. Sonobuoy was deployed at 3:25 on port side. However, it failed. In retrospect, the current is 180° and the streamer had a slight feather to starboard and the sonobuoy was probably swept into the streamer's path. It is still sending out odd signals and so it could be snagged on a bird where it is strumming. the lesson is not to deploy sonobuoys on straight steaming. Instead, only deploy on turns. At 60.55° N and 28.65° W, SMJ thinks that he has spotted a hydrothermal plume on the Simrad ER60at about 8:00. We can see an event on the seismic data as well. After lunch, we deployed a sonobuoy as we came around the 'light bulb' end of the turn at 13:00. Much debate about the current directions and feather of streamer with respect to the sonobuoy. Shortly afterwards, we crossed a prominent AVR and deployed an XCTD which was partly successful since it had spiky excursions. This deployment was close to the supposed hydrothermal plume. At 18:20, we deployed a sonobuoy but from the wrong (i.e. starboard) side because S8 was shot the other way around and thus the sonobuoy went out the wrong side and tangled with the streamer. Good weather conditions continued: cloudy with drizzle but calm seas. Steamed to S9. An XSV-01 was deployed at 5 kts and reached 850 m.

JD 207: Deployed XSV, which reached 850–900 m, at 00:00. Discussion of formula which determines the distance to the horizon over which a radio signal can be detected. Depends upon height of ship and its aerial. At 1:45, S9 was completed successfully. Two XBTs and one XSV were deployed as well as a sonobuoy which produced good data. Discussion about possibility of using a superior antenna such as WINRADIO AX-61S, a sonobuoy telemetry antenna which is 1 m high. At 3:00, weather begins to freshen and there is a slight swell. We are in a low pressure area of 995 mbar. Some swell noise on the streamer. These conditions

are exactly as forecast by different sites. Forecast looks good for the medium term with two occluded fronts developing. Swell and waves continue to decline with some mist and drizzle. S10 was carried out overnight and we are now approaching S11. S9 took 4 hours to carry out and S10 took just over 4 hours which is good progress. S11 was completed by 14:40 and took just under 4 hours. Quite a decent swell beam on for the southern port-side turn and so the near trace gather is very noisy. Once on Line 1 again, the near trace improved a lot. At 18:30, we started S12 and the sea state is more choppy. Tailbuoy GPS is not operating properly. S12 transect has run into several problems. The second crossing line had two failed hydrographic deployments (one XBT and one XSV). The streamer was right over to starboard and we suspect that the copper wire became entangled. No data were recorded. Because of the current, there was great difficulty turning back onto the main line and so we had to carry out a double Pig's Ear and so there are two crossings close to each other. At 2:00, the swell is still significant although wind has dropped and air pressure is rising. Streamer is maintained at 10 m depth.

JD 208: Examination of cross-sections from Gloria and Eirik Drifts. Depocentre of the latter is quite far south. At 3:00, it is now windy (30 kts) but air pressure is climbing quickly (1003 mbar). Successful XBT was deployed at the centre of S13. An XCTD was also deployed which failed. By 5:45, weather conditions have improved a lot. Two swell directions are colliding which helps to flatten the sea state more quickly. The wind has dropped significantly and air pressure is 1006 mbar and climbing. Seismic processing this evening of the axial lines look very exciting and suggest that details of oceanic crust at the ridge including magma chambers may have been imaged. The 14th sonobuoy was deployed at 7:00 and was a success. At lunchtime, all is going well. Good sea state as we acquire S14. Discussion with Adam Cox about bringing in the streamer for a visual inspection since he suspects that it is entangled with sonobuoy and bathythermograph wires. The problem is that there are no obvious diagnostics which indicate that the performance of the birds is being affected. NJW is inclined to keep shooting since the weather is good. BJM would like to acquire an additional crossing line on older oceanic crust to complement crossing lines on the European margin. At 15:00, the centre of S14 was crossed and both an XBT and an XSV were deployed successfully. Excellent shooting conditions. the remaining part of the navigation has now been finalized and BJM's proposed extra crossing line has been added.

JD 209: Excellent shooting conditions: calm seas, no wind, high air pressure. Some clouds. Continue to transit towards S15. At 5:30, approaching S15 which was carried out ok. At 12:00, the weather starts to deteriorate. Pressure is dropping and the wind is picking up. We must depart the final waypoint by 17:30 on 10th August in order to make Birkenhead on time. By 14:00, conditions have improved a little and the sea state has improved. At 18:00, the swell and wind have increased and a decision was taken to bring in the gear. The forecast suggests that this bad weather will push through this area tonight and after that we should have a reasonable spell. Problems in retrieval of the streamer were encountered: one bird is missing and the automated scroller on the winch broke down again. the streamer

had to be manually fed onto the winch which was slow work. To do this, the scroller had to first be removed. While we were stationary, the Valeport SVP was deployed. Gear all in by 21:00. Only one bird lost but lots of copper wire and fishing net was wrapped around some of the birds. Some difficulty in bringing in the tail buoy. A stormy night.

JD 210: A wild and stormy morning. We plan to carry out some SVPs on the wire. At 9:00, we deployed SVP at 60° 33.93′ N, 36° 5.52′ W. Management meeting. SVP plan discussed. the forecast looks good. 16 nm to the next Pig's Ear where we could do a second SVP. Dock plan discussed. On 13th August, the pilot is booked for 9:30 and by 11:30 we need to be in the lock with gangway down at 12:30. The SVP has resolution of 12.5 cm and recorded both temperature and salinity. At 12:30, it looks like it shows DSOW at bottom which is good news. We waited all day for the swell to subside. Deployed SVP again slightly further away close to where we will run the test line. At 18:30, we started to deploy the streamer in good conditions. As soon as the kit was deployed, conditions worsened but deemed bearable. The test data is noisy. Guns are now on a new float since the old one was about to break. Streamer depth is 8 m. Seismic penetration is less good probably due to the presence of volcanoclastic deposits.

JD 211: Gun failure at 12:45. It is a combination of hydrophone failure and the umbilical popping out of its socket. We brought the guns in with great difficulty because they kept snagging in the crane on portside stern. The damage was minor. Interesting circular and oval 'bobbles' on the seabed which may be current-related features associated with DSOW. Lengthy seven hour circle and restarted at 7:10. Still a problem with the gun, possibly the hydrophone. We circled again and took the guns in to check. There is evidently a major problem in that it is unclear why the gun is misfiring. Technicians rebuild the gun using parts from another GI gun and we start shooting again at 14:10. A whole history of minor disasters then unfolded. Finally, at 18:30, we get going again. We are in 4 seconds TWTT of water (i.e. 3 km). Getting high frequency wrap-around on the shot records. Several times, we have had power outage to the shack whose cause is unknown. At 22:30, power outage for 30 minutes which means that the next Pig's Ear must be ballooned backwards to cover the record gap. Nominal at the centre of the Pig's Ear and a good XBT deployment. Seismic penetration is much poorer this side of the Atlantic Ocean probably because of the large amount of volcanoclastic sediments and dropstones within the near surface sediments. At 2:30, the gun is restarted after fixing leaks and trying to protect the two guns from each other. Gun 1 appears to be bouncing around significantly.

JD 212: Continuing problems with guns which were redeployed several times. Back in properly at 4:30. hardly any overlap with the main seismic line however. Sonobuoy successfully deployed at 7:10. This Pig's Ear is quite ballooned. Just after deployment of guns, there seems to be a problem with either the hydrophone of the umbilical. Gun system diagnostics are red but the direct arrival and other data are ok. Gun finally failed at 9:00. Problems with guns continue through the morning. Power outages as well. In the end, the gun chains

were lengthened by 0.5 m. Another power outage. We turned off the air-conditioning which may help. On shot diagnostics, the shock hydrophone is not working but we can still record data provided that the near trace gather and the shot record look ok. Could the problem be Spanish wiring? The seabed is at 4.05 s TWTT and for a 15 s record we expect wrap-around at 1.2 s. Continued shooting in good conditions. However, signal penetration continues to be poor.

JD 213: Very calm seas due to influence of Greenland high pressure. Technicians have fixed up Gun 2 with umbilicals. NJW recalculated schedule which is still ok despite the two days of weather and technical downtime. At 4:30, deployment of XBT-T5 at waypoint was successful. Smooth ride all night with some rain. Reach S16 and deploy an XBT at centre. 13:50, deployed the last sonobuoy whose seal was broken but it worked fine, drifting slightly to port. At 14:30, deployed an XBT which rather splendidly encounters the top of DSOW: there is a lurch to lower temperatures just above the seabed. At 14:55, airhose leak and loss of gun. The gun aray is pulled in. Magnetometer deployed off port aft-deck at 15:15. Guns back in water and firing at 16:30. By 17:00, we start shooting again. The sonobuoy is still live. See Swift J.H. (1984) Deep Sea Research Part A for circulation through Denmark Straits. We shoot past the sonobuoy again which is excellent news.

JD 214: Good progress. We have acquired 65 km of big cross-line since 17:00 in excellent weather conditions. Cross-line should be finished by middle afternoon. If so, we could start Line 2 on 3rd August and it should take 5 days to complete if we have a clear run. bathythermograph count = 2 XSVs + 5 XCTDs + 7 XBTs = 14. Successful XBT half way down line which clearly shows DSOW. Good progress until 10:30 when airhose burst. Airgun array brought in and we switched to one gun on a small Sercel beam with new umbilicals. Some difficulty with streamer feather close to boat for this line orientation and we anticipate problems with port-side turn for next Pig's Ear. New gun system back in water at 13:15. We can see the shock hydrophone output again after a long gap (since S16). We decided to turn to starboard into Line 2 and abort the next Pig's Ear. Once we had come onto Line 2, we deployed an XBT in 2250 m. Excellent data with interesting water structure. 21:30, continue with nominal systems. Display for shot records and near trace gather keeps failing however. Excellent conditions at sunset: clear sky and calm.

JD 215: Good progress through the night to midday. A sunny breezy day with minimal swell. Good seismic data quality. Discussion about IODP proposal and AGU abstracts. 18:30, sudden air compressor failure for 10 shots. Probably caused by the ship's power management system stealing power from the compressors to divert it to the engines. Came back ok. 20:00, hydrophone failed but as before we can carry out quality control using the near-trace gather display. Good progress all day but signal penetration does not look as good as it was at the start of the cruise.

JD 216: Where should we break this line? So far, Line 2 has taken 32–36 hours which

means that we are ahead of schedule. XBT note: we have re-used the one that did not work yesterday but it produced poor quality data. The second one was better but it has some odd-looking excursions. At 6:45, we had a massive streamer failure: multiple failed channels. Unclear whether this problem is mechanical or a software issue. Sercel state that the screen diagnostics we have are "impossible" and that our only options is to reel in the streamer and examine the console box located half-way down the length. Problems with the automatic scroller again. Is it a power management issue? Unclear. Spent the whole day dealing with the streamer although we did deploy an XCTD at a speed of 2 kts which worked quite well. The problem with the streamer might have been the connector in the winch which seems to have been loose! At 18:00, still deploying streamer. Guns back in water for a soft start at 18:00 as well. Start shooting again at 20:40.

JD 217: All going well at 00:00. NJW has recalculated the line excursion south of Line 2 to ensure 12 hours of spare time. XSV was deployed but it only recorded down to 700 m showing interesting structure. Good progress throughout the night. At 12:30, we began turn onto the ridge axis. Mid-oceanic ridge here is very clearly defined. At 2:30, we turned onto the first of the two short lines which will image out to the edge of composite V2. Continued along the first transect.

JD 218: At 00:00, the conditions are good: calm with a slight swell. Magnetometer communication problems at 00:10. Turns out that it was a software glitch caused by clock reaching midnight. Restarted it and now ok. At 1:28, we spotted a plume-like feature sitting on top of a prominent volcanic crater at 61° 21.14′ N, 25° 13.18′ W in water depth of 1788 m. Top of crater is at 1500 m. Plume reaches 1000 m water depth and is visible on both 18 and 38 kHz pingers. At 2:30, slight swell starts up. The first loop was completed by 4:00. At 4:35, seas have flattened again and it is misty. 12:00, still excellent acquisition and good weather conditions. We are now halfway through the minisurvey after 24 hours. Adam Cox is copying seismic data and making multiple copies. Possible magma chamber reflection beneath mid-oceanic ridge on the third westerly transection. Continue shooting without incident and in good conditions.

JD 219: 00:00, sudden loss of pressure and we suspected an airhose leak. In fact, the problem once again is the power management system which caused the air compressors to briefly shut down. All ok. At 1:35, swell picking up somewhat on the turn. Continued swell. We complete the western turn at 2:10. Swath bathymetry quality is very poor on the turn itself, probably because of thruster power. The swell is now significant and so we have dropped the streamer depth to 8 m. Progress through the night is good and the swell gradually dropped. At 7:30, the gun umbilicals became snagged in the towing cable. Decision made to take in the guns and untangle at the next turn to the north close to the mid-oceanic ridge. At 1:30, the umbilicals have been unsnagged from the cable so all ok. Gun firing again at 1:40. Breezy with a light wind and some sunshine. Little swell, small wave height as we enter the final turn. More possible magma chamber reflections. 15:32, End

of excursion lines at shotpoint 29317. We deployed an XSV on the mid-oceanic ridge at 18:10.

JD 220: 00:00. All going well. The weather forecast is good. At 2:10, the northern lights were faintly visible off the portside. At 3:15, an XSV was successfully deployed in 800 m. See Schor and Martin (200*) on palaeoceanography. More swell and greater wave height on the next watch so the streamer was deepened to 9 m. Conditions much improved at midday. NJW chose a new end waypoint of survey at the top of Hatton Bank. Good weather all day. At 18:00, pilot and baleen whales sighted off the starboard midships. They seem totally unconcerned by the shot firing. We still have some tangling between the umbilicals and the cable off the stern.

JD 221: 00:15, good progress but there has been a heavy swell for the last few hours. Streamer dropped again to 9 m. Swath bathymetry and SBP have deteriorated considerably. We now have an excellent compressed version of Line A. Interesting asymmetry which might reflect different amounts of dynamic support close to ridge. The second last XBT-T5 probe was launched but it only reached 1000 m. It later transpired that this shallow depth was a plotted problem so ok. Excellent progress all day. Some swell but it gradually lessened. Occasional power management system issues which caused the air compressors to fail for very short periods. We took down the two sonobuoy aerials. the one that produced very poor quality records has a dubious connection which might have been the problem. NJW recalculated EOL to middle of Hatton Trough for 19:00 on JD 222.

JD 222: Excellent progress during the night. The heavy broadside swell of the previous evening gradually died away. We passed the original EOL and continued shooting up the continental margin. Good progress throughout the rest of the night and into the morning. Excellent seaward-dipping reflections visible on the near-trace display as we climb up Hatton Bank. Went well all day. Crossed into Hatton Trough. Scheduled to cease shooting at 19:00. EOL and bring in streamer without incident.

JD 223: Steamed all day under good conditions. RPC party held at 20:00. Back-up of all data and finalizing on-board seismic processing.

JD 224: Stopped close to Rathlin Island for lifeboat safety check. Disk NJW 1: JC049 and JC050 seismic data; ProMax archives, SEG-Y pre-stack data. Disk NJW 2: raw data and SEG-D. All geometrical and navigational data. Disk NJW 3: Leighton Rolley's full back-up of all ancillary datasets. Disk NJW 4: All raw seismic data including the shipboard stacks.

10 Equipment Performance

In general, all essential equipment performed well throughout the cruise and the data quality is excellent. The centrepiece of this cruise was the seismic acquisition programme which required successful operation of airgun array, streamer and recording system. The biggest

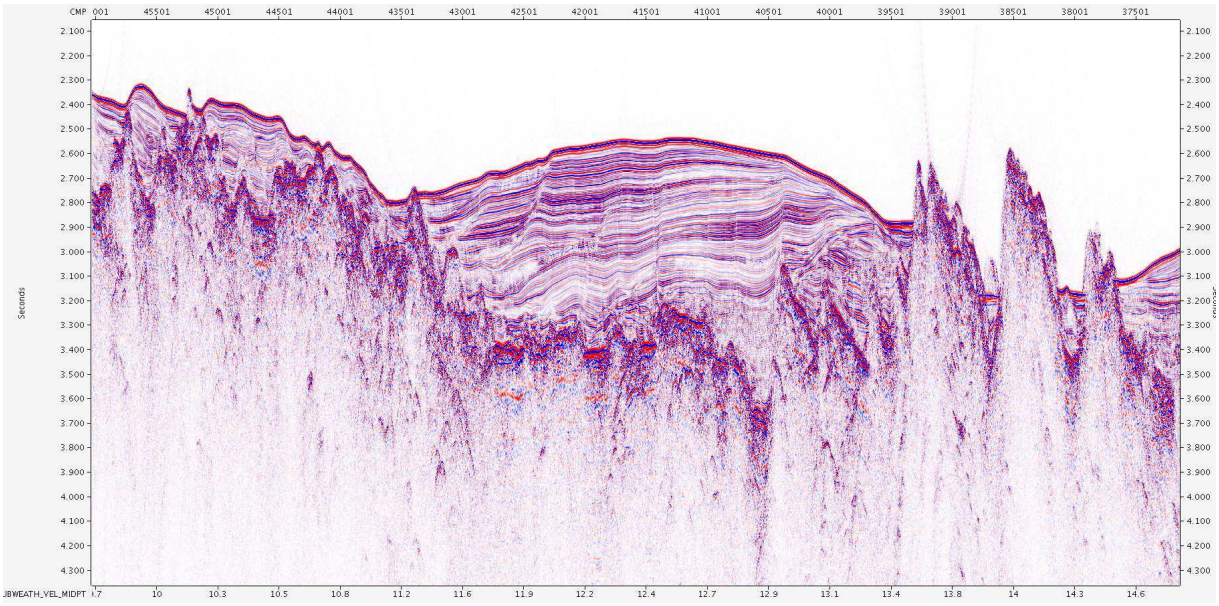

Figure 14: Portion of Line VRE-B which shows excellent image of Bjorn contourite drift. Note faulted sediment-basement interface and quality of internal reflectivity of contourite.

problem we had concerned the two airguns which were suspended by short chains from a Sercel metail beam. During the trial cruise, we discovered that the rearward gun became repeated damaged by collision with the forward gun and/or with the beam itself. The main consequence was progressive damage to the shot hydrophone, to the umbilical hoses, and to the integrity of the gun itself. As we ran out of spare parts, we decided that the success of the cruise would require an immediate solution. The rearward gun was disabled but left in place and this appeared to solve the problem. As a result, the seismic survey was carried out with only one half of the expected gun array volume which was clearly not ideal. However, thanks in part to the high pressure air system, signal penetration was deemed sufficient for our scientific purposes. The towing arrangements off the back deck were not ideal and at times, the gun array and the streamer became entangled which caused minor delays. The streamer itself performed well: towing proved straightforward and we very rarely had any problems with excessive feathering and buckling within the water column. One bird was lost. The seismic firing and recording system performed very well, thanks to the dedicated professionalism of Adam Cox and colleagues. There were occasional power outages, particularly during the second half of the cruise. These outages were traced to the ship's power management system which, when experiencing temporary overload, briefly stopped power to the air compressors. These outages generally only caused missed shots which did not require us to turn.

The disposable sonobuoys performed very well and enabled us to record wide-angle seismic events out to about 22 km. Although we erected two aerials and VHF receivers, only the one on the starboard side worked satisfactorily. We suspect that the problem with the postside aerial was interference with ship's aerials and systems. In future, we recommend

that these VHF sonobuoy aerials be erected even higher on the ship. In general, we deployed sonobuoys from the stern starboard side as we turned portside out of a cross-line. This arrangement ensured that the sonobuoy did not become entangled with the streamer as it, sometimes inevitably, drifted toward the streamer. It usually worked well and the only failures occurred when we tried to deploy a sonobuoy on a straight trajectory.

The swath bathymetry, sub-bottom and other profilers generally operated satisfactorily and yielded good quality data. Disposable hydrographic data were mostly acquired with success. To avoid entanglement with the streamer and guns, we launched the probes down a 5 m long drainpipe off the starboard side (i.e. on the opposite side to the gun array). This procedure mostly worked well although we had occasional entanglement and in one instance lost a bird possibly as a result of hydrographic wire and other debris becoming wrapped around it.

11 Seismic Line Overview

All lines were designated with a label that starts with the acronym VRE followed by a two digit number. Line VRE-A is a flowline which intersects the mid-oceanic ridge at 61° N at which position an active V-shaped ridge is propagating along the ridge away from Iceland (Searle et al., 1998). This line traverses the entire oceanic basin but note that on the European plate it does not start on the oldest oceanic crust abutting the continental margin. The reason for this gap is that Parson & Elliott acquired a seismic survey along the margin under the auspices of UNCLOS and one of their lines is an exact continuation towards the margins of Line VRE-A. Acquisition of this first flowline was complex because at intervals short crossing lines were acquired for the purposes of the IODP site survey requirements. A total of 19 crossing lines (VRE-1 to VRE-22) were acquired. In each case, a double loop was carried out. At the mid-oceanic ridge itself, we extended the double loop in order to acquire longer lines along the ridge at the location of the current V-shaped ridge. On either side of the mid-oceanic ridge, two spells of weather downtime occurred which accounts for excursions of the ship's track. The long flowline is of excellent quality. Our principal target, the sediment-basement interface, is visible even on brute stack data and can be traced along the length of the line. This interface is more clearly imaged in the Irminger basin than in the Icelandic basin because of the different acoustic properties of the sedimentary sections. In the Irminger basin, the sedimentary section consists of fine grain mudstones and siltstones. In the Icelandic basin, volcanoclastic and dropstone debris from both Iceland and Greenland contribute to the sedimentary section which degrades the acoustic properties. Within the sedimentary section, the internal structure of contourite deposits is clearly imaged. There is good evidence for changes in palaeocurrent with time. Pervasive small-offset normal faulting occurs.

Close to the East Greenland margin, a strike line, VRE-B, was acquired parallel to the margin and runs along the length of the Eirik Contourite Drift. This line crosses prominent modern and ancient channels which emanate from East Greenland. There is evidence for undulate disconformities within the sedimentary section. A second, longer flowline was ac-

quired closer to Iceland (Figure 2). Line VRE-C is longer than VRE-A and crosses oceanic floor where there is much less evidence for fracture zones. It crosses the Hatton margin and terminates in the middle of the Hatton Trough. At the mid-oceanic ridge, a southward excursion was carried out away from VRE-C and two additional short flowlines, VRE-D and VRE-D, were acquired. These two lines only reach the second V-shaped ridge but they provide valuable additional data coverage. VRE-C is of excellent quality. the sediment-basement interface can be mapped along its length and seaward-dipping reflections are evident along both continental margins. In place, minor degradation of acoustic penetration is probaby caused by the presence of volcanoclastic debris.

12 Subsequent Seismic Processing

During the Summer of 2010, under the auspices of an IODP site survey, over 3300 km of reflection seismic data were collected by RRS *James Cook* Cruise JC050. Two main seismic lines are oriented parallel to flowlines, with nineteen short perpendicular cross-lines (which serve as site surveys) located at various ridge-peak and ridge-trough locations along Line 1; see Figure **??**. Complementary wide-angle data were collected using sixteen disposable sonobuoys. Further data collected include multibeam bathymetry, gravity, magnetic and high frequency sub-bottom profiles. Although outside the scope of this project, hydrographic data were collected using a combination of expendible devices and continuous acoustic profilers.

A processing workflow including filtering, normal moveout (NMO), common mid-point (CMP) stacking and frequency-wavenumber (F-K) domain migration has been used to resolve seismic reflectors. In this section, we describe the experimental procedures and the processing flows applied to the data.

The aim of the cruise was to image the sediment-basement interface along two lines parallel to flow-lines peropendicular to the Reykjanes ridge. In order to collect data at the 19 crosslines, continuous data acquisition was intentionally interrupted to allow for turning the ship away from and back onto the main navigational path. Turns were completed at a rate of 3 degrees per minute. As a result, the two long flowlines consist of a number of overlapping segments. Additional data were collected along the ridge spreading axis, as well as two short sections parallel to the main northern flow line. Data was also acquired along the join between the two flow lines, parallel to the Greenland continental margin. The northern line extends east onto the continental margin of Hatton Bank.

The seismic source comprised a single 355 in^3 generator-injector (GI) airgun fired at a pressure of 3000 psi (20.7 MPa) at 15 second intervals. The GI gun suppresses the bubble oscillations of a traditional air gun, by injecting additional air into the bubble and controlling its collapse. The source therefore comprises an initial acoustic pulse (the generator) followed by a secondary pulse (injector) near the maximum expansion of the primary pulse. This has the effect of dampening primary bubble collapse. Two airguns were initially used but were reduced to one after technical challenges

The streamer consisted of 132 hydrophone groups at 12.5 m spacing, towed at a depth of 7 m. Streamer depth was maintained using five steerable Sercel Nautilus® depth controllers.

This gave a maximum source receiver offset of 1813 m. With a nominal ship speed of 5.0 knots (∼9.3 km/hr), this time interval gave a shot spacing of 40 m. The 21-fold seismic data were recorded in SEGD format with a sampling interval of 1 ms over a trace length of 14 s.

Initially, two GI guns were used simultaneously. Due to the geometry of the beam assembly from which the guns were suspended, the air hoses and control umbilicals became damaged after prolonged use. This was mitigated by reducing to a single gun source. This did not result in a reduction in acoustic penetration, and reduced greatly the amount of time required for gun maintenence and servicing.

Poor weather conditions were anticipated to significantly interrupt data acquisition during the cruise. However, the sea state was mostly fair enough to allow continuous shooting. Some periods of downtime occurred when sailing at an angle to the prevailing weather, which caused streamer and gun entanglement. Their geometry was subsequently modified so to minimise the risk of this occurring. Steerable devices on the streamer were used to reduce the risk of entanglement, and also maintain streamer depth during periods of heavy sea state. These problems were largely associated with aquisition of site survey crosslines, which each required two 270 ° turns.

Preliminary processing was carried out using *ProMAX 2003.19.1* during the JC050 cruise. The result of this processing was to produce normal moveout (NMO), common-depth point (CDP) stacked and migrated sections for each line segment. Subsequent processing at the Bullard Laboratotries has been carried out using *Omega 2010.1*, with the exception of the geometry assignment which has been preserved from that calculated during the cruise.

For geometry assignment, all source and receiver locations were determined in x, y, z coordinates (offset in x, y, and depth below sea surface, metres) in a Mercator projection centred at the sea surface at 60 °N 40 °W. Individual source and receiver depths were used to assign static corrections which were then applied to correct each shot gather to the sea surface datum.

In order to produce a single section for each of the two main lines, segments were joined together post CDP-assignment. In most cases there is overlap between successive segments therefore information recorded in observers logs such as sea state and equipment performance was used to choose join locations.

Following sorting to CMP gathers, a minimum-phase bandpass filter of 6Hz with roll-off 18 dB/octave was applied to attenuate incoherent noise and minimize source signature reverberation. The data were then stacked using a normal move-out (NMO) velocity model derived from semblance analysis and constant velocity stack (CVS) panels. I have produced time-varying velocity models for all of the lines collected, with a range of velocity pick spacings from 6250 m to 165.25 m. A pick spacing of 1250 m represents a good compromise between processing speed and image quality.

The application of post-stack FK Stolt migration has been found to significantly enhance final CDP stacked sections. Dipping events present a problem during NMO correction. NMO corrections are only correct when the reflecton horizon is flat. Further, when stacking an NMO CDP gather, it is assumed that all energy returning froma single horizon reflects from a common point. This is not the case from a dipping interface. Brief examination of the

roughness of both the seafloor and basement horizons shows that this assumption rarely holds true. However, a dip-moveout (DMO) correction can be applied to the CDP gathers to correct for these problems. DMO has been applied to these data, which show improvement in imaging of steep dips and a reduction in amplitude of sea floor scattered energy

13 Preliminary Cruise Results

The marine geophysical data acquired during JC050 is of much greater volume and quality than could have been anticipated during the planning phase. Despite teething problems with the electronic winch and the airgun array, the quality of the seismic reflection profiles is particularly noteworthy. The highlights of the acquisition programme are:

- 2 long high quality flowlines which will transform our understanding of V-shaped ridge formation.

- 22 cross lines which will form part of site survey package for IODP proposal.

- 2 short flowlines which will further enhance correlation of younger V-shaped ridges.

- 3 chronlines along mid-oceanic ridge which show morphology of Axial Volcanic Ridges (AVRs).

- High quality swath bathymetric survey, especially at, and in vicinity of, mid-oceanic ridge.

- Underway hydrographic dataset which will aid seismic processing and interpretation of water column reflectivity.

- 3 kHz profiling dataset.

14 Recommendations

The equipment performance throughout the cruise is a testament to the necessity of seismic trials cruises which enable rigorous testing of the seismic acquisition system. The fact that the scientific party participated in the trials cruise enabled important feedback between scientists and technical staff. There was sufficient time before JC050 to permit vital spare umbilical parts and shot hydrophones to be ordered for collection in Reykjavik. Seismic reflection surveying will continue to be a vital means for imaging the sub-surface at sea and it is important that the successes of JC050 and previous seismic-related cruises are built upon. The electronic winch needs to be adjusted so that it can operate effectively in

all weather conditions. On JC050, it repeated broke down in the rain which required the streamer to be retrieved and deployed manually which is very slow. The GI airgun array needs to be modified with the help of Sercel personnel to ensure that it can operate safely with two airguns at air pressures up to 3000 psi. It would be excellent if a longer streamer can be deployed. Although a 1650 m live streamer worked well on this cruise, it is the bare minimum for acceptable seismic reflection profiling. It would be better if 3–6 km could be deployed as a matter of course. Finally, the performance of both the gravimeter and magnetometer were less than satisfactory and these devices need attention.

15 Cruise Operations

The operation component of JC050 worked very well thanks to the tireless dedication of the technical crew together with the officers and crew of the ship. This effort meant that the original expectations of scientific output have been considerably exceeded.

16 Future Workflow

There is excellent evidence that the Iceland plume has varied in size and extent over the past 60 Ma (Jones, 2002; Poore *et al.*, 2009). Geophysical, geochemical, stratigraphic and palaeoceanographic observations support the notion that temperature anomalies travelling up the mantle plume conduit beneath Iceland flow radially outwards beneath the fringing continental margins, and are responsible for transient uplift events throughout Neogene times. Such events have caused vertical motion of the Greenland-Iceland-Scotland Ridge (GISR), hundreds of metres in amplitude, modifying overflow of North Atlantic Deep Water (NADW), first suggested by Wright & Miller (1996) and more recently by Poore *et al.* (2006). During Cenozoic times, it is likely that plume-controlled deep-water overflow has had a significant effect upon the biogeographical evolution of the Arctic Ocean, which is largely an enclosed basin. Arctic freshening events, for example during the Late Eocene, enabled species such as *Azolla*, a floating freshwater fern, to thrive until a sudden influx of warmer saline water flooded in from the south.

The primary aim of this project is to constrain the temporal and spatial variability in plume activity through Cenozoic times, and then to investigate its influence upon the fringing ocean basins and continental margins. The history of thermal anomalies in the plume will be used to reconstruct a framwork into which other observations such as transient uplift events, deep-water circulation and sedimentary patterns can be placed.

16.1 V-Shaped Ridges

Time-dependent mantle circulation is suggested by features observed on the seafloor South of Iceland. Using bathymetry and seismic reflection data, Vogt (1971) first identified symetric,

chevron-like features nested around the Reykjanes Ridge, now known as the V-Shaped Ridges (VSRs). They are best observed in high-pass filtered gravity data (Jones, 2002; Jones *et al.*, 2002), as their bathymetric expression is obscured by sedimentation. Limited wide-angle seismic data show that the V-shaped ridges and troughs are produced by small (2 km) changes in crustal thickness, which presumably reflect temperature variations of ±30–50 °C within the spreading plume (White *et al.*, 1995).

Given the limitations of bathymetric and gravity observations, seismic reflection data is an excellent tool for investigating VSR morphology. The only previously existing reflection profiles from the Reykjanes Ridge are those collected by the RV *Vema* in 1966 (Talwani *et al.*, 1971). These data vary in quality, are not continuous nor parallel to flowlines, and are limited in extent to ocean floor only up to ∼15 Myrs in age. A newly acquired seismic dataset, from RRS *James Cook* Cruise JC050, will be used in this project to extend our understanding of the plume back to the birth of the North Atlantic at around ∼55 Ma.

16.2 Reconstructing the Plume Record

16.2.1 Residual Depth

Examining the temporal variation in plume activity through Cenozoic times is at the heart of this project. In order to identify periods when the plume was anomalously hot or cold, it is necessary to compare the observed water-loaded depth to ocean crust with the predicted subsidence if the plume has been at a constant temperature. Any difference is referred to as the residual depth. The key observation here is present day depth to ocean crust; one which is readily made using the new seismic reflection profiles of the recent JC050 cruise.

Predicted subsidence is given by

$$d = d_i + c\sqrt{a} \tag{1}$$

where d is the depth of the crust in metres, d_i is the depth of the ridge for each profile, c is a cooling constant describing the subsidence expected as crust cools and a is the age of the crust in Ma.

Since the age and depth of oceanic crust is known, it is possible to calculate the residual depth (the variation caused by changes in the temperature of the plume head):

$$\Delta d = t_b - d \tag{2}$$

where t_b is the water-loaded depth to oceanic crust and d is the expected depth of oceanic crust from Equation (1).

It is also necessary to account for the effects of sediment-loaded subsidence of oceanic crust. A simple isostatic correction assuming constant density layers enables the depth of simple water-loaded oceanic crust to be found (Le Douaran & Parsons, 1982), so that:

$$t_b = t'_b + t_s \frac{(\rho_a - \bar{\rho_s})}{(\rho_a - \rho_w)} \tag{3}$$

where t_b is the depth before sediment loading; t'_b is the depth after sediment loading; t_s is the sediment thickness; ρ_a, the density of asthenosphere = 3200 kg/m^3 and ρ_w, the density of sea water = 1027 kg/m^3.

16.2.2 Cruise JC050

During the Summer of 2010, under the auspices of an IODP site survey, over 3300 km of reflection seismic data were collected by RRS *James Cook* Cruise JC050. Two main seismic lines are oriented parallel to flowlines, with nineteen short perpendicular cross-lines (which serve as site surveys) located at various ridge-peak and ridge-trough locations along Line 1. Wide-angle data were collected using sixteen disposable sonobuoys. Further underway data collected include multibeam bathymetry, gravity, magnetic and high frequency sub-bottom profiles. Although outside the scope of this project, hydrographic data were collected using a combination of expendable devices and continuous acoustic profilers.

Continuous data acquisition was intentionally broken at each crossline to allow for turning the ship, and at a number of other locations due to equipment or weather challenges. As a result, the two long flowlines consist of a number of overlapping segments. Additional data were collected along the ridge spreading axis, as well as two short sections parallel to the main northern flow line. Data was also acquired along the join between the two flow lines, parallel to the Greenland continental margin. The northern line extends east onto the continental margin of Hatton Bank.

16.2.3 Data Processing

Preliminary processing was carried out using *ProMAX* during the JC050 cruise. The result of this processing was to produce normal moveout (NMO), common-depth point (CDP) stacked and migrated sections for each line segment. Subsequent processing at Bullard Laboratories has been carried out using *Omega-2*, with the exception of the geometry assignment which has been preserved from that calculated during the cruise.

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spacings from 6250 m to 165.25 m. A pick spacing of 1250 m represents a good compromise between processing speed and image quality.

16.2.4 Frequency-Wavenumber Domain Migration

Migration moves dipping reflections to their true subsurface positions and collapses diffractions, thus increasing spatial resolution and yielding a seismic image of the subsurface. The application of post-stack extended F-K Stolt migration has been found to significantly enhance final CDP stacked sections.

Dipping events present a problem during NMO correction. NMO corrections are only correct when the reflecton horizon is flat. Further, when stacking an NMO CDP gather, it is assumed that all energy returning froma single horizon reflects from a common point. This is not the case from a dipping interface. Brief examination of the roughness of both the seafloor and basement horizons shows that this assumption rarely holds true. However, a dip-moveout (DMO) correction can be applied to the CDP gathers to correct for these problems. The application of DMO will be explored later in this project, which may yield improved imaging of steep dips and a reduction in amplitude of sea floor scattered energy

16.3 Results

16.3.1 VSR Morphology

Prominent, long-wavelength VSRs can be readliy identified along the entire oceanic section of the data. They are clearly imaged in areas where the short-wavelength gravity anomaly suggests their absence. Most VSRs show a high degree of faulting, and are in some cases appear to be composed of distinct lobes. It is important to separate the long-wavelength VSR signature from small-scale faulting in order to accurately construct the residual depth profile. Using the seafloor age grids of Müller *et al.* (2008), we have assigned ages to the basement along the two flowlines. This indicates that plume activity has not been temporally consistent, and the oldest VSRs to the west are up to 47 Myrs old. Interpretation of the faulting patterns, variations in amplitude and wavelength of the ridges will form a major part of this project.

16.3.2 Contourite Drifts

Contourite drifts are linked to the action of semi-permanent bottom currents in deep water, usually resulting from thermohaline and/or wind-driven circulation in the oceans and their marginal seas. They are especially common along continental margins and at oceanic gateways; the Snorri, Eirik, Bjorn and Hatton are examples in the North Atlantic which have been imaged by the JC050 cruise (see Figure **??**). These drift sediments record local changes in bottom-water flow and should be an important source of ocean/climate proxies (McCave & Hall, 2006). The stratigraphy of a drift is controlled by two related processes. The dominant external control is accumulation rate which is directly linked to changes in sediment supply and current activity. Local processes (e.g. biological activity and water

chemistry both producing and dissolving sediment components) have a modulating effect (Koenitz *et al.*, 2008).

16.3.3 Morphology of the spreading ridge

Along the ridge-axis there are ubiquitous, en-echelon axial volcanic ridges (AVRs), subnormal to the spreading direction, desribed in detail by Searle *et al.* (1998). The data collected during cruise JC050 allows us to make observations of along-axis variation and geometry of the axial magmatic system and to investigate the relationship between magma chamber structure, supply of melt to the crust and development of faulting and thickness of oceanic layer 2A.

Due to the highly chaotic nature of the seabed along the ridge, seismic reflection profiles are prone to being overwhelmed by highamplitude seabed scattered noise. Despite this problem there are clear intracrustal seismic events which relate to the axial magmatic system recorded with these data.

16.4 Palaeoceanography

In the North Atlantic Ocean, flow of North Atlantic Deep Water (NADW), and of its ancient counterpart Northern Component Water (NCW), across the Greenland-Scotland Ridge (GSR) is thought to have played an important role in ocean circulation. Bathymetry of the GSR has varied with time due to a combination of lithospheric plate cooling and fluctuations in the temperature and buoyancy within the underlying convecting mantle (Poore *et al.*, 2006).

Using an assemblage of benthic foraminiferal δ^{13}C data, Poore *et al.* (2006) showed that variation of NCW through time is consistent with independent estimates of the temporal variation of dynamical support associated with the Iceland Plume. Prior to 12 Ma, δ^{13}C patterns overlap and %NCW cannot be isolated. From 12 Ma, when lithospheric cooling probably caused the GSR to submerge completely, long-period δ^{13}C patterns diverge significantly and allow reasonable %NCW estimates to be made. In particular, there is a dramatic increase in NCW overflow between 6 and 2 Ma when dynamical support generated by the Iceland Plume was weakest. Between 6 and 12 Ma a series of variations in NCW overflow can be resolved.

16.4.1 Neodymium Isotopes

Whilst benthic δ^{13}C is a useful tool in studying deep-water palaeoceanography, it can be unreliable if it does not accurately record the nutrient content of palaeo water masses (the Mackensen effect). There is value in testing the estimates of %NCW by Poore *et al.* (2006) using other deep-water mass tracers, which may allow us to extend analysis further into the Palaeogene. One such tracer is the Neodymium isotopic ratio, ε_{Nd}, which can be measured in crusts, fish teeth and also in leaches from deep-sea sediments Piotrowski *et al.* (2004).

Neodymium isotopes ($^{143}Nd/^{144}Nd$) exhibit quasiconservative behavior in seawater so that cores of water masses have distinct isotopic compositions that reflect the age and lithology of surrounding lithosphere. It is conventional to express differences in $^{143}Nd/^{144}Nd$ ratios in epsilon notation (ε_{Nd}), which represents the deviation from the chondritic uniform reservoir (Depaolo & Wasserburg, 1976) in parts per 10^4. Neodymium isotopic compositions vary considerably over Earths surface as a result of the distribution of young and old crustal ages, and this pattern is imparted to seawater. For example the ε_{Nd} value of NADW is -13.5 (Piepgras & Wasserburg, 1987), which reflects extremely nonradiogenic Nd draining into the Labrador Sea from the ancient terrains of the Canadian Shield, whereas the ε_{Nd} value of Pacific Deep Water is -4 to -6 (Piepgras & Wasserburg, 1987), which reflects young arc volcanics in the circum-Pacific. Continental weathering is the predominant source of Nd to the oceans and Nd isotopes are not fractionated in marine chemical and biological pathways.

Two competing signals are embedded in long-term variability of Nd isotopes at a given location; firstly changes in Nd inputs derived from continental weathering and secondly changes in the proportions of different water masses (Scher & Martin, 2008). Therefore, by compiling a large dataset of ε_{Nd} values for the North Atlantic, Pacific and Southern Oceans, it may be possible to extract the %NCW record further back in time.

We have assembled a large number of published ε_{Nd} measurements, from a range of locations. These have been dated, and can be plotted for comparison. The relatively nonradiogenic North Atlantic end-member is easily distinguished from that of the radiogenic Pacific. The Southern Ocean shows intermediate values, which vary between the two end-members throughout the Cenozoic. A key question for this project is whether this variability shows a relation to plume activity, and hence flow of NCW across the Denmark Straits.

16.5 Future Work

16.5.1 Plume Chronology

Once final processed versions of the two main JC050 seismic reflection profiles have been produced (anticipated by end March 2011), their detailed analysis can begin. Firstly, faults will be identified and interpreted, as it is important to separate their short-wavelength character from the long-wavelength VSR features. Secondly, seabed and top-basement horizons will be picked. Horizons will then be depth converted, corrected for sediment loading and used to construct residual depth profiles (as discussed above), on an astronomical timescale. This will allow us to infer variations in plume activity (temperature, mass flux) in Cenozoic times. Once completed, this chronology will act as a benchmark against which other geological observations can be compared. Placing transient uplift events, ocean circulation variability, sedimentation patterns and volcanic activity into the context of this record of plume activity should prove a powerful integration tool.

16.5.2 Palaeoceanography

The high quality seismic images be used to describe the setting, morphology and internal structure of sedimentary drifts which occur within the North Atlantic. The internal seismic stratigraphy of the drift deposits will be mapped, to identify the principal stratigraphic horizons which record significant changes in oceanic circulation. Nearby scientific boreholes will be used to constrain sediment ages and hence variability in deposition rate. These well-imaged contourite drifts would make an excellent drilling target; the reprocessed seismic profiles presented here constitute a high-quality site survey for such purpose.

Further work is required to understand what the ε_{Nd} record can tell us. A more complete set of data from the North Atlantic would be helpful in particular. A thorough statistical approach could allow an estimate of %NCW for the entire Cenozoic, thus complementing the anticipated plume chronology from residual depth profiles.

16.5.3 Arctic Biogeography

Sedimentary patterns observed in Nordic seas demonstrate the influence of variations in NCW on basins north of Iceland (Henrich, 2002). However, the impact of subdued NCW production deep-water anoxia and organic carbon accumulation is not well-constrained. Recent interest in the hydrocarbon potential of the Arctic Ocean means that an understanding of the biogeographical development of the basin is increasingly important (Mann *et al.*, 2009). Periods of low %NCW production may relate to periods of isolation of the Arctic Ocean and of freshwater as opposed to saline conditions, indicated by the preservation of *Azolla* microfossils (Brinkhuis *et al.*, 2006). It would therefore be useful to investigate the relationship between opening and closing of major seaways such as the Fram Strait and the Denmark Straits, plume activity and sedimentation patterns in these northern basins.

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18 Appendix A

The appendix conatins a full set of daily logs which were kept by watch-keepers on JC050. We logged all scientific equipment every 15 minutes on a general log which recorded state-of-

health, deployments, weather events, and downtime causes. We also kept a separate seismic log which was dedicated to documenting the airgun array, the streamer and the recording. This log is also kept for every 15 minutes and has prove to be a valuable resource for subsequent signal processing strategies. Individual logs were kept for the gravimeter, which was located in the centre of the ship, and for the deployment of sonobuoys and disposable hydrographic probes. These logs are available in electronic form.

References

Abouchami, W., 1999. Pb and Nd isotopes in NE Atlantic Fe-Mn crusts: Proxies for trace metal paleosources and paleocean circulation, *Geochimica et Cosmochimica Acta*, **63**(10), 1489–1505.

Becker, J. J., Sandwell, D. T., Smith, W. H. F., Braud, J., Binder, B., Depner, J., Fabre, D., Factor, J., Ingalls, S., Kim, S.-H., Ladner, R., Marks, K., Nelson, S., Pharaoh, a., Trimmer, R., Von Rosenberg, J., Wallace, G., & Weatherall, P., 2009. Global Bathymetry and Elevation Data at 30 Arc Seconds Resolution: SRTM30_PLUS, *Marine Geodesy*, **32**(4), 355–371.

Brinkhuis, H., Schouten, S., Collinson, M. E., Sluijs, A., & Sinninghe, D. J. S., 2006. Episodic fresh surface waters in the Eocene Arctic, *Nature*, **441**(June), 606–609.

Burton, K. W., Lee, D.-C., Christensen, J. N., Halliday, A. N., & Hein, J. R., 1999. Actual timing of neodymium isotopic variations recorded by FeMn crusts in the western North Atlantic, *Earth and Planetary Science Letters*, **171**(1), 149–156.

Depaolo, D. J. & Wasserburg, G. J., 1976. Nd Isotopic variations and petrogenic models, *Geophysical Research Letters*, **3**(5), 3–6.

Elliott, G. & Parson, L., 2008. Influence of margin segmentation upon the break-up of the Hatton Bank rifted margin, NE Atlantic, *Tectonophysics*, **457**(3-4), 161–176.

Frank, M., 2002. North Atlantic Deep Water export to the Southern Ocean over the past 14 Myr: Evidence from Nd and Pb isotopes in ferromanganese crusts, *Paleoceanography*, **17**(2), 1–9.

Frank, M., 2003. Evolution of deepwater mixing and weathering inputs in the central Atlantic Ocean over the past 33 Myr, *Paleoceanography*, **18**(4).

Haley, B. A., Fank, M., Spielhagen, R. F., & Eisenhauer, A., 2008. Influence of brine formation on Arctic Ocean circulation over the past 15 million years., *Nature, Geoscience*, **1**, 68–72.

Henrich, R., 2002. Carbonate preservation records of the past 3 Myr in the Norwegian-Greenland Sea and the northern North Atlantic: implications for the history of NADW production, *Marine Geology*, **184**(1-2), 17–39.

Ito, G., 2001. Reykjanes V-shaped ridges originating from a pulsing and dehydrating mantle plume., *Nature*, **411**, 681–684.

Jones, S. M., White, N., & Maclennan, J. 2002. V-shaped ridges around Iceland: Implications for spatial and temporal patterns of mantle convection, *Geochemistry Geophysics Geosystems*, **3**(10), doi:10.1029/2002GC000361.

Jones, S. M., White, N., Clarke, B. J., Rowley, E., & Gallagher, K., 2002. Present and past influence of the Iceland Plume on sedimentation, *Geological Society, London, Special Publications*, **196**(1), 13–25.

Koenitz, D., White, N., McCave, I. N., & Hobbs, R., 2008. Internal structure of a contourite drift generated by the Antarctic Circumpolar Current, *Geochemistry Geophysics Geosystems*, **9**(6).

Le Douaran, S. & Parsons, B., 1982. A note on the correction of ocean floor depths for sediment loading, *Deep Sea Research Part B. Oceanographic Literature Review*, **29**(12), 767.

Ling, H., Burton, K., Onions, R., Kamber, B., Vonblanckenburg, F., Gibb, a., & Hein, J., 1997. Evolution of Nd and Pb isotopes in Central Pacific seawater from ferromanganese crusts, *Earth and Planetary Science Letters*, **146**(1-2), 1–12.

Ling, H.-F., Jiang, S.-Y., Frank, M., Zhou, H.-Y., Zhou, F., Lu, Z.-L., Chen, X.-M., Jiang, Y.-H., & Ge, C.-D., 2005. Differing controls over the Cenozoic Pb and Nd isotope evolution of deepwater in the central North Pacific Ocean, *Earth and Planetary Science Letters*, **232**(3-4), 345–361.

Mann, U., Knies, J., Chand, S., Jokat, W., Stein, R., & Zweigel, J., 2009. Evaluation and modelling of Tertiary source rocks in the central Arctic Ocean, *Marine and Petroleum Geology*, **26**(8), 1624–1639.

McCave, I. N. & Hall, I. R., 2006. Size sorting in marine muds: Processes, pitfalls, and prospects for paleoflow-speed proxies, *Geochemistry Geophysics Geosystems*, **7**(10).

Muiños, S. B., Frank, M., Maden, C., Hein, J. R., van de Flierdt, T., Lebreiro, S. M., Gaspar, L., Monteiro, J. H., & Halliday, a. N., 2008. New constraints on the Pb and Nd isotopic evolution of NE Atlantic water masses, *Geochemistry Geophysics Geosystems*, **9**(2), 1–18.

Müller, R. D., Sdrolias, M., Gaina, C., & Roest, W. R., 2008. Age, spreading rates, and spreading asymmetry of the world's ocean crust, *Geochemistry Geophysics Geosystems*, **9**(4), 1–19.

Murton, B. J. et al., 2004. IODP Proposal.

Murton, B. J., Taylor, R. N. & Thirlwall, M. F., 2002. Geochemical interaction between the Iceland plume and the Reykjanes Ridge: a geochemical perspective, *J. Petrol.* , **43**(4), 1987–2012.

Neal, C. R., et al., 2007. Investigating large igneous province formation and associated paleoenvironmental events: a white paper for scientific drilling, *IODP Management International Workshop* .

O'Nions, R., Frank, M., von Blanckenburg, F., & Ling, H.-F., 1998. Secular variation of Nd and Pb isotopes in ferromanganese crusts from the Atlantic, Indian and Pacific Oceans, *Earth and Planetary Science Letters*, **155**(1-2), 15–28.

Palmer, M. & Elderfield, H., 1986. Rare earth elements and neodymium isotopes in ferromanganese oxide coatings of Cenozoic foraminifera from the Atlantic Ocean?, *Geochimica et Cosmochimica Acta*, **50**(3), 409–417.

Piepgras, D. J. & Wasserburg, G. J., 1987. Rare earth element transport in the western North Atlantic inferred from Nd isotopic observations, *Geochim. cosmochim. Acta*, **34**(11), 950.

Piotrowski, A. M., Goldstein, S. L., Hemming, S. R., & Fairbanks, R. G., 2004. Intensification and variability of ocean thermohaline circulation through the last deglaciation, *Earth and Planetary Science Letters*, **225**(1-2), 205–220.

Poore, H. R., 2008. Neogene history of the Icelandic plume., *Unpublished PhD dissertation, University of Cambridge*.

Poore, H. R., Samworth, R., White, N. J., Jones, S. M., & McCave, I. N., 2006. Neogene overflow of Northern Component Water at the Greenland-Scotland Ridge, *Geochemistry Geophysics Geosystems*, **7**(6).

Poore, H. R., White, N., & Jones, S., 2009. A Neogene chronology of Iceland plume activity from V-shaped ridges, *Earth and Planetary Science Letters*, **283**(1-4), 1–13.

Reynolds, B., Frank, M., & O'Nions, R., 1999. Nd- and Pb-isotope time series from Atlantic ferromanganese crusts: implications for changes in provenance and paleocirculation over the last 8 Myr, *Earth and Planetary Science Letters*, **173**(4), 381–396.

Rudge, J. F., Shaw-Champion, M. E., White, N., McKenzie, D., & Lovell, B., 2008. A plume model of transient diachronous uplift at the Earth's surface., *Earth and Planetary Science Letters*, **267**, 146–160.

Scher, H. D. & Martin, E. E., 2004. Circulation in the Southern Ocean during the Paleogene inferred from neodymium isotopes, *Earth and Planetary Science Letters*, **228**(3-4), 391–405.

Scher, H. D. & Martin, E. E., 2008. Oligocene deep water export from the North Atlantic and the development of the Antarctic Circumpolar Current examined with neodymium isotopes, *Paleoceanography*, **23**(1), 1–12.

Searle, R., Keeton, J., Owens, R., White, R., Mecklenburgh, R., Parsons, B., & Lee, S., 1998. The Reykjanes Ridge: structure and tectonics of a hot-spot-influenced, slow-spreading ridge, from multibeam bathymetry, gravity and magnetic investigations, *Earth and Planetary Science Letters*, **160**(3-4), 463–478.

Talwani, M., Windisch, C. C., & Langseth, M. G., 1971. Reykjanes Ridge Crest: A Detailed Geophysical Study, *Journal of Geophysical Research*, **76**(2), 473–517.

Thomas, D. J., 2004. Evidence for deep-water production in the North Pacific Ocean during the early Cenozoic warm interval, *Nature*, **171**(May), 65–68.

Thomas, D. J., Bralower, T. J., & Jones, C.E., 2003. Neodymium isotopic reconstruction of late Paleoceneearly Eocene thermohaline circulation, *Earth and Planetary Science Letters*, **209**(3-4), 309–322.

Thomas, D. J., Lyle, M., Moore, T. C., & Rea, D. K., 2008. Paleogene deepwater mass composition of the tropical Pacific and implications for thermohaline circulation in a greenhouse world, *Geochemistry Geophysics Geosystems*, **9**(2), 1–13.

van de Flierdt, T., 2004. Deep and bottom water export from the Southern Ocean to the Pacific over the past 38 million years, *Paleoceanography*, **19**(1), 1–14.

Via, R. K. & Thomas, D. J., 2006. Evolution of Atlantic thermohaline circulation: Early Oligocene onset of deep-water production in the North Atlantic, *Geology*, **34**(6), 441.

Vlastélic, I., 2005. Miocene climate change recorded in the chemical and isotopic (Pb, Nd, Hf) signature of Southern Ocean sediments, *Geochemistry Geophysics Geosystems*, **6**(3), 1–22.

Vogt, P. R., 1971. Asthenosphere motion recorded by the ocean floor south of Iceland, *Earth and Planetary Science Letters*, **13**, 153–160.

White, R. S., Bown, J., & Smallwood, J., 1995. The temperature of the Iceland plume and origin of outward-propagating V-shaped ridges, *J. Geol. Soc. Lond.*, **152**, 1039–1045.

Wold, C. N., 1994. Cenozoic sediment accumulation on drifts in the northern North Atlantic, *Paleoceanography*, **9**(6), 917–941.

Wright, J. D. & Miller, K. G., 1996. Control of North Atlantic Deep Water Circulation by the Greenland-Scotland Ridge, *Paleoceanography*, **11**(2), 158–170.

Julian Day: Date: Sheet Number:

Time	Lat		Lon		Water	Head.	SOW	SOG	EM710	EM120			EA600	SBP		ER60	OLEX	Comments
(GMT)	D	DM	D	DM	depth (m)		(kts)	(kts)	rec.	rec	Line cnt.		rec.	rec.	Data file	rec.	rec.	
0801	60	52.79	22	14.86	2122	173	13.6	11.2	n	y	0066	92 JC049	y	y	-200-0753	y	y	TEC/B not too happy
0815	60	50.12	22	14.37	2150	174	13.5	11.4	n	y	0066	83 JC049	y	y	-200-0753	y	y	
0830	60	47.38	22	13.93	2163	175	13.5	11.4	n	y	0066	69 JC049	y	y	-0753_002	y	y	
0845	60	44.56	22	13.51	2223	174	13.5	11.1	n	y	0066	54 JC049	y	y	-0753_003	y	y	
0901	60	41.38	22	13.14	2383	174	13.3	11.9	n	y	0066	37 JC049	y	y	-0753_004	y	y	
0915	60	38.74	22	12.99	2299	175	14.1	11.6	n	n	0067	JC050	y	y	-0753_005	y	y	Em120 changing file name
0932	60	35.35	22	12.91	2239	173	14.1	10.9	y	y	0000	107 JC050	n	n	RESET	y	y	not recording GPS - being sorted out
0945	60	33.11	22	12.63	2380	173	13.7	11.1	y	y	0000	94 JC050	y	y	C059-200_093	y	y	
1000	60	30.57	22	12.15	2410	172	13.6	10.5	y	y	0000	81 JC050	y	y	C059-200_093	y	y	
1018	60	27.08	22	11.23	2456	172	13.6	10.8	y	y	0000	61 JC050	y	y	C059-200_093	y	y	EA600 check
1045	60	22.56	22	9.97	2522	171	13.1	10.9	y	y	0000	37 JC050		y	0937_001	y	y	
1100	60	19.66	22	9.24	2548	172	13.4	11.3	y	y	0000	21 JC050	y	y	0937_001	y	y	
1118	60	16.58	22	8.53	2573	171	13.5	11.3	y	y	0000	4 JC050	y	y	0937_001	y	y	
1131	60	13.68	22	7.99	2623	170	13.7	11.0	y	y	0001	108 JC050 White	n	y	0937_001	y	y	EM170 not logging
1146	60	11.00	22	7.57	2626	172	13.8	11.0	y	y	0001	94 JC050 White	y	y	0937_002	y	y	
1159	60	8.55	22	7.23	2709	172	13.8	11.2	y	y	0001	79 JC050 White	y	y	0937_002	y	y	EA600 intermittent - too fast
1213	60	5.91	22	6.91	2630	171	13.9	11.5	y	y	0001	67 JC050 White	y	y	0937_002	y	y	
1231	60	2.53	22	6.34	2641	169	13.5	11.0	y	y	0001	49 JC050 White	y	y	0937_002	y	y	
1250	59	59.20	22	5.70	2663	170	12.1	9.7	y	y	0001	29 JC050 White	y	y	0937_003	y	y	
1300	59	57.74	22	5.44	2660	169.6	12.5	10.2	y	y	0001	19 JC050 White	y	y	0937_003	n	y	Stopped for XBT.
1315	59	56.00	22	5.31	2676	171	3.1	2.9	y	y	0001	5 JC050 White	y	y	0937_003	n	y	Guns in at 13:16.
1330	59	55.36	22	5.63	2678	171	3.4	3.1	y	y	0002	110 JC050 White	y	y	0937_003	n	y	Magnetometer in.
1345	59	54.53	22	5.91	2678	170.2	4.9	4.0	y	y	0002	95 JC050 White	y	y	0937_0004	n	y	
1400	59	53.34	22	6.11	2678	169.8	5.9	4.7	y	y	0002	79 JC050 White	y	y	0937_0004	n	y	
1415	59	52.22	22	6.21	2681	170.2	6.4	4.9	y	y	0002	65 JC050 White	y	y	0937_0004	n	y	
1430	59	50.80	22	6.27	2683	170.6	6.3	5.1	y	y	0002	49 JC050 White	y	y	0937_0004	n	y	
1445	59	49.52	22	6.31	2681	170.3	6.5	5.3	y	y	0002	33 JC050 White	y	y	0937_0004	n	y	
1458	59	48.56	22	6.32	2541	170.1	6.4	5.1	y	y	0002	22 JC050 White	y	y	0937_0004	n	y	
1514	59	47.14	22	6.25	2681	165.6	6.6	4.6	y	y	0002	6 JC050 White	y	y	0937_0004	n	y	
1532	59	45.77	22	5.31	2688	146.1	6.4	5.1	y	y	0003	108 JC050 White	y	y	0937_0005	n	y	
1544	59	44.83	22	4.31	2694	145.0	6.9	5.2	y	y	0003	96 JC050 White	y	y	0937_0005	n	y	
1600	59	43.73	22	3.06	2700	146	7.4	5.0	n	y	0003	79 JC050 White	y	y	0937_0005	n	y	Magnometer deployed; huns & streamer out.
1615	59	42.82	22	1.86	2699	146	6.4	4.7	n	y	0003	66 JC050 White	y	y	0937_0005	y	y	Guns preparing
1630	59	41.85	22	0.58	2693	147	6.9	4.9	n	y	0003	52 JC050 White	y	y	0937_0006	y	y	
1645	59	40.70	21	59.01	2722	146	6.6	4.7	n	y	0003	35 JC050 White	y	y	0937_0006	y	y	Guns firing
1700	59	40.08	21	57.73	2755	120	6.0	4.6	n	y	0003	25 JC050 White	y	y	0937_0006	y	y	Guns misfiring
1714	59	39.93	21	54.84	2851	095	5.0	4.7	n	y	0003	5 JC050 White	y	y	0937_0006	y	y	Guns not working
1730	59	40.28	21	52.34	2752	094	5.1	4.9	n	y	0004	110 JC050 White	y	y	0937_0016	y	y	Turning
1745	59	41.34	21	52.17	2749	354	5.4	5.1	n	y	0004	97 JC050 White	y	y	0937_0007	y	y	
1800	59	42.84	21	52.25	2745	357	5.4	5.1	n	y	0004	79 JC050 White	y	y	0937_0007	y	y	mpasses negative. Guns now working
1814	59	43.83	21	52.33	2792	344	5.1	4.6	n	y	0004	67 JC050 White	y	y	0937_0007	y	y	
1830	59	44.91	21	53.77	2732	299	6.4	4.7	n	y	0004	52 JC050 White	y	y	0937_0007	y	y	Still turning
1845	59	45.19	21	56.20	2721	278	6.7	4.9	n	y	0004	36 JC050 White	y	y	0937_0007	y	y	Still turning. Testing guns
1900	59	45.34	21	58.75	2717	285	6.4	5.0	n	y	0004	21 JC050 White	y	y	0937_0008	y	y	Problems with tension on the line, about to shoot test line
1915	59	45.48	22	1.15	2708	281	5.7	4.6	n	y	004	6 JC050 White	y	y	0937_0008	y	y	
1930	59	45.61	22	3.31	2697	281	4.6	3.7	n	y	0005	110 JC050 White	y	y	0937_0008	y	y	Almost on Start of Line
1945	59	45.71	22	5.81	2866	285	5.1	4.2	n	y	0005	97 JC050 White	y	y	?	y	y	
2000	59	45.82	22	7.46	2811	297	5.5	4.4	n	y	0005	78 JC050 White	y	y	?	y	y	XCTD200-0937-009
2015	59	45.94	22	9.84	2660	286	5.2	4.3	n	y	0005	65 JC050 White	y	y	200_0937_009	n	y	No ER60 - XBT deployed
2030	59	46.05	22	12.05	2646	282	5.5	4.5	n	y	0006	50 JC050 White	y	y	200_0937_009	n	y	
2045	59	46.16	22	14.36	2632	280	5.4	4.5	n	y	0006	35 JC050 White	y	y	200_0937_009	n	y	
2100	59	46.33	22	16.66	?	288	5.6	4.9	n	y	0006	19 JC050 White	y	y	200_0937_009	y	y	crease speed to shallow first bird
2116	59	46.56	22	19.15	2464	286	6.4	5.1	n	y	0006	4 JC050 White	y	y	_010	y	y	
2130	59	46.69	22	21.21	2591	282	5.6	4.8	n	y	0006	111 JC050 White	y	y	_010	y	y	Birds now at correct depth
2144	59	46.90	22	23.82	2576	285	5.6	5.0	n	y	0006	95 JC050 White	y	y	_010	y	y	
2200	59	47.11	22	26.34	2552	282	5.5	4.9	n	y	0006	78 JC050 White	y	y	_010	y	y	
2215	59	47.30	22	28.79	2521	284	5.6	5.0	n	y	0006	64 JC050 White	y	y	_011	y	y	
2245	59	47.67	22	33.67	2516	283	5.6	5.2	n	y	0006	35 JC050 White	y	y	_011	y	y	
2302	59	47.92	22	36.46		283	5.4	4.8	n	y	0006	18 JC050 White	n	y	_011	y	y	No depth for a while, EA600 reading 0m
2316	59	48.11	22	38.73		280	5.4	4.8	n	y	0006	4 JC050 White	y	y	_011	y	y	Depth+EA600 still intermittent
2330	59	48.29	22	41.04	2420	280	5.5	4.9	n	y	0007	109 JC050 White	y	y	200-0937_012	y	y	
2345	59	48.47	22	43.41	2459	285	5.5	4.9	n	y	0007	95 JC050 White	y	y	_012	y	y	

Day: Date: Sheet Number:

Time	Lat		Lon		ADCP150	ADCP75	Techsas	Level-C	Grav.	Mag.	Wind		Sea State	Comments, eg state of seismic exp.
(GMT)	D	DM	D	DM	rec.	rec.	rec.	rec.	(mgal)	(nT)	Speed	Dir.		
0800	60	25.89	22	14.87	y	y	y	y	13295.2		4.0	289	calm	Issue with splitter overnight, some recording syetms down. Leighton dealing with issue - see Techsas screen. Level C backing
0815	60	50.12	22	14.37	y	y	y	y			4.0	310	calm	
0830	60	47.37	22	13.93	y	y	y	y	13293.9		3.7	303	calm	Techsas now ok
0845	60	44.56	22	13.51	y	y	y	y			3.5	306	calm	
0900	60	41.93	22	13.18	y	y	y	y	13281.9		3.6	290	calm	
0915	60	38.74	22	1299.00	y	y	y	y			4.0	250	calm	
0932	60	35.35	22	12.81	y	n	y	y	13270.1		4.0	265	calm	ADCP resetting
0945	60	33.11	22	12.63	y	n	y	y			4.0	280	calm	
1000	60	30.57	22	15.15	y	y	y	y	13258.4		4.8	265	calm	
1018	60	27.08	22	11.23	y	y	y	y			5.3	259	calm	
1045	60	22.56	22	9.97	y	y	y	y			4.5	262	calm	
1100	60	19.66	22	9.24	y	y	y	y			6.1	266	slight chop	
1116	60	16.50	22	8.53	y	y	y	y	13240.5		4.5	265	slight chop	
1128	60	14.24	22	8.09	y	y	y	y			3.8	269	slight chop	Level C in computer room - network error
1146	60	11.00	22	7.59	y	y	y	y	13244.0		6.0	267	slight chop	
1201	60	18.02	22	7.16	y	y	y	y	-		5.9	268	slight chop	
1215	60	5.51	22	6.86	y	y	y	y	-		5.0	259	slight chop	
1230	60	2.96	22	6.43	y	y	y	y	13238.6		4.7	275	slight chop	
1245	59	59.92	22	5.85	y	y	y	y	-		3.1	247.5	slight chop	
1258	59	58.04	22	5.50	y	y	y	y	13211.9		3.8	260	slight chop	
1314	59	56.10	22	5.30	y	y	y	y	-		5.3	221	slight chop	XBT deployed.
1330	59	55.36	22	5.63	y	y	y	y	13213.4		7.0	217.6	slight chop	
1345	59	54.54	22	5.91	y	y	y	y	-	49313.2	7.2	232.5	calm	Magneometer on.
1359	59	53.54	22	6.08	y	y	y	y	13208.3	-	5.0	212	calm	
1414	59	52.34	22	6.22	y	y	y	y	-	49283.2	4.7	221.6	calm	
1430	59	50.96	22	6.26	y	y	y	y	13208.0	-	5.8	224.5	calm	
1446	59	49.58	22	6.31	y	y	y	y	-	49721	5.0	212.6	calm	
1459	59	48.48	22	6.32	y	y	y	y	13201.4	-	5.9	222.5	calm	Dolphins behind the boat.
1515	59	57.12	22	6.26	y	y	y	y	-	49824	6.0	252.5	calm	All Birds in the water, just waiting for the streamer to be deployed. Mag' took a while to settle down.
1532	59	45.73	22	5.26	y	y	y	y	13194.0	-	5.6	24.5?	1m swell	Guns are backl on goat at 1539
1544	59	44.83	22	4.30	y	y	y	y	-	51657.1	6.4	250.4	1m swell	
1600	59	43.81	22	3.13	y	y	y	y	13184.9	51673	6.3	258	1m swell	
1615	59	42.93	22	2.20	y	y	y	y		51530	5.7	241		
1630	59	91.85	22	0.58	y	y	y	y	13204.0	51267	5.6	255		
1645	59	40.68	21	59.00	y	y	y	y		51158	5.9	250		Guns in water preparing to fire
1700	59	40.00	21	57.34	y	y	y	y	13170.1		7.6	282	Calm	Magnetometer not working properly
1714	59	39.93	21	54.84	y	y	y	y		51215	8.5	280	mall Peaks	Guns still misfiring, slow progress
1730	59	40.14	21	52.56	y	y	y	y	13155.6	51225	8.3	335		Guns still misfiring, turning to port to start of line
1743	59	41.34	21	52.17	y	y	y	y		51162	8.3	009	white caps	
1800	59	42.86	21	52.26	y	y	y	y	13171.1	51144	9.3	351		
1815	59	43.81	21	52.32	y	y	y	y		51184	9.1	005		Adam is still playing with the guns
1830	59	44.86	21	53.63	y	y	y	y	13194.7	51364	8.6	044		Significant tension on the streamer. Greater than 290daN.
1845	59	45.19	21	56.20	y	y	y	y		51572	6.9	066	white peaks	Come onto test line. Shooting
1901	59	45.36	21	56.09	y	y	y	y	13207.3	51703	9.1	060		
1915	59	45.49	22	1.11	y	y	y	y		51716	5.9	060		Approaching start of line. About to do XCTD
1930	59	45.61	22	3.31	y	y	y	y	13206.9	51668	8.6	062	white caps	
1945	59	45.71	22	5.17	y	y	y	y		51625	8.3	058	1.5m swell	Compressor has failed. Engineer is on the job.
2000	59	45.82	22	7.46	y	y	y	y	13211.1	51591	7.5	060		XCTD done - failed at ~450m depth
2018	59	45.96	22	10.33	y	y	y	y		51536	8.4	053		XBT done
2032	59	46.07	22	12.38	y	y	y	y	13212.9	51463	8.7	059	duced swell	
2045	59	46.16	22	19.36	y	y	y	y		51404	9.3	064		
2100	59	46.32	22	16.65	y	y	y	y	13212.0	51333	8.0	056		
2116	59	46.54	22	19.29	y	y	y	y	13216.3	51298	8.9	058	Calm	Bird one back in place
2130	59	56.69	22	21.21	y	y	y	y	13216.7	51319	8.8	064		
2144	59	46.90	22	23.62	y	y	y	y		51267	9.0	056		ADCP75 files have been recorded as AM not PM until 9.54pm
2200	59	47.11	22	26.34	y	y	y	y	13225.7	51151	8.9	062		
2215	59	47.30	22	28.79	y	y	y	y		51104	7.2	063		
2245	59	47.69	22	33.67	y	y	y	y	13231.1	51308	8.3	051		
2306	59	47.97	22	37.05	y	y	y	y	13225.5	51418	8.4	061		
2316	59	48.11	22	38.78	y	y	y	y	13225.2	51470	8.5	059		
2330	59	48.29	22	41.21	y	y	y	y	13229.1	51501	7.1	56	calm	happy happy
2345	59	48.47	22	43.42	y	y	y	y	13227.6	51434	7.1	71		

Every 30 min, for important events and not for birds during turns

Seismic log

Line No:	**1 Seq 1/2**				**Date:**	###		**Julian Day:**	**200.0**	**Page No:**		1		Depth of Gun 1:		5m				
														Depth of Gun 2:		5m				
	Vessel GPS				Bird 1		Bird 2		Bird 3		Bird 4		Bird 5					Tailbuoy GPS			
Time GMT	Lat		Long		Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Ship H'ding	CMG	Shot no.	FFID	Lat		Long	
1316	59		22																			
1341	59	54.76	22	5.86																		
1400	59	53.22	22	6.13															59	53.35	22	6.18
1432	59	50.76	22	6.27															59	51.14	22	6.37
1439	59	50.18	22	6.30															59	50.56	22	6.43
1501	59	48.29	22	6.31															59	49.07	22	6.49
1512	59	47.32	22	6.27															59	48.16	22	6.48
1529	59	45.83	22	5.36															59	46.79	22	6.25
1539																						
1546	59	44.70	22	4.16	7.10	159	7.3	170	6.5	155.0	6.3	157.0	6.6	164	145	151			59	45.61	22	5.19
1557	59	43.97	22	3.35											145	148			59	44.80	22	4.23
1608	59	43.18	22	2.24	7.50		6.8		7.6		7.7		6.9		147	148	16		59	44.08	22	3.36
1618	59	42.52	22	1.46											149	147			59	43.41	22	2.42
1630	59	42.77	22	1.57	7.20	150	6.9	155	7	140.0	7.1	143.0	7.3	149	146	145			59	42.65	22	1.38
1639	59	40.96	21	59.40	6.50	153	6.7	156.0	7.4	141.0	6.9	143.0	6.6	149	145	147	48		59	41.93	22	0.41
1655	59	40.10	21	57.81	8.00	137	7.7	156	7.3	140.0	7.3	143.0	6.9	149	117	116	89		59	40.93	21	59.03
1710	59	39.92	21	55.37	11.70	096	8.1	156.0	6.9	140.0	6.9	143.0	6.7	149	092	087	145		59	40.19	21	57.11
1722	59	39.95	21	53.30	11.20	096	7.1	156	7.7	140.0	7.7	143.0	6.9	150	067	072	82				21	55.12
1740	59	41.14	21	52.70	10.60	-014	6.3	-0.8	6.8	21.0	7.2	31.0	7.3	045	357	008	151		59	40.30	21	52.51
1757	59	42.60	21	51.76	9.20	356	6.4	354	6.6	1.0	7.1	354.0	6.5	352	357	000	225		59	41.74	21	51.77
1805	59	43.16	21	52.28	9.00	005	5.9	27.0	6.6	3.0	6.6	1.0	6.6	354	360	005	239		59	42.23	21	51.82
1812	59	43.81	21	52.33	8.80	003	6.2	1.0	7.5	0.0	7.4	4.0	7.5	004	345	349	250		59	42.83	21	51.89
1828	59	43.84	21	53.59	6.20	302	6.3	302.0	6.9	326.0	7.7	323.0	7.9	318	301	304	278		59	44.21	21	52.23
1838	59	45.13	21	55.15		291		302		301.0		307.0		306	271	272	316		59	44.21	21	52.37
1845	59	45.26	21	56.54	6.20	290	6.8	290.0	7.2	292.0	6.7	285.0	7.4	292	279	279	99		59	45.21	21	55.67
1855	59	45.32	21	58.17	8.00	290	7	286	7.4	288.0	7.3	295.0	7.2	286	273	274	16		59	45.27	21	56.43
1900	59	45.37	21	54.25	6.50	288	7	282.0	7.7	283.0	6.9	284.0	7.1	284	283	280	10	10	59	45.32	21	57.19
1906	59	45.36	21	57.90	7.90	292	7.7	288	7	290.0	6.8	292.0	6.7	293	278	283	48	48	59	45.37	21	57.97
1914	59	45.48	22	1.17	8.10	292	7.6	286.0	7	284.0	6.6	281.0	6.6	284	278	278	75	75	59	45.44	21	59.64
1920																	88	93				
1921	59	45.55	22	2.29													97	97	59	45.47	22	0.25
1923	59	45.50	22	2.48	8.60	290		290		294.0		290.0		282	280	277	102	102	59	45.48	22	0.45
																	110	110				
Start of line 1																						Array v
1925																	113	113				
1926																	114	114				
																	115	115				
																	116	116				
1927																	117	117				
																	118	118				
1927	59	45.6	22	3.16	12.18	291.3	7.49	289.6	7.51	289.9	6.82	291.5	6.97	293.5	279.8	278.4			59	45.51	22	1.13

Every 30 min, for important events and not for birds during turns.

Seismic log

1937	59	45.6	22	4.44	12.96	288.4	8.11	289.6	6.82	289.9	6.12	291.5	7.28	###	284.7	276.1			59	45.57	22	2.41
1942	59	45.69	22	5.03	12.27	288.4	7.11	289.6	6.73	289.9	6.8	291.5	7.04	293.5	285.1	278.8			59	45.61	22	3.10
1944																	300	300				
1947	59	45.74	22	5.82	9.66	291.5	6.94	284.1	6.57	283.5	7.08	280.2	6.9	283.7	277.8	274.1	301	301	59	45.64	22	3.77
1953	59	45.77	22	6.62	9.33	288.9	7.32	287.2	7.29	295.0	7.06	287.1	6.74	###	279.9	273.9	334	333	59	45.69	22	4.77
1958	59	45.8	22	7.35	8.96	279.7	6.17	291.6	6.95	291.6	6.34	288.9	6.93	285.2	285.1	280.74	353	352	59	45.71	22	5.33
2015	59	45.93	22	7.8	9.90	291	6.4	290.0	7.7	292.0	7.2	289.0	6.8	###	278	275	415	414	59	45.95	22	10.14
2029	59	46.1	22	12.51	10.90	291	7.3	289.0	7.3	291.0	6.7	283.0	7	289	285	279	472	471	59	45.07	22	12.50
2045	59	46.16	22	14.34	11.20	291	7.4	286.0	6.9	281.0	6.8	288.0	6.6	286	280	272	542	541	59	46.06	22	12.30
2100	59	46.35	22	16.86	12.20	294	7.7	292.0	6.8	296.0	6.6	294.0	6.3	293	275	277	597	596	59	46.16	22	14.61
2111	59	46.48	22	18.61	7.00	298	5.8	295.0	7.3	288.0	7.6	293.0	7	289	280	280	637	636	59	46.48	22	16.84
2130	59	46.71	22	24.46	9.12	289	7.54	295.0	7.3	291.0	7.1	296.0	7.03	294	284	278	725	724	59	96.53	22	19.45
2137	59	46.81	22	22.66	9.68	294	7.48	296.0	7.15	291.0	6.7	292.0	6.93	292	284	278	756	755	59	46.63	22	20.64
2148	59	46.94	22	24.37	9.07	301	6.85	297.0	7.44	301.0	6.28	295.0	6.61	291	285	280	793	792	59	46.78	22	22.42
2200	59	47.11	22	26.34	9.53	295	7.38	290	6.8	292	7.1	292	6.7	291	284	282	838	837	59	46.93	22	24.28
2215	59	47.31	22	28.84	9.72	292	6.82	294.0	7.29	294.0	7.41	294.0	6.77	296	282	282	902	901	59	47.12	22	26.83
2230	59	47.53	22	31.57	10.05	296	7.15	299.0	6.85	297.0	5.9	295.0	6.68	292	2.84	278	961	960	59	47.34	22	29.62
2245	59	47.7	22	33.71	9.95	299	6.78	297.0	7.25	293.0	6.76	290.0	6.84	290	284	277	1022	1021	59	47.51	22	31.86
2251	59	47.78	22	34.8	10.20	293	6.4	292.0	6.5	296.0	6.7	289.0	7.3	289	285	280	1049	1048	59	47.61	22	33.04
2300	59	47.89	22	36.17	9.89	290	6.34	293.0	7.53	298.0	7.66	300.0	7.15	298	281	280	1084	1083	59	47.72	22	34.47
2315	59	48.08	22	38.56	11.84	292	8.07	290.0	6.92	295.0	7.3	301.0	6.78	296	281	282	1133	1132	59	47.91	22	36.58
2331	59	48.29	22	41.2	10.65	296	7.83	293.0	7.48	295.0	7.19	295.0	6.99	290	278	281	1198	1197	59	48.15	22	39.25
2345	59	48.48	22	43.56	10.86	293	7.45	294.0	6.7	303.0	6.09	296.0	6.28	293	281	281	1255	1254	59	48.34	22	41.58

Julian Day: Date: Sheet Number:

Lon		Water	Head.	SOW	SOG	EM710	EM120			EA600	SBP		ER60	OLEX	Comments
D	DM	depth (m)		(kts)	(kts)	rec.	rec	Line cnt.			rec.	rec.	Data file	rec.	rec.	
22	46.11	2444	283	5.4	5.0	n	y	0007	78	JC50	y	y	0937_012	y	y	
22	48.34	2431	280	5.5	5.1	n	y	0007	65	JC50	y	y	0937_012	y	y	
22	51.42	2415	283	5.5	5.1	n	y	0007	47	JC50	y	y	0937_013	y	y	
22	53.46	2465	275	5.7	5.0	n	y	0007	34	JC50	y	y	0937_013	y	y	
22	55.86	2393	285	5.4	5.3	n	y	0007	20	JC50	y	y	0937_013	y	y	
22	58.49	2379	278	5.4	5.1	n	y	0007	3	JC50	y	y	0937_013	y	y	
23	0.28	2364	280	5.4	5.0	n	y	0008	113	JC50	y	y	0937_013	y	y	
23	2.99	2346	284	5.6	4.9	n	y	0008	96	JC50	y	y	0937_014	y	y	
23	5.47	2323	281	5.7	5.0	n	y	0008	81	JC50	y	y	0937_014	y	y	
23	8.25	2302	278	5.6	5.0	n	y	0008	63	JC50	y	y	0937_014	y	y	
23	10.17	2269	280	5.7	5.1	n	y	0008	52	JC50	y	y	0937_014	y	y	
23	12.74	2238	279	5.8	5.0	n	y	0008	36	JC50	y	y	0937_015	n	y	
23	15.14	2823	278	5.5	5.1	n	y	0008	22	JC50	y	y	0937_015	n	y	XBT launched
23	18.34	2222	293	5.8	5.1	n	y	0008	2	JC50	y	y	0937_015	n	y	EM120 new profile added from XBT
23	19.98	2873	326	6.2	5.2	n	y	0009	109	JC50	y	y	0937_016	y	y	turning
23	20.72	2209	023	6.4	5.2	n	y	0009	94	JC50	y	y	0937_016	y	y	periodic noise in EA600
23	21.05	2197	009	6.5	5.0	n	y	0009	84	JC50	y	y	0937_016	y	y	turning
23	19.50	2873	062	6.6	5.3	n	y	0009	65	JC050White	y	y	0937_016	y	y	EA600 noisy - sub critical stripes
23	17.09	2199	095	6.4	4.9	n	y	0009	50	JC050White	y	y	0937_017	y	y	
23	14.86	2222	141	6.6	5.0	n	y	0009	36	JC050White	y	y	0937_017	y	y	Still turning
23	14.06	2224	184	6.4	5.2	n	y	0009	21	JC050White	y	y	0937_017	y	y	
23	14.39	2225	186	6.2	5.1	n	y	0009	5	JC050White	y	y	0937_017	y	y	15 minute delay on SBP after new paper went in
23	14.71	2216	186	6.4	4.9	n	y	0010	111	JC050White	y	y	0937_018	y	y	About to deploy XCTD
23	15.00	2218	187	6.1	4.9	n	y	0010	98	JC050White	y	y	0937_018	y	y	XCTD got to 1365m
23	15.39	2234	188	6.2	5.1	n	y	0010	81	JC050White	y	y	0937_018	y	y	
23	14.59	2243	130	6.2	4.9	n	y	0010	66	JC050White	y	y	0937_018	y	y	
23	12.49	2241	082	6.4	5.1	n	y	0010	52	JC050White	y	y	0937_019	y	y	
23	10.25	2277	034	6.4	5.1	n	y	0010	37	JC050White	y	y	0937_019	y	y	Getting ready to deploy sonobuoy
23	9.47	2262	354	6.3	5.0	n	y	0010	23	JC050White	y	y	0937_019	y	y	
23	10.32	2259	317	6.1	4.7	n	y	0010	7	JC050White	y	y	0937_019	y	y	
23	12.56	2234	283	6.5	4.9	n	y	0011	111	JC050White	y	y	0937_020	y	y	sonobuoy deployed at 0718
23	14.75	2214	280	6.1	4.9	n	y	0011	98	JC050White	y	y	0937_020	y	y	
23	17.70	2205	276	6.2	5.2	n	y	0011	79	JC050White	y	y	0937_020	y	y	
23	20.46	2224	281	6.4	4.7	n	y	0011	63	JC050White	y	y	0937_020	y	y	EA600 picking up interference fromEM170 - looks stripey
23	22.64	2231	284	6.2	5.0	n	y	0011	50	JC050White	y	y	0937_021	y	y	
23	29.99	2249	280	6.5	5.1	n	y	0011	4	JC050White	y	y	0937_021	y	y	Missed two logs
23	32.42	2222	278	6.5	5.0	n	y	0012	1009	JC050White	y	y	0937_022	y	y	
23	34.89	2262	279	6.4	5.1	n	y	0012	95	JC050White	y	y	0937_022	y	y	
23	37.37	2249	277	6.1	5.0	n	y	0012	80	JC050White	y	y	0937_022	y	y	Needs new file for SBP
23	39.93	2247	279	6.2	4.9	n	y	0012	65	JC050White	y	y	0937_022	y	y	Needs new file for SBP
23	42.41	2258	281	6.4	4.9	n	y	0012	50	JC050White	y	y	0937_023	y	y	Needs new file for SBP
23	44.78	2262	279	5.8	4.9	n	y	0012	35	JC050White	y	y	0937_023	y	y	Needs new file for SBP
23	47.67	2268	283	6.1	5.0	n	y	0012	18	JC050White	y	y	0937_023	y	y	Needs new file for SBP
23	49.79	2239	251	6.1	5.1	n	y	0012	5	JC050White	y	y	0937_023	y	y	Needs new file for SBP
23	52.16	2276	279	6.0	4.9	n	y	0013	111	JC050White	y	y	0937_024	y	y	Needs new file for SBP
23	54.55	2273	289	5.8	5.0	n	y	0013	96	JC050White	y	y	0937_024	y	y	
23	57.49	2291	282	5.8	4.9	n	y	0013	78	JC050White	y	y	0937_024	y	y	
23	59.77	2293	279.8	6.3	4.8	n	y	0013	65	JC050White	y	y	0937_024	y	y	
24	2.61	2295	281.8	5.9	4.9	n	y	0013	48	JC050White	y	y	0937_025	y	y	
24	4.65	2299	283.8	5.8	5.1	n	y	0013	35	JC050White	y	y	0937_025	y	y	Vessel GPS briefly stopped working.
24	7.80	2296	279.9	5.4	5.0	n	y	0013	15	JC050White	y	y	0937_025	y	y	
24	9.41	2289	280.0	5.6	5.0	n	y	0013	6	JC050White	y	y	0937_025	y	y	
24	12.00	2274	281.9	5.8	5.2	n	y	0014	110	JC050White	y	y	0937_026	y	y	
24	14.46	2258	282.3	6.1	5.0	n	y	0014	96	JC050White	y	y	0937_026	y	y	1 hour from next waypoint.
24	16.97	2254	280.6	6.0	5.0	n	y	0014	80	JC050White	y	y	0937_026	y	y	
24	19.67	2240	282.5	5.7	5.0	n	y	0014	64	JC050White	y	y	0937_026	y	y	
24	22.07	2231	280.0	5.6	4.9	n	y	0014	50	JC050White	y	y	0937_027	y	y	
24	24.41	2648	286.1	5.8	4.9	n	y	0014	36	JC050White	y	y	0937_027	y	y	
24	26.77	2213	288.9	6.1	5.1	n	y	0014	20	JC050White	y	y	0937_027	y	y	
24	29.28	2208	286.5	6.1	5.0	n	y	0014	7	JC050White	y	y	0937_027	y	y	
24	31.92	2950	285.7	5.7	5.1	n	y	0015	111	JC050White	y	y	0937_028	y	y	
24	34.13	-	283.1	5.6	5.1	n	y	0015	97	JC050White	y	y	0937_028	n	y	XBT launching (or trying to).
24	37.02	2235	285.0	5.9	5.0	n	y	0015	78	JC050White	y	y	0937_028	n	y	XBT finished recording.
																Leighton has loaded new profiles into ER60
24	39.48	2252	284.5	5.7	5.0	n	y	0015	64	JC050White	y	y	0937_028	y	y	
24	41.85	2273	284.0	5.8	4.9	n	y	0015	50	JC050White	y	y	0937_029	y	y	
24	44.23	2291	283.7	5.7	5.0	n	y	0015	36	JC050White	y	y	0937_029	y	y	EA600 keeps dropping out - OK
24	16.75	2288	283	5.7	4.9	n	y	0015	19	JC050White	y	y	0937_029	y	y	
24	49.02	2288	286.0	5.7	5.1	n	y	0015	6	JC050White	y	y	0937_029	y	y	
24	51.50	2273	282.5	5.7	5.1	n	y	0016	112	JC050White	y	y	0937_030	y	y	
24	54.12	2315	281	5.6	4.9	n	y	0016	97	JC050White	y	y	0937_030	y	y	
24	56.76	2287	285.8	5.5	4.9	n	y	0016	78	JC050White	y	y	0937_030	y	y	
24	58.98	2323	278.2	5.5	4.9	n	y	0016	66	JC050White	y	y	0937_030	y	y	Troughs in SBP data
25	1.56	2300	284.3	5.9	4.9	n	y	0016	51	JC050White	y	y	0937_031	y	y	
25	3.90	2292	280.3	5.9	4.9	n	y	0016	36	JC050White	y	y	0937_031	y	y	
25	6.83	2278	279.7	5.6	4.9	n	y	0016	21	JC050White	y	y	0937_031	y	y	
25	8.95	2275	287.3	5.6	5.0	n	y	0016	6	JC050White	y	y	0937_031	y	y	
25	11.33	2183	278.0	5.5	4.9	n	y	0017	111	JC050White	y	y	0937_032	y	y	
25	13.84	2282	284.7	5.9	5.0	n	y	0017	96	JC050White	y	y	0937_032	y	y	
25	16.36	2280	283	5.4	4.9	n	y	0017	80	JC050White	y	y	0937_032	y	y	
25	18.81	2284	283	5.8	5.0	n	y	0017	65	JC050White	y	y	0937_032	y	y	
25	21.24	2285	278	5.5	4.9	n	y	0017	50	JC050White	y	y	0937_033	y	y	
25	23.82	2288	280	6.0	5.0	n	y	0017	35	JC050White	y	y	0937_033	y	y	
25	25.91	2287	285	6.1	5.0	n	y	0017	22	JC050White	y	y	0937_033	y	y	
25	28.68	2139	281	6.1	5.1	n	y	0017	5	JC050White	y	y	0937_033	y	y	
25	30.98	2230	279	5.7	4.9	n	y	0018	111	JC050White	y	y	0937_034	y	y	
25	33.61	2267	282	5.8	5.0	n	y	0018	96	JC050White	y	y	0937_034	y	y	
25	36.04	2309	285	6.0	5.0	n	y	0018	80	JC050White	y	y	0937_034	y	y	
25	39.65	2337	285	5.9	5.0	n	y	0018	59	JC050White	y	y	0937_035	y	y	
25	41.26	2278	283	5.7	5.0	n	y	0018	49	JC050White	y	y	0937_035	y	y	SBP showing v. steep slope -VSR?
25	43.53	2228	284	5.9	4.7	n	y	0018	36	JC050White	y	y	0937_035	y	y	
25	45.95	2175	286	5.8	4.8	n	y	0018	20	JC050White	y	y	0937_035	y	y	
25	48.43	2126	288	5.7	4.8	n	y	0018	4	JC050White	y	y	0937_035	y	y	EM120 switched to 110degrees
25	50.57	2088	290	5.4	4.9	n	y	0019	111	JC050White	y	y	0937_036	y	y	
25	53.10	2068	291	6.1	5.0	n	y	0019	96	JC050White	y	y	0937_036	y	y	

Day: Date: Sheet Number:

Time	Lat		Lon		ADCP150	ADCP75	Techsas	Level-C	Grav.	Mag.	Wind		Sea State	Comments, eg state of seismic exp.
(GMT)	D	DM	D	DM	rec.	rec.	rec.	rec.	(mgal)	(nT)	Speed	Dir.		
0000	59	48.68	22	46.04	y	y	y	y		51347.17	9.7	45.6	calm	
0015	59	48.86	22	48.29	y	y	y	y	13224.6		7.1	61.3	calm	
0030	59	49.06	22	50.77	y	y	y	y		51281.14	7.6	54.5	calm	
0044	59	49.24	22	53.11	y	y	y	y	13231.6		7.8	61.3	calm	
0102	59	49.49	22	56.12	y	y	y	y		51098.18	6.8	72.4	calm	
0120	59	49.73	22	59.16	y	y	y	y	13230.6		8.6	73.4	calm	
0130	59	49.86	23	0.79	y	y	y	y		51132.19	6.2	46.5	calm	
0145	59	50.05	23	3.13	y	y	y	y	13235.1		7.1	32.3	calm	GPS coverage dropping out of streamer section as satellite no. dropped to <6
0158	59	50.22	23	5.34	y	y	y	y		51446.97	6.8	64.4	calm	
0216	59	50.45	23	8.16	y	y	y	y	13239.7		6.7	36.0	calm	
0290	59	50.63	23	10.47	y	y	y	y		51308.82	7.2	54.5	calm	
0245	59	50.82	23	12.66	y	y	y	y	13241		7.5	30.6	calm	
0300	59	51.00	23		y	y	y	y					calm	deployed XBT
0315	59	51.14	23	17.77	y	y	y	y	13242.8		8.6	33.7	calm	
0329	59	51.71	23	19.84	y	y	y	y		51323.51	7.7	337.8	calm	turning
0344	59	52.86	23	20.69	y	y	y	y	13230.6		8.0	354.8	calm	
0400	59	53.94	23	21.09	y	y	y	y		51386	7.9	341	calm	Still turning on 1st point of pig's ear
0417	59	55.38	23	19.17	y	y	y	y	13216.3	51394	5.3	306	calm	Turning to starboard on loop one of pig's ear
0430	59	55.50	23	17.09	y	y	y	y		51346	5.0	279	calm	
0444	59	55.01	23	14.92	y	y	y	y	13222.1	51240	2.3	239	calm	Still turning to starboard
0500	59	53.89	23	14.03	y	y	y	y		51156	3.8	098	very calm	
0515	59	52.59	23	14.14	y	y	y	y	13236.4	51152	3.9	102		15 min delay on SBP
0530	59	51.44	23	14.71	y	y	y	y		51157	5.2	103	light drizzle	About to deploy XCTD
0545	59	50.36	23	15.00	y	y	y	y	13226.8	51154	2.9	118		XCTD reached 1350m
0600	59	48.97	23	15.39	y	y	y	y		51160	4.3	122	calm	Continuing with first pig's ear
0615	59	47.92	23	14.86	y	y	y	y	13202.6	51158	2.1	208	calm	
0630	59	47.35	23	12.49	y	y	y	y		51263	6.9	264	calm	
0645	59	47.88	23	10.27	y	y	y	y	13194.8	51417	5.3	214	calm	About to deploy sonobuoy
0700	59	49.01	23	9.48	y	y	y	y		51452	8.5	327	calm	
0715	59	50.34	23	10.48	y	y	y	y	13231.5	51329	8.9	006	calm	
0730	59	50.81	23	12.69	y	y	y	y		51111	9.0	023	calm	sonobuoy deployed at 0718
0745	59	50.99	23	13.05	y	y	y	y	13239.9	51123	7.0	037	calm	
0800	59	51.14	23	17.70	y	y	y	y		51262	8.2	026	calm	ADCP not displaying north/east components
0808	59	51.21	23	19.21	y	y	y	y						
0815	59	51.27	23	20.15	y	y	y	y	13240.1	51311	6.4	36	calm	
0830	59	51.40	23	22.64	y	y	y	y		51134	7.4	36	calm	
0845	59	51.52	23	25.00	y	y	y	y	13239.7	51337	5.7	30	calm	
0900	59	51.65	23	27.60	y	y	y	y		51343	7.7	23	calm	
0915	59	51.78	23	29.99	y	y	y	y	13239.7	51555	6.8	47	calm	
0930	59	51.91	23	32.42	y	y	y	y		51623	2.2	39	calm	
0945	59	52.03	23	34.89	y	y	y	y	13241.9	51441	7.9	44	calm	
1000	59	52.17	23	37.37	y	y	y	y		51534	8.5	33	calm	
1015	59	52.30	23	39.93	y	y	y	y	13243.4	51655	7.8	27	calm	
1030	59	52.42	23	42.41	y	y	y	y		51545	8.7	32	calm	Sonobuoys switched off
1045	59	52.55	23	44.78	y	y	y	y	13244.5	51398	7.3	33	calm	
1100	59	52.70	23	47.67	y	y	y	y		51327	6.7	33	calm	
1115	59	52.82	23	49.79	y	y	y	y	13247.2	51342	7.7	33	calm	
1130	59	52.94	23	52.16	y	y	y	y		51484	9.0	25	calm	
1144	59	53.06	23	54.55	y	y	y	y	13246.5	51562	7.8	23	calm	
1159	59	53.19	23	57.10	y	y	y	y		51407.18	6.3	21.6	calm	
1213	59	53.30	23	59.25	y	y	y	y	13241	51497.73	7.3	31.6	calm	
1231	59	53.47	24	2.35	y	y	y	y		51654.21	7.8	28.6	calm	
1245	59	53.54	24	4.78	y	y	y	y	13238.6	51630.3	8.0	30.1	calm	Mag frozen - layback disabled POSMV plus appromix system shows red. Data timeout err
1255	59	53.68	24	6.34	y	y	n	n		51551.75	7.2	25.6	calm	
1314	59	53.84	24	9.36	y	y	y	y	13241.9	51351.27	7.5	24.5	calm	
1328	59	53.96	24	11.73	y	y	y	y		51412.33	7.1	13.7	calm	
1355	59	54.24	24	16.89	y	y	y	y	13244.9	51588.59	8.4	15.16	calm	
1416	59	54.37	24	19.74	y	y	y	y		51597.81	8.0	16.7	calm	
1430	59	54.49	24	21.99	y	y	y	y	13244.8	51592.18	8.5	26.5	calm	
1445	59	54.62	24	24.41	y	y	y	y		51640.17	8.9	21.6	calm	
1500	59	54.80	24	26.75	y	y	y	y	13242.4	51682.22	8.7	19.6	calm	
1515	59	54.99	24	29.35	y	y	y	y		51612.13	7.7	27.6	calm	
1530	59	55.17	24	31.78	y	y	y	y	13245.4	51378.72	8.0	2.7	calm	
1545	59	55.35	24	34.13	y	y	y	y		51459	8.1	34	calm	Attempting to launch mid-line XBT - Spent canister must be removed!
1600	59	55.53	24	36.51	y	y	y	y	13241.7	51496	8.8	24	calm	XBT recording finished
1610														Latest profiles loaded by Leighton (ER60)
1615	59	55.70	24	38.86	y	y	y	y		21552	9.7	018	calm	
1632	59	55.95	24	42.22	y	y	y	y	13240.5	51416	7.3	021.6	calm	
1645	59	56.09	24	44.23	y	y	y	y		51430	73.7	023	calm	
1700	59	56.28	24	46.75	y	y	y	y	13239.8	51580	8.8	026.6	calm	
1715	59	56.45	24	49.02	y	y	y	y		51728	8.6	019	calm	All quiet on the Western Atlantic Front…
1730	59	56.64	24	51.51	y	y	y	y	13240.6	51800	8.3	026	calm	
1745	59	56.83	24	54.51	y	y	y	y		51732	9.5	013	calm	
1759	59	57.01	24	56.59	y	y	y	y	13244.7	51443	8.7	021.1	calm	
1815	59	57.21	24	59.15	y	y	y	y		51304	10.1	015.7	calm	
1830	59	57.38	25	1.58	y	y	y	y	13245.2	51357	10.1	016	calm	
1845	59	57.56	25	4.23	y	y	y	y		51533	10.8	017.7	calm	
1900	59	57.76	25	6.52	y	y	y	y	13241	51664	9.8	007.8	calm	
1915	59	57.93	25	8.95	y	y	y	y		51781	21.6	009.9	calm	
1930	59	58.11	25	11.36	y	y	y	y	13242.1	51660	19.6	008.9	calm	
1945	59	58.29	25	13.64	y	y	y	y		51684	10.0	022.7	calm	
2002	59	58.50	25	16.64	y	y	y	y	13245.8	51997	9.7	018	calm	
2016	59	58.62	25	19.08	y	y	y	y		52063	8.1	011	v. slight swell	
2031	59	58.86	25	21.49	y	y	y	y	13244.6	52009	9.6	023	v. slight swell	
2047	59	59.05	25	24.06	y	y	y	y		52031	8.3	021	v. slight swell	
2059	59	59.20	25	26.18	y	y	y	y	13243.2	51613	9.4	021	v. slight swell	
2116	59	59.42	25	28.97	y	y	y	y		51735	7.6	021	ven less chop	
2129	59	59.57	25	31.10	y	y	y	y	13242.9	51822	9.6	014	ven less chop	
2144	59	59.76	25	33.65	y	y	y	y		51582	8.6	020	1.5m swell	
2159	59	59.93	25	36.20	y	y	y	y	13236.2	51377	7.8	024		
2220	60	0.19	25	39.52	y	y	y	y		51611	9.8	011		
2231	60	0.32	25	41.34			y	y	13242	51534	7.8	026		
2246	60	0.51	25	43.77	y	y	y	y		51708	10.9	019	0.5m swell	Approaching first VSR?
2301	60	0.76	25	46.20	y	y	y	y	13248.4	51510	8.6	016	rk-hard to see	
2318	60	1.10	25	48.83	y	y	y	y		51524	9.0	006	lark - very still	
2329	60	1.34	25	50.63	y	y	y	y	13251.7	51687	10.1	018	-basically flat	
2346	60	1.69	25	53.39	y	y	y	y		51675	8.4	016		

Every 30 min, for important events and not for birds during turns.

Seismic log

Line No: 1 SEQ2/3 **Date: 20 7 2010** **Julian Day: 201** **Page No:** 1

Depth of Gun 1: 5m
Depth of Gun 2: 5m

	Vessel GPS				Bird 1		Bird 2		Bird 3		Bird 4		Bird 5						Tailbuoy GPS			
Time GMT	Lat		Long		Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Ship H'ding	CMG	Shot no.	FFID	Lat		Long	
0000	59	48.66	22	45.84	10.1	293	7	286	6.5	292	7	290	7.5	297	282	279	1323	1322	59	48.55	22	44.18
0015	59	48.86	22	48.35	9.6	291	6.6	290	6.8	291	6.8	285	6.6	288	280	280	1378	1317	59	48.73	22	48.49
30	59	49.05	22	50.7	10.3	283	7.4	285	7.5	293	7.1	292	6.8	283	284	280	1735	1434	59	48.94	22	48.88
0045	59	49.25	22	53.13	9.2	291	6.5	289	6.8	290	6.6	293	7.4	292	287	286	1494	1493	59	49.12	22	51.19
0100	59	49.45	22	53.61	9.4	295	7.1	292	7.1	286	7.4	295	6.6	296	279	279	1557	1556	59	49.34	22	53.63
0115	59	49.64	22	58.1	10.3	294	7.7	290	7.5	281	7.4	290	6.9	289	282	280	1650	1614	59	49.54	22	56.11
0131	59	49.86	23	0.86	9.6	294	6.9	294	7.4	287	7	291	7.3	290	281	283	1683	1682	59	49.76	22	58.89
0145	59	50.03	23	3.04	10.5	298	7.4	293	6.6	288	6.8	289	7.1	291	284	280	1735	1734	59	49.94	23	3.16
0200	59	50.24	23	5.5	9.7	291	7.5	293	6.6	293	7.1	291	6.6	294	278	278	1799	1798	59	50.3	23	3.54
0215	59	50.43	23	7.89	9.4	287	6.2	294	6.6	294	6.8	290	6.7	293	285	284	1860	1859	59	50.34	23	6.6
0230	59	50.13	23	10.27	8.2	294	6.1	290	7.2	291	7.5	294	7	294	281	283	1960	1915	59	50.49	23	8.31
02345	59	50.8	23	12.61	9.2	286	7.3	289	7.2	292	7	289	7.1	291	278	280	1971	1970	59	50.14	23	10.62
0300	59	51.01	23	15.36	9.3	298	6.5	294	7.1	295	7.3	292	6.9	289	278	279	2043	2042	59	50.92	23	13.84
0315	59	51.12	23	17.62	8.5	303	6.1	296	6.9	287	6.9	287	6.6	291	280	279	2094	2093	59	50.04	23	15.7
NEW SEQUENCE: SEQ3																						
0323	59	51.39	23	19.16	8.9	357	7.3	299	7.1	293	7	288	6.4	296	307	308	2500	2500	59	51.13	23	17.33
0330	59	52.15	23	20.35	8.1	333	7.1	331	7.3	326	7.1	320	7.3	312	338	337	2512	2512	59	51.35	23	18.86
0345	59	52.86	23	20.69	6.9	356	6.4	354	6.4	359	6.5	352	6.5	345	350	346	2502	2562	59	52.04	23	20.15
0400	59	54.09	23	21.08	7.2	11.2	7.2	120	7.5	9	6.9	8	6.8	7	8	11	2612	2612	59	53.07	23	20.81
0415	59	55.28	23	19.56	7.45	66	7.27	058	6.92	53	7.33	54	6.91	40	62	65	2684	2684	59	54.49	23	20.79
0430	59	55.5	23	17.03	5.52	107	6.78	104	6.68	106	7.13	97	7.49	92	97	93	2741	2741	59	55.39	23	19.06
0445	59	54.99	23	14.86	7.15	139	6.67	139	7.14	137	7.37	131	6.54	125	142	142	2800	2800	59	55.49	23	16.62
0500	59	53.89	23	14.05	8.07	189	7.62	187	7.6	176	7.57	170	6.84	169	182	184	2860	2860	59	54.82	23	14.67
0507	59	53	23	14.27	5.87	209	6.2	207	6.25	195	6.27	196	6.8	193	184	190	2885	2885	59	54.02	23	14.14
0517	59	52.36	23	14.49	6.15	201	7.09	202	7.11	198	7.32	197	6.85	202	187	190	2945	2945	59	53.15	23	14.29
0527	59	51.55	23	14.67	6.72	194	7.1	203	6.8	210	7.17	202	7.02	194	190	192	2974	2974	59	52.54	23	14.41
0537	59	50.68	23	14.91	7.9	210	7.5	205	7.14	196	7.32	199	7.1	200	191	212	3016	3016	59	51.61	23	14.65
0547	59	49.92	23	15.12	7.9	202	7.5	201	7.1	207	6.9	201	7.3	201	191	191	3049	3049	59	50.84	23	14.86
0557	59	49.18	23	15.32	7.4	203	7.1	201	6.6	207	6.6	149	7.3	205	190	192	3091	3091	59	50.13	23	15.04
0615	59	47.75	23	14.59											129	135	3164	3164	59	48.63	23	13.28
0630	59	47.36	23	12.59											90	98	3211	3211	59	47.79	23	14.53
0645	59	47.8	23	10.42											42	89	3268	3268	59	47.4	23	12.24
0700	59	49.01	23	9.48	7.94	23	7.33	30	7.31	31	7.26	40	6.59	39	356	359	3328	3328	59	47.99	23	10.17
0715	59	50.25	23	10.28	7.43	344	6.98	000	6.97	357	7.21	1	7.11	1	322	324	3386	3386	59	49.09	23	9.52
0730	59	50.5	23	10.85	8.39	302	7.31	308	6.12	313	7.36	321	7.35	325	380	316	3454	3454	59	50.34	23	10.57
0745	59	50.95	23	14.56	6.21	296	6.78	289	6.1	291	6.14	297	6.78	301	384	284	3497	3497	59	50.73	23	12.02
0800	59	51.1	23	17.07	6.85	292.3	5.33	291.5	6.58	288.4	7.22	293.6	7	290.6	277.9	278.4	3571	3571	59	50.96	23	15.23
0815	59	51.27	23	20.37	6.7	294	7.6	289	7.3	297	6.3	285	6.6	287	279	275	3641	3641	59	51.15	23	18.24
0830	59	51.4	23	22.61	7.1	290	6.7	298	6.6	288	6.7	294	6.9	294	281	276	3702	3702	59	51.27	23	20.53
0845	59	51.52	23	25.1	7	292	6.9	293	7.4	287	7.4	293	7.6	294	282	274	3762	3762	59	51.37	23	22.93
0900	59	51.65	23	27.55	6.5	299	6.6	295	7.1	289	6.7	292	6.8	298	282	280	3823	3823	59	51.48	23	27.56
0915	59	51.78	23	30.04	6.8	294	6.9	294	7.2	291	7.3	295	7.4	291	281	277	3883	3883	59	51.63	23	27.96
0930	59	51.91	23	32.44	7.7	288	7.3	289	7.3	292	7.3	291	6.9	291	278	277	3941	3941	59	51.76	23	32.42
0945	59	52.04	23	34.98	7.2	293	7	290	6.9	292	7.1	289	7.7	284	279	278	4003	4003	59	51.91	23	32.9
1000	59	52.18	23	23.37	7.9	295	7.5	293	6.7	292	7.3	289	7	290	275	280	4066	4066	59	52.07	23	35.51
1015	59	52.29	23	23.4	6.5	293	6.7	291	7.3	294	6.7	300	7.5	299	281	279	4122	4122	59	52.19	23	37.87
1030	59	52.43	23	42.56	7.3	295	6.6	295	6.7	297	6.9	295	7.7	287	282	279	4185	4185	59	52.33	23	23.41
1045	59	52.56	23	44.98	7.2	291	6.6	290	7	290	7	289	7.3	284	282	279	4245	4245	59	52.47	23	23.43
1100	59	52.69	23	47.37	7	291	6.8	293	7.4	291	7.7	292	7.1	298	279	278	4303	4303	59	52.56	23	45.34
1115	59	52.82	23	49.94	7.65	292	6.32	293	7.14	293	6.82	299	6.78	288	280	279	4362	4362	59	52.69	23	47.99
1121	59	52.89	23	50.89		291		295		293		287		291	278	274	4388	4388	59	52.74	23	48.91
1123																						
1130	59	52.95	23	52.31	7.83	292	7.1	289	6.97	288	6.83	287	6.79	293	282	275	4422	4422	59	52.94	23	50.33
1145	59	53.08	23	54.91	6.81	296	6.5	294	7.37	293	7.03	301	6.42	292	282	275	4482	4482	59	52.92	23	52.96
1151																						
1155																						
1157																						
1159																						
1200	59	53.2	23	57.21	8.62	297	7.52	295	7.35	292	6.61	285	6.56	294	284	282	4543	4543	59	53.04	23	55.39
1215	59	53.32	23	59.54	8.1	292	7.4	286	6.5	301	6.9	291	7.4	290	284.7	272	4607	4607	59	53.18	23	57.62
1230	59	53.47	24	2.4	7	289	7.1	293	6.6	294	6.6	296	7	297	281.1	277	4675	4675	59	53.32	24	0.47
1246	59	53.61	24	4.93	8.3	297	7.9	289	7.3	286	7.2	297	6.6	281	281.1	279	4736	4736	59	53.45	24	2.93
1300	59	53.71	24	6.9	8.5	295	7.7	289	6.9	291	6.5	294	6.8	299	277.5	278.7	4786	4786	59	53.57	24	5.23
1315	59	53.86	24	9.87	8.2	298	7.5	290	7.2	290	7	287	7.4	296	283	279.5	4852	4852	59	53.72	24	7.04
1330	59	53.97	24	12.03	8.1	296	6.7	292	7.2	297	7.1	298	6.6	291	282.1	277.6	4910	4910	59	53.84	24	10.05
1345	59	54.11	24	14.5	7.8	290	6.8	291	6.4	295	6.6	295	7.1	292	281.3	277.6	4966	4966	59	53.97	24	12.51
1400	59	54.24	24	16.99	8	290	7.6	291	6.7	294	7	296	6.7	290	281	279.6	5025	5025	59	54.09	24	14.99

Every 30 min, for important events and not for birds during turns.

Seismic log

1415	59	24.35	24	19.4	7.5	298	6.5	293	7.3	291	7	288	7.3	289	279.3	277.6	5082	5082	59	54.23	24	17.5
1431	59	24.51	24	22.34	8.3	298	7.3	294	7.7	290	6.8	288	7.1	281	281.4	277.1	5153	5153	59	54.37	24	20.36
1445	59	54.62	24	24.41	7.9	292	7.2	293	7.5	293	7	298	7.3	288	285.7	278.1	5203	5203	59	54.47	24	22.48
1500	59	54.81	24	26.84	7.8	294	7	298	6.7	298	7.4	290	7.2	290	285.6	284	5265	5265	59	54.62	24	22.89
1515	59	55	24	28.54	8.3	292	7.6	292	6.5	295	6.5	295	6.6	293	282.8	280	5329	5329	59	54.81	24	27.58
1530	59	55.18	24	31.91	7.5	291	6.8	294	7.5	300	6.9	303	6.9	300	284.3	282.1	5386	5386	59	54.98	24	29.96
1545	59	55.35	24	34.33	8.5	296	7	291	6.6	295	6.3	298	6.8	291	285.7	281.4	5443	5443	59	55.17	24	32.53
1600	59	55.52	24	36.64	9	279	6.8	278	7.6	283	7.6	292	6.9	274	285	281	5500	5500	59	55.35	24	34.86
1615	59	55.72	24	39.26	9.7	279	7.5	282	6.3	282	7	283	7.4	269	286	282	5557	5557	59	55.74	24	39.53
1630	59	55.91	24	41.81	9	279	6.5	282	7.5	282	7.5	285	6.9	284	289	282	5628	5628	59	55.92	24	42.03
1645	59	56.09	24	44.25	10.7	290	7.9	283	7.6	280	7.1	281	7.4	280	287	282	5685	5685	59	55.9	24	42.42
1700	59	56.27	24	46.67	9.6	282	6.6	280	7.3	283	7.4	283	7.4	275	281	281	5738	5738	59	56.09	24	44.77
1715	59	56.46	24	49.22	10	275	7.1	277	7	280	7.6	284	6.6	282	283	280	5804	5804	59	56.29	24	47.21
1730	59	56.62	24	49.33	9.8	277	7.4	276	6.6	289	6.2	280	6.2	279	283	279	5859	5859	59	56.47	24	49.53
1745	59	56.81	24	54	8.6	289	6.5	292	6.8	294	7.3	299	7.5	297	285.3	283.5	5914	5914	59	56.63	24	51.97
1800	59	56.99	24	56.33	9.5	277	7.6	277	7.2	280	7.3	278	6.6	276	285.8	281.8	5980	5980	59	56..81	24	54.3
1815	59	57.18	24	59.03	8.8	290	7.4	286	7.6	282	7.2	275	7.1	282	283	279	6043	6043	59	57.02	24	56.99
1830	59	57.37	25	1.5	7.6	283	6.4	276	7.4	275	6.9	278	7.2	277	284	286	6102	6102	59	57.18	24	59.48
1845	59	57.55	25	4.01	8.5	282	7.1	283	6.9	289	6.8	283	6.9	282	287	282	6158	6158	59	57.37	25	1.99
1900	59	57.74	25	6.49	8.6	281	6.8	279	7	281	7.4	289	7	288	279	278	6223	6223	59	57.58	25	4.52
1915	59	57.91	25	8.9	10.4	277	7.1	279	7.5	282	7.3	281	7	280	283	282	6281	6281	59	57.75	25	6.88
1930	59	58.16	25	11.32	9.9	277	7.7	277	6.9	281	6.8	280	7.1	288	278	278	6344	6344	59	57.94	25	9.29
1945	59	58.28	25	13.78	9	284	6.9	280	6.5	286	6.7	281	7.2	281	287	286	6404	6404	59	58.13	25	11.34
2000	59	58.48	25	16.45	9.5	299	7.4	295	7.4	291	7.5	297	7.1	297	285	282	6463	6463	59	58.48	25	16..52
2015	59	58.86	25	18.84	9.9	297	7.5	293	7	291	6.6	294	7.3	291	285	284	6522	6522	59	58.65	25	18.84
2030	59	58.84	25	21.31	10.2	304	7.6	295	7.3	286	7.3	291	7.1	290	283	280	6582	6582	59	58.69	25	19.14
2045	59	59.04	25	23.94	7.6	273	6.4	276	6.4	283	6.8	289	6.8	279	279	283	6644	6644	59	58.9	25	21.14
2101	59	59.19	25	25.26	6.2	290	5.7	293	7.4	294	7.2	294	6.8	297	283	282	6696	6696	59	59.07	25	23.98
2115	59	59.39	25	28.72	6.9	280	6.7	279	6.8	277	7	279	7	283	279	278	6761	6761	59	59.26	25	26.79
2130	59	59.57	25	31.13	6.9	273	6.6	277	6.6	283	6.7	278	7.5	274	280	279	6819	6819	59	59.44	25	29.19
2146	59	59.78	25	37.94	8	275	7.3	271	6.5	270	6.3	276	6.3	276	281	280	6887	6887	59	59.63	25	31.99
2200	59	59.97	25	36.42	7.3	276	6.8	273	7.2	269	7.4	271	6.9	284	279	277	6946	6946	59	59.82	25	34.34
2218	60	0.18	25	39.31	8.2	276	7.2	280	6.7	283	7.1	275	6.8	273	283	283	7017	7017	60	0.02	25	37.23
2237	60	0.37	25	25.42	8.3	295	7.5	295	6.6	298	6.9	296	6.9	301	282	283	7082	7082	60	0.17	25	39.87
2245	60	0.5	25	43.76	8.5	280	7.1	280	7.2	276	7.4	279	6.8	288	280	282	7124	7124	60	0.34	25	41.79
2254	60	0.62	25	45.19											286	288	7161	7161	60	0.45	25	43.2
2300	60	0.72	25	45.92	7.8	284	6.6	283	7.4	275	7.1	278	6.5	277	287	287	7180	1780	60	0.51	25	43.85
2315	60	1.02	25	48.25	8.2	283	7.3	283	7.2	288	7.1	288	6.9	290	290	288	7240	7240	60	0.77	25	46.2
2330	60	1.34	25	50.65	7.7	288	6.8	289	7.4	289	7.1	282	6.7	284	283	288	7301	7301	60	1.07	25	48.63
2345	60	1.67	25	53.23	7	303	6.2	300	6.6	300	7	299	6.7	295	290	290	7364	7364	60	1.39	25	51.19

Julian Day:
Sonobuoy Number:
Serial No:

Date:
Sonobuoy Channel:

Sonobuoy Frequency:
Depth Setting:
Duration (hours):

Time (GMT)	Lat (D.DM)	Lon (D.DM)	SOW (kts)	SOG (kts)	Wind head.	Wind speed	Current East (m/s)	Current North (m/s)	Data File	Comments
0718	59.50.50	23.10.85	6.1	4.9	11.6	8.2	-0.12	0.06		deployed successfully
0732	59.50.85	23.13.28	6.3	4.9	18.7	8.1	-0.52	0.31		Gain turned up on SB2
0738	59.50.92	23.14.05	6.2	4.9	31.6	8.1				SB1 appears to give 'cleaner' trace
0740	59.50.96	23.14.46	6.5							No refracted phase yet
0742										Gain turned up on SB2
0745										Gain tunred up on SB2
0748	59.51.04	23.15.84	6.4							SB2 very noisy
0752	59.51.07	23.16.48	6.4							gain tunred up on SB2
0753	59.51.08	23.16.48	6.4							SB2 disconnected
0754										SB2 reconnected on FMn
0757	59.51.11	23.17.23	6.4	5	38.5	7.9				SB2 reconnected on FM
0807	59.51.20	23.18.86	6.4	5.1	31.6	7.6				SB2 cable disconnected & replaced with spare - no difference!
0815	59.51.27	23.20.16	6.4	4.8	42	6.3	-0.78	0.05		
0832	59.51.41	23.22.94	6.3	4.9	27	7.7	-0.53	-0.02		Altered gain on SB1. Reset to where it was
0846	59.51.53	23.25.20	6.1	4.8	39	6.2	-0.38	-0.07		Input "sound mixer amplitude" on SB2 turned down.
0901	59.51.67	23.27.78	6.3	4.9	39	7.4	-0.68	-0.04		Sychonising clocks. SB! Signal weak, SB2 no signal. SB!= 7.15.43 behind GMT. SB2=7.15.40 behind GMT (Deployment time)
0912	59.51.75	23.29.74	6.4	5	36	7.1	-1.04	0.19		Lost coms. Noise. V weak signal
0917	59.51.79	23.30.29	6.4	5.1	40	7.1	-0.89	0.02		
0930	59.51.91	23.32.45	6.5	5	32	7.3	-0.79	-0.02		No clear signal
0945	59.52.04	23.34.44	6.5	5.1	46	7.7	-0.8	0.07		
1001	59.52.18	23.37.55	6.3	4.9	25	7.7	-0.82	0.12		
1034	59.52.46	23.43.09	6.3	4.8	21.6	8.2	-0.76	0		Both stopped

Sonobuoy Freq 160.00
Depth setting 140
Duration 6 hours
Sonobuoy channel 96
Serial no. 3065
Data file SB2_96_201071_S1/2

Julian Day: Date: Sheet Number:

Time	Lat		Lon		Water	Head.	SOW	SOG	EM710	EM120			EA600	SBP		ER60	OLEX	Comments
(GMT)	D	DM	D	DM	depth (m)		(kts)	(kts)	rec.	rec	Line cnt.		rec.	rec.	Data file	rec.	rec.	
0000	60	1.95	25	55.41	2051	292	5.7	5.2	n	y	0019	80 JC050White	y	y	200-0937_036	y	y	noted possible roll (swiss?) EM170 Pingin
0014	60	2.29	25	57.97	2160	290	5.8	4.6	n	y	0019	65 JC050White	y	y	200-0937_037	y	y	offset on swath bathymetry
00d9	60	2.60	26	0.39	2067	286	5.6	5.1	n	y	0019	51 JC050White	y	y	200-0937_037	y	y	
0045	60	2.94	26	3.00	2003	287	5.6	5.1	n	y	0019	34 JC050White	y	y	200-0937_037	y	y	
0100	60	3.27	26	5.51	2094	283	6.1	5.0	n	y	0019	19 JC050White	y	y	200-0937_037	y	y	
0118	60	3.63	26	8.21	2142	282	5.8	4.9	n	y	0019	2 JC050White	y	y	200-0937_038	y	y	
0132	60	3.94	26	10.63	2176	281	5.8	5.1	n	y	0020	107 JC050White	y	y	200-0937_038	y	y	
0145	60	4.20	26	12.64	2228	282	5.8	4.8	n	y	0020	95 JC050White	y	y	200-0937_038	y	y	
0200	60	4.53	26	15.21	2294	282	5.9	5.1	n	y	0020	78 JC050White	y	y	200-0937_038	y	y	
0216	60	4.84	26	17.57	2323	285	6.3	4.7	n	y	0020	64 JC050White	y	y	200-0937_039	y	y	
0232	60	5.18	26	20.21	1944	284	5.9	4.9	n	y	0020	47 JC050White	y	y	200-0937_039	y	y	SBP not coping well with steep topography
0245	60	5.46	26	22.30	2237	286	6.3	5.2	n	y	0020	35 JC050White	y	y	200-0937_039	n	y	a hard substrate (rock?)
0259	60	5.74	26	24.44	2059	285	6.4	5.1	n	y	0020	21 JC050White	y	y	200-0937_039	n	y	deploying XBT
0315	60	6.08	26	27.16	2118	282	6.5	4.9	n	y	0020	5 JC050White	y	y	200-0937_040	y	y	XBT launched
0331	60	6.42	26	29.62	2020	302	6.4	4.9	n	y	0021	109 JC050White	y	y	200-0937_041	y	y	new profile in swath and single beam
0350	60	7.81	26	31.14	1969	005	7.3	4.6	n	y	0021	90 JC050White	y	y	200-0937_043	y	y	turning
0400	60	8.41	26	31.07	1965	010	7.1	4.9	n	y	0021	82 JC050White	y	y	200-0937_043	y	y	"
0414	60	9.47	26	29.57	2002	058.2	6.9	5.0	n	y	0021	66 JC050White	y	y	200-0937_044	y	y	3 deg/min on turn 2 of pigs ear 2
0430	60	9.61	26	22.07	2001	110.2	6.4	5.1	n	y	0021	50 JC050White	y	y	200-0937_046	y	y	Still on turn 2
0445	60	8.72	26	25.42	2099	170.6	5.8	5.0	n	y	0021	35 JC050White	y	y	200-0937_046	y	y	Misfire on gun 2
0500	60	7.50	26	25.71	2082	198.9	4.7	4.1	n	y	0021	18 JC050White	y	y	200-0937_048	y	y	Guns Misfire
0515	60	6.61	26	26.12	2102	201.4	6.1	4.8	n	y	0021	7 JC050White	y	y	200-0937_048	y	y	
0528	60	5.45	26	26.65	2123	200	6.1	4.7	n	y	0022	108 JC050White	y	y	200-0937_050	y	y	ER60 stopped for XBT
0545	60	4.10	26	27.28	2082	205	6.0	4.9	n	y	0022	96 JC050White	y	y	200-0937_050	y	y	
0600	60	2.90	26	27.01	2082	149	5.6	4.8	n	y	0022	81 JC050White	y	y	200-0937_051	y	y	
0615	60	2.30	26	24.92	2044	091	5.7	4.9	n	y	0022	66 JC050White	y	y	200-0937_052	y	y	On turn
0630	60	2.12	26	22.60	2237	034	6.3	5.0	n	y	0022	51 JC050White	y	y	200-0937_053	y	y	
0644	60	3.83	26	21.62	2311	346	7.0	5.0	n	y	0022	36 JC050White	y	y	200-0937_054	y	y	
0700	60	4.96	26	22.08	2152	322	6.6	4.8	n	y	0022	21 JC050White	y	y	200-0937_055	y	y	About to deploy sonobuoy
0715	60	5.61	26	23.64	2057	292	6.4	5.0	n	y	0022	9 JC050White	y	y	200-0937_056	y	y	Sonobuoy deployed
0730	60	5.89	26	26.11	1952	282	6.9	4.9	n	y	0023	114 JC050White	y	y	200-0937_056	y	y	XBT about to deploy
0745	60	6.19	26	29.06	2010	285	6.4	5.0	n	y	0023	95 JC050White	y	y	200-0937_058	y	y	XBT deployed very successfully :)
0800	60	6.40	26	31.06	1971	283	6.4	5.0	n	y	0023	84 JC050White	y	y	200-0937_058	y	y	
0815	60	6.69	26	33.98	1908	287	6.8	4.8	n	y	0023	65 JC050White	y	y	200-0937_060	y	y	
0830	60	6.94	26	36.43	1879	285	6.3	5.1	n	y	0023	113 JC050White	y	y	200-0937_061	y	y	
0845	60	7.20	26	38.99	1866	283	6.2	4.9	n	y	0024	98 JC050White	y	y	200-0937_062	y	y	
0900	60	7.45	26	41.27	1872	282	6.4	5.0	n	y	0024	84 JC050White	y	y	200-0937_063	y	y	
0914	60	7.67	26	43.76	1888	284	6.3	4.9	n	y	0024	69 JC050White	y	y	200-0937_064	y	y	
0930	60	7.94	26	46.24	1972	285	6.4	4.8	n	y	0024	53 JC050White	y	y	200-0937_065	n	y	ER60 stopped for XBT
0945	60	8.36	26	48.61	1980	310	6.6	4.9	n	y	0024	38 JC050White	y	y	200-0937_066	n	y	EM120 back to 65/65 for turn
1000	60	9.37	26	49.73	2001	348	6.9	4.6	n	y	0024	23 JC050White	y	y	200-0937_067	n	y	Er60 still off
1015	60	10.62	26	49.45	1973	025	6.4	4.8	n	y	0024	7 JC050White	y	y	200-0937_068	n	y	
1016	60		26									JC050White						Er60 on. XBT saved
1030	60	11.41	26	47.58	1987	072	5.8	4.8	n	y	0025	112 JC050White	y	y	200-0937_069	y	y	Guns switched off to retrieve Magnetomet
1036	60		26									JC050White						Magnetometer in. Guns restart
1045	60	11.34	26	45.38	1962	119	5.7	4.8	n	y	0025	98 JC050White	y	y	200-0937_070	y	y	
1100	60	10.42	26	43.97	1996	178	6.1	4.9	n	y	0025	83 JC050White	y	y	200-0937_071	y	y	Almost on crossline of S3 (3rd pigs ear)
1115	60	9.19	26	44.37	1914	198	5.4	5.0	n	y	0025	68 JC050White	y	y	200-0937_072	y	y	Tailbuoy completed turn
1130	60	7.97	26	44.94	1902	196	5.6	4.9	n	y	0025	50 JC050White	y	y	200-0937_074	n	y	ER60 stopped for XCTD-2
1145	60	6.75	26	45.49	1891	197	5.9	5.1	n	y	0025	38 JC050White	y	y	200-0937_074	y	y	
1200	60	5.52	26	46.04	1885	185.7	5.7	5.2	n	y	0025	22 JC050White	y	y	200-0937_076	y	y	
1215	60	4.38	26	44.99	1886	126	6.1	5.2	n	y	0025	7 JC050White	y	y	200-0937_077	y	y	
1230	60	4.14	26	42.89	1874	79	6.1	4.9	n	y	0026	113 JC050White	y	y	200-0937_078	y	y	
1245	60	4.83	26	40.73	1879	26	6.4	4.6	n	y	0026	98 JC050White	y	y	200-0937_079	y	y	
1300	60	6.00	26	40.27	1872	350	6.4	4.7	n	y	0026	82 JC050White	y	y	200-0937_080	y	y	
1315	60	7.00	26	41.21	1869	312	6.5	4.9	n	y	0026	68 JC050White	y	y	200-0937_081	y	y	
1332	60	7.50	26	43.86	1886	286	6.0	5.0	n	y	0026	51 JC050White	y	y	200-0937_082	y	y	Sonobuoy deployed at 13:18.
1345	60	7.63	26	45.79	1911	281	5.9	5.0	n	y	0026	39 JC050White	y	y	200-0937_083	y	y	XBT deployed.
1400	60	7.82	26	48.61	1882	280	6.1	5.0	n	y	0026	22 JC050White	y	y	200-0937_084	y	y	New profiles in 10.10.
1414	60	7.97	26	50.79	2007	279	6.4	4.9	n	y	0027	9 JC050White	y	y	200-0937_085	y	y	
1429	60	8.14	26	53.25	2036	278	6.2	5.1	n	y	0027	114 JC050White	y	y	200-0937_086	y	y	SBP noisy.
1445	60	8.33	26	56.01	1952	273	6.3	5.1	n	y	0027	97 JC050White	y	y	200-0937_087	y	y	
1501	60	8.48	26	58.67	1878	272	6.5	5.0	n	y	0027	81 JC050White	y	y	200-0937_088	y	y	
1515	60	8.58	27	0.64	1799	274	6.1	5.1	n	y	0027	67 JC050White	y	y	200-0937_089	y	y	
1528	60	8.71	27	3.15	1759	274	6.4	4.9	n	y	0027	53 JC050White	y	y	200-0937_090	y	y	
1543	60	8.83	27	5.16	1721	277	6.4	4.9	n	y	0027	39 JC050White	y	y	200-0937_091	y	y	
1559	60	8.96	27	8.35	1707	275	6.2	5.1	n	y	0027	23 JC050White	y	y	200-0937_093	y	y	
1615	60	9.08	27	10.85	1718	278.5	6.2	4.8	n	y	0027	8 JC050White	n	y	200-0937_094	n	y	XBP being deployed. Start of fourth pig's e
1630	60	9.46	27	13.79	1727	306.8	6.4	5.0	n	y	0028	110 JC050White	y	y	200-0937_095	y	y	
1643	60	10.10	27	14.82	1730	338.5	6.4	4.7	n	y	0028	99 JC050White	y	y	200-0937_096	y	y	
1700	60	11.23	27	15.08	1660	359	6.4	4.8	n	y	0028	84 JC050White	y	y	200-0937_097	y	y	
1715	60	12.30	27	14.20	1744	050	6.4	4.9	n	y	0028	70 JC050White	y	y	200-0937_098	y	y	
1730	60	12.71	27	11.95	1640	094	6.4	5.2	n	y	0028	56 JC050White	y	y	200-0937_100	y	y	
1745	60	12.06	27	9.90	1686	154	5.7	5.0	n	y	0028	41 JC050White	y	y	200-0937_101	y	y	
1800	60	10.99	27	9.71	1698	190	5.3	4.9	n	y	0028	27 JC050White	y	y	200-0937_102	y	y	EA 600m periodically reads 0m.
1815	60	9.26	27	10.14	1751	190	5.7	4.8	n	y	0028	7 JC050White	y	y	200-0937_103	n	y	XBT prep for deployment
1829	60	8.18	27	10.42	1799	187	5.7	5.0	n	y	0029	113 JC050White	y	y	200-0937_105	n	y	XBT probe done + deployed
1845	60	7.21	27	10.64	1803	188	5.7	5.0	n	y	0029	101 JC050White	y	y	200-0937_105	n	y	XBT deployment complete
1859	60	5.71	27	10.25	1802	140	5.8	4.9	n	y	0029	83 JC050White	y	y	200-0937_107	n	y	ER60 switched back on
1915	60	5.23	27	8.02	1889	081	5.8	5.0	n	y	0029	68 JC050White	y	y	200-0937_108	y	y	
1930	60	5.03	27	6.22	1849	028	6.3	5.1	n	y	0029	56 JC050White	y	y	200-0937_109	y	y	
1945	60	7.05	27	5.39	1819	355.2	6.6	4.6	n	y	0029	37 JC050White	y	y	200-0937_110	y	y	
2000	60	8.15	27	5.91	1750	322	6.8	4.7	n	y	0029	23 JC050White	y	n		y	y	SBP not working
2008														y	200-2006			SBP now working
2015	60	8.84	27	7.92	1704	280	6.3	4.9	n	y	0029	8 JC050White	y	y	200-2006	y	y	
2028	60	8.98	27	10.31	1742	277	6.7	5.4	n	y	0030	114 JC050White	y	y	200-2006_001	n	y	ER60 turned off for XBT
2043	60	9.14	27	13.02	1727	278	6.9	5.6	n	y	0030	98 JC050White	y	y	200-2006_003	n	y	
2100	60	9.30	27	15.86	1721	278	6.6	5.5	n	y	0030	83 JC050White	y	y	200-2006_004	y	y	
2115	60	9.45	27	18.52	1741	275	7.0	5.5	n	y	0030	68 JC050White	y	y	200-2006_005	y	y	
2130	60	9.60	27	21.26	1820	278	6.8	5.5	n	y	0030	52 JC050White	y	y	200-2006_006	y	y	
2145	60	9.76	27	23.94	1925	273	6.7	5.5	n	y	0030	38 JC050White	y	y	200-2006_007	y	y	
2200	60	9.92	27	26.89	1695	274	7.3	5.5	n	y	0030	23 JC050White	y	y	200-2006_008	y	y	
2215	60	10.07	27	29.50	1625	274	7.0	5.5	n	y	0030	6 JC050White	y	y	200-2009_010	y	y	
2216	60	10.09	27	29.87	1611	273	6.7											
2230	60	10.24	27	32.37	1716	276	6.7	5.5	n	y	0031	113 JC050White	y	y	202-2006_011	y	y	ER60 turned off for XBT
2237																		ER60 back on
2245	60	10.44	27	34.98	1748	295	7.1	5.4	n	y	0031	98 JC050White	y	y	202-2006_012	y	y	Starting new sequence on seismic line
2300	60	11.48	27	36.64	1623	352	7.2	5.7	n	y	0031	82 JC050White	y	y	202-2006_013	y	y	
2323	60	13.48	27	35.81	1571	47	6.5	5.4	n	y	0031	59 JC050White	y	y	202-2006_015	y	y	
2330	60	13.85	27	34.70	1601	75	6.5	5.4	n	y	0031	52 JC050White	y	y	202-2006_016	y	y	
2345	60	13.66	27	32.21	1683	131	6.4	5.4	n	y	0031	38 JC050White	y	y	202-2006_017	y	y	

Day: Date: Sheet Number:

Time	Lat		Lon		ADCP150	ADCP75	Techsas	Level-C	Grav.	Mag.	Wind		Sea State	Comments, eg state of seismic exp.
(GMT)	D	DM	D	DM	rec.	rec.	rec.	rec.	(mgal)	(nT)	Speed	Dir.		
0000	60	2.01	25	55.90	y	y	y	y	13255.5		9.0	20	calm	magnetometer lost the GPS signal
0016	60	2.31	25	58.18	y	y	y	y		51663.2	11.0	15	mild swell	Tim started new log file for magnetometer
0030	60	2.63	26	0.56	y	y	y	y	13254.7		8.6	357	mild swell	
0045	60	2.93	26	2.89	y	y	y	y		51465.1	8.9	13	mild swell	
0059	60	3.24	26	5.25	y	y	y	y	13249.6	51555.2	7.9	358	mild swell	
0117	60	3.61	26	8.10	y	y	y	y		51751.3	8.6	6	mild swell	
0130	60	3.89	26	10.25	y	y	y	y	13251.1	51743.7	12.1	6	mild swell	
0144	60	4.19	26	12.51	y	y	y	y		51725.5	9.7	11	mild swell	
0201	60	4.52	26	15.14	y	y	y	y	13259	51891.1	10.1	20	mild swell	
0215	60	4.84	26	17.58	y	y	y	y		52092.1	9.3	10	mild swell	
0233	60	5.22	26	20.36	y	y	y	y	13268.4	52084.5	9.7	12	mild swell	
0245	60	5.45	26	22.23	y	y	y	y		51928.2	10.0	353	mild swell	
0300	60	5.76	26	24.56	y	y	y	y	13270.4	51977.55	9.8	17	mild swell	
0317	60	6.11	26	27.45	y	y	y	y		51677.5	9.6	349	mild swell	XBT launched as part of the second pig's ear
0331	60	6.41	26	29.67	y	y	y	y	13262.4	51662.7	9.5	342	calm	
0344	60	7.22	26	30.95	y	y	y	y		51712.3	9.5	321	calm	
0359	60	8.47	26	31.06	y	y	y	y	13248.6	51664	7.5	295	calm	
0415	60	9.47	26	29.52	y	y	y	y		51662	6.9	241	calm	
0430	60	9.61	26	22.07	y	y	y	y	13271.4	51722	2.9	209	calm	
0445	60	8.67	26	25.39	y	y	y	y		51736	7.0	100	calm	
0500	60	7.63	26	25.65	y	y	y	y	13244.5	51689	7.1	80.4	calm	Both Guns misfire. On 2ns straightn ~3 km from +
0515	60	6.61	26	26.12	y	y	y	y		51742	7.0	66.5	calm	
0528	60	5.33	26	26.71	y	y	y	y	13246.8	51892	7.0	074	calm	XBT launched (moderte failure)
0545	60	4.08	26	27.29	y	y	y	y		51946	10.2	86.5	calm	
0559	60	2.88	26	26.96	y	y	y	y	13237.9	51974	4.7	131	calm	
0615	60	2.32	26	25.01	y	y	y	y		51900	4.9	216	calm	
0630	60	2.71	26	22.61	y	y	y	y	13232.1	52021	7.6	285	calm	
0645	60	3.88	26	21.62	y	y	y	y		52064	9.0	336	calm	Gun 1 misfire
0700	60	4.93	26	22.05	y	y	y	y	13260.8	51986	9.6	352	calm	About to deploy sonobuoy
0715	60	5.67	26	23.98	y	y	y	y		51984	8.5	011	calm	
0730	60	5.91	26	26.31	y	y	y	y	13255.4	51788	8.6	351	calm	XBT launched
0745	60	6.22	26	29.30	y	y	y	y		51640	10.6	359	calm	Everything is very well
0800	60	6.44	26	31.52	y	y	y	y	13262.6	51722	8.8	357	calm	
0815	60	6.69	26	33.98	y	y	y	y		51777	7.4	17	rease swell	Couple of gun low pressure - Gun 2
0825														Widened beam of EM120 from 65-775
0830	60	6.94	26	36.43	y	y	y	y	13260.4	51664	9.5	19		Gun 2 still low pressure - probably hydrophone as compressor pressure good on both guns
0845	60	7.20	26	38.99	y	y	y	y		51564	8.6	9		Weather predicted to deteriorate tomorrow
0900	60	7.45	26	41.27	y	y	y	y	13258.9	51646	7.3	4		
0913														Preparing XBT H10
0916	60	7.70	26	44.06	y	y	y	y		52002	8.1	358		Approaching pigs ear 3
0931	60	7.97	26	46.53	y	y	y	y	13256.1	51906	8.8	351		XBT done, Bit spikey
0938														Starting turn PE3
0945	60	8.36	26	48.61	y	y	y	y		51690	7.0	348	re dropping	
1006	60	9.37	26	49.73	y	y	y	y	13252.3	51727	8.0	309	re dropping	
1017	60	10.77	26	49.28	y	y	y	y		51888	4.2	263		Mag reset-not responding
1030	60	11.41	26	47.62	y	y	y	y	13232.3		2.8	183	calm	Guns off. Recovering mag fish
1035	60	11.48	26	46.63										Mag fish recovered, guns back on
1045	60	11.36	26	45.44	y	y	y	y			4.0	142	calm	Checking diagnostics on mag fish
1100	60	10.42	26	43.98	y	y	y	y	13235.4		4.2	82	calm	
1115	60	9.19	26	44.36	y	y	y	y			5.7	069	calm	On crossline of pigs ear 3 (S3). Streamer now straight
1130	60	7.92	26	44.95	y	y	y	y			7.6	063	calm	XCTD-2 deployed
1145	60	6.75	26	45.49	y	y	y	y	13241.5		6.9	063	calm	
1200	60	5.61	26	46.01	y	y	y	y			6.9	60.4	calm	
1215	60	4.31	26	44.18	y	y	y	y	13223.5		4.2	120	calm	
1230	60	4.13	26	42.94	y	y	y	y			5.6	214	calm	
1247	60	4.99	26	50.65	y	y	y	y	13235		7.1	277	calm	
1300	60	5.95	26	40.25	y	y	y	y			7.1	306	calm	
1315	60	7.01	26	41.24	y	y	y	y	13257		7.2	325	calm	
1330	60	2.50	26	43.92	y	y	y	y			7.8	357	calm	Sonobuoy deployed.
1345	60	7.65	26	46.05	y	y	y	y	13257.4		8.1	349	calm	Deploying XBT
1400	60	7.79	26	48.19	y	y	y	y			9.2	343	calm	
1410	60	8.01	26	51.15	y	y	y	y	13257.2		9.7	341	calm	
1430	60	8.15	26	53.37	y	y	y	y			8.0	347	calm	
1445	60	8.33	26	55.96	y	y	y	y	13263.1		8.3	342	calm	
1500	60	8.47	26	58.46	y	y	y	y			8.7	329	calm	
1515	60	8.58	27	0.75	y	y	y	y	13270.3		8.0	333.9	calm	
1528	60	8.70	27	3.08	y	y	y	y			8.0	333.9	calm	
1543	60	8.84	27	5.66	y	y	y	y	13270.6		8.0	334.8	calm	
1600	60	8.96	27	8.31	y	y	y	y			8.3	346	very calm	
1614	60	9.08	27	10.81	y	y	y	y	13269.8		7.8	348	very calm	XBT Launched. Commencing Pig's Ear No. 4
1630	60	9.35	27	13.32	y	y	y	y			9.2	333	very calm	
1645	60	10.08	27	14.80	y	y	y	y	13264.7		7.8	310	very calm	
1700	60	11.26	27	15.08	y	y	y	y			4.5	273	very calm	
1715	60	12.28	27	14.23	y	y	y	y	13248.2		2.7	221	very calm	
1727	60	12.71	27	11.86	y	y	y	y			3.4	130	very calm	
1745	60	11.94	27	9.79	y	y	y	y	13247.3		6.4	064	calm	
1800	60	10.94	27	9.73	y	y	y	y			7.3	033	calm	
1817	60	9.12	27	10.18	y	y	y	y	13296		7.7	030	calm	XBT Launched
1830	60	8.27	27	10.37	y	y	y	y			7.3	027	calm	
1844	60	6.90	27	10.73	y	y	y	y	13248.5		7.9	033	calm	
1900	60	5.73	27	10.27	y	y	y	y			7.6	064	calm	
1917	60	5.25	27	7.75	y	y	y	y	13230.8		6.1	128	calm	
1930	60	5.63	27	6.22	y	y	y	y			3.2	237.5	calm	
1945	60	7.05	27	5.39	y	y	y	y	13298.8		4.0	254.4	bit choppier	
2000	60	5.15	27	5.90	y	y	y	y			6.4	298	calm	Sonobuoy launched 2006
2015	60	8.84	27	7.92	y	y	y	y	13271.1		7.4	321	calm	
2028	60	8.98	27	10.31	y	y	y	y			9.6	325	calm	XBT Launched 2035
2043	60	9.14	27	13.02	y	y	y	y	13274.1		8.5	326	calm	Now only firing one gun, G1
2100	60	9.29	27	15.71	y	y	y	y			8.4	323	calm	
2115	60	9.45	27	18.57	y	y	y	y	13272.4		7.5	328	calm	
2130	60	9.60	27	21.26	y	y	y	y			8.0	330	calm	
2145	60	9.76	27	23.94			y	y	13277.5		10.1	325	calm	
2202	60	9.94	27	27.31	y	y	y	y			8.9	324	0.5m swell	
2215	60	10.07	27	29.50	y	y	y	y			9.0	316	min. chop	
2229														XBT deploying 2229
2233	60	10.26	27	32.75	y	y	y	y	13272.2		7.9	304	eased swell	
2245	60	10.44	27	35.00	y	y	y	y			8.5	301		Starting new sequence on seismic line
2300	60	11.48	27	36.64	y	y	y	y	13264		2.6	203		
2323	60	13.47	27	35.86	y	y	y	y			4.0	129	Calm	Still turning
2330	60	13.85	27	34.69	y	y	y	y	13246.9		5.0	090	calm	
2346	60	13.59	27	32.03	y	y	y	y			6.9	055	calm	

Every 30 min, for important events and not for birds during turns.

Seismic log

21 7 10 **Julian Day:** **202** **Page No:** 1 Depth of Gun 1: 5M

Depth of Gun 2: 5M

rd 1		Bird 2		Bird 3		Bird 4		Bird 5						Tailbuoy GPS			
H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Ship H'ding	CMG	Shot no.	FFID		Lat		Long	
302	7.23	304	6.6	303	6.67	304	7.02	300	286.3	286.06	7431	7431	60	1.72	25	53.51	
304	6.61	297	7.03	301	6.83	300	6.66	298	289.7	290.9	7488	7488	60	2.02	25	56.23	
293	7.42	301	6.7	301	6.98	305	7.33	301	287.9	289.1	7544	7544	60	2.33	25	58.48	
294	6.04	298	6.28	301	6.29	305	6.72	303	287.5	289.1	7606	7606	60	2.69	26	0.96	
295	6.32	304	7.46	297	7.69	306	7.39	303	289.9	287.3	7673	7673	60	3.05	26	3.66	
299	5.83	299	6.69	300	6.78	304	6.69	289	281.6	290.2	7738	7738	60	3.4	26	6.26	
300	6.12	299	6.71	293	6.81	298	6.72	291	284.5	290.8	7787	7787	60	3.68	26	10.3	
295	5.97	299	6.22	296	6.44	294	7.25	297	285.5	288.77	7849	7849	60	4	26	10.65	
300	6.37	295	7.73	287	7.73	293	7.31	295	284.4	291.93	7926	7926	60	4.35	26	13.04	
292	6.85	293	7.35	300	7.27	297	6.88	286	283.7	287.9	7267	7267	60	6.67	26	15.38	
300	7.2	294	7	288	6.9	290	7.1	299	282.7	289.4	8026	8026	60	4.95	26	17.73	
300	7	295	6.8	292	7.2	297	7.4	293	285.7	290.2	8094	8094	60	5.29	26	20.43	
298	6.7	302	7.4	305	6.9	300	6.6	296	283.8	289.5	8144	8144	60	5.51	26	22.55	
307	7.48	295	7.16	293	7.19	294	6.98	301	284.2	284.9	8212	8212	60	5.87	26	25.39	
											8247	8247					
											8263	8263		Last shot number			
LAST SHOT 9000 - 2010/202																	
344	7.17	339	7.16	332	9.41	352	7.26	313	333.5	337	9010	9010	60	6.33	26	29.15	
									15	16.5	9083	9083	60	8.5	26	31.1	
									63	66	9145	9145	60	8.71	26	30.27	
									107	110	9202	9202	60	9.52	26	29.15	
									177	179	9272	9272	60	9.4	26	25.36	
									194	191	9293	9293					
205	7.2	202	6.3	202	6.8	206	6.6	203	202	199	9344	9344	60	8.36	26	25.5	
211	6.7	209	7.5	211	6.8	217	7.2	207	198	195	9386	9386	60	7.5	26	25.66	
216	6.8	213	6.9	207	7.1	220	7.5	212	197	203	9449	9449	60	6.16	26	26.17	
217	6.1	214	6.7	210	6.7	221	7.8	217	202	202	9506	9506	60	4.97	26	26.42	
183	8.07	198	7.61	192	7.27	197	8	189	140	142	9565	9565	60	3.87	26	27.15	
									50.5	88.42	9625	9625	60	2.66	26	26.24	
									33.4	48.35	9687	9687	60	2.37	26	24.29	
									341.5	354	9746	9746	60	2.94	26	22.03	
											9758	9768					
											9721	9771	60	3.45	26	21.52	
									336	351	9779	9779	60	3.65	26	21.45	
									319	332	9807	9807	60	4.16	26	21.44	
318	7.79	311	6.71	310	6.83	319	7.19	333	287	290	9865	9865	60	5.09	26	22.19	
298	7.26	293	6.74	302	6.71	309	7.25	303	280	285	9926	9926	60	5.66	26	29.57	
303	7.42	299	7.11	297	7.18	297	7.55	301	284	288	9980	9980	60	5.93	26	27.01	
											10027+29		60	6.13	26	28.99	
											10033						
300	7.5	298	6.7	304	7.3	287	7.7	288	285	285	10045	10045	60	6.2	26	31.66	
												10067	60	6.3	26	32.57	
												10085					
304	7.5	306	6.3	311	6.8	299	6.7	296	285	283	10099	10099	60	6.43	###		
												10103					
												10105					
												10137					
												10144					
												10146					
297	7.7	297	6.9	293	6.8	297	7.8	309	289	289	10166	10166	60	6.7	26	34.56	
299	7.2	296	7.7	292	6.8	291	7.5	294	282	284	10227	10227	60	6.97	26	37.24	
288	7.4	297	70.4	301	7.7	299	7.4	293	283	285	10283	10283	60	7.21	26	39.43	
												10316					
297	7.4	290	7.4	294	7.1	298	6.9	296	283	286	10408	10408	60	7.73	26	44.47	
									291	293	10436	10436	60	7.85	26	45.58	
308	7.5	306	6.4	297	6.5	303	7.3	302	304	286	10452	10452	60	7.93	26	26.46	

Every 30 min, for important events and not for birds during turns.

Seismic log

8	7.9	342	7.1	351	7.3	343	8.9	345	355	328	10528	10528	60	8.61	26	48.97
												10545				
29	8.4	29	7.6	18	7.4	15	7.3	14	27	1	10587	10587	60	9.68	26	49.66
									73	37	10642	10642				
95	7.5	86	6.9	82	6.8	80	6.7	75	92	58	10672	10672	60	11.13	26	48.38
124	8.2	117	7.1	110	6.9	100	7.3	93	122	80	10706	10706	60	1135	26	47.26
198	5.7	173	6.6	161	7	149	6	162	182	129	10767	10767	60	11.17	26	26.45
211	6.7	211	6.5	217	6.6	206	6.3	204	199	180	10824	10824	60	10.18	26	43.91
206	6.5	202	6.8	215	6.9	209	6.6	212	197	196	10942	10942	60	7.79	26	44.93
210	6.8	209	7.7	210	7.1	213	6.4	208	197	198	11000	11000	60	5.65	26	45.98
162	6.4	173	6.7	179	6.8	185	7	192	131	138	11064	11064	60	5.39	26	45.93
107	6.3	112	6.5	123	6.7	129	7.2	136	25.5	83.7	11129	11129	60	4.33	26	44.63
57	6.5	163	6.4	23	6.8	73	6.8	76	24.7	34	11193	11193	60	4.27	26	42.18
19	6.3	25	7.1	20	7	31	7.2	34	34.8	357	11245	11245	60	5.05	26	40.57
337	6.3	344	7.2	343	7.1	40	7.1	9	322.7	329	11294	11294	60	5.84	26	40.37
308	5.9	313	6.8	315	6.7	325	7.3	328	279	281	11365	11365	60	7	26	43.47
298	6.8	300	7.3	301	6.7	302	7.3	303	281	283	11422	11422	60	7.38	26	43.77
298	6.8	295	7.1	300	7.3	300	7.2	295	280.5	283	11479	11479	60	7.55	26	46.1
299	6.2	295	7	298	7.2	290	7	288	280.5	282	11545	11545	60	7.77	26	48.82
305	5.9	297	6.6	296	7	302	7.1	194	279.5	283.5	11607	11607	60	7.96	26	51.37
300	6.5	296	7	296	7.3	295	7.1	286	277.9	284.5	11665	11665	60	8.16	26	53.75
297	6.6	294	7	285	7.1	289	7	292	278.5	285	11729	11729	60	8.37	26	56.44
293	7.1	294	7.1	282	7.1	292	7.1	292	273.2	279	11790	11790	60	8.5	26	58.89
298	6.9	293	6.6	287	6.6	296	6.6	281	273.4	279	11842	11842	60	8.62	27	1.12
287	7	294	6.8	293	7.1	297	6.9	285	273.7	281	11917	11917	60	8.77	27	4.23
293	6.89	295	7	292	6.4	239	6.6	291	272.7	277.8	11965	11965	60	8.86	27	6.41
295	6.9	287	6.3	285	6.8	297	7.2	295	275.3	281.4	12051	10051	60	9.1	27	9.72
303	7.7	288	7.8	293	7.4	287	7.3	273	305	309	12087	10087	60	9.07	27	11.42
337	6.8	320	6.8	313	6.7	307	7.5	304	340	308	12145	12145	60	9.35	27	13.44
135	6.2	15	5.89	6	6.5	16.5	6.75	11.8	0.1	5.75	12205	12205	60	10.2	27	14.89
59	6.7	99	7.4	35	7.2	39	7.5	27	48.1	58.6	12265	12265	60	11.42	27	14.4
97	7.3	96	7.3	85	7	79	6.9	77	97.8	102.97	12320	12320	60	12.35	27	13.77
144	7.2	114	6.5	123	6.8	111	6.9	108	165.3	165.5	12385	12385	60	12.5	27	11.29
189	6.6	170	6.7	165	6.8	165	6.6	155	192.3	194.3	12433	12433	60	11.85	27	9.96
205	6.7	211	7.5	205	7.7	210	6.8	102	190.7	193.2	12508	12508	60	10.42	27	9.86
202	7.3	203	6.8	203	7.2	202	7.1	210	188.7	192.33	12565	12565	60	9.27	27	10.11
183	6.5	181	7	196	7.2	186	7.7	190	187.1	192.9	12627	12627	60	7.85	27	10.47
											12650	12650				
158	7.7	179	6.8	177	6.8	177	7.5	188	144	149.5	12685	12685	60	6.81	27	10.71
98	6.6	102	6.8	104	6.7	113	7	119	74.4	86	12745	12745	60	6	27	9.9
75	6.13	84	6.16	92	6.29	94	6.65	102	39	51.99	12788	12788	60	5.22	27	8.08
35	7.2	33	6.7	41	6.8	47	6.6	51	350	359	12850	12850	60	5.72	27	5.95
347	7.1	353	7.2	352	7.2	10	6.6	8	311	353	12938	12938	60	8.46		
311	7.1	320	7.4	324	6.9	327	7.5	323	280	324	12984	12984	60	8.3	27	6.27
											13031	13031	60			
											13044	13044	60			
294	7.06	295	7.01	297	7.28	287	6.89	290	277	282	13083	13083	60	8.95	27	10.19
											13102	13102				
											13111	13111				
293	6.7	294	7.1	296	7.2	293	6.8	289	277	283	13137	13137	60	9.08	27	12.73
299	7.2	299	7	298	6.6	291	7.2	295	273	293	13165	13165	60	9.16	27	13.89
292	7	297	7.3	297	7.4	293	6.9	289	276	282	13224	13224	60	9.33	27	16.62
272	7.2	274	7.5	292	7.3	278	6.9	284	279	282	13285	13285	60	9.45	27	19.41
305	7.3	298	6.8	298	7	289	7.5	301	275	282	13344	13344	60	9.59	27	22.11
299	6.9	296	7.1	295	6.7	296	7.4	299	274	282	13407	13407	60	9.78	27	27.25
278	7.2	278	6.9	276	6.2	281	7.1	274	276	284	13465	13465	60	9.93	27	27.54
296	6.7	298	6.8	294	7.2	293	7.1	292	277	282	13557	13557	60	10.19	27	31.92
											13576	13576				
											13588	13588				
											15000	15000				
											15006	15006				
310	7.1	303	7.3	296	7.3	300	7	299	338	300	15018	15018	60	10.45	27	35.09
23	7.4	19	7.5	23	6.9	18	7.4	10	16	2	15096	15096	60	11.87	27	36.66
71	6.8	67	7.2	64	6.8	58	6.7	47	72	36	15155	15155	60	13.14	27	36.46
132	6.9	108	6.7	115	6.8	106	6.9	99	130	85	15212	15212	60	13.81	27	34.26

Julian Day:
Sonobuoy Number:
Serial No:

Date:
Sonobuoy Channel:

Sonobuoy Frequency:
Depth Setting:
Duration (hours):

Time (GMT)	Lat (D.DM)	Lon (D.DM)	SOW (kts)	SOG (kts)	Wind head.	Wind speed	Current East (m/s)	Current North (m/s)	Data File	Comments
0655	60.04.82	26.21.94	6.6	4.8	350.9	8.7	-0.11	0.49	SB3_96_2020705_S1/S2	Date Feb 92 Both systems switched on
0705	60.05.38	21.22.80	6.4	4.8	6	10	-0.29	0.34		Deployed successfully
0710	60.05.38	26.23.72	6.3							Both S1 + S2 look good
0715										Interesting structure on both S1/S2
0718	60.05.77	26.24.78	6.6							Signal on S2 dropping
0723	60.05.84	25.25.67	6.4	5.1	11.7	8	-0.32	0.06		Both look good (S1/S2)
0729	60.05.93	26.26.51	6.4							Signal intermittent on S2.
0730										Signal v. low amplitude on S2, gain NOT changed, S1 still good.
0735	60.06.04	26.27.63	6.6							Possible line of sight problems for S2
0738	60.06.09	26.28.16	6.6	5	358.8	7.8	-0.56	0.08		Signal gone on S2
0747	60.06.24	26.29.57	6.8	4.8	353.3	9.1	-0.49	-0.09		Signal on S1 still good. Signal on S2 appears to be gone - some trigger signal interfer
0755	60.06.37	36.30.80	6.5	4.9	358.1	8.8	-0.43	-0.05		Signal on S1 still good
0811	60.06.64	26.33.44	6.4	5	12.8	7.9	-0.59	-0.03		Signal reducing but good
0824	60.06.82	26.35.27	6.4	5	353	8.2	-0.56	-0.06		Still ok
0837	60.07.05	26.37.63	6.3	5.2	6	8.5	-0.46	-0.05		Signal low but ok
0840										Gain increased.
0845	60.07.21	26.39.10	6.3	4.8	358	7.5	-0.54	0		Gain reduced again
0902	60.07.47	26.41.76	6.3	5	358	6.7	-0.55	-0.07		S1 low amplitude. Late arrivals still visible
0909	60.07.60	26.42.99	6.4							V. small but just visible
0918	60.07.75	26.44.45	6.2	4.8	357	8.3	-0.35	0.03		
0932	60.07.98	26.46.59	6.2	4.8	357	8.5	-0.3	-0.03		Signal not visible. Ran for 30mins more
0945	60.08.36	26.48.61	6.6	4.9	348	7	-0.27	0.15		Signal not visible, now turning.
1000	60.09.46	26.49.75	6.4	4.8	308	8.5	-0.08	0.4		Stopped firing guns
1006										Guns firing again
1010	60.10.84	26.49.16	6.3							Sonobuoys stopped
S1 time offset -6h 54.30										
S2 time offset -6h 54.27										
Frequency 160.00MHz										
Depth setting 140m										
Duration 6hrs										
Sonobuoy channel 96										
Serial number 3066										

Julian Day:
Sonobuoy Number:
Serial No:

Date:
Sonobuoy Channel:

Sonobuoy Frequency:
Depth Setting:
Duration (hours):

Time (GMT)	Lat (D.DM)	Lon (D.DM)	SOW (kts)	SOG (kts)	Wind head.	Wind speed	Current East (m/s)	Current North (m/s)	Data File	Comments
1318	60.07.20	26.41.69	6.4	4.9	230.8	8.7	-0.58	0.33	SB4_93_2021318_	S1/S2
1322										Date of MFTR - Feb 1992, gain set to avoid clipping on S1, S1 not reading initially as flipped onto SSB
1330	60.07.48	26.63.56	5.9	5.1	352.8	8.1	-0.62	-0.07		Sonobuoy drifted swiftly to port following deployment
1345	60.07.65	26.46.03	6	5	351.7	8	-0.68	-0.01		Amplitude decreasing on S2
1348	60.07.69	26.46.31	5.8	4.9	350.8	8.9	-0.48	-0.06		Amplitude decreased further on S2, S1 still good
1354	60.07.75	26.47.51	6.2	4.9	339.2	9.3	-0.66	-0.13		V. low amplitude still visible on S2, S1 still good
1415	60.07.96	26.50.79	6.3	5	339.8	9.4	-0.54	0.01		Pretty mush all noise on S2, S1 is still good
1430	60.08.14	26.53.20	6.4	5.1	346.8	7.9	-0.45	0		S1 still good
1445	60.08.32	26.55.76	6.2	5	333.9	8.9	-0.51	0.06		
1500	60.08.46	26.58.50	6.3	4.7	329.8	9	-0.7	-0.04		Amplitude decreasing on S1, still good
1515	60.08.59	27.00.80	6.3	5.1	333.9	8.1	-0.36	0.02		amplitude keeps diminishing on S1
1530	60.08.71	27.03.15	6.2	4.7	338.9	8	-0.41	0.06		
1542	60.08.82	27.05.41	6.4	4.9	330.8	8.4	-0.45	0.12		
1618	60.09.11	27.11.39	6.4	4.9	347.7	8.1	-0.75	-0.08		
1630	60.09.34	27.13.40	6.4	4.8	327.8	8.3	-0.76	0.14		On 2nd pigs ear
1709	60.12.12	27.14.51	6.6	4.9	234.5	3.2	0.23	0.56		Still on 1st loop of pigs ear
1757	60.10.76	27.09.77	5.6	5.1	38.5	8.1	-0.07	-0.55		GUN 2 STILL SHOWING MISSFIRE
1824	60.08.56	27.10.31	5.6	4.8	32.6	7.1	-0.07	-0.68		
1854	60.06.07	27.10.65	3.2	5	60.4	6.7	0.19	-0.5		
1915	60.05.24	27.08.01	5.7	4.8	115	3.1	0.53	-0.04		STOPPED RECORDING
S1 time offset -6h 11mins										
S2 time offset -6h 9mins										
Frequency 158.875 Hz										
Depth setting 140m										
Duration 6hours										
Sonobuoy channel 93										
Serial number 7514										

Sonobuoy Log Sheet

Current Head./Speed from shallowest ADCP 150 kHz

Data File: SBX_CH_DAYTIME_S1/S2

Julian Day:
Sonobuoy Number:
Serial No:

Date:
Sonobuoy Channel:

Sonobuoy Frequency:
Depth Setting:
Duration (hours):

Time (GMT)	Lat (D.DM)	Lon (D.DM)	SOW (kts)	SOG (kts)	Wind head.	Wind speed	Current East (m/s)	Current North (m/s)	Data File	Comments
2002	60.08.326	27.06.66	6.8							Started Audacity on S1/S2
2006	60.08.55	27.06.68	6.4	5	314	6.5	-0.36	0.07		Deployed
2013	60.08.81	27.07.73	6.7	4.9	321.1	7.1	-0.19	0.05		Both S1/S2 recording good clean data
2018	60.08.88	27.08.54	6.2	4.9	324	7	-0.36	-0.08		Amplitudes decreasing on S2(?) Sonobuoy prob' cleared tail buoy on visual inspection
2030	60.09.00	27.10.66	6.7	5.5	323	9.7	-0.53	-0.07		S2 amp to noise
2045	60.09.15	27.13.27	6.9	5.3	331	8.7	-0.42	-0.08		Air gun pressure low?
2046										Reduced to gun 1 only
2100	60.09.29	27.15.71	6.5	5.5	321	9	-0.7	-0.14		Signal ok on S1
2115	60.09.45	27.18.52	7	5.5	328	7.8	-0.47	0.09		Good signal S1, poor S2
2130	60.09.60	27.21.26	6.9	5.4	322	9.3	-0.39	0.04		OK!
2145	60.09.76	27.23.94	6.7	5.5	326	8.2	-0.37	-0.08		
2200	60.09.92	27.26.89	7.3	5.5	322	8.5	-0.14	-0.17		S1 good, S2 less so
2215	60.10.07	27.29.50	7	5.4	320	7.5	-0.4	-0.02		both look noisy
2238	60.10.32	27.33.84	7	5.5	318	8.6	-0.24	-0.07		"
2245	60.10.44	27.35.00	7	5.5	301	8.5	-0.34	0.04		New sequence seismic
2300	60.11.48	27.36.64	7.4	5.7	203	2.6	-0.06	0.07		
2323	60.13.47	27.35.86	6.8	5.2	129	4	0.19	0.12		
2330	60.13.85	27.34.70	6.5	5.4	99	4.3	0.07	0.03		Noise!
2347	60.13.52	27.31.88	6.7	5.5	47	7.3	0.2	-0.27		
0035	60.09.21	27.32.05	6	5.3	55	7.9				No obvious signal
1308	60.06.56	27.30.86	6.4	5.4	64.4	9.8	-0.02	-0.15		
S1 time offset	4h 28' 55" ahead of GMT									
S2 time offset	4h 28' 58" ahead of GMT									
Frequency 160.375 Hz										
Depth setting 140m										
Duration 6hours										
Sonobuoy channel 97										
Serial number 1839										

Sonobuoy Log Sheet

Current Head./Speed from shallowest ADCP 150 kHz

Data File: SBX_CH_DAYTIME_S1/S2

Julian Day: Date: Sheet Number:

Time	Lat		Lon		Water	Head.	SOW	SOG	EM710	EM120				EA600	SBP		ER60	OLEX	Comments
(GMT)	D	DM	D	DM	depth (m)		(kts)	(kts)	rec.	rec	Line cnt.			rec.	rec.	Data file	rec.	rec.	
0002	60	12.13	27	31.32	1756	191	6.1	5.4	N	Y	0031	22	JC050White	y	y	JC-050-202-2006_018	Y	Y	
0016	60	10.95	27	31.62	1719	185	6.1	5.7	N	Y	0031	6	JC050White	y	y	JC-050-202-2006_019	Y	Y	
0027																	Y	Y	Techsys poss. Errors; GPS down on some systems
0045	60	8.38	27	32.26	1657	185.6	6.4	5.5	N	Y	0032	98	JC050White	y	y	JC-050-202-2006_022	Y	Y	Techsys now fine
0100	60	6.98	27	31.92	1655	144.3	6.5	5.4	N	Y	0032	82	JC050White	y	y	JC-050-202-2006_023	Y	Y	
0112	60	6.45	27	30.04	1626	95.1	6.3	5.2	N	Y	0032	70	JC050White	y	y	JC-050-202-2006_024	Y	Y	
0127	60	6.96	27	27.67	1637	38.6	6.4	5.4	N	Y	0032	55	JC050White	y	y	JC-050-202-2006_025	Y	Y	
0145	60	8.48	27	26.99	1696	354.6	7.2	5.4	N	Y	0032	37	JC050White	y	y	JC-050-202-2006_027	Y	Y	Sonobuoy about to be deployed
0159	60	9.63	27	28.12	1689	312.5	7.0	5.5	N	Y	0032	23	JC050White	y	y	JC-050-202-2006_028	Y	Y	Sonobuoy in
0214	60	10.13	27	30.57	1693	269.5	7.6	5.5	N	Y	0032	9	JC050White	y	y	JC-050-202-2006_029	Y	Y	
0230	60	10.32	27	33.53	1745	277.7	6.9	5.4	N	Y	0033	112	JC050White	y	y	JC-050-202-2006_030	N	Y	XBT deployed
0244	60	10.48	27	36.11	1735	272.8	7.1	5.7	N	Y	0033	98	JC050White	y	y	JC-050-202-2006_031	Y	Y	
0258	60	10.64	27	38.61	1650	273.7	7.1	5.4	N	Y	0033	85	JC050White	y	y	JC-050-202-2006_032	Y	Y	
0318	60	10.87	27	42.19	1527	274.8	7.2	5.4	N	Y	0033	65	JC050White	y	y	JC-050-202-2006_034	Y	Y	
0330	60	11.01	27	44.39	1525	273.7	7.3	5.5	N	Y	0033	53	JC050White	y	y	JC-050-202-2006_035	Y	Y	
0344	60	11.17	27	46.90	1435	269.6	7.7	5.5	N	Y	0033	38	JC050White	y	y	JC-050-202-2006_036	Y	Y	
0400	60	11.34	27	49.68	1457	274.0	7.2	5.5	N	Y	0033	24	JC050White	y	y	JC-050-202-2006_038	Y	Y	
0415	60	11.51	27	52.32	1452	270	7.1	5.6	N	Y	0033	9	JC050White	y	y	JC-050-202-2006_039	Y	Y	
0430	60	11.71	27	55.39	1511	275.0	7.0	5.4	N	Y	0034	112	JC050White	y	y	JC-050-202-2006_040	Y	Y	
0445	60	11.81	27	58.10	1467	273.6	7.6	5.5	N	Y	0034	97	JC050White	y	y	JC-050-202-2006_042	Y	Y	
0500	60	12.05	28	0.75	1453	265	7.7	5.5	N	Y	0034	83	JC050White	y	y	JC-050-202-2006_043	N	Y	XBT deployed successfully
0517	60	12.38	28	3.73	1213	306	6.4	5.5	N	Y	0034	67	JC050White	y	y	JC-050-202-2006_045	Y	Y	Turning on S6
0530	60	13.37	28	4.87	1262	357	6.6	5.9	N	Y	0034	54	JC050White	y	y	JC-050-202-2006_046	Y	Y	
0545	60	14.86	28	4.65	1478	029	7.1	5.8	N	Y	0034	38	JC050White	y	y	JC-050-202-2006_047	Y	Y	
0558	60	15.71	28	2.71	1435	086.0	6.8	5.5	N	Y	0034	23	JC050White	y	y	JC-050-202-2006_049	Y	Y	SBP noisy, prob due to shallow basement
0615	60	15.38	28	0.16	1157	140	6.1	5.2	N	Y	0034	9	JC050White	y	y	JC-050-202-2006_050	Y	Y	
0628	60	14.30	27	59.45	1336	182.0	6.3	5.1	N	Y	0035	115	JC050White	y	y	JC-050-202-2006_052	Y	Y	
0645	60	12.72	27	59.82	1415	186	6.3	5.1	N	Y	0035	97	JC050White	y	y	JC-050-202-2006_053	Y	Y	XBT preparing for deployment
0700	60	11.40	28	0.15	1468	182	7.1	5.4	N	Y	0035	82	JC050White	y	y	JC-050-202-2006_055	Y	Y	XBT deployed at 0653. Rather noisy profile. Just turned ER60 back on
0715	60	10.13	28	0.47	1520	184	6.8	5.6	N	Y	0035	67	JC050White	y	y	JC-050-202-2006_056	Y	Y	
0730	60	8.63	27	59.81	1484	138	7.3	5.2	N	Y	0035	51	JC050White	y	y	JC-050-202-2006_057	Y	Y	EA600 flicking to 0m
0745	60	8.27	27	57.92	1496	096	6.6	5.0	N	Y	0035	38	JC050White	y	y	JC-050-202-2006_059	Y	Y	Ditto
0800	60	8.87	27	55.89	1394	043	6.3	5.2	N	Y	0035	23	JC050White	y	y	JC-050-202-2006_060	Y	Y	
0815	60	10.12	27	55.15	1496	002	6.4	5.1	N	Y	0035	8	JC050White	y	y	JC-050-202-2006_061	Y	Y	
0830	60	11.33	27	55.93	1509	314	6.5	5.2	N	Y	0036	113	JC050White	y	y	JC-050-202-2006_063	Y	Y	
0845	60	11.91	27	58.74	1474	264	6.4	5.7	N	Y	0036	97	JC050White	y	y	JC-050-202-2006_064	Y	Y	
0904	60	12.11	28	1.79	1487	266	6.5	5.4	N	Y	0036	78	JC050White	y	y	JC-050-202-2006_066	N	Y	ER60 off for XCTD-2
0907	60	12.15	28	2.33	1413												Y		ER60 back on
0915	60	12.23	28	3.74	1310	269	5.8	5.1	N	Y	0036	67	JC050White	y	y	JC-050-202-2006_067	Y	Y	
0930	60	12.36	28	6.04	1054	267	5.8	5.0	N	Y	0036	53	JC050White	y	y	JC-050-202-2006_068	Y	Y	Beginning turn, guns off
0945	60	12.81	28	8.54	1486	285	5.8	5.4	N	Y	0036	34	JC050White	y	y	JC-050-202-2006_070	Y	Y	Guns on board, streamer free
1000	60	12.37	28	10.76	1499	274	6.2	5.7	N	Y	0036	22	JC050White	y	y	JC-050-202-2006_071	Y	Y	Guns on for maintainance
1015	60	13.46	28	13.65	1681	237	6.3	4.9	N	Y	0036	6	JC050White	y	y	JC-050-202-2006_073	Y	Y	
1030	60	12.86	28	15.89	1495	210	7.2	5.2	N	Y	0037	112	JC050White	y	y	JC-050-202-2006_074	Y	Y	Commencing turn
1045	60	11.76	28	17.00	1554	177	7.0	4.7	N	Y	0037	96	JC050White	y	y	JC-050-202-2006_075	Y	Y	Turning at 2deg/min to port. EA600 poor quality. All swath poor quality
1100	60	10.68	28	16.54	1628	153	6.9	5.0	N	Y	0037	83	JC050White	y	y	JC-050-202-2006_076	Y	Y	Still poor swath
1115	60	9.72	28	14.87		139	6.5	4.9	N	Y	0037	68	JC050White	y	y	JC-050-202-2006_077	Y	Y	
1130	60	8.79	28	13.03	1428	134	6.8	5.1	N	Y	0038	116	JC050White	y	y	JC-050-202-2006_078	Y	Y	
1145	60	8.98	28	11.02		136	6.8	5.5	N	Y	0038	97	JC050White	y	y	JC-050-203-1146	Y	Y	SBP switched to wide beam
1200	60	6.97	28	8.69	1499	138.4	6.7	5.3	N	Y	0038	81	JC050White	y	y	JC-050-203_001	Y	Y	
1215	60	6.12	28	7.06	1425	140.3	7.1	5.0	N	Y	0038	68	JC050White	y	y	JC-050-203_002	Y	Y	
1225									N	Y	0038		JC050White	y	y		Y	Y	POSMV gyro and SBE 45 fail
1230	60	5.16	28	5.10	1544	139.6	6.8	5.1	N	Y	0038	55	JC050White	y	y	JC-050-203_003	Y	Y	Finding Leighton
1243	60	4.36	28	3.75	1516	139.4	7.0	5.5	N	Y	0038	42	JC050White	y	y	JC-050-203_004	Y	Y	POSMV fixed
1259	60	3.36	28	1.33	1486	130.9	6.8	5.3	N	Y	0038	26	JC050White	y	y	JC-050-203_005	Y	Y	POSMV failed again
1315	60	3.18	27	58.89	1628	086.0	6.7	5.7	N	Y	0038	10	JC050White	y	y	JC-050-203_007	Y	Y	16km from line, POSMV fixed
1329	60	4.02	27	56.38	1647	045	7.8	6.1	N	Y	0039	116	JC050White	y	y	JC-050-203_008	Y	Y	SBP set to focused
1346	60	5.29	27	54.66	1627	046	6.8	5.6	N	Y	0039	99	JC050White	y	y	JC-050-203_014	Y	Y	
1402	60	66.46	27	53.07	1534	043.5	5.8	5.4	N	Y	0039	83	JC050White	y	y	JC-050-203_016	Y	Y	
1420	60	7.89	27	51.39	1525	017	6.3	5.4	N	Y	0039	66	JC050White	y	y	JC-050-203_017	Y	Y	
1430	60	8.81	27	51.36	1455	001	6.4	6.5	N	Y	0039	55	JC050White	y	y	JC-050-203_018	Y	Y	guns going back in water when ship back on line, 2.3km from line
1445	60	10.15	27	51.84	1426	328	6.5	6.9	N	Y	0039	40	JC050White	y	y	JC-050-203_019	Y	Y	TECHAS being restarted
1500	60	11.48	27	53.66	1487	299	6.8	5.6	N	Y	0039	22	JC050White	y	y	JC-050-203_021	Y	Y	
1519	60	11.88	27	56.46	1521	265	7.2	6.0	N	Y	0039	6	JC050White	y	y	JC-050-203_022	Y	Y	Slowing to deply guns
1530	60	11.99	27	57.97	1810	263	6.3	5.0	N	Y	0040	115	JC050White	y	y	JC-050-203_023	Y	Y	guns in water speed, 5kts
1544	60	1.03	28	0.57	1446	270	5.7	5.0	N	Y	0040	101	JC050White	y	y	JC-050-203_024	Y	Y	SBP poor signal
1600	60	12.17	28	3.28	1251	202	8.0	6.1	N	Y	0040	85	JC050White	y	y	JC-050-203_024	Y	Y	guns back on
1615	60	12.34	28	5.59	1144	262	5.9	5.1	N	Y	0040	72	JC050White	y	y	JC-050-203_025	Y	Y	
1630	60	12.49	28	8.24	1478	266	6.2	4.7	N	Y	0040	56	JC050White	y	y	JC-050-203_026	Y	Y	Business as usual
1645	60	12.65	28	10.96	1986	274	6.4	4.7	N	Y	0040	40	JC050White	y	y	JC-050-203_028	Y	Y	
1700	60	12.77	28	13.03	1683	266	5.8	5.0	N	Y	0040	27	JC050White	no depth	y	JC-050-203_029	Y	Y	
1715	60	12.94	28	15.62	1472	265	5.7	5.0	N	Y	0040	12	JC050White	y	y	JC-050-203_030	Y	Y	
1730	60	13.09	28	18.28	1530	264	5.6	5.2	N	Y	0041	117	JC050White	y	y	JC-050-203_031	Y	Y	EA600 not very well
1745	60	13.25	28	20.89	1345	263	5.5	5.0	N	Y	0041	101	JC050White	y	y	JC-050-203_033	Y	Y	Depths are not consistent due to bad weather
1801	60	13.42	28	23.76	1380	268	5.8	5.3	N	Y	0041	85	JC050White	y	y	JC-050-203_034	Y	Y	
1815	60	13.54	28	25.83	1341	272	5.7	5.0	N	Y	0041	72	JC050White	y	y	JC-050-203_035	Y	Y	
1830	60	13.71	28	28.43	1448	276	5.4	4.9	N	Y	0041	57	JC050White	y	y	JC-050-203_036	Y	Y	
1845	60	13.87	28	31.24	1400	266	5.8	4.9	N	Y	0041	39	JC050White	y	y	JC-050-203_038	Y	Y	
1903	60	14.26	28	33.95	1664	318	5.9	4.7	N	Y	0041	23	JC050White	y	y	JC-050-203_039	Y	Y	EA600 quite slow
1918	60	15.31	28	34.72	1483	011	6.4	5.1	N	Y	0041	8	JC050White	y	y	JC-050-203_040	Y	Y	
1930	60	16.42	28	34.80	1391	026	6.4	5.5	N	Y	0042	115	JC050White	y	y	JC-050-203_041	Y	Y	Stopped firing due to bad weather
1945	60	17.44	28	33.24	1344	079	6.8	5.1	N	Y	0042	101	JC050White	y	y	JC-050-203_043	Y	Y	
1958													JC050White	y	y				EM120 set to 100 deg
2001	60	17.41	28	30.75	1383	124	5.4	3.7	N	Y	0042	84	JC050White	y	y	JC-050-203_043	Y	Y	All swath poor
2016	60	16.77	28	29.58	1434	140	5.0	3.8	N	Y	0042	69	JC050White	y	y	JC-050-203_044	Y	Y	All swath poor
2030	60	16.13	28	28.47	1394	138	5.5	3.8	N	Y	0042	55	JC050White	y	y	JC-050-203_045	Y	Y	All swath poor
2048	60	15.26	28	26.97		140	5.6	4.0	N	Y	0042	37	JC050White	y	y	JC-050-203_047	Y	Y	All swath poor
2100	60	14.68	28	25.97	1448	139	5.0	4.1	N	Y	0042	26	JC050White	y	y	JC-050-203_047	Y	Y	All swath poor
2115	60	14.17	28	25.11	1382	138	2.9	1.0	N	Y	0042	10	JC050White	y	y	JC-050-203_048	Y	Y	Swath improved at lower speeds
2130	60	14.13	28	25.03	1378	140	3.0	0.4	N	Y	0043	144	JC050White	y	y	JC-050-203_050	Y	Y	SBP better now slow speed
2145	60	14.11	28	24.99	1378	139	2.8	0.2	N	Y	0043	100	JC050White	y	y	JC-050-203_051	Y	Y	On station
2200	60	14.06	28	24.97	1403	131	2.8	0.5	N	Y	0043	85	JC050White	y	y	JC-050-203_053	Y	Y	Decision to fill in 'hole' in swath - consult bridge
2215	60	13.79	28	23.92	1367	116	3.5	2.7	N	Y	0043	64	JC050White	y	y	JC-050-203_055	Y	Y	At 3kts
2230	60	13.40	28	22.37	1408	123	4.6	3.2	N	Y	0043	54	JC050White	y	y	JC-050-203_055	Y	Y	
2245	60	13.05	28	21.16	1321	120	4.0	3.2	N	Y	0043	40	JC050White	y	y	JC-050-203_056	Y	Y	Az thrusters on -SBP poor
2300	60	12.69	28	19.91	1394	120	4.0	3.1	N	Y	0043	25	JC050White	y	y	JC-050-203_057	Y	Y	
2315	60	12.37	28	18.76	1495	122	4.2	3.2	N	Y	0043	10	JC050White	y	y	JC-050-203_058	Y	Y	
2330	60	12.01	28	17.37	1492	118	4.2	2.9	N	Y	0044	113	JC050White	y	y	JC-050-203_059	Y	Y	
2345	60	11.71	28	16.09	1550	122	3.9	2.9	N	Y	0044	100	JC050White		y	JC-050-203_060	Y	Y	

Day: Date: Sheet Number:

Time	Lat		Lon		ADCP150	ADCP75	Techsas	Level-C	Grav.	Mag.	Wind		Sea State	Comments, eg state of seismic exp.		
(GMT)	D	DM	D	DM	rec.	rec.	rec.	rec.	(mgal)	(nT)	Speed	Dir.				
0000	60	12.59	27	31.21	Y	Y	Y	Y	13255.5	N	8.3	20.7	CALM			
0015	60	11.14	27	31.57	Y	Y	Y	Y		N	8.5	354	CALM			
0033	60	9.39	27	32.01	Y	Y	N	N	13252.8	N	8.3	3.9	CALM	POS MV GPS error - Leighton fixing		
0045	60	8.39	27	32.26	Y	Y	Y	Y		N	8.9	4.3	CALM	POS MV back on		
0100	60	6.94	27	31.86	Y	Y	Y	Y	13241.7	N	11.2	48.6	CALM			
0117	60	6.00	27	29.17	Y	Y	Y	Y		N	5.7	120	CALM			
0129	60	7.04	27	27.56	Y	Y	Y	Y	13240.2	N	3.1	157	CALM			
0145	60	8.49	27	26.99	Y	Y	Y	Y		N	4.4	211	rocky			
0201	60	9.71	27	28.27	Y	Y	Y	Y	13272	N	6.8	262	mild swell			
0214	60	10.13	27	29.05	Y	Y	Y	Y		N	8.7	297	mild swell	latitude DM "29" ? (looks like a zero)		
0231	60	10.34	27	33.68	Y	Y	Y	Y	13271.9	N	9.7	289	mild swell			
0246	60	10.51	27	36.49	Y	Y	Y	Y		N	9.3	296	mild swell			
0300	60	10.67	27	38.95	Y	Y	Y	Y	13279.6	N	9.3	302	mild swell			
0318	60	10.87	27	42.31	Y	Y	Y	Y		N	8.6	294	mild swell			
0330	60	11.02	27	44.54	Y	Y	Y	Y	13289.3	N	10.6	286	mild swell			
0345	60	11.17	27	47.02	Y	Y	Y	Y		N	8.6	291.1	mild swell			
0400	60	11.33	27	49.50	Y	Y	Y	Y	13293.4	N	9.7	283	mild swell			
0415	60	11.61	27	52.30	Y	Y	Y	Y		N	8.5	274.4	mild swell			
0430	60	11.70	27	55.40	Y	Y	Y	Y	13289.9	N	8.3	265	mild swell			
0445	60	11.87	27	58.10	Y	Y	Y	Y		N	9.6	264	mild swell			
0500	60	12.05	28	0.75	Y	Y	Y	Y	13295.1	N	9.2	269	A few white peaks			
0515	60	12.38	28	3.73	Y	Y	Y	Y		N	8.1	245	A few white peaks			
0530	60	13.37	28	4.87	Y	Y	Y	Y	13288.8	N	2.7	148	A few white peaks			
0545	60	14.86	28	4.65	Y	Y	Y	Y		N	8.0	117	A few white peaks			
0600	60	15.71	28	2.66	Y	Y	Y	Y	13256.1	N	9.3	074	A few white peaks			
0615	60	15.38	28	0.10	Y	Y	Y	Y		N	11.5	015	A few white peaks			
0630	60	14.37	27	59.43	Y	Y	Y	Y	13278.9	N	13.3	340	A few white peaks			
0645	60	12.76	27	59.81	Y	Y	Y	Y		N	13.1	342	A few white peaks	XBT preparing to be deployed		
0700	60	11.44	28	0.15	Y	Y	Y	Y	13271	N	12.0	341	Quite windy swell 1-2m	XBT deployed 0653		
0715	60	10.13	28	0.47	Y	Y	Y	Y		N	13.8	353	Getting choppier			
0730	60	8.79	28	0.10	Y	Y	Y	Y	13257	N	13.2	021	Getting choppier			
0745	60	8.27	27	57.92	Y	Y	Y	Y		N	11.1	61.3	White peaks			
0800	60	8.87	27	55.70	Y	Y	Y	Y	13257.4	N	10.8	125	White peaks			
0815	60	10.11	27	55.15	Y	Y	Y	Y		N	5.5	160	White peaks			
0830	60	11.34	27	55.93	Y	Y	Y	Y	13286.4	N	8.6	219	White peaks	Sonobuoy being deployed		
0845	60	11.91	27	58.74	Y	Y	Y	Y		N	10.4	269	White peaks			
0906	60	12.13	28	2.16	Y	Y	Y	Y	13309.9	N	12.3	266	White peaks	XCTD deployed. Problems with guns tangled in streamer		
0912														Guns stopped		
0915	60	12.23	28	3.74	Y	Y	Y	Y		N	12.4	256	Swell + chop increased	Lowered gun block, steered streamer to starboard, seems less tangled		
0918														Slowing, bringing guns on board		
0930	60	12.36	28	6.04	Y	Y	Y	Y		N	11.8	262	From port side			
0940														Bringing guns in		
0945	60	12.81	28	8.54	Y	Y	Y	Y	13305.1	N	12.5	240		Guns on board, streamer free		
1000	60	13.37	28	10.76	Y	Y	Y	Y		N	11.6	262		Guns in for maintanance, starting turn		
1015	60	13.46	28	13.65	Y	Y	Y	Y	13285.7	N	12.3	290		4-5hrs to back on line		
1030	60	12.86	28	15.89	Y	Y	Y	Y		N	12.7	313	creased swell and chop			
1045	60	11.76	28	17.00	Y	Y	Y	Y	13252.8	N	12.4	342				
1100	60	10.73	28	16.59	Y	Y	Y	Y		N	16.0	4		Still turning, no guns		
1115	60	9.69	28	14.82	Y	Y	Y	Y	13231.1	N	15.1	12	Swelly			
1130	60	8.81	28	13.09	Y	Y	Y	Y		N	15.0	15	unpleasant swell + chop			
1145	60	8.05	28	11.17	Y	Y	Y	Y	13235.6	N	14.3	11		Wind picking up. Swell 1m. Choppy.		
1200	60	7.16	28	9.01	Y	Y	Y	Y		N	15.3	10.7	Force 4-5. Some swell	Left seismic line. Sailing into wind.		
1217	60	6.00	28	6.81	Y	Y	N	N	13218.1	N	14.1	6.8	2-5m swell	SBE 45 error showing on TECHSAS,		
1230	60	5.23	28	5.20	Y	Y	N	N		N	13.4	9.6		TECHAS POSMV errors out GPSm streamer		
1245	60	4.22	28	3.19	Y	Y	Y	Y	13222.6	N	14.7	9.6		Level C POSMV-GYROMV-relmev		
1301	60	3.29	28	1.13	Y	Y	N	N		N	12.8	12.6				
1304	60													POSMV Fixed		
1316	60	3.19	27	59.00	Y	Y	Y	Y	13216.4	N	14.4	84	foam cresting on waves	16335m from line		
1330	60	4.02	27	56.40	Y	Y	Y	Y		N	11.1	95	2-3m Swell	14215m from line		
1348	60	5.44	27	54.47	Y	Y	Y	Y	13238.9	N	11.6	101	2-3m Swell	11451m from line		
1402	60	6.46	27	53.07	Y	Y	Y	Y		N	11.8	94	Getting calmer	8300m from line. Guns getting ready to go out.		
1419	60	7.83	27	51.44	Y	Y	Y	Y	13257	N	9.1	117	Getting calmer	6615m from line		
1431	60	8.95	27	51.37	Y	Y	Y	Y		N	9.1	128				
1445	60	10.16	27	51.85	Y	Y	N	N	13292.6	N	5.5	160		TE$CHSAS being reset		
1501	60	11.36	27	53.36	Y	Y	Y	Y		N	8.8	211				
1515	60	11.87	27	55.84	Y	Y	Y	Y	13312.5	N	11.2	236		Ship slowing ready for gun deployment - ship back on line		
1543	60	12.03	28	0.36	Y	Y	Y	Y		N	11.1	230				
1600	60	12.17	28	3.28	Y	Y	Y	Y	13365.7	N	10.1	227	2m Swell	Guns back in. On line		
1615	60	12.33	28	5.56	Y	Y	Y	Y		N	10.1	238	2m Swell			
1630	60	12.49	28	8.29	Y	Y	Y	Y	13319.7	N	14.1	238	2m Swell			
1645	60	12.65	28	10.96	Y	Y	Y	Y		N	11.3	222	2m Swell	Business as usual		
1700	60	12.77	28	13.03	Y	Y	Y	Y	13299.3	N	11.7	235	2m Swell			
1715	60	12.94	28	15.62	Y	Y	Y	Y		N	11.7	225	2m Swell			
1730	60	13.09	28	18.27	Y	Y	Y	Y	13305.8	N	10.8	235	2m Swell			
1745	60	13.25	28	20.89	Y	Y	Y	Y		N	11.3	232	2m Swell			
1802	60	13.42	28	23.72	Y	Y	Y	Y	13306.9	N	10.2	239.5	3-4m roll			
1815	60	13.54	28	25.83	Y	Y	Y	Y		N	11.7	227	1-3m roll			
1530	60	13.71	28	28.42	Y	Y	Y	Y	13290.3	N	12.4	223				
1545	60	13.88	28	31.36	Y	Y	Y	Y		N	12.1	218				
1904	60	14.32	28	34.08	Y	Y	Y	Y	13275.8	N	9.8	140				
1920	60	15.45	28	34.90	Y	Y	Y	Y		N	13.3	104				
1932	60	16.55	28	34.73	Y	Y	Y	Y	13247	N	14.4	082	1.5m swell	Stopping due to bad weather		
1945	60	17.44	28	33.24	Y	Y	Y	Y		N	16.1	034				
2003	60	17.38	28	30.62	Y	Y	Y	Y	13227.7	N	13.9	349		Guns brought in		
2018	60	16.72	28	29.47	Y	Y	Y	Y		N	15.1	341				
2032	60	16.05	28	28.32	Y	Y	Y	Y	13227.4	N	16.4	347		Streamer coming in (40%)		
2050	60	15.16	28	26.79	Y	Y	Y	Y		N	14.8	341		Streamer coming in (80%)		
2101	60	14.59	28	25.81	Y	Y	Y	Y	13236.3	N	14.9	336		Streamer almost in		
2117	60	14.16	28	25.09	Y	Y	Y	Y		N	14.7	342	1m swell	Streamer in		
2130	60	14.13	28	25.03	Y	Y	Y	Y	13253.7	N	14.3	332				
2145	60	14.11	28	24.99	Y	Y	Y	Y		N	15.0	331	1m swell + chop			
2200	60	14.06	28	24.97	Y	Y	Y	Y	13253	N	14.0	346	1m swell + chop			
2215	60	13.79	28	23.92	Y	Y	Y	Y		N	13.8	347	1m swell + chop			
2230	60	13.40	28	22.37	Y	Y	Y	Y	13222.3	N	15.8	342	1m swell + chop			
2245	60	13.05	28	21.16	Y	Y	Y	Y		N	11.6	331	1m swell + chop			
2300	60	12.69	28	19.91	Y	Y	Y	Y	13240.4	N	16.6	346	2m swell			
2315	60	12.37	28	18.76	Y	Y	Y	Y		N	15.9	346	2m swell			
2330	60	12.01	28	17.37	Y	Y	Y	Y	13226.1	N	17.3	348	2m swell			
2345	60	11.71	28	16.09	Y	Y	Y	Y		N	14.4	342	2m swell			

Every 30 min, for important events and not for birds during turns.

Seismic log

Line No:	**1 SEQ5/6**				**Date:**	**22 7 10**		**Julian Day:**		**203**	**Page No:**		1		Depth of Gun 1:			5m				
															Depth of Gun 2:			5m				
	Vessel GPS				Bird 1		Bird 2		Bird 3		Bird 4		Bird 5						Tailbuoy GPS			
Time GMT	Lat		Long		Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Ship H'ding	CMG	Shot no.	FFID	Lat		Long	
0002	60	12.39	27	31.25	7.19	203	6.96	190	7.93	179	7.22	171	6.62	170	196.3	194.79	15273	15273	60	13.31	27	31.79
0008	60	11.61	27	31.45											189.5	192.3	15313	15313	60	12.56	27	31.31
15	60	11.06	27	31.59	7.17	198	7.11	212	6.71	194	6.98	205	6.78	203	187.7	194.4	15337	15337	60	12.03	27	31.39
0035	60	9.22	27	32.04	7.42	197.4	7.51	199	6.45	211	6.6	205	7.14	198	186	192.4	15417	15417	60	10.08	27	31.85
0047	60	8.14	27	32.31	6.72	198	6.48	202	6.7	207	6.71	192	6.81	193	185.8	192.7	15466	15466	60	9.12	27	32.16
0051	60	7.01	27	32.4											177.4	184.11	15479	15479	60		27	
0058																	15509	15509	60		27	
0100	60	7.02	27	31.98	8.22	163.2	7.57	175.2	7.38	180	7.22	187.6	7.66	197.1	145	149.66	15517	15517	60	7.95	27	32.4
0116	60	6.46	27	29.38	6.84	108.4	6.4	105.6	7.82	111	7.31	126.1	6.85	137	78.1	86.75	15583	15583	60	6.71	27	31.22
0130	60	7.11	27	27.46	6.31	58	6.77	65	6.77	72	6.42	79	6.66	83	30.4	38.23	15636	15636	60	6.55	27	29.05
0146	60	8.57	27	27.02	7.32	17	7.8	17	7.24	25	6.83	17	6.72	73	350.5	358.3	15703	15703	60	7.6	27	27.23
0200	60	9.58	27	28.01	7.26	337	7.73	304.6	7.16	342	7.24	353	6.91	349	312.1	318.1	15757	15757	60	8.79	27	27.28
0209	60	8.18	27	31.22													15792	15792	60		27	
0215	60	10.14	27	30.82	7.12	298	7.81	306	7.29	304	7.34	311	7	307.7	279.7	288.03	15822	15822	60	9.8	27	28.97
0219	60																15834	15834	60		27	
0230	60	10.32	27	33.59	6.74	240	6.79	289	6.97	291	6.59	300	6.85	298	276.6	287.17	15881	15881	60	10.19	27	31.68
0245	60	10.49	27	36.22	8.05	298	7.64	290	7.33	290	7.6	294	7.13	295	273.2	282.25	15938	15938	60	10.35	27	34.27
0259	60	10.64	27	38.65	7.2	296	7.07	291	7.01	295	6.8	293	7.07	292	276.7	283.25	15991	15991	60	10.52	27	36.74
0315	60	10.84	27	41.74	7.22	300	6.94	296	7.04	295	7.31	292	6.96	299	272.7	286.19	15059	15059	60	10.72	27	39.81
0330	60	11	27	44.37	7.61	291	6.84	285	6.37	284	6.9	281	7.08	290	273.9	283.01	15116	15116	60	10.9	27	42.4
0345	60	11.18	27	47.17	7.33	285	7.51	289	7.06	288	7.09	289	6.67	295	272.3	287.15	15178	15178	60	11.08	27	45.18
0400	60	11.33	27	19.6	7.6	275	7.01	276	6.7	274	6.8	260	7.4	276	274.2	280	15235	15235	60	11.24	27	47
0415	60	11.51	27	52.34	6.6	295	7	291	6.8	294	6.4	295	7.3	294	275	284	16290	16290	60	11.41	27	50.29
0430	60	11.7	27	55.41	4.2	294	7.4	293	6.7	294	7	205	6.8	286	273	288	16357	16357	60	11.6	27	53.35
0445	60	11.87	27	57.99	4.5	294	7.5	285	7	287	6.7	287	6.8	285	273	283	16414	16414	60	11.76	27	55.94
0502	60	12.07	27	1.19	4.6	301	7.5	295	7.1	290	6.6	293	6.6	288	267	282	16484	16484	60	11.96	27	59.14
0507																	16513	16513				
0509																	16505	16505				
0514	60	12.27	27	3.34	9.1	294	8.6	295	6.8	296	7	293	6.7	287	297	305	16529	16529	60	12.11	27	1.3
0530	60	13.37	27	4.89													16591	16591	60	12.52	27	3.94
0545	60	14.89	27	4.64													16655	16655	60	13.88	27	4.96
0600	60	15.72	27	2.01											88	87	16715	16715	60	15.17	27	4.34
0614	60	15.38	27	0.14	7.62	147	7.5	134	7.15	129	6.08	126	6.69	120	142.2	141.9	16775	16775	60	15.72	27	1.96
0625	60	14.48	27	59.41	8.66	180	7.87	197	7.24	169	6.91	154	7.39	148	180.9	189.4	16819	16819	60	15.38	27	0.43
0630	60	14.03	27	59.49	7.08	198	6.42	185	6.34	186	6.18	175	7.2	164	180.5	193.6	16843	16843	60	15	27	59.93
0637	60	13.45	27	59.64	6.87	201	7.13	195	6.7	204	6.12	188	7.53	192	184	193	16866	16866	60	14.45	27	59.65
0645	60	12.78	27	59.81	7.06	200	7.43	188	7.34	192	6.34	207	6.32	194	181.6	189	16898	16898	60	13.79	27	59.7
0653	60	12.03	27	59.99	6.33	187	7.12	202	6.63	204	6.18	195	6.71	187	181.2	195	16931	16931	60	13.04	27	59.83
0702	60	11.26	28	0.19	6.33	202	6.63	209	6.68	208	6.21	209	6.61	204	181	191	16966	16966	60	12.23	28	0.02
0714	60	10.18	28	0.45	6.57	202	6.55	202	6.81	204	6.45	194	7.19	200	181	191	17013	17013	60	11.2	28	0.29
0717																	17027	17027				
0730	60	8.82	28	0.12	High tension over streamer so speed dropped to 5kts												17077	17077	60	9.77	28	0.66
0745	60	8.28	27	57.98	Tension dropped. Wind from South. 11.2m/s. Swell 1-2m												17134	17134	60	8.72	27	59.83
0800	60	8.96	27	55.47	7.00	67	7	73	7	81	6.8	89	7.4		40	41	17194	17194	60	8.44	27	57.37
0815	60	10.27	27	55.14	6.9	17	6.2	028	6.2		5.6	30	6.4		7	9	17254	17254	60	9.33	27	55.47
0830	60	11.38	27	56	8.3	346	7.3	357	6.8		7	5	6.8		312	324	17314	17314	60	10.4	27	55.32
0838	60	11.75	27	57.06													17349	17349	60	11.08	27	55.73
0845	60	11.89	27	58.13	6.1	301	6.1	302	7.8		7	317	7.1		272	319	17372	17372	60	11.42	27	56.27
0908																	17464	17464				
0912																	17481	17481				
0918																	17509	17509				
0924																	17527	17527				
0927																	17544	17544				
0931																	17560	17560				
0937																	17584	17584				
0947																	17621	17621				
0957																	17662	17662				
1030																						
1110																						

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Seismic log

1202	60	6.97	28	8.69	10.45		10.44		12.15		11.86		11.24		138	141	17662	17662	60		28	
1215	60	6.17	28	7.12	10.12	144	9.76	152	11.84	157	12.27	158	12.11	152	140	139	20000	20000	60	6.76	28	8.33
1223	60																20000	20000	60		28	
1230	60																20000	20000	60		28	
1235	60	4.88	28	4.5	10	150.1	9.9	151	11.8	152.6	11.4	156	11.6	157	142	136.2	20000	20000	60	5.43	28	5.61
1246	60				10.44	156.6	10.35	150.8	12.8	146	11.6	165	12.1	156			20000	20000	60		28	
1300	60				10.37	137.1	10.34	154	12.17	149	11.7	148	12.1	158			20000	20000	60		28	
1305	60	3.16	28	0.44	10.09	136.5	10.13	139	12.81	138	12.6	155	12.65	152	116	109.2	20000	20000	60	3.72	28	2.06
1315	60	3.15	27	58.79	9.12	111.1	8.68	113	11.9	116	12.3	124	12.3	122			20000	20000	60	3.3	28	0.79
1330	60	3.94	27	56.51	10.5	65.6	10.8	81	11.9	84	11.6	89	11.9	127	45	41	20000	20000	60	3.4	27	58.17
1345	60	5.1	27	54.93	11.3	54.5	9.9	51.6	12	50	11.7	48	12	106	44	42	20000	20000	60	4.38	27	56.13
1400	60	6.21	27	53.41	9.6	52.4	9.7	48.8	11.6	55	11.9	47	12.1	58	45	41	20000	20000	60	6.21	27	53.54
1415	60	7.34	27	51.82	11.2	55	8.3	50	12	52	12.3	56	12.4	54	37	36	20000	20000	60	7.42	27	57.74
1430	60	8.71	27	51.34	9.5	8.7	9.7	18	11.7	23	12	32	11.6	49	2	2	20000	20000	60	7.83	27	51.56
1446	60	10.25	27	51.94	10.1	355	9.8	8.1	11.8	4	12	2	11.8	36	331	338.5	20000	20000	60	9.32	27	51.42
1501	60	11.4	27	53.45	10.5	326	10.3	349	12.3	347	12.3	343	11.9	5	302	318.5	20000	20000	60	10.61	27	52.28
1513	60	11.84	27	55.43	3.8		2.5		3.8		2.4		4.4	343	269	280.7	20000	20000				
1520	60																20000	20000	60			
1525	60																20000	20000	60			
1530	60	11.98	27	57.97	8.7	297	9	295	10.1	302	10.5	295	10.2	289	265	278	20000	20000	60	11.92	27	56.09
1555																						
1558																						
1600	60	12.17	28	3.42	9.2	282	9	274	7.62	278	7.07	286	7.2	283	269	283.4	20015	20015	60	12.2	28	1.44
1606																						
1615	60	12.17	28	5.64	6.78	286	6.95	291	6.86	285	6.46	290	6.87	304	267.1	282.9	20069	20069	60	12.32	28	3.59
1618																						
1630	60	12.46	28	7.8	7.09	283	5.61	280	7.12	269	7.6	294	6.99	286	267.9	285.6	20128	20128	60	12.5	28	5.74
1632																	20132					
1634																	20145					
1636																						Low
1645	60	12.63	28	10.56	7.33	288	7.18	294	7.56	296	7	295	6.69	285	261.9	283.4	20185	20185	60	12.63	28	8.7
1700	60	12.75	28	12.6	6.91	288	7.01	289	6.93	287	6.81	288	7.17	294	265.8	279.9	20245	20245	60	12.74	28	10.75
1715	60	12.92	28	15.48	6.63	295	6.47	291	6.9	282	7.47	294	6.94	284	268	283.4	20302	20302	60	12.92	28	13.45
1730	60	13.05	28	17.64	6.66	298	7.1	298	6.79	290	6.72	297	6.2	281	265.2	280	20370	20370	60	13.03	28	15.6
1745	60	13.21	28	20.28	8.03	290	6.77	301	7.25	290	7.24	293	7.05	275	268.3	284.97	20425	20425	60	13.17	28	18.23
1800	60	13.4	28	23.33	6.1	274	7.11	281	6.63	281	7.05	290	7.46	276	265.1	279.79	20487	20487	60	13.36	28	21.28
1815	60	13.56	28	25.98	6.51	282	6.76	270	6.37	266	6.77	279	6.04	296	269.6	287.19	20549	20549	60	13.49	28	23.91
1835	60	13.44	28	29.02	7.5	290	8.2	293	7.6	299	7.5	291	7	286	278	282	20620	20620	60	13.65	28	27
1849	60	13.9	28	31.74	6.7	279	5.7	266	6.6	267	8	272	6.4	267	284	270	20685	20685	60	13.81	28	29.71
1855																	20705	20705				
1901	60	14.15	28	33.72	8.6	310	8..0	296	60.9	270	7.3	274	7.4	263	314	314	20738	20738	60	13.94	28	31.87
1922	60	15.64	28	34.88	6	8	7	13	6	322	6.9	4	6.2	335	11	9	20815	20815	60	14.66	28	34.62
1925	60	16.01	28	34.89	6.1	7	6.2	12	6.6	22	7.2	7	6.65	341	14.6	7	20830	20830	60	14.99	28	34.91
1931	60	16.53	28	34.76	5.5	22	6.9	17	6.9	14	6.8	8	7.5	35	35	24	20830	20830	60	15.55	28	35.01
1942	60	17.32	28	33.68	6.77	65	7.02	67	6.96	66	6.42	52	6.79	34	70	59	20830	20830	60	16.49	28	34.82
1950	60	17.58	28	32.27	7.87	85	6.13	108	4.08	72	3.66	62	3.8	67	101	95	20830	20830	60	17.15	28	34.1
2003																						
2111																						

Julian Day:
Sonobuoy Number:
Serial No:

Date:
Sonobuoy Channel:

Sonobuoy Frequency:
Depth Setting:
Duration (hours):

Time (GMT)	Latitude Deg and DM		Longitude Deg and DM		SOW (kts)	SOG (kts)	Wind head.	Wind speed	Current East (m/s)	Current North (m/s)	Data File	Comments
01.57.53	60		27								SB6_96_2030159_S1/2	Started S1/S2. Recording
01.59.39	60	9.62	27	28.29	7	5.6	252.4	7.2	-0.15	-0.06	SB6_96_2030159_S1/2	Deployed
0214	60	10.13	27	30.45	7	5.6	297	8.7	-0.2	0.04	SB6_96_2030159_S1/2	Heading 269.5
0231	60	10.34	27	33.68	7.2	5.5	289	9.7	-0.19	-0.05	SB6_96_2030159_S1/2	
0235											SB6_96_2030159_S1/2	Radio S2 signal down, no reception
0246	60	10.51	27	36.48	7.1	5.5	296	9.3	-0.35	-0.09	SB6_96_2030159_S1/2	
0300	60	10.67	27	38.94	7.1	5.4	302	9.3	-0.2	-0.03	SB6_96_2030159_S1/2	SB2 all noise, SB1 good
0318	60	10.88	27	42.32	7.2	5.4	289.2	9.5	-0.23	0.01	SB6_96_2030159_S1/2	SB1 amp. Diminishing
0330	60	11.01	27	24.32	7.7	5.5	284.2	11.1	-0.11	-0.01	SB6_96_2030159_S1/2	"
0344	60	11.17	27	46.9	7.7	5.5	289.2	9	-0.11	0.1	SB6_96_2030159_S1/2	"
0400	60	11.34	27	49.68	7.2	5.5	273	8.9	-0.23	0.04	SB6_96_2030159_S1/2	Heading 274.0
0413	60	11.51	27	52.55	7.2	5.6	279.2	9.1	-0.4	0.06	SB6_96_2030159_S1/2	Still small trace on S1
0430	60	11.71	27	55.43	7.1	5.3	259.4	9.3	-0.23	-0.01	SB6_96_2030159_S1/2	Heading 275.0
0447	60	11.93	27	58.65	7.6	5.3	269.3	10.2	-0.3	0.11	SB6_96_2030159_S1/2	Trace on S1 gone (?)
0515	60	12.32	27	3.55	7.1	5.5	241.6	8.1	-0.52	0.15	SB6_96_2030159_S1/2	Started turn to stbd for pigs ear 6. Heading 308
0529	60	13.43	27	4.89	6.5	5.7	168.9	4.4	-0.25	0.63	SB6_96_2030159_S1/2	Heading 005.5
0542	60	14.72	27	4.79	7	5.8	133.7	6.7	-0.2	0.52	SB6_96_2030159_S1/2	Beginning 2nd turn to stbd
0601	60	15.74	27	2.14	6.8	5.3	57.4	10.9	0.31	0.17	SB6_96_2030159_S1/2	Head 28.2 No obvious trace on S1. Head': 098
0617	60	15.1	27	54.75	6.4	5.1	7.6	12.1	0.3	-0.33	SB6_96_2030159_S1/2	Cont' turn to stbd: Head': 157.4
0645	60	12.7	27	59.83	6.3	5.3	336	13.6	-0.14	-0.57	SB6_96_2030159_S1/2	
0700	60	11.42	27	0.15	7.2	5.7	339	12.8	-0.2	-0.79	SB6_96_2030159_S1/2	Pass Midpoint 2 on pigs ear 6
0715	60	10.03	27	0.49	6.9	5.4	352	13.1	-0.21	-0.54	SB6_96_2030159_S1/2	XBT deployed 0653 successfully
0729	60	8.81	27	0.11	6.8	5.4	26.6	12.1	0.04	-0.34	SB6_96_2030159_S1/2	
0759	60	8.86	27	55.71	5.8	5	122	10.8	0.21	0.54	SB6_96_2030159_S1/2	Recording stopped
S1 time offset 1h 46' behind GMT												
S2 time offset 1h 42' behind GMT												
Frequency 160.000 Hz												
Depth setting 140m												
Duration 6hours												
Sonobuoy channel 96												
Serial number 3067 Feb 92												

Julian Day:
Sonobuoy Number:
Serial No:

Date:
Sonobuoy Channel:

Sonobuoy Frequency:
Depth Setting:
Duration (hours):

Time (GMT)	Lat (D.DM)	Lon (D.DM)	SOW (kts)	SOG (kts)	Wind head.	Wind speed	Current East (m/s)	Current North (m/s)	Data File	Comments
831	60 11.46	27 56.15	6.4							Started recording.
838	60 11.75	27 57.06	6.1	5.3	261	11.5	-0.44	0.11	SB7_93_2031838_S1/S2	Deployed, driffing to port towards streamer, shot 17349.
918	60 12.24	28 04.15	5.9	5	256	12.2	-0.62	0.04		S1 - late weak arrival, S2 - noisy, no visible signal.
912										Guns disabled, tangled streamer.
930	60 12.36	28 06.04	5.8	5	262	11.8	-0.79	0.27		Guns off, weather coming in from North.
945	60 12.61	28 08.54	5.8	5.4	240	12.5	-0.92	0.7		Guns on board.
10	60 13.37	28 10.76	6.2	5.7	262	11.6	-0.65	0.32		
1515	60 13.46	28 13.65								6.4 h stop for gun maintainaence and turn back to line.
1513	60 11.84	27 55.57	6.5	5.2	236	10.8	-0.99	0.16		Guns about to go back out, back on pigs ear following gun failure.
1603	60 12.21	28 03.97	6.4	5.3	224.5	10.4	-0.7	1236		Both stopped recording.
		Odd Deployment stayed on line for only 45 mins, extra signal picked up at | 6h in to survey - Submarine ?								
		S1 time offset: 8h 31' 49" behind GMT								
		S2 time offset: 8h 31' 46" behind GMT								
		Julian Day: 203								
		Sonobuoy number: SB7								
		Serial number: 7516								
		Sonobuoy Channel: 93								
		Sonobuoy Freq: 158.875 MHz								
		Depth Setting: 140 m								
		Duration: 6h								

Julian Day: Date: Sheet Number:

Time	Lat		Lon		Water	Head.	SOW	SOG	EM710	EM120				EA600	SBP		ER60	OLEX	Comments
(GMT)	D	DM	D	DM	depth (m)		(kts)	(kts)	rec.	rec	Line cnt.			rec.	rec.	Data file	rec.	rec.	
000000	60	11.39	28	14.91	1639	117.5	4.1	3.5	n	y	0044	85	JC050White	y	y	203-1146_061	y	y	ecords 0m most of time due to swelling
0015	60	11.05	28	3.42	1292	119.8	4.1	3.0	n	y	0044	71	JC050White	y	y	203-1146_062	y	y	
0030	60	10.79	28	12.04	1214	119.4	3.9	3.3	n	y	0044	56	JC050White	y	y	203-1146_063	y	y	
0045	60	10.42	28	10.72	1402	1228	3.3	2.7	n	y	0044	40	JC050White	y	y	203-1146_064	y	y	
0058	60	9.98	28	90.69	1404	135.4	4.0	3.7	n	y	0044	27	JC050White	y	y	203-1146_065	y	y	SBP poor quality
0115	60	9.45	28	8.18	1313	126.9	3.8	3.2	n	y	0044	10	JC050White	y	y	203-1146_066	y	y	d new file "_066" (203-114-116_066_003) has added this part on (003) automatically, and incrementing this.
0130	60	9.05	28	6.84	1326	127.6	3.8	3.1	n	y	0045	115	JC050White	y	y	203-1146_066	y	y	
0147	60	8.63	28	5.56	1446	134	3.3	2.0	n	y	0045	98	JC050White	y	n	203-1146_066_001	y	y	
0200	60	8.38	28	4.55	1438	131	4.0	2.9	n	y	0045	84	JC050White	y	y	203-1146_066_002	y	y	
0215	60	7.99	28	3.25	155?	133	3.3	2.7	n	y	0045	69	JC050White	y	y	203-1146_066_002	y	y	
0222	60	7.82	28	2.69												Bearing 5 deg starboard to catch corner of swath gap: heading 140			
0230	60	7.49	28	1.64	1341	143	4.2	3.0	n	y	0045	55	JC050White	y	y	203-1146_066_003	y	y	h. Data looking low quality; gaps with high-amplitude negative excursions
0246	60	6.94	28	0.79	1478	140.4	3.4	2.8	n	y	0045	37	JC050White	y	y	203-1146_066_004	y	y	
0300	60	6.55	27	59.69	1457	141.8	4.1	3.3	n	y	0045	24	JC050White	y	y	203-1146_066_004	y	y	
0315	60	6.15	27	58.61	1489	141.5	4.7	3.5	n	y	0045	11	JC050White	y	y	203-1146_066_005	y	y	BP doesn't seem to work proeprly.
0330	60	5.66	27	57.27	1551	139.3	4.0	3.0	n	y	0046	115	JC050White	y	y	203-1146_066_005	y	y	
0344	60	5.28	27	26.31	1042	139.7	4.1	2.8	n	y	0046	102	JC050White	y	y	203-1146_066_006	y	y	00 only giving readings sporadically
0405	60	4.63	27	54.17	1676	138.2	3.9	3.2	n	y	0046	80	JC050White	y	y	203-1146_066_007	y	y	eather still deteriorating (Malcolm)
0416	60	4.31	27	57.23		138	4.2	3.6	n	y	0046	69	JC050White	y	y	203-1146_066_007	y	y	
0430	60	3.85	27	51.88	1690	141	4.5	3.2	n	y	0046	56	JC050White	y	y	203-1146_066_008	y	y	Swath really bad, EA600 V.Bad
0445	60	3.38	27	50.43		140	4.0	3.6	n	y	0046	40	JC050White	y	y	203-1146_066_008	y	y	no data appears; EA600 patchy, mostly records 0m
0505	60	2.88	27	48.70		135	3.9	2.9	n	y	0046	20	JC050White	n	y	203-1146_066_009	y	y	
0517	60	2.53	27	47.61	1696	140	4.0	3.0	n	y	0046	8	JC050White	y	y	203-1146_066_010	y	y	
0530	60	2.25	27	46.66	1652	140	3.7	2.8	n	y	0047	116	JC050White	n	n	203-1146_066_011	y	y	
0545	60	1.83	27	45.46	1527	146	4.0	3.0	n	y	0047	101	JC050White	n	y	203-1146_066_011	y	y	
0600	60	1.39	27	44.25	1820	149	3.9	2.4	n	y	0047	85	JC050White	n	y	203-1146_066_012	y	y	y depths but producing images again
0615	60	0.95	27	43.16	1761	146	4.0	3.1	n	y	0047	71	JC050White	n	y	203-1146_066_012	y	y	
0630	60	0.61	27	42.08	1772	146	3.2	2.2	n	y	0047	56	JC050White	n	y	203-1146_066_013	y	y	SBP working intermittently
0645	60	0.36	27	40.99		144	4.7	3.6	n	y	0047	41	JC050White	n	y	203-1146_066_014	y	y	No depths or SBP
0700	59	59.81	27	39.66		148	4.0	3.0	n	y	0047	27	JC050White	n	y	203-1146_066_014	y	y	"
0715	59	59.33	27	38.34		149	4.1	3.2	n	y	0047	11	JC050White	n	y	203-1146_066_015	y	y	BP & swath working intermittently
0729	59	58.84	27	37.01		148	3.4	2.9	n	y	0048	116	JC050White	n	y	203-1146_066_015	y	y	SBP + Swath no data
0745	59	58.40	27	35.70		147	4.5	2.9	n	y	0048	101	JC050White	n	y	203-1146_066_016	y	y	
0800	59	59.59	27	34.45		161	2.8	1.9	n	y	0048	86	JC050White	n	y	203-1146_066_016	y	y	
0815	59	57.71	27	33.71		169	3.0	2.1	n	y	0048	71	JC050White	n	y	203-1146_066_017	y	y	SBP Poor
0830	59	57.31	27	33.01	1768?	168	3.1	2.3	n	y	0048	56	JC050White	n	y	203-1146_066_017	y	y	SBP not registering
0900	59	56.56	27	31.37	2661?	168	2.9	2.0	n	y	0048	27	JC050White	n	y	203-1146_066_018	y	y	"
0930	59	56.00	27	30.98	1732	199	2.9	1.5	n	y	0049	114	JC050White	n	y	203-1146_066_020	y	y	
1001	59	55.30	27	31.09	1678	200	2.9	1.7	n	y	0049	84	JC050White	n	y	203-1146_066_023	y	y	EA600 v. poor
1030	59	56.38	27	30.92	1722	359	9.1	7.7	n	y	0049	56	JC050White	y	y	203-1146_066_025	y	y	EA600 v. poor
1100	59	59.89	27	30.90	1796	335	8.0	7.2	n	y	0049	27	JC050White	y	y	203-1146_066_027	y	y	EA600 v. poor. SBP OK
1130	60	3.30	27	31.04	1745	356	8.7	6.2	n	y	0050	114	JC050White	y	y	203-1146_066_030	y	y	
1158	60	6.33	27	31.25	1638	352	8.5	6.6	n	y	0050	87	JC050White	y	y	203-1146_066_032	y	y	
1228	60	9.52	27	31.40	1690	354	8.3	8.3	n	y	0050	57	JC050White	y	y	203-1146_066_034	y	y	SBP giving good data currently
1258	60	12.56	27	31.53	1583	358	8.2	6.4	n	y	0050	29	JC050White	y	y	203-1146_066_036	y	y	Dodgy EA600
1330	60	15.96	27	31.67	1518	353	8.2	6.3	n	y	0053	120	JC050White	y	n		y	y	SBP misbehaving
1357	60	19.13	27	31.78	1522	358	8.0	6.3	n	y	0053	91	JC050White	y	y	203-1146_1332_003	y	y	
1429	60	19.87	27	33.34	2256	221	8.9	1.6	n	y	0053	60	JC050White	y	y	203-1146_1332_005	y	y	EA600 + SBP very poor data
1459	60	19.45	27	35.62	1780	262	7.1	4.5	n	y	0053	30	JC050White	y	y	203-1146_1332_007	y	y	ditto
1530	60	18.94	27	39.92	1554	221	3.0	1.5	n	y	0054	120	JC050White	y	y	203-1146_1332_009	y	y	oat slowed down; rough weather
1600	60	18.64	27	43.08	1507	250.2	5.4	3.9	n	y	0054	94	JC050White	y	y	203-1146_1332_010	y	y	EA600 & SBP: hardly any data
1630	60	18.06	27	46.65	1452	201.6	3.7	2.2	n	y	0054	60	JC050White	y	y	203-1146_1332_012	y	y	0 sporadic; SBP: NO DATA AT ALL
1700	60	16.89	27	47.33		197.6	3.0	2.3	n	y	0054	33	JC050White	y	y	203-1146_1332_014	y	y	
1730	60	16.08	27	47.86	1515	202.6	3.0	1.5	n	y	0054	3	JC050White	y	y	203-1146_1332_016	y	y	No data on SBP120
1800	60	14.97	27	48.53	1481	196.9	2.9	1.9	n	y	0055	89	JC050White	y	y	203-1146_1332_018	y	y	No data on SBP, Ea600 noisy
1830	60	13.94	27	49.77		241.4	5.5	4.9	n	y	0055	61	JC050White	y	y	203-1146_1332_019	y	y	Ditto
1900	60	13.32	27	54.72	1800	252.2	6.4	4.3	n	y	0055	31	JC050White	y	y	203-1146_1332_021	y	y	00 as well this time round (isolated dots/noise)
1930	60	12.78	27	59.69	1832	253.1	5.5	4.7	n	y	0056	120	JC050White	y	y	203-1146_1332_023	y	y	EA600 are recording but there's no data
2000	60	12.18	28	4.98	1721	246	6.4	5.1	n	y	0056	89	JC050White	y	y	203-1146_1332_024	y	y	
2030	60	11.66	28	10.07	1470	253	5.9	4.7	n	n	0057		JC050White	y	y	203-1146_1332_025	y	y	Not recording EM120
2100	60	11.05	28	15.85	1643	001	6.8	6.6	n	n	0057		JC050White	y	y	203-1146_1332_025	y	y	
2128	60	15.48	28	13.03		020	12.3	9.1	n	y	0057	96	JC050White	y	y	204-2112_000_001	y	y	Recording EM120
2200	60	20.36	28	9.91	2499	022	12.0	8.6	n	y	0057	65	JC050White	y	y	204-2112_000_004	y	y	
2230	60	24.18	28	8.69	1351	237	5.5	3.8	n	y	0057	34	JC050White	y	y	204-2112_000_006	y	y	
2300	60	23.58	28	11.41	2984.00	239	7.5	5.1	n	y	0057	4	JC050White	y	y	204-2112_000_008	y	y	
2330	60	22.30	28	16.65	2974	242	7.5	5.6	n	y	0058	94	JC050White	y	y	204-2112_000_010	y	y	

Day: Date: Sheet Number:

Time	Lat		Lon		ADCP150	ADCP75	Techsas	Level-C	Grav.	Mag.	Wind			Comments, eg state of seismic exp.
(GMT)	D	DM	D	DM	rec.	rec.	rec.	rec.	(mgal)	(nT)	Speed	Dir.	Sea State	
0000	60	11.37	28	14.83	y	y	y	y	13234.8	n	14.8	348	choppy	
0015	60	11.04	28	13.32	y	y	y	y		n	14.4	355	choppy	
0030	60	10.79	28	12.03	y	y	y	y	13246.8	n	14.3	357	choppy	
0045	60	10.39	28	10.63	y	y	y	y		n	16.2	354	choppy	
0058	60	9.98	28	9.69	y	y	y	y	13251.9	n	13.2	353	choppy	
0114	60	9.46	28	8.21	y	y	y	y		n	12.4	3.8	choppy	
0130	60	9.05	28	6.84	y	y	y	y	13253.7	n	11.4	356.8	choppy	
0147	60	8.63	28	5.56	y	y	y	y		n	11.6	359	choppy	
0203	60	8.31	28	4.36	y	y	y	y	13243.3	n	12.6	8.7	choppy	
0215	60	7.99	28	3.25	y	y	y	y		n	11.1	5.1	choppy	
0222	60	7.82	28	2.69										Moving 5 deg starboard to catch swath gap; heading around 140 deg now
0230	60	7.51	28	1.97	y	y	y	y	13257	n	12.6	7.8	choppy	
0246	60	6.92	27	0.73	y	y	y	y		n	12.4	18.8	choppy	
0301	60	6.55	27	59.69	y	y	y	y	13257.3	n	12.6	12.8	choppy	
0315	60	6.15	27	58.61	y	y	y	y		n	19.7	14.9	choppy	
0330	60	5.66	27	57.27	y	y	y	y	13240.8	n	13.1	21.6	choppy	
0345	60	5.28	27	56.01	y	y	y	y		n	10.6	25.0	choppy	
0405	60	4.63	27	54.17	y	y	y	y	13243.2	n	12.2	25.7	5m swell	
0415	60	4.31	27	53.21	y	y	y	y		n	13.7	36	5m swell	
0430	60	3.85	27	51.88	y	y	y	y	13220.7	n	11.8	29	5m swell	
0445	60	3.38	27	50.45	y	y	y	y		n	13.8	30	5m swell	
0504	60	2.88	27	48.69	y	y	y	y	13255.5	n	15.0	38	5m swell	Swath is going bonkers, weather deteriorating
0517	60	2.52	27	47.59	y	y	y	y		n	13.4	31	5m swell	
0530	60	2.25	27	46.68	y	y	y	y	13263.6	n	13.5	26	5m swell	
0545	60	1.83	27	45.46	y	y	y	y		n	15.2	22	5m swell	
0600	60	1.39	27	44.25	y	y	y	y	13238	n	13.7	21	5m swell	
0615	60	0.95	27	43.16	y	y	y	y		n	13.6	028	5m swell	
0630	60	0.61	27	42.08	y	y	y	y		n	15.6	055	5m swell	
0645	60	0.36	27	42.99	y	y	y	y		n	13.0	031	5m swell	
0700	59	59.87	27	39.66	y	y	y	y	13229	n	13.0	036	5m swell	
0715	59	59.33	27	38.34	y	y	y	y		n	14.9	037	5m swell	
0729	59	58.83	27	36.97	y	y	y	y	13274.5	n	14.7	039	5m swell	
0745	59	58.40	27	35.70	y	y	y	y		n	15.3	041	5m swell	
0800	59	59.58	27	34.45	y	y	y	y	13226.3	n	15.6	024	5m swell	
0815	59	57.71	27	33.71	y	y	y	y		n	17.1	031	5m swell	
0830	59	57.31	27	33.01	y	y	y	y	13226.9	n	15.0	028	5m swell	
0900	59	56.56	27	31.37	y	y	y	y		n	12.0	014	frisky - gusting over 60 kts	
0930	59	56.00	27	30.98	y	y	y	y	13279.3	n	16.7	008	5m swell	
1001	59	55.30	27	31.09	y	y	y	y	13235.5	n	11.2	359	5m swell	
1031	59	56.55	27	30.90	y	y	y	y	13230.5	n	9.4	221		Turned about
1100	59	59.84	27	30.90	y	y	y	y	13244.5	n	11.4	215		
1130	60	3.30	27	31.04	y	y	y	y	13253.9	n	12.0	217	Slightly calmer still 4m swell	
1200	60	6.39	27	31.26	y	y	y	y	13254.5	n	13.1	214		
1230	60	9.89	27	31.40	y	y	y	y	13259.1	n	7.8	210		
1300	60	12.52	27	31.52	y	y	y	y	13265	n	7.1	210		
1330	60	15.92	27	31.64	y	y	y	y	13273.6	n	11.0	218		
1348	60	19.15	27	31.80	y	y	y	y	13286.1	n	6.1	233.6	appx 3.5m swell; white head on waves	
1432	60	19.85	27	33.45	y	y	y	y	13298.9	n	12.4	239		
1500	60	19.44	27	35.83	y	y	y	y	13347.2	n	14.0	315		
1530	60	18.92	27	39.98	y	y	y	y	13227.9	n	15.2	326		
1600	60	18.64	27	43.07	y	y	y	y	13324.4	n	15.6	301	up to 7m swell; ship rocking dramatically	
1630	60	18.06	27	46.65	y	y	y	y	13282.8	n	12.3	352	5-7m swell	
1700	60	16.89	27	47.33	y	y	y	y	13286.7	n	14.8	347		
1730	60	16.08	27	47.86	y	y	y	y	13280.3	n	13.0	348		
1802	60	14.90	27	48.57	y	y	y	y	13320	n	11.4	344	5m swell, weather calming slightly	
1830	60	3.94	27	49.77	y	y	y	y	13316.8	n	13.2	311	"	
1900	60	13.32	27	54.72	y	y	y	y	13321.2	n	10.6	311	5m swell, certainly not calm yet! Back to 5-7 m swell	
1930	60	12.18	27	59.69	y	y	y	y	13327.3	n	13.0	320	"	
2000	60	12.78	28	4.98	y	y	y	y	13337	n	10.0	311	~3m swell	
2030	60	11.06	28	10.07	y	y	y	y	13327.5	n	12.7	340	"	
2100	60	11.05	28	15.85	y	y	y	y	13285.8	n	1.1	152	"	
2128	60	15.48	28	13.03	y	y	y	y	13257.3	n	2.3	288		
2200	60	20.36	28	9.91	y	y	y	y	13257.7	n	2.5	311		
2230	60	24.18	28	8.69	y	y	y	y	13304.8	n	4.9	332	swelly	
2300	60	23.58	28	11.49	y	y	y	y	13298	n	6.1	332	"	
2310													>3m swell	Cannot turn to deploy equipment
2330	60	22.31	28	16.66	y	y	y	y	13313.8	n	6.7	342	5m swell	

Julian Day: Date: Sheet Number:

Time	Lat		Lon		Water	Head.	SOW	SOG	EM710	EM120				EA600	SBP		ER60	OLEX	Comments
(GMT)	D	DM	D	DM	depth (m)		(kts)	(kts)	rec.	rec	Line cnt.			rec.	rec.	Data file	rec.	rec.	
0000	60	21.41	28	21.14		d38.7	4.7	4.5	n	y	0058	64	JC050White	y	y	204-2112_000_012	y	y	EA600 data quality very poor
0031	60	21.29	28	23.02	1397	189.1	2.8	1.0	n	y	0058	33	JC050White	y	y	204-2112_000_014	y	y	
0100	60	21.32	28	23.04	1400	188.3	2.8	0.6	n	y	0058	4	JC050White	y	y	204-2112_000_017	y	y	
0132	60	21.56	28	23.06	1394	210.0	2.7	1.6	n	y	0059	91	JC050White	y	y	204-2112_000_020	y	y	Ship manouevering in to position to be ready for shooting
0158	60	21.69	28	23.08	1388	188.2	2.8	0.4	n	y	0059	66	JC050White	y	y	204-2112_000_022	y	y	
0235	60	22.33	28	22.73	1380	204.2	2.7	4.7	n	y	0059	29	JC050White	y	y	204-2112_000_026	y	y	
0300	60	22.87	28	22.34	1293	208.0	2.7	0.8	n	y	0059	2	JC050White	y	y	204-2112_000_028	y	y	
0330	60	23.46	28	21.91	1361	214.4	2.7	1.9	n	y	0060	95	JC050White	y	y	204-2112_000_031	y	y	
0400	60	24.42	28	22.96	1374	346.0	5.7	4.9	n	y	0060	65	JC050White	y	y	204-2112_000_033	y	y	
0430	60	25.70	28	23.80	1370	200	2.9	0.6	n	y	0060	35	JC050White	y	y	204-2112_000_036	y	y	SBP good data; just turning S to S7
0500	60	26.87	28	24.11	1338	349	3.1	2.5	n	y	0060	5	JC050White	y	y	204-2112_000_039	y	y	No depth output on EA600
0515	60	27.84	28	24.27	1231	349	4.0	3.9	n	y	0061	109	JC050White	y	y	204-2112_000_041	y	y	Trying to get streamer in water
0530	60	28.68	28	24.39	1219	349	4.0	3.8	n	y	0061	95	JC050White	y	y	204-2112_000_042	y	y	Part of streamer broken; electrician on the case. EA600 scale changed 500m - 2500m
0545	60	29.70	28	24.51	1203	350	3.7	3.4	n	y	0061	80	JC050White	y	y	204-2112_000_044	y	y	Electrician still working on job
0600	60	30.46	28	24.56	1129	349	3.1	3.3	n	y	0061	64	JC050White	y	y	204-2112_000_046	y	y	
0615	60	31.16	28	24.59		350	3.1	2.6	n	y	0061	48	JC050White	y	y	204-2112_000_048	y	y	
0630	60	31.75	28	24.65		350	3.1	2.4	n	y	0061	33	JC050White	y	y	204-2112_000_049	y	y	Deploying birds (prepping)
0645	60	32.28	28	24.69		350	3.7	3.7	n	y	0061	20	JC050White	y	y	204-2112_000_051	y	y	Turning to SOL - finally
0700	60	33.53	28	24.97		354	4.7	3.8	n	y	0061	3	JC050White	y	y	204-2112_000_053	y	y	"
0715	60	34.49	28	24.46	1025	032	4.9	4.9	n	y	0062	108	JC050White	y	y	204-2112_000_055	y	y	
0738	60	35.17	28	22.58	1045	075	5.1	4.7	n	y	0062	95	JC050White	y	y	204-2112_000_057	y	y	
0744	60	35.01	28	19.99		122.5	5.1	5.0	n	y	0062	80	JC050White	y	y	204-2112_000_059	y	y	3 birds / 3 compasses deployed
0800	60	34.03	28	18.40	1294	167	4.9	5.1	n	y	0062	65	JC050White	y	y	204-2112_000_060	y	y	Comms issue with compasses
0815	60	32.80	28	18.66		210	4.3	4.8	n	y	0062	49	JC050White	y	y	204-2112_000_062	y	y	All birds / compasses deployed
0830	60	31.73	28	19.76	1144	209	4.7	4.8	n	y	0062	34	JC050White	y	y	204-2112_000_063	y	y	Heading back to SOL
0846	60	30.43	28	21.17	1264	217	5.5	5.6	n	y	0062	18	JC050White	y	y	204-2112_000_065	y	y	
0859	60	29.49	28	22.57	1272	215	5.3	5.7	n	y	0062	5	JC050White	y	y	204-2112_000_066	y	y	SBP - no data
0915	60	28.21	28	24.06	1179	204	5.0	5.2	n	y	0063	109	JC050White	y	y		y	y	SBP being updated
0930	60	26.92	28	24.93	1199	197	4.9	5.2	n	y	0063	94	JC050White	y	y	205-0919_001	y	y	
0945	60	25.62	28	25.78	1271	201	5.0	5.3	n	y	0063	79	JC050White	y	y	205-0919_003	y	y	
0959	60	24.41	28	26.60	1226	200	5.7	5.0	n	y	0063	65	JC050White	y	y	205-0919_004	y	y	Running test line
1015	60	23.04	28	27.51	1383	201	5.6	5.7	n	y	0063	49	JC050White	y	y	205-0919_006	y	y	
1030	60	21.68	28	28.03	1319	191	5.7	5.7	n	y	0063	34	JC050White	y	y	205-0919_007	y	y	
1045	60	20.34	28	28.39	1387	196	5.5	5.8	n	y	0063	19	JC050White	y	y	205-0919_008	y	y	
1100	60	18.99	28	28.72	1385	193	4.8	5.3	n	y	0063	4	JC050White	y	y	205-0919_010	y	y	
1115	60	17.59	28	29.09	1409	178	5.0	5.1	n	y	0064	108	JC050White	y	y	205-0919_011	y	y	
1130	60	16.27	28	29.40		179	5.4	6.1	n	y	0064	94	JC050White	y	y	205-0919_012	y	y	
1145	60	14.92	28	29.73	1516	186	5.6	5.4	n	y	0064	79	JC050White	y	y	205-0919_014	y	y	
1200	60	13.60	28	30.05	1397	190.9	6.2	5.9	n	y	0064	65	JC050White	y	y	205-0919_015	y	y	
1230	60	10.85	28	30.41	1615	159	6.4	5.6	n	y	0064	34	JC050White	y	y	205-0919_017	n	y	ER60 not getting lat long - now fixed
1245	60	10.06	28	28.21	1463	096	6.8	5.3	n	y	0064	18	JC050White	y	y	205-0919_019	y	y	
1300	60	10.60	28	25.72	1244	038	6.1	5.6	n	y	0064	3	JC050White	y	y	205-0919_023	y	y	SBP data quality very ppor
1315	60	11.94	28	25.12	1368	359	5.4	5.0	n	y	0065	109	JC050White	y	y	205-0919_024	y	y	
1333	60	13.38	28	26.88	1443	297	4.8	5.5	n	y	0065	90	JC050White	y	y	205-0919_026	n	y	
1345	60	13.64	28	28.87	1512	268	5.1	5.4	n	y	0065	78	JC050White	y	y	205-0919_027	n	y	Doing XBT
1402	60	13.77	28	32.01	1403	265	5.4	5.2	n	y	0065	61	JC050White	y	y	205-0919_028	y	y	
1417	60	13.86	28	34.69	1653	272	5.1	5.7	n	y	0065	46	JC050White	y	y	205-0919_030	y	y	
1430	60	13.95	28	36.84	1374	267	5.5	5.3	n	y	0065	34	JC050White	y	y	205-0919_031	y	y	
1447	60	14.07	28	40.16	1249	270	5.6	5.5	n	y	0065	17	JC050White	y	y	205-0919_032	y	y	
1457	60	14.13	28	41.95	1312	272	5.4	5.6	n	y	0065	7	JC050White	y	y	205-0919_033	y	y	
1516	60	14.28	28	45.56	1222	270	5.5	5.5	n	y	0066	107	JC050White	y	y	205-0919_035	y	y	
1530	60	14.37	28	48.11	1193	275	5.6	5.6	n	y	0068	119	JC050White	y	y	205-0919_036	y	y	
1542	60	14.44	28	50.27	1133	272	5.6	5.6	n	y	0068	108	JC050White	y	y	205-0919_037	y	y	
1558	60	14.56	28	53.16	1126	274	5.3	5.6	n	y	0069	119	JC050White	y	y	205-0919_040	y	y	
1615	60	14.67	28	55.89	1043	266	5.8	5.9	n	y	0069	104	JC050White	y	y	205-0919_042	y	y	EA600 frequently displays zero meters.
1628	60	14.77	28	58.62	930	270	5.4	5.4	n	y	0069	90	JC050White	y	y	205-0919_043	y	y	
1645	60	14.87	29	1.62	1013	273	5.8	5.6	n	y	0069	73	JC050White	y	y	205-0919_045	y	y	EA600 quite patchy again
1702	60	1502.00	29	5.15		282	5.8	5.5	n	y	0069	54	JC050White	y	y	205-0919_046	y	y	Shallow ~720m
1715	60	15.15	29	7.25		273	5.8	5.0	n	y	0069	42	JC050White	y	y	205-0919_047	y	y	Deployed XBT 1703. Shallow ~710m
1730	60	14.82	29	9.99		231	5.8	5.5	n	y	0069	27	JC050White	y	y	205-0919_048	y	y	Going over seamount
1745	60	13.78	29	11.53		206	5.9	5.6	n	y	0069	12	JC050White	y	y	205-0919_050	y	y	
1800	60	12.64	29	12.90	811	207	5.6	5.7	n	y	0070	117	JC050White	y	y	205-0919_051	y	y	EA600 intermittently working
1815	60	11.46	29	14.32	812?	215	5.8	5.5	n	y	0070	103	JC050White	y	y	205-0919_053	y	y	Depths unreliable (EA600, EM120)
1828	60	10.50	29	15.46	819?	211	5.7	5.3	n	y	0070	90	JC050White	y	y	205-0919_054	y	y	
1835	60	9.84	29	16.30	873?	205	5.8	5.4	n	y	0070	82	JC050White	y	y	205-0919_055	y	y	"Rash of Pimples"
1845	60	9.17	29	17.10	810(?)	208	5.0	5.6	n	y	0070	73	JC050White	y	y	205-0919_056	y	y	EA600 not outputting for 2 mins
1900	60	9.99	29	18.54	790(?)	219	5.8	5.4	n	y	0070	58	JC050White	y	y	205-0919_057	y	y	Depths unreliable (EA600)
1915	60	6.76	29	20.02	990	218	5.6	5.4	n	y	0070	42	JC050White	y	y	205-0919_059	y	y	
1930	60	5.76	29	21.23		215	5.0	5.5	n	y	0070	29	JC050White	y	y	205-0919_060	y	y	
1945	60	4.47	29	22.78		219	5.0	5.4	n	y	0070	14	JC050White	y	y	205-0919_061	y	y	
2000	60	3.20	29	24.32	1626(?)	215	5.2	5.2	n	y	0071	117	JC050White	y	y	205-0919_063	y	y	
2015	60	2.01	29	25.77	1013	214	4.9	5.6	n	y	0071	103	JC050White	y	y	205-0919_064	y	y	
2030	60	0.78	29	27.26	1037	210	5.4	5.4	n	y	0071	87	JC050White	y	y	205-0919_066	y	y	
2045	59	59.64	29	28.65	1025	214	4.9	5.4	n	y	0071	69	JC050White	y	y		y	y	Volcanoes on EM120
2100	59	58.49	29	30.02	956	216	4.7	5.5	n	y	0071	58	JC050White	y	y	205-0919_069	y	y	
2115	59	57.68	29	32.20	1044	247	5.4	5.3	n	y	0071	43	JC050White	y	y	205-0919_071	y	y	Turning back along ridge line
2130	59	57.26	29	34.90	1168	260	5.5	5.5	n	y	0071	27	JC050White	y	y	205-0919_072	y	y	
2145	59	56.98	29	37.42	1108	247	5.6	5.4	n	y	0071	13	JC050White	y	y	205-0919_074	y	y	
2200	59	50.05	29	39.28	1033	204	4.9	5.3	n	y	0072	118	JC050White	y	y	205-0919_076	y	y	
2210																			EM 120 set to 70degrees
2215	59	54.69	29	39.48	1754	181	5.6	5.3	n	y	0072	103	JC050White	y	y	205-0919_079	y	y	EM120 set to 75degrees. EA600 displaying spurios depths - reset detection range
2229	59	53.44	29	38.99	1156	149	5.1	5.2	n	y	0072	89	JC050White	y	y	205-0919_081	y	y	
2244	59	52.64	29	36.84	1066	103	5.1	5.2	n	y	0072	74	JC050White	y	y	205-0919_083	y	y	
2303	59	52.73	29	33.59	1143	061	5.4	5.1	n	y	0072	55	JC050White	y	y	205-0919_082	y	y	
2314	59	53.41	29	32.20	1066	024	5.5	5.4	n	y	0072	43	JC050White	y	y	205-0919_084	y	y	
2330	59	54.87	29	31.74	1191	007	5.8	5.4	n	y	0072	27	JC050White	y	y	205-0919_086	y	y	
2345	59	56.06	29	31.22	1104	016	5.0	5.3	n	y	0072	13	JC050White	y	y	205-0919_087	y	y	

Day: Date: Sheet Number:

Time	Lat		Lon		ADCP150	ADCP75	Techsas	Level-C	Grav.	Mag.	Wind			Comments, eg state of seismic exp.
(GMT)	D	DM	D	DM	rec.	rec.	rec.	rec.	(mgal)	(nT)	Speed	Dir.	Sea State	
0000	60	21.41	28	21.14	Y	Y	Y	Y	13305.3	N	5.0	342.8	~4m swell	
0031	60	21.29	28	23.02	Y	Y	Y	Y	13259.9	N	3.4	337	"	
0100	60	21.32	28	23.04	Y	Y	Y	Y	13259.7	N	4.9	39.3	"	
0132	60	21.56	28	23.06	Y	Y	Y	Y	13265.1	N	4.6	35.7	"	
0200	60	21.71	28	23.09	Y	Y	Y	Y	13267.3	N	4.9	46.5	"	
0229	60	22.18	28	22.81	Y	Y	Y	Y	13262.9	N	4.2	42.6	"	
0300	60	22.87	28	22.34	Y	Y	Y	Y	13268.1	N	1.8	18.8	~3m swell	
0330	60	23.45	28	21.91	Y	Y	Y	Y	13266.1	N	3.8	36.6	"	
0400	60	24.42	28	22.96	Y	Y	Y	Y	13292	N	4.5	278	5m swell - lagging behind the weather	
0430	60	25.69	28	23.81	Y	Y	Y	Y	13321	N	2.4	092		
0500	60	26.87	28	24.11	Y	Y	Y	Y	13290.7	N	2.1	320		
0515	60	27.84	28	24.27	Y	Y	Y	Y		N	2.8	350		Attempting to put first birds out now for our runs back to S7
0530	60	28.68	28	24.39	Y	Y	Y	Y	13299.8	N	3.5	345	Getting calmer	
0544	60	29.71	28	24.51	Y	Y	Y	Y		N	3.0	11.7	Getting calmer	Scrolling block still being fixed
0600	60	30.46	28	24.56	Y	Y	Y	Y	13307.6	N	2.1	356	Quite calm	Stremer still not out yet
0615	60	31.07	28	24.58	Y	Y	Y	Y		N	1.9	028	"	"
0630	60	31.75	28	24.65	Y	Y	Y	Y	13314.2	N	2.0	041	"	Deploying birds
0645	60	32.28	28	24.69	Y	Y	Y	Y		N	3.2	034	"	Turning 3 deg/min stbd to get to SOL
0700	60	33.53	28	24.97	Y	Y	Y	Y	13327.2	N	3.4	021	"	"
0715	60	34.49	28	24.96	Y	Y	Y	Y		N	3.9	012	"	1st bird + compass deployed. Still turning
0738	60	35.17	28	22.58	Y	Y	Y	Y	13284.1	N	3.8	035	3-4m swell	
0744	60	35.02	28	20.03	Y	Y	Y	Y		N	3.1	335	3m swell	
0800	60	34.03	28	18.40	Y	Y	Y	Y	13274.1	N	2.7	352		Stremer being deployed
0815	60	32.84	28	18.63	Y	Y	Y	Y		N	2.5	030		
0830	60	31.75	28	19.75	Y	Y	Y	Y	13290	N	1.7	032		Streamer deployed
0846	60	30.41	28	21.19	Y	Y	Y	Y		N	3.5	032		Beginning soft start. One gun
0901	60	29.34	28	22.79	Y	Y	Y	Y	13301.4	N	4.3	053	Swell reducing	Techsas-Surfmet error due to restart. Seems to be working fir
0915	60	28.21	28	24.06	Y	Y	Y	Y		N	4.3	060		
0932	60	26.75	28	25.04	Y	Y	Y	Y	13280.5	N	6.1	048		Guns at full pressure. Running test line.
0945	60	25.62	28	25.79	Y	Y	Y	Y		N	7.8	045		
0949														First shotpoint for SEQ 7 (21022)
0959	60	24.40	28	26.60	Y	Y	Y	Y	13269.7	N	6.7	42	2.5m swell	
1015	60	23.00	28	27.53	Y	Y	Y	Y		N	6.3	53	2.5m swell	1hr 40mins to crossing point
1030	60	21.67	28	28.04	Y	Y	Y	Y	13264.8	N	6.7	51	2.5m swell	New SEQ8, due to geometry change
1045	60	20.37	28	28.36	Y	Y	Y	Y		N	6.3	47	2.5m swell	
1100	60	19.02	28	28.71	Y	Y	Y	Y	13267	N	6.0	51	2m swell	No chop
1115	60	17.58	28	29.08	Y	Y	Y	Y		N	8.2	62	2m swell	
1130	60	16.30	28	29.40	Y	Y	Y	Y	13250	N	8.1	56	2m swell	
1145	60	14.88	28	29.74	Y	Y	Y	Y		N	7.9	61	2m swell	
1200	60	13.64	28	30.04	Y	Y	Y	Y	13276.5	N	8.1	60	2m swell	
1229	60	10.88	28	30.43	Y	Y	Y	Y	13224.3	N	7.6	079	2m swell	
1245	60	10.05	28	28.11	Y	Y	Y	Y		N	4.8	149	2m swell	
1300	60	10.60	28	25.72	Y	Y	Y	Y	13249	N	6.4	243	2m swell	Larger swell 3-4 m occasionally comes through.
1315	60	11.88	28	25.13	Y	Y	Y	Y		N	7.9	263	2m swell	
1328	60	13.01	28	25.98	Y	Y	Y	Y	13288.6	N	10.4	308	2m swell	About to deploy sonobuoy.
1344	60	13.64	28	28.71	Y	Y	Y	Y		N	11.0	356	2m swell	
1359	60	13.74	28	31.31	Y	Y	Y	Y	13289.9	N	9.1	352	2m swell	
1417	60	13.86	28	34.69	Y	Y	Y	Y		N	9.9	351	2m swell	
1428	60	13.93	28	36.64	Y	Y	Y	Y	13301	N	10.3	351	2m swell	
1446	60	14.07	28	39.93	Y	Y	Y	Y		N	9.6	351	2m swell	
1458	60	14.14	28	42.15	Y	Y	Y	Y	13297.7	N	10.0	359	2m swell	
1516	60	14.28	28	45.56	Y	Y	Y	Y		N	10.4	343	2m swell	
1532	60	14.38	28	48.33	Y	Y	Y	Y	13300.6	N	10.6	350	2m swell	
1543	60	14.45	28	50.49	Y	Y	Y	Y		N	11.9	333	2m swell	
1600	60	14.56	28	53.14	Y	Y	Y	Y	13300.5	N	11.4	342	Few white caps	
1615	60	14.67	28	55.91	Y	Y	Y	Y		N	8.9	339	"	
1630	60	14.76	28	58.50	Y	Y	Y	Y	13310.6	N	9.4	348	"	
1645	60	14.87	29	1.39	Y	Y	Y	Y		N	7.8	342	"	
1702	60	15.02	29	5.15	Y	Y	Y	Y	13329.4	N	7.8	327	"	
1715	60	15.15	29	17.25	Y	Y	Y	Y		N	10.4	335	Getting calmer	Deployed XBT 1703
1730	60	14.81	29	10.00	Y	Y	Y	Y	13318.8	N	8.6	013	Calm	
1745	60	13.78	29	11.53	Y	Y	Y	Y		N	8.3	017	Calm	
1800	60	12.64	29	12.90	Y	Y	Y	Y	13289	N	9.4	022	A few white caps	
1815	60	11.46	29	14.32	Y	Y	Y	Y		N	9.4	019	"	
1828	60	10.50	29	15.49	Y	Y	Y	Y	13281.5	N	9.7	018	Calm	
1845	60	9.22	29	17.03	Y	Y	Y	Y		N	9.4	019	Calm	
1900	60	7.99	29	18.54	Y	Y	Y	Y	13285.6	N	11.4	020	"	
1915	60	6.76	29	20.02	Y	Y	Y	Y		N	8.6	014	"	
1930	60	5.76	29	21.23	Y	Y	Y	Y	13276.2	N	8.7	009	"	
1945	60	4.48	29	22.78	Y	Y	Y	Y		N	9.4	021.6	"	
2000	60	3.26	29	24.25	Y	Y	Y	Y	13277.1	N	8.2	032	"	
2016	60	1.92	29	25.87	Y	Y	Y	Y		N	7.0	016	Calm, 1/2 m swell	
2030	60	0.78	29	27.26	Y	Y	Y	Y	13269.8	N	8.8	11	Calm, 1/2 m swell	
2045	59	59.64	29	28.65	Y	Y	Y	Y		N	9.6	369	Calm, 1/2 m swell	
2100	59	58.49	29	30.02	Y	Y	Y	Y	13267.7	N	7.8	11	Calm, 1/2 m swell	
2115	59	57.68	29	32.20	Y	Y	Y	Y		N	7.6	341	Calm, 1/2 m swell	
2130	59	57.25	29	34.93	Y	Y	Y	Y	13290.5	N	8.1	328	Calm, 1/2 m swell	Turning. About to head back up ridge
2147	59	56.91	29	37.74	Y	Y	Y	Y		N	8.8	342	Calm, 1/2 m swell	
2202	59	55.85	29	39.40	Y	Y	Y	Y	13259.1	N	6.9	19	Calm, 1/2 m swell	
2220	59	54.18	29	39.47	Y	Y	Y	Y		N	7.0	27	Calm, 1/2 m swell	
2229	59	53.44	29	38.99	Y	Y	Y	Y	13228.9	N	5.4	49	Calm, 1/2 m swell	
2244	59	52.63	29	36.80	Y	Y	Y	Y		N	4.4	99	Calm, 1/2 m swell	
2303	59	52.73	29	33.58	Y	Y	Y	Y	13222.5	N	3.4	144	Calm, 1/2 m swell	
2315	59	53.45	29	32.17	Y	Y	Y	Y		N	5.1	227	Calm, 1/2 m swell	
2333	59	55.11	29	31.69	Y	Y	Y	Y	13249.6	N	6.9	248	Calm, 1/2 m swell	
2346	59	56.21	29	31.13	Y	Y	Y	Y		N	6.1	215	Calm, 1/2 m swell	Almost back on line

Every 30 min, for important events and not for birds during turns.

Seismic log

Line No:	1	SEQ7/8			Date:	###		Julian Day:	205	Page No:		1		Depth of Gun 1:		5m					Array Volume:
														Depth of Gun 2:		5m					355
	Vessel GPS				Bird 1		Bird 2		Bird 3		Bird 4		Bird 5					Tailbuoy GPS				
Time GMT	Lat		Long		Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Ship H'ding	CMG	Shot no.	FFID	Lat		Long		MISFIRE, Feathering angle, sea state, current, other comments
0507	60	27.3	28	24.16											350	0.2			60	27.32	28	24.16	Deploying bird + streamer
0518																							Scrolling bird not working. ETO called. Electrical fault
0637	60	32.03	28	24.68											349.5	4.3			60	31.98	28	24.66	About to continue deployment. Scrolling fixed 3deg/min turn to starboard
0715	60	34.58	28	24.32											36.8	42.3			60	34.44	28	24.50	First bird in water. Prepping the rest.
0729	60	35.22	28	22.14											84.4	77.5			60	35.11	28	22.89	Second bird successfully deployed
0745	60	34.94	28	19.77											126.8	110.5			60	35.15	28	20.86	Third bird on. 3 compasses out
0811																							Fourth bird out + las compass
0815	60	32.76	28	18.7											210	212			60	33.56	28	18.19	Final bird out in water
0830	60	31.77	28	19.71	21.6	225	15.4	227	8.8	185	6.7	268	4.8	226	210	216			60	32.66	28	18.67	Streamer diving in deployment. Speed to 5kts to help
0845	60	30.44	28	21.13	8.9	245	8.2	235	7.5	244	7.4	230	6.8	218	221	230			60	31.32	28	19.95	About to commence SS, clear from MMO, one gun only
0856																	30						After 29 missifres, first success
0900	60	29.35	28	22.76	7.4	251	7.3	235	7.1	233	7.2	248	6.1	246	222	228	44		60	31.15	28	21.39	Soft start, 100bar
0914	60	28.26	28	24.02	7.2	226	7.5	233	7.1	240	7.1	234	7.1	204	205	208	100		60	29.13	28	24.04	Full pressure
0930	60	27.62	28	24.86	7	216	6.9	239	7.1	223	6.6	222	6.7	272	202	206	165		60		28		
0931	60	26.71	28	25.07													166		60	27.66	28	25.07	Gun off for noise file. Test 2 noise file, 4 shots period
0936	60	26.31	28	25.25	7.3		7.5		7		6.8		6.9		209	204	7	6	60	27.28	28	24.56	Guns on, test line start
0939																	18	17					File - test 2.1
0943	60	25.72	28	25.74	6.3	199	6.6	184	7.2	223	6.9	200	6.9	189	200	204	21000	21000	60	26.67	28	24.97	NEW LINE
0945	60	25.37	28	25.94													21013	21011					2x missifre
0948	60	25.23	28	26.05													21022	21020	60	26.20	28	25.29	First good shot. Effective line start
1000	60	24.29	28	26.66	8.1	204	6.8	196	7	199	6.5	200	7	197	203	201	21069	20167	60	25.24	28	25.95	Channel 10, 70, 80 poor on QC due to swell (2.5m)
1015	60	23	28	27.54	7.2	217	7.3	217	6.9	213	7.5	234	6.8	210	201	204	21131	21129	60	23.92	28	26.85	
1027																	21175						Stopped to change geometry. I.e. System showing different offset to actual. New sequ
1030																	22000	22000					1st shotpoint of 8
1036	60	21.13	28	28.17	7	229	7	210	7.7	161	7.3	209	7.6	194	195	196	22017	22017	60	22.13	28	27.90	SEQUENCE 8
1044	60	20.39	28	28.36	6.4	139	6.9	192	7.1	206	7.1	203	6.9	203	193	196	22045	22045	60	20.34	28	28.37	
1100	60	19.01	28	28.7	7.3	201	7.2	196	7.3	173	7.3	197	6.5	189	192	193	22107	22107	60	20.01	28	28.50	
1115	60	17.6	29	29.07	7.3	196	6.8	240	7	207	7.1	250	7.2	194	191	194	22172	22172	60	18.60	29	28.87	Still swell noise in shots
1130	60	16.25	29	29.4	6.6	192	6.9	197	7.5	188	7.9	207	7	204	178	195	22227	22227	60	17.26	29	29.27	
1145	60	14.84	29	29.75	5.9	205	6.6	200	7	197	7.2	194	6.9	210	181		22290	22290	60	15.87	29	29.73	
1200	60	13.56	28	30.07	7.6	205	6.8	194	6.9	208	7.4	201	6.8	211	194.7	198	22356	22356	60	40.52	28	30.04	deploying XBT
1215	60	12.36	28	30.36	6.3	145	6.1	172	6.9	188	7	206	7	205	182.9	190	22406	22406	60	13.37	28	30.33	XBT deplowed, taking a while to reboot XBT computer and software
1225																							turning off line from the crossline 7 (pass 3)
1230	60	11.01	28	30.52	8	176	7.8	178	8.1	207	7.5	194	7.1	184	162.8	171	22464	22464	60	12.02	28	30.64	
1245	60	10.06	28	28.42	6.8	138	6.7	140	7.5	152	7.5	147	7.4	163	100.7	107.1	22531	22531	60	10.59	28	30.12	
1300	60	10.61	28	25.68	6.7	315	6.5	76	6.6	72	7.2	85	6.7	92	38.6	43	22596	22596	60	10.18	28	27.46	1325 ready to deply a sonobuoy at 1330
1315	60	11.86	28	25.11	7.6	9.9	6.7	40	6.3	29	7.2	358	6.4	31	2.9	10	22652	22652	60	10.92	28	25.64	
1330	60	13.14	28	26.22	7.9	350	7.4	0.6	6.8	359	6.6	9.5	7	10	303.5	322	22713	22713	60	12.21	28	25.47	
1333	60	13.31	28	26.64	8.3	348	7	344	7.2	346	7.5	2.2	7.3	357	296.7	306.3	22723	22723	60	12.46	28	25.64	back inline (pig's ear 7) pass 3
1345	60	13.64	28	28.7	9.2	307	7.7	318	7.3	321	7.2	314	6.7	329	270.3	277.1	22774	22774	60	12.28	28	28.90	sonobuoy deployed
1400	60	13.77	28	32.11	7.6	294	7	304	7.4	290	7.3	298	7.5	285	261.6	275	22846	22846	60	13.72	28	30.07	heading to pigs ear 8, the Mid-Atlantic Ridge
1415	60	13.86	28	34.4	7.1	295	6.1	293	6.9	288	7.4	293	6.4	288	270.5	286	22896	22896	60	13.81	28	32.34	
1430	60	13.94	28	36.59	6	281	6	283	7.1	293	7	285	6.6	298	268.1	276.4	22951	22951	60	13.90	28	34.82	
1446	60	14.07	28	40.29	7.3	292	6.7	289	6.9	291	7.3	286	7.3	282	270.8	280.8	23025	23025	60	14.01	28	38.22	
1459	60	14.15	28	42.16	6.8	283	6.7	294	7.5	300	7.1	293	7.1	302	266.4	279.7	23027	23027	60	14.07	28	40.06	
1516	60	14.27	28	25.57	6.3	287	6.6	294	7.1	294	7.2	294	6.7	283	278	286.5	23141	23141	60	14.19	28	45.53	
1530	60	14.37	28	48.12	6.5	285	7	183	7.3	293	7.6	298	7.4	291	276	284.5	23197	23197	60	14.27	28	46.09	
1545	60	14.47	28	50.68	6.4	299	6.7	296	7.8	297	7.2	302	7.1	293	265.89	276.7	23255	23255	60	14.38	28	48.60	Bird 4 & 5 'not communicating'
1600	60	14.55	28	53.06	5.8	273	6.6	268	6.9	293	6.5	282	6.2	278	265	282	23303	23303	60	14.47	28	51.02	
1625	60	14.76	28	58.47	5.6	270	7.2	273	7.1	277	6.8	275	6.6	268	269	280	23410	23410	60	14.72	28	56.39	
1635	60	14.91	28	59.97	5.7	277	6.7	261	7.1	266	7.6	273	7	278	273	286	23450	23450	60	14.78	28	57.87	
1645	60	14.88	29	1.73	6.05	275	7.09	268	6.56	279	7.2	275	7.01	265	269	281	23491	23491	60	14.84	28	59.65	
1700	60	14.99	29	4.75	5.6	277	6.5	269	6.7	268	6.9	266	7.12	278	268.5	276	23552	23552	60	14.95	29	2.69	XBT deployed on centre point
1721	60	15.14	29	6.34	65	201	7.3	267	6.7	272	6.3	284	7.09	279	250.8	263.1	23634	23634	60	15.13	29	6.37	Starting to turn 3 deg/min port. Vessel 3km from centre point
1731	60	14.81	29	9.98											229	239	23675	23675	60	15.18	29	8.08	
1738																210	23700	23700					TB 2km from turn point. Cables straight
1745	60	13.08	29	11.48											205.7	214.6	23729	23729	60	14.67	29	10.37	
1759	60	12.62	29	12.93	6.38	222	7.2	234	6.83	219	7.03	220	6.58	216	214	216	23791	23791	60	13.47	29	11.99	Still travelling to point 2
1815	60	11.4	29	14.39	6.95	226	6.91	339	7.05	238	6.86	232	7.07	220	209	218	23853	23853	60	12.23	29	13.44	
1828	60	10.43	29	15.55	7.2	220	2.8	206	7.2	210	7	208	7.2	225	216	225	23905	23905	60	11.23	29	14.64	
1845	60	9.12	29	17.14	7.7	217	7.4	216	7.2	211	7.3	215	6.9	216	217	219	23971	23971	60	9.94	29	16.19	
1900	60	8.04	29	18.45	7.3	195	7.6	206	7	223	6.8	218	7.3	210	221	222	24024	24024	60	8.93	29	17.37	Travelling S along the line
1915	60	6.68	29	20.1	6.7	206	7.2	215	7	204	7.2	205	6.7	200	215	235	24094	24094	60	7.55	29	19.03	
1930	60	5.68	29	21.31	6.3	208	6.4	204	7.1	208	7.3	216	6.2	223	210	215	24144	24144	60	6.55	29	20.20	Going down ridge
1945	60	4.52	29	22.71	6.7	207	6.7	211	6.7	205	6.8	208	7.4	200	219	222	24204	24204	60	5.39	29	21.62	
2000	60	3.19	29	24.34	7.4	221	6.7	264	6.7	240	6.6	231	7.5	240	214	220	24266	24266	60	4.11	29	23.11	Seamounts on QC
2015	60	1.96	29	25.08	6.8	231	6.6	226	6.8	228	6.9	229	7.5	232	217	217	24330	24330	60	2.90	29	24.58	Slight swell, heading down MAR
2030	60	0.78	29	27.25	6.8	237	6.7	228	6.6	229	7.2	231	7	220	210	217	24389	24389	60	1.70	29	26.03	
2045	59	59.59	29	28.66	7	225	7.3	232	6.5	237	7.3	230	6.9	232	209	216	24448	24448	60	0.43	29	27.49	
2100	59	58.23	29	30.41	7.4	227	7.1	233	6.3	215	7	221	7	233	226	227	24515	24515	59	59.21	29	29.06	Strating turn 3deg/min
2115	59	57.64	29	32.41	7	287	6.7	269	6.7	249	6.5	248	6.6	249	249	261	24569	24569	59	58.11	29	30.54	Good image of large seamount
2130	59	57.25	29	34.92	6.7	284	6.4	275	7.1	270	7.3	277	7.2	276	263	270	24630	24630	59	57.48	29	32.78	
2145	59	56.95	29	37.6	7.4	247	7.3	251	7.1	249	6.8	254	6	258	244	252	24689	24689	59	57.11	29	35.88	
2200	59	55.99	29	39.3	7.4	221	7.6	225	7.5	218	6.8	228	7.8	229	200	207	24747	24749	59	56.75	29	37.89	Interesting feature at 24737
2215	59	54.34	29	39.46	7.4	171	7.3	185	7	178	7.6	150	7.4	189	186	185	24809	24809	59	55.39	29	39.43	Gentle swell, many seamounts
2230	59	53.26	29	38.73	7.5	151	7.2	140	7	156	6.4	165	7.3	173	140	146	24869	24869	59	53.30	29	38.80	
2245	59	52.62	29	36.63	7.1	108	7.2	113	7.1	117	6.8	135	7	139	99	109	24928	24928	59	53.16	29	38.50	
2302	59	52.74	29	33.55	6.7	69	7.1	77	7.4	78	7.2	85	6.7	89	62	71	24997	24997	59	52.55	29	33.59	Start turn at end crossline pair
2315	59	53.43	29	32.16	7.1	29	6.9	38	6.9	43	7	43	6.6	54	22	32	25049	25049	59	52.72	29	33.66	5hrs to sonobuoy deployment
2330	59	54.82	29	31.75	6.2	9	7	5	7.1	357	7.4	12	6.5	5	5	4	25109	25109	59	53.80	29	31.75	
2345	59	56.14	29	31.17	7.2	17	7	15	6.9	15	7	12	7	3	15	23	25169	25169	59	55.06	29	31.76	Almost finished turn, 3hrs

Julian Day:
Sonobuoy Number:
Serial No:

Date:
Sonobuoy Channel:

Sonobuoy Frequency:
Depth Setting:
Duration (hours):

Time (GMT)	Lat (D.DM)	Lon (D.DM)	SOW (kts)	SOG (kts)	Wind head.	Wind speed	Current East (m/s)	Current North (m/s)	Data File	Comments
1325	60.12.85	28.25.73							SB8_96_2051333_S1/2	Started recording S1/S2
1333	60.13.33	28.26.70	5.1	5.5	319	9.8	-0.96	0.55	SB8_96_2051333_S1/2	Rapid drift to port
1349	60.13.68	28.29.54	5	5.6	354	10.1	-1.15	0.01	SB8_96_2051333_S1/2	Amplitude on S2 dropping
1358	60.13.44	28.31.24	5.2	5.6	355	9.5	-1.06	-0.08	SB8_96_2051333_S1/2	
1417	60.13.86	28.34.69	5	5.1	350.8	9.9	-0.99	0.13	SB8_96_2051333_S1/2	Signal barely visible on S2
1730	60.13.95	28.36.95	5.3	5.3	351.7	10.1	-1	0.2	SB8_96_2051333_S1/2	
1447	60.14.08	28.40.21	5	5.4	346.7	9.1	-0.93	0.1	SB8_96_2051333_S1/2	
1505	60.14.20	28.43.57	5.1	5.3	349.7	10.1	-1.11	0.1	SB8_96_2051333_S1/2	Still receiving on S1
1516	60.14.28	28.45.56	5.5	5.8	342.7	10.4	-864	0.05	SB8_96_2051333_S1/2	
1530	60.19.39	28.48.56	5.1	5.3	344.7	9.8	-1.32	0.03	SB8_96_2051333_S1/2	S1 & S2 all noise
1545	60.14.47	28.50.60	5.3	5.3	337.7	10.5	-1.33	0.16	SB8_96_2051333_S1/2	
1558	60.14.56	28.53.16	5.5	5.2	336	10.8	-1.15	0.07	SB8_96_2051333_S1/2	Possibly small amplitude signal on S1
1613	60.14.67	28.55.92	6	5.2	335	9.2	-0.91	0.14	SB8_96_2051333_S1/2	
1628	60.14.77	28.58.66	5.6	5.6	349	9.6	-0.61	0.07	SB8_96_2051333_S1/2	Shot Point No. 23426
1644	60.14.89	29.01.72	5.7	5.4	342	7.9	-0.77	0.05	SB8_96_2051333_S1/2	
1706	60.15.05	29.05.76	5.6	5.6	325	9	-1.11	0.15	SB8_96_2051333_S1/2	
1718	60.15.17	29.07.05	5.3	5	338	10.3	-959	0.11	SB8_96_2051333_S1/2	
1731	60.14.82	29.09.99	5.6	5.5	22	9.9	-0.77	-0.46	SB8_96_2051333_S1/2	
1745	60.13.78	29.11.53	6.3	5.6	17	8.3	-0.62	-0.07	SB8_96_2051333_S1/2	
1800	60.12.64	29.12.90	5.9	5.5	24	9.9	-0.21	-0.42	SB8_96_2051333_S1/2	Possilbe trace on S1
1815	60.11.23	29.14.59	6.1	5.5	12	10.2	-0.52	-0.97	SB8_96_2051333_S1/2	
1830	60.10.29	29.15.74	0.9	5.5	24	10.4	-0.44	-0.8	SB8_96_2051333_S1/2	
1845	60.09.18	29.17.09	5.7	5.5	19.7	9.9	-0.41	-0.74	SB8_96_2051333_S1/2	
1900	60.07.99	29.18.54	5.8	5.2	26	11.4	-0.45	-0.42	SB8_96_2051333_S1/2	
1915	60.06.76	29.20.02	5.5	5.4	14	8.6	-0.34	-0.72	SB8_96_2051333_S1/2	
1930	60.05.76	29.21.23	5.8	5.5	9	8.7	-0.27	-0.5	SB8_96_2051333_S1/2	
1946	60.04.28	29.23.03	5.9	5.2	26.5	8.9	-0.19	-0.47	SB8_96_2051333_S1/2	recording stopped

Time difference S1: 13h 24' 44" behind GMT
Time difference S2: 13h 24' 41" behind GMT
Frequency 160.000 Hz
Depth setting 140m
Duration 6hours
Sonobuoy channel 96
Serial number 15204
Date of manufacture = March 1992

SSQ906A(D) Sonobuoy

Julian Day: Date: Sheet Number:

Time	Lat		Lon		Water	Head.	SOW	SOG	EM710	EM120				EA600	SBP		ER60	OLEX	Comments
(GMT)	D	DM	D	DM	depth (m)		(kts)	(kts)	rec.	rec	Line cnt.			rec.	rec.	Data file	rec.	rec.	
0000	59	57.34	29	30.11	1053	36.4	5.5	5.2	N	Y	0073	117	JC050White	y	y	205-0919_089	y	y	
0018	59	58.62	29	28.29	938	39.6	5.5	5.8	N	Y	0073	99	JC050White	y	y	205-0919_091	y	y	
0030	59	59.52	29	26.99	1112	37	5.8	6.1	N	Y	0073	87	JC050White	y	y	205-0919_093	y	y	
0045	60	0.76	29	25.22	938	37.6	5.5	5.8	N	Y	0073	71	JC050White	y	y	205-0919_094	y	y	
0100	60	1.80	29	23.74	867	40.2	5.3	5.5	N	Y	0073	58	JC050White	y	y	205-0919_096	y	y	
0116	60	3.02	29	21.98	967	35.4	5.0	5.4	N	Y	0073	42	JC050White	y	y	205-0919_098	y	y	
0131	60	4.20	29	20.30	1004	38.4	5.0	5.3	N	Y	0073	26	JC050White	y	y	205-0919_100	y	y	
0146	60	5.26	29	18.78	902	39.1	4.9	5.2	N	Y	0073	12	JC050White	y	y	205-0919_101	y	y	
0201	60	6.34	29	17.25	1044	36.2	4.8	5.0	N	Y	0074	117	JC050White	y	y	205-0919_103	y	y	
0217	60	7.45	29	15.64	837	38.6	5.4	5.0	N	Y	0074	101	JC050White	y	y	205-0919_104	y	y	
0231	60	8.45	29	14.21	969	38.1	5.0	4.7	N	Y	0074	86	JC050White	y	y	205-0919_106	y	y	
0247	60	9.62	29	12.53	848	38.8	5.4	5.3	N	Y	0074	70	JC050White	y	y	205-0919_108	y	y	
0303	60	10.73	29	10.92	791	39.1	5.2	5.2	N	Y	0074	52	JC050White	y	y	205-0919_109	y	y	EM70 turned on; final number 0000-26_JC050
0315	60	11.67	29	4.58	774	40.3	5.2	5.6	Y	Y	0074	39	JC050White	y	y	205-0919_111	y	y	
0333	60	12.95	29	7.74	717	38.1	5.4	5.5	Y	Y	0074	25	JC050White	y	y	205-0919_113	y	y	EK60 ranges 38kHz; 18kHz; 70kHz - all set to 1250
0345	60	13.90	29	6.39	776	40.1	5.5	5.5	Y	Y	0074	12	JC050White	y	y	205-0919_115	y	y	
0400	60	14.84	29	5.02	710	44.2	5.3	5.2	Y	Y	0075	120	JC050White	y	y	205-0919_117	y	y	Approaching cross point ; about to deploy XBT - WHICH WAS OK
0415	60	15.99	29	3.36	877	40.6	5.1	5.3	Y	Y	0075	104	JC050White	y	y	205-0919_118	y	y	
0430	60	17.14	29	1.68	923	41.7	4.8	5.5	Y	Y	0075	88	JC050White	y	y	205-0919_120	y	y	
0445	60	18.21	29	0.15	984	41.5	4.5	5.4	Y	Y	0075	74	JC050White	y	y	205-0919_122	y	y	
0500	60	19.30	28	58.60	951	043.1	5.3	5.1	Y	Y	0075	59	JC050White	y	y	205-0919_124	y	y	
0515	60	20.44	28	56.95	891	042	5.2	5.4	Y	Y	0075	43	JC050White	y	y	205-0919_126	y	y	Techsas went down at 0501
0530	60	21.61	28	55.23	789	037	4.4	5.3	Y	Y	0075	27	JC050White	y	y	205-0919_127	y	y	Techsas OK now
0545	60	22.62	28	53.80	1002	041	4.5	4.7	Y	Y	0075	13	JC050White	y	y	205-0919_129	y	y	
0600	60	23.63	28	52.34	999	043	5.9	5.4	Y	Y	0076	118	JC050White	y	y	205-0919_131	y	y	
0615	60	24.85	28	50.50	1167	038	5.0	5.3	Y	Y	0076	102	JC050White	y	y	205-0919_133	y	y	EM170 0076 102 JC050White
0630	60	25.88	28	49.06	1276	042	4.7	5.6	Y	Y	0076	89	JC050White	y	y	205-0919_135	y	y	
0645	60	27.05	28	47.37	1312	040	4.8	5.4	Y	Y	0076	73	JC050White	y	y	205-0919_137	y	y	
0700	60	28.18	28	45.74	1160	042	4.8	5.4	Y	Y	0076	58	JC050White	y	y	205-0919_139	y	y	
0715	60	29.29	28	44.10	1100	038	4.6	5.4	Y	Y	0076	42	JC050White	y	y	205-0919_141	y	y	
0730	60	30.47	28	42.41	800	039	4.8	5.2	Y	Y	0076	26	JC050White	y	y	205-0919_143	y	y	SBP data is rather patchy
0745	60	31.54	28	40.85	697	037	4.4	5.5	Y	Y	0076	12	JC050White	y	y	205-0919_145	y	y	
0800	60	32.62	28	39.29	584	038	4.6	5.6	Y	Y	0077	118	JC050White	y	y	205-0919_147	y	y	Possible hydrothermal plume spotted on ER60
0814	60	33.67	28	37.75	653	036	4.8	5.5	Y	Y	0077	103	JC050White	y	y	205-0919_149	y	y	
0830	60	34.87	28	36.02	176	038	5.2	5.5	Y	Y	0077	88	JC050White	y	y	205-0919_152	y	y	
0848	60	36.23	28	34.04	831	038	5.3	5.6	Y	Y	0077	69	JC050White	y	y	205-0919_150	y	y	
0900	60	37.09	28	32.79	769	040	5.5	5.4	Y	Y	0077	58	JC050White	y	y	205-0919_154	y	y	
0915	60	38.21	28	31.15	722	038	5.4	5.1	Y	Y	0077	43	JC050White	y	y	205-0919_155	y	y	
0930	60	39.32	28	29.62	853	032	4.8	5.5	Y	Y	0077	28	JC050White	y	y	205-0919_159	y	y	Calm swell less than 0.5m
0945	60	40.52	28	28.19	703	034	5.1	5.7	Y	Y	0077	13	JC050White	y	y	205-0919_161	y	y	
0956																			SBP restarted
1000	60	41.75	28	27.03	589	9	4.7	5.5	Y	Y	0078	118	JC050White	y	y	206-1004	y	y	
1015	60	43.17	28	26.40	638	25	5.0	5.5	Y	Y	0078	102	JC050White	y	y	206-1004_001	y	y	Pressure falling still, SBP poor
1030	60	44.08	28	24.61	720	72	5.4	5.5	Y	Y	0078	88	JC050White	y	y	206-1004_002	y	y	
1045	60	44.24	28	21.81	850	95	5.2	5.4	Y	Y	0078	72	JC050White	y	y	206-1004_003	y	y	
1100	60	43.86	28	19.22	831	130	5.0	5.5	Y	Y	0078	58	JC050White	y	y	206-1004_004	y	y	
1115	60	42.64	28	17.91	919	176	5.4	5.9	Y	Y	0078	42	JC050White	y	y	206-1004_006	y	y	
1130	60	41.27	28	18.10	949	197	5.5	5.4	Y	Y	0078	27	JC050White	y	y	206-1004_006	y	y	
1145	60	40.28	28	19.85	887	241	5.5	5.4	Y	Y	0078	13	JC050White	y	y	206-1004_007	y	y	
1201	60	39.91	28	22.87	778	258	5.8	5.4	y	y	0079	116	JC050White	y	y	206-1004_008	y	y	
1214	60	39.63	28	25.11	823	240	5.7	5.4	y	y	0079	103	JC050White	y	y	206-1004_009	y	y	
1230	60	38.82	28	27.61	746	240	5.3	5.4	y	y	0079	88	JC050White	y	y	206-1004_010	y	y	
1245	60	38.00	28	29.89	685	221	5.5	5.5	y	y	0079	72	JC050White	y	y	206-1004_011	y	y	Sonobuoy deployed
1259	60	36.96	28	31.33	838	210	5.7	5.6	y	y	0079	59	JC050White	y	y	206-1004_012	y	y	
1316	60	35.69	28	32.99	812	208	5.8	5.5	y	y	0079	42	JC050White	y	y	206-1004_013	y	y	
1332	60	34.38	28	34.70	894	204	5.9	5.5	y	y	0079	25	JC050White	y	y	206-1004_014	y	y	
1345	60	33.45	28	36.90	802	213.5	5.8	5.6	y	y	0079	13	JC050White	y	y	206-1004_015	y	y	
1402	60	32.16	28	37.62	748	206.8	5.1	4.8	y	y	0080	115	JC050White	y	y	206-1004_016	y	y	XTD deployed
1415	60	31.32	28	38.63	726	206.1	4.8	4.5	y	y	0080	101	JC050White	y	y	206-1004_017	y	y	
1430	60	30.36	28	39.87	699	205.2	5.5	5.1	y	y	0080	88	JC050White	y	y	206-1004_018	y	y	
1446	60	29.10	28	41.50	575	205.3	5.4	5.4	y	y	0080	71	JC050White	y	y	206-1004_020	y	y	
1500	60	27.98	28	42.93	717	209.0	5.4	5.4	y	y	0080	57	JC050White	y	y	206-1004_021	y	y	
1517	60	26.63	28	44.68	916	210	5.2	5.5	y	y	0080	39	JC050White	y	y	206-1004_022	y	y	
1530	60	25.66	28	45.91	1014	211	5.3	5.4	y	y	0080	27	JC050White	y	y	206-1004_023	y	y	
1545	60	24.35	28	47.60	872	208	5.0	5.5	y	y	0080	8	JC050White	y	y	206-1004_024	y	y	
1600	60	23.48	28	48.68	1010	207	5.4	5.3	y	y	0081	119	JC050White	y	y	206-1004_024	y	y	
1615	60	22.19	28	50.31	1008	206	5.1	5.5	y	y	0081	102	JC050White	y	y	206-1004_025	y	y	
1630	60	21.09	28	51.77	996	207	4.8	5.4	y	y	0081	87	JC050White	y	y	206-1004_026	y	y	
1645	60	20.20	28	52.92	938	210	5.0	5.3	y	y	0081	75	JC050White	y	y	206-1004_027	y	y	
1658	60	18.96	28	54.51	916	208	5.2	5.5	y	y	0081	59	JC050White	y	y	206-1004_028	y	y	
1715	60	17.74	28	56.08	1007	206	4.9	5.5	y	y	0081	44	JC050White	y	y	206-1004_029	y	y	
1730	60	16.37	28	57.57	968	209	5.5	5.5	y	y	0081	28	JC050White	y	y	206-1004_029	y	y	
1745	60	15.40	28	59.13	929	217	5.5	5.4	y	y	0081	13	JC050White	y	y	206-1004_030	y	y	
1806	60	14.87	29	2.83	940	276	5.3	5.7	y	y	0082	111	JC050White	y	y	206-1004_032	y	y	
1815	60	14.98	29	4.47	773	268	5.3	5.5	y	y	0082	103	JC050White	y	y	206-1004_032	y	y	XBT launched 1814
1830	60	15.14	29	7.06	691	271	5.3	5.5	y	y	0082	89	JC050White	y	y	206-1004_033	y	y	
1843	60	15.31	29	9.77	844	271	5.2	5.5	y	y	0082	74	JC050White	y	y	206-1004_034	y	y	EM170 0032-20-JC050
1900	60	15.62	29	12.57	1027	277	5.1	5.5	y	y	0082	59	JC050White	y	y	206-1004_035	y	y	
1915	60	15.92	29	15.17	1083	276	5.3	5.4	y	y	0082	44	JC050White	y	y	206-1004_036	y	y	
1930	60	16.20	29	17.62	1208	273.1	5.6	5.7	y	y	0082	31	JC050White	y	y	206-1004_037	y	y	
1940																			SBP producing good data again
1945	60	16.55	29	20.95	1163	269.0	5.9	5.5	y	y	0082	13	JC050White	y	y	206-1004_038	y	y	SBP taken off Auto-depth. Click box "calculate delay from depth" if it goes funny.
200	60	16.94	29	24.14	1164	280	5.0	5.6	y	y	0083	115	JC050White	y	y	206-1004_040	y	y	Submarine on ER60!
2015	60	17.19	29	26.30	1269	278	5.3	5.4	y	y	0083	103	JC050White	y	y	206-1004_044	y	y	EM170 set to wide beam
2030	60	17.42	29	29.15	1138	259	5.6	5.2	y	y	0083	88	JC050White	y	y	206-1004_046	y	y	
2045	60	17.48	29	31.91	1226	265	6.1	5.4	y	y	0083	73	JC050White	y	y	206-1004_048	y	y	
					1373	264	5.5	5.6	y	y	0083	57	JC050White	y	y	206-1004_050	y	y	
2116	60	17.62	29	37.69	1451	283	5.1	5.3	y	y	0083	41	JC050White	y	y	206-1004_053	y	y	
2130	60	17.79	29	39.67	1579	282	5.0	5.4	y	y	0083	30	JC050White	y	y	206-1004_054	y	y	
2145	60	18.06	29	42.64	1576	280		5.3	y	y	0083	15	JC050White	y	y	206-1004_056	y	y	XBT launched 2139
2201	60	18.50	29	45.78	1557	310	5.5	5.5	y	y	0084	116	JC050White	y	y	206-1004_060	y	y	Turning on Pigs ear 9. New seismic SEQ 9
2215	60	19.55	29	46.85	1542	357	5.5	5.4	y	y	0084	103	JC050White	y	y	206-1004_062	y	y	
2230	60	20.91	29	46.52	1585	31	5.5	5.2	y	y	0084	88	JC050White	y	y	206-1004_064	y	y	halfway through 1st turn of pigs ear
2245	60	21.70	29	44.29	1517	87	5.5	5.5	y	y	0084	73	JC050White	y	y	206-1004_066	y	y	
2300	60	21.30	29	41.85	1553	140	5.4	5.5	y	y	0084	58	JC050White	y	y	206-1004_069	y	y	EM710 low disk space
2304																			EM710 turned off
2315	60	19.99	29	41.31	1601	186	5.6	5.3	n	y	0084	43	JC050White	y	y	206-1004_071	y	y	On crossline of pigs ear 9
2330	60	19.65	29	41.77	1584	189	5.3	5.0	n	y	0084	28	JC050White	y	y	206-1004_073	y	y	
2344	60	17.39	29	42.23	1626	185	5.0	5.6	n	y	0084	14	JC050White	y	y	206-1004_075	y	y	

Day: Date: Sheet Number:

Time	Lat		Lon		ADCP150	ADCP75	Techsas	Level-C	Grav.	Mag.	Wind			Comments, eg state of seismic exp.
(GMT)	D	DM	D	DM	rec.	rec.	rec.	rec.	(mgal)	(nT)	Speed	Dir.	Sea State	
0001	59	57.34	29	30.10	y	y	y	y	13243.1	n	3.5	195	Mild swell	
0017	59	58.56	29	28.36	y	y	y	y		n	3.4	194		
0030	59	59.52	29	26.99	y	y	y	y	13245.9	n	1.7	143		
0041	60	0.77	29	25.20	y	y	y	y		n	1.3	170		
0059	60	1.82	29	23.71	y	y	y	y	13255.7	n	3.1	195		
0115	60	2.94	29	22.10	y	y	y	y		n	3.5	187		
0130	60	4.06	29	20.50	y	y	y	y	13254.3	n	1.9	161		
0147	60	5.35	29	18.66	y	y	y	y		n	1.0	226		
0200	60	6.38	29	17.19	y	y	y	y	13258.9	n	1.3	146		
0218	60	7.51	29	15.54	y	y	y	y		n	3.5	153		
0232	60	8.52	29	14.10	y	y	y	y	13267.5	n	2.6	167		
0246	60	9.54	29	12.64	y	y	y	y		n	2.5	138		
0300	60	10.75	29	10.90	y	y	y	y	13272	n	1.6	148		
0320	60	12.12	29	8.94	y	y	y	y		n	2.9	136.1		
0333	60	12.98	29	7.71	y	y	y	y	13280.3	n	1.8	130.1		
0343	60	13.73	29	6.62	y	y	y	y		n	3.5	36.2 (?)		Log sheet says "362", which clearly is impossible!
0400	60	14.81	29	5.07	y	y	y	y	13282	n	4.2	116		Approaching cross point; about to deploy XBT.
0415	60	16.08	29	3.23	y	y	y	y		n	4.1	125		XBT profile successfully finished 0403
0430	60	17.14	29	1.69	y	y	y	y	13272.8	n	3.9	119		
0445	60	18.21	29	1.69	y	y	y	y		n	4.3	112		
0500	60	19.30	28	58.60	y	y	y	y	13278	n	2.8	121		
0515	60	20.44	28	56.95	y	y	y	y		n	4.2	114		Techsas failed at 1701. Leighton fixing it. No data logging. Working 1709
0530	60	21.44	28	55.48	y	y	y	y	13283.3	n	4.0	095		Techsas OK now
0545	60	22.61	28	53.80	y	y	y	y		n	4.2	100		
0600	60	23.63	28	52.34	y	y	y	y	13278.8	n	3.8	097		
0615	60	24.83	28	50.56	y	y	y	y		n	5.1	072		
0629	60	25.91	28	49.02	y	y	y	y	13275.1	n	5.6	067		
0644	60	27.06	28	47.36	y	y	y	y		n	5.3	080		
0700	60	28.01	28	45.97	y	y	y	y	13276.4	n	4.8	087		
0715	60	29.21	28	44.24	y	y	y	y		n	5.5	086		
0730	60	30.47	28	42.41	y	y	y	y	13290.4	n	6.0	080.4	Small swell	
0746	60	31.54	28	40.85	y	y	y	y		n	5.1	092	Small swell	
0800	60	32.52	28	39.32	y	y	y	y	13306.3	n	5.7	095	Small swell	
0814	60	33.67	28	37.75	y	y	y	y		n	6.7	099		
0830	60	34.87	28	36.02	y	y	y	y	13305.2	n	6.6	091		
0853	60	36.61	28	33.48	n	y	y	y		n	6.8	084		Leighton fixing something with ADCP 150
0906	60	37.59	28	32.07	y	y	y	y	13306.6	n	6.9	092		Techsas display has changed - can't see bottom two applications
0915	60	38.22	28	31.12	y	y	y	y		n	7.0	082		
0930	60	39.32	28	29.62	y	y	y	y	13310.6	n	7.8	93		
0945	60	40.49	28	28.23	y	y	y	y		n	7.9	88		
1000	60	41.73	28	27.04	y	y	y	y	13325.2	n	6.3	120		Starting turn to go back down ridge
1015	60	43.18	28	26.39	y	y	y	y		n	7.1	78		
1030	60	44.08	28	24.61	y	y	y	y	13308.2	n	9.1	34		
1046	60	44.24	28	21.52	y	y	y	y		n	9.1	358		
1102	60	43.73	28	18.94	y	y	y	y	13298	n	9.7	338	ll, light chop	
1115	60	42.55	28	17.90	y	y	y	y		n	9.4	310	ll, light chop	
1130	60	41.26	28	18.09	y	y	y	y	13362.7	n	10.0	290	ll, light chop	
1145	60	40.27	28	19.92	y	y	y	y		n	7.6	241	ll, light chop	
1202	60	39.90	28	22.98	y	y	y	y	13338.9	n	6.7	229.6	ll, light chop	
1216	60	39.53	28	25.50	y	y	y	y		n	6.7	236.6	ll, light chop	
1230	60	38.84	28	27.57	y	y	y	y	13338.7	n	8.0	239.5	l, slight chop	Sonobuoy deployed
1246	60	37.92	28	30.05	y	y	y	y		n	8.6	268	l, slight chop	
1300	60	36.98	28	31.34	y	y	y	y	13328.2	n	10.0	272.3	l, slight chop	
1315	60	35.72	28	32.96	y	y	y	y		n	9.7	295.2	l, slight chop	
1330	60	34.56	28	34.46	y	y	y	y	13323.7	n	9.3	310	l, slight chop	
1346	60	33.32	28	36.08	y	y	y	y		n	9.4	310	l, slight chop	
1402	60	32.08	28	37.66	y	y	y	y	13324.6	n	10.8	326	l, slight chop	
1415	60	31.32	28	38.62	y	y	y	y		n	11.2	322	l, slight chop	
1431	60	30.27	28	39.98	y	y	y	y	13322.6	n	10.8	321	l, slight chop	
1445	60	39.15	28	41.34	y	y	y	y		n	11.0	334.7	l, slight chop	
1500	60	27.96	28	42.95	y	y	y	y	13319.5	n	9.7	333	calm	All right !
1514	60	26.97	28	44.23	y	y	y	y		n	9.6	337	"	"
1530	60	25.84	28	45.67	y	y	y	y	13308.6	n	6.7	320	"	
1545	60	24.35	28	47.60	y	y	y	y		n	6.5	335		
1600	60	23.54	28	48.60	y	y	y	y	13302.1	n	7.2	340	"	
1614	60	22.43	28	50.06	y	y	y	y		n	0.5?	004		
1630	60	21.09	28	51.77	y	y	y	y	13300.8	n	7.1	341		
1645	60	20.20	28	52.92	y	y	y	y		n	12.4	359	"	
1658	60	18.96	28	54.51	y	y	y	y	13296.4	n	12.4	353		
1715	60	17.74	28	56.09	y	y	y	y		n	10.5	356	"	
1730	60	16.54	28	57.61	y	y	y	y	13294	n				
1745	60	15.40	28	59.13	y	y	y	y		n	10.0	343	"	
1806	60	14.87	29	2.83	y	y	y	y		n	10.5	301	"	
1815	60	14.98	29	4.47	y	y	y	y	13315.7	n	9.1	303	"	XBT launched 1814
1830	60	15.14	29	7.06	y	y	y	y		n	9.7	306	"	
1845	60	15.31	29	9.72	y	y	y	y	13317.8	n	10.2	294	"	
1858	60	15.63	29	12.57	y	y	y	y		n	8.5	289	"	
1915	60	15.92	29	15.17	y	y	y	y	13308.2	n	9.1	298	"	
1930	60	16.20	29	17.62	y	y	y	y		n	7.8	298	calm	
1945	60	16.58	29	20.19	y	y	y	y	13298	n	8.6	294	"	
2002	60	16.94	29	24.19	y	y	y	y		n	8.3	292	"	
2016	60	17.22	29	26.58	y	y	y	y	13305.4	n	6.5	288	"	
2032	60	17.43	29	29.52	y	y	y	y		n	7.7	297	"	
2045	60	17.48	29	31.91	y	y	y	y	13299.5	n	8.1	290		
2100	60	17.53	29	34.57	y	y	y	y		n	7.2	298		
2119	60	17.57	29	38.14	y	y	y	y	13287.9	n	6.7	278		
2130	60	17.79	29	39.67	y	y	y	y		n	7.5	278		
2145	60	18.06	29	42.64	y	y	y	y	13285.1	n	8.4	270		XBT launched 2139
2204	60	18.66	29	46.12	y	y	y	y		n	5.5	217		Turning on pigs ear 9. New seismic SEQ9
2217	60	19.80	29	46.84	y	y	y	y	13268.1	n	2.6	164		
2233	60	21.16	29	46.15	y	y	y	y	13259.2	n	4.5	102		halfway through 1st turn of pigs ear9
2247	60	21.72	29	43.81	y	y	y	y		n	6.5	61		
2300	60	21.30	29	41.85	y	y	y	y	13246.4	n	7.8	21		
2315	60	19.88	29	41.34	y	y	y	y		n	8.8	344		On crossline of pigs ear 9. Network of Level-C not working in lab-but ok in terminal room
2331	60	18.52	29	41.83	y	y	y	y	13263.5	n	7.8	351		About to deploy SVP
2344	60	17.39	29	42.23	y	y	y	y		n	8.8	352		SVP deployed successfully

Every 30 min, for important events and not for birds during turns.

Seismic log

Line No:	**1 SEQ 8/9**				**Date:**	###		**Julian Day:**	**206**	**Page No:**					Depth of Gun 1: 5m							Array Volume: 355
															Depth of Gun 2:							
	Vessel GPS				Bird 1		Bird 2		Bird 3		Bird 4		Bird 5						Tailbuoy GPS				
Time GMT	Lat		Long		Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Ship H'ding	CMG	Shot no.	FFID	Lat		Long		MISFIRE, Feathering angle, sea state, current, other comments
																	25208	25208					Ship onto line alone MAR
0000	59	57.29	29	30.18	6.9	43	6.6	19	7.3	26	7.2	21	7.2	21	38	47	25229	25229	59	38	29	31.09	
0015	59	28.66	29	28.22	9.7	58.4	7.14	50.3	7.2	61.8	7.1	55.2	7.4	60.7	55.6	43.6	25311	25311	59	58	29	29	
30	59	29.48	29	27.05	6.9	49.7	7.3	57.3	6.8	49.9	7.1	51.9	6.9	61.6	37.1	44	25352	25352	59	58	29	28	
0047	60	0.85	29	25.05	6.7	55.3	6.8	21.1	6.5	50.6	7.1	53.8	6.9	57.4	39.4	43.8	25417	25417	60	0	29	26	
0100	60	1.78	29	23.77	7.3	54.3	6.8	56.1	7	62.3	7.4	48.9	7.3	53.4	38.1	43.6	25468	25468	60	1	29	24	
0115	60	2.94	29	22.11	6.79	55.1	6.68	59.1	7.04	48.2	7.21	48.8	6.43	52.6	38	45.59	25532	25532	60	2.16	29	22.01	SEA STATE CALM LITTLE SWELL
0132	60	4.2	29	20.32	7.17	56.5	6.47	57.7	6.85	59.5	6.97	58.8	6.95	60.9	38.4	65.22	25602	25602	60	3.45	29	21.5	
0146	60	5.31	29	18.73	7.62	51.4	7.53	59.4	7.54	58.6	2.03	55.3	6.97	57	39.3	45.2	25658	25658	60	4.51	29	19.41	
0200	60	6.26	29	17.35	7.69	55.6	6.8	54.9	7.4	56	7.4	52.7	6.97	50	33.3	40.65	25711	25711	60	5.66	29	18.58	
0215	60	7.47	29	15.6	6.6	58	6.5	57	7.2	48	6.9	57	6.6	53	38.3	46.2	25783	25783	60	6.67	29	16.74	
0230	60	8.14	29	14.25	6.6	53	6.4	56	6.8	56	6.8	50	6.9	54	36.3	40.4	25836	25836	60	7.57	29	15.49	
0245	60	9.53	29	12.64	6.3	64	6.5	48	6.9	52	7.3	48	6.9	44	41.3	44.1	25902	25902	60	8.7	29	13.87	
0300	60	10.46	29	11.32	6.8	53	6.7	54	6.9	54	6.8	55	6.7	49	39.3	42.4	25950	25950	60	9.63	29	12.63	
0315	60	11.71	29	9.52	7.2	54	8.4	58	8.1	48	7.5	56	7	57	42.2	43.1	26020	26020	60	10.93	29	10.82	Ready to deploy a sonobuoy
0330	60	12.96	29	7.73	6.9	56	6.9	59	6.9	61	7.5	47	7	65	42.3	39.8	26087	26087	60	12.18	29	9.06	
0345	60	13.77	29	6.54	6.9	53	7.8	59	7.8	61	7	57	7.3	53	42.5	43.12	26130	26130	60	12.99	29	7.9	C325 sonobuoy deployed
0400	60	14.89	29	4.96	7.2	40	7.4	46	7.2	39	6.8	40	7.2	32	38	46	26186	26186	60	14.11	29	6.32	
0415	60	16.04	29	3.3	7.2	46	6.5	042	7.3	42	7.5	49	6.9	45	41	42.5	26250	26250	60	15.27	29	4.64	
0430	60	17.09	29	1.78	6.9	42	6.1	38	9.3	35	7.8	37	7	32	43	45	26309	26309	60	16.38	29	3.05	
0445	60	18.25	29	0.11	7.7	43	7.1	031	6.7	46	7.1	37	7	33	44	44	26372	26373	60	17.47	29	1.49	
0500	60	19.32	28	58.58	7	36	6.2	43	6.8	37	7.2	40	7.2	36	44	43	26425	26425	60	18.53	28	59.93	
0515	60	20.42	28	56.98	8	40	6.9	044	7.6	41	6.4	45	6.7	48	42	42	26485	26485	60	19.66	28	58.39	Heading along line on MAR
0530	60	21.6	28	55.26	7	40	6.5	41	7.1	41	7.3	41	6.8	35	42	40	26553	26553	60	20.83	28	56.65	
0545	60	22.64	28	53.76	6.3	40	6	039	7.4	312	7.1	40	7.3	44	39	43	26612	26612	60	21.85	28	55.1	
0600	60	23.61	28	52.37	5.6	37	5.6	46	6.6	43	7.2	41	6.8	43	41	45	26670	26670	60	22.81	28	53.07	
0615	60	24.82	28	50.61	6.6	40	6.5	043	6.8	37	6.8	40	7.1	41	37	43	26731	26731	60	2.01	28	51.92	
0645	60	27.08	28	47.33	6.3	37	6.4	41	6.8	37	7.3	34	7	32	41	43	26853	26853	60	26.29	28	48.66	
0700	60	28.12	28	45.83	7	37	7	039	7.1	33	6.8	37	7.3	35	41	43	26908	26908	60	27.31	28	47.14	
0715	60	29.28	28	44.13	6.7	39	6.7	34	7	36	7.3	37	7.2	34	40	39	26973	26973	60	28.53	28	45.42	
0730	60	30.38	28	42.54	6.4	32	6.4	032	8	34	6.8	39	6.8	40	40	42	27037	27037	60	29.58	28	43.84	
0745	60	31.52	28	40.88	6	32	6	39	7.2	34	7.2	42	7.4	37	38	42	27091	27091	60	30.71	28	42.14	
0800	60	32.67	28	39.17	6.9	19	6.8	035	7.4	29	7.4	29	7.2	26	37	42	27148	27148	60	31.78	28	40.5	
0815	60	33.83	28	37.52	6.9	36	6.8	35	6.9	31	6.8	35	6.8	37	37	44	27210	27210	60	32.96	28	38.76	
0830	60	34.88	28	35.96	6.1	41	5.9	035	6.2	35	6.7	36	7.1	35	38	42	27266	27266	60	34.02	28	37.23	
0845	60	36.03	28	34.32	6.6	34	7	33	7.8	35	7.1	32	6.5	34	37	45	27327	27327	60	35.16	28	35.51	
0900	60	37.3	28	32.47	7	30	7	035	7	28	6.6	34	6.5	34	38	41	27392	27392	60	36.39	28	33.72	
0915	60	38.31	28	30.99	7	38	7	38	7.3	38	7.2	38	7	38	35	41	27451	27451	60	37.44	28	32.22	
0930	60	39.37	28	29.54	6.5	26	5.8	30	6	34	7.1	34	6.8	29	34	37	27508	27508	60	38.5	28	30.69	Starting turn 3deg/min to port
0945	60	40.54	28	28.16	6	28	6.7	21	7.1	28	7.1	27	7.4	25	32	36	27568	27568	60	39.63	28	29.26	
1000	60	41.77	28	27.02	6.8	9	7.4	20	7.2	20	7.6	20	6.8	27	5	9	27629	27629	60	40.82	28	27.86	
1015	60	43.21	28	26.35	7	23	7.7	31	7.6	34	7.6	22	7	33	27	18	27698	27698	60	42.29	28	26.81	
1032	60	44.2	28	23.78	6.6	66	7.1	68	6.7	72	7.9	85	7.2	83	86	81	27761	27761	60	43.61	28	25.73	
1045	60	44.24	28	21.85	6.7	113	7.4	110	7.1	101	6.4	104	6.4	86	97	79	27807	27807	60	44.16	28	23.94	Calm. Swell 1m. Tailbuoy beginning stbd turn
1100	60	43.86	28	19.22	7.6	112	7.6	112	6.8	106	7.1	100	7.2	100	132	135	27866	27866	60	44.24	28	21.29	
1115	60	42.66	28	17.91	7.7	179	6.3	174	6.7	174	7.1	169	7.2	171	175	146	27927	27927	60	43.59	28	18.75	
1130	60	41.26	28	18.09	7.7	213	7.4	202	6.9	205	6.9	205	6.6	199	198	184	27998	27998	60	42.14	28	17.88	
1145	60	40.3	28	19.81	6.1	257	6.7	253	7.2	246	7	234	7.5	231	243	214	28048	27848	60	40.92	28	18.45	
1201	60	39.89	28	23.14	6.8	281	7.2	282	6.9	282	7.3	279	6.8	275	257	264	28124	28124	60	40.06	28	21.32	
1215	60	39.53	28	25.43	7.3	201	7.6	266	6.8	269	6.6	273	6.5	267	230	242	28169	28169	60	39	28	23	Compressor temp shut down, pressure dropped to below 75bar, shots 28168 and 28169 misfired.
1230	60	38.89	28	27.47	7.3	259	6.7	257	5.9	256	6.4	286	6.1	260	233	235	28227	28227	60	39	28	26	
1245	60	37.92	28	29.05	8	256	8.9	254	7.8	254	7.7	259	7.8	258	222	231	28288	28288	60	38	28	28	Streamer depth and orientation adjusted for sonobuoy deployment depth 7.5m, feather 20 degrees starboard
1300	60	36.98	28	31.34	7.5	226	7	230	6.8	229	7.2	239	7.3	233	213	216	28349	28349	60	37	28	30	
1315	60	35.78	28	32.91	7.4	243	7.5	231	7	242	7.2	241	7.5	242	219	219	28415	28415	60	36.59	28	31.73	At 1302 getting too straight line from the second circle, location 60 36.75, 28 31.61' shot 28359
1345	60	34.6	28	34.39	7.6	234	7	233	6.7	236	6.9	237	6.9	233	205	215	28473	28473	60	35.43	28	33.18	
1330	60	33.39	28	35.95	7.5	225	7.5	230	6.5	229	7.4	242	7	232	216	224	28536	28536	60	34.24	28	34.74	
1400	60	32.34	28	37.33	7.2	234	7.1	227	6.9	228	6.8	225	6.8	240	205	215	28589	28589	60	33.14	28	36.19	At 1410 XCTD deployed
1415	60	31.42	28	38.5	11.5	235	7.1	232	6.4	234	5.4	237	6	234	206	217	283650	283650	60	32.26	28	37.32	Bird 1 and 2 a bit deeper than usual 7 m by 3-4 m
1430	60	30.39	28	39.82	6.9	237	6.1	231	7	223	7.3	231	7	232	207	218	28712	28712	60	31.24	28	38.69	
1445	60	29.2	28	41.34	6.4	235	6.4	234	7.4	229	7.2	225	6.9	236	210	219	28772	28772	60	30.09	28	40.22	At 1424 all birds at normal depth
1500	60	2806	28	42.04	6.7	232	6.7	231	7	235	6.9	239	7.2	221	207	219	28832	28832	60	28.81	28	41.78	
1515	60	26.9	28	44.31	4.4	227	7.2	227	7.5	238	7.1	228	6.7	226	215	221	28892	28892	60	27.75	28	44.36	
1530	60	25.85	28	45.66	7.2	231	7.4	230	7.4	234	7.1	226	7.4	236	210	221	28946	28946	60	26.67	28	44.58	About 1 m swell coming from forward quarter
1545	60	16	29	2.11	7.6	212	7.5	230	7	210	6.6	208	6.4	197	208	215	29016	29016	60	25.37	28	47.42	
1600	60	23.37	28	48.84	7.1	213	7.2	218	7.1	218	7	207	7.3	202	210	220	29074	29074	60	24.24	28	47.73	Less than 1 m swell
1617	60	22.1	28	50.49	7.3	210	7.2	210	6.8	211	6.7	209	6.9	217	209	218	23139	23139	60	22.95	28	49.43	
1630	60	22.01	28	51.77	7	213	7.2	208	6.7	216	7	214	6.8	202	210	221	29191	29191	60	21.96	28	50.79	Pressure: 999 and dropping
1645	60	19.9	28	53.3	7.5	209	7.2	217	7.3	208	7.2	211	6.7	200	211	220	29259	29259	60	20.79	28	52.29	
1700	60	18.77	28	54.73	7.1	208	7.1	210	7.5	201	7	206	7.2	226	211	221	29311	29311	60	19.63	28	53.75	
1715	60	17.74	28	56.69	7.4	208	7.3	213	7.4	20	6.7	206	6.8	201	208	220	29378	29378	60	18.56	28	55.16	
1730	60	16.5	28	57.6	6.7	206	6.6	201	7.2	204	7	213	7.2	215	209	217	29427	29427	60	17.41	28	56.66	
1742																	29478	29478					Turning off line (onto mainline)
1745	60	15.36	28	59.17	7.6	211	7.5	212	6.7	268	7.1	198	6.6	202	217	227	29490	29490	60	16.26	28	58.14	
1803																	29562	29562					Stop turning, ship on line
1815	60	14.97	29	4.55	5.7	271	6.1	269	6.7	278	6.9	274	6.7	272	263	278	29607	29607	60	14.9	29	2.37	
1814																	29605	29605					Tailbuoy straight behind ship
1830	60	15.14	29	7.15	7.3	270	7.7	265	6.9	272	7.1	276	7.4	275	265	284	29671	29671	60	15.07	29	5.09	On line
1849	60	15.41	29	10.72	7.6	271	7.7	274	6.6	273	7.4	275	7.1	275	273	292	29752	29752	60	15.28	29	8.07	Going on line
1912	60	15.9	29	14.98	6.6	271	6.5	268	7.4	280	6.8	281	6.4	277	273	287	29842	29842	60	15.73	29	12.92	
1935	60	16.4	29	19.39	6.4	274	6.8	271	6.9	273	7	270	6.9	268	275	285	29941	29941	60	16.27	29	17.33	
1948	60	16.64	29	21.5	6.6	272	6.2	277	6.7	276	6.8	276	7.3	270	277	290	29980	29980	60	16.58	29	19.48	
2002	60	16.94	29	24.22	7.3	275	7.3	276	7.2	276	7.2	280	7.3	278	274	295	30038	30038	60	16.79	29	22.04	Submarine/whale
2015	60	17.2	29	26.46	7.6	285	7.2	278	7.3	285	6.9	280	7.2	280	269	286	30088	30088	60	17.04	29	###	
2030	60	17.42	29	29.32	7.2	272	6.6	272	6.9	269	6.7	273	7	275	266	274	30149	30149	60	17.34	29	27.07	
2045	60	17.48	29	32.07	6.4	272	6.7	264	6.8	262	6.6	260	7.3	269	265	273	30208	30208	60	17.5	29	29.82	1hr to next pigs ear
2100	60	17.52	29	34.64	6.2	270	6.6	267	6.8	270	7.3	270	7.2	270	272	281	30266	30266	60	17.53	29	32.65	
2115	60	17.59	29	35.52	7.5	274	7.5	271	7.2	272	6.9	278	7.5	276	267	286	30328	30328	60	17.58	29	35.3	21mins to crossing
2130	60	17.85	29	40.37	7.4	272	7.2	270	7.1	271	6.8	272	7.5	273	273	283	30393	30393	60	17.86	29	40.39	XBT deploying soon
2148	60	18.16	29	43.93	7.2	282	7.1	283	6.4	280	6.8	277	6.9	289	275	283	30465	30465	60	17.95	29	41.61	XBT deployed 2139, successful
2154	60	18.25	29	44.79											285	293	30488	30488	60	18.04	29	42.63	Starting turn 3deg/min
2155																	30492	30492					Last shot seq8
2200	60	18.48	29	45.73	7.7	296	7.7	289	7.8	294	7	285	6.9	281	309	316	32000	32000	60	18.13	29	43.75	New SEQ9
2215	60	19.59	29	46.86	6.8	9	6.8	339	7.3	331	7.3	329	6.9	321	4	9	32059	32059	60	18.65	29	46	In turn
2230	60	20.81	29	46.6	7.3	9	7.2	6	7.1	6	6.8	4	6.7	3	28	33	32114	32114	60	19.79	29	46.81	Midway through turn
2245	60	21.69	29	44.26	7.1	24	7	13	6.9	16	6.6	45	7	42	90	91	32179	32179	60	21.12	29	46.02	0.6m swell, slight chop
2300	60	21.27	29	41.8	7.1	125	7	121	6.8	115	7	100	7	108	144	147	32238	32238	60	21.68	29	43.71	Still turning
2312	60	20.19	29	41.02											191	197	32289	32289	60	21.16	29	41.75	Straight on crossline
2315	60	19.89	29	41.33	6.5	181	7.1	182	7.4	171	7.4	161	6.9	163	188	192	32300	32300	60	20.87	29	41.43	Straight, 20 to crossing
2330	60	18.62	29	41.77	7.4	190	7.4	190	7	185	7	188	7	192	191	197	32358	32358	60	19.66	29	41.38	
2345	60	17.18	29	42.29	7.1	190	7.2	190	7.1	186	6.4	194	6.7	191	197	197	32420	32420	60	18.1	29	41.91	SVP completed, 2337

Julian Day:
Sonobuoy Number:
Serial No:

Date:
Sonobuoy Channel:

Sonobuoy Frequency:
Depth Setting:
Duration (hours):

Time (GMT)	Lat D	Lat (D.DM)	Lon	Lon (D.DM)	SOW (kts)	SOG (kts)	Wind head.	Wind speed	Current East (m/s)	Current North (m/s)	Data File	Comments
0309											SB9_97_2060320_S1/S2	Sonobouy prepared for launch
0318											SB9_97_2060320_S1/S3	Started recording.
0320:30	60	11.99	29	9.13	5.7	5.6	136.1	3.3	-0.23	0.08	SB9_97_2060320_S1/S4	Deployed on Port side
0323											SB9_97_2060320_S1/S5	Gain set
0326	60	12.42	29	8.5	5.4	5.8	127	3.6	-0.12	0.24	SB9_97_2060320_S1/S6	S1/S2 died
0330	60	12.75	29	8.03	5.5						SB9_97_2060320_S1/S7	Small amplitude on S1/S2.
0345	60										SB9_97_2060320_S1/S8	Failure. No data. *
0434	60	17.51	29	1.18	5.3	6	124	3.5	-0.07	0.16	SB9_97_2060320_S1/S9	Still no traces.
0515	60	20.54	28	56.79	5.1	5.7	116	3.8	-0.02	0.52	SB9_97_2060320_S1/S10	Slightly higher amplitude on S1
0552	60	23.18	28	53.98	5	5.4	112	3.1	-0.08	0.4	SB9_97_2060320_S1/S11	Still slightly higher than background, amplitude peaks on S1
0830	60	34.95	28	35.91	4.9	5.2	94	5.8	0.32	0.44	SB9_97_2060320_S1/S12	Noise on both
0952	60	41.11	28	27.5	5	5.5	109	8.5	-0.01	0.43	SB9_97_2060320_S1/S13	Both S1/S2 stopped
* Possible that depth setting is too low (140m) for shallow water at ridge (at 700m). Also possible that port side deployment resulted in entanglement with streamer due to southerley directed current at depth (?). Plu												
				V poor deployment ~5 mins of data recorded								
Julian Day: 206												
Sonobuoy number: SB9												
Serial number: 1837												
Sonobuoy channel: 97												
Sonobuoy frequency: 160.375MHz												
Depth Setting: 140m												
Duration(hours): 6												
S1 Time difference: 3h 17' 51" Behind GMT												
S2 Time Difference 3h 17' 48" behind GMT												
SSQ906A(D) Sonobuoy												

Julian Day:
Sonobuoy Number:
Serial No:

Date:
Sonobuoy Channel:

Sonobuoy Frequency:
Depth Setting:
Duration (hours):

Time (GMT)	Lat (D.DM)	Lon (D.DM)	SOW (kts)	SOG (kts)	Wind head.	Wind speed	Current East (m/s)	Current North (m/s)	Data File	Comments
1207									SB10_2061246_S1/2	sonobuoy prepared, depth + time set
1232										streamer actively feathered to port to give maximum angle for starboard deployment, tailbuoy 15 degrees over port
12:46:30	60 37.90	28 30.12	5.7	5.4	272.1	9.5	-0.39	-0.77		S2 time deploy approximately 1 minute 23 seconds, S1 time deploy approximately 1 minute 9 seconds
1300	60 36.90	28 31.43	5.7	5.5	284	9.8	-0.22	-0.78		amplitudes on S2 diminishing, amplitudes on S1 still strong
1306	60 36.37	28 32.12	5.8	5.4	295	10.4	-0.25	-0.66		direct arrival close to sea bed reflector-shallow water approximately 707m, S2 dimming, S1 strong
1320	60 35.33	28 33.48	4.7	5.4	306	10	-0.09	-0.48		
1334	60 34.28	28 33.83	6.1	5.4	306	10.3	-0.12	-0.59		still receiving on S1
1346	60 33.32	28 36.08	6.2	5.4	308	9.4	-0.21	-0.63		
1404	60 31.98	28 37.79	4.7	4.4	324	9.7	-0.26	-0.54		S1 still good
1415	60 31.30	28 38.65	4.8	4.5	327	11.2	-0.15	-0.57		S1 still good
1430	60 30.26	28 40.01	5.7	5.1	327	10.3	-0.24	-0.41		S1 still good
1445	60 29.09	28 41.52	5.3	5.6	334	10.5	-0.41	-0.73		S1 still good
1501	60 27.89	28 43.03	4.8	5.4	337	10	-0.5	0.06		
1516	60 26.74	28 44.53	5.1	5.6	338	10.2	-0.37	-0.8		
1600	60 23.46	28 48.68	5.5	5.3	340	7.2	-0.34	-0.31		
1614	60 22.43	28 50.06	5.3	5.6	360	0.5?	-0.41	-0.69		
1630	60 21.06	28 51.81	4.8	5.4	344	6.8	-0.43	-0.56		
1645	60 20.20	28 52.92	5	5.3	359	12.4	-0.52	-0.62		
1658	60 18.96	28 54.51	4.9	5.5	354	12.9	-0.4	-0.28		
1715	60 17.74	28 56.08	4.9	5.5	353	11	-0.55	-0.58		
1730	60 16.37	28 57.57	5.4	5.5	355	11.8	-0.47	-0.48		
1745	60 15.40	28 56.13	4.8	5.4	340	10.1	-0.56	-0.36		
1753	60 14.95	29 00.70	5.4	5.5	321	10.7	-0.81	-0.25		recording on S1/S2 stopped, approximately 5 hours
Julian Day: 206										
Sonobuoy No: SB10										
Serial No: 7513										
Date: 25/7/10										
Sonobuoy channel: 93										
Sonobuoy frequency: 158.875 MHz										
Depth setting: 140m										
Duration: 6 hrs										
Ffid at start: 2892										
Time offset S1: 12 hours 45 mins 16 seconds behind GMT										
Time offset S2: 12 hours 45 minutes 20 seconds behind GMT										

Julian Day:
Sonobuoy Number:
Serial No:

Date:
Sonobuoy Channel:

Sonobuoy Frequency:
Depth Setting:
Duration (hours):

Time (GMT)	Lat (D.DM)	Lon (D.DM)	SOW (kts)	SOG (kts)	Wind head.	Wind speed	Current East (m/s)	Current North (m/s)	Data File	Comments
1754	60.14.91	29.00.70	5.4	5.5	321	10.7	-0.81	-0.25	SB11_96_2061754_S1/2	Deployed
1759	60.14.84	29.01.71	5.7						SB11_96_2061754_S1/3	Amplitude died. Sonobuoy must have drifted into streamer.
		Sonobuoy thrown in wrong way! On wrong turn thrown from stbd. On stbd turn. No data after 5 minutes.								
1824	60.15.10	29.06.29	5.7	5.5	300	8.7	-0.76	0.17	SB11_96_2061754_S1/4	
1845	60.15.38	29.10.23	5.1	5.4	293	9.5	-0.7	0.19	SB11_96_2061754_S1/5	No trace on S1/S2
1900	60.15.66	29.12.86	5.6	5.6	298	8.1	-0.82	0.26	SB11_96_2061754_S1/6	No trace on S1/S2
1915	60.15.97	29.15.55	5.7	5.3	287	8.9	-0.8	0.35	SB11_96_2061754_S1/7	No trace on S1/S2
1946	60.16.61	29.21.20	5.9	5.5	288	8.3	-0.4	0.42	SB11_96_2061754_S1/8	
2008	60.17.07	29.25.24	5.3	5.8	306	7.8	-0.72	0.12	SB11_96_2061754_S1/9	Recording stopped
Julian Day: 206										
Sonobuoy No: SB11										
Serial No: 15202										
Date: 25/7/10										
Sonobuoy channel: 96										
Sonobuoy frequency: 160.000 MHz										
Depth setting: 140m										
Duration: 6 hrs										
Ffid at start: 29524										
Time offset S1: 17 hours 53 mins 21 seconds behind GMT										
Time offset S2: 17 hours 53 minutes 19 seconds behind GMT										
SSQ906A(D) SONOBUOY										

Julian Day: Date: Sheet Number:

Time	Lat		Lon		Water	Head.	SOW	SOG	EM710	EM120				EA600	SBP		ER60	OLEX	Comments
(GMT)	D	DM	D	DM	depth (m)		(kts)	(kts)	rec.	rec	Line cnt.			rec.	rec.	Data file	rec.	rec.	
0000	60	15.98	29	42.73	1536	187	4.6	5.4	n	y	0085	118	JC050White	y	y	206_1004_078	y	y	Sea condition good
0017	60	14.48	29	41.67	1379	125	5.4	5.5	n	y	0085	100	JC050White	y	y	206_1004_080	y	y	
0029	60	14.30	d9	39.72	1289	79	4.9	5.3	n	y	0085	89	JC050White	y	y	206_1004_082	y	y	
0045	60	15.19	29	37.47	1459	21	5.0	5.5	n	y	0085	72	JC050White	y	y	206_1004_084	y	y	
0057	60	16.22	29	37.21	1370	000	4.9	5.5	n	y	0085	61	JC050White	y	y	206_1004_086	y	y	
0115	60	17.62	29	38.67	1511	299	5.3	5.5	n	y	0085	42	JC050White	y	y	206_1004_089	y	y	
0127	60	17.89	29	40.88	1630	d80	5.5	5.4	n	y	0085	30	JC050White	y	y	206_1004_091	y	y	Deploying XBT
0145	60	18.18	29	44.12	1524	278	4.8	5.7	n	y	0085	12	JC050White	y	y	206_1004_093	y	y	
0200	60	18.42	29	46.92	1592	270	5.0	5.5	n	y	0086	117	JC050White	y	y	206_1004_096	y	y	
0215	60	18.48	29	49.62	1543	266	5.5	5.5	n	y	0086	102	JC050White	y	y	206_1004_098	y	y	
0230	60	18.54	29	52.19	1507	265	5.5	5.4	n	y	0086	88	JC050White	y	y	206_1004_100	y	y	
0245	60	18.59	29	55.01	1448	272	5.2	5.5	n	y	0086	73	JC050White	y	y	206_1004_103	y	y	
0300	60	18.74	29	57.78	1504	269	5.4	5.4	n	y	0086	58	JC050White	y	y	206_1004_105	y	y	
0315	60	18.90	30	0.68	1466	272	4.8	5.5	n	y	0086	42	JC050White	y	y	206_1004_108	y	y	
0330	60	19.04	30	3.54	1522	271	5.6	5.4	n	y	0086	26	JC050White	y	y	206_1004_110	y	y	
0400	60	19.25	30	8.49	1600	273	5.1	5.4	n	y	0087	119	JC050White	y	y	206_1004_114	y	y	XBT at 0351. Success.
0415	60	19.60	30	11.17	1564	31d	4.9	5.3	n	y	0087	103	JC050White	y	y	206_1004_117	y	y	
0430	60	20.83	30	1d.08	1425	359	4.7	5.6	n	y	0087	89	JC050White	y	y	206_1004_119	y	y	
0445	60	22.24	30	11.81	14.87	033	4.8	5.6	n	y	0087	73	JC050White	y	y	206_1004_122	y	y	Sea calm. Swell ~1m
0500	60	23.00	30	9.46	1457	095	5.1	5.3	n	y	0087	57	JC050White	y	y	206_1004_124	y	y	
0515	60	22.43	30	7.21	1608	149	5.0	5.0	n	y	0087	43	JC050White	y	y	206_1004_126	y	y	
0530	60	21.25	30	6.84	1591	185	4.9	5.4	n	y	0087	29	JC050White	y	y	206_1004_128	y	y	
0545	60	19.53	30	7.15	1600	184	5.0	5.1	n	y	0087	8	JC050White	y	y	206_1004_131	y	y	XSV-01 deployed at 0554
0600	60	18.36	30	7.35	1741	179	4.8	5.1	n	y	0088	116	JC050White	y	y	206_1004_133	y	y	EA600 data choppy
0615	60	17.06	30	7.58	1643	177	4.9	5.3	n	y	0088	102	JC050White	y	y	206_1004_135	y	y	"
0630	60	15.99	30	7.17	13d4	144	5.5	5.4	n	y	0088	89	JC050White	y	y	206_1004_137	y	y	
0645	60	15.46	30	4.89	1544	086	5.3	5.0	n	y	0088	74	JC050White	y	y	206_1004_139	y	y	
0700	60	16.04	30	d.84	1537	036	4.7	5.1	n	y	0088	60	JC050White	y	y	206_1004_141	y	y	
0715	60	17.24	30	d.34	1623	003	4.5	5.1	n	y	0088	46	JC050White	y	y	206_1004_143	y	y	
0728	60	18.60	30	d.89	1586	316	4.8	5.3	n	y	0088	29	JC050White	y	y	206_1004_146	y	y	
0745	60	19.11	30	5.40	1591	374	4.5	5.3	n	y	0088	14	JC050White	y	y	206_1004_148	y	y	
0800	60	19.26	30	8.38	1594	367	5.8	5.3	n	y	0089	118	JC050White	y	y	206_1004_151	y	y	
0816	60	19.38	30	11.33	1541	270	5.4	5.5	y	y	0089	101	JC050White	y			y	y	SBP being backed up
0830	60	19.54	30	13.85	1398	270	5.3	5.4	n	y	0089	87	JC050White	y	y	206_1004_155	y	y	
0845	60	19.73	30	16.54	1561	281	4.9	5.4	n	y	0089	73	JC050White	y	y	206_1004_157	y	y	
0900	60	19.94	30	19.3d	1630	d75	5.3	5.4	n	y	0089	57	JC050White	y	y	206_1004_160	y	y	
0915	60	20.13	30	d1.99	1607	277	5.4	5.5	n	y	0089	43	JC050White	y	y	206_1004_161	y	y	
0931	60	20.34	30	d5.06	1715	279	5.4	5.2	n	y	0089	26	JC050White	y	y	206_1004_164	y	y	
0945	60	20.53	30	27.56	1819	277	5.3	5.2	n	y	0089	13	JC050White	y	y	206_1004_166	y	y	
1000	60	20.74	30	30.46	1677	276	5.3	5.6	n	y	0090	118	JC050White	y	y	206_1004_168	y	y	
1016	60	20.88	30	33.39	1697	279	4.8	5.3	n	y	0090	101	JC050White	y	y	206_1004_170	y	y	
1038	60	21.06	30	37.33	1735	276	4.6	5.4	n	y	0090	79	JC050White	y	y	206_1004_173	y	y	XBT sucessfully launched
1100	60	21.89	30	40.66	1604	337	4.6	6.0	n	y	0090	58	JC050White	y	y	206_1004_176	y	y	1st turn of pigs ear 11
1115	60	23.26	30	40.86	1705	359	5.0	5.7	n	y	0090	42	JC050White	y	y	206_1004_178	y	y	
1130	60	24.49	30	39.86	1791	50	4.6	5.3	n	y	0090	27	JC050White	y	y	206_1004_180	y	y	
1146	60	24.69	30	37.06	1759	118	5.1	5.5	n	y	0090	11	JC050White	y	y	206_1004_182	y	y	
1157	60	23.92	30	35.67	1818	165	5.1	5.8	n	y	0091	120	JC050White	y	y	206_1004_184	y	y	
1215	60	22.41	30	35.75	1717	187	5.7	5.3	n	y	0091	103	JC050White	y	y	206_1004_186	y	y	
1230	60	20.82	30	36.05	1665	187	5.1	5.2	n	y	0091	85	JC050White	y	y	206_1004_189	y	y	XBT plus 2 SVP launched
1301	60	18.14	30	36.36	1566	160	5.5	5.0	n	y	0091	50	JC050White	y	y	206_1004_192	y	y	
1315	60	17.27	30	34.50	1561	101	5.0	5.7	n	y	0091	41	JC050White	y	y	206_1004_194	y	y	
13d9	60	17.53	30	32.06	1655	047	5.8	4.7	n	y	0091	28	JC050White	y	y	206_1004_197	y	y	Increased swell
134d	60	18.49	30	31.30	1609	001	5.0	5.7	n	y	0091	16	JC050White	y	y	206_1004_198	y	y	
1401	60	20.17	30	31.37	1745	33	5.0	5.5	n	y	0092	117	JC050White	y	y	206_1004_201	y	y	
1415	60	20.89	30	33.56	1691	278	5.3	5.7	n	y	0092	102	JC050White	y	y	206_1004_203	y	y	
143d	60	21.02	30	36.70	1623	d82	5.4	5.8	n	y	0092	85	JC050White	y	y	206_1004_205	y	y	
1446	60	21.13	30	39.19	1768	276	5.2	5.4	n	y	0092	72	JC050White	y	y	206_1004_207	y	y	
1459	60	21.24	30	41.58	1791	281	5.6	5.4	n	y	0092	58	JC050White	y	y	206_1004_209	y	y	
1516	60	21.42	30	41.71	1697	283	5.8	5.6	n	y	0092	43	JC050White	y	y	206_1004_211	y	y	POSMV down, up again at 1519
1530	60	21.57	30	47.21	1633	d71	5.0	5.4	n	y	0092	28	JC050White	y	y	206_1004_213	y	y	
1545	60	21.71	30	50.18	1744	278	5.3	5.3	n	y	0092	12	JC050White	y	y	206_1004_215	y	y	
1600	60	21.86	30	52.58	1746	274	5.0	5.3	n	y	0093	118	JC050White	y	y	206_1004_218	y	y	
1615	60	22.01	30	55.47	1862	277	5.0	5.5	n	y	0093	101	JC050White	y	y	206_1004_219	y	y	
1630	60	23.16	30	58.22	1760	279	5.1	5.4	n	y	0093	87	JC050White	y	y	206_1004_221	y	y	
1645	60	22.31	31	0.81	1778	274	4.7	5.6	n	y	0093	73	JC050White	y	y	206_1004_223	y	y	
1700	60	22.44	31	3.27	1983	d72	5.1	5.7	n	y	0093	60	JC050White	y	y	206_1004_225	y	y	Swell increasing to 4m
1715	60	22.60	31	6.04	1881	271	5.4	5.5	n	y	0093	43	JC050White	y	y	206_1004_227	y	y	"
1730	60	22.71	31	8.75	1902	271	5.5	5.8	n	y	0093	d9	JC050White	y	y	206_1004_228	y	y	
1745	60	22.85	31	11.93	1826	271	5.5	5.3	n	y	0093	13	JC050White	y	y	206_1004_230	y	y	
1800	60	23.03	31	14.17	1893	d95	5.0	5.4	n	y	0094	120	JC050White	y	y	206_1004_23d	y	y	
1815	60	24.40	31	15.68	1899	344	5.9	4.9	n	y	0094	101	JC050White	y	y	206_1004_234	y	y	
1830	60	25.74	31	15.51	2000	016	5.0	5.5	n	y	0094	87	JC050White	y	y	206_1004_236	y	y	
1845	60	26.56	31	13.13	1960	067	5.4	5.4	n	y	0094	71	JC050White	y	y	206_1004_238	y	y	
1900	60	26.18	31	11.01	1924	121	5.3	5.7	n	y	0094	59	JC050White	y	y	206_1004_240	y	y	
1915	60	24.74	31	10.44	1910	201	6.4	5.6	n	y	0094	42	JC050White	y	y	206_1004_242	y	y	
1930	60	23.41	31	10.68	2147	196	4.8	5.4	n	y	0094	28	JC050White	y	y	206_1004_243	y	y	
1945	60	21.84	31	10.96	1893	192	5.4	5.3	n	y	0094	10	JC050White	y	y	206_1004_245	y	y	EA600 poor quality
2000	60	20.67	31	11.17	1833	184	5.2	5.3	n	y	0095	118	JC050White	y	y	206_1004_247	y	y	EA 600 + SBP poor quality
2015	60	19.40	31	10.42	1815	135	5.1	5.5	n	y	0095	103	JC050White	y	y	206_1004_249	y	y	
2029	60	19.07	31	7.97	1872	71	5.4	5.7	n	y	0095	88	JC050White	y	y	206_1004_251	y	y	EA600+SBP better quality
2045	60	19.94	31	5.97	1841	20	5.3	5.7	n	y	0095	75	JC050White	y	y	206_1004_252	y	y	
2101	60	21.51	31	6.01	1881	12	5.9	6.1	n	y	0095	57	JC050White	y	y	206_1004_255	y	y	
2118	60	22.98	31	6.00	1913	9	5.2	6.1	n	y	0095	39	JC050White	y	y	206_1004_257	y	y	
2130	60	24.01	31	4.21	1659	8	6.5	5.7	n	y	0095	28	JC050White	y	y	206_1004_258	y	y	
2145	60	25.42	31	3.20	1621	8	5.9	6.0	n	y	0095	12	JC050White	y	y	206_1004_260	y	y	
2200	60	26.77	31	1.99	1781	42	5.4	5.3	n	y	0096	118	JC050White	y	y	206_1004_263	y	y	Starting turn to stbd back onto mainline after pigs ear 12A
2215	60	27.41	30	59.24	1815	93	5.6	5.9	n	y	0096	102	JC050White	y	y	206_1004_264	y	y	Problem with Applanix +3 POSMV
2224	60		30																
dd30	60	29.26	30	56.38	1929	120	5.0	5.2	n	y	0096	87	JC050White	y	y	206_1004_266	y	y	
2246	60	26.28	30	54.68	1841	157	5.1	5.0	n	y	0096	72	JC050White	y	y	206_1004_268	y	y	
2300	60	25.12	30	54.02	1872	203	5.4	5.5	n	y	0096	57	JC050White	y	y	206_1004_270	y	y	
2315	60	23.94	30	55.15	1744	226	5.1	5.5	n	y	0096	43	JC050White	y	y	206_1004_272	y	y	
2331	60	22.95	30	57.52	14.53	254	5.4	5.6	n	y	0096	26	JC050White	y	y	206_1004_274	y	y	
2346	60	22.53	31	0.25	1837	266	5.2	5.6	n	y	0096	11	JC050White	y	y	206_1004_275	y	y	

Day: Date: Sheet Number:

Time	Lat		Lon		ADCP150	ADCP75	Techsas	Level-C	Grav.	Mag.	Wind			Comments, eg state of seismic exp.
(GMT)	D	DM	D	DM	rec.	rec.	rec.	rec.	(mgal)	(nT)	Speed	Dir.	Sea State	
0000	60	15.97	29	42.73	y	y	y	y	13263.1	n	9.2	359	Calm	Sea condition and seismic good
0017	60	14.50	29	41.76	y	y	y	y		n	7.8	48	Calm	
0035	60	14.53	29	38.55	y	y	y	y	13242.5	n	4.8	111	Calm	
0045	60	15.19	29	37.47	y	y	y	y		n	1.9	156	Calm	
0058	60	16.33	29	37.21	y	y	y	y	13265.5	n	2.6	220	Calm	
115	60	17.61	29	38.67	y	y	y	y		n	6.2	278	Calm	Deploy Sonobuoy
0128	60	17.90	29	40.91	y	y	y	y	13301.6	n	6.8	302	Calm	XBT deployed
0144	60	18.70	29	43.93	y	y	y	y		n	7.4	285	Calm	
0201	60	18.42	29	47.08	y	y	y	y	13300.9	n	7.6	306	Calm	
0219	60	18.49	29	50.26	y	y	y	y		n	6.9	304	Calm	
0236	60	18.55	29	53.40	y	y	y	y	13309.5	n	7.5	304	Calm	
0247	60	18.61	29	55.40	y	y	y	y		n	8.2	308	Calm	
0303	60	18.77	29	58.35	y	y	y	y	13307.7	n	7.3	306	Swell increasing	
0317	60	18.92	30	1.08	y	y	y	y		n	7.1	310		
0331	60	19.04	30	3.50	y	y	y	y	13310.6	n	7.1	308		
0400	60	19.25	30	8.49	y	y	y	y		n	6.2	310	Mild chop	XBT deployed at 0351. Success.
0415	60	9.60	30	11.17	y	y	y	y	13303.1	n	4.3	288	"	
0430	60	20.82	30	12.07	y	y	y	y		n	2.5	268	"	
0445	60	22.24	30	11.81	y	y	y	y	13274.5	n	1.5	084	<1m swell	
0500	60	23.00	30	9.46	y	y	y	y		n	3.2	073	"	
0515	60	22.43	30	7.21	y	y	y	y	13261.2	n	5.3	038	"	
0530	60	21.05	30	6.84	y	y	y	y		n	6.1	006	"	
0545	60	19.53	30	7.15	y	y	y	y	13274.9	n	5.7	007.8	"	XSV deployed at 0554
0600	60	18.37	30	7.36	y	y	y	y		n	5.2	026	<2m swell	
0615	60	17.26	30	7.53	y	y	y	y	13274.9	n	5.2	011	"	
0630	60	16.04	30	7.24	y	y	y	y		n	5.9	034	"	
0645	60	15.46	30	4.89	y	y	y	y	13238.2	n	2.1	073	"	
0700	60	16.04	30	2.84	y	y	y	y		n	0.6	072	"	
0715	60	17.24	30	2.34	y	y	y	y	13270	n	2.6	271	"	
0728	60	18.60	30	2.89	y	y	y	y		n	4.5	301	"	
0745	60	19.11	30	5.40	y	y	y	y	13301.9	n	6.0	332	"	
0803	60	19.27	30	9.00	y	y	y			n	5.8	330		XBT just deployed
0816	60	19.38	30	11.33	y	y	y		13313.5	n	5.8	343		
0830	60	19.54	30	13.85	y	y	y	y		n	5.3	335	1m swell	
0845	60	19.73	30	16.54	y	y	y	y	13307.4	n	5.4	340		
0900	60	19.94	30	19.32	y	y	y	y		n	5.1	344	2.6m swell	
0915	60	20.13	30	21.99	y	y	y	y	13321.5	n	5.3	347		
0931	60	20.35	30	25.13	y	y	y	y		n	5.4	345	2m swell	
0945	60	20.53	30	27.57	y	y	y	y	13308.7	n	5.6	345		
1000	60	20.73	30	30.32	y	y	y	y		n	5.3	349		
1015	60	20.88	30	33.12	y	y	y	y	13311.6	n	5.1	358	1m swell	
1041	60	21.07	30	37.84	y	y	y	y		n	4.6	14		XBT successfully launched
1103	60	22.17	30	40.84	y	y	y	y	13288.3	n	8.6	357	Swell increasing	1st turn of pigs ear 11
1116	60	23.38	30	40.86	y	y	y	y		n	7.1	351	1m swell	
1130	60	24.49	30	39.86	y	y	y	y	13262.4	n	8.3	313	1m swell	
1147	60	24.63	30	36.83	y	y	y	y		n	5.2	246	1m swell	
1200	60	23.77	30	35.58	y	y	y	y	13273.7	n	2.3	162	1m swell	
1215	60	22.42	30	35.76	y	y	y	y		n	2.5	136.9	1m swell	
1230	60	20.72	30	36.05	y	y	y	y	13283.5	n	4.0	136	1m swell	XBT deployed
1250	60	18.78	30	36.40	y	y	y	y		n	4.5	121	1m swell	XSV deployed x2, first failed after 300 m
1300	60	18.29	30	36.39	y	y	y	y	13273.8	n	2.6	159	1m swell	
1316	60	17.28	30	34.47	y	y	y	y		n	5.9	265	1m swell	Rolling by several meters
1330	60	17.52	30	32.08	y	y	y	y	13260.6	n	10.1	298	swell picked up 2-3 m, rolling by 5 m.	
1345	60	18.43	30	31.05	y	y	y	y		n	10.5	337	Big swell	
1400	60	20.18	30	31.41	y	y	y	y	13289.1	n	10.3	360		
1415	60	20.88	30	33.51	y	y	y	y		n	10.5	037	Huge swell	
1432	60	21.02	30	36.65	y	y	y	y	13327.3	n	11.4	35		
1447	60	21.13	30	39.38	y	y	y	y		n	11.2	23		
1500	60	21.24	30	41.61	y	y	y	y	13329.1	n	10.7	10.8		
1515	60	21.41	30	44.48	y	y	n	n		n	9.6	30		POSMV down, up again 1519
1530	60	21.57	30	47.08	y	y	y	y	13319.7	n	9.9	20		
1545	60	21.71	30	49.82	y	y	y	y		n	8.9	15	Big swell	
1600	60	21.85	30	52.56	y	y	y	y	13319.4	n	9.3	011	Small chop	
1615	60	22.02	30	55.47	y	y	y	y		n	9.8	013		
1630	60	22.16	30	58.22	y	y	y	y	13305.5	n	10.0	009		
1645	60	22.30	31	0.66	y	y	y	y		n	10.0	005		
1700	60	22.45	31	3.54	y	y	y	y	13321	n	11.2	358	2m swell, no white caps	
1715	60	22.60	31	6.04	y	y	y	y		n	10.9	355	"	
1730	60	22.71	31	8.75	y	y	y	y	13309	n	11.7	010	"	
1745	60	22.85	31	11.93	y	y	y	y		n	11.6	005	"	
1800	60	23.03	31	14.17	y	y	y	y	13312	n	11.4	350	"	
1815	60	24.40	31	15.68	y	y	y	y		n	11.9	306	"	
1830	60	25.74	31	15.51	y	y	y	y	13270.1	n	11.2	269	"	
1845	60	26.56	31	13.13	y	y	y	y		n	5.8	202	"	
1900	60	26.08	31	10.84	y	y	y	y	13256	n	9.4	118	2-3m swell	
1915	60	24.78	31	10.44	y	y	y	y		n	10.5	071	"	
1930	60	23.47	31	10.68	y	y	y	y		n	10.6	080		
1945	60	21.84	31	10.96	y	y	y	y	13270.3	n	10.6	082	"	
2001	60	20.52	31	11.21	y	y	y	y		n	10.8	077	1-3m swell	On crossline of Pig's Ear 12
2017	60	19.25	31	10.02	y	y	y	y	13242.7	n	7.4	143	1-2m swell	2nd turn of Pig's Ear 12
2031	60	19.12	31	7.65	y	y	y	y		n	10.7	229		
2045	60	19.94	31	5.97	y	y	y	y	13264.6	n	12.9	285		
2101	60	21.51	31	6.01	y	y	y	y		n	12.8	291		Cant do port turn because guns and stre
2116	60	22.83	31	5.13	y	y	y	y	13281.8	n	12.1	277		
2132	60	24.23	31	4.06	y	y	y	y		n	12.5	280		
2146	60	25.54	31	3.13	y	y	y	y	13284.4	n	11.8	292		
2200	60	26.74	31	2.04	y	y	y	y		n	11.3	274		
2216	60	27.40	30	59.14	y	y	n	y	13258.2	n	7.5	213		POSMV + applanix GPS red on Techsas
2245	60	26.35	30	54.75	y	y	y	y		n	8.7	126		Applanix + POSMV now ok
2300	60	25.12	30	54.07	y	y	y	y	13267.7	n	11.1	76	1m swell	
2315	60	23.94	30	55.15	y	y	y	y		n	11.5	59		
2333	60	22.90	30	57.77	y	y	y	y	13306	n	14.2	49	2m swell	Almost back on main line
2346	60	22.53	31	0.25	y	y	y	y		n	14.0	37		

Every 30 min, for important events and not for birds during turns.

Seismic log

Line No:	1 Sequence 9/10				Date: ###		Julian Day: 207		Page No:				Depth of Gun 1: 5 m								Array Volume: 355
													Depth of Gun 2:h								
	Vessel GPS				Bird 1		Bird 2		Bird 3		Bird 4		Bird 5					Tailbuoy GPS			
Time GMT	Lat		Long		Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Ship H'ding	CMG	Shot no.	FFID	Lat	Long	MISFIRE, Feathering angle, sea state, current, other comments
0000	60	15.93	29	42.73	6.7	213	6.7	210	6.8	47	6.8	208	6.4	208	191	199	32483	32483	60 16.98	29 42.33	Gentle swell, alright!
0015	60	14.67	29	42.13	7.3	168	7.3	178	7.5	177	7.5	187	7.5	194	138	146	32542	32542	60 15.63	29 42.78	
30	60	14.29	29	39.71	7.2	110	7.5	114	6.9	126	6.8	135	6.7	141	80	87	32601	32601	60 14.53	29 41.7	
0045	60	15.22	29	37.44	7	46	7.1	65	7.4	60	7.4	61	6.9	70	22	31	32667	32667	60 14.47	29 38.84	Ready to deploy a SONOBUOY
0100	60	16.42	29	37.21	6.5	17	6.4	20	6.8	26	7.1	33	6.9	24	359	6.9	32719	32719	60 15.46	29 37.41	Approaching inline
																					At 0113 sonobuoy deployed
0115	60	17.57	29	38.53	7.3	338	7.3	347	7.0	344	6.7	1.5	7.0	357	300	311	32782	32782	60 16.71	29 37.43	Back on inline
0128	60	17.88	29	40.77	6.6	301	6.2	309	6.8	305	7.5	312	7.4	309	280	289	32830	32830	60 17.57	29 38.82	Ready to deploy xbt
0145	60	18.17	29	44.05	7	303	7.5	302	7.4	302	7.6	299	7.5	301	281	287	32903	32903	60 17.96	29 41.99	
0200	60	18.42	29	46.79	7.1	294	6.8	296	6.8	296	6.6	303	6.9	301	282	289	32959	32959	60 18.2	29 44.79	
0216	60	18.49	29	49.83	7	296	6.9	302	6.8	300	6.8	294	7.0	296	274	280	33024	33024	60 18.37	29 47.85	Slight swell
0230	60	18.52	29	52.37	7.1	298	7.2	292	7.4	298	7.4	294	7.4	289	275	283	33080	33080	60 18.34	29 50.38	Swell noise on shot record
0245	60	18.59	29	54.92	6.3	285	6.8	291	6.6	294	6.2	294	6.8	300	270	279	33140	33140	60 18.52	29 53.16	slight swell
0300	60	18.73	29	57.79	6.4	296	6.2	297	7.1	288	7.5	298	7.7	298	271	280.6	33199	33199	60 18.62	29 55.98	slight swell
0315	60	18.88	30	0.45	6.9	299	6.5	297	7.0	298	6.9	290	7.4	293	277	286	33260	33260	60 18.78	29 58.65	Slight swell
0330	60	19.03	30	3.39	7.1	290	7.1	289	6.7	290	6.7	295	7.0	300	268	280	33321	33321	60 18.95	30 1.58	Slight swell
0348	60	19.18	30	6.72	6.2	294	6.3	295	6.7	290	7.4	291	7.4	295	271	286	33393	33393	60 19.1	30 4.78	XBT deployed at 0350
0400	60	19.25	30	8.5	6.2	275	6.8	273	7.4	278	7.3	273	6.5	269	279	286	33440	33440	60 19.18	30 6.87	
0406																	33466	33466			Ship started to turn off line
0415	60	19.62	30	11.32											319	323	33495	33495	60 19.29	30 9.3	0420 TB off line
0430	60	20.88	30	12.08											3	4	33560	33560	60 19.9	30 11.6	
0445	60	22.27	30	11.77											36	37	33622	33622	60 21.28	30 12.14	<2m swell
0508	60	22.83	30	8.06											128	129	33715	33715	60 22.95	30 10.08	Still turning
0524																	33776	33776			Start of line (SOL)
0530	60	21.2	30	6.85	6.9	177	6.7	179	6.8	175	6.7	171	6.8	183	183	194	33799	33799	60 22.2	30 7.13	
0531																	33806	33806			Streamer straight (TB behind ship)
0552																	33888	33888			
0558	60	18.59	30	7.37	6.3	175	6.5	179	6.5	175	6.6	179	7.3	182	181	192	33913	33913	60 19.03	30 7.24	
0618	60	16.98	30	7.58	7	180	7.1	175	7.2	180	7.0	182	7.0	181	188	197	33990	33990	60 18.02	30 7.5	
0620																	33995	33995			Started turn, off line
0630	60	19.9	30	7.02	6.5	156	6.9	157	7.5	155	7.6	168	7.5	108	136	148	34041	34041	60 16.87	30 7.65	
0712	60	17.31	30	2.34	6.7	24.1	6.5	27.01	6.1	23.93	6.6	36.3	7.0	39.16	358.9	3.88	34212	34212	60 16.31	30 2.8	Streamer coming straight
0725	60	18.41	30	2.65	7.5	4.38	6.8	5.71	6.7	19.94	6.5	12.24	7.2	19.16	328.5	337.4	34264	34264	60 17.43	30 2.49	Turning to port
0737																	34308	34308			Vessel back on line
0745	60	19.12	30	5.7	5.9	272	5.7	274	6.6	275	7.2	286	7.4	292	272	288	34344	34344	60 18.89	30 3.72	
075	60	19.2	30	7.34	6.5	295	6.5	297	7.5	287	7.3	295	6.7	295	269	298	34377	34377	60 19.14	30 5.26	Crossed + point. XBT deployed
0800	60	19.25	30	8.55	6.6	276	6.5	279	7.4	273	7.2	270	6.6	268	279	290	34401	34401	60 19.2	30 6.42	2hrs 45' to next crossing
0815	60	19.37	30	11.25	6.5	272	7	270	7.2	271	7.4	272	6.8	270	273	287	34460	34460	60 19.33	30 9.11	
0830	60	19.54	30	13.82	6.8	272	7.2	279	7.1	273	7.0	278	6.9	270	271	280	34519	34519	60 19.46	30 11.7	
0845	60	19.76	30	16.95	6.7	276	7.2	278	7.1	275	7.4	277	6.9	279	280	287	34580	34580	60 19.68	30 14.97	Slight swell, 2hrs to cross
0900	60	19.94	30	19.4	7.4	271	7.5	277	7.3	274	6.8	277	6.7	271	272	287	34639	34639	60 19.81	30 17.3	XBT at 10.30ish
0915	60	20.14	30	22.21	6.4	277	6.5	276	6.7	275	6.8	278	6.7	277	278	300	34700	34700	60 20	30 20.18	
0930	60	20.33	30	24.86	6.9	280	6.8	279	6.9	278	6.7	277	6.9	280	276	284	34760	34760	60 20.19	30 22.83	
0945	60	20.54	30	27.6	7	280	7.1	274	6.9	275	7.2	276	6.8	277	275	286	34820	34820	60 20.36	30 25.54	
1000	60	20.74	30	30.43	7	282	6.8	280	7.1	286	6.8	281	7.0	277	277	287	34880	34880	60 20.55	30 28.24	2m swell
1015	60	20.88	30	33.18	6.7	277	6.8	276	7.4	278	7.0	280	6.8	276	273	279	34940	34940	60 20.76	30 30.97	
1045	60	21.11	30	38.61	7.3	273	7.2	265	7.1	277	7.3	275	7.2	274	279	289	35060	35060	60 21	30 36.48	XBT at 1031, v calm swells
1050																	35081	35081			turning offline to pigs ear
1100	60	21.82	30	38.98	7.1	345	6.8	342	7.1	324	6.7	320	7.0	312	336	300	35120	35120	60 21.22	30 39.16	
1112	60	23.29	30	40.86	7.2	2	7.1	1	6.8	7	6.7	4	6.8	340	1	7	35180	35180	60 22.23	30 40.69	
1130	60	24.44	30	39.96	7.1	52	6.8	45	6.9	39	7.1	44	7.1	27	49	300	35238	35238	60 23.53	30 40.78	
1144																	35296	35296			swell on tail birds
1145	60	24.74	30	37.33	6.9	115	7.1	100	6.4	97	6.7	91	6.8	93	110	300	35302	35302	60 24.59	30 39.32	
1200	60	23.84	30	35.62	7.1	173	6.9	125	7.0	115	6.9	142	7.3	149	168.3	172.7	35361	35361	60 24.62	30 36.94	
1215	60	22.37	30	35.76	6.8	205	6.7	215	6.4	208	7.3	205	7.4	174	286	197	35425	35425	60 23.41	30 35.6	
1230	60	20.9	30	35.75	6.9	202	6.8	210	6.5	208	7.1	201	6.9	198	286	190	35486	35486	60 22	30 35.8	
1245	60	19.43	30	36.28	7.1	200	7.1	190	6.7	200	7.0	210	6.7	207	291	199	35553	35553	60 20.45	30 36	shot number 35538
1300	60	18.14	30	36.31	8	208	7.4	214	6.7	200	7.4	200	6.6	197	260	169	35609	35609	60 19.16	30 36.27	swell noise (about 1.8 m)
1315	60	17.28	30	34.59	6.7	237	6.5	167	6.3	146	6.9	161	6.6	175	102	115	35663	35663	60 17.96	30 36.03	1 XBt deployed at 12:30
1330	60	17.51	30	32.11	7.3	82	7.4	88	6.8	96	6.7	102	6.8	106	48	56	35720	35720	60 17.26	30 34.12	2SVP deployed, 1 failed
1345	60	18.75	30	31.04	6.1	25	6.5	27	6.2	44	6.5	40	6.6	45	355	5	35783	35783	60 17.82	30 31.58	Swell noise 35677 to 35720
1401	60	20.16	30	31.37	7.1	316	6.5	8	6.0	23	6.2	10	7.3	25	330	359	35845	35845	60 19.27	30 31.54	Swell (heave) about 5 m at 13:23
1406	60		30														35880	35880	60	30	Near trace gather noisy as it has ever been, sonobuoy deployed
1415	60	20.89	30	33.74	7.4	310	7.1	310	7.3	317	7.3	335	7.4	34	279	279	35902	35902	60 20.48	30 32.04	Ship back on line
1424	60	20.96	30	35.15	7.7	297	7.8	292	8.0	292	7.2	302	7.0	300	278	283	35935	35935	60 20.78	30 33.15	Tailbuoy is straight

Every 30 min, for important events and not for birds during turns.

Seismic log

1430	60	21.01	3k	36.35	7.6	290	7.4	300	7.6	292	7.5	300	7.1	290	277	285	35963	35963	67	20.9	3k	34.33	XBT deployed at 14:27
1445	67	21.13	3k	39.01	7.3	289	7.2	298	6.7	291	7.1	293	6.9	296	278	285	36021	36021	67	21.03	3k	37	Increasing swells errors on bird 4 & 5, data quality good
1500	67	21.25	3k	41.73	6.7	298	6.8	288	6.9	293	7.4	296	7.0	299	283	288	36080	36080	67	21.14	3k	39.65	
1509																	36119	36119					POSMV stopped working
1515	67	21.42	3k	44.71	6.6	298	6.4	301	6.5	300	7.3	300	7.1	287	283	289	36149	36149	67	21.22	3k	41.35	
1518																	36154	36154					POSMV started working
1530	67	21.5	3k	47.21	6.1	306	6.5	303	6.9	299	7.2	289	7.1	293	271	282	36200	36200	67	21.3	3k	45.45	Tailbuoy gyro input malfunctioning
1545	67	21.7	3k	50.04	6.4	293	6.6	290	7.0	287	7.2	293	7.3	291	278	288	36260	36260	67	21.35	3k	47.53	Tailbuoy GPS not reliable
1600	67	21.86	3k	52.99	6.4	267	6.4	262	7.0	272	6.6	265	6.6	271	280	289	36320	36320	67	21.5	3k	50.6	
1607	67	21.94	3k	54.27													36348	36348	67		3k		36348/49 misfired
1615	67	22	3k	55.43	6.9	274	7	273	7.2	276	7.0	280	7.0	278	273	284	36383	36383	67	21.55	3k	53.29	Low satellites
1631	67	22.09	3k	58.49	7	292	6.9	271	6.7	274	7.0	269	7.2	279	274	280	36446	36446	67	22.05	3k	56.23	
1645	67	22.32	31	1.17	7.2	276	6.6	276	6.6	272	7.1	278	7.0	268	270	280	36495	36495	60	22.15	3k	59.04	
1700	67	22.44	31	3.43	6.5	271	6.6	282	6.9	285	7.4	273	7.0	278	271	282	36560	36560	60	22.4	31	1.41	Calm, no white caps
1715	60	22.6	31	6.23	6.6	265	7	267	7.5	271	7.4	276	6.8	274	270	283	36620	36620	60	22.54	31	1.14	2-3m swell
1730	60	22.72	31	9.02	6.9	266	6.6	272	6.8	273	6.4	267	7.0	274	272	282	36680	36680	60	22.66	31	6.94	1153m from croxx point
1747	60	22.86	31	12.4	7.2	270	7.4	259	6.9	256	6.6	271	7.0	268	275	286	36756	36756	60	22.8	31	10.6	XBT at 36708, cross point (1738 -36714)
1753																	36773	36773					2-3m swell. Started turn offline 3deg/stbd
1756	60	23	31	14.08											294		36784	36784					End of line. Stopped to try and fix tail buoy GPS. Stopped firing
		START OF LINE 1 SEQUENCE 10																					
1813	60	24.51	31	15.71	7.3	6	6.1	6	6.8	7.8	6.7	352	6.6	351	351	10.7	40010	40010	60	23.33	31	15.01	Tailbuoy not fixed.
1819	60	24.79	31	15.73	6.7	1.2	7.3	15.9	6.5	17.4	6.2	2	6.6	356	354	13.4	40022	40022	60	23.52	31	15.19	First good shot point
1830	60	25.76	31	15.49	11.9	2.1	9	337	7.5	3.6	7.5	17	6.5	6	19	33.4	40070	40070	60	24.45	31	15.29	
1845	60	26.54	31	13.43	9.2	63	7.2	58	6.8	50	6.7	37	6.2	27	66	84	40129	40129	60	25.91	31	14.95	1st bird deep. Move up to 6m
		GPS OF TAILBUOY NOW OKAY TO READ AS NORMAL BUT SHE IS STILL HAVING DATA HANDLING PROBLEMS. ADAM FIXING																					
1905	60	25.67	31	10.41	5.2	92	6.2	181	6.7	144	6.6	135	6.2	128	176.5	172	40208	40208	60	26.47	31	11.65	1st bird reset to 7m. Ship on N-S line
1914	60	25.82	31	10.39	5.4	183	6.5	106	7.2	174	7.2	181	7.3	175	196	192	40242	40242	60	25.81	31	10.39	Ship on N-Sline
1916	60	29.59	31	10.49													40253	40253	60	25.62	31	10.2	Tailbuoy straight
1925	60	23.76	31	10.62	7.2	171	7.3	201	6.8	181	7.2	184	6.9	188	194	199	40288	40288	60	24.79	31	10.26	Heading of ship keeps wandering to 200 - not very straight due to strong swell 3m
1936	60	22.76	31	10.78	6.4	88	6.4	183	7.2	181	7.0	176	6.9	161	199	196	40332	40332	60	23.76	31	10.46	At cross point
1945	60	22.07	31	10.92	6.7	183	7.1	194	7.5	187	6.9	186	7.1	192	193	199	40368	40368	60	23.09	31	10.57	Double XBT failure over cross point
2000	60	20.57	31	11.2	8.1	180	7.6	213	7.3	180	7.2	200	7.0	183	192	194	40425	40425	60	21.58	31	10.88	3-4m swell
2010	60	19.67	31	10.85													40465	40465	60	20.7	31	11.04	Commencing turn
2015	60	19.37	31	10.38	8.2	141	7.9	170	7.7	157	7.6	154	7.7	178	131	137	40486	40486	60	20.35	31	10.39	Bird target depth 7.5m
2030	60	19.1	31	7.73	7.7	81	7.3	91	6.7	94	6.8	100	7.2	113	65	80	40546	40546	60	19.12	31	7.63	Tailbuoy still with coms issue
2045	60	20.06	31	5.69	8.4	6	9.2	1	7.7	15	8.2	28	8.2	300	351	12	40606	40606	60	20.04	31	5.91	Steering streamer away from gun
2052																	40636	40636					Aborting turn, turning stbd
2100	60	21.62	31	5.97	8.7	322	9.2	0	9.1	331	9.3	3	9.2	6	4	20	40668	40668	60	20.75	31	5.73	Birds at 9m, stbd turning. Will take extra straight then complete turn onto line. 1.5hrs to reach straigh
2115	60	22.68	31	5.08	8.3	15	8.5	16	9.1	23	8.8	17	8.4	10	10	30	40729	40729	60	21.83	31	5.62	Straight across main line
2130	60	24.06	31	4.17	9.1	7	9.3	10	9.1	9	9.1	21	9.4	8	11	30	40786	40786	60	23.12	31	4.12	Increase speed to 6.5kts
2144	60	25.49	31	3.16	9.7	14	9.3	17	8.8	12	9.4	37	8.9	7	9	28	40845	40845	60	24.42	31	3.67	
2150																	40869	40869					Starting turn at 3deg/min to stbd
2200	60	26.75	31	2.01	9.2	14	9.3	11	9.1	15	9.4	2	9.3	11	33	49	40903	40903	60	25.73	31	2.7	Increase rate to 4deg/min
2215	60	27.4	30	59.19	9.6	57	9.2	71	9.1	68	9.3	57	9.2	53	94	99	40966	40966	60	27.46	31	1.14	
2116															94		40971	40971					Last good shot before POSMVdown
2223	60	27.36	30	51.2											100	110	41001	41001	60	27.37	3k	57.15	POSMV back on
2230	67	27.29	30	56.57	11.7	106	9.8	107	9.3	98	9.2	89	8.9	90	118	118	41026	41026	67	27.39	3k	56.38	Reduce to 5kts, birds dive
2234																	41044	41044					Back to 5.5kts
2245	67	26.31	30	54.71	7.0	160	7.5	157	8.0	136	8.3	140	8.4	138	158	158	41086	41086	67	26.3	3k	54.69	Birds stable
2300	67	25.09	30	54.01	10.1	162	10.2	158	10.1	160	9.8	159	10.1	152	210	208	41145	41145	67	26.14	3k	54.43	
2315	67	23.97	30	55.09	9.5	213	9.3	210	9.2	190	9.5	222	9.1	147	225	226	41201	41201	67	24.96	3k	54.11	1hr to line
2330	67	22.95	30	57.41	10.4	224	10.5	227	10.3	225	9.7	224	9.6	230	244	242	41265	41265	67	23.65	3k	55.67	
2345	67	22.65	30	59.94	9.9	260	10.0	258	10.2	261	10.3	259	10.1	260	266	271	41325	41325	67	22.54	31	0.01	

Julian Day:
Sonobuoy Number:
Serial No:

Date:
Sonobuoy Channel:

Sonobuoy Frequency:
Depth Setting:
Duration (hours):

Time (GMT)	Lat (D.DM)	Lon (D.DM)	SOW (kts)	SOG (kts)	Wind head.	Wind speed	Current East (m/s)	Current North (m/s)	Data File	Comments
0052:44									SB12_97_2070113_S1/2	Sonobuoy unpacked and prepared
0056									SB12_97_2070113_S1/2	Trigger trace test S1 and S2 Ok
0111									SB12_97_2070113_S1/2	Both S1 and S2 recording
0113:20	60.17.56	29.38.50	5.3	5.3	273.3	7.3	-0.22	0.06	SB12_97_2070113_S1/2	Deployed
0128	60.17.92	29.41.10	5.4	5.4	292	7.5	-0.18	-0.08	SB12_97_2070113_S1/2	Amplitude diminishing on S2. S1 still strong
0146	60.18.19	29.44.24	5.2	5.4	303.1	7.1	-0.21	-0.07	SB12_97_2070113_S1/2	S2 not showing signal. S1 good
0202	60.18.42	29.47.19	5.6	5.3	394.2	8	-0.13	-0.14	SB12_97_2070113_S1/2	S1 good
0216	60.18.49	29.49.88	5.6	5.5	303.1	7.1	-0.33	-0.06	SB12_97_2070113_S1/2	"
0230	60.18.54	29.52.43	5.2	5.4	308	7.1	-0.27	-0.11	SB12_97_2070113_S1/2	"
0247	60.18.61	29.55.40	4.7	5.4	312	7.7	-0.14	-0.12	SB12_97_2070113_S1/2	S1 still showing weak signal
0300	60.18.75	29.58.02	5.7	5.6	312	6.7	-0.14	-0.04	SB12_97_2070113_S1/2	S2 box beeping, S1 signal still present
0317	60.18.92	30.01.08	5.3	5.4	311.1	6.2	-0.16	-0.01	SB12_97_2070113_S1/2	S1 maybe just still retaining signal
0331	60.19.04	30.03.50	5	5.4	315.9	6.2	-0.23	0.02	SB12_97_2070113_S1/2	S1 showing essentially no visible signal
0433	60.25.31	30.12.08	4.5	5.2	261	2.3	-0.03	0.11	SB12_97_2070113_S1/2	
0444	60.22.23	30.11.83	5.3	5.3	132	0.8	-0.07	0.17	SB12_97_2070113_S1/2	
0500	60.23.30	30.09.37	5	5.5	67	4	0.06	0.17	SB12_97_2070113_S1/2	
0514	60.22.41	30.07.17	5.1	5.5	30	5.7	0.25	-0.3	SB12_97_2070113_S1/2	
0529	60.21.16	30.06.87	4.9	5.6	6.8	6.6	-0.11	-0.13	SB12_97_2070113_S1/2	
0602	60.18.30	30.07.37	5.3	5.1	16.7	5.9	-0.21	-0.48	SB12_97_2070113_S1/2	
0648	60.15.53	30.04.24	5.2	5.1	77.5	1.9	0.05	0.08	SB12_97_2070113_S1/2	
0729	60.18.71	30.03.87	4.9	5.2	322	5.5	-0.39	0.25	SB12_97_2070113_S1/2	Both S1/S2 stopped recording
Julian Day: 207										
Sonobuoy No: SB12										
Serial No: 1840										
Date of Manufacture: Feb 1992										
Date: 26/7/10										
Sonobuoy channel: 97										
Sonobuoy frequency: 160.375 MHz										
Depth setting: 140m										
Duration: 6 hrs										
Ffid at start: 32773										
Time offset S1: 1 hours 11 mins 24 seconds behind GMT										
Time offset S2: 1 hours 11 minutes 20 seconds behind GMT										
Start time of recorder S1: 2:03										
Start time of recorder S2: 2:01										
SSQ906A(D) SONOBUOY										

Julian Day:
Sonobuoy Number:
Serial No:

Date:
Sonobuoy Channel:

Sonobuoy Frequency:
Depth Setting:
Duration (hours):

Time (GMT)	Lat (D.DM)	Lon (D.DM)	SOW (kts)	SOG (kts)	Wind head.	Wind speed	Current East (m/s)	Current North (m/s)	Data File	Comments
1406	60.20.53	30.31.95	5.3	5.7	16.7	10.6	-0.32	0.33	SB13_96_2071406_S1/2	Deployed. Water depth ~1600m. Slight Stbd deployment. Lots of swell.
1415	60.20.88	30.33.49	5.7	5.7	38.6	12.2	-0.54	-0.04	SB13_96_2071406_S1/2	S1/S2 strong returns
1434	60.21.03	30.36.90	5.4	5.4	36.6	10.4	-0.64	-0.01	SB13_96_2071406_S1/2	
1446	60.21.14	30.39.18	5.2	5.7	32.1	11.1	-0.42	0.11	SB13_96_2071406_S1/2	S1 strong returns. S2 showing no return
1502	60.24.27	30.42.11	5.5	5.7	22.7	10.7	-0.43	0.04	SB13_96_2071406_S1/2	
1516	60.21.42	30.44.79	5.2	5.5	30.6	8.4	-0.45	0.11	SB13_96_2071406_S1/2	
1531	60.21.57	30.47.46	5.5	5.6	10.7	8.9	-0.26	0.1	SB13_96_2071406_S1/2	S1 showing returns
1545	60.21.71	30.50.03	5.2	5.3	14.7	8.9	-0.25	0.03	SB13_96_2071406_S1/2	S1 signal dying out
1557	60.21.84	30.52.31	4.9	5.7	13.7	9.1	-0.4	0.09	SB13_96_2071406_S1/2	
1615	60.22.01	30.55.47	5.5	5.3	8.7	9.6	-0.28	0.15	SB13_96_2071406_S1/2	S1 no obvious trace
1630	60.22.16	30.58.22	5.1	5.4	9	10	-0.31	0.11	SB13_96_2071406_S1/2	
1645	60.22.30	31.00.66	5.1	5.6	5	10	-0.27	0.09	SB13_96_2071406_S1/2	
1658	60.22.45	31.03.39	5.5	5.4	352	11	-0.03	0.06	SB13_96_2071406_S1/2	
1713	60.22.57	31.06.12	5.7	5.8	359	12	-0.12	0.13	SB13_96_2071406_S1/2	
1730	60.22.71	31.08.75	5.5	5.8	357	11.6	-0.11	-0.01	SB13_96_2071406_S1/2	
1714	60.22.85	31.12.03	5.4	5.6	359	12.5	-0.3	0.16	SB13_96_2071406_S1/2	
1815	60.24.40	31.15.68	5.5	5.4	307	11.2	0.17	0.26	SB13_96_2071406_S1/2	
1845	60.26.56	31.12.92	5.5	5.4	194	3.7	0.53	0.3	SB13_96_2071406_S1/2	
1900	60.26.09	31.10.86	7	5.6	123	7.9	0.4	-0.01	SB13_96_2071406_S1/2	
1915	60.24.77	31.10.44	5.8	5.5	73	11.3	0.17	-0.45	SB13_96_2071406_S1/2	
2017	60.19.28	31.10.13	5.6	5.4	203	2.5	0.18	0.13	SB13_96_2071406_S1/2	S1/S2 stopped
Julian Day: 207										
Sonobuoy No: SB13										
Serial No: 15203										
Date of Manufacture: Mar 1992										
Date: 26/7/10										
Sonobuoy channel: 96										
Sonobuoy frequency: 160.000 MHz										
Depth setting: 140m										
Duration: 6 hrs										
Ffid at start: 35863										
Time offset S1: 14 hours 4 mins 20 seconds behind GMT										
Time offset S2: 14 hours 4 minutes 24 seconds behind GMT										
Start time of recorder S1: 14:04										
Start time of recorder S2: 14:04										
SSQ906A(D)	SONOBUOY									

Julian Day: Date: Sheet Number:

Time	Lat		Lon		Water	Head.	SOW	SOG	EM710	EM120			EA600	SBP		ER60	OLEX	Comments
(GMT)	D	DM	D	DM	depth (m)		(kts)	(kts)	rec.	rec	Line cnt.		rec.	rec.	Data file	rec.	rec.	
0000	60	22.43	31	6.66	1900	d70	6.5	5.9	n	y	0097	118 JC050White	y	y	206-1004_277	y	y	High swells; EA600 shows 0m.
0017	60	22.59	31	5.90	1847	284	5.3	5.5	n	y	0097	100 JC050White	y	y	206-1004_279	y	y	
0029	60	22.66	31	8.11	2040	276	5.4	5.4	n	y	0097	88 JC050White	y	y	206-1004_281	y	y	
0053	60	22.86	31	12.36	1876	282	6.2	5.0	n	y	0097	63 JC050White	y	y	206-1004_284	y	y	XBT and SVP Launched
0114	60	23.03	31	16.23	1899	270	5.1	5.3	n	y	0097	43 JC050White	y	y	206-1004_286	y	y	
0131	60	23.22	31	19.18	1957	281	5.2	5.2	n	y	0097	26 JC050White	y	y	206-1004_288	y	y	
0146	60	23.37	31	21.53	2066	263	4.9	5.0	n	y	0097	12 JC050White	y	y	206-1004_290	y	y	
0200	60	23.54	31	24.31	2245	265	5.8	5.5	n	y	0098	117 JC050White	y	y	206-1004_29d	y	y	
0216	60	23.71	31	27.08	2315	266	4.5	5.9	n	y	0098	102 JC050White	y	y	206-1004_293	y	y	
0233	60	23.87	31	30.03	3676	277	5.6	5.1	n	y	0098	85 JC050White	y	y	206-1004_294	y	y	
0244	60	23.95	31	32.06	3990	266	6.5	5.4	n	y	0098	73 JC050White	y	y	206-1004_295	y	y	
0300	60	24.07	31	34.81	2292	282	4.9	5.2	n	y	0098	57 JC050White	y	y	206-1004_296	y	y	
0315	60	24.63	31	37.32	2318	316	5.0	5.1	n	y	0098	42 JC050White	y	y	206-1004_298	y	y	
0330	60	25.82	31	37.93	2086	343	5.3	5.5	n	y	0098	28 JC050White	y	y	206-1004_299	y	y	
0348	60	27.33	31	37.12	2236	036	5.6	6.0	n	y	0098	9 JC050White	y	y	206-1004_301	y	y	
0400	60	27.74	31	35.51	2228	102	6.1	4.9	n	y	0099	119 JC050White	y	y	206-1004_302	y	y	
0415	60	27.34	31	33.16	23.61	145	5.8	5.1	n	y	0099	105 JC050White	y	y	206-1004_303	y	y	
0430	60	26.01	31	32.63	23.62	19d	7.6	5.6	n	y	0099	89 JC050White	y	y	206-1004_305	y	y	
0443	60	24.79	31	32.86	2392	196	5.9	5.9	n	y	0099	75 JC050White	y	y	206-1004_306	y	y	
0500	60	23.46	31	33.12	23.38	180	5.5	5.3	n	y	0099	59 JC050White	y	y	206-1004_308	y	y	XCTD fired (fail) @ 0455
0515	60	21.94	31	33.36	2330	191	5.4	5.5	n	y	0099	43 JC050White	y	y	206-1004_309	y	y	2swells from NW & SW (~1-3m)
0530	60	20.74	31	33.13	2396	156	5.8	5.3	n	y	0099	29 JC050White	y	y	206-1004_311	y	y	Think we found a magma chamber
0545	60	19.75	31	30.58	2301	101	6.0	5.1	n	y	0099	10 JC050White	y	y	206-1004_313	y	y	
0600	60	19.53	31	28.72	2232	095	5.5	5.1	n	y	0100	119 JC050White	y	y	206-1004_314	y	y	EA600 depth adjusted to 1500-3000
0614	60	20.05	31	26.18	2040	050	5.2	5.0	n	y	0100	103 JC050White	y	y	206-1004_315	y	y	
0630	60	21.19	31	25.36	2113	350	5.9	5.5	n	y	0100	89 JC050White	y	y	206-1004_317	y	y	
0645	60	22.51	31	25.39	2342	347	5.2	5.5	n	y	0100	74 JC050White	y	y	206-1004_319	y	y	
0700	60	23.56	31	26.84	2387	287	5.3	5.3	n	y	0100	59 JC050White	y	y	206-1004_320	y	y	Sonoguoy deployed successfully 0655
0715	60	23.83	31	29.32	2327	288	5.2	5.3	n	y	0100	45 JC050White	y	y	206-1004_322	y	y	EA600 & SBP poor data quality
0730	60	23.9d	31	31.50	2263	285	6.1	5.1	n	y	0100	32 JC050White	y	y	206-1004_323	y	y	
0744	60	24.07	31	34.85	2298	261	5.1	5.5	n	y	0100	14 JC050White	y	y	206-1004_324	y	y	EA600 & SBP intermittently poor
0800	60	24.20	31	37.65	2280	276	4.3	5.3	n	y	0101	116 JC050White	y	y	206-1004_326	y	y	
0815	60	24.15	31	40.37	2179	263	5.0	5.4	n	y	0101	103 JC050White	y	y	206-1004_328	y	y	
0845	60	24.02	31	45.59	No depth	267	4.5	5.0	n	y	0101	72 JC050White	y	y	206-1004_330	y	y	No depth reading
090d	60	24.24	31	48.43	No depth	284	4.7	4.8	n				y	y	206-1004_332	y	y	EM120 looking bad - focused to impr
0915	60	24.49	31	50.62	2347	281	4.7	5.4	n	y	0101	43 JC050White		y	206-1004_333	y	y	
0931	60	24.79	31	53.33	2280	276	5.1	5.2	n	y	0101	26 JC050White	y		206-1004_335	y	y	Swath + SBP poor
0946	60	25.01	31	55.82	2200	269	5.0	5.2	n	y	0101	12 JC050White	y	y	206-1004_336	y	y	
1000	60	25.12	31	58.18	2196	280	5.4	5.1	n	y	0102	118 JC050White	y	y	206-1004_338	y	y	
1021	60	25.27	32	1.67	2000	286	5.1	5.3	n	y	0102	96 JC050White	y	n	206-1004	y	y	SBP not logging. XBT launched 1013
1031	60	25.44	32	3.45	2320	301	5.4	4.9	n	y	0102	83 JC050White	y	y	208-1030	y	y	SBP logging set wide 30
1045	60	26.32	32	4.80	2422	347	5.1	5.2	n	y	0102	72 JC050White	y	y	208-1030_001	y	y	1st turn of pigs ear 14
1100	60	27.55	32	4.89	2324	347	4.9	5.1	n	y	0102	58 JC050White	y	y	208-1030_003	y	y	
1115	60	28.73	32	3.71	2293	51	5.4	5.4	n	y	0102	42 JC050White	y	y	208-1030_004	y	y	
1130	60	28.90	32	1.19	ddd0	111	5.6	5.2	n	y	0102	27 JC050White	y	y	208-1030_006	y	y	
1145	60	27.93	31	59.56	2152	176	5.1	5.4	n	y	0102	13 JC050White	y	y	208-1030_008	y	y	On crossline of pigs ear 14
1159	60	26.56	31	59.75	2252	195	6.1	4.7	n	y	0103	118 JC050White	y	y	208-1030_010	y	y	XBT deployed (before crossing as SS
1215	60	25.15	32	0.00	2200	199	5.7	5.5	n	y	0103	102 JC050White	y	y	208-1030_011	y	y	
1230	60	23.83	32	0.25	2261	187	5.5	5.5	n	y	0103	88 JC050White	y	y	208-1030_013	y	y	
1245	60	22.47	32	0.48	2316	182	5.3	5.6	n	y	0103	72 JC050White	y	y	208-1030_014	y	y	
1301	60	21.06	32	0.07	2284	150	5.5	5.8	n	y	0103	56 JC050White	y	y	208-1030_016	y	y	wide pigs ear turn onto line to keep g
1316	60	20.28	31	57.86	2426	110	5.6	5.3	n	y	0103	41 JC050White	y	y	208-1030_018	y	y	
1331	60	20.40	31	55.38	2431	060	4.4	5.7	n	y	0103	27 JC050White	y	y	208-1030_019	y	y	
1346	60	21.45	31	53.59	dd78	007	6.3	5.5	n	y	0103	11 JC050White	y	y	208-1030_021	y	y	
1400	60	22.67	31	53.47	2307	345	6.2	5.8	n	y	0104	117 JC050White	y	y	208-1030_022	y	y	
1416	60	24.06	31	53.90	dd55	327	5.4	5.5	n	y	0104	102 JC050White	y	y	208-1030_023	y	y	
1430	60	24.90	31	55.84	2215	286	5.1	5.3	n	y	0104	87 JC050White	y	y	208-1030_025	y	y	
1447	60	25.12	31	58.76	2103	277	5.4	5.2	n	y	0104	71 JC050White	y	y	208-1030_027	y	y	
1517	60	25.38	32	4.23	2366	279	5.3	5.4	n	y	0104	41 JC050White	y	y	208-1030_030	y	y	EM120, ER60, EA600 new profiles
1530	60	25.52	32	6.65	2424	264	6.2	5.0	n	y	0104	27 JC050White	y	y	208-1030_031	y	y	
1546	60	25.66	32	9.49	d313	280	5.3	5.3	n	y	0104	11 JC050White	y	y	208-1030_033	y	y	
1600	60	25.79	32	11.61	2438	291	5.2	5.4	n	y	0105	119 JC050White	y	y	208-1030_034	y	y	
1615	60	25.97	32	14.72	2497	274	5.5	5.4	n	y	0105	102 JC050White	y	y	208-1030_036	y	y	EA600 & SBP a bit streaky
1630	60	26.11	32	17.32		274	5.5	5.2	n	y	0105	88 JC050White	y	y	208-1030_037	y	y	Straight line ~13h to next pig's ear
1645	60	26.29	32	20.36	2521	281	6.0	5.5	n	y	0105	77 JC050White	y	y	208-1030_039	y	y	
1700	60	26.42	32	22.74	2495	277	5.3	5.0	n	y	0105	57 JC050White	y	y	208-1030_040	y	y	
1715	60	26.55	32	24.91	d377	268	5.4	5.1	n	y	0105	45 JC050White	y	y	208-1030_041	y	y	
1730	60	26.77	32	27.71	2549	d80	5.7	5.2	n	y	0105	30 JC050White	y	y	208-1030_043	y	y	
1745	60	26.06	32	30.53	2518	272	5.0	5.4	n	y	0105	14 JC050White	y	y	208-1030_044	y	y	
1800	60	27.03	32	33.41	2370	268	5.8	5.0	n	y	0106	118 JC050White	y	y	208-1030_046	y	y	EA600 quite dodgy
1815	60	27.20	32	36.30	2475	270	5.1	5.5	n	y	0106	102 JC050White	y	y	208-1030_047	y	y	
1830	60	27.32	32	38.64	2296	285	5.3	5.3	n	y	0106	89 JC050White	y	y	208-1030_048	y	y	
1845	60	27.50	32	41.87	2334	263	5.9	5.1	n	y	0106	71 JC050White	y	y	208-1030_050	y	y	
1900	60	27.63	32	44.01	2412	279	4.6	4.8	n	y	0106	59 JC050White	y	y	208-1030_052	y	y	
1915	60	27.78	32	46.84	2411	278	5.3	5.2	n	y	0106	44 JC050White	y	y	208-1030_053	y	y	
1930	60	27.94	32	49.55	2776	279	5.4	5.6	n	y	0106	29 JC050White	y	y	208-1030_054	y	y	
1944	60	28.12	32	52.44	2502	286	5.4	5.5	n	y	0106	13 JC050White	y	y	208-1030_056	y	y	
1959	60	28.26	32	55.12	2304	273	5.4	5.6	n	y	0107	118 JC050White	y	y	208-1030_057	y	y	
2015	60	28.42	32	57.98	2273	281	5.4	5.3	n	y	0107	103 JC050White	y	y	208-1030_059	y	y	
2030	60	28.58	33	0.67	2290	d71	5.4	5.4	n	y	0107	88 JC050White	y	y	208-1030_060	y	y	
2043	60	28.70	33	3.05	2403	260	5.4	5.2	n	y	0107	74 JC050White	y	y	208-1030_062	y	y	
2058	60	28.86	33	5.83	2561	265	4.7	5.3	n	y	0107	59 JC050White	y	y	208-1030_063	y	y	
2115	60	29.03	33	8.84	2727	274	5.7	5.4	n	y	0107	43 JC050White	y	y	208-1030_065	y	y	XBT 2104
2130	60	29.18	33	11.60	2663	279	5.4	5.4	n	y	0107	27 JC050White	y	y	208-1030_066	y	y	
2145	60	29.32	33	14.23	2690	d78	5.4	5.2	n	y	0107	13 JC050White	y	y	208-1030_067	y	y	
2200	60	29.48	33	17.19	d408	277	5.3	5.4	n	y	0108	116 JC050White	y	y	208-1030_069	y	y	
2214	60	29.62	33	19.42	2568	275	5.1	5.3	n	y	0108	104 JC050White	y	y	208-1030_070	y	y	
2230	60	29.78	33	22.46	2540	277	4.9	5.5	n	y	0108	87 JC050White	y	y	208-1030_072	y	y	
2244	60	29.91	33	24.87	2642	273	5.6	5.5	n	y	0108	74 JC050White	y	y	208-1030_073	y	y	
2300	60	30.08	33	27.78	2777	269	5.4	5.5	n	y	0108	58 JC050White	y	y	208-1030_074	y	y	
2315	60	30.23	33	30.39	2809	269	5.4	5.4	n	y	0108	43 JC050White	y	y	208-1030_076	y	y	
2330	60	30.38	33	33.20	2851	261	5.9	5.3	n	y	0108	27 JC050White	y	y	208-1030_077	y	y	
2347	60	30.54	33	36.29	d657	273	5.2	5.5	n	y	0108	11 JC050White	y	y	208-1030_078	y	y	

Day: Date: Sheet Number:

Time	Lat		Lon		ADCP150	ADCP75	Techsas	Level-C	Grav.	Mag.	Wind			Comments, eg state of seismic exp.
(GMT)	D	DM	D	DM	rec.	rec.	rec.	rec.	(mgal)	(nT)	Speed	Dir.	Sea State	
0000	60	22.43	31	2.72	y	y	y	y	13313.3	n	12.4	31	2m swells	
0017	60	22.59	31	5.90	y	y	y	y		n	14.0	33	"	
0030	60	22.67	31	8.13	y	y	y	y	13312.8	n	13.1	57	"	
0053	60	22.86	31	12.31	y	y	y	y		n	11.6	45.6	"	Launched XBT (success) & XSV (failed a
0116	60	23.54	31	16.43	y	y	y	y	13319.7	n	13.9	39.1		
0131	60	23.22	31	19.09	y	y	y	y		n	11.1	39.7	"	
0145	60	23.37	31	21.53	y	y	y	y	13302.1	n	9.4	27.7	"	
0201	60	23.85	31	24.45	y	y	y	y		n	11.9	32.6	Big swell	Heave around 3m
0215	60	23.71	31	26.90	y	y	y	y	13296.4	n	11.3	27.7	"	
0233	60	23.87	31	30.03	y	y	y	y		n	12.9	33.7	"	
0246	60	23.98	31	33.07	y	y	y	y	13272.4	n	12.2	29.6	"	XBT deployed at 0250
0300	60	24.07	31	34.81	y	y	y	y		n	11.8	27.7	"	
0317	60	24.74	31	37.50	y	y	y	y	13289.7	n	11.8	348.4	"	Started starboard turn for Pig's Ear 13
0328	60	25.69	31	37.88	y	y	y	y		n	12.0	344		
0345	60	27.17	31	37.42	y	y	y	y	13287.5	n	12.1	303.1	"	
0400	60	27.74	31	35.51	y	y	y	y		n	8.9	250	"	Putty not working : check Techsas in Te
0415	60	27.35	31	33.17	y	y	y	y	13240.6	n	3.3	146	"	Wind speed dropping
0430	60	26.01	31	32.63	y	y	y	y		n	7.8	098	2m swell	
0445	60	2.86	31	32.84	y	y	y	y	13252.4	n	11.4	107	"	XCTD preparing form deployment
0500	60	23.36	31	33.12	y	y	y	y		n	9.5	105	2-3m swell, light rain, wind	XCTD deployed 0455
0515	60	21.94	31	33.36	y	y	y	y	13247.9	n	8.9	108	"	
0530	60	20.74	31	33.13	y	y	y	y		n	6.4	155	"	Magma chamber found
0544	60	19.84	31	31.01	y	y	y	y	13231.5	n	7.7	213	"	
0600	60	19.53	31	28.72	y	y	y	y		n	9.1	237	"	
0615	60	19.85	31	26.59	y	y	y	y	13270.1	n	11.6	292	swell 2-3m from SW	
0629	60	21.23	31	25.36	y	y	y	y		n	12.9	343	"	
0645	60	22.51	31	25.39	y	y	y	y	13266.2	n	15.8	346	"	
0700	60	23.55	31	26.82	y	y	y	y		n	10.1	031	"	Sonobuoy deployed 0655 - very success
0715	60	23.83	31	39.32	y	y	y	y	13281	n	12.9	048	"	
0730	60	23.92	31	31.50	y	y	y	y		n	12.0	035	"	XBT @ 0734 deployed
0745	60	24.07	31	34.87	y	y	y	y	13282.6	n	12.4	032	"	
0800	60	24.20	31	37.65	y	y	y	y		n	12.2	44		
0815	60	24.15	31	40.37	y	y	y	y	13292.4	n	11.3	39	1m swell	
0845	60	24.02	31	45.59	y	y	y	y	13283.6	n	9.9	39		
0902	60	24.24	31	48.43	y	y	y	y		n	10.9	26		
0915	60	24.49	31	50.62	y	y	y	y	13286.4	n	10.0	32		
0931	60	24.79	31	53.33	y	y	y	y		n	10.5	25		
0946	60	25.01	31	55.82	y	y	y	y	13281.6	n	10.8	24		
1000	60	25.12	31	58.18	y	y	y	y		n	10.8	37		
1021	60	25.27	32	1.68	y	y	y	y	13290.1	n	10.4	25	1m swell	XBT launched 1013
1034	60	25.53	32	3.72	y	y	y	y		n	9.0	349		Starting first turn of Pigs ear 14
1047	60	26.49	32	4.87	y	y	y	y	13283.2	n	9.4	313	1-2m swell	
1102	60	27.76	32	4.90	y	y	y	y		n	11.0	312		
1118	60	28.84	32	3.31	y	y	y	y	13270.9	n	8.6	259		
1133	60	28.79	32	0.73	y	y	y	y		n	2.7	182	1-3m swell	Approaching crossline of pigs ear 14
1147	60	27.69	31	59.51	y	y	y	y	13273.2	n	7.5	100	"	Crossline of pigs ear 14
1201	60	26.44	31	59.78	y	y	y	y		n	7.2	87.3		XBT done bit early
1215	60	25.23	31	59.99	y	y	y	y	13278	n	6.1	097		
1230	60	23.78	32	0.25	y	y	y	y		n	6.4	097	"	
1246	60	22.42	32	0.49	y	y	y	y	13268.2	n	4.8	094	"	
1300	60	21.17	32	0.19	y	y	y	y		n	4.1	132	"	
1315	60	20.25	31	57.67	y	y	y	y	13255.1	n	3.6	230	"	
1331	60	20.43	31	55.24	y	y	y	y		n	5.8	269		
1346	60	21.45	31	53.58	y	y	y	y	13260.5	n	7.1	302		
1400	60	22.67	31	53.48	y	y	y	y		n	8.5	318	"	
1416	60	24.09	31	53.93	y	y	y	y	13275.3	n	7.6	348	"	
1431	60	24.94	31	56.03	y	y	y	y		n	7.5	015	"	
1446	60	25.10	31	58.56	y	y	y	y		n	6.7	020	"	Deploying XBT-SVP
1518	60	25.39	32	4.39	y	y	y	y	13280.1	n	7.7	024		
1532	60	25.53	32	6.94	y	y	y	y		n	8.3	031		
1547	60	25.68	32	9.72	y	y	y	y	13283.8	n	9.0	023		
1600	60	25.79	32	11.61	y	y	y	y	13289.8	n	8.4	040	calm	
1615	60	25.97	32	14.75	y	y	y	y		n	7.9	030	"	
1630	60	26.11	32	17.32	y	y	y	y	13280.7	n	7.9	020	"	
1646	60	26.29	32	28.36	y	y	y	y		n	6.7	029	"	
1700	60	26.42	32	22.74	y	y	y	y	13291	n	6.1	016	"	
1715	60	26.55	32	24.91	y	y	y	y		n	5.7	017	"	
1730	60	26.71	32	27.71	y	y	y	y	13283.2	n	6.2	032	"	
1745	60	26.06	32	30.53	y	y	y	y		n	5.1	029	"	
1800	60	27.03	32	33.41	y	y	y	y	13283	n	4.6	041	slight roll ~2m	
1815	60	27.20	32	36.60	y	y	y	y		n	5.8	044	swell < 1-2m	
1830	60	27.32	32	38.64	y	y	y	y	13288	n	4.2	035		
1845	60	27.50	32	41.87	y	y	y	y		n	4.0	042	"	
1900	60	27.63	32	44.01	y	y	y	y	13282.5	n	5.2	063	swell < 1-2m	
1915	60	27.78	32	46.84	y	y	y	y		n	2.4	023	"	
1930	60	27.96	32	49.48	y	y	y	y	13284.3	n	5.1	028	"	
1945	60	28.09	32	52.05	y	y	y	y		n	4.0	039	"	
2000	60	28.28	32	55.39	y	y	y	y	13294.2	n	2.3	353	swell 1-4 m, light wind, light chop	
2016	60	28.43	32	58.11	y	y	y	y		n	3.4	352		
2030	60	28.58	33	0.70	y	y	y	y	13295.5	n	3.3	322	"	
2046	60	28.73	33	3.57	y	y	y	y		n	3.1	345	swell 1-2m	
2101	60	28.84	33	6.36	y	y	y	y		n	2.4	340	swell 1-3m	
2118	60	29.05	33	9.37	y	y	y	y	13285	n	4.6	319	"	XBT done 2104
2133	60	29.21	33	12.14	y	y	y	y		n	5.3	329	swell 1-2m	
2147	60	29.34	33	14.56	y	y	y	y	13297.5	n	5.1	313	swell 1-2m	
2200	60	29.48	33	17.19	y	y	y	y		n	5.1	313	"	
2216	60	29.64	33	19.87	y	y	y	y	13285.7	n	4.8	306	"	
2232	60	29.79	33	22.77	y	y	y	y		n	4.0	307	"	
2246	60	29.94	33	25.26	y	y	y	y	13284.6	n	3.7	291	"	
2300	60	30.08	33	27.78	y	y	y	y		n	4.1	288	"	
2315	60	30.23	33	30.39	y	y	y	y	13286.6	n	4.0	301	"	
2332	60	30.40	33	33.60	y	y	y	y		n	5.0	300	"	
2350	60	30.58	33	36.75	y	y	y	y	13287.3	n	4.1	303	"	

Every 30 min, for important events and not for birds during turns.

Seismic log

Line No:	**1 SEQ10**				**Date:**	**###**		**Julian Day:**	**208**	**Page No:**				Depth of Gun	1: 5m							Array Volume: 355
														Depth of Gun	2: n/a							
	Vessel GPS				Bird 1		Bird 2		Bird 3		Bird 4		Bird 5					Tailbuoy GPS				
Time GMT	Lat		Long		Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Ship H'ding	CMG	Shot no.	FFID	Lat		Long		MISFIRE, Feathering angle, sea state, current, other comments
0000	60	22.41	31	2.42	10.3	38n	9.9	282	9.7	283	9.7	284	10.3	273	281.2	281	41383	41383	60	22.49	31	0.34	Back onto line (straight)
0015	60	22.57	31	5.69	9.7	285	9.5	287	9.7	290	9.7	293	10.2	293	285.2	286	41457	41457	60	22.45	31	3.7	Swell around 2.5m at 0012 (roll)
30	60	22.69	31	8.36	10.0	291	10.1	288	10.6	297	10.2	306	9.9	305	279.6	281	41508	41508	60	22.57	31	6.35	Real-time data looks fine
0047	60	22.81	31	11.31	9.6	296	9.8	286	10.2	289	10.4	297	10.5	297	281.3	277.2	41574	41574	60	22.7	31	69.4	XBT deployed at 0040
0100	60	22.91	31	13.4	9.8	290	9.8	291	10.0	291	9.7	291	9.7	294	285.6	285	41625	41625	60	22.79	31	13.43	Swell around 2m at 0054 (heave)
0115	60	23.06	31	16.45	10.1	293	10.0	300	9.8	289	10.2	289	9.7	291	285.8	290	41693	41693	60	22.92	31	14.38	Real-time data pretty good
0134	60	23.25	31	19.71	9.9	299	9.7	299	9.3	293	9.5	288	10.2	288	285.4	290.9	41767	41767	60	23.13	31	17.77	
0145	60	23.37	31	21.55	9.9	297	9.8	294	9.8	290	9.9	287	10.1	300	284.3	289.3	41809	41809	60	23.25	31	19.52	
0158																	41858	41858					Data looks very noisy
0200	60	23.53	31	24.17	9.4	289	9.5	248	9.8	302	9.9	298	10.0	306	280.4	287.2	41868	41868	60	23.42	31	22.13	ditto
0215	60	23.71	31	26.93	9.9	300	9.9	290	9.7	300	9.8	281	10.4	290	280.5	288.2	41929	41929	60	23.6	31	24.89	ditto
0235	60	23.88	31	30.36	10.2	288	10.0	290	8.9	293	9.9	300	10.3	288	281.9	288.7	42009	42009	60	23.82	31	28.35	Applying starboard streamer drive to avoid collision with guns on t
0258	60	24.06	31	34.56	11.0	303	10.6	294	10.4	290	10.6	298	10.6	289	278.5	290	42102	42102	60	24.01	31	32.54	XBT-T5 deployed; data still noisy
0304																	42121	42121					Turn started for Pig's Ear 13 (starboard)
0316	60	24.65	31	37.36	11.2	344	10.8	331	11.0	315	10.4	336	10.2	322	320	330	42177	42177	60	24.2	31	35.55	
0331	60	25.98	31	37.91	11.0	33.2	10.8	3.9	10.6	210	10.1	2.9	12.3	355.4	356	19	42239	42239	60	24.95	31	37.35	Birds set at 10m for turn (due to swell)
0345	60	27.17	31	37.44	12.1	39	11.4	37	10.9	26	10.3	21	11.0	1.7	26.2	44.2	42292	42292	60	26.16	31	37.65	
0400	60	27.74	31	34.65	10.7	93	10.3	90	10.1	76	10.1	74	9.7	64	112	118	42371	42371	60	27.47	31	34.42	Swell 3-4m; birds 1 & 5 a bit shallow at 7m.
0420	60	26.93	31	32.65	9.8	147	10.3	143	10.4	148	10.0	137	9.9	122	176	174	42429	42429	60	27.03	31	33.97	
0423																	42438	42438					Just about to turn on line
0430																	42470	42470					Vessel on line (SOL)
0433	60	25.67	31	32.68	10.4	184	10.9	195	10.5	182	10.0	180	10.7	171	195	198	42479	42479	60	26.68	31	32.46	
0435	60	25.4	31	32.73	9.7	211	10.5	208	10.4	211	9.6	221	10.7	203	199	196	42493	42493	60	25.31	31	32.76	
0450	60	24.1	31	32.97	10.1	210	10.7	216	10.8	213	10.4	206	10.6	211	194	192	42529	42529	60	25.09	31	32.6	XCTD deployed - failed. Vessel passed intersection of X line
0503																	42498	42498					TB passes intersection
0513																							2 swells, coming from NW (bigger) & SW
0515	60	21.83	31	33.37	10.7	186	10.1	191	10.2	188	10.0	194	10.6	191	190	197	42650	42650	60	22.86	31	33.08	
0518																	42660	42660					Vessel starts turning off line
0535	60	20.39	31	32.65											140	149	42724	42725	60	21.34	31	33.34	Turning
0547	60	19.76	31	30.6											100	117	42778	42778	60	20.3	31	28.79	TB on turn
0610	60	19.79	31	26.78											48	66	42868	42868	60	19.61	31		Swell 2-3m (still from NW & SW)
0630	60	21.26	31	25.37											345	1	42945	42945	60	20.29	31	25.89	Still turning
0649	60	23.03	31	25.62											325	341	43025	43025	60	22.01	31	25.26	
0655	60	23.44	31	26.37											300	310	43047	43047	60	22.53	31	25.29	Sonobuoy deployed
0708	60	23.81	31	28.67	10.0	280	10.1	276	11.0	294	9.9	321	10.5	293	273	275	43100	43100	60	23.56	31	26.65	Vessel on line
0712																	43115	43115					Steamer straight. TB behind ship
0734	60	23.98	31	32.96	10.1	268	10.8	275	10.8	274	9.4	274	10.2	271	283	287	43203	43203	60	23.95	31	30.86	Crossing intersection (XBT deployed - failed)
0749	60	24.11	31	35.74	10.8	280	10.8	269	11.0	279	9.2	273	10.6	265	276	279	43266	43266	60	24.05	31	33.65	2m swell from NW
0800	60	24.2	31	37.76	10.5	274	10.6	274	10.3	273	9.4	266	10.1	264	278	283	43306	43306	60	24.14	31	35.67	? Fishing buoy off stbd side
0815	60	24.15	31	40.35	9.8	278	9.4	264	10.2	261	10.0	254	10.0	259	274	275	43366	43366	60	24.14	31	40.34	
0830	60	24.07	31	43.13	10.5	267	10.9	268	10.3	264	9.3	268	10.3	269	277	283	43424	43424	60	24.13	31	40.92	
0845	60	24	31	45.83	11.1	263	11.0	259	9.9	264	9.8	269	9.7	267	276	278	43486	43486	60	24.07	31	43.6	
0900	60	24.24	31	48.1	10.3	280	10.2	291	10.1	283	10.1	270	10.4	280	285	289	43544	43544	60	24.04	31	48.16	1hr10 to next cross
0915	60	24.49	31	50.63	11.4	276	10.6	18	10.2	283	10.4	279	9.8	275	287	290	43606	43606	60	24.48	31	50.62	
0930	60	24.77	31	53.15	11.2	277	10.8	278	10.0	274	9.8	271	10.2	275	286	286	43666	43666	60	24.56	31	51.06	
0945	60	25.02	31	55.67	12.5	272	11.5	275	10.4	286	10.5	281	10.2	288	273	283	43726	43726	60	24.82	31	53.5	Birds at 10m for swell
1006	60	25.12	31	58.14	10.3	285	10.8	271	10.5	282	10.7	284	10.1	283	281	285	43786	43786	60	25.02	31	55.93	
1020	60	25.27	32	1.7	9.7	284	10.1	278	10.2	274	10.7	287	11.3	281	278	287	43868	43868	60	25.2	32	0	XBT drop at 43838
1030	60	25.39	32	3.18	10.0	279	10.2	275	10.3	274	10.4	281	9.8	256	293	300	43906	43906	60	25.25	32	0.8	Start turn to stbd
1045	60	26.29	32	4.79	10.8	338	10.6		11.1	292	10.4	308	10.1	313	329	356	43966	43966	60	25.48	32	63.26	1-2m swell, small chop
1100	60	28.55	32	4.88	9.8	2	10.8	3	10.5	8	10.7	6	12.1	13	348	9	44024	44024	60	26.5	32	4.66	
1115	60	28.72	32	3.75	9.9	266	10.7	34	10.0	44	10.6	23	9.8	23	52	350	44089	44089	60	27.85	32	3.68	
1130	60	28.89	32	1.17	10.1	107	10.9	102	10.2	95	10.5	97	10.1	91	116	350	44150	44150	60	28.82	32	1.05	Still turning
1145	60	27.91	31	59.55	9.1	131	10.2	166	9.5	157	9.6	160	10.0	150	180	350	44205	44205	60	28.71	31	59.32	
1200	60	26.55	31	59.76	7.3	197	7.9	198	7.6	202	7.5	207	7.6	190	195	196	44269	44269	60	27.56	31	55.49	Getting to cross line (straight)
1215	60	25.22	31	59.99	7.7	216	7.7	198	6.5	200	6.3	202	6.3	206	189	190	44330	44330	60	26.25	31	59.66	
1230	60	23.85	32	0.24	7.5	218	6.8	211	6.9	216	6.8	202	6.9	203	190	199	44390	44390	60	24.88	31	59.84	
1245	60	22.54	32	0.47	6.9	210	6.6	201	7.1	210	6.8	204	7.3	287	195	200	44449	44449	60	23.57	32	0.47	
1300	60	21.12	32	0.14	7.0	187	7.5	194	7.8	199	7.7	209	7.6	209	151	159	44574	44574	60	22.14	32	0.37	Start turning from cross line on port side

Every 30 min, for important events and not for birds during turns.

Seismic log

1315	60	20.26	31	57.79	7.1	120	7.1	151	6.8	130	7.0	149	7.0	152	100	114	44578	44578	60	20.82	31	59.52	
1336	67	20.37	31	55.5	8.1	93	7.4	100	7.6	107	7.0	112	7.2	100	60	75	44631	44631	60	20.28	31	57.54	Still turning
1345	60	21.26	31	53.72	6.9	18.9	7.1	032	6.7	49	7.1	65	7.3	60	14	32	44686	44686	60	20.52	31	54.97	
																							44705, 44707, & 44730 : bad (noisy) traces; also, certain channels
1400	60	22.61	31	53.48	7.2	27.1	7.0	16	7.0	30	7.3	18	7.1	16	347	4	44746	44746	60	21.61	31	53.39	First bird is high
1415	60	24.03	31	53.84	7.2	3.7	7.8	357	7.7	5	7.3	11	6.8	14	329	344	44806	44806	60	23.05	31	53.24	Turning onto main line
1430	60	24.91	31	55.84	6.7	312.5	7.5	333	7.6	324	7.1	317	7.2	330	288	297	44866	44866	60	24.39	31	54.1	Ship approaching main line
1433	60	24.98	31	56.68	6.9	312.9	6.7	305	7.6	303	6.8	313	7.6	311	275	281	44880	44880	60	24.67	31	54.7	Vessel on line; streamer not straight yet
1444	60	25.09	31	58.54	7.1	289	7.0	295	6.6	292	7.0	296	7.0	293	274	288	44925	44925	60	24.99	31	56.47	Streamer IS straight
1500	60	25.26	31	1.53	7.2	289	7.3	288	6.8	294	6.6	289	6.9	287	277	288	44999	44999	60	25.18	31	1.57	One XBT and one XSV deployed
1515	60	25.36	32	3.99	6.7	289	6.7	289	7.7	291	7.0	299	7.1	293	278	281	45046	45046	60	25.29	31	1.96	
1532	60	25.53	32	7.18	7.2	302	6.9	296	6.9	287	7.1	296	7.4	301	277	286	45114	45114	60	25.43	32	5.15	
1545	60	25.66	32	9.42	7.3	293.6	7.4	###	6.9	###	7.3	296	6.6	###	275.4	279.2	45166	45166	60	25.56	32	7.44	
1610	60	25.9	32	13.17	7.7	54	7.4	272	6.8	275	6.6	278	7.3	276	281	284	45279	45279	60	25.82	32	12.11	
1630	60	26.1	32	17.17	7.3	273	7.2	280	6.6	274	6.8	275	7.2	289	275	287	45346	45346	60	25.97	32	15.09	On line
1650	60	26.32	32	20.94	7.6	282	7.2	278	7.3	272	6.5	279	6.6	279	274	288	45429	45429	60	26.2	32	18.85	< 2m swell
1710	60	26.52	32	24.47	6.7	281	7.0	276	6.9	272	7.2	268	7.0	276	277	288	45508	45508	60	26.39	32	22.37	
1730	60	26.78	32	29.02	7.4	282	7.2	277	6.9	73	7.3	276	6.5	280	277	286	45585	45585	60	26.62	32	26.93	
1750	60	26.91	32	31.42	7.5	273	7.2	280	6.9	282	6.6	280	6.4	273	278	286	45667	45667	60	26.74	32	29.34	
1807	60	27.11	32	34.92	6.8	304	7.0	299	7.1	299	7.4	297	7.0	292	281	285	45737	45737	60	26.95	32	32.89	
1815	60	27.19	32	36.33	7.3	303	7.1	299	7.1	296	7.4	299	6.9	294	281	285	45769	45769	60	27.03	32	34.33	
1828	60	27.33	32	28.77	7.4	297	7.1	296	6.7	293	6.7	306	6.6	301	281	292	45821	45821	60	27.18	32	36.74	
1845	60	27.5	32	41.89	6.6	60.7	6.6	290	7.5	291	7.3	291	6.6	291	278	284	45891	45891	60	27.39	32	39.85	
1900	60	27.66	32	44.48	7.8	275	7.6	276	7.2	274	6.6	274	7.0	272	272	280	45950	45950	60	27.53	32	42.4	
1915	60	27.98	32	47.02	7.2	278	6.9	278	7.0	282	6.9	275	6.7	274	276	285	46008	46008	60	27.69	32	44.92	
1930	60	27.93	32	49.34	7.2	272	6.9	273	6.9	273	6.9	277	7.2	270	279	284	46058	46058	60	27.83	32	47.27	On line, < 2m swell
1945	60	28.11	32	50.46	6.7	274	6.9	274	7.0	273	6.6	270	6.8	273	276	288	46129	46129	60	28.02	32	50.19	
2000	60	28.27	32	55.27	6.7	282	6.6	283	6.5	276	7.1	274	6.7	275	278	290	46184	46184	60	28.18	32	53.06	98km to next +
2015	60	28.43	32	58.15	7.2	270	7.4	271	6.6	274	6.6	272	7.2	281	277	291	46246	46246	60	28.35	32	58.19	
2030	60	28.57	33	0.75	7.2	272	7.2	271	7.2	270	7.4	274	6.8	279	276	286	46306	46306	60	28.5	32	58.62	
2045	60	28.74	33	3.61	7.4	270	7.0	270	6.9	277	6.6	283	7.1	279	272	281	46366	46366	60	28.65	33	1.49	calm, mild swell
2058	60	28.86	33	5.89	7.2	271	7.1	270	6.9	276	7.4	281	7.2	276	273	286	46419	46419	60	28.76	33	3.67	XBT planned
2104	60																46444	46444					XBT deployed
2115	60	29.02	33	8.93	6.5	279	6.5	280	6.8	274	7.1	276	7.0	280	277	291	46487	46487	60	28.93	33	6.79	
2130	60	29.18	33	11.63	6.6	285	6.6	272	7.1	283	6.9	270	7.2	270	276	288	46547	46547	60	29.1	33	9.67	
2145	60	29.31	33	14.21	6.7	274	6.7	272	6.9	279	7.0	271	7.3	270	280	289	46606	46606	60	29.23	33	12.06	calm
2200	60	29.47	33	16.97	6.9	272	6.9	274	6.8	272	6.9	273	7.3	276	276	288	46666	46666	60	29.38	33	14.85	
2215	60	29.63	33	19.79	7.3	276	7.2	276	6.8	292	6.8	278	7.2	273	273	287	46726	46726	60	29.55	33	17.8	1-2m long period swell only
2230	60	29.78	33	22.38	7.0	280	7.1	276	7.3	278	7.0	282	7.3	273	271	286	46786	46786	60	29.67	33	22.31	
2245	60	29.92	33	24.93	6.6	284	6.5	280	7.0	279	6.6	281	7.0	279	277	288	46846	46846	60	29.82	33	22.99	
2315	60	30.24	33	30.77	6.9	278	6.9	275	7.0	278	6.7	280	7.2	281	280	291	46966	46966	60	30.12	33	30.77	
2330	60	30.38	33	33.26	7.2	271	7.2	273	7.2	277	7.2	281	6.9	275	273	287	47026	47026	60	30.26	33	31.13	
2350	60	30.58	33	36.96	7.3	277	7.2	282	7.1	280	7.2	277	7.2	281	280	290	47108	47108	60	30.45	33	34.84	1hr to next XBT

Julian Day:
Sonobuoy Number:
Serial No:

Date:
Sonobuoy Channel:

Sonobuoy Frequency:
Depth Setting:
Duration (hours):

Time (GMT)	Lat (D.DM)	Lon (D.DM)	SOW (kts)	SOG (kts)	Wind head.	Wind speed	Current East (m/s)	Current North (m/s)	Data File	Comments
0654									SB14_93_2080655_S1/2	S1/S2 start
0655	60.23.45	31.26.37	5.2	5.4	026	12.1	-0.23	0.35	SB14_93_2080655_S1/2	Deployed. Deep water ~1900m. S1 1:36, S2 1:34. Shot 43047
0658									SB14_93_2080655_S1/2	Gain set. 3m swell
0701	60.23.65	31.27.38	5.4	5.3	027	12	-0.61	0.15	SB14_93_2080655_S1/2	Signal strong on S1/S2
0709	60.23.28	31.28.71	6	5.3	047	11.4	-0.65	0.12	SB14_93_2080655_S1/2	Amplitude diminishing on S2
0716	60.23.87	31.29.99	5.3	5.2	039	12.7	-0.21	0.06	SB14_93_2080655_S1/2	Amplitude on S2 diming further
0745	60.24.04	31.33.99	5.1	5.4	044	10.8	-0.49	0.15	SB14_93_2080655_S1/2	XBT deployed @ 0734. S2 no obvious trace, S1 still strong.
0800	60.24.20	31.37.71	5.4	5.6	042	12.2	-0.73	0.03	SB14_93_2080655_S1/2	"
0816	60.24.14	31.40.61	5.1	5.2	039	10.6	-0.17	-0.09	SB14_93_2080655_S1/2	"
0830	60.24.08	31.43.00	5.4	5.1	043	12	-0.75	0.02	SB14_93_2080655_S1/2	S1 amplitude falling
0845	60.24.01	31.45.65	5	5.1	041	10.7	-0.19	-0.03	SB14_93_2080655_S1/2	S1 no obvious trace
0900	60.24.21	31.48.16	5.4	4.9	032	10.7	-0.46	0.04		S1/S2 no signal
0915	60.29.50	31.50.72	5.1	5.2	020	12	-0.54	0.04		S1/S2 no signal
0930	60.24.77	31.53.14	5.1	4.8	020	10.2	-0.6	0.18		S1/S2 no signal
0945	60.25.01	31.55.65	5.1	5.2	035	9.3	-0.33	-0.01		S1/S2 no signal
1000	60.25.12	31.55.18	4.6	4.9	032	9.7	-0.6	0.04		S1/S2 no signal
1029	60.25.36	32.03.04	5.1	4.9	010	5	-0.48	0.25		S1/S2 no signal
1102	60.27.78	32.04.90	5.1	4.7	308	9.7	-0.11	0.9		S1/S2 no signal
1133	60.28.75	32.00.62	5.3	5.2	145	2.4	0.7	-0.22		S1/S2 no signal
1214	60.25.22	32.00.00	4.4	5.4	80.4	7.6	0.2	-0.86		Sonobuoy dead
1257	60.21.46	32.00.43	5.6	5.5	130	4.1	0.2	-0.31		Stopped recording
Sonobuoy number SB14 (Pigs ear 13)										
Serial number 7515										
Sonobuoy channel 93										
Sonobuoy frequency 158.875MHz										
Depth setting 140m										
Duration 6hrs										
S1 time difference 6h54.06 behind GMT										
S2 time difference 6h 54.00 behind GMT										

Julian Day: Date: Sheet Number:

Time	Lat		Lon		Water	Head.	SOW	SOG	EM710	EM120				EA600	SBP		ER60	OLEX	Comments
(GMT)	D	DM	D	DM	depth (m)		(kts)	(kts)	rec.	rec	Line cnt.			rec.	rec.	Data file	rec.	rec.	
0000	60	30.69	33	38.01	2481	272	5.1	5.2	n	y	0109	116	JC050White	y	y	208_1030_080	y	y	
0015	60	30.83	33	41.45	2514	279	5.3	5.3	n	y	0109	102	JC050White	y	y	208_1030_081	y	y	
0030	60	30.98	33	44.14	2483	286	5.5	5.3	n	y	0109	87	JC050White	y	y	208_1030_082	y	y	
0047	60	31.15	33	47.25	2698	278	5.5	5.2	n	y	0109	70	JC050White	y	y	208_1030_084	y	y	
0100	60	31.22	33	49.59	2454	269	5.1	5.5	n	y	0109	56	JC050White	y	y	208_1030_085	y	y	
0116	60	31.25	33	52.45	2531	265	5.5	5.5	n	y	0109	42	JC050White	y	y	208_1030_087	y	y	
0131	60	31.27	33	55.17	2521	272	5.6	5.3	n	y	0109	26	JC050White	y	y	208_1030_088	y	y	
0148	60	31.32	33	58.28	2563	268	5.9	5.3	n	y	0109	9	JC050White	y	y	208_1030_090	y	y	
0200	60	31.34	34	0.50	2687	265	5.5	5.4	n	y	0110	117	JC050White	y	y	208_1030_091	y	y	
0216	60	31.38	34	3.36	2669	272	5.3	5.3	n	y	0110	101	JC050White	y	y	208_1030_092	y	y	
0230	60	31.41	34	5.84	2785	275	4.8	5.6	n	y	0110	88	JC050White	y	y	208_1030_093	y	y	
0245	60	31.43	34	8.62	2975	263	5.3	5.6	n	y	0110	73	JC050White	y	y	208_1030_095	y	y	
0302	60	31.47	34	11.72	2798	273	5.3	5.5	n	y	0110	56	JC050White	y	y	208_1030_096	y	y	
0317	60	31.50	34	14.62	2867	266	5.7	5.4	n	y	0110	40	JC050White	y	y	208_1030_097	y	y	
0330	60	31.52	34	16.92	2953	276	5.2	5.5	n	y	0110	28	JC050White	y	y	208_1030_098	y	y	
0346	60	31.56	34	19.83	2888	274	5.2	5.2	n	y	0110	12	JC050White	y	y	208_1030_100	y	y	
0400	60	31.58	34	22.20	3002	266	5.3	5.4	n	y	0111	118	JC050White	y	y	208_1030_101	y	y	
0415	60	31.62	34	24.94	2896	265	5.5	5.3	n	y	0111	103	JC050White	y	y	208_1030_102	y	y	
0430	60	31.65	34	27.86	2815	278	5.4	5.3	n	y	0111	87	JC050White	y	y	208_1030_103	y	y	
0445	60	31.68	34	30.61	2761	264	5.5	5.2	n	y	0111	72	JC050White	y	y	208_1030_105	y	y	
0503	60	31.72	34	33.84	2696	267	5.7	5.2	n	y	0111	54	JC050White	y	y	208_1030_106	y	y	
0515	60	31.75	34	36.01	2709	268	5.5	5.2	n	y	0111	43	JC050White	y	y	208_1030_107	y	y	
0528	60	31.78	34	38.53	2779	264	5.4	5.3	n	y	0111	29	JC050White	y	y	208_1030_108	y	y	
0555	60	31.81	34	43.19	2744	270	5.3	5.1	n	y	0111	3	JC050White	y	y	208_1030_111	y	y	
0615	60	32.26	34	46.42	2829	330	5.6	5.5	n	y	0012	103	JC050White	y	y	208_1030_112	y	y	
0630	60	33.70	34	46.93	3039	358	5.8	5.3	n	y	0012	87	JC050White	y	y	208_1030_114	y	y	
0645	60	35.02	34	46.46	3164	046	5.7	5.5	n	y	0012	72	JC050White	y	y	208_1030_115	y	y	
0700	60	35.56	34	44.34	3057	097	5.4	5.5	n	y	0012	59	JC050White	y	y	208_1030_116	y	y	
0715	60	34.85	34	42.14	2928	156	5.2	5.4	n	y	0012	43	JC050White	y	y	208_1030_117	y	y	
0730	60	33.79	34	41.94	2858	172	5.6	5.5	n	y	0012	31	JC050White	y	y	208_1030_118	y	y	
0745	60	32.17	34	41.99	2707	181	5.8	5.4	n	y	0012	14	JC050White	y	y	208_1030_119	y	y	
0800	60	30.62	34	42.05	2692	175	5.6	5.9	n	y	0113	116	JC050White	y	y	208_1030_121	y	y	
0815	60	29.17	34	41.81	2340	148	5.5	5.4	n	y	0113	101	JC050White	y	y	208_1030_122	y	y	0.5m-1m swell
0830	60	28.24	34	40.28	2472	119	5.3	5.1	n	y	0113	87	JC050White	y	y	208_1030_124	y	y	2nd turn of bonus pigs ear
0846	60	28.06	34	37.43	2836	89	5.2	5.3	n	y	0113	71	JC050White	y	y	208_1030_125	y	y	
0900	60	28.69	34	35.51	2897	32	5.7	5.3	n	y	0113	57	JC050White	y	y	208_1030_126	y	y	
0915	60	30.05	34	35.06	2887	3	5.2	5.1	n	y	0113	42	JC050White	y	y	208_1030_128	y	y	
0930	60	31.25	34	35.98	2850	313	5.5	5.5	n	y	0113	27	JC050White	y	y	208_1030_129	y	y	
0945	60	31.78	34	38.39	2779	271	5.4	5.3	n	y	0113	12	JC050White	y	y	208_1030_130	y	y	Back on main line
1000	60	31.79	34	41.03	2650	274	5.0	5.2	n	y	0114	119	JC050White	y	y	208_1030_131	y	y	Preparing XBT
1008	60	31.80	34	42.37			5.6	5.2											XBT launched 1008
1015	60	31.82	34	43.90	2649	264	5.2	5.4	n	y	0114	102	JC050White	y	y	208_1030_133		y	
1030	60	31.84	34	46.44	2802	272	5.4	5.1	n	y	0114	86	JC050White	y	y	208_1030_134	y	y	
1044	60	31.88	34	49.10	2876	268	5.1	5.3	n	y	0114	73	JC050White	y	y	208_1030_135	y	y	
1100	60	31.92	34	51.95	3013	271	5.7	5.3	n	n				y	y	208_1030_136	y	y	Restarting EM120
1115	60	31.97	34	54.67	2915	268	5.3	5.3	n	y	0000	117	JC050White-2	y	y	208_1030_137	y	y	
1130	60	32.02	34	57.54	3187	266	5.0	5.3	n	y	0000	102	JC050White-2	y	y	208_1030_139	y	y	
1145	60	32.06	35	0.26	2759	264	4.9	5.5	n	y	0000	88	JC050White-2	y	y	208_1030_140	y	y	
1200	60	32.10	35	2.85	3017	272	4.6	5.1	n	y	0000	72	JC050White-2	y	y	208_1030_141	y	y	
1215	60	32.13	35	5.60	2914	261	5.5	5.2	n	y	0000	57	JC050White-2	y	y	208_1030_142	y	y	
1231	60	32.18	35	8.58	2633	270	5.5	5.2	n	y	0000	41	JC050White-2	y	y	208_1030_144	y	y	POSMV down
1245	60	32.22	35	11.18	2696	265	5.8	5.4	n	y	0000	26	JC050White-2	y	y	208_1030_145	y	y	ditto
1300	60	32.76	35	13.96	2795	273	5.5	5.4	n	y	0000	11	JC050White-2	y	y	208_1030_146	y	y	
1315	60	32.31	35	16.67	3255	271	5.6	5.4	n	y	0001	17	JC050White-2	y	y	208_1030_147	y	y	
1331	60	32.34	35	19.41	3026	266	6.4	5.3	n	y	0001	101	JC050White-2	y	y	208_1030_148	y	y	
1346	60	32.39	35	22.21	3026	271	5.4	5.5	n	y	0001	86	JC050White-2	y	y	208_1030_150	y	y	
1415	60	32.47	35	27.56	2907	271	5.3	5.6	n	y	0001	57	JC050White-2	y	y	208_1030_152	y	y	Pilot whales!
1430	60	32.53	35	30.45	2816	253	6.6	5.2	n	y	0001	41	JC050White-2	y	y	208_1030_153	y	y	
1447	60	32.26	35	33.38	2954	263	5.8	5.5	n	y	0001	25	JC050White-2	y	y	208_1030_155	y	y	
1500	60	32.59	35	35.77	3009	270	6.0	5.5	n	y	0001	12	JC050White-2	y	y	208_1030_156	y	y	
1517	60	32.65	35	38.87	3006	259	5.6	5.2	n	y	0002	115	JC050White-2	y	y	208_1030_157	y	y	
1533	60	32.68	35	41.81	3003	258	5.5	5.5	n	y	0002	99	JC050White-2	y	y	208_1030_158	y	y	
1545	60	32.73	35	44.07	3002	297	5.4	5.6	n	y	0002	87	JC050White-2	y	y	208_1030_159	y	y	
1600	60	32.77	35	46.49	2996	271	5.4	5.4	n	y	0002	73	JC050White-2	y	y	208_1030_160	y	y	
1615	60	32.81	35	49.44	2994	262	5.1	5.4	n	y	0002	57	JC050White-2	y	y	208_1030_161	y	y	
1630	60	32.85	35	51.85	2994	264	6.4	5.5	n	y	0002	43	JC050White-2	y	y	208_1030_163	y	y	Swell increasing; poss take gu
1645	60	32.96	35	55.05	2992	274	5.4	4.9	n	y	0002	27	JC050White-2	y	y	208_1030_164	y	y	Swell ~2.5m
1700	60	32.94	35	57.39	2930	264	5.3	4.8	n	y	0002	14	JC050White-2	y	y	208_1030_165	y	y	
1715	60	32.98	36	0.11	2992	271	5.0	5.8	n	y	0003	118	JC050White-2	y	y	208_1030_166	y	y	
1730	60	33.30	36	2.52	2994	293	5.2	5.9	n	y	0003	104	JC050White-2	y	y	208_1030_167	y	y	
1745	60	33.93	36	5.34	2985	295	5.2	5.4	n	y	0003	88	JC050White-2	y	y	208_1030_169	y	y	Very flat seabed ok - no error
1800	60	34.45	36	7.63	2980	288	5.7	5.3	n	y	0003	74	JC050White-2	y	y	208_1030_170	y	y	
1815	60	35.02	36	10.52	2977	302	5.4	5.4	n	y	0003	56	JC050White-2	y	y	208_1030_171	y	y	bringing streamer in due to swe
1830	60	35.69	36	12.82	2944	268	5.2	5.8	n	y	0003	42	JC050White-2	y	y	208_1030_172	y	y	Guns in.
1845	60	36.18	36	15.00	2980	295	5.1	4.3	n	y	0003	29	JC050White-2	y	y	208_1030_174	y	y	Getting birds in now
1900	60	36.59	36	16.81	2981	298	3.7	3.3	n	y	0003	14	JC050White-2	y	y	208_1030_175	y	y	Tailbuoy tension v. high
1915	60	36.97	36	18.59	2982	279	4.2	3.8	n	y	0004	118	JC050White-2	y	y	208_1030_176	y	y	Tailbuoy tension v. high & heav
1930	60	37.30	36	20.10	2983	297	3.3	3.5	n	y	0004	105	JC050White-2	y	y	208_1030_177	y	y	
1945	60	37.71	36	22.20	2971	262	4.3	3.6	n	y	0004	88	JC050White-2	y	y	208_1030_178	y	y	3 birds retrieved; one minus a v
2002	60	38.13	36	24.13	2967	296	3.3	3.9	n	y	0004	70	JC050White-2	y	y	208_1030_180	y	y	Problems with scroller
2015	60	38.37	36	25.46	2966	297	3.9	3.4	n	y	0004	58	JC050White-2	y	y	208_1030_181	y	y	Manually operating scroller
2030	60	38.73	36	27.33	2969	274	4.7	3.1	n	y	0004	41	JC050White-2	y	y	208_1030_182	y	y	
2044	60	39.06	36	28.99	2967	307	3.4	3.6	n	y	0004	28	JC050White-2	y	y	208_1030_183	y	y	
2100	60	39.37	36	30.52	2972	303	3.4	3.9	n	y	0004	13	JC050White-2	y	y	208_1030_185	y	y	Beginning turn to return to stati
2115	60	39.51	36	30.64	3079	112	5.3	4.9	n	y	0005	118	JC050White-2	y	y	208_1030_186	y	y	
2130	60	38.87	36	28.03	3258	111	6.0	6.3	n	y	0005	102	JC050White-2	y	y	208_1030_187	y	y	
2200	60	37.59	36	22.63	2971	109	6.2	6.2	n	y	0005	74	JC050White-2	y	y	208_1030_189	y	y	
2232	60	36.07	36	15.96	3011	112	6.5	6.4	n	y	0005	41	JC050White-2	y	y	208_1030_192	y	y	
2259	60	34.78	36	10.24	3885	111	6.9	6.9	n	y	0005	13	JC050White-2	y	y	208_1030_194	y	y	
2330	60	33.93	36	5.53	2985	59	0.6	0.4	n	y	0006	102	JC050White-2	y	y	208_1030_196	y	y	Deploying XCTD on station SB
2350																			

Day: Date: Sheet Number:

Time	Lat		Lon		ADCP150	ADCP75	Techsas	Level-C	Grav.	Mag.	Wind			Comments, eg state of seismic exp.
(GMT)	D	DM	D	DM	rec.	rec.	rec.	rec.	(mgal)	(nT)	Speed	Dir.	Sea State	
0003	60	30.71	33	39.22	y	y	y	y	13290.3	n	2.3	274	1m swell	
0015	60	30.84	33	41.42	y	y	y	y		n	2.4	274		
0030	60	30.98	33	44.10	y	y	y	y	13296.1	n	1.0	228		
0048	60	31.17	33	47.42	y	y	y	y		n	1.8	206		
0100	60	31.22	33	49.59	y	y	y	y	13288.6	n	4.4	248		
0116	60	31.25	33	52.42	y	y	y	y		n	4.4	261		
0131	60	31.28	33	55.16	y	y	y	y	13283.5	n	5.2	251		
0149	60	31.32	33	58.42	y	y	y	y		n	3.8	252		
0200	60	31.35	34	0.51	y	y	y	y	13293.1	n	6.4	256		
0215	60	31.37	34	3.16	y	y	y	y		n	7.1	271		Guns have started misfiring, only a few shots misse
0228	60	31.04	34	5.54	y	y	y	y	13289.4	n	5.5	267		
0245	60	31.44	34	8.64	y	y	y	y		n	4.3	249		
0301	60	31.47	34	11.59	y	y	y	y	13286.8	n	4.0	251		
0317	60	31.51	34	14.61	y	y	y	y		n	5.0	233		
0330	60	31.53	34	16.91	y	y	y	y	13289.9	n	7.7	235		
0345	60	31.56	34	19.77	y	y	y	y		n	6.6	240		
0400	60	31.58	34	22.17	y	y	y	y	13290.5	n	7.4	236		
0414	60	31.62	34	24.96	y	y	y	y		n	7.3	240		
0430	60	31.65	34	27.83	y	y	y	y	13291.7	n	6.3	247		
0445	60	31.68	34	30.62	y	y	y	y		n	7.9	231	calm: < 1m swell	
0500	60	31.71	34	33.48	y	y	y	y	13297	n	8.4	228		
0515	60	31.75	34	36.06	y	y	y	y		n	7.0	231	"	
0530	60	31.77	34	38.53	y	y	y	y	13289.1	n	7.7	232	"	
0550	60	31.81	34	43.19	y	y	y	y		n	8.8	237	"	successful XBT deployed, 0545
0615	60	32.26	34	46.42	y	y	y	y	13282.8	n	7.5	132	"	
0630	60	33.71	34	46.93	y	y	y	y		n	8.9	123	"	
0645	60	35.02	34	46.46	y	y	y	y	13253.1	n	11.2	60.4	white peaks	
0700	60	35.56	34	44.34	y	y	y	y		n	12.2	017	"	
0715	60	34.85	34	42.14	y	y	y	y	13255.1	n	13.2	328		
0730	60	33.79	34	41.94	y	y	y	y		n	14.7	313	"	About to deploy XSV & XBT
0745	60	32.61	34	41.97	y	y	y	y	13269.5	n	12.7	313	"	
0800	60	30.62	34	42.05	y	y	y	y	13280.1	n	13.8	316	1-2m swell	
0816	60	29.18	34	41.81	y	y	y	y		n	12.9	329		
0831	60	28.22	34	40.19	y	y	y	y	13267.2	n	14.0	349		
0850	60	28.14	34	36.85	y	y	y	y		n	14.0	33		2nd turn of pigs ear
0903	60	28.94	34	35.27	y	y	y	y		n	14.9	60		Gravimeter not on - crashed? Leighton on the case -
0915	60	29.98	34	35.05	y	y	y	y	13273	n	13.0	92		
0931	60	31.25	34	35.98	y	y	y	y	13280.3	n	8.0	146		
0947	60	31.78	34	38.70	y	y	y	y		n	9.3	220		Back on main line
1001	60	31.79	34	41.22	y	y	y	y	13307.6	n	10.3	217	1-3m swell	Preparing XBT
1008	60	31.80	34	42.37									1-3m swell	XBT launched 1008
1019	60	31.80	34	44.47	y	y	y	y		n	11.3	217	1-3m swell	
1031	60	31.84	34	46.75	y	y	y	y	13310	n	9.5	206	1-3m swell	
1046	60	31.88	34	49.44	y	y	y	y		n	11.4	219	1-3m swell	
1101	60	31.93	34	52.19			y	y	13317.3	n	9.4	209	1-3m swell	
1117	60	30.29	34	55.00	y	y	y	y		n	6.4	202	1-3m swell	
1133	60	32.02	34	57.95	y	y	y	y	13315.4	n	9.1	214	1-3m swell	
1145	60	32.05	35	0.13	y	y	y	y		n	8.4	215	1-3m swell	
1200	60	32.09	35	3.06	y	y	y	y	13322.5	n	4.4	210	1-3m swell	
1215	60	32.14	35	5.74	y	y	y	y		n	9.9	208.1	1-3m swell	
1230	60	32.19	35	8.45	y	y	y	y	13317.9	n	8.6	208	1-3m swell	
1247	60	32.22	35	11.48	y	y	y	y		n	8.7	217	1-3m swell	Leighton updating Techsas
1300	60	32.27	35	13.91	y	y	y	y	13303.5	n	7.3	219	1-3m swell	
1315	60	32.30	35	16.73	y	y	y	y		n	9.5	216	1-3m swell	
1330	60	32.36	35	19.34	y	y	y	y	13295.1	n	11.0	221.7	1-3m swell	
1346	60	32.40	35	22.21	y	y	y	y		n	8.4	228.6	1-3m swell	
1401	60	32.43	35	24.88	y	y	y	y	13304.5	n	8.8	220	1-3m swell	
1416	60	32.47	35	27.72	y	y	y	y		n	9.9	219	1-3m swell	Pilot whales 100m off starboard
1430	60	32.52	35	30.39	y	y	y	y	13301	n	10.4	220.7	1-3m swell	
1448	60	32.58	35	33.55	y	y	y	y		n	9.3	220.6	1-3m swell	
1500	60	32.60	35	35.89	y	y	y	y	13301.1	n	7.4	217.2	1-3m swell	
1518	60	32.66	35	39.06	y	y	y	y		n	8.4	226.6	1-3m swell	
1532	60	32.69	35	41.67	y	y	y	y	13298.9	n	8.3	215.7		
1545	60	32.73	35	44.05	y	y	y	y		n	10.3	214.8		
1600	60	32.77	35	46.49	y	y	y	y	13302.5	n	8.7	223	mild chop: <2m swell	
1615	60	32.81	35	49.40	y	y	y	y		n	9.5	200	white peaks, 4m swell	
1630	60	32.85	35	51.85	y	y	y	y	13303	n	5.1	215	"	
1645	60	32.90	35	55.06	y	y	y	y		n	5.4	193	"	
1700	60	32.94	35	57.39	y	y	y	y	13300.7	n	4.6	190		Worried about swell. Team on standby to get gear in
1715	60	32.98	36	0.11	y	y	y	y		n	5.6	193	"	
1730	60	33.30	36	2.52	y	y	y	y	13287.1	n	9.4	146	"	
1745	60	33.93	36	5.34	y	y	y	y		n	10.2	136	"	
1800	60	34.45	36	7.63	y	y	y	y	13304	n	12.7	137	"	Preparing to bring gear in.
1815	60	35.02	36	10.52	y	y	y	y		n	10.2	134	v. choppy	Bringing streamer in due to swell now.
1829	60	35.60	36	12.64	y	y	y	y	13343.7	n	11.8	134	"	Guns in
1845	60	36.18	36	15.00	y	y	y	y		n	11.7	130	"	Getting birds in now
1900	60	36.59	36	16.81	y	y	y	y	13288.6	n	10.5	123	"	Tailbuoy tension high - Adam investigating
1915	60	36.97	36	18.59	y	y	y	y	13290.8	n	11.4	136	v. choppy, heavy rain	"
1930	60	37.30	36	20.06	y	y	y	y	13285.3	n	10.2	142	"	3 birds in so far
1945	60	37.71	36	22.20	y	y	y	y	13300.9	n	9.3	114	swell 6-7 m	"
2006	60	38.20	36	24.50	y	y	y	y	13278.1	n	13.1	134	swell up to 7m	Problems with scroller
2015	60	38.37	36	25.46	y	y	y	y	13285.7	n	12.5	126	"	
2030	60	38.73	36	27.33	y	y	y	y	13292.2	n	12.5	113	swell up to 5m	
2045	60	39.06	36	28.91	y	y	y	y	13284.5	n	11.0	118		2043, tailbuoy recovered
2100	60	39.37	36	30.52	y	y	y	y	13289.4	n	11.5	119		
2115	60	39.51	36	30.64	y	y	y	y	13244	n	16.0	322		
2130	60	38.87	36	28.03	y	y	y	y	13227.1	n	16.0	306		
2145	60		36						13220.2	n				
2200	60	37.52	36	22.27	y	y	y	y	13236.7	n	18.1	313		
2215	60		36						13249.2	n				
2231	60	36.08	36	16.02	y	y	y	y	13240.1	n	19.6	317	Swell up to 4m	
2247	60		36		y	y	y	y	13239.5	n				
2259	60	34.78	36	10.24	y	y	y	y	13261.9	n	17.4	304		
2315	60		36		y	y	y	y	13264.6	n				
2336	60	33.93	36	5.54	y	y	y	y	-	n	13.5	335		Deploying XCTD, on station

Every 30 min, for important events and not for birds during turns.

Seismic log

Line No:	1 SEQ 10/11				Date: ###		Julian Day: 209		Page No:				Depth of Gun 1: 5m								Array Volume: 355
													Depth of Gun 2:h								
	Vessel GPS				Bird 1		Bird 2		Bird 3		Bird 4		Bird 5					Tailbuoy GPS			
Time GMT	Lat		Long		Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Ship H'ding	CMG	Shot no.	FFID	Lat	Long	MISFIRE, Feathering angle, sea state, current, other comments
0000	60	30.v9	33	38.94	7	300	7.1	288	7.3	296	7	297	6.9	298	275	282	47147	47147	60 30.55	33 36.92	Start of shift
0015	60	30.84	33	41.65	7.1	301	6.9	297	7	296	7.2	298	6.8	302	276	288	47207	47207	60 30.69	33 39.62	Relatively calm, data quality OK
30	60	30.97	33	43.92	7.3	299	6.9	303	6.7	295	7.2	294	6.9	297	278	284	47627	47627	60 30.85	33 42.25	
0046	60	31.14	33	47	7.4	293	7.4	292	6.5	292	6.8	292	7.1	295	275	287	47333	47333	60 31.02	33 44.99	XBT launched
0101	60	31.21	33	49.68	7.1	296	7.1	297	7.2	295	6.8	293	7.1	297	271	281	47390	47390	60 31.16	33 47.65	All good
0115	60	31.25	33	52.28	6.6	292	6.7	292	6.7	299	6.6	295	7.4	299	269	285	47448	47448	60 31.22	33 50.24	
0130	60	31.28	33	55.06	6.5	287	6.6	285	6.6	286	6.9	288	7.4	288	269	282	47507	47507	60 31.28	33 52.99	
0146	60	31.31	33	58.08	7	288	6.9	289	7.2	290	7	287	7.1	285	264	280	47571	47571	60 31.33	33 56.11	
0200	60	31.34	34	0.52	7.4	285	7	290	6.8	292	6.9	289	6.9	292	266	282	47627	47627	60 31.37	33 58.47	
0215	60	31.37	34	3.21	6.7	287	6.9	287	7.5	287	6.9	289	6.8	291	264	283	47687	47687	60 31.43	34 1.76	Misfir at shot 47689-47697
0235	60	31.42	34	7.8	7	284	6.8	283	7	286	6.8	289	6.9	283	261	282	47769	47769	60 31.51	34 5.79	Problem fixed
0245	60	31.43	34	8.6	6.8	292	6.6	290	7.1	293	7	287	6.7	292	265	283	47807	47807	60 31.52	34 6.58	
0301	60	31.47	34	11.63	6.8	284	7.1	283	7.4	285	6.9	288	7.3	284	264	282	47869	47869	60 31.58	34 9.58	
0315	60	31.49	34	14.27	7	281	6.7	286	6.7	280	7	280	6.9	284	267	281	47927	47927	60 31.61	34 12.18	
0330	60	31.53	34	16.92	6.8	290	6.6	287	7.1	285	7.2	286	7.3	284	264	281	47987	47987	60 31.62	34 14.86	
0345	60	31.55	34	19.37	7.1	288	7.2	284	6.9	285	7.2	285	7.2	292	269	287	48046	48046	60 31.63	34 17.3	
0400	60	31.58	34	22.31	6.9	268	6.8	269	6.9	272	6.6	266	6.6	264	261	283	48109	48109	60 31.64	34 20.29	
0416	60	31.62	34	25.27	7.3	267	7	267	6.6	270	6.8	270	7.2	268	267	283	48173	48173	60 31.65	34 23.17	
0430	60	31.65	34	27.97	7.4	266	7.1	267	7.1	271	6.9	269	6.9	270	265	283	48232	48232	60 31.68	34 25.88	~1m swell
0445	60	31.68	34	30.65	7.5	272	7	274	6.6	271	7.2	272	7.2	270	267	280	48291	48291	60 31.71	34 28.54	
0502	60	31.71	34	33.97	7.6	270	6.9	271	6.9	270	6.7	268	7.5	271	269	283	48359	48359	60 31.73	34 31.79	
0515	60	31.74	34	34.17	6.8	273	6.8	272	7.2	269	7.2	269	6.5	280	266	282	48408	48408	60 31.74	34 34.21	
0530	60	31.37	34	38.56	7.1	274	6.9	271	6.8	269	6.9	270	6.9	271	269	280	48465	48465	60 31.76	34 36.46	
0555	60	31.8	34	43.27	7.4	274	7.4	275	6.9	274	7	273	9	296	265	287	48569	48569	60 31.8	34 41.16	XBT deployed
0604																	48600	48600			Started turning (ship off line)
																	48627	48627			EOL Line 1 Seq 10 (48627)
	START OF SEQUENCE 11 (on file it's still segment 10)																				
0610																	50050	50050			(SOL) Line 1 seq 11 (Start of Sequence)
0641	60	34.65	34	46.85											32	30	50111	50109	60 33.64	34 47.16	Shot no. and FFID out of sink. (continuing to write to file line 1-10)
0658	60	35.57	34	44.4											99	106	50183	50181	60 35.16	34 46.3	Still on turn
0719																	50263	50261			Turning onto line SOL
0721	60	31.2	34	41.97	6.7	172	6.8	174	7.4	163	7.4	163	7.4	146	160	185	50272	50269	60 35.12	34 42.78	Ship on line
0729																	50299	50597			TB behind ship, streamer straight
0745	60	32.09	34	42.01	7.1	179	7.7	182	7.5	169	6.9	172	6.6	182	167	190	50363	50361	60 33.13	34 42.13	Approaching crossing point
0800	60	30.66	34	42.03	4.7	154	4.1	193	6.1	180	7.1	172	6.7	192	170	198	50424	50422	60 31.72	34 42.17	XBT & XSV deployed 0756
0815	60	29.2	34	41.83	8.3	159	8	165	6.6	167	7.9	166	6.8	173	150	173	50484	50482	60 30.27	34 42.3	Steering birds to avoid crossing
0830	60	28.24	34	40.27	7.8	129	8	128	7.1	130	7.2	140	6.9	141	119	135	50544	50542	60 28.98	34 41.81	Speed reduced to 5 kts
0845	60	28.06	34	37.42	7.4	96	7.5	98	7.1	92	7.4	99	6.8	95	90	94	50603	50601	60 28.13	34 39.48	
0900	60	28.74	34	35.44	8	42	7.8	50	7.3	57	7.2	69	7.1	71	142	39	50666	50664	60 28.2	34 35.42	
0915	60	30.01	34	35.04	9	14	8	12	6.2	7	6.8	12	6.9	15	4	5	50723	50721	60 28.98	34 35.54	2/3 through turn, increasing wind + 1m swell
0930	60	31.21	34	35.89	9.3	321	9.2	340	8.1	330	7.6	337	7.4	342	315	327	50784	50782	60 30.2	34 35.26	Weather deteriorating
0945	60	31.78	34	38.35	7	280	7.5	291	6.9	293	7.2	299	8	309	264	285	50843	50841	60 31.39	34 36.43	20 mins to cross
0952																	50870	50868			Streamer straight
1005	60	31.8	34	42	7.8	273	7.7	270	7.9	269	6.9	270	6.6	267	265	284	50922	50920	60 31.82	34 39.77	XBT being prepared
1008	60	31.8	34	42.37																	XBT launched 1008
1020	60	31.82	34	44.61	8.8	269	8.1	262	6.9	267	7.4	269	6.4	278	265	284	50982	50980	60 31.83	34 44.65	Tail buoy passes centre cross
1030	60	31.84	34	46.52	6.4	266	8	269	6.5	278	6.7	275	6.9	269	265	283	51022	51020	60 31.83	34 44.3	
1045	60	31.88	34	49.33	7.9	278	7.7	274	7.1	268	7.2	268	7.6	275	262	278	51083	51081	60 31.85	34 47.13	1-2m swell, plenty chop
1100	60	31.92	34	51.86	7.7	272	7.8	275	6.5	268	6.9	272	6.6	275	258	286	51142	51140	60 31.88	34 49.73	
1115	60	31.96	34	54.59	7.2	274	6.9	276	6.8	277	7.3	271	7.1	277	269	285	51203	51201	60 31.91	34 52.46	
1121																	51225	51225			Problems with compressor - no missfires
1130	60	32	34	57.45	8	272	7.2	282	6.5	279	7	283	6.9	277	269	285	51264	51262	60 31.93	34 55.33	2.5m swell
1145	60	32.04	35	0.08	8.6	278	7.2	274	6.5	277	7	273	6.9	270	274	291	51324	51322	60 31.96	34 57.96	8hrs to next pigs ear
1200	60	32.09	35	2.74	7.6	278	7.2	277	6.7	285	7	283	7.2	289	265	281	51386	51384	60 32	35 0.62	Big swell
1216	60	32.13	35	5.77	7.6	305	7.1	293	6.6	292	7	296	7.2	289	270	283	51452	51450	60 32.07	35 3.69	"
1230	60	32.18	35	8.34	8.6	292	8	293	7	291	6.6	288	7.3	297	267	283	51510	51508	60 32.1	35 6.23	"
1245	60	32.21	35	10.91	7.9	278	7.6	278	6.3	294	6	294	6.9	291	269	286	51564	51562	60 32.17	35 8.82	POSMV down @ 1246
1300	60	32.26	35	13.95	7.8	300	8	295	8.4	287	7.5	293	7.9	298	263	280	51633	51631	60 32.25	35 11.89	POSMV up @ 1253
1315	60	32.29	35	16.65	6.9	286	6.9	289	7.4	287	8	291	7.7	287	271	281	51692	51690	60 32.31	35 14.59	Bringing down birds' depth by 0.5m to 7.5m
1331	60	32.35	35	19.44	7.4	286	8.3	289	7.8	286	7.7	290	7.7	285	270	286	51752	51750	60 32.37	35 17.31	
1345	60	32.38	35	22.08	6.6	283	7.4	283	7.2	288	7.8	285	7.6	284	267.5	282.7	51810	51808	60 32.43	35 19.98	
1406	60	32.43	35	25.2	7.5	295	7.7	296	8.1	290	8	296	7.1	293	263	289	51889	51887	60 32.57	35 24.24	
1415	60	32.47	35	27.66	8.5	285	7.2	286	7.4	284	7.3	287	7.8	277	268	292	51926	51924	60 32.54	35 25.61	Whales observed approx. 300m from stern
1433	60	32.52	35	30.95	7.6	309	6.9	289	7.7	289	7.3	296	7.6	287	267	283	51996	81994	60 32.58	35 28.88	
1447	60	32.57	35	33.47	8.4	280	7.8	282	7.3	293	7.4	284	7.2	277	260	286	52052	52050	60 32.63	35 31.4	
1500	60	32.59	35	35.73	7.2	290	7.3	309	8.4	282	7.6	292	7.2	286	270	289	52104	52102	60 32.68	35 33.68	
1517	60	32.65	35	39.08	8.3	282	8.4	280	7.6	281	8.1	286	8.4	280	261	281	52172	52170	60 32.75	35 36.99	Streamer depth increased to 8m to reduce swell noise in data
1530	60	32.69	35	41.31	7.2	290	7.5	287	7.1	285	7.4	291	8	290	269	287	52224	52222	60 32.77	35 39.21	
1545	60	32.72	35	43.99	8.4	287	8.5	284	7.9	286	7.9	293	8.4	279	263	287	52284	52282	60 32.8	35 41.95	
1600	60	32.76	35	46.37	8.8	268	7.7	210	7.7	282	8.1	271	7.3	271	268	282	52338	52336	60 32.83	35 44.27	Rain, wind 20kts, swell 2.5m
1615	60	32.81	35	49.29	8.2	270	7.8	267	8.7	277	8.6	274	8.1	263	257	280	52399	52397	60 32.87	35 47.21	
1630	60	32.85	35	51.89	8	266	7.4	279	7.8	291	8.1	273	8.5	272	274	282	52464	52462	60 32.88	35 49.9	
1648	60	32.91	35	55.65	8.6	263	8.7	268	8.6	275	7.8	276	8.3	273	265	289	52535	52535	60 32.92	35 53.53	
1700	60	32.93	35	57.41	7.9	274	7.7	277	7.8	270	8.1	275	7.5	262	271	283	52584	52584	60 32.92	35 55.31	~2m swell, wind from E, 22kts
1712	60	32.97	35	59.85	8.9	269	8.4	281	8.4	278	7.8	267	7.7	270	261	282	52637	525636	60 33	35 57.76	near the end of line
1717																	52653	52651			15-20deg turn in line towards Greenland
1727	60	33.1	36	1.78	8.5	286	8.1	288	8.3	45	7.7	270	8.6	265	294	307	52678	52676	60 33.03	35 59.69	Turning successful, but weather bad
1744	60	33.93	36	5.38	8	308	7.8	322	8.5	315	8	324	7.6	302	296	304	52763	52763	60 33.95	36 5.48	
1800	60	34.44	36	7.62	8.3	298	8.2	30	7.7	301	8.2	292	7.8	287	292	305	52819	52817	60 34.05	36 5.69	
1810	60	34.97	36	9.96	8.4	296	8.7	294	8.1	299	7.8	295	7.7	288	302	310	52866	52864	60 34.57	36 8.02	Last shot points. Guns + streamer coming in due to bad weather
1820																					Guns on board
1846	60	36.32	36	18.37															60 35.96	36 13.98	Recovering streamer - matching boat speed against winch recovery speed to minimise tension
1926	60	37.28	36	20.06															60 37.34	36 19.05	Bird 3 lost wing - XBT wire wrapped around
2009																					Problems with scroller. Continuing retrieval without it.
2043																					Tailbuoy recovered.

Julian Day: Date: Sheet Number:

Time	Lat		Lon		Water	Head.	SOW	SOG	EM710	EM120				EA600	SBP			ER60	OLEX	Comments
(GMT)	D	DM	D	DM	depth (m)		(kts)	(kts)	rec.	rec	Line cnt.			rec.	rec.	Data file		rec.	rec.	
0002	60	33.93	36	5.54	2948	58	0.5	0.5	N	Y	0006	70	JC050-2	Y	N	-		Y	Y	EM170 not logging
0028	60	33.92	36	5.53	2985	108	1.8	0.5	N	Y	0006	44	JC050-2	Y	N	-		Y	Y	SBP off
0101	60	33.93	36	5.51	2897	61	0.2	0.1	N	Y	0006	11	JC050-2	Y	N	-		Y	Y	
0129	60	33.94	36	5.52	2984	171	1.0	0.6	N	Y	0007	104	JC050-2	Y	N	-		Y	Y	
0146	60	33.93	36	5.53	2987	47	1.1	0.5	N	Y	0007	84	JC050-2	Y	N	-		Y	Y	
0200	60	33.93	36	5.53	2985	48	0.7	0.4	N	Y	0007	70	JC050-2	Y	N	-		Y	Y	
0230	60	33.94	36	5.53	2984	295	0.6	0.6	N	Y	0007	41	JC050-2	Y	N	-		Y	Y	
0300	60	33.92	36	5.54	2984	43	0.7	0.6	N	Y	0007	14	JC050-2	Y	N	-		Y	Y	
0330	60	33.92	36	5.52	2985	126	1.5	0.6	N	Y	0008	101	JC050-2	Y	N	-		Y	Y	ship turning
0400	60	33.92	36	5.52	2984	177	1.2	0.5	N	Y	0008	69	JC050-2	Y	N	-		Y	Y	Heading keeps changing due to weather
0429	60	33.94	36	5.54	2984	301	2.6	1.0	N	Y	0008	42	JC050-2	Y	N	-		Y	Y	No dam on SBP
0500	60	33.93	36	5.52	2985	024	0.6	0.4	N	Y	0008	11	JC050-2	Y	N	-		Y	Y	
0531	60	33.97	36	5.53	2985	070	0.4	0.5	N	Y	0009	100	JC050-2	Y	N	-		Y	Y	
0600	60	33.92	36	5.52	2985	005	0.6	0.3	N	Y	0009	71	JC050-2	Y	N	-		Y	Y	SBP not recording: no data
0630	60	33.94	36	5.52	2985	010	1.8	0.7	N	Y	0009	43	JC050-2	Y	N	-		Y	Y	
0700	60	33.94	36	5.52	2986	010	0.2	0.7	N	Y	0009	13	JC050-2	Y	N	-		Y	Y	
0730	60	33.93	36	5.53	2986	002	1.8	0.8	N	Y	0010	102	JC050-2	Y	N	-		Y	Y	
0759	60	33.95	36	5.52	2986	111	1.5	0.9	N	N	0010		JC050-2	Y	N	-		N	Y	EM120 not recording, SBP not on!!
0831	60	33.93	36	5.52	2986	062	1.2	0.3	N	N	0010			Y	N	-		N		SBP not on
0855	60	33.93	36	5.52	2990											-				SVP start
0900	60	33.93	36	5.51	2988	006	0.5	0.9	N	N	0011			Y	N	-		Y	Y	
0930	60	33.93	36	5.52	2986	021	1.4	1.0	N	N	0011			Y	N	-		Y	Y	SVP cable out 1377m
0959	60	33.93	36	5.52	2965	004	0.4	0.5	N	N	0011			Y	N	-		Y	Y	SVP 2649m
1013																-				SVP 2950m, returning to surface
1030	60	33.93	36	5.51	2986	188	0.8	0.7	N	N				Y	N	-		Y	Y	SVP at 1850m
1103	60	37.93	36	5.52	2987	5	0.7	0.1	N	N				Y	N	-		Y	Y	SVP at 300m
1113																-				SVP recovered
1128																-				SVP not recorded properly
1130	60	33.92	36	5.51	2986	2	0.3	0.1	N	N				Y	N	-		Y	Y	Staying on station
1200	60	33.93	36	5.51	2985	3	0.3	0.5	N	N				Y	N	-		Y	Y	
1230	60	33.92	36	5.52	2985	290	1.1	0.9	N	n				Y	n	-		Y	Y	SVP down at 200m
1300	60	33.93	36	5.54	2985	5	0.4	0.7	N	n				Y	n	-		Y	Y	
1330	60	35.70	36	5.31	3028	357	4.8	3.9	N	y	0011	99	JC050-2	Y	n	210_1316		Y	Y	EM120, SBP start logging
1401	60	35.28	36	0.17	2990	120	8.9	8.1	N	y	0011	67	JC050-2	Y	y	210_1316_001		Y	Y	
1434	60	33.00	35	57.47	3182	003	5.4	4.8	N	y	0011	34	JC050-2	Y	y	210_1316_002		Y	Y	
1500	60	33.14	35	51.46	2991	148	0.6	0.3	N	y	0011	7	JC050-2	Y	y	210_1316_003		Y	Y	Reached SVP location
1530	60	33.14	35	51.46	2991	358	2.6	0.5	N	y	0012	99	JC050-2	Y	y	210_1316_003		Y	Y	SVP deployed at 1450
1600	60	33.13	35	51.46	2991	004	0.5	0.6	N	y	0012	69	JC050-2	Y	y	210_1316_004		Y	Y	SVP - good data
1607	60	33.14	35	51.47	2991	004	1.0	0.2	N	y	0012	62	JC050-2	Y	y	210_1316_004		Y	Y	POSMV quality has dropped; current plan to deploy streamer at 6pm
1611	60																			POSMV turned off
1614	60																			POSMV rebooted
1615	60	33.13	35	51.46	2991	240	1.3	N	N	N	N	N	N	N	N	N		N	N	All systems rebooted, SBP. EA600, EM120, etc.
1619	60																			All systems back on line + logging
1630	60	33.16	35	51.46	2991	007	1.3	1.5	N	Y	0013	108	JC050-2	Y	Y	210-1618		Y	Y	
1700	60	33.14	35	51.47	2991	003	0.4	0.6	N	Y	0013	79	JC050-2	Y	Y	210-1618_003		Y	Y	
1730	60	33.14	35	51.46	2992	004	0.7	0.1	N	Y	0013	50	JC050-2	Y	Y	210-1618_005		Y	Y	
1800	60	33.46	35	51.46	2988	004	3.8	3.5	N	Y	0013	17	JC050-2	Y	Y	210-1618_008		Y	Y	About to deploy gun - first checks
1830	60	34.72	35	50.57	2960	023	2.2	2.1	N	Y	0014	109	JC050-2	Y	Y	210-1618_010		Y	Y	Tailbuoy deployed
1900	60	35.75	35	49.72	2988	021	2.5	1.8	N	Y	0014	76	JC050-2	Y	Y	210-1618_013		Y	Y	About to deploy streamer
1930	60	37.41	35	48.58	3066	026	4.0	4.6	N	Y	0014	48	JC050-2	Y	Y	210-1618_015		Y	Y	MV-POS (GPS) error in connection
1959	60	38.32	35	44.19	2989	100	4.2	4.2	N	Y	0014	18	JC050-2	Y	Y	210-1618_017		Y	Y	
2015	60	38.87	35	41.89	2993	121	4.9	4.6	N	Y	0014	2	JC050-2	Y	Y	210-1618_019		Y	Y	
2032	60	36.80	35	40.23	2982	156	4.3	4.1	N	Y	0015	105	JC050-2	Y	Y	210-1618_020		Y	Y	Steamer deployed
2045	60	35.84	35	39.87	2997	181	5.9	5.7	N	Y	0015	93	JC050-2	Y	Y	210-1618_021		Y	Y	
2103	60	34.11	35	40.54	3000	212	6.0	5.5	N	Y	0015	74	JC050-2	Y	Y	210-1618_023		Y	Y	Guns firing
2115	60	33.29	35	41.98	3001	243	5.5	5.8	N	Y	0015	62	JC050-2	Y	Y	210-1618_024		Y	Y	Guns stopped for whales
2130	60	32.96	35	44.53	3406	269	5.6	5.8	N	Y	0015	47	JC050-2	Y	Y	210-1618_025		Y	Y	Whales gone
2145	60	32.75	35	47.41	2997	280	6.7	6.1	N	Y	0015	31	JC050-2	Y	Y	210-1618_026		Y	Y	
2200	60	32.80	35	50.07	3099	286	5.2	5.0	N	Y	0015	16	JC050-2	Y	Y	210-1618_028		Y	Y	
2215	60	32.84	35	52.63	2994	264	2.3	5.1	N	Y	0015	2	JC050-2	Y	Y	210-1618_029		Y	Y	
2230	60	32.89	35	55.29	3070	288	5.1	5.2	N	Y	0016	106	JC050-2	Y	Y	210-1618_030		Y	Y	
2245	60	32.93	35	57.66	2964	276	4.6	5.0	N	Y	0016	92	JC050-2	Y	Y	210-1618_032		Y	Y	Echo poor + SBP
2301	60	32.98	36	0.54	3045	278	6.4	5.4	N	Y	0016	76	JC050-2	Y	Y	210-1618_033		Y	Y	
2315	60	33.37	36	2.83	3464	265	5.5	5.2	N	Y	0016	62	JC050-2	Y	Y	210-1618_034		Y	Y	
2329	60	33.87	36	5.09	3443	308	5.2	5.2	N	Y	0016	48	JC050-2	Y	Y	210-1618_035		Y	Y	
2346	60	34.44	36	7.56	2842	258	3.7	5.0	N	Y	0016	32	JC050-2	Y	Y	210-1618_037		Y	Y	

Day: Date: Sheet Number:

Time	Lat		Lon		ADCP150	ADCP75	Techsas	Level-C	Grav.	Mag.	Wind			Comments, eg state of seismic exp.
(GMT)	D	DM	D	DM	rec.	rec.	rec.	rec.	(mgal)	(nT)	Speed	Dir.	Sea State	
0004	60	33.93	36	5.53	y	y	y	y	13258.2	n	10.6	332	2m swell	
0029	60	33.92	36	5.05	y	y	y	y	13247.6	n	11.6	333	"	
0102	60	33.93	36	5.52	y	y	y	y	13249	n	9.5	3322		
0128	60	33.94	36	5.52	y	y	y	y	13255.9	n	10.4	336	2.5m swell	
0146	60	33.93	36	5.53	y	y	y	y	13253	n	11.6	331		
0200	60	33.93	36	5.53	y	y	y	y		n	10.1	332		
0230	60	33.94	36	5.53	y	y	y	y	13250.7	n	8.6	328	"	
0300	60	33.92	36	5.54	y	y	y	y	13254.4	n	8.1	326		
0330	60	33.93	36	5.52	y	y	y	y	13253.1	n	9.5	330	"	ship turning
0400	60	33.92	36	5.53	y	y	y	y	13255.5	n	8.4	320	"	
0429	60	33.99	36	5.53	y	y	y	y	13250.6	n	8.6	316	"	
0444	60	33.93	36	5.54	y	y	y	y	13290.7	n	9.7	039		
0449	60	33.90	36	5.53	y	y	y	y	13251.4	n	10.3	328		
0532	60	33.92	36	5.53	y	y	y	y	13271.8	n	10.3	322	"	
0600	60	33.92	36	5.52	y	y	y	y	13261.7	n	10.2	352	"	
0630	60	33.94	36	5.52	y	y	y	y	13256.8	n	9.6	339	"	
0700	60	33.93	36	5.52	y	y	y	y	13246.7	n	8.8	344	~3m sewll; heavy rain	
0730	60	33.93	36	5.52	y	y	y	y	13272.5	n	7.8	359	"	
0800	60	33.95	36	5.52	y	y	y	y	13246	n	8.1	325	Up to 10m swell, gusty wind	
0815									13261.6	n				
0831	60	33.93	36	5.52	y	y	y	y	13255.9	n	5.0	360		
0855	60	33.93	36	5.52	y	y	y	y						SVP start
0902	60	33.93	36	5.51	y	y	y	y	13237.2	n	12.3	351	Up to 5m swell	
0931	60	33.93	36	5.52	y	y	y	y	13245.5	n	11.3	356	Up to 6m swell	SVP Cable Out 136/m
0959	60	33.93	36	5.52	y	y	y	y	13263.5	n	10.8	339		2549m (SVP)
1013														SVP at 2950m, returning to surface
1030	60	33.93	36	5.51	y	y	y	y	13266.6	n	11.3	346	5m swell	
1100	60	33.93	36	5.52	y	y	y	y	13256	n	11.9	343	5m swell	SVP at 300m
1113	60	33.92	36	5.51	y	y	y	y	13268.2	n	10.8	354	5m swell	SVP recovered
1130	60	33.92	36	5.51	y	y	y	y	13271.9	n	10.1	348	5m swell	
1200	60	33.93	36	5.51	y	y	y	y	13259.8	n	10.1	358	2m swell	
1228	60	33.91	36	5.52	y	y	y	y	13269.3	n	9.2	345		
1301	60	33.92	36	5.53	y	y	y	y	13261.3	n	7.9	353		
1331	60	35.77	36	5.28	y	y	y	y	13262.7	n	11.9	352		
1401	60	35.25	36	0.01	y	y	y	y	13271.1	n	7.4	235.5		
1434	60	32.97	35	51.50	y	y	y	y	13262.1	n	11.3	360		
1502	60	33.14	35	51.57	y	y	y	y	13252.9	n	10.4	345.8		SVP at 330m depth
1531	60	33.14	35	51.47	y	y	y	y	13304.4	n	10.6	349.6		SVP at 1460m depth
1554	60	33.14	35	51.46	y	y	y	y	13303.3	n	11.5	342		SVP finished at 2800m
1628	60	33.13	35	51.50	y	y	y	y	13266	n	11.4	343	~2m swell	
1700	60	33.14	35	51.47	y	y	y	y	13254.6	n	8.7	356	2-3m swell	SVP on its way back up
1730	60	33.14	35	51.48	y	y	y	y	13256.3	n	10.9	348		
1800	60	33.46	35	51.46	y	y	y	y	13239.9	n	11.4	341	3m swell	About to deploy guns
1830	60	34.73	35	50.57	y	y	y	y	13254.5	n	9.6	338		About to deploy streamer
1900	60	35.75	35	49.72	y	y	y	y	13252.5	n	10.8	331	becoming calmer	Problem with winch scroll
1930	60	37.41	35	48.58	y	y	y	y	13258	n	10.7	326		Increased speed to 4kts - choppier
2000	60	38.31	35	44.12	y	y	y	y	13259.2	n	8.8	269		Streamer being deployed
2015	60	37.86	35	41.85	y	y	y	y		n	7.8	237		
2032	60	36.82	35	40.24	y	y	y	y	13270.5	n	3.1	164		
2045	60	35.84	35	39.87	y	y	y	y	13269.5	n	5.6	208	2m swell, choppy	
2103	60	34.11	35	40.54	y	y	y	y		n	10.1	115		Guns firing
2115	60	33.24	35	42.16	y	y	y	y	13267.7	n	11.6	080	3m swell	Guns stopped for whales
2130	60	32.96	35	44.53	y	y	y	y	13278.4	n	13.9	066		Whales gone
2145	60	32.75	35	47.41	y	y	y	y		n	15.2	60		Swell up to 3m - very choppy
2200	60	32.79	35	50.01	y	y	y	y	13260.8	n	15.3	51		
2215	60	32.84	35	52.63	y	y	y	y		n	14.2	52		
2234	60	32.90	35	55.92	y	y	y	y	13252.4	n	15.1	43	3m swell	
2245	60	32.93	35	57.66	y	y	y	y		n	14.3	50		
2300	60	32.98	36	0.49	y	y	y	y	13261.4	n	17.6	46		
2307														Changing course on line
2317	60	33.42	36	3.09	y	y	y	y		n	13.6	17	3m swell	
2331	60	33.94	36	5.36	y	y	y	y	13260.9	n	15.1	33		
2346	60	34.44	36	7.56	y	y	y	y		n	11.3	24		

Every 30 min, for important events and not for birds during turns.

Seismic log

Line No: 1SEQ12 **Date: ###** **Julian Day: 210** **Page No:** 1

Depth of Gun 1: 5m
Depth of Gun 2: n/a

Array Volume: 355

	Vessel GPS				Bird 1		Bird 2		Bird 3		Bird 4		Bird 5						Tailbuoy GPS				
Time GMT	Lat		Long		Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Ship H'ding	CMG	Shot no.	FFID	Lat		Long		MISFIRE, Feathering angle, sea state, current, other comments
1831																	55000	55000	60	34.87	35	50.44	Tailbuoy deployed succesfully
1840	60	35.16	35	50.25													55000	55000					Scroll winch has broken -> delays
1900	60	25.86	35	49.66												34.76	55000	55000	60	35.87	35	49.64	Problem with scrolling remains
1920	60	36.99	35	49.03												31.55	55000	55000					First bird deployed
2020																							MMO started
2030																							Streamer fully deployed
2050																	1	1	test 290710				Test line for streamer at 100 bar
2057					7		7		6.7		7.1		6.5				25	25					Gun cleared
2106					7.3		6.8		7		6.5		7				60	60					Pressure increased to 150 bar
2113																	90	90					Pilot whales seen, guns turned off
2127	60	32.97	35	44.22	6.5	261	6.6	258	7	247	7	255	6.5	250	269	276	55000	55000	60	33.22	35	44.72	Line 1, whales gone, guns at 150 bar
2142																	55061	55061					Increasing to full pressure
2145	60	32.75	35	47.46	6.5	270	7.1	260	7.6	257	7.5	242	7.1	339	280	286	55070	55070	60	32.93	35	45.42	Ship online
2149																	55088	55088					Full pressure reached
2200	60	32.8	35	50.28	6.9	278	6.9	268	6.5	270	7.1	257	7.1	264	281	281	55132	55132	60	32.79	35	48.28	
2210																	55170	55170					Birds lowerd to 8m to reduce noise
2215	60	32.83	35	52.72	8.6	272	8.4	269	7.7	275	8.8	289	8.5	284	274	287	55190	55190	60	32.79	35	50.69	
2230	60	32.87	35	55.07	7.6	277	7.6	267	8	273	8	270	8.5	269	244	289	55250	55250	60	32.83	35	53.2	QC machine reboot
2245	60	32.93	35	57.67	7.9	264	8.3	265	7.6	274	8.4	270	8.4	283	288	280	55310	55310	60	32.87	35	55.57	Swell ~ 2m
2300	60	32.99	36	0.14	7.6	273	8	277	8.3	268	8.1	257	7.9	260	296	292	55374	55374	60	32.93	35	58.93	Shallow bright reflector, wraparound multi
2304																	55390	55290					Course change
2315	60	33.37	36	2.9	8.3	292	7.8	288	7.7	283	7.8	328	7.7	289	304	300	55430	55430	60	32.99	36	0.87	
2330	60	33.87	36	5.16	8.2	293	8.3	314	8.1	331	7.9	296	7.8	294	307	315	55490	55490	60	33.41	36	3.26	Swell ~ 2m
2345	60	34.42	36	7.54	7.7	288	7.9	287	8.1	280	8.4	304	7.3	293	306	306	55550	55550	60	33.97	36	5.68	~ 3 hrs to the next pig's ear
2400	60	35.02	36	10.14	8	315	7.5		7.7	320	8.6	312	8.8	319	301	308	55623	55623	60	34.57	36	8.27	

Julian Day: Date: Sheet Number:

Time	Lat		Lon		Water	Head.	SOW	SOG	EM710	EM120				EA600	SBP		ER60	OLEX	Comments
(GMT)	D	DM	D	DM	depth (m)		(kts)	(kts)	rec.	rec	Line cnt.			rec.	rec.	Data file	rec.	rec.	
0002	60	35.03	36	10.17	2980	300	4.9	5.0	n	y	0016	15	JC050-2	y	y	210-1618_038	y	y	EA600 & SBP - poor data
0015	60	35.47	36	12.10	2896	305	4.9	4.9	n	y	0016	2	JC050-2	y	y	210-1618_039	y	y	
0022	60	35.47	36	12.10	3160	298	3.7		n								y	y	guns started firing
0030	60	36.03	36	14.61	2845	334	4.8	4.8	n	y	0017	106	JC050-2	y	y	210-1618_040	y	y	ditto
0033	60	36.14	36	15.04	2999	315	7.0		n								y	y	guns are going to be recovered
0044	60	36.15	36	16.70	3407	310	5.0	5.2	n	y	0017	93	JC050-d	y	y	210-1618_042	y	y	
0059	60	37.02	36	19.02	2901	317	5.9	4.0	n	y	0017	78	JC050-2	n	y	210-1618_043	y	y	EA600 position not incrementing
0116	60	37.45	36	21.28	3099	306	4.7	4.0	n	y	0017	61	JC050-2	y	y	210-1618_044	y	y	
0129	60	37.89	36	22.79	3080	311	3.9	4.6	n	y	0017	48	JC050-2	y	y	210-1618_045	y	y	guns on board
0145	60	38.90	36	24.63	3062	306	5.2	5.1	n	y	0017	32	JC050-2	y	y	210-1618_047	y	y	
0158	60	39.73	36	26.16	2993	302	4.7	4.3	n	y	0017	18	JC050-2	y	y	210-1618_048	y	y	
0218	60	40.87	36	28.26	2965	329	4.6	4.9	n								y	y	
0233	60	42.02	36	28.67	3148	026	4.2	5.2	n	y	0018	104	JC050-2	y	y	210-1618_051	y	y	
0246	60	42.91	36	27.26	2845	065	5.6	5.7	n	y	0018	90	JC050-2	y	y	210-1618_052	y	y	
0300	60	43.06	36	25.05	3050	096	5.5	5.0	n	y	0018	77	JC050-2	y	y	210-1618_053	y	y	
0315	60	42.12	36	22.94	d9d5	101	5.9	4.8	n	y	0018	63	JC050-2	y	y	210-1618_054	y	y	
0330	60	42.01	36	20.40	3086	114	5.3	5.1	n	y	0018	47	JC050-2	y	y	210-1618_056	y	y	
0346	60	43.39	36	17.06	2985	140	5.5	5.0	n	y	0018	31	JC050-2	y	y	210-1618_057	y	y	
0400	60	40.99	36	16.17	2962	114	5.5	4.8	n	y	0018	18	JC050-2	y	y	210-1618_058	y	y	
0415	60	40.39	36	13.65	d915	114	5.2	5.4	n	y	0018	2	JC050-2	y	y	210-1618_059	y	y	
0430	60	39.74	36	10.87	2971	108	5.5	5.4	n	y	0019	106	JC050-2	y	y	210-1618_061	y	y	
0445	60	39.11	36	8.22	2970	111	5.6	5.2	n	y	0019	90	JC050-2	y	y	210-1618_062	y	y	
0500	60	38.68	36	6.37	2974	111	5.3	4.9	n	y	0019	76	JC050-2	y	y	210-1618_063	y	y	
0515	60	38.12	36	3.90	d990	11d	5.4	4.8	n	y	0019	62	JC050-2	y	y	210-1618_064	y	y	
0530	60	37.61	36	1.72	2990	116	5.1	5.2	n	y	0019	48	JC050-d	y	y	210-1618_066	y	y	
0545	60	36.73	36	0.10	2993	146	5.2	5.2	n	y	0019	90	JC050-2	y	y	210-1618_067	y	y	
0600	60	35.83	35	59.96	289d	198	3.6	4.9	n	y	0019	19	JC050-2	y	y	210-1618_068	y	y	Just deploying the guns again
0615	60	34.66	35	58.85	2991	d09	4.8	4.9	n	y	0019	1	JC050-2	y	y	210-1618_070	y	y	Starting first few test fires
0630	60	33.82	36	1.70	2996	248	5.1	5.3	n	y	0020	109	JC050-2	y	y	210-1618_071	y	y	
0700	60	34.18	36	5.83	2985	296	4.7	5.2	n	y	0020	81	JC050-2	y	y	210-1618_073	y	y	Guns not working - hydrophone problems
0722	60	35.09	36	9.72	3160	29d	4.1	5.0	n	y	0020	57	JC050-2	y	y	210-1618_075	y	y	Guns coming in now
0745	60	36.01	36	12.93	3053	325	5.0	4.7	n	y	0020	33	JC050-2	y	y	210-1618_077	y	y	Replacing hydrophone. ETC: 1hr, Commencing 4hr turn
0800	60	37.40	36	13.27	3073	015	4.5	4.7	n	y	0020	16	JC050-2	y	y	210-1618_078	y	y	EA600 lat/long not updating - restarted
0814	60	38.41	36	12.32	2974	024	5.0	4.8	n	y	0020	3	JC050-2	y	y	210-1618_080	y	y	
0830	60	39.19	36	10.50	d971	072	4.6	5.0	n	y	0021	107	JC050-2	y	y	210-1618_081	y	y	
0846	60	39.16	36	7.93	2971	107	4.6	4.9	n	y	0021	91	JC050-2	y	y	210-1618_082	y	y	Guns working- turning back online
0900	60	38.57	36	5.81	2974	117	5.1	5.3	n	y	0021	77	JC050-2	y	y	210-1618_083	y	y	
0915	60	38.01	36	3.45	2986	112	5.4	5.4	n	y	0021	62	JC050-2	y	y	210-1618_085	y	y	
0930	60	37.47	36	1.10	2859	115	4.8	5.6	n	y	0021	48	JC050-2	y	y	210-1618_086	y	y	
0945	60	36.89	35	58.62	2983	120	4.6	5.2	n	y	0021	32	JC050-2	y	y	210-1618_087	y	y	
1001	60	36.37	35	55.98	2985	108	5.3	5.5	n	y	0021	18	JC050-2	y	y	210-1618_088	y	y	
1016	60	35.91	35	53.55	3114	111	5.2	5.3	n	y	0021	3	JC050-2	y	y	210-1618_090	y	y	
1030	60	35.48	35	51.24	2987	124	4.8	5.0	n	y	0022	109	JC050-2	y	y	210-1618_091	y	y	
1046	60	34.99	35	48.77	2989	11d	5.0	4.9	n	y	0022	9d	JC050-2	y	y	210-1618_09d	y	y	Guns retrieved
1100	60	34.56	35	46.87	2994	104	4.7	4.6	n	y	0022	79	JC050-2	y	y	210-1618_093	y	y	
1115	60	34.04	35	44.57	3000	108	4.8	5.0	n	y	0022	63	JC050-2	y	y	210-1618_095	y	y	
1130	60	33.28	35	42.53	3003	154	4.8	4.8	n	y	0022	47	JC050-2	y	y	210-1618_096	y	y	
1148	60	31.91	35	4d.40	3000	199	4.6	4.9	n	y	0022	29	JC050-2	y	y	210-1618_098	y	y	
1200	60	31.15	35	43.30	3000	197	5.6	4.4	n	y	0022	17	JC050-2	y	y	210-1618_099	y	y	Still not shooting
1214	60	30.16	35	44.64	3002	236	5.1	5.0	n	y	0022	3	JC050-2	y	y	210-1618_100	y	y	
1230	60	29.85	35	47.10	3003	281	4.8	4.9	n	y	0023	107	JC050-2	y	y	210-1618_101	y	y	
1247	60	30.38	35	49.65	3315	294	4.9	4.8	n	y	0023	901	JC050-2	y	y	210-1618_103	y	y	Replacing guns with one of their own
1302	60	30.90	35	51.99	3132	299	4.6	4.6	n	y	0023	74	JC050-2	y	y	210-1618_104	y	y	
1316	60	31.36	35	53.87	2996	295	4.3	4.3	n	y	0023	60	JC050-2	y	y	210-1618_105	y	y	Shooting in the next few minutes
1330	60	31.77	35	55.67	3082	299	4.5	4.6	n	y	0023	47	JC050-2	y	y	210-1618_106	y	y	
1345	60	32.24	35	57.71	2991	301	3.8	4.2	n	y	0023	32	JC050-2	y	y	210-1618_108	y	y	
1400	60	32.74	35	59.87	2930	285	4.9	4.6	n	y	0023	17	JC050-2	y	y	210-1618_109	y	y	start shooting
1419	60	33.40	36	2.67	2994	300	4.8	4.7	n	y	0024	118	JC050-2	y	y	210-1618_110	y	y	
1430	60	33.28	36	4.13	2990	300	5.3	5.2	n	y	0024	108	JC050-2	y	y	210-1618_111	y	y	
1447	60	34.77	36	6.29	d979	344	4.6	4.8	n	y	0024	90	JC050-2	y	y	210-1618_113	y	y	guns onboard
1503	60	36.18	36	5.98	2985	024	5.9	5.3	n	y	0024	73	JC050-2	y	y	210-1618_114	y	y	
1516	60	35.90	36	4.15	2985	076	6.2	6.2	n	y	0024	61	JC050-2	y	y	210-1618_115	y	y	
1530	60	36.90	36	1.85	2989	110	4.0	4.1	n	y	0024	47	JC050-2	y	y	210-1618_116	y	y	guns deployed
1545	60	36.42	35	59.62	3075	110	3.9	4.1	n	y	0024	32	JC050-2	y	y	210-1618_118	y	y	guns coming in
1600	60	36.03	35	57.77	2853	108	5.6	4.9	n	y	0024	18	JC050-2	y	y	210-1618_119	y	y	guns firing OK
1619	60	35.36	35	54.58	2987	113	4.8	4.9	n	y	0025	119	JC050-2	y	y	210-1618_120	y	y	Power failure in hanger, lost all comm. With streamer
1630	60	34.97	35	52.79	d987	115	4.5	5.0	n	y	0025	108	JC050-2	y	y	210-1618_121	y	y	
1645	60	34.41	35	50.16	2989	11d	5.2	5.3	n	y	0025	91	JC050-2	y	y	210-1618_123	y	y	Guns off, compressor issue
1702	60	33.87	35	47.52	2994	108	5.7	5.2	n	y	0025	75	JC050-d	y	y	210-1618_124	y	y	
1714	60	33.43	35	45.43	2894	115	5.4	5.0	n	y	0025	62	JC050-2	y	y	210-1618_125	y	y	
1731	60	32.50	35	43.23	3000	148	4.4	4.9	n	y	0025	45	JC050-2	y	y	210-1618_127	y	y	
1746	60	31.25	35	43.17	3000	196	5.9	5.4	n	y	0025	30	JC050-2	y	y	210-1618_128	y	y	
1800	60	30.42	35	44.16	3003	233	5.2	5.5	n	y	0025	17	JC050-2	y	y	210-1618_129	y	y	
1815	60	35.46	35	47.02	3005	274	4.6	5.0	n	y	0025	1	JC050-2	y	y	210-1618_130	y	y	
1831	60	30.35	35	49.59	3000	295	4.7	5.2	n	y	0026	105	JC050-2	y	y	210-1618_132	y	y	
1846	60	30.89	35	51.86	2998	294	5.2	5.1	n	y	0026	91	JC050-2	y	y	210-1618_133	y	y	
190d	60	31.49	35	54.47	2997	294	5.3	5.3	n	y	0026	75	JC050-2	y	y	210-1618_134	y	y	
1915	60	31.94	35	56.44	2993	293	5.0	5.3	n	y	0026	62	JC050-2	y	y	210-1618_135	y	y	
1930	60	32.53	35	59.02	299d	d94	4.9	5.2	n	y	0026	46	JC050-2	y	y	210-1618_137	y	y	
2000	60	33.64	36	3.64	2993	276	5.4	5.0	n	y	0026	17	JC050-2	y	y	210-1618_139	y	y	Collecting data again!
2015	60	34.24	36	6.01	2982	300	5.3	5.1	n	y	0026	2	JC050-2	y	y	210-1618_141	y	y	
2030	60	34.79	36	8.32	2982	294	5.1	5.0	n	y	0027	107	JC050-2	y	y	210-1618_142	y	y	
2045	60	35.29	36	10.63	2979	d95	5.0	5.1	n	y	0027	9d	JC050-2	y	y	210-1618_143	y	y	
2100	60	35.83	36	13.11	2979	d93	4.9	5.1	n	y	0027	77	JC050-2	y	y	210-1618_144	y	y	
2115	60	36.36	36	15.52	2980	285	5.5	5.0	n	y	0027	62	JC050-d	y	y	210-1618_145	y	y	
2130	60	36.88	36	17.88	2981	291	4.7	5.1	n	y	0027	47	JC050-2	y	y	210-1618_147	y	y	
2145	60	37.41	36	20.28	2983	287	5.2	5.0	n	y	0027	32	JC050-d	y	y	210-1618_148	y	y	
2200	60	37.94	36	22.71	2969	d91	5.3	5.5	n	y	0027	18	JC050-2	y	y	210-1618_149	y	y	
2217	60	38.55	36	25.47	2966	290	5.1	5.2	n	y	0028	120	JC050-2	y	y	210-1618_151	y	y	Power tripped twice
2223	60	39.10	36	38.01	2967	274	5.5	5.1	n	y	0028	104	JC050-2	y	y	210-1618_152	y	y	
2245	60	39.54	36	30.06	2969	310	4.7	5.0	n	y	0028	91	JC050-2	y	y	210-1618_153	y	y	Seismic recording again
2300	60	40.02	36	32.26	3039	305	4.9	5.2	n	y	0028	78	JC050-2	y	y	210-1618_154	y	y	
2315	60	40.55	36	34.77	2973	301	5.3	5.4	n	y	0028	62	JC050-2	y	y		y	y	Preparing XBT-T5
2334	60	41.19	36	37.9d	d964	288	4.9	5.3	n	y	0028	43	JC050-2	y	y	210-1618_157	y	y	XBT launched 2324
2347	60	41.85	36	39.56	2964	336	5.1	5.2	n	y	0028	30	JC050-2	y	y	210-1618_158	y	y	

Day: Date: Sheet Number:

Time	Lat		Lon		ADCP150	ADCP75	Techsas	Level-C	Grav.	Mag.	Wind			Comments, eg state of seismic exp.
(GMT)	D	DM	D	DM	rec.	rec.	rec.	rec.	(mgal)	(nT)	Speed	Dir.	Sea State	
0002	60	35.02	36	10.16	y	y	y	y		n	12.3	24.6	3m swell	
0015	60	35.46	36	12.09	y	y	y	y	13256	n	9.4	28.6	3m swell	
0022	60	35.76	36	13.41	y	y	y	y		n			3m swell	Guns started firing erratically
0030	60	36.02	36	14.61	y	y	y	y		n	11.5	28.7	3m swell	
0045	60	36.55	36	16.85	y	y	y	y	13257.2	n	9.1	43.6	3m swell	
0101	60	37.07	36	19.26	y	y	y	y		n	15.1	32.7	3m swell	Bringing guns in
0116	60	37.44	36	21.27	y	y	y	y	13279.1	n	13.6	19.7	3m swell	
0130	60	37.89	36	22.81	y	y	y	y		n	11.7	8.8	3m swell	Guns brought in
0145	60	38.97	36	24.76	y	y	y	y	13265.7	n	13.0	55.8	3m swell	
0200	60	39.76	36	26.24	y	y	y	y		n	14.4	57.9	3m swell	
0215	60	40.70	36	27.97	y	y	y	y	13275.6	n	11.6	358	3m swell	
0230	60	42.01	36	28.67	y	y	y	y		n	13.4	12.2	3m swell	Making starbd turn onto line at point of last good shots
0240	60	42.89	36	27.28	y	y	y	y	13272.4	n	13.5	201	3m swell	
0259	60	43.07	36	25.11	y	y	y	y		n	10.0	50.6	3m swell	
0316	60	42.55	36	22.62	y	y	y	y	13271	n	11.0	221		
0331	60	41.97	36	20.25	y	y	y	y		n	10.3	230		
0346	60	41.41	36	17.93	y	y	y	y	13264.7	n	10.0	234	~2m swell	
0400	60	40.99	36	16.17	y	y	y	y		n	9.9	299	2m swell	
0415	60	40.39	36	13.65	y	y	y	y	13263.5	n	9.4	230	"	
0430	60	39.76	36	10.96	y	y	y	y		n	8.1	233	"	
0445	60	39.11	36	8.22	y	y	y	y	13299.5	n	9.3	236		
0500	60	38.68	36	6.37	y	y	y	y		n	8.4	237		
0515	60	38.12	36	3.90	y	y	y	y	13289	n	8.8	231		
0530	60	37.61	36	1.72	y	y	y	y		n	8.9	233		
0545	60	36.73	36	0.10	y	y	y	y	13259	n	2.3	211		
0600	60	35.57	35	58.96	y	y	y	y		n	7.7	109	mild chop	deploying guns again now
0615	60	34.66	35	58.85	y	y	y	y	13269.8	n	7.9	100		About to start firing (soft start)
0630	60	33.84	36	1.31	y	y	y	y		n	8.7	063		
0700	60	34.18	36	5.83	y	y	y	y	13247.9	n	10.4	014	1-2m swell	Issue with guns (hydrophone not working)
0722	60	35.09	36	9.72	y	y	y	y		n	7.5	051	"	Guns coming in for repair
0732	60	35.42	36	11.46	y	y	y	y	13266.4	n	7.7	044	"	Guns in; replacing hydrophone
0745	60	36.01	36	12.93	y	y	y	y		n	6.8	359	mild chop	
0800	60	37.65	36	13.00	y	y	y	y		n	8.4	323	Up to 5m swell	
0814	60	38.41	36	12.32	y	y	y	y	13264.1	n	9.4	131		
0833	60	39.25	36	10.03	y	y	y	y		n	5.3	247		
0846	60	39.04	36	7.87	y	y	y	y	13271.1	n	3.8	239	Up to 3m swell	Guns in water
0901	60	38.51	36	5.57	y	y	y	y		n	4.4	210	Up to 4m swell	Gun 1 firing, unusual trace
0917	60	37.92	36	3.04	y	y	y	y	13271.5	n	5.9	238	Up to 3m swell	
0932	60	37.37	36	0.69	y	y	y	y		n	5.4	239	Up to 4m swell	
0948	60	36.77	35	58.13	y	y	y	y	13264.5	n	4.7	231	Up to 3m swell	
1002	60	36.35	35	55.89	y	y	y	y		n	5.5	225		Gun 1 still missfiring
1016	60	35.92	35	53.59	y	y	y	y	13253.8	n	3.7	234		
1031	60	35.47	35	51.13	y	y	y	y		n	4.4	217	Up to 4m swell	
1046	60	34.99	35	48.77	y	y	y	y	13257.2	n	3.7	218		
1100	60	34.56	35	46.87	y	y	y	y		n	3.8	209	Calm	Guns retrieved
1115	60	34.04	35	44.57	y	y	y	y	13267.4	n	4.8	217		
1130	60	33.28	35	42.53	y	y	y	y		n	3.5	135		
1148	60	31.91	35	42.40	y	y	y	y	13267.4	n	4.9	87	Calm	Working on guns
1159	60	31.16	35	43.26	y	y	y	y		n	5.7	78.4		
1215	60	30.15	35	44.74	y	y	y	y	13267.4	n	7.8	59.4		
1231	60	29.87	35	47.32	y	y	y	y		n	7.6	29.6		
1245	60	30.38	35	49.65	y	y	y	y	13257.5	n	6.7	21.6		
1301	60	30.90	35	53.00	y	y	y	y		n	6.6	8.7		Reducing speed to 4 kts
1316	60	31.35	35	53.86	y	y	y	y	13267.7	n	7.2	22.7		
1330	60	31.77	35	55.67	y	y	y	y		n	6.2	13.7		
1344	60	32.21	35	57.61	y	y	y	y	13265.4	n	5.6	7.8		
1402	60	32.79	36	0.07	y	y	y	y		n	5.7	20.7		Started shooting
1414	60	33.21	36	1.98	y	y	y	y	13270.8	n	5.2	14.7		
1430	60	33.74	36	3.88	y	y	y	y		n	5.1	79.7		
1448	60	34.85	36	6.34	y	y	y	y	13273.8	n	6.0	322		
1502	60	36.10	36	6.07	y	y	y	y		n	5.1	307		
1516	60	36.87	36	4.23	y	y	y	y	13258.3	n	2.9	272		
1532	60	36.85	36	1.60	y	y	y	y		n	1.6	115	Calm	guns in water
1542	60	36.49	35	59.92	y	y	y	y	13267.4	n	1.0	115		guns firing off now, finally
1600	60	36.00	35	57.61	y	y	y	y		n	0.8	90	Calm	guns firing ok, logging
1618	60	35.35	35	54.58	y	y	y	y	13253	n	1.8	95	"	
1630	60	34.97	35	52.79	y	y	y	y		n	1.1	325	"	
1645	60	34.41	35	50.12	y	y	y	y	13251	n	1.3	344	"	
1701	60	33.88	35	47.52	y	y	y	y		n	0.6	353	"	
1715	60	33.44	35	45.42	y	y	y	y	13249.2	n	0.9	030	"	
1734	60	32.41	35	43.16	y	y	y	y		n	3.3	435	"	
1746	60	31.25	35	43.17	y	y	y	y	13270	n	4.1	020	Force 1= calm	
1759	60	30.38	35	44.27	y	y	y	y		n	4.0	024	calm	
1817	60	29.89	35	47.28	y	y	y	y	13276.1	n	3.8	358	calm	
1831	60	30.35	35	49.47	y	y	y	y		n	3.8	342	"	
1847	60	30.92	35	52.02	y	y	y	y	13321.8	n	4.5	342	"	
1901	60	31.45	35	54.26	y	y	y	y		n	3.9	332	"	
1915	60	31.94	35	56.41	y	y	y	y	13279	n	4.2	319	"	
1932	60	32.53	35	59.00	y	y	y	y		n	4.3	323	"	
2000	60	33.63	36	3.59	y	y	y	y	13280.8	n	4.5	308	"	Collecting data again!
2016	60	33.28	36	6.17	y	y	y	y		n	3.2	324	<2m swell	
2030	60	34.79	36	8.32	y	y	y	y		n	3.5	284	"	
2046	60	35.36	36	10.96	y	y	y	y	13271.9	n	2.9	301	"	
2101	60	35.87	36	13.29	y	y	y	y		n	3.1	313	"	
2116	60	36.16	36	15.71	y	y	y	y	13274.3	n	3.3	320	"	
2131	60	36.93	36	18.09	y	y	y	y		n	0.8	16	"	
2145	60	37.41	36	20.29	y	y	y	y	13281.2	n	3.0	278	"	
2200	60	37.97	36	22.81	y	y	y	y		n	3.2	276		
2211	60	38.47	36	25.16										Lost power to seismic software
2212														Power restored
2213														Power lost again
2215	60	38.49	36	25.19	y	y				n	3.6	272		Power restored
2229														Restarting Nautilis (bird monitoring software)
2235	60	39.17	36	28.37	y	y	y	y	13285.1	n	2.6	295	2m swell	Nautilis back on
2237	60	39.29	36	28.87										Recording again
2245	60	39.56	36	30.12	y	y	y	y		n	2.6	281		
2300	60	40.07	36	32.48	y	y	y	y	13285.4	n	3.4	287		
2315	60	40.59	36	34.99	y	y	y	y		n	2.9	274	1-3m swell	Preparing XBT-T5
2336	60	41.26	36	38.25	y	y	y	y	13278	n	2.5	271		XBT Launched 2324
2347	60	41.85	36	39.56	y	y	y	y		n	0.8	055		Turning offline

Every 30 min, for important events and not for birds during turns.

Seismic log

															Depth of Gun 2:		n/a							
	Vessel GPS				Bird 1		Bird 2		Bird 3		Bird 4		Bird 5						Tailbuoy GPS					
Time GMT	Lat		Long		Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Ship H'ding	CMG	Shot no.	FFID	Lat		Long		MISFIRE, Feathering angle, sea state, current, other comments
0015	60	35.51	36	12.26	8.6	310	8.2	299	8.5	300	8.5	324	2.6	313	295	303	55677	55677	60	35.05	36	10.38	Appx 55694 misfire
0030	60	36.02	36	14.61																			appx 55696 misfire (3 in total). From 0030 to 0130, airgun misfired; stopped shooting and brought or
45	60	36.55	36	16.85																			55697 back on
0100	60	37.07	36	19.26																			55699 misfire
0115	60	37.44	36	21.27																			55706 misfire
0130	60	37.89	36	22.81																			55707, 55708, 55709, 55710 misfire
0145	60	38.97	36	24.76																			55712, 55135, 55716, 55717 misfire
0200	60	39.76	36	26.24	9.6	73	9.5	348	9.5	340	10	327	9.7	359	320	330							55720, 55721, 55722, misfire
0215	60	40.71	36	27.98	10.9	343	10	347	9.7	332	9.9	332	8.7	330	320	328			60	39.94	36	26.67	55724, 55725 - 7 misfire
0230	60	41.75	36	28.75	9.4	8.9	9.4	357	9	337	8.6	353	9.4	339	1.8	16.3			60	40.8	36	28.23	at 55731, airguns shut off
0245	60	42.82	36	27.52	9.9	8.7	9.1	67	9.6	58	9.8	39	9.5	29	48.6	70.2			60	41.97	36	28.67	start testing; at 55736, airgun back on; 55738 misfire; at 55742, airgun stops; shooting at 0033
0300	60	43.08	36	25.28	8.7	108	9.6	94	10.1	101	10.1	94	10.1	86	90.7	108.4			60	42.82	36	27.37	Ship speed brought up to 4kt at 0055. Picking up airgun from water. Airgun on board at 0130. Bird d
0315	60	42.58	36	22.77	9.43	140	9.59	134	9.65	134	9.7	146	9.54	137	116.5	130.57	55742	55742	60	42.96	36	24.53	Now on straight (ship) - return line is parallel to main line; plan to hove 3-mile run in to waypoint 16
0330	60	42.06	36	20.67	9.46	145	9.5	143	10.1	130	10.05	140	10.2	137	129.52	128.1	55742	55742	60	42.02	36	20.46	
0345	60	41.43	36	18.06	9.7	142	9.78	147	10.01	144	9.61	140	9.79	145	112.4	127.9	55742	55742	60	41.9	36	19.85	Back on line appx 0730
0402	60	40.84	36	15.57	9.8	122	10.2	121	10.1	123	10.2	117	10	118	113	131	55742	55742	60	41.31	36	15.51	
0415	60	40.32	36	13.35	9.3	111	9.6	120	9.3	108	9.6	103	10.1	109	112	130	"	"	60	40.79	36	15.21	Going to start shooting at 0530
0430	60	39.74	36	10.92	9.9	121	10.1	115	10.1	121	10.2	119	9.7	112	115	129	"	"	60	40.19	36	12.69	
START OF LINE 1 SEQ 13 shot point 60,000																							
0615	60	34.52	36	0													60000	60000	60	35.49	35	59.26	Guns back in water. Testing
0631	60	33.65	36	2.25											265	274	60001	6000	60	34.23	36	0.51	Start of line. Still turning
Hydrophone broken on gun 1? Going to keep guns in water for now and check data quality. 30min until back on line. Overlap in 45 min. Everyshot is being recorded as a misfire.																							
0644	60	33.73	36	4.18	7.2	276	7.3	255	7.4	282	7	268	6.9	260	302	305	60050	60049	60	33.73	36	2.11	Ship back online. Guns still missfiring. Nicky and Steve assessing data quality
0650	60	34.02	36	5.27	7.5	295	7.3	289	8.3	279	8.3	278	8.4	272	291	302	60071	60070	60	33.68	36	3.29	60070,71,72,73 Missfire - bubble error
0652	60	34.11	36	5.64	7.5	297	8.2	291	7.8	296	7.8	276	8.1	289	298	314	60081	60080	60	33.71	36	3.69	Missfire 60081-81. Tail buoy straight
0710	60	34.73	36	8.19	8.4	297	8	280	8.5	291	8.7	287	7.8	284	305	316	60153	60152	60	34.3	36	6.27	Decision made to bring in. Guns still misfiring
0712																	60163	60164					LAST SHOT
0721																							Guns being brought up on deck
0802	60	37.55	36	13.12											30	42			60	36.54	36	13.33	Turning back to line. Guns retreieved to fix hydrophones
0815	60	38.47	36	12.25											36	40			60	37.51	36	13.12	
0826																							Guns deployed
0830	60	39.2	36	10.41											67	82			60	38.55	36	12.07	
0843																							Soft start, MMO clear
0845	60	39.1	36	8.07											121	134			60	39.2	36	10.18	100bar
0856																	61008	61007					Bubble sync issues, testing
0915	60	38.06	36	3.64											119	128	61085	61084	60	38.53	36	3.69	Restoring BigShot
0920																							QC recording, start of sync
0930	60	37.45	36	1.02											106	127	61145	61144	60	37.91	36	1	Bubble sync tweaking
0945	60	36.88	35	58.59											111	130	61206	61205	60	36.1	35	56.1	
1000	60	36.37	35	56.01											107	120			60	36.77	35	56.04	Not firing at all
1015	60	35.97	35	53.85											111	121			60	36.37	35	53.88	
1030	60	35.47	35	51.19											113	124			60	35.47	35	51.24	
1037	60	35.24	35	50											107	122	61208	61207	60	35.62	35	51.91	Turned guns off - bringing in
1044	60	35.08	35	48.93											118	126			60	35.43	35	48.87	Guns on deck, reducing speed to 4.8kts
1100	60	34.52	35	46.71											113	130			60	34.98	35	46.66	
1114	60	40	35	46.25											116	120			60	34.46	35	46.19	Begin turning for line heading, estimate 3hr 30 to point where we broke off
1117		NEW SEQUENCE LINE 1 SEQ 14																					
1130	60	34	35	44.09											156	164			60	33.96	35	43.94	Turning
1145	60	32.13	35	42.26											203	211			60	33.15	35	42.36	
1200	60	31.05	35	43.39	7	235	6.6	228	7.5	235	7	117	6.6	233	213	225			60	31.95	35	42.38	
1200	60	30.11	35	44.87											243	253			60	30.83	35	43.04	
1215	60	29.83	35	46.84	8.1	278	7.6	263	7.7	268	7.5	263	7	263	277	287			60	30.16	35	44.92	
1245	60	30.37	35	49.66	8.3	310	7.3	307	7.4	305	7.1	307	6.8	310	295	210			60	30.02	35	47.68	
1301	60	30.9	35	51.95		312		310		306		309		313	300	311			60	30.55	35	50.1	Speed down to 4.5kts
1315	60	31.35	35	53.93											294	305	61208	61207					
1335	60	31.94	35	56.48											297.2	308.8	64000 on reboot						Going to start soft start
1338					9.5		6		6		6		6										Guns turned to soft start but missifiring
1340					9.5																		Stopped the soft start
1341					9.5																		Restarting BigShot
1345	60	32.26	35	57.82																			BigShot now restarted
1347																							2nd soft start attempt 6 missfires
1348																							First sucessful shot
1350	60	32.43	35	58.61	9.78	317	6.26	309	5.68	314	5.68	310	6.43	316									Now firing at full pressure
1358	60	32.75	35	59.81	8.44	318	5.96	313	6.61	316	6.96	319	7.18	314	296	307.2	64000	64000	60	32.31	35	59.89	First successful shot, not back on line yet
1408	60	33.11	36	1.53	7.05	308	5.97	312	6.9	315	7.35	322	6.79	318	294.5	301.2	64047	64047	60	32.7	35	59.9	First valid shot point, back on line and streamer straight
1416	60																64068	64068					first misfire
1417	60																64071	64071					last misfire
1417	60																64072	64072					start of good shots
1420	60																						amplitude of pulse, variable
1422	60																64099	64099					

Every 30 min, for important events and not for birds during turns.

Seismic log

1423	60																64100	64100					misfire, gain up to 25.5
1425	60																64107	64107					good shot, 64108 = last recorded shot, bringing guns back in, going to make starboard turn back on th
1433	60	33.94	36	4.9		320		317		322		314		311	304	314	not firing						guns turned off
1447	60	34.77	36	6.34	14.8	334	11.1	336	8.7	327	7.9	329	7.6	322	344	355			60	34.13	36	5.21	depth of bird brought down to 8.5m
1500	60	35.82	36	6.35	8.6	56	8.5	17	8.6	11	8.8	204	9.4	355	18.6	30.6			60	34.83	36	6.23	speed increase to 5.5kts, bird depths 8m
1515	60	36.82	36	4.56	7.2	78	7.3	61	7.6	65	8	58	7.9	55	67	79			60	36.15	36	5.92	still fixing guns, ship turning
1530	60	36.59	36	1.81	15.3	124	12.8	111	6.7	110	5.7	101	5.7	99	114	127			60	36.91	36	3.89	testing air gun
1545	60	36.43	35	59.6	14.3	139	9.4	137	6.9	133	6.6	132	6.6	131	110	126			60	36.85	36	1.55	line of test 0.1 at 15.34 misfires all the way! Speed down to 4 kts at 1543, testing at 1549, good shots
1605	60	35.77	35	36.77	8.4	135	7.5	136	7.2	148	7.7	137	8.1	142	111	124	62	62					Still going strong - soft start
1610																							CRISIS! Lost all electrical power - no screens functioning; breaker tripped in container
1612																							Power restored ok
1613																	72	72					Last good shot - guns off. Big shot restored after power down
1620	60	35.35	35	54.6	8.4	130	8.1	130	7.4	132	7.6	126	8.3	131	111.6	126.9	73	73	60	35.75	35	56.33	Not shooting; testing prior to start
1630	60	35.03	35	53.1	8.4	130	8.1	130	"	132	"	126	"	132	110.9	124.8	"		60	35.47	35	55.01	
1645	60	34.38	35	50.06											111.8	125.7							Guns off - compressor failure. Difficulty in communicating with birds. Comms with cable lost. Cann
1659	60	33.97	35	48.01	8.06	137	8.13	129	7.82	137	8.32	131	8.31	129	114.3	128	100	100	60	34.38	35	49.84	Continuing test line - birds ok now
1707	60	33.69	35	46.66													136	141					Compressor fixed by engineer. 166, 1713 MISFIRES
1715	60	33.5	35	45.96	8.11	130	8.2	134	7.9	133	7.74	132	7.94	129	116.6	125.7	169	169	60	33.88	35	47.35	All birds, gun ok, touch wood.
1719																	185						No! A MISFIRE
1730	60	32.89	35	43.73	6.71	164	6.81	146	7.39	141	7.43	141	7.34	137	151.1	158.7	221	221	60	33.48	35	45.26	
1727																	217	218					MISFIRES (still testing system)
1742	60	31.43	35	43.06												195	277	277					POWER FAIL. Lost communication with streamer.
1746																	283	283					Power back, systems rebooting.
1747	60	31.17	35	43.24											206	227							Firing again 1749, NOT recording
1749															211	224	289						
NEW LINE: LINE 1 SEQUENCE 15																							
1758																	66000	66000					First good shot
1800	60	30.25	35	44.56	10.3	216	7.11	213	7.53	214	6.77	205	6.17	210	231	246	66006	66006	60	31.1	35	43.4	Still on turn
1804																	66026	66026					Last good shot. POSMV just died - Not POSMV is seismic GPS. Stopped Firing.
RESTART LINE 1 SEQUENCE 15																							
1815																	66100	66100					Restart SEQ 15. First new good shot
1820	60	29.88	35	47.29	10.09	287	10.12	284	10.4	288	10.41	272	10.43	269	281	296	66119	66119	60	30.07	35	45.52	Check birds are under our control ok.
1833	60	30.38	35	49.75	6.66	315	6.63	313	6.75	307	6.88	304	7.1	301	291	312	66175	66175	60	30.05	35	47.78	Amplitude of pulse varies by ~2
1845	60	30.73	35	51.26	7.18	308	6.86	313	7.31	309	7.24	329	7.12	316	291	307	66220	66220	60	30.35	35	49.32	Seismic data quite noisy
1846																	66224						MISFIRE / back on line now
1900	60	31.29	35	33.68	7.05	314	6.8	317	7.05	313	7.05	313	7.23	315	291	306	66275	66275	60	30.9	35	51.73	
1922	60	32.12	35	57.25	6.75	315	6.6	313	6.78	317	6.87	321	6.95	310	299	311	66360	66360	60	31.71	35	55.31	Peak amplitude more stable now
1934	60	32.61	35	59.39	7.1	293	6.8	286	6.8	291	6.7	288	6.8	290	295	311	66416	66416	60	32.21	35	57.48	
1945	60	32.9	36	0	6.76	287	6.6	289	7.03	294	7.14	298	7.14	293	298	307	66457	66457	60	32.48	35	58.73	SOL - 66461 @ 1946
2000	60	33.64	36	3.6	6.8	296	6.9	296	7.3	297	7.2	295	7.1	294	294	308	66520	66520	60	33.17	36	1.7	
2015	60	34.26	36	6.12	6.5	303	6.6	302	7.3	301	6.9	290	7	292	295	308	66580	66580	60	33.79	36	4.22	
2030	60	34.78	36	8.33	6.8	289	6.8	280	7.3	292	7	299	6.8	285	297	308	66640	66640	60	34.33	36	6.43	Calm sea
2045	60	35.36	36	10.95	7.2	281	7.3	287	7.1	284	7	292	7.2	289	293	306	66700	66700	60	34.94	36	10.98	
2100	60	35.82	36	13.01	7.1	293	6.7	297	7	295	6.9	289	7.1	294	295	310	66760	66760	60	35.39	36	11.07	
2115	60	36.38	36	15.6	6.7	292	7	286	7.4	284	7.2	288	6.9	280	293	309	66820	66820	60	35.98	36	13.73	
2130	60	36.87	36	17.84	7.3	291	7.4	293	7	284	7	291	7.1	294	288	306	66880	66880	60	36.46	36	15.88	
2145	60	37.47	36	20.55	6.6	281	6.7	294	7.1	292	7.3	295	6.9	285	292	308	66940	66940	60	37.46	36	20.59	
2200	60	37.92	36	22.63	7.1	289	6.9	290	6.8	291	7.2	287	6.7	292	292	308	67000	67000	60	37.54	36	22.78	Glassy, slight swell
2211	60	38.47	36	25.16											291	308	67043	67043					Electrical trip, 5.1 kts
2221	60	38.77	36	26.56													67050		60	38.39	36	26.5	hot on line, streamer Nautilus control still off. NB Tailbuoy past ship at time of power outage
2228	60	38.95	36	27.37											289	308	67076		60	38.57	36	25.42	No comms with Nautilis - shutting down
2230	60	39.08	36	27.96											290	312	67094		60	39.1	36	25.04	Restarting Nautilis
2234	60	39.16	36	28.31											290	312							Nautilis back online
2237	60	39.29	36	28.87	6.9	281	7.1	285	7.4	286	7.2	291	7.4	287	287	312	70000	70000	60	38.91	36	27.1	New SEQ 16
2245	60	39.57	36	30.17	6.6	288	6.7	287	6.6	288	7.1	295	6.8	294	288	304	70031	70031	60	39.19	36	28.32	Guns and birds look good
2300	60	40.02	36	32.3	7.1	291	7.3	290	7	294	7	294	6.9	292	289	304	70087	70087	60	39.64	36	30.33	New WP for next PE to bridge
2315	60	40.56	36	34.87	6.7	290	6.6	291	6.5	294	6.8	289	7.1	278	294	293	70151	70151	60	40.17	36	32.91	Adjusted gain window on QC
2332	60	41.15	36	37.72	7.4	294	7.4	284	7.2	288	7.1	291	7.2	285	280	307	70219	70219	60	40.75	36	37.75	XBTin 2324, SN 70182
2336	60	41.26	36	38.25											295	308	70236	70236	60	40.88	36	36.39	Turning offline
2345	60	41.68	36	39.35	7.7	312	7.6	299	6.9	306	6.5	296	6.7	298	330	341	70271	70271	60	41.13	36	37.57	Turning 3deg/min, calm sea
2359	60	42.91	36	39.64	7.9	62	7.8	24	7.4	16	7.2	7.2?	7.2	18	19	37	70332	70332	60	41.93	36	39.5	Still turning

Julian Day: Date: Sheet Number:

Time	Lat		Lon		Water	Head.	SOW	SOG	EM710	EM120			EA600	SBP		ER60	OLEX	Comments
(GMT)	D	DM	D	DM	depth (m)		(kts)	(kts)	rec.	rec	Line cnt.		rec.	rec.	Data file	rec.	rec.	
0000	60	43.09	36	39.46	2960	22	5.2	5.0	n	y	0030	113 JC050-2	Y	Y	210-1618_159	Y	Y	
0015	60	44.01	36	38.66	2954	25	4.6	5.3	n	y	0030	101 JC050-2	Y	Y	210-1618_160	Y	Y	
0030	60	44.80	36	36.65	2805	84	5.2	4.9	n	y	0030	86 JC050-2	Y	Y	210-1618_161	Y	Y	
0048	60	44.63	36	33.39	2963	93	4.2	4.1	n	y	0030	67 JC050-2	Y	Y	210-1618_163	Y	Y	Guns onto ship
0101	60	44.53	36	31.11	2962	78	5.0	5.0	n	y	0030	54 JC050-2	Y	Y	210-1618_164	Y	Y	
0116	60	45.01	36	28.81	2951	60	5.1	5.0	n	y	0030	39 JC050-2	Y	Y	210-1618_165	Y	Y	
0133	60	45.22	36	26.34	2945	36	5.3	5.0	n	y	0030	21 JC050-2	Y	Y	210-1618_167	Y	Y	
0146	60	46.64	36	25.05	2942	34	5.4	4.8	n	y	0030	9 JC050-2	Y	Y	210-1618_168	Y	Y	
0201	60	47.84	36	24.24	2939	351	5.0	4.9	n	y	0031	113 JC050-2	Y	Y	210-1618_169	Y	Y	
0d17	60	48.89	36	25.44	2936	301	5.3	5.1	n	y	0031	98 JC050-2	Y	Y	210-1618_170	Y	Y	
0231	60	49.05	36	27.89	d9d3	264	5.8	5.1	n	y	0031	84 JC050-2	Y	Y	210-1618_171	Y	Y	
0248	60	48.16	36	29.78	2944	212	4.5	4.6	n	y	0031	66 JC050-2	Y	Y	210-1618_173	Y	Y	
0302	60	47.22	36	30.55	2953	201	4.3	4.6	n	y	0031	53 JC050-2	Y	Y	210-1618_174	Y	Y	
0316	60	46.21	36	31.39	2958	199	4.4	4.5	n	y	0031	38 JC050-2	Y	Y	210-1618_175	Y	Y	
0330	60	45.36	36	32.10	2960	202	4.7	4.9	n	y	0031	26 JC050-2	Y	Y	210-1618_176	Y	Y	Guns back in water
0345	60	41.14	36	33.11	2968	207	4.9	4.9	n	y	0031	11 JC050-2	Y	Y	210-1618_177	Y	Y	Started firing
0400	60	43.80	36	34.03	2966	198	5.1	5.1	n	y	0032	116 JC050-2	Y	Y	210-1618_179	Y	Y	
0415	60	41.87	36	35.08	3030	203	5.1	5.0	n	y	0032	101 JC050-2	Y	Y	210-1618_180	Y	Y	About to deploy XBT
0436	60	40.25	36	36.49	2973	200	4.5	5.2	n	y	0032	79 JC050-2	Y	Y	210-1618_182	Y	Y	XBT deployed 0427
0445	60	39.55	36	37.07	2971	204	5.4	5.0	n	y	0032	70 JC050-2	Y	Y	210-1618_182	Y	Y	
0500	60	38.40	36	38.00	2979	183	4.8	5.1	n	y	0032	55 JC050-2	Y	Y	210-1618_184	Y	Y	
0515	60	37.21	36	37.49	2983	137	5.1	5.2	n	y	0032	40 JC050-2	Y	Y	210-1618_185	Y	Y	
0530	60	36.48	36	35.32	2981	116	5.7	4.8	n	y	0032	23 JC050-2	Y	Y	210-1618_186	Y	Y	
0545	60	35.96	36	33.11	2985	116	5.1	5.0	n	y	0032	10 JC050-2	Y	Y	210-1618_187	Y	Y	
0559	60	35.46	36	30.97	2978	117	4.9	4.8	n	y	0033	116 JC050-2	Y	Y	210-1618_188	Y	Y	
0615	60	34.98	36	28.26	2979	081	5.1	4.6	n	y	0033	99 JC050-2	Y	Y	210-1618_190	Y	Y	
0630	60	35.45	36	25.89	2975	050	5.0	5.0	n	y	0033	83 JC050-2	Y	Y	210-1618_191	Y	Y	
0645	60	36.40	36	24.63	2973	031	4.8	4.8	n	y	0033	70 JC050-2	Y	Y	210-1618_192	Y	Y	Sea state very calm. About to deploy sonobuoy
0700	60	37.54	36	24.25	2968	346	5.4	5.1	n	y	0033	55 JC050-2	Y	Y	210-1618_193	Y	Y	
0715	60	38.55	36	25.67	2867	300	4.4	4.5	n	y	0033	39 JC050-2	Y	Y	210-1618_195	Y	Y	Sonobuoy deployed @ 0707
0730	60	39.01	36	27.28	2851	295	4.5	4.4	n	y	0033	25 JC050-2	Y	Y	210-1618_196	Y	Y	Guns continually misfiring
0745	60	39.48	36	29.89	2968	300	4.3	4.6	n	y	0033	10 JC050-2	Y	Y	210-1618_197	Y	Y	"
0800	60	39.94	36	33.04	2974	282	5.3	4.6	n	y	0034	115 JC050-2	Y	Y	210-1618_198	Y	Y	
0817	60	40.49	36	34.64	2971	291	4.6	4.7	n	y	0034	98 JC050-2	Y	Y	210-1618_200	Y	Y	Poor SBP penetration - dropstones?
0832	60	40.97	36	36.80	2967	291	4.5	4.2	n	y	0034	83 JC050-2	Y	Y	210-1618_201	Y	Y	SBT deployed 0829
0845	60	41.45	36	38.47	2963	319	5.2	4.5	n	y	0034	69 JC050-2	Y	Y	210-1618_202	Y	Y	Guns brought in. Turning to stbd, 3deg/min
0901	60	42.66	36	38.20	2959	23	4.7	4.5	n	y	0034	53 JC050-2	Y	Y	210-1618_203	Y	Y	
0916	60	43.72	36	37.09	2956	28	4.8	4.7	n	y	0034	38 JC050-2	Y	Y	210-1618_205	Y	Y	Perpendicular to main line
0930	60	44.67	36	36.12	2955	30	4.8	4.7	n	y	0034	25 JC050-2	Y	Y	210-1618_206	Y	Y	
0945	60	45.52	36	34.46	2962	74	4.7	5.0	n	y	0034	10 JC050-2	Y	Y	210-1618_207	Y	Y	Turning to stbd
1000	60	45.56	36	32.07	2959	115	4.6	4.9	n	y	0035	115 JC050-2	Y	Y	210-1618_208	Y	Y	Parallel to main line. About to redeploy guns
1015	60	45.04	36	29.83	2958	115	4.8	4.8	n	y	0035	100 JC050-2	Y	Y	210-1618_210	Y	Y	Guns deployed
1029	60	44.57	36	27.63	2951	116	5.1	5.1	n	y	0035	86 JC050-2	Y	Y	210-1618_211	Y	Y	Guns firing
1044	60	44.03	36	25.22	2951	115	5.0	5.2	n	y	0035	71 JC050-2	Y	Y	210-1618_212	Y	Y	Still have problems with gun hydrophone. Resta
1059	60	43.50	36	22.78	2954	117	5.1	5.1	n	y	0035	56 JC050-2	Y	Y	210-1618_213	Y	Y	
1114	60	42.95	36	20.32	2955	115	5.1	5.0	n	y	0035	41 JC050-2	Y	Y	210-1618_214	Y	Y	Changing gun power supply
1128	60	42.48	36	18.09	3080	115	5.4	5.1	n	y	0035	27 JC050-2	Y	Y	210-1618_216	Y	Y	
1140																		Reducing speed to 4.6kts
1143	60	41.95	36	15.70	2959	113	4.1	4.7	n	y	0035	12 JC050-2	Y	Y	210-1618_217	Y	Y	
1158	60	41.48	36	13.55	2963	128	4.4	4.7	n	y	0036	117 JC050-2	Y	Y	210-1618_218	Y	Y	
1216	60	40.92	36	10.99	2966	115	4.5	4.3	n	y	0036	99 JC050-2	Y	Y	210-1618_220	Y	Y	
1233	60	40.36	36	8.52	2969	118	4.5	4.5	n	y	0036	82 JC050-2	Y	Y	210-1618_221	Y	Y	
1245	60	39.89	36	6.93	2971	141	5.3	5.2	n	y	0036	70 JC050-2	Y	Y	210-1618_222	Y	Y	
1258	60	38.79	36	6.11	2972	172	4.9	5.4	n	y	0036	57 JC050-2	Y	Y	210-1618_223	Y	Y	
1313	60	37.47	36	6.88	2976	203	5.3	5.4	n	y	0036	42 JC050-2	Y	Y	210-1618_224	Y	Y	
1330	60	36.13	36	8.12	2975	218	5.6	5.4	n	y	0036	24 JC050-2	Y	Y	210-1618_226	Y	Y	
1345	60	35.50	36	10.34	2975	262	5.3	5.5	n	y	0036	11 JC050-2	Y	Y	210-1618_227	Y	Y	
1400	60	35.84	36	13.36	2982	298	5.4	5.5	n	y	0037	114 JC050-2	Y	Y	210-1618_228	Y	Y	
1415	60	36.40	36	15.98	2979	291	5.7	5.5	n	y	0037	99 JC050-2	Y	Y	210-1618_229	Y	Y	
1431	60	36.98	36	18.58	2980	288	5.4	5.3	n	y	0037	84 JC050-2	Y	Y	210-1618_231	Y	Y	
1448	60	37.61	36	21.44	2972	302	5.1	5.6	n	y	0037	67 JC050-2	Y	Y	210-1618_232	Y	Y	
1501	60	38.07	36	23.72	2967	298	5.2	5.2	n	y	0037	54 JC050-2	Y	Y	210-1618_233	Y	Y	
1515	60	38.62	36	26.04	2964	283	5.5	5.6	n	y	0037	40 JC050-2	Y	Y	210-1618_234	Y	Y	
1530	60	39.14	36	28.55	2964	293	5.3	5.3	n	y	0037	25 JC050-2	Y	Y	210-1618_236	Y	Y	
1545	60	39.74	36	31.23	2973	308	5.9	5.4	n	y	0037	9 JC050-2	Y	Y	210-1618_237	Y	Y	
1600	60	40.32	36	33.87	2970	288	5.7	5.4	n	y	0038	114 JC050-2	Y	Y	210-1618_238	Y	Y	
1615	60	40.80	36	36.21	2968	297	5.6	5.4	n	y	0038	100 JC050-2	Y	Y	210-1618_239	Y	Y	
1631	60	41.49	36	38.70	2961	297	5.5	5.5	n	y	0038	84 JC050-2	Y	Y	210-1618_240	Y	Y	
1644	60	42.05	36	40.93	2841	301	5.2	5.5	n	y	0038	71 JC050-2	Y	Y	210-1618_242	Y	Y	
1700	60	42.72	36	43.53	2953	293	5.2	5.5	n	y	0038	55 JC050-2	Y	Y	210-1618_243	Y	Y	
1715	60	43.30	36	46.18	2946	298	5.5	5.5	n	y	0038	37 JC050-2	Y	Y	210-1618_244	Y	Y	
1730	60	43.95	36	48.43	2941	296	5.4	5.5	n	y	0038	26 JC050-2	Y	Y	210-1618_245	Y	Y	
1744	60	44.62	36	51.03	2933	301	5.3	5.5	n	y	0038	10 JC050-2	Y	Y	210-1618_247	Y	Y	
1802	60	45.39	36	53.99	2931	303	5.7	5.5	n	y	0039	112 JC050-2	Y	Y	210-1618_248	Y	Y	
1815	60	45.89	36	56.01	2928	292	5.4	5.6	n	y	0039	100 JC050-2	Y	Y	210-1618_249	Y	Y	
1830	60	46.45	36	58.22	2932	296	5.5	5.3	n	y	0039	87 JC050-2	Y	Y	210-1618_250	Y	Y	
1845	60	47.14	37	0.94	2928	303	5.7	5.5	n	y	0039	70 JC050-2	Y	Y	210-1618_252	Y	Y	
1900	60	47.71	37	36.13	2931	297	5.4	5.3	n	y	0039	57 JC050-2	Y	Y	210-1618_253	Y	Y	
1915	60	48.41	37	5.86	2939	293	5.6	5.5	n	y	0039	40 JC050-2	Y	Y	210-1618_254	Y	Y	
1930	60	49.01	37	8.25	2939	295	5.3	5.7	n	y	0039	26 JC050-2	Y	Y	210-1618_255	Y	Y	
1945	60	49.67	37	10.86	2971	286	5.4	5.6	n	y	0039	11 JC050-2	Y	Y	210-1618_257	Y	Y	
2000	60	50.33	37	13.47	2933	307	5.7	5.4	n	y	0040	115 JC050-2	Y	Y	210-1618_258	Y	Y	
2015	60	50.97	37	15.95	2925	296	5.6	5.2	n	y	0040	99 JC050-2	Y	Y	210-1618_259	Y	Y	
2030	60	51.59	37	18.39	2923	293	5.4	5.4	n	y	0040	86 JC050-2	Y	Y	210-1618_260	Y	Y	
2045	60	52.19	37	20.81	2923	302	5.6	5.5	n	y	0040	71 JC050-2	Y	Y	210-1618_262	Y	Y	
2100	60	52.99	37	23.14	2921	312	5.9	5.6	n	y	0040	56 JC050-2	Y	Y	210-1618_263	Y	Y	
2115	60	53.86	37	25.33	2925	317	4.8	5.7	n	y	0040	40 JC050-2	Y	Y	210-1618_264	Y	Y	
2130	60	54.74	37	27.53	2917	308	5.6	5.5	n	y	0040	31 JC050-2	Y	Y	210-1618_265	Y	Y	
2145	60	55.66	37	29.88	2912	291	5.5	5.4	n	y	0040	9 JC050-2	Y	Y	210-1618_267	Y	Y	
2201	60	56.55	37	32.12	2896	307	5.6	5.2	n	y	0041	115 JC050-2	Y	Y	210-1618_268	Y	Y	
2215	60	57.32	37	34.10	2881	308	5.3	5.4	n	y	0041	101 JC050-2	Y	Y	210-1618_269	Y	Y	
2230	60	58.26	37	36.54	2865	299	5.7	5.6	n	y	0041	83 JC050-2	Y	Y	210-1618_271	Y	Y	
2245	60	59.09	37	38.59	2851	300	6.2	5.3	n	y	0041	70 JC050-2	Y	Y	210-1618_272	Y	Y	
2301	61	0.03	37	41.01	2839	308	6.0	5.4	n	y	0041	53 JC050-2	Y	Y	210-1618_273	Y	Y	
2315	61	0.78	37	42.91	2832	312	5.4	5.3	n	y	0041	40 JC050-2	Y	Y	210-1618_274	Y	Y	
2330	61	1.68	37	45.22	2822	308	5.6	5.4	n	y	0041	23 JC050-2	Y	Y	210-1618_276	Y	Y	
2345	61	2.50	37	47.27	2816	322	5.6	5.8	n	y	0041	10 JC050-2	Y	Y	210-1618_277	Y	Y	

Day: Date: Sheet Number:

Time	Lat		Lon		ADCP150	ADCP75	Techsas	Level-C	Grav.	Mag.	Wind			Comments, eg state of seismic exp.
(GMT)	D	DM	D	DM	rec.	rec.	rec.	rec.	(mgal)	(nT)	Speed	Dir.	Sea State	
0002	60	43.13	36	39.43	y	y	y	y		n	3.6	71.5	Flat calm	
0017	60	44.34	36	38.30	y	y	y	y	13263.7	n	4.0	37.8		
0030	60	44.80	36	36.65	y	y	y	y		n	5.5	17.8		Guns have been brought back on board; they had been misfiring!
0049	60	44.67	36	33.27	y	y	y	y	13262.1	n	5.0	10.8		
0100	60	44.53	36	31.27	y	y	y	y		n	4.1	25.6		
0116	60	45.03	36	28.80	y	y	y	y	13257.5	n	4.3	39.7		
0130	60	45.58	36	26.75	y	y	y	y		n	4.8	25.7		
0145	60	46.60	36	28.09	y	y	y	y	13267.8	n	5.6	40.6		
0201	60	47.83	36	24.24	y	y	y	y		n	3.9	74.4		
0215	60	48.83	36	25.26	y	y	y	y	13295.1	n	1.9	18.1		Guns are back in the water
0232	60	49.03	36	28.04	y	y	y	y		n	3.4	248		
0248	60	48.17	36	29.75	y	y	y	y	13204.6	n	4.5	278		Guns are out again
0303	60	47.15	36	30.61	y	y	y	y		n	5.7	285		
0317	60	46.13	36	31.46	y	y	y	y	13280	n	4.7	286		
0330	60	45.34	36	32.12	y	y	y	y		n	4.4	294	Calm	Gun back in water
0345	60	44.16	36	33.09	y	y	y	y	13278.3	n	4.8	306	"	Started firing
0400	60	43.80	36	34.03	y	y	y	y		n	4.2	286	Calm	ditto - not recording yet
0415	60	41.88	36	35.06	y	y	y	y	13277.3	n	4.6	304	"	
0435	60	40.27	36	36.47	y	y	y	y		n	5.2	303	"	XBT launched at 0427
0445	60	39.57	36	37.07	y	y	y	y	13270.9	n	4.9	297	very calm	
0500	60	38.35	36	38.02	y	y	y	y		n	4.8	307	"	
0514	60	37.23	36	37.52	y	y	y	y	13250.7	n	5.5	348	"	
0530	60	36.51	36	35.45	y	y	y	y		n	5.3	355	"	
0545	60	35.97	36	33.18	y	y	y	y	13248.7	n	5.3	358	"	
0600	60	35.46	36	30.98	y	y	y	y		n	5.9	357	"	
0616	60	34.98	36	28.27	y	y	y	y	13243.4	n	4.6	15	"	
0630	60	35.45	36	25.89	y	y	y	y		n	4.4	047	"	
0645	60	36.39	36	24.63	y	y	y	y	13254.6	n	4.2	034	"	
0700	60	37.53	36	24.24	y	y	y	y		n	2.6	055	"	
0715	60	38.55	36	25.67	y	y	y	y	13281.9	n	4.3	041	"	Sonobuoy deployed 0707, but the guns are misfiring
0730	60	39.01	36	27.68	y	y	y	y		n	2.8	065	"	Guns continuously misfiring
0745	60	39.47	36	29.84	y	y	y	y	13278.8	n	3.5	052	calm	Guns firing - just lost connection
0800	60	39.94	36	32.04	y	y	y	y		n	3.4	55	"	Shot gathers seem fine
0818	60	40.51	36	34.68	y	y	y	y	13280.3	n	4.1	62		
0823	60	40.71	36	35.57										Lost air pressure to guns
0834	60	41.01	36	37.01	y	y	y	y		n	3.7	062	~2m swell	XBT deployed 0829
0845	60	41.45	36	38.47	y	y	y	y	13276.4	n	4.8	43		Guns in. Turning to stbd 3deg/min
0903	60	42.77	36	38.10	y	y	y	y		n	5.2	004	~1m swell	
0917	60	43.80	36	37.03	y	y	y	y	13267	n	5.9	25		Magnetometer respooling. Perpendicular to main line
0930	60	44.67	36	36.12	y	y	y	y		n	5.7	30		
0946	60	45.57	36	34.23	y	y	y	y	13258.8	n	5.9	334	1-2m swell	Turning to stbd
1000	60	45.56	36	32.08	y	y	y	y		n	5.3	310		Parallel to main line. About to redeploy guns
1016	60	44.99	36	29.61	y	y	y	y	13254.2	n	3.9	315	1m swell	Guns deployed
1030	60	44.52	36	27.41	y	y	y	y		n	5.1	318	1-2m swell	Guns firing
1045	60	43.97	36	24.93	y	y	y	y	13258.1	n	4.0	321	1m swell	Still have problems with gun hydrophone. Restarted BigShot
1101	60	43.43	36	22.52	y	y	y	y		n	4.0	325	1-2m swell	
1116	60	42.90	36	20.06	y	y	y	y	13252.2	n	5.3	338		Changing gun power supply
1125														Deploying magnetometer
1130	60	42.39	36	17.69	y	y	y	y		n	5.2	326		Still deploying magnetometer
1140														Reducing boat speed to 4.6kts
1144	60	41.91	36	15.52	y	y	y	y	13252.6	n	4.8	325		Magnetometer had problems - back in. Leak
1159	60	41.43	36	13.38	y	y	y	y		n	4.9	312	Calm	
1218	60	40.85	36	10.69	y	y	y	y	13256.7	n	6.4	315		
1234	60	40.33	36	0.83	y	y	y	y		n	4.5	322		
1245	60	39.86	36	6.87	y	y	y	y	13255.7	n	3.2	326		
1300	60	38.70	36	6.11	y	y	y	y		n	2.5	322		
1315	60	37.42	36	6.94	y	y	y	y	13277	n	2.3	305		
1330	60	36.15	36	8.92	y	y	y	y		n	1.7	310	Calm	
1345	60	35.51	36	10.24	y	y	y	y	13288.3	n	2.9	64		
1400	60	35.89	36	13.36	y	y	y	y		n	1.9	58		
1415	60	36.42	36	15.99	y	y	y	y	13322.1	n	1.3	38		
1432	60	37.02	36	18.77	y	y	y	y		n	1.4	32		
1447	60	37.56	36	21.27	y	y	y	y	13281.6	n	2.5	27		
1500	60	38.05	36	23.46	y	y	y	y		n	1.9	356		
1515	60	38.61	36	25.99	y	y	y	y	13281.9	n	2.3	94.1		
1529	60	39.11	36	28.48	y	y	y	y		n	2.9	341		
1545	60	39.72	36	31.17	y	y	y	y	13289.3	n	2.9	346		
1600	60	40.33	36	33.88	y	y	y	y		n	3.7	315	mill pond	
1615	60	40.80	36	36.21	y	y	y	y	13286.8	n	3.7	311	calm	
1630	60	41.49	36	38.70	y	y	y	y		n	4.4	314		
1645	60	42.09	36	41.10	y	y	y	y	13285	n	3.4	317		
1700	60	42.72	36	43.53	y	y	y	y		n	2.9	317		
1715	60	43.38	36	46.18	y	y	y	y	13291	n	3.2	324	0m swell	
1730	60	43.95	36	48.43	y	y	y	y		n	3.3	353	"	
1745	60	44.64	36	51.10	y	y	y	y	13295	n	3.5	326	1m swell	
1800	60	45.39	36	54.04	y	y	y	y		n	4.0	323	calm	
1815	60	45.89	36	56.08	y	y	y	y	13299.8	n	3.9	315	"	
1830	60	46.45	36	58.22	y	y	y	y		n	3.5	338	"	
1845	60	47.14	37	0.94	y	y	y	y	13298.4	n	3.6	310	"	
1900	60	47.73	37	3.24	y	y	y	y		n	5.4	311	very flat	
1915	60	48.40	37	5.85	y	y	y	y	13305.7	n	4.3	319	mill pond	
1930	60	49.01	37	8.25	y	y	y	y		n	5.1	306	"	
1944	60	49.67	37	10.88	y	y	y	y	13307	n	2.9	320	"	
2000	60	50.34	37	13.50	y	y	y	y		n	4.6	323	~2m swell	
2017	60	51.04	37	16.26	y	y	y	y	13316.7	n	3.6	306		
2030	60	51.59	37	18.39	y	y	y	y		n	1.7	298		
2045	60	52.19	37	20.81	y	y	y	y	13309.9	n	3.2	338		
2100	60	53.02	37	23.19	y	y	y	y		n	3.7	286		
2115	60	53.86	37	25.33	y	y	y	y	13307.6	n	3.4	275		
2206	60	56.82	37	32.85	y	y	y	y	13310.7	n	3.7	272	2m swell	calm
2215	60	57.32	37	34.09	y	y	y	y		n	4.2	260		
2231	60	58.28	37	37.36	y	y	y	y	13310.6	n	4.2	260	2m swell	no local waves
2245	60	29.09	37	38.59	y	y	y	y		n	4.0	256		
2300	60	59.99	37	40.91	y	y	y	y	13317.1	n	4.9	258		
2315	61	0.78	37	42.90	y	y	y	y		n	3.0	254		
2332	61	1.76	37	45.41	y	y	y	y	13316	n	4.7	260		
2346	61	2.59	37	47.50	y	y	y	y		n	4.1	269		

Every 30 min, for important events and not for birds during turns.

Seismic log

Line No:	1 SEQ16/17/18				Date:	###		Julian Day:	212	Page No:				Depth of Gun 1:	5m					Array Volume: 355
														Depth of Gun 2:	n/a					
	Vessel GPS				Bird 1		Bird 2		Bird 3		Bird 4		Bird 5				Tailbuoy GPS			
Time GMT	Lat		Long		Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Ship H'ding	CMG	Shot no.	FFID	Lat	Long	MISFIRE, Feathering angle, sea state, current, other comments
0000	60	42.9n	36	39.64	7.9	62	7.8	24	7.4	16	7.2	7.2	7.2	18	19	37	70332	70332	60 41.93	36 39.5	Ship turning
0015	60	44.07	36	38.69	7.2	37	6.7	36	7	42	7.1	41	7	41	28	41	70391	70391	60 43.12	36 39.34	Calm sea; no swell
28	60	44.8	36	36.49													70444	70444			Misfire 70444, onwards
0045	60	44.68	36	34.12											97	114			60 44.74	36 36.17	Taking the gun out
0100	60	44.53	36	31.25											81	96			60 44.61	36 33.28	Fixing the gun
0116	60	45.03	36	28.8											60	77			60 44.59	36 30.67	
0130	60	45.61	36	26.69											42	62			60 45.08	36 28.46	
0145	60	46.52	36	25.26											33	49			60 45.71	36 26.49	
0200	60	47.52	36	24.32											6	23			60 46.58	36 25.11	
0215	60	48.82	36	25.32	6.6	339	6.3	321	6.5	353	7	356	6.7	358	305	321			60 47.96	36 24.29	Guns back in the water; not firing yet
0221	60	49.07	36	26.33													70470	70470	60 48.46	36 24.7	Start firing (testing only); gain = 1
																	72000	72000			SEQ17 Started on shot 72000
0235																	STOPPED FIRING @ 72020				File one behind
0240																					Guns coming back onto ship
0330																					Guns back in water & firing ok
0331																	73000	73000			SEQ17 Restarted
																	73003	73003			Guns firing ok; recording data; still some variability in the amplitude of the shot at gai
0335	60	44.79	36	32.6											201.2	215.92					Ship and tailbuoy on straight for transect of line
0344	60	44.12	36	33.16	8.09		6.33		6.51		6.71		7.26		202.9	217.8	73055	73055	60 45.02	36 33.24	Come on to start of transect of line - Pig's Ear crossing
0347	60		36														73064	73064			Batchle error - meaasge appeared on BigShot screen
																	73071	73071			Guns still firing
0356	60	43.22	36	33.96													73100	73100			Tailbuoy on line (low satellites)
0408																	73140				Shot looks ok.
0412	60	42.02	36	34.99	8.3	198	7.2	201	7.4	196	6.8	195	7.4	203	201	218	73169	73169	60 42.95	36 34.15	Shot looks good
0427	60	40.89	36	35.96	8.4	200	7.3	198	6.7	198	6.9	198	7.4	204	200	218	73228, 73259-60	73228, 73259-60	60 41.84	36 35.14	(73230 crossed line) A bit quiffy shot
0437																	73261	73261			Good shot
0445	60	39.56	36	37.12	7.9	203	6.7	201	7	192	7	216	7.1	198	200	216.6	23297	73297	60 40.52	36 36.34	(73279, not aligned)
0456																	23346	73346			Vessel turning off line
0503	60	38.06	36	38.09	8.3	182	7	195	7.3	191	7.1	200	7	184	173	191	23376	73376	60 39.05	36 37.62	Turning
0514	60	37.21	36	37.53	7.4	160	6.6	160	7.4	160	7.4	175	7.2	169	142	158	73417	73417	60 38.19	36 38.05	TB on turn (good shots)
0533	60	36.35	36	34.85											117	125	73494	73494	60 36.84	36 36.07	On the turn
0545	60	35.94	36	33.08											115	129	73540	73540	60 36.39	36 34.96	
0600	60	35.43	36	30.89											119	130	73593	73593	60 35.88	36 32.77	Stil turning
0616	60	34.97	36	28.33											90	103	73662	73662	60 35.32	36 30.28	
0631	60	35.45	36	25.45											45	58.6	73723	73723	60 35.07	36 25.88	
0640	60	36.04	36	25.1											31	42	73760	73760	60 35.33	36 26.47	Still turning
0653	60	36.96	36	24.25											8	22	73810	73810	60 36.08	36 24.95	73811 Badshot. 12,14,15,19,20,22,23,24,25,27,28,29,30,31,32,34,35,38,40
Bad shots ; 73844,53,54,64,66,67(sonobuoy deployed), 68,69 (bubble error), 70,71 (bubble error),72,73,74,75,76,79,80,81,82 (bubble error),87,88																					
																	73878 - missfire				
																	73890 -missfire				
0712	60	38.43	36	25.47													73888	73888	60 37.63	36 24.4	Vessel online
0715	Sonobuoy hydrophones look good (so carrying on)																73892 onwards				Missfiring
0722	60	38.81	36	26.83	11.6	285	6.6	293	6.4	299	6.8	308	7.4	312	289	307	73928	73928	60 38.27	36 25.07	Missfiring
0725																	73939	73939			TB online (still missfiring)
0737	60	39.26	36	28.95	11.5	286	6.5	288	6.1	283	6.8	285	6.9	284	294	308	73990	73990	60 38.91	36 20.99	Still missfiring, but sonobuoy recording & seismic looks fine so carrying on
0751	60	39.69	36	30.89	10.3	284	6.9	291	7	288	7.2	286	7	292	291	305	74044	74044	60 39.33	36 8.91	
0800	60	39.97	36	32.17	10.1	282	6.9	286	7	287	7.1	291	7	284	292	305	74076	74076	60 39.61	36 32.19	
0815	60	46.44	36	34.44	9.8	289	6.7	294	7.3	282	7.6	286	7	281	291	304	74136	74136	60 40.07	36 32.38	Problem with NAS export?
0823	60	40.7	36	35.8										Last Shot			74717	74171			Loss of air on deck. Guns deeper from SEQ 18 onwards (5.5m)
0830																					Starting turn to stbd at 3deg/min to come back to line. XBT at 0829
0840	60	41.23	36	38.02															60 41.22	36 36.11	Guns retrieved
0845	60	41.56	36	38.59											348	356			60 41	36 36.54	Turning 3deg/min
0900	60	42.49	36	38.36											31	40			60 41.53	36 38.38	Turning, up to 5.1kts for birds
0915	60	43.61	36	37.22											37	41			60 42.67	36 38.29	Turning, up to 5.1kts for birds
0930	60	44.82	36	35.96											33	38			60 43.88	36 36.01	Fixing airhose, lengthening chain, reconnecting hydrophone
0945	60	45.52	36	34.44											71	78			60 44.82	36 36.04	
1015	60	45	36	29.62											117	129			60 45.44	36 31.42	Guns redeployed. Parallel to line
1029	60	44.53	36	27.49											117	129	76000		60 45.01	36 27.44	Clear MMO soft start

Every 30 min, for important events and not for birds during turns.

Seismic log

																							Guns missfiring - stopped again
1044	60	43.99	36	25.05	6.6	110	6.7	111	6	112	6.2	117	6.7	118	116	127	76037		60	44.48	36	27.02	Soft start again
1100	60	43.51	36	22.83	6.5	111	6.4	115	6.9	117	6.1	112	6.8	120	119	130	76093		60	43.97	36	22.86	Gun probs still, swapping power supply in shack
1115	60	42.91	36	20.17	6.1	115	6.8	110	6.4	108	6.7	118	6.9	115	118	127			60	43.41	36	22.2	Restarting BigShot
1126	60	42.43	36	17.91											112	121							Power out. No bird coms
1133	60	42.25	36	17.08											117	124							Restart soft start, 4 shots
1140																							Restart Nautilis
1145	60	41.89	36	15.51	10.3	110	10.4	111	10	123	10.4	157	10.1	111	117	130			60	42.34	36	17.34	Birds back on line, 4.8 kts
1154	60	41.59	36	14.06											116	131	5		60	42.05	36	16.03	Firing again, testing
1200	60	41.48	36	15.62	11.1	134	10.3	133	10	146	9.8	179	9.8	134	115	128			60	41.93	36	15.5	
1232	60	40.37	36	8.53	10.09	134	7.07	133	6.53	146	6.7	180	7.53	134	115.2	126.4	52	76052					Starting turn to starboard, guns are working, but not hydrophone, now need to QC usin
1245	60	39.85	36	6.87	6.4	154	6.39	168	7.19	147	7.27	148	6.97	140	144.3	155.72	107	76106	60	40.39	36	8.48	
1259	60	38.68	36	6.13	6.58	200	6.87	195	7.28	197	7.11	176	6.96	180	183.9	195.3	161	76161	60	39.63	36	6.66	
1307																	192	76191					Continuing onto line perpendicular
1315																							Direct arrival crossing screen
1316	60	37.16	36	7.14													226	76226					Everything is getting stopped
1318	60	37.19	36	7.28	7.01	227	7.09	225	7.37	220	7.34	232	7.22	220	201.19	207.19	77000	77000	60	37.9	36	6.61	Test finish, start of line SOL
1330	60	36.05	36	8.25	6.88	232	7.09	210	7.5	225	6.94	226	7.32	230	220.1	235.3	77050	77050	60	36.95	36	7.35	
1345					7.37	265	7.2	258	7.35	255	7.45	247	7	259	257.6		77104	77104					Ship coming back around, coming back onto line, looks like there might be a lot of wra
1353																	77144	77144					Back on line heading NW (only vessel, not streamer)
1401	60	35.91	36	13.36	6.97	309	6.93	305	6.99	301	7.28	307	7.14	307	288.7	305.7	77177	77177	60	35.62	36	11.77	
1408																	77199	77199					TB back on line,m basement + seds visible on seal, reflection directly below wrap arou
1420	60	36.55	36	16.68	6.76	319	7.08	309	7.04	318	6.08	313	6.67	308	295.5	309	77254	77254	60	38.18	36	14.77	
1430	60	36.97	36	18.54	6.95	315	7.17	312	7.16	309	7.23	309	6.86	309	290	304	77292	77292	60	36.58	36	16.6	
1445	60	37.47	36	20.87	6.94	322	7.15	318	7.02	323	6.85	322	7.17	315	291	305	77349	77349	60	37.1	36	18.94	
1501	60	38.09	36	23.71	7.05	315	7.15	310	6.92	317	7.04	319	6.92	310	293	306	77413	77413	60	37.71	36	21.74	
1515	60	38.59	36	26.02	7.18	309	7.21	312	7.52	326	7.33	319	7.28	316	294	310	77469	77469	60	38.22	36	24.06	
1530	60	39.17	36	28.69	6.78	318	6.87	308	6.98	313	6.9	314	6.94	312	296.7	311.79	77533	77533	60	38.79	36	28.73	
1545	60	39.73	36	31.21	6.61	315	6.57	318	7.09	306	7.21	305	7.03	322	293.3	309.48	77592	77592	60	39.34	36	29.31	
1600	60	40.2	36	33.38	6.66	308	6.61	295	6.72	291	7.16	285	7.14	298	297	337	77648	77648	60	39.81	36	31.5	
1615	60	40.76	36	35.87	7.38	290	7.58	287	7.17	299	7.19	302	7.22	289	297	311	77705	77705	60	40.33	36	33.95	
1630	60	41.36	36	38.31	7.28	302	7.35	290	6.83	290	6.63	294	7.02	288	296	311	77766	77766	60	40.89	36	36.47	No hydrophone waveform
1645	60	41.98	36	40.74	6.85	292	6.74	303	7.02	301	6.73	291	6.92	296	295	310	77828	77828	60	41.51	36	39.05	
1700	60	42.63	36	43.34	6.69	294	6.8	295	7.16	304	7.16	290	7.02	294	297	312	77885	77885	60	42.16	36	41.43	
1715	60	43.34	36	46.06	6.25	299	6.79	304	7.2	302	7.3	309	6.82	302	299	312	77947	77947	60	42.86	36	46.16	
1730	60	43.08	36	47.87	7.05	304	6.96	297	7.35	299	6.64	296	6.26	297	299	311	78006	78006	60	43.3	36	46.02	
1745	60	44.49	36	50.59	6.7	297	6.67	300	7.03	298	7.15	299	6.99	300	296	313	78069	78069	60	44	36	48.73	
1800	60	45.27	36	53.61	6.7	294	6.73	301	6.8	301	6.85	301	6.87	318	295	311	78131	78131	60	44.78	36	51.72	
1815	60	45.83	36	55.85	6.9	300	6.8	300	6.7	293	7.1	291	7.3	284	295	313	78188	78188	60	45.86	36	55.95	Along line direct wave, seafloor etc. looks ok
1828	60	46.42	36	58.17	6.7	304	6.8	296	7.6	296	6.9	305	7.2	297	297	312	78243	78243	60	45.96	36	56.29	
1846	60	47.17	37	1.11	7.2	293	7	292	6.8	296	6.8	303	7.1	299	298	312	78312	78312	60	46.71	36	59.23	
1900	60	47.75	37	3.39	6.8	299	6.8	289	6.8	299	6.8	295	7	296	296	310	78372	78372	60	47.3	37	1.57	
1914	60	48.4	37	5.94	7	296	7.1	288	6.6	295	6.9	291	6.8	298	294	310	78433	78433	60	47.93	37	4.05	
1933	60	49.2	37	9.1	6.6	288	6.9	290	6.9	294	6.8	296	7.1	298	294	311	78507	78507	60	48.94	37	7.21	
1945	60	49.69	37	11.02	7	296	7	294	6.8	304	7.1	296	6.9	295	293	311	78553	78553	60	49.23	37	9.12	
2000	60	50.39	37	13.69	7	301	6.8	292	7.1	308	7.2	299	7.4	295	293	307	78609	78609	60	49.94	37	11.82	Penetration looks good
2022	60	51.31	37	17.39	7.4	301	7.1	303	6.9	298	7	300	7.1	288	292	310	78698	78698	60	50.86	37	15.64	
2031	60	51.65	37	18.75	6.9	302	6.9	289	6.6	95	6.9	298	6.6	287	298	317	78733	78733	60	51.18	37	16.86	
2043	60	52.16	37	20.74	6.8	290	7	298	7.1	298	6.7	295	7	298	294	309	78781	78781	60	51.7	37	20.84	
2047																	78797	78797					Bend in line
2100	60	53.03	37	23.29	6.8	314	6.6	315	7	309	7.1	300	7.2	300	310	323	78849	78849	60	52.41	37	21.61	
2115	60	53.89	37	25.48	7.1	314	7.2	304	7.1	313	6.8	316	7.3	310	310	326	78908	78908	60	53.25	37	23.9	
2130	60	54.77	37	27.73	6.6	308	6.9	307	7.1	308	6.8	297	7.3	310	312	323	78769	78769	60	54.11	37	26.11	
2146	60	55.73	37	30.14	7.4	314	7.4	312	7.1	307	7	304	7.5	321	312	323	79035	79035	60	55.05	37	30.18	
2200	60	56.51	37	37.32	7.2	312	7.1	310	7.3	308	7	309	7.2	305	308	323	79089	79089	60	55.86	37	32.21	
2215	60	27.33	37	34.11	7.5	311	7.4	314	7.2	317	7.1	308	7.1	303	306	322	79149	79149	60	56.67	37	32.64	2m swell, v calm, little wind
2230	60	58.16	37	36.32	6.7	297	7	309	6.9	309	6.7	303	6.6	319	311	322	79209	79209	60	57.48	37	34.72	
2245	60	59.07	37	38.67	7	313	7.2	309	7	309	6.9	302	7	311	311	324	79269	79269	60	58.4	37	37.07	
2300	60	59.89	37	40.74	7.2	308	7.2	312	7.2	307	6.9	318	7.2	304	308	321	79329	79329	60	59.22	37	37.39	
2315	61	0.87	37	43.13	6.7	313	6.8	311	7	312	6.9	307	6.8	316	311	328	79389	79389	61	0.13	37	41.61	
2330	61	1.66	37	45.24	6.9	309	6.8	310	7.1	314	6.8	309	7	315	308	324	79449	79449	61	1	37	43.61	1m swell, local ripples
2345	61	2.57	37	47.46	6.8	316	6.8	302	7.2	312	7.6	307	7.2	312	306	322	79509	79509	61	1.89	37	45.86	

Julian Day: Date: Sheet Number:

Time	Lat		Lon		Water	Head.	SOW	SOG	EM710	EM120			EA600	SBP		ER60	OLEX	Comments
(GMT)	D	DM	D	DM	depth (m)		(kts)	(kts)	rec.	rec	Line cnt.		rec.	rec.	Data file	rec.	rec.	
0000	61	3.39	37	49.56	2806	307	5.4	5.7	n	y	0042	114 JC050-2	y	y	210-1618_278	y	y	
0015	61	4.26	37	51.77	2801	304	6.1	5.4	n	y	0042	100 JC050-2	y	y	210-1618_280	y	y	
0045	61	5.95	37	56.08	2785	303	5.8	5.6	n	y	0042	69 JC050-2	y	y	210-1618_282	y	y	
0100	61	6.82	37	58.32	2775	311	5.3	5.3	n	y	0042	54 JC050-2	y	y	210-1618_283	y	y	
0115	61	7.76	38	0.65	2682	304	5.4	5.4	n	y	0042	39 JC050-2	y	y	210-1618_285	y	y	
0130	61	8.55	38	2.71	2754	304	5.3	5.7	n	y	0042	25 JC050-2	y	y	210-1618_286	y	y	
0145	61	9.40	38	4.89	2743	316	5.5	5.6	n	y	0042	10 JC050-2	y	y	210-1618_287	y	y	
0201	61	10.33	38	7.29	2731	308	5.2	5.3	n	y	0043	114 JC050-2	y	y	210-1618_289	y	y	
0215	61	11.17	38	9.43	2721	305	5.4	5.6	n	y	0043	99 JC050-2	y	y	210-1618_290	y	y	
0231	61	12.06	38	11.68	2711	324	5.4	5.4	n	y	0043	84 JC050-2	y	y	210-1618_291	y	y	
0246	61	12.92	38	13.92	2696	308	5.4	5.5	n	y	0043	69 JC050-2	y	y	210-1618_291	y	y	SBP frozen
0257	61	13.56	38	15.54	2666	310	5.5	5.4	n	y	0043	58 JC050-2	y	y	210-1618_291	y	y	SBP still frozen; calling Leighton
0305														y	210-1619			SBP now functional
0315	61	14.62	38	18.25	2672	303	5.3	5.3	n	y	0043	39 JC050-2	y	y	210-1619_001	y	y	
0330	61	15.44	38	20.36	2659	307	5.9	5.4	n	y	0043	25 JC050-2	y	y	210-1619_002	y	y	
0346	61	16.35	38	22.70	2644	304	5.5	5.3	n	y	0043	9 JC050-2	y	y	210-1619_003	y	y	
0400	61	17.10	38	24.62	2670	297	5.4	5.7	n	y	0044	115 JC050-2	y	y	210-1619_005	y	y	
0415	61	17.98	38	26.88	2618	289	5.3	5.7	n	y	0044	100 JC050-2	y	y	210-1619_006	y	y	
0431	61	8.95	38	29.39	2604	286	5.3	5.2	n	y	0044	81 JC050-2	y	y	210-1619_008	y	y	
0445	61	9.73	38	31.24	2591	325	5.2	5.3	n	y	0044	69 JC050-2	y	y	210-1619_009	y	y	XBT deployed 0437. OK
0500	61	20.64	38	33.28	2641	307	5.4	5.1	n	y	0044	56 JC050-2	y	y	210-1619_010	y	y	
0515	61	21.57	38	35.41	2558	309	5.5	5.6	n	y	0044	41 JC050-2	y	y	210-1619_012	y	y	
0530	61	22.50	38	37.54	2607	310	5.2	5.7	n	y	0044	26 JC050-2	y	y	210-1619_013	y	y	
0545	61	23.46	38	39.72	2519	312	5.5	5.1	n	y	0044	10 JC050-2	y	y	210-1619_015	y	y	
0600	61	24.34	38	41.72	2504	314	5.5	5.8	n	y	0045	116 JC050-2	y	y	210-1619_016	y	y	
0615	61	25.23	38	43.76	2488	310	5.7	5.2	n	y	0045	101 JC050-2	y	y	210-1619_017	y	y	SBP reading 0m for extendedperiods
0630	61	26.17	38	45.91	2500	313	5.0	5.3	n	y	0045	86 JC050-2	y	y	210-1619_019	y	y	SBP depths inconsisitent
0645	61	27.10	38	48.01	2507	310	5.7	5.4	n	y	0045	71 JC050-2	y	y	210-1619_020	y	y	"
0700	61	27.98	38	50.02	2502	309	6.4	5.2	n	y	0045	56 JC050-2	y	y	210-1619_022	y	y	"
0715	61	28.99	38	52.32	2498	312	6.0	5.5	n	y	0045	40 JC050-2	y	y	210-1619_023	y	y	"
0730	61	29.89	38	54.37	2747	314	5.2	5.4	n	y	0045	26 JC050-2	y	y	210-1619_025	y	y	"
0745	61	30.81	38	56.48	2636	313	5.6	5.3	n	y	0045	10 JC050-2	y	y	210-1619_026	y	y	"
0800	61	31.81	38	58.74	3266	309	5.3	5.4	n	y	0046	115 JC050-2	y	y	210-1619_028	y	y	
0815	61	32.74	39	0.90	2498	311	5.4	5.5	n	y	0046	100 JC050-2	y	y	210-1619_029	y	y	
0830	61	33.64	39	2.95	2578	303	5.7	5.6	n	y	0046	85 JC050-2	y	y	210-1619_031	y	y	
0845	61	34.60	39	5.13	2950	289	6.1	5.7	n	y	0046	70 JC050-2	y	y	210-1619_033	y	y	
0900	61	35.57	39	7.22	3066	312	5.3	5.1	n	y	0046	55 JC050-2	y	y	210-1619_034	y	y	
0915	61	36.48	39	9.46		314	5.3	5.2	n	y	0046	39 JC050-2	y	y	210-1619_036	y	y	No depth reading
0930	61	37.35	39	11.45		311	5.0	5.8	n	y	0046	25 JC050-2	y	y	210-1619_037	y	y	
0945	61	38.29	39	13.60		317	5.4	5.4	n	y	0046	10 JC050-2	y	y	210-1619_039	y	y	
1002	61	39.33	39	15.99		314	5.6	5.5	n	y	0047	113 JC050-2	y	y	210-1619_041	y	y	
1015	61	40.14	39	17.86	2141	317	5.2	5.2	n	y	0047	100 JC050-2	y	y	210-1619_042	y	y	
1030	61	41.09	39	20.03	2117	302	5.5	5.4	n	y	0047	85 JC050-2	y	y	210-1619_044	y	y	
1045	61	42.04	39	22.23	2065	317	5.7	5.5	n	y	0047	69 JC050-2	y	y	210-1619_046	y	y	
1100	61	42.92	39	24.23	2025	313	5.5	5.6	n	y	0047	55 JC050-2	y	y	210-1619_047	y	y	
1116	61	43.93	39	26.56	1984	315	5.5	5.5	n	y	0047	39 JC050-2	y	y	210-1619_049	y	y	
1130	61	44.76	39	28.47	1943	316	5.1	5.3	n	y	0047	26 JC050-2	y	y	210-1619_051	y	y	
1147	61	45.83	39	30.94	1898	314	5.3	5.4	n	y	0047	8 JC050-2	y	y	210-1619_053	y	y	
1200	61	46.65	39	32.86	1837	309	5.5	5.7	n	y	0048	114 JC050-2	y	y	210-1619_055	y	y	
1213	61	47.43	39	34.66	1798	311	5.4	5.3	n	y	0048	102 JC050-2	y	y	210-1619_056	y	y	
1226	61	48.24	39	36.58	1744	310	5.3	5.7	n	y	0048	89 JC050-2	y	y	210-1619_058	y	y	
1245	61	49.13	39	39.51	1679	270	5.2	5.4	n	y	0048	70 JC050-2	y	y	210-1619_061	y	y	End of line, ship turning
1300	61	48.46	39	41.98	1680	224	5.7	5.6	n	y	0048	55 JC050-2	y	y	210-1619_063	y	y	New profiles input
1317	61	47.22	39	43.86	1711	189	5.9	5.6	n	y	0048	38 JC050-2	y	y	210-1619_066	y	y	
1348	61	45.89	39	40.10	1795	052	5.8	5.1	n	y	0048	6 JC050-2	y	y	210-1619_070	y	y	
1403	61	46.85	39	38.19	1778	035	5.9	5.4	n	y	0049	112 JC050-2	y	y	210-1619_072	y	y	
1415	61	47.66	39	36.62	1767	041	5.1	5.6	n	y	0049	100 JC050-2	y	y	210-1619_073	y	y	
1430	61	48.66	39	34.71	1755	043	5.3	5.2	n	y	0049	85 JC050-2	y	y	210-1619_075	y	y	XBT launched
1444	61	49.80	39	32.58	1676	042	5.0	5.1	n	y	0049	68 JC050-2	y	y	210-1619_078	y	y	Leak on air gun
1500	61	50.68	39	30.67	1735	058	6.2	5.4	n	y	0049	54 JC050-2	y	y	210-1619_080	y	y	Bringing guns in
1513	61	50.89	39	28.39	1754	099	5.4	5.4	n	y	0049	42 JC050-2	y	y	210-1619_081	y	y	Deploying mag
1528	61	50.23	39	25.99	1801	150	5.7	5.3	n	y	0049	26 JC050-2	y	y	210-1619_084	y	y	
1546	61	48.70	39	25.47	1850	203	5.8	5.0	n	y	0049	9 JC050-2	y	y	210-1619_086	y	y	
1600	61	47.84	39	37.66	1862	224	4.9	5.1	n	y	0050	116 JC050-2	y	y	210-1619_088	y	y	About to deploy guns
1615	61	46.95	39	28.33	1874	223	5.6	5.7	n	y	0050	101 JC050-2	y	y	210-1619_089	y	y	
1630	61	46.04	39	29.98	1891	223	5.9	5.7	n	y	0050	88 JC050-2	y	y	210-1619_097	y	y	Soft start with guns
1645	61	44.92	39	32.16	1912	228	5.0	5.2	n	y	0050	71 JC050-2	y	y	210-1619_099	y	y	
1700	61	44.75	39	35.59	1872	295	5.5	5.4	n	y	0050	55 JC050-2	y	y	210-1619_101	y	y	
1715	61	45.58	39	37.66	1827	321	5.6	5.3	n	y	0050	40 JC050-2	y	y	210-1619_103	y	y	
1730	61	46.97	39	37.94	1773	035	5.6	5.6	n	y	0050	24 JC050-2	y	y	210-1619_105	y	y	
1745	61	47.80	39	36.37	1762	037	5.6	5.5	n	y	0050	11 JC050-2	y	y	210-1619_107	y	y	
1800	61	48.74	39	34.57	1755	040	5.4	5.7	n	y	0051	120 JC050-2	y	y	210-1619_109	y	y	
1815	61	49.77	39	32.61	1730	040	5.6	5.5	n	y	0053	109 JC050-2	y	y	210-1619_111	y	y	
1830	61	50.78	39	30.71	1746	041	5.2	5.5	n	y	0053	96 JC050-2	y	y	210-1619_113	y	y	
1845	61	51.69	39	28.51	1718	045	5.5	5.6	n	y	0055	120 JC050-2	y	y	210-1619_115	y	y	
1900	61	52.68	39	26.16	1724	042	5.5	5.2	n	y	0055	104 JC050-2	y	y	210-1619_116	y	y	
1915	61	53.53	39	24.07	1755	046	5.1	5.3	n	y	0055	90 JC050-2	y	y	210-1619_117	y	y	
1930	61	54.41	39	21.96	1765	044	5.4	5.4	n	y	0055	74 JC050-2	y	y	210-1619_117	y	y	
1945	61	55.37	39	19.67	1853	053	5.2	5.5	n	y	0056	107 JC050-2	y	y	210-1619_119	y	y	
2000	61	56.36	39	17.32	1955	046	5.6	5.2	n	y	0056	91 JC050-2	y	y	210-1619_121	y	y	
2015	61	57.25	39	15.21	2038	040	5.5	5.4	n	y	0056	77 JC050-2	y	y	210-1619_123	y	y	
2030	61	58.22	39	12.83	2117	049	5.7	5.5	n	y	0056	60 JC050-2	y		210-1619_125	y	y	
2045	61	59.22	39	10.47	2220	040	5.5	5.5	n	y	0056	44 JC050-2	y	y	210-1619_127	y	y	
2102	62	0.12	39	8.24	2127	043	5.6	5.6	n	y	0056	29 JC050-2	y	y	210-1619_129	y	y	
2118	62	1.10	39	5.89	2107	048	5.4	5.6	n	y	0056	13 JC050-2	y	y	210-1619_130	y	y	
2129	62	1.78	39	4.24	2084	051	5.4	5.4	n	y	0056	2 JC050-2	y	y	210-1619_132	y	y	
2145	62	2.71	39	1.99	2068	045	5.4	5.4	n	y	0057	106 JC050-2	y	y	210-1619_133	y	y	
2201	62	3.69	38	59.67	2063	046	5.2	5.6	n	y	0057	91 JC050-2	y	y	210-1619_135	y	y	
2214	62	4.51	38	57.67	2053	043	5.4	5.4	n	y	0057	77 JC050-2	y	y	210-1619_137	y	y	
2231	62	5.49	38	55.28	2028	046	5.7	5.8	n	y	0057	60 JC050-2	y	y	210-1619_139	y	y	
2246	62	6.44	38	53.00	2025	046	5.7	5.3	n	y	0057	44 JC050-2	y	y	210-1619_141	y	y	
2259	62	7.23	38	51.09	1961	045	5.4	5.4	n	y	0057	32 JC050-2	y	y	210-1619_142	y	y	
2316	62	8.25	38	48.60	2001	051	5.9	5.5	n	y	0057	14 JC050-2	y	y	210-1619_144	y	y	
2330	62	9.04	38	46.69	1999	048	5.6	5.6	n	y	0057	2 JC050-2	y	y	210-1619_146	y	y	
2346	62	10.07	38	44.20	2000	042	5.5	5.7	n	y	0058	104 JC050-2	y	y	210-1619_148	y	y	

Day: Date: Sheet Number:

Time	Lat		Lon		ADCP150	ADCP75	Techsas	Level-C	Grav.	Mag.	Wind			Comments, eg state of seismic exp.
(GMT)	D	DM	D	DM	rec.	rec.	rec.	rec.	(mgal)	(nT)	Speed	Dir.	Sea State	
0000	61	3.39	37	49.57	y	y	y	y		n	5.1	216	Calm	
0016	61	4.29	37	51.86	y	y	y	y	13319.9	n	45.0	260	"	
0030	61	5.02	37	53.72	y	y	y	y		n	5.5	264		
0045	61	5.98	37	56.15	y	y	y	y	13326.2	n	5.6	283	"	
0100	61	6.80	37	58.24	y	y	y	y		n	4.2	246	"	
0115	61	7.71	38	0.59	y	y	y	y	13330.5	n	3.5	358	"	
0130	61	8.55	38	2.70	y	y	y	y		n	3.5	258	"	
0144	61	9.35	38	4.78	y	y	y	y	13334.4	n	3.8	264	"	
0200	61	10.32	38	7.29	y	y	y	y		n	4.7	262	"	
0216	61	11.22	38	9.53	y	y	y	y	13334.7	n	5.4	260	"	
0230	61	12.05	38	11.66	y	y	y	y		n	4.2	261	"	
0245	61	12.91	38	13.88	y	y	y	y	13336.2	n	2.7	266	"	
0300	61	13.59	38	15.62	y	y	y	y		n	3.9	262	"	
0313	61	14.45	38	17.84	y	y	y	y	13336.6	n	3.8	264	"	
0330	61	15.45	38	20.39	y	y	y	y		n	4.5	271	"	
0345	61	16.36	38	22.73	y	y	y	y	13335.6	n	3.8	246	"	
0400	61	17.10	38	24.62	y	y	y	y		n	1.6	256	"	
0415	61	17.98	38	26.88	y	y	y	y	13336.9	n	1.8	265	"	
0430	61	18.78	38	28.94	y	y	y	y		n	2.7	231	"	About to deploy XBT
0445	61	19.73	38	31.24	y	y	y	y	13334.4	n	2.1	251	"	XBT deployed 0437 OK
0500	61	20.60	38	33.27	y	y	y	y		n	2.2	245	Still pretty calm	
0515	61	21.57	38	35.41	y	y	y	y	13336	n	3.2	251		Swell picked up a bit ~1m
0530	61	22.50	38	37.55	y	y	y	y		n	3.1	256	Calmer	
0545	61	26.46	38	39.72	y	y	y	y	13342.7	n	2.2	263		
0600	61	24.34	38	41.72	y	y	y	y		n	1.0	218		
0615	61	26.23	38	43.75	y	y	y	y	13346.6	n	1.3	141		
0630	61	26.17	38	45.90	y	y	y	y		n	0.8	195		
0645	61	27.11	38	47.99	y	y	y	y	13350.8	n	0.6	194		
0700	61	27.98	38	50.02	y	y	y	y		n	0.7	275	calm	
0715	61	28.99	38	52.32	y	y	y	y	13352.5	n	1.2	252		
0730	61	29.87	38	54.32	y	y	y	y		n	1.6	290		
0745	61	30.81	38	56.48	y	y	y	y	13355.6	n	1.9	304	calm	
0800	61	31.77	38	58.67	y	y	y	y		n	2.6	295		Ducks on stbd side - quack quack!
0816	61	32.82	39	1.07	y	y	y	y	13359.4	n	2.4	299	1-3m swell	
0830	61	33.65	39	2.99	y	y	y	y		n	2.5	314	Up to 2m swell	
0846	61	34.69	39	5.36	y	y	y	y	13361.7	n	2.3	312		
0901	61	35.60	39	7.96	y	y	y	y		n	2.9	317		
0917	61	36.55	39	9.63	y	y	y	y	13361.4	n	2.6	326		
0930	61	37.40	39	11.58	y	y	y	y		n	3.7	317		
0947	61	38.42	39	13.91	y	y	y	y	13364.8	n	3.5	317		
1002	61	39.33	39	15.99	y	y	y	y		n	4.2	328		
1017	61	40.26	39	18.12	y	y	y	y	13367.4	n	3.6	336		
1030	61	41.09	39	20.03	y	y	y	y		n	3.7	333		
1047	61	42.13	39	22.41	y	y	y	y	13374.7	n	5.9	359		
1101	61	43.03	39	24.49	y	y	y	y		n	6.7	10		
1116	61	43.90	39	26.50	y	y	y	y	13378.1	n	9.5	4		
1130	61	44.81	39	28.59	y	y	y	y			6.3	17	1m swell	
1145	61	45.77	39	30.80	y	y	y	y			6.0	14		
1200	61	46.66	39	32.85	y	y	y	y	13384.1	n	6.8	14		
1214	61	47.47	39	34.80	y	y	y	y		n	6.3	12.8		
1227	61	48.33	39	36.81	y	y	y	y	13391.3	n	7.0	6.8		
1245	61	49.13	39	39.43	y	y	y	y		n	6.8	33.6		
1300	61	48.48	39	41.96	y	y	y	y	13390.8	n	6.6	60.4		
1317	61	47.23	39	43.87	y	y	y	y		n	3.7	89.3		
1329	61	46.18	39	43.41	y	y	y	y	13357.2	n	2.1	58.9		
1342	61	45.70	39	41.25	y	y	y	y		n	3.7	257		
1400	61	46.68	39	38.50	y	y	y	y	13356.8	n	6.8	17.1		
1416	61	47.74	39	36.47	y	y	y	y		n	7.1	296		
1428	61	48.53	39	34.99	y	y	y	y	13360.5	n	6.5	298		
1446	61	49.76	39	32.63	y	y	y	y		n	7.5	305		
1457	61	50.49	39	31.21	y	y	y	y	13363.4	n	6.7	278		Air leak, bringing guns in
1512	61	50.90	39	28.65	y	y	y	y		n	4.0	232		Deploying magnetometer
1528	61	50.23	39	25.99	y	y	y	y	13358.3	53440.5	3.3	146	Gentle	mag reading okay
1547	61	48.66	39	25.51	y	y	y	y		53479.1	6.5	71.4	"	
1600	61	47.84	39	26.72	y	y	y	y	13386.6	53494	7.5	61	Calm	About to deploy guns again.
1615	61	46.95	39	28.33	y	y	y	y		53486	7.7	058	"	
1630	61	46.04	39	29.98	y	y	y	y	13379	53503	8.5	055	"	Commencing soft start with guns
1645	61	44.92	39	32.16	y	y	y	y		53612	8.6	039	"	
1700	61	44.75	39	35.59	y	y	y	y	13389.8	53647	8.6	004	"	Shooting back towards sonobuoy. Getting good data
1715	61	45.58	39	37.66	y	y	y	y		53636	8.1	348	"	
1730	61	46.94	39	37.94	y	y	y	y	13362.7	53633	7.1	293	"	
1745	61	47.80	39	36.37	y	y	y	y		53559	6.6	297	"	
1800	61	48.74	39	34.57	y	y	y	y	13361	53471	6.6	286	"	
1815	61	49.77	39	32.61	y	y	y	y		53391	7.2	293	"	
1830	61	50.78	39	30.71	y	y	y	y	13363	53369	6.3	288	"	
1843	61	51.69	39	28.51	y	y	y	y		53394	6.8	287	"	
1900	61	52.62	39	26.27	y	y	y	y	13366.7	53415	7.5	275	"	
1915	61	53.52	39	24.16	y	y	y	y		53413	5.6	277	"	
1930	61	54.41	39	21.96	y	y	y	y	13367	53417	6.7	282	"	
1945	61	55.37	39	19.67	y	y	y	y		53442	6.3	279	"	
2000	61	56.36	39	17.32	y	y	y	y	13362.6		6.8	281		
2015	61	57.33	39	14.99	y	y	y	y		53444	6.3	269		
2030	61	58.22	39	12.83	y	y	y	y	13357.5		7.5	286		
2047	61	59.20	39	10.47	y	y	y	y		53460	7.6	292		
2102	62	12.00	39	8.24	y	y	y	y	13357.1		7.7	293		
2119	62	1.17	39	5.71	y	y	y	y		53521	7.1	282	less than 1m swell	
2131	62	1.91	39	3.93	y	y	y	y	13360.7		7.3	290		
2145	62	2.71	39	1.99			y	y		53551	7.5	279	calm	
2201	62	3.69	38	59.67	y	y	y	y	13363.9		6.4	278		
2215	62	4.51	38	57.67	y	y	y	y		53588	7.6	289		
2231	62	5.49	38	55.28	y	y	y	y	13367.6		7.6	282		
2246	62	6.44	38	53.00	y	y	y	y		53624	7.4	301		
2259	62	7.23	38	51.09	y	y	y	y	13371.8		7.4	277		
2316	62	8.25	38	48.60	y	y	y	y		53577	7.4	285	less than 1m swell	
2330	62	9.04	38	44.69	y	y	y	y	13373		6.6	271		
2346	62	10.07	38	44.20	y	y	y	y		53552	7.9	275		

Every 30 min, for important events and not for birds during turns.

Seismic log

Line No:	1 SEQ 18/Join SEQ 1/2				Date:	1/8/2010			Julian Day:	213	Page No:				Depth of Gun 1: 5.5m								Array Volume: 355
															Depth of Gun 2: n/a								
	Vessel GPS				Bird 1		Bird 2		Bird 3		Bird 4		Bird 5						Tailbuoy GPS				
Time GMT	Lat		Long		Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Ship H'ding	CMG	Shot no.	FFID	Lat		Long		MISFIRE, Feathering angle, sea state, current, other comments
0000	61	3.28	37	49.27	7.1	331	7.1	330	6.7	337	6.9	327	6.8	322	306	324	79569	79569	61	2.67	37	47.78	
0015	61	4.28	37	51.82	6.9	323	7.2	320	6.5	316	6.6	322	6.5	325	306	325	79636	79636	61	3.67	37	50.24	
30	61	5.21	37	54.09	6.7	333	6.7	330	6.1	327	7.5	324	7.1	333	309	327	79702	79702	61	4.58	37	52.59	
0045	61	5.95	37	56.08	7	337	7	334	7.3	327	7.2	328	7	329	305	324	79754	79754	61	5.31	37	54.48	
0100	61	6.8	37	58.25	6.7	329	6.8	332	7	334	7.2	328	7	328	305	322	79812	79812	61	6.17	37	56.67	
0115	61	7.65	38	0.41	7.1	329	7.3	330	7.3	323	7.3	336	7.1	325	307	324	79871	79871	61	7	37	58.79	
0130	61	8.82	38	2.65	7.2	325	7.4	336	7.3	327	6.6	331	7	327	303	323	79933	79933	61	7.9	38	1.01	
0145	61	9.44	38	4.99	7.1	331	7.4	330	7.1	330	6.7	327	6.5	321	306	326	79992	79992	61	8.81	38	3.33	
0200	61	10.33	38	7.27	7	335	7	324	6.7	323	6.8	335	7.6	327	308	325	80059	80059	61	9.7	38	5.64	
0215	61	11.09	38	9.24	7.4	329	7.3	344	6.9	332	7	327	6.7	328	307	324	80110	80110	61	10.47	38	7.61	
0230	61	12.06	38	11.69	6.5	325	6.8	325	7.1	328	7	339	6.7	338	307	325	80177	80177	61	11.43	38	10.13	
0245	61	12.85	38	13.74	7.1	344	7.1	337	6.9	315	6.7	336	7.1	326	305	324	80232	80232	61	12.23	38	12.12	
0300	61	13.76	38	16.02	6.8	340	6.9	333	7.3	339	7.6	327	7.4	331	304	324	80296	80296	61	13.13	38	14.4	
0315	61	14.72	38	18.28	6.7	349	7.1	323	7.1	335	7.3	323	6.8	332	305	324	80356	80356	61	13.95	38	16.61	
0330	61	15.54	38	20.63	7.2	324	7.1	336	7.5	321	7.6	316	7.2	330	305	323	80420	80420	61	14.94	38	17.02	
0345	61	16.34	38	22.68	6.8	331	7	327	7.3	320	6.8	327	6.9	324	306	324	80475	80475	61	15.71	38	21.05	
0400	61	17.16	38	24.91	6.6	312	6.6	303	6.7	306	7	301	6.6	310	306	323	80533	80533	61	16.54	38	23.2	
0415	61	17.99	38	27.02	7.41	306	6.92	308	7.02	308	6.96	300	7.34	306	305	325	80593	80593	61	17.37	38	25.3	
0429	61	18.84	38	29.12	7.2	323	7.2	327	7.2	333	7.3	333	6.7	327	307	328	50650	50650	61	18.28	38	27.67	
0450	61	20.09	38	32.15	6.6	343	6.8	330	6.9	327	7.4	340	7	336	304	326	80733	80733	61	19.92	38	30.52	XBT deployed
0500	61	20.73	38	36.61	7	320	7.2	336	7.1	327	6.7	320	6.7	332	307	327	80775	80775	61	20.05	38	33.63	
0515	61	21.61	38	35.62	7.54	342	6.87	322	7.21	324	6.99	321	7.12	333	313	331	80831	80831	61	21	38	34.09	
0530	61	22.55	38	37.78	6.3	341	7.2	342	7.3	330	7.3	320	6.7	330	310	327	80892	80892	61	21.94	38	36.25	
0545	61	23.47	38	39.87	7.1	340	6.9	339	7.3	340	7.1	340	7.2	332	311	332	80951	80951	61	22.84	38	38.32	
0600	61	24.41	38	41.99	7.3	337	7.1	326	7.1	338	6.8	336	7	333	311	330	81013	81013	61	23.79	38	40.46	
0615	61	25.28	38	44	6.5	330	6.6	340	6.8	333	7	342	6.8	354	314	328	81069	81069	61	24.64	38	42.48	
0630	61	26.21	38	46.11	6.8	328	7.1	327	7	334	6.9	347	7.2	323	313	329	81130	81130	61	25.56	38	44.62	
0645	61	27.16	38	48.49	6.9	326	6.7	328	6.4	346	6.7	330	6.8	337	314	328	81191	81191	61	26.5	38	46.82	
0700	61	28.05	38	50.32	7.7	330	7.3	338	6.5	331	7	339	6.9	331	315	330	81250	81250	61	27.4	38	48.87	
0715	61	28.96	38	52.4	7.4	332	7.2	331	7.3	337	7.1	346	6.6	336	314	329	81309	81309	61	28.31	38	50.92	
0730	61	29.89	38	54.52	7.25	321	7	308	6.9	298	7	314	7.2	308	312	329	81370	81370	61	29.18	38	52.94	
0745	61	30.89	38	56.84	6.6	343	7.1	348	6.8	337	6.7	349	7.1	346	314	329	81434	81434	61	30.22	38	55.37	
0800	61	31.75	38	58.62	6.3	329	6.4	314	6.7	318	6.1	324	7.4	311	311	327	81490	81490	61	31.06	38	58.89	2-3m swell, light wind
0815	61	32.77	39	0.96	6.7	324	7.1	318	7.2	311	6.8	313	6.9	319	317	329	81550	81550	61	32.07	38	59.59	
0830	61	33.67	39	3	7.1	308	7.4	312	7.2	317	7.1	318	6.9	331	316	331	81610	81610	61	32.96	39	1.68	
0845	61	34.58	39	5.08	7.1	312	6.7	318	7.3	318	7	324	6.9	313	317	323	81670	81670	61	33.89	39	3.86	
0900	61	35.52	39	7.25	7.6	311	7.3	312	6.8	307	6.6	316	6.6	308	314	325	81730	81730	61	34.82	39	5.98	
0912	61	36.34	39	9.18													81744	81744	61	35.61	39	7.81	QC system down 0904
0915	61	36.45	39	9.38	7.1	321	7	325	6.7	315	7	322	7.3	320	315	327	81790	81790	61	35.72	39	9.61	Rebooting QC machine
0930	61	37.42	39	11.63	7.1	315	7.2	318	7	320	7	311	6.7	312	320	333	81850	81850	61	36.72	39	10.42	QC back online
0945	61	38.41	39	13.87	7.2	319	7.4	314	6.9	317	7	310	6.9	308	318	332	81910	81910	61	37.69	39	12.63	
1000	61	39.21	39	15.78	7	318	7.1	320	6.8	319	6.7	317	7	312	316	329	81969	81969	61	38.45	39	14.32	
1015	61	40.14	39	17.84	7.1	312	7.2	314	6.9	309	6.9	316	7.3	315	319	330	82029	82029	61	39.36	39	16.45	QC system down
1037	61	41.54	39	21.06	6.7	324	6.7	325	7.2	314	7.2	317	7.3	320	317	329	82119	82119	61	41.52	39	21.21	QC system back up
1100	61	42.95	39	24.3	7	369	6.9	321	7.1	319	6.8	318	7.2	320	313	327	82209	82209	61	43.23	39	24.56	
1115	61	43.92	39	26.55	7.1	328	6.8	319	6.9	314	7.2	321	7.3	318	314	329	82269	82269	61	43.91	39	26.7	
1145	61	45.82	39	31.11	7.1	310	6.9	322	6.9	313	6.7	308	7.3	319	313	328	82390	82390	61	45.12	39	29.49	Calm
1200	61	46.62	39	39.33	6.6	337	7	339	7	336	6.8	337	6.7	333	313	328	82454	82454	61	45.97	39	31.41	
1215	61	42.46	39	34.74	6.9	340	6.1	326	7.3	334	7.2	326	7	330	317	329	82507	82507	61	45.76	39	33.31	
1230	61	48.4	39	37.19	7	336	7.3	337	7.5	345	7.1	323	6.8	335	312	326	82569	82569	61	47.74	39	35.6	XBT deployed
1246	61	49.12	39	37.79	7	301	7	313	7	322	7.2	326	7.1	339	262	280	82642	82642	61	48.77	39	38.06	Turning to port from straight line at 12.51 to join seq 1, Last shot 82642 on seq 18 at 12.48, 61.48.80N, 39.41.1
1300	61	48.54	39	41.81	6.5	241	6.5	272	7	257	7.4	272	6.7	274	221	237	36	36	61	49.05	39	40.21	FFID 1, shot point 1 @ 61 48.83N, 39 41.30W
1315	61	47.45	39	43.71	7	237	6.7	232	6.1	240	6.7	247	7	241	204	220	96	96	61	48.26	39	42.54	
1330	61	46.24	39	43.49	7.6	192	7.2	188	7.5	198	7.7	208	7.7	2148	146	164	153	153	61	47.22	39	43.83	Sonobuoy ready for deployment @ 1345
1345	61	45.71	39	41.06	7	120	6.8	137	6.8	140	6.8	152	7	150	79.8	99	210	210	61	46.08	39	43.21	At FFID 216, sonobuoy deployed
1400	61	46.55	39	38.75	6.9	68	7.2	68	6.9	73	7.4	73	7.4	83	38	60	272	272	61	45.87	39	40.53	
1415	61	47.62	39	36.71	6.6	68	6.6	65	6.7	58	7	69	6.5	64	40	58	337	337	61	46.83	39	38.31	
1430	61	48.66	39	34.72	6.9	70	6.6	66	6.7	65	6.8	65	7	68	41	58	398	398	61	47.86	39	36.4	
1445	61	49.67	39	32.8	6.9	73	6.6	73	7.5	64	6.9	60	6.5	68	42	58	456	456	61	48.9	39	34.5	Got a leak of the airgun @ 1448; FFID 466; 61 49.91N, 39 32.36W. Bringing the gun back on deck. Stopped fi
1500	61	50.66	39	30.84			ALL BIRDS IN SPEC AT 7m								60.9	75.6			61	50.01	39	32.36	Turning back to centre point of last loop
1515	61	50.85	39	28.08					"						109.3	122.95			61	50.81	39	30.11	Guns on board
1530	61	50.19	39	26.09					"						148.6	162.04			61	50.77	39	27.74	
1545	61	48.86	39	25.53					"						195.7	209			61	48.78	39	25.57	
1600	61	47.84	39	26.85					"						223.7	239.4			61	48.73	39	25.73	Guns being put back in the water
1607	61	47.14	39	28.14					"							237							Guns back in the water - increase speed to 5.5kt
1628	61	45.85	39	30.45											221	235			61	46.64	39	24.04	Starting to test guns
1633	61	45.37	39	31.25					"						221	235	2	751	61	46.18	39	29.85	Started soft start. Waiting 10min for MMO to go to full pressure. Join_seg2. Jtest.SEQ2
1646	61	44.72	39	33					"						256	269	54	803	61	45.36	39	31.27	Birds fine at 7m. Shot 68 @ 1650 - Previous test finished. Hydrophone now deffo out of service: umbilical stre
START SEQ 2 - FIRST SHOT = 750 @ 1652 - SHOOTING ON LINE WITH FULL POWER																							
1700	61	44.69	39	32.25	7.03	276	7.25	271	6.93	271	6.77	258	6.68	252	292	304	780	780	61	44.74	39	33.11	Shooting back into sonobuoy direction
1715	61	45.41	39	37.48	6.52	312	6.76	300	7.2	290	6.94	311	7.11	294	312	329	840	840	61	44.81	39	35.7	
1718																							Turning back to the original crossing line
1730	61	46.61	39	38.36	7.36	25	7.16	13	7.32	9	6.9	355	7.02	2	16	29	901	901	61	45.64	39	37.86	Swell noise in brute stack seismic
1733																	914	914					Back on line N (// to Greenland)
1740																	941	941					Tailbuoy behind ship (directly)
1745	61	47.89	39	36.34	7.41	68	7.4	71	6.97	65	7.02	59	7.34	63	43	59	963	963	61	47.1	39	37.74	
1800	61	48.79	39	34.62	6.95	44	6.68	037	7	31	7.36	61	7.02	42	39	56	1016	1016	61	48.03	39	36.09	
1807	61	49.55	39	33.18	6.8	67	6.9	70	6.5	70	6.6	67	7.3	59	56	56	1051	1051	61	48.79	39	34.67	1051 Back at first misfire location (at 1500)
1817	61	50.11	39	32.11	6.8	56	7	0.58	6.9	67	6.8	61	6.5	64	40	57	1095	1095	61	49.37	39	33.5	
1830	61	50.9	39	30.59	6.3	62	6.4	62	6.6	68	7.1	63	6.9	52	52	65	1140	1140	61	50.16	39	31.98	
1844	61	51.81	39	28.37	7.2	68	7.4	74	7.6	64	7.3	68	7.8	73	47	65	1202	1202	61	51.17	39	29.84	
1859	61	52.73	39	26.18	7.2	72	7.3	69	6.5	69	6.7	68	6.8	70	50	65	1262	1262	61	52.09	39	27.65	
1915	61	53.59	39	24.08	6.6	72	6.7	76	1.9	73	7.2	75	6.94	67	47	64	1320	1320	61	52.94	39	25.66	
1930	61	54.5	39	21.86	7.4	74	7.3	69	7	71	6.9	73	6.9	72	49	66	1381	1381	61	53.86	39	23.46	
1944	61	55.41	39	19.72	7	66	7.3	69	7.3	78	7.1	71	7.2	74	46	655	1440	1440	61	54.77	39	21.26	
2000	61	56.32	39	17.54	7.4	49	7.5	47	7	50	7	45	6.1	47	46	67	1501	1501	61	55.69	39	19.02	Previous compass values uncorrected?
2015	61	57.31	39	15	7.3	44	7.1	43	7.5	46	7	45	7.5	49	46	67	1560	1560	61	56.63	39	16.63	Sonobuoy recording stopped
2030	61	58.28	39	12.82	7.1	43	6.8	46	7	49	7.1	48	6.8	44	42	66	1620	1620	61	57.54	39	14.34	Calm. Smooth 1m swell, small local waves
2045	61	59.12	39	10.65	7	44	6.9	45	7.3	48	7.2	45	7	44	43	67	1680	1680	61	58.42	39	12.28	
2100	62	0	39	8.53	7.1	50	7.3	50	6.4	51	7.3	42	6.8	50	42	64	1740	1740	61	59.28	39	10.13	
2115	62	0.95	39	6.25	7.2	49	7.4	45	6.9	50	7.7	48	7	51	44	62	1800	1800	62	0.22	39	7.93	
2130	62	1.79	39	4.23	7.1	43	7	45	6.8	47	7.2	50	7.1	52	48	62	1860	1860	62	1.06	39	5.64	
2145	62	2.7	39	2.16	7.1	53	7	53	7.7	47	7.4	48	6.4	49	46	66	1920	1920	62	1.99	39	3.75	Occasional strong swell noise
2200	62	3.67	38	59.67	7	49	6.7	47	6.9	48	7.1	44	6.9	51	47	65	1980	1980	62	2.99	39	1.34	
2215	62	4.57	38	57.51	7.2	45	6.9	49	6.9	51	7	48	7.1	52	48	63	2040	2040	62	3.88	38	59.24	
2230	62	5.53	38	55.18	7	47	7.2	50	7.8	49	7.4	50	6.5	45	46	64	2100	2100	62	4.83	38	56.97	
2245	62	6.44	38	53.01	7.1	51	7.1	47	7.2	44	7.5	46	6.8	41	46	62	2161	2161	62	5.76	38	54.69	
2300	62	7.3	38	50.9	7.2	52	6.9	49	7.1	51	6.8	48	7	50	45	61	2222	2222	62	6.62	38	52.62	Up to 1m swell
2315	62	8.22	38	48.68	7.1	51	6.9	48	7.4	49	7.5	53	7.7	54	47	66	2282	2282	62	7.49	38	50.46	
2330	62	9.04	38	46.69	7	46	7.1	42	7.2	43	7.4	45	6.7	44	44	64	2340	2340	62	8.34	38	48.38	
2345	62	10.05	38	44.27	7.4	48	7.1	52	7.3	51	7.2	51	6.7	57	45	67	2400	2400	62	9.37	38	46.03	

Julian Day:
Sonobuoy Number:
Serial No:

Date:
Sonobuoy Channel:

Sonobuoy Frequency:
Depth Setting:
Duration (hours):

Time (GMT)	Lat (D.DM)	Lon (D.DM)	SOW (kts)	SOG (kts)	Wind head.	Wind speed	Current East (m/s)	Current North (m/s)	Data File	Comments
1344									SB16_96_2131346_S1/2	Started S1/S2
1346	61.45.76	39.40.67	5.2	5	273.8	5.1	0.31	-0.03	SB16_96_2131346_S1/2	Deployed. Drifting slightly to port. S1/S2 strong signal
1359	61.46.61	39.38.62	5.5	5.5	296.1	6.3	0.31	0.22	SB16_96_2131346_S1/2	S1/S2 strong signal. Amplitude slightly diminished on S2
1444	61.49.68	39.32.79	5.1	4.8	302.1	7.4	0.03	0.13	SB16_96_2131346_S1/2	S2 no signal. S1 still good, low amp.
148									SB16_96_2131346_S1/2	Leak on guns - 100 bar, guns being brought in
1450									SB16_96_2131346_S1/2	Firing stopped 475=last shot point
1501	61.50.72	39.30.54	5.9	5.8	274.3	5.8	0.19	0.2	SB16_96_2131346_S1/2	
1514	61.50.87	39.28.16	5.3	5.2	230	3.8	0.17	-0.06	SB16_96_2131346_S1/2	Still not shooting
1529	61.50.12	39.25.85	5.3	5.4	144	3.2	0.18	-0.25	SB16_96_2131346_S1/2	"
1547	61.48.65	39.25.51	5.4	5.4	73.3	6.3	-0.12	-0.02	SB16_96_2131346_S1/2	"
1613	61.46.91	39.28.42	5.7	5.5	63.4	8	-0.22	-0.14	SB16_96_2131346_S1/2	Perpendicular to original line. Still not shooting. Travelling back to southern point of pig's ear.
1626	61.46.04	39.29.99	5.8	5.9	56.3	8	-0.21	-0.21	SB16_96_2131346_S1/2	Perpendicular to original line. Guns firing. Trace on S1.
1632	64.45.606	39.30.74	6.1	5.4	55.4	8.7	-0.31	-0.39	SB16_96_2131346_S1/2	Perpendicular to original line. Guns off.
1633									SB16_96_2131346_S1/2	Perpendicular to original line. Guns back on. Pressure = 100 bar
1641	61.44.99	39.31.93	5.1	5.2	36.4	8.5	-0.29	-0.22	SB16_96_2131346_S1/2	Perpendicular to original line. Guns to full pressure. FFID 781. Shooting towards S8.
1651									SB16_96_2131346_S1/2	Perpendicular to original line. Suns off to start line.
1653	61.44.65	39.34.10	5.4	5.6	18.7	93	-0.27	-0.11	SB16_96_2131346_S1/2	Perpendicular to original line. Guns on again. Heading 268. FFID 750. ~3000PSI. S1 data good.
1705	61.44.99	39.36.26	5.4						SB16_96_2131346_S1/2	Perpendicular to original line. Signal on S1, faint on S2. Heading 301
1709									SB16_96_2131346_S1/2	S2 strong, S1 strong
1715	61.45.57	39.37.68	5.2	5.6	348	8.5	-0.24	0.31	SB16_96_2131346_S1/2	Heading 322, FFID 849. Turning back to crossing line.
1731	61.46.96	39.37.90	5.2	5.6	306	6.8	0.11	0.25	SB16_96_2131346_S1/2	Heading 032. Back on 1st Pig's ear line
1735									SB16_96_2131346_S1/2	919, 919, shot no & FFID for vessel back on line.
1737									SB16_96_2131346_S1/2	S2 dying out, S1 good
1740									SB16_96_2131346_S1/2	942, TB behind ship
1745	61.47.50	39.36.37	5.6	5.5	279	6.6	0.11	0.15	SB16_96_2131346_S1/2	
1800									SB16_96_2131346_S1/2	
1815	51.49.96	39.32.26	5.8	5.5	300	6.7	0.14	0.02	SB16_96_2131346_S1/2	S1 still good, amplitude diminishing slightly. S2 dead
1831	61.51.03	39.30.08	5.5	5.1	282	6.3	0.23	0.06	SB16_96_2131346_S1/2	S1 amplitude dropped further
1845	61.51.80	39.28.26	5.7	5.5	284	6.5	0.16	0.14	SB16_96_2131346_S1/2	
1900	61.52.68	39.26.16	5.5	5.6	271	5.9	0.3	0.23	SB16_96_2131346_S1/2	S1 & S2 diminished / dead
1930	61.54.41	39.21.96	5.4	5.4	277	5.8	0.32	0.02	SB16_96_2131346_S1/2	
2000	61.56.42	39.17.19	5.8	5.7	277	6.6	0.31	0.16	SB16_96_2131346_S1/2	
2016	61.57.39	39.14.83	5.7						SB16_96_2131346_S1/2	Stopped recording FFID 1560

Julian Day:213
Sonobuoy No: SB16
Serial No: 15201
Date: 1st Aug 2010
Channel: 96
Frequency: 160.000 MHz
Depth: 140m
Duration: 6 hours
Ffid at start: 216 JOIN SEG 1
S1 time difference: 13 hours 43 minutes 57 seconds behind GMT
S2 time difference: 13 hours 43 minutes 53 seconds behind GMT
S1 rec' time at dep': 1:47
S2 rec' time at dep': 1:50
SSQ906A(D)

Julian Day: Date: Sheet Number:

Time	Lat		Lon		Water	Head.	SOW	SOG	EM710	EM120			EA600	SBP		ER60	OLEX	Comments
(GMT)	D	DM	D	DM	depth (m)		(kts)	(kts)	rec.	rec	Line cnt.		rec.	rec.	Data file	rec.	rec.	
0000	62	10.93	38	42.14	2018	050	5.6	5.7	n	y	0058	91 JC050-2	y	y	210-1619_150	y	y	
0015	62	11.82	38	39.45	2056	040	5.2	5.2	n	y	0058	26 JC050-2	y	y	210-1619_151	y	y	
0031	62	12.78	38	37.62	2113	047	5.4	5.4	n	y	0058	60 JC050-2	y	y	210-1619_153	y	y	
0045	62	13.65	38	35.54	2168	043	5.5	5.4	n	y	0058	46 JC050-2	y	y	210-1619_155	y	y	
0100	62	14.49	38	3.23	2215	040	5.5	5.4	n	y	0058	30 JC050-2	y	y	210-1619_157	y	y	
0114	62	15.60	38	31.28	2249	045	5.6	5.2	n	y	0058	17 JC050-2	y	y	210-1619_158	y	y	
0130	62	16.37	38	28.91	2269	044	5.7	5.3	n	y	0058	1 JC050-2	y	y	210-1619_160	y	y	
0145	62	17.27	38	26.74	2290	044	5.8	5.5	n	y	0059	106 JC050-2	y	y	210-1619_161	y	y	
0200	62	18.17	38	24.55	2311	041	5.6	5.5	n	y	0059	91 JC050-2	y	y	210-1619_163	y	y	
0217	62	19.20	38	22.07	2335	045	5.5	5.6	n	y	0059	74 JC050-2	y	y	210-1619_165	y	y	
0230	62	20.00	38	20.07	2357	054	5.2	5.6	n	y	0059	61 JC050-2	y	y	210-1619_166	y	y	
0245	62	20.91	38	17.85	2379	055	5.6	5.6	n	y	0059	46 JC050-2	y	y	210-1619_168	y	y	
0300	62	21.82	38	15.64	2400	045	5.5	5.4	n	y	0059	31 JC050-2	y	y	210-1619_169	y	y	
0317	62	22.86	38	13.09	2390	051	5.8	5.4	n	y	0059	13 JC050-2	y	y	210-1619_171	y	y	XBT deployed
0330	62	23.64	38	11.18	2380	040	5.3	5.7	n	y	0059	1 JC050-2	y	y	210-1619_172	y	y	
0345	62	24.53	38	9.01	2355	052	5.8	5.6	n	y	0060	106 JC050-2	y	y	210-1619_174	y	y	
0400	62	25.52	38	6.59	2337	044	5.1	5.8	n	y	0060	89 JC050-2	y	y	210-1619_175	y	y	
0415	62	24.30	38	4.70	2329	041	5.6	5.4	n	y	0060	76 JC050-2	y	y	210-1619_177	y	y	
0430	62	27.17	38	2.51	2316	045	6.1	5.2	n	y	0060	62 JC050-2	y	y	210-1619_178	y	y	
0447	62	28.31	37	59.78	2307	049	5.6	5.4	n	y	0060	43 JC050-2	y	y	210-1619_180	y	y	
0459	62	29.02	37	58.03	2306	039	5.5	5.5	n	y	0060	32 JC050-2	y	y	210-1619_182	y	y	
0515	62	29.93	37	55.81	2295	039	5.6	5.4	n	y	0060	17 JC050-2	y	y	210-1619_183	y	y	
0530	62	30.85	37	53.57	2283	059	5.4	5.4	n	y	0060	2 JC050-2	y	y	210-1619_185	y	y	
0545	62	31.77	37	51.29	2278	033	5.3	5.8	n	y	0061	105 JC050-2	y	y	210-1619_186	y	y	
0600	62	32.20	37	48.96	2266	038	5.7	5.4	n	y	0061	91 JC050-2	y	y	210-1619_188	y	y	
0615	62	33.61	37	46.81	2244	043	5.3	5.5	n	y	0061	76 JC050-2	y	y	210-1619_189	y	y	
0630	62	34.41	37	44.81	2280	042	5.2	5.4	n	y	0061	63 JC050-2	y	y	210-1619_191	y	y	
0645	62	35.51	37	42.12	2208	042	5.6	5.5	n	y	0061	45 JC050-2	y	y	210-1619_193	y	y	
0700	62	36.24	37	40.31	2289	045	5.6	5.4	n	y	0061	33 JC050-2	y	y	210-1619_194	y	y	
0715	62	37.25	37	37.85	2167	041	5.3	5.4	n	y	0061	16 JC050-2	y	y	210-1619_196	y	y	Guns and streamer in danger of crossing, may need to change direction
0730	62	38.05	37	35.87	2150	053	5.2	5.0	n	y	0061	2 JC050-2	y	y	210-1619_198	y	y	
0745	62	38.88	37	33.79	2127	038	5.3	5.3	n	y	0062	107 JC050-2	y	y	210-1619_199	y	y	Problem with guns. Coming in.
0800	62	39.81	37	31.55	2103	039	5.3	5.4	n	y	0062	91 JC050-2	y	y	210-1619_201	y	y	
0815	62	40.66	37	29.49	2081	048	4.7	4.9	n	y	0062	76 JC050-2	y	y	210-1619_203	y	y	
0828																		Turning to port 3deg/min to a Northerly heading
0830	62	41.41	37	27.32	2060	627	4.7	4.9	n	y	0062	60 JC050-2	y	y	210-1619_205	y	y	
0847	62	42.63	37	26.26	2034	913	5.0	4.5	n	y	0062	44 JC050-2	y	y	210-1619_207	y	y	
0900	62	43.55	37	25.81		357	4.3	4.1	n	y	0062	31 JC050-2			210-1619_208	y	y	
0923	62	45.34	37	25.72	2008	349	4.9	4.5	n	y	0062	8 JC050-2	y	y	210-1619_211	y	y	Poor quality swath
0931	62	45.98	37	25.70	2007	356	4.4	4.5	n	y	0063	120 JC050-2	y	y	210-1619_212	y	y	
0946	62	47.14	37	25.42	1830	25	4.9	5.0	n	y	0063	105 JC050-2	y	y	210-1619_214	y	y	
1000	62	48.02	37	23.62	1977	68	5.3	5.4	n	y	0063	92 JC050-2	y	y	210-1619_215	y	y	
1015	62	48.39	37	20.90	1988	66	5.2	5.0	n	y	0063	76 JC050-2	y	y	210-1619_217	y	y	
1031	62	48.74	37	18.08	1973	64	5.8	5.2	n	y	0063	60 JC050-2	y	y	210-1619_219	y	y	
1044	62	49.02	37	15.79	1988	63	5.2	4.7	n	y	0063	47 JC050-2	y	y	210-1619_221	y	y	
1100	62	49.37	37	12.93	2154	58	5.1	4.7	n	y	0063	31 JC050-2	y	y	210-1619_223	y	y	
1115	62	49.70	37	10.19	2103	81	4.8	5.0	n	y	0063	16 JC050-2	y	y	210-1619_224	y	y	
1130	62	50.04	37	7.49	2139	61	4.9	4.7	n	y	0063	1 JC050-2	y	y	210-1619_226	y	y	
1145	62	50.67	37	5.20	2164	51	4.8	4.8	n	y	0064	106 JC050-2	y	y	210-1619_228	y	y	Back on line, guns going in water. Not shooting yet
1200	62	51.49	37	3.07	2185	39	4.8	5.4	n	y	0064	90 JC050-2	y	y	210-1619_230	y	y	
1215	62	52.42	37	1.29	2200	17	5.1	5.2	n	y	0064	75 JC050-2	y	y	210-1619_231	y	y	
1230	62	53.65	37	2.02	2179	313	6.0	5.6	n	y	0064	60 JC050-2	y	y	210-1619_233	y	y	
1245	62	54.31	37	4.32	2150	290	4.9	4.8	n	y	0064	46 JC050-2	y	y	210-1619_234	y	y	
1300	62	54.93	37	6.91	2100	297	5.5	5.5	n	y	0064	31 JC050-2	y	y	210-1619_236	y	y	
1315	62	55.65	37	9.33	2074	326	5.3	5.6	n	y	0064	16 JC050-2	y	y	210-1619_238	y	y	
1331	62	56.99	37	10.19	2033	11	5.6	5.4	n	y	0065	120 JC050-2	y	y	210-1619_240	y	y	
1345	62	58.27	37	10.15	2054	358	5.6	5.5	n	y	0065	104 JC050-2	y	y	210-1619_242	y	y	
1402	62	59.71	37	9.28	2002	33	5.6	5.6	n	y	0065	89 JC050-2	y	y	210-1619_243	y	y	Sea path error on TECHSAS
1416	63	0.70	37	7.48	2027	42	5.0	4.9	n	y	0065	75 JC050-2	y	y	210-1619_245	y	y	Sea path error fixed
1431	63	1.61	37	5.83	2039	32	4.8	5.0	n	y	0065	60 JC050-2	y	y	210-1619_247	y	y	
1445	63	2.37	37	3.88	2057	63	4.7	4.8	n	y	0065	45 JC050-2	y	y	210-1619_249	y	y	
1500	63	2.51	37	10.80	2119	84	5.2	4.8	n	y	0065	31 JC050-2	y	y	210-1619_250	y	y	
1515	63	2.51	36	58.09	2166	84	5.0	4.9	n	y	0065	14 JC050-2	y	y	210-1619_252	y	y	
1530	63	2.27	36	35.87	2211	118	4.7	4.8	n	y	0065	1 JC050-2	y	y	210-1619_254	y	y	
1549	63	1.20	36	53.19	2244	128	5.2	5.0	n	y	0066	102 JC050-2	y	y	210-1619_256	y	y	XBT deployed
1600	63	0.65	36	51.86	2266	125	5.2	5.4	n	y	0066	92 JC050-2	y	y	210-1619_257	y	y	
1615	62	59.73	36	49.67	2310	123	5.9	5.5	n	y	0066	76 JC050-2	y	y	210-1619_258	y	y	
1629	62	58.75	36	47.33	2336	131	5.5	5.4	n	y	0066	61 JC050-2	y	y	210-1619_260	y	y	
1645	62	57.90	36	45.33	2365	132	5.4	5.4	n	y	0066	48 JC050-2	y	y	210-1619_261	y	y	
1700	62	57.01	36	43.23	2391	132	5.6	5.7	n	y	0066	33 JC050-2	y	y	210-1619_263	y	y	
1715	62	56.06	36	41.08	2413	136	5.3	5.5	n	y	0066	18 JC050-2	y	y	210-1619_264	y	y	
1730	62	55.04	36	38.78	2444	132	5.1	5.5	n	y	0066	2 JC050-2	y	y	210-1619_266	y	y	
1745	62	54.08	36	36.65	2471	137	5.5	5.4	n	y	0067	107 JC050-2	y	y	210-1619_268	y	y	
1815	62	42.18	36	32.43	2516	134	5.4	5.3	n	y	0067	75 JC050-2	y	y	210-1619_271	y	y	
1830	62	51.28	36	30.42	2534	133	5.9	5.3	n	y	0067	63 JC050-2	y	y	210-1619_272	y	y	
1845	62	50.31	36	28.26	2563	136	5.5	5.4	n	y	0067	47 JC050-2	y	y	210-1619_273	y	y	
1900	62	49.38	36	26.18	2593	135	5.5	5.3	n	y	0067	34 JC050-2	y	y	210-1619_275	y	y	
1915	62	48.42	36	24.06	2618	134	5.4	5.4	n	y	0067	17 JC050-2	y	y	210-1619_276	y	y	
1930	62	47.24	36	21.42	2596	134	5.2	5.5	n	y	0067	1 JC050-2	y	y	210-1619_278	y	y	
1945	62	46.56	36	19.91	2635	126	5.5	5.6	n	y	0068	109 JC050-2	y	y	210-1619_279	y	y	
2000	62	45.37	36	17.25	2636	136	6.2	5.7	n	y	0068	91 JC050-2	y	y	210-1619_280	y	y	
2013	62	44.54	36	15.44	2622	134	5.6	5.3	n	y	0068	79 JC050-2	y	y	210-1619_282	y	y	
2030	62	43.38	36	12.85	2634	127	5.7	5.6	n	y	0068	60 JC050-2	y	y	210-1619_283	y	y	
2045	62	42.45	36	10.79	2639	133	5.5	5.4	n	y	0068	46 JC050-2	y	y	210-1619_285	y	y	
2100	62	41.50	36	8.69	2647	132	5.4	5.3	n	y	0068	30 JC050-2	y	y	210-1619_286	y	y	
2117	62	40.38	36	6.21	2654	146	5.7	5.3	n	y	0068	14 JC050-2	y	y	210-1619_288	y	y	
2131	62	39.49	36	4.25	2659	134	5.3	5.4	n	y	0069	119 JC050-2	y	y	210-1619_289	y	y	
2145	62	38.64	36	2.39	2663	135	5.7	5.3	n	y	0069	106 JC050-2	y	y	210-1619_290	y	y	
2200	62	37.68	36	0.22	2671	134	5.3	5.3	n	y	0069	91 JC050-2	y	y	210-1619_292	y	y	
2215	62	36.67	35	58.00	2618	128	5.2	5.5	n	y	0069	75 JC050-2	y	y	210-1619_293	y	y	
2230	62	35.70	35	55.86	2685	131	5.7	5.5	n	y	0069	60 JC050-2	y	y	210-1619_294	y	y	
2245	62	34.79	35	53.83	2692	132	5.5	5.5	n	y	0069	46 JC050-2	y	y	210-1619_296	y	y	
2259	62	33.92	35	51.93	2697	133	5.8	5.2	n	y	0069	32 JC050-2	y	y	210-1619_297	y	y	
2315	62	32.86	35	49.60	2706	132	5.7	5.3	n	y	0069	16 JC050-2	y	y	210-1619_298	y	y	
2330	62	31.89	35	47.44	2713	140	4.6	5.5	n	y	0069	1 JC050-2	y	y	210-1619_300	y	y	
2345	62	30.91	35	45.28	2722	130	5.7	5.4	n	y	0070	105 JC050-2	y	y	210-1619_301	y	y	

Day: Date: Sheet Number:

Time	Lat		Lon		ADCP150	ADCP75	Techsas	Level-C	Grav.	Mag.	Wind			Comments, eg state of seismic exp.	
(GMT)	D	DM	D	DM	rec.	rec.	rec.	rec.	(mgal)	(nT)	Speed	Dir.	Sea State		
0000	62	10.86	38	42.26	y	y	y	y	13375.5	53562.9	9.1	284	calm		
0015	62	11.84	38	39.89	y	y	y	y		53577.2	8.1	276	calm		
0031	62	12.80	38	37.57	y	y	y	y	13374.5		8.9	83.2	calm		
0045	62	13.64	38	35.53	y	y	y	y		53563.5	8.4	278	calm		
0101	62	14.60	38	33.20	y	y	y	y	13375.7		8.6	279	calm		
0114	62	15.40	38	31.30	y	y	y	y		53566.3	8.4	79.4	calm		
0130	62	16.39	38	28.87	y	y	y	y	13375.3		7.7	82.3	calm		
0145	62	17.27	38	26.75	y	y	y	y		53524.4	8.5	87.2	calm		
0200	62	18.17	38	24.52	y	y	y	y	13373.8		9.5	292	calm		
0217	62	19.21	38	21.97	y	y	y	y		53486.3	9.9	287	calm		
0231	62	20.00	38	19.96	y	y	y	y	13374.6		10.4	28.4	calm		
0245	62	20.92	38	17.85	y	y	y	y		53479.5	10.4	74.4	calm		
0301	62	21.86	38	15.55	y	y	y	y	13378.1		10.1	283	calm		
0317	62	22.84	38	13.14	y	y	y	y		53431	10.1	287	calm	XBT deployed	
0330	62	23.64	38	11.19	y	y	y	y	13381.7		11.0	284	calm		
0345	62	24.59	38	8.87	y	y	y	y		53493.1	9.1	272	calm		
0402	62	25.51	38	6.63	y	y	y	y	13385	53363.7	9.4	273	calm		
0415	62	26.30	38	4.70	y	y	y	y		53418	11.1	281	"		
0430	62	27.17	38	2.51	y	y	y	y	13385.6	53413	11.6	272	"		
0445	62	28.19	38	0.09	y	y	y	y		53436	11.2	283	"		
0500	62	29.07	37	57.91	y	y	y	y	13396.6	53454	11.2	277	"		
0515	62	29.93	37	55.80	y	y	y	y		53434	10.8	273	"		
0530	62	30.85	37	53.56	y	y	y	y	13399.1	53421	11.1	274	"		
0545	62	31.77	37	51.29	y	y	y	y		53398	12.1	275			
0600	62	32.73	37	48.95	y	y	y	y	13402.6	53380	12.1	76.4	choppy		
0615	62	33.61	37	46.79	y	y	y	y		53416	11.4	279	Mild chop		
0629	62	34.41	37	44.81	y	y	y	y	13410.9	53459	12.5	275	"		
0645	62	35.51	37	42.12	y	y	y	y		53502	11.8	269	Small white peaks		
0658	62	36.26	37	40.26	y	y	y	y	13415.2	53526	11.7	273	"		
0715	62	37.24	37	37.87	y	y	y	y		53527	11.6	269	"	Guns and streamer crossing over due to inclement wind conditions	
0730	62	38.05	37	35.87	y	y	y	y	13418.5	53522	11.8	273	"		
0745	62	38.88	37	33.79	y	y	y	y		53482	14.8	268	Getting choppier: ~2m swell	Guns coming in: fault	
0800	62	39.81	37	31.55	y	y	y	y	13484.2	53402	13.0	264	Choppy	Guns coming in	
0815	62	40.66	37	29.49	y	y	y	y		53374	12.0	283	"	Guns in, turning to stbd	
0828														Turning to port 3deg/min to a Northerly heading	
0830	62	41.41	37	27.32	y	y	y	y	13437.9		13.0	294	"		
0847	62	42.63	37	26.26	y	y	y	y		53344	15.0	311			
0900	62	43.55	37	25.81	y	y	y	y	13430.6		14.0	323			
0923	62	45.34	37	25.72	y	y	y	y		53407	15.1	321	1-2m swell		
0932	62	46.09	37	25.70	y	y	y	y	13435.1		15.3	313			
0946	62	47.16	37	25.41	y	y	y	y		53480	15.0	298			
1001	62	48.53	37	23.60	y	y	y	y	13431.2		11.0	256			
1015	62	48.39	37	20.90	y	y	y	y		53451	10.9	237			
1031	62	48.74	37	18.08	y	y	y	y	13424.3		11.2	236			
1044	62	49.02	37	15.79	y	y	y	y		53442	11.8	256			
1100	62	49.37	37	12.93	y	y	y	y	13428.7		11.5	254			
1118	62	44.78	37	9.57	y	y	y	y		53526	10.1	245			
1132	62	50.07	37	7.25	y	y	y	y	13424.3		9.8	259			
1147	62	50.76	37	4.95	y	y	y	y		53513	12.0	273		Back on line, but not shooting. Guns are being deployed	
1200	62	51.45	37	3.19	y	y	y	y	13448.6	53509.7	10.0	262			
1217	62	52.55	37	1.26	y	y	y	y			12.3	12.1			
1230	62	53.63	37	1.98	y	y	y	y	13454.3	53555	12.9	343			
1245	62	54.35	37	4.47	y	y	y	y			11.3	8.7			
1300	62	54.93	37	6.90	y	y	y	y	13660.7	53571.3	13.2	56.8			
1315	62	55.70	37	9.42	y	y	y	y			12.8	320			
1330	62	57.00	37	10.19	y	y	y	y	13446.1	53638.9	12.5	20.1			
1345	62	58.27	37	10.15	y	y	y	y			12.5	315			
1400	62	29.69	37	9.30	y	y	y	y	13438.8	53660.2	10.1	275	Gentle		
1416	63	0.65	37	7.55	y	y	y	y			9.5	281			
1431	63	1.67	37	5.72	y	y	y	y	13442.7	53686.1	10.9	282			
1445	63	2.36	37	4.05	y	y	y	y			8.0	253			
1500	63	2.48	37	1.13	y	y	y	y	13427.3	53685.4	7.5	227	Mild chop		
1515	63	2.51	36	58.48	y	y	y	y			7.9	237			
1528	63	2.31	36	55.00	y	y	y	y	13426.5	53587.5	1.5	167			
1548	63	1.24	36	53.31	y	y	y	y			2.8	133			
1600	63	0.66	36	51.86	y	y	y	y	13420.3	53566	4.6	161			
1615	62	59.73	36	49.67	y	y	y	y			7.8	135			
1630	62	58.74	36	47.33	y	y	y	y	13412.5	53717	7.5	137			
1645	62	57.90	36	45.33	y	y	y	y			5.4	147			
1700	62	57.01	36	43.23	y	y	y	y	13414.3	53426	5.9	153			
1715	62	56.06	36	41.08	y	y	y	y			6.6	157			
1730	62	55.04	36	38.78	y	y	y	y	13408.6	53413	7.7	155			
1745	62	54.08	36	36.65	y	y	y	y			5.9	151			
1815	62	52.18	36	32.43	y	y	y	y	13407.5	53665	4.7	145			
1530	62	51.28	36	30.42	y	y	y	y			5.6	147			
1545	62	50.31	36	28.26	y	y	y	y	13402.8	53566	5.5	144			
1900	62	49.38	36	26.18	y	y	y	y			4.3	152			
1915	62	48.42	36	24.06	y	y	y	y	13403.2	53378	3.4	138	Calm		
1930	62	42.17	36	21.28	y	y	y	y			154.0	203	"		
1945	62	46.56	36	19.91	y	y	y	y	13397	53204	1.2	165			
2000	62	45.28	36	17.01	y	y	y	y			1.2	121	Calm & sunny!		
2013	62	44.54	36	15.44	y	y	y	y	13393.8	53219	2.2	171			
2030	62	43.38	36	12.85	y	y	y	y			1.8	157			
2045	62	42.45	36	10.79	y	y	y	y	13394.4	53053	1.1	176			
2100	62	41.50	36	8.69	y	y	y	y			2.4	215			
2117	62	40.38	36	6.21	y	y	y	y	13393.2	52858	0.6	120			
2131	62	39.49	36	4.25	y	y	y	y			1.2	117	Sunny		
2145	62	38.64	36	2.39	y	y	y	y	13391.7	53197	0.9	119			
2200	62	37.68	36	0.22	y	y	y	y			1.5	97			
2215	62	36.65	35	57.95	y	y	y	y	13393.2	53483	1.9	99			
2230	62	35.70	35	55.86	y	y	y	y			3.3	103			
2245	62	34.79	35	53.83	y	y	y	y	13390.4	53472	2.4	100			
2259	62	33.92	35	51.93	y	y	y	y			3.1	60	Sunset 2310		
2319	62	32.57	35	48.96	y	y	y	y	13393.1	53191	4.1	65			
2330	62	31.88	35	47.42	y	y	y	y			4.3	77			
2342	62	30.82	35	45.10	y	y	y	y	13388.5	52893	5.1	73			

Every 30 min, for important events and not for birds during turns.

Seismic log

															Depth of Gun 2:										
	Vessel GPS				Bird 1		Bird 2		Bird 3		Bird 4		Bird 5						Tailbuoy GPS				
Time GMT	Lat		Long		Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Ship H'ding	CMG	Shot no.	FFID	Lat		Long		MISFIRE, Feathering angle, sea state, current, other comments
0000	62	10.8	38	42.43	7.1	72	7.5	72	7.6	62	7.4	69	7	68	45	66	2459	2459	62	10.13	38	44.17	gentle swell
0015	62	41.81	38	39.97	6.5	71	6.3	71	7.2	71	7.4	73	7.2	70	40	64	2524	2524	62	11.09	38	41.73	gentle swell
30	62	12.84	38	37.73	7	72	6.6	67	7.8	67	7.1	67	6.6	72	50	66	2586	2586	62	12.02	38	39.45	
0045	62	13.61	38	35.62	7.5	71	7.5	67	7.1	69	7.3	67	7.3	68	45	65	2643	2643	62	12.94	38	37.38	
0100	62	14.48	38	33.5	7.5	73	7.4	74	6.6	66	6.9	65	7.7	68	49	66	2702	2702	62	13.77	38	35.31	
0115	62	15.37	38	31.45	7.5	79	7.4	73	7.4	70	6.9	67	6.7	71	47	64	2761	2761	62	14.67	38	33.06	
0130	62	16.3	38	29.17	6.7	71	6.9	73	6.9	73	7.3	73	7.2	72	42	61	2821	2821	62	15.62	38	30.78	
0145	62	17.25	38	26.87	7.5	79	7.6	72	7	64	7	62	7.3	72	42	62	2881	2881	62	16.55	38	28.47	
0200	62	18.14	38	24.68	6.7	73	6.9	76	6.7	74	7.1	67	7.4	70	43	63	2941	2941	62	17.45	38	26.28	
0217	62	19.22	38	22.05	7.2	73	7	67	6.8	57	6.7	68	7.1	75	41	61	3009	3009	62	18.51	38	23.65	
0230	62	19.91	38	20.4	7.4	71	7.4	67	7.2	75	6.9	72	7.1	60	45	63	3061	3061	62	19.19	38	22.01	qc real time data logged out at 0236 reboot at 0237
0245	62	20.83	38	18.05	7.6	75	7.7	75	7.5	69	7.6	70	7.2	73	42	60	3122	3122	62	20.13	38	19.8	
0308	62	21.79	38	15.72	6.8	70	6.6	74	7.3	71	7	68	7.1	73	43	60	3184	3184	62	21.09	38	17.52	
0314	62	22.6	38	13.73	6.7	71	6.8	71	7.7	65	7	74	7.2	71	48	68	3237	3237	62	21.9	38	15.48	
0330	62	23.59	38	11.3	7.5	75	7.5	76	7.3	69	7.4	71	7.3	71	48	69	3304	3304	62	22.9	38	13.1	3320-3329 delayed in export (disk to export)
0345	62	24.48	38	9.14	7.2	74	7.3	75	6.9	71	6.8	74	6.7	77	48	66	3363	3363	62	23.79	38	10.94	
0400	62	25.55	38	6.61	6.8	53	6.9	55	6.4	54	6.7	50	7.4	50	44	65	3432	3432	62	24.88	38	8.3	
0415	62	26.32	38	4.71	6	52	6	41	6.4	48	6.5	52	6.9	44	42	62	3484	3484	62	25.65	38	6.4	
0430	62	27.14	38	2.73	7.7	52	7.5	54	7	53	7.2	47	7.4	52	48	68	3537	3537	62	26.48	38	4.44	
0445	62	28.27	37	59.95	6.6	44	7.1	41	7	50	6.7	54	7.4	53	46	65	3612	3612	62	27.59	38	1.62	
0500	62	29	37	58.15	6.1	48	6.3	55	6.7	42	7	53	6.7	51	39	62	3662	3662	62	28.32	37	59.82	
0515	62	30.02	37	55.65	7.8	51	7.5	50	6.4	52	7	42	7.1	33	38	59	3729	3729	62	29.32	37	57.3	
0527	62	30.72	37	53.92	6.7	52	7.4	49	7.2	46	7.4	38	7.2	39	38	55	3773	3773	62	30.02	37	55.56	
0545	62	31.79	37	51.31	7.1	51	6.7	51	7.3	44	6.2	48	6.9	47	40	60	3848	3848	62	31.1	37	52.93	
0600	62	32.71	37	49.04	6.9	45	7.3	50	7.3	32.2	7.1	38.4	6.7	39.4	37	64	3907	3907	62	32	37	50.68	
0615	62	33.59	37	46.9	7.3	51	7.2	45	6.9	42	6.2	55	6.7	46	46	66	3963	3963	62	51.67	37	20.7	Wind from S.
0630	62	34.51	37	44.64	6.5	49	6.7	50	7.2	50	7	54	6..9	50	39	63	4021	4021	62	33.81	37	46.29	Swell from N, hitting starboard
0645	62	35.41	37	42.43	5.9	53	6.1	43	7.1	43	7	38	6.7	46	41	63	4085	4085	62	34.73	37	44.05	
0700	62	36.27	37	40.32	6.5	47	7.3	50	6.7	47	6.7	50	7.7	48	42	66	4140	4140	62	35.57	37	42.99	Driving birds starboard
0715	62	37.23	37	37.95	8.6	51	8.9	50	7.8	51	7	49	6.4	53	44	59	4202	4202	62	36.52	37	39.6	
0730	62	38.1	37	35.8	9.6	46	8.3	48	6.5	45	6.5	51	7.2	42	43	64	4262	4262	62	37.4	37	37.46	
0745	62	38.97	37	33.66	8.5	50	8.5	41	7.5	46	7.6	50	6.3	43	38	60	4323	4323	62	38.29	37	35.18	Guns have been lost, air hose(?)
0800	62	39.9	37	31.27	9.9	68	9.1	78	6.8	72	7.3	65	7.2	66	37	345	4382	4382	62	39.26	37	31.22	Guns disabled - coming in.
0806																	4404	4404					guns out of water (turning to stbd)
0815	62	40.68	37	29.39	7.6	49	7.6	47	8	50	8.1	53	8.7	54	42	66			62	39.97	37	31.16	Increased speed to 5.1kts.
0820																							Beginning turn 3deg/min stbd
0827																							Turning port, to reach northerly heading
0830	62	41.34	37	27.47	9.5	60	7.9	54	8.4	49	8.6	48	7.4	47	32	62			62	40.74	37	29.21	Guns retrieved, turning to port
0839															358	31							Staying with CMG aprox 30
0845	62	42.41	37	26.37	7.8	17	7.1	22	6.9	24	7.2	27	7.2	34	1	30			62	41.5	37	27.23	Speed at 4.5kts
0900	62	43.6	37	25.77	8.9	5	8.3	10	4	12	7.8	10	8.1	14	352	23			62	42.57	37	26.27	Course adjust 10deg to port
0906																		4646					Stopped writing data
0915	62	44.71	37	25.74	8.3	2	8.4	3	8.1	8	8	9	8.4	20	348	15			62	43.72	37	25.87	
0930	62	45.82	37	25.71	7.2	3	7.4	359	8	6	8	9	7.1	13	350	15			62	44.82	37	25.8	
0936	62	46.38	37	25.7															62	45.32	37	25.79	Turning back onto line, stbd
0945	62	46.99	37	25.54	7.2	16	7.6	2	7.7	8	8.5	6	7.9	4	18	42			62	46	37	25.78	
1000	62	48.02	37	23.61	7.4	45	7.5	48	8.2	46	8.3	37	7.9	33	57	80			62	47.31	37	25.17	t=760daN
1015	62	48.37	37	21.05	8.6	61	8.4	65	8.2	68	8.5	72	8.4	70	66	82			62	47.98	37	23.21	Tension back down - 650daN
1030	62	48.7	37	18.39	7.4	74	7.5	73	8	72	8.2	71	7.6	74	70	93			62	48.35	37	20.49	1hr to rejoin line
1045	62	49.03	37	15.74	8.4	70	8.2	72	8.5	74	8.4	76	8.6	75	65	91			62	48.67	37	17.9	
1100	62	49.37	37	12.92	7.8	66	8.8	67	7.8	73	7.9	74	7.6	70	64	88			62	49.02	37	15.05	
1115	62	49.7	37	10.23	8.4	72	8.3	69	7.9	70	7.7	70	8.1	70	62	82			62	49.34	37	12.43	
1130	62	50.05	37	7.37	6.9	65	7.4	66	7.9	71	7.6	64	7.6	70	66	87			62	49.7	37	9.43	New guns array set up; umbilical new, 2x new floats, single beam, single gun
1140																							Continue re-deployment of new system
1155																							Cant deploy guns on this course
1215	62	52.55	37	1.24	10	45	8.8	52	8.6	55	8	61	8.3	66	3	23			62	51.58	37	2.75	Possible problems with new buoy system
1230	62	53.51	37	1.77	10	6	8.6	10	8.2	11	7.6	15	5.8	35	324	335			62	52.49	37	1.58	Making a port turn
1245	62	54.35	37	4.45	8.5	322	7	342	6.5	322	8	336	7.3	332	304	313			62	53.73	37	2.78	Ship speed down to 4.5kt; ready for deploying the airgun
1301	62	54.97	37	7.11	6.8	324	6	328	6.5	376	6.9	330	7.2	325	306	310			62	54.39	37	5.26	
																							New line started as Line 2 Sequence 1 @ 1315
1315	62	55.61	37	9.25	7	347	7.3	308	7	325	7	328	7.2	325	325	335	4	2	62	54.96	37	7.6	First valid shot number 4; FFID 2.
1330	62	56.91	37	10.19	5.8	1.5	6.8	6.7	6.6	354	7.1	19	7.4	0.5	359	13.3	64	62	62	55.91	37	9.95	
1347	62	58.45	37	10.22	5.5	12	7	28	7.5	28	6.4	30	7.5	25	0	14.8	133	131	62	57.49	37	10.38	
1400	62	59.58	37	9.55	7.61	46	7.2	45	6.7	58	6.9	42	6.7	36	35	51.1	184	182	62	58.64	37	10.27	
1408																	215	213					SEAL QC went down
1413																	232	230					Tension of streamer 1000daN; speed reduced to 5kt
1416	63	0.67	37	7.59	6	62	6.6	53	7.2	68	6.7	70	6.4	63	36.6	50.6	249	247	62	59.87	37	8.94	
1432	63	1.68	37	5.77	6.6	53	7.2	51	7.2	67	7.2	61	7.3	48	31	51	308	306	63	0.87	37	7.17	
1445	63	2.38	37	4.04	7.1	73	6.6	64	6.1	69	6.5	71	7.4	67	63	82	360	358	63	1.65	37	5.65	
1501	63	2.52	37	1.11	7	108	6.8	103	6.7	107	7.1	109	7.1	99	72	91	423	421	63	2.32	37	3.36	
1517	63	25.1	36	58.03	7.6	104	7.3	111	6.6	108	7	109	6.7	106	83	102	488	486	63	2.4	37	0.3	
1532	63	2.1	36	55.43	9.6	148	7.6	130	7.1	112	6.9	112	7.1	108	128	146	550	548	63	2.38	36	57.58	
1545	63	1.44	36	53.83	8	145	6.6	149	6.5	146	6.6	151	6.8	148	129	144	600	598	63	2.04	36	55.69	
1602	63	0.45	36	51.43	6.6	129	6.1	127	6.9	124	7.4	116	7.5	123	129	145	673	671	63	1.01	36	53.22	
1614	62	59.73	36	49.71	6.3	123	6.4	123	6.7	133	6.7	127	6.3	134	129	146	719	717	63	0.39	36	51.47	All is well
1630	62	58.73	36	47.35	6.8	128	7	131	7.2	124	6.7	131	5.9	136	130	149	777	775	62	59.41	36	49.07	Approaching Line 2
1635		START	OF	LINE 2 (First valid shot point)												150	800	798					TB behind ship already
1645	62	57.83	36	45.21	7.2	129	7.1	105	7.4	139	7.4	145	6.4	125	131	146	841	839	62	58.51	36	46.91	
1700	62	56.81	36	42.93	6.3	131	6.5	135	7	129	7	118	5.9	127	136	146	906	904	62	57.54	36	44.64	
1716	62	55.84	36	40.64	6.7	131	6.8	132	6.8	132	6.8	121	5.5	145	134	148	969	967	62	56.54	36	42.3	
1731	62	54.85	36	38.42	7.2	133	7.2	106	6.7	154	6.9	139	7.5	128	135	147	1031	1029	62	55.57	36	40.06	
1745	62	53.91	36	36.33	7.2	137	7.1	135	6.9	135	7.2	133	6.8+	121	136	151	1090	1088	62	54.61	36	38	
1759	62	53.08	36	34.45	6.8	166	7.2	163	6.7	157	7.3	148	6.8	152	136	147	1141	1139	62	53.77	36	35.99	
1816	62	51.98	36	32	6.7	161	6.6	168	7.2	163	7.4	159	6.9	164	138	149	1209	1207	62	52.67	36	33.5	
1830	62	51.14	36	30.14	7.3	158	6.8	161	7.1	166	7	157	6.7	156	136	145	1261	1259	62	51.85	36	31.64	
1845	62	50.13	36	27.88	6.8	171	6.8	156	6.7	158	6.8	158	7.3	161	136	146	1324	1322	62	50.83	36	29.38	
1900	62	49.23	36	25.88	7	166	6.9	160	6.7	161	7	154	6.9	153	134	146	1381	1379	62	49.91	36	27.31	
1915	62	48.23	36	23.67	6.8	136	6.7	127	6.8	138	7.1	129	6.6	146	136	144	1444	1442	62	48.86	36	25.02	
1930	62	47.31	36	21.61	6.8	138	6.8	140	7.2	140	7.4	137	7.4	140	131	147	1501	1499	62	48	36	23.05	
1945	62	56.37	36	19.53	6.8	134	6.9	142	7	138	6.8	134	6.9	138	138	152	1559	1557	62	47.06	36	21.03	
2000	62	45.34	36	17.2	6.9	133	6.9	140	6.7	137	7	133	6.8	138	135	151	1618	1616	62	46.05	36	18.83	
2014	62	44.46	36	15.28	6.7	131	6.6	130	7	133	7.2	142	7.3	137	134	147	1678	1676	62	45.12	36	16.78	
2030	62	43.45	36	13.02	6.9	137	6.8	142	6	138	7.1	124	7.2	137	133	148	1738	1736	62	44.15	36	14.61	
2045	62	42.24	36	10.33	6.5	137	6.8	139	6.9	138	7.2	137	7.1	134	131	145	1810	1808	62	42.96	36	10.37	Calm and sunny
2100	62	41.45	36	8.58	7.2	137	7.3	138	7.3	137	7.3	136	7.2	132	133	147	1858	1856	62	41.68	36	8.67	
2120	62	40.17	36	5.74	7.3	131	7.1	134	7.6	132	7.2	138	7.1	131	135	152	1940	1938	62	40.85	36	7.35	102hrs left on this line
2130	62	39.56	36	4.45	7.2	143	7	139	7.5	128	7.3	128	6.9	132	134	148	1980	1978	62	40.27	36	6.09	
2145	62	38.63	36	2.37	7.2	127	6.9	134	7.4	131	7.3	140	6.8	133	130	147	2039	2037	62	39.33	36	4.02	
2200	62	37.69	36	0.27	6.7	140	6.7	136	7.1	132	7	139	7.1	151	136	150	2100	2098	62	32.3	36	1.87	
2215	62	36.69	35	58.08	6.9	130	7.3	128	7.4	131	7.4	133	7.3	125	132	150	2158	2156	62	37.41	35	59.82	
2230	62	35.72	35	55.89	6.9	132	6.9	120	6.6	124	6.9	133	7	128	128	146	2220	2218	62	36.4	35	57.61	
2245	62	34.8	35	53.9	6.9	135	6.8	136	7	125	7.3	133	6.9	124	130	142	2278	2276	62	35.4	35	55.50	
2300	62	33.84	35	51.76	6.7	130	6.9	137	7	130	7.3	141	7.1	136	131	146	2344	2342	62	34.42	35	53.23	
2315	62	32.9	35	49.68	7.3	122	7.1	128	7.3	130	7.1	124	7.2	138	133	147	2400	2398	62	33.56	35	51.35	
2330	62	31.93	35	47.55	6.8	136	7.1	132	7.4	136	8.9	131	6.9	134	131	146	2460	2458	62	32.59	35	49.20	
2345	62	30.9	35	45.27	6.9	128	7	129	6.8	131	7	122	7.2	121	132	148	2521	2519	62	31.57	35	46.95	

Julian Day: Date: Sheet Number:

Time	Lat		Lon		Water	Head.	SOW	SOG	EM710	EM120			EA600	SBP		ER60	OLEX	Comments
(GMT)	D	DM	D	DM	depth (m)		(kts)	(kts)	rec.	rec	Line cnt.		rec.	rec.	Data file	rec.	rec.	
0000	62	29.97	35	43.21	2729	151	5.4	5.6	n	y	0070	91 JC050-2	y	y	210_1619_302	y	y	
0015	62	29.02	35	41.14	2736	131	5.0	5.6	n	y	0070	76 JC050-2	y	y	210_1619_304	y	y	
0030	62	28.07	35	39.05	2744	132	5.6	5.7	n	y	0070	61 JC050-2	y	y	210_1619_305	y	y	
0045	62	27.22	35	36.69	2750	113	5.5	5.3	n	y	0070	46 JC050-2	y	y	210_1619_306	y	y	Deploying XBT
0100	62	26.59	35	33.80	2764	112	5.6	5.5	n	y	0070	30 JC050-2	y	y	210_1619_308	y	y	
0115	62	26.04	35	31.32	2766	116	5.2	5.6	n	y	0070	16 JC050-2	y	y	210_1619_309	y	y	
0130	62	25.46	35	28.66	2778	102	5.3	5.5	n	y	0070	1 JC050-2	y	y	210_1619_310	y	y	
0145	62	24.87	35	25.98	2783	113	6.3	5.3	n	y	0071	106 JC050-2	y	y	210_1619_312	y	y	
0200	62	24.26	35	23.16	2787	110	6.0	5.5	n	y	0071	90 JC050-2	y	y	210_1619_313	y	y	
0215	62	23.69	35	20.60	2794	109	5.6	5.5	n	y	0071	76 JC050-2	y	y	210_1619_314	y	y	
0232	62	23.03	35	17.59	2798	121	5.5	5.3	n	y	0071	59 JC050-2	y	y	210_1619_316	y	y	
0245	62	22.52	35	15.25	2803	114	5.5	5.5	n	y	0071	46 JC050-2	y	y	210_1619_317	y	y	
0300	62	21.93	35	12.62	2806	115	5.5	5.7	n	y	0071	31 JC050-2	y	y	210_1619_318	y	y	
0315	62	21.36	35	9.97	2809	111	5.0	6.0	n	y	0071	16 JC050-2	y	y	210_1619_320	y	y	
0330	62	20.77	35	7.28	2816	119	5.4	5.2	n	y	0071	1 JC050-2	y	y	210_1619_321	y	y	
0346	62	20.16	35	4.57	2797	120	6.0	5.5	n	y	0072	105 JC050-2	y	y	210_1619_322	y	y	
0402	62	19.56	35	1.75	2827	101	5.9	5.6	n	y	0072	90 JC050-2	y	y	210_1619_324	y	y	
0417	62	18.98	34	59.11	2826	113	5.6	5.4	n	y	0072	75 JC050-2	y	y	210_1619_325	y	y	
0428	62	18.52	34	57.05	2844	108	6.1	5.6	n	y	0072	63 JC050-2	y	y	210_1619_326	y	y	
0445	62	17.87	34	54.08	2839	122	5.4	5.4	n	y	0072	47 JC050-2	y	y	210_1619_327	y	y	
0500	62	17.22	34	51.14	2841	117	5.6	5.4	n	y	0072	30 JC050-2	y	y	210_1619_329	y	y	
0515	62	16.66	34	48.61	2904	114	4.8	4.9	n	y	0072	16 JC050-2	y	y	210_1619_330	y	y	
0532	62	15.96	34	45.67	2832	130	5.6	5.5	n	y	0073	119 JC050-2	y	y	210_1619_331	y	y	
0545	62	15.96	34	43.19	2835	131	5.4	5.5	n	y	0073	105 JC050-2	y	y	210_1619_333	y	y	
0601	62	14.62	34	40.44	2840	124	5.9	5.6	n	y	0073	89 JC050-2	y	y	210_1619_334	y	y	
0615	62	14.00	34	38.09	2843	134	5.5	5.3	n	y	0073	75 JC050-2	y	y	210_1619_335	y	y	
0630	62	13.33	34	35.54	2851	130	5.6	6.0	n	y	0073	61 JC050-2	y	y	210_1619_336	y	y	
0648	62	12.50	34	32.39	2861	129	5.7	5.4	n	y	0073	43 JC050-2	y	y	210_1619_338	y	y	
0659	62	11.96	34	30.33	2862	131	5.6	5.5	n	y	0073	31 JC050-2	y	y	210_1619_339	y	y	
0717	62	11.14	34	27.21	2863	127	5.6	5.6	n	y	0073	13 JC050-2	y	y	210_1619_340	y	y	
0738	62	10.17	34	23.58	2871	124	5.1	5.6	n	y	0074	112 JC050-2	y	y	210_1619_342	y	y	
0745	62	9.94	34	22.69	2870	130	5.7	5.4	n	y	0074	107 JC050-2	y	y	210_1619_343	y	y	
0800	62	9.21	34	19.91	2875	127	5.4	5.4	n	y	0074	90 JC050-2	y	y	210_1619_344	y	y	1m swell
0815	62	8.54	34	17.38	2880	127	5.7	5.4	n	y	0074	76 JC050-2	y	y	210_1619_345	y	y	
0830	62	7.86	34	14.82	2881	101	6.3	5.6	n	y	0074	61 JC050-2	y	y	210_1619_347	y	y	
0845	62	7.19	34	12.30	2887	126	5.6	5.5	n	y	0074	47 JC050-2	y	y	210_1619_348	y	y	
0900	62	6.51	34	9.71	2897	121	5.7	5.2	n	y	0074	31 JC050-2	y	y	210_1619_349	y	y	
0915	62	6.20	34	6.87	2896	89	5.5	5.4	n	y	0074	17 JC050-2	y	y	210_1619_350	y	y	
0930	62	6.13	34	4.00	2907	103	5.1	5.2	n	y	0074	1 JC050-2	y	y	210_1619_352	y	y	
0945	62	6.06	34	1.11	2912	88	5.8	6.1	n	y	0075	106 JC050-2	y	y	210_1619_353	y	y	
1000	62	5.99	33	58.20	2916	91	5.3	5.7	n	y	0075	92 JC050-2	y	y	210_1619_354	y	y	
1015	62	5.92	33	55.21	2915	90	5.5	5.1	n	y	0075	76 JC050-2	y	y	210_1619_355	y	y	
1030	62	5.85	33	52.24	2919	90	5.5	5.3	n	y	0075	61 JC050-2	y	y	210_1619_357	y	y	
1045	62	5.78	33	49.22	2918	92	5.3	5.5	n	y	0075	45 JC050-2	y	y	210_1619_358	y	y	
1101	62	5.71	33	46.17	2923	99	5.2	5.4	n	y	0075	30 JC050-2	y	y	210_1619_359	y	y	
1116	62	5.63	33	43.24	2921	89	5.1	5.4	n	y	0075	14 JC050-2	y	y	210_1619_361	y	y	
1131	62	5.56	33	40.30	2925	84	5.5	5.4	n	y	0076	120 JC050-2	y	y	210_1619_362	y	y	
1147	62	5.49	33	37.14	2924	81	5.3	5.4	n	y	0076	104 JC050-2	y	y	210_1619_363	y	y	
1200	62	5.44	33	34.61	2927	86	5.1	5.8	n	y	0076	90 JC050-2	y	y	210_1619_364	y	y	
1215	62	5.35	33	31.53	2929	95	5.7	5.7	n	y	0076	75 JC050-2	y	y	210_1619_366	y	y	
1230	62	5.28	33	28.51	2929	86	6.0	5.5	n	y	0076	60 JC050-2	y	y	210_1619_367	y	y	
1245	62	5.21	33	25.62	2977	88	6.4	6.1	n	y	0076	46 JC050-2	y	y	210_1619_368	y	y	
1301	62	5.13	33	22.19	2899	88	5.7	5.5	n	y	0076	30 JC050-2	y	y	210_1619_369	y	y	
1315	62	5.05	33	19.30	2922	85	6.2	5.6	n	y	0076	16 JC050-2	y	y	210_1619_370	y	y	
1330	62	4.98	33	16.26	2934	89	5.7	6.1	n	y	0076	1 JC050-2	y	n	210_1619_370	y	y	Frozen SBP now as well
1355	62	4.89	33	10.94	2934	89	5.4	5.8	n	y	0077	95 JC050-2	y	n		y	y	Frozen SBP
1400	62	4.88	33	10.03	2935	88	5.7	5.4	n	y	0077	90 JC050-2	y	y	210_1619_371	y	y	
1415	62	4.82	33	6.94	2938	94	6.2	5.6	n	y	0077	76 JC050-2	y	y	210_1619_372	y	y	
1430	62	4.76	33	6.80	2938	94	6.3	5.7	n	y	0077	61 JC050-2	y	y	210_1619_373	y	y	
1445	62	4.72	33	0.73	2821	93	5.7	5.2	n	y	0077	46 JC050-2	y	y	210_1619_374	y	y	
1500	62	4.66	32	57.67	2949	88	5.8	6.0	n	y	0077	31 JC050-2	y	y	210_1619_376	y	y	
1516	62	4.59	32	54.49	2815	95	5.8	5.8	n	y	0077	15 JC050-2	y	y	210_1619_377	y	y	
1530	62	4.54	32	51.55	2609	88	5.8	5.6	n	y	0077	1 JC050-2	y	y	210_1619_378	y	y	
1545	62	4.49	32	48.46	2311	93	5.6	5.9	n	y	0078	106 JC050-2	y	y	210_1619_380	y	y	
1600	62	4.43	32	45.11	2492	084	5.5	6.0	n	y	0078	89 JC050-2	y	y	210_1619_381	y	y	
1615	62	4.38	32	42.29	2447	092	5.9	5.9	n	y	0078	75 JC050-2	y	y	210_1619_383	y	y	
1630	62	4.33	32	39.59	2411	082	5.8	5.8	n	y	0078	62 JC050-2	y	y	210_1619_384	y	y	
1645	62	4.29	32	36.15	2478	093	5.6	5.8	n	y	0078	46 JC050-2	y	y	210_1619_386	y	y	
1700	62	4.23	32	33.46	2546	093	5.4	6.0	n	y	0078	32 JC050-2	y	y	210_1619_387	y	y	
1715	62	4.17	32	30.34	2774	095	6.1	5.8	n	y	0078	17 JC050-2	y	y	210_1619_388	y	y	
1730	62	4.12	32	27.26	2745	094	5.8	5.7	n	y	0078	2 JC050-2	y	y	210_1619_390	y	y	
1745	62	4.06	32	24.35	2676	089	5.4	5.7	n	y	0079	108 JC050-2	y	y	210_1619_391	y	y	
1800	62	4.01	32	20.88	2568	096	5.8	5.7	n	y	0079	91 JC050-2	y	y	210_1619_393	y	y	
1815	62	3.96	32	18.19	2361	084	5.2	4.7	n	y	0079	76 JC050-2	y	y	210_1619_394	y	y	Guns stopped firing: Compressor problem
1830	62	3.91	32	15.60	2325	093	5.1	5.5	n	y	0079	62 JC050-2	y	y	210_1619_396	y	y	
1845	62	3.85	32	12.20	2539	091	5.1	5.6	n	y	0079	47 JC050-2	y	y	210_1619_397	y	y	
1900	62	3.80	32	9.21	2824	095	5.6	5.6	n	y	0079	32 JC050-2	y	y	210_1619_399	y	y	
1915	62	3.74	32	6.19	2828	083	5.2	5.5	n	y	0079	16 JC050-2	y	y	210_1619_400	y	y	
1930	62	3.69	32	3.43	2573	085	5.3	5.5	n	y	0079	2 JC050-2	y	y	210_1619_401	y	y	
1945	62	3.64	32	0.75	2245	092	5.7	5.4	n	y	0080	108 JC050-2	y	y	210_1619_403	y	y	
2000	62	3.59	31	57.30	2362	087	5.6	5.4	n	y	0080	91 JC050-2	y	y	210_1619_405	y	y	
2015	62	3.54	31	54.33	2463	086	5.6	5.4	n	y	0080	76 JC050-2	y	y	210_1619_406	y	y	
2031	62	3.48	31	51.43	2693	100	5.5	5.7	n	y	0080	60 JC050-2	y	y	210_1619_407	y	y	
2046	62	3.43	31	48.43	2688	090	5.6	5.5	n	y	0080	45 JC050-2	y	y	210_1619_409	y	y	
2059	62	3.29	31	45.81	2635	093	5.5	5.6	n	y	0080	31 JC050-2	y	y	210_1619_410	y	y	
2114	62	3.10	31	42.90	2356	088	5.2	5.6	n	y	0080	16 JC050-2	y	y	210_1619_411	y	y	
2130	62	2.91	31	39.96	2255	086	5.6	5.4	n	y	0080	1 JC050-2	y	y	210_1619_413	y	y	
2145	62	2.72	31	37.00	2205	101	5.2	5.3	n	y	0081	105 JC050-2	y	y	210_1619_415	y	y	
2200	62	2.51	31	34.06	2175	100	5.3	5.5	n	y	0081	91 JC050-2	y	y	210_1619_416	y	y	
2215	62	2.33	31	31.23	2202	092	5.1	5.5	n	y	0081	76 JC050-2	y	y	210_1619_418	y	y	
2230	62	2.14	31	28.40	2447	095	5.7	5.3	n	y	0081	61 JC050-2	y	y	210_1619_419	y	y	
2246	62	1.93	31	25.25	2388	096	5.5	5.2	n	y	0081	44 JC050-2	y	y	210_1619_421	y	y	SBP on 10degrees wide
2300	62	1.77	31	22.60	2226	096	5.5	5.9	n	y	0081	31 JC050-2	y	y	210_1619_422	y	y	sunset at 2246
2315	62	1.57	31	19.79	2321	090	5.6	5.4	n	y	0081	16 JC050-2	y	y	210_1619_424	y	y	
2330	62	1.39	31	16.91	2266	096	5.7	5.4	n	y	0081	2 JC050-2	y	y	210_1619_425	y	y	
2345	62	1.19	31	13.95	225	096	5.5	5.6	n	y	0082	106 JC050-2	y	y	210_1619_429	y	y	

Day: Date: Sheet Number:

Time	Lat		Lon		ADCP150	ADCP75	Techsas	Level-C	Grav.	Mag.	Wind		Sea State	Comments, eg state of seismic exp.
(GMT)	D	DM	D	DM	rec.	rec.	rec.	rec.	(mgal)	(nT)	Speed	Dir.		
0000	62	29.94	35	43.16	y	y	y	y	13385.9	52924	3.7	79.5		
0015	62	28.99	35	41.07	y	y	y	y			5.6	64.5	calm	
0029	62	28.09	35	39.10	y	y	y	y	13383.4	52911	4.7	60.5	"	
0044	62	27.25	35	36.85	y	y	y	y			4.8	73.4	"	
0100	62	26.60	35	33.87	y	y	y	y	13385	53022.18	4.8	75.5	"	
0115	62	26.02	35	20.21	y	y	y	y			5.0	64.5	"	
0130	62	25.46	35	28.67	y	y	y	y	13379.9	53402	4.9	75.5		
0145	62	24.28	35	24.55	y	y	y	y			5.6	76.4	"	
0200	62	26.65	35	23.32	y	y	y	y	13381.8	53490	4.5	80.5	"	
0216	62	23.03	35	20.43	y	y	y	y			5.3	76.4	"	
0232	62	22.49	35	17.58	y	y	y	y	13382.1	53067.43	5.8	78.5	"	
0246	62	21.94	35	15.07	y	y	y	y			5.7	76.6	"	
0300	62	21.44	35	12.66	y	y	y	y	13378.3	52852.16	5.8	86.5	"	
0315	62	21.36	35	9.45	y	y	y	y			6.3	76.4	"	
0330	62	20.78	35	7.29	y	y	y	y	13371	52711.21	4.8	69.5	"	
0346	62	20.17	35	4.53	y	y	y	y			5.0	81.5	"	
0402	62	19.56	35	1.75	y	y	y	y	13369.4	52719	5.9	2.4	"	
0417	62	18.97	34	59.11	y	y	y	y			6.0	87	"	
0428	62	18.52	34	57.05	y	y	y	y	13362.9	52900	6.9	89		
0445	62	17.87	34	54.08	y	y	y	y			6.5	82		
0500	62	17.22	34	51.14	y	y	y	y	13369.6	53275	6.7	66		
0515	62	16.66	34	48.61	y	y	y	y			6.7	78		
0532	62	15.96	34	45.67	y	y	y	y	13369.2	52767	7.4	73		
0545	62	15.34	34	43.19	y	y	y	y			6.5	72		
0559	62	14.75	34	40.96	y	y	y	y	13367.8	52603	6.2	65		
0615	62	13.97	34	38.00	y	y	y	y			6.9	70		
0629	62	13.34	34	35.59	y	y	y	y	13307.7	52855	8.2	70		
0647	62	12.51	34	32.46	y	y	y	y			7.2	73		
0659	62	11.97	34	30.37	y	y	y	y	13412.6	52638	8.2	78		
0717	62	11.15	34	27.26	y	y	y	y			9.8	64		
0738	62	10.19	34	23.62	y	y	y	y	13366.4	52927	7.9	73		
0745	62	9.92	34	22.61	y	y	y	y			7.9	76	1m swell	
0800	62	9.21	34	19.92	y	y	y	y	13368.8	53057	7.7	73		
0815	62	8.54	34	17.37	y	y	y	y			6.4	70		
0830	62	7.86	34	14.82	y	y	y	y	13359.3	53206	8.9	91		
0845	62	7.19	34	12.30	y	y	y	y			7.9	97		
0900	62	6.52	34	9.74	y	y	y	y	13356.7	52872	5.9	103		
0915	62	6.20	34	6.76	y	y	y	y			5.3	133	1-2m swell	
0930	62	6.12	34	3.96	y	y	y	y	13356.1	52888	4.5	127		
0946	62	6.05	34	0.80	y	y	y	y			6.0	137		
1000	62	5.97	33	57.98	y	y	y	y	13357.8	52935	4.5	144		
1017	62	5.91	33	54.75	y	y	y	y			4.4	132		
1031	62	5.85	33	51.93	y	y	y	y	13357.8	53022	3.8	131		
1046	62	5.76	33	49.06	y	y	y	y			5.1	142		
1102	62	5.69	33	45.92	y	y	y	y	13358.8	52992	5.5	145	1m swell	XBT deployed at 11.06
1116	62	5.63	33	43.22	y	y	y	y			2.6	167		
1131	62	5.56	33	40.32	y	y	y	y	13362.6	52875	2.9	153		
1147	62	5.49	33	37.11	y	y	y	y			2.7	182		
1200	62	5.42	33	34.54	y	y	y	y	13362.5	52874	2.5	157		
1215	62	5.35	33	31.56	y	y	y	y			2.3	186		
1230	62	5.28	33	28.49	y	y	y	y	13366.7	52873	1.8	164		
1244	62	5.21	33	25.77	y	y	y	y			1.2	163		
1300	62	5.13	33	22.35	y	y	y	y	13366	52798	3.8	156		
1315	62	5.06	33	19.36	y	y	y	y			7.6	153		
1330	62	4.98	33	16.04	y	y	y	y	13363.1	52648	3.1	181		
1355	62	4.84	33	11.13	y	y	y	y			1.3	287		
1400	62	4.87	33	9.94	y	y	y	y	13364.4	52846	2.2	178		
1415	62	4.82	33	7.01	y	y	y	y			3.5	195		
1430	62	4.76	33	3.72	y	y	y	y	13363.7	52686	2.2	174		
1447	62	4.69	33	0.02	y	y	y	y			4.4	161		
1500	62	4.67	32	58.05	y	y	y	y	13368.1	52326	3.1	144		
1515	62	4.60	32	54.60	y	y	y	y			4.8	160		
1531	62	4.54	32	51.18	y	y	y	y	13372.3	52451	3.5	182	gentle	
1545	62	4.49	32	48.58	y	y	y	y			4.1	173	"	
1602	62	4.43	32	45.11	y	y	y	y	13377.9	52522	6.3	150	"	
1615	62	4.38	32	42.18	y	y	y	y			5.2	162	"	
1629	62	4.34	32	39.57	y	y	y	y	13378	52646	3.4	180	"	
1645	62	4.28	32	35.99	y	y	y	y			7.1	161	"	
1700	62	4.23	32	33.46	y	y	y	y	13363.3	52720	2.6	175	"	
1715	62	4.17	32	30.33	y	y	y	y			2.0	181	"	
1730	62	4.12	32	27.26	y	y	y	y	13359.1	52662	4.7	198	"	
1745	62	4.06	32	24.35	y	y	y	y			6.0	161	"	
1800	62	4.01	32	20.83	y	y	y	y	13361.1	52705	7.2	214	"	
1815	62	3.96	32	18.19	y	y	y	y			8.3	204	"	Guns stopped firing due to a problem with the compresso
1830	62	3.91	32	15.60	y	y	y	y	13363.8	52732	3.8	167	"	
1845	62	3.85	32	12.20	y	y	y	y			4.4	216	"	
1900	62	3.80	32	9.15	y	y	y	y	13356.3	52772	4.9	207		
1915	62	3.74	32	6.19	y	y	y	y			2.9	168		
1930	62	3.69	32	3.45	y	y	y	y	13366.2	53090	3.4	200	"	
1945														
2000	62	3.59	31	57.33	y	y	y	y	13370.1	53033	5.2	214		
2016	62	3.54	31	54.27	y	y	y	y			2.5	199		
2031	62	3.48	31	51.43	y	y	y	y	13364.8	52812	6.8	212		
2048	62	3.42	31	47.94	y	y	y	y			5.8	201		
2103	62	3.24	31	45.00	y	y	y	y	13365.6	52356	2.0	138		
2116	62	3.07	31	42.52	y	y	y	y			4.0	136		
2134	62	2.85	31	39.06	y	y	y	y	13364	52346	4.1	169		
2148	62	2.68	31	36.49	y	y	y	y			5.8	156		
2200	62	2.52	31	34.10	y	y	y	y	13366.1	52538	3.6	170		
2215	62	2.33	31	31.28	y	y	y	y			2.3	143		
2230	62	2.15	31	28.35	y	y	y	y	13367.8	52761	2.6	153		
2249	62	1.89	31	24.57	y	y	y	y			1.3	93		Sunset 2246
2301	62	1.74	31	22.28	y	y	y	y	13368.9	52493	3.7	171		
2315	62	1.57	31	19.79	y	y	y	y			3.8	184		
2330	62	1.39	31	16.89	y	y	y	y	13370.2	52659	3.3	152		
2345	62	1.19	31	14.04	y	y	y	y			3.1	180		

Every 30 min, for important events and not for birds during turns.

Seismic log

Line No:	**2 SEQ 1**				**Date:**	###		**Julian Day:**	215	**Page No:**				Depth of Gun 1: 5.5m									Array Volume: 355
														Depth of Gun 2:									
	Vessel GPS				Bird 1		Bird 2		Bird 3		Bird 4		Bird 5						Tailbuoy GPS				
Time GMT	Lat		Long		Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Ship H'ding	CMG	Shot no.	FFID	Lat		Long		MISFIRE, Feathering angle, sea state, current, other comments
0000	62	29.92	35	43.11	6.1	149	6.6	156	7.2	147	7	158	6.9	159	129	144	2584	2584	62	30.59	35	44.79	
0015	62	29.01	35	41.16	6.6	161	6.8	147	7.1	158	7.2	146	7.3	162	132	147	2641	2641	62	39.7	35	42.82	
30	62	27.98	35	38.86	6.2	163	6.6	159	7.4	160	7.1	165	7	159	135	150	2701	2699	62	38.67	35	40.49	
0045	62	27.25	35	36.79	7.2	147	7.5	141	8	147	7.8	149	7.6	158	115	128	2760	2758	62	37.82	35	38.62	XBT deployed.
0100	62	26.68	35	34.25	7	133	6.7	141	6.5	128	6.5	135	7.2	132	113	128	2820	2818	62	37.09	35	36.28	
0115	62	26.03	35	31.3	6.8	131	6.6	139	6.7	135	7.3	130	7.1	128	116	132	2883	2881	62	36.45	35	33.34	
0130	62	25.45	35	28.61	6.9	143	7	132	7.4	143	7.2	135	7.4	144	118	125	2943	2941	62	25.86	35	30.62	
0146	62	24.83	35	25.79	7	125	7	134	7.2	137	7.1	138	7.1	139	117	128	3007	3005	62	25.24	35	27.8	
0200	62	24.29	35	23.38	7.1	140	7	137	6.6	132	6.8	133	7.3	127	111	126	3061	3059	62	24.71	35	25.36	
0215	62	23.67	35	20.49	6.6	138	6.7	134	6.8	136	6.8	140	7	142	121	132	2123	3121	62	24.08	35	22.48	
0235	62	22.93	35	17.12	6.5	140	6.6	144	7	136	6.8	134	7.2	141	123	131	3200	3198	62	23.37	35	19.15	
0246	62	22.49	35	17.14	6.6	142	6.8	138	7.5	133	7.4	139	7	143	123	134	3246	3244	62	22.94	35	17.1	
0300	62	21.94	35	12.66	7.3	142	7	144	7.6	140	7.1	142	6.7	146	113	123	3302	3300	62	22.41	35	14.6	
0316	62	21.33	35	9.84	7.3	133	6.5	137	7.2	130	7.2	130	6.9	146	116	131	3365	3363	62	21.78	35	11.79	
0330	62	20.73	35	7.14	7.3	142	6.9	134	7.4	137	7.1	157	6.9	146	117	130	3424	3422	62	21.21	35	9.12	
0345	62	20.16	35	4.52	6.6	140	6.5	133	6.9	139	6.7	144	6.8	134	120	130	3482	3480	62	20.63	35	6.48	
0349	62	19.64	35	2.14	6.4	124	6.8	115	7.2	119	6.7	109	6.9	126	122	130	3541	3539	62	20.1	35	4.11	
0415	62	19.03	34	59.38	6.8	121	6.8	125	6.9	124	7.2	128	7.1	128	120	127	3602	3600	62	19.51	35	1.34	
0433	62	6.39	34	46.24	6.4	112	6.8	111	7	112	7	117	6.9	117	119	123	3676	3674	62	18.32	34	56.14	
0445	62	17.84	34	53.97	6.9	113	6.9	113	6.5	112	6.8	111	7.2	122	122	126	3730	3728	62	18.27	34	55.61	
0501	62	17.23	34	51.21	6.9	116	6.9	116	6.8	113	7.3	120	7.1	113	120	124	3789	3787	62	17.67	34	52.88	
0515	62	16.66	34	48.58	7	122	6.8	129	7	116	7.3	118	7.4	123	124	128	3848	3846	62	17.13	34	50.33	
0530	62	16.11	34	46.1	6.6	119	6.5	114	6.9	118	7	117	6.9	124	129	131	3904	3902	62	16.6	34	47.8	
0545	62	15.4	34	43.42	7.4	128	7.1	119	7	129	7	122	6.9	126	130	130	3966	3964	62	15.98	34	45.01	
0600	62	14.77	34	41.04	6.62	127	7.43	123	7.27	124	7.23	131	6.65	123	126	129	4020	4018	62	15.41	34	42.77	
0615	62	14.15	34	38.69	6.87	121	6.87	117	6.8	117	6.48	127	6.75	131	131	135	4073	4071	62	14.8	34	40.42	
0630	62	13.34	34	35.62	7.5	126	7.44	131	6.78	120	7.09	130	7.22	119	131	130	4146	4144	62	13.98	34	37.35	
0645	62	12.51	34	32.44	7.21	127	6.96	133	6.97	135	7.35	129	6.74	122	130	130	4217	4215	62	13.14	34	34.19	
0700	62	12.03	34	30.64	7.6	120	7.57	121	7.29	121	6.77	120	6.79	123	129	127	4258	4256	62	12.66	34	32.37	
0715	62	11.31	34	27.89	7.75	120	7.25	118	6.92	126	7.1	129	7.3	129	131	132	4324	4322	62	11.89	34	29.53	
0730	62	10.64	34	25.33	6.15	121	6.57	136	6.91	125	6.89	121	7.51	118	129	132	4381	4379	62	11.26	34	27.11	
0745	62	9.92	34	22.59	6.66	124	6.74	116	6.97	114	7.14	119	6.86	120	132	133	4445	4443	62	10.52	34	24.38	
0800	62	9.19	34	19.84	7.1	126	7.2	122	6.8	133	6.9	115	6.9	124	129	130	4501	4499	62	9.78	34	19.78	
0815	62	8.52	34	17.3	7.1	124	7.3	126	6.9	130	7.1	120	7	125	127	132	4560	4558	62	9.13	34	19.16	~1m swell
0830	62	7.83	34	14.67	7	128	6.9	131	7.3	124	7.4	130	6.9	129	128	129	4620	4618	62	8.4	34	16.45	
0845	62	7.2	34	12.32	7.1	130	6.8	131	7.2	130	7.4	127	6.8	128	127	134	4680	4678	62	7.76	34	14.11	
0900	62	5.52	34	9.78	7.2	124	7.3	127	6.9	121	7.2	123	6.9	122	123	132	4740	4738	62	7.07	34	11.56	
0915	62	6.2	34	6.81	7.3	127	6.9	123	7.2	124	7.1	121	7.3	120	100	100	4800	4798	62	6.4	34	9.02	Completed turn onto new heading
0930	62	6.12	34	3.95	7.1	90	7.2	91	7.4	89	6.9	93	7.4	93	93	103	4860	4858	62	6.19	34	6.1	
0945	62	6.06	34	1.02	7.1	94	6.8	89	7.3	91	7.4	96	6.9	92	97	105	4925	4923	62	6.1	34	3.09	
1000	62	5.99	33	58.24	7	94	6.9	87	7.4	92	7	93	7.1	91	93	106	4980	4978	62	6.02	34	0.27	
1015	62	5.91	33	55.09	8.1	93	7.4	94	7.6	89	7.1	89	6.9	91	90	103	5040	5038	62	5.91	33	57.17	1hr to XBT
1030	62	5.85	33	52.31	8.3	79	7.1	82	7.3	89	6.5	84	6.5	89	90	106	5100	5098	62	5.83	33	54.37	Bird 1 constantly deep
1045	62	5.78	33	49.32	7.7	84	6.1	88	7.1	85	7.1	86	7.1	89	93	108	5160	5158	62	5.74	33	51.27	
1100	62	5.7	33	46.52	8.4	91	6.2	88	6.9	87	7	86	6.8	85	80	106	5219	5217	62	5.66	33	46.46	
1115	62	5.64	33	43.45	7.4	91	6.1	86	6.4	85	6.6	78	6.3	86	89	103	5279	5277	62	5.56	33	45.62	
1130	62	5.56	33	40.3	7.3	89	5.6	92	7.8	82	7.5	79	7	89	85	103	5342	5340	62	5.47	33	42.41	
1145	62	5.48	33	37.27	6.7	81	7	85	6.8	81	7.2	82	7.1	82	81	100	5400	5398	62	5.39	33	39.54	
1200	62	5.43	33	34.65	8.2	106	7	110	6.7	109	6.9	105	6.1	106	87	107	5465	5463	62	5.35	33	34.57	
1215	62	5.35	33	31.58	6.4	111	6.5	106	7.4	106	7.3	103	7.5	101	83	100	5526	5524	62	5.28	33	33.76	
1230	62	5.27	33	28.3	6.4	107	6.3	105	6.5	103	6.6	104	7.5	105	88	105	5589	5587	62	5.21	33	30.53	
1245	62	5.2	33	25.23	6.9	107	7	109	7.2	111	7.4	104	6.8	106	88	104	5648	5646	62	5.14	33	27.5	
1300	62	5.13	33	22.32	7.1	104	7.2	101	6.6	118	6.6	104	6.6	107	88	102	5706	5704	62	5.08	33	24.58	
1315	62	5.05	33	19.05	7.3	110	7.2	110	6.9	110	6.7	111	7.1	108	92	102	5769	767	62	5.03	33	21.26	
1330	62	4.98	33	15.92	6.1	109	7.1	108	6.7	107	6.8	115	7.3	107	92	100	5833	5831	62	4.94	33	18.08	GPS vessel number is low; readings crossed out! (not a serious problem)
1346	62	4.92	33	12.9	6.6	113	6.6	111	7.6	113	7.1	117	6.9	112	89	104	5891	5889	62	4.9	33	15.17	
1400	62	4.87	33	10.05	7	109	7.5	108	7.5	107	6.8	106	7	112	90	107	5946	5946	62	4.86	33	12.25	
1415	62	4.82	33	6.89	7.02	111	6.84	114	7.17	104	6.85	109	6.79	108	94	104.4	6013	6012	62	4.78	33	8.57	
1430	62	4.77	33	3.96	6.82	111	6.59	113	7.59	113	7.4	112	6.93	106	88.5	106.8	6063	6061	62	4.72	33	6.04	
1445	62	4.72	33	0.85	7.37	113	7.04	104	7.22	115	7.1	114	7.21	113	94.7	103.7	6123	6121	62	4.67	33	2.94	
1503	62	4.65	32	57.02	7.08	116	7.25	112	6.73	112	7	110	7.37	113	88.5	101.6	6197	6195	62	4.64	32	56.82	
1516	62	4.6	32	54.44	6.67	110	6.81	116	7.3	113	7.44	110	7.52	111	86.5	98.8	6248	6246	62	4.62	32	56.54	
1530	62	4.55	32	51.52	6.75	109	7.06	108	6.84	116	7.01	111	7.03	115	90.5	101.7	6305	6303	62	4.55	32	53.57	
1546	62	4.5	32	48.24	6.69	103	6.91	110	7.56	108	7.35	109	7.24	116	91.6	###	6370	6368	62	4.49	32	50.27	
1600	62	4.44	32	45.36	7.2	86	7	84	7.7	86	7.3	87	7	90	89	107	6420	6418	62	4.42	32	47.56	
1619	62	4.37	32	43.69	7	86	6.7	92	6.5	91	6.7	88	7	87	90	102	6501	6499	62	4.34	32	43.63	
1642	62	4.29	32	36.85	7.4	84	7.5	83	7.2	87	7	84	6.8	81	94	102	6590	6589	62	4.29	32	39.06	
1659	62	4.22	32	33.09	7.6	90	7.5	84	6.8	89	6.8	86	6.7	90	94	105	6670	6668	62	4.24	32	35.29	
1714	62	4.17	32	30.17	7.7	90	7.6	95	6.9	92	6.8	91	7.3	90	91	94	6724	6722	62	4.2	32	32.37	
1730	62	4.11	32	26.96	6.9	92	6.6	91	6.8	88	7	88	6.9	88	93	103	6794	6793	62	4.14	32	29.1	
1745	62	4.06	32	23.95	6.7	94	6.6	90	7.2	91	7.2	94	7.4	92	87	104	6846	6844	62	4.11	32	26.15	
1801	62	4	32	20.41	6.9	91	7.1	96	6.9	92	6.8	98	6.8	93	97	101	6913	6911	62	4.06	32	22.61	
1811	62	3.96	32	18.51	6.5	113	6.7	114	7	117	6.6	107	6.8	114	99	103	1947	6945	62	4.03	32	20.65	Missed shot. Guns shut off. Compressor problem? Speed reduced to 4.5 kts. Last good: 6936.
1819																							Speed back up to 5kts
1830	62	3.91	32	15.06	7.5	75	7	90	7.2	96	6.7	95	7.4	93	100	102	7021	7019	62	4.1	32	17.05	
1845	62	3.85	32	12.09	7.2	94	7	96	7.25	94	7.2	95	6.8	97	93	94	7083	7081	62	3.98	32	14.04	
1900	62	3.8	32	9.19	6.9	90	6.7	95	7.1	97	6.8	69	7	98	95	103	7141	7139	62	3.93	32	11.21	
1915	62	3.75	32	6.16	7.3	92	7.1	90	6.7	97	6.9	97	7.4	96	99	103	7203	7201	62	3.85	32	8.19	
1930	62	3.7	32	3.33	6.8	91	7.1	91	6.7	92	6.9	91	6.9	70	95	105	7261	7259	62	3.79	32	5.35	
1945	62	3.65	32	0.47	6.8	96	6.7	94	6.7	92	6.9	93	6.8	95	90	102	7320	7318	62	3.71	32	2.51	Calm Sea. Minimal feather
2000	62	3.59	31	57.26	6.9	93	6.7	89	7.2	92	7.4	91	7	90	92	99	7381	7379	62	3.63	31	59.5	High HDOP ~2; 9 satellites
2006	62																7407	7405	62				QC down
2015	62	3.53	31	54.35	6.4	88	6.6	89	6.7	84	7	88	6.8	96	83	98	7441	7439	62	3.54	31	56.01	?Hydrophone down - "Missed shots" FFID 7439 last "good" one before hydrophone outage
2030	62	3.48	31	51.41	6.9	89	7.1	88	6.8	84	6.9	90	6.6	87	88	101	7501	7499	62	3.48	31	53.46	Direct arrival looks fine.
2045	62	3.43	31	48.46	6.8	87	7.2	79	6.5	89	6.6	89	6.7	87	91	102	7562	7560	62	3.42	31	50.55	
2100	62	3.29	31	45.67	7.3	92	7.2	90	6.6	86	6.7	97	7.1	93	90	106	7622	7620	62	3.36	31	47.29	Turning onto new segment
2115	62	3.09	31	46.69	7.1	87	7.1	97	7.3	93	6.8	90	7.1	90	101	114	7680	7678	62	3.17	31	44.81	
2130	62	2.9	31	39.94	6.9	94	7	87	7.1	91	6.8	90	6.9	94	89	99	7740	7738	62	2.99	31	42.2	
2145	62	2.71	31	36.96	6.4	92	6.9	86	7.4	89	6.7	93	7.2	91	90	100	7800	7798	62	2.79	31	39	
2200	62	2.51	31	33.93	7	110	6.7	92	6.2	89	7.2	93	7.1	94	92	107	7861	7859	62	2.61	31	36.26	
2215	62	2.33	31	31.31	6.8	90	6.6	94	7	99	7.3	107	7.3	93	96	111	7921	7919	62	2.44	31	33.36	
2230	62	2.14	31	28.37	7.4	95	6.8	107	6.6	92	6.7	93	6.7	89	95	107	7981	7979	62	2.25	31	30.55	swell 2m, occasional noise
2245	62	1.96	31	22.55	7.3	95	7.2	90	7.1	97	7.2	89	6.9	98	101	110	8041	8039	62	2.07	31	25.48	
2300	62	1.77	31	22.73	6.8	93	6.8	92	7.4	98	7.1	83	7	91	94	104	8101	8099	62	1.88	31	24.93	Swell picked up
2315	62	1.57	31	19.8	6.6	95	6.5	91	7.1	97	7	106	7.4	94	91	105	8160	8158	62	1.69	31	19.71	
2330	62	1.37	31	16.65	7.2	96	7.2	92	7.2	92	7.3	101	7.4	96	100	110	8221	8219	62	1.5	31	18.83	
2345	62	1.19	31	14.01	7.6	95	7.4	97	7.6	90	7.1	94	7.4	97	107	108	8281	8279	62	1.34	31	16.25	

Julian Day: Date: Sheet Number:

Time	Lat		Lon		Water	Head.	SOW	SOG	EM710	EM120				EA600	SBP		ER60	OLEX	Comments
(GMT)	D	DM	D	DM	depth (m)		(kts)	(kts)	rec.	rec	Line cnt.			rec.	rec.	Data file	rec.	rec.	
0000	62	1.03	31	11.53	2269	96	5.4	5.6	n	y	0082	93	JC050-2	y	y	210_1619_430	y	y	
0015	62	0.79	31	7.90	2348	91	5.0	5.2	n	y	0082	75	JC050-2	y	y	210_1619_432	y	y	
0030	62	0.62	31	5.25	2393	101	5.6	5.4	n	y	0082	61	JC050-2	y	y	210_1619_433	y	y	
0056	62	0.30	31	0.21	2573	115	5.5	5.9	n	y	0082	35	JC050-2	y	y	210_1619_436	y	y	XBT launched
0117	62	0.02	30	56.21	2547	88	5.6	5.7	n	y	0082	14	JC050-2	y	y	210_1619_438	y	y	
0130	61	9.85	30	53.63	2171	106	5.5	5.5	n	y	0082	1	JC050-2	y	y	210_1619_439	y	y	
0150	62	0.00	30	49.68	2057	104	5.5	5.4	n	y	0083	100	JC050-2	y	y	210_1619_442	y	y	SBP data looks low quality
0203	61	59.44	30	47.32	2160	101	5.3	5.2	n	y	0083	88	JC050-2	y	y	210_1619_443	y	y	
0216	61	59.26	30	44.69	1941	92	5.4	5.5	n	y	0083	76	JC050-2	y	y	210_1619_445	y	y	
0229	61	59.12	30	42.47	2259	105	6.0	5.8	n	y	0083	62	JC050-2	y	y	210_1619_446	y	y	
0244	61	58.91	30	39.32	2191	98	5.4	5.6	n	y	0083	46	JC050-2	y	y	210_1619_448	y	y	
0300	61	58.70	30	36.21	2004	109	5.9	5.3	n	y	0083	30	JC050-2	y	y	210_1619_450	y	y	
0400	61	57.99	30	25.43	2008	101	5.4	5.7	n	y	0084	92	JC050-2	y	y	210_1619_456	y	y	
0415	61	57.78	30	22.25	1924	84	4.9	5.3	n	y	0084	77	JC050-2	y	y	210_1619_458	y	y	
0430	61	57.58	30	19.33	1908	105	5.3	5.4	n	y	0084	62	JC050-2	y	y	210_1619_460	y	y	
0445	61	57.40	30	16.48	2064	106	5.4	5.9	n	y	0084	48	JC050-2	y	y	210_1619_461	y	y	EA600: patchy data
0500	61	57.23	30	13.87	2088	101	5.8	5.4	n	y	0084	32	JC050-2	y	y	210_1619_463	y	y	
0515	61	57.01	30	10.52	2040	105	5.5	5.7	n	y	0084	16	JC050-2	y	y	210_1619_465	y	y	
0530	61	56.82	30	7.80	2080	106	5.6	5.4	n	y	0085	120	JC050-2	y	y	210_1619_467	y	y	
0545	61	56.63	30	4.91	2080	104	5.7	5.6	n	y	0085	107	JC050-2	y	y	210_1619_468	y	y	
0600	61	56.45	30	2.14	2075	99	5.9	5.5	n	y	0085	91	JC050-2	y	y	210_1619_470	y	y	
0615	61	56.24	30	0.01	2061	96	5.0	5.3	n	y	0085	77	JC050-2	y	y	210_1619_472	y	y	
0630	61	56.05	29	56.24	1996	95	6.1	5.6	n	y	0085	62	JC050-2	y	y	210_1619_474	y	y	
0645	61	55.88	29	53.47	2067	115	5.2	5.0	n	y	0085	48	JC050-2	y	y	210_1619_475	y	y	
0659	61	55.69	29	50.67	2043	100	4.6	5.0	n	y	0085	33	JC050-2	y	y	210_1619_477	y	y	Lost some communication with streamer. Bringing guns and streamer in.
0715	61	55.50	29	47.92	2039	103	4.9	5.0	n	y	0085	17	JC050-2	y	y	210_1619_479	y	y	
0730	61	55.36	29	45.27	2050	103	5.4	6.0	n	y	0085	120	JC050-2	y	y	210_1619_481	y	y	Stop shooting @ 0720. Turning stbd. Putty not working - check Techsas in terminal room
0741										n									EM120 cut out - automatic shut down.
0745	61	54.70	29	42.51	2042	141	5.4	5.2	n	y	0085	114	JC050-2	y	y	210_1619_483	y	y	EM120 restarted ok
0759	61	53.87	29	40.28	2048	129	5.4	5.7	n	y	0086	95	JC050-2	y	y	210_1619_486	y	y	
0815	61	52.97	29	37.82	2059	132	5.5	5.2	n	y	0086	84	JC050-2	y	y	210_1619_488	y	y	Retrieving streamer
0831	61	52.10	29	35.46	1986	128	5.4	5.3	n	y	0086	68	JC050-2	y	y	210_1619_490	y	y	SBP reset
0846	61	51.12	29	33.72	1807	165	5.1	5.3	n	y	0086	54	JC050-2	y	y	216-0834_001	y	y	
0901	61	49.86	29	33.85	-	210	4.7	4.9	n	y	0086	38	JC050-2	y	y	216-0834_005	y	y	SBP poor
0915	61	49.06	29	35.67	1835	250	5.3	5.4	n	y	0086	25	JC050-2	y	y	216-0834_007	y	y	
0930	61	49.05	29	38.46	2072	279	5.1	5.1	n	y	0086	9	JC050-2	y	y	216-0834_009	y	y	SBP awful
0945	61	49.30	29	41.04	2042	287	4.9	4.9	n	y	0087	115	JC050-2	y	y	216-0834_011	y	y	All swath poor
1000	61	49.56	29	43.51	2071	286	3.9	4.7	n	y	0087	100	JC050-2	y	y	216-0834_012	y	y	
1015	61	49.79	29	45.86	2085	278	4.6	4.8	n	y	0087	85	JC050-2	y	y	216-0834_014	y	y	
1031	61	50.08	29	48.84	2082	280	4.3	4.4	n	y	0087	66	JC050-2	y	y	216-0834_016	y	y	
1046	61	50.33	29	51.02	2001	279	3.9	4.6	n	y	0087	54	JC050-2	y	y	216-0834_018	y	y	
1101	61	50.61	29	53.35	2088	290	4.1	4.0	n	y	0087	39	JC050-2	y	y	216-0834_020	y	y	
1115	61	50.89	29	55.37	2087	290	4.1	4.0	n	y	0087	24	JC050-2	y	y	216-0834_021	y	y	
1130	61	51.16	29	57.37	2089	278	4.2	4.0	n	y	0087	10	JC050-2	y	y	216-0834_023	y	y	
1145	61	51.47	29	59.48	2089	278	4.2	3.8	n	y	0088	115	JC050-2	y	y	216-0834_025	y	y	
1200	61	51.84	30	1.63	2034	286	4.8	4.2	n	y	0088	99	JC050-2	y	y	216-0834_027	y	y	SBP poor
1215	61	52.20	30	3.68	2093	299	3.9	4.2	n	y	0088	84	JC050-2	y	y	216-0834_028	y	y	
1230	61	52.45	30	4.82	2097	235	2.4	2.3	n	y	0088	70	JC050-2	y	y	216-0834_030	y	y	
1243	61	52.40	30	4.94	2095	159	0.5	0.1	n	y	0088	56	JC050-2	y	y	216-0834_031	y	y	Deploying XCTD
1259	61	52.06	30	5.32	2092	208	1.6	1.7	n	y	0088	41	JC050-2	y	y	216-0834_033	y	y	
1315	61	51.82	30	5.53	2093	224	0.3	0.2	n	y	0088	25	JC050-2	y	y	216-0834_035	y	y	
1330	61	51.89	30	5.66	2096	217	1.4	0.4	n	y	0088	11	JC050-2	y	y	216-0834_037	y	y	
1346	61	51.89	30	5.65	2096	192	0.2	0.2	n	y	0089	114	JC050-2	y	y	216-0834_039	y	y	
1400	61	51.90	30	5.67	2097	193	0.3	0.1	n	y	0089	101	JC050-2	y	y	216-0834_040	y	y	
1416	61	51.73	30	7.22	2106	277	3.4	3.3	n	y	0089	84	JC050-2	y	y	216-0834_042	y	y	
1431	61	52.13	30	9.30	2086	286	3.9	3.9	n	y	0089	68	JC050-2	y	y	216-0834_044	y	y	
1447	61	52.44	30	11.39	2127	263	3.5	3.8	n	y	0089	52	JC050-2	y	y	216-0834_046	y	y	
1500	61	52.60	30	13.25	2121	264	4.2	4.1	n	y	0089	39	JC050-2	y	y	216-0834_047	y	y	
1515	61	52.76	30	15.24	2080	280	3.9	4.0	n	y	0089	25	JC050-2	y	y	216-0834_049	y	y	
1530	61	53.01	30	17.77	2052	263	3.5	4.1	n	y	0089	8	JC050-2	y	y	216-0834_051	y	y	
1546	61	53.19	30	19.87	2127	264	4.1	4.1	n	y	0090	114	JC050-2	y	y	216-0834_053	y	y	
1601	61	53.38	30	21.97	2053	279	4.8	4.0	n	y	0090	98	JC050-2	y	y	216-0834_054	y	y	
1615	61	53.57	30	24.20	2136	263	5.1	5.2	n	y	0090	81	JC050-2	y	y	216-0834_056	y	y	
1628	61	53.68	30	26.21	2112	272	5.1	5.1	n	y	0090	73	JC050-2	y	y	216-0834_057	y	y	
1645	61	54.00	30	29.08	2141	293	5.0	4.9	n	y	0090	56	JC050-2	y	y	216-0834_059	y	y	
1659	61	55.08	30	30.51	2148	343	5.0	4.9	n	y	0090	41	JC050-2	y	y	216-0834_061	y	y	Problem with bird 3 during streamer deployment
1718	61	50.53	30	30.10	2151	026	4.6	4.7	n	y	0090	22	JC050-2	y	y	216-0834_063	y	y	
1730	61	57.20	30	29.07	2147	057	4.3	4.4	n	y	0090	11	JC050-2	y	y	216-0834_064	y	y	
1745	61	57.68	30	26.82	2010	072	4.4	4.5	n	y	0091	116	JC050-2	y	y	216-0834_066	y	y	No data on SBP
1805	61	57.50	30	23.59	1940	110	5.1	4.9	n	y	0091	96	JC050-2	y	y	216-0834_071	y	y	
1815	61	57.42	30	22.12	1903	103	5.2	5.1	n	y	0091	89	JC050-2	y	y	216-0834_072	y	y	
1836	61	57.13	30	17.66	1981	095	4.7	5.3	n	y	0091	63	JC050-2	y	y	216-0834_075	y	y	
1845	61	57.04	30	16.25	2016	104	5.2	5.1	n	y	0091	56	JC050-2	y	y	216-0834_076	y	y	
1859	61	56.38	30	13.61	2046	107	5.1	4.9	n	y	0091	41	JC050-2	y	y	216-0834_077	y	y	
1915	61	56.71	30	11.01	2071	090	5.6	5.6	n	y	0091	26	JC050-2	y	y	216-0834_079	y	y	
1930	61	56.50	30	7.75	2074	103	6.2	5.4	n	y	0091	10	JC050-2	y	y	216-0834_081	y	y	
1945	61	56.35	30	5.19	2079	108	5.6	5.4	n	y	0092	113	JC050-2	y	y	216-0834_083	y	y	
2000	61	56.15	30	2.03	2075	102	5.5	5.6	n	y	0092	100	JC050-2	y	y	216-0834_087	y	y	
2015	61	55.97	29	58.84	2054	86	5.4	5.6	n	y	0092	84	JC050-2	y	y	216-0834_088	y	y	
2030	61	55.81	29	56.85	1975	100	5.3	5.7	n	y	0092	70	JC050-2	y	y	216-0834_093	y	y	
2045	61	55.64	29	53.36	2046	100	5.5	5.5	n	y	0092	55	JC050-2	y	y	216-0834_094	y	y	
2103	61	55.42	29	49.71	2045	102	5.5	5.4	n	y	0092	37	JC050-2	y	y	216-0834_097	y	y	
2115	61	55.28	29	47.27	2039	101	5.3	5.5	n	y	0092	24	JC050-2	y	y	216-0834_098	y	y	
2131	61	55.11	29	44.29	2042	101	5.5	5.6	n	y	0092	9	JC050-2	y	y	216-0834_100	y	y	
2146	61	54.93	29	41.29	2043	99	5.2	5.4	n	y	0093	113	JC050-2	y	y	216-0834_104	y	y	ER60 lost contact with GPS at 21.40
2217	61	54.59	29	35.47	1965	95	5.3	5.6	n	y	0093	83	JC050-2	y	y	216-0834_107	y	y	
2231	61	54.43	29	32.76	2001	100	5.5	5.4	n	y	0093	68	JC050-2	y	y	216-0834_109	y	y	
2246	61	54.25	29	29.86	1975	102	5.9	5.4	n	y	0093	54	JC050-2	y	y	216-0834_111	y	y	
2300	61	54.08	29	26.96	1955	102	6.0	5.8	n	y	0093	40	JC050-2	y	y	216-0834_112	y	y	
2315	61	53.90	29	23.93	1886	102	5.9	5.4	n	y	0093	25	JC050-2	y	y	216-0834_114	y	y	
2331	61	53.71	29	20.70	1798	92	6.3	5.8	n	y	0093	9	JC050-2	y	y	216-0834_116	y	y	
2345	61	53.51	29	17.42	1889	102	5.3	5.7	n	y	0094	112	JC050-2	y	y	216-0834_119	y	y	

Day: Date: Sheet Number:

Time	Lat		Lon		ADCP150	ADCP75	Techsas	Level-C	Grav.	Mag.	Wind		Sea State	Comments, eg state of seismic exp.		
(GMT)	D	DM	D	DM	rec.	rec.	rec.	rec.	(mgal)	(nT)	Speed	Dir.				
0000	62	1.03	31	11.43	y	y	y	y	13364.1	52594.78	3.1	128	Calm			
0016	62	0.79	31	7.88	y	y	y	y			2.6	136	"			
0030	62	0.62	31	5.31	y	y	y	y	13361.4	52610.59	1.8	146	"			
0055	62	0.79	31	0.29	y	y	y	y			3.1	166	"	XBT launched		
0115	62	0.04	30	56.43	y	y	y	y	13360.9	53022.34	1.6	215	"			
0130	61	59.85	30	53.66	y	y	y	y			1.9	119	"			
0153	61	59.56	30	49.22	y	y	y	y	13374	52858.04	3.6	119	"			
0203	61	59.43	30	47.29	y	y	y	y			2.7	172	"			
0216	61	59.26	30	44.60	y	y	y	y	13368.8	52696.74	1.8	183	"			
0228	61	59.12	30	42.52	y	y	y	y			2.8	125	"			
0245	61	58.91	30	39.25	y	y	y	y	13370.2	52474.16	4.4	199	"			
0300	61	58.71	30	36.32	y	y	y	y			2.3	210				
0400	61	57.99	30	25.43	y	y	y	y	13372.4	52281	2.6	193	1m swell			
0415	61	57.78	30	22.25	y	y	y	y			2.4	193	"			
0430	61	57.58	30	19.33	y	y	y	y	13382.2	52715	2.2	209				
0445	61	57.40	30	16.48	y	y	y	y			2.5	206				
0500	61	57.23	30	13.87	y	y	y	y	13375.4	52179	3.2	221				
0515	61	57.01	30	10.52	y	y	y	y			1.5	230				
0530	61	56.82	30	7.80	y	y	y	y	13372.9	52100	1.2	231				
0545	61	56.63	30	4.91	y	y	y	y			1.0	260	Calm			
0600	61	56.45	30	2.14	y	y	y	y	13369.6	52258	0.8	261				
0615	61	56.24	30	0.01	y	y	y	y			0.9	329				
0630	61	56.05	29	26.24	y	y	y	y	13374.2	52818	1.1	017				
0645	61	55.88	29	53.47	y	y	y	y			1.1	043				
0700	61	55.70	29	50.78	y	y	y	y	13371.2	52694	1.4	079		Streamer has failed: prepping to bring init & the guns in		
0715	61	55.51	29	47.85	y	y	y	y			2.1	96		The problem is with the tailbuoy. 0720: stop shooting.		
0730	61	55.34	29	45.27	y	y	y	y	13362.2	52757	2.3	96		Increasing spd to 5.5kts; starboard turn		
0745	61	54.70	29	42.51	y	y	y	y			3.6	59				
0800	61	53.85	29	40.15	y	y	n	n	13351.1	52730	3.1	70	1-2m swell	POSMV error (Techsas and LevelC)		
0815	61	52.97	29	37.82	y	y	y	y			2.9	70	1m swell	POSMV OK		
0831	61	52.10	29	35.46	y	y	y	y	13350.9	52599	4.1	67	1-2m swell			
0846	61	51.12	29	33.72	y	y	y	y	13356.9	52292	5.6	46		Streamer coming in		
0901	61	49.86	29	33.86	y	y	y	y			7.4	19		Turning stbd		
0915	61	49.06	29	35.67	y	y	y	y	13441.8	52120	7.2	356				
0930	61	49.05	29	38.46	y	y	y	y			6.4	342	2m swell	Straight on reciprocal line now		
0945	61	49.30	29	41.04	y	y	y	y	13386.3	52524	8.9	326		Mag not updating		
1000	61	49.56	29	43.51	y	y	y	y		52619	6.9	337		Mag back on		
1015	61	49.79	29	45.86	y	y	y	y	13383.5		6.7	326				
1034	61	50.12	29	49.09	y	y	y	y		52414	7.6	335				
1046	61	50.33	29	51.02	y	y	y	y	13390.5		7.9	323				
1101	61	50.61	29	53.34	y	y	y	y		52526	7.8	318				
1115	61	50.89	29	55.37	y	y	y	y	13390.8		8.8	325				
1130	61	51.16	29	57.37	y	y	y	y		52566	8.7	312				
1145	61	51.47	29	49.47	y	y	y	y	13394.9		9.6	311		Streamer in. Shutting down system. Going to bring in magnetometer		
1200	61	51.86	30	1.85	y	y	y	y	13400.7		9.2	317				
1215	61	52.20	30	3.68	y	y	y	y			7.8	320				
1231	61	52.42	30	4.94	y	y	y	y	13391.9		6.6	17.7				
1244	61	52.40	30	4.94	y	y	y	y			4.4	13.7				
1300	61	52.04	30	5.33	y	y	y	y	13380.5		5.8	354				
1315	61	51.82	30	5.54	y	y	y	y			5.1	321				
1328	61	51.88	30	5.64	y	y	y	y	13379.1		5.9	326				
1345	61	51.89	30	5.65	y	y	y	y			5.2	5				
1358	61	51.89	30	5.60	y	y	y	y	13376.5		4.4	12.7				
1416	61	51.73	30	7.23	y	y	y	y			5.8	282.1		Tailbuoy in water		
1431	61	52.10	30	9.21	y	y	y	y	13397.2	52562	6.6	293		Magnetometer in water - getting readings but no GPS data		
1446	61	52.42	30	11.26	y	y	y	y			7.1	300				
1458	61	52.56	30	12.91	y	y	y	y	13396.7	52423	5.6	298		Magnetometer working		
1515	61	52.78	30	15.40	y	y	y	y			7.0	288				
1530	61	52.98	30	17.61	y	y	y	y	13401.7	52416	7.5	284				
1545	61	53.18	30	19.77	y	y	y	y			7.1	290.1				
1601	61	53.39	30	22.04	y	y	y	y	13401.5	52651	5.6	279		Magnetometer just crashed - 1604, have to bring it in		
1615	61	53.57	30	24.20	y	y	y	y			7.7	292	Calm <1m swell			
1628	61	53.68	30	26.21	y	y	y	y	13406.4		8.3	289	"			
1645	61	54.06	30	29.08	y	y	y	y			6.3	254	"			
1700	61	55.15	30	30.54	y	y	y	y	13397.3		3.5	192				
1705	61	55.54	30	30.55									Calm	Deploying magnetometer on port side		
1718	61	56.53	30	30.10	y	y	y	y	13382.7		4.9	138	"			
1730	61	57.18	30	29.11	y	y	y	y			6.3	095	"			
1745	61	57.68	30	26.82	y	y	y	y	13371.5		4.8	060	"			
1805	61	57.50	30	23.59	y	y	y	y			8.9	046	"			
1815	61	57.42	30	22.12	y	y	y	y	13379.6	52433	7.2	041	"			
1836	61	57.12	30	17.59	y	y	y	y			8.5	042	"			
1844	61	57.04	30	16.29	y	y	y	y	13422.9	52491	8.4	051	"			
1859	61	56.88	30	13.66	y	y	y	y			9.4	038	"			
1915	61	56.71	30	11.01	y	y	y	y	13373.8	52491	9.1	032	"			
1930	61	56.50	30	7.75	y	y	y	y			8.2	035	"			
1945	61	56.35	30	5.19	y	y	y	y	13370.6	52403	9.1	037	"			
2000	61	56.11	30	1.20	y	y	y	y		52406	9.1	039	Calm			
2017	61	51.96	29	58.63	y	y	y	y	13372.5	52405	8.8	036		Restarted Magnetometer, had frozen		
2030	61	55.81	29	56.85	y	y	y	y		52885	9.0	037				
2045	61	55.64	29	53.36	y	y	y	y	13371.2	52718	10.1	048				
2103	61	55.42	29	49.71	y	y	y	y			10.5	039				
2115	61	55.29	29	47.26	y	y	y	y	13363.3	52805	9.4	048	Calm			
2131	61	55.11	29	44.29	y	y	y	y			9.8	028				
2146	61	54.93	29	41.29	y	y	y	y	13362.9	52605	9.9	030				
2217	61	54.59	29	35.47	y	y	y	y			10.0	043				
2231	61	54.43	29	32.76	y	y	y	y	13362.1	52594	9.3	037	1m swell			
2245	61	54.27	29	30.13	y	y	y	y			8.8	033				
2301	61	54.06	29	26.69	y	y	y	y	13363.7	52466	8.4	036				
2315	61	53.90	29	23.92	y	y	y	y			10.3	053				
2331	61	53.71	29	20.80	y	y	y	y	13366.2	52301	9.6	045				
2345	61	53.51	29	17.42	y	y	y	y			9.4	022				

Every 30 min, for important events and not for birds during turns.

Seismic log

																Depth of Gun 2:									
	Vessel GPS				Bird 1		Bird 2		Bird 3		Bird 4		Bird 5						Tailbuoy GPS				
Time GMT	Lat		Long		Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Ship H'ding	CMG	Shot no.	FFID	Lat		Long		MISFIRE, Feathering angle, sea state, current, other comments
0000	62	1.01	31	11.23	7.2	93	6.9	102	6.4	100	6.4	96	6.8	91	95	105	8341	8339	62	1.14	31	13.39	
0015	62	0.81	31	8.24	7.4	122	7.4	124	7.1	111	7.2	112	7.3	118	98	103	8401	8399	62	0.96	31	10.46	
30	62	0.62	31	5.37	7.7	100	7.4	119	7.2	118	7	128	6.8	116	98	104	8462	8460	62	0.48	31	7.58	Ready to deploy an XBT
0045	62	0.39	31	1.89	7.5	117	7.4	110	6.8	105	7.2	105	6.7	112	100	106	8533	8531	62	0.54	31	4.58	XBT deployed
0100	62	0.12	30	59.25	6.5	118	7	115	6.8	120	6.4	117	6.9	113	103	106	8588	8586	62	0.36	31	1.49	
0115	62	0.01	30	56.1	7.2	118	7.1	112	7.2	115	7.4	116	6.7	120	98	105	8655	8653	62	0.16	30	58.34	
0130	61	59.86	30	53.75	6.7	112	7.2	113	6.8	112	6.8	105	6.9	110	109	116	8703	8701	61	59.99	30	55.99	
0145	61	59.65	30	56.66	6.9	122	6.8	113	6.8	115	6.9	119	7.1	120	100	106	8768	8766	61	59.8	30	52.88	
0200	61	59.44	30	47.49	7.6	122	7.2	122	7.7	132	7.3	122	6.6	128	100	106	8833	8831	61	59.63	30	47.47	
0218	61	59.25	30	44.61	7.1	123	7.3	119	6.5	114	7.2	122	6.6	119	102	101	8890	8888	61	59.41	30	46.8	
0230	61	59.07	30	41.72	7.05	97	7.15	97	7.42	82	7.17	105	6.9	100	104	106	8952	8950	61	59.25	30	43.78	
0245	61	58.9	30	39.17	6.74	100	7.23	98	7.26	110	6.86	101	7.3	96	108	108	9005	9003	61	59.08	30	41.25	
0300	61	58.71	30	36.31	7.36	92	7.15	98	7.24	105	6.86	96	7.12	95	104	107	9065	9063	61	58.41	30	38.39	
0315	61	58.52	30	33.33	7.43	94	6.94	102	7.14	92	7.75	88	7.55	102	105	113	9128	9126	61	58.73	30	35.31	
0330	61	58.33	30	37.43	6.7	98	6.84	92	6.69	98	7.05	104	7.35	101	105	105	9187	9185	61	58.56	30	37.4	
0346	61	58.13	30	27.47	7.27	106	6.75	106	7.49	108	7.31	110	6.85	99	108	108	9248	9246	61	58.32	30	29.43	
0400	61	57.95	30	24.8	6.9	106	7	101	6.7	93	6.5	100	7.1	113	110	107	9310	9308	61	58.19	30	26.81	
0415	61	57.77	30	22.02	7.1	131	6.9	118	7.5	116	7.4	125	7.6	135	103	107	9364	9362	61	57.99	30	23.9	
0430	61	57.57	30	19.09	6.9	96	6.5	97	7	98	7	97	7.2	96	107	109	9423	9421	61	57.78	30	21.05	
0445	61	57.38	30	16.13	7.4	101	7	103	7	104	7.2	101	7.4	91	109	112	9486	9484	61	57.59	30	18.26	
0500	61	57.19	30	13.27	6.7	120	6.8	114	6.6	126	6.6	118	6.6	129	104	107	9543	9541	61	57.39	30	15.3	
0515	61	57	30	10.53	7.5	104	7	100	7.3	93	7.4	91	6.7	102	106	106	9601	9599	61	57.23	30	12.52	
0530	61	56.82	30	7.67	7.1	95	7.3	91	7.3	94	7.2	94	7.3	96	98	103	9661	9659	61	57.03	30	9.6	
0545	61	56.92	30	4.65	6.8	100	6.6	95	7.1	94	6.5	98	7.1	104	100	110	9722	9720	61	56.82	30	6.67	
0600	61	56.43	30	1.88	7.8	93	7.4	101	6.6	98	6.9	96	7.2	96	104	106	9781	9779	61	56.62	30	3.36	
0615	61	56.24	29	58.97	7.5	92	6.8	97	6.4	93	6.7	93	7.3	97	103	105	9841	9839	61	56.4	30	0.98	
0633	61	56	29	55.33	8.2	97	7.2	97	7.4	99	7	96	6.9	98	98	107	9921	9919	61	56.15	29	57.48	
0645																							Lost connection to streamer twce for ~15 seconds
0680																							Streamer reporting errors, dropped speed to 5kts.
0702	61	55.64	29	49.93											93	103	10033	10031	61	55.76	29	52.1	Data looks like some channels are missing (still see direct wave) going to bring streamer in
0716																							No direct wave appearing now 2 out 4 traces are dead
0717																							Problem is likely to be tailbuoy
0719	61	55.43	29	46.82													10096	10094	61	55.54	29	48.98	Last shot number, bringing guns in
0723																							Begin turing stbd to reciprocal
0745	61	54.46	29	41.89											130	135			61	55.08	29	43.63	Stop firing. Speed to 5.0kts. Bringing streamer in (preparing)
0845	61	51.11	29	33.72											164	168			61	51.94	29	35.06	Fixing scroller/winch setup& turning into weather stbd.
0902	61	49.73	29	33.99											216	216			61	50.74	29	33.61	Electrical fault with scroller being fixed
0915	61	49.05	29	35.79											255	262			61	49.68	29	34.09	Scroller working now
0930	61	49.05	29	38.45											280	289							Turn to sea chmpleted
0933																							Restart streamer recovery
0945	61	49.3	29	40.99	1.8	261	2.8	280	3.7	277	4.5	287	4.4	266	279	289			61	49.11	29	39.13	
0951																							Bird 1 recovered
0957	61	49.55	29	43.46																			Bird 2 recovered
1000	61	49.58	29	43.74															61	49.43	29	42.29	
1003																							Scroller failed again
1020	61	49.87	29	46.71															61	49.74	29	46.75	
1030	61	50.06	29	48.59															61	49.93	29	48.62	
1040																							Restart recovery
1045	61	50.3	29	50.82							4		4.1		280	291			61	50.2	29	49.75	Bird 3 recovered
1105	61	50.68	29	63.95											279	294			61	50.62	29	53.29	
1118	61	50.94	29	55.79											280	294			61	50.92	29	55.48	
1124																							Bird 5 at stern. Scroller failed again
1130																							
1145	61	51.47	29	59.48											280					On deck			Total powerdown coming up soon
1200	61	51.96	30	2.23											278								
1215	61	52.2	30	3.69											280								
1230	61	52.45	30	4.86											225								
1245	61	52.29	30	4.93											209	221							
1301	61	51.99	30	5.38											209	2115							
1315	61	51.82	30	5.53											231	325							
1329	61	51.88	30	5.65											216	321							
1347	61	51.89	30	5.65											193	365							
1415	61	51.73	30	7.22																			Start to depoly streamer
1445																							Bird problem - replacing the node
1535																							First bird in, left in water for testing
1600	61	53.39	30	21.8											265	289							Bird 5 is at 4 m depth in water
1623	61	52.65	30	25.59											264	285							Decrease speed to 5kts; start turn to starb'd to come back to line direction
1630	61	53.74	30	27.07									5.63	263	264	285							Magnetometer fucked. In process of putting compasses & bird out
1645	61	53.95	30	28.68							3.08	266	3.99	265	289	305							Second bird out ok.
1658	61	55.03	30	30.49							5.09	330	4.55	322	344	355							Third bird: problem with deployment. Speed reduced to 4.5kts, currently removing the scrolling
1713	61	56.13	30	30.37					1.21	12.1	4.12	8	3.33	12	15	25							Third bird now in the water ok.
1730	61	57.2	30	29.06			0.02	16	4.16	28	6.3	25	3.63	21	61	58			61	56.79	30	29.85	
1741	61	57.57	30	27.78	0.01	52	2.83	58	5.34	72	6.17	48	3.29	49	85	80			61	57.82	30	29.21	All birds successfully deployed
1800	61	57.55	30	24.33	9.8	97	8	102	5	102	3.1	119	1.6	102	105	102			61	57.81	30	26.39	About to deploy guns
1815	61	57.39	30	21.82											108	104	11000	11001					Begin soft start: Line 2 SEQ 2
1824																							Start to record: good data!
1827	61	57.22	30	19.13											103	106	"	"	61	57.44	30	21.15	Restart line 2 SEG 2. 11 - SOL
1831																	11016	11016					Now operating at full power
1836	61	57.15	30	18.07	7.02	99	6.23	97	7.24	91	6.78	105	7.02	106	105	106	11031	11031	61	57.37	30	20.07	
1845	61	57.04	30	16.37	8.23	96	7.06	92	6.3	97	6.93	96	7.24	98	108	103	11072	11072	61	57.26	30	18.51	
1900	61	56.86	30	13.46	7.29	97	6.3	94	7.3	100	6.98	97	6.8	96	106	104	11136	11136	61	57.07	30	15.61	
1906																							Increase speed to 5.5kts to bring up first bird.
1915	61	56.71	30	11.09	6.34	100	6.31	110	7.26	98	6.97	94	6.91	103	105	104	11187	11187	61	56.92	30	13.23	
1930	61	56.53	30	8.26	6.54	89	6.48	94	7.17	99	7.09	94	6.9	99	104	105	11244	11244	61	56.73	30	10.41	
1945	61	56.33	30	5.02	7.3	94	6.7	105	6.4	94	6.8	95	7	100	107	110	11309	11309	61	56.53	30	7.18	
2000	61	56.14	30	1.82	7.6	97	7.5	94	7.1	98	6.9	89	7.6	90	106	105	11370	11370	61	56.32	30	3.87	
2016	61	67.56	29	59	8.1	122	7.1	111	7.3	119	7.2	124	6.9	129	105	105	11440	11440	61	55.96	29	58.65	
2031	61	55.79	29	55.81	6.4	117	6	114	6.5	115	6.4	123	7.2	123	105	106	11498	11498	61	55.95	29	57.95	
2045	61	55.63	29	53.28	7.5	116	7.4	123	6.8	121	6.9	122	7.6	129	101	106	11550	11550	61	55.8	29	55.45	
2100	61	55.47	29	50.47	6.8	120	7.2	123	6.8	115	7.3	116	6.8	121	107	106	11612	11612	61	55.62	29	52.54	
2115	61	55.29	29	47.52	6.7	112	6.7	117	7.7	115	6.9	132	7.8	124	102	107	11671	11671	61	55.44	29	49.67	
2130	61	55.12	29	44.52	7.1	121	7.3	124	7	118	6.8	114	7.2	118	101	105	11733	11733	61	55.24	29	44.44	
2144	61	54.96	29	41.82	6.6	116	6.7	131	7.1	115	7.2	119	7.1	120	101	105	11790	11790	61	55.07	29	43.94	
2200	61	54.77	29	38.71	6.8	112	7.3	113	6.2	116	6.5	123	7.2	111	100	105	11857	11857	61	54.89	29	38.58	
2215	61	54.61	29	35.94	7.2	113	7.3	118	6.5	111	7.1	119	6.9	108	100	105	11910	11910	61	54.73	29	38.14	
2230	61	54.44	29	33.08	6.6	115	6.8	118	7	116	7	112	7.6	116	104	103	11972	11972	61	54.59	29	35.19	
2245	61	54.25	29	29.76	6.5	102	6.8	93	7.2	94	6.8	101	7.1	88	102	106	12030	12030	61	54.41	29	29.71	Speed increased. Reported vessel astern
2300	61	54.07	29	26.91	6.3	94	6.6	94	7.5	93	7.2	96	6.8	91	101	103	12090	12090	61	54.06	29	26.67	
2316	61	53.9	29	23.79	6.6	97	6.6	90	6.7	91	6.6	93	7.1	94	103	109	12152	12152	61	54.01	29	25.97	
2330	61	53.71	29	20.74	7.5	92	7.2	92	6.6	86	6.8	100	7.1	91	104	101	12212	12212	61	53.7	29	22.51	

Julian Day: Date: Sheet Number:

Time	Lat		Lon		Water	Head.	SOW	SOG	EM710	EM120				EA600	SBP		ER60	OLEX	Comments
(GMT)	D	DM	D	DM	depth (m)		(kts)	(kts)	rec.	rec	Line cnt.			rec.	rec.	Data file	rec.	rec.	
0000	61	53.37	29	14.98	1774	86	5.9	5.5	n	y	0094	99	JC050-2	y	y	216-0834_120	y	y	
0015	61	53.20	29	12.36	1740	96	5.8	5.4	n	y	0094	86	JC050-2	y	y	216-0834_122	y	y	
0028	61	53.05	29	11.66	1699	102	5.4	5.4	n	y	0094	71	JC050-2	y	y	216-0834_124	y	y	
0043	61	52.87	29	6.67	1684	101	5.5	5.6	n	y	0094	56	JC050-2	y	y	216-0834_126	y	y	
0100	61	52.69	29	3.74	1652	101	5.5	5.7	n	y	0094	41	JC050-2	y	y	216-0834_128	y	y	
0115	61	52.49	29	0.50	1541	96	5.9	5.4	n	y	0094	25	JC050-2	y	y	216-0834_131	y	y	
0130	61	52.33	28	57.68	1499	97	5.7	5.6	n	y	0094	10	JC050-2	y	y	216-0834_133	y	y	
0146	61	52.14	28	54.54	1653	96	5.6	5.5	n	y	0095	113	JC050-2	y	y	216-0834_135	y	y	
0200	61	51.97	28	51.82	1795	100	5.5	5.1	n	y	0095	99	JC050-2	y	y	216-0834_137	y	y	
0215	61	51.81	28	48.91	1684	101	5.5	5.5	n	y	0095	84	JC050-2	y	y	216-0834_139	y	y	
0230	61	51.63	28	46.03	1743	101	5.4	5.3	n	y	0095	69	JC050-2	y	y	216-0834_141	y	y	
0246	61	51.45	28	42.48	1649	91	5.3	5.2	n	y	0095	52	JC050-2	y	y	216-0834_144	y	y	
0300	61	51.29	28	40.39	1704	100	5.5	6.0	n	y	0095	39	JC050-2	y	y	216-0834_146	y	y	
0315	61	51.12	28	37.48	1515	97	5.7	5.7	n	y	0095	24	JC050-2	y	y	216-0834_148	y	y	
0330	61	50.96	28	34.96	1618	101	5.3	5.2	n	y	0095	10	JC050-2	y	y	216-0834_150	y	y	
0345	61	50.77	28	31.67	1551	97	5.2	5.3	n	y	0096	114	JC050-2	y	y	216-0834_152	y	y	
0400	61	50.61	28	29.01	1647	101	5.6	5.5	n	y	0096	99	JC050-2	y	y	216-0834_154	y	y	
0415	61	50.46	28	26.65	1652	098	5.2	5.7	n	y	0096	86	JC050-2	y	y	216-0834_156	y	y	
0430	61	50.27	28	23.51	1521	096	5.7	5.5	n	y	0096	71	JC050-2	y	y	216-0834_159	y	y	SBP recording very patchy data
0445	61	50.11	28	20.66	1563	096	5.4	5.2	n	y	0096	57	JC050-2	y	y	216-0834_161	y	y	
0500	61	49.94	28	17.72	1540	092	5.6	5.3	n	y	0096	41	JC050-2	y	y	216-0834_163	y	y	
0514	61	49.77	28	15.06	1475	100	5.4	5.5	n	y	0096	27	JC050-2	y	y	216-0834_165	y	y	
0530	61	49.62	28	12.34		099	5.3	5.4	n	y	0096	11	JC050-2	y	y	216-0834_168	y	y	
0545	61	49.41	28	9.16	1521	099	5.4	5.9	n	y	0097	115	JC050-2	y	y	216-0834_170	y	y	
0600	61	49.25	28	6.27	1638	101	5.9	5.4	n	y	0097	101	JC050-2	y	y	216-0834_172	y	y	
0622	61	48.98	28	1.83	1461	099	5.5	5.4	n	y	0097	78	JC050-2	y	y	216-0834_176	y	y	
0630	61	48.87	28	0.12	1449	098	5.4	5.5	n	y	0097	69	JC050-2	y	y	216-0834_177	y	y	EA600 not recording depth
0650	61	48.63	27	56.20	1352	100	5.5	5.4	n	y	0097	49	JC050-2	y	y	216-0834_180	y	y	SBP not very good, EA 600 not good
0700	61	48.55	27	54.88	1533	095	5.5	5.6	n	y	0097	39	JC050-2	y	y	216-0834_181	y	y	SBP better
0715	61	48.34	27	51.34	1560	098	5.7	5.5	n	y	0097	24	JC050-2	y	y	216-0834_184	y	y	
0730	61	48.21	27	49.22	1477	102	5.4	5.4	n	y	0097	11	JC050-2	y	y	216-0834_186	y	y	SBP: another section of patchy data
0745	61	48.03	27	46.07	1466	104	5.3	5.4	n	y	0098	116	JC050-2	y	y	216-0834_188	y	y	
0800	61	47.83	27	42.88	1597	099	5.7	5.4	n	y	0098	99	JC050-2	y	y	216-0834_191	y	y	
0815	61	47.66	27	39.93		096	5.4	5.4	n	y	0098	84	JC050-2	y	y	216-0834_193	y	y	
0829	61	47.50	27	37.28	1621	91	5.5	5.5	n	y	0098	70	JC050-2	y	y	216-0834_195	y	y	
0844	61	47.35	27	34.75	1516	100	4.9	5.1	n	y	0098	56	JC050-2	y	y	216-0834_197	y	y	
0902	61	47.16	27	31.64	1536	98	5.1	4.8	n	y	0098	37	JC050-2	y	y	216-0834_200	y	y	Lost contact with GPT 0906
0918	61	46.98	27	28.72	1499	97	5.6	5.6	n	y	0098	22	JC050-2	y	y	216-0834_202	y	y	
0930	61	46.85	27	26.49	2229	97	5.6	5.3	n	y	0098	9	JC050-2	y	y	216-0834_204	y	y	Depth wrong EA600
0944	61	46.68	27	23.63	2216	94	5.4	5.4	n	y	0099	113	JC050-2	y	y	216-0834_206	y	y	Bottom detector set to incorrect range
1000	61	46.50	27	20.67	1086	93	5.5	5.4	n	y	0099	99	JC050-2	y	y	216-0834_208	y	y	Lost contact with GPT 0957
1015	61	46.33	27	17.76	895	99	5.7	5.3	n	y	0099	84	JC050-2	y	y	216-0834_210	y	y	
1029	61	46.16	27	15.07	865	101	5.0	5.6	n	y	0099	70	JC050-2	y	y	216-0834_212	y	y	
1046	61	45.98	27	11.93	940	99	5.5	5.5	n	y	0099	56	JC050-2	y	y	216-0834_214	y	y	
1100	61	45.81	27	9.26	880	96	5.7	5.5	y	y	0099	40	JC050-2	y	y	216-0834_215	y	y	EM710 turned on
1115	61	45.63	27	6.21	798	101	5.5	5.7	y	y	0099	24	JC050-2	y	y	216-0834_217	y	y	
1130	61	45.47	27	3.50	887	100	5.3	5.4	y	y	0099	10	JC050-2	y	y	216-0834_219	y	y	
1145	61	45.30	27	0.58	774	98	5.3	5.5	y	y	0100	115	JC050-2	y	y	216-0834_220	y	y	
1200	61	45.13	26	57.88	892	100	5.1	5.3	y	y	0100	100	JC050-2	y	y	216-0834_222	y	y	
1201	61	45.09	26	57.37	766	097	5.5	5.4	y	y	0100	98	JC050-2	y	y	216-0834_222	y	y	
1215	61	44.93	26	54.74	913	99	5.6	5.7	y	y	0100	84	JC050-2	y	y	216-0834_224	y	y	
1230	61	44.43	26	52.22	722	158	5.5	5.4	y	y	0100	68	JC050-2	y	y	216-0834_229	y	y	
1245	61	43.23	26	53.12	642	206	5.5	5.5	y	y	0100	55	JC050-2	y	y	216-0834_231	y	y	
1300	61	42.06	26	54.80	745	212	5.0	5.5	y	y	0100	38	JC050-2	y	y	216-0834_233	y	y	
1314	61	41.05	26	56.23	741	210	5.4	5.5	y	y	0100	26	JC050-2	y	y	216-0834_234	y	y	
1330	61	39.82	26	57.99	558	219	5.7	5.4	y	y	0002	118	JC050-3	y	y	216-0834_236	y	y	
1345	61	38.74	26	59.55	744	210	5.5	5.4	y	y	0003	111	JC050-3	y	y	216-0834_237	y	y	
1400	61	37.56	27	1.22	801	214	6.1	5.5	y	y	0003	96	JC050-3	y	y	216-0834_238	y	y	
1415	61	36.41	27	2.85	665	207	5.5	5.4	y	y	0003	81	JC050-3	y	y	216-0834_238	y	y	
1430	61	35.15	27	3.31	723	165	5.2	5.4	y	y	0003	66	JC050-3	y	y	216-0834_238	y	y	
1445	61	34.02	27	1.63	757	121	5.3	5.5	y	y	0003	51	JC050-3	y	n	216-0834_238	y	y	SBP frozen
1500	61	33.67	26	58.78	755	096	5.3	5.4	y	y	0003	36	JC050-3	y	y	216-0834_239	y	y	SBP fixed
1515	61	33.45	26	56.04	821	102	5.4	5.5	y	y	0003	21	JC050-3	y	y	216-0834_239	y	y	
1531	61	33.26	26	53.04	830	104	5.5	5.4	y	y	0003	5	JC050-3	y	y	216-0834_240	y	y	
1544	61	33.04	26	50.52	790	105	5.4	5.5	y	y	0004	112	JC050-3	y	y	216-0834_240	y	y	
1600	61	32.81	26	47.66	851	104	6.0	5.5	y	y	0004	97	JC050-3	y	y	216-0834_241	y	y	
1618	61	32.56	26	44.04	900	103	5.0	5.6	y	y	0004	203	JC050-2	y	y	216-0834_241	y	y	
1630	61	32.40	26	41.99	975	102	5.5	5.5	y	y	0004	66	JC050-3	y	y	216-0834_242	y	y	
1644	61	32.18	26	39.03	1037	100	5.4	5.4	y	y	0004	51	JC050-3	y	y	216-0834_242	y	y	EM710: 0052, 6, JC050
1700	61	32.01	26	36.66	1081	101	5.4	5.5	y	y	0004	38	JC050-3	y	y	216-0834_242	y	y	SBP crashed & needed to be restarted
1715	61	31.79	26	33.70	1193	093	5.6	5.5	y	y	0004	23	JC050-3	y	y	216-0834_248	y	y	
1730	61	31.56	26	30.77	1285	099	5.3	5.4	y	y	0004	7	JC050-3	y	y	216-0834_250	y	y	
1744	61	31.37	26	28.15	1284	096	5.4	5.4	y	y	0005	114	JC050-3	y	y	216-0834_252	y	y	EM710: 0054, 8, JC050
1800	61	31.13	26	24.96	1365	097	5.8	5.4	y	y	0005	97	JC050-3	y	y	216-0834_254	y	y	
1815	61	30.94	26	22.57	1340	103	5.6	5.3	y	y	0005	83	JC050-3	y	y	216-0834_256	y	y	EM710 died at 1825
1830	61	30.72	26	19.52	1522	098	5.5	5.6	y	y	0005	68	JC050-3	y	y	216-0834_258	y	y	
1845	61	30.50	26	16.66	1307	094	4.8	5.6	y	y	0005	53	JC050-3	y	y	216-0834_260	y	y	
1900	61	30.26	26	13.39	1311	092	5.5	5.5	y	y	0005	35	JC050-3	y	y	216-0834_263	y	y	
1915	61	30.10	26	11.22	1334	104	5.6	5.5	y	y	0005	24	JC050-3	y	y	216-0834_264	y	y	EA600 Flashed red on Techsas
1930	61	29.87	26	8.21	1473	098	5.3	5.3	y	y	0005	7	JC050-3	y	y	216-0834_266	y	y	Informed Leighton - no major problem
1945	61	29.66	26	5.41	1534	092	5.4	5.5	y	y	0006	112	JC050-3	y	y	216-0834_269	y	y	EA600 data very irregular
2000	61	29.42	26	2.21		101	5.4	5.6	y	y	0006	97	JC050-3	y	y	216-0834_271	y	y	Poor swath
2015	61	29.21	25	59.26	1381	094	5.5	5.5	y	y	0006	81	JC050-3	y	y	216-0834_273	y	y	
2030	61	28.99	25	56.53	1383	099	5.4	5.5	y	y	0006	67	JC050-3	y	y	216-0834_275	y	y	
2045	61	28.79	25	53.69	1436	099	5.3	5.5	y		0006	51	JC050-3	y	y	216-0834_277	y	y	
2100	61	28.55	25	50.64	1588	101	5.9	5.6	y	y	0006	35	JC050-3	y	y	216-0834_280	y	y	SBP poor
2115	61	28.35	25	47.86	1556	102	5.7	5.7	y	y	0006	20	JC050-3	y	y	216-0834_282	y	y	
2129	61	28.16	25	45.30	1408	100	5.5	5.4	y	y	0006	7	JC050-3	y	y	216-0834_284	y	y	
2145	61	27.93	25	42.35	1431	095	5.4	5.6	y	y	0007	111	JC050-3	y	y	216-0834_287	y	y	EA600 Flashed red on Techsas
2200	61	27.73	25	39.55	1452	096	5.5	5.6	y	y	0007	97	JC050-3	y	y	216-0834_289	y	y	EA600 Flashed red on Techsas
2215	61	27.51	25	36.66	1551	102	5.4	5.3	y	y	0007	81	JC050-3	y	y	216-0834_292	y	y	EA600 Flashed red on Techsas
2231	61	27.27	25	33.55	1546	099	5.6	5.4	y	y	0007	65	JC050-3	y	y	216-0834_294	y	y	EA600 Flashed red on Techsas
2243	61	27.10	25	31.26	1524	099	5.3	5.3	y	y	0007	52	JC050-3	y	y	216-0834_296	y	y	EA600 Flashed red on Techsas
2300	61	26.86	25	28.11	1528	095	5.4	5.4	y	y	0007	34	JC050-3	y	y	216-0834_299	y	y	
2315	61	26.66	25	25.42	1537	100	5.4	5.5	y	y	0007	22	JC050-3	y	y	216-0834_301	y	y	
2335	61	26.36	25	21.44	1553	102	5.5	5.3	y	y	0007	1	JC050-3	y	y	216-0834_304	y	y	
2345	61	26.23	25	19.73	1524	099	5.6	5.6	y	y	0008	112	JC050-3	y	y	216-0834_306	y	y	

Day: Date: Sheet Number:

Time	Lat		Lon		ADCP150	ADCP75	Techsas	Level-C	Grav.	Mag.	Wind			Comments, eg state of seismic exp.
(GMT)	D	DM	D	DM	rec.	rec.	rec.	rec.	(mgal)	(nT)	Speed	Dir.	Sea State	
0000	61	53.36	29	14.92	y	y	y	y	13373.1	52230	8.5	35.6	Calm	
0014	61	53.21	29	12.42	y	y	y	y			10.1	26.6	"	
0028	61	53.04	29	9.56	y	y	y	y	13373.4	52203	8.4	20.7	"	
0043	61	52.86	29	6.60	y	y	y	y			7.7	359	"	
0100	61	52.69	29	3.67	y	y	y	y	13377.6	52428	9.1	12.8	"	
0115	61	52.50	29	0.49	y	y	y	y		52847	9.3	5.5	Less than 1m heave, roll AND pitch	
0130	61	52.33	28	57.77	y	y	y	y	13376.3	53078	9.7	14.7	Calm	
0145	61	52.15	28	54.74	y	y	y	y			10.0	21.7	"	
0200	61	51.97	28	51.73	y	y	y	y	13371.9	52881	9.0	30.7	"	
0215	61	51.80	28	48.92	y	y	y	y			9.4	13.7		
0230	61	51.63	28	46.02	y	y	y	y	13365.4	52091	9.6	14.7	"	
0246	61	51.45	28	43.13	y	y	y	y			9.0	25.7		
0258	61	51.31	28	40.77	y	y	y	y	13367.8	52529	8.8	13.7		
0315	61	51.11	28	37.50	y	y	y	y			8.5	23.7		
0330	61	50.96	28	34.83	y	y	y	y	13369.8	52227	8.1	17.8	"	
0345	61	50.78	28	31.73	y	y	y	y			9.9	23.7		
0400	61	50.61	28	29.01	y	y	y	y	13367.3	51858	8.8	010		
0415	61	50.46	28	26.65	y	y	y	y			7.4	030	Calm	
0430	61	50.28	28	23.51	y	y	y	y	13374.7	52711	7.6	019	"	
0445	61	50.11	28	20.66	y	y	y	y			7.9	021		
0500	61	49.95	28	18.05	y	y	y	y	13375.1	52260	7.4	024		
0514	61	49.77	28	15.06	y	y	y	y			7.7	022		
0530	61	49.62	28	12.34	y	y	y	y	13374.3	52191	9.7	026		
0545	61	49.41	28	9.12	y	y	y	y			9.0	025		
0559	61	49.24	28	6.25	y	y	y	y	13376	52467	8.4	027		
0622	61	48.98	28	1.83	y	y	y	y			8.1	015		
0630	61	48.87	28	0.12	y	y	y	y	13369.5	52694	9.1	009		
0650	61	48.63	27	56.20	y	y	y	y			8.1	016		
0700	61	48.55	27	54.88	y	y	y	y	13367.3	51855	8.7	007		
0717	61	48.34	27	51.37	y	y	y	y			9.1	007		
0730	61	48.20	27	49.00	y	y	y	y	13367.1	52173	8.6	357		
0744	61	48.03	27	46.10	y	y	y	y			9.6	004	Calm <1m swell	
0801	61	47.83	27	42.71	y	y	y	y	13358.9	52504	8.3	006	"	
0815	61	47.66	27	39.93	y	y	y	y			9.1	013		
0831	61	47.49	27	37.03	y	y	y	y	13550.8	52137	7.9	357		
0844	61	47.35	27	34.75	y	y	y	y			7.9	359		
0905	61	47.13	27	31.13	y	y	y	y	13345.7	52134	10.2	350		XCTD done at 8.55
0918	61	46.98	27	28.72	y	y	y	y			9.2	355		
0930	61	46.85	27	26.49	y	y	y	y	13349.1	52642	8.5	357		
0949	61	46.63	27	22.79	y	y	y	y			9.2	356		
1005	61	46.44	27	19.65	y	y	y	y	13366.3	52336	7.7	007		
1015	61	46.33	27	17.76	y	y	y	y			7.7	006	0.5m swell, calm	
1031	61	46.15	27	14.80	y	y	y	y	13377.4	52308	8.3	355		
1046	61	45.97	27	11.83	y	y	y	y			7.4	351		
1100	61	45.81	27	9.28	y	y	y	y	13375.8	51363	8.4	8.7		
1115	61	45.63	27	6.21	y	y	y	y			8.6	353		
1131	61	45.45	27	3.26	y	y	y	y	13375.3	51754	7.8	004		
1145	61	45.30	27	0.62	y	y	y	y			7.7	004		
1200	61	45.12	26	57.79	y	y	y	y	13372.8	53537.9	6.4	4.3		
1215	61	44.94	26	54.75	y	y	y	y			8.7	6.9		
1230	61	44.47	26	52.25	y	y	y	y	13382.9	54140.65	6.5	307		
1246	61	43.15	26	53.21	y	y	y	y			3.6	179		
1300	61	41.96	26	54.95	y	y	y	y	13398.7	54244.7	5.4	309		
1316	61	40.86	26	56.53	y	y	y	y			3.4	303.1		
1330	61	39.89	26	57.92	y	y	y	y	13399.8	53563.4	2.9	256.4		
1344	61	38.76	26	59.50	y	y	y	y			2.4	266		
1400	61	37.56	27	1.22	y	y	y	y	13396	52777	4.4	276		
1416	61	36.36	27	2.91	y	y	y	y			3.7	294.1		
1430	61	35.17	27	3.31	y	y	y	y	13377.2	54503.3	5.7	303		
1445	61	34.04	27	1.67	y	y	y	y			6.6	324		
1500	61	34.67	26	58.85	y	y	y	y	13362.5	52734	6.7	354		
1515	61	33.46	26	55.99	y	y	y	y			5.3	345		
1530	61	33.24	26	53.09	y	y	y	y	13363.4	51743.6	6.6	356	Calm	
1545	61	33.02	26	50.33	y	y	y	y			5.4	369	Calm	
1600	61	32.82	26	47.63	y	y	y	y		52081	4.3	006	Calm	
1617	61	32.54	26	43.77	y	y	y	y	13399.5		4.5	102	Calm	
1630	61	32.40	26	41.99	y	y	y	y			4.3	338		
1645	61	22.22	26	39.43	y	y	y	y	13348.6	51221	4.8	354		
1700	61	32.01	26	36.66	y	y	y	y			4.6	015		
1715	61	31.79	26	33.70	y	y	y	y	13338.9	52793	5.7	349		
1730	61	31.56	26	30.77	y	y	y	y			4.4	342		
1745	61	31.35	26	27.97	y	y	y	y	13333.3	52741	4.8	350		
1800	61	31.12	26	24.85	y	y	y	y			4.3	326		
1815	61	30.94	26	22.57	y	y	y	y	13330.5	51383	4.8	332		
1830	61	31.72	26	19.52	y	y	y	y			4.9	326		
1845	61	30.50	26	16.66	y	y	y	y	13334	51319	5.6	327		
1900	61	30.26	26	13.39	y	y	y	y			5.2	341		
1915	61	30.10	26	11.33	y	y	y	y	13334.9	52216	5.6	344		
1930	61	29.87	26	8.21	y	y	y	y			5.6	344		
1945	61	29.66	26	5.41	y	y	y	y	13334	51420	4.7	344		
2000	61	29.42	26	2.19	y	y	y	y			3.9	342		
2015	61	29.21	25	59.37	y	y	y	y	13338.2	52286	5.9	06		
2032	61	28.97	25	56.06	y	y	y	y			5.3	356	0.5m swell	
2045	61	28.79	25	53.69	y	y	y	y	13336.9	51674	5.3	12	v flat	ER600 red on Techsas again
2100	61	28.56	25	50.64	y	y	y	y			5.0	04		
2115	61	28.35	25	47.86	y	y	y	y	13342	52025	3.3	302	calm	
2132	61	28.12	25	44.81	y	y	y	y			2.3	323		
2146	61	27.91	25	42.10	y	y	y	y	13334.9	52502	3.6	320		ER600 still not happy on Techsas
2201	61	27.71	25	39.33	y	y	y	y			3.9	351		
2215	61	27.51	25	36.66	y	y	y	y	13330.9	51576	3.4	325		
2233	61	27.24	25	33.15	y	y	y	y			2.1	295		
2245	61	27.08	25	30.95	y	y	y	y	13330.5	52284	4.7	336		
2300	61	26.86	25	28.11	y	y	y	y			4.5	322		
2315	61	26.66	25	25.45	y	y	y	y	13328.4	51607	4.0	340		
2335	61	26.37	25	21.50	y	y	y	y			4.2	330	calm	
2346	61	26.21	25	19.37	y	y	y	y	13330.3	51914	4.4	318		

Every 30 min, for important events and not for birds during turns.

Seismic log

															Depth of Gun 2:		n/a						
	Vessel GPS				Bird 1		Bird 2		Bird 3		Bird 4		Bird 5					Tailbuoy GPS				
Time GMT	Lat		Long		Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Ship H'ding	CMG	Shot no.	FFID	Lat		Long		MISFIRE, Feathering angle, sea state, current, other comments
0000	61	53.35	29	14.76	6.5	113	6.7	115	7.2	117	7.1	114	7.2	125	104	106	12338	12338	61	53.49	29	16.94	
0015	61	53.22	29	12.57	6.8	109	6.9	116	7.5	123	7.3	117	6.5	115	104	8111	12384	12384	61	53.39	29	12.58	
0030	61	53.0d	d9	9.33	7.2	118	7.3	118	7	117	6.8	114	7.6	120	105	105	12451	12451	61	53.d	d9	9.d8	
0045	61	52.85	29	6.39	6.56	98.6	6.82	95.5	6.89	97.3	7.13	92.4	7.5	103.8	103	105	12512	12512	61	53.04	29	8.44	
0100	61	52.67	29	3.53	7.4	121	7.5	109	7.2	111	7	126	7.4	126	100	101	12572	12572	61	52.86	29	5.71	
0115	61	52.49	29	0.44	6.6	116	6.6	123	6.9	115	7.4	111	7.1	119	104	106	12637	12637	61	52.68	29	2.57	
0129	61	52.33	28	57.75	7.3	97.3	6.89	99.95	7.32	94.6	7.69	98	7.34	92	98.3	104.3	12692	12692	61	52.53	28	59.62	
0145	61	52.14	28	54.62	6.6	112	6.8	118	7	112	7.2	119	7.3	112	100	107	12756	12756	61	52.3	28	56.58	
0200	61	51.96	28	51.73	7.1	118	7.2	132	7.3	116	7.5	117	7.2	123	100	104	12817	12817	61	52.11	28	53.93	SeaPro QC "flushes" @ 0145. QC screen reboot @ 0156. Showing up @ 0
0215	61	51.8	28	48.9	7	111	7.3	121	6.8	121	7.3	121	7.5	125	102	104	12877	12877	61	51.92	28	51.11	
0230	61	51.63	28	46.1	6.9	113	7	113	7	126	6.9	123	6.4	121	99	104	12936	12936	61	51.76	28	48.31	
0247	61	51.44	28	42.9	6.8	102	6.7	120	6.5	120	6.9	117	6.8	123	101	101	13000	13000	61	51.58	28	44.99	
0300	61	51.28	28	40.36	7	113	7.3	113	6.7	112	7.1	123	6.8	117	100	106	13057	13057	61	51.42	28	42.68	
0315	61	51.12	28	37.55	7.2	118	6.8	112	7	110	7.1	111	7.5	118	91	106	13115	13115	61	51.22	28	39.72	
0330	61	50.94	28	34.69	6.9	120	6.8	113	7.1	111	7.4	114	6.9	103	100	106	13175	13175	61	51.06	28	36.9	
0345	61	50.74	28	31.35	6.7	125	7.2	112	6.7	118	6.9	121	7	116	105	104	13243	13243	61	50.86	28	33.53	
0400	61	50.6	28	28.87	6.6	91	6.4	102	6.6	89	6.6	84	6.4	86	100	101	13291	13291	61	50.73	28	31.03	
0415	61	50.45	28	26.29	6.7	82	6.6	090	7	90	7.1	94	7.4	95	101	104	13351	13351	61	50.56	28	28.06	
0430	61	50.26	28	23.24	7.1	96	7.1	96	7.3	92	7	94	6.8	106	102	99	13415	13415	61	50.39	28	25.18	SeaPro QC Red flash - trace computer rebotting
0445	61	50.1	28	20.55	6.9	92	6.7	098	7.1	91	7.3	99	7	88	98	101	13470	13470	61	50.22	28	20.55	SeaPro QC working
0500	61	49.92	28	17.59	7.2	100	6.9	97	7.1	90	6.6	93	7	93	98	103	13532	13532	61	50.05	28	19.6	
0515	61	49.76	28	14.87	7.1	98	7	092	7	93	7.4	86	6.8	90	98	105	13590	13590	61	49.88	28	17.04	
0530	61	49.58	28	11.91	7.3	93	7.4	91	6.9	91	7.4	90	7.5	89	100	106	13651	13651	61	49.67	28	13.91	
0544	61	49.4	28	8.88	6.5	87	6.6	095	7	86	7.5	92	6.7	91	101	105	13715	13715	61	49.49	28	10.9	Compasses
0600	61	49.23	28	6.1	6.5	89	7.1	860	6.8	88	6.8	94	7.1	96	98	103	13772	13772	61	49.35	28	8.13	Bird 2 &4, Z(m) slow to update
0621	61	48.98	28	1.93	6.5	91	7.5	96	7.1	94	7.2	94	7.2	90	100	104	13858	13858	61	49.1	28	3.98	Bird 2&4 still not showing depth on "Birdmon" program
0630	61	48.89	28	0.37	6.1	81	6.4	89	6.6	95	6.7	100	6.7	84	95	105	138936	138936	61	48.97	28	2.29	Birdmon working
0648	61	48.67	27	56.69	7.3	95	7.3	92	7	102	6.4	92	5.9	93	97	100	13969	13969	61	48.78	27	58.66	
0700	61	48.55	27	54.67	7.2	83	7.2	90	7.1	99	6.7	92	6.5	102	100	106	14010	14010	61	48.65	27	56.67	
0715	61	18.37	27	51.66	6.5	87	6.5	95	7	94	6.8	95	6.4	94	102	106	14077	14077	61	48.49	27	53.55	
0730	61	48.19	27	47.75	7.1	95	7	95	7.1	93	6.9	86	7.3	97	97	105	14135	14135	61	48.34	27	50.77	
0745	61	48.02	27	46	6.7	93	6.7	98	6.7	99	6.5	92	6.9	96	99	104	14193	14193	61	48.16	27	45.8	
0800	61	47.84	27	42.99	6.8	94	6.5	94	6.6	98	6.2	95	6.9	96	99	105	14250	14250	61	48	27	45.09	
0815	61	47.67	27	40.09	6.9	93	6.8	94	6.4	96	7	94	6.5	99	100	102	14310	14310	61	47.83	27	42.31	Calm, <1m swell
0830	61	47.5	27	37.32	6.8	95	6.6	97	7.6	94	7.2	91	7.3	98	98	105	14370	14370	61	47.64	27	34.22	
0843																	14423	14423					Speed reduced to 5kts for XCTD
0845	61	47.32	27	34.35	8.2	97	7.9	99	6.8	96	6.7	94	7	98	102	113	14430	14430	61	47.43	27	38.44	
0900	61	47.2	27	32.14	10.7	88	5.9	90	7	90	7.3	95	7.4	103	102	104	14428	14428	61	47.35	27	34.26	Increasing speed post XCTD deployment. Should bring up Bird 1
0919	61	46.97	27	28.44	6.6	96	6.5	90	7.5	89	7.1	93	7.2	94	99	106	14567	14567	61	47.13	27	30.57	
0930	61	46.84	27	26.49	6.7	92	6.8	89	7	93	6.9	87	7	88	99	102	14610	14610	61	47	27	28.6	
0945	61	46.66	27	27.48	6.9	94	7	98	7.2	99	7.3	89	6.9	86	99	101	14670	14670	61	46.82	27	28.59	
1000	61	46.49	27	19.96	6.4	92	6.2	91	6.6	97	6.7	105	7.4	91	100	105	14748	14748	61	46.63	27	22.17	
1015	61	46.32	27	17.74	6.8	94	7	95	6.6	96	6.9	99	7.1	94	100	103	14790	14790	61	46.49	27	19.84	
1030	61	46.14	27	14.87	6.9	95	7.2	96	7.1	97	6.7	98	6.8	93	99	101	14851	14851	61	46.34	27	16.97	
1045	61	46	27	12.42	7	94	7.1	97	6.9	94	6.8	96	6.9	95	99	101	14911	14911	61	46.21	27	14.56	
1100	61	45.81	27	9.18	7.1	96	7	98	6.4	95	7	97	6.8	99	102	102	14971	14971	61	45.98	27	11.31	Calm, 1m swell
1115	61	45.62	27	6.19	7	91	6.9	96	7.2	98	6.8	99	6.9	90	103	104	15030	15030	61	45.81	27	8.23	
1127																							QC frozen, restarting
1130	61	45.46	27	3.49	7.1	92	6.8	89	6.4	90	7.1	95	6.2	94	101	106	15090	15090	61	45.64	27	5.58	
1145	61	45.28	27	0.46	7.2	95	7	90	6.9	94	7.3	97	7.4	98	99	102	15155	15155	61	45.44	27	2.59	
1200	61	45.12	26	57.61	6.6	117	6.7	107	6.8	105	6.8	107	6.6	112	101	103	15212	15212	61	45.26	26	59.98	
1215	61	44.93	26	54.62	6.5	114	7.4	109	6.9	114	7.2	111	6.7	118	100	101	17015	17015	61	45.08	26	56.77	End of line 2 seq 2, last shot 15249 at 1213. New line 2 seq 3, start ffid 170
1230	61	44.47	26	52.26	7.7	156	7.5	131	7	133	6.9	115	7	111	165	159	17071	17071	61	44.93	26	54.19	Starting turning at 12.23 61 44.84 N 26 53.22W
1240	61	43.7	26	52.44	8.5	233	7.5	195	7.5	178	7.3	189	7.3	188	212	222	17107	17107	61	44.65	26	52.77	A new line started as Line 2 SEGMENT 3
1245	61	43.09	26	53.3	6.8	223	6.8	239	5.7	225	6.4	219	7.1	213	214	221	17140	17140	61	44.03	26	52.39	
1300	61	42.06	26	54.77	6.8	224	6.9	225	7.2	224	7.4	221	6.9	238	212	221	17196	17196	61	42.98	26	53.63	
1315	61	40.95	26	56.37	7	221	7.1	225	7	229	7	224	7.2	224	210	219	17252	17252	61	41.85	26	55.21	
1330	61	39.77	26	58.05	7.2	227	7.2	229	6.9	223	6.9	210	7.4	235	211	219	17314	17314	61	40.67	26	56.94	QC screen crashed
1345	61	38.68	26	59.61	6.4	238	6.9	233	7.4	229	6.9	228	7	221	210	219	17371	17371	61	39.59	26	58.47	At 1339 reboot
1400	61	37.56	27	1.22	7.2	236	7.4	223	7.3	227	7.3	234	7.3	217	209	220	17432	17432	61	38.46	27	0.06	
1415	61	36.46	27	2.78	7.2	231	7.3	232	7.1	238	7.1	239	7.2	230	209	218	17489	17489	61	32.36	27	1.6	
1430	61	35.18	27	3.31	7.3	193	7.2	201	7.2	209	6.9	207	7.3	216	167	175	17547	17547	61	36.23	27	3.05	Ship turning again at 17490 (1415)
1445	61	33.99	27	1.52	7.5	150	7.4	154	6.8	159	6.8	164	7.1	195	120	126	17613	17613	61	34.8	27	2.92	Straight at 17645 (1455)
1500	61	33.66	26	58.79	6.6	120	6.7	128	7.1	121	6.6	124	7.1	132	106	106	17673	17673	61	33.94	27	0.92	
1515	61	33.45	26	56.01	7.1	121	6.9	118	7.5	116	7.3	124	6.6	118	102	105	17732	17732	61	33.66	26	58.18	
1530	61	33.24	26	53.15	6.5	126	6.8	123	6.7	124	6.6	131	6.8	123	102	100	17794	17794	61	33.43	26	53.14	
1545	61	33.04	26	50.49	6.9	121	6.9	120	6.5	119	6.6	111	6.4	113	106	106	17848	17848	61	33.24	26	52.68	
1600	61	32.83	26	47.62	6.9	99	6.8	98	6.9	94	7.1	90	6.9	96	103	96	17913	17913	61	33.03	26	49.39	
1615	61	32.62	26	44.76	7	99	7	096	7	94	7.1	96	6.8	96	104	105	17975	17975	61	32.81	26	46.49	
1630	61	32.4	26	41.77	7.1	94	6.9	102	6.9	98	7.5	106	7.2	103	104	105	18036	18036	61	32.59	26	43.61	
1645	61	32.19	26	39.08	7.3	100	7.3	097	6.7	102	7.2	98	6.5	100	100	102	18093	18096	61	32.4	26	40.93	
1700	61	31.96	26	36.1	7.5	97	7.2	94	6.7	96	6.7	96	6.5	99	102	102	18152	18152	61	32.18	26	38.23	
1715	61	31.73	26	33.05	7.7	100	7	090	6.1	92	7.3	99	6.9	97	99	105	18221	18221	61	31.96	26	35.15	
1727	61	31.58	26	33.15	7.9	94	6.7	94	7.1	96	7.2	91	7.4	95	101	106	18260	18260	61	31.77	26	33.11	
1743	61	31.36	26	28.06	7.7	96	6.7	70	7.2	97	7.3	92	6.6	89	99	103	18329	18329	61	31.51	26	30.19	
1800	61	31.13	26	24.96	8.2	91	7.4	94	7.6	92	6.9	96	7.1	91	97	104	18390	18290	61	31.28	26	27.12	
1815	61	30.92	26	22.19	7.1	95	6.6	96		87	7.1	89		95	100	102	18449	18449	61	31.05	26	24.13	Birds 3 & 5 not showing depth on birdmon
1830	61	30.71	26	19.35	7.1	96	6.9	98		93	7.1	88		91	97	102	18503	18503	61	30.85	26	21.38	"
1845	61	30.49	26	16.54	7.1	84	7	85		85	6.9	89		85	98	101	18568	18568	61	30.59	26	18.52	"
1900	61	30.28	26	13.69	8	86	7.3	90	6.7	97	6.6	85	6.9	87	96	106	18628	18628	61	30.38	26	15.75	Birds 3 & 5 display back on birdmon
1915	61	30.06	26	10.67	6.5	83	6.3	86	6.7	88	6.4	91	6.6	94	96	104	18693	18693	61	30.14	26	12.68	
1930	61	29.83	26	7.76	6.8	88	6.9	70	6.4	88	7.1	83	6.5	89	96	102	18755	18755	61	29.9	26	9.86	
1945	61	29.69	26	5.77	6.59	92	6.83	97	7.55	90	7.79	81	6.93	90	96	103	18797	18797	61	29.76	26	7.91	
2002	61	29.38	26	1.67	6.8	94	6.7	97	7.1	96	7.9	93	7	95	92	105	18876	18876	61	29.45	26	3.88	Calm, 0.5m swell
2015	61	29.19	25	59.08	6.7	96	6.9	99	7	95	7	94	6.9	96	97	104	18928	18928	61	29.28	26	1.29	
2030	61	28.98	25	56.3	6.1	118	6.4	113	7.2	112	7.4	113	7.3	105	96	103	18998	18998	61	29.07	25	58.34	
2045	61	28.78	25	53.65	7.3	86	7.3	89	6.8	88	6.6	85	7.2	93	98	103	19050	19050	61	28.92	25	55.76	
2100	61	28.58	25	50.85	6.9	86	6.9	88	7.1	85	7.1	88	6.9	90	100	103	19108	19108	61	28.71	25	52.97	Calm
2115	61	28.36	25	47.97	7.2	93	7	94	7	89	7	92	7.4	92	101	100	19168	19168	61	28.53	25	50.11	
2130	61	28.15	25	45.24	6.8	100	6.8	95	6.6	98	6.8	100	7	101	103	105	19228	19228	61	28.37	25	47.35	
2145	61	27.92	25	42.18	7.4	99	7.1	93	6.6	98	6.7	89	6.9	98	102	101	19288	19288	61	28.12	25	44.27	
2200	61	27.72	25	39.45	6.7	97	6.8	94	7.5	96	7.3	102	7	103	105	105	19348	19348	61	27.91	25	41.58	Calm
2216	61	27.49	25	36.44	6.6	97	6.9	92	7.3	95	7.1	98	6.9	95	103	104	19412	19412	61	27.49	25	36.39	
2232	61	27.26	25	33.42	6.7	100	6.7	90	7.3	97	7.3	95	7.3	100	104	101	19475	19475	61	27.25	25	33.12	
2245	61	27.09	25	31.02	6.8	91	6.6	96	6.8	94	6.6	94	6.8	102	103	103	19528	19528	61	27.3	25	33.14	
2304	61	26.82	25	27.42	6.9	105	7.1	94	7.3	90	7.2	96	7.4	95	104	105	19604	19604	61	27.02	25	29.53	
2315	61	26.65	25	25.35	7	104	7.1	100	7.3	101	7.4	98	7.2	101	100	101	19648	19648	61	28.84	25	27.22	
2330	61	26.61	25	21.92	7.3	94	7.3	91	7.3	96	7.5	98	6.7	98	103	102	19726	19726	61	26.6	25	23.78	
2345	61	26.22	25	19.63	7.1	93	7.2	94	6.9	91	7.4	98	7	97	100	100	19768	19768	61	26.51	25	21.68	

Julian Day: Date: Sheet Number:

(GMT)	D	DM	D	DM	depth (m)		(kts)	(kts)	rec.	rec	Line cnt.			rec.	rec.	Data file	rec.	rec.	
0000	61	26.02	25	16.93	1528	103	5.6	5.5	y	y	0008	97	JC050-3	y	y	216-0834_308	y	y	
0015	61	25.81	25	14.05	1515	96	5.4	5.4	y	y	0008	80	JC050-3	y	y	216-0834_311	y	y	
0029	61	25.52	25	11.30	1522	120	5.3	5.3	y	y	0008	67	JC050-3	y	y	216-0834_313	y	y	
0045	61	24.55	25	9.55	1488	162	5.6	5.4	y	y	0008	52	JC050-3	y	y	216-0834_315	y	y	
0100	61	23.09	25	9.86	1558	211	5.4	5.6	y	y	0008	36	JC050-3	y	y	216-0834_318	y	y	
0130	61	21.03	25	13.39	1592	215	5.5	5.4	y	y	0008	6	JC050-3	y	y	216-0834_322	y	y	
0145	61	20.03	25	15.16	1692	218	5.2	5.3	y	y	0008	112	JC050-3	y	y	216-0834_324	y	y	Interesting feature on ER60
0201	61	18.80	25	17.30	1683	220	5.2	5.7	y	y	0009	95	JC050-3	y	y	216-0834_326	y	y	
0220	61	17.56	25	20.22	1792	217	5.3	5.2	y	y	0009	71	JC050-3	y	y	216-0834_330	y	y	
0230	61	16.65	25	21.07	1734	223	5.0	5.4	y	y	0009	64	JC050-3	y	y	216-0834_331	y	y	
0245	61	15.84	25	22.53	1677	225	5.2	5.5	y	y	0009	53	JC050-3	y	y	216-0834_332	y	y	
0300	61	15.13	25	25.25	1745	264	5.2	5.5	y	y	0009	36	JC050-3	y	y	216-0834_335	y	y	
0315	61	15.14	25	25.66	1649	271	5.3	5.7	y	y	0009	34	JC050-3	y	y	216-0834_335	y	y	
0330	61	15.50	25	30.82	1577	274	5.8	5.5	y	y	0009	6	JC050-3	y	y	216-0834_339	y	y	
0345	61	15.70	25	33.64	1578	274	5.5	5.4	y	y	0010	111	JC050-3	y	y	216-0834_341	y	y	
0400	61	15.91	25	36.54	1653	273	5.6	5.4	y	y	0010	97	JC050-3	y	y	216-0834_343	y	y	
0415	61	16.11	25	39.28	1596	279	6.3	5.6	y	y	0010	81	JC050-3	y	y	216-0834_346	y	y	
0430	61	16.29	25	41.82	1550	276	5.4	5.4	y	y	0010	67	JC050-3	y	y	216-0834_348	y	y	EM710: 0076-22-JC050
0445	61	16.49	25	44.54	1496	284	5.3	5.7	y	y	0010	52	JC050-3	y	y	216-0834_350	y	y	
0500	61	16.69	25	47.33	1551	281	5.3	5.2	y	y	0010	36	JC050-3	y	y	216-0834_353	y	y	
0515	61	16.92	25	50.37	1638	276	5.7	5.3	y	y	0010	22	JC050-3	y	y	216-0834_355	y	y	
0530	61	17.10	25	52.95	1596	271	5.3	5.6	y	y	0010	7	JC050-3	y	y	216-0834_357	y	y	SBP: Very patchy data
0545	61	17.33	25	55.90	1556	275	5.5	5.7	y	y	0011	112	JC050-3	y	y	216-0834_359	y	y	Possible vent on ER60@ 0540
0600	61	17.51	25	58.47	1519	275	5.1	5.2	y	y	0011	99	JC050-3	y	y	216-0834_361	y	y	ery sharp features, still problems with Techsas
0615	61	17.71	26	1.27	1403	284	5.5	5.3	y	y	0011	83	JC050-3	y	y	216-0834_364	y	y	
0630	61	17.93	26	4.32	1368	278	5.5	5.5	y	y	0011	67	JC050-3	y	y	216-0834_366	y	y	
0645	61	18.16	26	7.49	1377	275	5.1	5.4	y	y	0011	50	JC050-3	y	y	216-0834_368	y	y	
0700	61	18.33	26	9.85	1503	280	6.1	5.3	y	y	0011	37	JC050-3	y	y	216-0834_370	y	y	EM710: 0081, 22, JC050
0715	61	18.55	26	12.77	1494	278	5.2	5.1	y	y	0011	22	JC050-3	y	y	216-0834_372	y	y	
0730	61	18.74	26	15.47	1403	271	5.6	5.6	y	y	0011	8	JC050-3	y	y	216-0834_375	y	y	
0745	61	18.95	26	18.37	1375	297	5.7	5.5	y	y	0012	113	JC050-3	y	y	216-0834_377	y	y	
0800	61	19.17	26	21.37	1522	275	5.4	5.6	y	y	0012	96	JC050-3	y	y	216-0834_379	y	y	
0815	61	19.31	26	24.20		275	5.6	5.7	y	y	0012	81	JC050-3	y	y	216-0834_382	y	y	
0829	61	19.59	26	27.03	1383	270	5.3	5.5	y	y	0012	66	JC050-3	y	y	216-0834_384	y	y	SBP poor, EA600 slow
0845	61	19.80	26	29.98		271	5.6	5.3	y	y	0012	51	JC050-3	y	y	216-0834_386	y	y	
0900	61	20.00	26	32.76	1400	282	5.1	5.4	y	y	0012	36	JC050-3	y	y	216-0834_388	y	y	
0916	61	20.22	26	35.82		273	5.9	5.4	y	y	0012	20	JC050-3	y	y	216-0834_390	y	y	
0930	61	20.40	26	38.28	1314	274	5.4	5.5	y	y	0012	7	JC050-3	y	y	216-0834_392	y	y	
0944	61	20.60	26	40.95	1560	293	6.2	5.5	y	y	0013	112	JC050-3	y	y	216-0834_394	y	y	
1000	61	20.86	26	44.49	1521	270	5.9	5.2	y	y	0013	94	JC050-3	y	y	216-0834_397	y	y	
1015	61	21.02	26	46.79	1461	272	5.6	5.5	y	y	0013	81	JC050-3	y	y	216-0834_399	y	y	
1030	61	21.22	26	49.63	1411	276	5.8	5.7	y	y	0013	67	JC050-3	y	y	216-0834_401	y	y	
1045	61	21.44	26	52.55	1176	275	5.7	5.2	y	y	0013	51	JC050-3	y	y	216-0834_404	y	y	
1101	61	21.67	26	55.67	1150	271	5.4	5.4	y	y	0013	35	JC050-3	y	y	216-0834_406	y	y	
1115	61	21.84	26	58.11	1080	274	5.4	5.5	y	y	0013	21	JC050-3	y	y	216-0834_408	y	y	
1131	61	22.07	27	1.14	880	275	5.4	5.4	y	y	0013	5	JC050-3	y	y	216-0834_410	y	y	
1144	61	22.24	27	3.57	948	273	5.5	5.8	y	y	0014	112	JC050-3	y	y	216-0834_411	y	y	
1157	61	22.42	27	6.15	951	271	5.7	5.6	y	y	0014	99	JC050-3	y	y	216-0834_413	y	y	
1215	61	22.66	27	9.31	890	284	5.9	5.5	y	y	0014	82	JC050-3	y	y	216-0834_415	y	y	
1231	61	22.88	27	12.56	848	270	5.7	5.6	y	y	0014	65	JC050-3	y	y	216-0834_416	y	y	
1245	61	23.08	27	15.14	798	270	5.4	5.4	y	y	0014	51	JC050-3	y	y	216-0834_418	y	y	
1259	61	23.26	27	17.65	862	278	5.3	5.4	y	y	0014	38	JC050-3	y	y	216-0834_420	y	y	
1315	61	23.47	27	20.52	752	276	5.5	5.0	y	y	0014	22	JC050-3	y	y	216-0834_421	y	y	
1330	61	23.68	27	23.43	912	275	5.5	0.5	y	y	0014	7	JC050-3	y	y	216-0834_423	y	y	
1345	61	23.90	27	26.57	802	273	5.4	5.5	y	y	0015	111	JC050-3	y	y	216-0834_425	y	y	
1400	61	24.11	27	29.58	991	271	5.4	5.3	y	y	0015	96	JC050-3	y	y	216-0834_427	y	y	
1415	61	24.33	27	32.48	852	275	5.3	5.7	y	y	0015	79	JC050-3	y	y	216-0834_429	y	y	
1430	61	24.57	27	35.16	1041	264	5.5	5.4	y	y	0015	65	JC050-3	y	y	216-0834_430	y	y	
1445	61	24.74	27	38.01	983	268	5.8	5.5	y	y	0016	112	JC050-3	y	y	216-0834_432	y	y	Rough sea bed; EA600 and EM120 having difficulties pinging
1500	61	24.94	27	40.89	948	272	5.6	5.6	y	y	0016	98	JC050-3	y	y	216-0834_434	y	y	
1515	61	25.14	27	43.64	975	273	5.6	5.6	y	y	0016	84	JC050-3	y	y	216-0834_435	y	y	
1532	61	25.36	27	46.74	1000	278	6.6	5.4	y	y	0016	67	JC050-3	y	y	216-0834_438	y	y	
1545	61	25.57	27	49.49	1024	273	5.5	5.9	y	y	0016	53	JC050-3	y	y	216-0834_440	y	y	
1600	61	25.74	27	51.98	1020	282	5.4	5.2	y	y	0016	39	JC050-3	y	y	216-0834_442	y	y	
1615	61	25.90	27	54.18	1260	276	6.1	5.3	y	y	0016	27	JC050-3	y	y	216-0834_444	y	y	
1630	61	26.14	27	57.33	1437	274	5.7	5.5	y	y	0016	9	JC050-3	y	y	216-0834_446	y	y	
1645	61	26.34	28	0.06	1501	269	5.5	5.4	y	y	0017	116	JC050-3	y	y	216-0834_448	y	y	
1700	61	26.53	28	2.86	1699	269	4.9	5.6	y	y	0017	101	JC050-3	y	y	216-0834_450	y	y	EM710: 0101, 23, JC050
1715	61	26.79	28	6.33	1621	274	5.1	5.1	y	y	0017	83	JC050-3	y	y	216-0834_453	y	y	
1730	61	26.95	28	8.72	1596	279	5.6	5.7	y	y	0017	70	JC050-3	y	y	216-0834_455	y	y	
1745	61	27.16	28	11.51	1500	272	5.7	5.3	y	y	0017	55	JC050-3	y	y	216-0834_457	y	y	No depth on EA600
1800	61	27.36	28	14.37	1440	273	6.1	5.8	y	y	0017	40	JC050-3	y	y	216-0834_459	y	y	
1815	61	27.59	28	17.39	1433	279	5.2	5.5	y	y	0017	24	JC050-3	y	y	216-0834_462	y	y	
1830	61	27.79	28	20.28	1524	286	5.7	5.5	y	y	0017	9	JC050-3	y	y	216-0834_464	y	y	
1845	61	27.99	28	23.04	1690	275	5.4	5.6	y	y	0018	114	JC050-3	y	y	216-0834_467	y	y	
1900	61	28.17	28	25.57	1382	282	5.6	5.4	y	y	0018	101	JC050-3	y	y	216-0834_468	y	y	SBP is quite poor
1915	61	28.40	28	28.69	1437	281	5.4	5.4	y	y	0018	85	JC050-3	y	y	216-0834_470	y	y	
1930	61	28.60	28	31.43	1288	281	5.6	5.6	y	y	0018	71	JC050-3	y	y	216-0834_473	y	y	
1945	61	28.80	28	34.25	1422	283	5.4	5.4	y	y	0018	55	JC050-3	y	y	216-0834_475	y	y	
2000	61	29.03	28	37.34		278	5.5	5.3	y	y	0018	39	JC050-3	y	y	216-0834_477	y	y	
2016	61	29.25	28	40.39		279	5.1	5.4	y	y	0018	23	JC050-3	y	y	216-0834_480	y	y	EA600 still slow
2032	61	29.46	28	43.34		286	5.1	5.3	y	y	0018	7	JC050-3	y	y	216-0834_482	y	y	
2045	61	29.64	28	45.77	1543	275	5.2	5.4	y	y	0019	114	JC050-3	y	y	216-0834_484	y	y	
2100	61	29.85	28	48.64		275	5.6	5.6	y	y	0019	99	JC050-3	y	y	216-0834_487	y	y	
2116	61	30.05	28	51.64	1443	281	5.5	5.6	y	y	0019	84	JC050-3	y	y	216-0834_490	y	y	
2129	61	30.24	28	54.20		282	5.7	5.4	y	y	0019	70	JC050-3	y	y	216-0834_492	y	y	
2145	61	30.46	28	57.15	1617	282	5.3	5.5	y	y	0019	54	JC050-3	y	y	216-0834_494	y	y	
2200	61	30.67	29	0.00	1645	280	5.4	5.9	y	y	0019	39	JC050-3	y	y	216-0834_496	y	y	
2214	61	30.87	29	2.73	1592	280	5.5	5.5	y	y	0019	25	JC050-3	y	y	216-0834_498	y	y	
2230	61	31.08	29	5.68	1832	284	5.3	5.3	y	y	0019	9	JC050-3	y	y	216-0834_500	y	y	swath depth
2252	61	31.38	29	9.90		284	5.6	5.7	y	y	0020	107	JC050-3	y	y	216-0834_503	y	y	
2300	61	31.49	29	11.45		280	5.4	5.3	y	y	0020	99	JC050-3	?	y	216-0834_505	y	y	EA600 grinding to a halt
2315	61	31.69	29	14.13		272	5.3	5.4	y	y	0020	85	JC050-3	?	y	216-0834_507	y	y	Leighton looking at EA600
2331	61	31.91	29	17.29		276	5.8	5.4	y	y	0020	68	JC050-3	y	y	216-0834_509	y	y	
2345	61	32.28	29	19.74	1685	308	5.9	5.6	y	y	0020	54	JC050-3	y	y	216-0834_511	y	y	

Day: Date: Sheet Number:

Time	Lat		Lon		ADCP150	ADCP75	Techsas	Level-C	Grav.	Mag.	Wind		Sea State	Comments, eg state of seismic exp.
(GMT)	D	DM	D	DM	rec.	rec.	rec.	rec.	(mgal)	(nT)	Speed	Dir.		
0000	61	26.02	25	16.85	y	y	y	y	13335.9		3.8	17.8	Calm	Synchronisation problem with GPS with mag
0015	61	25.80	25	13.97	y	y	y	y		52319	2.8	328	"	Mag back online
0030	61	25.51	25	11.27	y	y	y	y	13336.9		2.4	352	"	
0043	61	24.59	25	9.59	y	y	y	y		52677	3.9	343		
0100	61	23.09	25	9.84	y	y	y	y	13362.4	52682	2.5	344	"	
0130	61	20.97	25	13.50	y	y	y	y	13360	52464	3.7	18.5		
0145	61	19.86	25	15.45	y	y	y	y			3.3	359	"	
0157	61	19.08	25	16.82	y	y	y	y	13358.9	52548	5.0	19.7		
0220	61	17.17	25	20.20	y	y	y	y			4.2	33	"	
0230	61	16.77	25	20.90	y	y	y	y	13354	52597	5.0	14		
0248	61	15.51	25	23.02	y	y	y	y			4.8	5.8	"	
0300	61	15.13	25	25.22	y	y	y	y	13368	52661	4.9	314		
0315	61	15.31	25	28.16	y	y	y	y			4.7	296	"	
0330	61	15.49	25	30.82	y	y	y	y	13369.7	52309	5.2	295.1	"	
0345	61	15.70	25	33.60	y	y	y	y			5.0	294	"	
0400	61	15.88	25	36.26	y	y	y	y	13363.1	51692	6.9	320	"	
0415	61	16.11	25	39.27	y	y	y	y			5.9	323	"	EA600 problem: Techsas rad occasionally
0430	61	16.30	25	41.85	y	y	y	y	13362.7	51703	6.9	319	"	
0445	61	16.49	25	44.54	y	y	y	y			8.0	320	"	
0500	61	16.69	25	47.33	y	y	y	y	13367	52158	8.1	319	"	
0515	61	16.91	25	50.25	y	y	y	y			8.9	313	Calm	EA600 still experiencing delayed updates on Level-C/Techsas
0530	61	17.10	25	52.95	y	y	y	y	13368.9	51246	8.1	321	"	
0545	61	17.31	25	55.85	y	y	y	y			6.9	318	"	
0600	61	17.50	25	85.44	y	y	y	y	13374.6	52427	5.6	319	"	
0615	61	17.71	26	1.27	y	y	y	y			8.6	305		
0630	61	17.93	26	4.32	y	y	y	y	13373.5	51968	8.3	299		
0645	61	18.16	26	7.49	y	y	y	y			9.4	304		
0700	61	18.33	26	9.85	y	y	y	y	13371.9	51885	8.5	296		
0715	61	18.55	26	12.76	y	y	y	y			9.4	326		
0730	61	18.74	26	15.47	y	y	y	y	13367	51493	9.7	317		
0745	61	18.96	26	18.43	y	y	y	y			11.7	319		
0800	61	19.17	26	21.37	y	y	y	y	13369	51536	9.4	311	0.5m swell	calm
0815	61	19.31	26	24.20	y	y	y	y			10.8	309		
0836	61	19.69	26	28.29	y	y	y	y	13369.8	52314	11.7	310	1m swell	Techsas EA600 flashing red
0848	61	19.85	26	30.52	y	y	y	y			10.6	307	1m swell	Techsas EA600 flashing red
0906	61	20.08	26	33.88	y	y	y	y	13369.7	51979	10.1	310	1m swell	
0919	61	20.27	26	36.34	y	y	y	y			11.1	308		
0930	61	20.40	26	38.28	y	y	y	y	13361.7	51259	11.2	315	1m swell	
0946	61	20.63	26	41.45	y	y	y	y			12.0	318	1m swell	
1000	61	20.86	26	44.49	y	y	y	y	13369.9	52535	11.2	312	1m swell	
1015	61	20.02	26	46.79	y	y	y	y			12.1	308	1m swell	
1030	61	21.23	26	49.77	y	y	y	y	13366.5	52473	11.0	309	1m swell	Techsas EA600 flashing red
1045	61	21.44	26	52.56	y	y	y	y			12.4	309	1m swell	Techsas EA600 flashing red
1101	61	21.66	26	55.60	y	y	y	y	13380.2	51254	9.8	313	1m swell	Techsas EA600 flashing red
1118	61	21.89	26	58.67	y	y	y	y			13.2	312	1m swell	Techsas EA600 flashing red
1131	61	22.07	27	1.09	y	y	y	y	13392.8	51748	11.9	316		
1145	61	22.25	27	3.82	y	y	y	y			10.7	311	1m swell	
1202	61	22.69	27	6.99	y	y	y	y	13385.9	51230.97	13.1	312	1m swell	
1215	61	22.67	27	9.57	y	y	y	y			12.9	310		
1232	61	22.90	27	12.70	y	y	y	y	13391.9	52410	12.0	314		
1246	61	23.08	27	15.30	y	y	y	y			11.9	324		
1258	61	23.25	27	17.53	y	y	y	y	13391.5	53398	13.1	317		
1315	61	23.48	27	20.62	y	y	y	y			13.1	318		
13?	61	23.68	27	23.35	y	y	y	y	13396.3	53372.3	11.3	329		
1340	61	23.85	27	25.77	y	y	y	y			12.7	343		
1345	61	25.89	27	26.41	y	y	y	y	13433.5	53051	12.5	342		
1400	61	24.11	27	29.42	y	y	y	y			13.7	323		
1416	61	24.33	27	32.48	y	y	y	y	13390.3	52819.2	12.2	328		
1430	61	24.52	27	34.96	y	y	y	y			10.4	333		
1445	61	24.74	27	38.07	y	y	y	y						
1500	61	24.94	27	40.89	y	y	y	y	13393.6	50813.14	9.8	356		
1515	61	25.16	27	43.81	y	y	y	y			11.6	7		
1527	61	25.29	27	45.72	y	y	y	y	13390.5	52021	9.4	7		
1545	61	25.54	27	49.27	y	y	y	y			10.7	348		
1600	61	25.74	27	52.03	y	y	y	y	13380.8	51811	4.1	4		
1615	61	25.90	27	54.18	y	y	y	y			12.1	365		
1630	61	26.14	27	57.33	y	y	y	y	13370.6	52949	11.5	355		
1645	61	26.36	28	0.06	y	y	y	y			10.8	004		
1700	61	26.53	28	2.86	y	y	y	y	13364.9	52234	9.4	351		
1715	61	26.78	28	6.25	y	y	y	y			11.5	335		
1730	61	26.96	28	8.73	y	y	y	y	13366.9	52073	10.9	353		
1745	61	27.16	28	11.51	y	y	y	y			11.5	348		
1800	61	27.36	28	14.37	y	y	y	y	13380.2	52348	11.7	010		
1815	61	27.59	28	17.39	y	y	y	y			11.3	355		
1830	61	27.78	28	20.25	y	y	y	y	13381.1	52436	11.8	012		
1845	61	27.99	28	23.04	y	y	y	y			11.6	006		
1900	61	28.17	28	25.70	y	y	y	y	13388.6	51774	9.5	004		
1915	61	28.40	28	28.69	y	y	y	y			9.6	356		
1930	61	28.62	28	31.66	y	y	y	y	13391.5	52349	10.2	355		
1945	61	28.80	28	34.28	y	y	y	y			8.0	009		
2000	61	29.05	28	37.63	y	y	y	y	13384.5	52533	10.8	007	1m swell	
2018	61	29.28	28	40.72	y	y	y	y			9.3	358	1-2m swell	Techsas EA600 still flashing red
2038	61	29.55	28	44.53	y	y	y	y	13387	52057	9.3	353		
2047	61	29.68	28	46.23	y	y	y	y			12.0	007		
2102	61	29.88	28	49.03	y	y	y	y	13397.6	52028	12.1	356		
2117	61	30.09	28	51.94	y	y	y	y			10.7	004		
2129	61	30.23	28	54.05	y	y	y	y	13386.2	52948	10.6	009		
2146	61	30.48	28	57.43	y	y	y	y			13.1	011		
2204	61	30.73	29	0.88	y	y	y	y	13387.4	51899	13.4	008		
2215	61	30.88	29	2.81	y	y	y	y			12.6	010		
2230	61	31.08	29	5.74	y	y	y	y	13381.7	52661	12.1	018		Techsas EA600 still flashing red
2254	61	31.41	29	10.28	y	y	y	y			13.6	005		
2304	61	31.55	29	12.22	y	y	y	y	13376.7	52269	13.3	004		Techsas EA600 still flashing red
2317	61	31.72	29	14.57	y	y	y	y			13.3	359	Calm	
2331	61	31.91	29	17.29	y	y	y	y	13370.9	52618	13.7	06		
2345	61	32.28	29	19.74	y	y	y	y			15.3	340		

Every 30 min, for important events and not for birds during turns.

Seismic log

Line No:	**2 SEQ3**				**Date:**	**###**		**Julian Day:**	**218**	**Page No:**				Depth of Gun 1: 5.5m								Array Volume: 355
														Depth of Gun 2: n/a								
	Vessel GPS				Bird 1		Bird 2		Bird 3		Bird 4		Bird 5					Tailbuoy GPS				
Time GMT	Lat		Long		Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Ship H'ding	CMG	Shot no.	FFID	Lat		Long		MISFIRE, Feathering angle, sea state, current, other comments
0000	61	26.02	25	16.92	7.4	120	7.4	129	6.6	122	6.7	122	6.5	115	102	104	19830	19830	61	26.23	25	19.02	
0015	61	25.81	25	14.12	7.3	118	7.1	122	6.7	123	6.9	113	6.4	115	104	100	19889	19889	61	26.01	25	16.25	
0030	61	25.45	25	11.09	7.4	128	7.3	124	7.6	116	7	116	6.5	113	123	125	19956	19956	61	25.77	25	13.09	
0045	61	24.53	25	9.54	7.12	147	7.38	136	7.59	148	7.26	135	6.95	123	160	165	20006	20006	61	25.32	25	10.79	
0100	61	23.09	25	9.86	7.56	189	7.78	189	7.07	162	6.93	174	7.36	185	206	212	20072	20072	61	24.06	25	9.57	Ship on starboard straight
0115	61	21.93	25	11.79	6.58	208	7.57	211	6.71	204	7.1	208	7.22	215	207	219	20137	20137	61	22.75	25	10.64	Calm seas - Tailbuoy online
0130	61	20.96	25	13.49	6.97	206	7.02	207	7.12	208	7.34	214	6.8	204	216	222	20191	20191	61	21.8	25	12.27	Plume like feature spotted on ER^)
0145	61	19.96	25	15.25	6.69	213	6.63	210	6.61	212	6.62	210	7.27	211	217	223	20252	20252	61	20.8	25	14.04	
0201	61	18.82	25	17.35	7.18	203	7.03	205	7.46	210	6.99	202	7.24	208	213	223	20316	20316	61	19.62	25	16.2	
0215	61	17.81	25	19.04	7.1	209	6.81	209	6.86	206	7.35	202	7.62	206	215	224	20372	20372	61	18.66	25	17.92	
0230	61	16.75	25	20.93	7.17	208	7.44	216	7.05	208	6.85	211	7.01	204	210	221	20433	20433	61	17.57	25	19.76	
0244	61	15.84	25	22.52													20482	20482					Started starboard turn onto east-west line
0245	61	15.79	25	22.63	7.11	203	7.14	202	7.25	206	7.3	209	6.89	210	215	223	20489	20489	61	16.63	25	21.33	Starboard turing at 0243
0300	61	15.13	25	25.35	8.1	272	7.2	264	7.4	260	6.8	249	6.9	247	267	271	20555	20555	61	15.57	25	23.38	Turn to straight line again 0306; FFID 2051
0315	61	15.29	25	28	8.3	296	6.7	291	6.2	293	6.5	291	6.9	288	274	279	20611	20611	61	15.21	25	25.82	
0330	61	15.5	25	30.9	6.4	292	6.3	291	6.6	294	6.6	293	7.1	292	276	284	20676	20676	61	15.37	25	28.7	
0345	61	15.7	25	33.67	6.5	290	6.7	290	7.1	290	7.3	294	7	283	278	281	20732	20732	61	15.57	25	31.51	
0401	61	15.91	25	36.6	6.9	270	6.7	275	7.2	274	7.2	268	6.7	275	276	283	20799	20799	61	15.78	25	34.49	
0418	61	16.14	25	39.77	6.8	269	7.3	269	7.2	273	7.2	268	9.3	273	281	284	20866	20866	61	16.01	25	37.65	
0430	61	16.31	25	47.03	7.1	267	7.4	267	7.1	266	7.2	273	7.3	273	272	282	20913	20913	61	16.31	25	42.13	
0445	61	16.51	25	42.83	6.9	264	6.7	269	7.2	269	7.4	262	7.3	265	277	284	20976	20976	61	16.39	25	42.86	
0458	61	16.69	25	47.32	7.2	274	7.2	274	7.4	276	7.2	270	7	278	274	284	21023	21023	61	16.55	25	45.17	
0515	61	16.92	25	50.44	6.9	271	7.3	268	7.1	269	7	270	7	268	274	283	21093	21093	61	16.78	25	48.3	Going West
0530	61	17.13	25	53.35	7.3	272	7.4	272	6.8	272	6.9	271	7.5	266	276	280	21153	21153	61	16.99	25	51.23	
0547	61	17.36	25	56.51	6.8	273	6.8	281	7	273	7.1	276	6.8	299	277	282	21219	21219	61	17.2	25	54.37	
0600	61	17.53	25	58.87	6.46	274	6.8	277	7.32	272	6.87	267	6.69	268	274	280	21273	21273	61	17.37	25	56.76	
0615	61	17.71	26	1.27	6.99	274	7.1	274	6.92	272	6.93	266	7.03	266	276	282	21321	21321	61	17.53	25	59.14	
0630	61	17.92	26	4.25	6.5	270	6.35	270	7.19	270	7.16	263	6.81	271	280	282	21385	21385	61	17.75	26	2.13	
0645	61	18.16	26	7.47	7	282	6.9	272	6.7	278	6.8	267	6.9	276	274	286	21456	21456	61	18	26	25.34	
0709	61	18.48	26	11.93	6.5	266	7.5	271	7.1	281	7.2	279	6.9	273	275	284	21551	21551	61	18.35	26	9.95	
0726	61	18.7	26	15.02	7.7	272	7.3	271	6	276	6.4	273	7.1	287	275	286	21616	21616	61	18.57	26	12.89	
0745	61	18.95	26	8.42	6.3	274	6.3	275	7.5	270	7.5	272	7.2	274	275	284	21689	21689	61	18.83	26	16.53	
0800	61	19.16	26	21.24	7.6	270	7.6	272	7.6	271	7.2	274	7.4	272	274	283	21748	21748	61	19	26	19.17	
0815	61	19.38	26	24.2	7.5	271	7.4	272	7.2	274	7.1	273	7	276	271	284	21808	21808	61	19.18	26	22.03	
0830	61	19.59	26	27.24	7	270	7.4	274	7.6	271	7.4	272	7.1	274	277	280	21868	21868	61	19.4	26	25.07	
0845	61	19.81	26	30.09	7.1	274	7.2	271	7.4	276	7.6	275	7	270	273	280	21928	21928	61	19.61	26	27.93	
0900	61	20	26	32.8	6.4	267	6.7	280	6.9	275	7	279	6.7	281	277	282	21988	21988	61	19.82	26	30.75	
0916	61	20.2	26	36.09	7	274	6.8	279	6.8	281	7.2	276	7.1	279	278	286	22055	22055	61	20.04	26	34.05	~1.5m swell
0930	61	20.4	26	36.22	7.1	278	7	277	7.4	274	7.6	280	7	281	276	285	22107	22107	61	20.19	26	36.18	Caklm, 2m swell
0945	61	20.6	26	41.04	6.7	280	7.3	275	7	274	7.1	272	6.9	279	272	282	22168	22168	61	20.37	26	38.89	
1000	61	20.8	26	43.77	6.9	281	7.2	276	7.4	275	6.8	280	6.9	283	274	284	22230	22230	61	20.59	26	41.7	
1015	61	21.01	26	46.71	7	284	6.8	286	7.2	289	7	279	7	283	275	279	22290	22290	61	20.79	26	44.7	
1030	61	21.22	26	49.67	7.4	285	7.1	278	7	282	7.3	280	7.2	274	278	283	22350	22350	61	20.98	26	47.67	
1045	61	21.44	26	52.55	6.4	274	6.5	277	6.9	280	7	282	7.1	282	277	283	22410	22410	61	21.19	26	50.57	
1100	61	21.62	26	55.11	6.8	278	6.9	281	7	274	7.1	279	7.2	281	275	285	22467	22467	61	21.38	26	55.24	Slight increased chop
1115	61	21.84	26	58.17	6.9	280	7	278	7.4	276	7.1	277	7.3	282	275	283	22530	22530	61	21.59	26	56.09	
1130	61	22.03	27	0.8	7	281	7.1	279	7.2	274	6.9	280	7.4	281	280	287	22590	22590	61	21.79	26	58.75	
1145	61	22.24	27	3.62	7.1	280	7.2	278	7.3	279	6.8	281	7.3	282	272	283	22648	22648	61	22.02	27	1.56	
1200	61	22.44	27	6.41	7.8	297	7.5	291	7.6	298	7.4	300	6.8	301	277	288	22708	22708	61	22.27	27	4.22	
1215	61	22.68	27	9.6	7.51	278	7.49	267	6.12	261	6.95	278	7.07	276	274	282	22770	22770	61	22.5	27	7.38	
1230	61	22.92	27	12.95	6.43	278	7	286	7.36	276	7.38	270	6.9	264	223	269	22845	22845	61	22.74	27	10.83	
1245	61	23.08	27	15.16	6.46	277	7	271	7.67	279	7.68	277	7.2	276	270	280	22893	22893	61	22.94	27	13.14	
1300	61	23.28	27	19.71	7.24	280	6.92	273	6.6	279	7.05	281	7.2	273	273	283	22954	22954	61	23.11	27	15.85	
1315	61	23.49	27	20.82	5.8	297	6.3	300	7.3	292	7	304	6.9	294	269	283	23014	23014	61	23.31	27	18.68	
1331	61	23.72	27	23.99	7.6	295	7.2	296	7.2	301	6.8	305	7.3	294	271	286	23079	23079	61	23.54	27	21.88	
1344	61	23.89	27	26.42	7.4	280	7.4	270	7.3	260	6.9	273	6.3	277	273	284	23130	23130	61	23.73	27	24.27	
1400	61	24.1	27	29.37	7.1	277	7.4	272	7.3	266	7.2	265	7.1	265	272	284	23191	23191	61	23.95	27	27.19	
1415	61	24.32	27	32.22	7.2	258	7.2	273	6.8	261	6.9	267	7.5	280	269	284	23248	23248	61	24.17	27	30.05	
1430	61	24.52	27	35.06	6.2	268	8.8	256	7.4	254	6.6	258	7.7	264	264	283	23309	23309	61	24.37	27	32.88	
1447	61	24.75	27	38.32	6.5	276	6.5	269	6.2	263	6.3	268	7.1	271	270	282	23377	23377	61	24.6	27	36.15	
1500	61	24.94	27	40.9	7.1	276	7	264	7.2	280	6.6	277	7.1	276	272	284	23431	23431	61	24.81	27	38.71	
1515	61	25.13	27	43.49	7.1	269	7	273	7	273	7.5	266	7.1	271	274	282	23488	23488	61	25.02	27	41.5	
1530	61	25.34	27	46.41	7	273	6.8	276	7.1	274	6.5	274	7	273	279	284	23549	23549	61	25.24	27	44.49	Vessel GPS temporarily lost reading
1545	61	25.55	27	49.28	6.7	275	7	268	7.2	268	7.4	270	7.2	269	277	287	23610	23610	61	25.47	27	47.32	Everything is GOOD!
1601	61	25.75	27	52.16	7	273	7.3	277	6.6	275	7.2	274	6.5	262	276	288	23674	23674	61	25.64	27	49.99	
1613	61	25.91	27	54.42	7.5	271	7.4	273	6.9	271	7.2	270	7.5	261	275	289	23725	23725	61	25.81	27	52.26	
1629	61	26.14	27	57.5	6.8	278	6.6	275	6.6	268	6.8	262	6.6	266	275	284	23789	23789	61	26.03	27	55.34	
1645	61	26.34	28	0.32	7	263	6.9	270	7.2	276	7	284	7.2	278	279	291	23850	23850	61	26.23	27	58.16	
1700	61	26.55	28	3.14	6.9	271	7.5	270	6.9	276	7.4	270	7	265	274	283	23909	23909	61	26.44	28	0.98	
1715	61	26.77	28	6.12	7.5	263	7.6	265	7.5	269	7.1	268	7.2	279	272	283	23972	23972	61	26.61	28	3.97	Problem with updating files - sorted.
1729	61	26.96	28	8.84	7	279	6.7	272	7	279	7	274	6.8	273	279	285	24030	24030	61	26.8	28	6.71	
1743	61	27.15	28	11.52	6.9	279	6.8	272	6.7	265	7	275	7.3	276	277	284	24089	24089	61	26.98	28	9.37	
1800	61	27.37	28	14.43	6.7	270	6.6	282	7.3	272	7.4	273	7	272	281	282	24148	24148	61	27.19	28	12.41	
1815	61	27.58	28	17.37	6.7	277	6.6	279	6.8	265	7	262	7.2	278	280	284	24211	24211	61	27.39	28	15.37	
1830	61	27.78	28	20.15	6.9	287	6.6	282	7.1	275	7	262	7.5	273	266	286	24269	24269	61	27.59	28	18.12	
1845	61	27.98	28	23.01	6.9	266	6.7	274	6.8	280	6.8	280	7.2	268	283	281	24331	24331	61	27.79	28	21.03	
1900	61	28.18	28	25.68	6.5	274	6.7	279	7.3	275	7.3	279	6.3	276	280	289	24387	24387	61	27.99	28	23.67	
1915	61	28.4	28	28.79	6.7	279	7.2	275	7.2	275	7.4	283	6.6	278	279	283	24453	24453	61	28.21	28	26.79	
1930	61	28.59	28	31.41	6.7	270	7.2	277	6.9	280	7.2	271	6.8	271	284	285	24508	24508	61	28.39	28	29.38	
1945	61	28.82	28	34.66	6.7	275	7.3	275	7.4	282	6.6	280	6.8	266	285	287	24578	24578	61	28.64	28	32.67	
2000	61	29.09	28	37.35	6.8	277	7.2	278	7.4	280	6.9	278	7	270	281	282	24630	24630	61	29.03	28	35.42	1m swell
2015	61	29.23	28	40.1	6.9	274	6.8	270	6.7	274	7	271	7.1	275	280	286	24690	24690	61	29.05	28	38.05	
2030	61	29.47	28	43.44	7	272	7.1	269	6.9	275	7.2	271	7.4	278	282	289	24755	24755	61	29.27	28	41.38	
2045	61	29.65	28	46.1	7.1	270	7.2	275	6.8	282	7.3	281	7	280	290	288	24810	24810	61	29.45	28	44.01	
2100	61	29.84	28	48.52	6.9	271	6.9	272	6.9	275	7	274	6.7	275	280	279	24868	24868	61	29.63	28	46.38	1m chop
2145	61	30.47	28	57.32	7.2	291	7	298	7.1	297	7.5	300	7.1	276	281	284	25053	25053	61	30.31	28	55.23	
2200	61	30.66	28	59.93	7.3	267	7.3	271	6.7	275	6.5	275	6.9	280	280	285	25108	25108	61	30.49	28	57.99	QC system crash
2215	61	30.87	29	2.67	7.1	280	6.9	279	6.7	277	6.9	278	6.9	265	281	284	25168	25168	61	30.72	29	0.98	
2230	61	31.07	29	5.64	7	279	6.7	282	6.9	283	6.8	279	7.1	278	283	290	25228	25228	61	30.88	29	3.65	
2245	61	31.28	29	8.42	7.1	281	7	282	6.9	281	6.8	283	7.4	281	277	282	25288	25288	61	31.09	29	6.31	
2300	61	31.47	29	11.28	6.1	275	6.5	281	6.3	275	6.6	270	6.6	274	283	287	25348	25348	61	31.3	29	9.14	
2315	61	31.69	29	14.27	7.4	273	7.3	271	7.1	274	6.4	275	7.5	266	284	289	25408	25408	61	31.53	29	12.12	Front in met data and fish finder
2332	61	31.91	29	17.31	7.2	267	7.3	280	6.8	276	6.7	273	6.2	276	281	287	25476	25476	61	31.76	29	15.17	Some swell noise from chop
2334	61	31.97	29	18.03													25487	25487					Start turn to stbd
2345	61	32.26	29	19.68	7.6	290	7.7	274	7	284	7.5	265	7.6	286	304	313	25528	25528	61	31.94	29	17.63	
2348	61	32.53	29	20.32													25540	25540	61	32.02	29	18.4	Air leak on deck, 140bar? - False alarm

Julian Day: Date: Sheet Number:

Time	Lat		Lon		Water	Head.	SOW	SOG	EM710	EM120			EA600	SBP		ER60	OLEX	Comments
(GMT)	D	DM	D	DM	depth (m)		(kts)	(kts)	rec.	rec	Line cnt.		rec.	rec.	Data file	rec.	rec.	
0000	61	33.39	29	21.20	1717	353	5.4	5.6	y	y	0020	39 JC050-3	y	y	216-0834_513	y	y	
0014	61	34.69	29	20.61	1647	026	5.5	5.4	y	y	0020	25 JC050-3	y	y	216-0834_515	y	y	
0029	61	35.83	29	18.93	1763	017	5.5	5.4	y	y	0020	10 JC050-3	y	y	216-0834_517	y	y	Swell increasing, poor data.
0044	61	36.95	29	17.29	1748	029	5.5	5.8	y	y	0021	115 JC050-3	y	y	216-0834_519	y	y	
0100	61	38.14	29	15.58	1639	044	5.8	5.2	y	y	0021	99 JC050-3	y	y	216-0834_522	y	y	
0116	61	39.36	29	13.75	1633	032	5.4	5.6	y	y	0021	83 JC050-3	y	y	216-0834_524	y	y	
0130	61	40.43	29	12.17	2564	027	5.9	5.3	y	y	0021	68 JC050-3	y	y	216-0834_526	y	y	
0144	61	41.48	29	10.62	1710	039	6.3	5.2	y	y	0021	55 JC050-3	y	y	216-0834_528	y	y	EA600 and SBP poor
0159	61	42.37	29	8.56	1723	069	5.2	5.3	y	y	0021	40 JC050-3	y	y	216-0834_530	y	y	
0215	61	42.36	29	5.48	1772	096	5.2	5.4	y	y	0021	24 JC050-3	y	y	216-0834_532	y	y	
0231	61	42.16	29	2.51	1672	083	5.1	5.1	y	y	0021	9 JC050-3	y	y	216-0834_535	y	y	Sea calmer after turn
0245	61	41.98	28	59.74	1774	103	5.3	5.6	y	y	0022	114 JC050-3	y	y	216-0834_537	y	y	
0300	61	41.79	28	56.91	1799	096	5.9	5.3	y	y	0022	99 JC050-3	y	y	216-0834_539	y	y	
0315	61	41.61	28	54.05	1841	095	5.2	5.0	y	y	0022	84 JC050-3	y	y	216-0834_541	y	y	SBP poor
0330	61	41.41	28	51.14	1705	097	5.9	5.1	y	y	0022	69 JC050-3	y	y	216-0834_543	y	y	
0345	61	41.15	28	48.69	1703	102	6.3	5.7	y	y	0022	55 JC050-3	y	y	216-0834_545	y	y	
0400	61	41.07	28	45.85	1755	098	5.7	5.4	y	y	0022	38 JC050-3	y	y	216-0834_548	y	y	
0415	61	40.87	28	42.80	1618	098	5.5	5.7	y	y	0022	24 JC050-3	y	y	216-0834_550	y	y	
0430	61	40.65	28	39.61	1618	103	4.8	5.2	y	y	0022	8 JC050-3	y	y	216-0834_552	y	y	
0445	61	40.49	28	37.19	1565	100	5.0	5.7	y	y	0023	115 JC050-3	y	y	216-0834_554	y	y	
0500	61	40.30	28	34.51	1648	099	5.2	5.5	y	y	0023	99 JC050-3	y	y	216-0834_556	y	y	
0515	61	40.11	28	31.54	1522	097	5.2	5.4	y	y	0023	86 JC050-3	y	y	216-0834_558	y	y	SBP - no data appearing on screen
0530	61	39.92	28	28.56	1527	097	6.2	5.6	y	y	0023	68 JC050-3	y	y	216-0834_560	y	y	"
0545	61	39.73	28	25.73	1618	101	5.5	5.6	y	y	0023	55 JC050-3	y	y	216-0834_562	y	y	"
0600	61	39.55	28	23.05	1490	080	5.5	5.5	y	y	0023	41 JC050-3	y	y	216-0834_564	y	y	" & EM710: 0127-22-JC050
0615	61	39.37	28	20.17	1600	098	5.3	5.2	y	y	0023	25 JC050-3	y	y	216-0834_567	y	y	"
0630	61	39.17	28	17.14	1396	089	5.7	6.0	y	y	0023	10 JC050-3	y	y	216-0834_569	y	y	"
0645	61	38.98	28	14.47	1375	091	5.2	5.4	y	y	0024	115 JC050-3	y	y	216-0834_571	y	y	"
0700	61	38.80	28	11.75	1192	106	5.5	5.5	y	y	0024	102 JC050-3	y	y	216-0834_573	y	y	" : some v. steep topo around ridges
0715	61	38.60	28	8.61	1545	097	5.7	5.3	y	y	0024	85 JC050-3	y	y	216-0834_575	y	y	"
0730	61	38.40	28	5.86	1374	096	5.5	5.4	y	y	0024	69 JC050-3	y	y	216-0834_578	y	y	
0745	61	38.22	28	2.97	1330	100	5.5	5.2	y	y	0024	55 JC050-3	y	y	216-0834_580	y	y	SBP still patchy
0800	61	38.02	27	59.85	1425	099	5.4	5.3	y	y	0024	39 JC050-3	y	y	216-0834_582	y	y	
0815	61	37.83	27	56.97	1496	098	5.3	5.5	y	y	0024	24 JC050-3	y	y	216-0834_587	y	y	SBP tweaked, now working
0831	61	37.62	27	53.86	1491	094	5.4	5.4	y	y	0024	8 JC050-3	y	y	216-0834_591	y	y	
0846	61	37.43	27	51.04	1564	094	5.4	5.5	y	y	0025	113 JC050-3	y	y	216-0834_594	y	y	
0900	61	37.25	27	48.28	1564	090	5.4	5.5	y	y	0025	99 JC050-3	y	y	216-0834_596	y	y	
0915	61	37.08	27	45.74	1479	096	5.1	5.3	y	y	0025	85 JC050-3	y	y	216-0834_598	y	y	
0929	61	36.88	27	42.74	1477	094	5.3	5.5	y	y	0025	70 JC050-3	y	y	216-0834_601	y	y	
0945	61	36.62	27	39.82	1299	091	5.3	5.8	y	y	0025	53 JC050-3	y	y	216-0834_603	y	y	
1000	61	35.51	27	37.07	1119	095	5.3	5.7	y	y	0025	40 JC050-3	y	y	216-0834_605	y	y	
1015	61	36.32	27	34.15	1026	095	5.6	5.8	y	y	0025	24 JC050-3	y	y	216-0834_607	y	y	
1030	61	36.12	27	31.26	1044	085	5.5	5.7	y	y	0025	9 JC050-3	y	y	216-0834_610	y	y	
1046	61	35.91	27	28.16	1792	102	5.6	5.6	y	y	0026	113 JC050-3	y	y	216-0834_612	y	y	
1100	61	35.74	27	25.62		093	5.3	5.3	y	y	0026	100 JC050-3	y	y	216-0834_613	y	y	
1115	61	35.55	27	22.72	762	101	5.6	5.5	y	y	0026	84 JC050-3	y	y	216-0834_615	y	y	
1130	61	35.37	27	19.91	847	094	5.5	5.4	y	y	0026	70 JC050-3	y	y	216-0834_617	y	y	
1145	61	35.17	27	17.04	749	091	5.1	5.4	y	y	0026	55 JC050-3	y	y	216-0834_619	y	y	
1156	61	35.03	27	14.77	795	112	5.2	5.5	y	y	0026	43 JC050-3	y	y	216-0834_620	y	y	
1214	61	34.80	27	11.37	799	099	5.7	5.3	y	y	0026	25 JC050-3	y	y	216-0834_622	y	y	
1230	61	34.62	27	8.65	829	094	4.9	5.7	y	y	0026	10 JC050-3	y	y	216-0834_627	y	y	Poor quality on SBP
1245	61	34.42	27	5.68	725	093	5.4	5.2	y	y	0027	114 JC050-3	y	y	216-0834_629	y	y	Ship turning
1300	61	34.73	27	2.83	796	045	5.5	5.2	y	y	0027	99 JC050-3	y	y	216-0834_631	y	y	
1314	61	35.79	27	1.42	687	008	5.4	5.2	y	y	0027	85 JC050-3	y	y	216-0834_633	y	y	
1330	61	37.21	27	0.55	668	046	4.8	4.4	y	y	0027	70 JC050-3	y	y	216-0834_635	y	y	
1345	61	38.34	26	59.87	612	018	4.9	5.5	y	y	0027	54 JC050-3	y	y	216-0834_637	y	y	
1400	61	39.66	26	59.06	772	014	5.4	5.4	y	y	0027	39 JC050-3	y	y	216-0834_639	y	y	
1415	61	40.98	26	58.26	790	009	5.4	5.1	y	y	0027	24 JC050-3	y	y	216-0834_641	y	y	
1430	61	42.27	26	57.47	696	008	5.8	5.5	y	y	0027	9 JC050-3	y	y	216-0834_643	y	y	
1447	61	43.76	26	56.55	819	006	6.7	5.2	y	y	0028	112 JC050-3	y	y	216-0834_645	y	y	
1502	61	45.08	26	55.75	903	020	5.7	5.5	y	y	0028	97 JC050-3	y	y	216-0834_647	y	y	
1515	61	46.26	26	55.00	875	014	5.3	5.4	y	y	0028	84 JC050-3	y	y	216-0834_648	y	y	
1530	61	47.57	26	54.33	943	359	5.2	5.5	y	y	0029	114 JC050-3	y	y	216-0834_649	y	y	
1546	61	48.82	26	55.40	846	313	5.4	5.3	y	y	0029	99 JC050-3	y	y	216-0834_651	y	y	
1600	61	49.35	26	57.63	678	268	5.1	5.4	y	y	0029	85 JC050-3	y	y	216-0834_654	y	y	
1615	61	49.18	27	0.81	824	240	5.5	5.5	y	y	0030	108 JC050-3	y	y	216-0834_655	y	y	
1629	61	48.21	27	2.39	889	209	5.6	5.5	y	y	0030	95 JC050-3	y	y	216-0834_656	y	y	
1645	61	46.90	27	2.93	831	179	5.6	5.7	y	y	0030	79 JC050-3	y	y	216-0834_657	y	y	
1700	61	45.84	27	2.32	840	137	5.7	5.2	y	y	0030	63 JC050-3	y	y	216-0834_659	y	y	SBP still SHIT
1715	61	45.21	26	59.83	813	096	5.0	5.4	y	y	0030	52 JC050-3	y	y	216-0834_659	y	y	
1730	61	44.99	26	56.68	786	095	5.7	57.0	y	y	0030	35 JC050-3	y	y	216-0834_660	y	y	EM120 cuts out when bow thrusters are activated
1745	61	44.76	26	53.37	690	108	5.7	5.7	y	y	0030	18 JC050-3	y	y	216-0834_661	y	y	
1800	61	44.60	26	51.11	878	094	5.3	5.5	y	y	0030	6 JC050-3	y	y	216-0834_662	y	y	
1815	61	44.43	26	48.54	868	090	5.6	5.4	y	y	0031	113 JC050-3	y	y	216-0834_663	y	y	SBP wtill poor
1830	61	44.21	26	45.36	893	092	5.5	5.6	y	y	0031	94 JC050-3	y	y	216-0834_664	y	y	SBP giving fairly clear data
1845	61	44.00	26	42.27	886	100	5.2	5.6	y	y	0031	80 JC050-3	y	y	216-0834_665	y	y	
1900	61	43.79	26	39.25	911	096	5.6	5.6	y	y	0031	64 JC050-3	y	y	216-0834_666	y	y	
1915	61	43.59	26	36.40	726	092	5.2	5.3	y	y	0031	48 JC050-3	y	y	216-0834_667	y	y	
1930	61	43.41	26	33.75	818	087	5.2	5.5	y	y	0031	34 JC050-3	y	y	216-0834_668	y	y	
1945	61	43.20	26	30.82	977	084	5.5	5.3	y	y	0031	17 JC050-3	y	y	216-0834_669	y	y	
2000	61	42.99	26	27.68	835	086	5.6	5.6	y	y	0031	4 JC050-3	y	y	216-0834_678	y	y	
2015	61	42.79	26	24.73	902	093	5.6	5.4	y	y	0032	109 JC050-3	y	y	216-0834_679	y	y	
2030	61	42.59	26	21.92	972	097	5.9	5.3	y	y	0032	94 JC050-3	y	y	216-0834_686	y	y	
2045	61	42.38	26	18.92	1081	104	6.0	5.4	y	y	0032	79 JC050-3	y	y	216-0834_688	y	y	
2100	61	42.19	26	16.22	1294	096	5.9	5.7	y	y	0032	65 JC050-3	y	y	216-0834_690	y	y	
2115	61	42.00	26	13.27	1285	104	5.3	5.5	y	y	0032	49 JC050-3	y	y	216-0834_692	y	y	
2130	61	41.78	26	10.29	1468	087	5.6	5.1	y	y	0032	34 JC050-3	y	y	216-0834_694	y	y	Slowing down to 4.5kts for CTD
2145	61	41.61	26	7.81	1299	096	4.7	5.3	y	y	0032	18 JC050-3	y	y	216-0834_697	y	y	XCTD done 2135. Speeding up to 5.5kts
2200	61	41.42	26	5.11	1400	094	5.5	5.5	y	y	0032	4 JC050-3	y	y	216-0834_698	y	y	
2215	61	41.23	26	2.25	1271	096	5.5	5.3	y	y	0033	110 JC050-3	y	y	216-0834_700	y	y	
2230	61	41.02	25	59.38	1215	092	5.8	5.4	y	y	0033	94 JC050-3	y	y	216-0834_702	y	y	SBP poor
2245	61	40.84	25	56.57	1373	100	5.2	5.6	y	y	0033	79 JC050-3	y	y	216-0834_704	y	y	
2300	61	40.62	25	53.54	1270	093	5.2	5.2	y	y	0033	64 JC050-3	y	y	216-0834_706	y	y	
2315	61	40.44	25	50.86	1622	094	5.4	5.6	y	y	0033	50 JC050-3	y	y	216-0834_708	y	y	
2331	61	40.21	25	47.63	1598	095	5.9	5.2	y	y	0033	33 JC050-3	y	y	216-0834_711	y	y	
2345	61	40.04	25	45.06	1601	103	5.4	5.7	y	y	0033	19 JC050-3	y	y	216-0834_713	y	y	

Day: Date: Sheet Number:

Time	Lat		Lon		ADCP150	ADCP75	Techsas	Level-C	Grav.	Mag.	Wind			Comments, eg state of seismic exp.
(GMT)	D	DM	D	DM	rec.	rec.	rec.	rec.	(mgal)	(nT)	Speed	Dir.	Sea State	
0000	61	33.50	29	21.23	y	y	y	y	13337.7	52950	14.3	305	Calm - slight swell	
0015	61	34.73	29	20.55	y	y	y	y			12.3	255	"	
0030	61	35.87	29	18.91	y	y	y	y	13389.6	52944	12.1	262	"	
0043	61	36.85	29	17.45	y	y	y	y			10.0	258		
0058	61	38.04	29	15.72	y	y	y	y	13385.2	52832	12.7	259	Swell increasing	
0116	61	39.38	29	13.74	y	y	y	y			13.0	273		
0128	61	40.18	29	12.56	y	y	y	y	13387.2	52883	11.0	270	Medium swell roll=2.5 m	
0145	61	41.48	29	10.63	y	y	y	y			15.0	282		
0200	61	42.38	29	8.50	y	y	y	y	13373.5	52832	8.7	226		
0214	61	42.38	29	5.71	y	y	y	y			7.0	210		
0230	61	42.17	29	2.56	y	y	y	y	13357.5	52581	4.0	202		
0245	61	41.98	28	59.80	y	y	y	y			3.0	209		
0300	61	41.82	28	57.20	y	y	y	y	13352.7	52291	5.0	217		
0315	61	41.62	28	54.17	y	y	y	y			6.0	223		
0331	61	41.41	28	50.98	y	y	y	y	13361.7	52698	6.4	208		
0345	61	41.25	28	48.69	y	y	y	y			7.3	215		
0400	61	41.07	28	45.87	y	y	y	y	13354.4	51831	4.6	205		
0415	61	40.86	28	42.78	y	y	y	y			7.9	217		
0430	61	40.68	28	40.07	y	y	y	y	13357.6	52533	9.9	220		
0445	61	40.49	28	37.12	y	y	y	y			7.4	216		
0500	61	40.30	28	34.51	y	y	y	y	13358.5	52390	9.2	242		
0515	61	40.12	28	31.54	y	y	y	y			10.1	214		
0530	61	39.92	28	28.56	y	y	y	y	13363.7	52052	6.8	215		
0545	61	39.73	28	25.73	y	y	y	y			7.5	219		
0600	61	39.55	28	23.05	y	y	y	y	13361.4	52323	10.7	215	Choppy	
0615	61	39.37	28	20.17	y	y	y	y			9.0	222		
0630	61	37.17	28	17.20	y	y	y	y	13366.3	52820	9.5	220		
0645	61	38.98	28	14.47	y	y	y	y			9.4	220	Swell < 2m	
0700	61	38.80	28	11.75	y	y	y	y	13364.3	52177	9.6	214		
0715	61	38.59	28	8.49	y	y	y	y			9.0	215		
0730	61	38.41	28	5.79	y	y	y	y	13361.2	52084	7.2	203		
0745	61	38.22	28	2.97	y	y	y	y			9.1	207	Calm - 2m swell	
0800	61	38.02	27	59.85	y	y	y	y	13348.1	51888	6.2	193		
0815	61	37.83	27	56.97	y	y	y	y			6.8	204		
0831	61	37.62	27	53.86	y	y	y	y	13340.8	51964	7.6	196		
0846	61	51.04	27	51.04	y	y	y	y			5.6	217		
0902	61	37.23	27	47.96	y	y	y	y	13334.9	51990	7.1	213		
0915	61	37.07	27	45.55	y	y	y	y			8.4	212		
0931	61	36.87	27	42.55	y	y	y	y	13336.8	52476	3.0	197		
0945	61	36.62	27	39.82	y	y	y	y			5.2	172		
1000	61	36.51	27	37.07	y	y	y	y	13349.8	52564	3.9	141		
1015	61	36.30	27	33.87	y	y	y	y			11.2	249		
1031	61	36.11	27	31.18	y	y	y	y	13364.3	51626	8.8	271		
1047	61	35.90	27	27.91	y	y	y	y			6.7	265		
1100	61	35.74	27	25.62	y	y	y	y	13363	51686	7.4	256		
1117	61	35.53	27	22.28	y	y	y	y			5.0	263		
1131	61	35.35	27	19.67	y	y	y	y	13362.1	50646	6.9	239		
1145	61	35.17	27	17.06	y	y	y	y			5.9	265		
1157	61	35.01	27	14.61	y	y	y	y	13359.9	51510	8.5	240		
1216	61	34.77	27	11.06	y	y	y	y			5.1	236		
1229	61	34.61	27	8.54	y	y	y	y	13353.2	52939	6.0	243		
1245	61	34.42	27	5.67	y	y	y	y			5.3	271	calm	
1300	61	34.65	27	3.05	y	y	y	y	13373.5	53547	7.4	301		
1315	61	34.85	27	1.39	y	y	y	y			4.0	324		
1330	61	37.12	27	0.61	y	y	y	y	13388.4	53044	10.0	320		
1345	61	38.39	26	59.83	y	y	y	y			11.0	310		
1405	61	40.13	26	58.79	y	y	y	y	13389.6	52791.5	12.0	320		
1416	61	41.05	26	58.22	y	y	y	y			10.5	316		
1429	61	42.22	26	57.50	y	y	y	y	13397	53066	10.5	324		
1445	61	43.63	26	56.63	y	y	y	y			11.0	326		
1459	61	44.86	26	55.88	y	y	y	y	13393.1	53435	11.9	318		
1518	61	46.45	26	54.88	y	y	y	y			11.8	322		
1530	61	47.59	26	54.33	y	y	y	y	13396.4	52571	10.4	338	1 m chop	
1547	61	48.93	26	55.55	y	y	y	y			11.2	16	"	
1600	61	49.35	26	57.63	y	y	y	y	133420.4	51851	11.4	39	White horses	
1615	61	49.18	27	0.74	y	y	y	y			10.1	077		
1630	61	48.21	27	2.39	y	y	y	y	13401.4	51388	7.0	113		
1645	61	46.90	27	2.93	y	y	y	y			6.7	140		
1700	61	45.84	27	2.32	y	y	y	y	13377	51970	7.6	212		
1715	61	45.21	26	59.79	y	y	y	y			9.1	250		
1730	61	44.99	26	56.61	y	y	y	y	13373.2	53895	7.8	257		
1745	61	44.76	26	53.37	y	y	y	y		54529	10.0	276		
1800	61	44.60	26	51.11	y	y	y	y	13372.5	53080	8.3	264		
1813	61	44.43	26	48.54	y	y	y	y			9.3	259		
1830	61	44.21	26	45.36	y	y	y	y	13370.9	53816	10.7	268		
1845	61	43.99	26	42.32	y	y	y	y			10.8	269		
1900	61	43.79	26	39.25	y	y	y	y	13374.1	53213	9.0	259		
1915	61	43.59	26	36.40	y	y	y	y			10.1	273		
1930	61	43.41	26	33.75	y	y	y	y	13380	512869	11.1	269		
1945	61	43.20	26	30.82	y	y	y	y			11.2	274		
2005	61	42.93	26	36.73	y	y	y	y	13384	51792	11.0	267	1-2m Swell	
2015	61	42.79	26	24.80	y	y	y	y			10.6	265		
2030	61	42.59	26	21.92	y	y	y	y	13374.8	51362	10.3	280		
2045	61	42.38	26	18.92	y	y	y	y			9.0	267		
2101	61	42.18	26	15.99	y	y	y	y	13356.4	52633	11.3	270	1m swell	
2118	61	41.95	26	12.76	y	y	y	y			8.5	272		
2130	61	41.78	26	10.31	y	y	y	y	13350.2	52261	8.8	261		Slowing down to 4.5kts for XCTD
2146	61	41.61	26	7.78	y	y	y	y			8.2	266		XCTD done 2135. Speeding up to 5.5kts
2200	61	41.42	26	4.91	y	y	y	y	13347.9	51718	10.7	274		
2216	61	41.21	26	2.02	y	y	y	y			9.1	261		
2230	61	41.02	25	59.34	y	y	y	y	13353.6	52027	8.5	264		
2245	61	40.84	25	56.57	y	y	y	y			9.7	256	1-2m swell	
2300	61	40.61	25	53.46	y	y	y	y	133353.8	52247	8.3	266	Calm	
2315	61	40.44	25	50.86	y	y	y	y			9.5	258		
2330	61	40.22	25	47.75	y	y	y	y	13347.7	51358	9.7	258		
2345	61	40.04	25	45.06	y	y	y	y			10.2	259		

Every 30 min, for important events and not for birds during turns.

Seismic log

Line No:	2 SEQ 3/4				Date:	###		Julian Day:	219	Page No:				Depth of Gun 1: 5.5m								Array Volume: 355
														Depth of Gun 2:								
	Vessel GPS				Bird 1		Bird 2		Bird 3		Bird 4		Bird 5					Tailbuoy GPS				
Time GMT	Lat		Long		Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Ship H'ding	CMG	Shot no.	FFID	Lat		Long		MISFIRE, Feathering angle, sea state, current, other comments
0000	61	33.46	29	21.23	6.5	350	7.1	332	7.1	342	7.3	342	7.3	343	341	357	25588	25588	61	32.55	29	20.22	
0015	61	33.73	29	20.51	6.2	23	7	24	7.3	13	7.5	6	7.1	3	26	45	25650	25650	61	33.85	29	21.12	Ship on straight going 080E
30	61	35.83	29	18.94	5.9	23	6.1	36	7	277	7.3	33	6.5	35	28	36	25710	25710	61	34.98	29	20.15	Tailbuoy on straight
0045	61	36.98	29	17.75	6	31	6.9	27	7.2	32	7.3	37	6.8	21	26	45	25771	25771	61	36.14	29	18.45	
0100	61	37.36	29	15.43	6.9	27	6.6	14	7.3	31	7.1	34	7.3	30	27	41	25841	25841	61	37.39	29	16.62	
0116	61	39.4	29	13.69	7.2	30	7.1	25	7.5	26	7.2	36	7.4	31	22	37	25892	25892	61	38.58	29	14.9	
0131	61	40.46	29	12.12	6.4	36	6.3	27	7.5	21	7.3	31	7.2	29	24	42	25955	25955	61	39.56	29	13.3	Swell has increased, heave and rollhu w 2.5 m
0145	61	41.5	29	10.61	7.1	36	7.1	20	7.4	28	6.9	42	6.6	38	25	39	26010	26010	61	40.7	29	11.79	
0147	61	41.73	29	10.27													26019	26019	61		29		Started turn to starboard back onto E-W line
0200	61	42.39	29	8.46	7.2	52	7.1	50	6.9	36	6.5	48	7.4	39	73	79	26071	26071	61	41.79	29	10.16	On starboard turn
0207	61	42.47	29	7.03													26097	26097	61		29		Ship on E-W straight
0216	61	42.37	29	5.35	7.2	91	6.8	89	6.3	91	6.6	89	6.9	87	99	112	26196	26196	61	42.46	29	7.48	
0219	61	42.32	29	5.64													26194	26194	61	42.44	29	6.9	Tailbuoy on E-W straight, data showing noise because of windy day. Bird depths increased t
0231	61	42.17	29	2.56	7.5	92	8	102	7.9	101	8.7	104	7.8	105	93	102	26196	26196	61	42.32	29	4.7	Bird depths increased to 8.5 m.
0245	61	41.98	28	59.71	8.5	101	9	90	8.4	90	8.2	97	8.4	104	88	102	26254	26254	61	42.14	29	1.9	
0300	61	41.8	28	56.94											96	109	26312	26312	61		28		
0316	61	41.6	28	56.05	8.3	93	8.8	92	8.3	87	8.5	102	7.6	95	91	106	26376	26376	61	41.73	28	55.97	
0330	61	41.63	28	51.23	8	89	8.7	88	8.2	105	8.4	99	8.3	100	103	109	26433	26433	61	41.55	28	53.95	
0345	61	41.26	28	48.42	7.8	97	8.3	100	8.9	91	8.4	95	8.2	92	93	93	26490	26490	61	4136	28	50.52	
0400	61	41.05	28	48.56	8.5	94	8.6	96	8.4	90	8.3	97	8.5	96	88	95	26555	26555	61	41.16	28	47.53	
0414	61	40.87	28	42.9	8.2	83	8.4	94	9	140	8.4	90	8.1	94	99	104	26607	26607	61	40.98	28	45.06	
0430	61	10.72	28	42.91	8.18	95	9.12	102	8.45	92	8.29	89	7.98	97	91	99	26660	26660	61	40.84	28	42.87	
0444	61	10.49	28	37.19	7.5	80	8	93	8.4	95	8.5	95	8.2	91	94	105	26726	26726	61	40.6	28	39.37	
0500	61	40.3	28	34.28	8.2	96	8.8	093	8.8	91	8.5	101	8.3	97	97	104	26791	26791	61	40.39	28	36.25	
0515	61	40.1	28	31.39	8.5	93	8.8	95	8.3	97	8.2	93	8.3	96	96	99	26851	26851	61	40.2	28	33.42	
0532	61	39.88	28	27.88	7.5	91	8.3	086	8.6	90	8.7	78	7.6	90	97	105	26924	26924	61	39.96	28	29.92	
0545	61	39.71	28	25.42	8.4	92	8.7	94	8.6	82	8.3	87	8.3	86	94	98	26975	26975	61	39.82	28	27.47	
0600	61	39.55	28	22.8	7.7	93	8.4	103	8.5	87	8.2	93	7.8	88	101	111	27031	27031	61	39.65	28	24.81	
0615	61	39.34	28	19.78	8.4	85	8.6	91	8.8	96	8.7	88	8.3	94	98	109	27095	27095	61	39.44	28	21.77	
0630	61	39.15	28	16.96	7.4	79	8.4	089	8.6	88	8.5	94	8.2	89	94	101	27153	27153	61	39.25	28	19.04	
0645	61	38.97	28	14.31	8.2	81	8.7	97	8.4	89	8.9	94	7.9	90	87	101	27208	27208	61	39.09	28	16.36	0650: Umbilical wtrapped around towing wire, monitoring
0700	61	38.78	28	11.4	7	100	8.8	94	8.8	96	8.8	95	7.6	121	94	100	27270	27270	61	38.91	28	13.56	
0715	61	38.59	28	8.6	7.8	87	8.3	93	8.9	85	8.6	89	8	93	91	103	27328	27328	61	38.71	28	10.65	
0730	61	38.39	28	5.58	7.9	95	8.7	093	8.8	94	8.9	93	8.3	97	94	102	27392	27392	61	38.51	28	7.61	
0745	61	38.21	28	2.82	7.6	95	8.5	85	8.4	87	8.5	90	8.3	91	98	106	27450	27450	61	38.33	28	4.98	
0800	61	38.02	27	59.84	7.5	91	7.9	94	8	89	8.1	89	8.2	90	98	109	27510	27510	61	38.13	28	1.93	1m swell, slight chop
0815	61	37.83	27	56.96	7	92	7.8	95	8.1	90	8.1	87	8.2	91	101	105	27570	27570	61	37.95	27	59.02	Gun umbilical still twisted
0830	61	37.63	27	54.08	8.2	96	8.8	97	7.6	98	7.5	95	7.9	96	94	97	27630	27630	61	37.79	27	56.28	
0845	61	37.44	27	51.14	8.3	94	8.7	99	8	98	7.9	96	7.8	98	101	106	27690	27690	61	37.6	27	53.27	
0900	61	37.24	27	48.22	8.4	95	8.1	97	8.2	94	8.2	100	7.9	101	93	98	27750	27750	61	37.38	27	50.33	
0915	61	37.07	27	45.55	8.3	85	8.4	91	8.1	84	8.3	92	8	98	93	103	27810	27810	61	37.18	27	47.57	
0930	61	36.87	27	42.69	8.1	87	8.4	92	8.3	91	8.1	89	8.3	90	92	104	27870	27870	61	36.98	27	44.82	
0945	61	36.69	27	39.92	8	91	8.2	94	8.3	96	7.9	93	8.1	90	96	106	27930	27930	61	36.79	27	42.02	
1000	61	36.49	27	36.88	8.1	101	8.3	89	8.4	95	8	100	7.9	98	93	105	27990	27990	61	36.59	27	39.02	Raining
1015	61	36.31	27	34.07	8	102	7.9	99	8.2	98	8.4	95	8.3	92	94	108	28050	28050	61	36.39	27	36.2	
1030	61	36.12	27	31.26	8.2	100	8.7	94	8.4	96	8.9	93	8	91	88	97	28110	28110	61	36.21	27	33.41	
1045	61	35.92	27	28.37	8.1	91	8.4	89	8.7	88	8.6	94	7.8	87	95	102	28170	28170	61	36.01	27	30.39	1hr50 to turn
1100	61	35.75	27	25.73	8	89	7.7	87	8.4	90	7.9	89	8.1	86	90	102	28230	28230	61	35.84	27	27.84	
1115	61	35.54	27	22.7	8.1	90	8.3	86	7.9	92	8.2	84	8.4	89	95	109	28290	28290	61	35.64	27	24.84	
1130	61	35.36	27	19.85	8	92	8.5	90	8.1	93	7.9	92	8.3	91	94	105	28350	28350	61	35.45	27	21.98	
1145	61	35.17	27	17.01	8.2	94	8.1	87	8.4	88	8.2	91	8.3	92	93	102	28410	28410	61	35.27	27	19.15	
1200	61	34.98	27	14.16	8.4	107	8.5	105	8.3	104	8.3	112	8.2	123	97	107	28472	28472	61	35.08	27	16.24	qc screen rebooting at 12:11
1215	61	34.8	27	11.37	8.6	106	8.9	103	8	97	8.4	105	8.2	100	105	102	28528	28528	61	34.89	27	13.49	
1230	61	34.61	27	8.55	8	110	8.6	109	8.4	109	8.4	256	8	104	94	105	28590	28590	61	34.72	27	10.76	
1245	61	34.41	27	5.54											94.7	105	28655	28655	61	34.51	27	7.58	
1247	61	34.39	27	5.08	7.65	82	8.11	80	7.46	93	7.3	93	7.84	282			28657	28657	61		27		start port side turn at 12:47, file id 28567
1300	61	34.7	27	2.93	7.33	58	8.58	62	8.07	69	8.1	70	8.42	68	48.1	62	28710	28710	61	34.37	27	4.91	on port turn slap on N/S straight
1310	61	35.5	27	1.61													28750	28750	61		27		
1315	61	35.9	27	1.38	8.24	20	8.57	16	7.58	18	7.74	32	7.79	25	14.4	16.4	28772	28772	61	35.02	27	2.35	
1323	61		27														28803	28803	61		27		Tailbuoy on straight
1326	61		27														28830	28830	61		27		bird set to full starboard tilt, last shot still recording though, umbilical going to (be) unwrappe
1329	61		27																61		27		speed elevated to 4.5 kts
1333	61	37.42	27	0.44															61		27		all birds in spec at 7 m.
1335	61		27														28831	28831	61		27		speed to 5 kts, recording and gun start point out of sync by two.
1337	61	37.76	27	0.23													28859	28859	61	36.78	27	0.76	start firing again on N/S straight
1342	61		27														28878	28878	61		27		speed now at 5.5. Kts
1345	61	28.3	26	59.91	6.01	12	6.74	12	7.9	14	7.81	12	7.28	12	20.2	25.4	28888	28888	61	37.32	27	0.48	
1403	61	39.89	26	58.93	6.07	3.4	6.9	11.2	7.28	6.4	7.05	21	7.14	7.5	16.2	21.7	28963	28963	61	38.94	26	59.5	
1415	61	40.97	26	58.67	6.27	9	7.27	5	6.13	73	6.46	14	6.97	2	11.5	17.6	29012	29012	61	40.01	26	58.85	
1431	61	42.41	26	57.39	7.79	6.5	6.9	13	7.95	70	7.16	6	7.21	1	19	26.6	29079	29079	61	41.44	26	58	
1445	61	43.59	26	56.66	6	10.4	6.8	19	7.2	16.5	7.2	16.5	6.5	0.7	9.9	20.9	29130	29130	61	42.63	26	57.31	
1500	61	44.9	26	55.85	6.29	0.2	7.56	20	6.7	14	7.04	7.7	7.15	7.8	12.6	21.6	29194	29194	61	43.95	26	56.48	going through centre point of line now
1516	61	46.33	26	54.96	8.3	17.2	8.3	17	6.8	12.4	7	17.2	7.2	15	13.2	25.2	29253	29253	61	45.35	26	55.61	
1526	61	47.22	26	54.43													29293	29293	61		26		starting port side turn
1530	61	47.52	26	54.34	6.4	323	6.1	11.4	6.4	9.5	6.9	6.2	7.1	14.3	357	6.1	29309	29309	61	46.54	26	58.84	
1532	61		26														29317	29317	61		26		end of sequence
NEW SEQUENCE																							
1538																	30000	30000					Start of sequence turning back on to the main line
1545	61	48.87	26	55.41	7.5	307	7.5	317	7.4	317	7.3	320	7.3	332	318	312	30025	30025	61	48.15	26	54.55	
1600	61	49.36	26	57.88	6.3	45	6.4	305	6.2	285	6	293	7.1	295	295	290	30091	30091	61	49.04	26	53.82	On turn
1615	61	49.24	27	0.49	6.6	252	7	253	7.6	263	7.1	271	7	265	244	245	30143	30143	61	49.41	26	58.36	Still turning
1630	61	48.15	27	242	7.2	204	7.3	209	7.5	217	7.5	214	7	214	192	200	30207	30207	61	49.01	27	1.29	
1647	61	4665	27	2.88	6.8	170	7.6	168	6.2	181	7.8	172	7.4	185	167	176	30275	30275	61	47.68	27	2.82	Bring guns closer, going to stop firing at 30289
1659	61	45.66	27	1.96	6.7	128	8.6	144	8.08	154	7.5	154	6.89	146	126	134	30307	30307	61	46.66	27	2.94	Guns in water. No problems. Firing at 30307
1717	61	45.15	26	58.94	6.2	93	7.11	99	7.05	99	7.26	103	7.1	101	96	108	30395	30395	61	45.39	27	1.05	
1729	61	44.99	26	56.73	7.3	100	7.3	86	6.5	91	7	110	7.4	92	97	104	30442	30442	61	45.15	26	58.83	1711 - Back on mainline
1745	61	44.78	26	53.57	7.1	95	7.2	94	6.6	98	6.7	98	6.8	97	101	103	30506	30506	61	44.96	26	55.71	Stbd push on streamer
1800	61	44.59	26	50.92	7	100	6.7	102	6.6	113	7.1	103	7.4	104	99	103	30565	30565	61	44.77	26	52.95	XBT deployed @ 1752
1815	61	44.42	26	48.52	6.96	110	6.57	102	6.35	92	7.23	100	7.22	100	93	103	30617	30617	61	44.6	26	50.66+	
1830	61	44.2	26	45.21	7.2	97	7.1	99	6.4	93	7.3	94	6.8	96	94	107	30684	30684	61	44.34	26	47.27	
1845	61	43.9	26	42.21	6.6	96	6.6	95	7.1	93	6.6	96	6.9	106	95	104	30749	30749	61	44.1	26	44.18	
1900	61	43.79	26	39.42	7	96	7.2	98	6.9	99	7.2	99	7.1	100	93	101	30805	30805	61	43.91	26	41.49	
1915	61	43.59	26	36.73	7.1	101	7.2	104	6.5	100	7.1	98	7	95	93	105	30865	30865	61	43.68	26	38.6	
1930	61	43.43	26	33.65	7.7	93	7.1	94	6.7	98	7.3	95	6.5	105	95	108	30922	30922	61	43.49	26	35.82	
1945	61	43.17	26	30.46	7.86	86	7.33	98	7.07	95	7.27	92	6.64	99	69	100	30988	30988	61	43.24	26	32.64	
2000	61	42.96	26	27.57	7.8	87	7.4	92	7.2	96	7.3	90	6.7	96	91	104	31045	31045	61	43.04	26	29.65	XCTD in 1hr 35'
2015	61	42.79	26	24.86	8	92	7.4	95	7.1	93	7.6	94	8	98	92	101	31105	31105	61	42.87	26	27.05	
2031	61	42.57	26	21.56	6.8	87	7.6	90	6.6	106	6.7	102	7.4	93	96	100	31171	31171	61	42.56	26	21.45	
2047	61	42.36	26	18.52	6.9	89	7.1	96	6.8	85	7.5	89	7.5	90	94	101	31234	31234	61	42.45	26	20.65	
2105	61	42.13	26	15.24	6.5	102	6.7	102	7.3	99	7.1	99	6.3	98	96	103	31303	31303	61	42.25	26	15.19	
2115	61	41.99	26	13.22	6.4	112	6.2	126	6.6	114	7.1	113	7.1	105	93	101	31348	31348	61	42.11	26	15.27	
2130	61	41.8	26	10.45	6.6	105	6.2	97	6.8	95	7.2	104	6.9	87	96	100	31404	31404	61	41.93	26	12.63	Slowing down to 4.5kts for XCTD
2145	61	41.62	26	7.95	6.7	102	6.8	101	6.6	99	6.7	92	6.7	94	95	103	31465	31465	61	41.76	26	10.06	
2200	61	41.42	26	5.13	6.5	106	7.1	98	7.4	92	7.3	96	7.1	100	95	102	31525	31525	61	41.58	26	7.28	
2215	61	41.22	26	2.14	6.6	102	7	99	6.9	98	7.1	99	7	102	92	100	31585	31585	61	41.39	26	4.22	
2230	61	41.03	25	59.39	7.1	104	6.9	97	7.4	102	7.4	97	7.4	101	96	103	31645	31645	61	41.19	26	1.37	1m swell
2245	61	40.84	25	56.6	7.8	97	6.7	112	7	101	7	96	6.9	99	98	105	31705	31705	61	41	25	58.23	
2300	61	40.64	25	53.82	7.9	97	8	93	6.9	93	7.2	90	7.2	104	95	102	31765	31765	61	40.8	25	55.93	
2315	61	40.44	25	50.87	7.8	99	7	94	7.7	94	7.4	100	7.3	99	98	100	31825	31825	61	40.6	25	53.02	Calm
2330	61	40.24	25	47.96	6.3	98	7.1	92	7.4	91	6.9	97	7	100	89	101	31885	31885	61	40.38	25	50.08	
2345	61	40.04	25	45.04	7.4	101	7.7	102	7.6	104	7.4	98	7.8	94	89	100	31945	31945	61	40.18	25	47.18	

Julian Day: Date: Sheet Number:

Time	Lat		Lon		Water	Head.	SOW	SOG	EM710	EM120				EA600	SBP		ER60	OLEX	Comments
(GMT)	D	DM	D	DM	depth (m)		(kts)	(kts)	rec.	rec	Line cnt.			rec.	rec.	Data file	rec.	rec.	
0000	61	39.85	25	42.35	1522	101	5.4	5.5	y	y	0033	4	JC050-3	y	y	216-0834_715	y	y	
0015	61	39.65	25	39.59	1417	93	5.6	5.4	y	y	0034	110	JC050-3	y	y	216-0834_717	y	y	
0028	61	39.48	25	36.95	1378	92	5.6	5.4	y	y	0034	96	JC050-3	y	y	216-0834_719	y	y	
0044	61	39.25	25	33.69	1408	93	5.6	5.5	y	y	0034	79	JC050-3	y	y	216-0834_722	y	y	
0100	61	39.06	25	30.99	1461	94	5.4	5.4	y	y	0034	65	JC050-3	y	y	216-0834_724	y	y	
0118	61	38.80	25	27.24	1522	101	5.2	5.5	y	y	0034	46	JC050-3	y	y	216-0834_727	y	y	
0130	61	38.64	25	24.91	1519	111	5.3	5.5	y	y	0034	33	JC050-3	y	y	216-0834_729	y	y	
0145	61	38.45	25	22.11	1566	111	5.3	5.4	y	y	0034	19	JC050-3	y	y	216-0834_731	y	y	
0200	61	38.24	25	19.12	1543	93	5.6	5.7	y	y	0034	3	JC050-3	y	y	216-0834_734	y	y	
0216	61	38.03	25	16.18	1535	97	5.3	5.3	y	y	0035	107	JC050-3	y	y	216-0834_736	y	y	
0231	61	37.83	25	13.42	1479	99	5.0	5.7	y	y	0035	93	JC050-3	y	y	216-0834_738	y	y	
0245	61	37.65	25	10.64	1455	95	5.6	5.3	y	y	0035	78	JC050-3	y	y	216-0834_741	y	y	
0300	61	37.47	25	8.01	1446	102	5.2	5.3	y	y	0035	64	JC050-3	y	y	216-0834_743	y	y	
0315	61	37.27	25	5.17	1429	92	5.2	5.4	y	y	0035	50	JC050-3	y	y	216-0834_746	y	y	
0332	61	37.03	25	1.67	1452	95	5.5	5.5	y	y	0035	31	JC050-3	y	y		y	y	SBP stuck
0341																220-0336			SBP fixed
0345	61	36.86	24	59.28	1444	100	5.3	5.8	y	y	0035	19	JC050-3	y	y	220-0336	y	y	
0400	61	36.65	24	56.16	1445	90	5.4	5.3	y	y	0035	2	JC050-3	y	y	220-0336_003	y	y	EM710_108 0171,19,JC050
0415	61	36.49	24	53.93	1489	092	5.8	5.6	y	y	0036	110	JC050-3	y	y	220-0336_005	y	y	
0430	61	36.28	24	50.94	1548	100	5.4	5.4	y	y	0036	95	JC050-3	y	y	220-0336_008	y	y	
0445	61	36.06	24	47.80	1572	091	4.8	5.2	y	y	0036	79	JC050-3	y	y	220-0336_010	y	y	SBP quite weak signal
0500	61	35.89	24	45.38	1559	089	5.6	5.4	y	y	0036	66	JC050-3	y	y	220-0336_012	y	y	
0515	61	35.70	24	42.47	1584	092	5.6	5.3	y	y	0036	50	JC050-3	y	y	220-0336_014	y	y	
0530	61	35.51	24	39.73	1674	093	5.4	5.6	y	y	0036	36	JC050-3	y	y	220-0336_017	y	y	
0545	61	35.31	24	36.93	1651	091	5.8	5.7	y	y	0036	21	JC050-3	y	y	220-0336_019	y	y	
0600	61	35.10	24	33.95	1809	095	5.4	5.6	y	y	0036	6	JC050-3	y	y	220-0336_021	y	y	
0615	61	34.90	24	31.25	1793	0100	5.8	5.7	y	y	0037	112	JC050-3	y	y	220-0336_022	y	y	
0630	61	34.57	24	28.03	1708	105	5.5	5.4	y	y	0037	94	JC050-3	y	y	220-0336_025	y	y	
0645	61	34.31	24	25.34	1683	101	5.9	5.5	y	y	0037	80	JC050-3	y	y	220-0336_027	y	y	EM710: 0176, 7, JC050
0700	61	34.04	24	22.64	1684	109	5.5	5.3	y	y	0037	66	JC050-3	y	y	220-0336_029	y	y	
0715	61	33.76	24	19.80	1642	090	5.3	5.2	y	y	0037	51	JC050-3	y	y	220-0336_031	y	y	
0730	61	33.53	24	17.24	1617	100	5.5	5.3	y	y	0037	37	JC050-3	y	y	220-0336_033	y	y	
0745	61	33.19	24	13.94	1579	93	5.4	5.5	y	y	0037	20	JC050-3	y	y	220-0336_036	y	y	XCTD deployed at 0737
0800	61	32.91	24	10.99	1574	92	5.7	5.8	y	y	0037	4	JC050-3	y	y	220-0336_038	y	y	
0816	61	32.61	24	7.96	1567	91	5.3	5.7	y	y	0038	109	JC050-3	y	y	220-0336_040	y	y	
0831	61	32.32	24	4.98	1570	83	5.5	5.8	y	y	0038	93	JC050-3	y	y	220-0336_043	y	y	
0845	61	32.06	24	2.28	1582	106	5.2	6.1	y	y	0038	79	JC050-3	y	y	220-0336_045		y	Hydrographic probe stuff going on
0859	61	31.81	23	59.59	1595	93	5.6	5.8	y	y	0038	65	JC050-3	y	y	220-0336_047	y	y	
0916	61	31.48	23	56.44	1624	92	5.3	5.6	y	y	0038	48	JC050-3	y	y	220-0336_050		y	
0929	61	31.24	23	53.97	1652	105	5.3	5.2	y	y	0038	35	JC050-3	y	y	220-0336_051		y	
0945	61	30.96	23	51.01	1697	103	5.3	5.1	y	y	0038	18	JC050-3	y	y	220-0336_054		y	EM710 - position input missing
1000	61	30.69	23	48.24	1722	101	5.5	5.3	y	y	0038	4	JC050-3	y	y	220-0336_056		y	
1015	61	30.42	23	45.58	1732	88	5.1	5.0	y	y	0039	109	JC050-3	y	y	220-0336_058		y	
1030	61	30.15	23	42.79		107	5.1	5.3	y	y	0039	94	JC050-3	y	y	220-0336_060	y	y	
1046	61	29.88	23	39.98	1751	97	4.7	5.7	y	y	0039	78	JC050-3	y	y	220-0336_062	y	y	
1102	61	29.59	23	37.03	1751	88	6.0	5.0	y	y	0039	62	JC050-3	y	y	220-0336_064	y	y	
1115	61	29.36	23	34.72	1758	94	5.1	5.5	y	y	0039	49	JC050-3	y	y	220-0336_066	y	y	
1130	61	29.09	23	32.06	1779	97	5.9	5.7	y	y	0039	34	JC050-3	y	y	220-0336_068	y	y	
1145	61	28.83	23	29.30	1786	85	4.9	5.0	y	y	0039	19	JC050-3	y	y	220-0336_070		y	EM710 switched off 1148
1200	61	28.59	23	26.74	1796	98	5.3	5.3	n	y	0039	4	JC050-3	y	y	220-0336_072	y	y	
1215	61	28.28	23	23.69	1801	097	5.0	5.2	n	y	0040	108	JC050-3	y	y	220-0336_074	y	y	
1231	61	28.00	23	20.93	1808	111	4.8	5.6	n	y	0040	93	JC050-3	y	y	220-0336_077	y	y	
1244	61	27.76	23	18.46	1759	108	5.1	5.3	n	y	0040	80	JC050-3	y	y	220-0336_078	y	y	
1258	61	27.53	23	15.42	1821	104	5.2	5.4	n	y	0040	65	JC050-3	y	y	220-0336_080	y	y	SBP calculate delay from depth on.
1314	61	27.24	23	13.08	18234	92	5.3	5.3	n	y	0040	50	JC050-3	y	y	220-0336_082	y	y	
1330	61	26.94	23	10.01	1830	98	5.8	5.2	n	y	0040	34	JC050-3	y	y	220-0336_085	y	y	
1346	61	26.63	23	6.93	1833	99	5.5	5.6	n	y	0040	18	JC050-3	y	y	220-0336_087	y	y	
1400	61	26.38	23	4.34	1834	98	5.6	5.2	n	y	0040	4	JC050-3	y	y	220-0336_089	y	y	
1414	61	26.12	23	1.78	1840	96	5.8	5.5	n	y	0041	110	JC050-3	y	y	220-0336_090	y	y	
1431	61	25.80	22	58.46	1857	105	6.0	5.3	n	y	0041	92	JC050-3	y	y	220-0336_093	y	y	
1446	61	25.54	22	55.80	1856	100	5.7	5.2	n	y	0041	78	JC050-3	y	y	220-0336_095	y	y	
1500	61	25.27	22	52.99	1844	93	5.6	5.5	n	y	0041	63	JC050-3	y	y	220-0336_096	y	y	
1515	61	24.99	22	50.31	1878	103	5.7	5.5	n	y	0041	49	JC050-3	y	y	220-0336_098	y	y	
1530	61	24.72	22	47.51	1816	98	6.2	5.6	n	y	0041	34	JC050-3	y	y	220-0336_100	y	y	
1547	61	24.41	22	44.35	1750	97	6.0	5.4	n	y	0041	17	JC050-3	y	y	220-0336_103	y	y	
1600	61	24.25	22	42.65	1851	104	4.3	5.3	n	y	0041	7	JC050-3	y	y	220-0336_104	y	y	
1615	61	23.97	22	39.76	1854	099	5.1	5.4	n	y	0042	112	JC050-3	y	y	220-0336_106	y	y	
1630	61	23.68	22	36.86	1853	094	5.5	5.2	n	y	0042	96	JC050-3	y	y	220-0336_108	y	y	
1645	61	23.38	22	33.85	1854	089	5.7	5.5	n	y	0042	80	JC050-3	y	y	220-0336_110	y	y	
1700	61	23.10	22	30.88	1850	099	5.9	5.4	n	y	0042	65	JC050-3	y	y	220-0336_112	y	y	
1715	61	22.82	22	28.16	1841	099	5.5	5.7	n	y	0042	50	JC050-3	y	y	220-0336_114	y	y	
1730	61	22.59	22	25.72	1835	109	5.1	5.3	n	y	0042	34	JC050-3	y	y	220-0336_116	y	y	
1745	61	22.26	22	22.45	1868	101	4.2	5.6	n	y	0042	20	JC050-3	y	y	220-0336_118	y	y	
1802	61	21.95	22	19.22	1815	097	5.7	5.4	n	y	0042	2	JC050-3	y	y	220-0336_120	y	y	Pilot & Baleen whales came close & played with the guns
1815	61	21.72	22	16.92	1806	098	6.0	5.2	n	y	0043	109	JC050-3	y	y	220-0336_122	y	y	
1830	61	21.46	22	14.30	1798	106	6.3	5.2	n	y	0043	96	JC050-3	y	y	220-0336_123	y	y	
1845	61	21.19	22	11.54	1906	101	6.2	5.8	n	y	0043	81	JC050-3	y	y	220-0336_125	y	y	
1900	61	20.90	22	8.55	1715	099	5.5	5.5	n	y	0043	65	JC050-3	y	y	220-0336_128	y	y	
1915	61	20.70	22	5.88	1790	098	6.3	5.4	n	y	0043	51	JC050-3	y	y	220-0336_129	y	y	
1930	61	20.49	22	3.31	1796	094	5.6	5.4	n	y	0043	37	JC050-3	y	y	220-0336_131	y	y	
1945	61	20.25	22	0.16	1806	098	5.8	5.2	n	y	0043	20	JC050-3	y	y	220-0336_134	y	y	
2000	61	20.01	21	57.01	1807	098	5.3	5.5	n	y	0043	4	JC050-3	y	y	220-0336_136	y	y	
2015	61	19.78	21	54.25	1888	086	6.0	5.6	n	y	0044	109	JC050-3	y	y	220-0336_138	y	y	
2030	61	19.55	21	51.27	1804	102	6.0	5.8	n	y	0044	93	JC050-3	y	y	220-0336_143	y	y	
2045	61	19.35	21	48.73	1807	093	5.4	5.4	n	y	0044	80	JC050-3	y	y	220-0336_144	y	y	
2101	61	19.12	21	45.57		102	5.3	5.1	n	y	0045	118	JC050-3	y	y	220-0336_148	y	y	EM120 poor
2114	61	18.92	21	43.07	1789	100	5.4	5.4	n	y	0045	104	JC050-3	y	y	220-0336_150	y	y	All swath poor
2130	61	18.68	21	40.03	1543	090	4.8	5.4	n	y	0045	88	JC050-3	y	y	220-0336_152	y	y	
2145	61	18.48	21	37.58	1780	084	5.5	5.4	n	y	0045	77	JC050-3	y	y	220-0336_154	y	y	All swath poor - swell increasing
2200	61	18.24	21	34.49	1655	087	4.9	5.7	n	y	0045	58	JC050-3	y	y	220-0336_156	y	y	Sunset 2147
2215	61	18.04	21	31.83	1827	096	5.3	5.4	n	y	0045	44	JC050-3	y	y	220-0336_158	y	y	
2231	61	17.78	21	28.76	1909	076	5.4	5.2	n	y	0045	28	JC050-3	y	y	220-0336_160	y	y	Swell increasing 4m
2245	61	17.57	21	26.04	1714	094	5.6	5.4	n	y	0045	13	JC050-3	y	y	220-0336_162	y	y	Swath still bad
2300	61	17.32	21	22.83	1784	092	5.4	5.5	n	y	0046	116	JC050-3	y	y	220-0336_165	y	y	
2316	61	17.13	21	20.41	1600	100	5.1	5.4	n	y	0046	103	JC050-3	y	y	220-0336_166	y	y	
2331	61	16.90	21	17.46		103	5.7	5.6	n	y	0046	88	JC050-3	y	y	220-0336_169	y	y	
2346	61	16.68	21	14.65		85	5.3	5.3	n	y	0046	73	JC050-3	y	y	220-0336_170	y	y	

Day: Date: Sheet Number:

Time	Lat		Lon		ADCP150	ADCP75	Techsas	Level-C	Grav.	Mag.	Wind			Comments, eg state of seismic exp.
(GMT)	D	DM	D	DM	rec.	rec.	rec.	rec.	(mgal)	(nT)	Speed	Dir.	Sea State	
0000	61	39.85	25	42.49	y	y	y	y	13349.4	52032.2	8.9	265	calm, slight swell	
0015	61	39.65	25	39.59	y	y	y	y			10.0	259	"	
0027	61	39.47	25	36.92	y	y	y	y	13351.5	52475	7.3	273		
0045	61	39.24	25	33.66	y	y	y	y			8.5	256	"	
0058	61	39.08	25	31.17	y	y	y	y	13350.4	51827	8.3	255	"	
0118	61	38.81	25	27.31	y	y	y	y			8.6	261	"	
0130	61	38.65	25	25.03	y	y	y	y	13352.4	52453	7.5	275		
0146	61	38.43	25	21.93	y	y	y	y			7.8	241		
0200	61	38.24	25	19.20	y	y	y	y	13354	51664	7.2	241		
0216	61	38.04	25	16.21	y	y	y	y			9.1	264		
0232	61	37.83	25	13.23	y	y	y	y	13351	52166	10.4	252		
0246	61	37.64	25	10.59	y	y	y	y			11.0	246		
0258	61	37.47	25	8.13	y	y	y	y	13359.8	51866	12.7	251		
0315	61	37.28	25	5.09	y	y	y	y			11.7	246	"	
0330	61	37.04	25	1.90	y	y	y	y	13352.1	51925	10.6	248		
0345	61	36.86	24	59.32	y	y	y	y			12.0	246		
0400	61	36.64	24	56.21	y	y	y	y	133353.3	52402	11.9	245		
0415	61	36.49	24	53.96	y	y	y	y			11.9	254		
0430	61	36.28	24	50.94	y	y	y	y	13357	52714	11.0	234		
0445	61	36.06	24	47.80	y	y	y	y			135.0	239		
0500	61	35.89	24	45.44	y	y	y	y	13354	52099	12.4	258		
0515	61	35.70	24	42.47	y	y	y	y			11.5	243		
0530	61	35.51	24	39.73	y	y	y	y	13355	51732	13.5	238		
0545	61	35.31	24	36.93	y	y	y	y			12.2	227	Swell <2m	
0600	61	35.10	24	33.95	y	y	y	y	13350	51900	12.0	240		
0615	61	34.90	24	31.25	y	y	y	y			13.4	241		
0630	61	34.57	24	28.03	y	y	y	y	13348	52124	9.9	252		
0645	61	34.31	24	25.42	y	y	y	y			11.2	239		
0700	61	34.04	24	22.49	y	y	y	y	13355	51653	11.5	236		
0715	61	33.76	24	19.80	y	y	y	y			11.7	245		
0730	61	33.53	24	17.24	y	y	y	y	13351.4	51249	12.5	243		
0745	61	33.19	24	13.94	y	y	y	y			11.3	251	1m swell, white caps	
0800	61	32.91	24	10.99	y	y	y	y	13352	52134	12.7	239		
0816	61	32.61	24	7.96	y	y	y	y			12.5	250		
0831	61	32.32	24	4.98	y	y	y	y	13345.3	52314	12.0	238		
0848	61	32.01	24	1.63	y	y	y	y			11.6	256	"	
0905	61	31.67	23	58.39	y	y	y	y	13341.7	52180	9.7	254	"	
0918	61	31.44	23	55.94	y	y	y	y			10.2	252	"	
0933	61	31.15	23	53.08	y	y	y	y	13342.6	51943	11.8	247	"	
0948	61	30.90	23	50.35	y	y	y	y			10.6	251	"	
1005	61	30.60	23	47.42	y	y	y	y	13341.1	51501	9.7	241	"	
1017	61	30.39	23	45.20	y	y	y	y			9.5	247	"	
1035	61	30.07	23	41.72	y	y	y	y	13343.5	51779	8.9	238	"	
1048	61	29.85	23	39.60	y	y	y	y			9.8	258	"	
1100	61	29.58	23	37.05	y	y	y	y	13342.7	51977	10.5	264	"	
1117	61	29.32	23	34.30	y	y	y	y			9.3	257	"	
1130	61	29.09	23	32.06	y	y	y	y	13337.8	51595	11.0	253	"	
1147	61	28.80	23	28.95	y	y	y	y			9.8	260	"	
1200	61	28.57	23	26.68	y	y	y	y	13332.7	51801	10.7	251	"	
1215	61	28.32	23	24.05	y	y	y	y			9.7	260	"	
1230	61	28.00	23	20.91	y	y	y	y	13330.4	51260	9.4	256	"	
1245	61	27.74	23	18.29	y	y	y	y			9.3	264	"	
1257	61	27.52	23	16.06	y	y	y	y	13329.4	51945	9.6	257	"	
1315	61	27.23	23	12.91	y	y	y	y			8.1	257	"	
1329	61	26.94	23	10.11	y	y	y	y	13326.3	51956	8.7	255	"	
1347	61	26.62	23	6.78	y	y	y	y			11.0	251	"	
1400	61	26.39	23	4.40	y	y	y	y	13323.7	52246	9.1	257	"	
1415	61	26.11	23	1.59	y	y	y	y			10.5	253	"	
1431	61	25.81	22	58.58	y	y	y	y	13324.4	51932	7.9	267	"	
1446	61	25.54	22	55.77	y	y	y	y			10.0	272	"	
1500	61	25.28	22	53.11	y	y	y	y	13326.7	51937	9.5	292	"	
1515	61	24.99	22	50.33	y	y	y	y			9.5	276	"	
1531	61	27.72	22	47.36	y	y	y	y	13328.9	51790	8.2	276	"	
1546	61	24.44	22	44.60	y	y	y	y			8.8	276	"	
1600	61	24.25	22	42.65	y	y	y	y	13328.6	51676	7.2	282	"	
1615	61	23.97	22	39.76	y	y	y	y			6.9	264		
1630	61	23.68	22	36.86	y	y	y	y	13326.4	51747	7.7	274		
1645	61	23.38	22	33.85	y	y	y	y			6.4	277		
1700	61	23.10	22	30.88	y	y	y	y	13373.1	52072	6.9	274		
1715	61	22.82	22	28.16	y	y	y	y			6.8	275		
1730	61	22.59	22	25.72	y	y	y	y	13329.1	51763	5.7	263		
1745	61	22.26	22	22.45	y	y	y	y			5.4	260		
1802	61	21.95	22	19.22	y	y	y	y	13328	51727	5.2	246	Calm, swell 1-2m	
1815	61	21.72	22	16.92	y	y	y	y			6.0	237		
1830	61	21.46	22	14.30	y	y	y	y	13326.7	51710	6.0	243		
1845	61	21.19	22	11.54	y	y	y	y			6.3	242		
1900	61	20.90	22	8.55	y	y	y	y	13322.7	51591	5.6	251		
1915	61	20.70	22	5.88	y	y	y	y			6.7	251		
1930	61	20.49	22	3.31	y	y	y	y	13327.6	51605	7.0	257		
1945	61	20.25	22	0.16	y	y	y	y			8.0	263		
2000	61	20.01	21	57.01	y	y	y	y	13323.1	51914	11.7	257		
2015	61	19.78	21	54.16	y	y	y	y			10.1	266		
2030	61	19.55	21	51.26	y	y	y	y	13324.5	51900	8.8	264		
2045	61	19.35	21	48.73	y	y	y	y			9.5	261		
2101	61	19.12	21	45.57	y	y	y	y	13328.3	51653	11.3	281		
2118	61	18.85	21	42.33	y	y	y	y			9.5	284	Up to 3m swell	
2131	61	18.67	21	40.00	y	y	y	y	13330.5	51967	12.4	270		
2144	61	18.48	21	37.58	y	y	y	y			12.2	280	Up to 5m swell	
2202	61	18.21	21	34.06	y	y	y	y	13334.8	51719	12.3	286		Sunset 2147
2217	61	17.99	21	31.33	y	y	y	y			11.2	292		
2230	61	17.78	21	28.78	y	y	y	y	13330	51736	11.1	270		
2245	61	17.57	21	26.05	y	y	y	y			10.7	268		
2201	61	17.34	21	23.10	y	y	y	y	13325	51518	13.8	282	Up to 3m swell	Magnetometer GPS tagging off
2315	61	17.12	21	20.35	y	y	y	y			10.6	289	3m swell	
2333	61	16.87	21	17.07	y	y	y	y	13324.4	51716	12.5	274		Magnetometer Layback disabled
2346	61	16.68	21	14.58	y	y	y	y			13.5	293		

Every 30 min, for important events and not for birds during turns.

Seismic log

Line No:	**2 seq 4/5**				**Date:**	**###**		**Julian Day:**	**220**	**Page No:**				Depth of Gun 1: 5.5m							Array Volume: 355	
														Depth of Gun 2: n/a								
	Vessel GPS				Bird 1		Bird 2		Bird 3		Bird 4		Bird 5					Tailbuoy GPS				
Time GMT	Lat		Long		Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Ship H'ding	CMG	Shot no.	FFID	Lat		Long		MISFIRE, Feathering angle, sea state, current, other comments	
0000	61	39.85	25	39.85		110		121		109		115		115	101	110	32012	32012	61	40.05	25	41.95		
0016	61	39.62	25	39.14	7.4	115	6.7	125	6.7	116	7.3	120	7.5	112	88	99	32072	32072	61	39.77	25	41.26		
0030	61	39.46	25	36.86	6.8	117	6.9	112	7.4	121	6.8	121	6.6	109	95	99	32120	32120	61	39.6d	25	39.08		
0045	61	39.24	25	33.63	7.7	112	7	109	7.5	121	6.7	119	6.6	110	93	100	32191	32191	61	39.4	25	35.82		
0100	61	39.06	25	31.04	7.4	119	7.6	116	7.2	117	6.7	113	7.8	119	95	105	32244	32244	61	39.21	25	33.24		
0015	61	38.84	25	27.76	7.02	88	7.09	98	6.68	101	6.92	101	7.51	93	97.5	103	32311	32311	61	38.97	25	29.86		
0131	61	38.64	25	24.87	7.2	100	7.22	95	7.16	94	7.34	97	6.56	93	95	104.9	32371	32371	61	38.78	25	7.02		
0146	61	38.44	25	22.01	7.15	103	7.43	96	7.08	96	6.98	97	6.85	102	94.3	103.8	32434	32434	61	38.59	25	24.14		
0201	61	38.25	25	19.18	8.95	95	6.8	101	7.14	92	7.1	92	7.2	93	97.3	104.8	32491	32491	61	38.39	25	21.29		
0216	61	38.04	25	16.18	7.05	88	7.29	92	7.02	99	6.97	102	6.65	104	96.2	107.1	32554	32554	61	38.17	25	18.29		
0231	61	37.84	25	13.44	7.52	89	7.57	95	6.96	91	6.45	92	7.37	99	88.1	99.07	32611	32611	61	37.96	25	15.27	First and second bird to less than 6.5m regularly	
0245	61	37.66	25	10.78	7.83	93.2	7.91	95.8	6.3	90.5	6.33	106.4	7.05	96.3	95.4	104.9	32667	32667	61	37.79	25	12.91		
0300	61	37.47	25	8.02	7.4	90.4	7.3	100.8	6.9	113	7.1	94.7	6.7	92.7	94	100.8	32725	32725	61	37.59	25	10.16		
0320	61	37.19	25	4.05	7	98.4	7.3	94.9	7.5	91.3	7.4	93	7	90.5	93	103.7	32805	32805	61	37.32	25	6.15	XBT launched at 0310	
0330	61	37.07	24	2.14	8.4	94.3	6.1	94.3	6.2	92.5	6.3	104.1	6.2	93.8	96	106.1	32845	32845	61	37.19	25	4.25		
0345	61	36.07	24	59.34	7.9	92.7	7.3	95.5	6.7	96.5	6.8	99	7.3	92.3	96	105	32905	32905	61	36.99	25	1.5		
0400	61	36.67	24	56.49	8	93.7	8	95.3	6.8	92.8	6.8	94	6.7	93	89.5	98.1	32965	32965	61	36.81	24	58.64		
0415	61	36.43	24	53.14	6.35	94	6.95	98	7.44	99	7.09	96	6.49	95	103	104	33041	33041	61	36.48	24	55.3		
0430	61	36.27	24	50.84	7.65	97	7.7	95	7.11	92	7.11	90	7.45	95	93	104	33085	33085	61	34.4	24	53		
0445	61	36.06	24	47.66	6.7	96	7.1	104	6.9	101	6.5	100	7.1	94	96	101	33155	33155	61	36.2	24	49.67		
0500	61	35.89	24	45.4	8.5	102	7.7	98	7.13	110	6.7	103	7.2	106	91	95	33199	33199	61	36.06	24	47.56		
0515	61	35.67	24	42.13	8.6	100	7.7	104	7.51	94	6.5	110	6.66	89	93	105	33269	33269	61	35.85	24	44.27		
0530	61	35.47	24	39.26	7.3	96	6.3	405	6.8	99	7.6	107	6.68	101	92	101	33328	33328	61	35.62	24	41.41		
0545	61	35.29	24	36.67	7.7	83	7.9	097	6.7	103	7.4	100	7.1	90	92	105	33384	33384	61	35.42	24	38.84		
0600	61	35.08	24	33.68	6.47	93	7.26	91	7.41	96	7.4	93	7.51	97	89	100	33449	33449	61	35.22	24	35.84		
0615	61	34.85	24	30.83	6.8	98	7.3	095	7.3	98	7	94	6.6	100	101	106	33509	33509	61	35.01	24	32.84		
0629	61	34.59	24	28.17	8.9	103	8.6	104	7.1	105	7.1	101	7.5	105	91	97	33565	33565	61	34.79	24	30.18	Swell ~2m. Birds set to 8m	
0644	61	34.3	24	25.27	9	99	10.2	96	9	100	0.8	98	9.3	104	89	102	33627	33627	61	34.49	24	27.41		
0700	61	34.04	24	22.56	7.96	98	7.99	94	8.52	91	8.59	96	9.59	92	95	105	33684	33684	61	34.23	24	24.7		
0715	61	33.75	24	14.65	10.3	94	9.04	117	8.84	111	8.88	94	8.73	99	96	102	33754	33754	61	33.94	24	21.79		
0730	61	33.45	24	16.62	7.9	95	7.8	94	8.6	98	9	89	8.6	95	92	106	33806	33806	61	33.61	24	18.77		
0745	61	33.19	24	13.9	8.4	94	9.5	098	8.7	97	9.1	92	8.5	99	92	104	33		61	33.33	24	16.06	XBT - 33833	
0800	61	32.91	24	10.91	8.4	98	9.4	99	9	100	8.9	96	8.4	94	95	102	33927	33927	61	33	24	13.02	1-2m swell	
0815	61	32.64	24	8.23	8.2	97	8.9	102	9.1	101	9.2	99	8.6	98	87	99	33987	33987	61	32.73	24	10.35		
0830	61	32.32	24	4.93	8.1	96	8.4	99	8.6	98	7.9	97	9.1	96	86	97	34050	34050	61	32.37	24	7.08		
0845	61	32.05	24	2.21	8	99	8.4	94	8.5	96	8.7	99	8.6	96	93	106	34109	34109	61	32.11	24	4.35		
0900	61	31.8	23	59.64	7.9	93	8.2	89	8.7	92	8.4	95	8.9	98	94	104	34169	34169	61	31.88	24	1.72		
0918	61	31.42	23	55.72	7.8	95	8	96	8.4	99	8.3	99	8.6	100	93	105	34239	34239	61	31.52	23	57.99		
0930	61	31.d4	23	53.9	9.9	95	9.4	97	8.7	98	8.6	99	9	94	93	103	34d85	34d85	61	31.34	d3	56.99	1m swell	
0946	61	30.93	23	5076	9.8	96	9.3	99	9	94	9.2	93	9.1	92	93	101	34350	34350	61	31.07	23	52.88		
1000	61	30.69	23	48.31	9.1	96	9.2	96	8.4	98	8.6	97	9.4	95	92	104	34405	34405	61	30.86	d3	50.36	Streamer noisy. Signal better with reduced horixontal dri	
1016	61	30.41	23	45.37	9	92	8.6	94	8.7	97	8.4	98	8.9	94	103	105	34470	34470	61	30.57	23	47.49		
1030	61	30.15	23	42.77	8.9	99	8.4	92	8.6	94	9	96	8.3	94	95	100	34525	34525	61	30.31	d3	44.87		
1045	61	29.91	23	40.37	8.9	94	9	92	8.8	96	8.6	90	8.4	96	98	98	34585	34585	61	30.08	23	42.46		
1100	61	29.61	23	37.33	8.7	89	8.9	86	8.4	90	8.8	91	8.6	89	97	110	34645	34645	61	29.77	d3	39.44	Bird depths up to 8m target	
1116	61	d9.31	23	34.3	80.4	87	8.6	90	8.d	98	8.9	96	8.7	98	95	101	34715	34715	61	d9.46	23	36.31		
1130	61	29.08	23	31.95	7.9	98	7.1	97	8	94	7.6	99	7.2	94	93	98	34765	34765	61	29.25	d3	34.05		
1145	61	28.76	23	28.68	8.6	95	8	96	8.1	99	8.2	94	7.9	91	93	102	34835	34835	61	28.92	23	30.6		
1200	61	28.6	23	26.97	8.7	107	7.8	115	8.6	112	8.5	113	7.8	107	96	103	34884	34884	61	28.74	d3	28.98		
1215	61	28.32	23	24.08	8.4	97	7	95	7.8	102	8.5	102	7.7	88	92	100	34945	34945	61	28.48	23	23.19		
1230	61	28.04	23	21.24	7	112	8.3	109	7.8	115	8.1	119	8.1	107	96	100	35006	35006	61	28.19	d3	23.25		
1245	61	27.76	23	18.38	7.9	94	8.6	93	8.2	97.3	7.9	94	8.2	92	97	105	35066	35066	61	27.91	23	20.53		
1300	61	27.5	23	15.71	7.5	9d	6.9	98	7.8	91.5	7.3	99.8	7.7	96.5	69	103	351d6	351d6	61	d7.65	d3	17.93	Vessel GPS not correct.	
1315	61	27.21	23	12.73	7	87.3	7.5	93.7	8.7	96.1	8.2	96.5	8.3	94.6	96	104	35186	35186	61	27.36	23	14.85		
1330	61	26.95	23	10.1	7.2	91.7	8	93.4	8.4	95.8	8.3	99.6	7.3	95.1	95	103	35246	35246	61	27.13	23	12.23		
1345	61	26.67	23	7.29	8.8	100.1	8.7	101.6	8.7	110.5	7.8	96.9	8.1	94.1	97	97.8	35306	35306	61	26.87	23	9.43		
1400	61	26.39	23	4.39	7.6	97.1	7	100.4	7.6	102.7	7.8	97.9	8.1	101.5	96.4	102.1	35366	35366	61	26.6	23	6.52		
1416	61	26.1	23	1.37	7.2	91.09	8	142.1	7.9	97.4	7.8	97.4	7.5	108.3	96.1	101.2	35428	35428	61	26.32	23	3.49		
1430	61	25.83	22	58.68	7.7	98.3	8.5	99.8	7.8	103.4	8.3	106.9	8.7	104.1	102.2	108.4	35486	35486	61	26.05	23	0.74		
1446	61	25.54	22	55.81	9.1	98	8.7	###	7.7	###	7.8	###	8.2	92.5	100.2	102.4	35549	35549	61	25.77	22	57.87		
1500	61	25.27	22	53.07	8.7	93.5	8.2	106.7	8.1	100.8	8	97.8	8.8	103	99.8	96.4	35607	35607	61	25.51	22	55.18		
1518	61	24.97	22	49.86	8	99.8	8.5	104.8	7.7	100	7.5	102.7	7.5	97.9	101.7	110.1	35677	35677	61	25.19	22	51.98		
1530	61	24.73	22	47.47	7.2	101	7.7	###	7.9	###	8.1	93.7	8	###	103.1	108.8	35727	35727	61	24.96	22	49.58		
1546	61	24.44	22	44.53	8.6	94.3	6.2	98	8.4	###	8.2	###	7.9	###	98.2	104.1	35790	35790	61	24.65	22	46.65		
1557	61	24.24	22	42.6	8	95	7.5	98	8.5	92	8.5	98	8.4	94	90	100	35839	35839	61	24.44	22	44.72		
1613	61	23.93	22	39.41	8.7	90	8.9	103	8.4	92	7.8	96	7.5	97	108	111	35904	35904	61	24.12	22	41.55		
1628	61	23.66	22	36.6	8.9	96	8	101	8	104	8.4	93	8.4	91	100	109	35963	35963	61	23.84	22	38.7		
1645	61	23.36	22	33.56	7.9	98	7	102	7.1	126	7.9	93	7.8	91	100	107	36027	36027	61	23.55	22	35.69	Streamer set to 7.5m	
1700	61	23.1	22	30.97	7.4	102	8	98	7	91	7	94	7.7	98	100	105	36086	36086	61	23.28	22	32.93	XBT-T5 launched	
1715	61	22.8	22	27.93	8.1	100	8.2	101	8	100	7.8	101	7.2	111	96	100	36147	36147	61	23	22	30.05		
1728	61	22.56	22	25.53	8.1	91	7.3	100	7.1	100	7.4	101	7.9	96	94	101	36199	36199	61	22.75	22	27.64		
174	61	22.26	22	22.45	6.7	94	7.2	90	7.6	93	8.1	94	7.5	95	100	101	36265	36265	61	22.43	22	24.6		
1801	61	21.95	22	19.34	7	92	7.4	94	7.6	89	7.2	94	7.8	97	100	100	36334	36334	61	22.1	22	21.34		
1815	61	21.7	22	16.8	7.2	98	7.4	92	7.2	92	7.2	97	7.6	98	96	100	36388	36388	61	21.86	22	18.84		
1830	61	21.44	22	14.08	7.3	86	7.6	98	7.4	93	7.8	99	7.4	120	93	101	36447	36447	61	21.6	22	16.08	~2m swell	
1845	61	21.17	22	11.33	6.8	95	6.7	97	7.5	112	7.8	103	6.6	96	95	101	36505	36505	61	21.33	22	13.37		
1900	61	20.88	22	8.3	7.9	92	7.7	90	7.7	105	7.2	103	7.1	101	97	98	36570	36570	61	21.03	22	10.33	Streamer set to 7m	
1916	61	20.64	22	5.2	6.1	92	7.8	90	7.6	102	7.7	102	7.4	95	94	101	36636	36636	61	20.79	22	7.33		
1930	61	20.64	22	2.74	6.7	83	6.4	96	7	94	6.9	96	7	103	96	99	36689	36689	61	20.61	22	4.86		
1944	61	20.24	22	0.03	7.4	98	7.2	92	7.2	94	7	98	7.2	99	94	99	36745	36745	61	20.4	22	2.15		
2000	61	19.99	21	59.94	6.1	89	6.7	86	7	91	7.1	89	6.9	98	96	104	36805	36805	61	20.16	21	56.84		
2015	61	19.78	21	54.32	7.9	97	7.1	96	7.2	94	7.3	92	7.8	96	87	94	36865	36865	61	19.96	21	54.35		
2030	61	19.55	21	51.25	7.8	95	7.2	92	6.9	99	7.4	98	7.6	94	95	105	36930	36930	61	19.73	21	53.42		
2045	61	19.34	21	48.64	7.2	96	7.1	95	6.9	92	7.1	96	7.1	96	96	99	36985	36985	61	19.52	21	50.73		
2100	61	19.11	21	45.65	7.1	97	7.4	98	7	100	6.9	102	6.8	99	103	108	37045	37045	61	19.29	21	47.83		
2107																	37076	37076					Streamer to 8m	
2115	61	18.91	21	43.05	8.2	99	8	98	8.1	87	8.1	99	8	100	89	100	37105	37105	61	19.12	21	45.22		
2124																	37139	37139					Heave 5m, birds to 9m	
2130	61	18.68	21	40.02	9.3	90	9.2	99	9.8	101	9.6	105	9.6	91	102	98	37168	37168	61	18.87	21	42.12	Streamer strong swell noise	
2149	61	18.38	21	36.41	9	98	9.1	94	8.9	99	8.9	100	9.2	96	82	93	37240	37240	61	18.56	21	38.42	5m roll	
2200	61	18.22	21	34.34	9.1	99	9.5	92	9.7	96	8.8	99	9.1	92	103	99	37290	37290	61	18.41	21	36.51		
2215	61	18.03	21	31.85	9.4	96	9	98	8.9	94	9.4	99	9.2	98	99	102	37345	37345	61	18.22	21	34.03		
2230	61	17.8	21	29.95	9.2	97	9.2	96	9.6	91	8.9	95	9	96	96	104	37405	37405	61	18.01	21	31.99	Streamer to 9.5m	
2245	61	17.55	21	25.75	9	92	9.2	94	9.4	96	9.3	99	8.9	99	91	95	37465	37465	61	17.78	21	27.85		
2300	61	17.33	21	23.06	9.2	89	8.7	102	8.9	92	9.4	94	9.6	96	89	99	37528	37528	61	17.56	21	25.13	QC system reset	
2304																	37543	37543					Break in logical line	
2309	61	17.21	21	21.31													40000	40000					Line 2 Seq 5	
2315	61	17.12	21	20.31	9.4	91	9.3	104	9.6	102	9.7	99	9.1	92	92	101	40022	40022	61	17.32	21	22.4		
2330	61	16.91	21	17.66	9.3	90	9.7	99	9.9	100	9.1	101	9.3	96	96	104	40082	40082	61	17.09	21	19.77		
2345	61	16.68	21	14.69	9.1	92	9.2	96	9.4	94	9.2	99	9.7	101	101	93	40145	40145	61	16.91	21	16.79		

Julian Day: Date: Sheet Number:

Time	Lat		Lon		Water	Head.	SOW	SOG	EM710	EM120			EA600	SBP		ER60	OLEX	Comments
(GMT)	D	DM	D	DM	depth (m)		(kts)	(kts)	rec.	rec	Line cnt.		rec.	rec.	Data file	rec.	rec.	
0000	61	16.45	21	11.79	2018	088	5.9	5.4	n	y	0046	57 JC050-3	y	y	220_0336_172	y	y	
0015	61	16.24	21	9.13	2450	105	8.2	5.2	n	y	0046	44 JC050-3	y	y	220_0336_174	y	y	
0030	61	16.02	21	6.30	2086	099	4.1	5.3	n	y	0046	29 JC050-3	y	y	220_0336_176	y	y	
0045	61	15.78	21	3.19	2237	090	5.4	5.6	n	y	0046	13 JC050-3	y	y	220_0336_178	y	y	
0059	61	15.59	21	0.74	2152	096	5.5	5.8	n	y	0047	120 JC050-3	y	y	220_0336_179	y	y	
0115	61	15.34	20	57.66	2206	090	5.1	5.2	n	y	0047	103 JC050-3	y	y	220_0336_181	y	y	
0128	61	15.16	20	55.25	2136	094	5.3	5.6	n	y	0047	90 JC050-3	y	y	220_0336_183	y	y	
0145	61	14.91	20	52.14	2243	107	4.2	5.5	n	y	0047	73 JC050-3	y	y	220_0336_188	y	y	
0159	61	14.71	20	49.60	2329	094	5.3	5.3	n	y	0047	59 JC050-3	y	y	220_0336_190	y	y	
0216	61	14.47	20	46.60	2225	088	5.0	5.1	n	y	0047	43 JC050-3	y	y	220_0336_192	y	y	
0230	61	14.27	20	43.99	2240	090	5.0	5.3	n	y	0047	28 JC050-3	y	y	220_0336_193	y	y	
0245	61	14.00	20	41.29	2214	101	4.8	5.4	n	y	0047	13 JC050-3	y	y	220_0336_195	y	y	
0300	61	13.74	20	38.64	2214	097	5.7	5.0	n	y	0048	118 JC050-3	y	y	220_0336_197	y	y	
0315	61	13.44	20	35.90	2226	097	5.3	5.9	n	y	0048	103 JC050-3	y	y	220_0336_199	y	y	
0330	61	13.18	20	33.17	2245	104	5.3	5.3	n	y	0048	88 JC050-3	y	y	220_0336_201	y	y	
0345	61	12.91	20	30.52	2268	090	5.4	5.0	n	y	0048	75 JC050-3	y	y	220_0336_205	y	y	
0400	61	12.68	20	28.21	2300	097	4.8	5.5	n	y	0048	60 JC050-3	y	y	220_0336_207	y	y	
0415	61	12.40	20	25.51	2293	095	5.4	4.8	n	y	0048	45 JC050-3	y	y	220_0336_209	y	y	
0430	61	12.12	20	22.72	2336	099	5.5	5.0	n	y	0048	29 JC050-3	y	y	220_0336_210	y	y	
0445	61	11.85	20	20.16	2269	096	5.6	5.0	n	y	0048	15 JC050-3	y	y	220_0336_212	y	y	
0500	61	11.58	20	17.50	2325	091	5.1	47.7	n	y	0049	120 JC050-3	y	y	220_0336_214	y	y	SBP data very poor quality
0515	61	11.31	20	14.76	2338	096	5.4	5.7	n	y	0049	105 JC050-3	y	y	220_0336_216	y	y	"
0530	61	11.02	20	12.03	2454	097	6.1	5.4	n	y	0049	90 JC050-3	y	y	220_0336_218	y	y	SBP data very poor quality - essentially a series of vertical lines
0545	61	10.76	20	9.49	2330	091	4.7	5.1	n	y	0049	75 JC050-3	y	y	220_0336_220	y	y	"
0600	61	10.48	20	6.63	2361	096	5.5	5.6	n	y	0049	60 JC050-3	y	y	220_0336_221	y	y	
0615	61	10.20	20	3.90	2369	095	5.2	5.3	n	y	0049	44 JC050-3	y	y	220_0336_223	y	y	
0630	61	9.89	20	0.93	2135	095	5.2	5.6	n	y	0049	29 JC050-3	y	y	220_0336_225	y	y	
0645	61	9.60	19	58.03	2379	100	6.0	5.8	n	y	0049	14 JC050-3	y	y	220_0336_227	y	y	
0700	61	9.33	19	55.32	2392	088	5.3	5.6	n	y	0050	119 JC050-3	y	y	220_0336_228	y	y	
0715	61	8.76	19	52.81	2390	126	5.5	5.4	n	y	0050	105 JC050-3	y	y	220_0336_228	y	y	EA600 - not so good
0730	61	7.80	19	50.61	2396	112	5.7	5.6	n	y	0050	89 JC050-3	y	y	220_0336_229	y	y	
0745	61	6.87	19	48.40	2401	124	5.2	5.6	n	y	0050	74 JC050-3	y	y	220_0336_229	y	y	
0800	61	5.93	19	46.22	2405	124	5.4	5.4	n	y	0050	58 JC050-3	y	y	220_0336_230	y	y	
0815	61	5.05	19	44.17	2409	144	5.7	5.5	n	y	0050	44 JC050-3	y	y	220_0336_230	y	y	
0831	61	4.07	19	41.89	2412	137	5.5	5.1	n	y	0050	28 JC050-3	y	y	220_0336_230	y	y	SBP was set to 'slow' record. Now changed
0845	61	3.22	19	39.92	2415	126	5.8	5.4	n	y	0050	14 JC050-3	y	y	220_0336_232	y	y	
0900	61	2.28	19	37.74	2418	130	5.4	5.5	n	y	0051	119 JC050-3	y	y	220_0336_233	y	y	
0916	61	1.29	19	35.45	2423	133	5.5	5.5	n	y	0051	102 JC050-3	y	y	220_0336_235	y	y	
0930	61	0.45	19	33.52	2434	134	5.4	5.7	n	y	0051	89 JC050-3	y	y	220_0336_236	y	y	
0946	60	59.49	19	31.27	2434	121	6.2	5.4	n	y	0051	73 JC050-3	y	y	220_0336_238	y	y	
1000	60	58.63	19	29.23	2182	122	5.1	5.1	n	y	0051	58 JC050-3	y	y	220_0336_239	y	y	
1014	60	57.75	19	27.23	3905	120	6.0	5.4	n	y	0051	44 JC050-3	y	y	220_0336_241	y	y	Deptj?
1028	60	56.89	19	25.25	2446	125	5.6	5.4	n	y	0051	30 JC050-3	y	y	220_0336_242	y	y	Reduced speed to 5kts for XCTD
1044	60	55.98	19	23.12	2449	127	5.5	5.6	n	y	0051	14 JC050-3	y	y	220_0336_244		y	XCTD deployed 1036. Increased speed to 5.5kts
1100	60	55.02	19	21.16	2454	134	5.5	6.3	n	y	0052	119 JC050-3	y	y	220_0336_246	y	y	
1114	60	54.11	19	19.23	2457	151	6.2	5.6	n	y	0052	105 JC050-3	y	y	220_0336_247	y	y	
1130	60	53.05	19	17.10	2460	137	5.7	5.8	n	y	0052	88 JC050-3	y	y	220_0336_248	y	y	
1144	60	52.12	19	15.20	2462	134	5.1	5.5	n	y	0052	74 JC050-3	y	y	220_0336_250	y	y	
1200	60	51.20	19	13.34	2467	119	5.4	5.5	n	y	0052	60 JC050-3	y	y	220_0336_251	y	y	
1214	60	50.26	19	11.42	2468	135	5.4	5.9	n	y	0052	45 JC050-3	y	y	220_0336_253	y	y	
1230	60	49.16	19	9.19	2472	140	5.9	5.4	n	y	0052	28 JC050-3	y	y	220_0336_254	y	y	
1246	60	48.11	19	7.07	2473	133	6.1	5.3	n	y	0052	12 JC050-3	y	y	220_0336_256	y	y	
1300	60	47.18	19	5.21	2476	132	5.4	5.6	n	y	0053	118 JC050-3	y	y	220_0336_257	y	y	
1315	60	46.22	19	3.24	2476	134	4.9	5.4	n	y	0053	103 JC050-3	y	y	220_0336_259	y	y	
1330	60	45.21	19	1.22	2481	116	6.3	5.2	n	y	0053	88 JC050-3	y	y	220_0336_260	y	y	
1345	60	44.23	18	59.23	2482	129	5.7	5.9	n	y	0053	73 JC050-3	y	y	220_0336_262	y	y	
1401	60	43.21	18	57.21	2306	140	5.7	5.3	n	y	0053	57 JC050-3	y	y	220_0336_263	y	y	
1415	60	42.35	18	55.44	2487	132	6.2	5.7	n	y	0053	44 JC050-3	y	y	220_0336_264	y	y	
1430	60	41.31	18	53.34	2472	135	6.2	5.6	n	y	0053	28 JC050-3	y	y	220_0336_266	y	y	
1445	60	40.41	18	51.51	2490	127	5.7	5.4	n	y	0053	14 JC050-3	y	y	220_0336_267	y	y	
1500	60	39.39	18	49.46	2493	136	5.5	5.6	n	y	0054	114 JC050-3	y	y	220_0336_269	y	y	
1515	60	38.36	18	47.42	2502	140	6.2	5.9	n	y	0054	103 JC050-3	y	y	220_0336_270	y	y	
1530	60	37.43	18	45.54	2505	118	6.2	5.5	n	y	0054	88 JC050-3	y	y	220_0336_272	y	y	
1543	60	36.56	18	43.79	2507	113	5.9	5.3	n	y	0054	73 JC050-3	y	y	220_0336_273	y	y	
1600	60	35.46	18	41.83	2510	141	5.1	5.6	n	y	0054	59 JC050-3	y	y	220_0336_275	y	y	
1615	60	34.25	18	40.25	2516	143	5.6	5.6	n	y	0054	43 JC050-3	y	y	220_0336_276	y	y	
1630	60	33.15	18	38.81	2517	161	6.3	5.3	n	y	0054	29 JC050-3	y	y	220_0336_277	y	y	
1645	60	32.10	18	37.42	2475	155	5.5	5.6	n	y	0054	15 JC050-3	y	y	220_0336_279	y	y	
1700	60	30.98	18	35.99	2522	146	5.3	5.0	n	y	0055	120 JC050-3	y	y	220_0336_280	y	y	
1715	60	29.81	18	34.44	2479	136	5.2	6.0	n	y	0055	105 JC050-3	y	y	220_0336_282	y	y	
1730	60	28.64	18	32.93	2530	143	5.2	5.9	n	y	0055	90 JC050-3	y	y	220_0336_283	y	y	
1745	60	27.50	18	31.42	2535	164	5.5	5.0	n	y	0055	75 JC050-3	y	y	220_0336_285	y	y	
1800	60	26.36	18	29.94	2538	141	6.0	5.1	n	y	0055	62 JC050-3	y	y	220_0336_286	y	y	
1817	60	24.91	18	28.05	2544	164	3.9	5.8	n	y	0055	41 JC050-3	y	y	220_0336_288	y	y	
1830	60	24.03	18	26.92	2545	163	5.9	5.3	n	y	0055	30 JC050-3	y	y	220_0336_289	y	y	
1845	60	22.91	18	25.75	2549	143	5.3	5.7	n	y	0055	16 JC050-3	y	y	220_0336_290	y	y	
1900	60	21.71	18	23.98	2553	163	6.2	5.0	n	y	0056	119 JC050-3	y	y	220_0336_292	y	y	
1915	60	20.55	18	22.42	2783	156	5.7	5.3	n	y	0056	104 JC050-3	y	y	220_0336_293	y	y	
1928	60	19.42	18	20.94	2560	153	5.3	5.3	n	y	0056	90 JC050-3	y	y	220_0336_294	y	y	
1945	60	18.17	18	19.32	2276	152	5.7	5.3	n	y	0056	72 JC050-3	y	y	220_0336_296	y	y	
1959	60	17.04	18	17.86	2570	136	5.4	5.3	n	y	0056	59 JC050-3	y	y	220_0336_297	y	y	
2015	60	15.85	18	16.29	2576	146	5.9	5.3	n	y	0056	44 JC050-3	y	y	220_0336_299	y	y	
2030	60	14.69	18	14.85	2576	144	5.3	5.5	n	y	0056	29 JC050-3	y	y	220_0336_300	y	y	
2044	60	13.55	18	13.34	2551	144	5.5	5.1	n	y	0056	14 JC050-3	y	y	220_0336_302	y	y	
2058	60	12.53	18	12.00	2582	147	5.3	5.6	n	y	0056	1 JC050-3	y	y	220_0336_303	y	y	
2115	60	11.22	18	10.31	2886	145	5.8	5.2	n	y	0057	104 JC050-3	y	y	220_0336_304	y	y	
2129	60	10.09	18	8.86	2860	154	4.9	5.6	n	y	0057	88 JC050-3	y	y	220_0336_306	y	y	
2145	60	8.91	18	7.35	2593	143	5.6	5.6	n	y	0058	74 JC050-3	y	y	220_0336_307	y	y	
2200	60	7.70	18	5.79	2596	136	5.9	5.4	n	y	0059	58 JC050-3	y	y	220_0336_309	y	y	
2214	60	6.64	18	4.42	2578	174	6.3	5.5	n	y	0060	45 JC050-3	y	y	220_0336_310	y	y	
2230	60	5.43	18	2.86	2599	139	5.6	5.5	n	y	0061	29 JC050-3	y	y	220_0336_311	y	y	
2245	60	4.25	18	1.33	2605	145	5.5	5.3	n	y	0062	13 JC050-3	y	y	220_0336_313	y	y	
2300	60	3.11	17	59.88	2606	133	5.8	5.4	n	y	0058	119 JC050-3	y	y	220_0336_314	y	y	
2315	60	1.94	17	58.39	2611	137	5.5	5.8	n	y	0058	103 JC050-3	y	y	220_0336_316	y	y	
2330	60	0.76	17	56.86	2611	143	5.3	5.4	n	y	0058	88 JC050-3	y	y	220_0336_317	y	y	

Day: Date: Sheet Number:

Time	Lat		Lon		ADCP150	ADCP75	Techsas	Level-C	Grav.	Mag.	Wind		Sea State	Comments, eg state of seismic exp.
(GMT)	D	DM	D	DM	rec.	rec.	rec.	rec.	(mgal)	(nT)	Speed	Dir.		
0000	61	16.45	21	11.79	y	y	y	y	13316.9	51673	10.7	306	Mild swell	EM120 not getting good data due to mild swell
0015	61	16.27	21	9.30	y	y	y	y			11.0	294		
0030	61	16.02	21	6.33	y	y	y	y	13320.4	51692	12.6	289		
0046	61	15.78	21	3.20	y	y	y	y			12.0	283		
0058	61	15.60	21	0.81	y	y	y	y	13317.1	51660	9.3	294		
0115	61	15.33	20	57.54	y	y	y	y			11.4	284		
0130	61	15.15	20	55.17	y	y	y	y	13314.5	51445	8.4	295		
0146	61	14.89	20	52.99	y	y	y	y			9.7	286		
0200	61	14.72	20	49.62	y	y	y	y	13309.2	51342	10.8	277		
0215	61	14.48	20	46.70	y	y	y	y			11.9	279		
0230	61	14.28	20	44.12	y	y	y	y	13310.8	51159	8.6	302		
0245	61	13.99	20	41.29	y	y	y	y			11.0	285		
0300	61	13.73	20	38.63	y	y	y	y	13325	51655	9.5	285		
0315	61	13.44	20	35.94	y	y	y	y			8.3	285		
0330	61	13.18	20	33.28	y	y	y	y	13324.8	51378	8.5	285		
0345	61	12.91	20	30.51	y	y	y	y			8.7	278		
0359	61	12.68	20	28.24	y	y	y	y	13318.2	51306	9.0	279		'lay back' disabled on magnetometer
0415	61	12.40	20	25.59	y	y	y	y			10.2	289	Swell ~2.5m	
0430	61	11.12	20	22.76	y	y	y	y	13310.8	51333	9.4	280		
0445	61	11.86	20	20.12	y	y	y	y			9.1	295		
0500	61	11.58	20	17.50	y	y	y	y	13303.1	51526	9.5	284		
0515	61	11.31	20	14.81	y	y	y	y			11.1	279		
0530	61	11.02	20	12.08	y	y	y	y	13311.3	51396	9.6	303		
0545	61	10.76	20	9.49	y	y	y	y			10.8	298		
0600	61	10.48	20	6.62	y	y	y	y	13312.2	51379	11.1	294		
0615	61	10.20	20	3.90	y	y	y	y			10.5	274		
0630	61	9.91	20	0.99	y	y	y	y	13292.7	51456	12.1	280		
0645	61	9.60	19	58.03	y	y	y	y			13.2	286		
0700	61	9.33	19	55.32	y	y	y	y	13300.5	51527	12.6	283		
0715	61	8.77	19	52.83	y	y	y	y			10.3	248		
0730	61	7.73	19	50.44	y	y	y	y	13303	51522	9.4	247	Swell ~2m	
0745	61	6.87	19	48.40	y	y	y	y			12.3	273	~2m swell	
0800	61	5.93	19	46.22	y	y	y	y	13296	51545	8.4	250	"	
0815	61	5.05	19	44.17	y	y	y	y			9.0	252	"	
0830	61	4.07	19	41.89	y	y	y	y	13291.4	51402	9.4	250		
0845	61	3.22	19	39.97	y	y	y	y			11.6	262	1m swell, calm	
0900	61	2.28	19	37.74	y	y	y	y	13294.2	51606	8.6	260		
0916	61	1.29	19	35.45	y	y	y	y			10.8	254		
0930	61	0.45	19	33.52	y	y	y	y	13347.8	51567	11.0	249	l up a bit (2-3m)	
0946	60	59.49	19	31.27	y	y	y	y			9.8	249		
1003	60	58.41	19	28.76	y	y	y	y	13294.1	51439	10.6	254	1m swell	
1017	60	57.57	19	26.80	y	y	y	y			11.2	252		
1030	60	56.78	19	24.97	y	y	y	y			10.0	251		Reduced speed to 5kts for XCTD
1047	60	55.85	19	22.83	y	y	y	y	13284.6	51427	10.3	248		XCTD deployed 1036. Increased speed to 5.5kt
1102	60	54.84	19	20.73	y	y	y	y			11.4	249	1m swell	
1116	60	53.96	19	18.93	y	y	y	y	13297.5	51328	12.1	256		
1130	60	53.05	19	17.10	y	y	y	y			10.1	251		
1146	60	51.99	19	14.94	y	y	y	y	13290.5	51270	9.5	243		
1200	60	51.13	19	13.19	y	y	y	y			11.6	247		
1212	60	50.31	19	11.53	y	y	y	y	13311	51446	10.4	241		
1229	60	49.28	19	9.46	y	y	y	y			7.8	250		
1244	60	48.27	19	7.40	y	y	y	y	13290.3	51662	9.8	245		
1300	60	47.19	19	5.22	y	y	y	y			9.5	254		
1315	60	46.21	19	3.26	y	y	y	y	13288.5	51573	9.8	250		Level C network error
1331	60	45.15	19	1.11	y	y	y	y			9.4	247		
1345	60	44.25	18	59.27	y	y	y	y	13275.9	51238.3	8.6	47.4		
1400	60	43.31	18	57.37	y	y	y	y			11.6	39.4		
1415	60	42.32	18	55.38	y	y	y	y	13281.9	51266	11.4	255		
1431	60	41.26	18	53.25	y	y	y	y			8.2	262		
1443	60	40.51	18	51.75	y	y	y	y	13341.6	51222	13.0	257		
1459	60	39.49	18	49.68	y	y	y	y			10.5	61.5		
1517	60	38.23	18	47.18	y	y	y	y	13276.1	51153	9.9	252	1m swell	
1528	60	37.55	18	45.79	y	y	y	y			7.6	242	"	
1545	60	36.55	18	43.77	y	y	y	y	13268.2	51131.8	11.2	244	"	
1600	60	35.46	18	41.83	y	y	y	y			9.0	244	"	
1616	60	34.22	18	40.22	y	y	y	y	13283	51024	10.6	241	<2m swell	
1630	60	33.15	18	38.81	y	y	y	y			10.4	249		
1645	60	32.10	18	37.12	y	y	y	y	13277.2	51399	10.7	236		
1700	60	30.98	18	35.99	y	y	y	y			11.3	251		
1715	60	29.81	18	34.44	y	y	y	y	13268.2	51611	10.1	237		
1730	60	28.64	18	32.93	y	y	y	y			10.0	242		
1745	60	27.50	18	31.42	y	y	y	y	13264.7	51647	9.3	232		
1800	60	26.36	18	29.94	y	y	y	y			8.4	237		
1817	60	24.91	18	28.05	y	y	y	y	13269	51689	9.8	246		
1830	60	24.03	18	26.92	y	y	y	y			9.2	238		
1845	60	22.96	18	25.52	y	y	y	y	13269.8	51285	8.7	228		
1900	60	21.71	18	23.91	y	y	y	y			8.7	237		
1915	60	20.55	18	22.42	y	y	y	y	13269	50990	9.9	236	<2m swell	
1930	60	19.42	18	20.94	y	y	y	y			7.2	240		
1945	60	18.17	18	19.32	y	y	y	y	13262.7	50905	8.8	228		
2000	60	17.05	18	17.87	y	y	y	y			10.7	238		
2015	60	15.85	18	16.29	y	y	y	y	13248.6	51074	10.6	234		
2030	60	14.69	18	14.85	y	y	y	y			10.3	254		
2044	60	13.55	18	13.34	y	y	y	y	13255.8	51259	7.8	245	1-2m swell	
2100	60	12.39	18	11.84	y	y	y	y			9.2	251	1-3m swell	
2115	60	11.25	18	10.35	y	y	y	y	13248.6	51397	8.9	252		
2131	60	9.96	18	8.69	y	y	y	y			8.0	256		
2145	60	8.93	18	7.37	y	y	y	y	13243.1	51435	10.7	256		
2202	60	7.56	18	5.59	y	y	y	y			9.6	249	1-2m swell	
2215	60	6.61	18	4.40	y	y	y	y	13232.3	51197	9.3	249		
2231	60	5.34	18	2.74	y	y	y	y			10.1	248		
2245	60	4.25	18	1.33	y	y	y	y	13232.2	51121	10.9	255		
2300	60	3.11	17	59.88	y	y	y	y			10.0	247		
2315	60	1.94	17	58.39	y	y	y	y	13216.9	51267	11.0	256		
2330	60	0.79	17	56.90	y	y	y	y			9.0	256		
2345	59	59.55	17	55.30	y	y	y	y	13216.9	51428	8.7	256		

Every 30 min, for important events and not for birds during turns.

Seismic log

Time GMT	Lat		Long		Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Ship H'ding	CMG	Shot no.	FFID	Lat		Long		MISFIRE, Feathering angle, sea state, current, other comments
0000	61	16.44	21	11.64	8.7	110	8.3	113	9.2	112	9.3	117	8.9	105	89	100	40215	40215	61	16.63	21	13.76	Swell, pitch 2.5m, roll 2m
0015	61	16.22	21	8.82	9.1	104	9.4	111	9.6	91	9.1	123	9.9	100	89	96	40274	40274	61	16.28	21	10.92	
0030	61	16.02	21	6.27	9.5	102	10	122	9.5	108	9.6	106	9.2	103	87	92	40326	40326	61	16.09	21	8.48	
0045	61	15.8	21	3.48	9.6	101	10.2	107	9.5	111	9.4	108	9.5	105	86	97	40385	40385	61	15.85	21	5.67	
0100	61	15.56	21	0.44	10	97	10.2	105	8.8	119	9.1	115	9.1	101	91	99	40448	40448	61	15.62	21	2.64	
0115	61	15.33	20	57.54	9.8	111	10.1	115	9.6	129	9.2	114	9.7	103	90	100	40509	40509	61	15.4	20	59.67	
0130	61	15.16	20	55.26	9.6	107	9.8	114	9.3	115	8.8	111	9.2	108	92	99	40559	40559	61	15.23	20	57.45	
0145	61	14.92	20	52.32	8.7	105	9.2	110	9.5	93	9.3	105	9.7	102	93	101	40624	40624	61	15.03	20	54.45	
0200	61	14.71	20	49.51	9.4	108	8.8	114	10	112	9.1	127	9	111	97	104	40686	40686	61	14.82	20	51.64	
0216	61	14.44	20	46.11	9.6	95	9.6	89.5	9.7	88	9.1	96	9.1	88	87	98	40754	40754	61	14.57	20	46.22	
0230	61	14.28	20	44.15	9.4	87	9.5	95	10.1	92	9.2	85	9.7	94	94	95	40803	40803	61	14.41	20	46.28	
0245	61	14.01	20	41.36	9.1	92	9.7	93	8.9	102	9.2	103	9.7	102	98	106	40863	40863	61	14.18	20	43.45	
0300	61	13.74	20	38.78	9.5	94	9.7	94	9.8	87	10.1	94	9.3	95	93	95	40924	40924	61	13.92	20	40.77	Lost good GPS location
0310																	40962	40962					A lot of noise on streamer
0314	61	13.47	20	36.14	8.9	100	9.96	91	9.29	98	9.47	105	9.8	99	98	105	40984	40984	61	13.67	20	38.2	
0330	61	13.18	20	33.29	8.6	93	9.1	92.7	8.94	96	9.46	94	9.87	98	94	96	41048	41048	61	13.37	20	35.37	
0346	61	12.88	20	30.37	9.95	103	9.1	98.8	9.25	95	9.36	96	9.1	96	96	104	41114	41114	61	13.07	20	32.45	
0358	61	12.68	20	28.31	9.6	107	10.1	95	9.8	99	10.1	108	9.4	90	97	98	41156	41156	61	12.87	20	30.43	
0413	61	12.4	20	25.46	10.3	96	10.1	95	8.9	88	9.9	98	10	95	95	97	41217	41217	61	12.61	20	27.7	
0430	61	12.1	20	22.6	8.9	95	8.7	96	9.8	102	9.8	103	10	101	96	104	41286	41286	61	12.3	20	24.61	
0445	61	11.83	20	19.91	8.9	95	9.7	98	8.5	130	9.2	105	9.3	92	101	106	41346	41346	61	12.03	20	21..91	
0500	61	11.58	20	17.46	9.8	104	9	98	9.4	90	8.7	95	9.3	95	96	98	41400	41400	61	11.79	20	19.46	
0515	61	11.29	20	14.66	9.3	95	9.6	93	9.3	93	9.3	92	9.1	91	95	104	41463	41463	61	11.48	20	16.68	
0545	61	10.75	20	9.25	8.6	100	9.7	93	9.9	107	9.4	88	9.3	97	97	101	41583	41583	61	10.88	20	11.26	~2m swell
0600	61	10.46	20	6.41	9.5	85	9.7	93	9.7	103	9.5	99	9.2	93	95	102	41645	41645	61	10.59	20	8.46	
0615	61	10.23	20	4.24	10.02	96	9.8	96	9.1	93	9.4	94	9.1	87	84	96	41699	41699	61	10.36	20	6.37	
0630	61	9.93	20	1.28	9.1	89	8.7	90	10.2	87	10.1	94	8.8	92	88	100	41760	41760	61	10.04	20	1.41	@41750-41830: Seismic QC a bit shit - going over a bit of long - X swell/temporary decrease in gun p
0645	61	9.63	20	58.27	9.5	85	9.2	84	9.7	89	9.3	86	9.6	91	83	100	41823	41823	61	9.71	20	0.41	
0700	61	9.34	20	55.51	10	92	9.7	90	9.2	91	9.1	88	10	79	83	98	41881	41881	61	9.45	20	57.63	
0715	61	8.84	20	52.97	11.2	114	9.9	103	9.8	116	8.5	95	8.4	91	132	138	41942	41942	61	9.16	20	54.93	
0730	61	7.9	20	50.83	8.8	123	8.6	127	9	115	9.4	124	9.1	115	123	131	41999	41999	61	8.52	19	52.54	
0745	61	6.94	20	48.63	11.2	129	8.9	119	8.5	119	7.7	120	7.6	123	113	121	42064	42064	61	7.57	19	50.34	Birds raised to 8m
0803	61	5.72	19	45.72	7.4	140	7.4	145	8.2	140	8.2	135	7.8	133	126	129	42138	42138	61	6.3	19	45.65	
0815	61	5	19	44.05	8.7	136	7.6	142	7.7	135	7.8	141	7.8	136	130	129	42186	42186	61	5.56	19	45.66	
0830	61	4.05	19	41.86	7.4	134	8.5	137	8	132	8.5	140	8.4	136	127	133	42245	42245	61	4.66	19	43.48	
0838																							QC crashed, restarting
0845	61	3.19	19	39.86	8.4	135	8.1	136	8.2	131	7.5	139	8.1	140	119	120	42305	42305	61	3.82	19	41.47	QC back on
0900	61	2.3	19	37.78	7.7	132	8.4	138	7.9	129	8.1	140	8.3	136	131	129	42365	42365	61	2.95	19	39.4	XBT in ~1hr 30'
0916	61	1.29	19	35.43	8.5	130	8.7	127	7.5	131	8.2	129	8.6	123	134	130	42425	42425	61	1.93	19	31.01	
0930	61	0.48	19	33.57	7	121	7.7	132	7.1	128	8.3	130	8.1	128	123	131	42483	42483	61	1.14	19	35.13	2m swell
0946	60	59.4	19	31.04	7.2	125	8.1	129	8.1	130	7.9	131	8.2	128	131	133	42548	42548	61	0.07	19	30.99	
1000	60	58.54	19	29.04	7.1	126	7.8	131	7.9	128	8	127	7.4	129	130	135	42605	42605	60	59.19	19	30.68	
1015	60	57.77	19	27.28	7.3	123	8	120	7.4	128	7.1	126	7.6	125	131	135	42665	42665	60	58.42	19	28.9	
1027																							Reduce speed to 5kts
1030	60	56.84	19	25.13	7.2	125	7.9	126	7.6	125	7.4	129	8	127	120	125	42722	42722	60	57.51	19	26.74	XCTD 1036
1041																							Speed back to 5.5kts
1045	60	55.96	19	23.07	7.6	136	8.5	116	8.2	124	8.1	129	8	128	131	129	42783	42783	60	56.62	19	24.64	
1100	60	55.02	19	21.09	8.1	146	8.5	154	7.5	140	8.4	143	7.8	152	130	131	42825	42825	60	54.99	19	19.21	
1115	60	54.08	19	19.19	8.2	144	8.4	138	7.9	141	8.1	142	7.6	149	134	143	42902	42902	60	54.82	19	19.11	
1130	60	53.04	19	17.08	9	146	9.1	185	8.1	183	7.5	166	8	146	131	134	42967	42967	60	53.77	19	19.18	
1145	60	52.08	19	15.12	8.2	135	8.8	147	8.5	132	8.3	134	7.9	128	137	135	43024	43024	60	52.83	19	16.44	
1201	60	51	19	12.93	8.6	115	8.8	134	7.6	123	7.9	137	7.6	130	129	133	43097	43097	60	51.76	19	14.19	
1220	60	49.82	19	10.54	8.5	111	9.3	133	8.3	147	7.8	133	8.2	131	132	133	43168	43168	60	50.84	19	11.88	
1230	60	49.18	19	9.25	8.9	150	9.2	145	8.3	145	8	152	8.9	156	127	127	43204	43204	60	49.96	19	10.62	
1245	60	48.12	19	7.07	8.3	132	9.2	134	7.8	139	8.9	136	8	127	132	135	43265	43265	60	48.88	19	8.49	
1300	60	47.24	19	5.31	8.1	137	8.7	141	7.3	124	8.1	135	8.1	135	127	129	43324	43324	60	47.99	19	6.73	
1315	60	46.21	19	3.24	8.3	124	8.3	127	7.1	133	7.8	130	7.7	130	137	137	43383	43383	60	46.97	19	4.69	
1330	60	45.29	19	1.37	8.5	100	8.5	129	7.9	149	8.3	139	7.5	137	131	134	43443	43443	60	46.04	19	2.82	
1345	60	44.24	18	59.26	8.5	127.7	8.7	132	7.8	136	7.2	128	7.7	131	130	132	43504	43504	60	44.99	19	0.7	
1405	60	42.86	18	58.47	6.7	129.6	7.3	128	6.8	125	7.3	128	7.5	122	137	142	43585	43585	60	43.61	18	57.92	
1416	60	42.22	18	55.19	8.2	127	8.4	135	6.8	124	7.1	132	7.1	130	128	136	43628	43628	60	42.96	18	56.67	
1431	60	41.21	18	53.16	8.3	130	7.1	148	6.8	119	7.2	129	6.9	131	136	134	43688	43688	60	41.95	18	54.66	
1445	60	40.38	18	51.44	7.2	120	6.8	130	7.9	127	7.6	136	7.4	134	138	137	43744	43744	60	41.11	18	52.94	
1500	60	39.28	18	49.27	7.7	131	7.7	133	7.2	122	7.7	135	7.7	132	132	133	43806	43806	60	40.02	18	50.75	
1516	60	38.29	18	47.24	7.3	127	6.9	135	7.3	131	7.2	131	7.4	131	127	134	43868	43868	60	39	18	48.73	
1530	60	37.44	18	45.55	6.9	127	7.7	121	6.5	127	6.9	131	7.4	134	136	137	43925	43925	60	38.17	18	47.05	
1546	60	36.35	18	43.33	7.6	114.5	6.9	128	7.8	128	10.7	139	7.5	126	129	135	43988	43988	60	37.06	18	44.79	
1600	60	35.41	18	41.77	9.1	111	8.4	120	8.1	126	7.9	126	7.1	121	137	140	44044	44044	60	36.2	18	43.14	
1618	60	34	18	39.91	8.4	134	7.6	166	6.4	147	6.7	138	6.6	141	142	143	44116	44116	60	34.88	18	41.09	
1630	60	33.15	18	38.82	7.4	134	7	131	7.5	138	7.6	139	6.7	137	135	141	44163	44163	60	34.01	18	39.99	
1645	60	31.97	18	37.26	6.7	111	7.1	103	6.4	28	65	137	7.4	145	138	146	44229	44229	60	32.83	18	38.4	Occassionally swell up to 4m
1659	60	30.84	18	35.75	6.8	149	6.9	132	7.2	135	7.6	149	6.6	132	150	151	44284	44284	60	31.7	18	36.88	
1714	60	29.78	18	34.41	7.1	137	7.5	147	8	139	7	138	7.1	139	140	149	44339	44339	60	30.66	18	35.53	
1721																	44368	44368					EOL: End Of Line
1725		LINE 2	SEQUENCE 6														45000	45000					SOL: Start Of Line
1732	60	28.41	18	32.69	6.1	141	6	140	7.5	138	7.6	151	7.1	136	144	150	45027	45027	60	29.29	18	33.72	
1745	60	27.41	18	31.32	6.8	139	6.4	134	7.1	141	7.1	140	6.9	144	138	143	45080	45080	60	28.29	18	32.42	
1758	60	26.37	18	29.97	6.5	137	7.3	141	6.3	132	6.6	157	7.4	138	145	139	45134	45134	60	27.26	18	31.06	
1816	60	24.92	18	28.05	7.7	125	8.1	145	6.5	143	7.3	148	7.4	153	150	149	45209	45209	60	25.76	18	29.07	~3m swell
1830	60	23.96	18	26.84	6.5	130	6.6	144	7.1	149	64	135	7.1	146	139	145	45258	45258	60	24.81	18	27.85	
1845	60	22.83	18	25.39	6.1	144	6.5	133	7	140	7	162	7.1	154	144	142	45317	45317	60	23.68	18	26.4	~4m swell
1900	60	21.67	18	23.85	7.4	155	7.9	141	8.3	140	6.9	144	7.5	147	143	142	45378	45378	60	22.51	18	###	
1915	60	20.46	18	22.29	7.4	144	7.1	154	7.2	134	7.3	149	6.5	151	144	141	45440	45440	60	21.31	18	23.32	
1930	60	19.33	18	20.81	7.7	140	7.3	132	6.5	155	7.1	147	7.2	138	146	145	45499	45499	60	20.17	18	21.86	
1944	60	18.15	18	19.29	6.7	137	6.2	154	6.5	135	7.5	141	7	151	142	144	45566	45566	60	19.03	18	20.39	
2001	60	16.81	18	17.56	6.4	136	6.4	163	6.3	169	7	151	7.3	154	142	138	45631	45631	60	16.65	18	17.34	
2015	60	15.78	18	16.22	6.1	137	7.4	134	7.2	142	7.6	146	7.3	141	151	150	45680	45680	60	16.65	18	17.28	
2030	60	14.64	18	14.75	6.3	132	7.1	141	6.9	138	7.2	139	6.9	140	140	141	45739	45739	60	15.51	18	15.79	
2045	60	13.53	18	13.3	6.2	131	7	139	6.8	134	6.7	136	6.4	139	142	144	45798	45798	60	14.41	18	14.35	
2100	60	12.27	18	11.68	6.5	134	6.9	138	7	141	7.1	139	6.9	140	145	143	45860	45860	60	13.18	18	12.81	
2115	60	11.19	18	10.27	6.2	128	7.1	140	6.8	134	7.4	145	7.1	139	149	145	45920	45920	60	12.06	18	11.35	5m roll
2130	60	9.98	18	8.73	6.4	131	7	137	6.9	140	7.2	146	6.8	138	142	142	45980	45980	60	10.86	18	9.82	
2145	60	8.95	18	7.4	7	140	7.1	141	7	153	6.9	143	6.8	149	142	144	46036	46036	60	9.82	18	8.47	
2201	60	7.64	18	5.7	7.1	141	6.9	138	7.2	129	7.3	146	6.9	143	140	140	46100	46100	60	8.5	18	6.81	
2215	60	6.61	18	4.39	7	143	7.2	142	6.9	138	7.2	141	7.1	142	140	148	46158	46158	60	7.47	18	5.49	
2230	60	5.43	18	2.86	7.2	113	7.4	135	7.3	128	7.1	144	6.9	140	141	142	46220	46220	60	6.27	18	3.79	
2245	60	4.27	18	1.31	7.7	112	7.2	138	6.9	133	6.8	140	7	136	146	147	46280	46280	60	5.08	18	2.48	swell down to 2m
2300	60	3.11	17	59.86	7.5	137	7	140	6.8	135	7.1	139	7.3	141	136	138	46340	46340	60	3.92	18	1.06	
2315	60	1.96	17	58.4	7.2	134	7.6	140	7.1	138	7.4	134	6.8	140	138	145	46398	46398	60	2.77	17	59.66	
2330	60	0.8	17	56.89	7.9	142	6	143	6.5	129	6.4	135	6.6	135	139	143	46458	46458	60	1.59	17	58.19	
2345	59	59.63	17	55.4	7.8	144	6.2	148	6.9	134	6.7	130	6.4	138	141	143	46518	46518	60	0.42	17	56.68	

Julian Day: Date: Sheet Number:

Time	Lat		Lon		Water	Head.	SOW	SOG	EM710	EM120				EA600	SBP		ER60	OLEX	Comments
(GMT)	D	DM	D	DM	depth (m)		(kts)	(kts)	rec.	rec	Line cnt.			rec.	rec.	Data file	rec.	rec.	
0000	59	58.36	17	53.73	2619	149	5.3	5.5	n	y	0058	57	JC050-3	y	y	220_0336_320	y	y	
0015	59	57.21	17	52.22	2621	137	5.6	5.3	n	y	0058	43	JC050-3	y	y	220_0336_321	y	y	
0030	59	56.13	17	50.79	2624	151	5.7	5.5	n	y	0058	29	JC050-3	y	y	220_0336_322	y	y	
0045	59	54.99	17	49.28	2628	130	5.8	5.5	n	y	0058	14	JC050-3	y	y	220_0336_324	y	y	
0100	59	53.89	17	47.83	2628	140	5.5	5.5	n	y	0059	119	JC050-3	y	y	220_0336_325	y	y	
0115	59	52.67	17	46.23	2624	151	5.3	5.5	n	y	0059	104	JC050-3	y	y	220_0336_326	y	y	
0130	59	51.46	17	44.62	2622	147	5.6	5.6	n	y	0059	88	JC050-3	y	y	220_0336_328	y	y	
0145	59	50.46	17	43.31	2500	150	5.6	5.3	n	y	0059	75	JC050-3	y	y	220_0336_329	y	y	
0159	59	49.22	17	41.67	2627	137	5.8	5.7	n	y	0059	59	JC050-3	y	y	220_0336_331	y	y	
0216	59	47.93	17	39.97	2605	148	5.4	5.8	n	y	0059	42	JC050-3	y	y	220_0336_332	y	y	
0230	59	46.91	17	38.64	2548	131	5.6	5.4	n	y	0059	29	JC050-3	y	y	220_0336_333	y	y	
0245	59	45.73	17	37.08	2438	140	5.5	5.5	n	y	0059	14	JC050-3	y	y	220_0336_335	y	y	
0300	59	44.57	17	35.55	2386	139	6.4	5.6	n	y	0060	118	JC050-3	y	y	220_0336_336	y	y	
0315	59	43.41	17	34.03	2336	150	4.9	5.4	n	y	0060	103	JC050-3	y	y	220_0336_338	y	y	
0330	59	42.28	17	32.56	2289	157	6.8	5.6	n	y	0060	89	JC050-3	y	y	220_0336_339	y	y	
0345	59	41.09	17	30.99	2282	139	5.3	5.5	n	y	0060	73	JC050-3	y	y	220_0336_341	y	y	
0400	59	40.07	17	29.64	2249	143	5.4	5.5	n	y	0060	59	JC050-3	y	y	220_0336_343	y	y	
0415	59	38.96	17	28.19	2169	152	5.9	5.5	n	y	0061	45	JC050-3	y	y	220_0336_344	y	y	
0430	59	37.65	17	26.48	2165	140	5.4	5.6	n	y	0062	28	JC050-3	y	y	220_0336_346	y	y	
0445	59	36.77	17	25.31	2126	152	5.6	5.5	n	y	0063	16	JC050-3	y	y	220_0336_347	y	y	
0500	59	35.61	17	23.80	2082	144	5.6	5.5	n	y	0061	120	JC050-3	y	y	220_0336_349	y	y	EA600 range set 1500-3500
0515	59	34.43	17	22.26	2001	140	5.9	5.3	n	y	0061	105	JC050-3	y	y	220_0336_351	y	y	
0530	59	33.25	17	20.53	1887	147	5.3	5.4	n	y	0061	88	JC050-3	y	y	220_0336_353	y	y	
0545	59	31.94	17	19.03	1817	142	5.1	5.2	n	y	0061	73	JC050-3	y	y	220_0336_355	y	y	
0600	59	31.84	17	17.57	1728	157	6.4	5.3	n	y	0061	58	JC050-3	y	y	220_0336_357	y	y	
0615	59	29.82	17	16.25	1615	134	6.0	5.5	n	y	0061	45	JC050-3	y	y	220_0336_359	y	y	No depth on EA600
0630	59	28.61	17	14.67	1508	145	5.7	5.3	n	y	0061	29	JC050-3	y	y	220_0336_361	y	y	No depth on EA600: depths taken from Olex
0645	59	27.55	17	13.30	1427	142	5.4	5.4	n	y	0061	15	JC050-3	y	y	220_0336_363	y	y	No depth on EA600
0700	59	26.37	17	11.77	1339	148	5.6	5.3	n	y	0062	119	JC050-3	y	y	220_0336_366	y	y	EA600 incorrect by ~1700m!
0715	59	25.27	17	10.33	1258	149	4.8	5.5	n	y	0062	105	JC050-3	y	y	220_0336_368	y	y	
0730	59	24.16	17	8.86	1180	133	4.8	5.7	n	y	0062	90	JC050-3	y	y	220_0336_370	y	y	EA600 depth still wrong (3300m)
0745	59	23.00	17	7.36	1104	143	5.5	5.4	n	y	0062	75	JC050-3	y	y	220_0336_370	y	y	
0800	59	21.74	17	5.73		148	5.5	5.3	n	y	0062	59	JC050-3	y	y	220_0336_372	y	y	
0815	59	20.53	17	4.17	934	150	6.3	5.5	n	y	0062	43	JC050-3	y	y	220_0336_376	y	y	EA600 bottom detector range was set incorrect (2000-3500) now
0832	59	19.25	17	2.50	866	162	5.5	5.6	n	y	0062	26	JC050-3	y	y	220_0336_378	y	y	
0846	59	18.21	17	1.15	823	144	5.4	5.6	n	y	0062	13	JC050-3	y	y	220_0336_380	y	y	
0901	59	17.09	16	59.70	768	148	6.4	5.4	n	y	0063	113	JC050-3	y	y	220_0336_382	y	y	
0915	59	15.96	16	58.23	676	148	5.8	5.5	n	y	0063	103	JC050-3	y	y	220_0336_387	y	y	
0934	59	14.68	16	56.05	648	115	5.5	5.5	n	y	0063	84	JC050-3	y	y	220_0336_390	y	y	
0945	59	14.13	16	54.43	584	120	6.0	5.3	n	y	0063	74	JC050-3	y	y	220_0336_391	y	y	
1000	59	13.36	16	52.18	581	114	5.2	5.5	n	y	0063	57	JC050-3	y	y	220_0336_394	y	y	
1014	59	12.64	16	50.06	587	112	5.4	5.5	n	y	0064	119	JC050-3	y	y	220_0336_396	y	y	All swath poor
1029	59	11.87	16	47.77	590	115	5.5	5.2	n	y	0064	104	JC050-3	y	y	220_0336_397	y	y	
1044	59	11.11	16	45.56	598	116	5.5	5.5	n	y	0064	89	JC050-3	y	y	220_0336_399	y	y	
1100	59	10.34	16	43.30	602	128	5.5	5.4	n	y	0064	74	JC050-3	y	y	220_0336_402	y	y	
1115	59	9.58	16	41.03	620	120	5.6	5.5	n	y	0064	59	JC050-3	y	y	220_0336_405	y	y	
1130	59	8.83	16	38.84	724	122	5.3	5.5	n	y	0064	44	JC050-3	y	y	220_0336_413	y	y	Swath improved. Still not great
1145	59	8.02	16	36.46	790	117	5.3	5.1	n	y	0064	28	JC050-3	y	y	220_0336_415	y	y	
1200	59	7.24	16	34.19	887	124	5.1	5.5	n	y	0064	13	JC050-3	y	y	220_0336_417	y	y	
1217	59	6.43	16	31.77	927	135	5.7	5.7	n	y	0065	117	JC050-3	y	y	220_0336_419	y	y	
1230	59	5.83	16	30.04	974	131	5.6	5.4	n	y	0065	105	JC050-3	y	y	220_0336_420	y	y	
1245	59	4.99	16	27.58	1030	122	5.5	5.5	n	y	0065	88	JC050-3	y	y	220_0336_422	y	y	
1258	59	4.32	16	25.60	1089	122	5.4	5.3	n	y	0065	75	JC050-3	y	y	220_0336_423	y	y	Restarted EM120
1316	59	3.42	16	22.95	1098	114	5.6	5.5	n	y	0066	103	JC050-3	y	y	220_0336_426	y	y	
1330	59	2.70	16	20.86	1116	126	5.5	5.4	n	y	0066	89	JC050-3	y	y	220_0336_428	y	y	
1345	59	1.95	16	18.66	1109	117	5.6	5.4	n	y	0066	74	JC050-3	y	y	220_0336_430	y	y	
1400	59	1.22	16	16.53	1112	116	5.6	5.5	n	y	0066	60	JC050-3	y	n	220_1402	y	y	Frozen SBP, restarted
1415	59	0.47	16	14.33	1118	126	5.5	5.4	n	y	0066	45	JC050-3	y	y	220_1402_002	y	y	SBP Starts logging
1430	58	59.67	16	12.02	1094	116	5.4	5.6	n	y	0066	30	JC050-3	y	y	220_1402_004	y	y	
1445	58	58.93	16	9.80	1121	118	5.4	5.5	n	y	0066	15	JC050-3	y	y	220_1402_006	y	y	
1500	58	58.18	16	7.65	1127	120	5.6	5.4	n	y	0067	120	JC050-3	y	y	220_1402_008	y	y	
1514	58	57.42	16	5.44	1139	124	5.7	5.5	n	y	0067	105	JC050-3	y	y	220_1402_010	y	y	
1530	58	56.61	16	3.05	1142	120	5.5	5.4	n	y	0067	89	JC050-3	y	y	220_1402_012	y	y	
1545	58	55.83	16	0.78	1149	120	5.7	5.5	n	y	0067	74	JC050-3	y	y	220_1402_014	y	y	
1600	58	55.16	15	58.77	1204	125	5.2	5.3	n	y	0067	61	JC050-3	y	y	220_1402_015	y	y	
1615	58	54.39	15	56.59	1163	117	5.4	5.4	n	y	0067	46	JC050-3	y	y	220_1402_017	y	y	
1630	58	53.64	15	54.42	1165	108	5.5	5.6	n	y	0067	31	JC050-3	y	y	220_1402_019	y	y	
1645	58	52.89	15	52.21	1159	120	5.5	5.6	n	y	0067	16	JC050-3	y	y	220_1402_021	y	y	
1700	58	52.15	15	50.04	1135	116	5.3	5.3	n	y	0068	120	JC050-3	y	y	220_1402_024	y	y	
1715	58	51.36	15	47.75	1147	120	5.5	5.4	n	y	0068	106	JC050-3	y	y	220_1402_029	y	y	
1730	58	50.66	15	45.69	1150	121	5.4	5.5	n	y	0068	91	JC050-3	y	y	220_1402_031	y	y	
1745	58	49.98	15	43.73	1112	113	5.2	5.3	n	y	0068	79	JC050-3	y	y	220_1402_033	y	y	
1800	58	49.03	15	40.99	1141	118	5.3	5.5	n	y	0068	60	JC050-3	y	y	220_1402_036	y	y	
1815	58	48.25	15	38.67	1136	120	5.4	5.4	n	y	0068	45	JC050-3	y	y	220_1402_038	y	y	
1830	58	47.51	15	36.54	1136	121	5.4	5.2	n	y	0068	30	JC050-3	y	y	220_1402_040	y	y	
1845	58	46.82	15	34.52	1139	114	5.6	5.5	n	y	0068	16	JC050-3	y	y	220_1402_042	y	y	
1900	58	46.06	15	32.38	1151	120	5.4	5.6	n	y	0068	2	JC050-3	y	y	220_1402_044	y	y	
1915	58	45.36	15	30.27	1134	116	5.1	5.3	n	y	0069	105	JC050-3	y	y	220_1402_047	y	y	Guns in/stop firing @ 1859
1930	58	44.70	15	28.37	1133	128	4.5	4.4	n	y	0069	91	JC050-3	y	y	220_1402_049	y	y	
1945	58	44.03	15	26.43	1132	122	4.4	4.6	n	y	0069	75	JC050-3	y	y	220_1402_051	y	y	
2002	58	43.32	15	24.40	1136	118	4.1	4.0	n	y	0069	58	JC050-3	y	y	220_1402_054	y	y	
2032	58	42.06	15	20.73	1119	120	4.6	4.5	n	y	0069	27	JC050-3	y	y	220_1402_058	y	y	
2100	58	40.93	15	17.43	1118	122	4.7	4.4	n	y	0070	120	JC050-3	y	y	220_1402_063	y	y	
2130	58	39.68	15	13.81	1104	122	5.1	4.3	n	y	0070	90	JC050-3	y	y	220_1402_074	y	y	
2201	58	38.40	15	15.10	1094	116	6.3	6.5	n	y	0070	58	JC050-3	y	y	220_1402_075	y	y	Tailbuoy recovered
2232	58	35.94	15	2.85	1077	120	11.7	11.6	n	y	0070	25	JC050-3	y	y	220_1402_080	y	y	
2300	58	32.89	14	54.14	1130	119	10.5	10.6	n	y	0071	119	JC050-3	y	y	220_1402_084	y	y	
2330	58	30.00	14	45.57	980	121	11.3	11.1	n	y	0071	90	JC050-3	y	y	220_1402_089	y	y	

Day: Date: Sheet Number:

Time	Lat		Lon		ADCP150	ADCP75	Techsas	Level-C	Grav.	Mag.	Wind			Comments, eg state of seismic exp.
(GMT)	D	DM	D	DM	rec.	rec.	rec.	rec.	(mgal)	(nT)	Speed	Dir.	Sea State	
0000	59	58.36	17	53.73	y	y	y	y	13212.2	51429.1	8.7	254	Mild swell	
0015	59	57.23	17	52.23	y	y	y	y			9.4	259	"	
0030	59	56.15	17	50.81	y	y	y	y	13208.4	51407	8.0	245	"	
0045	59	55.01	17	49.31	y	y	y	y			9.0	246	"	
0100	59	53.91	17	47.85	y	y	y	y	13207.5	51322.5	9.0	256	"	
0115	59	52.66	17	46.21	y	y	y	y			8.9	252	"	
0130	59	51.47	17	44.62	y	y	y	y	13205.4	51090	8.2	238	"	
0145	59	50.43	17	43.26	y	y	y	y			7.6	244	"	
0200	59	49.25	17	41.71	y	y	y	y	13197.6	51055.4	6.6	246	"	
0216	59	47.96	17	40.01	y	y	y	y			7.5	249	"	
0229	59	46.93	17	38.86	y	y	y	y	13120	51053	10.6	252		
0245	59	45.70	17	37.04	y	y	y	y			7.8	249		
0259	59	44.62	17	35.63	y	y	y	y	13197.1	51157	8.0	238		
0316	59	43.33	17	33.94	y	y	y	y			7.2	241		
0330	59	42.30	17	32.58	y	y	y	y	13207.5	51214.6	6.7	237		
0345	59	41.02	17	30.90	y	y	y	y			7.3	235		
0400	59	40.11	17	29.69	y	y	y	y	13191.6	51236	7.8	230		
0415	59	38.91	17	28.13	y	y	y	y			7.7	224		
0430	59	37.65	17	26.48	y	y	y	y	13197	50977	9.1	225		
0445	59	36.77	17	25.31	y	y	y	y			8.9	225		
0500	59	35.61	17	23.80	y	y	y	y	13199.7	50834	8.9	222		
0515	59	34.43	17	22.26	y	y	y	y			7.6	212		
0530	59	33.25	17	20.71	y	y	y	y	13200.3	50746	7.8	223		
0545	59	31.96	17	19.03	y	y	y	y			8.0	231		
0600	59	30.84	17	17.57	y	y	y	y	13208.5	50740	8.4	223		
0615	59	29.58	17	16.29	y	y	y	y			8.5	233		
0630	59	28.61	17	14.67	y	y	y	y	13220.7	50786	6.2	231		
0645	59	27.55	17	13.30	y	y	y	y			8.4	232		
0700	59	26.37	17	11.77	y	y	y	y	13219.9	50818	5.7	243		
0715	59	25.27	17	10.33	y	y	y	y			7.2	234		
0730	59	24.16	17	8.86	y	y	y	y	13215.3	51131	6.8	233		
0745	59	23.00	17	7.36	y	y	y	y			7.6	222	~2m swell	
0800	59	21.74	17	5.73	y	y	y	y	13226.7	50968	8.6	224		
0815	59	20.54	17	4.17	y	y	y	y			7.9	217		
0832	59	19.52	17	2.50	y	y	y	y	13203.6	51160	8.3	231		
0846	59	18.21	17	1.15	y	y	y	y			8.3	224		
0901	59	17.06	16	59.67	y	y	y	y	13189.2	51092	6.2	218	2m swell	
0917	59	15.85	16	58.10	y	y	y	y			6.9	226	"	
0934	59	14.68	16	56.07	y	y	y	y	13178.5	50914	7.4	251		
0945	59	14.13	16	54.42	y	y	y	y			7.7	249	"	
1004	59	13.14	16	51.50	y	y	y	y	13173.1	50915	7.4	238	"	
1015	59	12.62	16	50.02	y	y	y	y			6.8	251		
1030	59	11.85	16	47.73	y	y	y	y	13166.4	51169	6.1	259		
1046	59	11.05	16	45.36	y	y	y	y			5.5	264	"	
1100	59	10.32	16	43.24	y	y	y	y	13164.4	50648	6.4	254		
1115	59	9.58	16	41.06	y	y	y	y			6.0	234		
1131	59	8.76	16	38.66	y	y	y	y	13145.5	50659	6.9	241		
1145	59	8.02	16	36.45	y	y	y	y			7.7	234		
1201	59	7.21	16	34.09	y	y	y	y	13142.2	50708	7.0	241		
1215	59	6.48	16	31.93	y	y	y	y			5.7	243		
1230	59	5.78	16	29.85	y	y	y	y	13137.7	50735	5.6	241		
1245	59	5.00	16	27.58	y	y	y	y			6.8	248		
1300	59	4.30	16	25.55	y	y	y	y	13135.8	50611	7.7	242		
1315	59	3.51	16	23.21	y	y	y	y			7.9	243		
1330	59	2.73	16	20.94	y	y	y	y	13115.8	50674	6.8	238		
1345	59	1.96	16	18.67	y	y	y	y			5.4	242		
1400	59	1.16	16	16.35	y	y	y	y	13104	50622	6.3	232		
1415	59	0.47	16	14.34	y	y	y	y			6.3	236		
1429	58	59.71	16	12.13	y	y	y	y	13102.7	50632	7.4	241		
1445	58	58.92	16	9.77	y	y	y	y			7.6	232		
1500	58	58.15	16	7.54	y	y	y	y	13088.4	50594	5.2	219		
1515	58	57.42	16	5.40	y	y	y	y			7.2	225	1 m Swell	
1531	58	56.58	16	2.97	y	y	y	y	13083.6	50726	4.8	240	"	
1545	58	55.80	16	0.70	y	y	y	y			5.8	237		
1600	58	55.61	15	58.79	y	y	y	y	13087.7	50873	8.0	236		
1615	58	54.39	15	56.59	y	y	y	y			7.3	228	"	
1630	58	53.63	15	54.36	y	y	y	y	13135.4	50936	6.2	234	"	
1645	58	52.86	15	52.22	y	y	y	y			6.0	218		
1700	58	52.15	15	50.04	y	y	y	y	13091.5	50980	5.9	226		
1715	58	51.36	15	47.75	y	y	y	y			5.7	217		
1730	58	50.66	15	45.69	y	y	y	y	13097	50990	5.9	232		
1745	58	49.98	15	43.73	y	y	y	y			6.8	233		
1800	58	49.05	15	41.01	y	y	y	y	13130.4	50978	4.9	231		
1815	58	48.23	15	38.64	y	y	y	y			6.7	213		
1830	58	47.52	15	36.57	y	y	y	y	13094.1	50927	7.2	206		
1845	58	46.82	15	34.52	y	y	y	y			6.6	230		
1900	58	46.06	15	32.38	y	y	y	y	13092.2	50859	7.7	216		Guns stopped firing @ 1859
1915	58	45.36	15	30.27	y	y	y	y			6.5	226		
1930	58	44.70	15	28.37	y	y	y	y	13084.4	50803	7.7	220		
1945	58	44.08	15	26.60	y	y	y	y			7.5	233		
2006	58	43.14	15	23.87	y	y	y	y	13103.3	50866	7.9	216	1-2m Swell	
2034	58	41.99	15	20.52	y	y	y	y	13086.1	50795	8.1	212		
2104	58	40.74	15	16.91	y	y	y	y	13091.2	50562	7.0	216		
2131	58	39.64	15	13.70	y	y	y	y	13083.5	50504	7.4	230		
2202	58	38.41	15	10.12	y	y	y	y	13080	50501	7.3	234		
2232	58	35.94	15	2.85	y	y	y	y	13057	50815	5.6	251		Notify Leighton if mag depth less than 2r
2304	58	32.47	14	52.92	y	y	y	y	13055.5	50881	5.9	247	1m swell	
2333	58	29.55	14	44.24	y	y	y	y	13064.4	50679	6.8	256		

Every 30 min, for important events and not for birds during turns.

Seismic log

Line No	2 SEQ 6				Date:	###		Julian Day	222	Page No:			Depth of Gun 1: 5.5m						Array Volume: 355
													Depth of Gun 2:						
	Vessel GPS				Bird 1		Bird 2		Bird 3		Bird 4		Bird 5					Tailbuoy GPS			
Time GMT	Lat		Long		Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Z (m)	H'ding	Ship H'ding	CMG	Shot no.	FFID	Lat	Long	MISFIRE, Feathering angle, sea state, current, other comments
0000	59	58.34	17	53.71	7.4	148	7.8	148	6.6	153	6.6	159	7.2	145	136	145	46587	46587	59 59.15	17 5.07	
0015	59	57.21	17	52.2	7	158	7.2	149	6.8	158	7.7	165	6.8	153	142	145	46645	46645	59 58.01	17 53.49	
30	59	56.16	17	50.81	7.54	139.1	6.55	###	6.63	###	7.3	###	6.49	###	145.4	151.7	46702	46702	59 56.95	17 52.09	
0045	59	54.96	17	49.24	6.29	136.3	6.54	133.1	6.62	###	6.27	140	7.42	###	131	###	46765	46765	59 55.73	17 50.53	
0100	59	53.88	17	47.81	7.7	90.9	6.28	128	6.75	###	7.25	###	7.3	###	139.9	###	46818	46818	59 54.63	17 49.14	
0115	59	52.63	17	46.18	7.19	131.5	7.39	132.7	6.47	###	7.09	###	6.95	###	134.8	###	46882	46882	59 53.51	17 47.5	
0130	59	51.46	17	44.6	7.46	133	6.74	###	7.07	###	7.41	###	6.66	###	134.7	###	46946	46946	59 52.22	17 45.93	
0145	59	50.43	17	43.26	6.31	132.4	6.42	177.3	7.72	###	6.93	###	6.47	###	141.5	###	46999	46999	59 51.21	17 44.59	
0200	59	49.26	17	41.72	6.2	138.4	6.57	###	6.61	###	7.08	###	7.25	###	137.8	###	47059	47059	59 50.03	17 43.07	
0216	59	47.96	17	40.01	7.02	147.5	6.15	125.2	7.28	###	7.14	135	7.14	###	136	139.5	47127	47127	59 48.74	17 41.32	
0230	59	46.88	17	38.58	6.02	130.3	7.1	###	7.38	###	7.05	134	7.08	###	137.7	###	47183	47183	59 47.65	17 39.82	
0239	59		17														47214	47214	59	17	Pitch, roll & heave appx 1.5m; data looks
0246	59	45.66	17	36.99	7.88	144	7.92	###	7.19	###	7.3	###	7.23	###	135.7	144.6	47243	47243	59 46.45	17 38.3	
0300	59	44.59	17	35.59	7.03	135.8	7.97	133.3	7.03	###	6.84	###	7.13	###	138.3	140.1	47300	47300	59 45.37	17 38.88	
0316	59	43.36	17	33.97	7.12	143.7	7.28	###	7.88	###	6.52	###	6.28	###	136.2	144.5	47369	47369	59 44.16	17 35.23	Birds 4 &5 horizontal force to stbd remov
0321	59		17														47383	47383	59	17	Third bird now set to 0 h force
0330	59	42.29	17	32.57	7.57	135.5	7.5	###	6.6	###	6.84	###	6.97	###	144.7	148.4	47421	47421	59 43.09	17 33.79	
0345	59	41.09	17	30.99	7.12	146.5	7.67	141.6	7.28	###	6.7	###	7.67	###	139.4	162.5	47485	47485	59 41.89	17 33.21	
0400	59	40.04	17	29.58	6.5	137	7.3	130	6.4	137	6.4	145	7.4	141	140	148	47542	47542	59 40.85	17 30.8	On line
0415	59	38.92	17	28.14	7.2	131	6.3	138	6.1	21	6.6	148	7.3	129	145	148	47599	47599	59 39.75	17 29.34	
0431	59	37.54	17	26.32	7.1	133	6.3	140	6.6	140	7.1	137	6.9	137	142	143	47666	47666	59 38.37	17 27.5	
0445	59	36.66	17	25.18	7.1	136	7.5	133	6.1	139	6	133	7	136	141	142	47718	47718	59 37.56	17 26.36	
0458	59	35.53	17	23.71	7.8	126	6.5	138	7.2	139	7..6	142	6.8	133	140	142	47716	47716	59 36.36	17 24.89	
1514	59	34.41	17	22.22	6.2	134	7.6	134	6.1	136	6.4	141	7.3	139	148	149	47836	47836	59 35.2	17 23.33	
1530	59	33.11	17	20.54	7.7	129	8	140	6.7	133	7.3	163	6.9	138	144	141	47904	47904	59 33.92	17 21.62	
0545	59	31.96	17	19.04	7.4	151	7.1	137	7.3	138	6.5	132	6.4	143	143	142	47964	47964	59 32.79	17 20.1	
0600	59	30.87	17	17.62	6.5	138	7.5	142	6.9	152	6.9	142	6.6	145	149	149	48021	48021	59 31.72	17 18.66	
0615	59	29.76	17	16.16	6.4	134	7.5	149	7.1	146	7.5	149	6.3	142	150	148	48080	48080	59 30.59	17 17.17	
0628	59	28.7	17	14.78	8.1	132	8	140	7.6	150	6.3	141	6.2	141	145	142	48135	48135	59 29.58	17 15.86	
0645	59	27.41	17	13.1	6.8	141	7.8	135	7	150	6.9	137	7.4	151	143	149	48203	48203	59 28.24	17 14.11	
0700	59	26.31	17	11.67	7.8	140	7.9	136	7	146	6..6	178	7.3	143	142	143	48261	48261	59 27.13	17 12.71	
0715	59	25.19	17	10.21	6.8	133	7	128	6	140	6.9	136	6.9	142	148	143	48319	48319	59 26.01	17 11.28	
0725	59	24.11	17	8.8	6.2	134	7.4	142	6.7	138	7	146	6.5	150	144	149	48376	48376	59 24.97	17 9.96	
0745	59	22.85	17	7.16	7.6	131	8.3	138	7	146	6.7	146	7	146	145	145	48444	48444	59 23.62	17 18.24	Swell dropping ~1-2m
0800	59	21.7	17	5.69	7.4	134	7.2	133	7.1	140	6.9	142	7	141	140	142	48500	48500	59 22.55	17 6.81	
0815	59	20.66	17	4.33	7.2	133	7.1	140	7	138	7.7	141	7.6	140	146	147	48554	48554	59 21.51	17 5.45	
0830	59	19.32	17	2.59	7	138	7.1	136	6.9	134	7.2	139	7.4	138	142	143	48619	48619	59 20.16	17 3.73	
0845	59	18.24	17	1.18	5.8	135	7.4	134	5.9	130	6	131	6.4	136	146	148	48680	48680	59 19.08	17 2.28	2m swell
0901	59	17.04	16	59.62	5.9	143	7	137	6.1	134	6.4	138	5.8	135	145	144	48740	48740	59 17.87	17 0.71	
0915	59	15.9	16	58.16	6	143	7	146	6.4	144	6.8	141	6.4	146	143	143	48800	48800	59 16.76	16 59.22	
1000	59	13.42	16	52.33	6.1	112	6.7	112	6.6	118	7	113	7.1	128	117	120	48978	48978	59 13.93	16 53.96	Turn at 0924 to port
1015	59	12.57	16	49.84	6.4	116	6.3	112	6.2	114	6.9	117	6.4	116	116	117	49038	49038	59 13.1	16 51.56	
1030	59	11.87	16	47.78	6.5	117	6.2	114	6.7	119	6.6	117	6.2	114	115	121	49098	49098	59 12.38	16 49.48	
1045	59	11.09	16	45.5	6.4	114	6.6	114	6.3	113	6.1	118	6.9	116	117	118	49160	49160	59 11.6	16 47.25	
1100	59	10.32	16	43.22	6.7	139	6.8	115	6.9	117	6.7	117	6.5	112	117	117	49220	49220	59 10.84	16 44.94	
1115	59	9.58	16	41.03	6.9	120	6.7	119	6.2	116	6.6	115	6.8	111	121	118	49280	49280	59 10.12	16 42.8	1m swell
1130	59	8.83	16	38.85	6.8	121	6.2	114	6.7	108	7	117	6.4	112	121	116	49338	49338	59 9.36	16 40.57	
1145	59	8.02	16	36.45	6.7	111	6.9	115	6.1	117	6.5	116	7	115	118	116	49400	49400	59 8.56	16 38.17	
1200	59	7.23	16	34.13	6.38	115	6.79	116	6.2	118	6.4	122	7.33	122	115	116	49467	49467	59 7.77	16 35.77	
1217	59	6.93	16	33.38	7.65	117	7.29	119	7.31	114	7.7	119	6.7	122	129	124	49529	49529	59 6.96	16 33.45	
1228	59	5.85	16	30.08	7.2	115	7.4	115	7.3	118	6.8	116	6.9	116	122	123	49573	49573	59 6.4	16 31.74	
1245	59	4.97	16	27.51	7.4	116	6.8	123	6.9	130	7	114	6.7	111	121	119	49640	49640	59 5.54	16 29.19	
1300	59	4.3	16	25.53	6.6	118	6.6	114	7.1	110	7.1	116	6.2	126	118	119	49697	49697	59 4.88	16 27.19	
1315	59	3.46	16	23.08	7.9	112	6.9	116	7.2	120	7.1	118	7.4	119	115	118	49760	49760	59 4.02	16 24.74	
1330	59	2.73	16	20.95	7.9	115	7.2	112	6.9	120	7.1	120	6.4	110	114	120	49818	49818	59 3.27	16 22.63	
1345	59	1.97	16	18.71	7.3	114	6.7	115	7.2	111	7.2	121	6.9	110	114	118	49878	49878	59 2.48	16 20.34	
1400	59	1.23	16	16.55	8.5	118	8	114	7.6	109	6.6	109	6.1	111	122	121	49940	49940	59 1.75	16 18.24	
1415	59	0.41	16	14.16	6.8	111	6.2	111	5.9	117	6.9	113	8.9	128	115	122	50000	50000	59 0.91	16 15.82	
1433	58	59.53	16	11.58	7.76	120	6.4	110	7.47	117	7.2	118	6.85	117	115	122	50078	50078	59 0.03	16 13.31	
1445	58	58.92	16	9.8	7.1	109	6.5	112	6.9	109	6.7	109	6.6	114	115	120	50119	50119	58 59.42	16 11.57	
1500	58	58.17	16	7.6	6.7	111	6.9	118	7.3	120	7.9	110	7.7	114	124	127	50178	50178	58 58.66	16 9.31	
1515	58	57.39	16	5.34	7	109	6.3	114	5.6	109	5.9	110	7.6	120	115	119	50238	50238	58 57.9	16 7.04	
1530	58	53.63	16	3.12	6.3	108	6.2	110	6.5	111	7	114	7.7	106	118	122	50298	50298	58 57.15	16 4.83	
1545	58	55.89	16	0.96	6.46	107	6.6	123	7.37	107	6.85	115	7.27	122	120	123	50360	50360	58 56.39	16 2.66	
1600	58	55.17	15	58.84	6.5	113	7.4	106	7.6	103	6.6	106	7.8	114	121	117	50418	50418	58 55.66	16 0.61	
1614	58	54.4	15	56.57	7.3	116	6.4	107	5.8	116	6.7	115	6.1	113	115	122	50480	50480	58 54.89	15 58.32	<2.5m swell
1630	58	53.59	15	54.23	7.4	111	7.6	110	7.5	105	7.3	111	7.5	112	116	118	50541	50541	58 54.08	15 55.99	
1645	58	52.89	15	52.19	7	111	6.4	110	7.1	118	7.9	112	7.6	114	120	122	50597	50597	58 53.38	15 53.96	
1659	58	52.11	15	49.92	7.4	110	7.8	107	6.4	115	6.3	110	7.4	111	122	127	50658	50658	58 52.58	15 51.6	
1715	58	51.35	15	47.68	7.4	109	7.7	109	7.3	109	7.2	107	6.9	103	125	123	50718	50718	58 51.82	15 49.36	
1730	58	50.57	15	45.47	7.4	112	7	110	7	113	7.3	113	6.7	107	114	116	50779	50779	58 51.06	15 47.11	
1742	58	49.96	15	43.68	7.1	112	6.6	113	6.8	122	6.9	116	7.2	113	116	114	50827	50827	58 50.46	15 45.43	
1800	58	49.01	15	40.91	6.6	107	7	117	7.1	112	7.2	122	7	118	113	118	50900	50900	58 49.51	15 42.64	
1815	58	48.26	15	38.71	6.6	111	7.2	115	7.1	115	6.5	106	6.7	109	123	119	50964	50964	58 48.73	15 40.36	
1830	58	47.54	15	36.6	7.2	108	7.7	111	7.3	111	7.5	112	6.6	118	122	120	51019	51019	58 48.01	15 38.25	
1845	58	46.81	15	34.51	7.2	111	7	109	7.2	116	7.5	115	6.8	110	114	118	51076	51076	58 47.31	15 36.13	
1900	58	46.01	15	32.19	7.5	109	7.3	103	7.5	104	7.3	109	7	114	117	121	51137	51137	58 46.53	15 33.91	End of line - 1859. Lat shot 51137, ever.

Julian Day: Date: Sheet Number:

Time	Lat		Lon		Water	Head.	SOW	SOG	EM710	EM120			EA600	SBP		ER60	OLEX	Comments
(GMT)	D	DM	D	DM	depth (m)		(kts)	(kts)	rec.	rec	Line cnt.		rec.	rec.	Data file	rec.	rec.	
0000	58	26.91	14	36.63	863	124	11.0	10.8	n	y	0071	59 JC050-3	y	y	222_1402_092	y	y	
0030	58	23.88	14	28.21	781	121	10.9	10.9	n	y	0071	30 JC050-3	y	y	222_1402_096	y	y	
0100	58	20.77	14	19.36	619	124	10.9	11.0	n	y	0071	120 JC050-3	y	y	222_1402_100	y	y	
0130	58	17.78	14	10.29	520	122	10.9	11.0	n	y	0071	90 JC050-3	y	y	222_1402_103	y	y	
0200	58	14.59	14	2.24	818	123	10.5	10.8	n	y	0072	58 JC050-3	y	y	222_1402_106	y	y	
0230	58	11.52	13	54.50		121	10.2	10.4	n	y	0072	30 JC050-3	y	y	222_1402_109	y	y	
0300	58	8.52	13	46.32	492	123	11.4	10.7	n	y	0073	118 JC050-3	y	y	222_1402_112	y	y	
0331	58	5.23	13	37.52	594	123	10.8	10.7	n	y	0073	88 JC050-3	y	y	222_1402_115	y	y	
0404	58	1.84	13	28.39	792	123	11.1	10.9	n	y	0073	56 JC050-3	y	y	222_1402_117	y	y	
0431	57	59.08	13	21.08		122	10.7	10.7	n	y	0073	29 JC050-3	y	y	222_1402_122	y	y	
0500	57	56.26	13	13.00	675	123	10.5	10.6	y	y	0074	100 JC050-3	y	y	222_1402_125	y	y	EM120 not seeing seabed. Started logging EM170. No seabed EA600
0530	57	53.21	13	4.53	507	123	10.8	10.7	y	y	0074	89 JC050-3	y	y	222_1402_130	y	y	EA600 back
0600	57	50.42	12	56.54	841	122	10.5	10.4	y	y	0074	61 JC050-3	y	y	222_1402_133	y	y	
0630	57	51.80	12	48.69	1212	122	10.9	10.8	y	y	0074	33 JC050-3	y	y	222_1402_134	y	y	
0700	57	44.53	12	39.25	1455	127	10.8	11.3	y	y	0075	120 JC050-3	y	y	222_1402_136	y	y	
0730	57	41.47	12	30.75		129	10.2	10.2	y	y	0075	88 JC050-3	y	y	222_1402_137	y	y	EM170: 0191, 2, JC050
0800	57	38.30	12	23.50		123	9.4	9.7	y	y	00075	58 JC050-3	y	y	222_1402_138	y	y	Swath bad (EM120 + EA600)
0830	57	35.45	12	16.23		121	9.4	9.5	y	y	0007	113 JC050-3	y	y	222_1402_139	y	y	EM120 - NOT PINGING?!
0900	57	32.83	12	8.72	1439	121	9.8	10.0	y	y	0078	118 JC050-3	n	y	222_1402_142	y	y	EM120 ok, EA600 interference
0905																		EA600 ok now!
0930	57	30.22	12	1.39		125	8.9	8.9	y	y	0078	88 JC050-3	y	y	222_1402_146	y	y	
1000	57	27.46	11	53.64		127	9.6	9.1	y	y	0078	55 JC050-3	y	y	222_1402_150	y	y	EA600 out of range - changed - ok now.
1030	57	24.98	11	46.96		122	9.0	9.1	y	y	0078	26 JC050-3	y	y	222_1402_154	y	y	
1100	57	22.38	11	40.23	1970	121	9.0	9.2	y	y	0079	117 JC050-3	y	y	222_1402_158	y	y	
1130	57	19.74	11	30.40	2042	123	9.1	9.1	y	y	0079	87 JC050-3	y	y	222_1402_161	y	y	
1200	57	17.11	11	26.82	1951	124	9.2	9.3	y	y	0079	57 JC050-3	y	y	222_1402_165	y	y	
1230	57	14.02	11	19.21	1868	121	9.1	9.0	y	y	0079	24 JC050-3	y	y	222_1402_169	y	y	
1300	57	11.83	11	13.58	2006	127	9.0	9.0	y	y	0079	116 JC050-3	y	y	222_1402_172	y	y	
1330	57	9.26	11	6.11	2256	121	9.1	9.2	y	y	0079	84 JC050-3	y	y	222_1402_175	y	y	
1359	57	6.86	10	58.94	2299	121	9.3	9.4	y	y	0080	54 JC050-3	y	y	222_1402_179	y	y	
1428	57	4.39	10	51.86	2328	119	9.6	9.5	y	y	0080	25 JC050-3	y	y	222_1402_182	y	y	
1455	57	2.01	10	45.11	2322	118	9.2	9.3	y	y	0081	118 JC050-3	y	y	222_1402_182	y	y	SBP had stopped out at 1428 - restarted
1527	56	59.49	10	37.29	2310	119	9.4	9.3	y	y	0081	86 JC050-3	y	y	222_1402_185	y	y	
1600	56	56.85	10	30.20	2245	132	9.7	9.7	y	y	0081	56 JC050-3	y	y	222_1402_188	y	y	
1630	56	53.68	10	23.17	2173	125	9.6	9.6	y	y	0081	26 JC050-3	y	y	222_1402_191	y	y	
1700	56	50.85	10	16.43	2109	126	8.8	8.9	y	y	0082	114 JC050-3	y	y	222_1402_195	y	y	
1730	56	48.36	10	9.25	2000	118	9.0	8.8	y	y	0082	84 JC050-3	y	y	222_1402_198	y	y	
1800	56	46.09	10	2.44	2002	121	9.0	9.0	y	y	0082	53 JC050-3	y	y	222_1402_202	y	y	
1830	56	43.54	9	55.25	1969	121	9.1	8.8	n	y	0082	24 JC050-3	y	y	222_1402_205	y	y	EM170 out of disk space. Turned off logging
1900	56	41.66	9	50.98	1865	119	4.5	4.5	n	y	0083	114 JC050-3	y	y	222_1402_209	y	y	
1930	56	39.64	9	45.80	1721	118	8.5	8.1	n	y	0083	85 JC050-3	y	y	222_1402_213	y	y	
1959	56	37.38	9	39.09	1530	119	9.1	8.7	n	y	0083	55 JC050-3	y	y	222_1402_220	y	y	
2030	56	35.10	9	31.90	1354	118	9.0	8.9	y	y	0083	24 JC050-3	y	y	222_1402_225	y	y	EM170 logging.
2101	56	32.84	9	24.32	1187	115	9.2	9.3	y	y	0084	114 JC050-3	y	y	222_1402_228	y	y	
2129	56	30.40	9	17.78	987	121	10.1	9.3	y	y	0084	85 JC050-3	y	y	222_1402_233	y	y	
2201	56	27.40	9	10.48	749	125	8.7	8.9	y	y	0084	53 JC050-3	y	y	222_1402_237	y	y	
2230	56	24.84	9	4.23	211	122	8.5	8.7	y	y	0084	23 JC050-3	y	y	222_1402_240	y	y	
2306	56	21.80	8	59.57		125	8.4	8.9	y	y	0085	107 JC050-3	y	y	222_1402_246	y	y	
2330	56	19.74	8	51.54		125	8.7	8.7	y	y	0085	85 JC050-3	y	y	222_1402_251	y	y	

Day: Date: Sheet Number:

Time	Lat		Lon		ADCP150	ADCP75	Techsas	Level-C	Grav.	Mag.	Wind		Sea State	Comments, eg state of seismic exp.
(GMT)	D	DM	D	DM	rec.	rec.	rec.	rec.	(mgal)	(nT)	Speed	Dir.		
0000	58	26.58	14	36.50	y	y	y	y	13064.4	50521.7	6.1	253	calm	
0030	58	23.83	14	28.05	y	y	y	y	13064.7	50397.4	4.7	276	"	
0100	58	20.77	14	19.36	y	y	y	y	13061.7	50505.4	4.6	257	"	
0130	58	17.78	14	10.79	y	y	y	y	13057.3	50399.2	5.7	256	"	
0200	58	14.53	14	2.09	y	y	y	y	13063.2	50340.05	4.6	45.5	"	
0229	58	11.56	13	54.58	y	y	y	y	13067.3	50103.39	4.8	54.1	"	
0300	58	8.53	13	6.39	y	y	y	y	13070.7	51207	7.2	267		
0331	58	5.19	13	37.42	y	y	y	y	13050.1	50866	5.0	254	"	
0404	58	1.84	13	28.39	y	y	y	y	13051.9	50090	3.7	242	"	
0431	57	59.08	13	21.08	y	y	y	y	13055.7	50206	5.5	252	"	
0500	57	56.26	13	13.00	y	y	y	y	13062.7	49963	6.5	245	Calm	
0530	57	53.21	13	4.53	y	y	y	y	13057.1	49594	7.0	234	"	
0600	57	50.42	12	56.54	y	y	y	y	13014	51117	8.7	264		
0630	57	47.80	12	48.69	y	y	y	y	12981	50651	7.2	243		
0700	57	44.46	12	39.08	y	y	y	y	12973.6	50635	6.6	231	"	
0730	57	41.30	12	30.89	y	y	y	y	13018.3	50417	6.1	267	"	
0800	57	38.30	12	23.50	y	y	y	y	12989.3	50401	4.4	249		
0830	57	35.45	12	16.23	y	y	y	y	12974.2	50321	5.6	242		
0900	57	32.83	12	8.72	y	y	y	y	12972.5	50280	4.9	263		
0930	57	30.23	12	1.41	y	y	y	y	12975.3	50245	9.2	251		
1002	57	27.46	11	53.64	y	y	y	y	12979.3	50224	8.6	260		
1031	57	24.99	11	46.97	y	y	y	y	12980.6	50232	9.3	280		
1100	57	22.37	11	40.20	y	y	y	y	12973.5	50261	5.3	285		
1130	57	19.74	11	30.40			y	y	12976.1	50211	6.9	258		
1200	57	17.11	11	26.82	y	y	y	y	12987.9	50287	9.4	242		
1230	57	14.02	11	19.21	y	y	y	y	12987.5	50158	7.1	245		
1300	57	11.83	11	13.58	y	y	y	y	12971.5	50192	8.9	240		
1330	57	9.26	11	6.11	y	y	y	y	12951.7	50261	7.4	252		
1359	57	6.86	10	58.94	y	y	y	y	12925.9	50350	8.1	251		
1428	57	4.39	10	51.86	y	y	y	y	12920.8	50428	6.7	252		
1457	57	1.84	10	44.63	y	y	y	y	12927.8	50168	7.1	250		
1529	56	59.49	10	37.29	y	y	y	y	-	50094	9.2	253		
1600	56	56.85	10	30.20	y	y	y	y	12924.4	50085	5.5	253		
1630	56	63.38	10	23.17	y	y	y	y	12921.6	50077	7.0	240		
1700	56	50.85	10	16.43	y	y	y	y	12912.4	50102	7.9	244		
1730	56	48.38	10	9.34	y	y	y	y	12911.3	50061	5.5	250		
1800	56	46.09	10	2.44	y	y	y	y	12911.9	49996	5.8	246	Calm	
1830	56	43.54	9	55.25	y	y	y	y	12900.3	49949	8.7	248	"	
1900	56	41.66	9	50.98	y	y	y	y	12912.7	n	7.1	236		Magnetometer brought in
1930	56	39.64	9	45.80	y	y	y	y	12916.6	n	9.4	235		
2002	56	37.09	9	38.22	y	y	y	y	12927.7	n	7.6	237	~2m swell	
2034	56	34.79	9	30.85	y	y	y	y	12936.3	n	9.2	226	"	
2058	56	33.06	9	25.12	y	y	y	y	12936.5	n	4.9	247	"	
2132	56	30.08	9	16.94	y	y	y	y	12913.3	n	7.2	240	"	
2206	56	26.93	9	9.37	y	y	y	y	12908.1	n	7.0	236	~1m swell	
2234	56	24.52	9	3.42	y	y	y	y	12934.2	n	7.2	240	"	
2303	56	22.09	8	57.28	y	y	y	y	12927	n	7.7	226	"	
2337	56	19.16	8	50.14	y	y	y	y	12915.3	n	7.4	221	"	

Julian Day: Date: Sheet Number:

Time	Lat		Lon		Water	Head.	SOW	SOG	EM710	EM120				EA600	SBP		ER60	OLEX	Comments
(GMT)	D	DM	D	DM	depth (m)		(kts)	(kts)	rec.	rec	Line cnt.			rec.	rec.	Data file	rec.	rec.	
0000	56	17.24	8	45.53	137	124	8.7	8.5	y	y	0085	53	JC050-3	y	y	222_1402-257	y	y	
0030	56	14.58	8	38.53		119	8.8	8.8	y	y	0085	23	JC050-3	y	y	222_1402-262	y	y	
0100	56	12.24	8	32.49	127	120	8.9	8.9	y	y	0086	115	JC050-3	y	y	222_1402-268	y	y	EA600 has no reading
0130	56	9.91	8	25.74	127	118	8.8	9.1	y	y	0086	85	JC050-3	y	y	222_1402-273	y	y	
0200	56	7.46	8	18.91	122	125	8.1	8.2	y	y	0086	54	JC050-3	y	y	222_1402-280	y	y	
0230	56	5.35	8	13.49	152	132	8.1	7.9	y	y	0086	25	JC050-3	y	y	222_1402-285	y	y	Clock shift from 0225 to 0325
0300	56	2.90	8	7.24	159	123	8.7	7.9	y	y	0087	114	JC050-3	y	y	222_1402-291	y	y	
0330	56	0.60	8	1.27	142	125	8.9	8.6	y	y	0087	85	JC050-3	y	y	222_1402-297	y	y	
0400	55	57.90	7	54.37	159	129	9.2	9.1	y	y	0087	51	JC050-3	y	y	222_1402-303	y	y	
0430	55	55.18	7	48.12	152	120	8.7	9.1	y	y	0087	23	JC050-3	y	y	222_1402-308	y	y	No depth EA600
0500	55	52.52	7	41.47		121	8.7	8.7	y	y	088	112	JC050-3	y	y	222_1402-313	y	y	"
0530	55	50.60	7	35.86		118	8.1	8.5	y	y	0088	86	JC050-3	y	y	222_1402-318	y	y	"
0600	55	48.34	7	28.68	72	124	8.4	8.4	y	y	0088	54	JC050-3	y	y	222_1402-324	y	y	"
0630	55	46.06	7	22.14	68	130	8.9	8.9	y	y	0088	24	JC050-3	y	y	222_1402-327	y	y	SBP picking up seabed sporadically
0700	55	42.90	7	14.30	62	128	11.4	11.4	y	y	0089	113	JC050-3	y	y	222_1402-334	y	y	UTC time correct. TH. EM120 turned off SBP delay fixed 50ms
0733	55	38.77	7	5.08	5	132	13.4	13.4	y	n	0090			y	y	222_1402-340	y	y	
0744															y	224-0745_001			SBP change to 20ms
0802	55	34.50	6	56.32	66	128	14.1	14.1	y	n				y	y	224-0745_005	y	y	Sweep delay 30ms
0833	55	29.81	6	46.44	70	129	14.8	14.8	y	n				y	y	224-0745_013	y	y	
0903	55	25.07	6	36.10	82	129	15.1	15.1	y	n				y	y	224-0745_021	y	y	
0930	55	21.43	6	27.51		132	14.3	14.6	y	n				y	y	224-0745_026	y	y	
1002	55	16.84	6	17.01		100	9.9	9.8	y					y	y	224-0745_033	y	y	
1015																			EA600, EK60, EM710 off
1027																			SBP off, water depth 24m
1030	55	17.10	6	13.33		189	0.3	0.4	n	n				n	n		n	y	Stopped to run checks - lifeboats
1100	55	17.06	6	13.36	25		0.0	0.0	n	n				n	n		n	y	SBP to turn on when move
1130	55	17.07	6	13.36			0.3	0.1	n	n				n	n	224-0745_038	n	y	Stationary, testing life boat
1200	55	17.06	6	13.36			0.4	0.2	n	n				n	n	224-0745_038	n	y	
1230	55	17.07	6	13.36			0.1	0.1	n	n				n	n	224-0745_038	n	n	
1308	55	17.07	6	13.36			0.2	0.1	n	n				n	n	224-0745_038	n	n	
1312	55	17.07	6	13.36		323	0.2	0.1	n	n				n	n		n	n	
1331	55	17.07	6	13.36		175	0.5	0.1	n	n				n	n		n	n	
1359	55	17.06	6	13.36		324	1.0	1.2	n	n				n	n		n	y	
1429	55	14.45	6	12.12		085	4.6	4.6	n	n				n	n		n	y	Moving!
1500	55	14.64	6	6.66		101	7.3	6.9	n	n				n	n		n	y	
1530	55	14.57	6	0.69		125	7.1	7.3	n	n				n	y	224-1415_015	n	y	
1600	55	12.61	5	57.36		134	7.9	8.0	n	n				n	y	224-1415_019	n	y	
1630	55	9.52	5	52.87		143	8.4	8.3	n	n				n	y	224-1415_023	n	y	
1700	55	5.23	5	47.48		144	9.1	9.2	n	n				n	y	224-1415_028	n	y	
1730	55	1.34	5	42.05		141	9.3	9.5	n	n				n	y	224-1415_033	n	y	
1800	54	56.93	5	36.59		152	10.4	10.4	n	n				n	y	224-1740_003	n	y	
1830	54	52.12	5	32.22		150	11.7	11.8	n	n				n	y	224-1740_011	n	y	
1903	54	45.78	5	26.36		154	12.6	12.7	n	n				n	y	224-1740_017	n	y	
1926	54	40.52	5	22.50		166	14.3	14.1							y	224-1740_025		y	
2000	54	33.52	5	18.61		164	14.5	14.4							y	224-1740_030		y	
2029	54	26.89	5	14.86		156	14.1								y	224-1740_035			Olex Off
2058	54	20.63	5	10.77		161	13.7								y	224-1740_041			
2129	54	14.25	5	6.78		157	12.7								y	224-1740_046			
2200	54	8.05	5	2.81		158	12.7								y	224-1740_051			
2229	54	2.20	4	59.01		159	12.8								y	224-1740_056			
2244																			SBP Stopped Recording
2258	53	58.51	4	50.57		083	13.3												

Day: Date: Sheet Number:

Time	Lat		Lon		ADCP150	ADCP75	Techsas	Level-C	Grav.	Mag.	Wind			Comments, eg state of seismic exp.
(GMT)	56	DM	D	DM	rec.	rec.	rec.	rec.	(mgal)	(nT)	Speed	Dir.	Sea State	
0000	56	17.24	8	45.53	y	y	y	y	12904.1	n	6.6	212	Calm	
0030	56	14.58	8	38.85	y	y	y	y	12903.2	n	8.3	228	"	
0100	56	1224.00	8	32.49	y	y	y	y	12902.8	n	8.1	234	"	
0130	56	9.91	8	25.74	y	y	y	y	12900	n	9.1	252	"	
0200	56	7.46	8	18.91	y	y	y	y	12900.5	n	9.9	254	"	Clock shift from 0225 to 0325
0230	56	5.35	8	13.49	y	y	y	y	12902.3	n	11.9	226	"	
0300	56	2.93	8	7.31	y	y	y	y	12953.1	n	6.8	227	"	
0330	56	0.62	8	1.32	y	y	y	y	12940	n	9.1	235	"	
0400	55	57.90	7	54.37	y	y	y	y	12885.8	n	8.2	236		
0430	55	55.18	7	48.12	y	y	y	y	12880.2	n	8.7	245	"	
0502	55	55.52	7	41.47	y	y	y	y	12872.4	n	11.8	239	"	
0530	55	50.60	7	35.86	y	y	y	y	12866.5	n	10.3	241	"	
0600	55	48.34	7	28.68	y	y	y	y	12861.6	n	10.0	235	"	
0630	55	46.06	7	22.14	y	y	y	y	12843.6	n	8.3	234	"	
0700	55	42.90	7	14.30	y	y	y	y	12924.7	n	9.1	211	1m chop	
0733	55	38.77	7	5.08	y	y	y	y	12826.5	n	9.8	230	"	
0744	55													SBP change to 20ms sweep
0802	55	34.50	6	56.32	y	y	y	y	12819.7	n	7.0	227		
0833	55	29.81	6	46.44	y	y	y	y	12796.5	n	7.7	235		
0903	55	25.07	6	36.10	y	y	y	y	12796.3	n	7.2	220	"	
0930	55	21.43	6	27.51	y	y	y	y	12774.2	n	4.1	261		
1000	55	16.86	6	17.14	y	y	y	y	12764.2	n	9.5	276		
1030	55	17.10	6	13.34	n	n	y		12805.4	n	10.6	53		No ADCP
1100	55	17.06	6	13.36	n	n	y	y	12808.5	n	8.6	3.99	'	Hove to for boat test.
1130	55	17.07	6	13.36	n	n	y	y	12809.8	n				Everything turned off except for gravity
1200	55	17.07	6	13.36	n	n	y	y	12806.9	n				
1230	55	17.07	6	13.36	n	n	y	y	12805.9	n				
1305	55	17.07	6	13.36	n	n	y	y	12804.8	n				
1312	55	17.07	6	13.36	n	n	y	y	12805.9	n				
1331	55	17.07	6	13.36	n	n	y	y	12805.9	n			Mild chop	
1359	55	17.07	6	13.35	n	n	y	y	12806.8	n				
1429	55	14.45	6	12.07	n	n	y	y	12786.9	n				
1500	55	14.64	6	6.66	n	n	y	y	12791.4	n				
1530	55	14.54	6	0.69	n	n	y	y	12784.6	n				
1600	55	12.61	5	57.36	n	n	y	y	12794	n				
1630	55	9.52	5	52.87	n	n	y	y	12781.1	n				
1700	55	5.23	5	47.48	n	n	y	y	12768	n				
1730	55	1.34	5	42.05	n	n	y	y	12755.9	n				
1800	54	36.95	5	36.60	n	n	y	y	12759.5	n				Error screen on grav' - "Unsafe removal of Hard Dis
1830	54	52.14	5	32.19	n	n	y	y	12756.8	n			"	"
1900	54	46.38	5	26.89	n	n	y	y	12757.2	n				"
1932	54	39.84	5	22.11			y	y	12752.4					
2003	54	32.87	5	18.26			y	y	12751.1					
2031	54	26.65	5	14.69			y	y	12743.3					Check Techsas in Computer Locker
2103	54	19.69	5	10.18			y	y	12730.7					
2132	54	13.67	5	6.41			y	y	12713.5					
2204	54	7.39	5	2.38			y	y	12713.5					
2232	54	1.59	4	58.57			y	y	12707.4					
2301	53	58.52	4	49.52			y	y	12693					

Julian Day: Date: Sheet Number:

All files exported to two different .edf (text) files:
1) No post processing " ".edf
2) " "-proc.edf with post-processing applied
Noise threshold = 4.0
Averaging window = 9.0
NOTE: No. 58, no .rdf file (lost somewhere!) - only processed .edf file available

XBT-T5	60
XBT-T7	3
XCTD-2	11
XSV-01	10
SVP	2
XCTD	1
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Julian	Station number	Lat (D.DM)		Lon (D.DM)		SOW (kts)	SOG (kts)	Probe type		Serial number	Max. depth Increase	Start time (GMT)	End time (GMT)	End depth	Data File
200	5	59	55.86	22	5.39	3.2	2.5	XBT-T7		T7	1000	1313		200	001-200-1315-XBT-T7
200	H1	59	45.84	22	7.8	5.3	4.5	XCTD-2		10016825	0	2002	20052016	431	002-200-2002-XCTD-XCTD2
200	H2	59	45.93	22	9.74	5.3	4.6	XBT-T7				2014		888	003-200-2014-XBT-T7
201	H3	59	51.02	23	15.47	5.8	5	XBT-T5		349461DOM	2200	0302	0308	2200	0004-201-0302-XBT-T5
201	H4	59	50.9	23	14.85	6.2	4.9	XCTD		10016824	1850	0535	0543	1385.4	0005-201-0530-XCTD-XCTD2
201	H5	59	51.05	23	16.13	6.1	5.3	XBT-T5		263404	1000	0751	0749	2219	006-201-0751-XBT-T7
201	H6							XBT-T5		349457DOM					
201	H6	59	55.45	24	35.48	5.6	5.1	XBT-T5		349462DOM	2400	1552	1558	2100	007-201-1552-XBT-T5
202	H7	60	5.96	26	26.08	6.4	5	XBT-T5		263405	2400	0313	0316	2110	008-202-0310-XBT-T5
202	H8	60	5.45	26	26.65	6.1	4.9	XBT-T5		349458DOM	2400	0528	1530	300	009-202-0532-XBT-T5-FAIL
202	H9	60	5.94	26	6.5	6.4	4.9	XBT-T5		349464DOM	2400	0729	0735	2120	009-202-0730-XBT-T5
202	H10	60	7.78	26	44.78	6.3	4.9	XBT-T5		263400	2400	0921	0927	1910	011-202-0921-XBT-T5
202	H11	60	7.8	26	45	5.5	4.9	XCTD-2		10016822	1850	1132	1140	1535	012-202-1132-XCTD-XCTD2
202	H12	60	2.69	26	46.71	6.2	5	XBT-T5		949457 (?)	2400	1348	1353	1950	013-202-1348-XBT-T5
202	H13	60	9.1	27	11.19	6	5	XBT-T5		263406(4/9/9(1999)	2400	1619	1710	1710	014-202-1614-XBT-T5
202	H14	60	9.03	27	10.2	5.6	4.6	XBT-T5		349454DOM	2400	1818	1824	1750	015-202-1818-XBT-T5
202	H15	60	9.05	27	11.48	6.8	5.6	XBT-T5		263408(4/9/96)	2400	2035	2040	1714	016-202-2036-XBT-T5
202	H16	60	10.23	27	32.09	7.1	5.5	XBT-T5		263409	2400	2229	2234	1735	017-202-2229-XBT-T5
202	H17							XBT-T5							
203	H18	60	10.19	27	31.81	6.3	5.5	XBT-T5		260651	2400	0032	0037	1703	018-203-0038-XBT-T5
203	H19	60	10.25	27	32.41	7	5.4	XBT-T5		260643	2400	0223	0229	1717	019-203-0229-XBT-T5
203	H20	60	12.01	27	59.98	7.3	5.5	XBT-T5		349459DOM	2400	0455	0459	1453	020-203-0455-XBT-T5
203	H21	60	12.02	28	0	7	5.4	XBT-T5		260650	2400	0653	0659	1450	021-203-0653-XBT-T5
203	H22	60	12.03	28	0.44	6.9	5.5	XCTD-2		10016823	1850	0857	0904	1358	022-203-0857-XCTD-XCTD2
203	H23	60	13.79	28	29.81	5.8	4.7	XBT-T5		349460	1850	1843	1847	1500	023-203-1843-XBT-T5
205	H24	60	12.43	28	30.35	6	5.8	XBT-T5		260642	2400	1212	1215	1620	024-205-1212-XBT-T5
205	H25	60	13.71	28	30.29	4.9	5.3	XBT-T5		260647	2400	1354	1358	1408	025-205-1354-XBT-T5
205	H26	60	14.99	29	4.75	6.2	5.5	XBT-T5		349456	2400	1701	1703	722	026-170-1701-XBT-T5
206	H27	60	15	29	4.72	4.6	5.6	XBT-T5		260645	2400	0400	0403	816	027-206-0400-XBT-T5
206	H28	60	31.97	28	37.81	4.7	4.2	XCTD-2		10016820	1850	1406	1410	790	028-206-1406-XCTD-XCTD2
206	H29	60	14.98	29	4.37	5.6	5.5	XBT-T5		349455	2400	1814	1817	740	029-206-1814-XBT-T5
206	H30	60	17.99	29	41.84	5.6	5.5	XBT-T5		261047	2400	2139	2145	1821	030-206-2139-XBT-T5
206	H31	60	17.96	29	42.03	4.9	5.4	XSV-01		16227*	1600	2337	2340	910	031-206-2337-XSV-01
207	H32	60	17.99	29	42.01	4.9	5.5	XBT-T5		349453	2400	0133	0138	1548	032-207-0133-XBT-T5
207	H33	60	19.18	30	6.73	5	5.4	XBT-T5		561046	2400	0351	0355	1600	033-207-0351-XBT-T5
207	H34	60	19.14	30	7.21	5.2	5.6	XSV-01		16226	1600	0554	0556	896.9	034-207-0554XSV-01
207	H35	60	19.21	30	7.39	5.2	5.5	XBT-T5		229062	2400	0754	0759	1752	035-207-0754-XBT-T5
207	H36	60	21	30	36.09	4.8	5.5	XBT-T5		262040	2400	1031	1036	1650	036-207-1031-XBT-T5
207	H37	60	21.19	30	35.98	4.5	4.8	XBT-T5		260697	2400	1229	1234	1658	037-207-1229-XBT-T5
207	H38	60	20.04	30	36.18			XSV-01		16224	2400	1242	1243	350	038-207-1242-XSV-01
207	H39	60	19.42	30	36.28	5	5.8	XSV-01		16223	2400	1247	1251	1251	039-207-1242-XSV-01
207	H40	60	20.79	30	35.58	5	5.8	XBT-T5		259590	2400	1427	1432	1653	040-207-1427-XBT-T5
207	H41	60	22.78	31	10.53	5.7	5.5	XBT-T5		264014	2400	1737	1743	1978	041-207-1737-XBT-T5
207	H42	60	22.88	31	10.79	5.8	5.4	XBT-T5		349465	2400	1935	1936	350	042-207-1936-XBT-T5
207	H43	60	22.37	31	10.88	5.2	5.4	XSV-01		16220	2400	1941	1942	100	043-207-1941-XSV-01
208	H44	60	22.75	31	9.85	5.5	5.3	XBT-T5		259585	2400	0040	0046	1960	044-208-0040-XBT-T5
208	H45	60	22.83	31	11.61			XSV-01		16228	2400	0050	0051		
208	H46	60	23.48	31	32.77	5.2	5	XBT-T5		259586	2400	0249	0255	1889.5	046-208-0249-XBT-T5
208	H47	60	24.02	31	33	5.7	5	XCTD-2		10016821	1850	0455	0456	100	047-208-0455-XCTD-2
208	H48	60	23.97	31	32.56	5.6	5.2	XBT-T5		349473DOM	2400	0734	0736	850	048-208-0734-XBT-T5
208	H49	60	25.2	32	30	5	5.3	XBT-T5		349469	2400	1013	1019	2061	049-208-1013-XBT-T5
208	H50	60	26	32	59	5.3	5.4	XBT-T5		259594	2400	1200	1203	592	050-208-1200-XBT-T5
208	H51	60	25.2	32	0.07	5.4	5.2	XBT-T5		349470	2400	1454	1500	2165	051-208-1454-XBT-T5
208	H52	60	25.28	32	1.67	5.5	5.5	XSV-01		16225	2400	1503	1507	910	052-208-1503-XSV-01
208	H53	60	28.92	33	6.78	5.3	5.1	XBT-T5		259591	2400	2104	2110	2200	053-208-2104-XBT-T5
209	H54	60	31.06	33	45.6	5.1	5.4	XBT-T5		260699	2400	0039	0046	2250	054-208-0039-XBT-T5
209	H55	60	31.8	34	41.53	5.1	5.2	XBT-T5		349466DOM	2400	0545	0551	2210	055-209-0545-XBT-T5
209	H56	60	32.33	34	41.99			XSV-01		16231	2400	0744	0747	880	056-209-0744-XSV-01
209	H57	60	31.7	34	42.02	5.1	5.5	XBT-T5		261042	2400	0752	0758	2230	057-209-0752-XBT-T5
209	H58	60	31.8	34	42.37	5.6	5.2	XBT-T5		259595	2400	1008	1013	2260	058-209-1008-XBT-T5
209	H59	60	33.93	36	5.54	0.9	0.3	XCTD-2		10016819	1850	2333	2342	1850	059-209-2333-XCTD-2
209	H60	60	33.94	36	554	0.6	0.5	XBT-T5		349474	3500	2347	2352	2200	060-209-2347-XBT-T5
210	H61	60	33.93	36	5.52	0.6	0.4	SVP				0855	1113	2800(?)	
210	H62	60	33.14	35	51.46	0.6	0.3	SVP				1450	1533	2800	
211	H63	60	40.85	36	36.3	5.1	4.9	XBT-T5		349471	3500	2324	2330	2220	063-211-2324-XBT-T5
212	H64	60	40.91	36	35.91	4.7	4.9	XBT-T5		349467	3500	0427	0432	2220	064-212-0427-XBT-T5
212	H65	60	40.88	36	36.42	4.5	4.7	XBT-T5		349475	3500	0829	0835	2225	065-212-0829-XBT-T5
213	H66	61	19.16	38	28.94	5.6	5.5	XBT-T5		349476	3500	0437	0442	2210	066-213-0437-XBT-T5
213	H67	61	47.82	39	35.64	5.5	5.4	XBT-T5		349472	3500	1223	1226	1748.9	067-213-1226-XBT-T5
213	H68	61	48.07	39	35.85	5.8	5.4	XBT-T5		260698	3500	1422	1427	1750	068-213-1422-XBT-T5
214	H69	62	22.78	38	13.29	5.6	5.4	XBT-T5		349468	3500	0317	0323	2226	069-214-0317-XBT-T5
214	H70	61	1.33	36	53.49	4.9	4.8	XBT-T5		264017	3500	1547	1554	2226	070-214-1547-XBT-T5
215	H71							XBT-T5		260696	3500				
215	H71	62	27.26	35	36.78	5.5	5.8	XBT-T5		264020	3500	0063	0050	7233	071-215-0043-XBT-T5
215	H72	62	5.68	33	45.08	5.4	5.5	XBT-T5		264013	3500	1107	1113	2240	072-215-1107-XBT-T5
216	H73							XBT-T5		260696	3500	0037	0041		073_fail-216-0037-XBT-T5
216	H73	62	0.54	31	2.7	5.1	5.4	XBT-T5		260695	3500	0044	0050	2212	073-216-0044-XBT-T5
216	H74	61	52.31	30	5.05	1.7	1.9	XCTD-2		10016817	1850	1251	1300	1850	074-216-1251-XCTD-2
217	H75	61	51.41	28	42.29	5.6	5.4	XSV-01		16230	2400	0251	0255	692	075-217-0250-XSV-01
217	H76	61	47.26	27	33.25	4.6	4.4	XCTD-2		10016818	1850	0853	0902	1604?	076-217-0853-XCTD-2
219	H77	61	44.68	26	52.11	5.3	5.8	XBT-T7		1065033	1000	1752	1756	820	077-219-1752-XBT-T7
219	H78	61	41.73	26	9.46	4.8	4.7	XCTD-2		10016816	1850	2135	2143	1430	078-219-2135-XCTD-2
220	H79	61	37.35	25	6.25	5.7	5.4	XSV-01		16229	2400	0309	0313	883	079-220-0309-XSV-1
220	H80	61	33.36	24	15.3	5.4	5.3	XCTD-2		10016815	1850	0737	0743	962	080-220-0737-XCTD-2
220	H81	61	23.11	22	31.09	5.7	5.6	XBT-T5		264012	3500	1659	1703	1350	081-220-1659-XBT-T5
221	H82	61	15.12	20	54.69	5.2	5.2	XBT-T5		264016	3500	0131	0135	1325	082-221-0131-XBT-T5
221	H83	60	56.44	19	24.18	5	5.1	XCTD-2		10016814	1850	1036	1040	740	083-221-1036-XCTD-2

Gravimeter reading location:	**Quayside RRSJC, Reykjavik Hafnarfjörour quay**					
Date:	7/17/2010					
Latitude:	64 9.15 N					
Longitude	21 56.42 W					
		Time				
Reading 1	5669.96	10:26	meter units		times are local, UTC	
Reading 2	5669.95	10:28				
Reading 3	5669.95	10:31				
Comment	Quay 0.3m above ship main deck; 1.5m from water					
Gravimeter reading location:	**Base Station, Hallgrimskirkja Reykjavik**					
Date:	7/17/2010					
Latitude:	64.14167N					
Longitude	21.93000W					
		Time				
Reading 1	5661.71	11:18	meter units			
Reading 2	5661.7	11:19				
Reading 3	5661.7	11:22				
Comment	Station No. 001261					
Gravimeter reading location:	**Quayside RRSJC, Reykjavik Hafnarfjörour quay**					
Date:	7/17/2010					
Latitude:	64 9.15 N					
Longitude	21 56.42 W					
		Time				
Reading 1	5668.84	11:41	meter units			
Reading 2	5668.84	11:44				
Reading 3	5668.84	11:48				
Comment	Quay 0.3m above ship main deck; 1.5m from water					
Base station gravity (mgals)	982258.790					
Portable meter calibration factor	1.02455		mgal/meter unit			
Dock reading 1 average	5669.95	10:28	meter units			
Base station average	5661.7	11:19				
Dock reading 2 average	5668.84	11:44				
Effective meter drift rate	-21.09		meter units/day			
Drift corrected base station value	5662.46	at	10:28	base stn in	meter units	
Difference in meter dock -base	7.50		meter units			
Gravity value at dockside	982266.47		mgal			
Height of dock above upper deck	0.3					
Height of upper deck above meter	2.2					
Total height of dock above meter	2.5					
Free air correction dock to ship	0.77	mgal				
Bouguer correction dock to ship	-0.1	mgal	assumes dock density			
Corrected gravity value at ship meter	982267.14					
Ship meter reading (manual)	13550.2					
Ship meter reading (disk recorded)	13595.02	13550.16				
Offset to add to ship reading	968672.12	###	mgal			
	0.9967000					