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A COMPILATION OF REPORTS ON AGC CRUISES FROM 1982 TO 1986 INCLUSIVE TO SABLE ISLAND BANK AND BANQUEREAU IN THE STUDY OF SURFICIAL SEDIMENT DYNAMICS

by

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Fifteen cruises have been undertaken to study the distribution, stratigraphy and stability of Quaternary sediments on Sable Island Bank and Banquereau, Scotian Shelf. These cruises are compiled in this open file. Reports review activities carried out in support of Geological Survey of Canada projects 800036 and 830056 on the following cruises:

CSS BAFFIN CRUISE 82-039 - 24 NOVEMBER TO 17 DECEMBER, 1982
CSS DAWSON CRUISE 82-040 - 12 TO 18 OCTOBER, 1982
CSS DAWSON CRUISE 83-026 - 7 TO 12 JULY, 1983
MV POLAR DUKE - 31 JULY TO 14 SEPTEMBER, 1983
CSS DAWSON CRUISE 84-005 - 8 TO 16 MARCH, 1984
MFV ARCTIC PROWLER - 22 TO 29 SEPTEMBER, 1984
MFV ARCTIC PROWLER - 25 TO 29 OCTOBER, 1984
MFV ARCTIC PROWLER - 12 TO 18 JANUARY, 1985
MFV ARCTIC PROWLER - 17 TO 22 FEBRUARY, 1985
CSS BAFFIN CRUISE 85-007 - 22 TO 29 APRIL, 1985
CSS DAWSON CRUISE 85-037 - 18 TO 29 OCTOBER, 1985
MV PANDORA CRUISE 85-054 - 20 TO 26 MAY, 1985
ROWAN GORILLA 1 - 29 JANUARY TO 13 FEBRUARY, 1986
CSS DAWSON CRUISE 86-041 - 24 TO 30 NOVEMBER, 1986
MFV BALDER CHALLENGER - 10 TO 17 APRIL, 1987

A variety of seismic reflection systems, side scan sonars, sampling tools and monitoring devices were used during these cruises. The configuration and operation of these devices are described in internal cruise reports produced at the termination of each cruise. The reports give detailed cruise itineraries, participating scientific staff, cruise objectives and some preliminary interpretations. These reports also contain track plots and site survey maps together with appendixes of fix point positions, bathymetry and equipment status. All magnetic, data tapes, original graphic profiles and records and samples are archived at the Data Section, Program Support Subdivision, Atlantic Geoscience Centre, Dartmouth, Nova Scotia. Original records of the radio-isotope experiment are available through INRS-Oceanologie, Universite du Quebec, Rimouski. Final summary data, plots and interpretations are the subject of a series of scientific papers in preparation or in press.

CSS BAFFIN CRUISE REPORT 82-039

- SABLE ISLAND BANK AND BANQUEREAU -

by
Carl L. Amos

Internal Cruise Report

CSS BAFFIN CRUISE REPORT 82-039

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Atlantic Geoscience Centre
Geological Survey of Canada

Project 800036

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ABSTRACT

CSS Baffin Cruise 82-039 to Scotia Shelf and Grand Banks of Newfoundland was a cruise of opportunity organized by Ron McNabb and carried out in conjunction with Canadian Hydrogrphic Service (CHS). The cruise was designed to provide regional bathymetric check lines for CHS and a multivariate geophysical data set to the Geological Survey of Canada. This cruise report deals with the second phase of a 2-part cruise and covers the dates 24 November - 17 December, 1982. The regions covered included Western Bank, S.E. Sable Island Bank, The Gully, Banquereau (concentrating primarily on those regions outlined by Petro Canada) and Artimon Bank. Despite rough seas, the geophysical data set was of good quality and nearly complete. The following data were collected: bathymetry, side scan sonar, Huntec (DTS), airgun seismics (10 cubic inch and 40 cubic inch), gravity and magnetics. Initial results showed a thick veneer of well stratified surficial sediments over a flat bedrock surface. Thick sequences of sand were discovered over much of the bank top area, comprising what appears to be an arcuate archipelago of barrier islands of which, only Sable Island is presently visible. We did not find active sand waves (sensu stricto) on any of the banks, though active megaripples were observed at the mouth of The Gully. The published information on the sedimentary character of Sable Island Bank is therefore misleading in many aspects. Tidal ridges, sand ribbons and pseudo-sand waves (s.s.) were observed, though the latter two features showed no relief. The region was dotted with 'specks', interpreted to be shell communities. Slumping at the bank edges was prevalent in The Gully and around Banquereau. No slumped sediments were observed from Western Sable Island Bank. The results to date seem to show that sediment moves only during intense storms, though rippling of the seabed occurs during moderate seas.

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CRUISE SUMMARY SHEET

CRUISE SHIP:	C.S.S. BAFFIN
CRUISE NUMBER:	82-039 (Phase 2)
CRUISE DATES:	24 November - 17 December, 1982
CHIEF HYDROGRAPHER:	B. Swim (C.H.S.)
CHIEF SCIENTIST:	C.L. Amos (Sable I. Phase)
CHIEF TECHNICIAN:	M. Hughes (A.G.C.)
NAVIGATION SYSTEM:	BIONAV (±100 m)
SURVEY SPEED:	6 Knots
SURVEY REGION:	Sable Island Bank The Gully Western Bank Banquereau Artimon Bank
TOTAL LINE SURVEY:	1400 Km
TYPE OF DATA:	Side Scan Sonar (Klein "K"-Map) Bathymetry Huntec (DTS) Airgun Seismic
PERSONNEL:	R.O. Miller (AGC) F. Jodrey (AGC) L. Harrison (AGC) V. Coady (AGC) A. Boyce (AGC) G. Standen (Huntec Ltd.) R. Cooper (EPB)

1.0 INTRODUCTION

A multi-parameter, high resolution seismic survey was carried out on Sable Island Bank and Banquereau in order to provide a regional data base on the distribution and nature of surficial sediments and their stability. The information was collected aboard CSS BAFFIN in a cooperative cruise between AGC and CHS. This work comprised one phase of an extensive cruise plan extending from Georges Bank to Grand Banks of Newfoundland. The data collected was derived in order to supplement seismic data collected during CSS DAWSON Cruise 82-040 held during October, 1982.

Sable Island Bank has been described as a region of active sediment movement and bedform migration. The region is perhaps best known for its sand waves. With the increased activity in oil and gas exploration on Sable Island Bank and Banquereau, the problems associated with scour and fill of pipelines, flowlines and production facilities needs to be defined.

The surficial geology of the region has been described by King (1970) based on echograms and core data. Very limited high resolution seismic or side scan sonar data are available from the region and therefore much of the transport of sediment in the region is inferred rather than observed.

In order to better understand shelf bank sediment dynamics such as is inferred on Sable Island Bank and Banquereau, a numeric model is being formulated which will evaluate sediment transport and stability under actual storm conditions. Such a model clearly needs to be driven by good environmental data, bounded by good geological data and calibrated by direct observation.

The seismic data compiled to date allows for a regional interpretation of the surficial sedimentary character of the banks and will provide valuable information for model calibration and as a guide to sampling of the seabed.

2.0 DETAILS OF THE SURVEY

A total of 125 hours of survey was conducted at an average over-the-ground speed of 6 knots. Track plots of the lines surveyed is shown in Figures 1 (A and B). Fixes were made at 10 minute intervals and were annotated by sequential fix number, Julian day, time (GMT) and position (latitude and longitude). At each fix, the tape number and revolution number were recorded and voice fixes made on one channel. Details of weather conditions and bathymetry were abstracted from the bridge log and CHS data files respectively. Notes on equipment status, configurations and settings were logged where appropriate. A complete listing of the fixes is given in Appendix-A and was logged in real time on an Apple II - plus using the DB Master routine.

The first phase of the cruise began at 2040 GMT day 330, 1982 and terminated at 2230 GMT: day 334, 1982. A total of 604 fixes were taken. The survey covered the region south of Sable Island to the 100 metre isobath. A further detailed coverage was made of S.W. Banquereau and a regional coverage (20 km lime spacing) of the remaining area of Banquereau.

The second phase of the survey began at 0745 GMT: day 348, 1982 and terminated at 2330 GMT: day 349, 1982. Fix numbers ran from 243 to 360 inclusively, yielding 118 fixes. Three survey lines were positioned NNW to SSE across Western Bar (Sable Island Bank).

All systems worked well. There was approximately a 5% downtime for routine maintenance, tape changes, etc. Weather conditions were poor for the first phase of the survey. Westerly gale-force winds raised rough seas of 2-4 metres. The second part of the cruise was calm throughout.

3.0 SIDE-SCAN SONAR

The side scan sonar (K-map, Model 531 T) worked for all but one hour of the survey. The fish touched bottom at the "spillover" immediately east of Sable Island, breaking the circular fin; no other damage resulted from the grounding.

The side scan was towed at approximately 1/3 the water depth above bottom. This corresponded to a distance behind the ship of about 100 metres. The swath width was set at 250 metres per channel for maximum resolution and coverage. The paper speed produced 40 scan lines/cm yielding a 1:1 ratio in geometry between track parallel and track normal directions. The 3.5 kHz profiler was not enabled.

All data was recorded on tape (Scotch 295). The tape used was 6.3 metre X 1097.2 metre and was used with an 8-track H.P. 3968A instrument recorder. The following were the channels used to record data:

Channel 1 - reference pulse (DR)

Channel 3 - port signal (FM)

Channel 4 - attitude signal (FM)

Channel 5 - servo to recorder (FM)

Channel 7 - starboard signal (FM)

The tapes were run at 3 "/second and voice annotated at regular intervals. The water column removal option (Model 610) was not used, though the attitude warning sensor was armed. The print delay unit (Model 611) was also used at times. A total of 40 tapes of side scan data were recorded. The records were annotated every 10 minutes using the TSS 312 automatic record annotator. The range lines on the output are incremented in 15 metre intervals, while the fix marks are approximately 1.8 km apart.

4.0 HUNTEC DEEP TOW SYSTEM

The Huntec system worked well except for about 1 hour. The body motion compensation removed only the low frequency fish motions. The wave induced motions were reflected in the seabed morphology. The Huntec system was towed at approximately mid-water depth corresponding to an approximate distance behind the ship, of 50 metres.

A total of 1100 line kilometres of records were collected. The firing rate was 0.75 seconds, the sweep speed was 0.25 seconds. Both reflectively (1) - first return, and reflectivity (2) - top 1 metre of sediment, worked well. Records were printed on an EPC graphic recorder Model 4100 (serial #161).

The data was taped on Scotch tape 295 (6.3 mm X 1097.2 m) using a 4-track H.P. 3960 instrument recorder. Tape speed was 3"/second. The following channels were used:

Channel 1 - Internal Hydrophone (FM)

Channel 2 - Synch Pulse (FM)

Channel 5 - -

Channel 4 - Voice and external Hydrophone (FM)

The following were the settings on the Huntec consol used throughout the cruise:

Fire Rate	-	0.75 seconds
Gain	-	4 db
P.C.U.	-	4 Kv.
B.M.C.	-	all modes (pressure, heave and normal)
H.P. Filter	-	0.5 kHz
L.P. Filter	-	10.0 kHz
Signal Processor	-	adaptor mode
Print	-	+

Both graphic output and tapes were annotated using the TSS automatic record annotator at 10 minute intervals.

5.0. AIRGUN

A 10 cubic inch bolt airgun in association with a bolt pulse shaper was used in the first part of this survey: A 40 cubic inch gun was used in the second part. The gun was fired at 2 second intervals at a chamber pressure of 1600 p.s.i. A Rix compressor was used to charge the guns. The airgun was surface towed 30 metres behind the ship. The hydrophone was the N.S.R.F. tapered array. The array has 32 hydrophones, is 20 metres long and was towed 50 metres behind the ship immediately behind the airgun.

Signals were filtered using a Krohn-Hite filter Model 3323R and recorded on a Racal tape recorder Model Store 4-D. Data was stored on Scotch tape 295 and recorded at a tape speed of 15/16"/second. The data was recorded on the following channels:

Channel 1 - trigger pulse (DR)

Channel 3 - data (DR)

Channel 4 - voice (DR)

The following is a list of settings used in this survey:

Firing Rate	- 2 seconds
Sweep Speed	- 1 second
H.P. Filter	- 150 Hz
L.P. Filter	- 2 kHz
Trigger Pulse Delay	- 0.5 seconds
T.V.G. Sweep	- 1 second

The data were printed on an E.P.C. Graphic Recorder Model 4100 (Serial #128). Both the tape and graphic output were annotated at 10 minute intervals using the TSS 312 record annotator.

6.0. RESULTS

The records showed that both Sable Island Bank and Banquereau are covered by a continuous layer of sand. This sand varies in thickness from a thin veneer, broken in places by poorly developed bedforms, to over 50 metres on Eastern Shoal (Banquereau) S.W. Banquereau and Western Bar. The majority of the sand on Sable Island Bank is featureless though 'specks', in the order of 10-20 metres diameter occurred throughout the region. These specks, recognized by Evans-Hamilton, (1976), are thought to be shell communities living on the sand banks (Fader, pers. comm.). No sand waves (s.s.) were observed on Sable Island Bank, or indeed on any of the Banks. Sand ribbons were observed at the 100 metre isobath showing a current direction parallel to the contours. These ribbons appear to be concentrated at the change in slope. In shoaler water, a number of sand ridges (featureless) were observed. These features correspond to the sand waves of Evans-Hamilton (1975).

An interesting feature observed on the side scan sonograms were parallel alignment of 'specks', row upon row. It appears that these features are found in the troughs of bedforms, although this hypothesis needs confirming.

On the eastern edge of Sable Island Bank adjacent to The Gully is found a band of slumped sediments. The slumps appear continuous down slope from the 200 metre isobath. The slumping is associated with active megaripples (2-D) which have a defineable relief and show a down slope migration. These bedforms are considered active by the sharp crest line which produces hyperbolae on the Huntec (DTS) and the definite relief. No slumping was observed on the flanks of Sable Island Bank west of about 59°15'(W).

Southwest Banquereau is characterized by a thin layer of megarippled sand over a gravelly substrate. An excellent example of 2-D megaripples was collected at this site. The majority of these features are inactive. Well developed trawl marks are visible on the harder substrate and in places cut through sand patches indicating that the sand is only intermittantly active. Slumps border The Gulley on the flanks of Banquereau. Such slumps were seen on virtually all lines carried out over the bank edge. They appear to be continuous around the western margin of Banquereau at a depth of 100-250 metres. They also occur in association with active 2-D megaripples. The slumps are irregular in plan being about 20-50 metres in diameter at the crowns.

The southwest lobe of Banquereau seems to be (in part at least) comprised of a large body of sand, prograding to the southwest. It seems that the long term transport of sand is in this direction. The top of the sand body is covered by excellent examples of sand ribbons which indicate unidirectional currents in the order of 100-125 cm/s. In common with other bedforms, these features appear to be immobile with no measureable relief. The ribbons show a variety of orientations which may well be a function of bathymetry: The ribbons being parallel with the contours.

The northern part of Banquereau is relatively starved of mobile sand. Large regions of hard substrate are visible on the side scan and Huntec (DTS) records. My present feeling is that the surface sand is swept to the southwest and southeast. Eastern Shoal shows an asymmetry resulting from this sediment transport. It is a very large sand bar which shows a migration the the southeast which appears oblique or against the direction of propagation of the largest waves. The net transport of sediment may well be related to storm generated currents propagating across the shelf.

Eastern Shoal is covered by shell beds showing that the mobility of the bar is relatively low. It seems to be part of a large archipelago of submerged ridges possibly forming a nearshore barrier island system which may well have formed during lower stands of sea level. This archipelago extends from The Stone Fence to Western Gully, a distance of about 300 nautical miles and is reflected in the thick (30-50 metre) accumulations of sand in this zone.

The airgun records from the first seismic phase showed penetration to the bedrock surface through the sand overburden, but no deeper. We used the 10 cubic inch gun in this phase, preferring resolution to acoustic penetration. The records show a complex series of overburden units in keeping with the interpretation of King (1970). We also observed numerous buried channels in the bedrock surface.

For the latter survey, on Western Bar, we used a 40 cubic inch airgun which gave excellent results penetrating both the surficial deposits and bedrock to a depth of 600 milliseconds. The bedrock strata dips southeast without significant folding or faulting.

7.0 RECOMMENDATIONS

I feel that I have enough seismic data to make a general interpretation of surficial sediment stability, and to provide the necessary boundary conditions to the sediment transport numeric model. My preliminary results are quite different to those published to date. Firstly, no active sand waves (s.s.) were observed on Sable Island Bank, nor on Banquereau, though some relict forms may be present sporodically. Repeated side scan surveys at key sites, or staking of the seabed in order to monitor bedform migration is, in my view, not justified for the majority of the bank (i.e.

deeper than 20 metres), though this may not be true for the shoaler parts adjacent to Sable Island. I recommend tracer studies to measure long term sediment transport, which should be monitored over a number of storms typical of a winter season.

The major bed features on the banks are featureless sand ridges which, according to the work of Stride et al., are probably moribund or intermittantly active. Sand ridges are much less mobile than sand wave fields. An indication of their stability might be inferred from the apparent relationship to lower stands in sea level, and the presence of widely spread, deeply intrenched shell beds.

It appears that transport on the major part of the shelf is restricted to periods of intense storm activity and is not due to the tidal flow. Sediment transport is likely to be catastrophic rather than chronic. We need to monitor both the periods and rates of transport over relatively long time intervals by deployment of fluorescent dyed sand (or other tracer) at a number of key sites. This would also provide useful information on the depth of disturbance (or thickness of the mobile layer). This data will compliment RALPH data which is presently being compiled.

The major task ahead is the calibration of the acoustic data by coring and bottom sampling. A program of vibrocoring will be set up for summer 1983. I anticipate using CSS Hudson during July, 1983.

I would recommend we support three studies in the future: The first is the detailed survey and monitoring of a slump field in order to establish their nature (genesis) and stability. It is no doubt important to establish whether these features are modern or relict, and indeed if they are still moving. The second study would be to determine the origin and mobility of the larger ridges from the point of view of their geologi-

cal significance and of their long term stability. I suspect that sediment movement on the banks has been overstated and that much of the region is moribund.

The third study would be a detailed survey of the currents, waves and sediment transport within the 20 metre isobath around Sable Island. It seems that the conclusions above are not applicable to this much more energetic zone.

ACKNOWLEDGEMENTS

I would like to acknowledge the excellent support of the following people in the collection of these data sets:

Graham Standen (Huntec Ltd.), Bud Swim (C.H.S.), Mike Hughes (AGC), Ron McNabb (AGC), and the staff and crew of CSS Baffin.

82-039 BAFFIN
1-1 MILLION AT 48N

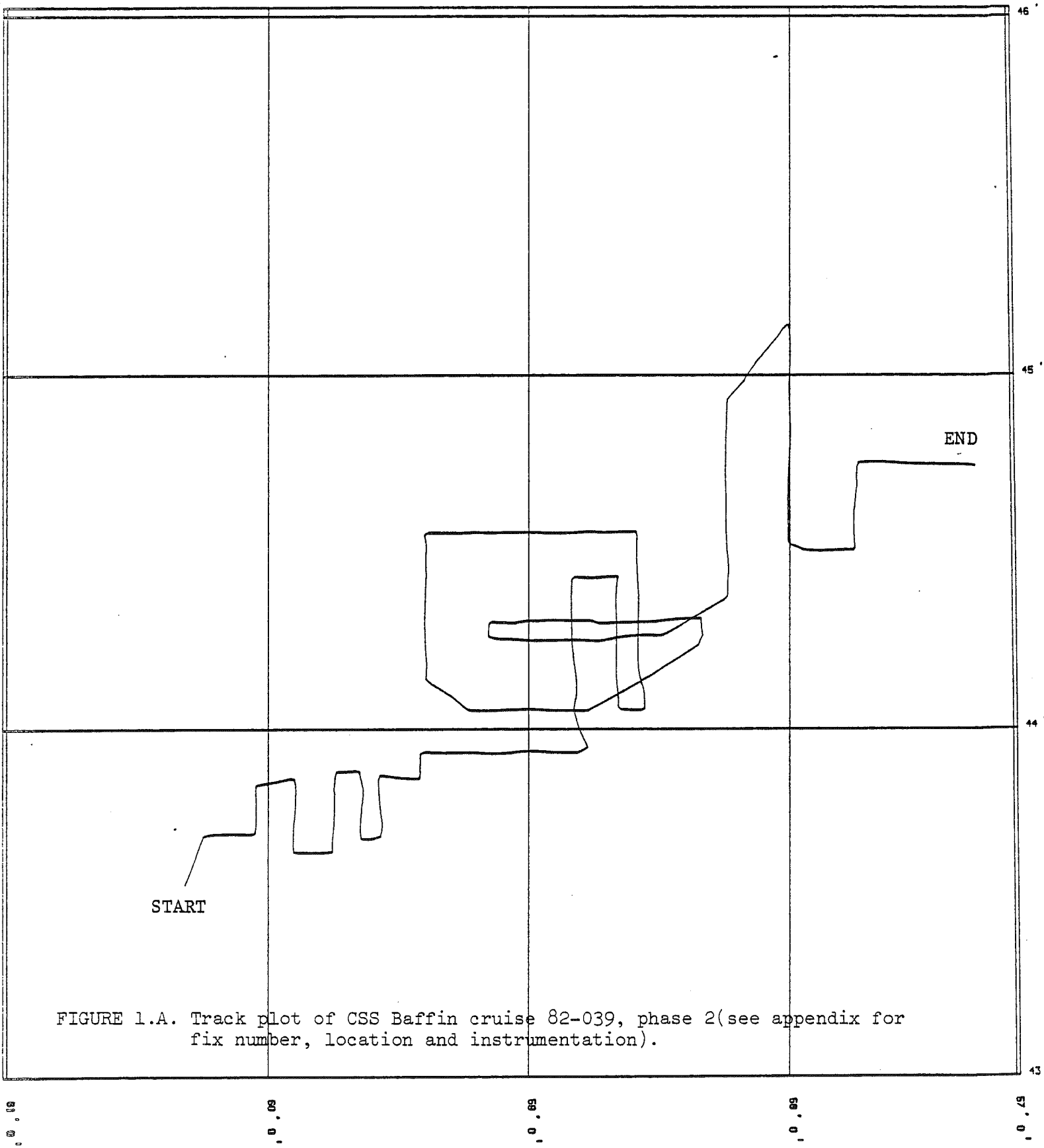

FIGURE 1.A. Track plot of CSS Baffin cruise 82-039, phase 2(see appendix for fix number, location and instrumentation).

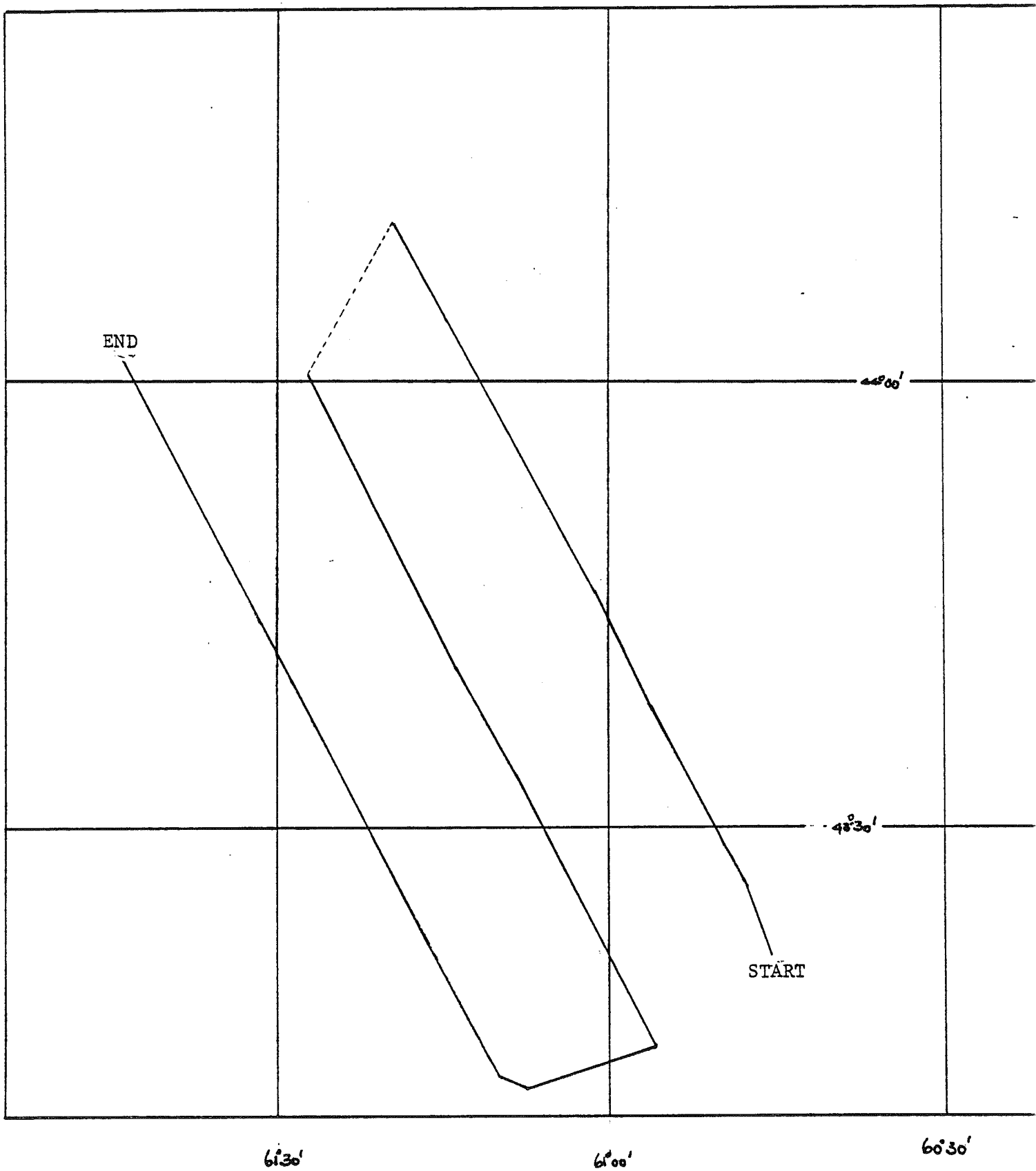

FIGURE 1.B. Track plot of CSS Baffin cruise 82-039, phase 2(see appendix for fix number,location and instrumentation)

APPENDIX - A.

CSS BAFFIN CRUISE/SABLE ISLAND BANK AND BANQUEREAU;;; BN82=039; NOVEMBER 24= DECEMBER 17;1982

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
1	082-330-2040	43-33-40	60-19-10	86	001(0000)	001(0000)	001(0000)	STILL ADJUSTING FISH DEPTHS
2	082-330-2050	43-34-30	60-18-59	82	001(248)	001(306)	001(20)	AIRGUN AROUND HUNTEC AUTO FIX NOT WORKING MOD WIND/3M WAVES
3	082-330-2100	43-34-30	60-18-59	78	001(571)	001(486)	001(59)	AS ABOVE WIND;40KTS/WAVES;3M AS ABOVE LOWERING SIDE SCAN FISH AIRGUN GAINS ADJUSTED
4	082-330-2110	43-35-77	60-17-80	74	001(810)	001(694)	001(106)	MOD WINDS/3 M WAVES PROBLEMS WITH EVENT MARK
5	082-330-2115	43-36-26	60-17-57	71	001(911)	001(770)	001(130)	AS ABOVE AS ABOVE NO WATER COLUMN REMOVAL ON NO SHIP SPEED OPTION ON SS
6	082-330-2125	43-17-15	60-17-12	67	001(1108)	001(948)	001(177)	AS ABOVE ALL SYSTEMS GO CABLES STILL TANGLED
7	082-330-2135	43-38-10	60-16-69	65	001(1310)	001(1127)	001(177)	AS ABOVE ALL SYSTEMS OK
8	082-330-2145	43-38-89	60-16-32	62	001(1490)	001(1285)	001(274)	AS ABOVE OK HUNTEC SWEEP;250 MILLI SEC
9	082-330-2150	43-39-26	60-16-16	62	001(1562)	001(1354)	001(294)	AS ABOVE OK 250 M SWATH ON SS;40 LINES/ CM.
10	082-330-2200	43-40-07	60-15-17	59	001(1733)	001(1508)	001(342)	AS ABOVE OK;SS TAPE SPEED 3.75
11	082-330-2210	43-40-90	60-15-31	56	001(1884)	001(1646)	001(388)	AIRGUN1 SEC SWEEP/2 SEC FI G RATE. AS ABOVE TRIGGER PULSE ON AIRGUN TAP E RECORDER POOR. EVENT MARK OK.
12	082-330-2220	43-41-69	60-14-91	59	001(2034)	001(1786)	001(436)	AS ABOVE HUNTEC MODE;ADAPTIVE/ 4 KV SOURCE LEVEL/0.5 KHZ H FILTER. AS ABOVE

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
13	082-330-2230	43-41-90	60-13-80	57	001(2192)	001(1933)	001(489)	SS CHAN#1:REF/#3:PORT/ CHAN#4 SOUNDER/CHAN#7:STARB CHAN#5:SERVO REF FOR TAPE AS
14	082-330-2240	43-41-97	60-12-69	56	001(2119)	001(2049)	001(530)	AIRGUN CHAN#1:TRIGGER/ CHAN#2:OUT/CHAN#3:DATA(RAW) CHAN#4:VOICE AS ABOVE
15	082-330-2250	43-41-98	60-11-34	56	001(2456)	001(2183)	001(577)	ALL DATA ON DR BOARDS. SHIP SPEED: 5.6 KTS. AS ABOVE
16	082-330-2300	43-42-05	60-10-13	57	001(2582)	001(2303)	001(624)	DELAY ON SS DEPTH TRACKER: SEABED ON HUNTEC IRREGULAR/ NOT REMOVING WATER MOTION AS ABOVE
17	082-330-2310	43-42-02	60-08-81	59	001(2709)	001(2420)	001(671)	PROFILER SCALE LINES:15M. NAVIGATION:SATNAV AND LORAN SHIP HEADING 90 TRUE. AS ABOVE
18	082-330-2320	43-43-03	60-07-52	59	001(2837)	001(2543)	001(718)	OK/END OF SS TAPE#1 CALMING
19	082-330-2330	43-42-01	60-06-25	60	001(2965)	002(0070)	001(766)	CHANGING AIRGUN AND STREAM- ER POSITION. STATUS OK GOOD
20	082-330-2340	43-42-00	60-05-13	61	001(3070)	002(0325)	001(0815)	OK CALMING
21	082-330-2350	43-42-00	60-03-83	63	001(END)	002(0590)	001(0860)	OK END OF HUNTEC TAPE#1 WIND:20KTS/WAVES:1M
22	082-331-0000	43-42-32	60-02-99	58	002(0264)	002(0820)	001(0907)	TAPE#2 STARTED AT 2352 SHIP HEADING 359 T
23	082-331-0010	43-43-19	60-02-87	56	002(0549)	002(1055)	001(0960)	SHIP SPEED 5.6KTS EQUIPMENT OK
24	082-331-0020	43-43-96	60-02-81	54	002(0772)	002(1241)	001(1004)	MESSING WITH HUNTEC;POOR RECORDS/CHANGING STYLUS GRAHAM TEARING OUT HAIR CALM

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
25	082-331-0030	43-44-79	60-02-79	52	002(0994)	002(1435)	001(1054)	STILL WORKING ON HUNTEC/ CHANGED TO HEAVE/BOTTOM NOT COMPENSATED
26	082-331-0040	43-45-56	60-02-81	50	002(1187)	002(1606)	001(1097)	CALMING STYLUS CHANGES COMMON ON HUNTEC.
27	082-331-0050	43-46-60	60-02-79	47	002(1130)	002(1820)	001(1145)	MODERATE POOR HUNTEC RECORDS
28	082-331-0100	43-47-27	60-02-74	47	002(1582)	002(1958)	001(1196)	OK;HEADING NORTH TOWARDS SABLE ISLAND/
29	082-331-0110	43-48-08	60-02-86	48	002(1744)	002(2104)	001(1243)	LOW SWELL,MOD WIND GAINS OF AIRGUN ADJUSTED/ RECORDS POOR DUE TO SHALLOW WATER
30	082-331-0120	43-48-79	60-02-87	50	002(1889)	002(2240)	001(1286)	AS ABOVE AS ABOVE
31	082-331-0130	43-49-58	60-02-85	43				AS ABOVE GRAHAM AND AUSSIE MISSED THE FIX
32	082-331-0140	43-50-38	60-02-80	40	002(2132)	002(2518)	001(1380)	AS ABOVE AS ABOVE
33	082-331-0150	43-50-61	60-01-44	35	002(2274)	002(2657)	001(1427)	AS ABOVE AS ABOVE
34	082-331-0200	43-50-77	60-00-23	36	002(2416)	002(2786)	001(1474)	AS ABOVE HUNTEC FCU DROPPED TO 3KV.
35	082-331-0210	43-50-97	59-58-27	38	002(2549)	002(2912)	001(1521)	AS ABOVE OK
36	082-331-0220	43-51-13	59-57-59	38	002(2680)	002(3033)	001(1568)	AS ABOVE ROUGHENING

CSS BAFFIN CRUISE/SABLE ISLAND BANK AND BANQUEREAU... BN82-039. NOVEMBER 24- DECEMBER 17;1982

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
37	082-331-0230	43-51-13	59-57-59	36	002(2680)	002(3158)	001(1617)	
38	082-331-0240	43-51-55	59-54-91	37	002(2812)	002(3158)	001(1617)	AS ABOVE HEADING;87.8;SPEED;5.6
39	082-331-0250	43-51-43	59-53-98	40	002(3055)	003(0302)	001(1711)	HEADING;95.7;SPEED;5.8 KTS
40	082-331-0300	43-50-74	59-53-79	30	002(3169)	003(0559)	001(1757)	MODERATE END OF HUNTEC TAPE#2.
41	082-331-0310	43-49-91	59-53-70	40	003(0078)	003(0795)	001(1804)	MODERATE/STRONG WIND COURSE CH
42	082-331-0320	43-49-09	59-53-70	44	003(0254)	003(1004)	001(1849)	SHIP SPEED 3.1-5.3 KTS.
43	082-331-0330	43-48-30	59-53-73	48	003(586)	003(1186)	001(1892)	AS ABOVE OK
44	082-331-0340	43-47-32	59-57-75	48	003(849)	003(1406)	001(1941)	AS ABOVE OK
45	082-331-0350	43-46-47	59-53-87	53	003(1059)	003(1584)	001(1993)	AS ABOVE OK
46	082-331-0400	43-45-49	59-53-93	54	003(1255)	003(1142)	001(2040)	AS ABOVE OK
47	082-331-0410	43-44-70	59-54-06	52			001(2140)	AS ABOVE OK
48	082-331-0420	43-43-80	59-54-13	51				AS ABOVE OK
								AS ABOVE

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
49	082-331-0430	43-42-78	59-54-19	57	003(1761)	003(2197)	001(2183)	OK NO PENETRATION ON AIRGUN
50	082-331-0440	43-41-87	59-54-21	68	003(1919)	003(2339)	001(2230)	ROUGH OK
51	082-331-0450	43-48-87	59-54-22	77	003(2072)	003(2478)	001(2279)	AS ABOVE OK
52	082-331-0500	43-39-99	59-54-26	83	003(2216)	003(2610)	001(2325)	AS ABOVE OK SWELL BROADSIDE 10 ROLLS
53	082-331-0510	43-38-99	59-54-13	90	003(2266)	003(2748)	001(2371)	AS ABOVE OK
54	082-331-0520	43-38-89	59-52-94	93	003(2494)	003(2870)	001(2376)	AS ABOVE OK
55	082-331-0530	43-38-92	59-51-91	94	003(2616)	003(2981)	001(2464)	AS ABOVE OK
56	082-331-0540	43-38-88	59-50-40	96	003(2764)	003(3115)	001(2515)	SPEED 5.5 KTS AS ABOVE OK
57	082-331-0550	43-38-88	59-49-21	96	003(2878)	003(3220)	001(2560)	ROUGH SPEED:5.7 KTS. STATUS OK.
58	082-331-0600	43-38-90	59-47-90	98	003(2996)	004(0092)	001(2607)	ASABOVE SPEED:6.8 KTS.
59	082-331-0610	43-38-93	59-46-37	104	004(188)	004(387)	001(2657)	WIND:35KTS/WAVES:2M AS ABOVE OK
60	082-331-0620	43-39-11	59-45-22	105	004(465)	004(640)	001(2700)	AS ABOVE CHANGE OF COURSE SPEED:4.4 KTS. AS ABOVE

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61	082-331-0630	43-40-04	59-45-22	91	004(688)	004(855)	001(2749)	OK.;SPEED;6.2 KTS
62	082-331-0640	43-41-12	59-45-18	82	004(912)	004(1063)	001(2796)	AS ABOVE OK
63	082-331-0650	43-42-07	59-45-00	77	004(1110)	004(1258)	001(2843)	AS ABOVE OK SEA SURFACE OVER PRINTING S SPEED;5.7 KTS.
64	082-331-0700	43-43-02	59-44-91	74	004(1313)	004(1440)	001(2891)	AS ABOVE OK. SPEED;5.7 KTS
65	082-331-0710	43-44-02	59-44-84	68	004(1496)	004(1780)	001(2986	AS ABOVE OK SPEED;6.0 KTS
66	082-331-0720	43-44-98	59-44-78	62	004(1670)	004(1780)	001(2986)	AS ABOVE OK SPEED;5.9 KTS.
67	082-331-0730	43-45-98	59-44-77	55	004(1836)	004(1938)	001(3034)	AS ABOVE OK SPEED;5.8 KTS
68	082-331-0740	43-46-87	59-44-77	52	004(1987)	004(2083)	001(3079)	AS ABOVE OK SPEED;5.6 KTS.
69	082-331-0750	43-47-88	59-44-73	48	004(2142)	004(2230)	001(3128)	AS ABOVE OK SPEED;5.8 KTS
70	082-331-0800	43-48-85	59-44-71	45	004(2283)	004(2370)	001(3173)	AS ABOVE OK
71	082-331-0810	43-49-74	59-44-92	42	004(2423)	004(2508)	001(3220)	AS ABOVE OK SPEED;6.3 KTS
72	082-331-0820	43-50-79	59-44-68	40	004(2563)	004(2644)	001(3268)	AS ABOVE OK SPEED;6.4 KTS.
								AS ABOVE

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73	082-331-0830	43-51-78	59-44-62	38	004(2690)	004(2766)	001(3315)	OK SPEED:6.2 KTS
74	082-331-0840	43-52-70	59-44-25	34	004(2816)	004(2888)	001(3361)	AS ABOVE OK BMC ON HUNTEC NOT WORK- ING SPEED:6.2 KTS; EOL. ROUGH
75	082=331=0850	43-52=73	59=42-63	33	004(2941)	004(3010)	001(3408)	OK; HEADING 83; SPEED:5.7 KTS
76	082-331-0900	43-52-78	59-41-38	33	004(3059)	004(3124)	001(3455)	AS ABOVE OK;AIRGUN WITH SHORT EEL SPEED5.6 HEADING:87
77	082-331-0910	43-52-85	59-40-02	35	004(3178)	004(3236)	001(3503)	AS ABOVE OK;END OF SS TAPE; SPEED:5.5 KTS; HEADING:87.3
78	082=331=0920	43=52=69	59=39=03	35	005(0000)	005(234)	002(0000)	AS ABOVE OK; SPEED:3.7 KTS HEADING:146.8
79	082-331-0930	43-51-82	59-38-75	39	005((184)	005(533)	002(0000)	AS ABOVE OK; SPEED:5.2 KTS HEADING:
80	082-331-0940	43-51-00	59-38-49	41	005(496)	005(744)	002(043)	AS ABOVE OK SPEED:5.5 KTS HEADING:168
81	082=331=0950	43=50=22	59=38=28	44	005(728)	005(966)	002(089)	AS ABOVE OK; SPEED:170 HEADING 5.0 KTS
82	082-331-1000	43-49-39	59-38-20	47	005(728)	005(966)	002(089)	AS ABOVE OK; SPEED:5.0 KTS HEADING:180
83	082-331-1010	43-48-57	59-38-27	50	005(1136)	005(1354)	002(184)	AS ABOVE OK; SPEED:5.2 KTS HEADING:187
84	082=331=1020	43=47=70	59=38=40	53	005(1235)	005(1549)	002(231)	AS ABOVE OK SPEED:5.3 KTS HEADNG:185

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85	082-331-1030	43-46-87	59-38-55	58	005(1400)	005(1710)	002(277)	OK SPEED:5.4 KTS HEADING:185.7
86	082-331-1040	43-46-00	59-38-60	63	005(1669)	005(1873)	002(325)	AS ABOVE HUNTEC RECORD POOR SPEED:5.5 KTS HEADING:181
87	082-331-1050	43-45-03	59-38-72	68	005(1833)	005(2033)	002(373)	AS ABOVE OK SPEED:5.8 KTS HEADING:184
88	082-331-1100	43-44-11	59-38-79	72	005(1983)	005(2033)	002(373)	AS ABOVE OK; SPEED:5.8 KTS HEADING:184
89	082-331-1110	43-43-20	59-38-82	0	005(2132)	005(2333)	002(466)	AS ABOVE OK SPEED:5.7 KTS HEADING:182.3
90	082-331-1120	43-44-21	59-38-90	84	005(2273)	005(2468)	002(514)	AS ABOVE OK SPEED:5.9 KTS HEADING:183.9
91	082-331-1130	43-41-24	59-38-55	99	005(2413)	005(2604)	002(561)	AS ABOVE OK;COURSE CHANGE SPEED:** HEADING:183.9
92	082-331-1140	43-44-90	59-37-94	114	005(2546)	005(2736)	002(609)	AS ABOVE OK;HARD BOTTOM ,THIN SAND LAYER, MANY SPECKS SPEED:6.7 KTS;HEADING 75
93	082-331-1150	43-41-19	59-36-75	118	005(2674)	005(2860)	002(656)	AS ABOVE OK; SPEED:5.2 KTS HEADING:76.6
94	082-331-1200	43-41-45	59-35-39	120	005(2811)	005(2999)	002(706)	AS ABOVE OK; SPEED:** HEADING:**
95	082-331-1210	43-41-68	59-34-21	121	005(2916)	005(3099)	002(751)	AS ABOVE OK
96	082-331-1220	43-42-44	59-33-91	106	005(3037)	005(3213)	002(789)	AS ABOVE AS ABOVE

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97	082-331-1230	43-43-18	59-33-84	88	005(3152)	005(133)	002(846)	OK SPEED:**
98	082-331-1240	43-43-97	59-33-87	81	006(186)	006(422)	002(892)	AS ABOVE OK; HARD BOTTOM WITH SPECKS SPEED4.8 KTS HEADING:352.3
99	082-331-1250	43-44-81	59-34-02	73	006(462)	006(676)	002(939)	AS ABOVE OK; SPEED:5.0 KTS HEADING:352.3
100	082-331-1300	43-45-69	59-34-20	68	006(696)	006(893)	002(987)	AS ABOVE OK SPEED:5.2 KTS HEADING:358.1
101	082-331-1310	43-46-62	59-34-34	66	006(930)	006(1116)	002(1036)	AS ABOVE OK; SPEED:5.2 KTS;SHIP ROLL:20; HEADING:358.8 ROUGH
102	082-331-1320	43-47-45	59-34-42	61	006(1116)	006(1294)	002(1080)	OK;SS FISH UP 5M. SPEED:5.5 KTS; HEADING:359
103	082-331-1330	43-48-48	59-34-50	56	006(1325)	006(1495)	002(1132)	AS ABOVE OK; SPEED:5.7 KTS; HEADING:360
104	082-331-1341	43-49-39	59-34-59	51	006(1503)	006(1667)	002(1179)	AS ABOVE OK;RAISED SS 5 M;RAISED HUNTEC 5 M.SPEED:5.7 KTD; HEADING:001
105	082-331-1351	43-50-35	59-34-62	48	006(1679)	006(1838)	002(1228)	AS ABOVE OK; SPEED:5.5 KTS HEADING:003 ROUGH
106	082-331-1401	43-51-26	59-34-62	45	006(1836)	006(1990)	002(1274)	OK; END OF LINE SPEED:5.5 KTS HEADING:006
107	082-331-1411	43-52-10	59-34-23	43	006(2001)	006(2152)	002(1325)	AS ABOVE OK SPEED:5.1 KTS HEADING:90.8 ROUGH
108	082-331-1421	43-51-97	59-32-93	44	006(2136)	006(2285)	002(1358)	OK SPEED:6.1 KTS HEADING:88.2 AS ABOVE

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109	082-331-1431	43-51-82	59-31-54	46	006(2286)	006(2431)	002(1416)	OK SPEED:5.5 KTS HEADING:88 AS ABOVE
110	082-331-1441	43-51-72	59-30-29	51	006(2418)	006(2557)	002(1462)	OK SPEED:5.6 KTS HEADING:86 AS ABOVE
111	082-331-1451	43-51-63	59-29-01	50	006(2559)	006(2701)	002(1509)	OK SPEED:5.4 KTS HEADING:83 AS ABOVE
112	082-331-1501	43-51-59	59-27-77	50	006(2680)	006(2822)	002(1556)	OK; SPEED:5.4 KTS HEADING:86
113	082-331-1511	43-51-56	59-26-51	52	006(2812)	006(2951)	002(1603)	OK; SPEED:5.4 KTS HEADING:73 AS ABOVE
114	082-331-1521	43-51-58	59-25-25	54	006(2938)	006(3075)	002(1652)	OK; SPEED:5.4 KTS HEADING:52 AS ABOVE
115	082-331-1531	43-52-23	59-25-09	54	006(3052)	006(3186)	002(1698)	OK; SPEED:5.1 HEADING:6.5 AS ABOVE
116	081-331-1541	43-53-10	59-25-12	51	006(3170)	007(103)	002(1745)	OK SPEED:5.1 KTS HEADING:9 ROUGH
117	082-331-1551	43-53-95	59-25-03	48	007(132)	007(386)	002(1792)	OK; SPEED:5.3 KTS HEADING:10.6 ROUGH
118	082-331-1601	43-54-88	59-25-03	46	007(432)	007(654)	002(1839)	OK SPEED:5.3 KTS HEADING:19.1 AS ABOVE
119	082-331-1611	43-55-77	59-25-02	43	007(0653)	007(0850)	002(1884)	150M SWATH;FISH IN SPEED 5.2 HEADING 55.6 ROUGH
120	082-331-1621	43-56-11	59-24-09	42	007(0881)	007(1068)	002(1934)	STATUS OK SPEED 6.0 HEADING 90.1 AS ABOVE

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121	082-331-1631	43-56-01	59-22-47	44	007(1120)	007(1290)	002(1990)	GAIN ADJUSTMENT HUNTEC SPEED 5.9 HEADING 89.8 ROUGH
122	082-331-1641	43-56-00	59-21-30	45	007(1288)	007(1451)	002(2030)	DROPPED THRESH UP PRINT INT SPEED 5.4 HEADING 89.8 ROUGH
123	082-331-1651	43-55-96	59-20-07	47	007(1467)	007(1624)	002(2076)	SPEED 5.5 HEADING 89.7 ROUGH
124	082-331-1701	43-56-00	59-18-80	47	007(1636)	007(1785)	002(2122)	SPEED 5.6 HEADING 89.8 ROUGH
125	082-331-1711	43-56-00	59-17-44	45	007(1809)	007(1954)	002(2172)	SPEED 5.6 HEADING 89.8 ROUGH
126	082-331-1721	43-56-00	59-16-15	44	007(1970)	007(2118)	002(2223)	DROPPED FISH 10M SPEED 5.5 HEADING 89.8 ROUGH
127	082-331-1731	43-56-01	59-14-92	43	007(2112)	007(2247)	002(2266)	SPEED 5.5 HEADING 89.9 AS ABOVE
128	082-331-1741	43-56-00	59-13-78	40	007(2243)	007(2376)	002(2308)	SPEED 5.3 HEADING 89.9 ROUGH
129	082-331-1751	43-55-96	59-12-48	38	007(2294)	007(2526)	002(2359)	SPEED 5.2 HEADING 89.7 ROUGH
130	082-331-1811	43-55-85	59-09-90	44	007(2663)	007(2788)	002(2454)	WIND:20KTS/WAVES:2M SPEED 5.6 HEADING 89.3 ROUGH
131	082-331-1811	43-55-85	59-09-90	44	007(2663)	007(2788)	002(2454)	DROPPED S.S. 10M SPEED 5.6 HEADING 89.3 ROUGH
132	082-331-1821	43-55-83	59-08-56	67	007(2792)	007(2917)	002(2502)	DROPPED HUNTEC 20M SPEED 5.5 HEADING 89.1 ROUGH

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133	082-331-1831	43-55-82	59-07-29	80	007(2910)	007(3032)	002(2548)	REDUCED HUNTEC GAIN SPEED 5.7 HEADING 89.1 ROUGH
134	082-331-1841	43-55-89	59-06-04	90	007(3058)	007(3035)	002(2593)	DROPPED HUNTEC 20M SPEED 5.3 HEADING 81.0 ROUGH
135	082-331-1851	43-55-95	59-04-81	105	007(3142)	007(3250)	002(2639)	END OF SS TAPE #7 SPEED 5.2 HEADING 89.6 ROUGH
136	082-331-1901	43-55-72	59-03-11	203	007(3240)	008(0235)	002(2690)	SPEED 10.9 HEADING 88.4 ROUGH
137	082-331-1911	43-56-20	59-02-36	0	007(0000)	008(0509)	002(2734)	SPEED 5.7 HEADING 91.0 ROUGH
138	082-331-1921	43-56-22	59-01-03	0	008(0000)	008(0755)	002(2783)	SPEED 5.7 HEADING 91.5 ROUGH
139	082-331-1931	43-56-21	58-59-81	0	008(0000)	008(0966)	002(2829)	SPEED 5.1 HEADING 91.7 ROUGH
140	082-331-1941	43-56-20	58-58-61	0				WATER DEEP NIL ON EQUIP
141	082-331-1951	43-55-71	58-56-70	0	008(0000)	008(1157)	002(2926)	SPEED 5.7 HEADING 91.5 ROUGH
142	082-331-2001	43-56-12	58-55-99	0		008(1341)	002(2970)	SPEED 5.3 HEADING 91.5
143	082-331-2010	43-56-05	58-55-99	0		008(1523)	002(3015)	SPEED 5.9 HEADING 89.7
144	082-331-2021	43-56-01	58-53-50	247	008(0187)	008(1523)	002(3062)	SPEED 5.9 HEADING 89.7 ROUGH

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145	082-331-2031	43-56-00	58-52-24	175	008(0429)	008(1854)	002(3109)	OK SPEED 5.1 HEADING 86.0 ROUGH
146	082-331-2040	43-56-14	58-51-82	172	008(667)	008(2009)	002(3157)	OK SPEED:4.9 HEADING:287 AS ABOVE
147	082-331-2050	43-55-50	58-49-59	178	008(893)	008(2160)	002(3204)	OK AS ABOVE
148	082-331-2100	43-55-97	58-48-90	182	008(1105)	008(2311)	002(3248)	OK SPEED:4.1 HEADING:47.6 AS ABOVE
149	082-331-2110	43-56-78	58-49-22	163	008(1204)	008(2456)	002(3299)	OK SPEED:4.5 HEADING:352 AS ABOVE
150	082-331-2120	43-54-24	58-45-54	147	008(1488)	008(2593)	002(3345)	OK SPEED:5.1 HEADING:112 AS ABOVE
151	082-331-2130	43-57-08	58-48-30	140	008(1656)	008(2721)	002(3392)	OK SPEED:6.0 HEADING:341 AS ABOVE
152	082-331-2130	43-57-95	58-48-52	140	008(1818)	008(2849)	002(3438)	OK SPEED:4.9 HEADING:359 AS ABOVE
153	082-331-2150	43-56-88	58-46-56	128	008(1971)	008(2970)	002(3487)	OK SPEED:5.0 HEADING:4 AS ABOVE
154	082-331-2200	43-59-24	58-48-03	122	008(2126)	008(3094)	002(3534)	OK, END OF AIRGUN TAPE#2 SPEED:5.0 HEADING:335 AS ABOVE
155	082-331-2210	44-00-80	58-48-75	117	008(2276)	008(3208)	002(3581)	OK SPEED:4.3 HEADING:001 AS ABOVE
156	082-331-2220	44-01-83	58-49-05	113	008(3108)	008(3287)	003(0012)	OK; SPEED:4.1 HEADING:356 AS ABOVE

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157	082-331-2230	44-02-69	58-49-44	111		009(0321)	003(0060)	HUNTEC TAPE STOPPED/OVER THE GULLEY/DEPTH 1000M. SPEED:4.5;HEADNG:353
								AS ABOVE
158	082-331-2240	44-03-48	58-49-57	108		009(611)	003(108)	DEEP WATER/ SPEED:4.5 HEADING:353
								AS ABOVE
159	082-331-2250	44-03-99	58-49-44	107		009(827)	003(154)	OK/ SPEED:3.3 HEADING:11.2
								AS ABOVE
160	082-331-2300	44-04-60	58-49-36	103		009(1055)	003(200)	OK SPEED:3.9 HEADING:1.1
								AS ABOVE
161	082-331-2310	44-05-11	58-49-15	102	009(000)	009(1248)	003(252)	OK SPEED:3.2 HEADNG:358
								AS ABOVE
162	082-331-2320	44-05-72	58-49-06	101	009(226)	009(1438)	003(297)	OK SPEED:3.6 HEADNG:06.6
								AS ABOVE
163	082-331-2330	44-64-48	58-49-04	98	009(509)	009(1632)	003(340)	OK; SPEED:4.2 HEADNG:359.9
								MODERATE
164	082-331-2340	44-07-11	58-49-08	94	009(1773)	009(1714)	003(439)	OK;HUNTEC RECORD GOOD SPEED:4.4
								HEADNG:358
								AS ABOVE
165	082-331-2350	44-07-77	58-49-08	88	009(939)	009(1944)	003(439)	OK SPEED:4.0 HEADNG:01.5
								AS ABOVE
166	082-331-0000	44-08-50	58-49-20	84	009(1134)	009(3922)	003(485)	OK/WIND:31KTS/WAVES:2.5M SPEED:4.4 HEADNG:351.7
								AS ABOVE
167	082-332-0010	44-09-27	58-49-28	78	009(1330)	009(2246)	003(532)	OK SPEED:4.1 HEADNG:358
								AS ABOVE
168	082-332-0020	44-10-07	58-49-44	68	009(1504)	009(2386)	003(579)	OK SPEED:5.2 HEADNG:358.6
								AS ABOVE

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169	082-332-0030	44-10-97	58-49-60	61	009(1704)	009(2550)	003(627)	OK SPEED:5.0 HEADNG:359
170	082-332-0040	44-11-73	58-49-75	56	009(1833)	009(2657)	003(675)	AS ABOVE OK SPEED:5.1 HEADNG:359
171	082-332-0050	44-12-66	58-49-83	58	009(1987)	009(2787)	003(721)	AS ABOVE OK SPEED:5.5 HEADNG:358
172	082-332-0100	44-30-45	58-50-00	60	009(1987)	009(2787)	003(721)	AS ABOVE OK SPEED:5.5 HEADNG:358
173	082-332-0110	44-14-38	58-50-12	61	009(2287)	009(3042)	003(816)	AS ABOVE OK SPEED:5.6 HEADNG:355
174	082-332-0120	44-15-31	58-50-13	61	009(2432)	009(3169)	003(866)	AS ABOVE OK SPEED:4.6 HEADNG:00.5
175	082-332-0130	44-16-23	58-50-11	58	009(2574)	010(0049)	003(915)	AS ABOVE OK SPEED:5.0 HEADNG:358
176	082-332-0140	44-16-92	58-50-12	56	009(2687)	009(306)	003(968)	OK SPEED:4.9 HEADNG:359
177	082-332-0150	44-17-72	58-50-18	56	009(2806)	010(558)	003(1003)	OK SPEED:5.7 HEADNG:357
178	082-332-0200	44-18-62	58-50-20	58	009(2927)	010(792)	003(1050)	OK SPEED:5.3 HE
179	082-332-0200	44-19-31	58-50-22	58	009(3026)	010(972)	003(1092)	OK SPEED:5.0 HEADNG:000
180	082-332-0210	44-20-13	58-50-27	61	009(3138)	010(1168)	003(1135)	OK SPEED:4.6 HEADNG:359

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
181	082-332-0238	44-21-02	58-50-32	66	010(185)	010(1359)	003(1182)	OK SPEED:5.4 HEADNG:358
182	082-332-0238	44-21-93	58-50-29	66	010(461)	010(1541)	003(1182)	OK SPEED:5.4 HEADNG:358
183	082-332-0248	44-22-81	58-50-25	63	010(695)	010(1706)	003(1278)	OK SPEED:5.6 HEADNG:003
184	082-332-0258	44-23-68	58-50-19	61	010(923)	010(1873)	003(1323)	OK SPEED:5.4 HEADNG:003.5
185	082-332-0308	44-24-29	58-50-18	61	010(1137)	010(2035)	003(1372)	OK SPEED:4.8 HEADNG:002
186	082-332-0320	44-25-47	58-50-16	65	010(1319)	010(2178)	003(1417)	OK SPEED:5.9 HEADNG:000
187	082-332-0330	44-25-94	58-49-41	65	010(1536)	010(2352)	003(1476)	OK SPEED:5.0 HEADNG:101
188	082-332-0340	44-25-81	58-48-32	61				FIX MISSED
189	082-332-0350	44-75-24	58-47-21	61	010(1870)	010(2627)	OFF	AIRGUN FLOODED SPEED:4.1 HEADNG:083.7
190	082-332-0400	44-25-75	58-46-21	62	010(2013)	010(2749)	OFF	AIRGUN ABOARD SPEED:4.1 HEADNG:087
191	082-332-0410	44-25-80	58-45-29	62	010(2170)	010(2880)	OFF	REPAIRING AIRGUN SPEED:4.0 HEADNG:085
192	082-332-0420	44-25-84	58-44-33	61	010(2310)	010(3010)	OFF	SPEED:4.1 HEADNG:087

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
193	082-332-0430	44-25-09	58-43-47	61	010(2450)	010(3126)	003(15620	AIRGUN RUNNING SPEED:3.7 HEADNG:83.3
194	082-332-0440	44-25-95	58-42-51	61	010(2580)	011(0000)	003(1562)	OK SPEED:3.8 HEADNG:81.8
195	082=332=0450	44=26=04	58=41=60	58	010(2710)	011(278)	003(1562)	OK SPEED:3.8 HEADNG:76.1
196	082-332-0500	44-26-00	58-40-65	58	010(2836)	011(536)	003(1562)	OK SPEED:4.1 HEADNG:97.7
197	082-332-0510	44-25-96	58-39-65	60	010(2958)	011(770)	003(1562)	COURSE CHANGE AIRGUN OK AT 0512.TAPE ON A 0512/SPEED:4.3/HEADG:110
198	082=332=0520	44=25=01	58=39=86	61	010(3087)	011(984)	003(1593)	OK SPEED:6.0 HEADNG:180
199	082-332-0530	44-25-01	58-39-86	58	010(3193)	011(1169)	003(1635)	OK SPEED:6.0 HEADNG:180
200	082-332-0541	44-22-88	58-40-06	55	011(290)	011(1389)	003(1682)	OK SPEED:6.3 HEADNG:180
201	082=332=0550	44=22=03	58=40=10	60	011(1539)	011(508)	003(1729)	OK SPEED:6.0 HEADNG:177
202	082-332-0600	44-21-03	58-40-05	58	011(753)	011(1709)	003(1778)	OK/WIND:35KTS/WAVES:2M SPEED:5.7 HEADNG:180
203	082-332-0610	44-20-03	58-39-97	58	011(966)	011(1866)	003(1824)	OK SPEED:6.0 HEADNG:177
204	082=332=0620	44=18=99	58=39=95	60	011(1184)	011(2032)	003(1874)	OK SPEED:6.0 HEADNG:180

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
205	082-332-0630	44-18-07	58-39-92	60	011(1356)	011(2169)	003(1918)	OK SPEED:6.1 HEADNG:181
206	082-332-0640	44-17-17	58-39-88	61	011(1533)	011(2311)	003(1965)	OK SPEED:5.4 HEADNG:180
207	082-332-0650	44-16-18	58-39-91	59	011(1705)	011(2451)	003(2012)	OK SPEED:5.5 HEADNG:181
208	082-332-0700	44-15-26	58-39-90	57	011(1862)	011(2582)	003(2059)	OK SPEED:5.6 HEADNG:180
209	082-332-0710	44-14-27	58-39-95	55	011(2025)	011(2718)	003(2107)	OK SPEED:5.6 HEADNG:180
210	082-332-0720	44-13-24	58-40-00	57	011(2183)	011(2853)	003(2158)	OK SPEED:5.7 HEADNG:180
211	082-332-0730	44-12-43	58-39-98	56	011(2309)	011(2962)	003(2201)	OK SPEED:5.4 HEADNG:180
212	082-332-0740	44-11-43	58-40-00	60	011(2448)	011(3083)	003(2248)	OK SPEED:5.9 HEADNG:180
213	082-332-0750	44-10-48	58-40-00	62	011(2585)	011(3195)	003(2295)	OK SPEED:5.2 HEADNG:181
214	082-332-0800	44-09-52	58-39-97	68	011(2712)	012(251)	003(2343)	OK SPEED:5.7 HEADNG:180
215	082-332-0810	44-08-60	58-39-88	81	011(2845)	012(540)	003(2390)	OK SPEED:5.6 HEADNG:173
216	082-332-0820	44-07-67	58-39-81	83	011(2967)	012(785)	003(2436)	OK SPEED:5.4 HEADNG:179

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
217	082-332-0830	44-06-64	58-39-61	88	011(3086)	012(998)	003(2484)	OK SPEED:6.0 HEADNG:175
218	082-332-0840	44-05-56	58-39-52	90	011(3210)	012(1209)	003(2535)	OK SPEED:6.0 HEADNG:175
219	082-332-0850	44-04-71	58-39-50	91	012(150)	012(1379)	003(2582)	OK SPEED:5.8 HEADNG:183
220	082-332-0900	44-03-89	58-39-64	100	012(425)	012(1560)	003(2626)	OK SPEED:5.4 HEADNG:185
221	082-332-0910	44-03-35	58-38-91	108	012(690)	012(1751)	003(2672)	OK SPEED:5.7 HEADNG:97.3
222	082-332-0920	44-03-33	58-37-36	114	012(0906)	012(1902)	003(2721)	SPEED 6.0 HEADING 90.0 ROUGH
223	082-332-0930	44-03-28	58-35-87	122	012(1118)	012(2064)	003(2767)	SPEED 6.8 HEADING 92.9 ROUGH
224	082-332-0940	44-03-26	58-34-40	135	012(1298)	012(2202)	003(2814)	SPEED 6.8 HEADING 94.9 ROUGH
225	082-332-0950	44-03-58	58-33-43	156	008(3108)	012(2351)	003(2862)	E O L SPEED 4.0 HEADING 10.1 ROUGH
226	082-332-1000	44-04-40	58-33-45	129	012(1656)	012(2492)	003(2909)	OK SPEED 4.9 HEADING 385.5 ROUGH
227	082-332-1010	44-05-33	58-33-52	107	012(1843)	012(2646)	003(2963)	OK SPEED 4.6 HEADING 357.9 AS ABOVE
228	082-332-1020	44-05-95	58-33-60	93	012(1988)	012(2751)	003(3003)	OK SPEED 4.7 HEADING 350.9 ROUGH

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
229	082-332-1030	44-06-63	58-33-74	88	012(2118)	012(2880)	003(3050)	SPEED 4.7 HEADING 347.4 ROUGH
230	082-332-1040	44-07-42	58-34-04	86	012(2269)	012(3008)	003(3096)	OK SPEED 5.8 HEADING 342.4 ROUGH
231	082=332=1050	44=08=33	58=34=42	86	012(2408)	012(3128)	003(3145)	OK SPEED:5.7 HEADNG:344
232	082-332-1100	44-09-16	58-34-67	84	012(2533)	012(3230)	003(3192)	OK SPEED:5.1 HEADNG:349
233	082-332-1110	44-10-09	58-34-82	80	012(2673)	013(143)	003(3239)	OK SPEED:5.2 HEADNG:354
234	082=332=1120	44=10=97	58=43=90	78	012(2796)	013(418)	003(3287)	OK SPEED:5.4 HEADNG:358
235	082-332-1130	44-11-94	58-34-92	71	012(2914)	013(656)	003(3333)	OK SPEED:5.5 HEADNG:358
236	082-332-1140	44-12-81	58-34-95	61	012(3037)	013(888)	003(3380)	OK SPEED:5.4 HEADNG:360
237	082=332=1150	44=13=85	58=34=99	57	012(3159)	013(1100)	003(3428)	OK SPEED:6.2 HEADNG:358
238	082-332-1200	44-14-75	58-34-97	58	013(000)	013(1293)	003(3476)	AIRGUN NOT FIRING FROM 1130-1220 SPEED:6.2/HEADNG:358
239	082-332-1210	44-15-63	58-34-94	60	013(286)	013(1467)	003(3525)	AIRGUN DOWN SPEED:5.4 HEADNG:2
240	082=332=1220	44=16=56	58-34-92	57	013(538)	013(1633)	003(3569)	AIRGUN DOWN SPEED:5.2 HEADNG:360

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241	082-332-1230	44-17-60	58-34-93	59	013(773)	013(1799)	004(000)	OK SPEED:6.1 HEADNG:359
242	082-332-1240	44-18-56	58-34-91	62	013(993)	013(1961)	004(032)	OK SPEED:5.4 HEADNG:360
243	082-332-1250	44-19-54	58-34-92	64	013(1184)	013(2105)	004(077)	OK SPEED:6.4 HEADNG:360
244	082-332-1300	44-20-37	58-34-86	57	013(1372)	013(2252)	004(126)	OK SPEED:5.3 HEADNG:360
245	082-332-1310	44-21-23	58-34-86	61	013(1541)	013(2386)	004(172)	OK SPEED:5.5 HEADNG:360
246	082-332-1320	44-22-03	58-34-84	66	013(1705)	013(2521)	004(218)	OK SPEED:5.2 HEADNG:360
247	082-332-1330	44-22-95	58-34-90	61	013(1862)	013(2651)	004(265)	OK SPEED:5.4 HEADNG:360
248	082-332-1340	44-23-83	58-34-98	62	013(2012)	013(2779)	004(312)	OK SPEED:5.2 HEADNG:360
249	082-332-1350	44-24-71	58-35-04	63	013(2160)	013(2902)	004(360)	OK SPEED:5.1 HEADNG:000
250	082-332-1400	44-25-62	58-35-11	63	013(2303)	013(3023)	004(407)	OK SPEED:5.4 HEADNG:000
251	082-332-1410	44-26-46	58-35-15	64	013(2438)	013(3141)	004(454)	OK SPEED:5.1 HEADNG:000
252	082-332-1420	44-27-36	58-35-21	68	013(2576)	014(008)	004(501)	OK SPEED:5.4 HEADNG:001

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253	082-332-1430	44-28-26	58-35-29	64	013(2699)	014(347)	004(550)	OK SPEED:5.5 HEADNG:002
254	082-332-1440	44-29-19	58-35-33	64	013(2826)	014(608)	004(598)	OK SPEED:6.5 HEADNG:003
255	082-332-1450	44-30-09	58-35-29	66	013(2946)	014(830)	004(643)	OK SPEED:5.6 HEADNG:004
256	082-332-1500	44-31-04	58-35-28	64	013(3059)	014(1040)	004(690)	OK SPEED:6.4 HEADNG:005
257	082-332-1510	44-31-96	58-35-25	64	013(3174)	014(1237)	004(737)	OK SPEED:5.7 HEADNG:006
258	082-332-1520	44-32-82	58-35-21	62	014(207)	014(1418)	004(784)	OK SPEED:5.2 HEADNG:013
259	082-332-1530	44-33-64	58-35-54	62	014(514)	014(1619)	004(831)	OK SPEED:4.5 HEADNG:269
260	082-332-1540	44-33-58	58-36-82	63	014(727)	014(1766)	004(878)	OK SPEED:6.2 HEADNG:270
261	082-332-1550	44-33-58	58-38-34	61	014(960)	014(1934)	004(927)	OK SPEED:5.7 HEADNG:270
262	082-332-1600	44-33-52	58-39-44	64	014(1153)	014(2081)	004(974)	OK SPEED:5.3 HEADNG:270
263	082-332-1612	44-33-50	58-41-04	69	014(1395)	014(2267)	004(1038)	OK SPEED:5.2 HEADNG:270
264	082-332-1620	44-33-46	58-32-14	67	014(1631)	014(2371)	004(1075)	OK SPEED:6.0 HEADNG:270

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265	082-332-1630	44-33-49	58-43-24	67	014(1686)	014(2497)	004(1118)	OK SPEED:8.7 HEADNG:270
266	082-332-1640	44-33-55	58-44-36	68	014(1850)	014(2636)	004(1167)	OK, COUNTER IRREGULAR SPEED:5.1 HEADNG:270
267	082-332-1650	44-33-63	58-45-58	64	014(2004)	014(2762)	004(1214)	PAPER CHANGE ON AIRGUN SPEED:5.5 HEADNG:270
268	082-332-1700	44-33-56	58-46-82	63	014(2138)	014(2873)	004(1253)	OK SPEED:5.3 HEADNG:270
269	082-332-1710	44-34-08	58-48-77	62	014(2288)	014(2999)	004(1253)	OK SPEED:11.5 HEADNG:269
270	082-332-1720	44-33-40	58-49-55	61	014(2436)	014(3125)	004(1303)	OK SPEED:5.6 HEADNG:270
271	082-332-1730	44-33-40	58-50-64	58	014(2556)	014(3213)	004(1345)	OK SPEED:5.6 HEADNG:270
272	082-332-1740	44-33-36	58-51-82	55	014(2696)	015(210)	004(1396)	OK SPEED:4.7 HEADNG:264
273	082-332-1750	44-33-38	58-52-95	53	014(2822)	015(488)	004(1442)	OK;ADJUSTING AUTO PRINT SPEED:5.3 HEADNG:270
274	082-332-1800	44-33-38	58-54-23	53	014(2944)	015(729)	004(1490)	OK SPEED:5.4 HEADNG:270
275	082-332-1810	44-33-37	58-55-46	52	014(3056)	015(939)	004(1535)	OK/WIND:20KTS/WAVES:2M SPEED:5.6 HEADNG:270
276	082-332-1820	44-33-44	58-56-66	48	014(3169)	015(1139)	004(1557)	OK SPEED:4.9 HEADNG:257

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277	082-332-1830	44-33-49	58-57-96	47	014(3237)	015(1332)	004(1580)	OK SPEED:5.5 HEADNG:270
278	082-332-1841	44-33-50	58-59-23	51	015(242)	015(1523)	004(1630)	OK SPEED:5.7 HEADNG:272
279	082-332-1850	44-33-52	59-00-83	52	015(501)	015(1690)	004(1676)	OK SPEED:5.8 HEADNG:269
280	082-332-1900	44-33-49	59-01-83	51	015(738)	015(1848)	004(1722)	OK SPEED:5.7 HEADNG:270
281	082-332-1910	44-33-49	59-03-11	52	015(961)	015(2006)	004(1770)	OK SPEED:5.4 HEADNG:270
282	082-332-1920	44-33-47	59-04-36	51	015(1159)	015(2152)	004(1816)	OK SPEED:5.3 HEADNG:270
283	082-332-1930	44-33-45	59-05-53	53	015(1351)	015(2299)	004(1864)	OK SPEED:4.8 HEADNG:270
284	082-332-1940	44-33-43	59-08-83	54	015(1529)	015(2437)	004(1912)	OK SPEED:5.5 HEADNG:270
285	082-332-1950	44-33-39	59-08-00	56	015(1698)	015(2772)	004(1950)	OK SPEED:4.9 HEADNG:270
286	082-332-2000	44-33-42	59-09-24	54	015(1863)	015(2706)	004(2005)	OK SPEED:***
287	082-332-2010	44-33-45	59-10-43	57				FIX MISSED
288	082-332-2020	44-33-47	59-11-81	76	015(2166)	015(2959)	004(2099)	OK SPEED:5.6 HEADNG:273

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
289	082-332-2030	44-43-44	59-13-07	60	015(2311)	015(3080)	004(2146)	OK SPEED:5.6 HEADNG:269
290	082-332-2040	44-33-40	59-14-13	54	015(2436)	015(3178)	004(2192)	OK SPEED:4.9 HEADNG:269
291	082-332-2050	44-33-35	59-15-61	54	015(2576)	016(054)	004(2241)	OK SPEED:5.6 HEADNG:268
292	082-332-2100	44-33-39	59-16-92	55	015(2706)	016(348)	004(2290)	OK SPEED:5.6 HEADNG:268
293	082-332-2110	44-33-38	59-18-15	57	015(2835)	016(622)	004(2336)	OK SPEED:5.6 HEADNG:277
294	082-332-2120	44-33-42	59-19-35	60	015(2957)	016(839)	004(2382)	OK SPEED:5.4 HEADNG:270
295	082-332-2130	44-33-42	59-20-63	54	015(3075)	016(1054)	004(2427)	OK SPEED:5.2 HEADNG:268
296	082-332-2140	44-33-40	59-21-89	52	015(3188)	016(1250)	004(2476)	OK SPEED:5.4 HEADNG:271
297	082-332-2150	44-33-45	59-23-17	48	016(090)	016(1344)	004(2525)	OK SPEED:5.2 HEADNG:269
298	082-332-2200	44-33-08	59-24-04	47	016(376)	016(1610)	004(2571)	OK SPEED:5.6 HEADNG:193
299	082-332-2210	44-31-88	59-23-75	47	016(616)	016(1770)	004(2617)	OK SPEED:6.0 HEADNG:185
300	082-332-2220	44-30-79	59-23-66	48	016(860)	016(1942)	004(2664)	OK SPEED:6.7 HEADNG:177

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
301	082-332-2230	44-29-77	59-23-80	50	016(1060)	016(2086)	004(2714)	OK SPEED:6.5 HEADNG:185
302	082-332-2240	44-28-46	59-23-78	52	016(1256)	016(2235)	004(2761)	OK SPEED:6.7 HEADNG:184
303	082-332-2250	44-27-57	59-23-78	82	016(1438)	016(2377)	004(2807)	OK SPEED:6.2 HEADNG:183
304	082-332-2300	44-26-34	59-23-63	117	016(1615)	016(2518)	004(2854)	OK SPEED:8.9 HEADNG:173
305	082-332-2310	44-25-35	59-23-79	129	016(1777)	016(2650)	004(2902)	OK SPEED:6.2 HEADNG:180
306	082-332-2320	44-24-19	59-23-84	102	016(1953)	016(2792)	004(2953)	OK SPEED:6.1 HEADNG:182
307	082-332-2330	44-23-36	59-23-88	128	016(2900)	016(2078)	004(2993)	OK SPEED:6.3 HEADNG:181
308	082-332-2340	44-22-29	59-23-93	118	016(2233)		004(3042)	OK SPEED:6.3 HEADNG:182
309	082-332-2350	44-21-27	59-23-95	144	016(2371)		004(3090)	OK SPEED:6.0 HEADNG:182
310	082-332-2400	44-20-28	59-24-00	134	016(2507)	016(3087)	004(3137)	OK/WIND:31KTS/WAVES:2.5M SPEED:6.5 HEADNG:180
311	082-333-0010	44-19-20	59-24-00	137	016(3198)	016(2637)	004(3185)	OK SPEED:6.1 HEADNG:180
312	082-333-0020	44-18-25	59-24-02	244	016(2761)	017(202)	004(3231)	OK SPEED:6.2 HEADNG:180

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
313	082-333-0030	44-17-21	59-24-01	226	016(2889)	017(482)	004(3280)	OK SPEED:6.3 HEADNG:180
314	082-333-0040	44-16-23	59-23-93	226	016(3005)	017(750)	004(3327)	OK SPEED:5.7 HEADNG:180
315	082-333-0050	44-15-19	59-23-93	247	016(3129)	017(952)	004(3374)	OK SPEED:6.5 HEADNG:180
316	082-333-0100	44-14-17	59-23-88	180	017(023)	017(1156)	004(3421)	OK SPEED:5.8 HEADNG:181
317	082-333-0110	44-13-25	59-25-78	199	017(295)	017(1335)	004(3467)	OK SPEED:5.7 HEADNG:177
318	082-333-0120	44-12-29	59-23-67	162	017(558)	017(1520)	004(3514)	OK SPEED:5.9 HEADNG:177
319	082-333-0130	44-11-31	59-23-58	215	017(797)	017(1697)	004(3561)	OK SPEED:5.8 HEADNG:188
320	082-332-0140	44-10-45	59-23-68	239	017(1004)	017(1856)	004(3608)	OK SPEED:4.9 HEADNG:189
321	082-333-0150	44-09-46	59-23-70	217				FIX MISSED
322	082-333-0200	44-08-59	59-23-74	210	017(1387)	017(2165)	005(027)	OK SPEED:6.0 HEADNG:127
323	082-333-0210	44-07-83	59-22-56	238	017(1561)	017(2308)	005(094)	OK SPEED:7.4 HEADNG:127
324	082-333-0220	44-07-31	59-21-41	200	017(1726)	017(2448)	005(140)	OK SPEED:5.4 HEADNG:127

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
325	082-333-0230	44-06-79	59-20-31	158	017(1887)	017(2585)	005(188)	OK SPEED:6.0 HEADNG:128
326	082-333-0240	44-06-26	59-19-26	107	017(2038)	017(2716)	005(235)	OK SPEED:5.8 HEADNG:129
327	082-333-0250	44-05-71	59-18-08	40				GEAR HIT BOTTOM S S OUT OF WATER/HUNTEC OK
328	082-333-0300	44-05-07	59-17-02	95				GEAR ONBOARD FOR REPAIR
329	082-333-0310	44-04-45	59-16-03	25				S S ONBOARD
330	082-333-0320	44-03-78	59-15-00	39				SS OUT OF WATER
331	082-333-0330	44-03-78	59-15-00	42	017(2392)			S S OUT OF WATER
332	082-333-0340	44-03-25	59-13-85	92	017(2534)		005(473)	S S OUT OF WATER SPEED:6.1 HEADNG:90
333	082-333-0350	44-03-19	59-12-54	163	017(2656)		005(520)	S S ON BOARD SPEED:5.9 HEADNG:90
334	082-333-0350	44-03-19	59-12-54	163	017(2656)		005(520)	S S ON BOARD SPEED:5.9 HEADNG:90
335	082-333-0410	44-03-21	59-08-35	176	017(3030)	017(2938)	005(0663)	OK SPEED:5.5 HEADNG:90
336	082-333-0420	44-03-28	56-06-87	255	017(3157)	017(3070)	005(715)	OK SPEED:5.6 HEADNG:91

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
337	082-333-0430	44-03-33	59-05-70	0	018(000)	017(3175)	005(759)	OK SPEED:5.9 HEADNG:91
338	082-333-0440	44-03-31	59-04-28	0	018(246)	018(090)	005(809)	OK SPEED:5.7 HEADNG:91
339	082-333-0450	44-03-36	59-03-08	0	018(499)	018(364)	005(853)	OK SPEED:5.6 HEADNG:92
340	082-333-0500	44-03-39	59-01-78	0	018(740)	018(620)	005(900)	OK SPEED:5.6 HEADNG:92
341	082-333-0510	44-03-42	59-00-53	0	018(955)	018(846)	005(945)	OK SPEED:5.3 HEADNG:92
342	082-333-0520	44-03-37	58-59-28	0	018(1156)	018(1054)	005(993)	OK SPEED:5.1 HEADNG:92
343	082-333-0530	44-03-34	58-58-07	255	018(1340)	018(1248)	005(1039)	OK SPEED:5.1 HEADNG:92
344	082-333-0540	44-03-25	58-56-75	209	018(1515)	018(1435)	005(1085)	OK SPEED:5.8 HEADNG:92
345	082-333-0550	44-03-21	58-55-40	163	018(1687)	018(1607)	005(1134)	OK SPEED:5.3 HEADNG:92
346	082-333-0600	44-03-20	58-54-14	139	018(1853)	018(1777)	005(1181)	OK/WIND:30KTS/WAVES:1.5M SPEED:5.5 HEADNG:92
347	082-333-0610	44-03-22	58-52-88	124	018(2013)	018(1940)	005(1229)	OK SPEED:5.1 HEADNG:93
348	082-333-0620	44-03-21	58-51-70	122	018(2155)	018(2086)	005(1278)	OK SPEED:5.4 HEADNG:93

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
349	082-333-0630	44-03-18	58-50-51	113	018(2298)	018(2236)	005(1321)	OK SPEED:5.5 HEADNG:93
350	082-333-0643	44-03-17	58-48-70	109	018(2481)	018(2419)	005(1386)	OK SPEED:5.7 HEADNG:96
351	082-333-0650	44-03-17	58-47-90	106	018(2565)	018(2506)	005(1416)	OK SPEED:5.3 HEADNG:99
352	082-333-0700	44-03-16	58-46-48	104	018(2694)	018(2635)	005(1464)	OK SPEED:5.8 HEADNG:150
353	082-333-0710	44-03-57	58-45-67	104	018(2824)	018(2767)	005(1512)	OK SPEED:4.8 HEADNG:59
354	082-333-0720	44-03-92	58-44-66	103	018(2943)	018(2888)	005(1558)	OK SPEED:5.0 HEADNG:58
355	082-333-0730	44-04-31	58-43-63	100	018(3021)	018(3070)	005(1607)	OK
356	082-333-0740	44-04-78	58-42-58	97	018(3184)	018(3130)	005(1654)	OK SPEED:4.9 HEADNG:58
357	082-333-0750	44-05-19	58-41-70	93	019(225)	019(156)	005(1702)	OK SPEED:4.8 HEADNG:56
358	082-333-0800	44-05-55	58-40-68	92	019(498)	019(426)	005(1746)	OK SPEED:5.2 HEADNG:58
359	082-333-0810	44-06-02	58-39-39	90	019(835)	019(0795)	005(1810)	OK SPEED:4.7 HEADNG:65
360	082-333-0820	44-06-30	58-38-82	87	019(984)	019(934)	005(1842)	OK SPEED:4.8 HEADNG:59

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
361	082-333-0830	44-06-71	58-36-95	86	019(1182)	019(1136)	005(1888)	OK SPEED:5.0 HEADNG:60
362	082-333-0840	44-07-12	58-36-95	85	019(1367)	019(1324)	005(1936)	OK SPEED:5.0 HEADNG:57
363	082-333-0850	44-07-51	58-35-99	88	019(1542)	019(1501)	005(1981)	OK SPEED:4.9 HEADNG:59.2
364	082-333-0900	44-07-93	58-34-96	87	019(1718)	019(1680)	005(2030)	OK SPEED:4.8 HEADNG:57
365	082-333-0910	44-08-37	58-34-04	86	019(1874)	019(1838)	005(2076)	OK SPEED:5.0 HEADNG:63
366	082-333-0920	44-08-76	58-33-04	86	019(2083)	019(1986)	005(2126)	OK SPEED:5.2 HEADNG:55
367	082-333-0930	44-09-21	58-31-97	87	019(2139)	019(2176)	005(2174)	OK SPEED:5.1 HEADNG:65
368	082-333-0940	44-09-66	58-31-08	83	019(2322)	019(2294)	005(2225)	OK SPEED:4.9 HEADNG:55
369	082-333-0950	44-10-14	58-30-08	85	019(2425)	019(2457)	005(2266)	OK SPEED:5.1 HEADNG:48.6
370	082-333-1000	44-10-65	58-29-11	88	019(2604)	019(2547)	005(2317)	OK SPEED:5.2 HEADNG:59
371	023-331-1010	44-11-10	58-28-05	104	019(2728)	019(2699)	005(2362)	OK SPEED:5.3 HEADNG:61
372	082-333-1020	44-11-10	58-28-05	0	019(2848)	019(2819)	005(2408)	OK SPEED:5.3 HEADNG:52.6

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
373	082-333-1030	44-12-02	58-26-02	0	019(2975)	019(2945)	005(2455)	OK SPEED:5.2 HEADNG:59.1
374	082-333-1040	44-12-49	58-25-01	0	019(3089)	019(3062)	005(2502)	OK SPEED:5.4 HEADNG:63.3
375	082-333-1050	44-12-97	58-24-03	230	019(3199)	019(3169)	005(2550)	OK SPEED:5.0 HEADNG:58.7
376	082-333-1100	44-13-43	58-23-07	127	019(3251)	019(3306)	005(2601)	OK SPEED:5.2 HEADNG:57.4
377	082-333-1110	44-13-90	58-22-07	98	020(0036)	020(0071)	005(2643)	OK SPEED:5.0 HEADNG:49.7
378	082-333-1120	44-14-36	58-20-98	92	020(370)	020(338)	005(2690)	OK SPEED:6.5 HEADNG:63
379	082-333-1130	44-15-07	58-20-69	89	020(627)	020(598)	005(2739)	OK SPEED:4.6 HEADNG:4.6
380	082-333-1140	44-16-00	58-20-06	78	020(840)	020(817)	005(2783)	OK SPEED:6.1 HEADNG:007
381	082-333-1150	44-17-01	58-20-42	63	020(1058)	020(1038)	005(2831)	OK SPEED:6.1 HEADNG:007
382	023-333-1200	44-17-03	58-20-29	58	020(1254)	020(1239)	005(2882)	OK/WIND:25KTS/WAVES:2M SPEED:5.6 HEADNG:344
383	082-333-1210	44-18-87	58-20-49	56	020(1449)	020(1438)	005(2929)	OK SPEED:4.5 HEADNG:369
384	082-333-1220	44-18-84	58-21-55	62	020(1615)	020(1607)	005(2975)	OK SPEED:5.3 HEADNG:269

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
385	082-333-1230	44-18-87	58-22-89	58	020(1780)	020(1775)	005(3022)	OK SPEED:5.8 HEADNG:269
386	082-333-1240	44-18-82	58-24-18	59	020(1943)	020(1942)	005(3072)	OK SPEED:5.1 HEADNG:269
387	082-333-1250	44-18-76	58-25-36	63	020(2085)	020(2086)	005(3116)	OK SPEED:6.7 HEADNG:269
388	082-333-1300	44-18-67	58-26-57	65	020(2234)	020(2238)	005(3163)	OK SPEED:5.5 HEADNG:269
389	082-333-1310	44-18-58	58-27-84	61	020(2372)	020(2378)	005(3211)	OK SPEED:5.7 HEADNG:269
390	082-333-1320	44-18-49	58-29-03	54	020(2507)	020(2515)	005(3258)	OK SPEED:5.5 HEADNG:270
391	023-333-1330	44-18-40	58-30-31	58	020(2638)	020(2648)	005(3305)	OK SPEED:5.2 HEADNG:270
392	082-333-1340	44-18-33	58-31-73	62	020(2769)	020(2781)	005(3353)	OK SPEED:7.3 HEADNG:270
393	082-333-1350	44-18-33	58-33-00	60	020(2888)	020(2903)	005(3400)	OK LORAN-C OFF
394	082-333-1400	44-18-34	58-32-66	62	020(3009)	020(3026)	005(3446)	OK SPEED:7.4
395	082-333-1410	44-18-27	58-35-79	61	020(3129)	020(3148)	005(3496)	LORAN-C OFF
396	082-333-1420	44-18-22	58-37-13	58	021(000)	021(014)	005(3545)	LORAN-C OFF

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
397	082-333-1430	44-18-20	58-38-50	57	021(262)	021(301)	005(3588)	LORAN-C OFF
398	082-333-1440	44-18-15	58-39-89	61	021(519)	021(562)	006(000)	LORAN-C DOWN
399	082-333-1450	44-18-11	58-41-23	64	021(759)	021(802)	006(046)	LORAN-C DOWN
400	082-333-1500	44-18-10	58-42-57	64	021(989)	021(1031)	006(096)	LORAN-C DOWN
401	082-333-1510	44-18-05	58-44-00	59	021(1174)	021(1217)	006(140)	LORAN-C DOWN
402	082-333-1520	44-18-48	58-45-60	60	021(1365)	021(1407)	006(187)	OK SPEED:6.8
403	082-333-1530	44-18-00	58-46-83	63	021(1540)	021(1583)	006(234)	OK
404	082-333-1540	44-18-48	58-48-41	63	021(1709)	021(1751)	006(282)	OK SPEED:9.1
405	082-333-1550	44-18-48	58-49-80	58	021(1872)	021(1910)	006(329)	OK SPEED:6.0 HEADNG:270
406	082-333-1600	44-18-48	58-49-80	58	021(1872)	021(1910)	006(329)	OK SPEED:6.0 HEADNG:270
407	082-333-1610	44-18-53	58-52-75	63	021(2171)	021(2212)	006(424)	OK SPEED:6.0 HEADNG:270
408	082-333-1620	44-18-59	58-54-09	64	021(2311)	021(2353)	006(470)	OK SPEED:6.2 HEADNG:269

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
409	082-333-1630	44-18-53	58-55-45	68	021(2448)	021(2491)	006(517)	OK SPEED:5.8 HEADNG:270
410	082-333-1640	44-18-46	58-56-87	78	021(2582)	021(2625)	006(565)	OK SPEED:6.0 HEADNG:270
411	082-333-1650	44-18-48	58-58-25	83	021(2711)	021(2755)	006(612)	OK SPEED:6.1 HEADNG:270
412	082-333-1700	44-18-49	58-59-62	104	021(2838)	021(2880)	006(659)	OK SPEED:6.0 HEADNG:270
413	082-333-1710	44-18-25	59-00-68	132	021(2958)	021(3003)	006(705)	OK SPEED:5.3 HEADNG:272
414	082-333-1720	44-18-29	59-02-13	164	021(3088)	021(3135)	006(757)	OK SPEED:6.0 HEADNG:274
415	082-333-1730	44-18-03	59-03-19	177	022(000)	021(3239)	006(802)	OK SPEED:5.3 HEADNG:276
416	082-333-1740	44-18-09	59-04-42	181	022(259)	022(221)	006(847)	OK SPEED:5.6 HEADNG:277
417	082-333-1750	44-18-15	59-05-77	173	022(517)	022(498)	006(894)	OK SPEED:5.4 HEADNG:278
418	082-333-1800	44-18-21	59-07-11	114	022(754)	022(741)	006(942)	OK/WIND:26KTS/WAVES:1.5M SPEED:5.4 HEADNG:282
419	082-333-1810	44-18-33	59-08-63	204	022(998)	022(991)	006(994)	OK SPEED:6.2 HEADNG:304
420	082-333-1820	44-17-87	59-09-23	214	022(1171)	022(1169)	006(1035)	OK SPEED:5.5 HEADNG:177

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
421	082-333-1830	44-16-79	59-09-27	211	022(1362)	022(1363)	006(1083)	OK SPEED:5.9 HEADNG:174
422	082-333-1840	44-15-81	59-09-24	210	022(1536)	022(1545)	006(1130)	OKSPEED:5.8 HEADNG:168
423	082-333-1850	44-15-51	59-08-04	230	022(1703)	022(1717)	006(1177)	OK SPEED:6.2 HEADNG:91
424	082-333-1900	44-15-45	59-06-74	251	022(1862)	022(1880)	006(1224)	OK SPEED:5.5 HEADNG:91
425	082-333-1910	44-15-45	59-06-74	231	022(2015)	022(2037)	006(1271)	OK SPEED:5.9 HEADNG:91
426	082-333-1920	44-15-38	59-04-14	188	022(2162)	022(2187)	006(1318)	OK SPEED:5.6 HEADNG:91
427	082-333-1930	44-15-29	59-02-81	171	022(2308)	022(2334)	006(1366)	OK SPEED:5.7 HEADNG:90
428	082-333-1940	44-15-20	59-01-61	101	022(2446)	022(2474)	006(1412)	OK SPEED:5.2 HEADNG:91
429	082-333-1950	44-15-12	59-00-35	73	22(2578)	22(2608)	006(1459)	OK SPEED 6.2 HEADING 90.2 AS ABOVE
430	082-333-2000	44-15-11	57-58-89	63	22(2845)	22(2884)	06(1558)	OK SPEED 5.6 HEADING 94.8 AS ABOVE
431	082-333-2010	44-15-12	57-58-89	59	22(2845)	22(2884)	006(1558)	OK SPEED 5.3 HEADING 89.8 AS ABOVE
432	082-333-2020	44-15-14	58-56-70	59	22(2968)	22(3008)	006(1605)	OK SPEED 5.1 HEADING 84.7 AS ABOVE

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
433	082-333-2030	44-15-16	58-55-48	60	22(3084)	22(3125)	006(1651)	OK SPEED 5.2 HEADING 88.8
434	082-333-2040	44-15-15	58-54-31	62	22(3193)	22(3235)	006(1696)	AS ABOVE OK SPEED 5.3 HEADING 92.3 ROUGH
435	082-333-2050	44-15-19	58-52-85	62	023(154)	023(000)	006(1750)	OK SPEED:5.1 HEADNG:88
436	082-333-2100	44-15-22	58-51-85	62	023(412)	023(266)	006(1794)	OK SPEED:5.4 HEADNG:89
437	082-333-2110	44-15-20	58-50-64	62	023(652)	023(517)	006(1837)	OK SPEED:5.3 HEADNG:94
438	082-333-2120	44-15-18	58-19-46	60	023(871)	023(744)	006(1887)	OK SPEED:5.5 HEADNG:96
439	082-333-2130	44-15-16	58-48-03	60	023(1073)	023(950)	006(1932)	OK SPEED:5.0 HEADNG:94
440	082-333-2140	44-15-12	58-47-06	66	023(1269)	023(1150)	006(1980)	OK SPEED:5.3 HEADNG:93
441	082-333-2150	44-15-08	58-45-81	63	023(1456)	023(1335)	006(2028)	OK SPEED:4.9 HEADNG:86
442	082-333-2200	44-15-01	58-44-57	58	023(1623)	023(1506)	006(2076)	OK SPEED:5.5 HEADNG:96
443	082-333-2210	44-15-15	58-43-24	57	023(1792)	023(1671)	006(2126)	OK SPEED:5.9 HEADNG:72
444	082-333-2220	44-15-38	58-41-88	57	023(1948)	023(1828)	006(2171)	OK SPEED:5.9 HEADNG:78

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
445	082-333-2230	44-15-57	58-40-70	61	023(2098)	023(1978)	006(2217)	OK SPEED:6.0 HEADNG:79
446	082-333-2240	44-15-70	58-39-11	63	023(2238)	023(2116)	006(2266)	OK SPEED:6.1 HEADNG:81
447	082-333-2250	44-15-84	58-37-72	59	023(2378)	023(2254)	006(2312)	OK SPEED:6.4 HEADNG:81
448	082-333-2300	44-15-92	58-36-35	57	023(2510)	023(2389)	006(2362)	OK SPEED:6.0 HEADNG:84
449	082-333-2310	44-15-01	58-34-86	57	023(2646)	023(2518)	006(2408)	OK SPEED:5.6 HEADNG:80
450	082-333-2320	44-16-02	58-33-09	63	023(2772)	023(2641)	006(2454)	OK SPEED:6.3 HEADNG:90
451	082-333-2330	44-15-98	58-32-10	60	023(2893)	023(2760)	006(2500)	OK SPEED:6.0 HEADNG:92
452	082-333-2340	44-15-94	58-30-70	63	023(3017)	023(2881)	006(2551)	OK SPEED:6.1 HEADNG:93
453	082-333-2350	44-16-12	58-29-28	68	023(3134)	023(2990)	006(2596)	OK SPEED:6.5 HEADNG:64
454	082-334-0000	44-16-55	58-28-04	65	024(093)	023(END)	006(2642)	OK/WIND:30KTS/WAVES:2M SPEED:5.5 HEADNG:68
455	082-334-0010	44-16-00	58-27-00	67	024(381)	024(260)	006(690)	OK SPEED:5.4 HEADNG:58
456	082-334-0020	44-17-44	58-25-92	63	024(623)	024(524)	006(728)	OK SPEED:5.3 HEADNG:58

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
457	082-334-0030	44-17-90	58-24-89	58	024(840)	024(760)	006(2784)	OK SPEED:5.0 HEADNG:58
458	082-334-0040	44-18-35	58-23-89	59	024(1033)	024(967)	006(2831)	OK SPEED:5.4 HEADNG:58
459	082-334-0050	44-18-81	58-22-86	57	024(1223)	024(1173)	006(2876)	OK SPEED:5.3 HEADNG:58
460	082-334-0100	44-19-25	58-21-75	61	024(1398)	024(1360)	006(2925)	OK SPEED:5.4 HEADNG:58
461	082-334-0110	44-19-71	58-20-70	56	024(1564)	024(1542)	006(2972)	OK SPEED:5.4 HEADNG:58
462	082-334-0120	44-20-17	58-19-58	63	024(1722)	024(1710)	006(3020)	OK SPEED:5.6 HEADNG:58
463	082-334-0130	44-20-68	58-18-48	63	024(1875)	024(1873)	006(3060)	OK SPEED:5.6 HEADNG:57
464	082-334-0140	44-21-13	58-17-35	59	024(2029)	024(1993)	006(3114)	OK SPEED:5.6 HEADNG57
465	082-334-0150	44-21-61	58-16-26	60	024(2132)	024(2177)	006(3160)	OK SPEED:5.5 HEADNG:55.6
466	082-334-0200	44-22-07	58-15-11	60	024(2270)	024(2326)	006(3209)	OK SPEED:5.5 HEADNG:47
467	082-334-0210	44-22-66	58-14-37	59	24(2401)	24(2463)	06(3255)	OK SPEED 4.4 HEADING 359.8 AS ABOVE
468	082-334-0220	44-23-65	58-14-34	55	24(2525)	4(2594)	006(3302)	OK SPEED 5.6 HEADING 359.8 SEE ABOVE

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
469	082-334-0230	44-24-54	58-14-33	57	024(2648)	024(2726)	006(3350)	OK SPEED 5.5 HEADING 359.8
								AS ABOVE
470	082-334-0230	44-25-40	58-14-28	57	024(2766)	024(2852)	006(3397)	OK SPEED 5.0 HEADING 359.7
								AS ABOVE
471	082-334-0250	44-26-32	58-14-13	59	024(2996)	024(2978)	006(3444)	OK SPEED 5.3 HEADING 359.5 ROUGH
472	082-334-0300	44-27-21	58-14-13	60	024(2996)	024(3095)	006(3492)	OK SPEED 5.1 HEADING 359.5
								AS ABOVE
473	082-334-0310	44-27-95	58-14-20	58	025(000)	024(3222)	006(3541)	OK SPEED:5.2 HEADNG:360
474	082-334-0320	44-28-80	58-14-31	58	025(300)	025(172)	006(3586)	OK SPEED:5.1 HEADNG:360
476	082-334-0340	44-30-50	58-14-50	54	025(782)	025(693)	007(045)	OK SPEED:4.8 HEADNG:360
477	082-334-0350	44-31-42	58-14-54	54	025(984)	025(916)	007(092)	OK SPEED:5.1 HEADNG:000
478	082-334-0400	44-32-33	58-14-58	53	025(1171)	025(1111)	007(139)	OK SPEED:5.3 HEADNG:000
479	082-334-0410	44-33-26	58-14-66	52	025(1370)	025(1318)	007(189)	OK SPEED:5.4 HEADNG:000
480	082-334-0420	44-34-12	58-14-73	54	025(1537)	025(1498)	007(234)	OK SPEED:5.1 HEADNG:000
481	082-334-0430	44-35-11	58-14-73	58	025(1702)	025(1681)	006(283)	OK SPEED:5.1 HEADNG:000

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
483	082-334-0440	44-36-12	58-14-70	58	025(1878)	025(1862)	007(337)	OK SPEED:5.5 HEADNG:000
484	082-334-0500	44-37-39	58-14-71	63	025(2133)	025(2134)	007(421)	OK SPEED:5.5 HEADNG:000
485	082-334-0610	44-38-82	58-14-71	62	025(2229)	025(2289)	007(470)	OK SPEED:6.3 HEADNG:000
486	082-334-0520	44-39-68	58-14-75	53	025(2408)	025(2426)	007(516)	OK SPEED:5.6 HEADNG:000
487	082-334-0530	44-40-66	58-14-75	55	025(2637)	025(2564)	007(565)	OK SPEED:5.8 HEADNG:000
488	082-334-0540	44-41-66	58-14-82	55	025(2663)	025(2698)	007(614)	OK SPEED:5.8 HEADNG:000
489	082-334-0550	44-42-64	58-14-83	53	025(2784)	025(2826)	007(659)	OK SPEED:6.0 HEADNG:000
490	023-334-0600	44-43-59	58-14-82	58	025(2900)	025(2950)	007(708)	OK/WIND:24KTS/WAVES:1.5M SPEED:5.3 HEADNG:001
491	023-340-0610	44-44-56	58-14-81	62	025(3013)	025(3070)	007(753)	OK SPEED:5.7 HEADNG:001
492	082-334-0620	44-45-51	58-14-79	65	025(3114)	025(3180)	007(802)	OK SPEED:5.8 HEADNG:001
493	082-334-0630	44-46-51	58-14-74	70	026(281)	026(173)	007(850)	OK SPEED:5.9 HEADNG:001
494	082-334-0640	44-47-41	58-14-78	68	026(535)	026(452)	007(895)	OK SPEED:5.5 HEADNG:000

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
495	082-334-0650	44-48-45	58-14-75	76	026(776)	26(713)	007(944)	OK SPEED:5.9 HEADNG:001
496	082-334-0700	44-49-44	58-14-75	86	026(1007)	026(954)	007(996)	OK SPEED:5.0 HEADNG:001
497	082-334-0710	44-50-28	58-14-70	103	026(1183)	026(1139)	007(1037)	OK SPEED:5.9 HEADNG:001
498	082-334-0720	44-51-16	58-14-62	78	026(1357)	026(1327)	007(1084)	OK SPEED:4.8 HEADNG:006
499	082-334-0730	44-52-11	58-14-57	78	026(1531)	026(1508)	007(1132)	OK SPEED:5.8 HEADNG:000
500	082-334-0740	44-53-10	58-14-53	108	026(1697)	026(1685)	007(1179)	OK SPEED:5.8 HEADNG:000
501	082-334-0750	44-53-97	58-14-51	171	026(1848)	026(1846)	007(1227)	OK SPEED:6.1 HEADNG:000
502	082-334-0800	44-54-81	58-14-44	141	026(2004)	026(2010)	007(1277)	OK SPEED:5.8 HEADNG:000
503	082-334-0810	44-55-86	58-14-41	103	026(2177)	026(2159)	007(1322)	OK SPEED:5.4 HEADNG:001
504	082-334-0820	44-56-56	58-13-64	90	026(2278)	026(2312)	007(1367)	OK SPEED:6.5 HEADNG:039
505	082-334-0830	44-57-29	58-12-67	85	026(2410)	026(2445)	007(1414)	OK SPEED:6.4 HEADNG:037
506	082-334-0840	44-58-12	58-11-73	91	026(2542)	026(2583)	007(1463)	OK SPEED:6.4 HEADNG:035

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
507	082-334-0850	44-58-95	58-10-57	89	026(2660)	026(2711)	007(1511)	OK SPEED:6.6 HEADNG:030
508	082-334-0900	44-59-76	58-09-99	85	026(2782)	026(2840)	007(1556)	OK SPEED:6.1 HEADNG:037
509	082-334-0910	45-00-61	58-09-17	158	026(2901)	026(2966)	007(1603)	OK SPEED:5.9 HEADNG:039
510	082-334-0920	45-01-48	58-08-32	117	026(3016)	026(3086)	007(1652)	OK SPEED:6.1 HEADNG:031
511	082-334-0930	45-02-22	58-07-77	108	026(3128)	026(3205)	007(1699)	OK SPEED:6.0 HEADNG:037
512	082-334-0940	45-03-05	58-06-70	128	027(190)	027(081)	007(1746)	OK SPEED:6.1 HEADNG:034
513	082-334-0950	45-03-83	58-05-88	110	027(456)	027(356)	007(1792)	OK SPEED:5.6 HEADNG:040
514	082-334-1000	45-04-57	58-05-00	98	027(697)	027(615)	007(1840)	OK SPEED:5.5 HEADNG:045
515	082-334-1010	45-05-36	58-04-13	100	027(906)	027(841)	007(1890)	OK SPEED:5.8 HEADNG:037
516	082-334-1020	45-06-07	58-03-27	63	027(1103)	027(1045)	007(1934)	OK SPEED:5.9 HEADNG:037
517	082-334-1030	45-06-92	58-02-42	59	027(1292)	027(1240)	007(1983)	OK SPEED:5.9 HEADNG:035
518	082-334-1040	45-07-77	58-01-66	60	027(1476)	027(1439)	007(2032)	OK SPEED:6.2 HEADNG:025

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
519	082-334-1050	45-08-48	58-00-59	61	027(1639)	027(1610)	007(2076)	OK SPEED:5.9 HEADNG:031
520	082-334-1100	45-08-28	58-00-13	60	027(1790)	027(1770)	007(2123)	OK SPEED:5.1 HEADNG:157
521	082-334-1110	45-07-32	57-59-99	60	027(1935)	027(1923)	007(2170)	OK SPEED:7.4 HEADNG:172
522	082-334-1120	45-06-36	57-59-96	60	027(2076)	027(2072)	007(2216)	OK SPEED:5.7 HEADNG:180
523	082-334-1130	45-05-36	57-59-90	58	027(2230)	027(2225)	007(2264)	OK SPEED:5.6 HEADNG:179
524	082-334-1140	45-04-32	57-59-90	140	027(2357)	027(2368)	007(2311)	OK SPEED:6.3 HEADNG:180
525	082-334-1150	45-03-28	57-59-91	119	027(2485)	027(2504)	007(2364)	OK SPEED:5.1 HEADNG:178
526	082-334-1200	45-02-39	57-59-97	118	027(2605)	027(2633)	007(2407)	OK/WIND:20KTS/WAVES:2M SPEED:6.5 HEADNG:180
527	082-334-1210	45-01-32	58-00-01	114	027(2731)	027(2755)	007(2454)	OK SPEED: HEADNG:180
528	082-334-1220	45-00-41	58-00-14	120	027(2843)	027(2886)	007(2500)	OK SPEED:5.5 HEADNG:180
529	082-334-1230	45-59-37	58-00-20	110	027(2980)	027(3007)	007(2547)	OK SPEED:5.7 HEADNG:180
530	082-334-1240	44-58-43	58-00-23	93	027(3073)	027(3126)	007(2596)	OK SPEED:5.0 HEADNG:180

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
531	082-334-1250	44-57-42	58-00-15	105	028(000)	028(083)	007(2642)	OK SPEED:6.2 HEADNG:180
532	082-334-1300	44-56-40	58-00-15	103	028(362)	028(298)	007(2689)	OK SPEED:5.4 HEADNG:180
533	082-334-1310	44-55-32	58-00-07	72	028(608)	028(559)	007(2689)	OK SPEED:5.4 HEADNG:180
534	082-334-1320	44-54-28	58-00-05	61	028(850)	028(819)	007(2787)	OK SPEED:6.7 HEADNG:180
535	082-334-1330	44-53-29	57-60-00	59	028(1041)	028(1019)	007(2832)	OK SPEED:6.3 HEADNG:180
536	082-334-1340	44-52-20	57-59-89	59	028(1221)	028(1208)	007(2877)	OK SPEED:6.5 HEADNG:180
537	082-334-1350	44-51-13	57-59-84	58	028(1402)	028(1400)	007(2925)	OK SPEED:6.1 HEADNG:180
539	082-334-1410	44-49-15	57-59-91	57	028(1723)	028(1740)	007(3020)	OK SPEED:6.7 HEADNG:180
540	082-334-1420	44-48-06	57-57-98	59	028(1876)	028(1902)	007(3067)	OK SPEED:5.9 HEADNG:180
541	082-334-1430	44-47-01	58-00-06	58	028(2022)	028(2056)	007(3114)	OK SPEED:6.9 HEADNG:180
542	082-334-1440	44-45-94	58-00-14	61	028(2164)	028(2207)	007(3161)	OK SPEED:6.2 HEADNG:181
543	082-334-1450	44-44-86	58-00-26	61	028(2357)	028(2305)	007(3210)	OK SPEED:6.3 HEADNG:185

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE #/REV).....	AIRGUN	NOTES (WIND/WAVES/SPEED/HEADNG...)
544	082-334-1500	44-43-91	58-00-34	59	028(2357)	028(2305)	007(3210)	OK SPEED:6.3 HEADNG:185

CSS BAFFIN CRUISE/SABLE ISLAND BANK AND BANQUEREAU... BN82-039....NOVEMBER 24 - DECEMBER 17, 1982.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC (TAPE #.REV)	SIDESCAN (TAPE #.REV)	AIRGUN	EQUIPMENT (WIND/WAVES..)	SHIP SPEED(KTS) HEADING(TRUE)
545	082-334-1510	44-42-80	58-00-36	59	28.2551	28.2617	7.3303	OK	7.0 178.0
546	082-334-1520	44-41-56	58-00-39	56	28.2690	28.2764	7.3354	OK	6.7 180.0
547	082-334-1530	44-40-59	58-00-40	55	28.2792	28.2873	7.3397	OK	7.1 183.0
548	082-334-1540	44-39-48	58-00-43	53	28.2907	28.2994	7.3444	OK	6.5 183.0
549	083-334-1550	44-38-30	58-00-41	48	28.3021	28.3114	7.3492	OK	6.9 178.0
550	082-334-1600	44-37-19	58-00-43	46	29.0105	29.0000	7.3539	OK	6.3 177.0
551	082-334-1610	44-36-17	58-00-44	51	29.0357	29.0281	7.3586	OK	6.1 182.0
552	082-334-1620	44-35-06	58-00-41	48	0.0000	0.0000	0.0000	FIX MISSED	0.0 0.0
553	082-334-1630	44-33-95	58-00-39	47	29.0831	29.0079	8.0104	OK	6.5 179.0
554	082-334-1640	44-32-88	58-00-41	44	29.1001	29.1028	8.0149	OK	6.7 180.0
555	082-334-1650	44-31-83	58-00-41	46	29.1217	29.1203	8.0196	OK	6.7 180.0

********THE DECIMAL POINT SEPARATES THE TAPE # FROM TAPE REV********

CSS BAFFIN CRUISE/SABLE ISLAND BANK AND BANQUEREAU... BN82-039....NOVEMBER 24 - DECEMBER 17, 1982.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC (TAPE #.REV)	SIDESCAN (TAPE #.REV)	AIRGUN (TAPE #.REV)	EQUIPMENT (WIND/WAVES..)	SHIP SPEED(KTS) HEADING(TRUE)
556	082-334-1700	44-31-37	57-59-72	46	29.1395	29.1394	8.0243	OK	4.7 113.0
557	082-334-1710	44-31-09	57-58-75	43	29.1575	29.1590	8.0293	OK	3.8 107.0
558	082-334-1720	44-30-77	57-57-77	43	29.1735	29.1757	8.0342	OK	4.2 110.0
559	082-334-1730	44-30-57	57-56-94	43	29.1876	29.1906	8.0385	OK	4.2 107.0
560	082-334-1740	44-30-46	57-55-84	41	29.2023	29.2065	8.0432	OK	4.8 97.0
561	082-334-1750	44-30-42	57-54-66	39	29.2168	29.2219	8.0481	OK	5.0 89.0
562	082-334-1800	44-30-38	57-53-52	37	29.2297	29.2357	8.0526	OK/WIND:23 KTS	5.1 91.0
563	083-334-1810	44-30-39	57-52-31	32	29.2429	20.2497	8.0574	OK	5.1 86.0
564	082-334-1820	44-30-45	57-51-14	34	29.2562	29.2639	8.0624	OK	5.4 91.0
565	082-334-1830	44-30-27	57-49-86	36	29.2681	29.2766	8.0669	OK	5.5 92.0
566	082-334-1840	44-30-48	57-48-83	56	29.2797	29.2890	8.0715	OK	4.8 91.0

********THE DECIMAL POINT SEPARATES THE TAPE # FROM TAPE REV*********

CSS BAFFIN CRUISE/SABLE ISLAND BANK AND BANQUEREAU... BN82-039....NOVEMBER 24 - DECEMBER 17, 1982.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC (TAPE #.REV)	SIDESCAN (TAPE #.REV)	AIRGUN (TAPE #.REV)	EQUIPMENT (WIND/WAVES..)	SHIP SPEED(KTS) HEADING(TRUE)
567	082-334-1850	44-30-50	57-47-59	63	29.2927	29.3028	8.0768	OK	4.7 94.0
568	082-334-1900	44-30-47	57-46-60	64	29.3030	29.3138	7.0811	OK	5.0 92.0
569	082-334-1910	44-30-45	57-45-42	63	29.3247	29.3250	8.0858	OK	5.0 88.0
570	082-334-1920	44-30-91	57-44-93	63	30.0133	30.0266	8.0906	OK	3.8 347.0
571	082-334-1930	44-31-87	57-45-15	61	30.0418	30.0555	8.0958	OK	5.7 354.0
572	082-334-1940	44-32-67	57-45-17	62	30.0627	30.0768	8.0999	OK	5.4 1.0
573	082-334-1950	44-33-56	57-45-20	38	30.0835	30.0984	8.1046	OK	5.5 360.0
574	082-334-2000	44-34-75	57-45-20	34	30.1091	30.1250	8.1106	OK	5.8 356.0
575	082-334-2010	44-35-43	57-45-24	33	30.1222	30.1338	8.1138	OK	5.5 359.0
576	082-334-2020	44-36-40	57-45-21	33	30.1411	30.1585	8.1190	OK	5.3 1.0
577	082-334-2030	44-37-37	57-45-09	33	30.1576	30.1759	8.1237	OK	5.2 10.0

********THE DECIMAL POINT SEPARATES THE TAPE # FROM TAPE REV*********

CSS BAFFIN CRUISE/SABLE ISLAND BANK AND BANQUEREAU... BN82-039....NOVEMBER 24 - DECEMBER 17, 1982.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC (TAPE #.REV)	SIDESCAN (TAPE #.REV)	AIRGUN (TAPE #.REV)	EQUIPMENT (WIND/WAVES..)	SHIP SPEED(KTS) HEADING(TRUE)
578	082-334-2040	44-38-22	57-44-93	30	30.1721	30.1909	8.1283	OK	5.6 8.0
579	082-334-2050	44-39-29	57-44-82	31	30.1871	30.2066	8.1330	OK	6.2 3.0
580	082-334-2100	44-30-32	57-44-69	31	30.2018	30.2219	8.1378	OK	6.1 5.0
581	082-334-2110	44-41-40	57-44-48	30	30.2157	30.2367	8.1426	OK	5.6 7.0
582	082-334-2120	44-42-46	57-44-61	31	30.2285	30.2500	8.1473	OK	6.8 357.0
583	082-334-2130	44-43-54	57-44-54	32	30.2416	30.2637	8.1519	OK	6.4 0.0
584	082-334-2140	44-44-50	57-44-48	33	30.2542	30.2770	8.1568	OK	6.2 323.0
585	082-334-2150	44-45-26	57-44-04	35	30.2660	30.2860	8.1613	OK	5.2 66.0
586	082-334-2200	44-45-35	57-42-47	33	30.2785	30.3035	8.1663	OK	6.4 88.0
587	082-334-2210	44-45-35	57-41-04	33	30.2912	30.3166	8.1714	OK	5.6 89.0
588	082-334-2220	44-45-37	57-39-75	32	30.3006	30.3240	8.1758	OK	5.6 86.0

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CSS BAFFIN CRUISE/SABLE ISLAND BANK AND BANQUEREAU... BN82-039....NOVEMBER 24 - DECEMBER 17, 1982.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC .....(TAPE #.REV).....	SIDESCAN	AIRGUN	EQUIPMENT (WIND/WAVES..)	SHIP SPEED(KTS) HEADING(TRUE)
589	082-334-2230	44-45-32	57-38-28	32	31.0060	31.0040	8.1806	OK	6.2 97.0
590	082-334-2240	44-45-23	57-36-99	32	31.0340	31.0315	8.1850	OK	6.1 98.0
591	082-334-2250	44-45-18	57-35-65	32	31.0591	31.0572	8.1898	OK	4.1 86.0
592	082-334-2300	44-45-06	57-34-25	32	31.0812	31.0806	8.1943	OK	6.0 99.0
593	082-334-2310	44-45-06	57-32-84	37	31.1035	31.1040	8.1994	OK	6.1 85.0
594	082-334-2320	44-45-01	57-31-55	47	31.1210	31.1222	8.2038	OK	6.1 93.0
595	082-334-2330	44-45-02	57-30-00	50	31.1384	31.1407	8.2083	OK	6.1 89.0
596	082-334-2340	44-45-00	57-28-62	52	31.1562	31.1594	8.2133	OK	6.5 91.0
597	082-334-2350	44-44-96	57-27-20	55	31.1715	31.1756	8.2180	OK	6.1 87.0
598	082-335-0000	44-44-94	57-25-63	56	31.1872	31.1921	8.2227	OK/WIND 23 KTS	6.2 87.0
599	082-335-0010	44-44-94	57-23-93	58	31.2035	31.2096	8.2281	OK	6.2 87.0

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CSS BAFFIN CRUISE/SABLE ISLAND BANK AND BANQUEREAU... BN82-039....NOVEMBER 24 - DECEMBER 17, 1982.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC (TAPE #.REV)	SIDESCAN (TAPE #.REV)	AIRGUN (TAPE #.REV)	EQUIPMENT (WIND/WAVES..)	SHIP SPEED(KTS) HEADING(TRUE)
600	082-335-0020	44-44-91	57-22-69	63	31.2159	31.2226	8.2322	OK	6.5 92.0
601	082-335-0030	44-44-91	57-21-24	67	31.2294	31.2369	8.2373	OK	5.9 85.0
602	082-335-0040	44-44-87	57-19-75	85	31.2503	31.2420	8.2416	OK	6.4 92.0
603	082-335-0050	44-44-73	57-18-09	242	31.2638	31.2548	8.2464	OK	6.7 97.0
604	082-335-0054	44-44-71	57-17-43	0	31.2606	31.2706	8.2487	END OF SURVEY	0.0 0.0

*********THE DECIMAL POINT SEPARATES THE TAPE # FROM TAPE REV*********

CSS BAFFIN CRUISE BN82-039/ SABLE I. BANK AND BANQUEREAU. NOVEMBER 24 - DECEMBER 17, 1982.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ....(TAPE#/REV).... SIDESCAN AIRGUN	EQUIPMENT (WIND/WAVES...)	SHIP SPEED(KTS) HEADING(TRUE)
243	082-348-0740	43-21-42	60-45-29	148	37A(510)	SIDESCAN ONLY	7.3 336
244	082-348-0750	43-22-62	60-45-95	120	37A(748)	3.5 KHZ PROFILE	7.7 340
245	082-348-0800	43-23-84	60-46-52	101	37A(970)	OK	7.7 342
246	082-348-0810	43-25-04	60-47-07	87	37A(1164)	HIGH SPEED SURV	7.3 342
247	082-348-0820	43-26-24	60-47-68	83		OK	7.6 336
248	082-348-0830	43-27-46	60-48-51	78	37A(1524)	OK	7.6 333
249	082-348-0840	43-28-66	60-49-35	73	37A(1700)	FISH TILTED TO	8.7 334
250	082-348-0850	43-29-90	60-50-20	59	37A(1857)	OK	8.7 333
251	082-348-0900	43-31-09	60-51-11	60	37A(2013)	OK	8.4 331
252	082-348-0910	43-32-24	60-51-99	62	37A(2151)	200M RANGE/SWAT	8.2 331
253	082-348-0920	43-33-46	60-52-92	59	37A(2290)	50M DELAY ON PR	8.4 330
254	082-348-0930	43-34-70	60-53-82	61	37A(2427)	OK	0.0 0

CSS BAFFIN CRUISE BN82-039/ SABLE I. BANK AND BANQUEREAU. NOVEMBER 24 - DECEMBER 17, 1982.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ....(TAPE#/REV).... SIDESCAN AIRGUN	EQUIPMENT (WIND/WAVES...)	SHIP SPEED(KTS) HEADING(TRUE)
255	082-348-0945	43-36-57	60-55-16	61	37A(2627)	FIXES EVERY 15	8.6 333
256	082-348-1000	43-38-34	60-56-42	55	37A(2814)	100 KHZ FISH/30	8.4 334
257	082-348-1015	43-40-42	60-57-88	38	37A(3000)	FISH UP	0.0 0
258	082-348-1030	43-42-10	60-58-91	43	37A(3168)	OK	8.0 336
259	082-348-1045	43-43-90	60-59-97	43	38A(350)	OK	8.0 337
260	082-348-1100	43-45-90	61-01-30	44	38A(750)	OK	7.7 333
261	082-348-1115	43-47-43	61-02-40	45	38A(1044)	OK	8.0 330
262	082-348-1130	43-49-30	61-03-80	48	38A(1340)	OK	7.9 330
263	082-348-1145	43-50-80	61-04-90	48	38A(1580)	OK	7.6 331
264	082-348-1200	43-52-80	61-06-50	49	38A(1857)	DEPLOYING HUNTE	8.1 331
266	082-348-1230	43-55-92	61-08-85	51	38A(2293)	HUNTEC OUT/SPEE	6.7 333
267	082-348-1245	43-56-86	61-09-55	53	38A(2482)	OK	5.7 332

CSS BAFFIN CRUISE BN82-039/ SABLE I. BANK AND BANQUEREAU. NOVEMBER 24 - DECEMBER 17, 1982.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC (TAPE#/REV)	SIDESCAN (TAPE#/REV)	AIRGUN (TAPE#/REV)	EQUIPMENT (WIND/WAVES...)	SHIP SPEED(KTS) HEADING(TRUE)
268	023-481-1300	43-58-04	61-10-40	55		38A(2668)		HUNTEC CABLE BR	4.9 334
269	082-348-1315	43-59-19	61-11-22	59		38A(2861)	009(579)	AIRGUN DEPLOYED	5.4 332
270	082-348-1330	44-00-36	61-12-14	61		38A(3035)	009(648)	OK	4.9 326
271	082-348-1345	44-01-46	61-12-92	61		39A(222)	009(271)	TAPE 009 CONT.F	5.2 332
272	082-348-1400	44-02-59	61-13-78	67		39A(607)	009(787)	TRUE SPEED 4.5	5.3 332
273	082-348-1415	44-03-88	61-14-77	71		39A(943)	009(861)	OK	6.4 331
274	082-348-1430	44-05-36	61-15-84	89		39A(1252)	009(933)	OK	6.1 333
275	023-481-1445	44-06-86	61-16-91	101		39A(1539)	009(1010)	HUNTEC STILL DO	6.3 332
276	082-348-1500	44-07-99	61-17-70	103		39A(1658)	009(1072)	S/S STOPPED 165	6.2 333
277	082-348-1515	44-09-35	61-18-70	109			009(1142)	40 IN.AIRGUN/ 2	6.6 332
278	082-348-1530	44-10-78	61-19-68	124				END OF LINE	0.0 0
279	082-349-0315	44-00-43	61-27-41	102	36(208)	39A(1818)	009(1169)	ALL SYSTEMS GO	5.8 153

CSS BAFFIN CRUISE BN82-039/ SABLE I. BANK AND BANQUEREAU. NOVEMBER 24 - DECEMBER 17, 1982.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC (TAPE#/REV)	SIDESCAN (TAPE#/REV)	AIRGUN (TAPE#/REV)	EQUIPMENT (WIND/WAVES...)	SHIP SPEED(KTS) HEADING(TRUE)
280	082-349-0330	43-59-14	61-26-49	81	36A(644)	39A(2047)	009(1239)	OK	5.7 153
281	082-349-0345	43-57-74	61-25-56	64	36A(969)	39A(2262)	009(1311)	OK	6.2 154
282	082-349-0400	43-56-44	61-24-63	58	36A(1252)	39A(2460)	009(1380)	OK	5.9 152
283	082-349-0415	43-55-04	61-23-67	56	36A(1519)	39A(2656)	009(1450)	S/S FISH ALT:40	6.6 153
284	082-349-0430	43-53-73	61-23-79	48	36A(1756)	39A(2842)	009(1522)	HUNTEC FISH DEP	6.2 154
285	082-349-0445	43-52-39	61-21-91	44	36A(1996)	39A(3022)	009(1592)	OK	6.1 155
286	082-349-0500	43-51-04	61-21-01	43	36A(2216)	40A(000)	009(1669)	OK	5.7 156
287	082-349-0515	43-49-75	61-20-13	39	36A(2417)	40A(479)	009(1735)	OK	5.3 151
288	082-349-0530	43-48-43	61-19-22	35	36A(2611)	40A(850)	009(1804)	OK	5.9 156
289	082-349-0547	43-46-94	61-18-29	38	36A(2836)	40A(1208)	009(1890)	OK	5.8 154
290	082-349-0600	43-45-85	61-17-61	43	36A(2978)	40A(1440)	009(1945)	OK	5.8 157
291	082-349-0615	43-44-60	61-16-75	42	36A(3148)	40A(1696)	009(2015)	OK	5.5 152

CSS BAFFIN CRUISE BN82-039/ SABLE I. BANK AND BANQUEREAU. NOVEMBER 24 - DECEMBER 17, 1982.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC (TAPE#/REV)	SIDESCAN (TAPE#/REV)	AIRGUN (TAPE#/REV)	EQUIPMENT (WIND/WAVES...)	SHIP SPEED(KTS) HEADING(TRUE)
292	082-349-0630	43-43-32	61-15-82	42	37A(350)	40A(1948)		AIRGUN DOWN	5.3 152
293	082-349-0645	43-42-12	61-14-83	42	37A(712)	40A(2168)		AIRGUN DOWN	6.1 149
294	082-349-0700	43-41-04	61-13-94	44	37A(1036)	40A(2378)		AIRGUN DOWN	5.2 151
295	082-349-0715	43-39-77	61-12-98	49	37A(1582)	40A(2762)	009(2183)	OK	5.2 153
296	082-349-0730	43-38-60	61-12-12	44	37A(1582)	40A(2762)	009(2183)	OK	5.2 153
297	082-349-0745	43-37-51	61-11-25	43	37A(1829)	40A(2947)	009(2254)	OK	5.5 149
298	082-349-0800	43-36-16	61-10-33	50	37A(2157)	40A(3124)	009(2325)	OK	5.7 153
299	082-349-0815	43-35-01	61-09-60	59	37A(2276)	41A(120)	009(2395)	START TAPE 41A!	5.9 154
300	082-349-0830	43-33-81	61-08-76	65	37A(2480)	41A(535)	009(2466)	OK	5.3 153
301	082-349-0845	43-32-68	61-07-91	62	37A(2673)	41A(877)	009(2535)	OK	5.5 154
302	082-349-0900	43-31-49	61-07-13	58	37A(2861)	41A(1182)	009(2606)	OK	4.7 152
303	082-349-0915	43-30-32	61-06-37	64	37A(3039)	41A(1459)	009(2677)	OK	4.8 153

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC (TAPE#/REV)	SIDESCAN (TAPE#/REV)	AIRGUN (TAPE#/REV)	EQUIPMENT (WIND/WAVES...)	SHIP SPEED(KTS) HEADING(TRUE)
304	082-349-0930	43-29-27	61-05-61	67	37A(3214)	41A(1718)	009(2748)	OK	5.0 152
305	082-349-0945	43-28-08	61-04-74	67	38A(292)	41A(1966)	009(2832)	OK	5.2 150
306	082-349-1000	43-26-97	61-03-84	67	38A(651)	41A(2180)	009(2890)	OK/ WEATHER CAL	5.0 148
307	082-349-1015	43-25-94	61-02-98	69	38A(987)	41A(2394)	009(2964)	OK	4.9 151
308	082-349-1032	43-24-61	61-01-99	73	38A(1315)	41A(2615)	009(3045)	OK	5.3 154
309	082-349-1045	43-23-66	61-01-33	90	38A(1532)	41A(2776)	009(3104	OK	5.2 151
310	082-349-1100	43-22-35	61-00-30	103	38A(1782)	41A(2960)	009(3176)	OK	5.2 147
311	082-349-1115	43-21-28	60-59-51	99	38A(2012)	41A(3139)	009(3249)	OK	5.8 153
312	082-349-1132	43-19-85	60-58-73	114	38A(2253)	42A(233)	009(3328)	OK	5.7 159
313	082-349-1145	43-18-32	60-58-45	136	39A(425)	42A(580)	009(3389)	OK	5.5 160
314	082-349-1200	43-17-74	60-57-41	177	39A(2618)	42A(923)	009(3457)	OK	5.6 151
315	082-349-1215	43-16-37	60-56-43	245	39A(2806)	42A(1229)	009(3529)	OK	6.0 154

CSS BAFFIN CRUISE BN82-039/ SABLE I. BANK AND BANQUEREAU. NOVEMBER 24 - DECEMBER 17, 1982.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC (TAPE#/REV)	SIDESCAN (TAPE#/REV)	AIRGUN (TAPE#/REV)	EQUIPMENT (WIND/WAVES...)	SHIP SPEED(KTS) HEADING(TRUE)
316	082-349-1230	43-15-04	60-55-77	327	38A(2950)		009(3601)	OK	4.8 185
317	082-349-1245	43-14-60	60-57-76	321	38A(3155)	42A(1753)	010(055)	OK	6.0 252
318	082-349-1300	43-14-13	60-59-60	325	39A(388)	42A(1989)	010(124)	OK	5.8 246
319	082-349-1315	43-13-66	61-01-49	316	39A(744)	42A(2212)	010(193)	OK	5.9 254
320	082-349-1330	43-13-26	61-03-44	469	39A(1062)	42A(2423)	010(339)	OK	5.5 248
321	082-349-1345	43-12-79	61-05-38	574	39A(1367)	42A(2622)	010(229)	OK	5.5 248
322	082-349-1400	43-12-22	61-07-23	*04			010(416)	OK	5.4 247
323	082-349-1415			0				FIX MISSED	0.0 0
324	082-349-1430	43-12-84	61-09-66	423	39A(2078)	43A(045)	010(548)	OK	5.6 335
325	082-349-1445	43-14-21	61-10-52	327	39A(2296)	43A(484)	010(620)	OK	6.1 336
326	082-349-1500	43-15-54	61-11-51	214	39A(2497)	43A(842)	010(692)	OK	5.9 332
327	082-349-1515	43-16-86	61-12-59	139	39A(2687)	43A(1155)	010(763)	OK	5.9 331

CSS BAFFIN CRUISE BN82-039/ SABLE I. BANK AND BANQUEREAU. NOVEMBER 24 - DECEMBER 17, 1982.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE#/REV)	AIRGUN	EQUIPMENT (WIND/WAVES...)	SHIP SPEED(KTS) HEADING(TRUE)
328	082-349-1530	43-18-10	61-13-50	108	39A(2870)	43A(1427)	010(834)	OK	6.0 332
329	082-349-1545	43-19-36	61-14-37	89	39A(3049)	43A(1689)	010(902)	OK	5.8 333
330	082-349-1600	43-20-76	61-15-37	79	39A(3208)	43A(1923)	010(974)	OK	5.9 333
331	082-349-1615	43-22-09	61-16-31	70	40A(355)	43A(2150)	010(1048)	OK	6.1 333
332	082-349-1630	43-23-38	61-17-23	68	40A(708)	43A(2357)	010(1114)	OK	5.8 333
333	082-349-1645	43-24-77	61-18-28	70	40A(1039)	43A(2563)	010(1186)	OK	6.1 331
334	082-349-1700	43-26-10	61-19-30	72	40A(1326)	43A(2644)	010(1256)	OK	6.1 330
335	082-349-1715	43-27-43	61-20-31	71	40A(1593)	43A(2644)	010(1328)	OK	6.0 331
336	082-349-1730	43-28-76	61-21-25	73	40A(1835)	43A(2644)	010(1399)	OK	5.6 333
337	082-349-1745	43-30-11	61-22-29	72	40A(2092)	43A(2644)	010(1480)	OK	5.9 330
338	082-349-1800	43-31-19	61-23-09	68	40A(2278)	43A(2674)	010(1541)	OK	5.8 333
339	082-349-1815	43-32-52	61-24-05	58	40A(2476)	43A(2835)	010(1611)	OK	6.0 333

CSS BAFFIN CRUISE BN82-039/ SABLE I. BANK AND BANQUEREAU. NOVEMBER 24 - DECEMBER 17, 1982.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC	SIDESCAN (TAPE#/REV)	AIRGUN	EQUIPMENT (WIND/WAVES...)	SHIP SPEED(KTS) HEADING(TRUE)
340	082-349-1830	43-33-95	61-24-96	53	40A(2674)	43A(3018)	010(1683)	OK/ WEATHER CAL	6.2 333
341	082-349-1845	43-35-38	61-25-84	51	40A(2775)	43A(3189)	010(1754)	OK	6.1 337
342	082-349-1900	43-36-74	61-26-65	47	40A(2952)	44A(293)	010(1823)	OK	6.2 337
343	082-349-1915	43-38-17	61-27-49	49	40A(3128)	44A(682)	010(1895)	OK	6.4 337
344	082-349-1930	43-39-57	61-28-40	53	41A(339)	44A(950)	010(1965)	OK	5.6 33
345	082-349-1945	43-40-98	61-29-39	51	41A(712)	44A(1250)	010(2036)	OK	6.1 332
346	082-349-2000	43-42-44	61-30-43	52	41A(1035)	44A(1528)	010(2108)	OK	6.4 333
347	082-349-2015	43-43-76	61-31-40	53	41A(1322)	44A(1779)	010(2175)	OK	5.9 333
348	082-349-2030	43-45-17	61-32-47	49	41A(1593)	44A(2021)	010(2248)	OK	6.5 333
349	082-349-2045	43-46-54	61-33-44	53	41A(1834)	44A(2240)	010(2320)	OK	6.0 332
350	082-349-2100	43-47-92	61-34-39	54	41A(2059)	44A(2445)	010(2389)	OK	6.3 334
351	082-349-2115	43-49-28	61-35-29	55	41A(2271)	44A(2644)	010(2458)	OK	5.9 354

CSS BAFFIN CRUISE BN82-039/ SABLE I. BANK AND BANQUEREAU. NOVEMBER 24 - DECEMBER 17, 1982.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC (TAPE#/REV)	SIDESCAN (TAPE#/REV)	AIRGUN (TAPE#/REV)	EQUIPMENT (WIND/WAVES...)	SHIP SPEED(KTS) HEADING(TRUE)
352	082-349-2130	43-50-09	61-35-88	55	41A(2484)	44A(2842)	010(2531)	OK	6.0 333
353	082-349-2145	43-51-96	61-37-16	58	41A(2673)	44A(3019)	010(2602)	OK	5.8 335
354	082-349-2200	43-53-37	61-38-10	61	41A(2860)	44A(3195)	010(2672)	OK	6.2 333
355	082-349-2215	43-54-87	61-39-20	65	41A(3046)	45A(255)	010(000)	OK	5.9 332
356	082-349-2230	43-56-14	61-40-13	70	42A(060)	45A(630)		AIRGUN DOWN	6.4 331
357	082-349-2245	43-57-42	61-41-07	84	42A(480)	45A(960)		AIRGUN DOWN	5.8 332
358	082-349-2300	43-58-65	61-42-11	86	42A(812)	45A(1215)		AIRGUN DOWN	5.9 327
359	082-349-2315	44-00-02	61-43-24	89	42A(1122)	45A(1525)		AIRGUN DOWN	6.0 332
360	082-349-2330	44-01-28	61-44-15	142	42A(1396)	45A(1776)		AIRGUN DOWN	6.3 332

CSS BAFFIN CRUISE SABLE I. BANK AND BANQUEREAU...BN82-039... NOVEMBER 24 - DECEMBER 17,1982

FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
1	2.0	36	2	HUMMOCKY SUBSTRATE	.....	.....
2	2.0	0	0	COMING ONTO SABLE I. BANK	.....	.....
3	1.5	35	2	.....	Refl(1) at 30m / Smooth	.....
4	2.0	33	3	BMC NOT WORKING	.....	.....
5	2.0	35	5	.....	.....	.....
6	4.0	33	3	2 SUBSTRATE REFLECTORS	Refl(1) at 35m ✓	.....
7	4.0	33	3	.....	Refl(1) at 30m ✓	.....
8	5.0	33	2	ACOUSTIC CLEAR SURFACE LAYER	Refl(1) at 25m ✓	.....
9	6.0	33	8	.....	Refl(1) at 30m ✓	.....
10	6.0	34	2	FLAT SUBSTRATE REFLECTOR	.....	.....
11	7.0	35	2	.....	.....	.....
12	4.0	34	2	EPC CAUSING NOISY RECORDS	Refl(1) at 20m ✓	.....
13	4.0	33	3	.....	Refl(1) at 20m ✓	.....
14	8.0	34	3	REFL. CONSTANT	.....	.....

REFLECTIVITY (1) AND (2) REFER TO THE RETURN ENERGY FROM THE SEA SURFACE AND SUBSURFACE RESPECTIVELY, NORMALISED TO THE OUTGOING PULSE ON THE HUNTEC DTS

SEDIMENT THICKNESS REFERS TO THE DEPTH OF THE MOBILE LAYER IN WHICH SEDIMENT WILL MOVE PERIODICALLY

CSS BAFFIN CRUISE SABLE I. BANK AND BANQUEREAU...BN82-039... NOVEMBER 24 - DECEMBER 17,1982

FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
15	6.0	33	2			
16	6.0	32	2		refl(1) at 20m	
17	7.0	33	2	FLAT LYING SUBSTRATE	refl(1) at 20m	
18	0.0	0	0			
19	10.0	33	2			
20	1.5	0	0	REFLECTIVITY DOWN	refl(1) at 20m	
21	1.5	0	0	AS ABOVE	refl(1) at 18m	
22	2.5	0	0	AS ABOVE	refl(1) at 20m	
23	2.0	33	2	POOR RECORDS	refl(1) at 20m	
24	5.0	33	2		refl(1) at 20m	
25	5.0	32	2		refl(1) at 20m	
26	7.0	31	7		South dipping beds	
27	5.5	30	14		refl(1) at 20m	
28	0.0	0	0		refl(1) at 20m	
29	4.0	30	7		refl(1) at 18m	

REFLECTIVITY (1) AND (2) REFER TO THE RETURN ENERGY FROM THE SEA SURFACE AND SUBSURFACE RESPECTIVELY, NORMALISED TO THE OUTGOING PULSE ON THE HUNTEC DTS

SEDIMENT THICKNESS REFERS TO THE DEPTH OF THE MOBILE LAYER IN WHICH SEDIMENT WILL MOVE PERIODICALLY

CSS BAFFIN CRUISE SABLE I. BANK AND BANQUEREAU...BN82-039... NOVEMBER 24 - DECEMBER 17,1982

FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
30	0.0	33	8		refr(1) at 18m	
31	1.0	0	0	SMALL SAND RIDGE	refr(1) at 23m	
32	0.0	0	0	SAND RIDGE:4M THICK	refr(1) at 28m	
33	4.0	0	0	SAND RIDGE	refr(1) at 30m	
34	2.0	32	5	SAND RIDGE:3M THICK	refr(1) at 30m	
35	0.0	30	7		refr(1) at 30m	
36	1.5	30	14	SAND RIDGE WITH SHELL BEDS	refr(1) at 30m	
37	4.0	29	6	SAND RIDGE WITH SHELL BEDS	refr(1) at 32m	
38	2.0	30	8	AS ABOVE	refr(1) at 30m	
39	1.5	30	3	SHELL BEDS	refr(1) at 27m	
40	6.0	26	3	Sand ridge/steep face. South	refr(1) at 34m	
41	4.0	28	3		refr(1) at 30m	
42	4.0	33	8		refr(1) at 24m	
43	3.0	33	8		refr(1) at 22m	
44	6.0	33	8	SAND RIDGE	refr(1) at 22m	

REFLECTIVITY (1) AND (2) REFER TO THE RETURN ENERGY FROM THE SEA SURFACE AND SUBSURFACE RESPECTIVELY, NORMALISED TO THE OUTGOING PULSE ON THE HUNTEC DTS

SEDIMENT THICKNESS REFERS TO THE DEPTH OF THE MOBILE LAYER IN WHICH SEDIMENT WILL MOVE PERIODICALLY

CSS BAFFIN CRUISE SABLE I. BANK AND BANQUEREAU...BN82-039... NOVEMBER 24 - DECEMBER 17,1982

FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
45	8.0	33	8	AS ABOVE	refl(1) at 20m	
46	8.0	33	5	AS ABOVE	refl(1) at 18m	
47	6.0	32	8	SAND RIDGE	refl(1) at 18m	
48	9.0	32	7	AS ABOVE	refl(1) at 25m	
49	6.0	35	5	IRREGULAR REFLECTOR AT 15M	refl(1) at 29m	
50	2.0	37	3	IRREGULAR REFLECTOR AT 12M	refl(1) at 25m	
51	0.0	37	3	IRREGULAR LAYER AT 10M	not visible	
52	0.0	37	3	MOTTLEY SUBSTRATE(TILL?)	" "	
53	3.0	37	2	IRREGULAR SUBSTRATE AT 10M	" "	
54	2.5	38	3	AS ABOVE	" "	
55	3.0	38	3	IRREG. SUBSTRATE(TILL?)	" "	
56	5.0	40	3	AS ABOVE	" "	
57	0.0	40	2	THIN SAND VENEER OVER TILL	" "	
58	0.0	39	2	AS ABOVE	" "	
59	0.0	35	3	AS ABOVE	" "	

REFLECTIVITY (1) AND (2) REFER TO THE RETURN ENERGY FROM THE SEA SURFACE AND SUBSURFACE RESPECTIVELY, NORMALISED TO THE OUTGOING PULSE ON THE HUNTEC DTS

SEDIMENT THICKNESS REFERS TO THE DEPTH OF THE MOBILE LAYER IN WHICH SEDIMENT WILL MOVE PERIODICALLY

CSS BAFFIN CRUISE SABLE I. BANK AND BANQUEREAU...BN82-039... NOVEMBER 24 - DECEMBER 17,1982

FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
60	0.0	32	2	R(1) FLUCTUATING		
61	0.0	35	2	SCATTERERS WITHIN SEDS.		
62	0.0	32	4	AS ABOVE		
63	0.0	35	3	AS ABOVE		
64	1.0	38	8	THIN VENEER OVER TILL		
65	1.0	36	3	WEAK REFLECTOR AT 15M		
66	2.5	33	3	R(1) CONSTANT	Refl at 28m	
67	5.0	32	3	WEAK REFLECTOR AT 10M	refl at 30m	
68	5.0	32	2	INTERNAL REFLECTORS IN SAND	refl at 30m	
69	0.0	0	0	STYLUS BROKEN	refl at 26m	
70	5.0	30	5	POOR QUALITY RECORDS	refl at 25m	
71	4.0	32	2	AS ABOVE	refl at 28m	
72	2.0	0	0	AS ABOVE		
73	0.0	0	0	AS ABOVE		
74	0.0	0	0	AS ABOVE		

REFLECTIVITY (1) AND (2) REFER TO THE RETURN ENERGY FROM THE SEA SURFACE AND SUBSURFACE RESPECTIVELY, NORMALISED TO THE OUTGOING PULSE ON THE HUNTEC DTS

SEDIMENT THICKNESS REFERS TO THE DEPTH OF THE MOBILE LAYER IN WHICH SEDIMENT WILL MOVE PERIODICALLY

CSS BAFFIN CRUISE SABLE I. BANK AND BANQUEREAU...BN82-039... NOVEMBER 24 - DECEMBER 17,1982

FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
75	1.5	0	0	SOUTH SABLE I. BANK	.....	.....
76	4.0	0	0		.....	.....
77	3.0	0	0		.....	.....
78	3.0	0	0		.....	.....
79	3.0	0	0		.....	.....
80	3.0	0	0		.....	.....
81	7.0	0	0		.....	.....
82	7.0	0	0		.....	.....
83	5.0	0	0		.....	.....
84	6.0	0	0		.....	.....
85	4.0	0	0		.....	.....
86	4.0	0	0		.....	.....
87	1.0	0	0		.....	.....
88	1.0	0	0		.....	.....
89	0.0	0	0		.....	.....

REFLECTIVITY (1) AND (2) REFER TO THE RETURN ENERGY FROM THE SEA SURFACE AND SUBSURFACE RESPECTIVELY, NORMALISED TO THE OUTGOING PULSE ON THE HUNTEC DTS

SEDIMENT THICKNESS REFERS TO THE DEPTH OF THE MOBILE LAYER IN WHICH SEDIMENT WILL MOVE PERIODICALLY

CSS BAFFIN CRUISE SABLE I. BANK AND BANQUEREAU...BN82-039... NOVEMBER 24 - DECEMBER 17,1982

FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
90	0.0	0	0			
91	0.0	0	0			
92	1.5	0	0	DIFFUSED SUBSTRATE		
93	4.0	0	0			
94	5.0	0	0			
95	5.0	29	2			
96	2.0	29	2	DIFFUSED REFLECTORS=TILL?		
97	0.0	33	5	R(1) MODERATELY IRREGULAR		
98	0.0	35	3	AS ABOVE	Bedrock close to surface	
99	0.0	33	5			
100	2.0	35	3			
101	1.5	31	2	IRREGULAR SUBSTRATE		
102	4.0	31	2	DIFFUSE REFLECTORS		
103	5.0	30	2	R(1) CONSTANT		
104	7.0	30	2	HORIZONTAL REFLECTOR AT 16M		

REFLECTIVITY (1) AND (2) REFER TO THE RETURN ENERGY FROM THE SEA SURFACE AND SUBSURFACE RESPECTIVELY, NORMALISED TO THE OUTGOING PULSE ON THE HUNTEC DTS

SEDIMENT THICKNESS REFERS TO THE DEPTH OF THE MOBILE LAYER IN WHICH SEDIMENT WILL MOVE PERIODICALLY

CSS BAFFIN CRUISE SABLE I. BANK AND BANQUEREAU...BN82-039... NOVEMBER 24 - DECEMBER 17,1982

FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
105	6.0	33	7		.....	.....
106	5.0	31	8		.....	.....
107	6.0	30	7		.....	.....
108	3.0	33	3		Refl(1) at 12 m	.....
109	5.0	32	2		Refl(1) at 15 m	.....
110	6.0	32	7	INTERNAL REFLS.DIPPING WEST	Refl(1) at 15 m	.....
111	6.0	30	8	" " " "	?R close to surface	.....
112	4.0	35	8		"	.....
113	5.0	31	2	R(1) CONSTANT	"	.....
114	5.0	32	2		"	.....
115	5.0	32	2	ABUNDANT RINGING	"	.....
116	5.0	34	8	POOR QUALITY RECORDS	"	.....
117	6.0	33	8	N. DIPPING INT.REFLS.	"	.....
118	6.0	33	8		"	.....
119	5.0	32	8		"	.....

REFLECTIVITY (1) AND (2) REFER TO THE RETURN ENERGY FROM THE SEA SURFACE AND SUBSURFACE RESPECTIVELY, NORMALISED TO THE OUTGOING PULSE ON THE HUNTEC DTS

SEDIMENT THICKNESS REFERS TO THE DEPTH OF THE MOBILE LAYER IN WHICH SEDIMENT WILL MOVE PERIODICALLY

CSS BAFFIN CRUISE SABLE I. BANK AND BANQUEREAU...BN82-039... NOVEMBER 24 - DECEMBER 17,1982

FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
120	1.0	32	8	Base of Sand not Seen	"	"
121	0.0	32	8		"	Abundant 'Sprigs' of Shell beds ~20m diameter
122	3.0	31	8		"	Shells on Sand
123	~~3.0~~ 0.0	31	8		"	"
124	~~9.0~~ 0.0	32	2		B.R. @ 10m	"
125	~~15.0~~ 0+0	32	2		B.R. at 15m	Shells diffuse
126	~~15.0~~ 0+0	32	2		B.R. at 18m	Sand Continues
127	~~15.0~~ 0+0	32	2		B.R at 18m	Top reflector surface
128	~~18.0~~ 0+0	32	2		B.R. at 25m	"
129	~~27.0~~ 0+0	28	3		B.R. at 30m	"
130	~~24.0~~ 0.0	30	2		B.R. at 32m	"
131	~~25.0~~ 0+0	32	8		two reflectors Seen B.R. at 35m	"
132	10.0	40	2		Bl. at 33m	"
133	4.0	40	2		B.R at 35m	"
134	35.0	32	2	CENTRE OF BURIED CHANNEL (30m deep)	B.R at 34m	"

REFLECTIVITY (1) AND (2) REFER TO THE RETURN ENERGY FROM THE SEA SURFACE AND SUBSURFACE RESPECTIVELY, NORMALISED TO THE OUTGOING PULSE ON THE HUNTEC DTS

SEDIMENT THICKNESS REFERS TO THE DEPTH OF THE MOBILE LAYER IN WHICH SEDIMENT WILL MOVE PERIODICALLY

CSS BAFFIN CRUISE SABLE I. BANK AND BANQUEREAU...BN82-039... NOVEMBER 24 - DECEMBER 17,1982

FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
135	2.0	33	8		B.R at 22m	2-D. Megaripples
136	0.0	0	0	SLUMPED SEDS-W.OF THE GULLEY	flank of The Gullies	too deep
137	0.0	0	0	PASSING ACROSS THE GULLEY	too deep	"
138	0.0	0	0	AS ABOVE-TOO DEEP	"	"
139	0.0	0	0	AS ABOVE	"	"
140	0.0	0	0	AS ABOVE	"	"
141	0.0	0	0	AS ABOVE	Slumped sediments	too deep
142	0.0	0	0	AS ABOVE	" "	too deep
143	0.0	0	0	APPROACHING S. BANQUEREAU	" "	"
144	2.0	32	6	ERRATIC REFLECTORS	—	Soft bottom
145	2.0	42	3	RAPID DEPTH CHANGE	—	Hard bottom
146	2.5	37	3	FEATURELESS SUBSTRATE	Bed rock at 65m	trawl marks
147	2.0	35	3	AS ABOVE	B.R. surface flat lying B.R. at 55m	Sand thickening
148	2.0	38	3	DIFFUSED SUBSTRATE	BR at 50m	?
149	2.0	37	3	AS ABOVE	BR at 58m	Hard bottom

REFLECTIVITY (1) AND (2) REFER TO THE RETURN ENERGY FROM THE SEA SURFACE AND SUBSURFACE RESPECTIVELY, NORMALISED TO THE OUTGOING PULSE ON THE HUNTEC DTS

SEDIMENT THICKNESS REFERS TO THE DEPTH OF THE MOBILE LAYER IN WHICH SEDIMENT WILL MOVE PERIODICALLY

CSS BAFFIN CRUISE SABLE I. BANK AND BANQUEREAU...BN82-039... NOVEMBER 24 - DECEMBER 17,1982

FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
150	1.5	42	3	AS ABOVE	Surf. material - no structure	"
151	2.0	42	5	HEADNG NORTH ONTO BANQUEREAU	B.R at 40m	megaripples
152	1.5	41	3	R(1) CONSTANT	B.R at 32m	Trawl marks
153	1.5	42	3		B.R at 32m	Hard bottom
154	2.0	42	3		—	"
155	1.0	42	4	ERRATIC FISH MOTION	Beds dipping South	"
156	0.0	35	8		B.R at 35m	"
157	0.0	33	8		B.R. at 40m	"
158	1.0	28	7	THIN VENEER OVER IRREG BASE	B.R at 42m	2-D megaripples appearing
159	1.0	30	7		B.R. at 40m	(excellent examples)
160	1.5	27	2		B.R at 40m	"
161	1.5	28	6	SURF. VENEER WELL DEFINED	B.R at 40m	"
162	1.5	31	2	FLAT SUBSTRATE	B.R at 70m	"
163	2.5	33	2		B.R at 65m	"
164	4.0	32	2		B.R at 55m	Continuous band

REFLECTIVITY (1) AND (2) REFER TO THE RETURN ENERGY FROM THE SEA SURFACE AND SUBSURFACE RESPECTIVELY, NORMALISED TO THE OUTGOING PULSE ON THE HUNTEC DTS

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FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
165	4.5	32	2		large channel in B.R	"
166	10.0	32	2	EDGE OF LARGE SAND REDGE	—	"
167	15.0 ~~0.0~~	34	2	BOTTOM OF MOBILE LAYER ?	—	"
168	20.0 ~~0.0~~	35	2	AS ABOVE	B.R at 55m	Sand ripples - well developed. Contour parallel
169	25.0 ~~0.0~~	33	2	AS ABOVE	B.R at 70m	"
170	15.0 ~~0.0~~	0	0	AS ABOVE	B.R at 55m	"
171	10.0 ~~0.0~~	43	3		B.R at 45m	" (good example)
172	6.0 ~~0.0~~	35	3	HARD BOTTOM/REFL.ERRATIC	B.R at 55m	"
173	1.0	37	8	SMALL S	B R at 50m	"
174	0.0	37	8	SMALL SAND RIDGE:2M HIGH	B.R at 45m	"
175	0.0	33	8		B.R at 40m	"
176	2.0	37	8	SMALL SAND RIDGE	B.R at 40m	"
177	0.0	35	2		B.R at 37m	"
178	0.0	42	8		B.R at 30m	"
179	0.0	35	2		B.R at 55m channel	"

REFLECTIVITY (1) AND (2) REFER TO THE RETURN ENERGY FROM THE SEA SURFACE AND SUBSURFACE RESPECTIVELY, NORMALISED TO THE OUTGOING PULSE ON THE HUNTEC DTS

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FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
180	2.5	35	8	SMALL SAND RIDGE	buried channel	"
181	2.5	36	3		—	"
182	0.0	35	8		—	"
183	1.0	41	8	BURIED CHANNEL;6M DEEP	—	"
184	2.0	37	6	IRREG. SUBSTRATE;10M	B.R at 66M	"
185	0.0	40	3		—	"
186	0.0	42	3	SUBSTRATE AT 7M	—	"
187	1.5	31	3	SMALL BURIED CHANNEL(4m)	—	"
188	2.0	35	2		System down	mottled reflectivity
189	0.0	33	2	FLAT,FEATURELESS SEABED	"	"
190	0.0	35	3	AS ABOVE	"	"
191	0.0	35	3	AS ABOVE	"	sand ribbons
192	0.0	35	3	AS ABOVE	"	
193	0.0	32	3	AS ABOVE	"	
194	0.0	34	2	AS ABOVE	"	

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FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
195	0.0	32	8	AS ABOVE	"	ice scour?
196	0.0	31	10	AS ABOVE	"	mottled reflectivity
197	0.0	32	8	AS ABOVE	-	"
198	~~0.0~~ 8.0	33	3	AS ABOVE	B.R at 30m	"
199	~~0.0~~	33	8	AS ABOVE	B.R at 30 m	"
200	~~0.0~~	33	8	AS ABOVE	B.R at 36m	"
201	~~0.0~~ 12.0	35	2	AS ABOVE	—	sand ribbons
202	~~0.0~~ 15.0	35	3	AS ABOVE	B.R at 37m	"
203	~~0.0~~ 16.0	33	10	AS ABOVE	B.R at 42m	"
204	~~0.0~~ 13.0	33	5	AS ABOVE	B.R at 42m	"
205	~~0.0~~ 15.0	30	8	REFL. MOD. ERRATIC	B.R at 45m	"
206	~~0.0~~ 14.0	35	8		B.R at 46m	"
207	0.0	35	3		B.R at 53m	"
208	0.0	37	7		B.R at 53m	"
209	0.0	35	8		—	"

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FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
210	~~0.0~~ 20.0	33	8			
211	17.0 ~~0.0~~	33	5	DIFFUSED INT. REFL.		
212	15.0 ~~0.0~~	33	2	RINGING AT TILL(?) SURFACE	unit① Sand / unit① 10m thick unit / unit③ 30m unit from B.R.	
213	15.0 ~~1.5~~	35	3		Another reflector at 25m B.R at 60m	
214	15.0	35	2		Underlying unit. Crops out unit②	
215	5.0	35	2	INT. REFLECTOR DIPPING N	B.R at 60m	
216	6.0	33	2	REFL. CONSTANT	Unit③ crops out	plane sand
217	4.0	0	0	well developed Mobile Layer	"	"
218	3.0 (20.0)	0	0	INT. REFL. DIPPING N	B.R. dipping South	Sand ribbons
219	8.0(23.0)	0	0	Coherent Substrate	"	"
220	5.0(40.0)	0	0	REFL.DOWN	"	plane sand
221	4.0(20.0)	0	0	DIFFUSED HUMMOCKY SUBSTRATE	B.R. at 45m	trawl marks on sand.
222	4.0(20.0)	0	0	TRANSPARENT SURFACE LAYER	B.R at 45m	trawl marks (many)
223	4.0(20.0)	0	0	SOUTH FLANK;BANQUEREAU	B.R. at 55m	"
224	5.0(17.0)	0	0		B.R at 55m	"

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FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
225	~~32.0~~ 20.0	32	2	BURIED CHANNEL(1)	BR @ 46m	plane sand
226	~~18.0~~ 26.0	30	2	BURIED CHANNEL(2)		"
227	38.0	35	3	BURIED CHANNEL(3)		"
228	~~3.0~~ 40.0	37	3	well developed mobile layer	strata dipping south	Sand ribbons (parallel to contours)
229	~~3.0~~ 34.0	37	5			"
230	~~2.0~~ 30.0	35	3			"
231	~~2.5~~ 17.0	37	2			"
232	~~2.5~~ 10.0	35	2	HUMMOCKY, DIFFUSED SUBSTRATE		plane sand
233	2.5	35	2	REFL. CONSTANT	B.R at 65m	"
234	4.0	35	2	thick sand layer	B.R at 64m	Mottled sand
235	8.0	35	2		BR at 65m	plane sand
236	0.0	37	2	ACOUSTIC CLEAR SAND	refr (2) at 16m (top of hill)	"
237	0.0	31	8		refr at 20.0m	"
238	5.0	32	3		back of unit (2) at 17m	"
239	2.0	34	8		back of unit (2) at 16m	"

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240	0.0	30	8		Base of unit① at 4m	"
241	3.5	32	3		Base of unit① at 15m	
242	1.0	38	9	HORIZ.REFLECTOR	Base of unit① at 15m. Base of unit① @ 40m B.R @ 50m	poorly defined - negligible
243	1.0	35	2	HORIZ. REFLEC.@12M		sandy bed
244	7.0	31	8	HORIZ. REFLEC@10M		"
245	2.5	33	2		B.R at 45m	Sand ribbons
246	2.0	37	2		B.R at 75m	"
247	2.0	35	2	SMALL BURIED CHANNEL@8M DEEP		"
248	0.0	32	3			" trawl marks or Anchor lines
249	0.0	33	3	SMALL BURIED CHANNEL@7M DEEP	B.R at 65m	
250	0.0	33	7		B.R at 65m	Mottled surface - thin sand veneer.
251	1.0	35	5	Buried Channel (15m deep)		Current lineations
252	12.0	35	8	BURIED CHANNEL (15m deep)		Mare land
253	3.0	30	2	BEDROCK(?) AT 15M		"
254	2.0	37	2			"

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255	0.0	37	2			
256	5.0	35	2			Current ripples
257	1.0	30	4	HORIZ. REFL.:7M	B.R. high	"
258	2.5	32	2			"
259	2.5	33	2	SMALL SAND RIDGE:4M HIGH		"
260	0.0	32	2	HORIZ. REFL.:18M	B.R. high	rhythmic bedforms
261	5.0	27	3			"
262	1.0	35	2	HORIZ. REFL.:12M	B.R. high	"
263	0.0	30	2	2 BURIED CHANNELS(7m deep)	—	"
264	0.0	0	0		—	"
265	2.5	0	0		—	"
266	0.0	0	0		—	"
267	0.0	0	0		—	"
268	0.0	35	3		—	"
269	0.3	35	3	THICKNESS INFERRED FROM S/S	—	"

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270	0.3	31	7	AS ABOVE	.....	.....
271	0.3	35	6	NO INTERNAL STRAT. TILL?	.....	.....
272	0.3	33	7	AS ABOVE	.....	.....
273	0.3	30	8	AS ABOVE	.....	.....
274	0.3	30	8	MOTTLEY INTERNAL PATTERNS	no obvious reflectors	high wave interference
275	0.3	33	8	AS ABOVE	till? close to surface	" Sandy to surface
276	0.3	32	8	AS ABOVE	.....	"
277	0.3	32	8	AS ABOVE	.....	"
278	0.3	32	8	AS ABOVE	.....	"
279	0.3	35	8	AS ABOVE	.....	"
280	0.3	35	9	AS ABOVE	.....	"
281	0.3	32	8	AS ABOVE	.....	"
282	0.3	33	8	AS ABOVE	.....	"
283	0.0	33	8	AS ABOVE	.....	"
284	1.0	33	7	AS ABOVE	.....	Current lineations

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285	2.5	34	2	AS ABOVE	Rll close to surface	Sandy bottom
286	3.0	33	3	AS ABOVE		"
287	4.0	33	8	AS ABOVE		"
288	0.0	36	2	AS ABOVE		Current lineations
289	7.0	33	3	BURIED CHANNEL!16M DEEP		mottled bedrock
290	3.0	33	3			"
291	1.0	30	7			"
292	3.0	30	3	SMALL SAND RIDGE!4M HIGH		"
293	0.0	40	3	Sand lens in \ local depression		"
294	1.5	35	3			Hard reflective bedrock
295	0.0	31	8			Wave interference
296	3.0	32	8			" plane bedded
297	2.0	28	8			" "
298	0.0	32	8			"
299	2.0	35	8	FEATURELESS SAND RIDGE		"

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300	1.0	35	3	HORIZ. LAM. SAND		"
301	0.0	35	3			"
302	0.0	35	2			" (increased refl.)
303	0.0	38	2	LAM.SAND WITH ACTIVE MEGA'S		"
304	5.0	33	2	AS ABOVE - Gas masking		"
305	5.0	23	2	AS ABOVE - " "		Hard bottom
306	1.0	35	3		B. Rat 15m (till outlier?)	
307	3.0	35	2	LENSE OF SURF. SAND	B. Rat 15m "	Hard to sand edge
308	0.0	35	4	TILL OVER BEDROCK:9M	Mound of till 25m thick	Bottom loll reflective
309	0.0	35	8	TILL OVER BEDROCK:1.0M	B.R. close to surface	
310	0.0	40	8	TILL OVER BEDROCK:2.5M		
311	0.0	30	12	TILL OVER BEDROCK:1.5M		patchy sand
312	0.0	12	6		30 m of Emerald silt	
313	0.0	8	4	lam-Silts : Gas masking TILL-AT-SURFACE	47 m of Emerald silt	Low reflectivity
314	0.0	10	5		45m of Emerald silt	"

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315	21.0	16	6	" "	21m of Emerald silt	"
316	0.0	32	7	Bedrock high	till mound	hard refl. mound
317	2.0	28	7	POCKET OF SILT	blank B.R. surface... clipping	Sft. Substrate
318	0.0	32	3	HARD BOTTOM	B.R. surface at 110m	Hard mound
319	1.0	32	2		B.R. surface at 90m	"
320	20.0	30	2	SLUMPING OF EMERALD SILTS	40m of Emerald silt	Sft. superficial material
321	2.0	32	3	ACOUSTIC MASKING	B.R. surface at 120m	low reflect. flat (Sand)
322	8.0	30	3		B.R. channel (200 M fm)	Shell beds
323	25.0	15	2	SLUMPED EMERALD SILT **	20m of Emerald silt	flat hard bed
324	40.0	28	5	SLUMPED SEDIMENTS IN TROUGH	50m of Emerald silt	"
325	40.0	29	2	CONFORM. LAMINS	45m of Emerald silt	"
326	10.0	31	5	SLUMPED SEDS/BASE OF SLOPE	15m of Emerald silt	"
327	0.0	0	0	EAST BAR/FISH GROUNDED	Horizontal reflectors at 130m	
328	0.0	0	0	EQUIPMENT INBOARD	Horiz. refl. continues.	
329	0.0	0	0	AS ABOVE	" " "	

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330	0.0	0	0	AS ABOVE	—	
331	0.0	0	0	AS ABOVE	well developed bank sequence back of sand 20m	
332	0.0	37	7	W. FLANK OF THE GULLEY	Base of unit(1) at 35m	
333	0.0	0	0	SLUMPED EMERALD SILTS	irregular topo	
334	0.0	0	0	SLUMPED EMERALD SILTS	no penetration	
335	7.0	42	9	SLUMPS CONTINUE	—	
336	0.0	25	7	HIGHLY CONTORTED SLUMPS	30m of overburden	
337	0.0	25	10		—	
338	0.0	0	0	REFLC. HIGHLY ERRATIC	—	
339	0.0	0	0	SLUMPS/POOR QUALITY RECORDS	back of the Gulley	
340	0.0	0	0	SLUMPS AT BASE OF EAST FLANK	—	
341	0.0	0	0		wedge of fill	
342	0.0	0	0		"	
343	0.0	0	0		"	
344	0.0	0	0		"	

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345	0.0	37	8	EAST FLANK OF THE GULLEY	reflector within B.R.	
346	1.0	37	5	DIFFUSED SUBBOTTOM REFLECTOR	flat lying substrate	
347	1.0	34	3	Hummocky surface – Slumping ?	dipping east	
348	2.0	35	2			
349	0.0	38	8			
350	1.0	33	4			
351	1.0	0	0			
352	1.0	32	7	CLEAR SAND OVER FLAT SUBSTRATE		
353	1.5	32	2	AS ABOVE		
354	1.5	33	2	AS ABOVE		
355	~~2.0~~ 10.0	37	2	AS ABOVE		
356	~~2.5~~ 15.0	37	2	AS ABOVE		
357	~~4.0~~ 17.0	36	2	AS ABOVE		
358	~~4.0~~ 17.0	34	2	AS ABOVE		
359	~~2.0~~ 20.0	35	3	AS ABOVE		

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360	4-0 25.0	37	3	AS ABOVE	horiz. eff. below Sand Wav.	
361	5-0 25.0	38	3	AS ABOVE		
362	7.0 25.0	43	9	AS ABOVE		
363	3-5 20.0	34	2	HORIZ. INT. REFLECTORS		
364	1-5 25.0	35	2	VENEER OF SAND ON FLAT SUBST.		
365	1-5 25.0	37	3	AS ABOVE		
366	2.0 25.0	38	5	AS ABOVE		
367	1-0 30.0	42	9	ACTIVE MEGA'S		
368	1-0 30.0	42	8	AS ABOVE		
369	2-0 30.0	40	3	AS ABOVE		
370	7-0 20.0	40	3	ACTIVE MEGA'S/CANYON FLANK		
371	8.0	37	2			
372	0.0	0	0	TOO DEEP		
373	0.0	0	0	AS ABOVE		
374	0.0	0	0	AS ABOVE	Slumped Sediments	

REFLECTIVITY (1) AND (2) REFER TO THE RETURN ENERGY FROM THE SEA SURFACE AND SUBSURFACE RESPECTIVELY, NORMALISED TO THE OUTGOING PULSE ON THE HUNTEC DTS

SEDIMENT THICKNESS REFERS TO THE DEPTH OF THE MOBILE LAYER IN WHICH SEDIMENT WILL MOVE PERIODICALLY

CSS BAFFIN CRUISE SABLE I. BANK AND BANQUEREAU...BN82-039... NOVEMBER 24 - DECEMBER 17,1982

FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
375	0.0	0	0	AS ABOVE / Slumps	...Slumps...	
376	0.0	0	0	Slumps.	...Slumps...	
377	1.0	0	0	HUMMOCKY DISSECTED SUBSTRATE	...wedge of fill...	
378	1.0	0	0		...B.R. at 70m...	
379	4.0	0	0		...B.R. at 60m...	
380	14.0	0	0		...reflector at 80m...	
381	0-0 26.0	0	0	MOVING ONTO BANQUEREAU	...reflector at 90m...	
382	0-0 23.0	32	2	SMOOTH/FEATURELESS SURFACE		
383	0-0 24.0	32	3	NO INTERNAL REFLECTORS		
384	0-0 20.0	32	8		...reflector at 60m...	
385	0-0 27.0	32	5		...reflector at 70m...	
386	0-0 25.0	32	3			
387	0-0 20.0	32	7	BEDROCK AT 17M		
388	0-0 18.0	36	7			
389	0-0 27.0	32	3			

REFLECTIVITY (1) AND (2) REFER TO THE RETURN ENERGY FROM THE SEA SURFACE AND SUBSURFACE RESPECTIVELY, NORMALISED TO THE OUTGOING PULSE ON THE HUNTEC DTS

SEDIMENT THICKNESS REFERS TO THE DEPTH OF THE MOBILE LAYER IN WHICH SEDIMENT WILL MOVE PERIODICALLY

CSS BAFFIN CRUISE SABLE I. BANK AND BANQUEREAU...BN82-039... NOVEMBER 24 - DECEMBER 17,1982

FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
390	0.0 24.0	30	11	LARGE SAND RIDGE	Interbed substrate at 5.0m	
391	0.0 10.0	35	13	LARGE SAND RIDGE		
392	0.0 18.0	32	7	LARGE SAND RIDGE		
393	3.0 17.0	30	7	FLAT SUBSTRATE AT 17M		
394	1.5 13.0	34	3	FLAT SUBSTRATE AT 13M		
395	2.0 15.0	33	3	LARGE SAND RIDGE		
396	5.0 16.0	33	8	AS ABOVE/FLAT SUBSTRATE AT 15M		
397	0.0 16.0	28	13	AS ABOVE		
398	0.0 16.0	35	7	AS ABOVE		
399	0.0 13.0	39	9	AS ABOVE		
400	0.0 9.0	41	3	AS ABOVE/FLAT SUBSTRATE AT 8M		
401	2.0 8.0	35	2	AS ABOVE/SUBSTRATE AT 8M		
402	0.0 14.0	35	8	RINGING SEABED		
403	2.0 10.0	38	2	SUBSTRATE AT 10M		
404	5.0	33	2			

REFLECTIVITY (1) AND (2) REFER TO THE RETURN ENERGY FROM THE SEA SURFACE AND SUBSURFACE RESPECTIVELY, NORMALISED TO THE OUTGOING PULSE ON THE HUNTEC DTS

SEDIMENT THICKNESS REFERS TO THE DEPTH OF THE MOBILE LAYER IN WHICH SEDIMENT WILL MOVE PERIODICALLY

CSS BAFFIN CRUISE SABLE I. BANK AND BANQUEREAU...BN82-039... NOVEMBER 24 - DECEMBER 17,1982

FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
405	0.0	35	3		Bedrock/strata beyond 200 msecs	
406	12.0	35	3		"	
407	0.0	33	2		"	
408	8.0	35	2			
409	8.0	43	9	INT. REFLECTORS DIPPING E		
410	1.0	35	3			
411	0.0	25	11	ACTIVE MEGA'S	55m of surficial deposits	
412	15.0	28	12	ACTIVE MEGA'S		
413	0.0	15	15	SAND WAVES/MEGA'S		
414	0.0	31	2	SHELL BEDS AT SURFACE	faint reds wedge out	
415	0.0	35	3	ACOUSTIC MASKING		
416	0.0	5	7	SAND WAVES/MEGA'S	diapiric structure	
417	0.0	20	10	THICK LAM. SILTS	Bedrock high	
418	0.0	34	7	STEEP SLOPE/SLUMPS AT BASE		
419	20.0	28	7	GAS CHARGED SEDS		

REFLECTIVITY (1) AND (2) REFER TO THE RETURN ENERGY FROM THE SEA SURFACE AND SUBSURFACE RESPECTIVELY, NORMALISED TO THE OUTGOING PULSE ON THE HUNTEC DTS

SEDIMENT THICKNESS REFERS TO THE DEPTH OF THE MOBILE LAYER IN WHICH SEDIMENT WILL MOVE PERIODICALLY

CSS BAFFIN CRUISE SABLE I. BANK AND BANQUEREAU...BN82-039... NOVEMBER 24 - DECEMBER 17,1982

FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
420	19.0	30	7		lam. unit over K11	
421	18.0	31	7	HORIZ. LAM SILTS		
422	15.0	30	6	HUMMOCKY SUBSTRATE		
423	17.0	30	7			
424	8.0	30	2	LAM. SILTS		
425	20.0	0	0	SLUMPS WITH ACTIVE MEGA'S	Slumping	
426	0.0	20	17	ERRATIC REFLECTORS		
427	0.0	40	12	MOVING ONTO BANQUEREAU		
428	0.0	0	0	SLUMPS		
429	0.0	0	0	EAST FLANK OF THE GULLEY		
430	1.0	0	0	REFLECT.NOT WORKING	Edge of sand wedge	
431	0.3	0	0	THIN VENEER OF SAND		
432	0.3	0	0	DIFFUSED SUBSTRATE		
433	0.3	35	8	BEDROCK AT 10M		
434	0.3	33	8	FLAT LYING BEDROCK AT 10M		

REFLECTIVITY (1) AND (2) REFER TO THE RETURN ENERGY FROM THE SEA SURFACE AND SUBSURFACE RESPECTIVELY, NORMALISED TO THE OUTGOING PULSE ON THE HUNTEC DTS

SEDIMENT THICKNESS REFERS TO THE DEPTH OF THE MOBILE LAYER IN WHICH SEDIMENT WILL MOVE PERIODICALLY

CSS BAFFIN CRUISE SABLE I. BANK AND BANQUEREAU...BN82-039... NOVEMBER 24 - DECEMBER 17,1982

FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
435	~~0.5~~ 8.0	28	7	AS ABOVE/~~BEDROCK AT 8M~~	.....	.....
436	~~0.3~~ 9.0	38	8	AS ABOVE/~~BEDROCK AT 9M~~	.....	.....
437	0.3	33	5	SAND RIDGE 12M HIGH	.....	.....
438	0.3	38	8	SAND RIDGE	.....	.....
439	~~0~~ 10.0	35	2	~~BEDROCK AT 10M~~	.....	.....
440	5.0	35	2	AS ABOVE	.....	.....
441	~~0~~ 8.0	37	4	BEDROCK ~~CLOSE TO SURFACE~~ at 8m	..Many refl. at 30m. Dipping east.	.....
442	~~0~~ 12.0	35	3	~~BEDROCK AT 12M~~	.....	.....
443	~~0~~ 17.0	35	3	~~BEDROCK AT 17M~~	.....	.....
444	~~0~~ 17.0	34	3	AS ABOVE	.....	.....
445	~~0~~ 20.0	35	3	AS ABOVE	.....	.....
446	~~0~~ 19.0	28	3		.....	.....
447	~~0~~ 19.0	32	8		.....	.....
448	~~2.0~~ 21.0	33	7	mobile layer 2.0 m	.....	.....
449	~~4.0~~ 20.0	29	15	SURFACE RINGING mobile layer 4.0	.....	.....

REFLECTIVITY (1) AND (2) REFER TO THE RETURN ENERGY FROM THE SEA SURFACE AND SUBSURFACE RESPECTIVELY, NORMALISED TO THE OUTGOING PULSE ON THE HUNTEC DTS

SEDIMENT THICKNESS REFERS TO THE DEPTH OF THE MOBILE LAYER IN WHICH SEDIMENT WILL MOVE PERIODICALLY

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FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
450	~~1.0~~ 13.0	32	7	~~BEDROCK AT 13M~~ Mobile layer 1.0m	reflectn at 60m	
451	~~0.0~~ 16.0	37	3	~~BEDROCK AT 16M~~	"	
452	~~0.0~~ 18.0	35	3	ERRATIC REFLECT.	reflectn at 55m	
453	0.0	37	3	R(1)+10%/R(2)+3%		
454	~~0.0~~ 15.0	31	3	SMALL BURIED CHANNEL		
455	~~2.0~~ 23.0	29	2	Mobile layer 2.0m		
456	~~1.0~~ 18.0	37	3	Mobile layer 1.0m		
457	~~5.0~~ 25.0	35	2	R(1)+3%/R(2)+1%	reflectn at 70m	
458	~~2.0~~ 25.0	33	8	Mobile layer 2.0		
459	~~0.0~~ 16.0	31	2	NO SUBSTRATE VISIBLE		
460	~~2.0~~ 20.0	34	3	Mobile layer 2.0m LARGE SAND RIDGE		
461	~~10.0~~ 20.0	33	3			
462	~~4.0~~ 17.0	35	2	Mobile layer 4.0m		
463	~~2.0~~ —	33	2	Mobile layer 2.0m		
464	~~0.0~~ 20.0	31	10	SURFACE RINGING		

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SEDIMENT THICKNESS REFERS TO THE DEPTH OF THE MOBILE LAYER IN WHICH SEDIMENT WILL MOVE PERIODICALLY

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FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
465	~~5.0~~ 25.0	28	7	SHELL BEDS mobile layer 5.0m	...Sand bank...clearly visible.	.....
466	~~0.0~~ —	30	8	SHELL BEDS	Thinning...North	.....
467	~~2.0~~ 23.0	35	8	SHELL BEDS mobile layer 2.0 m	.....	.....
468	~~4.0~~ 15.0	26	16	SHELL BEDS mobile layer 4.0 m		
469	~~3.0~~ 6.0	30	10	~~FLAT BEDROCK AT 16M~~ Mobile layer 3.0	.....	.....
470	~~1.5~~ 2.0	30	2	~~BEDROCK AT 12M~~ mobile layer 1.5m	.....	.....
471	2.0	25	7	R(1)+10%/R(2)+7%	.....	.....
472	8.0	30	8		.....	.....
473	~~11.0~~ 8.0	36	9	~~reflector BEDROCK AT 8M~~	.....	.....
474	1.0	33	10	SHELL BEDS	.....	.....
475	~~0.0~~	31	7	AS ABOVE	.....	.....
476	~~0.0~~	33	8	reflector BEDROCK AT 14M	Sand bar disappears	.....
477	~~0.0~~	28	7	THICK SANDS WITH SHELL BEDS	Hard sea bed	.....
478	3.5	30	2	SHELLS/LARGE CHANGES IN R(2)	no internal reflectors	.....
479	2.0	31	7	STRONG REFLECTOR AT 6M	.....	.....

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SEDIMENT THICKNESS REFERS TO THE DEPTH OF THE MOBILE LAYER IN WHICH SEDIMENT WILL MOVE PERIODICALLY

CSS BAFFIN CRUISE SABLE I. BANK AND BANQUEREAU...BN82-039... NOVEMBER 24 - DECEMBER 17,1982

FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
480	3.0	33	7	AS ABOVE	Structure in Subsurface - intermittent	
481	12.0	33	7	AS ABOVE		
482	7.0	30	15	SHELL BEDS		
483	2.5	32	7	AS ABOVE		
484	2.5	36	4	AS ABOVE		
485	5.0	34	8	AS ABOVE		
486	12.0	30	11	R(2) ERRATIC	possible buried channel	
487	12.0	27	13	FLAT LYING BEDROCK BENEATH		
488	12.0	30	7	AS ABOVE		
489	12.0	26	8	AS ABOVE		
490	10.0	30	10	AS ABOVE		
491	7.0	31	7	LARGE SHELL BED		
492	0.0	34	7	AS ABOVE		
493	1.5	30	2	AS ABOVE		
494	1.0	26	6	AS ABOVE		

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CSS BAFFIN CRUISE SABLE I. BANK AND BANQUEREAU...BN82-039... NOVEMBER 24 - DECEMBER 17,1982

FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
495	4.5	30	2			
496	4.0	35	5		reflectn at 65m	
497	0.0	31	7	SLUMPED SEDIMENTS		
498	0.0	33	7			
499	0.0	35	8	STRONG DIFFUSED SUBSTRATE	reflectn at 40m	
500	0.0	26	2	R(1)AND R(2) ERRATIC		
501	30.0	21	6	LARGE SLUMPS IN LAM. SILT	laminated Slumped sediments	
502	20.0	20	7	R(1) AND R(2) LOW- SILT	Hard substrate	
503	0.0	35	8	NORTH FLANK-BANQUEREAU	South dipping reflectn	
504	0.0	40	3		reflectn at 85m	
505	0.0	40	9	BEDROCK AT SURFACE		
506	45.0	33	7	BURIED CHANNEL	buried channel	
507	0.0	37	8	BEDROCK AT SURFACE	poss bc BR. high	
508	0.0	38	3	BEDROCK AT SURFACE		
509	0.0	5	3	DEEP CHANNEL	infilled channel: 50m infill	

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FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
510	0.0	33	8		45m infill	
511	0.0	37	3	GAS CHARGED SILTS	Gas charged sed in buried channel	
512	40.0	33	8		Some dipping reflectors	
513	0.0	38	9		"	
514	1.0	39	3		"	
515	0.0	35	2			
516	9.0	30	13	MOVING ONTO ARTIMON BANK		
517	3.0	33	15			
518	0.0	32	12	R(1) AND R(2) ERRATIC		
519	0.0	35	9	AS ABOVE		
520	2.0	35	9	AS		
521	0.0	40	8	AS ABOVE		
522	0.0	40	8	GAIN MODULE ERRATIC		
523	0.0	38	9	MOVING OFF ARTIMON BANK		
524	0.0	32	3		Some dipping reflectors	

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SEDIMENT THICKNESS REFERS TO THE DEPTH OF THE MOBILE LAYER IN WHICH SEDIMENT WILL MOVE PERIODICALLY

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FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
525	4.0	37	8			
526	4.0	37	3	HUMMOCKY SUBSTRATE		
527	0.0	27	9	R(1) AND R(2) VERY ERRATIC		
528	0.0	40	9		South dipping internal reflectors	
529	7.0	33	3	SMOOTH CLEAN SURF. LAYER	Channel infill	
530	10.0	38	3			
531	5.0	31	3			
532	10.0	32	2	R(1)+30%/R(2)+15%		
533	0.0	35	2	AS ABOVE/ [illegible]	Hard substrate	
534	0.0	30	8	AS ABOVE	no internal reflectors	
535	0.0	32	7	AS ABOVE		
536	0.0	30	18	AS ABOVE		
537	0.0	41	7			
538	0.0	0	0			
539	0.0	0	0			

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540	0.0	25	14	R(1)±2%/R(2)±5%		
541	0.0	30	8	AS ABOVE	thin layer of Sand	
542	0.0	26	7			
543	1.0	30	3	SHELL BEDS	Sand bar thickens South	
544	0-0 4.0	30	5	AS ABOVE		
545	5.0	28	7	AS ABOVE		
546	7.0	26	13	AS ABOVE		
547	0-0 10.0	28	5	AS ABOVE	flat substrate to Sand bar	
548	0-0 15.0	25	6	AS ABOVE	"	
549	0-0 21.0	23	8	AS ABOVE	"	
550	0-0 22.0	20	11	AS ABOVE	"	
551	0-0 20.0	25	5	THICK SAND SEQUENCE	"	
552	0-0 20.0	3	11	NO INT. REFLECTORS	"	
553	0-0 20.0	18	3		"	
554	0-0 22.0	17	1	HEAVE COMPENSATOR INOP.	"	

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FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
555	0+015.0	18	11		flat substrate under last bar	
556	0+025.0	15	13		"	
557	0+018.0	15	18		"	
558	0+030.0	12	3		"	
559	0+030.0	23	9		thick sands	
560	0+028.0	12	13		"	
561	0+028.0	23	13		"	
562	0+032.0	20	12		"	
563	0+035.0	18	14		South dipping inter. reflector in sand	
564	0+034.0	23	10		"	
565	0+031.0	15	15		steep south bar slope	
566	12.0	28	3	DIFFUSE SUBSTRATE	flat reflector 35m. below sand South dipping (B.R.)	
567	5.0	30	2		"	
568	1.0	30	2	REFLECT. CONSTANT	"	
569	4.0	28	2	R(1)±2%/R(2)±2%	"	

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570	5.0	30	2	HORIZ. INT.REFLECTOR	"	
571	5.0	30	2	AS ABOVE	"	
572	5.0	30	2	AS ABOVE	"	
573	15.0	28	9	REFLEC. MORE ERRATIC	Horizont. intec. reflc. in overburden	
574	0.030.0	25	11	R(1)+5%/R(2)+4%	Steep fault face to bar	
575	0.030.0	15	15	AS ABOVE	Sand bar	
576	0.028.0	18	15	AS ABOVE	"	
577	0.026.0	25	5	AS ABOVE	"	
578	0.030.0	19	12	R(1)+7%/R(2)+5%	"	
579	0.028.0	26	7	AS ABOVE	"	
580	0.026.0	15	14	AS ABOVE	"	
581	0.027.0	18	16	AS ABOVE	"	
582	0.025.0	22	6	AS ABOVE	"	
583	0.023.0	18	3	AS ABOVE	"	
584	0.020.0	16	16	AS ABOVE	"	

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585	0.020.0	16	15	REFLECT.ERRATIC	land bar	
586	0.021.0	18	13	R(1)+7%/R(2)+7%	intermittent refl. at depth	
587	0.024.0	28	8	AS ABOVE	"	
588	0.021.0	24	11	AS ABOVE	"	
589	0.024.0	19	12	AS ABOVE	?	
590	0.025.0	27	3	AS ABOVE	"	
591	0.023.0	25	5		"	
592	0.021.0	15	15	AS ABOVE	?	
593	0.018.0	15	15	AS ABOVE	"	
594	0.08.0	20	8	AS ABOVE	"	
595	5.0	29	3	DIFFUSE SUBSTRATE		
596	5.0	30	3	REFLECT. CONSTANT		
597	3.0	30	7	SEABED RINGING		
598	0.0	30	18	REFLECT. MORE ERRATIC		
599	0.0	35	13	AS ABOVE		

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FIX NUMBER	SEDIMENT THICKNESS(M)	R(1) (%)	R(2) (%)	HUNTEC NOTES...	AIRGUN NOTES...	SIDESCAN NOTES...
600	0.0	27	13	AS ABOVE	.....	.....
601	0.0	35	11	AS ABOVE	.....	.....
602	0.0	32	5	THE STONE FENCE	.....	.....

REFLECTIVITY (1) AND (2) REFER TO THE RETURN ENERGY FROM THE SEA SURFACE AND SUBSURFACE RESPECTIVELY, NORMALISED TO THE OUTGOING PULSE ON THE HUNTEC DTS

SEDIMENT THICKNESS REFERS TO THE DEPTH OF THE MOBILE LAYER IN WHICH SEDIMENT WILL MOVE PERIODICALLY

REPORT ON C.S.S. DAWSON CRUISE

82-040, SABLE I. BANK

by

C.L. AMOS and K.W. ASPREY

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Geological Survey of Canada
Atlantic Geoscience Centre
Bedford Institute of Oceanography

Cruise Report

Ship:	C.S.S. Dawson
Cruise Number:	82-040
Location:	Sable I. Bank
Cruise Dates:	October 12 - 18, 1982
Responsible Agency:	Atlantic Geoscience Centre
Chief Scientist:	C. L. Amos
Cruise Participants:	K. W. Asprey (AGC) F. Jodrey (AGC) G. Melling (NSRF) F. Spencer (AGC) G. Standen (Huntec) R. W. Dalrymple (Queen's Univ.) E. Hoogendoorn (Queen's Univ.)

Objective of Cruise:

1. To carry out a high resolution seismic survey of Sable Island Bank, within a region bounded by the 100 m isobath.

2. To survey and identify seabed sedimentary structures indicative of sediment transport or sediment scour. Such features will be identified on Side Scan Sonar and echo sounder and will be followed up by R. W. Dalrymple (Queen's University).

3. To survey and identify the edge of the banks in regions of high slopes with a view to identifying growth faults, convolute bedding or any signs of sediment slumping.

4. To identify and map the thickness of surficial sediment overlying till/bedrock with a view of estimating the potential thickness of the mobile layer.

5. To collect high quality seismic data on which to interpret (with G. Fader) the postglacial and glacial geologic evolution of the Bank, to plan for the extended 1983 cruise, to determine potential sites for vibrocoring in 1983 and to provide a data set to Ron Boyd (Dalhousie) for evaluation of the stratigraphy between Sable Island and the shelf edge.

6. To collect 1 m^3 of granular bottom sediment from four sites (yet to be identified) for purposes of dying and releasing at a future date to measure long-term sediment motion.

Con'd .....

Results:

A high resolution seismic survey was carried out using the Huntec deep tow system, the Klein K-map side scan, the Raytheon sub-bottom profiler and the Teledyne line tip sparker array.

A total of 1100 line Km were surveyed over Sable I. Bank, Middle Bank and The Gully. Navigation fixes were taken at 5 minute intervals corresponding to an approximate distance of 1 km over the ground; the ship speed being 6 knots on average. Navigation was carried out using Loran C. A track plot of the lines surveyed is shown in figure 1. All data with the exception of the Raytheon profiler was recorded on tape and the tape revolution of each fix logged. A listing of the survey is shown in Appendix 1.

The following is a list of equipment down time (in hours) over a survey time of 104 hours.

Huntec:	5.25	hours
Side Scan Sonar:	6.2	"
Sub-bottom profiler:	0.0	"
Line Tip Array:	66.0	"

The Huntec System:

The Huntec System generally worked well though there was interference resulting from the sparker due to cable cross talk. This was eliminated in part by separating the deck leads. The system worked best in water depths greater than 50 m. In shallow depths wave motion suppressed the wave compensator.

In most cases, however, the thickness of mobile sands was evident, which was the prime objective of the high resolution survey.

A most significant find was the presence of what appear to be slump structures on the flanks of Sable I. Bank. These structures appear concentrated in the vicinity of The Gully.

Towing of the D.T.S. in shallow water put severe strain on the tow cable and resulted in the loss of one roller on the roller cluster, the bending of the DTS yoke and the severe denting of the winch drum. Consequently, the system was towed as far below the surface as possible. This increased the danger of grounding, and indeed the system did hit bottom on a rapidly rising shoal on East Bar. The only damage sustained by the fish was a fractured acoustic window on the underside of the housing.

Con'd .....

Bedrock was not differentiated by the Huntec System despite the presence of strong, intermittant reflections at depth. The acoustic profile was indeed, reminiscent of the Grand Banks, the surficial cover appearing to be no more than 1-2 m thick.

The Acoustic Reflectivity Module (ARM) differentiated between litho-stratigraphic units, though its performance was intermittant. It did appear valuable in identifying shell fish communities, commonly associated with the troughs of bedforms.

All Huntec data was recorded on tape at 3 3/4"/sec tape speed. The data was stored in FM on channels 2 and 3 with superimposed DR voice fixes and tape annotations. A total of 31,7" reels were used. A high pass filter of 0.5 KHZ was used to "clean" the data. The pressure mode was adopted with an ADT setting of 4. The firing interval was 0.75 sec and the sweep speed 0.25 sec.

A technical account of the Huntec operation is given in Appendix 2.

The Klein, K-Map System:

The Klein side scan produced consistantly good results, despite the fact that the water column removal and the ship's speed modules were inoperable throughout the cruise. In water depths of 50-100 m, the 150-200 m range option proved the most satisfactory, giving good results despite heavy seas. The K-wing was invaluable in depressing the fish and providing stability in turbulence resulting from the ships propellors.

Optimum results were obtained by flying the fish 20-30 m above the bed.

The most notable problems resulting from flooding of the underwater splices and fracturing of the drum Helixes on the printer.

The Side Scan was run for a time on the Kevlar cable which held up extremely well despite rough seas. This was subsequently substituted for the longer, armoured cable which was spliced by Fred Jodrey, at the lower end, using grease instead of a potting compound. The splice held well at depths up to 70 m, for over 60 hours of continuous rough weather.

The equipment was inoperable for 6.2 hours out of a possible total of 104 hours. Gain adjustments and scan ranges were altered continuously to the ever changing water depths and varying reflectivities of the seabed.

Con'd .....

The results showed that the top of Sable I. Bank is sand covered with an abundance of low amplitude features with, superimposed megaripples and ripples. The sand generally forms tidal ridges elongate in the general direction of the current. The bedforms occur on tidal ridges. In water depths less than 20 m, only small scale ripples were observed.

The height of the bedforms are not in equilibrium with the corresponding bedform wavelength. I feel that bedforms are suppressed by wave erosion of the crests during storms. The bedforms probably regenerate during quieter periods.

The bedforms are intermittantly active, demonstrated by a megaripple field being scoured by a trawl mark observed at the seabed on Middle Bank.

The N.S.R.F. Line Tip Array

One sparker line tip array was rented from NSRF in order to differentiate the bedrock surface through the anticipated covering of sand.

The system was towed at the sea surface and triggered at a 1 sec frequency with a power output of 100 joules. Technical specifications were voice recorded on tape.

The system suffered from external triggering problems resulting in erratic firing. The first 66 hours of the survey were lost because of this problem. The eventual source of the problem was ultimately related to a problem in the consol.

Once overcome, the system did differentiate subsurface reflectors. The resolution of the records was poor due to rough seas and interference from the Huntec System. No obvious reflectors in, what is considered to be Tertiary bedrock, were observed.

Sediment Sampling

Two bottom samples of sand were collected in the vicinity of (1) the Olympia field and (2) the Venture field. At the Olympia site, approximately one tonne of sand was collected. The precise location of recovery was latitude 43°56.74'; longitude 59°36.16'. Two tonnes of sand were recovered from the Venture site at the precise location of latitude: 43°56.67'; longitude: 59°35.13',(see figure 1). The objective of taking such large samples is to ensure recovery of material during the ensuing experiment. The sand is dyed with Rhodamine "b" and redeployed at the sampling site. Subsequent grab sampling around the deployment site will be undertaken to observe the dispersion and migration of the sample and hence the mass transport of sediment.

Con'd .....

Western Canada Hydraulics Lab and Geomarine Associates are presently preparing a U.P. for Mobil to participate in the redeployment and subsequent sampling of the dyed sand.

Cruise Data Methodology

The main body of this report was logged and formatted using an Apple II Plus micro computer and a software package named the D. B. Master (Data Base Management package). Data were collected from each of the four log books and a record of this information inputed for each fix. When the cruise was over, the D. B. Master's report writer was used to format the data as shown in the appendix.

Once back at B.I.O. the positions of each fix were transmitted to the Cyber, and the ship's track plotted using available AGC software.

The data storage of cruise information, consolidates all log book data and will be invaluable in the working up of Geophysical data, especially helpful in the playback of data tapes.

82-040 DAWSON
-1 MILLION AT 48N

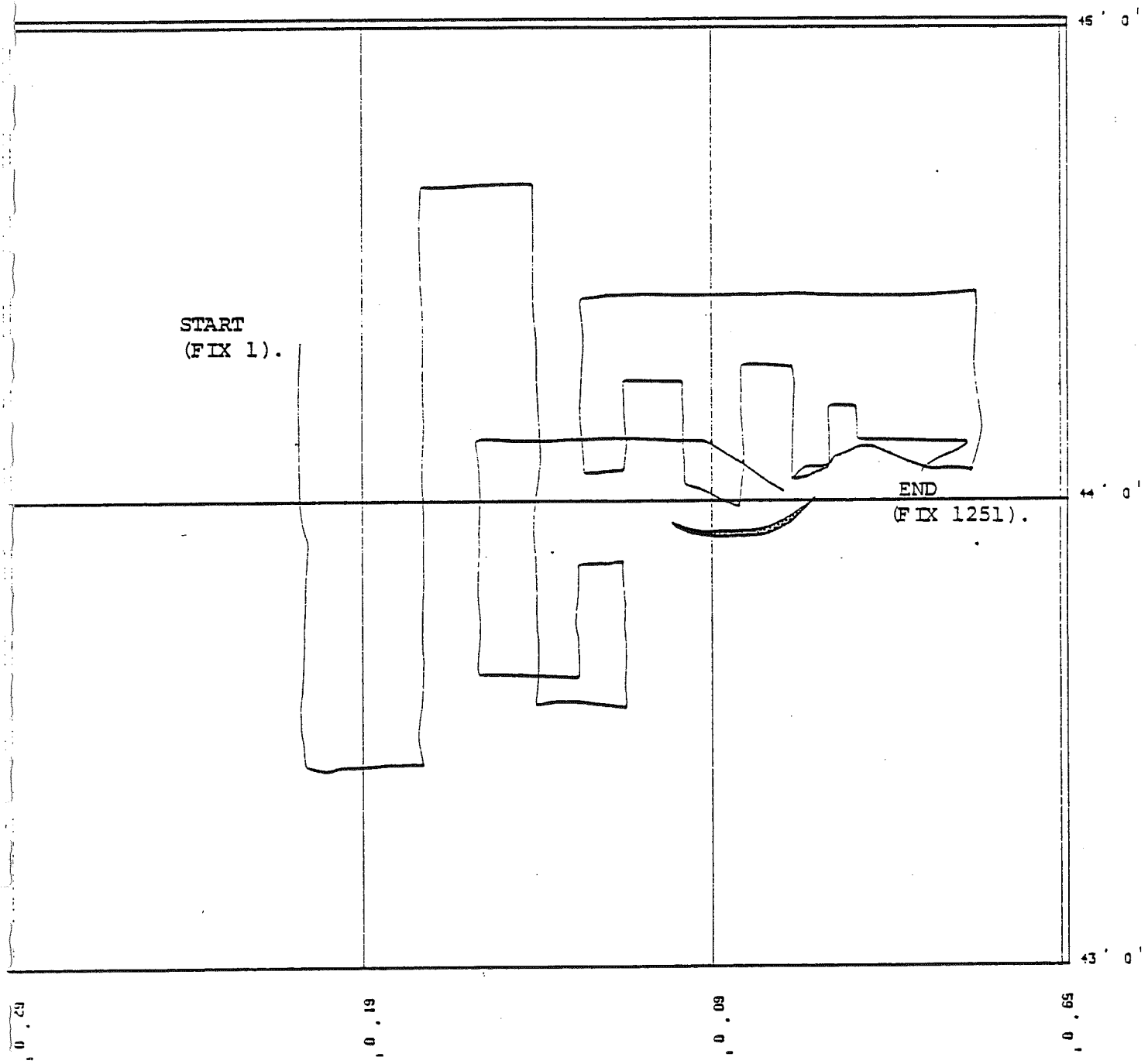

FIGURE 1. Track plot of seismic survey carried out during DAWSON cruise 82-040. A total of 1100 line km of lines were ran.

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	ONNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
1	2060345	442019	611065	X	X	X	X	SOL ALL GEAR IN WATER EQUIPMENT BEING TUNED UP
2	2060350	441976	611069	X	0	X	X	NSRF NOT FIRING
3	2060355	441930	611071	X	0	X	X	
4	2060400	441883	611075	X	0	X	X	
5	2060405	0	0	X	0	X	X	THIS FIX WAS MISSED
6	2060410	441779	611077	X	0	X	X	STILL NO NSRF
7	2060415	441738	611082	X	0	X	X	
8	2060420	441693	611086	X	0	X	X	NSRF NOT WORKING
9	2060425	441647	611089	X	0	X	X	
10	2060430	441606	611091	X	0	X	X	
11	2060435	441569	611090	X	0	X	X	
12	2060440	441536	611091	X	0	X	X	
13	2060445	441490	611092	X	0	X	X	NSRF IS DOWN
14	2060450	441435	611094	X	0	X	X	
15	2060455	441390	611094	X	0	X	X	
16	2060500	441353	611097	X	0	X	X	
17	2060505	441307	611098	X	0	X	X	START NEW SIDE SCAN TAPE TAPE NUMBER 2

DAWSON 02-040 (CABLE 16.)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	HSRF	SIDE SCAN	SOUNDER	NOTES.....
18	2060510	441263	611090	X	0	X	X	
19	2060515	441217	611096	X	0	X	X	
20	2060520	441171	611096	X	0	X	X	
21	2060525	441127	611095	X	0	X	X	
22	2060530	441081	611094	X	0	X	X	
23	2060535	441036	611094	X	0	X	X	
24	2060540	440991	611093	X	0	X	X	
25	2060545	440946	611092	X	0	X	X	
26	2060550	440901	611092	X	0	X	X	
27	2060555	440857	611092	X	0	X	X	
28	2060600	440813	611091	X	0	X	X	
29	2060605	440766	611092	X	0	X	X	
30	2060610	440722	611091	X	0	X	X	
31	2061615	440675	611090	X	0	X	X	
32	2060620	440630	611090	X	0	X	X	
33	2060625	440584	611090	X	0	X	X	FRED JOCKEY SEA SICK HAD TO GO TO BUNK
34	2060630	440538	611090	X	0	X	X	

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
35	2060635	440493	611089	X	0	X	X	
36	2060640	440447	611087	X	0	X	X	END OF TAPE 2 SIDESCAN END OF TAPE 1 HUNTEC
37	2060645	440401	611086	X	0	X	X	START TAPE 3 SIDESCAN START TAPE 2 HUNTEC
38	2060650	440356	611085	X	0	X	X	
39	2060655	440312	611084	X	0	X	X	
40	2060700	440269	611083	X	0	X	X	BRING HUNTEC UP 12 METRES
41	2060705	440224	611083	X	0	X	X	
42	2060705	440181	611083	X	0	X	X	
43	2060715	440135	611081	X	0	X	X	
44	2060720	440092	611079	X	0	X	X	STILL NO NSRF
45	2060725	440047	611076	X	0	X	X	
46	2060730	440002	611072	X	0	X	X	
47	2060735	435958	611068	X	0	X	X	
48	2060735	435914	611065	X	0	X	X	
49	2060745	435870	611056	X	0	X	X	
50	2060750	435825	611049	X	0	X	X	
51	2060755	435780	611041	X	0	X	X	HUNTEC FISH UP 10 METERS

DAWSON 02-040 (CABLE 16.)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	BOUNDER	NOTES.....
52	2060000	435735	611032	0	0	X	X	HUNTEC DOWN INTERFERENCE FROM NSRF AND BAD STYLIS
53	2060005	435491	611019	0	0	X	X	HUNTEC AND NSRF DOWN
54	2060010	435647	611006	0	0	X	X	BOTH HUNTEC AND NSRF DOWN
55	2060015	435602	610987	0	0	X	X	BOTH HUNTEC AND NSRF DOWN
56	2060020	435560	610965	0	0	X	X	BOTH HUNTEC AND NSRF DOWN
57	2050025	435516	610946	0	0	X	X	BOTH HUNTEC AND NSRF DOWN START SIDESCAN TAPE # 4
58	2060030	435468	610939	X	0	X	X	HUNTEC WORKING WELL NSRF DOWN
59	2060035	435418	610941	X	0	X	X	JOBKEY STILL SEA SICK
60	2060040	435368	610947	X	0	X	X	
61	2060045	435319	610951	X	0	X	X	
62	2060050	435268	610956	X	0	X	X	
63	2060055	435217	610959	X	0	X	X	
64	2060900	435166	610965	X	0	X	X	
65	2060905	435114	610969	X	0	X	X	
66	2060910	435064	610974	X	0	X	X	ALL GEAR WORKING WELL
67	2060915	435013	610976	X	0	X	X	ADJUST GAIN ON HUNTEC
68	2060920	434961	610977	X	0	X	X	

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	BOUNDER	NOTES.....
69	2860925	434910	610978	X	0	X	X	
70	2860930	434858	610980	X	0	X	X	NSRF STILL NOT WORKING
71	2860935	434807	610980	X	0	X	X	
72	2860940	434733	610980	X	0	X	X	
73	2860945	434684	610982	X	0	X	X	
74	2860950	434633	610985	X	0	X	X	
75	2860955	434582	610988	X	0	X	X	START HUNTEC TAPE #3
76	2861000	434532	610991	X	0	X	X	
77	2861005	434481	610997	X	0	X	X	NSRF NOT WORKING START SIDESCAN TAPE # 5
78	2861010	434429	610998	X	0	X	X	
79	2861015	434308	611002	X	0	X	X	
80	2861020	434330	611005	X	0	X	X	
81	2861025	434279	610999	X	0	X	X	
82	2861030	434229	610999	X	0	X	X	
83	2861035	434181	611002	X	0	X	X	
84	2861040	434131	611005	X	0	X	X	
85	2861045	434082	611005	X	0	X	X	

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
86	2061050	434033	611009	X	0	X	X	
87	2061055	433984	611011	X	0	X	X	
88	2061100	433934	611013	X	0	X	X	
89	2061105	433884	611018	X	0	X	X	CHANGE HUNTEC PAPER
90	2061110	433833	611020	X	0	X	X	
91	2061115	433783	611024	X	0	X	X	CHANGE HUNTEC STYLUS
92	2061120	433734	611027	X	0	X	X	
93	2061125	433684	611030	X	0	X	X	NSRF STILL NOT WORKING
94	2061130	433634	611037	X	0	X	X	
95	2061135	433582	611034	X	0	X	X	
96	2061140	433531	611049	X	0	X	X	
97	2061145	433479	611055	X	0	X	X	
98	2061150	433427	611060	X	0	X	X	
99	2061155	433377	611064	X	0	X	X	START SIDESCAN TAPE # 6
100	2061200	433327	611062	X	0	X	X	
101	2061205	433279	611059	X	0	X	X	
102	2061210	433230	611059	X	0	X	X	

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	WIDTH	MBG	SIG	AM	IMG	TES
103	2061215	433179	611057	X	0		X	X	
104	2061220	433127	611050	X	0		X	X	
105	2061225	433080	611055	X	0		X	X	
106	2061230	433031	611044	X	0		X	X	
107	2061235	432987	611033	X	0		X	X	
108	2061240	432942	611021	X	0		X	X	
109	2061245	432894	611014	X	0		X	X	
110	2061250	432845	611010	X	0		X	X	
111	2061255	432795	611014	X	0		X	X	
112	2061300	432744	611001	X	0		X	X	
113	2061305	432693	610997	X	0		X	X	START OF HUNTEC TAPE # 4
114	2061310	432641	610994	X	0		X	X	
115	2061315	432611	610971	X	0		X	X	
116	2061320	432603	610932	X	0		X	X	START OF LINE NO. 2
117	2061325	432995	610903	X	0		X	X	
118	2061330	432584	610860	X	0		X	X	
119	2061335	432579	610819	X	0		X	X	

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
120	2061340	432573	610783	X	0	X	X	START SIDESCAN TAPE # 7
121	2061345	432567	610745	X	0	X	X	
122	2061350	432562	610710	X	0	X	X	
123	2061355	432560	610673	X	0	X	X	
124	2061400	432561	610639	X	0	X	X	NSRF STILL NOT WORKING
125	2061405	432566	610601	X	0	X	X	
126	2061410	432572	610563	X	0	X	X	
127	2061415	432580	610521	X	0	X	X	
128	2061420	432584	610483	X	0	X	X	
129	2061425	432593	610440	X	0	X	X	
130	2061430	432599	610399	X	0	X	X	
131	2061435	432602	610356	X	0	X	X	
132	2061440	432602	610315	X	0	X	X	
133	2061445	432602	610271	X	0	X	X	
134	2061450	432602	610227	X	0	X	X	NSRF NOT WORKING
135	2061455	432601	610185	X	0	X	X	
136	2061500	432601	610143	X	0	X	X	

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	BOUNCER	NOTES.....
137	2061505	432605	610100	X	0	X	X	
138	2061510	432607	610057	X	0	X	X	
139	2061515	432610	610017	X	0	X	X	START SIDESCAN TAPE # 8
140	2061520	432611	605976	X	0	X	X	
141	2061525	432615	605929	X	0	X	X	
142	2061530	432616	605885	X	0	X	X	
143	2061535	432620	605885	X	0	X	X	
144	2061540	432621	605786	X	0	X	X	
145	2061445	432625	605737	X	0	X	X	NSRF NOT WORKING
146	2061550	432629	605689	X	0	X	X	
147	2061555	432633	605642	X	0	X	X	
148	2061600	432633	605586	X	0	X	X	
149	2061605	432633	605540	X	0	X	X	
150	2061610	432631	605485	X	0	X	X	
151	2061615	432631	605434	X	0	X	X	SIDESCAN FISH LOWERED
152	2061620	432631	605381	X	0	X	X	SIDESCAN TWIK LEFT
153	2061625	432635	605330	X	0	X	X	

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	HSRF	SIDE SCAN	SOUNDER	NOTES.....
155	2061635	432637	605225	X	0	X	X	BROKEN HELIX ON SIDESCAN
156	2061640	432639	605173	X	X	X	X	
157	2061645	432639	605123	X	0	X	X	CHANGE PAPER ON SOUNDER
158	2061650	432638	605068	X	0	X	X	
159	2061655	432637	605021	X	0	X	X	
160	2061700	432638	604968	X	0	X	X	SIDE SCAN UP (HELIX REPLACED)
161	2061705	432683	604977	X	0	X	X	SIDESCAN START TAPE # 9 SOUNDER PAPER CHANGE
162	2061710	432738	604990	X	0	X	X	
163	2061715	432792	605004	X	0	X	X	
164	2061720	432844	605018	X	0	X	X	
165	2061725	432896	605031	X	0	X	X	
166	2061730	432946	605039	X	0	X	X	SIDESCAN FISH RAISED
167	2061735	432998	605042	X	0	X	X	
168	2061740	433047	605036	X	0	X	X	
169	2061745	433100	605030	X	0	X	X	
170	2061750	433154	605024	X	0	X	X	
171	2061755	433219	605013	X	0	X	X	

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	MONTEC	MSRF	SIDE SCAN	SOUNDER	NOTES.....
172	2061000	433261	605004	X	0	X	X	
173	2061005	433315	604995	X	0	X	X	
174	2061010	433369	604982	X	0	X	X	
175	2061015	433420	604982	X	0	X	X	
176	2061020	433475	604976	X	0	X	X	
177	2061025	433527	604971	X	0	X	X	
178	2061030	433578	604969	X	0	X	X	
179	2061030	433631	604967	X	0	X	X	SIDESCAN FISH RAISED
180	2061040	433684	604965	X	0	X	X	
181	2061045	433737	604961	X	0	X	X	START SIDESCAN TAPE# 10
182	2061050	433790	604961	X	0	X	X	
183	2061055	433843	604957	X	0	X	X	
184	2061900	433899	604956	X	0	X	X	
185	2061905	433946	604950	X	0	X	X	
186	2061910	433997	604961	X	0	X	X	
187	2061915	434049	605965	X	0	X	X	
188	2061920	434102	604969	X	0	X	X	

DAWSON 02-040 (SABLE I8.)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
189	2061925	434154	604971	X	0	X	X	
190	2061930	434219	604971	X	0	X	X	START HUNTEC TAPE 6
191	2061935	434263	604972	X	0	X	X	
192	2061940	434318	604971	X	0	X	X	
193	2061945	434372	604970	X	0	X	X	
194	2061950	434426	604969	X	0	X	X	
195	2061955	434483	604969	X	0	X	X	
196	2062000	434537	604969	X	0	X	X	
197	2062005	434592	604968	X	0	X	X	
198	2062010	434646	604965	X	0	X	X	
199	2062015	434703	604962	X	0	X	X	
200	2062020	434759	604960	X	0	X	X	SWELL BROADSIDE 3M HIGH
201	2062025	434813	604955	X	0	X	X	
202	2062030	434867	604953	X	0	X	X	
203	2062035	434920	604951	X	0	X	X	
204	2062040	434977	604950	X	0	X	X	HUNTEC TAPE 6 SIDE SCAN TAPE 11
205	2062045	435032	604953	X	0	X	X	HUNTEC TAPE 6 SIDE SCAN TAPE 11

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	USCG	SIDE SCAN	SOUNDER	NOTES.....
206	2062050	435007	604954	X	0	X	X	HUNTEC 1
207	2062055	435143	604955	X	0	X	X	HUNTEC TAPE 6 SIDE SCAN TAPE 11
208	2062100	435199	604956	X	0	X	X	HUNTEC TAPE 6 SIDE SCAN TAPE 11
209	2062105	435254	604955	X	0	X	X	HUNTEC TAPE 6 SIDE SCAN TAPE 11(1700)
210	2062110	435307	604955	X	0	X	X	HUNTEC TAPE 6 SIDE SC
211	435361	604953	0	X	X	X	X	
212	2062120	435415	604952	X	0	X	X	HUNTEC TAPE 6 SIDE SCAN TAPE 11(2068)
214	2062130	435526	604950	X	0	X	X	HUNTEC TAPE 6 SIDE SCAN TAPE 11(2472)
215	2062135	435579	604952	X	0	X	X	HUNTEC TAPE 6 SIDE SCAN TAPE 11(2630)
216	2062140	435579	604952	X	0	X	X	HUNTEC TAPE 6 SIDE SCAN TAPE 11(2730)
217	2062145	435687	604954	X	0	X	X	HUNTEC TAPE 6 SIDE SCAN TAPE 11(2870)
218	2062150	435740	604956	X	0	X	X	HUNTEC TAPE 6 SIDE SCAN TAPE 11(2904)
219	2062150	435793.	604956	X	0	X	X	HUNTEC TAPE 6 SIDE SCAN TAPE 11(END)
220	2062200	435846	604956	X	0	X	X	HUNTEC TAPE 6 SIDE SCAN TAPE 12(BEGIN)
221	206	435898	604958	X	0	X	X	HUNTEC TAPE 6 SIDE SCAN TAPE 12(310)
222	2062210	435949	604959	X	0	X	X	HUNTEC TAPE 6 SIDE SCAN TAPE12(555)
223	2062215	440000	604952	X	0	X	X	HUNTEC TAPE 6 SIDE SCAN 1

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSKF	SIDE SCAN	SOUNDER	NOTES.....
224	2062220	440053	604964	X	0	X	X	HUNTEC TAPE 6 SIDE SCAN TAPE 12(996)
225	206	440106	604967	X	0	X	X	HUNTEC TAPE 6 SIDE SCAN TAPE 12(1194)
226	2062230	440159	604971	X	0	X	X	HUNTEC TAPE 6 SIDE SCAN TAPE 12(1380)
227	2062235	440211	604972	X	0	X	X	SIDE SCAN TAPE 12(1560)
228	2062240	440264	604975	X	0	X	X	HUNTEC TAPE 6 SIDE SCAN TAPE 12(1724)
229	2062245	440317	604973	X	0	X	X	HUNTEC TAPE 6 SIDE SCAN TAPE 12(1882)
230	2062250	440369	604972	X	0	X	X	HUNTEC TAPE 6(END) SIDE SCAN TAPE 12(2035)
231	2062255	440426	604972	X	0	X	X	HUNTEC TAPE 7(BEGIN) SIDE SCAN TAPE 12(2182)
232	2062300	440473	604970	X	0	X	X	HUNTEC TAPE 7 SIDE SCAN TAPE 12( )
233	2062305	440523	604968	X	0	X	X	HUNTEC TAPE 7 SIDE SCAN TAPE 12(2463)
234	2062310	440573	604966	X	0	X	X	HUNTEC TAPE 7 SIDE SCAN TAPE 12(2595)
235	2062315	440624	604964	X	0	X	X	HUNTEC TAPE 7 SIDE SCAN TAPE 12 (2595)
236	2062320	440674	604960	X	0	X	X	HUNTEC TAPE 7 SIDE SCAN TAPE 12 (2848)
237	2062325	440726	604958	X	0	X	X	HUNTEC TAPE 7 . SIDE SCAN TAPE 12 (2970)
238	2061230	440774	604955	X	0	X	X	HUNTEC TAPE 7 SIDESCAN TAPE 12 (3090)
239	2062335	440825	604952	X	0	X	X	HUNTEC TAPE 7 SIDE SCAN TAPE 12 END
240	2062340	440875	604950	X	0	X	X	HUNTEC TAPE 7 SIDE SCAN START TAPE 13

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	MAGF	SIDE SCAN	SOUNDER	NOTES.....
241	2062345	440921	604949	X	0	X	X	HUNTEC TAPE 7 SIDE SCAN TAPE 13 (3628)
242	2062350	440967	604950	X	0	X	X	HUNTEC TAPE 7 SIDE SCAN TAPE 13 (3873)
243	2062355	441015	604951	X	0	X	X	HUNTEC TAPE 7 (1146) SIDE SCAN TAPE 13 (4100)
244	2070000	441063	604952	X	0	X	X	HUNTEC TAPE 7 (1250) SIDESCAN TAPE 13 (4315)
245	2070005	441111	604955	X	0	X	X	HUNTEC TAPE 7 (1334) SIDE SCAN TAPE 13 (4510)
246	2070010	441160	604955	X	0	X	X	HUNTEC TAPE 7 (1435) SIDE SCAN TAPE 13 (4695)
247	2070015	441215	604960	X	0	X	X	HUNTEC TAPE 7 (1530) SIDESCAN TAPE 13 (4870)
248	2070020	441259	604959	X	0	X	X	HUNTEC TAPE 7 (1626) TAPE 13(5045) NEW ROLL
249	2070025	441309	604961	X	0	X	X	HUNTEC TAPE 7 (1711) SIDE SCAN TAPE 13 (5192)
250	2070030	441358	604962	X	0	X	X	HUNTEC TAPE 7 (1815) SIDE SCAN TAPE 13 (5348)
251	2070035	441409	604964	X	0	X	X	HUNTEC TAPE 7 (1902) SIDE SCAN TAPE 13 (5490)
252	2070040	441460	604966	X	0	X	X	HUNTEC TAPE 7 (2002) SIDE SCAN TAPE 13 (5632)
253	2070045	441512	604966	X	0	X	X	HUNTEC TAPE 7 (2097) SIDE SCAN TAPE 13 (5770)
254	2070050	441563	604966	X	0	X	X	HUNTEC TAPE 7 (2186) SIDESCAN TAPE 13 (5900)
255	2070055	441613	604965	X	0	X	X	HUNTEC TAPE 7 (2286) SIDE SCAN TAPE 13 (6030)
256	2070100	441663	604965	X	0	X	X	HUNTEC TAPE 7 (2380) SIDESCAN TAPE 13 (6155)
257	2070105	441714	604962	X	0	X	X	HUNTEC TAPE 7 (2460) SIDE SCAN TAPE 13 (6277)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	BOUNDER	NOTES.....
258	2070110	441764	604961	X	0	X	X	HUNTEC TAPE 7 (2565) SIDESCAN EOT 13 (6396)
259	2070115	441815	604960	X	0	X	X	HUNTEC TAPE 7 (2650) SIDE SCAN TAPE 14 (0000)
260	2070120	441864	604960	X	0	X	X	HUNTEC TAPE 7 (2752) SIDE SCAN TAPE 14 (0294)
261	2070125	441916	604959	X	0	X	X	HUNTEC TAPE 7 (2847) SIDE SCAN TAPE 14 (0550)
262	2070130	441966	604960	X	0	X	X	HUNTEC TAPE 7 (2944) SIDE SCAN TAPE 14 (0706)
263	2070135	442017	604959	X	0	X	X	HUNTEC TAPE 7 (3037) SIDE SCAN TAPE 14 (0995)
264	2070140	442067	604959	X	0	X	X	HUNTEC TAPE 7 (3131) SIDE SCAN TAPE 14 (1195)
265	2070145	442116	604960	X	0	X	X	HUNTEC TAPE 7 (3224) SIDE SCAN TAPE 14 (1387)
266	2070150	442167	604958	X	0	X	X	HUNTEC TAPE 7 (3319) SIDE SCAN TAPE 14 (1565)
267	2070155	442217	604960	X	0	X	X	HUNTEC TAPE 7 (3415) SIDE SCAN TAPE 14 (1730)
268	2070200	604961	604961	X	0	X	X	HUNTEC TAPE 7(3511) SIDE SCAN TAPE 14 (1892)
269	2070205	442318	604962	X	0	X	X	HUNTEC TAPE 7 (3604) SIDE SCAN TAPE 14 (2042)
270	2070210	442368	604965	X	0	X	X	HUNTEC START TAPE 8 SIDE SCAN TAPE 14 (2191)
271	2070215	442418	604964	X	0	X	X	HUNTEC TAPE 8 (0150) SIDE SCAN TAPE 14 (2335)
272	2070220	442469	604970	X	0	X	X	HUNTEC TAPE 8 (0245) SIDE SCAN TAPE 14 (2472)
273	2070225	442520	604976	X	0	X	X	HUNTEC TAPE 8 (0339) SIDE SCAN TAPE 14 (2605)
274	2070230	442569	604981	X	0	X	X	HUNTEC TAPE 8 (0433) SIDE SCAN TAPE 14 (2736)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	BOUNDER	NOTES.....
275	2070235	442619	604908	X	0	X	X	HUNTEC TAPE 8 (0527) SIDE SCAN TAPE 14 (2062)
276	2070240	442670	604992	X	0	X	X	HUNTEC TAPE 8 (0623) SIDE SCAN TAPE 14 (2983)
277	2070245	442720	604996	X	0	X	X	HUNTEC TAPE 8 (0717) SIDE SCAN TAPE 14 (3100)
278	2070250	442771	604997	X	0	X	X	HUNTEC TAPE 8 (0812)
279	2070255	442820	604998	X	0	X	X	HUNTEC TAPE 8 (1025) SIDE SCAN BOT 15
280	2070300	442871	604999	X	0	X	X	HUNTEC TAPE 8 (1003) SIDE SCAN TAPE 15 (0445)
281	2070305	442922	605001	X	0	X	X	HUNTEC TAPE 8 SIDE SCAN TAPE 15
282	207310	442974	605002	X	0	X	X	HUNTEC TAPE 8 (1109) SIDESCAN TAPE 15 (0805)
283	2070315	443026	605004	X	0	X	X	HUNTEC TAPE 8 (1287) SIDE SCAN TAPE 15 (1081)
284	2070320	443077	605005	X	0	X	X	HUNTEC TAPE 8 (1374) SIDE SCAN TAPE 15 (1278)
285	2070325	443128	605009	X	0	X	X	HUNTEC TAPE 8 (1473) SIDE SCAN TAPE 15 (1445)
286	2070330	443179	605012	X	0	X	X	HUNTEC TAPE 8 (1568) SIDE SCAN TAPE 15 (1612)
287	2070335	443279	605013	X	0	X	X	HUNTEC TAPE 8 (1662) SIDE SCAN TAPE 15 (1768)
288	2070340	443278	605013	X	0	X	X	HUNTEC TAPE 8 (1757) SIDE SCAN TAPE 15 (1919)
289	2070345	443327	605014	X	0	X	X	HUNTEC TAPE 8 (1851) SIDE SCAN TAPE 15 (2062)
290	2070350	443377	605014	X	0	X	X	HUNTEC TAPE 8 (1945) SIDE SCAN TAPE 15 (2200)
291	2070355	445014	605014	X	0	X	X	HUNTEC TAPE 8 (2040) SIDE SCAN TAPE 15 (2332)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	HSRF	SIDE SCAN	SOUNDER	NOTES.....
292	2070400	443477	605014	X	0	X	X	HUNTEC TAPE 8 (2135) SIDE SCAN TAPE 15 (2462)
293	2070405	443520	605014	X	0	X	X	HUNTEC TAPE 8 (2220) SIDE SCAN TAPE 15 (2587)
294	2070410	443582	605012	X	0	X	X	HUNTEC TAPE 8 (2324) SIDE SCAN TAPE 15 (2709)
295	2070415	443630	605012	X	0	X	X	HUNTEC TAPE 8 (2418) SIDE SCAN TAPE 15 (2825)
296	2070420	443684	605005	X	0	X	X	HUNTEC TAPE 8 (2514) SIDE SCAN TAPE 15 (2940)
297	2070425	443736	605002	X	0	X	X	HUNTEC TAPE 8 (2617) SIDE SCAN TAPE 15 (3048)
298	2070430	443788	605000	X	0	X	X	HUNTEC TAPE 8 (2701) SIDE SCAN START TAPE 16
299	2070435	443841	604998	X	0	X	X	HUNTEC TAPE 8 (2800) SIDE SCAN TAPE 16 (0390)
300	2070440	443894	604998	X	0	X	X	HUNTEC TAPE 8 (2895) SIDE SCAN TAPE 16 (0479)
301	2070445	443947	604996	X	0	X	X	HUNTEC TAPE 8 (2985) SIDE SCAN TAPE 16 (0481)
302	2070450	443995	604983	X	0	X	X	HUNTEC TAPE 8 (3085) SIDE SCAN TAPE 16 (0726)
303	2070455	443991	604915	X	0	X	X	HUNTEC TAPE 8 (3183) SIDE SCAN TAPE 16 (0930)
304	2070500	443989	604837	X	0	X	X	HUNTEC TAPE 8 (3297) SIDE SCAN TAPE 16 (1121)
305	2070505	443989	604777	X	0	X	X	HUNTEC TAPE 8 (3365) SIDE SCAN TAPE 16 (1314)
306	2070510	443990	604710	X	0	X	X	HUNTEC TAPE 8 (3416) SIDE SCAN TAPE 16 (1489)
307	2070515	443991	604639	X	0	X	X	HUNTEC TAPE 8 (3557) SIDE SCAN TAPE 16 (1644)
308	2070520	443993	604570	X	0	X	X	HUNTEC START TAPE 9 SIDE SCAN TAPE 16 (1810)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	SHOTREC	MSRC	SIDE SCAN	SHOTNUMBER	NOTES.....
309	2070525	444025	604500	X	0	X	X	HUNTEC TAPE 9 (0009) SIDE SCAN TAPE 16 (1954)
310	2070530	443990	604433	X	0	X	X	HUNTEC TAPE 9 (0177) SIDE SCAN TAPE 16 (2097)
311	2070535	444000	604363	X	0	X	X	HUNTEC TAPE 9 (0271) SIDE SCAN TAPE 16 (2233)
312	2070540	444004	604296	X	0	X	X	HUNTEC TAPE 9 (0366) SIDE SCAN TAPE 16 (2360)
313	2070545	444006	604229	X	0	X	X	HUNTEC TAPE 9(0460) SIDE SCAN TAPE 16(2497)
314	2070550	444008	604160	X	0	X	X	HUNTEC TAPE 9(0554) SIDE SCAN TAPE 16(2624)
315	2070555	444011	604097	X	0	X	X	HUNTEC TAPE 9(0652) SIDE SCAN TAPE 16(2746)
316	2070600	444014	604028	X	0	X	X	HUNTEC TAPE 9(0744) SIDE SCAN TAPE 16(2858)
317	2070605	444017	603959	X	0	X	X	JUNTEC TAPE 9(0876) SIDE SCAN TAPE 16(2987)
318	2070610	444019	603893	X	0	X	X	HUNTEC TAPE 9(0933) SIDE SCAN TAPE 16(3078)
319	2070615	444021	603828	X	0	X	X	HUNTEC TAPE 9(1028) SIDE SCAN TAPE CHANGED
320	2070620	444023	603761	X	0	X	X	HUNTEC TAPE 9(1130) SIDE SCAN TAPE 17(0000)
321	2070625	444025	603693	X	0	0	X	HUNTEC TAPE 9(1225)
322	2070630	444026	603626	X	0	0	X	HUNTEC TAPE 9(1312)
323	2070635	444027	603559	X	0	0	X	HUNTEC TAPE 9(1415)
324	2070635	444027	603559	X	0	X	X	HUNTEC TAPE 9(1415) SIDE SCAN TAPE 17(BEGIN)
325	2070645	444030	603406	X	0	X	X	HUNTEC TAPE 9(1597) SIDE SCAN TAPE 17(DOWN)

DAWSON 82-040 (TABLE 18.)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
326	2070650	444031	603341	X	0	X	X	HUNTEC TAPE 9(1691) SIDE SCAN TAPE 17(DOWN)
327	2070655	444030	603297	X	0	X	X	HUNTEC TAPE 9( ) SIDE SCAN TAPE 17(DOWN)
328	2070700	444030	603297	X	0	X	X	HUNTEC TAPE 9(1882) SIDE SCAN TAPE 17(DOWN)
329	2070705	444030	603165	X	0	X	X	HUNTEC TAPE 9(1972) SIDE SCAN TAPE 17(DOWN)
330	2070710	444030	603101	X	0	X	X	HUNTEC TAPE 9(2067) SIDE SCAN TAPE 17(DOWN)
331	2070715	444006	603050	X	0	0	X	HUNTEC TAPE 9( ) SIDE SCAN TAPE 17(DOWN)
332	2070720	443954	603062	X	0	0	X	HUNTEC TAPE 9(2257) SIDE SCAN TAPE 17(DOWN)
333	2070725	443905	603062	X	0	0	X	HUNTEC TAPE 9(2352) SIDE SCAN TAPE 17(DOWN)
334	2070730	443855	603061	X	0	0	X	HUNTEC YAPE 9(2448) SIDE SCAN TAPE 17(DOWN)
335	2070735	443805	603061	X	0	0	X	HUNTEC TAPE 9 (2542) SIDE SCAN TAPE 17 (DOWN)
336	2070740	443754	603060	X	0	0	X	HUNTEC TAPE 9(2635) SIDE SCAN TAPE 17(DOWN)
337	2070745	443704	603058	X	0	0	X	HUNTEC TAPE 9(2734) SIDE SCAN TAPE 17(DOWN)
338	2070750	443652	603058	X	0	0	X	HUNTEC TAPE 9(2827) SIDE SCAN TAPE 17(DOWN)
339	2070755	443600	603057	X	0	0	X	HUNTEC TAPE 9(2919) SIDE SCAN TAPE 17(DOWN)
340	2070800	443549	603056	X	0	0	X	HUNTEC TAPE 9(3015) SIDE SCAN TAPE 17(DOWN)
341	2070805	443496	603055	X	0	0	X	HUNTEC TAPE 9(3114) SIDE SCAN TAPE 17(DOWN)
342	2070810	443445	603055	X	0	0	X	HUNTEC TAPE 9(3205) SIDE SCAN TAPE 17(DOWN)

AUG. 2-0 MAP. 8.)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	MARK	SIDE SCAN	BOOMER	NOTES.....
344	2070815	443387	603054	X	0	0	X	HUNTEC TAPE 9(3299) SIDE SCAN TAPE 17(DOWN)
344	2070820	443338	603054	X	0	0	X	HUNTEC TAPE 9(3404) SIDE SCAN TAPE 17(DOWN)
345	2070825	443284	603056	X	0	0	X	HUNTEC TAPE 9 ENDED SIDE SCAN TAPE 17(DOWN)
346	2070830	443224	603057	X	0	0	X	CHANGING HUNTEC TAPE SIDE SCAN TAPE 17(DOWN)
347	2070835	443174	603058	X	0	0	X	HUNTEC TAPE 10(0000) SIDE SCAN TAPE 17(DOWN)
348	2070840	443120	603059	X	0	0	X	HUNTEC TAPE 10(0190) SIDE SCAN TAPE 17(DOWN)
349	2070845	443070	603059	X	0	0	X	HUNTEC TAPE 10(?) SIDE SCAN TAPE 17 (DOWN)
350	2070850	443019	603061	X	0	0	X	HUNTEC TAPE 10(?) SIDE SCAN TAPE 17(DOWN)
351	2070855	442960	603060	X	0	X	X	HUNTEC TAPE 10(0374) SIDE SCAN TAPE 17(0254)
352	2070900	442918	603060	X	0	X	X	HUNTEC TAPE 10(0469) SIDE SCAN TAPE 17(0504)
353	2070905	442868	603059	X	0	0	X	HUNTEC TAPE 10(0563) SIDE SCAN TAPE 17(DOWN)
354	2070910	442817	603059	X	0	0	X	HUNTEC TAPE 10(0657) SIDE SCAN TAPE 17(DOWN)
355	2070915	442768	603059	X	0	0	X	HUNTEC TAPE 10(0753) SIDE SCAN TAPE 17(DOWN)
356	2070920	442718	603059	X	0	0	X	HUNTEC TAPE 10(0846) SIDE SCAN TAPE 17(DOWN)
357	2070925	442669	603057	X	0	X	X	HUNTEC TAPE 10 (0942) SIDE SCAN TAPE 17(0780)
358	2070930	442619	603057	X	0	0	X	HUNTEC TAPE 10(1050) SIDE SCAN TAPE 17(DOWN)
359	2070935	442570	603057	X	0	0	X	HUNTEC TAPE 10(1131) SIDE SCAN TAPE 17(DOWN)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	HSRF	SIDE SCAN	SOUNDER	NOTES.....
360	2070940	442520	603056	X	0	0	X	HUNTEC TAPE 10(1225) SIDE SCAN TAPE 17(DOWN)
361	2070945	442471	603054	X	0	0	X	HUNTEC TAPE 10(1319) SIDE SCAN TAPE 17(DOWN)
362	2070950	442422	603048	X	0	0	X	HUNTEC TAPE 10(1430) SIDE SCAN TAPE 17(DOWN)
363	2070955	442374	603043	X	0	0	X	HUNTEC TAPE 10(1508) SIDE SCAN TAPE 17(DOWN)
364	2071000	442326	603038	X	0	0	X	HUNTEC TAPE 10(1602) SIDE SCAN TAPE 17(DOWN)
365	2071005	442277	603032	X	0	0	X	HUNTEC TAPE 10(1697) SIDE SCAN TAPE 17(DOWN)
366	2071010	442230	603025	X	0	0	X	HUNTEC TAPE 10(1794) SIDE SCAN TAPE 17(DOWN)
367	2071015	442182	603018	X	0	X	X	HUNTEC TAPE 10(1886) SIDE SCAN TAPE 17(1185)
368	2071020	442133	603012	X	0	X	X	HUNTEC TAPE 10(1980) SIDE SCAN TAPE 17(1365)
369	2071025	442083	603006	X	0	X	X	HUNTEC TAPE 10(2085) SIDE SCAN TAPE 17(1555)
370	2071030	442034	603004	X	0	X	X	HUNTEC TAPE 10(2169) SIDE SCAN TAPE 17(1700)
371	2071035	441983	603002	X	0	X	X	HUNTEC TAPE 10(2271) SIDE SCAN TAPE 17(1870)
372	2071040	441932	603000	X	0	X	X	HUNTEC TAPE 10(2370) SIDE SCAN TAPE 17(2025)
373	2071045	441881	602999	X	0	X	X	HUNTEC TAPE 10(2465) SIDE SCAN TAPE 17(2165)
374	2071035	441820	603000	X	0	X	X	HUNTEC TAPE 10(2271) SIDE SCAN TAPE 17(2285)
375	2071055	441776	602999	X	0	X	X	HUNTEC TAPE 10(2442) SIDE SCAN TAPE 17(2415)
376	2071100	441724	602999	X	0	X	X	HUNTEC TAPE 10(2736) SIDE SCAN TAPE 17(2542)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
377	2071105	441672	603000	X	0	X	X	HUNTEC TAPE 10(2031) SIDE SCAN TAPE 17(2698)
378	2071110	441622	603000	X	0	X	X	HUNTEC TAPE 10(2926) SIDE SCAN TAPE 17(2790)
379	2071115	441570	602998	X	0	X	X	HUNTEC TAPE 10(3020) SIDE SCAN TAPE 17(2910)
380	2071120	441522	602994	X	0	X	X	HUNTEC TAPE 10(3116) SIDE SCAN TAPE 17(3015)
381	2071125	441471	602994	X	0	X	X	HUNTEC TAPE 10(3211) SIDE SCAN TAPE 17(3115)
382	2071130	441422	602990	X	0	X	X	HUNTEC TAPE 10(3306) SIDE SCAN TAPE 17 ENDED
383	2071135	441372	602988	X	0	X	X	HUNTEC TAPE 10(3403) SIDE SCAN TAPE 18(0135)
384	2071140	441323	602985	X	0	X	X	HUNTEC TAPE 10(3495) SIDE SCAN TAPE 18(0390)
385	2071145	441273	602981	X	0	X	X	HUNTEC TAPE 10(3587) SIDE SCAN TAPE 18(0630)
386	2071150	41273	602981	X	0	X	X	HUNTEC TAPE 11(0050) SIDE SCAN TAPE 18(0875)
387	2071155	441172	602973	X	0	X	X	HUNTEC TAPE 11(0150) SIDE SCAN TAPE 18(1100)
388	2071200	441123	602969	X	0	X	X	HUNTEC TAPE 11(0226) SIDE SCAN TAPE 18(1240)
389	2071205	441075	602965	X	0	X	X	HUNTEC TAPE 11(0319) SIDE SCAN TAPE 18(1415)
390	2071210	441027	602960	X	0	X	X	HUNTEC TAPE 11(0413) SIDE SCAN TAPE 18(1579)
391	2071215	440979	602957	X	0	X	X	HUNTEC TAPE 11(0509) SIDE SCAN TAPE 18(1739)
392	2071220	440931	602955	X	0	X	X	HUNTEC TAPE 11(0602) SIDE SCAN TAPE 18(1887)
393	2071225	440882	602953	X	0	X	X	HUNTEC TAPE 11(0697) SIDE SCAN TAPE 18(2040)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSKF	SIDE SCAN	SOUNDER	NOTES.....
394	2071230	440833	602949	X	0	X	X	HUNTEC TAPE 11(0791) SIDE SCAN TAPE 18(2172)
395	2071235	440784	602947	X	0	X	X	HUNTEC TAPE 11(0886) SIDE SCAN TAPE 18(2307)
396	2071235	440736	602943	X	0	X	X	HUNTEC TAPE 11(0886) SIDE SCAN TAPE 18(2307)
397	2071245	440685	602939	X	0	X	X	HUNTEC TAPE 11(1075) SIDE SCAN TAPE 18(2540)
398	2071250	440626	602937	X	0	X	X	HUNTEC TAPE 11(1170) SIDE SCAN TAPE 18(2700)
399	2071255	440583	602936	X	0	X	X	HUNTEC TAPE 11(1265) SIDE SCAN TAPE 18(2811)
400	2071300	440532	602936	X	0	X	X	HUNTEC TAPE 11(1359) SIDE SCAN TAPE 18(2925)
401	2071305	440482	602940	X	0	X	X	HUNTEC TAPE 11(1453) SIDE SCAN TAPE 18(3032)
402	2071310	440431	602946	X	0	X	X	HUNTEC TAPE 11(1548) SIDE SCAN TAPE 18 ENDED
403	2071315	440381	602962	X	0	X	X	HUNTEC TAPE 11(1643) SIDE SCAN TAPE 19(1443)
404	2071320	440330	602962	X	0	X	X	HUNTEC TAPE 11(1740) SIDE SCAN TAPE 19(0260)
405	2071325	440279	602971	X	0	X	X	HUNTEC TAPE 11(1832) SIDE SCAN TAPE 19(0495)
406	2071330	440228	602980	X	0	X	X	HUNTEC TAPE 11(1927) SIDE SCAN TAPE 19(0725)
407	2071335	440177	602991	X	0	X	X	HUNTEC TAPE 11(2021) SIDE SCAN TAPE 19(0901)
408	2071340	440126	603001	X	0	X	X	HUNTEC TAPE 11(2115)
409	2071345	440072	603007	X	0	X	X	HUNTEC TAPE 11(2220) SIDE SCAN TAPE 19(1200)
410	2071350	440017	603015	X	0	X	X	HUNTEC TAPE 11(2304) SIDE SCAN TAPE 19(1421)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSKI	SIDE SCAN	BOOMER	NOTES.....
411	2071355	435965	603024	X	0	X	X	HUNTEC TAPE 11(2390) SIDE SCAN TAPE 19(1500)
412	2071400	435912	603033	X	0	X	X	HUNTEC TAPE 11(2493) SIDE SCAN TAPE 19(1725)
413	2071405	435858	606039	X	0	X	X	HUNTEC TAPE 11 (2592) SIDE SCAN TAPE 19 (1069)
414	2071410	435805	603045	X	0	X	X	HUNTEC TAPE 11 (2684) SIDE SCAN TAPE 19 (2005)
415	2071415	437552	603046	X	0	X	X	HUNTEC TAPE 11 (2777) SIDE SCAN TAPE 19 (2148)
416	2071420	435698	603040	X	0	X	X	HUNTEC TAPE 11 (2870) SIDESCAN TAPE 19 (2269)
417	2071425	435646	603050	X	0	X	X	HUNTEC TAPE 11 (2966) SIDESCAN TAPE 19 (2395)
418	2071430	435595	603049	X	0	X	X	HUNTEC TAPE 11 (3060) SIDESCAN TAPE 19 (2515)
419	2071435	435546	603044	X	0	X	X	HUNTEC TAPE 11 (3155) SIDE SCAN TAPE 19 (2640)
420	2071440	435496	603039	X	0	X	X	HUNTEC TAPE 11 (3253) SIDE SCAN TAPE 19 (2740)
421	2071445	435447	603035	X	0	X	X	HUNTEC TAPE 11 (3346) SIDE SCAN TAPE 19 (2845)
422	2071415	435400	603028	X	0	X	X	HUNTEC TAPE 11 (3438) SIDE SCAN START TAPE 20
423	2071455	435351	603021	X	0	X	X	HUNTEC TAPE 11 (3534) SIDE SCAN TAPE 20 (0278)
424	2071500	435303	603018	X	0	X	X	HUNTEC TAPE 11 (3628) SIDE SCAN TAPE 20 (0532)
425	2071505	435255	603017	X	0	X	X	HUNTEC END OF TAPE 11 SIDE SCAN TAPE 20 (0769)
426	2071510	435208	603015	X	0	X	X	HUNTEC START TAPE 12 SIDE SCAN TAPE 20 (0985)
427	2071515	435162	603014	X	0	X	X	HUNTEC TAPE 12 (0098) SIDE SCAN TAPE 20 (1190)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	HSRF	SIDE SCAN	SOUNDER	NOTES.....
428	2071520	435115	603012	X	0	X	X	HUNTEC TAPE 12 (0190) SIDE SCAN TAPE 20 (1357)
429	2071525	435067	603010	X	0	X	X	HUNTEC TAPE 12 (0290) SIDE SCAN TAPE 20 (1532)
430	2071530	435021	603007	X	0	X	X	HUNTEC TAPE 12 (0379) SIDE SCAN TAPE 20 (1697)
431	2071535	434973	603005	X	0	X	X	HUNTEC TAPE 12 (0477) SIDE SCAN TAPE 20 (1852)
432	2071540	434926	603004	X	0	X	X	HUNTEC TAPE 12 (0570) SIDE SCAN TAPE 20 (2004)
433	2071545	434879	603002	X	0	X	X	HUNTEC TAPE 12 (0663) SIDE SCAN TAPE 20 (2145)
434	2071550	434832	603001	X	0	X	X	HUNTEC TAPE 12 (0757) SIDE SCAN TAPE 20 (2282)
435	2071555	434782	603001	X	0	X	X	HUNTEC TAPE 12 (0852) SIDE SCAN TAPE 20 (2415)
436	2071600	434735	603001	X	0	X	X	HUNTEC TAPE 12 (0950) SIDE SCAN TAPE 20 (2555)
437	2071605	434687	603084	X	0	X	X	HUNTEC TAPE 12 (1041) SIDE SCAN TAPE 20 (2674
438	2071615	434579	603005	X	0	X	X	HUNTEC TAPE 12 (1136) SIDE SCAN TAPE 20 (2795)
439	2071615	434579	603005	X	0	X	X	HUNTEC TAPE 12 (1232) SIDE SCAN TAPE 20 (2918)
440	2071620	434544	603003	X	0	X	X	HUNTEC TAPE 12 (1328) SIDE SCAN TAPE 20 (3035)
441	2071625	434500	603001	X	0	X	X	HUNTEC TAPE 12 (1420) SIDE SCAN TAPE 20 (3142)
442	2071630	434455	602998	X	0	X	X	HUNTEC TAPE 12 (1519) GG DOWN PAPERTAPE
443	2071635	434410	602995	X	0	X	X	HUNTEC TAPE 12 (RESEED) SIDE SCAN STILL DOWN
444	2071640	434364	602990	X	0	X	X	HUNTEC TAPE 12 (1702) SIDE SCAN DOWN

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	ISIS	SIDE SCAN	SOUNDER	NOTES.....
445	2071645	434320	602984	X	0	X	X	HUNTEC TAPE 12 (1779) SIDE SCAN START TAPE 21
446	2071650	434275	602977	X	0	X	X	HUNTEC TAPE 12 (1892) SIDE SCAN TAPE 21 (3188)
447	2071655	434227	602975	X	0	X	X	HUNTEC TAPE 13 (1990) SIDE SCAN TAPE 21 (3520)
448	2071700	434180	602974	X	0	X	X	HUNTEC TAPE 12 (2081) SIDE SCAN TAPE 21 (3750)
449	2071705	434133	602974	X	0	X	X	HUNTEC TAPE12 (2175) SIDE SCAN TAPE 21 (3980)
450	2071710	434086	602973	X	0	X	X	HUNTEC TAPE 12 (2270) SIDE SCAN TAPE 21 (4200)
451	2071715	434039	602972	X	0	X	X	HUNTEC TAPE 12 (2367) SIDE SCAN 21 (4400)
452	2071720	433990	602973	X	0	X	X	HUNTEC TAPE 12 (2467) SIDE SCAN TAPE 21 (4590)
453	2071725	433946	602973	X	0	X	X	HUNTEC TAPE 12(2555) SIDE SCAN TAPE 21(4760)
454	2071730	433899	602975	X	0	X	X	HUNTEC TAPE 12(2651) SIDE SCAN TAPE 21(4919)
455	2071735	433852	602976	X	0	X	X	HUNTEC TAPE 12(2745) SIDE SCAN TAPE 21(5080)
456	2071740	433804	602978	X	0	X	X	HUNTEC TAPE 12(2835) SIDE SCAN TAPE 21(5220)
457	2071745	433750	602981	X	0	X	X	HUNTEC TAPE 12(2933) SIDE SCAN TAPE 21(5379)
458	2071750	433712	602984	X	0	X	X	HUNTEC TAPE 12(3028) SIDE SCAN TAPE 21(5518)
459	2071755	433665	602989	X	0	X	X	HUNTEC TAPE 12(3122) SIDE SCAN TAPE 21(5655)
460	2071800	433620	602994	X	0	X	X	HUNTEC TAPE 12( ) SIDE SCAN TAPE 21( )
461	2071805	433575	603001	X	0	X	X	HUNTEC TAPE 12(3229) SIDE SCAN TAPE 21(5910)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
462	2071810	433575	603001	X	0	X	X	HUNTEC TAPE 12(3323) SIDE SCAN TAPE 21(6030)
463	2071815	433490	603013	X	0	X	X	HUNTEC TAPE 12(3420) SIDE SCAN TAPE 21(6150)
464	2071820	433449	603019	X	0	X	X	HUNTEC TAPE 13(000) SIDE SCAN TAPE 21(6243)
465	2071825	433399	603016	X	0	X	X	HUNTEC TAPE 13(091) SIDE SCAN TAPE 22(000)
466	2071830	433406	602977	X	0	X	X	HUNTEC TAPE 13(180) SIDE SCAN TAPE 22(000)
467	2071835	433415	602922	X	0	X	X	HUNTEC TAPE 13(270) SIDE SCAN TAPE 22(505)
468	2071835	433423	602866	X	0	X	X	HUNTEC TAPE 13(373) SIDE SCAN TAPE 22(745)
469	2071845	433431	602807	X	0	X	X	HUNTEC TAPE 13(472) SIDE SCAN TAPE 22(960)
470	2071850	433435	602759	X	0	X	X	HUNTEC TAPE 13(560) SIDE SCAN TAPE(1160)
471	2071855	433440	602704	X	0	X	X	HUNTEC TAPE 13(656) SIDE SCAN TAPE 22(1360)
472	2071900	433440	602649	X	0	X	X	HUNTEC TAPE 13(753) SIDE SCAN TAPE 22(1532)
473	2071905	433438	602594	X	0	X	X	HUNTEC TAPE 13(846) SIDE SCAN TAPE 22(1690)
474	2071910	433437	602538	X	0	X	X	HUNTEC TAPE 13(940) SIDE SCAN TAPE 22(1852)
475	2072010	433437	602482	X	0	X	X	HUNTEC TAPE 13(1035) SIDE SCAN TAPE 22(2010)
476	2071920	433436	602426	X	0	X	X	HUNTEC TAPE 13(1130) SIDE SCAN TAPE 22(2148)
477	2071925	433438	602369	X	0	X	X	HUNTEC TAPE 13(1226) SIDE SCAN TAPE 22(2290)
478	2071930	433435	602312	X	0	X	X	HUNTEC TAPE 13( ) SIDE SCAN TAPE 22( )

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NAV	SIDE SCAN	SOUNDER	NOTES.....
479	2071935	433429	602254	X	0	X	X	HUNTEC TAPE 13(1414) SIDE SCAN TAPE 22(2554)
480	2071940	433427	602199	X	0	X	X	HUNTEC TAPE 13(1509) SIDE SC
481	2071945	433420	602140	X	0	X	X	HUNTEC TAPE 13(1604) SIDE SCAN TAPE 22(2805)
482	2071950	433414	602083	X	0	X	X	HUNTEC TAPE 13(1703) SIDE SCAN TAPE 22(2929)
483	2071955	433410	602026	X	0	X	X	HUNTEC TAPE 13(1793) SIDE SCAN TAPE 22(3039)
484	2072000	433405	601962	X	0	X	X	HUNTEC TAPE 13(1887) SIDE SCAN TAPE 22(3153)
485	2072005	433402	601962	X	0	X	X	HUNTEC TAPE 13(1990) SIDE SCAN TAPE 23(000)
486	2072010	433397	601854	X	0	X	X	HUNTEC TAPE 13(2080) SIDE SCAN TAPE 23(206)
487	2072015	433394	601795	X	0	X	X	HUNTEC TAPE 13(2169) SIDE SCAN TAPE 23(548)
488	2072020	433387	601735	X	0	X	X	HUNTEC TAPE 13(2266) SIDE SCAN TAPE 23(992)
489	2072025	433382	601675	X	0	X	X	HUNTEC TAPE 13(2359) SIDE SCAN TAPE 23(992)
490	2072030	433375	601613	X	0	X	X	HUNTEC TAPE 13(2455) SIDE SCAN TAPE 23(1190)
491	2072035	433368	601552	X	0	X	X	HUNTEC TAPE 13(2548) SIDE SCAN TAPE 23(1368)
492	2072040	433372	601491	X	0	X	X	HUNTEC TAPE 13(2644) SIDE SCAN TAPE 23(1545)
493	2072045	433419	601476	X	0	X	X	HUNTEC TAPE 13(2736) SIDE SCAN TAPE 23(1702)
494	2072050	433475	601481	X	0	X	X	HUNTEC TAPE 13(2839) SIDE SCAN TAPE 23(1862)
495	2072055	433525	601407	X	0	X	X	HUNTEC TAPE 13(2932) SIDE SCAN T

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
496	2062100	433576	601492	X	0	X	X	HUNTEC TAPE 13(3021) SIDE SCAN TAPE 23(2153)
497	2072105	433626	601495	X	0	X	X	HUNTEC TAPE 13(3110) SIDE SCAN TAPE 23(2279)
498	2072110	433677	601492	X	0	X	X	HUNTEC TAPE 13(3209) SIDE SCAN TAPE 23(2279)
499	2072115	433728	601489	X	0	X	X	HUNTEC TAPE 13(3303) SIDE SCAN TAPE 23(2303)
500	2072120	433781	601486	X	0	X	X	HUNTEC TAPE 13(3390) SIDE SCAN TAPE 23(2436)
501	2072125	433834	601484	X	0	X	X	HUNTEC TAPE 13(3492) SIDE SCAN TAPE 23(2562)
502	2072130	433883	601483	X	0	X	X	HUNTEC TAPE 13(3584) SIDE SCAN TAPE 23(2680)
503	2072135	433934	601482	X	0	X	X	HUNTEC TAPE 14(055) SIDE SCAN TAPE 23(2809)
504	2072140	433983	601479	X	0	X	X	HUNTEC TAPE 14(150) SIDE SCAN TAPE 23(2925)
505	2072145	433983	601479	X	0	X	X	HUNTEC TAPE 14(244) SIDE SCAN TAPE 23(3030)
506	2072150	434084	601481	X	0	X	X	HUNTEC TAPE 14(339) SIDE SCAN TAPE 23(3145)
507	2072155	434136	601481	X	0	X	X	HUNTEC TAPE 14(434) SIDE SCAN TAPE 24(000)
508	2072200	434189	601484	X	0	X	X	HUNTEC TAPE 14(528) SIDE SCAN TAPE 24(266)
509	2072205	434241	601490	X	0	X	X	HUNTEC TAPE 14(622) SIDE SCAN TAPE 24(510)
510	2072210	434294	601494	X	0	X	X	HUNTEC TAPE 14(717) SIDE SCAN TAPE 24(730)
511	2072215	434345	601499	X	0	X	X	HUNTEC TAPE 14(813) SIDE SCAN TAPE 24(937)
512	2072220	434397	601503	X	0	X	X	HUNTEC TAPE 14(906) SIDE SCAN TAPE 24(1125)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSKR	SIDE SCAN	SOUNDER	NOTES.....
513	2072225	434397	601503	X	0	X	X	HUNTEC TAPE 14(1000) SIDE SCAN TAPE 24(1300)
514	2072230	434500	601496	X	0	X	X	HUNTEC TAPE 14(1095) SIDE SCAN TAPE 24(1468)
515	2072235	434554	601493	X	0	X	X	HUNTEC TAPE 14(1189) SIDE SCAN TAPE 24(1627)
516	2072240	434610	601494	X	0	X	X	HUNTEC TAPE 14(1284) SIDE SCAN TAPE 24(1779)
517	2072245	434665	601487	X	0	X	X	HUNTEC TAPE 14(1378) SIDE SCAN TAPE 24(1928)
518	2072250	434718	601501	X	0	X	X	HUNTEC TAPE 14(1473) SIDE SCAN TAPE 24(2065)
519	2072255	434770	601504	X	0	X	X	HUNTEC TAPE 14(1473) SIDE SCAN TAPE 24(2200)
520	2072300	434825	601507	X	0	X	X	HUNTEC TAPE 14(1662) SIDE SCAN TAPE 24(2331)
521	2072305	434874	601511	X	0	X	X	HUNTEC TAPE 14(1757) SIDE SCAN TAPE 24(2458
522	2072310	434924	601518	X	0	X	X	HUNTEC TAPE 14(1851) SIDE SCAN TAPE 24(2581)
523	2072315	434925	601524	X	0	X	X	HUNTEC TAPE 14(1944) SIDE SCAN TAPE 24(2701)
524	2072320	435025	601526	X	0	X	X	HUNTEC TAPE 14(2040) SIDE SCAN TAPE 24(2817)
525	2072325	435079	601530	X	0	X	X	HUNTEC TAPE 14(2125) SIDE SCAN TAPE 24(2929)
526	2072330	435128	601530	X	0	X	X	HUNTEC TAPE 14 (2229) SIDE SCAN TAPE 25 (0000)
527	2072335	435179	601529	X	0	X	X	HUNTEC TAPE 14 (2324) SIDE SCAN TAPE 25 (0340)
528	2072340	435228	601535	X	0	X	X	HUNTEC TAPE 14 (2422) SIDE SCAN TAPE 25 (0608)
529	2072345	435227	601601	X	0	X	X	HUNTEC TAPE 14 (2503) SIDE SCAN TAPE 25 (0826)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	HSRF	SIDE SCAN	SOUNDER	NOTES.....
530	2072350	435216	601675	X	0	X	X	HUNTEC TAPE 14 (2607) SIDE SCAN TAPE 25 (1033)
531	2072355	435207	601740	X	0	X	X	HUNTEC TAPE 14 (2702) SIDE SCAN TAPE 25 (1225)
532	2080000	435205	601806	X	0	X	X	HUNTEC TAPE 14 (2796) SIDE SCAN TAPE 25 (1403)
533	2080005	435206	601869	X	0	X	X	HUNTEC TAPE 14 (2891) SIDE SCAN TAPE 25 (1574)
534	2080010	435206	601932	X	0	X	X	HUNTEC TAPE 14 (2985) SIDE SCAN TAPE 25 (1736)
535	2080015	435205	601995	X	0	X	X	HUNTEC TAPE 14 (3080) SIDE SCAN TAPE 25 (1891)
536	2080020	435202	602056	X	0	X	X	HUNTEC TAPE 14 (3175) SIDE SCAN TAPE 25 (2038)
537	2080025	435201	602119	X	0	X	X	HUNTEC TAPE 14 (3269) SIDE SCAN TAPE 25 (2180)
538	2080030	435198	602182	X	0	X	X	HUNTEC TAPE 14 (3364) SIDE SCAN TAPE 25 (2317)
539	2080035	435193	602244	X	0	X	X	HUNTEC TAPE 14 (3458) SIDE SCAN TAPE 25 (2450)
540	2080040	435181	602295	X	0	X	X	HUNTEC TAPE 14 (3553) SIDE SCAN TAPE 25 (2577)
541	2080045	435137	602291	X	0	X	X	HUNTEC START TAPE 15 SIDE SCAN TAPE 25 (2703)
542	2080050	435095	602291	X	0	X	X	HUNTEC TAPE 15 (0093) SIDE SCAN TAPE 25 (2021)
543	2080055	435054	602291	X	0	X	X	HUNTEC TAPE 15 (0187) SIDE SCAN TAPE 25 (2939)
544	2080100	435013	602292	X	0	X	X	HUNTEC TAPE 15( ) SIDE SCAN TAPE 25 (3040)
545	2080105	434966	602293	X	0	X	X	HUNTEC TAPE 15 (0377) SIDE SCAN CHANGING TAPE
546	2080110	434917	602295	X	0	X	X	HUNTEC TAPE 15 (0471) SIDE SCAN TAPE 26 (0132)

FIX NUMBER	DAY/TIME (GMT)	EASTING	NORTHING	HUNTEC	MAG	SIDE SCAN	BOUNDER	NOTES.....
547	2000115	434067	602297	X	0	X	X	HUNTEC TAPE 15 (0545) SIDE SCAN TAPE 26 (0405)
548	2000120	434019	602301	X	0	X	X	HUNTEC TAPE 15 (0660) SIDE SCAN TAPE 26 (0644)
549	2000125	434771	602305	X	0	X	X	HUNTEC TAPE 15 (0755) SIDE SCAN TAPE 26 (0862)
550	2000130	434720	602311	X	0	X	X	HUNTEC TAPE 15 (0849) SIDE SCAN TAPE 26 (1064)
551	2000135	434684	602318	X	0	X	X	HUNTEC TAPE 15 (0944) SIDE SCAN TAPE 26 (1252)
552	2000140	434640	602325	X	0	X	X	HUNTEC TAPE 15 (1038) SIDE SCAN TAPE 26 (1428)
553	2000145	434602	602328	X	0	X	X	HUNTEC TAPE 15 (1133) SIDE SCAN TAPE 26 (1595)
554	2000150	434550	602332	X	0	X	X	HUNTEC TAPE 15 (1220) SIDE SCAN TAPE 26 (1754)
555	2000155	0	0	X	0	X	X	HUNTEC TAPE 15 (1322) SIDE SCAN TAPE 26 (1905)
556	2000200	434489	602338	X	0	X	X	HUNTEC TAPE 15 (1416) SIDESCAN TAPE 26 (2051)
557	2000205	434454	602330	X	0	X	X	HUNTEC TAPE 15 (1512) SIDE SCAN TAPE 26 (2191)
558	2000210	434415	602334	X	0	X	X	HUNTEC TAPE 15 (1606) SIDE SCAN TAPE 26 (2327)
559	2000215	434379	602323	X	0	X	X	HUNTEC TAPE 15 (1700) SIDE SCAN TAPE 26 (2457)
560	2000220	434344	602315	X	0	X	X	HUNTEC TAPE 15 (1795) SIDE SCAN TAPE 26 (2504)
561	2000225	434307	602304	X	0	X	X	HUNTEC TAPE 15 (1889) SIDE SCAN TAPE 26 (2707)
562	2000230	434268	602293	X	0	X	X	HUNTEC TAPE 15 (1984) SIDE SCAN 26 (2027)
563	2000235	434234	602293	X	0	X	X	HUNTEC TAPE 15 (2078) SIDE SCAN TAPE 26 (2944)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	HSRF	SIDE SCAN	SOUNDER	NOTES.....
564	2000240	434201	602294	X	0	X	X	HUNTEC TAPE 15 (2173) SIDE SCAN TAPE 26 (3053)
565	2000245	434149	602294	X	0	X	X	HUNTEC TAPE 15 (2268) SIDE SCAN TAPE 27 (0108)
566	2000250	434138	602293	X	0	X	X	HUNTEC TAPE 15 (2362) SIDE SCAN TAPE 27 (0304)
567	2000255	434103	602290	X	0	X	X	HUNTEC TAPE 15 (2456) SIDE SCAN TAPE 27 (0429)
568	2000400	434064	602287	X	0	X	X	HUNTEC TAPE 15 (2551) SIDE SCAN TAPE 27 (0849)
569	2000300	434064	602287	X	0	X	X	HUNTEC TAPE 15 (2646) SIDE SCAN TAPE 27 (1053)
570	2000310	433980	602283	X	0	X	X	HUNTEC TAPE 15 (2741) SIDE SCAN TAPE 27 (1246)
571	2000315	433955	602284	X	0	X	X	HUNTEC TAPE 15 (2840) SIDE SCAN TAPE 27 (1423)
572	2000320	433921	602280	X	0	X	X	HUNTEC TAPE 15 (2934) SIDE SCAN TAPE 27 (1598)
573	2000325	433882	602277	X	0	X	X	HUNTEC TAPE 15 (3029) SIDE SCAN TAPE 27 (1749)
574	2000330	433845	602278	X	0	X	X	HUNTEC TAPE 15 (3119) SIDE SCAN TAPE 27 (1900)
575	2000335	433810	602281	X	0	X	X	HUNTEC TAPE 15 (3214) SIDE SCAN TAPE 27 (2047)
576	2000340	433774	602282	X	0	X	X	HUNTEC TAPE 15 (3308) SIDE SCAN TAPE 27 (2188)
577	2000345	433750	602311	X	0	X	X	HUNTEC TAPE 15 (3405) SIDE SCAN TAPE 27 (2421)
578	2000350	433754	602308	X	0	X	X	HUNTEC TAPE 15 (3498) SIDE SCAN TAPE 27 (2455)
579	2000335	433757	602465	X	0	X	X	HUNTEC START TAPE 16 SIDE SCAN TAPE 27 (2587)
580	2000400	433759	602540	X	0	X	X	HUNTEC TAPE 16 (0130) SIDE SCAN TAPE 27 (2706)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NGRF	SIDE SCAN	SOUNDER	NOTES.....
501	2000405	433762	602615	X	0	X	X	HUNTEC TAPE 16 (0225) SIDE SCAN TAPE 27 (2062)
502	2000410	433765	602692	X	0	X	X	HUNTEC TAPE 16 (0320) SIDE SCAN TAPE 27 (2942)
503	2000415	433766	602761	X	0	X	X	HUNTEC TAPE 16 (0414) SIDE SCAN TAPE 27 (3059)
504	2000420	433768	602833	X	0	X	X	HUNTEC TAPE 16 (0511) SIDE SCAN TAPE 28 (0068)
505	2000425	433769	602904	X	0	X	X	HUNTEC TAPE 16 (0600) SIDE SCAN TAPE 28 (0350)
506	2000430	433770	602971	X	0	X	X	HUNTEC TAPE 16 (0698) SIDE SCAN TAPE 28 (0610)
507	2000435	433774	603044	X	0	X	X	HUNTEC TAPE 16 (0793) SIDE SCAN TAPE 28 (0836)
508	2000440	433775	603109	X	0	X	X	HUNTEC TAPE 16 (0887) SIDE SCAN TAPE 28 (1040)
509	2000445	433779	603177	X	0	X	X	HUNTEC TAPE 16 (0982) SIDE SCAN TAPE 28 (1235)
590	2000450	433782	603245	X	0	X	X	HUNTEC TAPE 16 (1076) SIDE SCAN TAPE 28 (1415)
591	2000455	433783	603314	X	0	X	X	HUNTEC TAPE 16 (1170) SIDE SCAN TAPE 28 (1585)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSKF	SIDE SCAN	SOUNDER	NOTES.....
592	2000500	433783	603374	X	0	X	X	HUNTEC TAPE 16 (1265) SIDE SCAN TAPE 28 (1740) NSKF READY TO ROLL IT IS ABOUT TIME
593	2000505	433785	603430	X	0	X	X	HUNTEC TAPE 16 (1359) SIDE SCAN TAPE 28 (1896)
594	2000510	433787	603504	X	0	X	X	HUNTEC TAPE 16 (1454) SIDE SCAN TAPE 28 (2044)
595	2000515	433788	603569	X	0	X	X	HUNTEC TAPE 16 (1549) SIDE SCAN TAPE 28 (2188)
596	2000520	433791	603630	X	X	X	X	HUNTEC TAPE 16 (1623) SIDE SCAN TAPE 28 (2322)
597	2000525	433793	603695	X	X	X	X	HUNTEC TAPE 16 (1737) SIDE SCAN TAPE 28 (2454)
598	2000530	433791	603756	X	X	X	X	HUNTEC TAPE 16 (1832) SIDE SCAN TAPE 28 (2583)
599	2000535	433792	603818	X	X	X	X	HUNTEC TAPE 16 (1927) SIDE SCAN TAPE 28 (2707)
600	2000540	433790	603877	X	X	X	X	HUNTEC TAPE 16 (2021) SIDE SCAN TAPE 28 (2827) NSKF TAPE 1 (0552)
601	2000545	433789	603937	X	X	X	X	HUNTEC TAPE 16 (2116) SIDE SCAN TAPE 28 (2945) NSKF TAPE 1 (0641)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
602	2080550	433709	604002	X	X	X	X	HUNTEC TAPE 16 (2211) SIDE SCAN TAPE 28 (3056) NSRF TAPE 1 (0764)
603	2080555	433831	604014	X	X	X	X	HUNTEC TAPE 16 (2305) SIDE SCAN TAPE 28 (3157) NSRF TAPE 1 (0862)
604	2080600	433839	604012	X	X	X	X	HUNTEC TAPE 16 (2399) SIDE SCAN TAPE 29 (0128) NSRF TAPE 1 (0958)
605	2080605	433945	604008	X	X	X	X	HUNTEC TAPE 16 (2493) SIDE SCAN TAPE 29 (0400) NSRF TAPE 1 (1053)
606	2080610	434004	604003	X	X	X	X	HUNTEC TAPE 16 (2588) SIDE SCAN TAPE 29 (0659) NSRF TAPE 1 (1139)
607	2080615	434063	603997	X	X	X	X	HUNTEC TAPE 16 (2588) SIDE SCAN TAPE 29 (0880) NSRF TAPE 1 (1226)
608	2080620	434122	603989	X	X	X	X	HUNTEC TAPE 16 (2770) SIDE SCAN TAPE 29 (1088) NSRF TAPE 1 (1312)
609	2080625	434181	603983	X	X	X	X.	HUNTEC TAPE 16 (2875) SIDE SCAN TAPE 29 (1277) NSRF TAPE 1 (1390)
610	2080630	434237	603976	X	X	X	X	HUNTEC TAPE 16 (2966) SIDE SCAN TAPE 29 (1456) NSRF TAPE 1 (1473)
611	2080635	434291	603977	X	X	X	X	HUNTEC TAPE 16 (3061) SIDE SCAN TAPE 29 (1628) NSRF TAPE 1 (1553)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES....
612	2000640	434340	603976	X	X	X	X	HUNTEC TAPE 16 (3155) SIDE SCAN TAPE 29 (1700) NSRF TAPE 1 (1677)
613	2000645	434400	603975	X	X	X	X	HUNTEC TAPE 16 (3250) SIDE SCAN TAPE 29 (1940) NSRF TAPE 1 (1701)
614	2000650	434456	603975	X	X	X	X	HUNTEC TAPE 16 (3346) SIDE SCAN TAPE 29 2093) NSRF TAPE 1 (1700)
615	2000655	434504	603903	X	X	X	X	HUNTEC TAPE 16 (3440) SIDE SCAN TAPE 29 (2242) NSRF TAPE 1 (1840)
616	2000700	434558	603990	X	X	X	X	HUNTEC TAPE 17 (0006) SIDE SCAN TAPE 29 (2370) NSRF TAPE 1 (1923)
617	2000705	434605	603996	X	X	X	X	JODREY MISSED THE FIX
618	2000710	434657	604002	X	X	X	X	JODREY MISSED THE FIX
619	2000715	434711	604009	X	X	X	X	HUNTEC TAPE 17(284) SIDE SCAN TAPE 29(2755) NSRF TAPE 1(2126) NSRF SYSTEM SHUT DOWN
620	2000720	434765	604012	X	0	X	X	HUNTEC TAPE 17(301) SIDE SCAN TAPE 29(2876) NSRF DOWN SEA STATE ROUGH
621	2000725	434818	604011	X	0	X	X	HUNTEC TAPE 17(473) SIDE SCAN TAPE 29(2906) NSRF DOWN SEA STATE ROUGH

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	BOUNDER	NOTES.....
622	2080730	434076	604012	X	0	X	X	HUNTEC TAPE 17(566) SIDE SCAN TAPE 29(3096) NSRF DOWN
623	2080735	434930	604013	X	0	X	X	HUNTEC TAPE 17( ) SIDE SCAN TAPE 29( ) NSRF DOWN
624	2080740	434905	604011	X	0	X	X	HUNTEC TAPE 17(757) SIDE SCAN TAPE 30(430) NSRF DOWN
625	2080745	435034	604010	X	0	X	X	HUNTEC TAPE 17(851) SIDE SCAN TAPE 30(677) NSRF DOWN
626	2080750	435083	604007	X	0	X	X	HUNTEC TAPE 17(944) SIDE SCAN TAPE 30(895) NSRF DOWN
627	2080755	435134	604006	X	0	X	X	HUNTEC TAPE 17(1044) SIDE SCAN TAPE 30(1100) NSRF DOWN
628	2080800	435184	604003	X	0	X	X	HUNTEC TAPE 17(1134) SIDE SCAN TAPE 30(1289) NSRF DOWN
629	2080805	435232	603999	X	0	X	X	HUNTEC TAPE 17(1232) SIDE SCAN TAPE 30(1474) NSRF DOWN
630	2080810	435284	603995	X	0	X	X	HUNTEC TAPE 17(1322) SIDE SCAN TAPE 30(1536) NSRF DOWN
631	2080810	435331	603991	X	0	X	X	HUNTEC TAPE 17(1419) SIDE SCAN TAPE 30(1790) NSRF DOWN

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
632	2000820	435380	603992	X	0	X	X	HUNTEC TAPE 17(1514) SIDE SCAN TAPE 30(1953) NSRF DOWN
633	2000825	435429	603993	X	0	X	X	HUNTEC TAPE 17(1606) SIDE SCAN TAPE 30(2096) NSRF DOWN
634	2000830	435477	603994	X	0	X	X	HUNTEC TAPE 17(1701) SIDE SCAN TAPE 30(2230) NSRF DOWN
635	2000835	435525	603995	X	0	X	X	HUNTEC TAPE 17(1795) SIDE SCAN TAPE 30(2370) NSRF DOWN
636	2000840	435574	603996	X	0	X	X	HUNTEC TAPE 17(1890) SIDE SCAN TAPE 30(2507) NSRF DOWN
637	2000845	435620	603994	X	0	X	X	HUNTEC TAPE 17(1987) SIDE SCAN TAPE 30( ) NSRF DOWN
638	2000850	435669	603990	X	0	X	X	HUNTEC TAPE 17(2079) SIDE SCAN TAPE 30(2760)
639	2000855	435717	603988	X	0	X	X	HUNTEC TAPE 17(2174) SIDE SCAN TAPE 30(2875) NSRF DOWN
640	2000900	435767	603986	X	0	X	X	HUNTEC TAPE 17(2270) SIDE SCAN TAPE 30(2995) NSRF DOWN
641	2000905	435816	603982	X	0	X	X	HUNTEC TAPE 17(2363) SIDE SCAN TAPE 30(3097) NSRF DOWN

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
642	2000910	435066	603981	X	0	X	X	HUNTEC TAPE 17(2450) SIDE SCAN TAPE 30(END) NSRF DOWN
643	2000915	435916	603970	X	0	X	X	HUNTEC TAPE 17(2552) SIDE SCAN TAPE 31(220) NSRF DOWN
644	2000920	435966	603975	X	0	X	X	HUNTEC TAPE 17(2647) SIDE SCAN TAPE 31(495) NSRF DOWN
645	2000925	440016	603971	X	0	X	X	HUNTEC TAPE 17(2742) SIDE SCAN TAPE 31(732) NSRF DOWN
646	2000930	440065	603975	X	0	X	X	HUNTEC TAPE 17(2836) SIDE SCAN TAPE 31(955) NSRF DOWN
647	2000935	440117	603980	X	0	X	X	HUNTEC TAPE 17(2940) SIDE SCAN TAPE 31(1200) NSRF DOWN
648	2000940	440166	603983	X	0	X	X	HUNTEC TAPE 17(3025) SIDE SCAN TAPE 31(1351) NSRF DOWN
649	2000945	440213	603985	X	0	X	X	HUNTEC TAPE 17(3120) SIDE SCAN TAPE 31(1535) NSRF DOWN
650	2000950	440258	603987	X	0	X	X	HUNTEC TAPE 17(3220) SIDE SCAN TAPE 31(1720) NSRF DOWN
651	2000955	440306	603990	X	0	X	X	HUNTEC TAPE 17(3312) SIDE SCAN TAPE 31(1875) NSRF DOWN

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
652	2001000	440355	603995	X	0	X	X	HUNTEC TAPE 17(3403) SIDE SCAN TAPE 31(2027) NSRF DOWN
653	2001005	440402	604001	X	0	X	X	HUNTEC TAPE 17(3490) SIDE SCAN TAPE 31(2100) NSRF DOWN
654	2001010	440444	604004	X	0	X	X	HUNTEC TAPE 18(000) SIDE SCAN TAPE 31(2325) NSRF DOWN
655	2001015	440530	604012	X	0	X	X	HUNTEC TAPE 18(095) SIDE SCAN TAPE 31(2464) NSRF DOWN
656	2001105	440530	604012	X	0	X	X	HUNTEC TAPE 18(100) SIDE SCAN TAPE 31(2400) NSRF FIRING SHIP SPEED 5.9 KNOTS
657	2001025	440577	604019	X	0	X	X	HUNTEC TAPE 18(203) SIDE SCAN TAPE 31(2730) NSRF FIRING
658	2001030	440626	604028	X	0	X	X	HUNTEC TAPE 18(377) SIDE SC
659	2001035	440669	604037	X	0	X	X	HUNTEC TAPE 18(472) SIDE SCAN TAPE 31(2904) NSRF TESTS
660	2001040	440716	604045	X	0	X	X	HUNTEC TAPE 18(566) SIDE SCAN TAPE 31(3105) SPEED 5.9 KNOTS
661	2001045	440764	604054	X	0	X	X	HUNTEC TAPE 18(665) SIDE SCAN TAPE 31(3226) NSRF TESTS

DAWSON 82-040 (LEG 1B.)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
662	2001050	440779	604018	X	0	X	X	HUNTEC TAPE 18(755) SIDE SCAN TAPE 31(END)
663	2001055	440795	603942	X	0	X	X	HUNTEC TAPE 18(851) SIDE SCAN TAPE 32(000)
664	2001100	440792	603707	X	0	X	X	HUNTEC TAPE 18(944) SIDE SCAN TAPE 32(100)
665	2001105	440788	603707	X	0	X	X	HUNTEC TAPE 18(1040) SIDE SCAN TAPE 32(230)
666	2001110	440784	603713	X	0	X	X	HUNTEC TAPE 18(1133) SIDE SCAN TAPE 32(442)
667	2001115	440780	603638	X	0	X	X	HUNTEC TAPE 18(1220) SIDE SCAN TAPE 32(638)
668	2001120	440775	603565	X	0	X	X	HUNTEC TAPE 18(1324) SIDE SCAN TAPE 32(828) SPEED 6.7 KNOTS
669	2001125	440775	603488	X	0	X	X	HUNTEC TAPE 18(1420) SIDE SCAN TAPE 32(1000)
670	2001130	440774	603406	X	0	X	X	HUNTEC TAPE 18(1511) SIDE SCAN TAPE 32(1163)
671	2001135	440775	603336	X	0	X	X	HUNTEC TAPE 18(1607) SIDE SCAN TAPE 32(1322) NSRF DOWN

DAWSON 02-040 (SABLE I8.)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSKF	SIDE SCAN	SOUNDER	NOTES.....
672	2001140	440774	603258	X	0	X	X	HUNTEC TAPE 18(1705) SIDE SCAN TAPE 32(1500) NSKF DOWN
673	2001145	440773	603179	X	0	X	X	HUNTEC TAPE 18(1796) SIDE SCAN TAPE 32(1618) NSKF DOWN
674	2001150	440772	603101	X	0	X	X	HUNTEC TAPE 18(1890) SIDE SCAN TAPE 32(1755 NSKF DOWN
675	2001155	440770	603021	X	0	X	X	HUNTEC TAPE 18(1984) SIDE SCAN TAPE 32(1890) NSKF DOWN
676	2001200	440769	602940	X	0	X	X	HUNTEC TAPE 18(2079) SIDE SCAN TAPE 32(2020) NSKF DOWN
677	2001205	440772	602861	X	0	X	X	HUNTEC TAPE 18(2173) SIDE SCAN TAPE 32(2149) NSKF DOWN
678	2001210	440774	602779	X	0	X	X	HUNTEC TAPE 18(2268) SIDE SCAN TAPE 32(2272) NSKF DOWN
679	2001215	440778	602701	X	0	X	X	HUNTEC TAPE 18(2363) SIDE SCAN TAPE 32(2390) NSKF DOWN
680	2001220	440781	602619	X	0	X	X	HUNTEC TAPE 18(2457) SIDE SCAN TAPE 32(2505) NSKF DOWN
681	2001225	440784	602537	X	0	X	X	HUNTEC TAPE 18(2552) SIDE SCAN TAPE 32(2618) NSKF DOWN

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
602	2001230	440705	602406	X	0	X	X	HUNTEC TAPE 10(2646) SIDE SCAN TAPE 33(0070) NSRF DOWN
603	2001235	440706	602376	X	0	X	X	HUNTEC TAPE 10(2743) SIDE SCAN TAPE 33(0360) NSRF DOWN SHIP SPEED 6.5
604	2001240	440706	602294	X	0	X	X	HUNTEC TAPE 10(2836) SIDE SCAN TAPE 33(0607) NSRF DOWN SHIP SPEED 6.6
605	2001245	440707	602212	X	0	X	X	HUNTEC TAPE 10(2930) SIDE SCAN TAPE 33(0840) NSRF DOWN SHIP SPEED 6.6
606	2001250	440709	602130	X	0	X	X	HUNTEC TAPE 10(3024) SIDE SCAN TAPE 33(1050) NSRF DOWN SHIP SPEED 6.4
607	2001255	440794	602048	X	0	X	X	HUNTEC TAPE 10(3125) SIDE SCAN TAPE 33(1250) NSRF DOWN SHIP SPEED 6.5
608	2001300	440799	601960	X	0	X	X	HUNTEC TAPE 10(3212) SIDE SCAN TAPE 33(1420) NSRF DOWN SHIP SPEED 6.5
609	2001305	440799	601880	X	0	X	X	HUNTEC TAPE 10(3308) SIDE SCAN TAPE 33(1595) NSRF DOWN SHIP SPEED 6.8
690	2001310	440801	601814	X	0	X	X	HUNTEC TAPE 10(3402) SIDE SCAN TAPE 33(1755) NSRF DOWN SHIP SPEED 5.8
691	2001315	440801	601743	X	0	X	X	HUNTEC TAPE 10(3505) SIDE SCAN TAPE 33(1935) NSRF DOWN SHIP SPEED 6.1

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSKF	SIDE SCAN	SOUNDER	NOTES.....
692	2001320	440801	601671	X	0	X	X	HUNTEC TAPE 18(3591) SIDE SCAN TAPE 33(2060) NSKF DOWN SHIP SPEED 6.1
693	2001325	440799	601599	X	0	X	X	HUNTEC TAPE 18 ENDED SIDE SCAN TAPE 33(2205) NSKF DOWN SHIP SPEED 6.1
694	2001330	440799	601520	X	0	X	X	HUNTEC TAPE 19(0078) SIDE SCAN TAPE 33(2345) NSKF DOWN SHIP SPEED 5.8
695	2001335	440799	601456	X	0	X	X	HUNTEC TAPE 19(0171) SIDE SCAN TAPE 33(2476) NSKF DOWN SHIP SPEED 6.1
696	2001340	440800	601305	X	0	X	X	HUNTEC TAPE 19(0265) SIDE SCAN TAPE 33(2606) NSKF DOWN SHIP SPEED 5.8
697	2001345	440797	601313	X	0	X	X	HUNTEC TAPE 19(0360) SIDE SCAN TAPE 33(2731) NSKF DOWN SHIP SPEED 5.9
698	2001350	440794	601240	X	0	X	X	HUNTEC TAPE 19(0457) SIDE SCAN TAPE 33(2857) NSKF DOWN SHIP SPEED 6.1
699	2001355	440792	601166	X	0	X	X	HUNTEC TAPE 19(0553) SIDE SCAN TAPE 33(2977) NSKF DOWN SHIP SPEED 6.1
700	2001400	440788	601092	X	0	X	X	HUNTEC TAPE 19(0644) SIDE SCAN TAPE 33(3087) NSKF DOWN SHIP SPEED 6.1
701	2001405	440786	601019	X	0	X	X	HUNTEC TAPE 19(0730) SIDE SCAN TAPE 33(3200) NSKF DOWN SHIP SPEED 6.2

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
702	2001410	440702	600944	X	0	X	X	HUNTEC TAPE 19(0033) SIDE SCAN TAPE 33(3232) NSRF DOWN SHIP SPEED 6.1
703	2001415	440700	600870	X	0	X	X	HUNTEC TAPE 19(0932) SIDE SCAN TAPE 34(0105) NSRF DOWN SHIP SPEED 6.1
704	2001420	440777	600796	X	X	X	X	HUNTEC TAPE 19(1023) SIDE SCAN TAPE 34(0430) NSRF STARTED NOW SHIP SPEED 6.0
705	2001425	440774	600723	X	X	X	X	HUNTEC TAPE 19(1125) SIDE SCAN TAPE 34(0700) NSRF TAPE 2(0140) SHIP SPEED 6.3
706	2001430	440773	600648	X	X	X	X	HUNTEC TAPE 19(1210) SIDE SCAN TAPE 34(0890) NSRF TAPE 2(0250) SHIP SPEED 5.9
707	2001435	440771	600574	X	X	X	X	HUNTEC TAPE 19(1304) SIDE SCAN TAPE 34(1092) NSRF TAPE 2(0385) SHIP SPEED 6.4
708	2001440	440770	600499	X	X	X	X	HUNTEC TAPE 19(1400) SIDE SCAN TAPE 34(1283) NSRF TAPE 2(0509) SHIP SPEED 6.2
709	2001445	440770	600424	X	X	X	X	HUNTEC TAPE 19(1493) SIDE SCAN TAPE 34(1457) NSRF TAPE 2(0628) SHIP SPEED 6.1
710	2001450	440770	600352	X	X	X	X	HUNTEC TAPE 19(1580) SIDE SCAN TAPE 34(1622) NSRF TAPE 2(0737) SHIP SPEED 6.2
711	2001455	440767	600279	X	X	X	X	HUNTEC TAPE 19(1683) SIDE SCAN TAPE 34(1784) NSRF TAPE 2(0845) SHIP SPEED 6.0

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	BOUNDER	NOTES.....
712	2001500	440766	600207	X	X	X	X	HUNTEC TAPE 19 (1778) SIDE SCAN TAPE 34 (1934) NSRF TAPE 2(0945)
713	2001505	440766	600136	X	X	X	X	HUNTEC TAPE 19 (1872) SIDE SCAN TAPE 34 (2000) NSRF TAPE 2 (1045)
714	2001510	440731	600072	X	X	X	X	HUNTEC TAPE 19 (1940) SIDE SCAN TAPE 34 (2226) NSRF TAPE 2 (1140)
715	2001515	440723	600017	X	X	X	X	HUNTEC TAPE 19 (2046) SIDE SCAN TAPE 34 (2364) NSRF TAPE 2 (1235)
716	2001520	440697	595962	X	X	X	X	HUNTEC TAPE 19 (2150) SIDE SCAN TAPE 34 (2491) NSRF TAPE 2 (1320)
717	2001525	440670	595905	X	X	X	X	HUNTEC TAPE 19 (2252) SIDE SCAN TAPE 34 (2617) NSRF TAPE 2 (1406)
718	2001530	440644	595848	X	X	X	X	HUNTEC TAPE 19 (2355) SIDE SCAN TAPE 34 (2742) NSRF TAPE 2 (1491)
719	2001535	440611	595783	X	X	X	X	HUNTEC TAPE 19 (2447) SIDE SCAN TAPE 34 (2864) NSRF TAPE 2 (1574)
720	2001540	440590	595736	X	X	X	X	HUNTEC TAPE 19 (2530) SIDE SCAN TAPE 34 (2977) NSRF TAPE 2 (1645)
721	2001545	440564	595678	X	X	X	X	HUNTEC TAPE 19 (2629) SIDE SCAN TAPE 34 (3088) NSRF TAPE 2 (1720)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
722	2001550	440530	595621	X	X	X	X	HUNTEC TAPE 19 ( ) SIDE SCAN START TAPE 35 NSRF TAPE 2 (1807)
723	2001555	440512	595565	X	X	X	X	HUNTEC TAPE 19 (2020) SIDE SCAN TAPE 35 (0267) NSRF TAPE 2 (1870)
724	2001600	440486	595508	X	X	X	X	HUNTEC TAPE 19 (2913) SIDE SCAN TAPE 35 (0530) NSRF TAPE 2 (1942)
725	2001605	440458	595454	X	X	X	X	HUNTEC TAPE 19 (3009) SIDE SCAN TAPE 35 (0779) NSRF TAPE 2 (2016)
726	2001610	440428	595398	X	X	X	X	HUNTEC TAPE 19 (3104) SIDE SCAN TAPE 35 (1005) NSRF TAPE 2 (2085)
727	2001615	440399	595343	X	X	0	X	HUNTEC TAPE 19 (3200) SIDE SCAN ON WAY UP NSRF TAPE 2 (2150)
728	2001620	440370	595287	X	X	0	X	HUNTEC TAPE 19 (3295) SIDE SCAN CABLE CHANGE NSRF TAPE 2 (2215)
729	2001625	440341	595231	X	X	0	X	HUNTEC TAPE 19 (3389) SIDE SCAN CABLE CHANGE NSRF TAPE 2 (2282)
730	2001630	440309	595173	X	X	0	X	HUNTEC TAPE 19 (3483) SIDE SCAN ALMOST READY NSRF TAPE 2 (2345)
731	2001635	440280	595117	X	X	0	X	HUNTEC TAPE 19 (3579) SIDE SCAN BACK IN WATER NSRF TAPE 2 (2414)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
732	2001640	440253	595064	X	X	0	X	HUNTEC END TAPE 19 SIDE SCAN SEEMS TO WORK NSRF TAPE 2 (2472)
733	2001645	440235	595024	0	X	0	X	FISH ON WAY UP TROUBLE WITH SIDE SCAN NSRF TAPE 2 (2532)
734	2001650	440218	594984	0	X	0	X	HUNTEC HOOKED SIDE SCAN SIDE SCAN K WING BROKEN NSRF TAPE 2 (2598)
735	2001655	440200	594943	0	X	0	X	HUNTEC ON DECK SIDESCAN ON DECK NSRF TAPE 2 (2654)
736	2001700	440184	594905	0	X	0	X	HUNTEC DOWN SIDE SCAN DOWN NSRF TAPE 2 (2710)
737	2001705	440153	594842	0	X	0	X	HUNTEC DOWN SIDE SCAN DOWN NSRF TAPE 2 (2776)
738	2001710	440138	594809	0	X	0	X	HUNTEC DOWN SIDE SCAN DOWN NSRF TAPE 2 (2825)
739	2001715	440119	594770	0	X	0	X	SURVEY STOPED DUE TO EQUIP. FAILURE GRAB SAMPLING DONE UNTIL GEAR IS UP AND RUNNING
740	2001901	0	0	X	X	X	X	ALL GEAR IN WATER AND WORKING
741	2001905	440302	594576	X	X	X	X	HUNTEC START TAPE 20 SIDE SCAN TAPE 35 (1105) NSRF TAPE 2 (2968)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	BOUNCER	NOTES.....
742	2001910	440323	594553	X	X	X	X	HUNTEC TAPE 20 (0065) SIDE SCAN TAPE 35 (1367) NSRF TAPE 2 (3023)
743	2001915	440345	594501	X	X	X	X	HUNTEC TAPE 20 (0157) SIDE SCAN TAPE 35 (1550) NSRF TAPE 2 (3074)
744	2001920	440397	594440	X	X	X	X	HUNTEC TAPE 20 (0253) SIDE SCAN TAPE 35 (1709) NSRF START TAPE 3
745	2001925	440428	594384	X	X	X	X	HUNTEC TAPE 20 (0350) SIDE SCAN TAPE 35 (1867) NSRF TAPE 3 (0175)
746	2001930	440433	594311	X	X	X	X	HUNTEC TAPE 20 (0444) SIDE SCAN TAPE 35 (2019) NSRF TAPE 3 (0313)
747	2001935	440431	594255	X	X	X	X	HUNTEC TAPE 20 (0543) SIDE SCAN TAPE 35 (2167) NSRF TAPE 3 (0444)
748	2001940	440429	594193	X	X	X	X	HUNTEC TAPE 20 (0633) SIDE SCAN TAPE 35 (2305) NSRF TAPE 3 (0563)
749	2001945	440426	594128	X	X	X	X	HUNTEC TAPE 20 (0725) SIDE SCAN TAPE 35 (2442) NSRF TAPE 3 (0677)
750	2001950	440441	594066	X	X	X	X	HUNTEC TAPE 20 (0825) SIDE SCAN TAPE 35 (2573) NSRF TAPE 3 (0787)
751	2001955	440459	594005	X	X	X	X	HUNTEC TAPE 20 (0920) SIDE SCAN TAPE 35 (2700) NSRF TAPE 3 (0890)

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FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
752	2002000	440405	593949	X	X	X	X	HUNTEC TAPE 20 (1015) SIDE SCAN TAPE 35 (2026) NSRF TAPE 3 (0992)
753	2002005	440530	593919	X	X	X	X	HUNTEC TAPE 20 (1100) SIDE SCAN TAPE 35 (2946) NSRF TAPE 3 (1084)
754	2002010	440548	593878	X	X	X	X	HUNTEC TAPE 20 (1205) SIDE SCAN TAPE 35 (3070) NSRF TAPE 3 (1180)
755	2002015	440579	593820	X	X	X	X	HUNTEC TAPE 20 (1300) SIDE SCAN TAPE 35 (3183) NSRF TAPE 3 (1269)
756	2002020	440598	593758	X	X	X	X	HUNTEC TAPE 20 (1390) SIDE SCAN START TAPE 36 NSRF TAPE 3 (1356)
757	2002025	440617	593695	X	X	X	X	HUNTEC TAPE 20 (1485) SIDE SCAN TAPE 36 (0290) NSRF TAPE 3 (1442)
758	2002030	440638	593635	X	X	X	X	HUNTEC TAPE 20 (1580) SIDE SCAN TAPE 36 (0538) NSRF TAPE 3 (1523)
759	2002035	440661	593575	X	X	X	X	HUNTEC TAPE 20 (1670) SIDE SCAN TAPE 36 (0760) NSRF TAPE 3 (1603)
760	2002040	440683	593515	X	X	X	X	HUNTEC TAPE 20(1766) SIDE SCAN TAPE 36(0973) NSRF TAPE 3(1682) SHIP SPEED 6.3
761	2002045	440689	593450	X	X	X	X	HUNTEC TAPE 20(1860) SIDE SCAN TAPE 36(1163) NSRF TAPE 3(1758) SHIP SPEED 6.0

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
762	2002050	440691	593304	X	X	X	X	HUNTEC TAPE 20(1952) SIDE SCAN TAPE 36(1346) NSRF TAPE 3(1834) SHIP SPEED 6.1
763	2002055	440690	593319	X	X	X	X	HUNTEC TAPE 20(2045) SIDE SCAN TAPE 36(1515) NSRF TAPE 3(1905) SHIP SPEED 6.1
764	2002100	440682	593256	X	X	X	X	HUNTEC TAPE 20(2145) SIDE SCAN TAPE 36(1605) NSRF TAPE 3(1985) SHIP SPEED 5.9
765	2002105	440669	593194	X	X	X	X	HUNTEC TAPE 20(2242) SIDE SCAN TAPE 36(1847) NSRF TAPE 3(2057) SHIP SPEED 6.0
766	2002110	440652	593133	X	X	X	X	HUNTEC TAPE 20(2330) SIDE SCAN TAPE 36(1985) NSRF TAPE 3(2121) SHIP SPEED 6.1
767	2002115	440634	593076	X	X	X	X	HUNTEC TAPE 20(2425) SIDE SCAN TAPE 36(2131) NSRF TAPE 3(2190) SHIP SPEED 6.2
768	2002120	440613	593010	X	X	X	X	HUNTEC TAPE 20(2510) SIDE SCAN TAPE 36(2269) NSRF TAPE 3(2257) SHIP SPEED 5.9
769	2002125	440599	592962	X	X	X	X	HUNTEC TAPE 20(2616) SIDE SCAN TAPE 36(2403) NSRF TAPE 3(2322) SHIP SPEED 5.8
770	2002130	440581	592906	X	X	X	X	HUNTEC TAPE 20(2700) SIDE SCAN TAPE 36(2531) NSRF TAPE 3(2450) SHIP SPEED 6.0
771	2002135	440561	592847	X	X	X	X	HUNTEC TAPE 20(2302) SIDE SCAN TAPE 36(2656) NSRF TAPE 3(2450) SHIP SPEED 6.1

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FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
772	2002140	440541	592707	X	X	X	X	HUNTEC TAPE 20(2997) SIDE SCAN TAPE 36(2779) NSRF TAPE 3(2513) SHIP SPEED 6.1
773	2002145	440520	592727	X	X	X	X	HUNTEC TAPE 20(2999) SIDE SCAN TAPE 36(2905) NSRF TAPE 3(2579) SHIP SPEED 6.0
774	2002150	440503	592663	X	X	X	X	HUNTEC TAPE 20(3007) SIDE SCAN TAPE 36(3015) NSRF TAPE 3(2636)
775	2002155	440485	592600	X	X	X	X	HUNTEC TAPE 20(3180) SIDE SC
776	2002200	440469	592537	X	X	X	X	HUNTEC TAPE 20(3275) SIDE SCAN TAPE 37(0054) NSRF TAPE 3(2812) SHIP SPEED 6.1
777	2002205	440449	592469	X	X	X	X	HUNTEC TAPE 20(3370) SIDE SCAN TAPE 37(0339) NSRF TAPE 3(2812) SHIP SPEED 6.1
778	2002210	440433	592402	0	0	0	X	ALL SYSTEMS DOWN DUE TO SUDDEN SHALLOWING
779	2002215	440417	592335	0	0	0	X	ALL SYSTEMS DOWN DUE TO SUDDEN SHALLOWING
780	2002220	440411	592307	0	0	0	X	ALL SYSTEMS DOWN DUE TO SUDDEN SHALLOWING
781	2002225	440398	592243	0	0	0	X	ALL SYSTEMS DOWN DUE TO SUDDEN SHALLOWING

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
702	2002230	440390	592164	0	0	0	X	ALL SYSTEMS DOWN DUE TO SUDDEN SHALLOWING
703	2002235	440403	592097	0	0	0	X	ALL SYSTEMS DOWN DUE TO SUDDEN SHALLOWING
704	2002240	440409	592060	0	0	0	X	ALL SYSTEMS DOWN DUE TO SUDDEN SHALLOWING
705	2002245	440410	592021	0	0	0	X	ALL SYSTEMS DOWN DUE TO SUDDEN SHALLOWING SHIP SPEED 3.1
706	2002250	440408	591481	0	0	0	X	ALL SYSTEMS DOWN DUE TO SUDDEN SHALLOWING SHIP SPEED 3.3
707	2002255	440408	591940	0	0	0	X	ALL SYSTEMS DOWN DUE TO SUDDEN SHALLOWING
708	2002300	440407	591899	0	0	0	X	ALL SYSTEMS DOWN DUE TO SUDDEN SHALLOWING
709	2002305	440405	591857	0	0	0	X	ALL SYSTEMS DOWN DUE TO SUDDEN SHALLOWING
796	2002310	440403	591813	0	0	0	X	ALL SYSTEMS DOWN DUE TO SUDDEN SHALLOWING
791	2002315	440400	591769	0	0	X	X	HUNTEC DOWN SIDE SCAN TAPE 37(1800) NSRF DOWN SHIP SPEED 3.6

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	HSRF	SIDE SCAN	SOUNDER	NOTES.....
792	2002320	440396	591725	0	0	X	X	HUNTEC DOWN SIDE SCAN TAPE 37(2020) HSRF DOWN SHIP SPEED 3.6
793	2002325	440391	591681	0	X	X	X	HUNTEC DOWN SIDE SCAN TAPE 37(2161) HSRF TAPE 3(3043) SHIP SPEED 3.5
794	2002330	440385	591639	0	0	X	X	HUNTEC DOWN SIDE SCAN TAPE 372307) HSRF DOWN SHIP SPEED 3.6
795	2002335	440379	591596	0	0	X	X	HUNTEC DOWN SIDE SCAN TAPE 37(2431) HSRF DOWN SHIP SPEED 3.4
796	2002340	440373	591552	0	0	X	X	HUNTEC DOWN SIDE SCAN TAPE 37(2562) HSRF DOWN SHIP SPEED 3.6
797	2002345	440308	591532	0	0	X	X	HUNTEC DOWN SIDE SCAN TAPE 37(2685) HSRF DOWN
798	2002350	440418	591520	0	0	X	X	HUNTEC DOWN SIDE SCAN TAPE 37(2815) HSRF DOWN SHIP SPEED 3.6
799	2002355	440439	591512	0	0	X	X	HUNTEC DOWN SIDE SCAN TAPE 37(2925) HSRF DOWN SHIP SPEED 3.7
800	2090000	440443	591504	0	0	X	X	HUNTEC DOWN SIDE SCAN TAPE 37(3042) HSRF DOWN SHIP SPEED 3.6
801	2090005	440486	591495	0	0	X	X	HUNTEC DOWN SIDE SCAN - CHANGING TAPE HSRF DOWN SHIP SPEED 3.6

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FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
002	2090010	440511	591406	0	0	X	X	HUNTEC DOWN SIDE SCAN TAPE 38(0156) NSRF DOWN
003	2090015	440535	591478	0	0	X	X	HUNTEC DOWN SIDE SCAN TAPE 38(0411) NSRF DOWN SHIP SPEED 3.8
004	2090020	440559	591468	0	0	X	X	HUNTEC DOWN SIDE SCAN TAPE 38(0660) NSRF DOWN SHIP SPEED 3.5
005	2090025	440586	591458	0	0	X	X	HUNTEC DOWN SIDE SCAN TAPE 38(0889) NSRF DOWN SHIP SPEED 3.7
006	2090030	440607	591449	0	0	X	X	HUNTEC DOWN SIDE SCAN TAPE 38(1090) NSRF DOWN SHIP SPEED 3.4
007	2090035	440632	591437	0	X	X	X	HUNTEC DOWN SIDE SCAN STOPPED-RAISED NSRF TAPE 4(0000) SHIP SPEED 3.4
008	2090040	440654	591434	0	0	X	X	HUNTEC DOWN SIDE SCAN TAPE 38(1360) NSRF DOWN SHIP SPEED 3.1
009	2090045	440675	591427	0	0	X	X	HUNTEC DOWN SIDE SCAN TAPE 38(1532) SRF DOWN SHIP SPEED 3.5
010	2090050	440699	591417	0	0	X	X	HUNTEC DOWN SIDE SCAN TAPE 38(1698) NSRF DOWN SHIP SPEED 3.5
011	2090055	440724	591410	0	0	X	X	HUNTEC DOWN SIDE SCAN TAPE 38(1861) NSRF DOWN

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSKF	SIDE SCAN	SOUNDER	NOTES.....
012	2090100	440746	591402	0	0	0	X	HUNTEC DOWN SIDE SCAN DOWN- TOO DEEP NSKF DOWN SHIP SPEED 3.1
013	2090105	440768	591394	0	0	0	X	HUNTEC DOWN SIDE SCAN DOWN- TOO DEEP NSKF DOWN SHIP SPEED 3.1
014	2090110	440789	591389	0	0	0	X	HUNTEC DOWN SIDE SCAN DOWN- TOO DEEP NSKF DOWN
015	2090115	440789	591389	0	0	0	X	HUNTEC DOWN SIDE SCAN DOWN- TOO DEEP NSKF DOWN
016	2090120	440831	591378	0	0	0	X	HUNTEC DOWN SIDE SCAN DOWN- TOO DEEP SKF DOWN SHIP SPEED 3.0
017	2090125	440851	591373	0	0	0	X	HUNTEC DOWN SIDE SCAN DOWN- TOO DEEP NSKF DOWN
018	2090130	440871	591369	X	0	0	X	HUNTEC PRINTER STARTED SIDE SCAN DOWN- TOO DEEP NSKF DOWN SHIP SPEED 3.3
019	2090135	440892	591365	X	0	0	X	HUNTEC TAPE 21 STARTED SIDE SCAN DOWN- TOO DEEP NSKF DOWN SHIP SPEED 3.1
020	2090140	440911	591361		0	0	X	HUNTEC TAPE 21(0052) SIDE SCAN DOWN- TOO DEEP NSKF DOWN SHIP SPEED 3.2
021	2090145	440935	591360	X	0	0	X	HUNTEC TAPE 21(0147) SIDE SCAN DOWN- TOO DEEP NSKF DOWN SHIP SPEED 4.4

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FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
022	2090150	440974	591364	X	0	0	X	HUNTEC TAPE 21(0230) SIDE SCAN DOWN- 100 DEEP NSRF DOWN SHIP SPEED 5.0
023	2090155	441017	591371	X	0	0	X	HUNTEC TAPE 21(0333) SIDE SCAN DOWN- 100 DEEP NSRF DOWN SHIP SPEED 5.7
024	2090200	441060	591377	X	0	X	X	HUNTEC TAPE 21(0420) SIDE SCAN TAPE 30 STARTED NSRF DOWN SHIP SPEED 5.8
025	2090205	441103	591380	X	0	X	X	HUNTEC TAPE 21(0523) SIDE SCAN TAPE 30(2152) NSRF DOWN SHIP SPEED 6.0
026	2090210	441149	591397	X	0	X	X	HUNTEC TAPE 21(0618) SIDE SCAN TAPE 30(2476) NSRF DOWN SHIP SPEED 5.8 A027
027	2090215	441189	591405	X	0	X	X	HUNTEC TAPE 21(0730) SIDE SCAN TAPE 30(2476) NSRF DOWN SHIP SPEED 6.2
028	2090220	441235	591414	X	0	X	X	HUNTEC TAPE 21(0812) SIDE SCAN TAPE 30(2555) NSRF DOWN SHIP SPEED 6.3
029	2090225	441282	591424	X	0	X	X	HUNTEC TAPE 21(0903) SIDE SCAN TAPE 30(2600) NSRF DOWN SHIP SPEED 6.4
030	2090230	441329	591432	X	0	X	X	HUNTEC TAPE 21(0994) SIDE SCAN TAPE 30(2000) NSRF DOWN SHIP SPEED 6.4
031	2090235	441377	591440	X	0	X	X	HUNTEC TAPE 21(1090) SIDE SCAN TAPE 30(2918) NSRF DOWN SHIP SPEED 6.2

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
032	2090240	441424	591447	X	0	X	X	HUNTEC TAPE 21(1183) SIDE SCAN TAPE 38(3035) NSRF DOWN SHIP SPEED 6.1
033	2090245	441471	591454	X	0	X	X	HUNTEC TAPE 21(1278) SIDE SCAN TAPE 38(3151) NSRF DOWN SHIP SPEED 6.3
034	2090250	441518	591460	X	0	X	X	HUNTEC TAPE 21(1372) SIDE SCAN TAPE 38 ENDED NSRF DOWN SHIP SPEED 6.5
035	2090255	441565	591466	X	0	X	X	HUNTEC TAPE 21(1470) SIDE SCAN TAPE 39 STARTED NSRF DOWN SHIP SPEED 6.2
036	2090300	441612	591471	X	0	X	X	HUNTEC TAPE 21(1562) SIDE SCAN TAPE 39(0210) NSRF DOWN SHIFF
037	2090305	441658	591478	X	0	X	X	HUNTEC TAPE 21(1666) SIDE SCAN TAPE 39(0490) NSRF DOWN SHIP SPEED 6.1
038	2090310	441704	591485	X	X	X	X	HUNTEC TAPE 21(1755) SIDE SCAN- NEW HELIX NSRF TAPE 4(0991) SHIP SPEED 6.1
039	2090315	441754	591485	X	X	X	X	HUNTEC TAPE 21(1857) SIDE SCAN- CHANGE HELIX NSRF TAPE 4(1100) SHIP SPEED 6.3
040	2090320	441801	591481	X	X	X	X	HUNTEC TAPE 21(1941) SIDE SCAN TAPE 39(1162) NSRF TAPE 4(1100) SHIP SPEED 6.3
041	2090325	441850	591477	X	X	X	X	HUNTEC TAPE 21(2036) SIDE SCAN TAPE 39(1340) NSRF TAPE 4(1195) SHIP SPEED 6.3

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
042	2090330	441098	591474	X	X	X	X	HUNTEC TAPE 21(2131) SIDE SCAN TAPE 39(1517) NSRF TAPE 4(1206) SHIP SPEED 6.2
043	2090335	441947	591471	X	X	X	X	HUNTEC TAPE 21(2227) SIDE SCAN TAPE 39(1690) NSRF TAPE 4(1366) SHIP SPEED 6.3
044	2090340	441995	591467	X	X	X	X	HUNTEC TAPE 21(2332) SIDE SCAN TAPE 39(1852) NSRF TAPE 4(1452) SHIP SPEED 6.1
045	2090345	442043	591465	X	X	X	X	HUNTEC TAPE 21(2427) SIDE SCAN TAPE 39(2005) NSRF TAPE 4(1536) SHIP SPEED 6.3
046	2090350	442092	591463	X	X	X	X	HUNTEC TAPE 21(2519) SIDE SCAN TAPE 39(2150) NSRF TAPE 4(1615) SHIP SPEED 6.3
047	2090355	442139	591459	X	X	X	X	HUNTEC TAPE 21(2608) SIDE SCAN TAPE 39(2282) NSRF TAPE 4(1689) SHIP SPEED 6.3
048	2090400	442190	591456	X	X	X	X	HUNTEC TAPE 21(2703) SIDE SCAN TAPE 39(2420) NSRF TAPE 4(1766) SHIP SPEED 6.5
049	2090405	442238	591453	X	X	X	X	HUNTEC TAPE 21(2798) SIDE SCAN TAPE 39(2551) NSRF TAPE 4(1840) SHIP SPEED 6.3
050	2090410	442285	591448	X	X	X	X	HUNTEC TAPE 21(2890) SIDE SCAN TAPE 39(2670) NSRF TAPE 4(1912) SHIP SPEED 6.2
051	2090415	442331	591445	X	X	X	X	HUNTEC TAPE 21(2986) SIDE SCAN TAPE 39(2801) NSRF TAPE 4(1982) SHIP SPEED 6.5

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
052	2090420	442379	591444	X	X	X	X	HUNTEC TAPE 21(3080) SIDE SCAN TAPE 39(2921) NSRF TAPE 4(2052) SHIP SPEED 6.3
053	2090425	442427	591442	X	X	X	X	HUNTEC TAPE 21(3175) SIDE SCAN TAPE 39(3039) NSRF TAPE 4(2122) SHIP SPEED 6.4
054	2090430	442476	591444	X	X	X	X	HUNTEC TAPE 21(3269) SIDE SCAN TAPE 39(3153) NSRF TAPE 4(2198) SHIP SPEED 6.4
055	2090435	442523	591447	X	X	X	X	HUNTEC TAPE 21(3369) SIDE SCAN TAPE 40(0000) NSRF TAPE 4(2258) SHIP SPEED 6.3
056	2090440	442570	591452	X	X	X	X	HUNTEC TAPE 21(3459) SIDE SCAN TAPE 40(0285) NSRF TAPE 4(2319) SHIP SPEED 6.3
057	2090445	442617	591456	X	X	X	X	ALL TAPE FIXES MISSED
058	2090450	442664	591464	X	X	X	X	ALL FIXES MISSED
059	2090455	442663	591521	X	X	X	X	HUNTEC TAPE 21(3555) SIDE SCAN TAPE 40(0549) NSRF TAPE 4(2383) SHIP SPEED 6.2
060	2090500	442659	591578	X	X	X	X	HUNTEC TAPE 22(0030) SIDE SCAN TAPE 40(0779) NSRF TAPE 4(2445) SHIP SPEED 6.3
061	2090505	442655	591636	X	X	X	X	MISSED ALL TAPE FIXES HUNTEC STYLUS CHANGE

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
062	2090510	442650	591695	X	X	X	X	HUNTEC TAPE 22(0215) SIDE SCAN TAPE 40(1651) NSRF TAPE 4(2687) SHIP SPEED 5.4
063	2090515	442645	591755	X	X	X	X	HUNTEC TAPE 22(0325) SIDE SCAN TAPE 40(1753) NSRF TAPE 4(2746) SHIP SPEED 5.5
064	2090520	442642	591816	X	X	X	X	HUNTEC TAPE 22(0390) SIDE SCAN TAPE 40(1876) NSRF TAPE 4(2803) SHIP SPEED 5.6
065	2090525	442640	591881	X	X	X	X	HUNTEC TAPE 22(0493) SIDE SCAN TAPE 40(2025) NSRF TAPE 4(2859) SHIP SPEED 5.6
066	2090530	442638	591939	X	X	X	X	HUNTEC TAPE 22(0595) SIDE SCAN TAPE 40(2173) NSRF TAPE 4(2916) SHIP SPEED 5.6
067	2090535	442635	592002	X	X	X	X	HUNTEC TAPE 22(0688) SIDE SCAN TAPE 40(2309) NSRF TAPE 4(2970) SHIP SPEED 5.6
068	2090540	442631	592063	X	X	X	X	HUNTEC TAPE 22(0780) SIDE SCAN TAPE 40(2442) NSRF TAPE 4(3024) SHIP SPEED 5.6
069	2090545	442628	592125	X	X	X	X	HUNTEC TAPE 22(0878) SIDE SCAN TAPE 40(2576) NSRF TAPE 4(3079) SHIP SPEED 5.6
070	2090550	442627	592188	X	X	X	X	HUNTEC TAPE 22(0970) SIDE SCAN TAPE 40(2700) NSRF TAPE 5(0000) SHIP SPEED 5.6
071	2090555	442625	592251	X	X	X	X	HUNTEC TAPE 22(1066) SIDE SCAN TAPE 40(2825) NSRF TAPE 5(0000) SHIP SPEED 5.6

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FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
072	2090600	442623	592316	X	X	X	X	HUNTEC TAPE 22(1161) SIDE SCAN TAPE 40(2945) NSRF TAPE 5(0102) SHIP SPEED 5.7
073	2090605	442621	592380	X	X	X	X	HUNTEC TAPE 22(1255) PE SCAN TAPE 40(3061) NSRF TAPE (0310) SHIP SPEED 5.8
074	2090605	442621	592443	X	X	X	X	HUNTREC TAPE 22(1350) SIDE SCAN TAPE 40(3174) NSRF TAPE 5(0447) SHIP SPEED 5.7
075	2090615	442619	592512	X	X	X	X	HUNTEC TAPE 22(1449) SIDE SCAN TAPE 41(0170) NSRF TAPE 5(0570) SHIP SPEED 5.7
076	2090620	442618	592572	X	X	X	X	HUNTEC TAPE 22(1540) SIDE SCAN TAPE 41(0444) NSRF TAPE 5(0684) SHIP SPEED 5.7
077	2090625	442616	592642	X	X	X	X	HUNTEC TAPE 22(1631) SIDE SCAN TAPE 41(0681) NSRF TAPE 5(0790) SHIP SPEED 5.9
078	2090630	442616	592706	X	X	X	X	HUNTEC TAPE 22(1729) SIDE SCAN TAPE 41(0911) NSRF TAPE 5(0898) SHIP SPEED 5.9
079	2090635	442615	592773	X	X	X	X	HUNTEC TAPE 22(1823) SIDE SCAN TAPE 41(1111) NSRF TAPE 5(0996) SHIP SPEED 5.5
080	2090640	442614	592839	X	X	X	X	HUNTEC TAPE 22(1916) SIDE SCAN TAPE 41(1300) NSRF TAPE 5(1092) SHIP SPEED 5.7
081	2090645	442615	592906	X	X	X	X	HUNTEC TAPE 22(2013) SIDE SCAN TAPE 41(1480) NSRF TAPE 5(1186) SHIP SPEED 5.7

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
002	2090645	442615	592974	X	X	X	X	HUNTEC TAPE 22(2105) SIDE SCAN TAPE 41(1561) NSRF TAPE 5(1270) SHIP SPEED 5.7
003	2090655	442615	593038	X	X	X	X	HUNTEC TAPE 22(2200) SIDE SCAN TAPE 41(1809) NSRF TAPE 5(1364) SHIP SPEED 5.7
004	2090700	442618	593105	X	X	X	X	HUNTEC TAPE 22(2290) SIDE SCAN TAPE 41(1962) NSRF TAPE 5(1532) SHIP SPEED 5.7
005	2090705	442616	593160	X	X	X	X	HUNTEC TAPE 22(2389) SIDE SCN TAPE 41(2110) NSRF TAPE 5(1532) SHIP SPEED 5.7
006	2090710	442618	593234	X	X	X	X	HUNTEC TAPE 22(2483) SIDE SCAN TAPE 41(2251) NSRF TAPE 5(1612) SHIP SPEED 5.6
007	2090715	442619	593302	X	X	X	X	HUNTEC TAPE 22(2579) SIDE SCAN TAPE 41(2391) NSRF TAPE 5(1691) SHIP SPEED 5.8
008	2090720	442618	593392	X	X	X	X	HUNTEC TAPE 22(2675) SIDE SCAN TAPE 41(2525) NSRF TAPE 5(1769) SHIP SPEED 5.8
009	2090725	442618	593432	X	X	X	X	HUNTEC TAPE 22(2760) SIDE SCAN TAPE 41(2651) NSRF TAPE 5(1843) SHIP SPEED 5.8
090	2090730	442620	593496	X	X	X	X	HUNTEC TAPE 22(2864) SIDE SCAN TAPE 41(2777) NSRF TAPE 5(1918) SHIP SPEED 5.4
091	2090735	42621	593564	X	X	X	X	HUNTEC TAPE 22(2957) SIDE SCAN TAPE 41(2997) NSRF TAPE 5(1909) SHIP SPEED 5.5

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
892	2090740	442621	593626	X	X	X	X	HUNTEC TAPE 22(3053) SIDE SCAN TAPE 41(3016) NSRF TAPE 5(2061) SHIP SPEED 5.5
893	2099745	442622	593697	X	X	X	X	HUNTEC TAPE 22(3147) SIDE SCAN TAPE 41(3140) NSRF TAPE 5(2130) SHIP SPEED 5.6
894	2090750	442623	593757	X	X	X	X	HUNTEC TAPE 22(3241) SIDE SCAN TAPE 42(0097) NSRF TAPE 5(2198) SHIP SPEED 5.7
895	2090755	442625	593825	X	X	X	X	HUNTEC TAPE 22(3391) SIDE SCAN TAPE 42(0398) NSRF TAPE 5(2260) SHIP SPEED 5.7
896	2090800	442626	593892	X	X	X	X	HUNTEC TAPE 22(3434) SIDE SCAN TAPE 42(0645) NSRF TAPE 5(2333) SHIP SPEED 5.9
897	2090805	442629	593960	X	X	X	X	HUNTEC TAPE 22(3529) SIDE SCAN TAPE 42(0871) NSRF TAPE 5(2397) SHIP SPEED 6.0
898	2090810	442629	594033	X	X	X	X	HUNTEC TAPE 23(0021) SIDE SCAN TAPE 42(1002) NSRF TAPE 5(2462) SHIP SPEED 6.0
899	2090815	442631	594096	X	X	X	X	HUNTEC TAPE 23(0112) SIDE SCAN TAPE 42(1267) NSRF TAPE 5(2522) SHIP SPEED 6.0
900	2090820	442632	594164	X	X	X	X	HUNTEC TAPE 23(0164) SIDE SCAN TAPE 42(1463) NSRF TAPE 5(2589)
901	2090825	442634	594234	0	X	X	X	HUNTEC DOWN- PAPER CHANGE SIDE SCAN TAPE 42(NO FIX) NSRF TAPE 5(NO FIX)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	NUMREC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
902	2090830	442637	594305	0	X	X	X	HUNTEC DOWN- PAPER CHANGE SIDE SCAN TAPE 42(1799) NSRF TAPE 5(2707) SHIP SPEED 6.0
903	2090835	442640	594377	0	X	X	X	HUNTEC DOWN- PAPER CHANGE SIDE SCAN TAPE 42(1957) NSRF TAPE 5(2777) SHIP SPEED 5.8
904	2090840	442642	594448	0	X	X	X	HUNTEC DOWN-PAPER CHANGE SIDE SCAN TAPE 42(2090) NSRF TAPE 5(2889) SHIP SPEED 5.7
905	2090845	442643	594519	X	X	X	X	HUNTEC TAPE 23(0175) SIDE SCAN TAPE 42(2249) SRF TAPE 5(2889) SHIP SPEED 5.8
906	2090850	442643	594594	X	X	X	X	HUNTEC TAPE 23(0254) SIDE SCAN TAPE 42(2362) NSRF TAPE 5(2936) SHIP SPEED 5.5
907	2090855	442641	594657	X	X	X	X	HUNTEC TAPE 23(0350) SIDE SCAN TAPE 42(2497) NSRF TAPE 5(2993) SHIP SPEED 5.8
908	2090900	442640	594728	X	X	X	X	HUNTEC TAPE 23(0440) SIDE SCAN TAPE 42(2630) NSRF TAPE 5(3050) SHIP SPEED 5.7
909	2090905	442638	594799	X	X	X	X	HUNTEC TAPE 23(0532) SIDE SCAN TAPE 42(2750) NSRF TAPE 5(3133) SHIP SPEED 5.7
910	2090910	442636	594870	X	X	X	X	HUNTEC TAPE 23(0611) SIDE SCAN TAPE 42(2852) NSRF TAPE 6(0000) SHIP SPEED 5.4
911	2090915	442635	594938	X	X	X	X	HUNTEC TAPE 23(0721) SIDE SCAN TAPE 42(2990) NSRF TAPE 6(0166) SHIP SPEED 5.8

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
912	209920	442633	595007	X	X	X	X	HUNTEC TAPE 23 (0817) SIDE SCAN TAPE 42 (3105) NSRF TAPE 6 (0306)
913	2090925	442634	595077	X	X	X	X	HUNTEC TAPE 23 (0930) SIDE SCAN STAR) TAPE 43 NSRF TAPE 6 (0465)
914	2090930	442634	595140	X	X	X	X	HUNTEC TAPE 23 (1021) SIDE SCAN TAPE 43 (0292) NSRF TAPE 6 (0617)
915	2090935	442633	595217	X	X	X	X	HUNTEC TAPE 23 (1100) SIDE SCAN TAPE 43 (0515) NSRF TAPE 6 (0665)
916	2090940	442633	595284	X	X	X	X	HUNTEC TAPE 23 (1199) SIDE SCAN TAPE 43 (0743) NSRF TAPE 6 (0779)
917	2090945	442633	595352	X	X	X	X	HUNTEC TAPE 23 (1300) SIDE SCAN TAPE 43 (0999) NSRF TAPE 6 (0891)
919	2090955	442636	595490	X	X	X	X	HUNTEC REPAIRING STYLUS SIDE SCAN TAPE 43 (1380) NSRF TAPE 6 (1006)
920	2091000	442634	595558	X	X	X	X	HUNTEC TAPE 23 (1574) SIDE SCAN TAPE 43 (1543) NSRF TAPE 6 (1170)
921	2091005	442635	595625	X	X	X	X	HUNTEC TAPE 23 (1674) SIDE SCAN TAPE 43 (1722) NSRF TAPE 6 (1227)
922	2091010	442632	595691	X	X	X	X	HUNTEC TAPE 23 (1761) SIDE SCAN TAPE 43 (1870) NSRF TAPE 6 (1347)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
923	2091015	442631	595957	X	X	X	X	HUNTEC TAPE 23 (1860) SIDE SCAN TAPE 43 (2032) NSRF TAPE 6 (1439)
924	2091020	442630	595825	X	X	X	X	HUNTEC TAPE 23 (1951) SIDE SCAN TAPE 43 (2173) NSRF TAPE 6 (1519)
925	2091025	442630	595892	X	X	X	X	HUNTEC TAPE 23 (2070) SIDE SCAN TAPE 43 (2350) NSRF TAPE 6 (1624)
926	2091030	442629	595961	X	X	X	X	HUNTEC TAPE 23 (2145) SIDE SCAN TAPE 43 (2450) NSRF TAPE 6 (1678)
927	2091035	442629	600027	X	X	X	X	HUNTEC TAPE 23 (2240) SIDE SCAN TAPE 43 (2593) NSRF TAPE 6 (1760)
928	2091040	442629	600094	X	X	X	X	HUNTEC TAPE 23 (2329) SIDE SCAN TAPE 43 (2714) NSRF TAPE 6 (1831)
929	2091045	442629	600160	X	X	X	X	HUNTEC TAPE 23 (2329) SIDE SCAN TAPE 43 (2714) NSRF TAPE 6 (1831)
930	2091050	442628	600224	X	X	X	X	HUNTEC TAPE 23 (2519) SIDE SCAN TAPE 43 (2960) NSRF TAPE 6 (1970)
941	2091055	442628	600293	X	X	X	X	HUNTEC TAPE 23 (2612) SIDE SCAN TAPE 43 (3079) NSRF TAPE 6 (2050)
932	2091100	442628	60036	X	X	X	X	HUNTEC TAPE 23 (2711) SIDE SCAN TAPE 43 (3199) NSRF TAPE 6 (2122)

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FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
933	2091105	442629	600426	X	X	X	X	HUNTEC TAPE 23 (2801) SIDE SCAN START TAPE 44 NSRF TAPE 6 (2187)
934	2091110	442629	600493	X	X	X	X	HUNTEC TAPE 23 (2896) SIDE SCAN TAPE 44 (0400) NSRF TAPE 6 (2255)
935	2091115	442630	600562	X	X	X	X	HUNTEC TAPE 23 (2990) SIDE SCAN TAPE 44 (0645) NSRF TAPE 6 (2322)
936	2091120	442632	600628	X	0	X	X	HUNTEC TAPE 23 (3085) SIDE SCAN TAPE 44 (0865) NSRF DOWN FOUR RECORDS
937	2091125	442633	600693	X	X	X	X	HUNTEC TAPE 23 (3180) SIDE SCAN TAPE 44 (1070) NSRF DOWN
938	2091130	442634	600791	X	0	X	X	HUNTEC TAPE 23 (3274 SIDE SCAN TAPE 44 (1261) NSRF DOWN
939	2091135	442635	600825	X	0	X	X	HUNTEC TAPE 23 (3369) SIDE SCAN TAPE 44 (1340) NSRF DOWN
940	2091140	442637	600890	X	0	X	X	HUNTEC TAPE 23 (3463) SIDE SCAN TAPE 44 (1607) NSRF DOWN
941	2091145	442638	600956	X	0	X	X	HUNTEC TAPE 23 (3557) SIDE SCAN TAPE 44 (1766) NSRF DOWN
942	2091150	442640	601023	X	0	X	X	HUNTEC START TAPE 24 SIDE SCAN TAPE 44 (1924) NSRF DOWN

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	BOOMER	NOTES.....
943	2081155	442637	601080	X	0	X	X	HUNTEC TAPE 24 (0094) SIDE SCAN TAPE 44 (2060) NSRF DOWN
944	2091200	442637	601151	X	0	X	X	HUNTEC TAPE 24 (0100) SIDE SCAN 44 (2210) NSRF DOWN
945	2091205	442637	601215	X	0	X	X	HUNTEC TAPE 24 (0230) SIDE SCAN TAPE 44 (2346) NSRF DOWN
946	2091210	442636	601280	X	0	X	X	HUNTEC TAPE 24 (0379) SIDE SCAN TAPE 44 (2400) NSRF DOWN
947	2091215	442634	601346	X	0	X	X	HUNTEC TAPE 24 (0472) SIDE SCAN TAPE 44 (2605) NSRF DOWN
948	2091220	442634	601411	X	0	X	X	HUNTEC TAPE 24 (0567) SIDE SCAN TAPE 44 (2732) NSRF DOWN
949	2091225	442632	601476	X	0	X	X	HUNTEC TAPE 24 (0660) SIDE SCAN TAPE 44 (2850) NSRF DOWN
950	2091230	442631	601538	X	0	X	X	HUNTEC TAPE 24 (0756) SIDE SCAN TAPE 44 (2968) NSRF DOWN
951	2091235	442629	601604	X	0	X	X	HUNTEC TAPE 24 (0850) SIDE SCAN TAPE 44 (3080) NSRF DOWN
952	2091240	442627	601668	X	0	X	X	HUNTEC TAPE 24 (0945) SIDE SCAN TAPE 45 (0020) NSRF DOWN

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FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
953	2091245	442624	601732	0	0	X	X	HUNTEC DOWN FOR REPAIRS SIDE SCAN TAPE 45 (0306) NSRF DOWN
954	2091250	442630	601797	X	0	X	X	ALL FIXES MISSED
955	2091255	442616	601862	X	0	X	X	HUNTEC TAPE 24 (1046) SIDE SCAN TAPE 45 (0785) NSRF DOWN
956	2091300	442612	601924	X	0	X	X	HUNTEC TAPE 24 (1141) SIDE SCAN TAPE 45 (1001) NSRF DOWN
957	2091305	442607	601989	X	0	X	X	MISSED ALL FIXES AMOS' WATCH
958	2091310	442601	602054	X	0	X	X	HUNTEC TAPE 24 (1163) SIDE SCAN TAPE 45 (1301) NSRF DOWN
959	2091315	442598	602119	X	0	X	X	HUNTEC TAPE 24 (1256) SIDE SCAN TAPE 45 (1551) NSRF DOWN
960	2091320	442590	602183	X	0	X	X	HUNTEC TAPE 24 (1351) SIDE SCAN TAPE 45 (1715) NSRF DOWN
961	2091325	442583	602249	X	0	X	X	HUNTEC TAPE 24 (1446) SIDE SCAN TAPE 45 (1874) NSRF DOWN
962	2091330	442545	602255	X	0	X	X	HUNTEC TAPE 24(1543) SIDE SCAN TAPE 45(2020) NSRF DOWN SHIP SPEED 6.0

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
963	2091335	442404	602251	X	0	X	X	HUNTEC DOWN SIDE SCAN TAPE 45(2175) NSRF DOWN SHIP SPEED 6.1
964	2091340	442431	602244	0	0	X	X	HUNTEC DOWN SIDE SCAN TAPE 45(2336) NSRF DOWN SHIP SPEED 5.9
965	2091345	442379	602336	0	0	X	X	HUNTEC DOWN SIDE SCAN TAPE 45(MISSED) NSRF DOWN
966	2091350	442325	602227	0	0	X	X	HUNTEC DOWN SIDE SCAN TAPE 45(MISSED) NSRF DOWN
967	2091355	442274	602220	0	0	X	X	HUNTEC DOWN SIDE SCAN TAPE 45(2697) NSRF DOWN SHIP SPEED 6.0
968	2091400	442218	602212	0	0	X	X	HUNTEC DOWN SIDE SCAN TAPE 45(2824) NSRF DOWN SHIP SPEED 6.1
969	2091405	442169	602208	0	0	X	X	HUNTEC DOWN SIDE SCAN TAPE 45(2945) NSRF DOWN SHIP SPEED 6.0
970	2091410	442117	602207	0	0	X	X	HUNTEC DOWN SIDE SCAN TAPE 45(3056) NSRF DOWN
971	2091415	442063	602205		0	X	X	HUNTEC TAPE 24(1770) SIDE SCAN TAPE 45(3172) NSRF DOWN SHIP SPEED 6.1
972	2091420	442011	602004	X	0	X	X	HUNTEC TAPE 24(1746) SIDE SCAN TAPE 45(END) NSRF DOWN SHIP SPEED 6.0

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
973	2091425	441959	602207	X	0	X	X	HUNTEC TAPE 24(1942) SIDE SCAN TAPE 46(0100) SRF DOWN SHIP SPEED 6.0
974	2091430	441905	602212	X	0	X	X	HUNTEC TAPE 24(2033) SIDE SCAN TAPE 46(0499) NSRF DOWN SHIP SPEED 6.0
975	2091435	441850	602217	X	0	X	X	HUNTEC TAPE 24(2128) SIDE SCAN TAPE 46(0499) NSRF DOWN SHIP SPEED 6.2
976	2091440	441807	602221	X	0	X	X	HUNTEC TAPE 24(2224) SIDE SCAN TAPE 46(0727) NSRF DOWN SHIP SPEED 6.4
977	2091445	441756	602225	X	0	X	X	HUNTEC TAPE 24(2319) SIDE SCAN TAPE 46(0921) NSRF DOWN SHIP SPEED 6.1
978	2091450	441704	602229	X	0	X	X	HUNTEC TAPE 24(2411) SIDE SCAN TAPE 46(1110) NSRF DOWN SHIP SPEED 6.2
979	2091455	441651	602232	X	0	X	X	HUNTEC TAPE 24(2507) SIDE SCAN TAPE 46(1205) NSRF DOWN SHIP SPEED 6.0
980	2091500	441599	602236	X	0	X	X	HUNTEC TAPE 24(2601) SIDE SCAN TAPE 46(1447) NSRF DOWN SHIP SPEED 6.2
981	2091505	441547	602240	X	0	X	X	HUNTEC TAPE 24(2695) SIDE SCAN TAPE 46(1609) NSRF DOWN SHIP SPEED 6.0
982	2091510	441493	602244	X	0	X	X	HUNTEC TAPE 24(2789) SIDE SCAN TAPE 46(1740) NSRF DOWN SHIP SPEED 6.0

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
903	2091515	441441	602240	X	0	X	X	HUNTEC TAPE 24(2804) SIDE SCAN TAPE 46(1904) NSRF DOWN SHIP SPEED 6.2
904	2091520	441308	60251	X	X	X	X	HUNTEC TAPE 24(2970) SIDE SCAN TAPE 46(2045) NSRF TAPE 6(RESTARTED) SHIP SPEED 6.3
905	2091525	441335	602254	X	X	X	X	HUNTEC TAPE 24(3073) SIDE SCAN TAPE 46(2103) NSRF TAPE 6(2392) SHIP SPEED 6.3
906	2091530	441203	602257	X	X	X	X	HUNTEC TAPE 24(3168) SIDE SCAN TAPE 46(2440) NSRF TAPE 6(2513) SHIP SPEED 6.3
907	2091535	441230	602241	X	X	X	X	HUNTEC TAPE 24(3261) SIDE SCAN TAPE 46(2440) NSRF TAPE 6(2513) SHIP SPEED 6.2
908	2091540	441176	602260	X	X	X	X	HUNTEC TAPE 24(3373) SIDE SCAN TAPE 46(2571) NSRF TAPE 6(2578) SHIP SPEED 6.1
909	2091545	441122	602259	X	X	X	X	HUNTEC TAPE 24(3450) SIDE SCAN TAPE 46(2691) NSRF TAPE 6(2637) SHIP SPEED 6.0
990	2091550	441067	602256	X	X	X	X	HUNTEC TAPE 24(3550) SIDE SCAN TAPE 46(2918) NSRF TAPE 6(2697) SHIP SPEED 6.0
991	2091555	441012	602252	X	X	X	X	HUNTEC TAPE 25(0070) SIDE SCAN TAPE 46(2918) NSRF TAPE 6(2758) SHIP SPEED 6.3
992	2091600	440953	602244	X	X	X	X	HUNTEC TAPE 25(0162) SIDE SCAN TAPE 47(0026) NSRF TAPE 6(2815) SHIP SPEED 6.3

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FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
993	2091605	440099	602238	X	X	X	X	HUNTEC TAPE 25(0258) SIDE SCAN TAPE 47(0329) NSRF TAPE 6(2875) SHIP SPEED 6.3
994	2091610	440842	602231	X	X	X	X	HUNTEC TAPE 25(0352) SIDE SCAN TAPE 47(0586) NSRF TAPE 6(2932) SHIP SPEED 6.4
995	2091615	440789	602226	X	X	X	X	HUNTEC TAPE 25(0446) SIDE SCAN TAPE 47(0812) NSRF TAPE 6(2988) SHIP SPEED 6.4
996	2091620	440735	602219	X	X	X	X	HUNTEC TAPE 25(0545) SIDE SCAN TAPE 47(1033) NSRF TAPE 6(3047) SHIP SPEED 6.4
997	2091625	440680	602213	X	X	X	X	HUNTEC TAPE 25(0630) SIDE SCAN TAPE 47(1222) NSRF TAPE 6(3100) SHIP SPEED 6.2
998	2091630	440611	602206	X	X	X	X	HUNTEC TAPE 25(0720) SIDE SCAN TAPE 47(1400) NSRF TAPE 7(0000) SHIP SPEED 6.4
999	2091635	440570	602202	X	X	X	X	HUNTEC TAPE 25(0819) SIDE SCAN TAPE 47(1577) NSRF TAPE 7(0155) SHIP SPEED 6.2
1000	2091640	440515	602198	X	X	X	X	HUNTEC TAPE 25(0912) SIDE SCAN TAPE 47(1741) NSRF TAPE 7(0295) SHIP SPEED 6.5
1001	2091645	440460	602195	X	X	X	X	HUNTEC TAPE 25(1007) SIDE SCAN TAPE 47(1899) NSRF TAPE 7(0427) SHIP SPEED 6.5
1002	2091650	440405	602194	X	0	X	X	HUNTEC TAPE 25(1103) SIDE SCAN TAPE 47(2044) NSRF DOWN SHIP SPEED 6.5

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FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	BOUNDER	NOTES.....
1003	2091655	440353	602101	X	0	X	X	HUNTEC TAPE 25(1197) SIDE SCAN TAPE 47(2193) NSRF DOWN SHIP SPEED 6.6
1004	2091700	440357	602103	X	0	X	X	HUNTEC TAPE 25(1291) SIDE SCAN TAPE 47(2325) NSRF DOWN SHIP SPEED 7.0
1005	2091705	440362	602023	X	0	X	X	HUNTEC TAPE 25(1305) SIDE SCAN TAPE 47(2458) NSRF DOWN SHIP SPEED 7.0
1006	2091710	440368	601943	X	0	X	X	HUNTEC TAPE 25(1479) SIDE SCAN TAPE 47(2586) NSRF DOWN SHIP SPEED 6.8
1007	2091715	440373	601865	X	0	X	X	HUNTEC TAPE 25(1577) SIDE SCAN TAPE 47(2714) NSRF DOWN SHIP SPEED 6.5
1008	2091715	440378	601783	X	0	X	X	HUNTEC TAPE 25(1671) SIDE SCAN TAPE 47(28353) NSRF DOWN SHIP SPEED 6.8
1009	2091725	440382	601703	X	0	X	X	HUNTEC TAPE 25(1765) SIDE SCAN TAPE 47(2954) NSRF DOWN SHIP SPEED 6.6
1010	2091730	40386	601621	X	0	X	X	HUNTEC TAPE 25(1858) SIDE SCAN TAPE 47(3068) NSRF DOWN SHIP SPEED 6.8
1011	2091735	440390	601535	X	0	X	X	HUNTEC TAPE 25(1952) SIDE SCAN TAPE 47(3173) NSRF DOWN SHIP SPEED 6.5
1012	2091740	440417	601501	X	0	X	X	HUNTEC TAPE 25(2050) SIDE SCAN TAPE 48(0080) NSRF DOWN SHIP SPEED 6.3

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
1013	2091745	440473	601495	X	0	X	X	HUNTEC TAPE 25(2145) SIDE SCAN TAPE 48(0308) NSRF DOWN SHIP SPEED 6.6
1014	2091750	440521	601490	X	0	X	X	HUNTEC TAPE 25(2240) SIDE SCAN TAPE 48(0634) NSRF DOWN SHIP SPEED 6.6
1015	2091755	440571	601483	X	0	X	X	HUNTEC TAPE 25(2330) SIDE SCAN TAPE 48(0858) NSRF DOWN SHIP SPEED 6.5
1016	2091800	440622	601476	X	X	X	X	HUNTEC TAPE 25(2427) SIDE SCAN TAPE 48(1071) NSRF TAPE 7(1463) SHIP SPEED 6.5
1017	2091805	440682	601467	X	X	X	X	HUNTEC TAPE 25(2525) SIDE SCAN TAPE 48(1268) NSRF TAPE 7(1542) SHIP SPEED 6.7
1018	2091810	440756	601469	X	X	X	X	HUNTEC TAPE 25(2620) SIDE SCAN TAPE 48(1449) NSRF TAPE 7(1621) SHIP SPEED 6.5
1019	2091815	440778	601473	X	X	X	X	HUNTEC TAPE 25(2709) SIDE SCAN TAPE 48(1626) NSRF TAPE 7(1700) SHIP SPEED 6.6
1020	2091820	440822	601481	X	X	X	X	HUNTEC TAPE 25(2806) SIDE SCAN TAPE 48(1786) NSRF TAPE 7(1773) SHIP SPEED 6.5
1021	2091825	440873	601485	X	X	X	X	HUNTEC TAPE 25(2899) SIDE SCAN TAPE 48(1956) NSRF TAPE 7(1853) SHIP SPEED 6.6
1022	2091830	440920	601489	X	X	X	X	HUNTEC TAPE 25(2992) SIDE SCAN TAPE 48(2190) NSRF TAPE 7(1919) SHIP SPEED 6.6

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
1023	2091835	440769	601492	X	X	X	X	HUNTEC TAPE 25(3090) SIDE SCAN TAPE 48(22400 NSRF TAPE 7(1905) SHIP SPEED 6.6
1024	2091840	441020	601498	X	X	X	X	HUNTEC TAPE 25(3102 SIDE SCAN TAPE 48(2303) NSRF TAPE 7(2059) SHIP SPEED 6.6
1025	2091845	441068	601503	X	X	X	X	HUNTEC TAPE 25(3280) SIDE SCAN TAPE 48(2515) NSRF TAPE 7(2125) SHIP SPEED 6.6
1026	2091850	441119	601507	X	X	X	X	HUNTEC TAPE 25(3377) SIDE SCAN TAPE 48(2647) NSRF TAPE 7(2191) SHIP SPEED 6.1
1027	2091855	441164	601506	X	X	X	X	HUNTEC TAPE 25(3472) SIDE SCAN TAPE 48(2777) NSRF TAPE 7(2258) SHIP SPEED 6.1
1028	2091900	441210	601507	X	X	X	X	HUNTEC TAPE 25(3546) SIDE SCAN TAPE 48(2867) NSRF TAPE 7(2307) SHIP SPEED 6.1
1029	2091905	441256	601510	X	X	X	X	HUNTEC TAPE 26(0000) SIDE SCAN TAPE 48(3020) NSRF TAPE 7(2386) SHIP SPEED 6.2
1030	2091910	441300	601512	X	X	X	X	HUNTEC TAPE 26(0140) SIDE SCAN TAPE 48(3130) NSRF TAPE 7(2447) SHIP SPEED 6.0
1031	2091915	441346	601514	X	X	X	X	HUNTEC TAPE 26(0232) SIDE SCAN TAPE 48(3240) NSRF TAPE 7(2508) SHIP SPEED 6.0
1032	2091920	441390	601517	X	X	X	X	HUNTEC TAPE 26(0322) SIDE SCAN TAPE 49(0111) NSRF TAPE 7(2569) SHIP SPEED 6.2

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FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NGRF	SIDE SCAN	SOUNDER	NOTES.....
1033	2091925	441434	601520	X	X	X	X	HUNTEC TAPE 26(0417) SIDE SCAN TAPE 49(0402) NGRF TAPE 7(2627) SHIP SPEED 6.1
1034	2091930	441478	601520	X	X	X	X	HUNTEC TAPE 26(0516) SIDE SCAN TAPE 49(0460) NGRF TAPE 7(2607) SHIP SPEED 6.1
1035	2091935	441523	601525	X	X	X	X	HUNTEC TAPE 26(0613) SIDE SCAN TAPE 49(0801) NGRF TAPE 7(2001) SHIP SPEED 6.0
1036	2091940	441543	601402	X	X	X	X	HUNTEC TAPE 26(0706) SIDE SCAN TAPE 49(1006) NGRF TAPE 7(2001) SHIP SPEED 5.8
1037	2091945	441539	601418	X	X	X	X	HUNTEC TAPE 26(0800) SIDE SCAN TAPE 49(1289) NGRF TAPE 7(2857) SHIP SPEED 6.1
1038	2091950	441537	601351	X	X	X	X	HUNTEC TAPE 26(0894) SIDE SCAN TAPE 49(1466) NGRF TAPE 7(2910) SHIP SPEED 6.2
1039	2091955	441534	601286	X	X	X	X	HUNTEC TAPE 26(0990) SIDE SCAN TAPE 49(1632) NGRF TAPE 7(2968) SHIP SPEED 6.2
1040	2092000	441536	601220	X	X	X	X	HUNTEC TAPE 26(1096) SIDE SCAN TAPE 49(1791) NGRF TAPE 7(3021)
1041	2092005	441535	601152	X	X	X	X	HUNTEC TAPE 26(1180) SIDE SCAN TAPE 49(1950) NGRF TAPE 7(3077) SHIP SPEED 6.1
1042	2092010	441532	601079	X	X	X	X	HUNTEC TAPE 26(1267) SIDE SCAN TAPE 49(2091) NGRF TAPE 0(0000) SHIP SPEED 6.2

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
1043	2092015	441530	600886	X	X	X	X	HUNTEC TAPE 26(1352) SIDE SCAN TAPE 49(2230) NSRF TAPE 8(0150) SHIP SPEED 6.1
1044	2092020	441529	600883	X	X	X	X	HUNTEC TAPE 26(1450) SIDE SCAN TAPE 49(2380) NSRF TAPE 8(0299) SHIP SPEED 6.3
1045	2092025	441528	600879	X	X	X	X	HUNTEC TAPE 26(1552) SIDE SCAN TAPE 49(2500) NSRF TAPE 8(0426) SHIP SPEED 6.4
1046	2092030	441526	600814	X	X	X	X	HUNTEC TAPE 26(1645) SIDE SCAN TAPE 49(2629) NSRF TAPE 8(0546) SHIP SPEED 6.4
1047	209235	441526	600742	X	X	X	X	HUNTEC TAPE 26(1740) SIDE SCAN TAPE 49(2754) NSRF TAPE 8(0663) SHIP SPEED 6.4
1048	2092040	441527	600674	X	X	X	X	HUNTEC TAPE 26(1834) SIDE SCAN TAPE 49(2878) NSRF TAPE 8(0776) SHIP SPEED 6.4
1049	2092045	441526	600605	X	X	X	X	HUNTEC TAPE 26(1932) SIDE SCAN TAPE 49(2995) NSRF TAPE 8(0881) SHIP SPEED 6.4
1050	2092050	441526	600537	X	X	X	X	HUNTEC TAPE 26(2041) SIDE SCAN TAPE 49(3116) NSRF TAPE 8(0989) SHIP SPEED 6.4
1051	2092055	441495	600501	X	X	X	X	HUNTEC TAPE 26(2118) SIDE SCAN TAPE 50(0148) NSRF TAPE 8(1081) SHIP SPEED 5.9
1052	2092100	441444	600505	X	X	X	X	HUNTEC TAPE 26(2212) SIDE SCAN TAPE 50(0440) NSRF TAPE 8(1174) SHIP SPEED 6.1

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FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
1053	2892105	441395	600508	X	X	X	X	HUNTEC TAPE 26(2309) SIDE SCAN TAPE 50(0676) NSRF TAPE 0(1260) SHIP SPEED 6.0
1054	2892110	441346	600510	X	X	X	X	HUNTEC TAPE 26(2402 SIDE SCAN TAPE 50(0896) NSRF TAPE 0(1357) SHIP SPEED 5.8
1055	2892115	441299	600506	X	X	X	X	HUNTEC TAPE 26(2497) SIDE SCAN TAPE 50(1105) NSRF TAPE 0(1441) SHIP SPEED 6.0
1056	2892120	441250	600502	X	X	X	X	HUNTEC TAPE 26(2593) SIDE SCAN TAPE 50(1295) NSRF TAPE 0(1528) SHIP SPEED 5.9
1057	2892125	441203	600497	X	X	X	X	HUNTEC TAPE 26(2687) SIDE SCAN TAPE 50(1474) NSRF TAPE 0(1609) SHIP SPEED 5.8
1058	2892130	441156	600491	X	X	X	X	HUNTEC TAPE 26(2782) SIDE SCAN TAPE 50(1645) NSRF TAPE 0(1688) SHIP SPEED 5.7
1059	2892135	441109	600490	X	X	X	X	HUNTEC TAPE 26(2877) SIDE SCAN TAPE 50(1800) NSRF TAPE 0(1767)
1060	2892140	441061	600490	X	X	X	X	HUNTREC TAPE 26(29700 SIDE SCAN TAPE 50(1950) NSRF TAPE 0(1841) SHIP SPEED 5.7
1061	2892145	441015	600492	X	X	X	X	HUNTEC TAPE 26(3065) SIDE SCAN TAPE 50(2107) NSRF TAPE 0(1915) SHIP SPEED 5.8
1062	2892150	440949	600493	X	X	X	X	HUNTEC TAPE 26(3159) SIDE SCAN TAPE 50(2249) NSRF TAPE 0(1987) SHIP SPEED 5.9

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	BOUNDER	NOTES.....
1063	2892155	440922	600494	X	X	X	X	HUNTEC TAPE 26(3259) SIDE SCAN TAPE 50(2306) NSRF TAPE 0(2059) SHIP SPEED 5.0
1064	2892200	440875	600494	X	X	X	X	HUNTEC TAPE 26(3340) SIDE SCAN TAPE 50(2510) NSRF TAPE 0(2129) SHIP SPEED 5.0
1065	2892205	440830	600494	X	X	X	X	HUNTEC TAPE 26(3442) SIDE SCAN TAPE 50(2640) NSRF TAPE 0(2197) SHIP SPEED 5.9
1066	2892210	40782	600494	X	X	X	X	HUNTEC TAPE 26(3538) SIDE SCAN TAPE 50(2773) NSRF TAPE 0(2264) SHIP SPEED 5.9
1067	2892215	440735	600493	X	X	X	X	HUNTEC TAPE 26(3639) SIDE SCAN TAPE 50(2902) NSRF TAPE 0(2336) SHIP SPEED 5.0
1068	2892220	440688	600491	X	X	X	X	HUNTEC TAPE 27(0050) SIDE SCAN TAPE 50(3013) NSRF TAPE 0(2397) SHIP SPEED 5.0
1069	2892225	440640	600487	X	X	X	X	HUNTEC TAPE 27(0094) SIDE SCAN TAPE 50(3131) NSRF TAPE 0(2463) SHIP SPEED 5.0
1070	2892230	440590	600481	X	X	X	X	HUNTEC TAPE 27(0189) SIDE SCAN TAPE 50(END) NSRF TAPE 0(2523) SHIP SPEED 5.9
1071	2892235	440549	600477	X	X	X	X	HUNTEC TAPE 27(0283) SBG TAPE 51(3442 OR 0000) NSRF TAPE 0(2588) SHIP SPEED 5.9
1072	2892240	440505	600474	X	X	X	X	HUNTEC TAPE 27(0378) SIDE SCAN TAPE 51(0267) NSRF TAPE 0(2646) SHIP SPEED 5.7

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NGRF	SIDE SCAN	SOUNDER	NOTES.....
1073	2092245	440461	600474	X	X	X	X	HUNTEC TAPE 27(0473) SIDE SCAN TAPE 51(0515) NGRF TAPE 8(2707) SHIP SPEED 5.8
1074	2092250	440414	600473	X	X	X	X	HUNTEC TAPE 27(0566) SIDE SCAN TAPE 51(0732) NGRF TAPE 8(2766) SHIP SPEED 5.9
1075	2092255	440367	600472	X	X	X	X	HUNTEC TAPE 27(0661) SIDE SCAN TAPE 51(0934) NGRF TAPE 8(2824) SHIP SPEED 5.9
1076	2092300	440322	600471	X	X	X	X	HUNTEC TAPE 27(0756) SIDE SCAN TAPE 51(1120) NGRF TAPE 8(2882) SHIP SPEED 6.0
1077	2092305	440273	600471	X	X	X	X	HUNTEC TAPE 27(0850) SIDE SCAN TAPE 51(1307) NGRF TAPE 8(2939) SHIP SPEED 6.3
1077	2092310	440222	600472	X	X	X	X	HUNTEC TAPE 27(0945) SIDE SCAN TAPE 51(1476) NGRF TAPE 8(2996) SHIP SPEED 6.6
1078	2092310	440199	600405	X	X	X	X	HUNTEC TAPE 27(0945) SDE SCAN TAPE 51(1476) NGRF TAPE 8(2996) SHIP SPEED 6.6
1079	2092315	440199	600405	X	X	X	X	HUNTEC TAPE 27(1039) SIDE SCANI TAPE 51(1637) NGRF TAPE 8(3051) SHIP SPEED 7.0
1080	2092320	440181	600324	X	X	X	X	HUNTEC TAPE 27(1134) SIDE SCAN TAPE 51(1795) NGRF TAPE 8(3107) SHIP SPEED 6.3
1081	2092325	440164	600253	X	X	X	X	HUNTEC TAPE 27(1229) SIDE SCAN TAPE 51(1950) NGRF TAPE 9(0000) SHIP SPEED 6.1

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	BOUNDER	NOTES.....
1082	2892330	440142	600184	X	X	X	X	HUNTEC TAPE 27(1323) SIDE SCAN TAPE 51(2002) NSRF TAPE 9(0155) SHIP SPEED 6.3
1083	2892335	440119	600120	X	X	X	X	HUNTEC TAPE 27(1410) SIDE SCAN TAPE 51(2222) NSRF TAPE 9(0295) SHIP SPEED 6.3
1084	2892340	440093	600052	X	X	X	X	HUNTEC TAPE 27(1512) SIDE SCAN TAPE 51(2355) NSRF TAPE 9(0423) SHIP SPEED 6.3
1085	2892345	440069	595986	X	X	X	X	HUNTEC TAPE 27(1607) SIDE SCAN TAPE 51(2483) NSRF TAPE 9(0543) SHIP SPEED 6.3
1086	2892350	440044	595920	X	X	X	X	HUNTEC TAPE 27(1703) SIDE SCAN TAPE 51(2616) NSRF TAPE 9(0664) SHIP SPEED 6.3
1087	2892355	440020	595854	X	X	X	X	HUNTEC TAPE 27(1797) SIDE SCAN TAPE 51(2732) NSRF TAPE 9(0767) SHIP SPEED 6.2
1088	2900000	435996	595787	X	X	X	X	HUNTEC TAPE 27(1895) SIDE SCAN TAPE 51(2850) NSRF TAPE 9(0871) SHIP SPEED 6.2
1089	2900005	435975	595719	X	X	X	X	HUNTEC TAPE 27(1987) SIDE SCAN TAPE 51(2969) NSRF TAPE 9(0972) SHIP SPEED 6.2
1090	2900010	435954	595650	X	X	X	X	HUNTEC TAPE 27(2080) SIDE SCAN TAPE 52(0000) NSRF TAPE 9(1069) SHIP SPEED 6.2
1091	2900015	435934	595582	X	X	X	X	HUNTEC TAPE 27(2174) SIDE SCAN TAPE 52(0279) NSRF TAPE 9(1150) SHIP SPEED 6.2

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
1092	2900020	435931	595521	X	X	X	X	HUNTEC TAPE 27(2269) SIDE SCAN TAPE 52(0536) NSRF TAPE 9(1249) SHIP SPEED 5.2
1093	2900025	435977	595517	X	X	X	X	HUNTEC TAPE 27(2364) SIDE SCAN TAPE 52(0763) NSRF TAPE 9(1336) SHIP SPEED 5.7
1094	2900030	440029	595505	X	X	X	X	HUNTEC TAPE 27(2458) SIDE SCAN TAPE 52(0974) NSRF TAPE 9(1421) SHIP SPEED 6.3
1095	2900035	440079	595499	X	X	X	X	HUNTEC TAPE 27(2553) SIDE SCAN TAPE 52(1175) NSRF TAPE 9(1501) SHIP SPEED 6.3
1096	2900040	440130	595494	X	X	X	X	HUNTEC TAPE 27(2650) SIDE SCAN TAPE 52(1352) NSRF TAPE 9(1581) SHIP SPEED 6.3
1097	2900045	440181	595487	X	X	X	X	HUNTEC TAPE 27(2742) SIDE SCAN TAPE 52(1521) NSRF TAPE 9(1656) SHIP SPEED 6.3
1098	2900050	440234	595480	X	X	X	X	HUNTEC TAPE 27(2837) SIDE SCAN TAPE 52(1691) NSRF TAPE 9(1734) SHIPP SPEED 6.3
1099	2900055	440287	595470	X	X	X	X	HUNTEC TAPE 27(2933) SIDE SCAN TAPE 52(1847) NSRF TAPE 9(1806) SHIP SPEED 6.4
1100	2900100	440339	595461	X	X	X	X	HUNTEC TAPE 27(2961) SIDE SCAN TAPE 52(1999) NSRF TAPE 9(1883) SHIUP SPEED 6.4
1101	2900105	440339	595461	X	X	X	X	HUNTEC TAPE 27(3052) SIDE SCAN TAPE 52(2140) NSRF TAPE 9(1951) SHIP SPEED 6.3

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
1101	2900105	440391	595454	X	X	X	X	HUNTEC TAPE 27(3052) SIDE SCAN TAPE 52(2140) NSRF TAPE 9(1951) SHIP SPEED 6.3
1102	2900110	440444	595453	X	X	X	X	HUNTEC TAPE 27(3147) SIDE SCAN TAPE 52(2279) NSRF TAPE 9(2020) SHIP SPEED 6.4
1103	2900115	440497	595447	X	X	X	X	HUNTEC TAPE 27(3242) SIDE SCAN TAPE 52(2422) NSRF TAPE 9(2090) SHIP SPEED 6.3
1104	2900120	440547	595449	X	X	X	X	HUNTEC TAPE 27(3339) SIDE SCAN TAPE 52(2540) NSRF TAPE 9(2155) SHIP SPEED 6.2
1105	2900125	440598	595452	X	X	X	X	HUNTEC TAPE 27(3434) SIDE SCAN TAPE 52(2680) NSRF TAPE 9(2223) SHIP SPEED 6.2
1106	2900130	440650	595456	X	X	X	X	HUNTEC TAPE 27(3527) SIDE SCN TAPE 52(2790) NSRF TAPE 9(2282) SHIP SPEED 6.2
1107	2900135	440699	595460	X	X	X	X	HUNTEC TAPE 28(0024) SIDE SCAN TAPE 52(2922) NSRF TAPE 9(2355) SHIP SPEED 6.1
1108	2900140	440749	595464	X	X	X	X	HUNTEC TAPE 28(0115) SIDE SCAN TAPE 52(3031) NSRF TAPE 9(2414) SHIP SPEED 6.1
1109	2900145	440798	595467	X	X	X	X	HUNTEC TAPE 28(0209) SIDE SCAN TAPE 52(3147) NSRF TAPE 9(2476) SHIUP SPEED 6.2
1110	2900150	440848	595470	X	X	X	X	HUNTEC TAPE 28(0306) SIDE SCAN TAPE CHANGE NSRF TAPE 9(2536) SHIP SPEED 6.0

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
1111	2900155	440897	595473	X	X	X	X	HUNTEC TAPE 28(0390) SIDE SCAN TAPE 53(0070) NSRF TAPE 9(2597) SHIP SPEED 6.0
1112	2900200	440945	595476	X	X	X	X	HUNTEC TAPE 28(0494) SIDE SCAN TAPE 53(0346) NSRF TAPE 9(2656) SHIP SPEED 6.1
1113	2900205	440995	595480	X	X	X	X	HUNTEC TAPE 28(0589) SIDE SCAN TAPE 53(0605) NSRF TAPE 9(2714) SHIP SPEED 6.1
1114	2900210	441045	595484	X	X	X	X	HUNTEC TAPE 28(0683) SIDE SCAN TAPE 53(0836) NSRF TAPE 9(2770) SHIP SPEED 6.2
1115	2900215	441095	595490	X	X	X	X	HUNTEC TAPE 28(0776) SIDE SCAN TAPE 53(1040) NSRF TAPE 9(2827) SHIP SPEED 6.1
1115	2900220	441145	595490	X	X	X	X	HUNTEC TAPE 28(0874) SIDE SCAN TAPE 53(1243) NSRF TAPE 9(2883) SHIP SPEED 6.1
1117	2900225	441195	595489	X	X	X	X	HUNTEC TAPE 28(0966) SIDE SCAN TAPE 53(1430) NSRF TAPE 9(2939) SHIP SPEED 6.2
1118	2900230	441246	595490	X	X	X	X	HUNTEC TAPE 28(1062) SIDE SCAN TAPE 53(1610) NSRF TAPE 9(2993) SHIP SPEED 6.3
1119	2900235	441297	595488	X	X	X	X	HUNTEC TAPE 28(1156) SIDE SCAN TAPE 53(1773) NSRF TAPE 9(3046) SHIP SPEED 6.2
1120	2900240	441346	595489	X	X	X	X	HUNTEC TAPE 28(1249) SIDE SCAN TAPE 53(1932) NSRF TAPE 10(0035) SHIP SPEED 6.1

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FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
1121	2900245	441395	595489	X	X	X	X	HUNTEC TAPE 28 (1364) SIDE SCAN TAPE 53 (2107) NSRF TAPE 10 (0209)
1122	2900550	441444	595490	X	X	X	X	HUNTEC TAPE 28 (1440) SIDE SCAN TAPE 53 (2231) NSRF TAPE 10 (0321)
1123	2900255	441501	595491	X	X	X	X	HUNTEC TAPE 28 (1534) SIDE SCAN TAPE 53 (2370) NSRF TAPE 10 (0454)
1124	2900300	441542	595492	X	X	X	X	HUNTEC TAPE 28 (1629) SIDE SCAN TAPE 53 (2504) NSRF TAPE 10 (0570)
1125	2900305	441590	595494	X	X	X	X	HUNTEC TAPE 28 (1723) SIDE SCAN TAPE 53 (2630) NSRF TAPE 10 (0686)
1126	2900310	441600	595496	X	X	X	X	HUNTEC TAPE 28 (1810) SIDE SCAN TAPE 53 (2765) NSRF TAPE 10 (0795)
1127	2900315	441711	595492	X	X	X	X	HUNTEC TAPE 28 (1915) SIDE SCAN TAPE 53 (2889) NSRF TAPE 10 (0905)
1128	2900320	441731	595470	X	X	X	X	HUNTEC TAPE 28 (2011) SIDE SCAN TAPE 53 (3012) NSRF TAPE 10 (1004)
1129	2900325	441741	595399	X	X	X	X	HUNTEC TAPE 28 (2104) SIDE SCAN TAPE 53 (3126) NSRF TAPE 10 (1101)
1130	2900330	441730	595322	X	X	X	X	HUNTEC TAPE 28 (2190) SIDE SCAN TAPE 53 (3237) NSRF TAPE 10 (1192)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
1131	2900335	441736	595243	X	X	X	X	HUNTEC TAPE 28 (2300) SIDE SCAN TAPE 54 (0138) NSRF TAPE 10 (1285)
1132	2900340	441735	595164	X	X	X	X	HUNTEC TAPE 28 (2309) SIDE SCAN TAPE 54 (0442) NSRF TAPE 10 (1375)
1133	2900345	441734	595084	X	X	X	X	HUNTEC TAPE 28 (2573) SIDE SCAN TAPE 54 (0091) NSRF TAPE 10 (1543)
1134	2900350	441728	595007	X	X	X	X	HUNTEC TAPE 28 (2573) SIDE SCAN TAPE 54 (0091) NSRF TAPE 10 (1543)
1135	2900355	441725	594931	X	X	X	X	HUNTEC TAPE 28 (2666) SIDE SCAN TAPE 54 (1097) NSRF TAPE 10 (1625)
1136	2900400	441721	594853	X	X	X	X	HUNTEC TAPE 28 (2763) SIDE SCAN TAPE 54 (1292) NSRF TAPE 10 (1705)
1137	2900405	441717	594771	X	X	X	X	HUNTEC TAPE 28 (2852) SIDE SCAN TAPE 54 (1471) NSRF TAPE 10 (1702)
1138	2900410	441714	594699	X	X	X	X	HUNTEC TAPE 28 (2952) SIDE SCAN TAPE 54 (1640) NSRF TAPE 10 (1857)
1139	2900415	441711	594625	X	X	X	X	HUNTEC TAPE 28 (3046) SIDE SCAN TAPE 54 (1799) NSRF TAPE 10 (1030)
1140	2900420	441672	594601	X	X	X	X	HUNTEC TAPE 28 (3141) SIDE SCAN 54 (1953) NSRF TAPE 10 (2000)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
1141	2900425	441623	594598	X	X	X	X	HUNTEC TAPE 28 (3236) SIDE SCAN 54 (2103) NSRF TAPE 10 (2073)
1142	2900430	441575	594589	X	X	X	X	HUNTEC TAPE 28 (3331) SIDE SCAN TAPE 54 (2246) NSRF TAPE 10 (2144)
1143	2900435	441527	594578	X	X	X	X	HUNTEC TAPE 28 (3426) SIDE SCAN 54 (2384) NSRF TAPE 10 (2213)
1144	2900440	441481	594580	X	X	X	X	HUNTEC TAPE 28 (3519) SIDE SCAN TAPE 54 (2515) NSRF TAPE 10 (2279)
1145	2900445	441436	594584	X	X	X	X	HUNTEC TAPE 26 (3612) SIDE SCAN TAPE 54 (2622) NSRF TAPE 10 (2343)
1146	2900450	441388	594586	X	X	X	X	HUNTEC TAPE 29 (0000) SIDE SCAN TAPE 54 (2771) NSRF TAPE 10 (2411)
1147	2900455	441343	594589	X	X	X	X	HUNTEC TAPE 29 (0092) SIDE SCAN TAPE 54 (2889) NSRF TAPE 10 (2473)
1148	2900500	441296	594594	X	X	X	X	HUNTEC TAPE 29 (0187) SIDE SCAN 54 (3008) NSRF TAPE 10 (2537)
1149	2900505	441247	594594	X	X	X	X	HUNTEC TAPE 29 (0283) SIDE SCAN TAPE 54 (3124) NSRF TAPE 10 (2599)
1150	2900510	441202	594592	X	X	X	X	HUNTEC TAPE 29 (0380) SIDE SCAN TAPE 55 (0000) NSRF TAPE 10 (2659)

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FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
1151	2900515	441131	594594	X	X	X	X	HUNTEC TAPE 29 (0470) SIDE SCAN TAPE 55 (0099) NSRF TAPE 10 (2722)
1152	2900520	441110	594595	X	X	X	X	HUNTEC TAPE 29 (0570) SIDE SCAN TAPE 55 (0279) NSRF TAPE 10 (2780)
1153	2900525	441042	594595	X	X	X	X	HUNTEC TAPE 29 (0661) SIDE SCAN TAPE 55 (0515) NSRF TAPE 10 (2837)
1154	2900530	441017	594600	X	X	X	X	HUNTEC TAPE 29 (0759) SIDE SCAN TAPE 55 (0734) NSRF TAPE 10 (2895)
1155	2900535	440949	594603	X	X	X	X	HUNTEC TAPE 29 (0851) SIDE SCAN TAPE 55 (0934) NSRF TAPE 10 (2951)
1156	2900540	440921	594604	X	X	X	X	HUNTEC TAPE 29 (0945) SIDE SCAN TAPE 55 (1127) NSRF TAPE 10 (3008)
1157	2900545	440852	594606	X	X	X	X	HUNTEC TAPE 29 (1030) SIDE SCAN 55 (1304) NSRF TAPE 10 (3063)
1158	2900550	440823	594607	X	X	X	X	HUNTEC TAPE 29 (1135) SIDE SCAN TAPE 55 (1457) NSRF TAPE 10 (3119)
1159	2909555	440754	594609	X	X	X	X	HUNTEC TAPE 29 (1230) SIDE SCAN TAPE 55 (1642) NSRF START TAPE 11
1160	2900600	440726	594610	X	X	X	X	HUNTEC TAPE 29 (1323) SIDE SCAN TAPE 55 (1790) NSRF TAPE 11 (0154)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
1161	2900605	440660	594612	X	X	X	X	HUNTEC TAPE 29 (1410) SIDE SCAN TAPE 55 (1941) NSRF TAPE 11 (0295)
1162	2900610	440616	594613	X	X	X	X	HUNTEC TAPE 29 (1520) SIDE SCAN TAPE 55 (2081) NSRF TAPE 11 (0422)
1163	2900615	440578	594613	X	X	X	X	HUNTEC TAPE 29 (1609) SIDE SCAN PAPER & HELIX NSRF TAPE 11 (0546)
1164	2900620	440525	594614	X	X	X	X	HUNTEC TAPE 29 (1702) SIDE SCAN TAPE 55 (2157) NSRF TAPE 11 (0662)
1165	2900625	440474	594615	X	X	X	X	HUNTEC TAPE 29 (1796) SIDE SCAN TAPE 55 (2293) NSRF TAPE 11 (0776)
1166	2900630	440431	594616	X	X	X	X	HUNTEC TAPE 29 (1892) SIDE SCAN TAPE 55 (2427) NSRF TAPE 11 (0884)
1167	2900635	440380	594619	X	X	X	X	HUNTEC TAPE 29 (1986) SIDE SCAN TAPE 55 (2554) NSRF TAPE 11 (0986)
1168	2900640	440314	594623	X	X	X	X	HUNTEC TAPE 29 (2083) SIDE SCAN TAPE 55 (2671) NSRF TAPE 11 (1076)
1169	2900645	440276	594625	X	X	X	X	HUNTEC TAPE 29 (2174) SIDE SCAN TAPE 55 (2792) NSRF TAPE 11 (1172)
1170	2900650	440276	594563	X	X	X	X	HUNTEC TAPE 29 (2270) SIDE SCAN TAPE 55 (2910) NSRF TAPE 11 (1264)

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FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
1171	2900655	440207	594502	X	X	X	X	HUNTEC TAPE 29 (2344) SIDE SCAN TAPE 55 (3000) NSRF TAPE 11 (1353)
1172	2900700	440300	594428	X	X	X	X	HUNTEC TAPE 29(2460) SIDE SCAN TAPE 56(0067) NSRF TAPE 11(1437) SHIP SPEED 6.4
1173	2900705	440315	594351	X	X	X	X	HUNTEC TAP 29(2555) SIDE SCAN TAPE 56(0370) NSRF TAPE 11(1520) SHIP SPEED 6.5
1174	2900710	440337	594285	X	X	X	X	HUNTEC TAPE 29(2647) SIDE SCAN TAPE 56(0621) NSRF TAPE 11(1603) SHIP SPEED 6.5
1175	2900715	440361	594213	X	X	X	X	HUNTEC TAPE 29(2754) SIDE SCAN TAPE 56(0859) NSRF TAPE 11(1685) SHIP SPEED 6.4
1176	2900720	440379	594139	X	X	X	X	HUNTEC TAPE 29(2837) SIDE SCAN TAPE 56(1066) NSRF TAPE 11(1759) SHIP SPEED 6.4
1177	2900725	440398	594075	X	X	X	X	HUNTEC TAPE 29(2930 SIDE SCAN TAPE 56(1260) NSRF TAPE 11(1833) SHIP SPEED 6.3
1178	2900730	440415	594004	X	X	X	X	HUNTEC TAPE 29(3025) SIDE SCAN TAPE 56(1448) NSRF TAPE 11(1909) SHIP SPEED 6.3
1179	2900735	440441	593907	X	X	X	X	HUNTEC TAPE 29(3119) SIDE SCAN TAPE 56(1623) NSRF TAPE 11(1900) SHIP SPEED 6.0
1180	2900740	440509	593901	X	X	X	X	HUNTEC TAPE 29(3214) SIDE SCAN TAPE 56(1785) NSRF TAPE 11(2052) SHIP SPEED 6.0

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
1101	2900745	440509	593981	X	X	X	X	HUNTEC TAPE 29(3308) SIDE SCAN TAPE 56(1949) NSRF TAPE 11(2122) SHIP SPEED 6.0
1101	2900745	440560	593983	X	X	X	X	HUNTEC TAPE 29(3214) SIDE SCAN TAPE 56(1705) NSRF TAPE 11(2052) SHIP SPEED 6.0
1102	2900750	440609	593984	X	X	X	X	HUNTEC TAPE 29(3402) SIDE SCAN TAPE 56(2101) NSRF TAPE 11(2109) SHIP SPEED 5.8
1103	2900755	440657	593983	X	X	X	X	HUNTEC TAPE 29(3509) SIDE SCAN TAPE 56(2253) NSRF TAPE 11(2259) SHIP SPEED 5.7
1104	2900800	440711	593982	X	X	X	X	HUNTEC TAPE 30(0000) SIDE SCAN TAPE 56(2391) NSRF TAPE 11(2323) SHIP SPEED 5.6
1105	2900805	440756	593980	X	X	X	X	HUNTEC TAPE 30(0093) SIDE SCAN TAPE 56(2533) NSRF TAPE 11(2387) SHIP SPEED 5.5
1106	2900810	440805	593981	X	X	X	X	HUNTEC TAPE 30(0188) SIDE SCAN TAPE 56(2661) NSRF TAPE 11(2452) SHIP SPEED 6.0
1107	2900815	440856	593984	X	X	X	X	HUNTEC TAPE 30(0285) SIDE SCAN TAPE 56(2792) NSRF TAPE 11(2516) SHIP SPEED 5.8
1108	2900820	440906	593986	X	X	X	X	HUNTEC TAPE 30(0380 SIDE SCAN TAPE 56(2920) NSRF TAPE 11(2581) SHIP SPEED 5.7
1109	2900825	440956	593989	X	X	X	X	HUNTEC TAPE 30(0473) SIDE SCAN TAPE 56(3039) NSRF TAPE 11(2640) SHIP SPEED 5.8

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FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NGRF	SIDE SCAN	SOUNDER	NOTES.....
1190	2900830	441005	593992	X	X	X	X	HUNTEC TAPE 30(0570) SIDE SCAN TAPE 56(3153) NGRF TAPE 11(2699) SHIP SPEED 5.9
1191	2900835	441054	593994	X	X	X	X	HUNTEC TAPE 30(0663) SIDE SCAN TAPE 57(0020) NGRF TAPE 11(2757) SHIP SPEED 5.9
1192	2900840	441102	593995	X	X	X	X	HUNTEC TAPE 30(0760) SIDE SCAN TAPE 57(0324) NGRF TAPE 11(2818) SHIP SPEED 5.8
1193	2900845	441151	593997	X	X	X	X	HUNTEC TAPE 30(0852 SIDE SCAN TAPE 57(0584) NGRF TAPE 11(2874) SHIP SPEED 6.0
1194	2900850	441200	593983	X	X	X	X	HUNTEC TAPE 30(0944) SIDE SCAN TAPE 57(0820) NGRF TAPE 11(2932) SHIP SPEED 6.0
1195	2900855	441215	593924	X	X	X	X	HUNTEC TAPE 30(1041) SIDE SCAN TAPE 57(1036) NGRF TAPE 11(2988) SHIP SPEED 6.5
1196	2900900	441214	593847	X	X	X	X	HUNTEC TAPE 30(1133) SIDE SCAN TAPE 57(1228) NGRF TAPE 11(3041) SHIP SPEED 6.2
1198	2900910	441211	593776	X	X	X	X	HUNTEC TAPE 30(1325) SIDE SCAN TAPE 57(1600) NGRF TAPE 12(0000) SHIP SPEED 5.8
1199	2900915	441208	593641	X	X	X	X	HUNTEC TAPE 30(1420) SIDE SCAN TAPE 57(1775) NGRF TAPE 12(0159) SHIP SPEED 5.8
1200	2900920	41208	593641	X	X	X	X	HUNTEC TAPE 30(1514) SIDE SCAN TAPE 57(1933) NGRF TAPE 12(0295) SHIP SPEED 5.8

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
1200	2900920	441206	593573	X	X	X	X	HUNTEC TAPE 30(1514) SIDE SCAN TAPE 57(1933) NSRF TAPE 12(0295) SHIP SPEED 5.0
1201	2900925	441109	593524	X	X	X	X	HUNTEC TAPE 30(1614) SIDE SCAN TAPE 57(2000) NSRF TAPE 12(0410)
1202	2900930	441147	593621	X	X	X	X	HUNTEC TAPE 30(1703) SIDE SCAN TAPE 57(2229) NSRF TAPE 12(0547) SHIP SPEED 5.0
1203	2900935	441105	593516	X	X	X	X	HUNTEC TAPE 30(1798) SIDE SCAN TAPE 57(2368) NSRF TAPE 12(0664) SHIP SPEED 5.0
1204	2900940	441164	593510	X	X	X	X	HUNTEC TAPE 30(1892) SIDE SCAN TAPE 57(2510) NSRF TAPE 12(0778) SHIP SPEED 5.2
1205	2900945	441022	593507	X	X	X	X	HUNTEC TAPE 30(1987) SIDE SCAN TAPE 57(2645) NSRF TAPE 12(0884)
1206	2900950	440981	593505	X	X	X	X	HUNTEC TAPE 30(2081) SIDE SCAN TAPE 57(2775) NSRF TAPE 12(0987)
1207	2900955	440934	593506	X	X	X	X	HUNTEC TAPE 30(2176) SIDE SCAN TAPE 57(2901) NSRF TAPE 12(1084) SHIP SPEED 6.2
1208	2901000	440883	593506	X	X	X	X	HUNTEC TAPE 30(2270) SIDE SCAN TAPE 57(3020) NSRF TAPE 12(1176) SHIP SPEED 6.2
1209	2901005	440832	593505	X	X	X	X	HUNTEC TAPE 30(2364) SIDE SCAN TAPE 57(3138) NSRF TAPE 12(1260) SHIP SPEED 6.2

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NGRF	SIDE SCAN	SOUNDER	NOTES.....
1210	2901010	440704	593491	X	X	X	X	HUNTEC TAPE 30(2459) SIDE SCAN TAPE 57(3250) NGRF TAPE 12(1350) SHIP SPEED 6.4
1211	2901015	440727	593417	X	X	X	X	HUNTEC TAPE 30(2553) SIDE SCAN TAPE 58(0236) NGRF TAPE 12(1445) SHIP SPEED 7.0
1212	2901020	440700	593337	X	X	X	X	HUNTEC TAPE 30(2649) SIDE SCAN TAPE 58(0509) NGRF TAPE 12(1539) SHIP SPEED 6.7
1213	2901025	440728	593263	X	X	X	X	HUNTEC TAPE 30(2742) SIDE SCAN TAPE 58(0747) NGRF TAPE 12(1609) SHIP SPEED 6.4
1214	2901030	440727	593108	X	X	X	X	HUNTEC TAPE 30(2838) SIDE SCAN TAPE 58(0973) NGRF TAPE 12(1690) SHIP SPEED 6.3
1215	2901035	440726	593112	X	X	X	X	HUNTEC TAPE 30(2933) SIDE SCAN TAPE 58(1174) NGRF TAPE 12(1767) SHIP SPEED 6.4
1216	2901040	440724	593036	X	X	X	X	HUNTEC TAPE 30(3027) SIDE SCAN TAPE 58(1364) NGRF TAPE 12(1845) SHIP SPEED 6.1
1217	2901045	440723	592965	X	X	X	X	HUNTEC TAPE 30(3121) SIDE SCAN TAPE 58(1538) NGRF TAPE 12(1916) SHIP SPEED 6.1
1218	2901050	440720	592891	X	X	X	X	HUNTEC TAPE 30(3216) SIDE SCAN TAPE 58(1707) NGRF TAPE 12(1991) SHIP SPEED 6.3
1219	2901055	440720	592820	X	X	X	X	HUNTEC TAPE 30(3311) SIDE SCAN TAPE 58(1864) NGRF TAPE 12(2062) SHIP SPEED 6.2

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
1220	2901100	440787	592749	X	X	X	X	HUNTEC TAPE 30(3407) SIDE SCAN TAPE 50(2019) NSRF TAPE 12(2131) SHIP SPEED 6.2
1221	2901105	440767	592600	X	X	X	X	HUNTEC TAPE 30(3409) SIDE SCAN TAPE 50(2166) NSRF TAPE 12(2200) SHIP SPEED 6.2
1222	2901110	440766	592607	X	X	X	X	HUNTEC TAPE 30(3594) SIDE SCAN TAPE 50(2304) NSRF TAPE 12(2266) SHIP SPEED 6.3
1223	2901115	440764	592534	X	X	X	X	HUNTEC TAPE 31(0059) SIDE SCAN TAPE 50(2444) NSRF TAPE 12(2334) SHIP SPEED 6.3
1224	2901120	440761	592460	X	X	X	X	HUNTEC TAPE 31(0152) SIDE SCAN TAPE 50(2703) NSRF TAPE 12(2399) SHIP SPEED 6.3
1225	2901125	440756	592386	X	X	X	X	HUNTEC TAPE 31(0250) SIDE SCAN TAPE 50(2826) NSRF TAPE 12(2463) SHIP SPEED 6.3
1226	2901130	440755	592308	X	X	X	X	HUNTEC TAPE 31(0343) SIDE SCAN TAPE 50(2026) NSRF TAPE 12(2527) SHIP SPEED 6.3
1227	2901135	440755	592236	X	X	X	X	HUNTEC TAPE 31(0440) SIDE SCAN TAPE 50(2944) NSRF TAPE 12(2587) SHIP SPEED 6.1
1228	2901140	440753	592162	X	X	X	X	HUNTEC TAPE 31(0532) SIDE SCAN TAPE 50(3063) NSRF TAPE 12(2651) SHIP SPEED 6.3
1229	2901145	440754	592088	X	X	X	X	HUNTEC TAPE 31(0627) SIDE SCAN TAPE 50(3176) NSRF TAPE 12(2712) SHIP SPEED 6.2

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
1230	2901150	440752	592013	X	X	X	X	HUNTEC TAPE 31(0721) SIDE SCAN TAPER 58(3271) NSRF TAPE 12(2772) SHIP SPEED 6.3
1231	2901155	440751	591937	X	X	X	X	HUNTEC TAPE 31(0816) SIDE SCAN TAPE 59(0124) NSRF TAPE 12(2830) SHIP SPEED 6.2
1232	2901200	440750	591861	X	X	X	X	HUNTEC TAPE 31 (0911) SIDE SCAN TAPE 59 (0406) NSRF TAPE 12 (2808)
1233	2901205	449749	591784	X	X	X	X	HUNTEC TAPE 31 (1000) SIDE SCAN TAPE 59 (0660) NSRF TAPE 12 (2946)
1234	2901210	440748	591708	X	X	X	X	HUNTEC TAPE 31 (1100) SIDE SCAN TAPE 59 (0887) NSRF TAPE 12 (3003)
1235	2901215	440746	591631	X	X	X	X	HUNTEC TAPE 31 (1194) SIDE SCAN TAPE 59 (1004) NSRF TAPE 12 (3056)
1236	2901220	440718	591612	X	X	X	X	HUNTEC TAPE 31 (1290) SIDE SCAN TAPE 59 (1279) NSRF TAPE 12 (3113)
1237	2901225	440695	591654	X	X	X	X	HUNTEC TAPE 31 (1303) SIDE SCAN TAPE 59 (1457) NSRF TAPE 12 (3313)
1238	2901479	440670	591707	X	X	X	X	HUNTEC TAPE 31 (1479) SIDE SCAN TAPE 59 (1632) NSRF TAPE 12 (3442)
1239	2901235	440649	591760	X	0	X	X	HUNTEC TAPE 31 (1573) SIDE SCAN TAPE 59 (1706) NSRF DOWN

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	NSRF	SIDE SCAN	SOUNDER	NOTES.....
1240	2901240	440629	591012	X	X	X	X	HUNTEC TAPE 31 (1667) SIDE SCAN TAPE 59 (1944) NSRF TAPE 13 (0260)
1241	2901245	440612	591068	X	X	X	X	HUNTEC TAPE 31 (1764) SIDE SCAN TAPE 59 (2089) NSRF TAPE 13 (0377)
1242	2901250	440597	591927	X	X	X	X	HUNTEC TAPE 31 (1857) SIDE SCAN TAPE 59 (2231) NSRF TAPE 13 (0491)
1243	2901255	440578	591982	X	X	X	X	HUNTEC TAPE 31 (1951) SIDE SCAN TAPE 59 (2370) NSRF TAPE 13 (0607)
1244	2901300	440558	592037	X	X	X	X	HUNTEC TAPE 31 (2047) SIDE SCAN TAPE 59 (2498) NSRF TAPE 13 (0705)
1245	2901305	440536	592092	X	X	X	X	HUNTEC TAPE 31 (2140) SIDE SCAN TAPE 59 (2628) NSRF TAPE 13 (0812)
1246	2901310	440513	592144	X	X	X	X	HUNTEC TAPE 31 (2235) SIDE SCAN TAPE 59 (2753) NSRF TAPE 13 (0905)
1247	2901315	440437	592198	X	X	X	X	HUNTEC TAPE 31 (2330) SIDE SCAN TAPE 59 (2875) NSRF TAPE 13 (0999)
1248	2901320	440461	592252	X	X	X	X	HUNTEC TAPE 31 (2426) SIDE SCAN TAPE 59 (2986) NSRF TAPE 13 (1091)
1249	2901325	440435	592304	X	X	X	X	HUNTEC TAPE 31 (2525) SIDE SCAN TAPE 59 (3113) NSRF TAPE 13 (1109)

DAWSON 02-040 (GABLE IS.)

FIX NUMBER	DAY/TIME (GMT)	LATITUDE	LONGITUDE	HUNTEC	N6RF	SIDE SCAN	SOUNDER	NOTES.....
1250	2901330	440406	592361	X	X	X	X	HUNTEC TAPE 31 (2613) SIDE SCAN END OF TAPE 59 N6RF TAPE 13 (1275)
1251	2901335	440357	592387	X	X	X	X	HUNTEC TAPE 31 (2726) SIDE SCAN TAPE 60 (0000) N6RF TAPE 13 (1360)

82-040 DAWSON
1:1 MILLION AT 48N

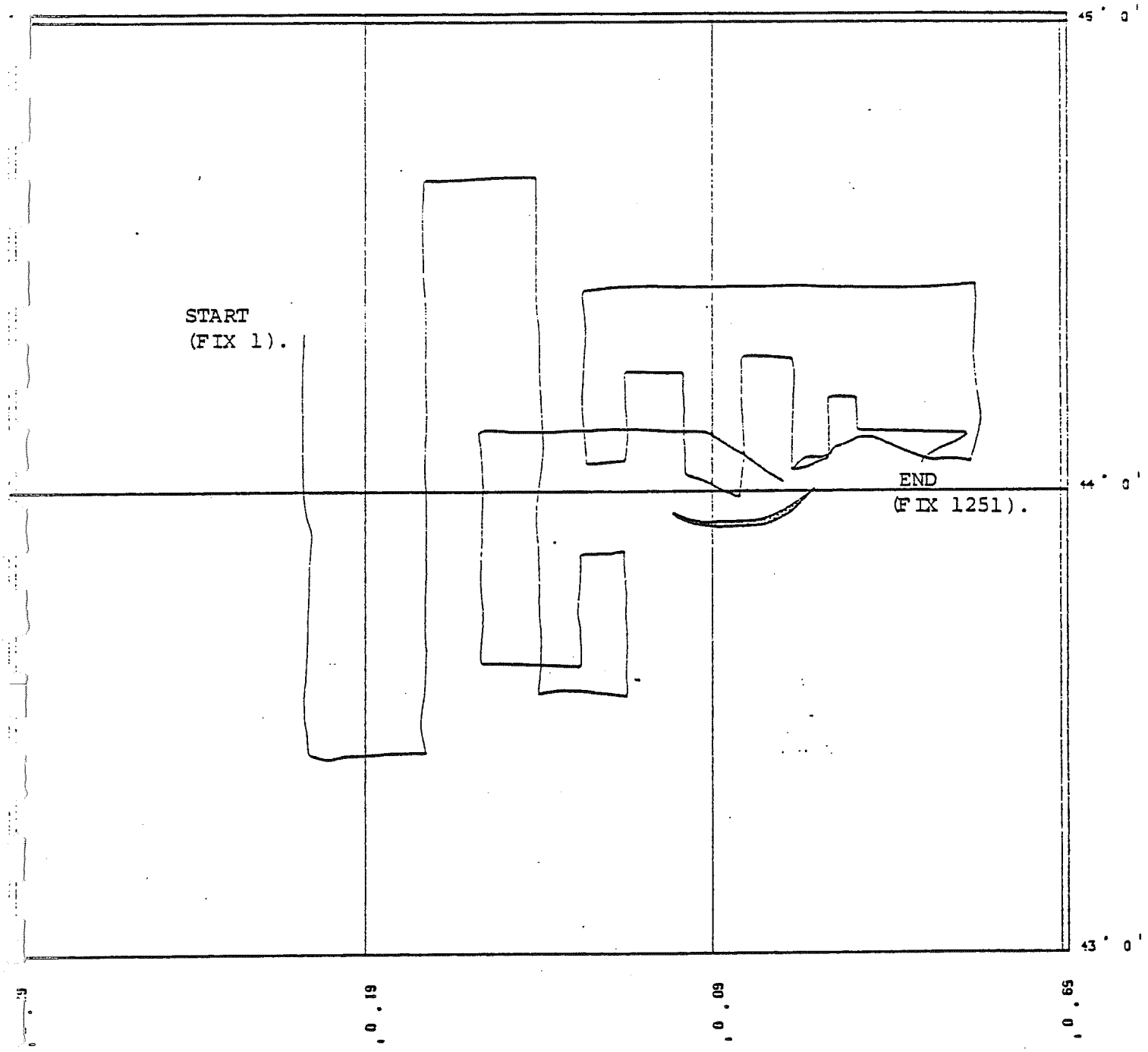

FIGURE 1. Track plot of seismic survey carried out during DAWSON cruise 82-040. A total of 1100 line km of lines were ran.

CSS DAWSON CRUISE REPORT 83-026

SABLE ISLAND BANK AND BANQUEREAU

by
Carl L. Amos

INTERNAL CRUISE REPORT

C.S.S. DAWSON CRUISE REPORT 83-026,

SABLE ISLAND BANK AND BANQUEREAU

by

Carl L. Amos

Atlantic Geoscience Centre
Geological Survey of Canada
P.O. Box 1006, Dartmouth, Nova Scotia
B2Y 4A2

Project 800036

July, 1983

ABSTRACT

CSS Dawson cruise 83-026 (7-12 July, 1983) was a cruise of opportunity carried out in association with Queen's University, Dalhousie University and Université de Québec, and organised by Atlantic Geoscience Centre, Geological Survey of Canada.

The cruise objectives were to collect detailed side scan sonographs and high resolution seismic reflection profiles at 5 specific sites of interest, based on regional records collected during previous cruises to the region (C.S.S. Dawson cruise 82-040; C.S.S. Baffin cruise 82-039); to collect 17 vibrocores of surficial sediment from Sable Island Bank and Banquereau; and to collect CTD profiles over Sable Island Bank coordinated with pump samples from specific depths for analysis of material suspended in the water column.

The cruise was successful in meeting all the cruise objectives within the time frame allotted. Calm seas and good weather were contributing factors. The geophysical data was of good quality, though in general the Huntec (DTS) is not suited to shallow water (20-40 m) surveying over massive sand. The side scan sonographs showed some interesting bedform relationships and provided a key to distinguishing sand ribbons from mobibund 2-D megaripples, and in the interpretation of shoreface-connected ridges to the south of Sable Island.

Fifteen vibrocores of various lengths were collected despite some severe operational problems. The length of recovery and degree of penetration was variable presumably due to the nature of the sea bed.

As in previous cruises, we found no active sand waves, though we did observe some active 2-D megaripples and an abundance of sand ribbons.

A detailed survey carried out over an area of possible slumping was inconclusive and so the question of sediment stability in The Gully is still open.

LIST OF CONTENTS

CRUISE SUMMARY SHEET

CRUISE SHIP:	C.S.S. Dawson
CRUISE NUMBER:	83-026
CRUISE DATES:	7-12 July, 1983
SHIP CAPTAIN:	Mr. R. Dickinson
CHIEF SCIENTIST:	C.L. Amos
CHIEF TECHNICIAN:	R.B. Murphy
NAVIGATION SYSTEM:	Loran 'C'
SURVEY SPEED:	3-5 kts
SURVEY REGION:	North Sable Island Bank The Gully South Banquereau South Sable Island Bank Western Bank
TOTAL LINES SURVEYED:	600 km
VIBROCORES:	15 (up to 3 m in length)
CTD PROFILES:	5
GRAB SAMPLES:	15
PERSONNEL:	R.B. Murphy (A.G.C.) K.W. Asprey (A.G.C.) S. Denman (A.G.C.) B. Kelly (A.G.C.) T. McInnis (A.G.C.) S. LeBlanc (Uni de Quebec) R. Parrott (Huntec Ltd.) B. Zaitlin (A.G.C./Queen's University) R. Dalrymple (Queen's University) M. Jonasz (Dalhousie University)

1.0 INTRODUCTION

A multi-parameter geophysical survey was conducted over Sable Island Bank and Banquereau aboard C.S.S. Dawson. The purpose of the cruise was to supplement seismic data collected during two previous cruises to the region (C.S.S. Dawson cruise 82-040 and C.S.S. Baffin cruise 82-039) and to collect core samples in order to interpret lithology from the acoustic data. Associated with these programs, Dalhousie University were to run CTD profiles and analyse water samples in order to determine suspended sediment type and concentration, Université de Québec were to examine the background radiation levels (and emissions) of the seabed at two selected sites on Sable Island Bank, and Queen's University were to be involved in core and grab sample collection for analyses of the detailed internal sedimentary structures of various bedforms recognized in the region.

The data collected will aid interpretations of the nature and origin of the local surficial sediments and on the mobility of these sediments. This cruise was coordinated with C.S.S. Hudson Cruise 83-019 (chief scientist: G. Fader) which was concurrently collecting side scan sonographs, seabed samples and bottom photographs south of Sable Island.

The specific objectives of the Dawson cruise were as follows:

1. To carry out five site specific surveys, for purposes of side scan sonograph mosaicing, in order to interpret specific bed features such as: slumps, sand ribbons, sand waves or sand ridges.
2. To collect 17 vibrocores in the Sable Island Bank area in order to calibrate the acoustic records and provide sedimentologic evidence for the recent bank evolution.
3. To carry out a preliminary site survey in two regions proposed for sand tracer experiments, in order to determine the nature of the seabed in these areas.

4. To carry out CTD profiles of the water column in order to evaluate the water structure, and to filter seawater samples for sediment analyses.

2.0 THE DETAILS OF THE SURVEY

The cruise began at 1300 GMT, 07 July, 1983 and terminated at 1200 GMT, 12 July, 1983. A total of 55.8 hours of surveying were carried out at four specific sites around Sable Island and in a zone within the nearshore immediately south of Sable Island. A track plot of the survey lines is shown in Figure 1. 670 fixes were taken at 5 minute intervals and were annotated by sequential fix number, julian day, time (GMT) and position (latitude and longitude). Weather conditions and sea state was abstracted from the bridge log and were also listed. Position fixes were noted (together with 2 TD's) from the RACAL LORAN 'C' consol. Position fixing was checked against C.S.S. Hudson which was also in the region and was considered accurate to within 100 m. Notes on equipment status, configurations and settings were logged where appropriate. A complete listing of the fixes is given in Appendix A and was logged in real time on an Apple IIE using the 'DB Master' routine.

Seismic equipment worked well throughout the cruise providing good quality records. All data was recorded on magnetic tape.

3.0 SIDE SCAN SONAR

The Klein 421T side scan fish and recorder were used and worked well throughout the survey despite the short length of the tow cable. We could not use a longer armoured cable (which would have given better depth coverage) due to a short circuit and the absence of the K-wing depressor. The fish was towed approximately 80 m behind the ship at an average depth

of 15 metres. The swath width was adjusted between 200-250 metres per channel and displayed at 30 scan lines/cm. This yielded an aspect ratio of 1.4 (exaggerated in the cross-track direction). The distance over the ground between 5 minute fixes averaged, approximately 0.77 km.

All data was recorded on magnetic tape (Scotch 295; 6.3 mm x 1097.2 m) using a RACAL store 4D tape recorder. The following were the channel designations:

Channel 1 - Right channel (FM; 5 volts)

Channel 2 - Left channel (FM; 5 volts)

Channel 3 - Reference pulse (DR; 2 volts)

Channel 4 - Voice (DR; 1 volt)

Tapes were driven at a speed of 3-3/4"/second and voice annotated at regular intervals. A total of 19 tapes of side scan data were recorded.

4.0 HUNTEC DEEP TOW SYSTEM (DTS)

The Huntec (DTS) was operational throughout the entire survey. However, the system was not well suited to the shallow water around Sable Island. The body motion compensator could not remove sensor motion due to waves (at a fish depth of 9 m), although low frequency oscillations were removed when the system was in pressure mode.

A total of 550 line km of survey lines were carried out. A total of 18 Scotch 295 (6.3 mm x 1097.2 m) tapes were recorded using an H.P. 3960 recorder, at a tape speed of 3-3/4"/second. The following were the channel designations:

Channel 1 -

Channel 2 - Internal hydrophone (FM)

Channel 3 - Trigger pulse (DR)

Channel 4 - Voice fix (FM)

The system was fired at a 0.75 second rate, synchronised to an E.P.C. sweep speed of 0.25 seconds. The body motion compensator was almost exclusively in pressure mode with 0° offset. The source level was adjusted between 2-4 Kv, while the high pass filter was adjusted between 0.7 - 2.0 KH $_3$.

5.0 VIBROCORES AND GRAB SAMPLES

A total of 15 vibrocores were collected varying in length up to 3 metres. The system was functional although some problems were encountered. Firstly, the penetration indicator was found to be unreliable and cumbersome, often times penetration was of necessity inferred from vibration time. Secondly, the splice on the seaward terminus of the umbilical leaked on the second lowering and grounded the system through an 'exposed' wire emerging from the splice. Finally, the braided rope used to lower the system tangled twice with the ship's keel. The second tangle almost resulted in the loss of the corer. Clearly, the system needs to be redesigned.

The following is a table of cores recovered. Grab samples were also collected at each site for reference purposes.

Vibrocore	Latitude	Longitude	Length (m)	Water depth (m)
1	44°07.83'	59°51.89'	2.38	41
2	44°15.65'	59°06.11'	0.42	194
3	No sample attempted			
4	43°07.83'	59°39.42'	2.12	32
5	43°53.33'	59°47.52'	1.87	32
6	43°53.12'	59°48.68'	1.55	30

7	43°52.95'	59°50.43'	-	26
8	43°52.58'	60°00.69'	1.32	22
8A	43°53.25'	60°01.78'	2.23	22
9	43°53.52'	60°03.41'	2.25	20
10	43°54.22'	60°23.83'	3.02	18
10A	43°54.56'	60°25.25'	2.66	22
11	43°54.58'	60°26.74'	No recovery	
11A	43°55.10'	60°29.60'	No recovery	
12	43°56.70'	60°40.20'	1.34	23
13	43°26.86'	61°04.00'	2.22	68
14	43°29.23'	61°05.01'	2.54	68
15	43°31.54'	61°07.21'	1.49	57
16	43°42.24'	61°14.53'	0.90	45
17	43°50.77'	61°20.27'	No recovery	

6.0 RESULTS

The interpretation of the records indicates that the suite of bedforms on Sable Island Bank are predominantly moribund. The site surveys (4 were conducted) were however generally of high enough quality to define bedform type. Mosaic area #1 was predominantly covered with moribund 'sand patches' similar to those described by workers in the North Sea. Some evidence of degraded sand waves were observed. A vibrocore (#1) from the site penetrated clean sand to a depth of 2.38 m. This indicated that the acoustic reflectivity variations seen on the side scan sonographs result from variations in shell content of the seabed sediment.

Mosaic #2, surveyed over the Banquereau flank of The Gully and in a region of supposed slumping showed evidence of active 2-D megaripples, active sand waves and type-B sand ribbons. The existance of slumps or megaflutes (erosional features) is not resolved although one site of potential slumping was noted.

We observed interesting features on the side scan sonographs which appear to be internal waves or solitons approximately 300 m in wavelength which were propagating along on the local thermocline.

Mosaic #3 was collected over an area of thin clean sands (1-2 m thick), on which occur features thought to be either moribund 2-D megaripples or sand ribbons. The survey track, which was parallel to the bedform crestlines,shows them to be flow-transverse, 2-D megaripples. The appropriate diagnostic features of these bedforms can now be evaluated.

Mosaic #4 covers an area of low amplitude ridges. These features appear moribund. They do however possess an asymmetry in trough character with a sharp western margin and diffuse eastern margin. The inference is that they are migrating (intermittantly perhaps) to the east. The seismic data show the ridges to be 2-5 m thick, lying on a flat, acoustically opaque reflector.

The asymmetry in trough character is reflected in all troughs associated with the shore-connected ridges on the south Sable Island foreshore. Again these features appear to be moving eastward. They show no superimposed bedforms and are therefore presumed moribund, however the troughs show type-B sand ribbons and megaripples moving sediment along the trough. The erosive troughs of the bedforms seems to be cutting down the lag surface (underlying the mobile sand) 1-2 m as each successive trough migrates.

7.0 RECOMMENDATIONS

There is evidence to suggest that bedforms (of all types) are intermitantly active. I recommend a tracer study in order to determine the time frame of these movements and to determine the depth of the mobile layer.

The next phase of sampling should be to collect box cores and bottom photographs from the various bedform types in order to classify them according to more detailed observations of bottom type and internal structure.

The question of slumping is still unanswered. A further, more detailed seismic and coring program survey should be undertaken on the flank of The Gully to resolve this question.

I also recommend a detailed coring and box coring program on Eastern Shoal (Banquereau) in order to evaluate the concept that the bar is a relict, submerged barrier island system.

ACKNOWLEDGEMENTS

I feel bound to thank the quick thinking and practical abilities of the deck crew of C.S.S. Dawson who by their actions saved A.G.C. several pieces of valuable equipment that would otherwise would have been lost. I also acknowledge Danny Winters (Ship's Division) who contributed significantly to the success of the cruise by providing invaluable input to the repair of the vibrocorer. I finally thank all the cruise participants for making this survey a successful and enjoyable learning experience, and the Word Processing Unit for typing this manuscript.

APPENDIX A

- SEISMIC SHOT POINT DATA -

CSS DAWSON CRUISE/SABLE ISLAND BANK DN 83-026 JULY 7-12, 1983.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
1	083-189-0600	44-00-82	59-55-21	38	1.0361	1.0136	5.3	106	START LINE #1, MOSAIC #1 SIDE SCAN AND HUNTEC WORKING FINE
2	083-189-0605	44-00-80	59-54-64	38	1.0491	1.0027	5.4	88	SEA STATE CALM HUNTEC HEAVE INOPERABLE
3	083-189-0610	44-00-81	59-54-06	36	1.0620	1.0365	5.2	90	
4	083-189-0615	44-00-80	59-53-45	38	1.0700	1.4600	5.4	89	
5	083-189-0620	44-00-81	59-52-86	38	1.0828	1.0935	5.4	91	
6	083-189-0625	44-00-79	59-52-27	38	1.0935	1.0650	5.4	92	KLEIN 421 T KEVLAR CABLE 100 M, 250 M SWATH WIDTH TAPE SPEED 3 3/4 INS.
7	083-189-0630	44-00-78	59-51-67	39	1.1036	1.0746	5.4	87	
8	083-189-0635	44-00-79	59-51-06	39	1.1134	1.0842	5.3	88	HUNTEC FISH AT 20 M. SOURCE LEVEL 2 KV H.P. FILTER 2.0 KHZ SWEEP SPEED 0.25 SECS
9	083-189-0640	44-00-79	59-50-47	39	1.1229	1.0936	5.4	92	
10	083-189-0645	44-00-78	59-49-88	39	1.1321	1.1032	5.4	87	
11	083-189-0650	44-00-80	59-49-27	39	1.1410	1.1128	5.4	88	
12	083-189-0655	44-00-76	59-48-74	40	1.1497	1.1227	1.0	170	END LINE #1, MOSAIC #1

DAWSON 83-026

CSS DAWSON CRUISE/SABLE ISLAND BANK DN 83-026 JULY 7-12, 1983.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
13	083-189-0700	44-00-48	59-48-96	38	1.1582	1.1319	2.7	276	RAISE SIDESCAN FISH SHIP'S SPEED REDUCED FROM 5 TO 3 KNOTS
14	083-189-0705	44-00-49	59-48-96	38	1.1664	1.1413	3.0	276	
15	083-189-0710	44-00-51	59-49-60	38	1.1744	1.1508	3.0	276	SEA STATE LIGHT
16	083-189-0715	44-00-50	59-49-85	36	1.1822	1.1604	3.1	275	
17	083-189-0720	44-00-56	59-50-19	37	1.1900	1.1699	3.2	272	START SCINTILLOMETRY
18	083-189-0725	44-00-51	59-50-52	37	1.1978	1.1800	3.3	275	
19	083-189-0730	44-00-51	59-50-87	38	1.2048	1.1890	3.3	269	
20	083-189-0735	44-00-51	59-51-22	38	1.2120	1.1985	3.3	272	
21	083-189-0740	44-00-50	59-51-57	37	1.2191	1.2081	3.3	272	
22	083-189-0745	44-00-48	59-51-93	37	1.2260	1.2176	3.3	277	
23	083-189-0750	44-00-47	59-52-27	37	1.2329	1.2272	3.4	275	
24	083-189-0755	44-00-50	59-52-62	38	1.2397	1.2366	3.2	275	
25	083-189-0800	44-00-50	59-52-98	38	1.2463	1.2462	3.4	272	

CSS DAWSON CRUISE/SABLE ISLAND BANK DN 83-026 JULY 7-12, 1983.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
26	083-189-0805	44-00-50	59-53-34	34	1.2528	1.2558	3.4	272	
27	083-189-0810	44-00-49	59-53-69	34	1.2592	1.2653	3.4	273	
28	083-189-0815	44-00-50	59-54-05	34	1.2655	1.2749	3.3	273	
29	083-189-0820	44-00-31	59-54-39	34	1.2718	1.2843	3.4	272	
30	083-189-0825	44-00-53	59-54-76	35	1.2779	1.2940	4.6	264	
31	083-189-0830	44-00-26	59-54-96	33	1.2840	1.3034	3.8	153	
32	083-189-0835	44-00-21	59-54-54	32	1.2897	1.3130	3.1	87	END OF LINE 2, MOSAIC 1
33	083-189-0840	44-00-22	59-54-16	32	1.2959	1.3225	3.4	90	
34	083-189-0845	44-00-23	59-53-74	32	1.3017	1.3320	3.5	93	
35	083-189-0850	44-00-22	59-53-33	32	1.3074	1.3415	3.6	96	
36	083-189-0855	44-00-21	59-52-93	33	1.3131	1.3510	3.3	94	END OF SIDESCAN TAPE 1
37	083-189-0900	44-00-20	59-52-55	32	1.3188	2.0000	3.4	94	START SIDESCAN TAPE 2 END OF HUNTEC TAPE 1
38	083-189-0905	44-00-19	59-52-17	32	2.0110	2.0098	3.1	94	SHIFT CHANGE

CSS DAWSON CRUISE/SABLE ISLAND BANK DN 83-026 JULY 7-12, 1983.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
195	083-190-0505	44-13-84	58-58-09	62	6.1384	6.1144	5.8	269	
196	083-190-0510	44-13-84	58-58-52	62	6.1471	6.1241	5.5	271	
197	083-190-0515	44-13-82	58-59-30	68	6.1556	6.1335	5.2	270	END LINE #6, MOSAIC #2 END MOSAIC #2
198	083-190-0520	44-13-85	58-59-87	70	6.1660	6.1455	5.1	356	ENROUTE TO MOSAIC #3
199	083-190-0525	44-13-90	58-59-37	68	6.1718	6.1526	5.7	104	
200	083-190-0530	44-13-54	58-59-26	68	6.1794	6.1621	5.5	181	
201	083-190-0535	44-13-09	58-59-23	68	6.1874	6.1716	5.2	181	WEATHER CLEAR AND CALM
202	083-190-0540	44-12-64	58-59-21	68	6.0000	6.0000	5.2	178	CHANGING SIDE SCAN PAPER
203	083-190-0545	44-12-26	58-59-18	76	6.2022	6.1907	5.1	182	NEW SIDE SCAN ROLL
204	083-190-0550	44-11-81	58-59-18	81	6.2094	6.2002	5.1	179	
205	083-190-0555	44-11-39	58-59-18	82	6.2164	6.2098	5.2	180	
206	083-190-0600	44-10-94	58-59-18	82	6.2234	6.2192	5.6	182	
207	083-190-0605	44-10-49	58-59-21	83	6.2302	6.2288	5.2	178	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
208	083-190-0610	44-10-05	58-59-20	112	6.2369	6.2383	5.6	180	
209	083-190-0615	44-09-71	58-59-23	126	6.2435	6.2480	5.2	179	HUNTEC AND SIDE SCAN WORKING WELL WEATHER CLEAR AND CALM
210	083-190-0620	44-09-42	58-59-93	120	6.2501	6.2573	5.8	125	
211	083-190-0625	44-09-20	58-59-44	106	6.2564	6.2669	5.9	122	
212	083-190-0630	44-08-97	58-57-98	96	6.2627	6.2764	5.8	124	
213	083-190-0635	44-08-75	58-57-52	90	6.2689	6.2859	5.2	124	
214	083-190-0640	44-08-52	58-57-10	90	6.2749	6.2955	5.1	124	
215	083-190-0645	44-08-30	58-56-67	96	6.2809	6.3049	5.1	124	
216	083-190-0650	44-08-11	58-56-28	100	6.2869	6.3145	5.1	124	
217	083-190-0655	44-07-89	58-55-86	100	6.2928	6.3240	5.2	124	
218	083-190-0700	44-07-67	58-55-46	105	0.0000	6.3335	5.1	123	END OF TAPES #6 FOR BOTH HUNTEC AND SIDE SCAN
219	083-190-0705	44-07-38	58-55-05	102	7.0114	7.0001	5.5	122	BEGIN TAPE #7 FOR BOTH HUNTEC AND SIDESCAN
220	083-190-0710	44-07-25	58-54-63	100	7.0258	7.0095	5.2	116	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
221	083-190-0715	44-07-08	58-54-18	102	7.0399	7.0193	5.6	112	
222	083-190-0720	44-06-92	58-53-73	100	7.0522	7.0286	5.6	114	
223	083-190-0725	44-06-76	58-53-27	100	7.0643	7.0381	5.2	116	
224	083-190-0730	44-06-59	58-52-80	100	7.0758	7.0476	5.7	118	
225	083-190-0735	44-06-47	58-52-36	100	7.0868	7.0573	5.3	108	
226	083-190-0740	44-06-39	58-51-92	100	7.0973	7.0667	5.1	85	BEGIN MOSAIC #3
227	083-190-0745	44-06-42	58-51-47	100	7.1072	7.0761	5.3	85	
228	083-190-0750	44-06-44	58-51-02	96	7.1170	7.0857	5.4	90	
229	083-190-0755	44-06-46	58-50-63	96	7.1265	7.0952	5.1	88	
230	083-190-0800	44-06-46	58-50-10	96	7.1356	7.1048	5.5	100	
231	083-190-0805	44-06-44	58-49-67	95	7.1445	7.1134	5.2	97	
232	083-190-0810	44-06-44	58-49-24	95	7.1531	7.1238	5.1	98	
233	083-190-0815	44-06-44	58-48-82	90	7.1614	7.1333	5.2	95	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
234	083-190-0820	44-06-43	58-48-41	90	7.1696	7.1426	5.1	95	
235	083-190-0825	44-06-44	58-48-01	0	7.1775	7.1524	5.2	91	
236	083-190-0830	44-06-44	58-47-60	88	7.1853	7.1619	5.3	93	
237	083-190-0835	44-06-43	58-47-21	90	7.1929	7.1714	5.3	101	
238	083-190-0840	44-06-40	58-46-83	90	7.2004	7.1809	5.1	95	
239	083-190-0845	44-06-44	58-46-45	90	7.2077	7.1905	5.0	89	
240	083-190-0850	44-06-45	58-46-14	90	7.2149	7.2000	5.1	122	END LINE 1, MOSAIC 3
240	083-192-0240	43-54-52	60-23-54	21	15.0750	16.0375	5.2	278	
241	083-190-0855	44-06-10	58-46-16	90	7.2219	7.2095	5.3	180	
242	083-190-0900	44-05-82	58-46-51	90	7.2288	7.2190	4.9	279	
243	083-190-0905	44-05-90	58-47-23	91	7.2355	7.2285	5.7	277	
244	083-190-0910	44-05-97	58-47-87	92	7.2422	7.2383	4.5	262	
245	083-190-0915	44-05-95	58-48-54	93	7.2488	7.2476	5.0	263	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
246	083-190-0920	44-05-94	58-49-21	95	7.2552	7.2572	5.0	262	
247	083-190-0925	44-05-93	58-49-86	95	7.2615	7.2667	5.4	258	
248	083-190-0930	44-05-91	58-50-36	98	7.2678	7.2763	5.1	264	
249	083-190-0935	44-05-91	58-51-12	99	7.2740	7.2858	5.2	265	
250	083-190-0940	44-05-90	58-51-70	101	7.2801	7.2954	5.1	267	
251	083-190-0945	44-05-92	58-51-29	102	7.2861	7.3049	5.2	232	END LINE 2, MOSAIC 3
252	083-190-0950	44-05-58	58-52-44	105	8.0039	8.0002	5.3	138	START TAPE #8 FOR BOTH HUNTEC AND SIDE SCAN
253	083-190-0955	44-05-62	58-51-90	103	7.0191	7.0096	5.9	88	START LINE 3, MOSAIC 3
254	083-190-1000	44-05-44	58-51-28	102	8.0331	8.0192	4.7	102	
255	083-190-1005	44-05-42	58-50-89	100	8.0463	8.0286	4.9	94	
256	083-190-1010	44-05-45	58-50-41	99	8.0589	8.0383	5.9	94	
257	083-190-1015	44-05-44	58-49-91	98	8.0705	8.0477	4.9	96	
258	083-190-1020	44-05-45	58-49-40	96	8.0815	8.0583	5.1	96	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
259	083-190-1025	44-05-46	58-48-94	97	8.0922	8.0668	4.9	102	
260	083-190-1030	44-05-45	58-48-85	97	8.1026	8.0763	5.3	101	
261	083-190-1035	44-05-44	58-47-96	95	8.1125	8.0858	5.1	100	
262	083-190-1040	44-05-42	58-47-52	94	8.1219	8.0954	5.3.	100	
263	083-190-1045	44-05-41	58-47-07	93	8.1311	8.1048	4.9	94	
264	083-190-1050	44-05-42	58-46-56	93	8.1401	8.1144	5.0	96	END LINE 3, MOSAIC 3\
265	083-190-1055	44-05-42	58-46-08	92	8.1488	8.1241	4.6	127	
266	083-190-1100	44-05-15	58-46-03	93	8.1572	8.1334	4.6	219	
267	083-190-1105	44-04-87	58-46-55	96	8.1655	8.1436	6.1	269	START LINE 4, MOSAIC 3
268	083-190-1110	44-04-91	58-47-27	97	8.1735	8.1526	6.3	275	
269	083-190-1115	44-04-93	58-47-98	97	8.1840	8.1621	5.9	272	
270	083-190-1120	44-04-93	58-48-68	98	8.1889	8.1716	5.9	266	
271	083-190-1125	44-04-94	58-49-36	99	8.1965	8.1812	5.6	265	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
272	083-190-1130	44-04-94	58-49-36	100	8.2041	8.1908	5.6	265	
273	083-190-1135	44-04-93	58-50-69	102	8.2111	8.2005	5.5	263	
274	083-190-1140	44-04-91	58-51-32	104	8.2182	8.2097	5.7	264	
275	083-190-1145	44-04-90	58-51-97	108	8.2252	8.2192	5.7	264	END LINE 4, MOSAIC 3
276	083-190-1150	44-04-86	58-52-58	10	8.2320	8.2288	4.5	205	
277	083-190-1155	44-04-48	58-52-59	112	8.2388	8.2384	5.3	140	
278	083-190-1200	44-04-39	58-52-09	108	8.2453	8.2476	6.0	88	START LINE 5, MOSAIC 3
279	083-190-1205	44-04-43	58-51-52	107	8.2518	8.2574	6.0	91	
280	083-190-1210	44-04-45	58-50-93	105	8.2582	8.2669	5.9	93	
281	083-190-1215	44-04-42	58-50-35	102	8.2645	8.2765	5.5	87	
282	083-190-1220	44-04-42	58-49-74	101	8.2707	8.2860	5.3	89	
283	083-190-1225	44-04-42	58-49-20	100	8.2768	8.2956	5.4	90	
284	083-190-1230	44-04-40	58-48-60	99	8.2828	8.3052	5.5	92	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
285	083-190-1235	44-04-36	58-47-96	100	8.2888	8.3148	5.3	86	
286	083-190-1240	44-04-36	58-47-41	100	8.2947	8.3243	5.6	87	
287	083-190-1245	44-04-39	58-46-82	99	8.3005	8.3337	5.7	83	
288	083-190-1250	44-04-43	58-46-36	100	8.3063	8.3433	5.7	82	END LINE 5, MOSAIC 3
289	083-190-1255	44-04-28	58-46-01	97	9.0040	9.0008	4.2	191	CHANGED BOTH TAPES
290	083-190-1300	44-03-98	58-46-28	99	9.0193	9.0103	4.3	204	
291	083-190-1305	44-03-78	58-46-68	100	9.0337	9.0201	0.0	275	START OF LINE 6, MOSAIC 3
292	083-190-1310	44-03-85	58-47-26	100	9.0467	9.0294	4.8	274	
293	083-190-1315	44-03-86	58-47-82	101	9.0591	9.0389	5.0	274	
294	083-190-1320	44-03-88	58-48-35	101	9.0707	9.0485	4.7	277	
295	083-190-1325	44-03-90	58-48-93	103	9.0817	9.0580	5.0	274	
296	083-190-1330	44-03-86	58-49-47	103	9.0924	9.0675	5.2	267	
297	083-190-1335			103	9.1028	9.0771	4.9	277	SLAVE DISTANCE(1) 13769.9 SLAVE DISTANCE(2) 27960.5

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
298	083-190-1340			105	9.1127	9.0866	5.3	282	SLAVE DISTANCE(1) 13769.8 SLAVE DISTANCE(2) 27964.6
299	083-190-1245			108	9.1223	9.0962	5.5	280	SLAVE DISTANCE(1) 13769.7 SLAVE DISTANCE(2) 27970.0
300	083-190-1350			111	9.1313	9.1057	5.2	273	SLAVE DISTANCE(1) 13769.6 SLAVE DISTANCE(2) 27973.3
301	083-190-1355			115	9.1403	9.1153	4.1	216	SLAVE DISTANCE(1) 13769.3 SLAVE DISTANCE(2) 27978.5
302	083-190-1400			118	9.1488	9.1248	4.3	184	SLAVE DISTANCE(1) 13768.2 SLAVE DISTANCE(2) 27979.5
303	083-190-1405	44-03-25	,58-52-54	121	9.1575	9.1345	4.3	169	
304	083-190-1410	44-03-00	58-52-27	120	9.1658	9.1441	5.2	29	
305	083-190-1415	44-03-41	58-52-14	118	9.1737	9.1534	5.3	30	START OF LINE #7, MOSAIC #3
306	083-190-1420	44-03-75	58-51-88	112	9.1815	9.1629	5.8	32	
307	083-190-1425	44-04-10	58-51-62	108	9.1891	9.1725	6.2	29	
308	083-190-1430	44-04-44	58-51-36	105	9.1967	9.1820	5.4	31	
309	083-190-1435	44-04-73	58-51-16	105	9.2042	9.1915	5.4	27	
310	083-190-1440	44-05-02	58-50-94	102	9.2112	9.2011	4.7	37	END OF LINE #7, MOSAIC #3

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
311	083-190-1445	44-05-20	58-50-64	100	9.2184	9.2106	4.4	97	START OF LINE #8, MOSAIC #3
312	083-190-1450	44-05-14	58-50-18	100	9.2253	9.2203	4.8	88	
313	083-190-1455	44-05-13	58-49-74	98	9.2321	9.2297	4.6	87	
314	083-190-1500	44-05-18	58-49-29	97	9.2388	9.2398	4.8	93	WEATHER CLEAR AND FINE HUNTEC AND SIDE SCAN WORKING FINE
315	083-190-1505	44-05-18	58-48-81	100	9.2456	9.2490	5.0	93	
316	083-190-1510	44-05-17	58-48-32	98	9.2520	9.2583	4.9	87	END LINE #8, MOSAIC #3
317	083-190-1515	44-05-35	58-48-03	98	9.2584	9.2679	4.9	300	COMING AROUND TO LINE #9
318	083-190-1520	44-05-07	58-48-20	98	9.2646	9.2774	5.4	171	BEGIN LINE #9, MOSAIC #3
319	083-190-1525	44-04-69	58-48-13	100	9.2710	9.2872	1.7	167	
320	083-190-1530	44-04-31	58-48-14	100	9.2770	9.2965	4.9	179	
321	083-190-1535	44-03-92	58-48-17	100	9.2830	9.3060	5.1	176	
322	083-190-1540	44-03-55	58-48-15	102	9.2890	9.3155	5.0	177	
323	083-190-1545	44-03-17	58-48-12	102	9.2949	9.3251	4.9	178	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
324	083-190-2329	44-02-90	58-48-10	0	10.0000	10.0000	2.7	177	
325	083-190-2330	43-57-02	59-42-54	0	10.0000	10.0092	5.2	359	
326	083-190-2335	43-57-26	59-42-24	20	10.0128	10.0179	4.7	149	
327	083-190-2340	43-57-06	59-41-83	20	10.0277	10.0274	5.0	87	START LINE 1, MOSAIC 4
328	083-190-2345	43-57-12	59-41-10	21	10.0328	10.0369	5.3	91	
329	083-190-2350	43-57-15	59-40-54	21	10.0534	10.0465	4.7	95	
330	083-190-2355	43-57-14	59-39-98	23	10.0650	10.0564	4.6	100	
331	083-191-0000	43-57-12	59-39-43	22	10.0761	10.0655	4.7	96	BRIDGE CLOCK MAY BE APPROX. 30 SEC AHEAD OF LAB CLOCK!
332	083-191-0005	43-57-11	59-38-81	22	10.0870	10.0750	4.6	93	
333	083-191-0010	43-57-11	59-38-28	22	10.0975	10.0846	4.7	95	
334	083-191-0015	43-57-10	59-37-69	20	10.1070	10.0941	4.6	95	
335	083-191-0020	43-57-10	59-36-98	21	10.1165	10.1036	4.5	95	
336	083-191-0025	43-57-09	59-36-64	22	10.1259	10.1132	4.7	91	END LINE 1, MOSAIC 4

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
337	083-191-0030	43-56-95	59-35-98	23	10.1348	10.1227	4.5	163	
338	083-191-0035	43-56-77	59-36-25	25	10.1435	10.1322	5.8	278	
339	083-191-0040	43-56-81	59-36-77	21	10.1520	10.1417	5.3	276	START LINE 2, MOSAIC 4
340	083-191-0045	43-56-82	59-37-32	21	10.1601	10.1512	5.1	270	
341	083-191-0050	43-56-84	59-37-85	20	10.1681	10.1608	5.1	271	
342	083-191-0055	43-56-84	59-38-37	22	10.1759	10.1704	5.1	271	
343	083-191-0100	43-56-84	59-38-80	23	10.1836	10.1798	5.3	269	
344	083-191-0105	43-56-84	59-39-44	21	10.1911	10.1893	5.3	271	
345	083-191-0110	43-56-82	59-39-82	22	10.1985	10.1990	5.2	265	
346	083-191-0115	43-56-81	59-40-45	22	10.2057	10.2085	5.0	271	
347	083-191-0120	43-56-81	59-40-98	21	10.2167	10.2181	5.0	271	
348	083-191-0125	43-56-80	59-41-49	22	10.2197	10.2276	5.0	270	
349	083-191-0130	43-56-80	59-42-00	20	10.2265	10.2372	5.2	269	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
350	083-191-0135	43-56-80	59-42-48	20	10.2331	10.2460	4.3	269	END LINE 2, MOSAIC 4
351	083-191-0140	43-56-73	59-42-81	19	10.2398	10.2565	3.3	204	
352	083-191-0145	43-56-48	59-42-73	19	10.2463	10.2660	3.5	159	
353	083-191-0150	43-56-36	59-42-41	20	10.2526	10.2753	3.3	43	
354	083-191-0155	43-56-56	59-42-11	20	10.2588	10.2848	2.7	89	START LINE 3, MOSAIC 4
355	083-191-0200	43-56-56	59-41-84	21	10.2651	10.2945	2.9	101	
356	083-191-0205	43-56-51	59-41-41	21	10.2711	10.3042	3.2	92	
357	083-191-0210	43-56-51	49-41-09	22	10.2775	10.3137	3.1	91	
358	083-191-0215	43-56-50	59-40-71	21	10.2832	10.3230	3.1	90	
359	083-191-0220	43-56-49	59-40-35	22	10.2889	10.3326	3.1	91	
360	083-191-0225	43-56-49	59-40-01	22	10.2947	10.3421	3.0	91	WEATHER CLEAR AND FINE
361	083-191-0230	43-56-48	59-39-64	23	10.3004	10.3517	3.0	85	HUNTEC AND SIDE SCAN WORKING WELL
362	083-191-0235	43-56-47	59-39-28	23	10.3060	10.3612	3.1	89	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
363	083-191-0240	43-56-47	59-38-94	24	10.3117	11.0051	3.1	83	END HUNTEC TAPE #10 START SIDE SCAN TAPE #11
364	083-191-0245	43-56-49	59-56-54	23	11.0091	11.0147	3.2	84	START HUNTEC TAPE #11
365	083-191-0250	43-56-49	59-38-19	22	11.0237	11.0241	3.3	97	
366	083-191-0255	43-56-50	59-37-87	20	11.0374	11.0336	3.2	88	
367	083-191-0300	43-56-49	59-37-53	20	11.0505	11.0432	3.1	86	WEATHER CLEAR AND CALM HUNTEC AND SIDE SCAN WORKING WELL
368	083-191-0305	43-56-49	59-37-16	22	11.0627	11.0528	3.1	85	
369	083-191-0310	43-56-49	59-36-82	22	11.0742	11.0623	3.2	86	
370	083-191-0315	43-56-47	59-36-47	25	11.0852	11.0718	3.2	85	END OF LINE #3, MOSAIC #4
371	083-191-0320	43-56-36	59-36-26	25	11.0957	11.0813	2.4	181	COMING AROUND TO LINE #4
372	083-191-0325	43-56-17	59-36-36	24	11.1073	11.0928	2.3	282	WEATHER CLEAR AND CALM
373	083-191-0330	43-56-18	59-36-65	24	11.1155	11.1066	2.9	270	HUNTEC AND SIDE SCAN WORKING WELL
374	083-191-0335	43-56-14	59-36-96	22	11.1251	11.1101	2.9	286	
375	083-191-0340	43-56-18	59-37-25	22	11.1340	11.1203	2.9	282	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
376	083-191-0345	43-56-19	59-37-58	20	11.1430	11.1291	3.0	270	
377	083-191-0340	43-56-19	59-37-95	22	11.1516	11.1386	3.0	274	
378	083-191-0355	43-56-17	59-38-27	22	11.1600	11.1481	3.1	276	
379	083-191-0400	43-56-16	59-38-63	22	11.1682	11.1577	3.2	275	
380	083-191-0405	43-56-17	59-39-00	25	11.1762	11.1673	3.4	276	
381	083-191-0410	43-56-16	59-39-36	22	11.1840	11.1768	3.4	275	NEAR CORE SITE #4
382	083-191-0415	43-56-17	59-39-71	23	11.1916	11.1863	3.3	275	
383	083-191-0420	43-56-17	59-40-05	22	11.1991	11.1959	3.2	277	
384	083-191-0425	43-56-18	59-40-39	22	11.2064	11.2054	3.3	277	
385	083-191-0430	43-56-19	59-40-74	22	11.2136	11.2149	3.1	278	
386	083-191-0435	43-56-19	59-41-08	21	11.2206	11.2245	3.2	274	
387	083-191-0440	43-56-21	59-41-44	22	11.2275	11.2340	3.2	275	SIDE SCAN, HUNTEC AND SCINTILLATION SLED WORKING WELL
388	083-191-0445	43-56-22	59-41-79	20	11.2344	11.2436	3.0	268	WEATHER CLEAR AND CALM

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
389	083-191-0450	43-56-22	59-43-14	20	11.2410	11.2531	3.0	270	END LINE #4, MOSAIC #4
390	083-191-0455	43-56-14	59-42-44	20	11.2480	11.2640	2.1	187	SCINTILLATION SLED BROUGHT IN. LINE #5 WILL BE AT APROXIMATLY 5 KNOTS
391	083-191-0500	43-55-96	59-42-38	20	11.2540	11.2723	3.0	103	COMING AROUND TO LINE #5
392	083-191-0505	43-55-94	59-41-90	20	11.2604	11.2818	5.0	94	START LINE #5, MOSAIC #4 SIDE SCAN FISH LOWERED
393	083-191-0510	43-55-94	59-41-35	23	11.2667	11.2913	5.1	91	WEATHER CLEAR AND CALM SIDE SCAN AND HUNTEC WORKING WELL
394	083-191-0515	43-55-95	59-40-80	22	11.2729	11.3009	5.0	86	
395	083-191-0520	43-55-99	59-40-24	22	11.2790	11.3104	5.0	92	
396	083-192-0525	43-55-97	59-39-71	24	11.2829	11.3199	5.4	91	
397	083-191-0530	43-55-99	59-39-17	24	11.2909	11.3295	5.2	96	
398	083-191-0535	43-55-96	59-38-62	24	11.2970	11.3390	5.3	95	
399	083-191-0540	43-55-92	59-38-09	24	11.3027	12.0000	5.1	86	START SIDE SCAN TAPE #12
400	083-191-0545	43-55-92	59-37-55	20	11.3082	12.0096	5.3	83	
401	083-191-0550	43-55-92	59-37-02	22	11.3140	12.0191	5.1	89	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
402	083-191-0555	43-55-67	59-36-90	22	0.0000	12.0286	4.7	129	END OF MOSAIC #4 END OF HUNTEC TAPE #11 START TAPE #12
403	083-191-0600	43-55-67	59-36-90	20	12.0130	12.0382	5.2	251	
404	083-191-0605	43-55-52	59-37-50	22	12.0276	12.0477	5.2	254	
405	083-191-0610	43-55-40	59-38-09	22	12.0410	12.0572	5.0	254	
406	083-191-0615	43-55-27	59-38-68	25	12.0538	12.0668	5.1	254	
407	083-191-0620	43-55-14	59-39-24	25	12.0657	12.0764	5.0	255	
408	083-191-0625	43-55-04	59-39-80	25	12.0770	12.0859	5.2	256	
409	083-191-0630	43-54-92	59-40-42	25	12.0879	12.0954	5.2	253	
410	083-191-0635	43-54-80	59-40-98	26	12.0982	12.1050	5.2	254	
411	083-191-0640	43-54-69	59-41-52	26	12.1084	12.1145	5.4	254	
412	083-191-0645	43-54-58	59-42-10	24	12.1178	12.1240	4.9	253	
413	083-191-0650	43-54-46	59-42-67	24	12.1272	12.1336	5.2	254	WEATHER CLEAR AND CALM
414	083-191-0655	43-54-34	59-43-23	24	12.1362	12.1431	5.2	253	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
415	083-191-0700	43-54-22	59-43-80	24	12.1450	12.1527	4.9	252	HUNTEC AND SIDE SCAN WORKING WELL
416	083-191-0705	43-54-08	59-44-36	25	12.1535	12.1622	5.1	254	
417	083-191-0710	43-53-96	59-44-91	25	12.1622	12.1718	4.7	252	
418	083-191-0715	43-53-93	59-45-48	25	12.1698	12.1813	4.8	251	
419	083-191-0720	43-53-71	59-46-03	22	12.1777	12.1908	4.8	253	
420	083-191-0725	43-53-60	59-46-61	20	12.1854	12.2004	5.1	252	
421	083-191-0730	43-53-47	59-47-18	20	12.1929	12.2099	4.8	252	
422	083-191-0735	43-53-35	59-47-74	22	12.2003	12.2194	5.2	252	NEAR CORE SITE #5
423	083-191-0740	43-53-25	59-48-32	28	12.2078	12.2292	5.0	256	
424	083-191-0745	43-53-17	59-48-92	28	12.2146	12.2381	4.8	257	NEAR CORE SITE #6
425	083-191-0750	43-53-10	59-49-50	28	12.2216	12.2481	5.0	261	
426	083-191-0755			25	12.2284	12.2576	4.9	257	BAD FIX
427	083-191-0800	43-52-99	59-50-71	25	12.2315	12.2672	5.1	263	NEAR CORE SITE #7

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
428	083-191-0805	43-52-99	59-51-36	27	12.2418	12.2767	5.5	270	
429	083-191-0810	43-53-01	59-51-93	22	12.2483	12.2862	5.6	271	
430	083-191-0815	43-53-02	59-52-57	23	12.2547	12.2958	5.0	269	
431	083-191-0820	43-53-04	59-53-19	22	12.2610	12.3053	4.9	269	
432	083-191-0825	43-53-05	59-53-05	22	12.2675	12.3152	5.1	271	
433	083-191-0830	43-53-07	59-54-45	22	12.2723	12.3244	5.1	269	
434	083-191-0835	43-53-11	59-55-16	0	12.2793	12.3339	5.0	266	
435	083-191-0840	43-53-11	59-55-70	20	12.2854	13.0000	5.0	266	
436	083-191-0845	43-53-06	59-56-33	20	12.2912	13.0096	5.2	258	
437	083-191-0850	43-53-01	59-56-93	22	12.2970	13.0191	5.2	266	
438	083-191-0855	43-53-00	59-57-56	20	12.3027	13.0286	5.1	265	
439	083-191-0900	43-52-98	59-58-15	20	12.3084	13.0382	5.2	266	
440	083-191-0905	43-52-97	59-58-77	22	12.3130	13.0478	4.9	266	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
441	083-191-0910	43-52-96	59-59-39	19	13.0000	13.0572	5.1	269	
442	083-191-0915	43-52-97	59-59-99	21	13.0152	13.0669	5.1	268	
443	083-191-0920	43-52-59	60-00-63	19	13.0294	13.0763	5.2	280	NEAR CORE SITE #8
444	083-191-0925	43-53-13	60-01-32	20	13.0428	13.0858	5.2	286	
445	083-191-0930	43-53-26	60-01-82	21	13.0553	13.0955	5.1	285	NEAR CORE SITE #8A
446	083-191-0935	43-53-39	60-02-41	18	13.0671	13.1047	5.0	275	
447	083-191-0940	43-53-46	60-02-97	15	13.0784	13.1144	4.9	282	
448	083-191-0945	43-53-55	60-03-56	16	13.0892	13.1240	5.4	280	NEAR CORE SITE #9
449	083-191-0950	43-53-66	60-04-29	16	13.0995	13.1336	5.1	282	
450	083-191-0955	43-53-75	60-04-80	14	13.1093	13.1431	5.2	280	
451	083-191-1000	43-53-84	60-05-34	16	13.1188	13.1526	5.2	280	
452	083-191-1005	43-53-92	60-05-92	15	13.1280	13.1621	4.9	280	
453	083-191-1010	43-54-02	60-06-52	16	13.1370	13.1717	5.0	280	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
454	083-191-1015	43-53-89	60-06-88	18	13.1457	13.1814	5.6	176	
455	083-191-1020	43-53-89	60-06-87	17	13.1545	13.1912	5.7	179	
456	083-191-1025	43-53-28	60-06-39	19	13.1623	13.2003	6.1	105	
457	083-191-1030	43-53-19	60-05-75	19	13.1705	13.2099	6.3	105	
458	083-191-1035	43-53-08	60-05-08	23	13.1783	13.2194	6.3	109	
459	083-191-1040	43-52-92	60-04-54	20	13.1858	13.2290	4.9	115	
460	083-191-1045	43-52-78	60-04-06	18	13.1933	13.2387	5.3	115	
461	083-191-1050	43-52-63	60-03-57	24	13.2006	13.2481	5.2	116	TD1 13690.7 TD2 28525.4
462	083-191-1055	43-52-47	60-03-04	27	13.2078	13.2576	5.3	113	
463	083-191-1100	43-52-41	60-02-56	24	13.2149	13.2671	5.0	105	TD1 13690.1 TD2 28518.1
464	083-191-1105	43-52-33	60-02-04	21	13.2218	13.2767	5.2	105	TD1 13689.9 TD2 28514.1
465	083-191-1110	43-52-24	60-01-51	22	13.2286	13.2863	5.2	101	
466	083-191-1115	43-52-15	60-01-02	23	13.2352	13.2958	5.2	108	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
467	083-191-1120	43-52-03	60-01-02	23	13.2418	13.3053	5.2	108	
468	083-191-2005	43-55-55	60-31-17	22	0.0000	14.0048	5.0	172	START NEW SET OF LINES S & W OF SABLE ISLAND
469	083-191-2010	43-55-33	60-30-91	22	0.0000	14.0139	5.4	136	HUNTEC NOT OPERATING, A-FRAME DOWN
470	083-191-2015	43-55-16	60-30-64	22	0.0000	14.0239	4.9	151	
471	083-191-2020	43-54-97	60-30-61	22	0.0000	14.0336	4.7	148	A-FRAME STILL INOPERATIVE START OF LINE
472	083-191-2025	43-55-11	60-30-31	22	0.0000	14.0430	4.5	99	
473	083-191-2030	43-55-12	60-29-92	28	0.0000	14.0530	4.8	114	A-FRAME STILL INOPERATIVE
474	083-191-2035	43-55-08	60-29-51	24	0.0000	14.0620	4.9	118	
475	083-191-2040	43-55-00	60-29-19	21	0.0000	14.0720	5.0	134	PASSING VIBROCORE SITE 11A!
476	083-191-2045	43-54-92	60-28-89	22	0.0000	14.0811	4.5	124	A-FRAME STILL INOPERATIVE, HUNTEC CAN'T OPERATE
477	083-191-2050	43-54-87	60-28-50	24	0.0000	14.0906	5.0	117	
478	083-191-2055	43-54-80	60-28-07	22	0.0000	14.1002	5.3	126	A-FRAME STILL DOWN
479	083-191-2100	43-54-73	60-27-63	22	0.0000	14.1097	5.5	113	A-FRAME STILL DOWN

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
480	083-191-2105	43-54-57	60-26-20	24	0.0000	14.1193	5.1	110	
481	083-191-2110	43-54-57	60-26-15	34	0.0000	14.1289	5.0	113	A-FRAME STILL DOWN
482	083-191-2115	43-54-58	60-26-13	26	0.0000	14.1384	5.3	116	HUNTEC CAN'T OPERATE - A-FRAME DOWN PASSING VIBROCORE SITE 11
483	083-191-2120	43-54-54	60-25-68	28	0.0000	14.1481	5.2	111	
484	083-191-2125	43-54-55	60-25-26	28	0.0000	14.1576	5.3	107	A-FRAME STILL DOWN PASSING VIBROCORE SITE 10A
485	083-191-2130	43-54-56	60-24-64	24	0.0000	14.1671	5.1	113	
486	083-191-2135	43-54-55	60-24-14	22	0.0000	14.1765	5.2	115	A-FRAME STILL DOWN PASSED VIBROCORE SITE 10 BEFORE NEXT FIX
487	083-191-2140	43-54-55	60-22-70	21	0.0000	14.1861	4.9	127	
488	083-191-2145	43-54-47	60-22-16	24	0.0000	14.1957	4.9	124	A-FRAME STILL DOWN = NO HUNTEC
489	083-191-2150	43-54-42	60-22-74	27	0.0000	14.2051	4.6	121	
490	083-191-2155	43-54-36	60-22-26	25	0.0000	14.2147	4.9	118	DEPLOYING HUNTEC; A-FRAME REPAIRED
491	083-191-2200	43-54-32	60-21-80	25	13.2451	14.2242	5.1	118	
492	083-191-2205	43-54-23	60-21-22	28	13.2517	14.2338	4.7	119	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
493	083-191-2210	43-54-16	60-20-74	26	13.2580	14.2432	5.1	111	
494	083-191-2215	43-54-09	60-20-23	31	13.2643	14.2529	5.2	113	
495	083-191-2220	43-54-04	60-19-70	28	13.2705	14.2624	5.2	114	
496	083-191-2225	43-53-98	60-19-16	26	13.2765	14.2720	5.3	113	
497	083-191-2230	43-53-91	60-18-62	22	13.2825	14.2815	5.0	107	
498	083-191-2235	43-53-88	60-18-07	22	13.2883	14.2911	5.6	109	
499	083-191-2240	43-53-84	60-17-52	28	13.2941	14.3006	5.6	107	
500	083-191-2245	43-53-77	60-16-82	25	13.2998	14.3101	5.7	107	
501	083-191-2250	43-53-70	60-16-22	21	13.3055	14.3198	5.8	110	
502	083-191-2255	43-53-61	60-15-61	24	13.3109	14.3293	5.7	108	
503	083-191-2300	43-52-51	60-14-98	24	14.0001	14.3388	5.9	108	CHANGED HUNTEC TAPE
504	083-191-2305	43-53-43	60-14-41	24	14.0154	14.3483	6.0	109	
505	083-191-2310	43-53-35	60-13-73	26	14.0298	15.0044	5.9	102	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
506	083-191-2315	43-53-32	60-13-12	28	14.0431	15.0141	6.0	105	
507	083-191-2320	43-53-26	60-12-50	24	14.0556	15.0232	5.4	103	
508	083-191-2325	43-53-19	60-11-92	27	14.0673	15.0327	5.0	105	
509	083-191-2330	43-53-14	60-11-14	26	14.0786	15.0422	5.2	106	
510	083-191-2335	43-53-07	60-10-80	33	14.0896	15.0519	5.3	105	
511	083-191-2340	43-53-01	60-10-24	27	14.0998	15.0614	5.0	105	END OF LINE
512	083-191-2345	43-52-96	60-09-66	24	14.1096	15.0708	5.1	55	
513	083-191-2350	43-52-96	60-09-58	26	14.1194	15.0804	5.6	357	
514	083-191-2355	43-53-78	60-09-70	24	14.1288	15.0901	5.2	312	START OF LINE
515	083-192-0000	43-54-04	60-10-10	24	14.1377	15.0996	4.7	270	START NEW LINE
516	083-192-0005	43-54-08	60-10-67	22	14.1475	15.1102	5.1	277	
517	083-192-0010	43-54-15	60-11-14	20	14.1550	15.1186	5.2	279	
518	083-192-0015	43-45-22	60-11-70	20	14.1634	15.1281	5.2	277	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
519	083-192-0020	43-54-28	60-12-21	22	14.1715	15.1377	5.1	276	
520	083-192-0025	43-54-34	60-12-80	21	14.1795	15.1473	5.3	276	
521	083-192-0030	43-54-37	60-13-21	20	14.1869	15.1567	5.0	268	
522	083-192-0035	43-54-38	60-13-72	21	14.1945	15.1662	5.2	275	
523	083-192-0040	43-54-60	60-14-19	21	14.2019	15.1760	5.4	275	
524	083-192-0045	43-54-45	60-14-78	20	14.2093	15.1854	5.4	275	
525	083-192-0050	43-54-49	60-15-35	19	14.2163	15.1949	5.2	277	
526	083-192-0055	43-54-52	60-15-83	20	14.2235	15.2045	5.2	275	
527	083-192-0100	43-54-55	60-16-26	19	14.2301	15.2139	5.2	278	
528	083-192-0105	43-54-63	60-16-80	19	14.2369	14.2369	5.0	278	
529	083-192-0110	43-54-68	60-17-16	18	14.2435	15.2331	5.3	277	
530	083-192-0115	43-54-75	60-17-66	22	14.2501	15.2428	4.8	279	
531	083-192-0120	43-54-81	60-18-06	28	14.2565	15.2521	5.0	280	

CSS DAWSON CRUISE/SABLE ISLAND BANK DN 83-026 JULY 7-12, 1983.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
532	083-192-0125	43-54-88	60-18-55	21	14.2628	15.2618	5.1	277	
533	083-192-0130	43-54-92	60-19-03	20	14.2690	15.2713	4.9	275	
534	083-192-0135	43-54-96	60-19-62	21	14.2752	15.2808	5.0	273	
535	083-192-0140	43-54-96	60-19-96	22	14.2813	15.2983	5.1	275	
536	083-192-0145	43-54-99	60-20-39	22	14.2874	15.3002	5.0	274	
537	083-192-0150	43-55-01	60-20-85	22	14.2931	15.3095	5.0	275	
538	083-192-0155	43-55-03	60-21-31	22	14.2987	15.3191	4.9	276	
539	083-192-0200	43-55-09	60-21-80	21	14.3047	15.3285	5.3	278	
540	083-192-0205	43-55-17	60-22-27	19	14.3105	15.3388	5.2	280	EVADING HUDSON
541	083-192-0210	43-55-22	60-22-72	18	14.3161	15.3477	5.2	280	
542	083-192-0215	43-55-27	60-23-16	20	15.0068	15.3573	5.2	280	START HUNTEC TAPE #15
543	083-192-0220	43-55-29	60-23-60	23	15.0219	16.0000	5.2	165	START SIDE SCAN TAPE #16 BREAKING OFF LINE TURNING SE
544	083-192-0225	43-55-03	60-23-13	19	15.0356	16.0093	5.1	130	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
545	083-192-0230	43-54-35	60-22-75	22	15.0488	16.0187	5.1	169	
546	083-192-0235	43-54-48	60-23-01	23	15.0608	16.0283	5.2	279	BACK ON CORE LINE 7 CABLES EAST OF FIRST CORE
548	083-192-0245	43-54-57	60-23-92	20	15.0840	16.0477	4.9	272	PASSING OVER CORE SITE #10
549	083-192-0250	43-54-52	60-24-44	21	15.0944	16.0569	5.3	273	
550	083-192-0255	43-54-50	60-24-88	22	15.1046	16.0665	5.2	274	
551	083-192-0300	43-54-55	60-25-31	22	15.1146	16.0760	5.0	285	CORE SITE #10A
552	083-192-0305	43-54-59	60-25-77	22	15.1241	16.0856	5.1	260	
553	083-192-0310	43-54-53	60-26-25	22	15.1333	16.0951	4.9	283	CORE SITE #11
554	083-192-0315	43-54-58	60-26-72	34	15.1421	16.1044	5.6	283	
555	083-192-0320	43-54-66	60-27-19	26	15.1510	16.1142	5.4	283	
556	083-192-0325	43-54-72	60-27-67	22	15.1594	16.1237	5.1	285	
557	083-192-0330	43-54-76	60-28-14	24	15.1677	16.1333	4.9	284	WEATHER CLEAR AND CALM
558	083-192-0335	43-54-82	60-28-60	28	15.1757	16.1428	5.2	286	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
559	083-192-0340	43-54-88	60-26-06	22	15.1836	16.1523	5.1	287	NEAR CORE SITE #11A
560	083-192-0345	43-54-49	60-29-50	22	15.1913	16.1618	5.1	287	HEADING NORTH TO REJOIN LINE
561	083-192-0350	43-55-00	60-29-98	24	15.1988	16.1714	5.0	295	
562	083-192-0355	43-55-31	60-30-02	26	15.2062	16.1810	5.6	358	
563	083-192-0400	43-55-64	60-30-01	22	15.2134	16.1905	5.2	352	
564	083-192-0405	43-55-98	60-30-05	20	15.2208	16.2004	4.9	319	
565	083-192-0410	43-55-99	60-30-53	22	15.2275	16.2096	5.1	281	
566	083-192-0415	43-56-02	60-31-06	22	15.2344	16.2191	5.3	293	
567	083-192-0420	43-56-10	60-31-50	20	15.2411	16.2287	5.0	286	
568	083-192-0425	43-56-17	60-31-98	20	15.2477	16.2382	5.0	292	
569	083-192-0430	43-56-24	60-32-48	21	15.2542	16.2477	5.4	295	
570	083-192-0435	43-56-32	60-32-97	20	15.2606	16.2574	5.3	293	CHANGING SIDE SCAN PAPER
571	083-192-0440	43-56-43	60-33-49	38	15.2670	16.2669	5.2	295	WEATHER CLEAR AND CALM

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
572	083-192-0445	43-56-52	60-34-01	18	15.2733	16.2764	5.1	295	WEATHER CLEAR AND CALM
573	083-192-0450	43-56-61	60-34-50	22	15.2794	16.2860	5.3	297	
574	083-192-0455	43-56-71	60-35-00	22	15.2854	16.2955	5.4	297	
575	083-192-0500	43-56-83	60-35-53	20	15.2915	16.3050	5.0	297	END HUNTEC TAPE #15 END SIDE SCAN TAPE #16
576	083-192-0505	43-56-94	60-36-05	20	16.0042	17.0017	5.6	297	BEGIN HUNTEC TAPE #16 BEGIN SIDESCAN TAPE #17
577	083-192-0510	43-57-04	60-36-53	20	16.0194	17.0112	5.5	293	
578	083-192-0515	43-57-12	60-37-06	22	16.0336	17.0208	4.9	295	
579	083-192-0520	43-57-20	60-37-56	22	16.0468	17.0303	5.6	294	
580	083-192-0525	43-57-28	60-38-07	20	16.0592	17.0398	5.1	299	
581	083-192-0530	43-47-41	60-38-56	24	16.0710	17.0494	5.0	301	
582	083-192-0535	43-57-52	60-39-03	26	16.0822	17.0589	5.2	300	
583	083-192-0540	43-57-67	60-39-54	26	16.0930	17.0685	5.0	300	CORE SITE #12
584	083-192-0545	43-57-76	60-40-07	24	16.1034	17.0780	5.1	287	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
585	083-192-0550	43-57-81	60-40-61	24	16.1133	17.0815	5.3	293	
586	083-192-0555	43-57-88	60-41-16	33	16.1228	17.0951	5.0	289	
587	083-192-0600	43-57-95	60-41-73	30	16.1323	17.1047	5.2	293	END OF LINE
588	083-192-0605	43-57-76	60-42-11	30	16.1413	17.1162	5.1	179	
589	083-192-0610	43-57-27	60-42-04	30	16.1501	17.1257	5.4	170	START NEW LINE
590	083-192-0615	43-56-85	60-41-87	28	16.1587	17.1354	4.9	101	
591	083-192-0620	43-56-75	60-41-30	30	16.1670	17.1448	5.4	86	WEATHER CLEAR AND CALM
592	083-192-0625	43-56-71	60-40-74	32	16.1750	17.1543	5.4	86	
593	083-192-0630	43-56-67	60-40-17	35	16.1827	17.1638	5.5	92	
594	083-192-0630	43-56-67	60-40-17	28	16.1906	17.1733	5.5	98	
595	083-192-0640	43-56-43	60-39-00	23	16.1983	17.1831	5.5	97	
596	083-192-0645	43-56-33	60-38-53	30	16.2059	17.1928	5.1	97	
597	083-192-0650	43-56-24	60-37-97	24	16.2131	17.2020	5.4	94	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
598	083-192-0655	43-56-16	60-37-44	22	16.2203	17.2116	5.3	95	
599	083-192-0700	43-56-07	60-36-88	24	16.2272	17.2211	5.4	99	
600	083-192-0705	43-55-97	60-36-35	24	16.2344	17.2309	5.7	97	
601	083-192-0710	43-55-79	60-35-82	20	16.2409	17.2402	5.5	98	
602	083-192-0715	43-55-78	60-35-76	21	16.2478	17.2499	5.5	97	
603	083-192-0720	43-55-67	60-34-72	38	16.2543	17.2593	5.4	97	
604	083-192-0725	43-55-59	60-34-20	26	16.2607	17.2688	5.5	97	
605	083-192-0730	43-55-50	60-33-68	20	16.2671	17.2784	5.5	97	
606	083-192-0735	43-55-41	60-33-14	19	16.2732	17.2879	5.1	97	
607	083-192-0740	43-55-33	60-32-60	20	16.2792	17.2974	5.3	96	END OF LINE
608	083-192-0745	43-55-25	60-32-13	28	16.2858	17.3072	5.3	97	AC TO 180
609	083-192-0750	43-54-86	60-32-04	22	16.2917	17.3165	5.5	183	
610	083-192-0755	43-54-40	60-32-17	22	16.2975	17.3263	5.2	179	AC TO 285

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
611	083-192-0800	43-53-93	60-32-36	22	16.3035	17.3359	5.6	248	WEATHER CLEAR AND CALM HUNTEC AND SIDE SCAN WORKING FINE
612	083-192-0805	43-54-13	60-33-02	25	16.3093	17.3452	5.3	308	
613	083-192-0810	43-54-33	60-33-66	28	16.3150	17.3545	5.8	299	
614	083-192-0815	43-54-51	60-34-20	22	17.0085	18.0032	5.3	298	CHANGED SIDESCAN AND HUNTEC TAPES
615	083-192-0820	43-54-68	60-34-89	25	17.0205	18.0108	5.2	301	
616	083-192-0825	43-54-83	60-35-53	22	17.0372	18.0222	5.4	295	
617	083-192-0830	43-54-98	60-36-15	32	17.0505	18.0321	5.6	292	
618	083-192-0835	43-55-12	60-37-01	28	17.0624	18.0412	5.3	288	
619	083-192-0840	43-55-21	60-37-44	24	17.0741	18.0508	5.2	289	
620	083-192-0845	43-55-33	60-38-10	26	17.0853	18.0603	5.4	289	
621	083-192-0850	43-55-46	60-38-77	25	17.0958	18.0698	5.5	288	
622	083-192-0855	43-55-59	60-39-43	28	17.1061	18.0792	5.4	289	
623	083-192-0900	43-55-70	60-40-09	28	17.1159	18.0889	5.3	284	BAD FIX!

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
624	083-192-0905	43-55-79	60-40-75	29	17.1255	18.0988	5.5	281	
625	083-192-0910	43-55-85	60-41-45	32	17.1349	18.1081	5.2	280	
626	083-192-0915	43-55-92	60-42-16	38	17.1436	18.1177	5.3	283	
627	083-192-0920	43-56-02	60-42-82	35	17.1521	18.1270	5.4	284	
628	083-192-0925	43-56-12	60-43-49	30	17.1609	18.1369	5.6	232	
629	083-192-0930	43-55-75	60-43-53	33	17.1692	18.1465	5.8	147	
630	083-192-0935	43-55-30	60-43-19	31	17.1772	18.1557	5.3	137	
631	083-192-0940	43-55-13	60-42-85	30	17.1852	18.1653	5.8	117	
632	083-192-0945	43-54-94	60-42-38	31	17.1930	18.1747	5.8	117	
633	083-192-0950	43-54-71	60-41-84	38	17.2005	18.1847	5.4	99	
634	083-192-0955	43-54-65	60-41-29	41	17.2080	18.1939	5.5	105	
635	083-192-1000	43-54-56	60-40-78	41	17.2152	18.2035	5.3	104	
636	083-192-1005	43-54-49	60-40-32	41	17.2225	18.2130	5.5	102	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
637	083-192-1010	43-54-39	60-39-75	34	17.2295	18.2226	5.6	106	
638	083-192-1015	43-54-29	60-39-21	32	17.2363	18.2321	5.8	103	
639	083-192-1020	43-54-19	60-38-62	32	17.2431	18.2416	5.7	103	
640	083-192-1025	43-54-09	60-38-12	31	17.2496	18.2512	5.5	105	
641	083-192-1030	43-54-00	60-37-58	30	17.2516	18.2608	5.7	104	
642	083-192-1035	43-53-90	60-37-04	31	17.2626	18.2704	0.0	0	
643	083-192-1040	43-53-79	60-36-49	29	17.2689	18.2799	5.6	104	
644	083-192-1045	43-53-69	60-35-96	35	17.2752	18.2893	5.7	101	
645	083-192-1050	43-53-61	60-35-40	38	17.2811	18.2995	5.4	102	
646	083-192-1055	43-53-53	60-34-88	32	17.2876	18.3085	5.3	102	
647	083-192-1100	43-53-47	60-34-47	31	17.2935	18.3179	5.5	102	
648	083-192-1105	43-53-33	60-33-65	28	17.2995	18.3274	5.4	102	
649	083-192-1110	43-53-28	60-33-34	28	17.3053	18.3270	5.6	101	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
650	083-192-1115	43-53-20	60-32-80	27	17.3312	18.3467	5.5	103	
651	083-192-1120	43-53-10	60-32-26	29	17.3136	18.3563	5.2	103	
652	083-192-1125	43-53-21	60-31-95	28	18.0000	19.0056	5.2	356	
653	083-192-1130	43-53-64	60-31-07	31	18.0153	19.0150	4.9	321	
654	083-192-1135	43-53-61	60-32-53	29	18.0300	19.0246	4.6	300	
655	083-192-1140	43-53-79	60-32-37	27	18.0432	19.0342	5.1	87	
656	083-192-1145	43-53-79	60-31-89	31	18.0558	19.0437	4.5	126	
657	083-192-1150	43-53-57	60-32-09	31	18.0675	19.0533	5.2	277	END OF LINE
658	083-192-1155	43-53-66	60-32-71	27	18.0787	19.0628	5.2	290	
659	083-192-1200	43-53-78	60-33-32	27	18.0658	19.0628	5.2	290	
660	083-192-1205	43-53-90	60-33-95	32	18.1001	19.0819	5.5	290	
661	083-192-1210	43-54-01	60-34-55	39	18.1106	19.0918	5.6	289	
662	083-192-1215	43-54-09	60-35-19	37	18.1195	19.1010	5.4	290	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
663	083-192-1220	43-54-21	60-35-91	31	18.1219	19.1105	5.8	289	
664	083-192-1225	43-54-30	60-36-53	27	18.1379	19.1201	5.7	289	
665	083-192-1230	43-54-41	60-37-12	32	18.1467	19.1295	5.6	289	
666	083-192-1235	43-54-53	60-37-74	34	18.1553	19.1391	5.2	289	
667	083-192-1240	43-54-68	60-38-65	38	18.1637	19.1486	5.8	290	
668	083-192-1245	43-54-74	60-38-99	32	18.1718	19.1582	5.2	290	
669	083-192-1250	43-54-85	60-39-61	31	18.1797	19.1677	5.7	289	
670	083-192-1255	43-54-90	60-40-29	31	18.1877	19.1773	5.2	214	
671	083-192-1300	43-54-79	60-40-36	31	18.1958	19.1798	1.5	43	POWER CUT/SHIP STOPPED WITH GEAR STILL IN WATER. END OF SURVEY/ NO DAMAGE.

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
39	083-189-0910	44-00-17	59-51-82	0	0.0000	0.0000	3.1	94	SHIFT CHANGE; TAPE FOOTAGE NOT RECORDED
40	083-189-0915	44-00-17	59-51-48	34	2.0392	2.0287	3.1	90	
41	083-189-0920	44-00-17	59-51-12	33	2.0524	2.0382	3.1	90	
42	083-189-0925	44-00-18	59-50-76	35	2.0645	2.0477	3.1	92	
43	083-189-0930	44-00-19	59-50-40	33	2.0759	2.0572	3.2	93	
44	083-189-0935	44-00-19	59-54-04	34	2.0870	2.0668	3.1	92	
45	083-189-0940	44-00-20	59-49-67	34	2.0975	2.0763	3.1	91	
46	083-189-0945	44-00-20	59-49-30	35	2.1076	2.0858	3.1	94	
47	083-189-0950	44-00-18	59-48-87	35	2.1174	2.0954	5.3	113	END OF LINE 3 AT 0948 HAULING IN SCINTILLOMETER
48	083-189-0955	43-59-90	59-48-77	32	2.1268	2.1049	4.3	261	TURN ALMOST COMPLETED
49	083-189-1000	43-59-91	59-49-22	32	2.1360	2.1144	4.5	270	
50	083-189-1005	43-59-90	59-49-59	31	2.1449	2.1239	3.1	267	HUNTEC POWER DROPPED TO 2KV FROM 4KV
51	083-189-1010	43-59-89	59-49-89	33	2.1525	[illegible]	3.0	269	

CSS DAWSON CRUISE SABLE ISLAND BANK [illegible]

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	STRIPCHART	SPEED (KTS)	HEADING (TRUE)	NOTES
52	083-189-1015	43-59-89	59-50-18	31	2.1620	2.1430	3.1	270	
53	083-189-1020	43-59-89	59-50-49	31	2.1702	2.1525	3.1	268	
54	083-189-1025	43-59-89	59-50-80	30	2.1782	2.1620	3.1	269	
55	083-189-1030	43-59-88	59-51-12	30	2.1867	2.1716	4.5	264	
56	083-189-1035	43-59-88	59-51-65	30	2.1938	2.1811	5.3	268	
57	083-189-1040	43-59-87	59-52-14	30	2.2012	2.1906	4.2	270	
58	083-189-1045	43-59-87	59-52-62	30	2.2086	0.0000	5.1	273	
59	083-189-1050	43-59-89	59-53-89	30	2.2158	2.2098	5.1	274	
60	083-189-1055	43-59-91	59-53-69	30	2.2230	2.2192	4.9	273	
61	083-189-1100	43-59-91	59-54-19	30	2.2299	2.2280	4.9	270	END OF LINE 3 AT 1103 MOSAIC 1
62	083-189-1105	43-59-89	59-54-71	30	2.2366	2.2383	4.9	261	STARTED LINE 5 AT 1108
63	083-189-1110	43-59-65	59-55-07	28	2.2435	2.2478	5.1	187	HUNTEC FISH RAISED AFTER THIS FIX
64	083-189-1115	43-59-57	59-54-64	26	2.2500	2.2668	5.0	73	

CSS DAWSON CRUISE/SABLE ISLAND BANK DN 83-026 JULY 7-12, 1983.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
65	083-189-1120	43-59-63	59-54-04	27	2.2567	2.2668	5.3	95	
66	083-189-1125	43-59-62	59-53-41	28	2.2631	2.2763	5.4	93	
67	083-189-1130	43-59-61	59-53-83	29	2.2693	2.2860	5.3	93	
68	083-189-1135	43-59-61	59-53-19	29	2.2755	2.2956	5.2	93	
69	083-189-1140	43-59-60	59-51-58	29	2.2817	2.3050	5.2	93	
70	083-189-1145	43-59-60	59-51-96	29	2.2876	2.3146	5.3	94	
71	083-189-1150	43-59-60	59-50-33	28	2.2937	2.3240	5.4	93	
72	083-189-1155	43-59-60	59-49-70	29	2.2996	2.3336	5.4	93	
73	083-189-1200	43-59-60	59-49-06	29	2.3045	2.3431	5.6	93	END OF LINE 5 AND MOSAIC 1 AT 1202 END SIDESCAN TAPE 2 AT 1202 AND FOOTAGE 3482
74	083-189-1900	44-18-47	59-07-59	186	3.0000	3.0000	5.8	359	WEATHER CLEAR AND CALM
75	083-189-1905	44-18-82	59-07-20	130	3.0140	3.0086	5.7	78	START LINE #1 MOSAIC #2
76	083-189-1910	44-18-83	59-06-63	108	3.0273	3.0182	5.0	95	SIDESCAN AND HUNTEC WORKING FINE
77	083-189-1915	44-18-82	59-06-05	138	3.0401	3.0276	5.4	94	

CSS DAWSON CRUISE/SABLE ISLAND BANK DN 83-026 JULY 7-12, 1983.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
78	083-189-1920	44-18-83	59-05-57	168	3.0522	3.0371	4.9	98	
79	083-189-1925	44-18-84	59-05-01	165	3.0635	3.0467	5.2	95	
80	083-189-1930	44-18-87	59-04-41	122	3.0746	3.0562	4.8	104	
81	083-189-1935	44-18-87	59-03-85	122	3.0848	3.0657	4.6	101	
82	083-189-1940	44-18-88	59-03-28	188	3.0848	3.0752	5.0	101	
83	083-189-1945	44-18-88	59-02-68	166	3.1045	3.0847	5.2	107	
84	083-189-1950	44-18-87	59-02-03	160	3.1138	3.0943	5.4	106	
85	083-189-1955	44-18-85	59-01-41	158	3.1229	3.1038	5.4	102	
86	083-189-2000	44-18-87	59-00-83	160	3.1320	3.1135	5.1	103	
87	083-189-2005	44-18-88	59-00-27	158	3.1402	3.1232	4.9	103	
88	083-189-2010	44-18-88	58-59-69	150	3.1495	3.1330	5.2	102	
89	083-189-2015	44-18-86	58-59-13	139	3.1565	3.1420	4.8	108	
90	083-189-2020	44-18-84	58-58-48	125	3.1645	3.1516	5.3	104	NEAR CORE SITE #1

CSS DAWSON CRUISE/SABLE ISLAND BANK DN 83-026 JULY 7-12, 1983.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
91	083-189-2025	44-18-83	58-57-97	120	3.1722	3.1610	5.2	106	
92	083-189-2030	44-18-81	58-57-35	118	3.1798	3.1706	5.1	106	
93	083-189-2035	44-18-81	58-56-91	102	3.1872	3.1801	4.9	107	
94	083-189-2040	44-18-82	58-56-36	90	3.1945	3.1897	5.2	104	END LINE #1 MOSAIC #2
95	083-189-2045	44-18-69	58-56-01	98	3.2016	3.1992	5.2	169	COMING AROUND FOR LINE #2, MOSAIC #2
96	083-189-2050	44-18-26	58-55-84	92	3.2087	3.2087	5.4	169	
97	083-189-2055	44-17-95	58-55-82	88	3.2145	3.2184	5.3	200	
98	083-189-2100	44-17-71'	58-55-91	85	3.2222	3.2278	5.1	201	
99	083-189-2105	44-17-53	58-56-23	83	3.2288	0.0000	4.7	271	START LINE 2, MOSAIC 2 CHANGED SIDESCAN RANGE TO 250M
100	083-189-2110	44-17-58	58-56-74	84	3.2353	3.2470	4.8	259	CHANGE SIDE SCAN RANGE-250M
101	083-189-2115	44-17-58	58-56-27	83	3.2418	3.2566	5.4	257	
102	083-189-2120	44-17-56	58-57-78	85	3.2480	3.2660	5.5	261	
103	083-189-2125	44-17-55	58-57-25	94	3.2543	3.2755	5.1	259	

CSS DAWSON CRUISE/SABLE ISLAND BANK DN 83-026 JULY 7-12, 1983.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
104	083-189-2130	44-17-52	58-58-75	92	3.2604	3.2851	5.1	260	
105	083-189-2135	44-17-50	58-58-24	110	3.2664	3.2946	5.3	266	
106	083-189-2140	44-17-52	58-59-71	125	3.2724	3.3042	5.2	265	
107	083-189-2145	44-17-50	59-00-22	135	3.2783	3.3137	5.3	261	
108	083-189-2150	44-17-49	59-00-71	147	3.2841	3.3232	5.4	269	CHANGED SIDESCAN SLANT RNAGE TO 300M MOMENTARILY
109	083-189-2155	44-17-52	59-01-22	162	3.2898	3.3328	5.1	268	
110	083-189-2200	44-17-54	59-01-70	167	3.2955	3.3422	4.9	266	
111	083-189-2205	44-17-52	59-02-21	165	3.3017	4.0016	4.8	264	LOADED NEW TAPE 4 ON SIDE-SCAN
112	083-189-2210	44-17-53	59-02-75	175	4.0075	4.0099	5.0	264	LOADED NEW TAPE 4 ON HUNTEC
113	083-189-2215	44-17-50	59-02-24	168	4.0218	4.0199	0.0	264	
114	083-189-2220	44-17-49	59-03-75	172	4.0359	4.0289	5.1	269	
115	083-189-2225	44-17-55	59-04-28	185	4.0487	4.0385	5.0	265	
116	083-189-2230	44-17-49	59-04-79	175	4.0611	4.0480	4.9	264	

CSS DAWSON CRUISE/SABLE ISLAND BANK DN 83-026 JULY 7-12, 1983.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
117	083-189-2235	44-17-48	59-05-30	165	4.0726	4.0575	5.1	268	
118	083-189-2240	44-17-51	59-05-84	166	4.0837	4.0670	4.8	266	
119	083-189-2245	44-17-49	59-06-35	122	4.0943	4.0765	5.0	268	
120	083-189-2050	44-17-50	59-06-89	140	4.1046	4.0862	4.8	268	END OF LINE 2, MOSAIC 2 AT 2251
121	083-189-2255	44-17-42	59-07-38	210	4.1144	4.0956	0.0	205	
122	083-189-2300	44-17-10	59-07-37	190	4.1240	4.1053	4.8	148	
123	083-189-2305	44-16-64	59-06-88	118	4.1331	4.1147	4.7	87	START LINE 3, MOSAIC 2
124	083-189-2310	44-16-68	59-06-35	140	4.1420	4.1242	4.9	90	
125	083-189-2315	44-16-67	59-05-78	185	4.1507	4.1338	5.2	98	
126	083-189-2320	44-16-64	59-05-21	183	4.1592	4.1434	5.2	97	
127	083-189-2325	44-16-61	59-04-55	182	4.1675	4.1530	5.1	101	
128	083-189-2330		44-16-60	179	4.1754	4.1627	5.1	93	
129	083-189-2335	44-16-59	59-03-31	178	4.1833	4.1720	5.0	96	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
130	083-189-2340	44-16-56	59-02-74	178	4.1910	4.1816	4.8	93	
131	083-189-2345	44-16-55	59-02-13	168	4.1985	4.1910	4.7	90	
132	083-189-2350	44-16-56	59-01-53	155	4.2059	4.2005	4.7	90	
133	083-189-2355	44-16-61	59-00-94	138	4.2132	4.2101	5.1	86	
134	083-190-0000	44-16-65	59-00-32	119	4.2205	4.2196	4.9	90	
135	083-190-0005	44-16-69	58-59-69	108	4.2273	4.2292	5.2	90	
136	083-190-0010	44-16-69	58-59-07	105	4.2341	4.2387	5.3	95	
137	083-190-0015	44-16-69	58-58-41	80	4.2409	4.2483	5.2	96	
138	083-190-0020	44-16-67	58-57-78	77	4.2473	4.2579	5.3	102	
139	083-190-0025	44-16-62	58-57-12	70	4.2540	4.2673	5.3	100	
140	083-190-0030	44-16-59	58-56-60	67	4.2604	4.2769	5.6	100	END LINE 3, MOSAIC 2 AT 0033; SIDE SCAN TAPE FOOTAGE 2829
141	083-190-0035	44-16-55	58-56-85	67	4.2666	4.2865	4.6	136	
142	083-190-0040	44-16-20	58-55-63	62	4.2729	4.2959	5.0	182	

CSS DAWSON CRUISE/SABLE ISLAND BANK DN 83-026 JULY 7-12, 1983.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
143	083-190-0045	44-16-84	58-55-54	62	4.2791	4.3054	5.1	181	
144	083-190-0050	44-15-49	58-55-53	60	4.2851	4.3150	4.2	237	
145	083-190-0055	44-15-53	58-55-95	61	4.2911	5.0000	5.4	300	START SIDESCAN TAPE 5
146	083-190-0100	44-15-67	58-56-38	62	5.0000	5.0081	4.9	270	STARTED HUNTEC TAPE 5 STARTED LINE 4, MOSAIC 2
147	083-190-0105	44-15-65	58-56-84	60	5.0151	5.0171	5.0	270	
148	083-190-0110	44-15-64	58-57-30	61	5.0297	5.0266	5.4	270	
149	083-190-0115	44-15-62	58-57-80	62	5.0429	5.0362	4.9	272	
150	083-190-0120	44-15-62	58-58-09	61	5.0553	5.0458	5.1	274	
151	083-190-0125	44-15-66	58-58-74	63	5.0670	5.0553	4.7	274	
152	083-190-0130	44-15-68	58-59-21	68	5.0785	5.0685	5.1	276	
153	083-190-0135	44-15-72	58-59-69	73	5.0891	5.0774	4.8	275	
154	083-190-0140	44-15-73	59-00-17	86	5.0993	5.0839	5.2	270	
155	083-190-0145	44-15-72	59-00-66	108	5.1092	5.0934	4.9	272	

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FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
156	083-190-0150	44-15-70	59-00-12	117	5.1188	5.1030	4.6	270	
157	083-190-0155	44-15-69	59-01-61	138	5.1280	5.1126	4.5	269	
158	083-190-0200	44-15-67	59-02-09	161	5.1370	5.1220	4.8	270	
159	083-190-0205	44-15-66	59-02-57	174	5.1458	5.1360	4.8	270	
160	083-190-0210	44-15-64	59-03-04	185	5.1543	5.1411	5.4	271	
161	083-190-0215	44-15-62	59-03-51	184	5.1626	5.1506	4.7	272	
162	083-190-0220	44-15-63	59-03-98	162	5.1705	5.1602	4.3	275	
163	083-190-0225	44-15-63	59-04-43	198	5.1784	5.1697	4.4	275	
164	083-190-0230	44-15-64	59-04-80	202	5.1860	5.1793	4.6	270	
165	083-190-0235	44-15-63	59-05-37	212	5.1937	5.1888	4.7	270	
166	083-190-0240	44-15-64	59-05-80	207	5.2009	5.1983	4.8	275	
167	083-190-0245	44-15-65	59-06-26	157	5.2082	5.2079	5.1	271	NEAR CORE SITE #2
168	083-190-0250	44-15-64	59-06-77	186	5.2152	5.2174	4.8	268	

CSS DAWSON CRUISE/SABLE ISLAND BANK DN 83-026 JULY 7-12, 1983.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
169	083-190-0255	44-15-62	59-07-25	255	5.2222	5.2269	4.4	197	EOL 4
170	083-190-0300	44-15-26	59-07-19	248	5.2291	5.2365	4.6	183	
171	083-190-0305	44-14-90	59-07-27	234	5.2358	5.2460	4.1	200	
172	083-190-0310	44-14-66	59-06-97	234	5.2424	5.2555	4.9	94	BEGIN LINE #5, MOSAIC #2
173	083-190-0315	44-14-67	59-06-34	240	5.2488	5.2650	*.0	94	WEATHER CLEAR AND CALM
174	083-190-0320	44-14-64	59-05-72	242	5.2552	5.2746	5.1	90	SIDESCAN AND HUNTEC WORKING FINE
175	083-190-0325	44-14-61	59-05-09	228	5.2615	5.2842	5.2	94	
176	083-190-0330	44-14-60	59-04-50	216	5.2677	5.2937	5.0	87	
177	083-190-0335	44-14-59	59-03-87	180	5.2738	5.3037	5.5	90	
178	083-190-0340	44-14-57	59-03-27	174	5.2798	5.3137	5.2	87	
179	083-190-0345	44-14-56	59-02-67	178	5.2858	5.3237	5.1	92	
180	083-190-0350	44-14-53	59-02-05	158	5.2916	5.3318	5.4	88	
181	083-190-0355	44-14-53	59-01-47	121	5.2974	5.3414	5.2	87	

CSS DAWSON CRUISE/SABLE ISLAND BANK DN 83-026 JULY 7-12, 1983.

FIX NUMBER	YEAR/DAY/TIME (GMT)	LATITUDE (N)	LONGITUDE (W)	DEPTH (M)	HUNTEC ...(TAPE#/REV)...	SIDESCAN	SPEED (KTS)	HEADING (TRUE)	NOTES
182	083-190-0400	44-14-53	59-00-90	80	5.3030	5.3509	5.2	85	END OF TAPE #5 FOR BOTH HUNTEC AND SIDE SCAN
183	083-190-0405	44-14-54	59-00-30	76	6.0001	6.0001	5.2	86	BEGIN TAPE#6 FOR BOTH HUNTEC AND SIDE SCAN
184	083-190-0410	44-14-54	58-59-83	66	6.0015	6.0095	5.2	83	
185	083-190-0415	44-14-57	58-59-10	64	6.0313	6.0191	5.3	84	
186	083-190-0420	44-14-59	58-58-50	60	6.0443	6.0286	5.2	90	WEATHER CLEAR AND CALM
187	083-190-0425	44-14-61	58-57-91	60	6.0569	6.0380	5.1	91	
188	083-190-0430	44-14-60	58-57-31	60	6.0687	6.0477	5.4	89	
189	083-190-0435	44-14-59	58-56-71	58	6.0801	6.0573	5.4	90	END LINE #5, MOSAIC #2
190	083-190-0440	44-14-50	58-56-19	58	6.0907	6.0668	4.0	171	COMING AROUND TO LINE #6
191	083-190-0445	44-14-12	58-56-06	60	6.1008	6.0763	4.6	176	
192	083-190-0450	44-13-90	58-56-29	60	6.1108	6.0858	4.8	266	BEGIN LINE 6, MOSAIC #2
193	083-190-0455	44-13-86	58-56-88	60	6.1203	6.0954	5.2	269	
194	083-190-0500	44-13-85	58-57-50	60	6.1295	6.1047	5.5	269	

INTERNAL CRUISE REPORT

M.V.POLAR DUKE BORE HOLE PROGRAM-- BAY OF FUNDY AND BANQUEREAU.

by

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September,1983.

ABSTRACT

THE CRUISE ABOARD M.V. POLAR DUKE WAS A CRUISE OF OPPORTUNITY IN WHICH THE GEOLOGICAL SURVEY OF CANADA WORKED IN ASSOCIATION WITH PRIVATE INDUSTRY IN THE COLLECTION AND DOCUMENTATION OF A NUMBER OF BORE HOLES DRILLED IN THE BAY OF FUNDY AND ON THE SCOTIAN SHELF.

THE CRUISE WAS ORGANISED BY JACQUES/MCCLELLAND UNDER CONTRACT TO :

1. CHEVRON/STANDARD
2. HOME OIL COMPANY LTD.
3. HUSKY/BOW VALLEY

A TOTAL OF 8 BORE HOLES WERE DRILLED DURING THE CRUISE TO A MAXIMUM DEPTH OF 51 METRES. THE HOLES WERE DRILLED USING A FAILING 1500 RIG AND SAMPLES TAKEN AT 1-2 METRE INTERVALS. A LOGGING PROGRAM WAS EVOLVED THAT WAS OF VALUE TO BOTH G.S.C. AND INDUSTRY AND AT THE SAME TIME LOGISTICALLY PRACTICAL

THE BAY OF FUNDY HOLES(B.H 001, 002, AND 003) TERMINATED IN WHAT WE INTERPRET TO BE BEDROCK. MUSTONE WAS FOUND IN B.H.001 AND 002, WHILE WELL WEATHERED OLIVENE BASALT WAS FOUND IN B.H.003. THE SURFICIAL SEDIMENTS COMPRISED PREDOMINANTLY LAMINATED SANDS AND FINES WITH POSSIBLY 1 METRE OF TILL OVERLYING BEDROCK IN B.H.001. DEPTH TO BEDROCK VARIED FROM 2.5 TO 9.5 METRES BELOW THE SEABED.

THE CENTRAL BANQUEREAU BORE HOLES(B.H.004 AND 005) TERMINATED IN SURFICIAL, UNCONSOLIDATED MATERIAL. THE BASE OF B.H.004 COMPRISED 14 METRES OF CLEAN WELL SORTED SANDS CONSIDERED TO BE PROGLACIAL SHALLOW MARINE. OVERLYING THIS UNIT IS A SEQUENCE OF CHANNEL CUT AND FILL DEPOSITS COMPOSED OF POORLY SORTED GRAVELLY MATERIAL. THIS UNIT IS CONSIDERED TO BE FLUVIO-MARINE AS IT CONTAINS LIGNACEOUS DEBRIS, TOGETHER WITH SOME ESTUARINE FAUNA.THIS UNIT IS BETWEEN 3-10 METRES THICK AND IS OVERLAIN BY A BARRIER ISLAND COMPLEX DEPOSIT OF SANDY SEDIMENTS VARYING FROM 3- 16 METRES IN THICKNESS. A FINE GRAINED UNIT 6-9 METRES THICK OVERLIES THE BARRIER ISLAND COMPLEX AND IS INTERPRETED TO BE LAGOONAL IN ORIGIN. AT THE CONTEMPORARY SURFACE IS FOUND 4 METRES OF SHELLY REWORKED SAND.

THE EASTERN BANQUEREAU BORE HOLE PROGRAM DRILLED 3 HOLES(B.H.006, 007 AND 008) TO DEPTHS OF 49-51 METRES BELOW THE SEABED. THE MATERIAL DRILLED COMPRISED ENTIRELY UNCONSOLIDATED, SURFICIAL MATERIAL. THE SEQUENCE ENCOUNTERED PARALLELED THAT OF BORE HOLES 004 AND 005 EXCEPT THAT NO LAGOONAL SEDIMENTS WERE ENCOUNTERED. THE SEQUENCE WAS PREDOMINANTLY SANDY AND IS THOUGHT TO BE NO OLDER THAN EARLY POST GLACIAL.

NO GLACIAL TILL WAS ENCOUNTERED IN ANY OF THE 5 BANQUEREAU BORE HOLES.

CONCLUSIONS IN THIS REPORT ARE TENTATIVE ONLY AND MAY BE SUBJECT TO CHANGE.

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CRUISE SUMMARY SHEET

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SHIP OPERATOR.....	CARINO
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NAVIGATION.....	LORAN-C, ARGO, SATNAV, MINIRANGER
EQUIPMENT.....	FAILING 1500
PARTY MANAGER.....	SUTHER YUILL(JACQUES/MCCLELLAND)
PARTICIPANTS.....	BRIAN TAYLOR(J/M) GRANT CROUSE(J/M) CHARLES PELTIER(M) BOYD HILTZ(J/M) GERALD ARBEAU(J/M) DWAYNE YOUNG(J/M) DONNIE MACINTOSH(J/M) BEN COURTURIER(MCELHANNEY) CARL AMOS(GEOL.SURV.CAN.) WILLIAM COOPER(COOPER MARINE)

M.V. POLAR DUKE WAS CHARTERED BY JACQUES/MCCLELLAND TO CARRY OUT A SERIES OF BORINGS FOR THE PURPOSE OF ESTABLISHING THE BEARING STRENGTH OF THE SURFICIAL SEDIMENTARY COVER AT A NUMBER OF SITES BEING CONSIDERED FOR EXPLORATION DRILLING.

THE BORE HOLE PROGRAM WAS TO BE CARRIED OUT IN THE FOLLOWING AREAS :

(1) S.W. BAY OF FUNDY(CLIENT: CHEVRON/STANDARD)
(2) CENTRAL BANQUEREAU(CLIENT: HOME OIL)
(3) EASTERN BANQUEREAU(CLIENT: HUSKY BOW VALLEY)

THE OBJECTIVES OF THE CRUISE WERE TO ESTABLISH THE SUITABILITY OF KEY SITES TO SUPPORT JACK-UP EXPLORATION DRILL RIGS BY REFERENCE TO STANDARD GEOTECHNICAL SOILS TESTING.

THE GEOLOGICAL SURVEY OF CANADA WAS INVITED TO PARTICIPATE IN THE CRUISE IN ORDER TO GEOLOGICALLY INTERPRET AND ANALYSE THE VARIOUS BORE HOLE SAMPLES AS THEY WERE OBTAINED. THE SPECIFIC OBJECTIVES OF THE G.S.C. PROGRAM WERE AS FOLLOWS:

(1) TO PROVIDE AN ONSITE GEOLOGICAL REPORT OF THE BORE HOLE CRUISE TO ACCOMPANY THE BORE HOLE SAMPLES WHICH WILL ULTIMATELY BE TRANSFERED FROM INDUSTRY TO THE G.S.C.REPOSITORY.

(2) TO INTERPRET THE LITHOSTRATIGRAPHY OF THE SURFICIAL SEDIMENTS(AND/OR BEDROCK) IN ORDER TO CALIBRATE AND INTERPRET HIGH RESOLUTION SEISMIC DATA COLLECTED BY BOTH INDUSTRY AND G.S.C.

(3) TO USE THE RESULTS IN THE REGIONAL INTERPRETATION OF THE BAY OF FUNDY AND SCOTIAN SHELF POST GLACIAL EVOLUTION AND SEDIMENTARY DISTRIBUTION AND CHARACTER .

(4) TO COMPILE THE AVAILABLE INFORMATION IN OPEN FILE FORMAT FOR THE SCRUTINY OF THE GENERAL PUBLIC.

2.0 SHIPBOARD PROCEDURES

2.1 THE BORE HOLE PROGRAM

THE BORE HOLES WERE DRILLED USING A FAILING 1500 SYSTEM THE DRILL STRING WAS VARIED DEPENDING ON DRILLING CONDITIONS. IN GENERAL TWO DRILL COLLARS WERE USED TO KEEP THE STEM IN TENSION SEPERATED BY A 20 FOOT BUMPER SUB.DRILLING WAS CARRIED OUT USING DRILLING MUD WHICH WAS MIXED TO A DENSITY OF ABOUT 22 LBS/GALLON.

SAMPLES WERE TAKEN AT REGULAR INTERVALS USING A WIRE LINE PERCUSSION SAMPLER OF 1 1/4 INCH I.D. SPLIT SPOONS WITH SAND TRAPS WERE USED IN SANDY OR ROCKY MATERIAL, SHELBY TUBING WAS USED IN UNCONSOLIDATED FINE GRAINED SEDIMENTS, AND, THEORETICALLY, A LATCH IN DIAMOND DRILL IN ROCK.

A DRAG BIT WAS NORMALLY USED TO DRILL AHEAD, THOUGH A TRICONE WAS NECESSARY AT TIMES.

DRILLING WAS CARRIED OUT IN SEAS PRODUCING A SHIP HEAVE

OF UP TO 3 METRES.IN ROUGHER SEAS DRILLING WAS SUSPENDED.

2.2 THE GEOTECHNICAL PROGRAM

THE GEOTECHNICAL PROGRAM COMPRISED OPERATING THE FAILING 1500 SYSTEM, THE RECOVERY OF UNDISTURBED SAMPLES TO DEPTHS OF UP TO 50 METRES BELOW THE SEABED AND TO CARRY OUT A NUMBER OF SOIL TESTS TO ALLOW AN ONSITE DECISION TO BE MADE ON THE SUITABILITY OF THE SITE TO ACCEPT THE LOADING OF A JACK-UP DRILL RIG. IF UNSUITABLE, THEN A DECISION WAS TO BE MADE TO DRILL A SECOND HOLE AT A SECONDARY SITE AND THE PROCEDURE REPEATED. THE FOLLOWING IS A LIST OF THE ACTIVITIES CARRIED OUT IN THE GEOTECHNICAL PROGRAM:

1 . DIARY OF DRILLING OPERATION AND METHODS

2. SAMPLE LOG AND DESCRIPTION

3. MOISTURE CONTENT AND GRAVEL/SAND/MUD RATIOS

4. ATTERBERG LIMITS AND PLASTIC LIMITS(IF FINE GRAINED)

5. UNCONSOLIDATED/UNDRAINED TRIAXIAL TEST(AS NECESSARY)

6. UNCONFINED COMPRESSION TESTS(AS NECESSARY)

7. HAND PENETROMETER(IF FINE GRAINED)

8. HAND VANE AND TOR VANE SHEAR STRENGTH TESTS(IF FINE GRAINED)

9. POINT LOAD TESTS(IF ROCK)

10. NATURAL GAMMA LOG

2.3 THE GEOLOGICAL PROGRAM

THE PURPOSE OF THE GEOLOGICAL PROGRAM WAS TO LOG AND DESCRIBE THE UNDISTURBED SEDIMENT SAMPLES OBTAINED DURING THE BORE HOLE PROGRAM AND TO MAKE A PRELIMINARY INTERPRETATION OF THE SEDIMENTARY SEQUENCE. AS THIS REPRESENTS THE FIRST INVOLVEMENT OF THE G.S.C. IN AN EAST COAST BORE HOLE PROGRAM IT WAS ALSO THE PURPOSE TO ESTABLISH A METHOD OF LOGGING THAT WAS COMPLETE, EFFICIENT AND WHICH COMPLIMENTED THE ONGOING GEOTECHNICAL WORK.

THE FOLLOWING IS A DESCRIPTION OF THE ACTIVITIES PERFORMED BY G.S.C. UPON SAMPLE RECOVERY:

1. SAMPLE EXTRUSION(SHELBY TUBE) OR SPLITTING(SPLIT SPOON);CARRIED OUT UNDER THE DIRECTION OF J/M.

2. LOG OF CORE RECOVERY AND PHOTOGRAPH OF SAMPLE

3. VISUAL CORE DESCRIPTION:TEXTURE, COLOUR(BY REFERENCE TO THE MUNSELL CHART), STRUCTURE AND FAUNA.

4. SUBSAMPLE AND LOG MAJOR LITHOLOGICAL EVENTS

5. QUICK LOOK ANALYSIS UNDER BINOCCULAR MICROSCOPE(BASED ON A SMEAR SAMPLE ON SLIDE COVER)

6. MICROSCOPIC ANALYSIS OF WASHED COARSE FRACTION:

6.1. PRINCIPAL COMPONANTS
- QUARTZ
- PRECIPITATES(CARBONATES,GYPSUM,GLAUCONITE ETC.)
- FELSPARS
- LITHICS
- SHELL

6.2 FAUNAL ASSEMBLAGE

6.3 GRAIN SORTING, SHAPE AND ROUNDING

6.4 OTHER(SUCH AS HCL TESTING)

3.0 RESULTS.

3.1 BAY OF FUNDY PROGRAM

THREE BORE HOLES WERE DRILLED IN THE BAY OF FUNDY, ON BEHALF OF CHEVRON/STANDARD, UNDER JACQUES/MCCLELLAND JOB NUMBER G-018. THE FOLLOWING ARE THEW DETAILS OF THE BORINGS:

J/M NO.	G.S.C.NO.	LAT. (N)	LONG. (W)	WATER (M)	T.D. (M)
001	001	45-08-49.9	65-56-11.6	57	11.6
002	002	45-08-50.0	65-56-12.0	57	15.2
003	003	45-08-45.0	65-56-33.0	57	5.2

A SAMPLE RECOVERY LOG FOR THE THREE BORE HOLES IS SHOWN IN FIGURE 3.1.1 THE FIGURE SHOWS THE GRAIN SIZE(GS) SAMPLE NUMBERS, THE PHOTOGRAPHIC COVERAGE AND THE SAMPLE RECOVERY. THE INTERPRETED LITHOLOGY IS ALSO SHOWN IN THE FIGURE AND IS BASED ON VISUAL INTERPRETATION AND THE PRINCIPAL COMPONANT ANALYSIS OF THE WASHED COARSER FRACTIONS(INDICATED IN THE

FIGURE BY ARROWS).THIS COARSE FRACTION IS THE MATERIAL HELD BY A 200 MESH SIEVE (I.E. GRAIN DIAMETER GREATER THAN 70 MICRONS).

FIGURES 3.1.2, 3.1.3 AND 3.1.4 SHOW THE ANALYSIS OF THE PRINCIPAL COMPONANTS. THE FIGURES ALSO INCLUDE A DESCRIPTION OF ROUNDING OF THE SILICEOUS MATERIAL(BASED ON FOLK'S CLASSIFICATION)AND THE PERCENTAGE GRAVEL, SAND AND FINES(COURTESY J/M).

.THE REGION IS UNDERLAIN BY WELL WEATHERED OLIVENE-BASALTS AND FRIABLE REDDISH COLOURED VARVED MUDSTONES CONTAINING WHAT ARE THOUGHT TO BE FRESH WATER PELYCEPODS. THE BASALT SHOWS WEATHERING TO SOAPSTONE(INDICATED BY THE ABUNDANCE OF TALC) AND THE MUDSTONE SHOWS A HIGH DEGREE OF FRACTURING AND ASSOCIATED PRECIPITATION OF GYPSUM. THESE CHARACTERISTICS ARE THOUGHT TO HAVE RESULTED FROM ACTIVITIES ALONG THE GLOOSCAP-COBEQUID FAULT WHICH FADER ET AL. INTERPRET TO BE IN THE VICINITY.

OVERLYING BEDROCK IS A UNIT OF LAMINATED SILTS AND SANDS CONTAINING WHAT APPEAR TO BE ANGULAR DROPSTONES(CARRIED TO THE SITE IN SEA ICE AND DROPPED DURING ICE MELTING). THIS UNIT IS POORLY SORTED AND CONTAINS A WIDE DIVERSITY OF MINERALOGIES. THE BASE OF THE UNIT IS TILL-LIKE, LACKING LAMINATIONS AND SHOWING SOME DEGREE OF COMPACTION. THE UPWARD GRADATION INTO LAMINATED SEDIMENTS IS HOWEVER GRADUAL AND THE INTERPRETATION IS THEREFORE SPECULATIVE. THE TILL-LIKE LITHOLOGY IN BORE-HOLE 1 IS LOCALLY APPROXIMATELY 1 METRE THICK. BORE HOLE 2 SHOWS SIMILAR INCREASES IN THE GRAVEL CONTENT WITH DEPTH WITHOUT SHOWING ANY SIGNIFICANT CHANGES IN COMPACTION.

THE LAMINATES ARE PROTECTED FROM THE STRONG 1.5 M/SEC CURRENTS BY A THIN(30-50CM) LAYER OF SAND AND GRAVEL. THIS LAYER IS EQUATED TO TIDAL SANDS PRESENTLY FORMING IN THE UPPER BAY OF FUNDY AND IS CONSIDERED MODERN.

3.2 THE CENTRAL BANQUEREAU PROGRAM

TWO BORE HOLES WERE DRILLED ON CENTRAL BANQUEREAU, ON BEHALF OF HOME OIL, BY JACQUES/MCCLELLAND UNDER JOB NUMBER J-019.THE FOLLOWING TABLE GIVES THE GENERAL STATISTICS OF THE TWO HOLES:

J/M NO.	G.S.C. NO.	LAT (N)	LONG. (W)	T.D. (M)	WATER DEPTH(M)
001	004	44-26-44	58-21-28	50.6	65
002	005	44-26-42.6	58-21-27.4	20.3	65

A BORE HOLE SAMPLE LOG IS SHOWN IN FIGURE 3.2.1. SAMPLES WERE RECOVERED AT APPROXIMATELY 1 METRE INTERVALS. THE DEGREE OF CORE RECOVERY AND PHOTOGRAPHIC COVERAGE OF SAMPLES ARE ALSO SHOWN IN THE FIGURE.

A MICROSCOPIC ANALYSIS OF THE PRINCIPAL COMPONANTS OF THE WASHED COARSE FRACTION(DIAMETER GREATER THAN 70 MICRONS) WAS MADE OF 26 SAMPLES FROM CORE 004 AND 12 SAMPLES FROM CORE 005. THE RESULTS OF THESE ANALYSES ARE SHOWN IN FIGURES 3.2.2 AND 3.2.3 RESPECTIVELY.

A TENTATIVE INTERPRETATION OF THE LITHOSTRATIGRAPHY IS SHOWN IN THE COMPOSITE SECTION OF FIGURE 3.2.4. IN BOTH BORINGS THE HOLES WERE

TERMINATED IN SURFICIAL SEDIMENTS. THE BASE OF BORE HOLE 004(J-47-1) COMPRISED V.FINE GLAUCONITIC SANDS INTERPRETED TO BE PROGLACIAL SHALLOW MARINE.THE BASE OF BORE HOLE 005(J-47-2) TERMINATED IN CHANNEL CUT AND FILL DEPOSITS INTERPRETED TO BE FLUVIO-MARINE.

THE PROGLACIAL SANDS CONTAIN SMALL MARINE FORAMINIFERA CONSIDERED TO BE ASSOCIATED WITH IMMEDIATE POST GLACIAL OR PROGLACIAL CONDITIONS.THIS DEPOSIT IS CONSIDERED TO BE A REWORKED PRODUCT OF GLACIAL WASTING.THIS UNIT IS 14 METRES THICK IN BORE HOLE 004.

OVERLYING THE PROGLACIAL SANDS IS A UNIT OF POORLY SORTED GRAVELS, SANDS AND FINES, SHOWING GRADED BEDDING AND CONTAINING LIGNACEOUS MATERIAL. THIS UNIT IS LATERALLY DISCONTINUOUS AND IS OF VARYING THICKNESS. THE UNIT IS INTERPRETED TO BE CHANNEL CUT AND FILL, PRODUCED BY FLUVIO-MARINE CHANNELS DRAINING ACROSS THE EMERGENT CONTINENTAL SHELF DURING LATE GLACIAL/EARLY POST GLACIAL TIMES.

OVERLYING THE CHANNEL CUT AND FILL SEQUENCE IS A UNIT OF VARYING THICKNESS INTERPRETED TO BE A BARRIER ISLAND COMPLEX.IT COMPRISES WELL ROUNDED FROSTED GRAINS OF SILICA AND IS RICH IN THICK-SHELLED DEBRIS.IT IS THOUGHT TO HAVE FORMED SYNCHRONOUSLY TO THE MINIMUM STAND OF SEALEVEL AND COMPRISES REWORKED SHELLY BANKS AND SUPERIMPOSED AEOLIAN DUNES. THIS SEQUENCE IS IN PART TIME EQUIVALENT TO THE UNDERLYING CHANNEL DEPOSITS WHICH WOULD HAVE CUT ACROSS THE EMERGENT BARRIER ISLAND SEQUENCE. THIS UNIT IS THOUGHT TO BE POST GLACIAL. HOWEVER RADIOCARBON DATING IS REQUIRED TO SUBSTANTIATE THIS.

THE BARRIER ISLAND SEQUENCE IS OF VARIABLE THICKNESS, NO DOUBT DEPENDENT ON THE UNDERLYING TOPOGRAPHY. LOCALLY IT VARIES BETWEEN 3 AND 16 METRES.

OVERLYING THE BARRIER ISLAND COMPLEX IS A SILT AND SAND UNIT WHICH VARIES IN THICKNESS FROM 6-9 METRES. IT CONTAINS AN ESTUARINE SUITE OF FAUNA AND IS INTERPRETED TO BE LAGOONAL SILTS DEPOSITED BEHIND THE EMERGENT BARRIER ISLAND SYSTEM.

OVERLYING THE LAGOONAL DEPOSITS IS A UNIT OF WELL SORTED SAND WHICH IS 4 METRES THICK. IT CONTAINS SHELL DEBRIS AND FROSTED SAND GRAINS CONSIDERED DERIVED FROM THE BARRIER ISLAND COMPLEX. IT IS EQUATED WITH THE SABLE ISLAND SAND AND GRAVEL UNIT OF KING(1970) AND IS STILL FORMING TODAY. IT IS THOUGHT TO HAVE RESULTED FROM WAVE REWORKING OF BEACH AND BARRIER ISLAND SAND AFTER THE BARRIER ISLAND SYSTEM WAS OVERTOPPED BY THE RISING SEALEVEL, WHICH OCCURRED DURING POST GLACIAL TIMES.

NO GLACIAL TILL WAS ENCOUNTERED IN EITHER OF THE BORE HOLES.

3.3. THE EASTERN BANQUEREAU PROGRAM

THREE BORE HOLES WERE DRILLED ON EASTERN BANQUEREAU ON BEHALF OF HUSKY/BOW VALLEY, BY JACQUES/MCCLELLAND UNDER JOB NUMBER J-020. THE FOLLOWING TABLE LISTS THE DETAILS OF THE BORINGS:

J/M NO.	G.S.C.NO.	LAT. (N)	LONG. (W)	T.D. (M)	WATER DEPTH(M)
001	006	44-22-39.9	58-01-55.2	51	63
002	007	44-28-30.3	57-52-51.6	49	39
003	008	44-28-30.3	57-52-51.6	49	43

THE SAMPLE LOG FOR BORE HOLES 006(SOUTH GRIFFIN) AND 007(EAST GRIFFIN) IS SHOWN IN FIGURE 3.3.1; THE SAMPLE LOG FOR BORE HOLE 008(HESPER) IS SHOWN IN FIGURE 3.3.2. SAMPLES WERE RECOVERED AND LOGGED AT 1 METRE INTERVALS FOR THE FIRST 13 METRES AND AT 2 METRE INTERVALS BELOW 13 METRES.

THE PRINCIPAL COMPONANTS OF THE COARSER WASHED FRACTION OF ALTERNATE SAMPLES WITHIN EACH OF THE BORE HOLES WERE ANALYSED UNDER THE BINOCCULAR MICROSCOPE(USING REFLECTED LIGHT). THE RESULTS OF THESE ANALYSES ARE SHOWN IN FIGURES 3.3.3, 3.3.4, AND 3.3.5 RESPECTIVELY.

BORE HOLES 006 AND 007 WERE SITUATED ON THE SEAWARD FLANK OF EASTERN SHOAL, BANQUEREAU. THIS SHOAL HAS BEEN INTERPRETED TO BE A SUBMERGED BARRIER ISLAND SYSTEM, EXPOSED DURING LOWER STANDS OF SEALEVEL DURING EARLY POSTGLACIAL TIMES. BORE HOLE 008 BY CONTRAST WAS SITUATED ON THE SHOREWARD FLANK OF THE SHOAL.

ALL THREE BORE HOLES TERMINATED IN UNCONSOLIDATED SURFICIAL SEDIMENTS(SEE FIGURE 3.3.6). THESE SEDIMENTS ARE THOUGHT TO BE NO OLDER THAN LATE GLACIAL TO EARLY POST-GLACIAL(PROGLACIAL). THE BORE HOLES WERE DOMINATED BY SANDY SEDIMENTS, INTERSPERSED WITH GRAVEL LENSES AND FINE GRAINED HORIZONS.

THE DEEPER PORTIONS OF ALL THREE HOLES ARE INTERPRETED TO COMPRISE PROGLACIAL SHALLOW MARINE SAND. THE LACK OF FINE MATERIAL IS PROBABLY THE RESULT OF WAVE REWORKING WHILE THE LACK OF FAUNA SUGGESTS COLD WATER CONDITIONS AND RAPID SEDIMENT DEPOSITION. THE PRESENCE OF GRADED BEDDING SUPPORT THE IDEA OF SEDIMENT MOBILITY CONCOMITANT WITH THE WINNOWING OF FINES.

OVERLYING THE PROGLACIAL SAND IS A THIN UNIT OF CHANNEL CUT AND FILL CHARACTERISED BY POORLY SORTED SEDIMENTS, BY CROSS BEDDING AND BY THE VARIETY OF GRAVEL SIZED LITHIC MATERIAL. BORE HOLE 8(A) ENCOUNTERED A ULTRABASIC LARGE BOULDER(THOUGHT TO BE A GLACIAL ERRATIC) AT 21 METRES DEPTH. THE SECOND HOLE, RESPUDDED 13 METRES FROM THE FIRST, ENCOUNTERED NOTHING BUT CLEAN SAND THROUGHOUT THIS DEPTH, ATTESTING TO THE INTERMITTANT NATURE OF THE CHANNEL CUT AND FILL MATERIAL. THIS UNIT APPEARS TO DIP SOUTHWARD INDICATING A GRAVITY FLOW OF WATER IN THIS DIRECTION.

THE BARRIER ISLAND COMPLEX, INTERPRETED TO BE AEOLIAN AND NEARSHORE(BEACH) DEPOSITS SIMILAR TO THOSE OF BORE HOLES 004 AND 005, ARE THICKEST IN BORE HOLE 007 ALTHOUGH PRESENT IN ALL THREE HOLES. THE GREATEST THICKNESS CORRESPONDS WITH THE SHOALEST PART OF EASTERN SHOAL.THIS UNIT VARIES IN THICKNESS FROM 8 METRES(B.H.008) TO 23 METRES(B.H.007).

OVERLYING THE BARRIER ISLAND COMPLEX IS A SANDY, SHELLY UNIT INTERPRETED TO BE REWORKED SHELF SAND. THIS UNIT IS FOUND IN ALL THREE HOLES AND VARIES IN THICKNESS FROM 5 METRES TO 12 METRES. THE LAGOONAL FINE GRAINED UNIT FOUND IN BORE HOLES 004 AND 005 ARE ABSENT FROM THESE LATTER THREE

HOLES. ON THE BASIS OF THE PRESENT INTERPRETATION THE LAGOONAL DEPOSITS WOULD BE EXPECTED TO OCCUR TO THE N.W., THICKENING IN THAT DIRECTION.

4.0 CONCLUSIONS

THE RESULTS OF THIS BORE HOLE PROGRAM, THOUGH TENTATIVE AND POTENTIALLY SUBJECT TO CHANGE, ARE OF GREAT VALUE IN THE INTERPRETATION OF THE POST GLACIAL EVOLUTION OF THE SCOTIAN SHELF. FURTHERMORE, THE STRATEGY OF SAMPLE ANALYSIS EVOLVED MAY PROVE USEFUL AS A GUIDE TO FOLLOW-UP CRUISES OF A SIMILAR NATURE.

THE FOLLOWING ARE THE TENTATIVE MAJOR FINDINGS OF THIS PROGRAM:

BEDROCK IN THE BAY OF FUNDY SITES WERE CLOSE TO THE SEABED SURFACE(BETWEEN 2.5 AND 9.5 METRES) AND COMPRISED LACUSTRINE MUDSTONES AND WELL WEATHERED OLIVENE-BASALT.
THE BEDROCK WAS OVERLAIN BY LAMINATED SANDS AND FINES WHICH MAY WELL BE POST GLACIAL, WITHOUT THE OCCURRENCE OF GLACIAL TILL. IN BORE HOLE 001, 1 METRE OF TILL WAS INTERPRETED TO BE PRESENT.

THE CENTRAL BANQUEREAU PROGRAM AT THE LOUISBURG(J-47) DRILL SITE ENCOUNTERED SURFICIAL, UNCONSOLIDATED SEDIMENTS THROUGHOUT. THESE SEDIMENTS ARE THOUGHT TO REPRESENT A SEQUENCE OF SEDIMENTARY DEPOSITS FROM LATE GLACIAL(PROGLACIAL)TIMES ONWARDS. THE SITE SHOWS 50 METRES OF THESE SEDIMENTS WITH NO INDICATION OF BEDROCK. A CHANNEL CUT AND FILL/BARRIER ISLAND/LAGOONAL SEQUENCE WAS INTERPRETED FROM THE SECTION. NO GLACIAL TILL WAS ENCOUNTERED.

THE EASTERN BANQUEREAU PROGRAM AT THE EAST GRIFFIN, SOUTH GRIFFIN AND HESPER SITES, WERE DRILLED TO ABOUT 50 METRES DEPTH. THE HOLES COMPRISED ENTIRELY SURFICIAL,UNCONSOLIDATED SANDY SEDIMENTS. THE SEQUENCE IS INTERPRETED TO BE SIMILAR TO THE CENTRAL BANQUEREAU SITES EXCEPT THAT THE LAGOONAL DEPOSITS ARE ABSENT.NO GLACIAL TILL WAS ENCOUNTERED IN ANY OF THE THREE HOLES.

A COMPOSITE INTERPRETATION OF THE POST GLACIAL EVOLUTION OF THE OUTER SCOTIAN SHELF IS PRESENTED IN FIGURE 4.1. THE SEQUENCE OF EVENTS DEPICTED IN CARTOONS A-D SHOW THE EVOLUTION OF A BARRIER ISLAND SYSTEM UNDER EASTERN SHOAL WITH THE D3EPOSITION OF LAGOONAL SILTS AND CLAYS TO THE LANDWARD SIDE OF THE ISLANDS AND WELL SORTED REWORKED FINE SAND TO THE SEAWARD SIDE. THE WHOLE SYSTEM IS CONSIDERED TO HAVE BEEN OVERTOPPED BY A RISING POST GLACIAL SEALEVEL AND REWORKED TO A DEPTH OF ABOUT 10 METRES BELOW THE SEABED DURING RECENT TIMES.

THE PRESENTED GENERAL MODEL, ALTHOUGH TENTATIVE AND REGIONAL, MAY BE OF VALUE IN THE INTERPRETATION OF BORE HOLE RESULTS FROM OTHER LOCATIONS.

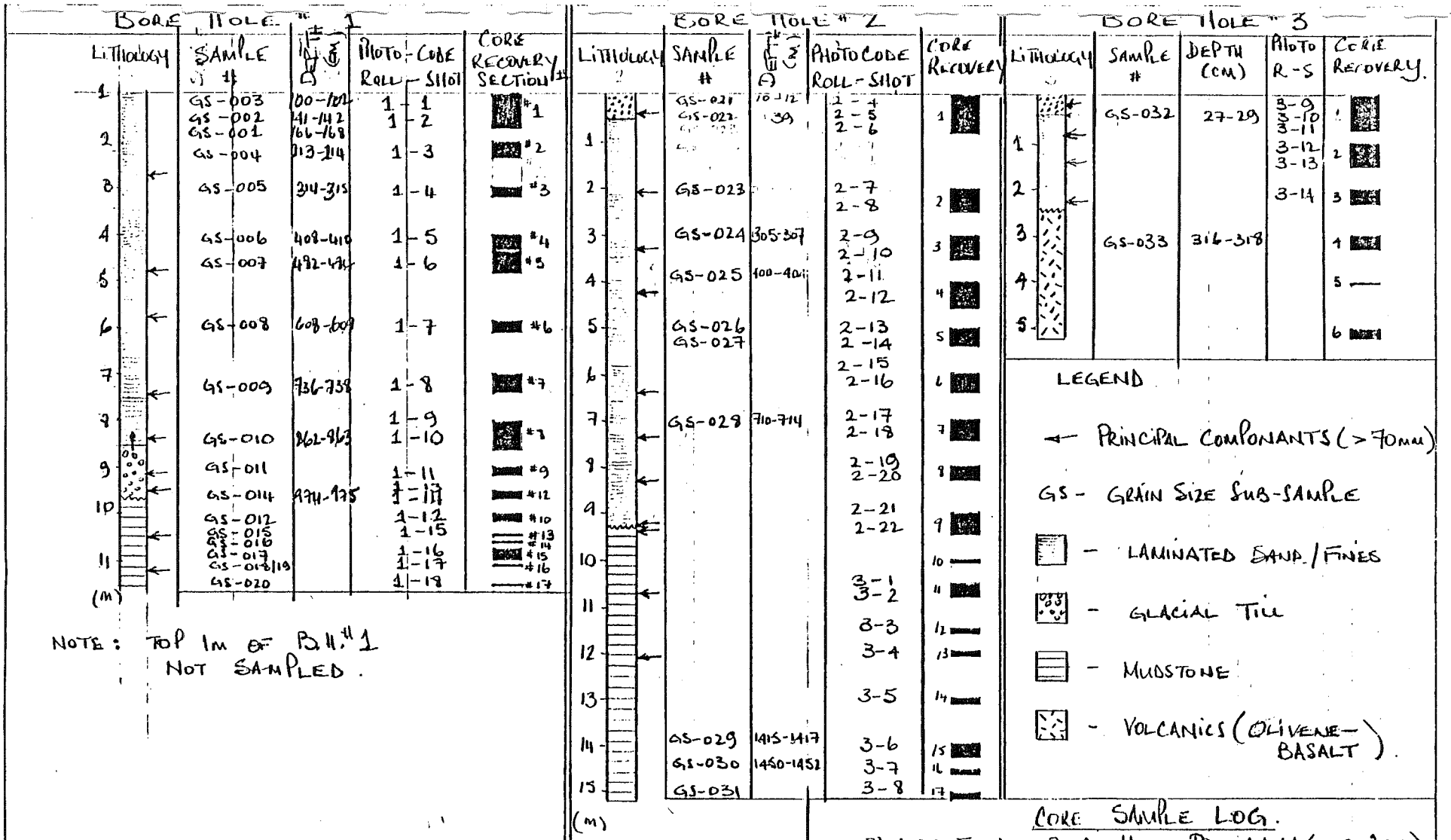
THE CRUISE WAS CONSIDERED A SUCCESS FROM THE POINT OF VIEW OF DATA RECOVERY AND OF INTERPRETATION. THE LOGS OBTAINED WILL BE INVALUABLE IN THE INTERPRETATION OF HIGH RESOLUTION SEISMIC RECORDS AND IN THE EVENTUAL REINTERPRETATION OF THE POST GLACIAL EVOLUTION OF THE OUTER SCOTIAN SHELF.

ACKNOWLEDGEMENTS

THE RESULTS OF THIS CRUISE WILL BE OF GREAT VALUE TO G.S.C. I ACKNOWLEDGE THE SUPPORT PROVIDED BY WILLIAM COOPER OF COOPER MARINE ENTERPRISES DURING THIS CRUISE, TOGETHER WITH THAT OF THE PARTY MANAGER, SUTHER YUILL OF JACQUES/MCCLELLAND. THE RESULTS OF THIS COOPERATIVE VENTURE WERE IN LARGE PART ONLY POSSIBLE AS A RESULT OF THE GOOD WILL OF THE OIL COMPANIES UNDERWRITING THIS CRUISE AND THE STAFF OF JACQUES/MCCLELLAND AND THE CREW OF M.V. POLAR DUKE. TO ALL I EXTEND MY SINCEREST THANKS.

BOREHOLE STATS

BOREHOLE #	WATER DEPTH (M)	LAT. (N).	LONG. (W)	T.D. (M)	GENERAL DESCRIPTION
1	57	45° 08' 50"	65° 56' 12"	11.6	MARINE LAMINATES / TILL / MUDSTONE
2	57	45° 08' 50"	65° 56' 12"	15.2	SANDY MUD / MARINE LAMINATES / MUDSTONE
3	57	45° 09' 45"	65° 56' 33"	5.2	SANDY MUD / MARINE LAMINATES / OLIVENE BASALT
4	65	44° 26' 42"	58° 21' 28"	50.6	SAND / LAGOONAL DEPOSITS / BARRIER I / CHANNEL C & F / SAND
5	65	44° 26' 42.6"	58° 21' 27.4"	20.0	SAND / LAGOONAL DEPOSITS / BARRIER I. / CHANNEL C & F
6	63	44° 22' 39.9"	58° 01' 55.2"	51.0	SAND / BARRIER I / CHANNEL C & F / PROGLACIAL SAND
7	39	44° 28' 30.3"	57° 52' 51.6"	49	SAND / BARRIER I COMPLEX / CHANNEL C & F / PROGLACIAL SAND
8	43	44° 41' 44"	57° 52' 07"	49	SAND / BARRIER I COMPLEX / CHANNEL C & F / PROG. SAND



CORE SAMPLE LOG.
BAY OF FUNDY BORE HOLE PROGRAM (SEPT '83)
(CHEVRON | STANDARD)

FIGURE 3.1.1.

LITHOLOGY	SAMPLE #	DEPTH (M.)	% YELLOW QTZ.	% OTHER QTZ.	% GYPSUM	% POTASH FELDSPAR	% LITHICS	% SHELL	ANGULAR	SUB-ANG	SUB-ROUND	ROUND	DESCRIPTION	% GRAVEL (> 1mm)	% SAND	% SILT / CLAY
TOP 1m MISSING (?)	1	1.7	40	20	–	10	30	–					POORLY SORTED MINERALOGY VARIED	2.1	20.2	77.7
LAMINATED SAND / FINES WITH ANGULAR "DROPSTONES"	7	3.8	30	30	5	15	20	–					POORLY SORTED MINERALOGY VARIED	19.1	23.8	57.1
	2	4.8	20	10	5	40	25	–					POORLY SORTED MINERALOGY VARIED	8.4	29.0	62.6
	3	6.4	25	25	5	20	25	–					POORLY SORTED MINERALOGY VARIED	7.9	32.5	59.6
	8	7.5	30	30	10	20	10	–					POORLY SORTED MINERALOGY VARIED	7.4	29.4	63.2
COMPACT & POORLY SORTED	5	8.2	20	10	30	30	10	–					QTZ. WITH FRACTURES & PITTING	10.3	32.7	57.6
MUDSTONE	6	8.6	–	–	100	–	–	–					VARVED SILTS FRIABLE MATERIAL	9.2	36.2	54.6
	9	9.6	— 15 —		50	30	5	–					VARVED SILTS POORLY SORTED	28.0	27.9	44.1
	4	10.2	5	–	60	45	–	–					WELL SORTED GRAINS NO FILLING	29.2	25.1	45.7

PRINCIPAL COMPONENTS OF COARSE FRACTION — BORE HOLE # 1 (> 80μm)

FIGURE 3.2

LITHOLOGY	SAMPLE #	DEPTH (M)	% YELLOW QTZ.	% OTHER QTZ	% GYPSUM	% POTASH GRAIN. LITHICS	% LITHICS	% SHELL	ANGULAR	SUB-ANG.	SUB-ROUND	ROUND	DESCRIPTION	% GRAVEL	% SAND	% SILT/CLAY
LAG LAYER 1	10	0.4	20	70	–	T	10	T					GRAVEL MOSTLY LITHICS YELL. QTZ. ROUNDED	1.4	8.7	89.9
LAMINATED SAND/FINES WITH ANGULAR "DROPSTONES"	8	2.1	30	40	T	T	30	T					TEXTURALLY SUB-MATURE MINERALOGY VARIED	3.2	51.7	45.1
	11	3.2	30	45	T.	5	20	–					TEXTURALLY SUB-MATURE GRAVELS MOSTLY LITHICS	4.2	24.8	71.0
	5	4.1	30	35	5	10	20	–					TEXTURALLY IMMATURE GRAVELS MOSTLY LITHICS	26.6	20.2	53.2
	3	6.4	40	30	5	15	10	–					LITHICS & POTASH ROUNDED QTZ - FRACTURED	4.6	17.7	77.7
	23	7.3	40	30	5	15	10	–					LITHICS ROUNDED. MINERALOGY VARIED.	13.3	27.6	59.1
	22	8.2	35	30	5	15	15	–					MUDSTONE LITHICS, ANGULAR GYPSUM CRYST.	18.1	27.5	54.4
	26	9.3	35	30	10	10	15	–					LITHICS BUFF & ROUND. ANGULAR GYPSUM CRYST.	12.6	29.2	58.2
MUDSTONE	2	9.4	5	–	40	5	50	–					LITHICS – BUFF & ROUNDED ANGULAR CRYS. GYPSUM	–	8.6	91.4
	7	10.7	40	20	20	10	10	–					$CaCO_3$ CEMENTING OF GRAINS VARVED STRUCTURE IN LITHICS	10.3	29.8	59.9
	12	12.1	10	–	5	–	80	–					$CaCO_3$ CEMENTING, YELL. QTZ. ANGULAR	2.6	47.0	50.4

PRIMARY POROSITY IS GOOD (FAIR) IN LOL 2 (8)

LITHOLOGY	SAMPLE #	DEPTH (m)	% YELLOW QTZ.	% OTHER QTZ.	% GYPSUM	% POTASH OR GRN LITHICS	% LITHICS	% SHELL	ANGULAR / SUB-ANGULAR / SUB-ROUNDED / ROUNDED	DESCRIPTION	% GRAVEL	% SAND	% FINES (<75μm)
LAMINATED SAND/FINES WITH ANGULAR GRAVEL	6	0.3	25	45	5	5	10	10		QTZ - SUB ROUNDED LITHICS IMMATURE	13.5	55.7	30.8
	24	0.7	10	50	10	5	15	5		QTZ - ANGULAR BASALT FRAGMENTS	5.8	36.0	58.2
	29	1.4	25	45	5	10	15	T		GREEN STAINING ON QTZ. LITHICS: SUB-R; QTZ: SUB-A.	9.1	31.9	59.0
	27	2.3	10	50	15	5	15	—		OLIVENE-BASALT FRAGMENTS QTZ - ANGULAR.	8.1	33.8	58.1

PRINCIPAL COMPONANTS OF COARSE FRACTION - BORE HOLE # 3.
(>80 μm)

FIGURE 3.1.4.

BAY OF FUNDY BORE HOLE PROGRAM -- 1-3 SEPT. 1983

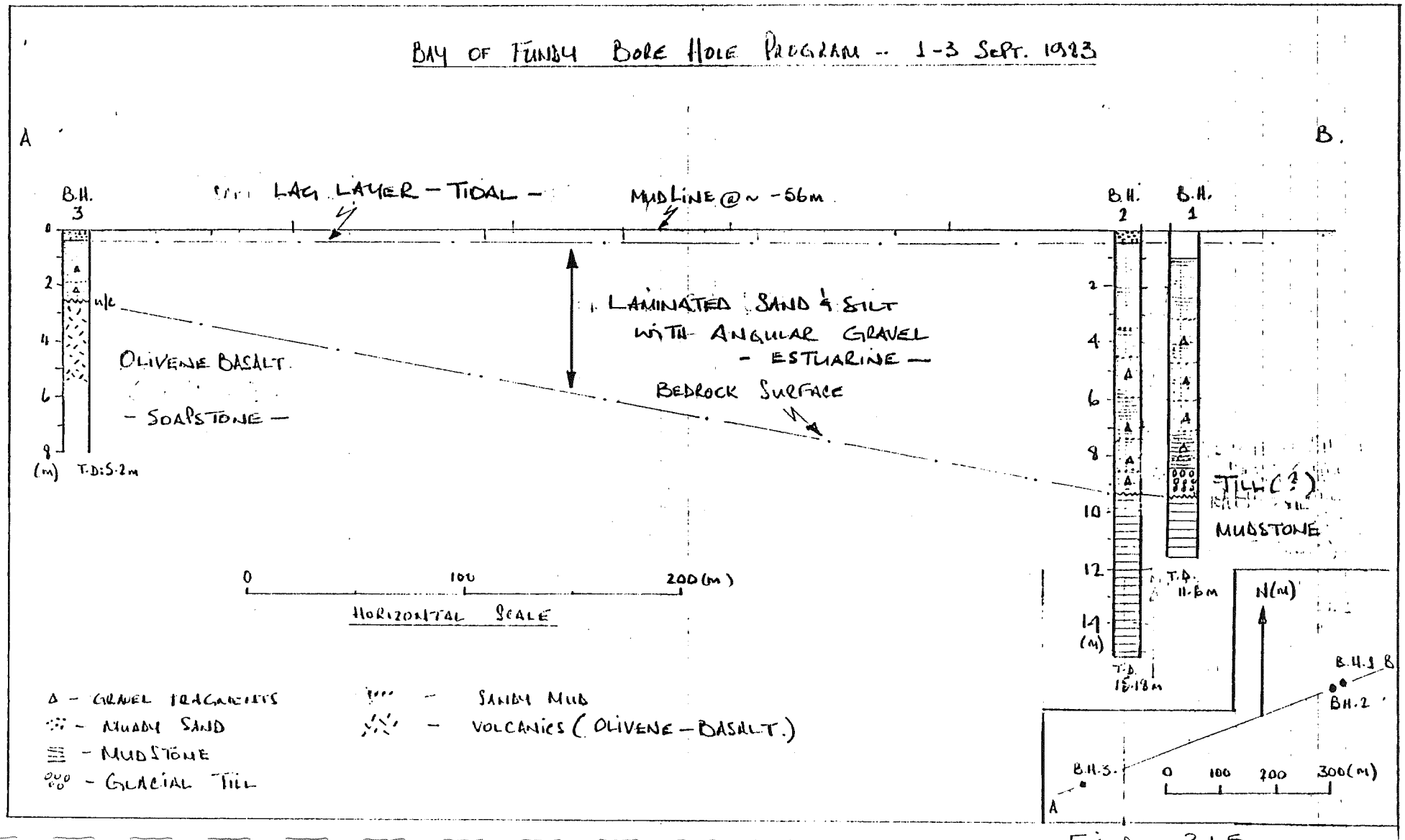
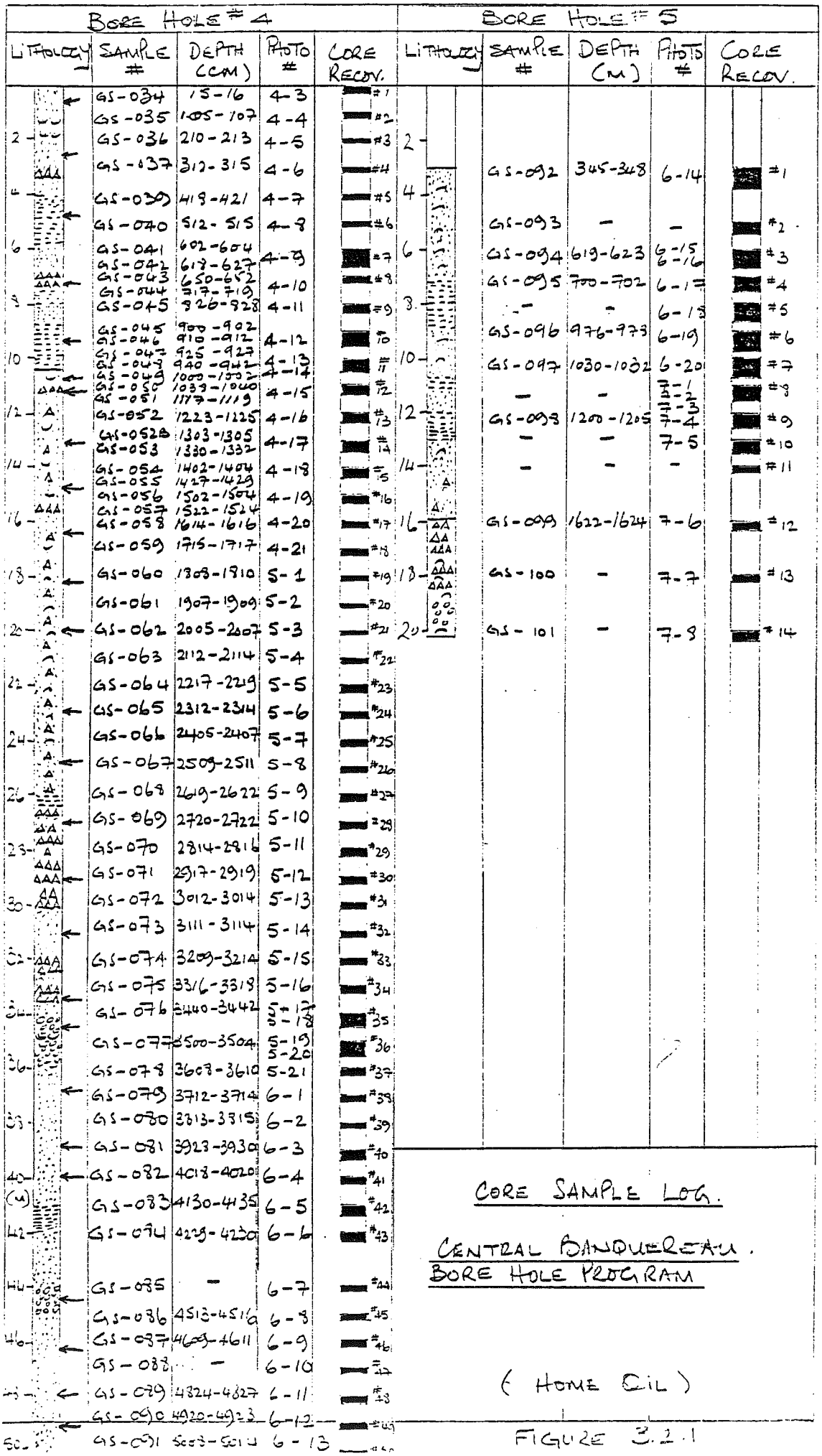


FIGURE 3.1



CORE SAMPLE LOG.

CENTRAL BANQUEREAU.
BORE HOLE PROGRAM

(HOME OIL)

FIGURE 3.2.1

LITHOLOGY	SAMPLE #	CORR. DEPTH (cm)	% QUARTZ	% GLAUCONITE	% SHELL & CACO3	% LITHICS	ANGULAR SUB-ANG. SUB-ROUND ROUND	% FROSTED QTZ	DESCRIPTION	% GRAVEL	% SAND	% SILT/CLAY
REWORKED SAND + SHELF	1	0.5	100	1	T	T		50	QUARTZ ARENITE: 2ND CYCLE REWORKED,	0	98.9	1.1
	3	2.5	100	1	—	—		80	QUARTZ ARENITE: TEX & MIN. MATURE	0	98.6	1.4
	5	4.8	90	10	T	T		20	QUARTZ ARENITE: GRAVELLY SAND	0	91.0	9.0
LAGOONAL DEPOSITS	7	7.3	90	5	5	T		40	QUARTZ ARENITE: GRAVELLY SAND	0	68.5	31.5
	9	9.4	90	5	5	T		20	QUARTZ ARENITE: MED SAND = POLISHED	0	83.7	16.3
- ESTUARINE -	10	10.7	85	5	1	10		5	WELL SORTED: FINE SAND SUB-ANGULAR	0	3.1	96.9
	11A	11.2	95	5	T	T		5	SILICA SAND: FINE SAND SUB-ANGULAR	0	10.0	90.0
	13	13.1	90	—	T	10		90	SAND POORLY SORTED - VARIOUS ANGULARITY	3.6	89.4	7.0
	15	14.8	90	5	5	T		50	WELL SORTED QTZ ARENITE	0	87.9	12.1
BARRIER ISL. COMPLEX	17	16.4	90	5	5	T		70	GRAVEL MOSTLY SHELL; TEX. IMMATURE	8.3	83.6	8.1
	19	18.2	100	—	T	T		80	SAND WELL SORTED & ROUNDED	1.0	93.4	5.6
- AEOLIAN/ NEARSHORE -	21	20.0	90	—	10	T		90	BIMODAL - SHELLY GRAVEL & MED. SAND	6.5	90.7	2.8
	24	22.9	80	—	5	15		90	GRAVEL: SUB ROUND	1.2	93.3	5.5
	26	24.8	70	—	20	10		70	GRAVEL: SUB ROUND; TEXT: IMMATURE	18.0	76.0	6.0
CHANNEL CUT & FILL	28	27.0	75	—	20	5		50	GRAVEL: SUB ANGULAR; QTZ: ROUNDED	31.8	62.7	2.5
	30	29.1	70	—	20	10		50	GRAVEL: SUBROUNDED: SAND - QTZ ARENITE	41.9	54.0	4.1
- FLUVIO-MARINE -	32	31.1	95	T	T	5		80	LITHICS: SUB ANGULAR	0.0	95.1	4.9
	34	33.5	80	T	10	10		60	LITHICS ANGULAR; GRAVEL ANGULAR	39.3	54.1	6.6
	35	34.6	65	5	30	T		5	POORLY SORTED	55.2	34.6	10.2
PROGLACIAL	37	36.8	85	10	5	T		10	WELL SORTED FINE SAND; GLAUC. SHELLS	—	91.7	8.3
- SHALLOW MARINE -	39	38.9	90	5	5	T		30	WELL SORTED FINE SAND " "	—	93.6	6.4
	40	40.0	90	10	T	T		—	" " " "	—	70.6	29.4
	41	41.3	80	10	T	10		60	MEDIUM SAND + ANG. FINE SAND	—	91.5	8.5
	46	46.2	95	5	T	T		80	WELL SORTED MEDIUM SAND - WELL ROUNDED	—	96.7	3.3
	48	48.0	90	5	T	5		30	FINE SAND - CLEAR & SUB-ANGULAR	—	85.1	14.9
	50	49.1	95	5	10	T		20	TAN FINE SAND - FROSTED	—	91.4	15.1

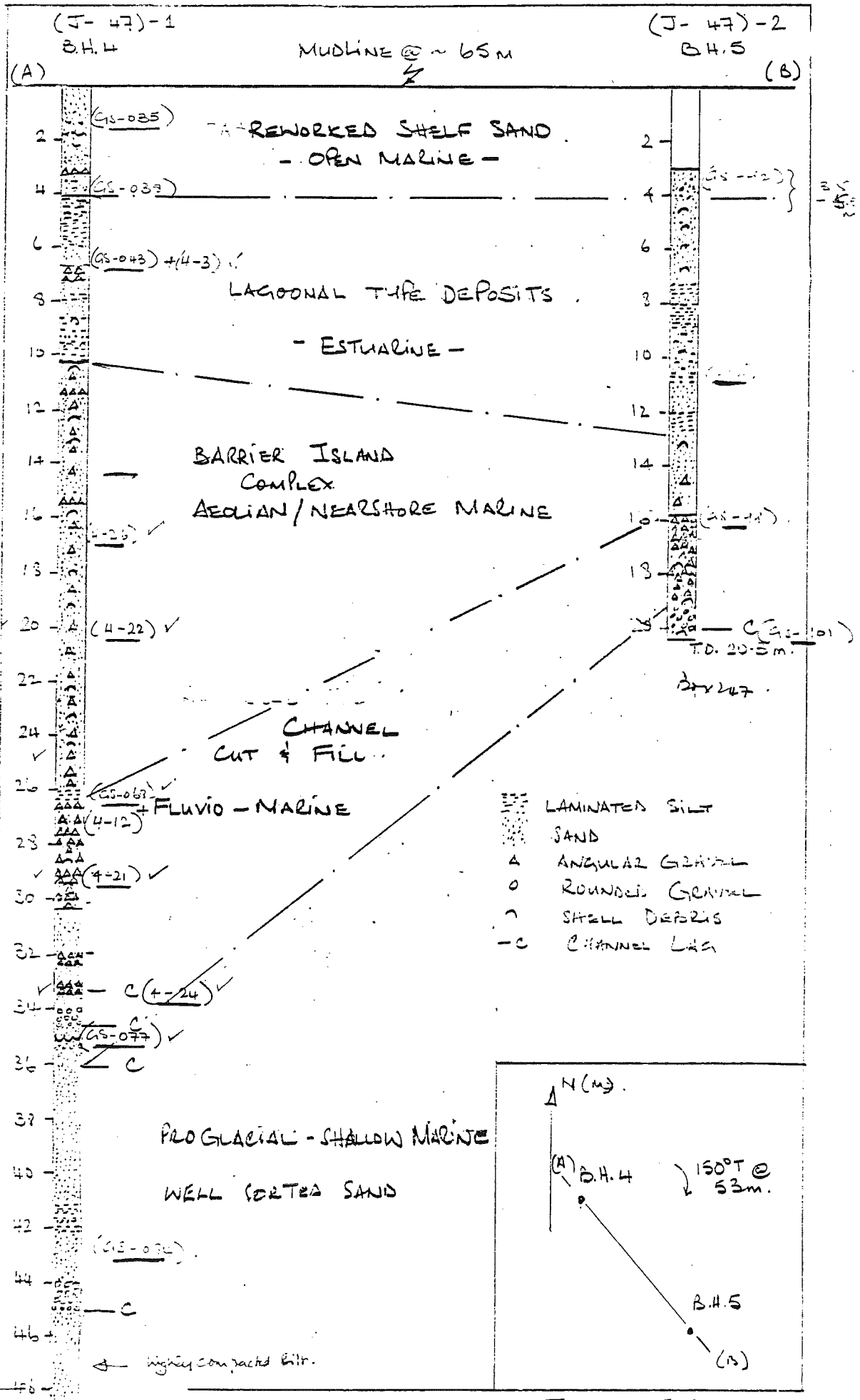

(J- 47)-1
B.H.4
MUDLINE @ ~ 65M
(J- 47)-2
B.H.5
(A)
(B)
REWORKED SHELF SAND
- OPEN MARINE -
LAGOONAL TYPE DEPOSITS
- ESTUARINE -
BARRIER ISLAND
COMPLEX
AEOLIAN / NEARSHORE MARINE
CHANNEL
CUT & FILL
FLUVIO - MARINE
PROGLACIAL - SHALLOW MARINE
WELL SORTED SAND
highly compacted silt.
T.D. 50.3m. (BOX 246 247)
T.D. 20.3m.
LAMINATED SILT
SAND
ANGULAR GRAVEL
ROUNDED GRAVEL
SHELL DEBRIS
CHANNEL LAG
N (M).
(A) B.H.4
150°T @ 53m.
B.H.5
(B)

FIGURE 3.2.4.

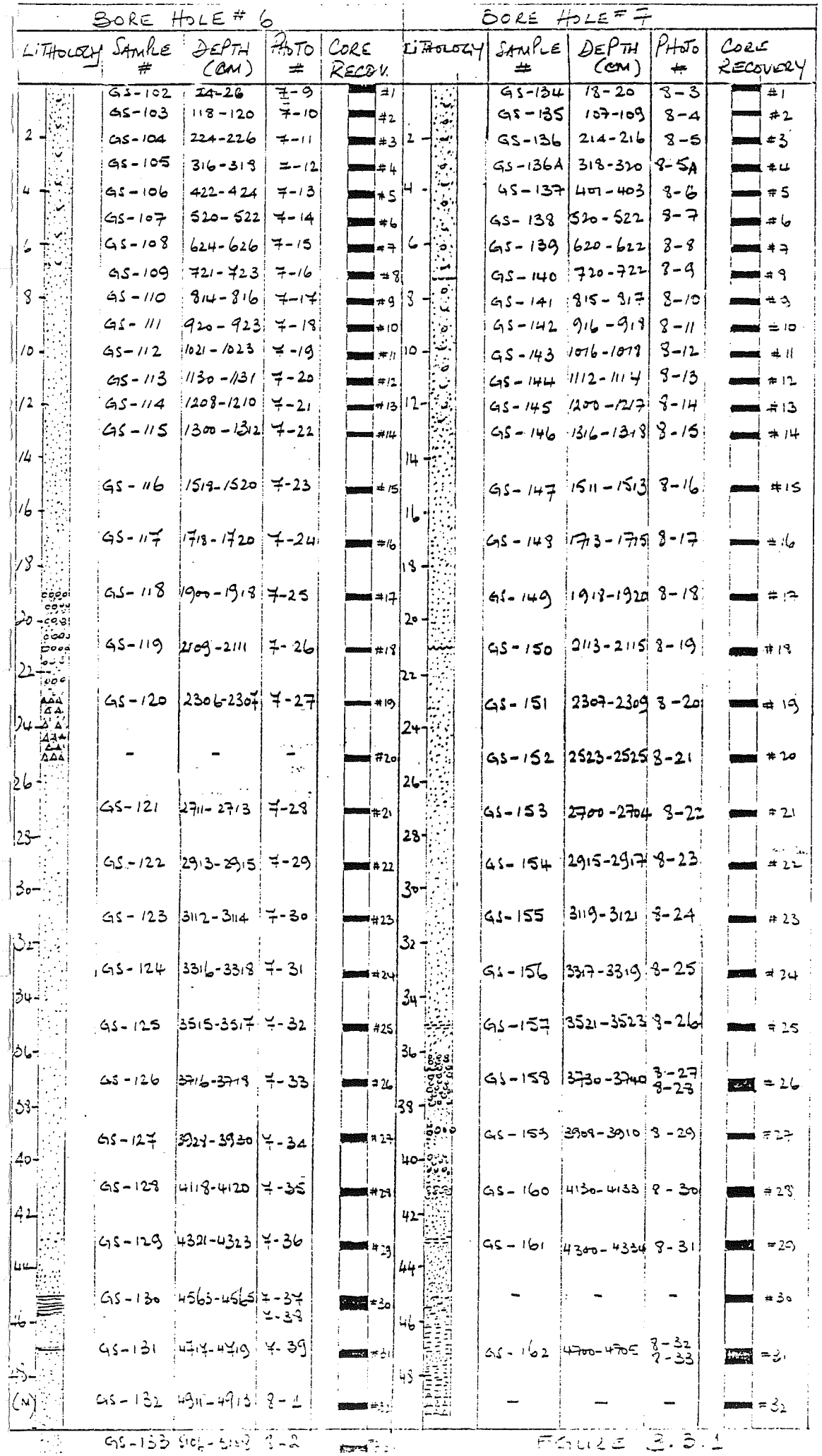

BORE HOLE # 6
BORE HOLE # 7
LITHOLOGY
SAMPLE #
DEPTH (CM)
PHOTO #
CORE RECOV.
GS-102 24-26 7-9 #1
GS-103 118-120 7-10 #2
GS-104 224-226 7-11 #3
GS-105 316-319 7-12 #4
GS-106 422-424 7-13 #5
GS-107 520-522 7-14 #6
GS-108 624-626 7-15 #7
GS-109 721-723 7-16 #8
GS-110 814-816 7-17 #9
GS-111 920-923 7-18 #10
GS-112 1021-1023 7-19 #11
GS-113 1130-1131 7-20 #12
GS-114 1208-1210 7-21 #13
GS-115 1300-1312 7-22 #14
GS-116 1519-1520 7-23 #15
GS-117 1718-1720 7-24 #16
GS-118 1900-1918 7-25 #17
GS-119 2109-2111 7-26 #18
GS-120 2306-2307 7-27 #19
- - - #20
GS-121 2711-2713 7-28 #21
GS-122 2913-2915 7-29 #22
GS-123 3112-3114 7-30 #23
GS-124 3316-3318 7-31 #24
GS-125 3515-3517 7-32 #25
GS-126 3716-3719 7-33 #26
GS-127 3924-3930 7-34 #27
GS-128 4118-4120 7-35 #28
GS-129 4321-4323 7-36 #29
GS-130 4563-4565 7-37 7-38 #30
GS-131 4714-4719 7-39 #31
GS-132 4911-4913 8-1 #32
GS-133 5102-5103 8-2
GS-134 18-20 8-3 #1
GS-135 107-109 8-4 #2
GS-136 214-216 8-5 #3
GS-136A 318-320 8-5A #4
GS-137 407-403 8-6 #5
GS-138 520-522 8-7 #6
GS-139 620-622 8-8 #7
GS-140 720-722 8-9 #9
GS-141 815-817 8-10 #9
GS-142 916-918 8-11 #10
GS-143 1016-1018 8-12 #11
GS-144 1112-1114 8-13 #12
GS-145 1200-1217 8-14 #13
GS-146 1316-1318 8-15 #14
GS-147 1511-1513 8-16 #15
GS-148 1713-1715 8-17 #16
GS-149 1918-1920 8-18 #17
GS-150 2113-2115 8-19 #18
GS-151 2307-2309 8-20 #19
GS-152 2523-2525 8-21 #20
GS-153 2700-2704 8-22 #21
GS-154 2915-2917 8-23 #22
GS-155 3119-3121 8-24 #23
GS-156 3317-3319 8-25 #24
GS-157 3521-3523 8-26 #25
GS-158 3730-3740 8-27 8-28 #26
GS-159 3909-3910 8-29 #27
GS-160 4130-4133 8-30 #28
GS-161 4300-4324 8-31 #29
- - - #30
GS-162 4700-4705 8-32 8-33 #31
- - - #32

FIGURE 3.3.1

BORE HOLE #3

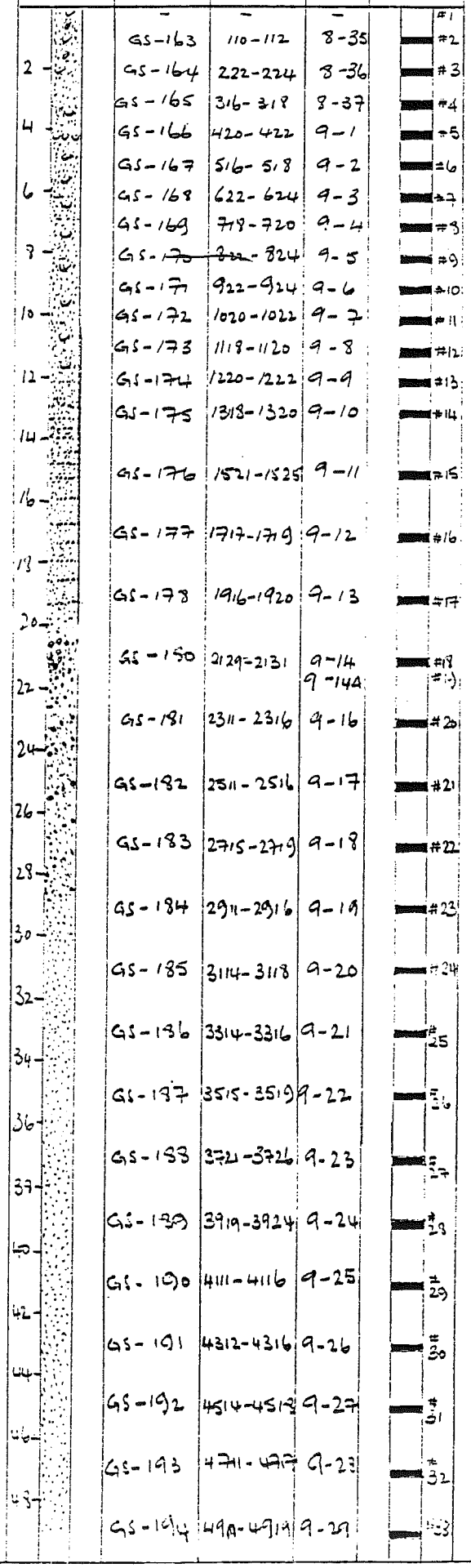


FIGURE 3.3.2.

LITHOLOGY.	SAMPLE #	DEPTH (m)	% QUARTZ	% GLAUCONITE	% SHELL $CaCO_3$	% LITHICS	ANGULAR / SUB-ANG. / SUB-ROUND / ROUND	% FROSTING	DESCRIPTION	% GRAVEL	% SAND	% SILT / CLAY
REWORKED SHELF SAND - OPEN MARINE.	1	0.3	95	-	T	5		30	WELL SORTED; FINE GRAIN / NO FAUNA	-	98.1	1.9
	3	2.3	95	-	T	5		20	MOD. SORTED; FINE GRAIN / NO FAUNA	-	97.6	2.4
	5	4.3	95	T	-	5		40	WELL SORTED; NO FAUNA	-	97.6	2.4
	7	6.3	95	T	-	5		10	WELL SORTED; FINE GRAIN	-	97.6	2.4
BARRIER I. COMPLEX AEOLIAN / BEACH	10	9.3	95	T	T	5		5	WELL SORTED; FINE GRAIN.	-	97.6	2.4
	11	10.2	95	T	T	5		20	MOD. SORTED; MICA	-	97.3	2.7
	12	11.3	95	T	T	5		40	MOD. SORTED; MICA	-	93.6	6.4
	14	13.1	90	5	T	5		10	MOD. SORTED; NO FAUNA / NO MICA	-	97.0	3.0
	16	17.2	90	5	T	5		10	FINE GRAIN; LARGE PART. FROSTED	-	87.2	12.8
CHANNEL C & F	18	21.1	80	5	T	10		50	POOR SORTING / NO FAUNA.	18.6	75.2	6.2
	21	27.1	90	T	5	5		10	POOR SORTING / SMALL ELPHIDIUM	-	93.8	6.2
	23	31.1	90	T	5	5		30	LARGE PART. ROUND & FROSTED / NO FAUNA	-	97.3	2.7
PROGLACIAL SAND	25	35.2	95	T	T	T		20	FINE PART.: SUB ANG / LARGE PART: ROUND	2.5	94.0	3.5
	27	39.2	90	T	5	5		T	WELL SORTED / NO FAUNA	-	46.8	53.2
SHALLOW MARINE	29	43.2	95	T	T	5		60	POOR SORTING / NO FAUNA	-	94.9	5.1
	30	45.3	90	T	T	5		20	POOR SORTING / NO FAUNA	-	18.9	81.1
	31	47.0	80	T	T	20		50	LARGE PART. ANGULAR.	-	98.9	1.1
	33	51.0	90	T	T	10		30	MOD. SORTING / NO FAUNA.	7.4	86.7	5.9

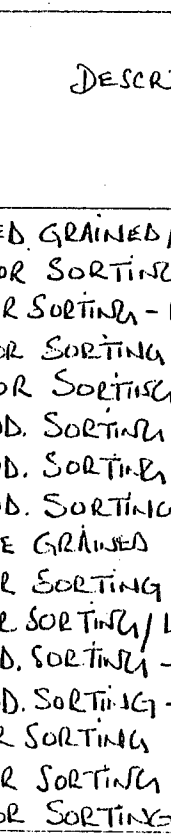
PRINCIPAL COMPONENTS - COARSE FRACTION. B.H. 6. (SOUTH GRIFFIN).

FIGURE 3.3.3

LITHOLOGY	Sample #	Depth (m)	% Quartz	% Glauconite	% Shell $CaCO_3$	% Lithics	Angular / Sub-Ang / Sub-Round / Round	% Frosting	Description	% Gravel	% Sand	% Silt / Clay
Reworked Sand - Open Marine -	1	0.3	95	–	T	5		70	Medium grained. Large part. Sub-R & Frost.	–	98.7	1.3
	3	2.2	95	–	T	5		50	Poor sorting – Medium Grained.	–	97.2	2.8
	5	4.1	95	–	T	5		30	Poor sorting – Large Part. Frosted.	–	97.3	2.7
	7	6.3	95	–	T	5		50	Mod. Sorting – No Fauna.	–	97.4	2.6
	9	8.2	95	–	T	5		50	Poor Sorting – 1. Copepod; Medium Sand	–	96.7	3.3
	11	10.2	90	–	5	5		50	Poor Sorting – Medium Sand; Large Part. Frost.	0.6	95.1	4.3
	13	12.2	95	–	T	5		30	Poor Sorting – No Fauna; Large Part. Frosted	–	96.4	3.6
Barrier Isl. Complex	15	15.2	95	–	T	5		80	Mod. Sorting – No Fauna.	–	96.1	3.9
	17	19.2	95	T	T	5		10	Fine Grain – Well Sorted –	–	96.3	3.7
Aeolian / Beach	19	23.3	90	5	T	5		30	Fine Grained – No Fauna.	–	93.1	6.9
	21	27.2	95	T	T	5		50	Mod. Sorting – Large Part. Frosted.	–	98.2	1.8
	23	31.2	95	5	–	–		10	Fine Grained - Well Sorted.	–	92.5	7.5
	25	35.2	90	5	T	5		10	Fine Grained – Well Sorted	–	88.6	11.4
Channel C & F	27	37.5	40	–	T	60		10	Angular Gravel; Fine Grain Sand	72.9	22.7	4.4
Proglacial Shallow Marine Sand / Fines	29c	41.1	80	5	T	15		5	V. Fine Grained; Mod Sorting; Mica	–	42.8	57.2
	29B	41.2	90	5	T	5		10	Fine Grained; Well Sorted	–	10.9	89.1
	32	47.6	90	5	T	5		30	Fine Grained	–	30.9	69.1
	33	49.1	90	5	T	5		70	Poor Sorting; Globig.; Large Part. Frosted	12.7	22.9	64.4

Principal Components of Coarse Fraction. B.H. 4. (East Griffin)

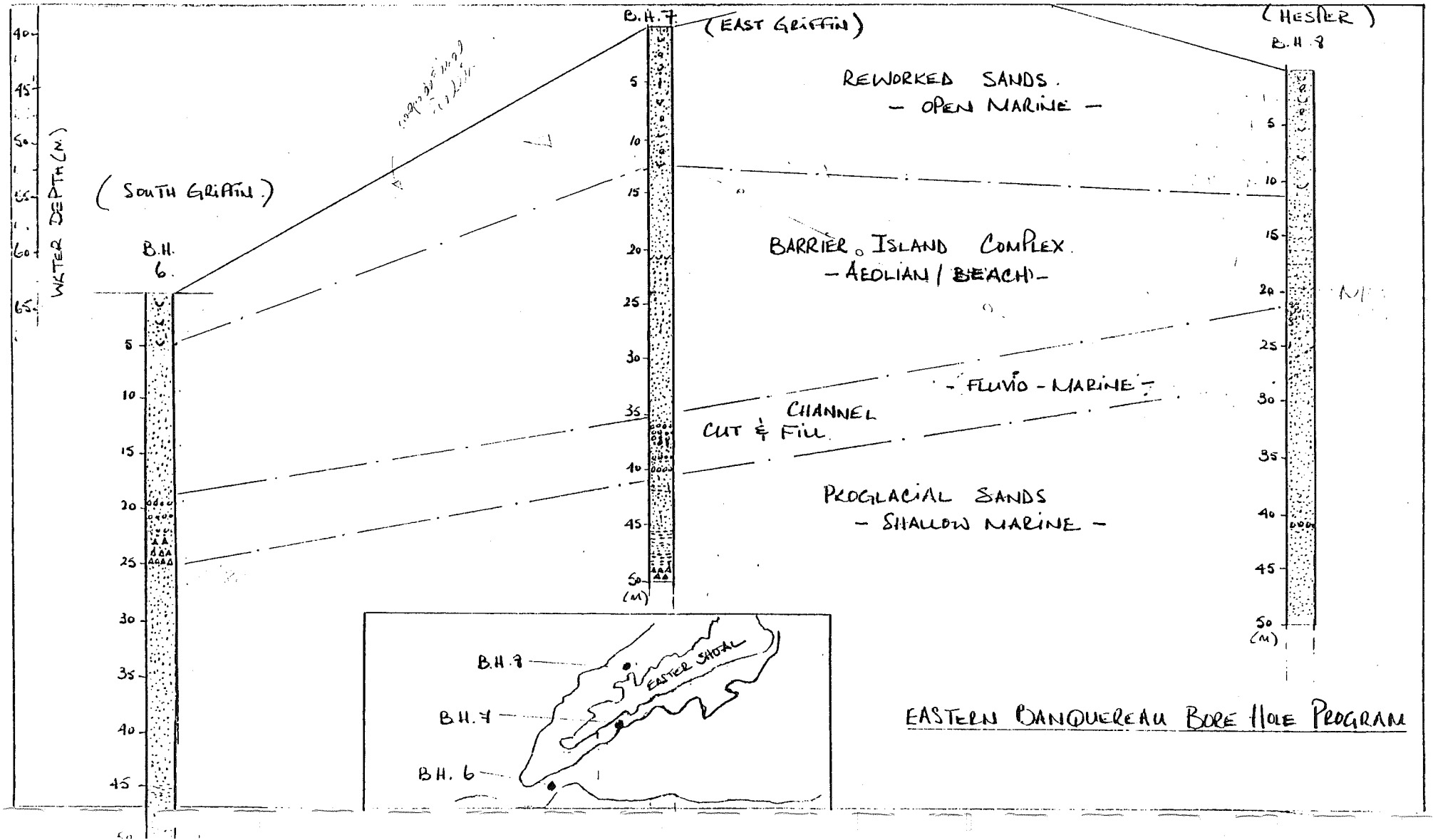
LITHOLOGY	SAMPLE #	DEPTH (m)	% QUARTZ	% GLAUCONITE	% SHELL	% LITHICS	ANGULAR / SUB-ANG / SUB-ROUND / ROUND	% FROSTING	DESCRIPTION	% GRAVEL	% SAND	% SILT / % CLAY
	2	1.1	90	-	-	10		80	MED. GRAINED / POOR SORTING - NO FAUNA	3.9	94.4	1.7
REWORKED SAND	4	3.2	90	T	T	10		50	POOR SORTING - NO FAUNA	-	97.0	3.0
	6	5.2	90	T	-	10		50	POOR SORTING - FINE SAND SUB ANG & CLEAR	-	95.3	4.7
- OPEN MARINE -	8	7.2	95	T	T	5		50	POOR SORTING - NO FAUNA	-	95.5	4.5
	10	9.3	90	T	T	10		50	POOR SORTING - NO FAUNA	-	97.1	2.9
BARRIER I. COMPLEX	12	11.2	90	T	-	10		50	MOD. SORTING - FINE SAND ANG & CLEAR	-	94.6	5.4
AEOLIAN / BEACH -	14	13.2	90	5	T	5		30	MOD. SORTING - NO FAUNA	-	96.4	3.6
	16	17.2	95	T	T	5		30	MOD. SORTING - NO FAUNA	-	94.5	5.5
	20	21.2	80	5	T	10		5	FINE GRAINED LITHICS - GLOBIGERINIDS	-	69.3	30.7
CHANNEL C & F.	22	25.2	90	T	T	10		40	POOR SORTING - NO FAUNA	-	96.0	4.0
- FLUVIO - MARINE -	24	29.2	90	T	T	10		70	POOR SORTING / LARGE PART. SUB-R & FROSTED	-	96.9	3.1
	26	33.2	90	5	T	15		20	MOD. SORTING - NO FAUNA	-	93.4	6.6
PROGLACIAL SANDS	28	37.2	90	T	T	10		40	MOD. SORTING - NO FAUNA	-	81.7	18.3
	30	41.2	90	T	T	10		60	POOR SORTING - NO FAUNA.	5.8	86.2	8.0
- SHALLOW MARINE -	32	45.2	95	T	T	5		50	POOR SORTING - NO FAUNA	-	95.8	4.2
	34	49.2	90	T	T	10		40	POOR SORTING - NO FAUNA.	-	95.1	4.9



PRINCIPAL COMPONENTS OF COARSE FRACTION (>70 MICRON)

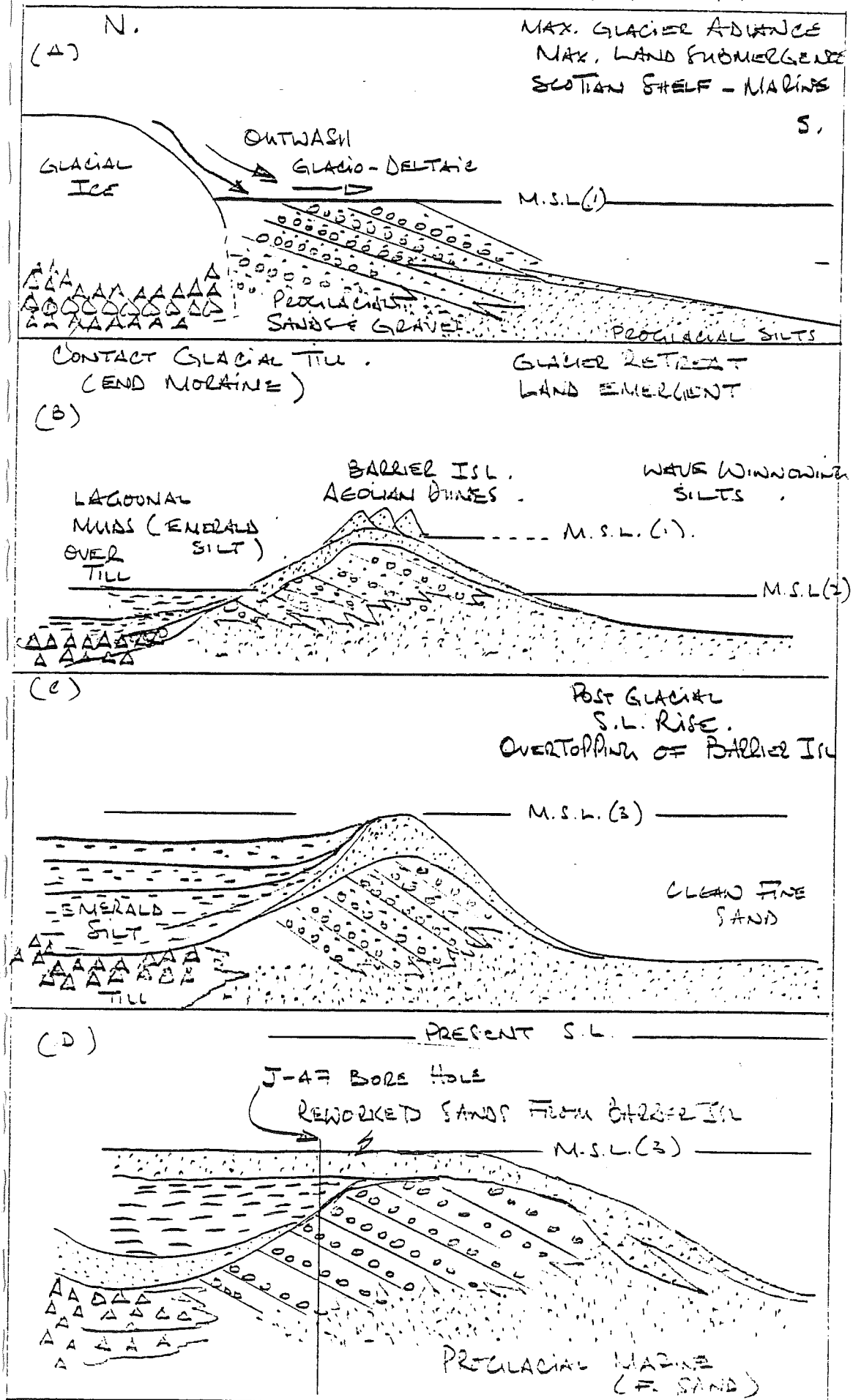
BORE HOLE # 8 (HESPER)

FIGURE 3.3.5



EASTERN BANQUEREAU BORE HOLE PROGRAM

FIGURE 4.1.



AN INTERPRETATION OF THE POST GLACIAL & LATE GLACIAL EVOLUTION OF BANQUEREAU - SCOTIAN SHELF

CSS DAWSON CRUISE REPORT 84-005

SABLE ISLAND BANK AND BANQUEREAU

by
Carl L. Amos

INTERNAL CRUISE REPORT.

C.S.S DAWSON CRUISE REPORT 84-005.

SABLE ISLAND BANK AND BANQUEREAU.

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Geological Survey of Canada,

P.O. Box 1006, Dartmouth,

Dartmouth, Nova Scotia,

CANADA, B2Y 4A2.

PROJECT 800036

March, 1984.

ABSTRACT

CSS Dawson cruise 84-005 was a joint cruise between AGC, Queen's University and Dalhousie University. The objectives of the cruise wer to carry out high resolution shallow seismic surveys along a number of key lines considered important to the interpretation of (1) the lithostratigraphy of the Banquereau surficial sediments, (2) the genesis and distribution of the early Holocene Sable Island, and (3) the genesis and internal structures associated with the shoreface-connected ridges on the south flank of Sable Island. We also needed a data set of high resolution seismics along the genera pipeline corridor.

Despite the passage of 4 major storms and the effects of freezing spray, the major objectives of the cruise were met. The exceptions to this were the site survey of the shoreface-connected ridges (Queen's University) and the NORDCO drilling program.

The storm events did allow an assessment of bank stability under what are considered to be the most energetic conditions. Indeed, eviden of sediment transport was observed both on Sable Island Bank and Banquereau. The first active 2-D megaripples to be measured on Sable Island Bank were fou in the vicinity of East Bar. A feature that I term "linguoid megaripple" was seen on side scan records from Sable Island Bank and Banquereau. This feature, I put forward, was generated by the combined flows of waves and currents duri the passage of the major storms.

The results given in this report are tentative based on a cursory examination only. Interpretation may therefore be subject to change.

LIST OF CONTENTS

CRUISE SUMMARY SHEET

CRUISE SHIP	C.S.S. DAWSON
CRUISE NUMBER	84-005
CRUISE DATES	8-16 MARCH, 1984
SHIP CAPTAIN	Mr. R. DICKINSON
CHIEF SCIENTIST	C.L. AMOS
NAVIGATION SYSTEMS	ARGO, MINIRANGER, LORAN-C, SATNAV
SURVEY SPEED	3-5 KNOTS
SURVEY REGION	SABLE ISLAND BANK AND BANQUEREAU

PERSONNEL

R. MURPHY	AGC
K.W. ASPREY	AGC
J. NIELSEN	AGC
A. BOYCE	AGC
R. BOYD	DALHOUSIE UNI.
G. BIKA	HUNTEC(70) LTD.
D. HAUGHN	ST. ANDREWS BIOL.
E. HOOGENDOORN	QUEEN'S UNIVERSITY
R. POITTIER	MCELHANNEY
R. ASHLEY	MCELHANNEY
R. TERRY	NORDCO
J. COOMBES	NORDCO

TOTAL LINES SURVEYED 362 KM.

NUMBER OF CORES NONE

NUMBER OF IKU GRABS NONE

ITINERARY

TIME(AST)/DATE	OPERATION
23-24 FEBRUARY	LOADING CSS DAWSON; BIO
1000, 6 MARCH	BOARDING SHIP AT ARGENTIA, NFLD.
	DELAY IN SAILING DUE TO GALE AND FREEZING SPRAY WARNINGS
7 MARCH	STORM(1) AND FREEZING SPRAY CONTINUED
0900, 8 MARCH	SET SAIL FOR BANQUEREAU
0500, 9 MARCH	BEGIN SEISMIC SURVEY(BANQUEREAU)
0632, 9 MARCH	HESPER SITE
0910, 9 MARCH	E. GRIFFIN SITE
1236, 9 MARCH	VIDEO#1 - S. GRIFFIN SITE
1840, 9 MARCH	TERMINATE SURVEY DUE TO HIGH SEAS
10 MARCH	65 KNOT WINDS- STORM(2)
2200,10 MARCH	BEATING UPWIND TO BANQUEREAU
0600,11 MARCH	CONTINUE BANQUEREAU SURVEY
1356,11 MARCH	VIDEO#2 - HESPER SITE
1929,11 MARCH	VIDEO#3 - LOUISBURG SITE
0037,12 MARCH	NEW HOME OIL SITE
0133,12 MARCH	TERMINATE BANQUEREAU SURVEY
	STEAMING TO SABLE ISLAND BANK
	45 KNOT WINDS - STORM(3)
0930,13 MARCH	NORDCO DRILL AT SITE RB#1
1130,13 MARCH	BEGIN RIDGE SEISMIC SURVEY
1534,13 MARCH	VIDEO#4-SHOREFACE-CONNECTED RIDGE

1.0 INTRODUCTION

A multi-parameter geophysical and coring program was undertaken over Banquereau and Sable Island Bank aboard CSS Dawson during cruise 84-005. The purpose of the cruise was to collect high resolution seismic data to suppliment the existing data base, to develop a type section of the surficial sediments on Banquereau, and to evaluate meso-scale bedforms on Sable Island Bank.

The cruise was mobilised by AGC and was in support o GSC project 800036(continental shelf sediment stability).Time was allotted during the cruise to R. Boyd(Dalhousie university) and E. Hoogendoorn(Queen's University). The Dalhousie program involved an analysis of the origin of the large scale features (barrier islands) on Sable Island Bank. The Queen's University program involved a stud of the dynamics of formation of shoreface-connected ridges on the south flank of Sable Island.

The specific objectives of the cruise were as follows

1. To carry out a high resolution shallow seismic survey on Banquereau in order to:

A.Tie together the five bore holes collected during the Polar Duke cruise (Sept.83') and specified in the associated cruise report.

B. To complete the regional seismic coverage of Banquereau for general geological interpretation.

C. To record video data of the seabed in the vicinity of drill sites as background information on site stability evaluatio

2. To carry out, on behalf of Queen's University, sit

specific seismic mosaics with coring at 7 sites situated over Sable Island shoreface-connected ridges

3. To carry out, on behalf of Dalhousie University, a seismic survey and coring program over the submerged extensions of Sable Island, in order to evaluate genesis.

4. To carry out a high resolution seismic survey with associated borings and seabed video coverage along the general corridor of the proposed Venture gas pipeline route.

2.0 DETAILS OF THE SURVEY.

This 10 day cruise began in Argentia on 6 March and terminated on 16 March ,84 at BIO. The cruise was broken down into 4 phases as follows:

1. Seismic survey of Banquereau to be terminated at 1100 AST, 11 March, 84.

2. Bore hole and seismic mosaicing over 7 Sable Bank sites to begin 1300 AST, 11 March,84 terminating 1300, 12 March,84.

3. Bore hole and seismic survey across Sable Bank(south) to begin 1300, 12 March,84 and terminating 1100, 14 March,84.

4. Seismic survey in the general vicinity of the pipeline corridor over Sable Island Bank, to be supplimented with cores if time was available, to begin 2300, 14 March,84

The cruise was multidisciplinary, in that a variety of seismic, acoustic and coring techniques were attempted. The seismic operation was carried out using the Huntec Deep Tow System equipped with the internal hydrophone and external streamer, a 40 cubic inch airgun and a 100 khz side scan sonar system. BRUTIV was used along

key lines to provide visual observation of the seabed in order to calibrate the Huntec reflectivity and the side scan sonograms

Bathymetry was recorded on a Raytheon Universal Graphic Recorder(12 KHz) and PTR power supply.

Seabed sampling was to be done using the recently developed NORDCO drill which was equipped with a 10 foot barrel. Where appropriate the IKU 1 metre cube grab sampler was to be used.

3.0 NAVIGATION

The navigation was carried out by McElhanney Ltd. Positions were fixed using their Argo network which consists of slave stations at Three Fathom Harbour, Port Bickerton, Fourchu and east Sable Island(Lock). Position coordinates were logged on tape throughout the survey. Fixes were taken every 100 metres over the ground and were accurate to approximately 10 metres.

Throughout the seismic program positions were fixed at constant distances of 500 metres over the ground. A 7 volt closure was transmitted to the TSS record annotator which thereupon triggered event marks on the graphic records. A print out of the position fixes was provided every 500 metres over the ground, and is referenced by fix number in the appendix of this report.

The Argo system was a Cubic Western Data DM54 with a H.P. 9826 microcomputor and an Okidata printer. The system was backed up with a Magnavox 1107 Satnav receiver, an Internav LC404(Loran-C), and a Motorola Miniranger system(used in the vicinity of drill rigs.

4.0 HUNTEC(DEEP TOW SYSTEM)

The Huntec deep tow seismic system(DTS) was towed at a depth of 9 metres and at an approximate distance behind the ship of 10 metres. Both the internal streamer and external hydrophone were used throughout the survey.

The system was operated at 4000 volts which yielded a source level of approximately 440 joules. The boomer firing rate was 0.75 seconds. The BMC was operated in pressure mode with a 0 second offset. The processor source level was set to 4 Kv and data was displayed using the adaptive mode on the adaptive signal processor(ASP). The signal from the internal hydrophone was filtered between 700 and 12000 Hz by the ASP. The external signal was filtered between 750 and 4000 Hz using the Kronhite filter prior to display.

Data was recorded on an H.P. 3968A, 8 track tape recorder at a tape speed of 3 3/4 inches/second. The following are the Huntec channel designations:

channel 5..... Huntec EPC reference(Bipolar;FM)

channel 6..... Huntec Int. hydro.(bipolar;DR)

channel 8..... Huntec ext. streamer(bipolar;DR)

channel 9..... voice fix

The internal hydrophone signal was printed on an EPC model 4100 graphic recorder(serial # 128) at a sweep speed of 0.25 seconds and a firing rate 0.75 secs. The external streamer was printed on EPC model 4603 graphic recorder(serial # 547) at a sweep speed of 0.25 secs.

All records were annotated with the TSS 312B record

annotator.

5.0 SIDE SCAN SONAR.

A Klein K-map, 100 Khz, 3- channel 531T side scan system was used throughout the survey. The water column removal module(model 611) and the slant range correction module(model 606) were used intermittantly. An initial range of 250 m/channel was used and later changed to 200 m/channel. Paper speed was set to 30 lines/cm. Data was recorder on an H.P. 3968A, 8 track tape recorder at a tape speed of 3 3/4 inches/second. The same tape was also used to record Huntec data. Channel designations of the side scan data are as follows:

channel 1	side scan reference(bipolar;DR)
channel 2	ship speed(unipolar pos.;FM)
channel 3	port channel data(unipolar neg.;FM)
channel 5	tape servo(bipolar;FM)
channel 7	starboard channel data(unipolar neg.;FM)

The layback of the fish with respect to the ship was usually 50 - 75 metres

6.0 AIRGUN SEISMICS.

A 40 cubic inch, Bolt airgun equipped with a pulse shaper was used. The gun was fired at a pressure of 900 - 1600 psi at 3 - 4 second firing rates. An NSRF tapered streamer was used and streamed approximately 20 metres behind the ship

7.0 BRUTIV.

The BRUTIV system was towed from the starboard cargo crane approximately 200 metres behind the ship. The system was flown at a height above the bed of 2.5 metres and at a ships speed of 4-5 knots.

The video was recorded continuously during the dive. Slides were taken in stereo pairs at 10 second intervals, corresponding to a distance of 25 metres between frames. The video camera is angled forward, in the direction of travel, at 10 degrees. The flood lights are housed 3 metres behind the camera and positioned to converge on the field of view. The still flash is located 2.5 metres behind the still cameras. Illumination is therefore from the base of the frame

Video was logged on Scotch T120 tape. The stills were shot in Ektachrome professional film 5036(35 mm; 200 ASA).

The still cameras were both Egertons, with a film capacity of 550 frames.

8.0 THE NORDCO AUGER DRILL

The NORDCO auger drill is an in situ tool comprising a rotary drag bit and inner push sampler. The system is designed to collect undisturbed seabed samples up to 10 feet long under known controlled sampling conditions. The attitude of the drill and the drilling operation are continuously monitored using the NORDCO software package developed for the IBM/PC minicomputer. The drill weighs 4000 lbs. It is powered by 440 volts through isolators and step

down transformers to an operating voltage of 110 volts.

The system is interconnected by a 250 metre long umbilical.

9.0 RESULTS.

We experienced, during the first phase of the cruise, four major storms. Poor weather and associated freezing spray severely eroded the cruise activities. Only on one occassion was the sea state suitable to deploy the NORDCO drill, and only five SRUTIV dives were possible.

The following is a brief description of the results obtained from this cruise and some of the major finding. A track plot showing the survey lines is presented in figure 1.

The Banquereau Survey

Tie lines were established between the four bore hole sites sampled in September,83. The 40 cubic inch airgun records showed recogniseable reflectors at depths of 50-75 metres. Such penetration will hopefully permit a correlation of horizons detected within the entire 50 metres of section penetrated by the bore holes. The Huntec system showed only limited penetration of the seabed. Neither the internal hydrophone nor the external streamer were suited to the sandy seabed encountered. The side scan worked consistently well throughout although the record quality was significantly reduced by use of the on-line geometric correction module. For this reason it was disenabled early in the cruise.

The following are the line designations of the

Banquereau survey:

line 1..... Hesper to E. Griffin

line 2..... E. Griffin to S. Griffin

line 3..... S. Griffin to Louisburg

line 4..... E. Griffin

line 5..... southern Eastern Shoal

line 6..... Hesper

line 7..... Louisburg

line 8..... Louisburg to new site

BRUTIV was deployed during three periods of this survey. The system was towed at a speed of 4 knots and at a height of 8 feet above the seabed. Between 1-2 hours of video was recorded at each site and was accompanied by still photographs of the seabed taken in stereo pairs.

	video time(min)	stereo pairs
video#1- S. Griffin site	84 mins	560
video#2- Hesper site	94 mins	581
video#3- Louisburg site	61 mins	363

Survey line 4-8 and videos# 2 and 3 were performed after the passage of storm event(2). The storm is thought to be the most severe of the winter.Thus if seabed sediment dispersal takes place during storms it is expected that evidence of such dispersal would be present in the survey records; these records having been

collected within 24 hours of the passage of the storm. No active sand waves or megaripples were found. There was however evidence of tongue like features on the sandy seabed. These features have a width and wavelength of about 50 metres but show no measureable relief. These features I term " linguoid megaripples". I interpret them to have formed by unidirectional flow at the bed which has been influenced by the disrupting effect of wave motion. This interpretation is, however, speculative.

Well formed sand ribbons and ridges were also observed. These, I feel were generated during storm(2). If this is the case then it indicates that much of the bank suffered sediment motion at some stage of the storm.

The Sable Island Bank Survey

The shoreface connected ridge survey achieved only moderate success due to poor weather conditions. We were not able to collect bottom samples by either coring, or by grab sampling. There were, however, 200 line km of seismic surveying performed across the south flank of Sable Island Bank. The quality of the seismic data is generally good and shows acoustic stratigraphy to approximately 100 milliseconds beneath the seabed.

Side scan records show the presence of abundant shell beds and also the presence of low amplitude ridges with what appear to be well defined slip faces oriented to the east. The bedforms provide evidence to the mass transport of sediment eastward across Sable Bank. The side scan records also show aligned shell beds and "specks" in the process of formation at the leading edge of the low amplitude ridges.

Two BRUTIV dives were carried out during the course of the seismic survey. One dive was made over a major shoreface-connected ridge and the second over a field of shell beds. The following are the details of the dives:

	video time	stereo pairs
video#4- shoreface ridge	75 mins	300
video#5- shell beds	107 mins	500

The results of dive#5 showed the circular "specks", detected on side scan records, to be dense shell bed communities.

The Pipeline Survey

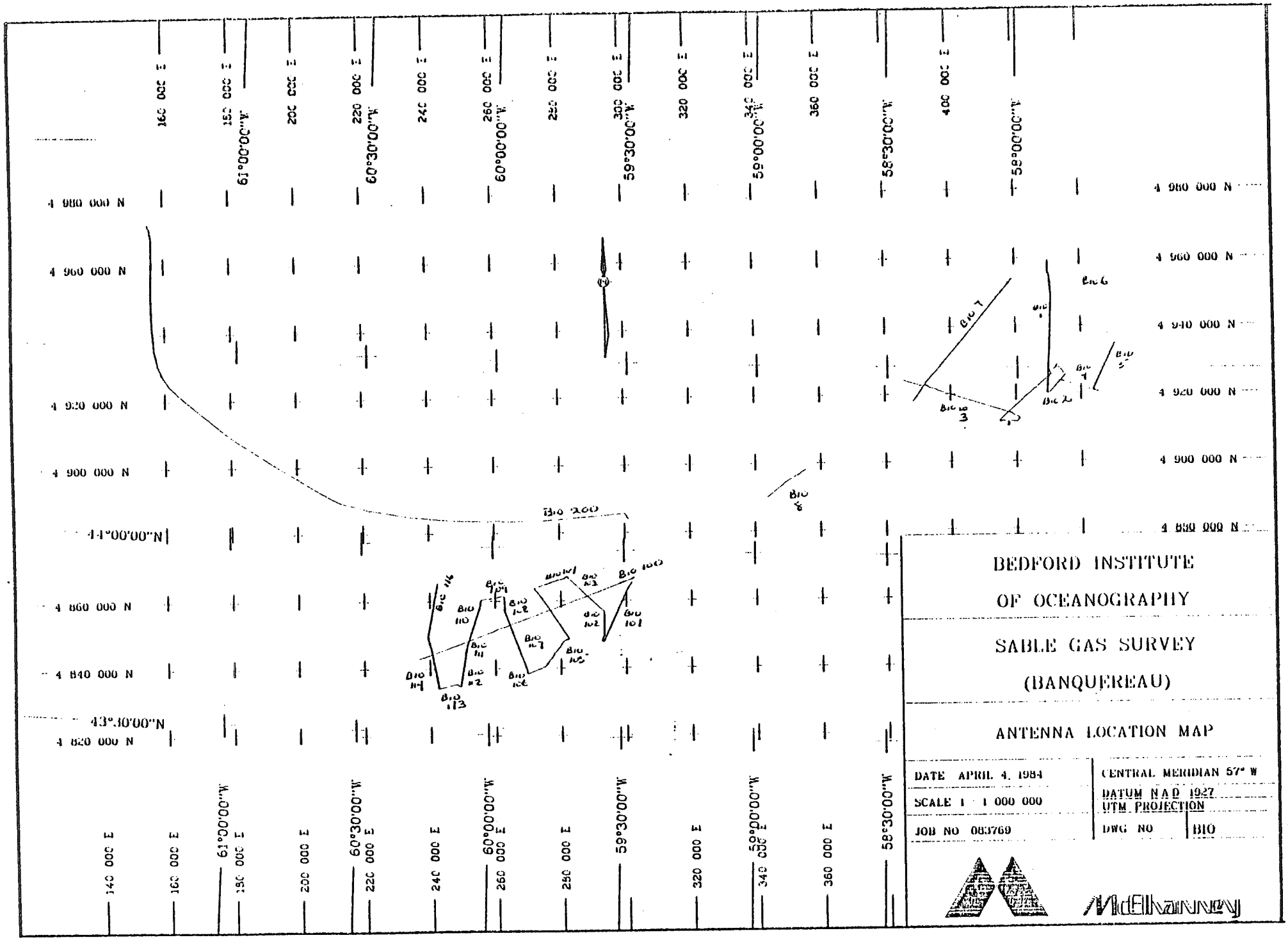
Despite heavy following seas, the quality of the seismic and side scan records of the pipe line survey was good. The survey was continued beyond the western edge of Sable Island Bank, to the fall line of the coastal zone Meguma formation. The survey was terminated at the limit of reliable navigational control which was approximately 25 km from shore.

Active 2-D megaripples were encountered at the eastern end of the survey. These bedforms have a wavelength of about 50 metres and an amplitude of about 1 metre. They demonstrate a transport of sediment to the east as bedload. Sand ribbons were also detected at various sites over Sable Island Bank. The origin of these features is, however, less obvious.

Gas escape structures such as buried pock marks and bedding disruption were interpreted in the Huntec(internal hydrophone)

seismic records of Sable Island Bank. No information is available to evaluate the age of these features or the present day likelihood of gas venting.

A comparison was made between the Argo navigation system and the ship board Loran-C system. The specific comparison of coordinates will be included in the McElhanney Ltd. cruise report. The mean offset over Banquereau, based on 12 comparisons was 1.8 Km. The mean offset over Sable Island Bank, based on 6 comparisons was 1.2 Km. The Argo system, calibrated by various Satnav passes, was accurate to within 10 metres. The errors in the shipboard Loran-C is therefore much greater than previously thought, and unacceptable for most geophysical surveys.



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SABLE GAS SURVEY (BANQUEREAU)

ANTENNA LOCATION MAP

DATE APRIL 4, 1984	CENTRAL MERIDIAN 57° W
SCALE 1 : 1 000 000	DATUM NAD 1927 UTM PROJECTION
JOB NO 083769	DWG NO BIO

MacKenzie

LINE	START EVENT	END EVENT
BIO 1	1	378
BIO 2	379	778
BIO 3	779	1272
BIO 4	1280	1417
BIO 5	1418	1591
BIO 6	1592	1961
BIO 7	1962	2450
BIO 8	2460	2605
BIO 100	2620	3329
BIO 101	3330	3528
BIO 102	3529	3618
BIO 103	3619	3765
BIO 104	3766	3875
BIO 105	3876	4175
BIO 106	4176	4295
BIO 107	4296	4425
BIO 108	4426	4465
BIO 109	4466	4545
BIO 110	4546	4675
BIO 111	4676	4705
BIO 112	4706	4805
BIO 113	4806	4885
BIO 114	4886	5035
BIO 116	5036	5210
BIO 200	5215	7250

APPENDIX-A: FIX POINT SUMMARY TABLE

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annotator.

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CRUISE REPORT
HUNTEC DTS OPERATIONS
BANQUEREAU AND SABLE ISLAND BANKS
DAWSON 84-005
MARCH 5-21, 1984

Submitted by: G. Bika
Huntec ('70) Limited

Distribution: C. L. Amos (AGC) - Chief Scientist
R. Boyd (Dalhousie University)-Second Scientist
G. Bika (Huntec)
M. Uyesugi (Huntec)
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- R. Hutchins

H8403-04/DTS/GB

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INTRODUCTION

Huntec Job C3315 took place onboard the CSS Dawson from March 5 to March 21, 1984. Actual sea time took place from March 8 to March 15 inclusive. The cruise took us from Argentia, NF to Dartmuth, NS with most of the work being done on Banquereau Bank and Sable Island Bank. Dawson Cruise DN 84-ØØ5 was headed by C. L. Amos as Chief Scientist with R. Boyd (Dalhousie) as Second Scientist. G. Bika (Huntec) directed the operation and maintenance of the Huntec DTS system owned by AGC.

The object of this cruise was to carry out:

1. A high resolution seismic survey of Banquereau Bank and to tie in bore hole samples by the Polar Duke (September 1983).
2. A high resolution seismic survey on Sable Island Bank with sampling.
3. A high resolution seismic survey along the proposed Sable Island gas pipeline route.

OPERATIONAL SUMMARY

Julian Day	Date	Standby Hours	Operational Hours	Downtime	Comments
Ø65	5/3/84				Travel to St.John's
Ø66	6/3/84				Join Dawson
Ø67	7/3/84	24.Ø			Check out system
Ø68	8/3/84	24.Ø			Travel to work area
Ø69	9/3/84	1Ø.5	13.5		Survey Banquereau
Ø7Ø	1Ø/3/84	24.Ø			Banquereau
Ø71	11/3/84	8.5	15.5		Banquereau
Ø72	12/3/84	21.Ø	3.Ø		Banquereau
Ø73	13/3/84	9.Ø	15.Ø		Sable Island Bank
Ø74	14/3/84	4.5	19.5		Sable Island Bank
Ø75	15/3/84	13.Ø	11.Ø		BIO by 2ØØØ hrs.
Ø76	16/3/84				Tied up at BIO
Ø77	17/3/84				Tied up at BIO
Ø78	18/3/84				Bad weather
Ø79	19/3/84				Attempt to depart
Ø8Ø	2Ø/3/84				Tied up at BIO
Ø81	21/3/84				Demobilize
TOTAL HOURS		138.5	77.5		
PERCENTAGE OF TOTAL		64.1%	35.9%	Ø%	

The DTS system was utilized for 35.9% of the time at sea.

The standby time of 64.1% of the time lumps together travelling time and weather downtime.

There was no downtime listed on this cruise despite the fact that the leak alarm was going most of the cruise, and we had a badly damaged acoustic window.

The leak alarm was due to cable problems and was muffled (reported last year).

The seas were too rough to change the acoustic window.

EQUIPMENT PERFORMANCE

IKU Style Fish

This fish performed well considering the sea state during most of the cruise. The external streamer data was poor due to excessive fish motion. At times the pitch meter gave readings in excess of $\pm 25^{\circ}$. The fish could not be decoupled due to shallow water in the Sable Island area. The fish had to be towed no more than halfway to the bottom or the surface return would interfere with the streamer data. The internal hydrophone data had wave noise on it (towing in sea state 5-6). The IKU style fish is awkward to launch and recover on the Dawson because of space and the short reach of the gallows.

Winch for IKU Style Fish

The winch worked well after its overhaul this winter.

Tow Cable for IKU Fish

This cable developed problems last fall on the Hudson cruise (October 2, 1983). It was used on this trip because the replacement has not arrived yet. The side scan lines deteriorated until the 750V line was grounded completely. This caused no problem because the 50kHz side scan was not wanted. The scientists required 100kHz data. The leak alarm was set off by problems in the cable. The cable stranded a little due to excessive strumming caused by high sea states on short cable out in shallow water.

Retermination of the cable at both ends is required (75 metres from winch and 40 metres from fish).

Deck Cable

Two deck cables had to be joined together through a connector box, to reach the winch. This connector box got some moisture inside at one point and had to be cleaned and resealed.

A longer single cable would be far superior.

PCU

The PCU worked well as always.

The high voltage toggle switch is bent.

Systems Console

Two consoles were used, the second only to provide an ASP for the streamer data. Both worked well.

The BMC had a tough time considering the buffeting the towed body was taking, but it worked well.

ARU

The newly rebuilt ARU was a pleasure to use. It locked in on the bottom return in the worst of conditions.

EPC Graphic Recorders

The two EPC's used on this cruise worked very well.

Both were cleaned and checked by AGC personnel at the end of the trip, so nothing further needs to be done to either.

HP Tape Recorder

Huntec data was recorded on three of the eight channels.

Some of the data may not be recoverable due to calibration problems and recorder speed fluctuations of the takeup reel.

EQUIPMENT STATUS

All gear was demobilized at BIO.

Towed Body

Acoustic window needs to be re-drilled.

The nose of the fish took a severe beating during recovery in rough seas - the lead needs to be straightened and two retaining bolts may be required.

The port side skin could use some fibreglass patching after impact with the ship on recovery.

Tow Cable

The cable has a fault near the fish. Several strands of armour are broken. At least 40 metres should be cut off the fish end.

There is a fault within the first 75 metres from the winch end of the cable. This section will have to be cut off.

With retermination at both ends the cable will still be 180 to 190 metres long. This is adequate for a standby cable.

HP Tape Recorder

Needs to be looked at. The take up spool slows down too much when nearly full.

CONCLUSIONS

The IKU style Huntec fish took a severe beating on this cruise. It is the heaviest fish produced by Huntec, and as the name implies it is a deep towed seismic system. It was used in water depths ranging from 20 to 60 metres in sea states up to 6. This left the fish directly coupled to the ship at all times.

The tow cable is stranded and has internal damage requiring retermination.

The front of the fish has impact damage from recovery in rough seas.

The port side skin needs patching or replacement due to impact damage.

The standard Huntec fish would have been far superior in these coditions, being lighter and using a smaller cable. The only reason anyone would want to use the IKU style fish in these conditions would be for its side scan sonar capability., The Chief Scicentist, however, required only 100kHz side scan data and not the 50kHz contained in the fish.

Oil industry vessels shut down operations well before the sea states encountered on this cruise. Their seismic records are accordingly far superior. If the industry people see the records from this cruise it might be detrimental to future work for Huntec with the oil industry. Therefore, it is hoped that the conditions under which the data was obtained are made clear to anyone that has access to the data.

The HP tape recorder posed a few problems with take up reel

speed fluctuations when nearly full. This could present a problem when replaying data.

Despite the weather conditions the data was still of good enough quality to fulfill the cruise objectives.

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
4	084-069-0539	44-46-19	57-52-50	52	6	183	001(0099)	001(0250).	NA	NA	2M WAVES CLEAR
4											SS LAYBACK 30-40M
4											TAPE SPEED 3.75 RPM
6	084-069-0545	44-46-03	57-52-49	51	5	180	001(0271)	001(0465)	NA	NA	2METRE WAVES CLEAR
6											
6											
8	084-069-0550	44-45-31	57-52-50	50	6	173	001(0403)	001(0568)	NA	NA	CLEAR AND CALM
8											ALL GEAR UP AND RUNNING
8											SS FISH-26M HUNTEC FISH-50
10	084-069-0557	44-44-59	57-52-36	47	6	185	001(0577)	001(0706)	NA	NA	CLEAR AND CALM
10											
10											
12	084-069-0602	44-44-27	57-52-27	47	6	180	001(0714)	001(0822)	NA	NA	
12											
12											
14	084-069-0608	44-43-54	57-52-22	48	6	166	001(0849)	001(0928)	NA	NA	CLEAR AND CALM
14											
14											
16	084-069-0614	44-43-22	57-52-20	42	5	179	001(0964)	001(1030)	NA	NA	CLEAR, 2M WAVES
16											

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18	084-069-0620	44-42-50	57-52-14	47	5	187	001(1088)	001(1125)	NA	NA	CLEAR AND CALM
18											AIRGUN LEAKING THIRD STAGE
18											MAINTAINING APPOX 600 PSI
20	084-069-0626	44-42-17	57-52-11	45	6	171	001(1204)	001(1225)	NA	NA	CLEAR AND CALM
20											
20											
22	084-069-0632	44-41-45	57-52-07	45	5	196	001(1318)	001(1314)	NA	NA	CLEAR AND CALM
22											GOING OVER HESPER SITE
22											
24	084-069-0639	44-41-11	57-52-09	43	4	175	001(1442)	001(1416)	NA	NA	CLEAR AND CALM
24											
24											
26	084-069-0646	44-40-38	57-52-09	42	5	189	001(1560)	001(1513)	NA	NA	CALM BECOMMING OVERCAST
26											EQUIPMENT WORKING WELL
26											BRUTIV BEING DE-ICED
28	084-069-0653	44-40-06	57-52-11	41	5	187	001(1662)	001(1603)	NA	NA	OVERCAST AND CALM
28											AIR HOSE HAS SMALL LEAK
28											NEAR AIR GUN
30	084-069-0700	44-39-34	57-52-14	41	5	162	001(1779)	001(1694)	NA	NA	OVERCAST AND CALM
30											ALL EQUIPMENT WORKING
30											

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FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
32	084-069-0707	44-39-01	57-52-16	41	5	185	001(1886)	001(1782)	NA	NA	OVERCAST AND CALM
32											BRUTIV DE-ICED
32											
34	084-069-0714	44-38-29	57-52-18	41	5	190	001(1990)	001(1864)	NA	NA	OVERCAST AND CALM
34											2 METRE WAVES
34											
36	084-069-0720	44-37-56	57-52-19	38	5	187	001(2085)	001(1943)	NA	NA	OVERCAST AND CALM
36											
36											
38	084-069-0726	44-37-24	57-52-21	45	5	177	001(2173)	001(2015)	NA	NA	1.5-2 METRE SWELL
38											END OF SIDESCAN/HUNTEC
38											TAPE 1
40	084-069-0733	44-36-52	57-52-23	45	5	185	001(2265)	002(0000)	NA	NA	2 METRE SWELL, OVERCAST
40											START OF HUNTEC/SIDESCAN
40											TAPE NO. 2
42	084-069-0740	44-36-19	57-52-24	40	5	186	001(2355)	002(0220)	NA	NA	OVERCAST
42											AIRGUN IN FOR REPAIR
42											
44	084-069-0746	44-35-47	57-52-27	42	5	179	001(2438)	002(0368)	NA	NA	OVERCAST 2 METRE SWELL
44											AIRGUN STUCK SOLINOID
44											LEAKY HOSE AND POOR SEAL

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46	084-069-0752	44-35-14	57-52-28	42	5	188	001(2523)	002(0515)	NA	NA	OVERCAST
46											AIRGUN BEING REPAIRED
46											
48	084-069-0759	44-34-42	57-52-30	42	5	190	001(2600)	002(0655)	NA	NA	OVERCAST 2 METRE SWELL
48											AIRGUN BEING REPAIRED
48											
50	084-069-0806	44-34-10	57-52-34	42	5	185	001(2690)	002(0785)	NA	NA	OVERCAST 2 METRE SWELL
50											AIRGUN UP AND WORKING
50											
52	084-069-0812	44-33-37	57-52-34	42	5	179	001(2761)	002(0901)	NA	NA	OVERCAST 2 METRE SWELL
52											EQUIPMENT WORKING WELL
52											
54	084-069-0818	44-33-05	57-52-36	42	5	180	001(2835)	002(1010)	NA	NA	OVERCAST LIGHT SWELL
54											
54											
56	084-069-0824	44-32-33	57-52-36	43	5	166	001(2908)	002(1112)	NA	NA	OVERCAST LIGHT SWELL
56											
56											
58	084-069-0831	44-32-00	57-52-39	43	5	190	001(2983)	002(1216)	NA	NA	OVERCAST LIGHT SWELL
58											EQUIPMENT WORKING WELL
58											

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60	084-069-0837	44-31-28	57-52-41	36	5	183	001(3052)	002(1309)	NA	NA	WEATHER CLEARING
60											EQUIPMENT WORKING WELL
60											
62	084-069-0840	44-31-11	57-52-42	36	0	0	END OF #1		NA	NA	CLEARING LIGHT SWELL
62											
62											
64	084-069-0848	44-30-23	57-52-45	36	5	182	START #2	002(1480)	NA	NA	CLEARING LIGHT SWELL
64											
64											
66	084-069-0855	44-29-51	57-52-47	36	5	181	002(0115)	002(1571)	NA	NA	
66											
66											
68	084-069-0901	44-29-18	57-52-48	37	5	185	002(0290)	002(1644)	NA	NA	CLEARING LIGHT SWELL
68											EQUIPMENT WORKING WELL
68											
70	084-069-0907	44-28-46	57-52-50	37	5	185	002(0442)	002(1718)	NA	NA	CLEARING LIGHT SWELL
70											
70											
71	084-069-0910	44-28-30	57-52-51	38	5	181	002(0519)	002(1755)	NA	NA	CLEARING LIGHT SWELL
71											PASSING OVER EAST GRIFFIN
71											EQUIPMENT WORKING WELL

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72	084-069-0913	44-28-16	57-52-52	40	5	180	002(0600)	002(1790)	NA	NA	CLEARING LIGHT SWELL
72											
72											
74	084-069-0918	44-27-43	57-52-53	0	5	180	002(0726)	002(1860)	NA	NA	MISSED FIX
74											
74											
76	084-069-0925	44-27-11	57-52-55	69	5	185	002(0848)	002(1930)	NA	NA	CLEARING LIGHT SWELL
76											
76											
77	084-069-0928	44-26-43	57-52-58	70	0	0	002(0910)	002(1960)	NA	NA	CLEARING LIGHT SWELL
77											END OF LINE EQUIPMENT
77											STILL LOGGING TO NEXT LINE
78	084-069-0930	44-26-43	57-52-57	0	5	0	002(1038)	002(2030)	NA	NA	
78											FIXES 78-91 NOT LOGGED
78											SHIP POSITIONING ITS SELF
92	084-069-1018	44-27-52	57-50-04	76	5	44	002(1811)	003(0333)	NA	NA	CLEAR LIGHT SEA
92											MOVING FROM LINE 2 TO LINE
92											3
94	084-069-1025	44-28-16	57-49-33	74	5	44	002(1906)	003(0504)	NA	NA	CLEAR WITH LIGHT SWELL
94											VOICE FIX ON TAPES
94											

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96	084-069-1032	44-28-40	57-49-02	70	5	40	002(2013)	003(0658)	NA	NA	CLEAR WITH LIGHT SWELL
96											CHANGING HUNTEC STYLIS
96											SS FISH ALT 68M
98	084-069-1039	44-29-02	57-49-08	70	5	290	002(2109)	003(0791)	NA	NA	CLEAR WITH LIGHT SWELL
98											I KM FROM START OF LINE
98											
102	084-069-1052	44-29-40	57-49-49	45	5	313	002(2298)	003(1041)	NA	NA	CLEAR WITH LIGHT SWELL
102											COMING ON LINE
102											
104	084-069-1059	44-30-11	57-50-40	40	5	300	002(2318)	003(1140)	NA	NA	LIGHT SWELL
104											BRUTIV AWAY 1104 AST
104											
106	084-069-1107	44-30-33	57-50-54	37	4	131	002(2490	003(1265)	NA	NA	LIGHT SWELL
106											AITGUN TURNED OFF FOR
106											BRUTIV'S LAUNCHING
108	084-069-1115	44-30-10	57-50-59	39	4	223	002(2576)	003(1376)	NA	NA	CLEAR WITH LIGHT SWELL
108											AIRGUN TRIGGER UNIT CHANGE
108											BRUTIV FLYING UP SIDE DOWN
110	084-069-1123	44-30-10	57-50-59	39	4	223	002(2576)	003(1376)	NA	NA	START LINE @1117 AST
110											SHIP'S REDUCED TO 3 KNOTS
110											TO RETRIEVE BRUTIV

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118	084-069-1156	44-28-31	57-52-48	39	5	242	002(3063)	003(1913)	NA	NA	CLEAR LIGHT SWELL
118											BRUTIV ONBOARD AT 1132 AST
118											SS FISH ALT 22 METRES
120	084-069-1203	44-28-09	57-53-19	39	5	203	002(3139)	003(1990)	NA	NA	CLEAR WITH LIGHT SWELL
120											END OF SEISMIC TAPE-2
120											START OF SEISMIC TAPE-3
122	084-069-1209	44-27-49	57-53-53	39	5	240	3(0122)	4(2068)	NA	NA	LIGHT SWELL
122											
122											
124	084-069-1216	44-27-29	57-54-25	39	5	213	3(0284)	4(0080)	NA	NA	LIGHT SWELL
124											AT 1211 AST START SS TAPE
124											# 4
126	084-069-1223	44-27-10	57-54-57	39	5	255	3(0492)	4(0297)	NA	NA	LIGHT SWELL
126											
126											
128	084-069-1230	44-25-51	55-55-30	39	5	220	3(0657)	4(0465)	NA	NA	LIGHT SWELL
128											
128											
130	084-069-1236	44-26-33	57-56-03	40	6	238	3(0797)	4(0595)	1(0000)	1(000)	LIGHT SWELL
130											BRUTIV IN WATER
130											

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132	084-069-1241	44-26-10	57-56-34	42	6	235	3(0912)	4(0706)	1(0128)	1(021)	LIGHT SWELL
132											800 FT. CABLE ON BRUTIV
132											
134	084-069-1247	44-25-49	57-57-07	43	5	242	3(1034)	4(0819)	1(0256)	1(042)	LIGHT SWELL
134											
134											
136	084-069-1254	44-25-29	57-57-42	45	5	233	3(1166)	4(0936)	1(0384)	1(063)	LIGHT SWELL
136											CHANGING SOUNDING PAPER
136											
138	084-069-1300	44-25-07	57-58-16	47	5	228	3(1280)	4(1040)	1(0512)	1(084)	LIGHT SWELL
138											CHANGING SOUNDING PAPER
138											
140	084-069-1306	44-24-45	57-58-49	51	6	230	3(1390)	4(1143)	1(0640)	1(105)	LIGHT SWELL
140											
140											
142	084-069-1312	44-24-23	57-59-22	53	6	230	3(1493)	4(1240)	1(0768)	1(126)	LIGHT SWELL
142											LOWER SS FISH SLIGTLY
142											
144	084-069-1318	44-24-02	57-59-56	56	5	230	3(1595)	4(1326)	1(0896)	1(147)	LIGHT SWELL
144											
144											

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146	084-069-1324	44-23-41	58-00-31	60	5	226	3(1692)	4(1412)	1(1024)	1(168)	LIGHT SWELL
146											
146											
148	084-069-1330	44-23-20	58-01-05	61	6	228	3(1786)	4(1496)	1(1152)	1(195)	LIGHT SWELL
148											BRUTIV FRAMES #199-200
148											ARE BLANK
150	084-069-1336	44-22-59	58-01-39	62	5	230	3(1879)	4(1576)	1(1280)	1(217)	WIND INCREASING TO 25 KTS
150											
150											
152	084-069-1342	44-22-37	58-02-13	60	5	223	3(1964)	4(1652)	1(1408)	1(240)	SEA STATE APPOX 1
152											
152											
154	084-069-1348	44-22-15	58-02-45	62	5	227	3(2053)	4(1729)	1(1536)	1(266)	SEA STATE APPOX 1
154											
154											
156	084-069-1354	44-21-53	58-03-18	63	6	227	3(2135)	4(1801)	1(1664)	1(281)	SEA STATE APPOX 1
156											
156											
158	084-069-1400	44-21-31	58-03-51	64	6	224	3(2217)	4(1877)	1(1800)	1(387)	SEA STATE APPOX 1
158											AT FIX 157 END LINE#2 A/C
158											TO LINE #3

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160	084-069-1407	44-21-22	58-03-35	67	4	26	3(2319)	4(1956)	NA	1(424)	SEA STATE APPOX 1
160											
160											
162	084-069-1415	44-21-22	58-02-53	72	4	96	3(2420)	4(2046)	NA	1(560)	SEA STATE APPOX 1
162											
162											
164	084-069-1422	44-21-19	58-02-08	76	4	95	3(2521)	5(0137)	NA	NA	SEA STATE APPOX 1
164											END SS TAPE #4 START #5
164											
166	084-069-1443	44-20-57	58-01-48	79	3	176	3(2663)	5(0420)	NA	NA	SEA STATE APPOX 1
166											END OF BRUTIV RUN,BRUTIV
166											ON DECK.
168	084-069-1442	44-20-39	58-02-06	77	4	222	3(21767)	5(0613)	NA	NA	SEA STATE APPOX 1
168											
168											
170	084-069-1450	44-21-11	58-01-48	78	4	12	3 (2861)	5 (0762)	NA	NA	SEA STATE INCREASED TO 2
170											WIND INCREASE TO 35 KTS.
170											
172	084-069-1458	44-21-22	58-01-26	83	5	96	3(2952)	5	NA	NA	SEA STATE 2
172											
172											

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174	084-069-1506	44-21-19	58-00-18	100	5	93	3(3057)	5(1061)	NA	NA	SEA STATE 2
174											
174											
176	084-069-1503	44-21-19	57-59-56	135	4	43	3(3130)	5(1170)	NA	NA	SEA STATE 2
176											
176											
178	084-069-1518	44-21-43	57-59-26	152	4	43	3(3184)	5(1243)	NA	NA	SEA STATE INCREASED TO 3
178											
178											
180	084-069-1526	44-24-10	58-08-17	120	6	289	4(0068)	5(1351)	NA	NA	SEA STATE 3
180											END SEISMIC TAPE 3
180											START TAPE 4
182	084-069-1531	44-22-19	58-00-49	85	6	274	4(0230)	5(1434)	NA	NA	SEA STATE 3
182											
182											
184	084-069-1538	44-22-37	58-01-08	75	6	297	4(0390)	5(1520)	NA	NA	SEA STATE 3
184											
184											
186	084-069-1543	44-22-49	58-01-50	65	6	294	4(0529)	5(1594)	NA	NA	SEA STATE 3
186											
186											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
188	084-069-1548	44-22-58	58-02-31	52	6	285	004(0644)	005(1660)	NA	NA	SEA STATE 4
188											EQUIPMENT WORKING WELL
188											
190	084-069-1553	44-23-06	58-03-14	51	6	284	004(1748)	005(1723)	NA	NA	APPROX 4
190											
190											
192	084-069-1559	44-23-16	58-03-57	47	6	281	004(0876)	005(1797)	NA	NA	APPOX 4
192											ALT OF SIDESCAN FISH-16M
192											
194	084-069-1605	44-23-25	58-04-41	52	6	280	004(0993)	005(1826)	NA	NA	APPOX 4
194											EQUIPMENT WORKING WELL
194											
196	084-069-1611	44-23-33	58-05-25	53	6	288	004(1097)	005(1934)	NA	NA	APPOX 4
196											ALT OF SIDESCAN FISH 17.5M
196											
198	084-069-1617	44-23-43	58-06-08	56	6	288	004(1205)	005(1998)	NA	NA	SEA STATE APPOX 4
198											ALT SIDESCAN FISH 23.4M
198											
200	084-069-1622	44-23-51	58-06-51	55	6	283	004(1306)	006(0036)	NA	NA	SEA STATE APPOX 4
200											START OF HUNTEC/SIDESCAN
200											TAPE 6

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
202	084-069-1628	44-24-00	58-07-34	55	6	291	004(1403)	006(0235)	NA	NA	SEA STATE APPOX 4
202											ALT OF SIDESCAN FISH 22M
202											ALL EQUIPMENT WORKING WELL
204	084-069-1634	44-24-10	58-08-17	58	6	284	004(1502)	006(0374)	NA	NA	SEA STATE APPOX 4
204											ALT OF SIDESCAN FISH 23M
204											ALL EQUIPMENT WORKING WELL
206	084-069-1640	44-24-19	58-09-01	58	6	285	004(1596)	006(0509)	NA	NA	SEA STATE APPOX 4
206											ALT OF SIDESCAN FISH 24
206											ALL GEAR WORKING WELL
208	084-069-1646	44-24-29	58-09-45	60	6	286	004(1686)	006(0338)	NA	NA	SEA STATE 4
208											ALT SIDESCAN FISH 25M
208											ALL GEAR WORKING WELL
210	084-069-1651	44-24-36	58-18-28	57	6	284	004(1773)	006(0747)	NA	NA	SEA STATE APPOX 4
210											ALT OF SIDESCAN FISH 25M
210											ALL GEAR WORKING WELL
212	084-069-1657	44-24-47	58-11-11	61	5	286	004(1853)	006(0840)	NA	NA	SEA STATE APPOX 4
212											ALT OF SIDESCAN FISH 27M
212											ALL GEAR WORKING WELL
214	084-069-1703	44-24-55	58-11-55	61	6	288	004(1936)	006(0953)	NA	NA	SEA STATE APPOX 4
214											ALT OF SIDESCAN FISH 27M
214											ALL GEAR WORKING WELL

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG. (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
216	084-069-1708	44-25-04	58-12-38	64	6	286	004(2020)	006(1049)	NA	NA	SEA STATE 4
216											ALT OF SIDESCAN FISH 29
216											ALL GEAR WORKING WELL
218	084-069-1714	44-25-13	58-13-22	63	6	298	004(2097)	006(1114)	NA	NA	SEA STATE APPOX 4
218											ALT OF SIDESCAN FISH 29
218											ALL GEAR WORKING WELL
220	084-069-1720	44-25-24	58-14-05	64	6	285	004(2175)	006(1235)	NA	NA	SEA STATE APPOX 4
220											ALT OF SIDESCAN FISH 31
220											ALL GEAR WORKING WELL
222	084-069-1725	44-25-31	58-14-49	65	6	285	004(2247)	006(1317)	NA	NA	SEA STATE APPOX 4
222											ALT OF SIDE SCAN FISH 31M
222											ALL GEAR WORKING WELL
224	084-069-1731	44-25-41	58-15-32	63	6	284	004(2319)	006(1399)	NA	NA	SEA STATE APPOX 4
224											ALT OF SIDESCAN FISH 32
224											ALL GEAR WORKING WELL
226	084-069-1736	44-25-50	58-16-15	63	6	285	004(2391)	006(1474)	NA	NA	SEA STATE APPOX 4
226											ALT OF SIDESCAN FISH 28M
226											ALL GEAR WORKING WELL
228	084-069-1742	44-26-01	58-16-58	64	6	280	004(2462)	006(1555)	NA	NA	SEA STATE 4
228											ALT OF SIDESCAN FISH 23M
228											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
230	084-069-1747	44-26-09	58-17-42	65	6	276	004(2530)	006(1628)	NA	NA	SEA STATE APPOX 4
230											ALT OF SIDESCAN FISH 27M
230											ALL GEAR WORKING WELL
232	084-069-1753	44-26-20	58-18-24	67	5	313	004(2603)	006(1705)	NA	NA	SEA STATE APPOX 4
232											ALT OF SIDESCAN FISH 22.5M
232											ALL GEAR WORKING WELL
234	084-069-1759	44-26-32	58-19-06	66	8	278	004(2674)	006(1780)	NA	NA	SEA STATE APPOX 4
234											ALT OF HUNTEC FISH 35M
234											ON LINE #3
236	084-069-1803	44-26-39	58-19-51	67	6	298	004(2723)	006(1825)	NA	NA	SEA STATE APPOX 4
236											ALT OF SIDESCAN FISH 30M
236											ALL EQUIPMENT WORKING
238	084-069-1808	44-26-54	58-20-32	67	7	297	004(2778)	006(1884)	NA	NA	SEA STATE 4
238											ALT OF SIDESCAN FISH 31M
238											
240	084-069-1812	44-27-07	58-21-14	66	7	282	004(2835)	006(1942)	NA	NA	SEA STATE APPOX 4
240											COMING BACK ON LINE
240											
242	084-069-1818	44-27-02	58-22-02	70	8	242	004(2894)	006(2005)	NA	NA	SEA STATE APPOX 4
242											DATA POOR DUE TO HIGH
242											SPEED AND WAVE CONDITIONS

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
244	084-069-1823	44-27-11	58-22-46	69	6	92	004(2954)	006(2063)	NA	NA	SEA STATE 4
244											END OF SIDESCAN/HUNTEC
244											TAPE #6
246	084-069-1828	44-27-18	58-23-30	70	6	288	004(3010)	007(0070)	NA	NA	SEA STATE 4
246											START HUN/SS TAPE #7
246											END AIRGUN TAPE #4
248	084-069-1834	44-27-26	58-24-14	69	7	282	NA	007(0213)	NA	NA	SEA STATE 4
248											AIRGUN NOT TAPED
248											
250	084-069-1839	44-27-33	58-24-58	67	7	284	NA	007(0343)	NA	NA	SEA STATE 4
250											AIRGUN NOT BEING TAPED
250											
252	084-069-1849	44-27-50	58-26-31	64	7	288	NA	007(0578)	NA	NA	SEA STATE 4
252											END OF LINE 3, GEAR
252											BEING RECOVERED, WEATHER
256	084-071-0738	44-28-31	57-52-50	37	6	118	NA	007(0950)	NA	NA	SEA STATE 2 WHITE CAPS
256											AIRGUNN COOLING LINE
256											FROZEN,HUNTEC NOT IN WATER
258	084-071-0743	44-28-22	57-52-07	55	6	111	NA	007(1030)	NA	NA	SEA STATE 2 WHITE CAPS
258											RUNNING DOWN LINE 4
258											HUNTEC,AIRGUN NOT WORKING

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
260	084-071-0749	44-28-13	57-51-24	65	6	111	NA	007(1130)	NA	NA	SEA STATE 2 WHITE CAPS
260											HUNTEC,AIRGUN NOT WORKING
260											LOWERING SIDESCAN FISH
262	084-071-0755	44-28-04	57-50-40	75	5	107	005(0000)	007(1220)	NA	NA	SEA STATE 2 WHITE CAPS
262											START OF AIRGUN TAPE-5
262											AIRGUN WORKING
264	084-071-0801	44-27-55	57-49-56	75	6	113	005(0204)	007(1306)	NA	NA	SEA STATE 2 WHITE CAPS
264											SIDESCAN NOT RECORDING
264											DIGITAL DATA
266	084-071-0807	44-27-46	57-49-13	75	6	102	005(0365)	NA	NA	NA	SEA STATE 2 WHITE CAPS
266											SIDESCAN NOT RECRDING DATA
266											HUNTEC AWAY 0820 AST
272	084-071-0825	44-27-20	57-47-02	80	5	102	005(0800)	007(1380)	NA	NA	SEA STATE 2 WHITE CAPS
272											AIRGUN NOT FIRING DUE TO
272											FROZEN HIGH PRESSURE HOSE
274	084-071-0831	44-27-11	57-46-19	80	5	102	005(0935)	007(1460)	NA	NA	SEA STATE 2 WHITE CAPS
274											MEGARIPPLES ON SIDESCAN
274											AIR LINE BEING DE-ICED
276	084-071-0837	44-27-02	57-45-35	80	6	105	005(1045)	007(1540)	NA	NA	SEA STATE 2 WHITE CAPS
276											180 METRES OF SIDESCAN
276											CABLE OUT

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
278	084-071-0843	44-26-53	57-44-52	80	6	105	005(1155)	007(1610)	NA	NA	SEA STATE 2 WHITE CAPS
278											AIR LINE STILL FROZEN
278											
280	084-071-0850	44-26-45	57-44-08	80	6	109	005(1263)	007(1668)	NA	NA	SEA STATE 2 WHITE CAPS
280											AIR LINE STILL FROZEN
280											
282	084-071-0854	44-26-36	57-43-24	80	5	109	005(1370)	007(1762)	NA	NA	SEA STATE 2 WHITE CAPS
282											ALT OF SIDESCAN FISH 14.8M
282											
284	084-171-0901	44-26-27	57-42-41	79	5	98	005(1480)	007(1835)	NA	NA	SEA STATE 2 WHITE CAPS
284											END OF LINE 4,AIRGUN DOWN
284											AIRGUN TAPE OFF
286	084-071-0915	44-26-21	57-42-41	80	4	352	005(1550)	007(2000)	NA	NA	SEA STATE 2 WHITE CAPS
286											COMING AROUND TO LINE 5
286											SIDESCAN BOTTOMED LOW SLOW
288	084-071-0930	44-26-49	57-42-14	77	5	29	005(1584)	008(0222)	NA	NA	AIR GUN RUNNING
288											START SIDESCAN TAPE-8,
288											START LINE 5 AT 0928
290	084-071-0937	44-27-18	57-41-54	75	5	24	005(1696)	008(0400)	NA	NA	SEA STATE 2 WHITE CAPS
290											ARGO AND ANNOTATOR,ARGO 1
290											FIX AHEAD LEFT UNTIL EOL

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
292	084-071-0946	44-28-03	57-41-25	73	5	26	005(1860)	008(0649)	NA	NA	SEA STATE 2 WHITE CAPS
292											ON LINE 5, ALL GEAR
292											RUNNING WELL
294	084-071-0954	44-28-32	57-41-05	70	5	25	005(1960)	008(0786)	NA	NA	SEA STATE 2 WHITE CAPS
294											SKY CLEARING. ALL GEAR
294											WORKING WELL
296	084-071-1001	44-29-01	57-40-46	69	5	26	005(2062)	008(0899)	NA	NA	SEA STATE 2 WHITE CAPS
296											ALL GEAR RUNNING WELL
296											
298	084-071-1008	44-29-30	57-40-27	67	5	26	005(2160)	008(1022)	NA	NA	SEA STATE 2 WHITE CAPS
298											STILL ON LINE #5
298											
300	084-071-1015	44-30-00	57-40-07	65	4	20	005(2260)	008(1145)	NA	NA	SEA STATE 2 WHITE CAPS
300											ALL GEAR RUNNING WELL
300											
302	084-071-1023	44-30-30	57-39-50	62	4	35	005(2360)	008(1257)	NA	NA	SEA STATE 2 WHITE CAPS
302											
302											
304	084-171-1030	44-30-58	57-39-28	66	4	26	005(2455)	008(1366)	NA	NA	SEA STATE 2 WHITE CAPS
304											
304											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
306	084-071-1037	44-31-27	57-39-09	66	4	27	005(2550)	008(1469)	NA	NA	SEA STATE 2 WHITE CAPS
306											
306											
308	084-071-1045	44-31-56	57-38-48	65	4	35	005(1250)	008(1575)	NA	NA	SEA STATE 2 WHITE CAPS
308											AD WEIGHT ON EEL,DROP
308											FILTER TO 100-500HZ
310	084-071-1053	44-32-26	57-38-29	65	4	926	005(2740)	008(1670)	NA	NA	SEA STATE 2 WHITE CAPS
310											ARGO IS ONE FIX AHEAD OF
310											ANOTATOR
312	084-071-1100	44-32-55	57-38-10	65	4	27	005(2828)	008(1765)	NA	NA	SEA STATE 2 WHITE CAPS
312											
312											
314	084-071-1108	44-33-24	57-37-50	65	4	27	005(2915)	008(1858)	NA	NA	SEA STATE 2 WHITE CAPS
314											
314											
316	084-071-1116	44-33-53	57-37-31	65	4	26	005(3000)	008(1947)	NA	NA	SEA STATE 2 WHITE CAPS
316											CHANGE STYLUS ON AIR GUN
316											GRAPHIC RECORDER
318	084-071-1123	44-34-22	57-37-11	66	5	25	005(3090)	008(2035)	NA	NA	SEA STATE 2 WHITE CAPS
318											
318											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
319	084-071-1128	44-34-37	57-37-02	60	4	25	005(3149)	009(0030)	NA	NA	SEA STATE 2 WHITE CAPS
319											E.O.L.#5
319											CHANGE SS TAPE TO #9
322	084-071-1135	44-35-56	57-37-36	58	6	247	006(0000)	009(0525)	NA	NA	SEA STATE 2 WHITE CAPS
322											STARTING LINE #6
322											CHANGE SEISMIC TAPE TO 6
324	084-071-1141	44-35-14	57-38-13	57	6	78		009(0344)	NA	NA	SEA STATE 2 WHITE CAPS
324											OTHER DATA NOT IN LOG BOOK
324											NOTE,AT FIX 321 ARGO SYNC.
326	084-071-1147	44-35-32	57-38-51	57	5	298	006(0345)	009(0653)	NA	NA	SEA STATE 2 WHITE CAPS
326											HEADING UP EASTERN SHOAL
326											
328	084-071-1153	44-35-49	57-40-07	52	5	306	006(0500)	009(0653)	NA	NA	SEA STATE 2 WHITE CAPS
328											HUNTEC HAULED IN FROM 31M
328											TO 20M
330	084-071-1159	44-36-07	57-40-07	52	6	297	006(0640)	009(0768)	NA	NA	SEA STATE 2 WHITE CAPS
330											SEISMIC RECORD NOISY MAY
330											BE RUBBING ON SS CABLE
332	084-071-1205	44-36-24	57-40-45	56	5	302	006(0771)	009(0877)	NA	NA	SEA STATE 2 WHITE CAPS
332											
332											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
334	084-071-1211	44-36-42	57-41-23	52	6	301	006(0903)	009(0985)	NA	NA	SEA STATE 2 WHITE CAPS
334											MOVED NSRF EEL TO STDB
334											SIDE TO CLEAR SS CABLE
336	084-071-1217	44-37-00	57-42-01	37	5	304	006(1012)	009(1077)	NA	NA	SEA STATE 2 WHITE CAPS
336											BOTTOM RISING RAPIDLY
336											
338	084-071-1222	44-37-18	57-42-39	35	6	299	006(1121)	009(1169)	NA	NA	SEA STATE 2 WHITE CAPS
338											
338											
340	084-071-1229	44-37-36	57-43-17	35	6	304	006(1236)	009(1266)	NA	NA	SEA STATE 2 WHITE CAPS
340											
340											
342	084-071-1234	44-37-54	57-43-55	34	6	307	006(1334)	009(1346)	NA	NA	SEA STATE 2 WHITE CAPS
342											
342											
344	084-071-1240	44-38-11	57-44-33	35	6	303	006(1438)	009(1422)	NA	NA	SEA STATE 2 WHITE CAPS
344											
344											
346	084-071-1246	44-38-29	57-45-11	35	5	302	006(1544)	009(1515)	NA	NA	SEA STATE 2 WHITE CAPS
346											
346											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
348	084-071-1252	44-38-47	57-45-49	36	5	303	006(1647)	009(1598)	NA	NA	SEA STATE 2 WHITE CAPS
348											
348											
350	084-071-1259	44-39-05	57-46-29	36	5	304	006(1748)	009(1681)	NA	NA	SEA STATE 2 WHITE CAPS
350											
350											
352	084-071-1306	44-39-22	57-47-05	36	5	303	006(1853)	009(1767)	NA	NA	SEA STATE 2 WHITE CAPS
352											
352											
354	084-071-1313	44-39-40	57-47-43	37	4	298	006(1949)	009(1847)	NA	NA	SEA STATE 2 WHITE CAPS
354											BRUTIV GOING OVER THE SIDE
354											
356	084-071-1321	44-39-57	57-48-21	37	4	305	006(2069)	009(1948)	NA	NA	SEA STATE 2 WHITE CAPS
356											BRUTIV HAVING TROUBLE,
356											COMMING BACK ABORD.
358	084-071-1330	44-40-15	57-48-59	38	4	280	006(2203)	010(0000)	NA	NA	SEA STATE 2 WHITE CAPS
358											CHANGING SS TAPE TO 10
358											
360	084-071-1339	44-40-32	57-49-38	42	4	303	006(2321)	010(0247)	NA	NA	SEA STATE 2 WHITE CAPS
360											
360											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
362	084-071-1348	44-40-51	57-50-15	41	4	304	006(2434)	010(0477)	NA	NA	SEA STATE 2 WHITE CAPS
362											CHANGED CONNECTOR ON
362											BRUTIV BACK IN WATER
364	084-071-1356	44-41-09	57-50-33	42	5	304	006(2540)	010(0685)	2(0885)	2(048)	SEA STATE 2 WHITE CAPS
364											BRUTIV IS NOW ON BOTTOM
364											CAMERAS ON
366	084-071-1404	44-41-26	57-51-31	42	4	307	006(2630)	010(0850)	2(1253)	2(094)	SEA STATE 2 WHITE CAPS
366											BRUTIV LAY BACK IS 600 FT.
366											
368	084-071-1411	44-41-43	57-52-08	45	5	303	006(2718)	010(1004)	2(1415)	2(140)	SEA STATE 2 WHITE CAPS
368											CHANGE GUN FIRING RATE TO
368											3 SEC. FROM 2 SEC.
370	084-071-1419	44-41-59	57-52-48	45	5	298	006(2806)	010(1154)	2(1575)	2(187)	SEA STATE 2 WHITE CAPS
370											
370											
372	084-071-1426	44-42-14	57-53-29	59	5	299	006(2899)	010(1296)	2(1722)	2(230)	SEA STATE 2 WHITE CAPS
372											
372											
374	084-071-1433	44-42-29	57-54-09	47	5	292	006(2971)	010(1418)	2(1865)	2(274)	SEA STATE 2 WHITE CAPS
374											1435 AST END SEISMIC TAPE
374											#6

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
376	084-071-1440	44-42-43	57-54-50	52	5	295	007(0083)	010(1544)	2(2006)	2(325)	SEA STATE 2 WHITE CAPS
376											START SEISMIC TAPE #7
376											
378	084-071-1448	44-42-59	57-55-30	52	5	295	007(0291)	010(1672)	2(2148)	2(384)	SEA STATE 2 WHITE CAPS
378											
378											
380	084-071-1455	44-43-14	57-56-10	58	4	299	007(0478)	010(1785)	2(2277)	2(437)	SEA STATE 2 WHITE CAPS
380											BRUTIV IS 8 FT. OF BOTTOM
380											
382	084-071-1503	44-43-28	57-56-51	62	5	296	007(0649)	010(1899)	2(2407)	2(512)	SEA STATE 2 WHITE CAPS
382											
382											
384	084-071-1510	44-43-43	57-57-31	60	4	299	007(0808)	010(2007)	2(2532)	2(581)	SEA STATE 2 WHITE CAPS
384											BRUTIV ABOUT TO COME OFF
384											BOTTOM
386	084-071-1520	44-43-58	57-58-11	61	3	296	007(1012)	010(2154)	2(2698)	2(581)	SEA STATE 2 WHITE CAPS
386											BRUTIV ON SURFACE NOW
386											
388	084-071-1530	44-44-13	57-58-52	63	4	299	007(1199)	010(2284)	2(2852)	NA	SEA STATE 2 WHITE CAPS
388											BRUTIV NOW ON DECK
388											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS,	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
390	084-071-1538	44-44-28	57-59-12	64	4	297	007(1363)	010(2408)	NA	NA	SEA STATE 2 WHITE CAPS
390											
390											
392	084-071-1546	44-44-43	58-00-12	66	5	298	007(1489)	010(2504)	NA	NA	SEA STATE 2 WHITE CAPS
392											END LINE #6
392											
394	084-071-1553	44-44-24	57-00-54	66	5	250	007(1598)	010(2584)	NA	NA	SEA STATE 2 WHITE CAPS
394											MISSED FIX 394
394											
396	084-071-1600	44-44-03	58-01-29	66	5	232	007(1706)	010(2665)	NA	NA	SEA STATE 2 WHITE CAPS
396											
396											START LINE #7
398	084-071-1606	44-43-36	58-01-54	65	5	220	007(1799)	010(2730)	NA	NA	SEA STATE 2 WHITE CAPS
398											
398											
400	084-071-1611	44-43-11	58-02-23	65	5	220	007(1881)	010(2789)	NA	NA	SEA STATE 2 WHITE CAPS
400											
400											
402	084-071-1617	44-42-47	58-02-53	65	5	221	007(1965)	010(2840)	NA	NA	SEA STATE 2 WHITE CAPS
402											
402											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
404	084-071-1623	44-42-22	58-03-22	66	5	225	007(2046)	010(2886)	NA	NA	SEA STATE 2 WHITE CAPS
404											
404											
406	084-071-1629	44-41-57	58-03-51	66	5	221	007(2131)	010(2929)	NA	NA	SEA STATE 2 WHITE CAPS
406											
406											
408	084-071-1634	44-41-33	58-04-21	69	5	214	007(2212)	010(2964)	NA	NA	SEA STATE 2 WHITE CAPS
408											
408											
410	084-071-1640	44-41-08	58-04-50	70	6	210	007(2282)	011(0000)	NA	NA	SEA STATE 2 WHITE CAPS
410											
410											
412	084-071-1646	44-40-42	58-05-18	69	5	216	007(2355)	011(0175)	NA	NA	SEA STATE 2 WHITE CAPS
412											
412											
414	084-071-1651	44-40-17	58-05-48	72	5	220	007(2439)	011(0344)	NA	NA	SEA STATE 2 WHITE CAPS
414											
414											
416	084-071-1658	44-38-53	58-06-17	70	5	220	007(2506)	011(0488)	NA	NA	SEA STATE 2 WHITE CAPS
416											
416											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
418	084-071-1703	44-39-29	58-06-47	70	5	219	007(2581)	011(0647)	NA	NA	SEA STATE 2 WHITE CAPS
418											ALT OF SIDESCAN FISH 32M
418											ALL EQUIPMENT WORKING WELL
420	084-071-1709	44-39-04	58-07-16	72	5	221	007(2646)	011(0766)	NA	NA	SEA STATE 2 WHITE CAPS
420											ALT OF SIDESCAN FISH 30M
420											
422	084-071-1714	44-38-39	58-07-46	70	5	220	007(2712)	011(0885)	NA	NA	SEA STATE 2 WHITE CAPS
422											ALT OF SIDESCAN FISH 26M
422											
424	084-071-1720	44-38-14	58-08-14	68	5	222	007(2781)	011(1004)	NA	NA	SEA STATE 2 WHITE CAPS
424											ALT OF SIDESCAN FISH 68M
424											
426	084-071-1726	44-37-49	58-08-44	72	5	219	007(2848)	011(1113)	NA	NA	SEA STATE 2 WHITE CAPS
426											ALT OF SIDE SCAN FISH 25M
426											ALL EQUIPMENT WORKING WELL
428	084-071-1731	44-37-24	58-09-13	68	5	223	007(2910)	011(1219)	NA	NA	SEA STATE 2 WHITE CAPS
428											ALT OF SIDESCAN FISH 24M
428											
430	084-071-1737	44-36-59	58-09-42	67	5	219	007(2977)	011(1332)	NA	NA	SEA STATE 2 WHITE CAPS
430											ALT OF SIDESCAN FISH 24M
430											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
432	084-071-1743	44-36-35	58-10-12	66	5	212	007(3035)	011(1425)	NA	NA	CHANGE AIRGUN
432											ALT OF SIDESCAN FISH 24
432											END OF AIRGUN TAPE-7
434	084-071-1748	44-36-09	58-10-39	67	6	216	CHANGING	071(1523)	NA	NA	SEA STATE 2 WHITE CAPS
434											END OF AIRGUN TAPE-7
434											
436	084-071-1755	44-35-45	58-11-10	69	6	218	008(0154)	011(1620)	NA	NA	SEA STATE 2 WHITE CAPS
436											START OF AIRGUN TAPE 8
436											ALT OF SIDESCAN FISH 26M
438	084-071-1800	44-35-20	58-11-39	66	6	219	008(0315)	011(1707)	NA	NA	SEA STATE 2 WHITE CAPS
438											ALT OF SIDESCAN FISH 24.2M
438											
440	084-071-1805	44-34-55	58-12-07	63	6	219	008(0465)	011(1795)	NA	NA	SEA STATE-2
440											ALT OF SIDESCAN FISH 20M
440											
442	084-071-1811	44-34-30	58-12-37	65	6	214	008(0596)	011(1882)	NA	NA	SEA STATE 2 WHITE CAPS
442											ALT OF SIDESCAN FISH 25.7M
442											ALL EQUIPMENT WORKING WELL
444	084-071-1816	44-34-05	58-13-05	64	6	221	008(0728)	011(1964)	NA	NA	SEA STATE 2 WHITE CAPS
444											ALT OF SIDESCAN FISH 23M
444											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
448	084-071-1827	44-33-16	58-14-05	58	6	230	008(0964)	011(2121)	NA	NA	SEA STATE 2 WHITE CAPS
448											ALT OF SIDESCAN FISH 18.5M
448											AIRGUN DOWN 1831 AST
450	084-071-1833	44-32-51	58-14-33	57	6	222	008(1075)	011(2205)	NA	NA	SEA STATE 2 WHITE CAPS
450											ALT OF SIDESCAN FISH 20.5
450											AIRGUN DOWN
452	084-071-1839	44-32-26	58-15-02	60	5	214	008(1195)	011(2284)	NA	NA	SEA STATE 2 WHITE CAPS
452											ALT OF SIDESCAN FISH 19M
452											AIRGUN DOWN
456	084-071-1851	44-31-37	58-16-01	29	6	212	008(1402)	011(2438)	NA	NA	SEA STATE 2 WHITE CAPS
456											ALT OF SIDESCAN FISH 29M
456											AIRGUN EEL BEING CHANGED
458	084-071-1857	44-31-12	58-17-30	68	5	210	008(1518)	011(2520)	NA	NA	SEA STATE 2 WHITE CAPS
458											NEW EEL OUT,AIRGUN DOWN
458											AGAIN AT 1900 AST
460	084-171-1903	44-30-48	58-17-01	66	6	218	008(OFF)	011(2597)	NA	NA	SEA STATE 2 WHITE CAPS
460											CHANGED AIRGUN,EEL AND
460											TRIGGERING UNIT
462	084-071-1910	44-30-22	58-17-28	69	5	221	008(1615)	011(2680)	NA	NA	SEA STATE 2 WHITE CAPS
462											ALT OF SIDESCAN FISH 23M
462											BRUTIV AWAY DEPLOYMENT #3

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
464	084-071-1916	44-29-57	58-17-56	70	5	231	008(1660)	011(2755)	NA	NA	SEA STATE 2 WHITE CAPS
464											ALT OF SIDESCAN FISH 29M
464											EEL MOVED STARBOARD-PORT
466	084-071-1922	44-29-32	56-18-26	70	5	213	008(1757)	011(2815)	NA	NA	BRUTIV, #1-329,#2-211 .
466											ALT OF SIDESCAN FISH 28M
466											FIRST 25 STILLS BLANK
468	084-071-1929	44-29-09	58-18-56	65	5	222	008(1856)	011(2827)	003(0340)	003-065	SEA STATE 2 WHITE CAPS
468											ALT OF SIDESCAN FISH 28M
468											BRUTIV PERFORMING WELL
470	084-071-1936	44-28-45	58-19-29	65	5	227	008(1945)	011(2923)	003(0508)	003-093	SEA STATE 2 WHITE CAPS
470											ALT OF SIDESCAN FISH 25M
470											ALL EQUIPMENT WORKING WELL
472	084-071-1941	44-28-22	58-19-59	64	5	222	008(2035)	011(2961)	003(0673)	003-093	SEA STATE 2 WHITE CAPS
472											ALT SIDESCAN FISH 64M
472											BRUTIV WORKING WELL
474	084-071-1947	44-27-57	58-20-29	67	5	222	008(2125)	012(0090)	003(0850)	003-155	SEA STATE 2 WHITE CAPS
474											START HUNTEC TAPE 12
474											ALT OF SIDESCAN FISH 28M
478	084-071-1959	44-27-06	58-21-26	66	5	209	008(2295)	012(0420)	NA	NA	SEA STATE 2 WHITE CAPS
478											ALT SIDESCAN FISH 26M
478											BRUTIV WORKING WELL

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
479	084-071-2001	44-26-51	58-21-37	62	5	213	DOWN	MISSED	003(1174)	003-221	SEA STATE 2 WHITE CAPS
479											PASSING LOUISBURG SITE
479											
480	084-071-2005	44-26-38	58-21-52	63	5	213	008(2375)	012(0551)	NA	003-236	SEA STATE 2 WHITE CAPS
480											ALT OF SIDESCAN FISH 27M
480											
482	084-071-2012	44-26-11	58-22-15	64	5	213	008(2455)	012(0682)	NA	NA	SEA STATE 2 WHITE CAPS
482											AIRGUN DOWN,TAPE STOPPED
482											ALT OF SIDESCAN FISH 25M
484	084-071-2018	44-25-43	58-22-40	64	5	219	DOWN	012(0814)	NA	NA	SEA STATE 2 WHITE CAPS
484											ALT OF SIDESCAN FISH 26M
484											AIRGUN LINES FROZEN
486	084-071-2024	44-25-23	58-23-02	64	5	216	DOWN	012(0922)	NA	003-329	SEA STATE 2 WHITE CAPS
486											ALT OF SIDESCAN FISH 24M
486											2023 BRUTIV STROBE RATE 10
488	084-071-2030	44-24-51	58-23-34	64	5	215	DOWN	012(1024)	003(1784)	003-363	SEA STATE 2 WHITE CAPS
488											EOL 7,ALT OF SS FISH 24M
488											2028 STROBE BACK TO 13SEC
492	084-071-2345	44-13-23	58-48-25	67	5	252	008(2804)	013(0136)	NA	NA	SEA STATE 2 WHITE CAPS
492											ALT OF SIDESCAN FISH 34
492											ALLEQUIPMENT RUNNING WELL

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
494	084-071-2351	44-13-07	58-49-05	67	6	226	008(2884)	013(0334)	NA	NA	SEA STATE 2 WHITE CAPS
494											ALT OF SIDESCAN FISH 34M
494											
496	084-071-2359	44-12-49	58-49-41	67	5	240	008(2968)	013(0525)	NA	NA	SEA STATE 2 WHITE CAPS
496											ALT OF SIDESCAN FISH 24M
496											
498	084-072-0007	44-12-29	58-50-18	64	5	253	008(3062)	013(0716)	NA	NA	SEA STATE 2 WHITE CAPS
498											ALT OF SIDESCAN FISH 20M
498											END OF AIRGUN TAPE-8
500	084-072-0014	44-12-15	58-50-59	62	5	237	009(0053)	013(0867)	NA	NA	SEA STATE 2 WHITE CAPS
500											ALT OF SIDESCAN FISH 18M
500											START OF AIRGUN TAPE-9
502	084-072-0021	44-11-57	58-51-36	61	5	240	009(0280)	013(1027)	NA	NA	SEA STATE 2 WHITE CAPS
502											SIDESCAN FISH ALT 25M
502											
504	084-072-0029	44-11-40	58-52-15	63	5	240	009)0478)	013(1172)	NA	NA	SEA STATE 2 WHITE CAPS
504											ALT OF SIDESCAN FISH 26M
504											ALL GEAR RUNNING WELL
506	084-072-0037	44-11-22	58-52-56	70	5	234	009(0678)	013(1330)	NA	NA	SEA STATE 2 WHITE CAPS
506											ALT OF SIDESCAN FISH 32M
506											FIX OVER HOME OIL SITE

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FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
508	084-072-0045	44-11-01	58-53-30	80	5	230	009(0850)	013(1465)	NA	NA	SEA STATE 2 WHITE CAPS
508											ALT OF SIDESCAN FISH 21M
508											
510	084-072-0053	44-10-40	58-54-05	84	5	233	009(1014)	013(1598)	NA	NA	SEA STATE 2 WHITE CAPS
510											FISH ALT 20
510											
512	084-072-0100	44-10-20	58-54-40	87	5	230	009(1162)	013(1720)	NA	NA	SEA STATE 2 WHITE CAPS
512											ALT OF SIDESCAN FISH 26M
512											
514	084-072-0107	44-09-59	58-55-14	88	5	232	009(0107)	013(1831)	NA	NA	SEA STATE 2 WHITE CAPS
514											ALT OF SIDESCAN FISH 14M
514											ALL GEAR WORKING WELL
516	084-072-0115	44-09-39	58-55-50	89	5	232	009(1425)	013(1941)	NA	NA	SEA STATE 2 WHITE CAPS
516											ALT OF SIDESCAN FISH 14M
516											
518	084-072-0122	44-09-19	58-56-26	92	5	231	009(1552)	013(2052)	NA	NA	SEA STATE 2 WHITE CAPS
518											FISH ALT 14 METRES
518											
520	084-072-0129	44-08-58	58-57-00	105	5	233	009(1672)	013(2156)	NA	NA	SEA STATE 2 WHITE CAPS
520											
520											ALT OF SIDESCAN FISH 28M

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
521	084-072-0133	44-08-58	58-57-17	110	0	0	009(1792)	013(0000)	NA	NA	SEA STATE 2 WHITE CAPS
521											END OF LINE
521											ALL GEAR RECOVERED
524	084-073-0058	43-41-44	60-15-52	63	4	65	009(1752)	NA	NA	NA	SOL,LINE // TO SABLE IS.
524											RUNNING W-E TO END AT RB-1
524											ONLY AIRGUN WORKING
526	084-073-0106	43-41-57	60-15-11	63	4	70	009(1880)	NA	NA	NA	SEA STATE-LIGHT SWELL
526											110M/SEC DELAY ON RECORD
526											FILTERS 180-700
528	084-073-0113	43-42-07	60-14-30	63	5	65	009(1989)	NA	NA	NA	SEA STATE-LIGHT SWELL
528											ONLY AIRGUN BEING USED
528											
530	084-073-0120	43-42-17	60-13-48	61	4	70	009(2095)	NA	NA	NA	SEA STATE-LIGHT SWELL
530											
530											
532	084-073-0128	43-42-29	60-13-07	60	5	72	009(2196)	NA	NA	NA	SEA STATE-LIGHT SWELL
532											
532											
534	084-073-0135	43-42-41	60-12-25	58	4	68	009(2295)	NA	NA	NA	SEA STATE-LIGHT SWELL
534											GRADUALLY SHOALING
534											GOOD AIRGUN RECORD

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS,	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
536	084-073-0142	43-42-53	60-11-44	56	5	70	009(2390)	NA	NA	NA	SEA STATE-LIGHT SWELL
536											
536											
538	084-073-0149	43-43-05	60-11-02	55	4	69	009(2484)	NA	NA	NA	SEA STATE-LIGHT SWELL
538											
538											
540	084-073-0156	43-43-16	60-10-23	54	5	69	009(2577)	NA	NA	NA	SEA STATE-LIGHT SWELL
540											ONLY AIRGUN BEING USED
540											
542	084-073-0203	43-43-29	60-09-39	52	5	68	009(2665)	NA	NA	NA	SEA STATE-LIGHT SWELL
542											
542											
544	084-073-0211	43-43-41	60-08-58	52	5	70	009(2752)	NA	NA	NA	SEA STATE-LIGHT SWELL
544											
544											
546	084-073-0218	43-43-54	60-08-17	55	4	63	009(2840)	NA	NA	NA	SEA STATE-LIGHT SWELL
546											
546											
548	084-073-0225	43-44-03	60-07-43	52	4	71	009(2925)	NA	NA	NA	SEA STATE-LIGHT SWELL
548											
548											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
550	084-073-0233	43-44-17	60-06-54	51	4	69	009(3013)	NA	NA	NA	SEA STATE-LIGHT SWELL
550											
550											
552	084-073-0240	43-44-29	60-06-13	56	4	68	009(3095)	NA	NA	NA	SEA STATE-LIGHT SWELL
552											
552											
554	084-073-0227	43-44-41	60-05-31	56	5	67	009(3179)	NA	NA	NA	SEA STATE-LIGHT SWELL
554											END OF AIRGUN TAPE-9
554											ONLY AIRGUN BEING USED
556	084-073-0254	43-44-53	60-04-50	55	4	67	010(0185)	NA	NA	NA	SEA STATE-LIGHT SWELL
556											START OF AIRGUN TAPE-10
556											
558	084-073-0302	43-45-05	60-04-08	55	4	68	010(0390)	NA	NA	NA	SEA STATE-LIGHT SWELL
558											AIRGUN FIRING AT 1400 PSI
558											
560	084-073-0309	43-45-17	60-03-27	55	4	68	010(0573)	NA	NA	NA	SEA STATE-LIGHT SWELL
560											AIRGUN DOWN, AIRLINE
560											FROZEN NEAR GUN
562	084-073-0317			55	4	67	010(0752)	NA	NA	NA	SEA STATE-LIGHT SWELL
562											NO DATA
562											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
578	084-073-0416	43-47-12	59-56-56	0	0	0	DOWN	013(1500)	NA	NA	SEA STATE-LIGHT SWELL
578											SIDESCAN DEPLOYED
578											AIRGUN DOWN
580	084-073-0423	43-47-17	59-56-35	0	4	68	DOWN	013(2620)	NA	NA	SEA STATE-LIGHT SWELL
580											STILL ON LINE
580											AIRGUN NOT WORKING
582	084-073-0430	43-47-29	59-55-54	55	4	67	DOWN	013(2710)	NA	NA	SEA STATE-LIGHT SWELL
582											HUNTEC AND SIDESCAN UP
582											AIRGUN DOWN
584	084-073-0438	43-47-41	59-55-12	55	4	68	DOWN	013(2800)	NA	NA	SEA STATE-LIGHT SWELL
584											AIRGUN NOT WORKING
584											
586	084-073-0445	43-47-53	59-54-33	55	4	56	DOWN	013(2885)	NA	NA	SEA STATE-LIGHT SWELL
586											HUNTEC SHOWS AT LEAST
586											3 REFLECTORS
588	084-073-0453	43-48-05	59-53-52	55	4	87	DOWN	013(2953)	NA	NA	SEA STATE-LIGHT SWELL
588											ALT OF SIDESCAN FISH 18M
588											END OF SS/HUNTEC TAPE-13
590	084-073-0500	43-48-15	59-53-11	55	4	74	010(0865)	014(0155),	NA	NA	SEA STATE-LIGHT SWELL
590											AIRGUN O-RING SEALED
590											START HUNTEC TAPE-14

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
592	084-073-0508	43-48-28	59-52-30	54	4	71	010(1032)	014(0360)	NA	NA	SEA STATE-LIGHT SWELL
592											ALT OF SIDECAN FISH 15.6M
592											
594	084-073-0515	43-48-39	59-51-48	54	4	69	010(1168)	014(0552)	NA	NA	SEA STATE-LIGHT SWELL
594											ALT OF SIDESCAN FISH 10M
594											
596	084-073-0523	43-48-51	59-51-07	0	4	66	010(1307)	014(0729)	NA	NA	SEA STATE-LIGHT SWELL
596											ALL EQUIPMENT WORKING WELL
596											ALT OF SIDESCAN FISH 15M
598	084-073-0530	43-49-04	59-50-25	0	4	69	010(1436)	014(0891)	NA	NA	SEA STATE-LIGHT SWELL
598											ALT OF SIDESCAN FISH 14M
598											
600	084-073-0538	43-49-17	59-49-45	0	4	66	010(1560)	014(1048)	NA	NA	SEA STATE-LIGHT SWELL
600											ALT OF SIDESCAN FISH 23M
600											
602	084-073-0545	43-49-28	59-49-05	0	5	71	010(1648)	014(1189)	NA	NA	SEA STATE-LIGHT SWELL
602											ALT OF SIDESCAN FISH 21M
602											
604	084-073-0553	43-49-41	59-48-26	48	4	59	010(1799)	014(1331)	NA	NA	SEA STATE-LIGHT SWELL
604											ALT OF SIDESCAN FISH 21M
604											ALL EQUIPMENT WORKING WELL

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
606	084-073-0600	43-49-56	59-47-45	0	4	75	010(1930)	014(1460)	NA	NA	SEA STATE-LIGHT SWELL
606											ALT OF SIDESCAN FISH 20M
606											
608	084-073-0607	43-50-03	59-47-03	47	4	71	010(2013)	014(1576)	NA	NA	SEA STATE-LIGHT SWELL
608											ALT OF SIDESCAN FISH 20M
608											ALL EQUIPMENT WORKING WELL
610	084-073-0614	43-50-15	59-46-21	47	4	60	010(2114)	014(1696)	NA	NA	SEA STATE-LIGHT SWELL
610											ALT OF SIDESCAN FISH 18M
610											
612	084-073-0621	43-50-26	59-45-40	0	4	72	010(2213)	014(1805)	NA	NA	SEA STATE-LIGHT SWELL
612											ALT OF SIDESCAN FISH 17M
612											
614	084-073-0628	43-50-38	59-44-58	45	4	67	010(2313)	014(1909)	NA	NA	SEA STATE-LIGHT SWELL
614											ALT OF SIDESCAN FISH 17M
614											ALL EQUIPMENT WORKING WELL
616	084-073-0639	43-50-56	59-43-56	44	4	67	010(2457)	014(2082)	NA	NA	SEA STATE-LIGHT SWELL
616											ALT OF SIDESCAN FISH 16M
616											
618	084-073-0646	43-51-08	59-43-15	43	4	67	010(2549)	014(2182)	NA	NA	SEA STATE-LIGHT SWELL
618											ALT OF SIDESCAN FISH 21M
618											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
620	084-073-0654	43-51-19	59-42-33	43	4	71	010(2638)	014(2282)	NA	NA	SEA STATE-LIGHT SWELL
620											ALT OF SIDESCAN FISH 23M
620											
622	084-073-0701	43-51-32	59-41-52	43	4	65	010(2729)	014(2381)	NA	NA	SEA STATE-LIGHT SWELL
622											ALT OF SIDESCAN FISH 20M
622											
624	084-073-0708	43-51-46	59-41-13	42	4	65	010(2817)	014(2478)	NA	NA	SEA STATE-LIGHT SWELL
624											ALT OF SIDESCAN FISH 20M
624											
626	084-073-0715	43-51-57	59-40-31	42	4	68	010(2899)	014(2570)	NA	NA	SEA STATE-LIGHT SWELL
626											ALT OF SIDESCAN FISH 20M
626											
628	084-073-0723	43-52-08	59-39-49	42	4	68	010(2981)	014(2654)	NA	NA	SEA STATE-LIGHT SWELL
628											ALT OF SIDESCAN FISH 20M
628											ALL EQUIPMENT WORKING WELL
630	084-073-0730	43-52-18	59-39-07	42	4	70	010(2062)	014(2734)	NA	NA	SEA STATE-LIGHT SWELL
630											ALT OF SIDESCAN FISH 20M
630											
632	084-073-0737	43-52-29	59-38-25	43	4	61	010(3143)	014(2811)	NA	NA	SEA STATE-LIGHT SWELL
632											ALT OF SIDESCAN FISH 20M
632											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
634	084-073-0745	43-52-43	59-37-45	42	4	63	010(3167)	014(2883)	NA	NA	SEA STATE-LIGHT SWELL
634											ALT OF SIDESCAN FISH 20M
634											
636	084-073-0752	43-52-55	59-37-03	42	4	71	010(END)	014(END)	NA	NA	SEA STATE-LIGHT SWELL
636											ALT OF SIDESCAN FISH 20M
636											PUTTING ON NEW TAPES
638	084-073-0800	43-53-08	59-36-23	42	4	65	011(0201)	015(0028)	NA	NA	SEA STATE-LIGHT SWELL
638											ALT OF SIDESCAN FISH 20M
638											ALL EQUIPMENT WORKING WELL
640	084-073-0807	43-53-17	59-35-40	43	4	64	011(0280)	015(????)	NA	NA	SEA STATE-LIGHT SWELL
640											ALT OF SIDESCAN FISH 20M
640											
642	084-073-0815	43-43-30	59-34-59	42	4	67	011(0360)	015(0457)	NA	NA	SEA STATE-LIGHT SWELL
642											ALT OF SIDESCAN FISH 20M
642											CHANGED FROM 140-500 HZ
650	084-073-0846	43-54-18	59-32-13	44	4	68	DOWN	015(1154)	NA	NA	SEA STATE-LIGHT SWELL
650											AIRGUN DOWN, FIXES 644-648
650											MISSED
652	084-073-0854	43-54-30	59-31-31	43	4	68	DOEN	015(1303)	NA	NA	SEA STATE-LIGHT SWELL
652											ALT OF SIDESCAN FISH 22M
652											AIRGUN STILL DOWN

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
656	084-073-0911	43-54-54	59-30-08	42	4	68	DOWN	015(1582)	NA	NA	SEA STATE-LIGHT SWELL
656											ALT OF SIDESCAN FISH 22M
656											FIX 654 MISSED
658	084-073-0919	43-55-05	59-29-26	45	4	69	DOWN	015(1715)	NA	NA	SEA STATE-LIGHT SWELL
658											ALT OF SIDESCAN FISH 22M
658											AIRGUN DOWN
660	084-073-0927	43-55-18	59-26-45	44	4	70	DOWN	015(1844)	NA	NA	SEA STATE-LIGHT SWELL
660											ALT OF SIDESCAN FISH 44M
660											AIRGUN DOWN
662	084-073-0935	43-55-29	59-28-03	44	4	70	DOWN	015(1972)	NA	NA	SEA STATE-LIGHT SWELL
662											EOL AT SITE RB-1
662											ALT OF SIDESCAN FISH 21M
666	084-073-1207	43-54-56	59-27-59	46	5	201	1127	011(1172)		0	SEA STATE-LIGHT SWELL
666											HUNTEC DOWN-RETERMINATING
666											start ss tape #16
668	084-073-1213	43-54-31	59-28-20	47	5	215	011(1276)	016(0225)	NA	NA	SEA STATE-LIGHT SWELL
668											HUNTEC DOWN-RETERMINATING
668											
670	084-073-1219	43-54-04	59-28-44	48	5	206	011(1389)	016(0391)	NA	NA	SEA STATE-LIGHT SWELL
670											HUNTEC DOWN-RETERMINATING
670											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
672	084-073-1225	43-53-35	59-29-05	48	5	207	011(1496)	016(0547)	NA	NA	SEA STATE-LIGHT SWELL
672											HUNTEC DOWN-RETERMINATING
672											
674	084-073-1231	43-53-06	59-29-25	49	5	205	011(1598)	016(0690)	NA	NA	SEA STATE-LIGHT SWELL
674											HUNTEC DOWN-RETERMINATING
674											
676	084-073-1237	43-52-37	59-29-43	50	5	204	011(1696)	016(0825)	NA	NA	SEA STATE-LIGHT SWELL
676											HUNTEC DOWN-RETERMINATING
676											
678	084-073-1243	43-52-07	59-30-01	52	5	203	011(1795)	016(0927)	NA	NA	SEA STATE-LIGHT SWELL
678											HUNTEC DOWN-RETERMINATING
678											
680	084-073-1250	43-51-37	59-30-19	53	5	203	011(1892)	016(1083)	NA	NA	SEA STATE-LIGHT SWELL
680											HUNTEC DOWN-RETERMINATING
680											
682	084-073-1256	43-51-08	59-30-37	54	5	203	011(1989)	016(1205)	NA	NA	SEA STATE-LIGHT SWELL
682											HUNTEC DOWN-RETERMINATING
682											
684	084-073-1303	43-50-38	59-30-54	56	4	202	011(2082)	016(1322)	NA	NA	SEA STATE-LIGHT SWELL
684											HUNTEC DOWN-RETERMINATING
684											airgun on 3 sec firing

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
686	084-073-1309	43-50-08	59-31-12	56	5	204	011(2175)	016(1437)	NA	NA	SEA STATE-LIGHT SWELL
686											HUNTEC DOWN-RETERMINATING
686											airgun back on 2 sec fire
688	084-073-1315	43-49-39	59-31-30	58	5	204	011(2259)	016(1542)	NA	NA	SEA STATE-LIGHT SWELL
688											HUNTEC DOWN-RETERMINATING
688											air line froze gun off
690	084-073-1322	43-49-09	59-31-48	60	5	203	011(2346)	-16(1648)	NA	NA	SEA STATE-LIGHT SWELL
690											HUNTEC DOWN-RETERMINATING
690											
692	084-073-1328	43-48-49	59-32-06	62	5	203	011(2428)	016(1746)	NA	NA	SEA STATE-LIGHT SWELL
692											HUNTEC DOWN-RETERMINATING
692											working on frozen airline
694	084-973-1334	43-48-09	59-32-23	63	5	204	011(2510)	016(1844)	NA	NA	SEA STATE-LIGHT SWELL
694											HUNTEC DOWN-RETERMINATING
694											
696	084-073-1341	43-47-40	59-32-41	65	5	200	011(2591)	016(1939)	NA	NA	SEA STATE-LIGHT SWELL
696											HUNTEC DOWN-RETERMINATING
696											airgun tape stop fix 697
698	084-073-1347	43-47-10	59-32-59	67	5	204	stopped	016(2032)	NA	NA	SEA STATE-LIGHT SWELL
698											HUNTEC DOWN-RETERMINATING
698											moisture tank installed

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
700	084-073-1354	43-46-40	59-33-17	69	4	203	stopped	016(2129)	NA	NA	SEA STATE-LIGHT SWELL
700											HUNTEC DOWN-RETERMINATING
700											airgun back in service
702	084-073-1400	43-46-11	59-33-35	70	5	204	011(2721)	016(2281)	NA	NA	SEA STATE-LIGHT SWELL
702											HUNTEC DOWN-RETERMINATING
702											
704	084-073-1408	43-45-41	59-33-53	73	5	203	011(2797)	016(2306)	NA	NA	SEA STATE-LIGHT SWELL
704											HUNTEC DOWN-RETERMINATING
704											fix 705 eol #101
706	084-073-1414	43-45-21	59-34-20	73	4	269	011(2880)	016(2398)	NA	NA	SEA STATE-LIGHT SWELL
706											HUNTEC DOWN-RETERMINATING
706											s.o.l.#102
708	084-073-1422	43-45-50	59-34-22	72	5	19	011(2970)	016(2501)	NA	NA	SEA STATE-LIGHT SWELL
708											HUNTEC DOWN-RETERMINATING
708											scratch brutiv crane t.u.
711	084-073-1430	43-46-18	59-34-02	72	4	13	011(3060)	016(2601)	NA	NA	SEA STATE LIGHT SWELL
711											ON RECORDS THIS FIX IS 710
711											
712	084-073-1438	43-46-49	59-34-04	72	5	357	012(0064)	016(2696)	NA	NA	SEA STATE CLEAR AND CALM
712											START OF AIRGUN TAPE-12
712											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
714	084-073-1446	43-47-22	59-34-04	65	5	359	012(0304)	016(2788)	NA	NA	SEA STATE-1
714											HUNTEC WORKING
714											
716	084-073-1454	43-47-54	59-34-05	63	5	359	012(0516)	016(2871)	NA	NA	SEA STATE-1
716											AIRGUN DOWN, END OF
716											SS/HUNTEC TAPE-16
718	084-073-1502	43-48-27	59-34-06	61	5	358	012(0714)	017(0055)	NA	NA	SEA STATE-1
718											AIRGUN WORKING,START
718											HUNTEC TAPE-17,SS FISH 19M
720	084-073-1510	43-48-59	59-34-07	58	5	359	012(0893)	016(0297)	NA	NA	SEASTATE-1
720											ALT OF SIDESCAN FISH 24M
720											
722	084-073-1518	43-49-31	59-34-09	56	5	359	012(1052)	016(0506)	NA	NA	SEA STATE-1
722											ALT OF SIDESCAN FISH 21M
722											ALL EQUIPMENT WORKING WELL
724	084-073-1526	43-50-04	59-34-09	53	5	357	012(1205)	017(0742)	NA	NA	SEA STATE-1
724											ALT OF SIDESCAN FISH 20M
724											CLOSE TO EAGLE SITE,EOL102
726	084-073-1534	43-50-25	59-34-37	52	4	38	012(1348)	017(0869)	004(0058)	004-016	SEA STATE-1
726											BRUTIV AWAY Dive # 4
726											ALT OF SIDESCAN FISH 15M

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU,(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
728	084-073-1543	43-50-46	59-35-11	50	4	311	012(1493)	017(1044)	004(0900)	004-?	SEASTATE-1
728											ALT OF SIDESCAN FISH 20M
728											ALL EQUIPMENT WORKING WELL
730	084-073-1551	43-51-07	59-35-45	48	4	308	012(1633)	017(1208)	004(1373)	004-051	SEA STATE-1
730											ALT OF SIDESCAN FISH 18M
730											
732	084-073-1559	43-51-28	59-36-19	47	4	312	012(1766)	017(1359)	004(1879)	004-094	SEA STATE-1
732											ALT OF SIDESCAN FISH 17
732											BRUTIV APPOX 6FT ABOVE BED
734	084-073-1607	43-51-49	59-36-53	45	4	309	012(1887)	017(1497)	004(2314)	004-134	SEA STATE-1
734											ALT OF SIDESCAN FISH 16M
734											
738	084-073-1623	43-52-31	59-38-07	43	4	313	012(2124)	017(1763)	004(3107)	004-218	SEA STATE-1
738											ALT OF SIDESCAN FISH 26M
738											
740	084-073-1631	43-52-51	59-38-36	41	4	311	012(2238)	017(1888)	004(3468)	004-260	SEA STATE-1
740											ALT OF SIDESCAN FISH 24M
740											
742	084-073-1639	43-53-13	59-39-09	40	4	306	012(2348)	017(2018)	004(3840)	004-300	SEA STATE-1
742											BRUTIV ON WAY UP
742											ALT OF SIDESCAN FISH 22M

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
744	084-073-1649	43-53-34	59-39-43	40	3	312	012(2476)	017(2155)	004(4210)	004-300	LOST BRUTIV, RECOVERING GEAR, THEN PICKING BRUTIV UP,ALT OF SS FISH 17M
744											
744											
746	084-073-1734	43-54-03	59-40-29	37	6	318	012(2540)	017(2235)	NA	NA	SEA STATE CLEAR AND CALM ALL GEAR UP AND RUNNING AT 1732 AST, ALT OF SS 15M
746											
746											
748	084-073-1741	43-54-24	59-41-03	36	5	310	012(2620)	017(2324)	NA	NA	SEA STATE CLEAR AND CALM ALT OF SIDESCAN TAPE-13M
748											
748											
750	084-073-1747	43-54-45	59-41-37	35	5	310	012(2700)	017(2410)	NA	NA	SEA STATE CLEAR AND CALM ALT OF SIDESCAN FISH 21M
750											
750											
752	073-073-1753	43-55-07	59-42-11	34	5	318	012(2775)	017(2490)	NA	NA	SEA STATE CLEAR AND CALM ALT OF SIDESCAN FISH 19M
752											
752											
754	084-073-1759	43-55-25	59-42-47	32	5	314	012(2848)	017(2567)	NA	NA	SEA STATE CLEAR AND CALM ALT OF SIDESCAN FISH 16M END OF LINE RB 103
754											
754											
757	084-073-1808	43-55-12	59-43-30	31	6	237	012(2950)	017(2676)	NA	NA	SEA STATE CLEAR AND CALM ALT OF SIDESCAN FISH 15.2M START OF LINE RB-104
757											
757											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
758	084-073-1810	43-55-07	59-43-51	30	6	249	012(2978)	017(2708)	NA	NA	SEA STATE CLEAR AND CALM
758											ALT OF SIDESCAN FISH 15M
758											CROSSING EAST RIDGE
760	084-073-1816	43-54-58	59-44-34	30	6	255	012(3032)	017(2772)	NA	NA	SEA STATE CLEAR AND CALM
760											ALT OF SIDESCAN FISH 15.4M
760											AIRGUN DOWN AT 1809 AST
762	084-073-1821	43-54-48	59-45-16	34	5	255	012(3075)	017(2834)	NA	NA	SEA STATE CLEAR AND CALM
762											ALT OF SIDESCAN FISH 17M
762											COMING UP TO A RIDGE
764	084-073-1827	43-54-38	59-45-59	30	6	250	012(3140)	017(2885)	NA	NA	SEA STATE CLEAR AND CALM
764											ALT OF SIDESCAN FISH 15M
764											ON A RIDGE,END AIR TAPE-12
766	084-073-1832	43-54-26	59-46-40	27	6	247	013BEGIN)	017(2920)	NA	NA	SEA STATE CLEAR AND CALM
766											START AIRGUN TAPE-13
766											END HUNTEC TAPE-17
770	084-073-1843	43-54-06	59-48-05	30	6	253	013(0033)	018(0219)	NA	NA	SEA STATE CLEAR AND CALM
770											ALT OF SIDESCAN FISH 15M
770											START OF HUNTEC TAPE-18
772	084-073-1848	43-53-55	59-48-47	35	6	253	013(0180)	18(0370)	NA	NA	SEA STATE CLEAR AND CALM
772											ALT OF SIDESCAN FISH 20.7M
772											ALL EQUIPMENT WORKING WELL

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU,(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
774	084-073-1854	43-53-44	59-49-29	36	6	249	013(0330)	018(0508)	NA	NA	SEA STATE CLEAR AND CALM
774											ALT OF SIDESCAN FISH 21.5M
774											
775	084-073-1856	43-53-39	59-49-50	37	6	249	013(0405)	018(0570)	NA	NA	SEA STATE CLEAR AND CALM
775											ALT OF SIDESCAN FISH 20M
775											END OF LINE RB-104
777	084-073-1902	43-53-19	59-50-03	40	4	138	013(0552)	018(0712)	NA	NA	SEA STATE CLEAR AND CALM
777											ALT OF SIDESCAN FISH 25.6M
777											START OF LINE RB-105
778	084-073-1906	43-53-07	59-49-47	35	5	134	013(0632)	018(0791)	NA	NA	SEA STATE CLEAR AND CALM
778											ALT OF SIDESCAN FISH 20.8M
778											ALL EQUIPMENT WORKING WELL
780	084-073-1912	43-52-45	59-49-15	36	5	137	013(0790)	018(0932)	NA	NA	SEA STATE CLEAR AND CALM
780											ALT OF SIDESCAN FISH 16.6M
780											
782	084-073-1919	43-52-20	59-48-47	37	5	143	013(0935)	018(1065)	NA	NA	SEA STATE CLEAR AND CALM
782											ALT OF SIDESCAN FISH 23M
782											
784	084-073-1925	43-51-54	59-48-20	40	5	148	013(1058)	018(1190)	NA	NA	SEA STATE CLEAR AND CALM
784											ALT OF SIDESCAN FISH 25.6M
784											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
786	084-073-1932	43-51-29	59-47-52	40	5	142	013(DOWN)	018(1305)	NA	NA	SEA STATE CLEAR AND CALM
786											ALT OF SIDESCAN FISH 26M
786											AIRGUN STILL DOWN
788	084-073-1938	43-51-04	59-47-25	43	5	141	013(1130)	017(1430)	NA	NA	SEA STATE CLEAR AND CALM
788											ALT OF SIDESCAN FISH 28.5M
788											AIRGUN WORKING AGAIN
790	084-073-1945	43-50-37	59-46-59	45	5	146	013(1235)	018(1545)	NA	NA	SEA STATE-1
790											ALT OF SIDESCAN FISH 17.2M
790											
792	084-073-1952	43-50-11	59-46-33	46	5	144	013(1358)	018(1660)	NA	NA	SEA STATE-1
792											ALT OF SIDESCAN FISH 18.2M
792											
794	084-073-2001	43-49-45	59-46-07	48	4	145	013(1511)	018(1796)	NA	NA	SEA STATE-1
794											ALT OF SIDESCAN FISH 14.6M
794											BRUTIV AWAY
796	084-073-2010	43-49-18	59-45-42	48	4	143	013(1658)	018(1933)	NA	NA	SEA STATE-1
796											ALT OF SIDESCAN FISH 16M
796											BRUTIV IN WATER AT 2003AST
798	084-073-2019	43-48-52	59-45-16	50	4	146	013(1802)	018(2062)	NA	NA	SEA STATE-1
798											ALT OF SIDESCAN FISH 16.6M
798											STILL ON LINE RB-105

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
800	084-073-2028	43-48-26	59-44-49	51	4	146	013(1942)	018(2200)	005(1942)	005-094	SEA STATE-1
800											ALT OF SIDESCAN FISH 19.1
800											
802	084-073-2036	43-48-00	59-44-23	53	4	146	013(2070)	018(2319)	NA	NA	SEA STATE-1
802											ALT OF SIDESCAN FISH 21.4
802											
804	084-073-2045	43-47-34	59-43-56	55	4	144	013(2193)	018(2430)	NA	NA	SEA STATE-1
804											ALT OF SIDESCAN FISH 24M
804											ALL EQUIPMENT WORKING WELL
806	084-073-2054	43-47-07	59-43-30	55	4	144	013(2310)	018(2548)	NA	NA	SEA STATE-1
806											ALT OF SIDESCAN FISH 25.2M
806											
808	084-073-2102	43-46-41	59-43-04	57	4	147	013(2420)	018(2650)	NA	NA	SEA STATE-1
808											ALT OF SIDESCAN FISH 27M
808											
810	084-073-2105	43-46-28	59-42-51	0	0	0	013(2545)	018(2702)	NA	NA	SEA STATE-1
810											MOST PARAMETERS MISSED?
810											BRUTIV-2116/ SHELL BEDS
812	084-073-2119	43-45-49	59-42-12	65	4	144	013(2611)	018(2855)	NA	NA	SEA STATE-1
812											ALT OF SIDESCAN FISH 35M
812											AC FROM 144 TO 220

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
815	084-073-2129	43-45-22	59-42-49	67	6	253	013(2735)	018(2965)	NA	NA	SEA STATE-1
815											ALT OF SIDESCAN FISH 26M
815											ALL EQUIPMENT WORKING WELL
817	084-073-2135	43-45-04	59-43-24	70	6	217	013(2804)	018(3028)	NA	NA	SEA STATE-1
817											ALT OF SIDESCAN FISH 26M
817											
819	084-073-2141	43-44-37	59-43-49	73	5	213	013(2875)	019(0036)	NA	NA	SEA STATE-1
819											ALT OF SIDESCAN FISH 14.7
819											START HUNTEC TAPE-19
823	084-073-2155	43-44-44	59-44-40	76	4	204	013(3035)	019(0427)	NA	NA	SEA STATE-1
823											BRING BRUTIV IN
823											
824	084-073-2159	43-44-53	59-44-53	77	4	225	013(3080)	019(0531)	NA	NA	SEA STATE-1
824											ALT OF SIDESCAN FISH 20.8
824											BRUTIV BACK ABOARD
826	084-073-2207	43-43-10	59-45-26	78	4	211	014(0170	019(0718)	NA	NA	SEA STATE-1
826											
826											
828	084-073-2213	43-42-41	59-45-42	80	5	211	014(0350)	019(0859)	NA	NA	SEA STATE-1
828											ALT OF SIDESCAN FISH 19.7
828											STILL ON CORRECTED LINE105

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
830	084-073-2219	43-42-15	59-46-09	84	6	223	014(0492)	019(0980)	NA	NA	SEA STATE-1
830											ALT OF SIDESCAN FISH 20.4M
830											
832	084-073-2225	43-41-52	59-46-34	84	5	209	014(0640)	019(1101)	NA	NA	SEA STATE-1
832											ALT OF SIDESCAN FISH 23.2
832											
834	084-073-2231	43-41-24	59-46-59	85	5	227	014(0780)	019(1216)	NA	NA	SEA STATE-1
834											ALT OF SIDESCAN FISH 16.2M
834											
835	084-073-2234	43-41-11	59-47-11	86	5	214	014(0845)	019(1270)	NA	NA	SEA STATE-1
835											ALT OF SIDESCAN FISH 18M
835											EOL#5, START LINE 106
837	084-073-2240	43-40-53	59-47-48	89	5	241	014(0965)	019(1570)	NA	NA	SEA STATE-1
837											ALT OF SIDESCAN FISH 20M
837											ALL EQUIPMENT WORKING WELL
838	084-073-2243	43-40-47	59-48-09	89	5	242	014(1022)	019(1423)	NA	NA	SEA STATE-1
838											ALT OF SIDESCAN FISH 23M
838											
840	084-073-2249	43-40-34	59-48-48	90	5	240	14(1140)	19(1525)	NA	NA	SEA STATE-1
840											ALT OF SIDESCAN FISH 27M
840											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
842	084-073-2254	43-40-20	59-49-28	90	6	248	14(1234)	19(1606)	NA	NA	SEA STATE-1
842											ALT OF SIDESCAN FISH 30M
842											
844	084-073-2258	43-40-09	59-50-10	91	6	246	014(1327)	019(1690)	NA	NA	SEA STATE-1
844											STRONG ALONG SHELF CURRENT
844											OF 1.5KTS.
846	084-073-2304	43-39-55	59-50-50	94	6	246	014(1420)	019(1770)	NA	NA	SEA STATE-1
846											E.O.L.106 S.O.L.107
846											OVERSHOT LINE
848	084-073-2309	43-40-05	59-51-16	92	5	2	014(1508)	019(1850)	NA	NA	SEA STATE-1
848											NOW ON LINE #107
848											
850	084-073-2315	43-40-35	59-51-29	88	6	341	014(1610)	019(1943)	NA	NA	SEA STATE-1
850											NICE CLEAR WEATHER ALL OK
850											
852	084-073-2320	43-41-05	59-51-45	0	0	0	014(1697)	019(2021)	NA	NA	SEA STATE-1
852											MISSED FIX,NO INFO ON LOG
852											SHEET
854	084-073-2326	43-41-35	59-52-02	80	6	338	014(1785)	019(2100)	NA	NA	SEA STATE-1
854											
854											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
856	084-073-2332	43-42-05	59-52-19	75	6	337	014(???)	019(???)	NA	NA	SEA STATE-1
856											BOTH TAPE COUNTERS NOT
856											IN LOG SHEETS
858	084-073-2338	43-42-34	59-52-37	70	6	336	014(1958)	019(2253)	NA	NA	SEA STATE-1
858											
858											
860	084-073-2344	43-43-04	59-52-54	65	5	333	014(2045)	019(2335)	NA	NA	SEA STATE-1
860											AIR GUN STOPPED FIRING
860											STILL HAVING ICE PROBLEMS
862	084-073-2350	43-43-34	59-53-12	60	5	337	014(2132)	019(2420)	NA	NA	SEA STATE-1
862											NO LEAK IN GUN,FIRING
862											PULSE GOOD BUT NO GO YET
864	084-073-2357	43-44-04	59-53-29	56	5	335	014(2219)	019(2500)	NA	NA	SEA STATE-1
864											DECK LINES TO AIR GUN
864											FROZE BEING FIXED NOW
866	084-074-0003	43-44-33	59-53-46	57	5	336	014(2303)	020(0067)	NA	NA	SEA STATE-1
866											START SS TAPE #20
866											
868	084-074-0009	43-45-03	59-54-04	62	5	337	014(2383)	020(0249)	NA	NA	SEA STATE-1
868											AIR GUN NOW BACK ON LINE
868											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
870	084-074-0015	43-45-18	59-54-13	58	5	337	014(2464)	020(0412)	NA	NA	SEA STATE-1
870											
870											
872	084-074-0021	43-46-03	59-54-39	58	5	337	014(2539)	020(0565)	NA	NA	SEA STATE-1
872											
872											
874	084-074-0027	43-46-33	59-54-57	56	5	336	014(2624)	020(0723)	NA	NA	SEA STATE-1
874											
874											
876	084-074-0034	43-47-02	59-55-14	58	5	338	014(2706)	020(0872)	NA	NA	SEA STATE-1
876											
876											
878	084-074-0041	43-47-32	59-55-31	56	5	337	014(2788)	020(1014)	NA	NA	SEA STATE-1
878											
878											
880	084-074-0048	43-48-02	59-55-48	54	5	337	014(2868)	020(1147)	NA	NA	SEA STATE-1
880											
880											
882	084-074-0054	43-48-32	59-56-06	52	5	337	014(2946)	020(1278)	NA	NA	SEA STATE-1
882											
882											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
884	084-074-0101	43-49-02	59-56-23	48	5	336	014(3021)	020(1399)	NA	NA	SEA STATE-1
884											
884											
886	084-074-0108	43-49-32	59-56-41	45	5	336	014(3095)	020(1512)	NA	NA	SEA STATE-1
886											E.O.L.#107,A/C TO LINE #
886											108
888	084-074-0115	43-50-03	59-56-49	48	4	358	015(0126)	020(1628)	NA	NA	SEA STATE-1
888											NEW SEISMIC TAPE #15 START
888											ON LINE #108
890	084-074-0122	43-50-35	59-56-50	45	4	356	015(0337)	020(1747)	NA	NA	SEA STATE-1
890											
890											
892	084-074-0129	43-51-07	59-56-54	44	5	355	015(0527)	020(1860)	NA	NA	SEA STATE-1
892											
892											
894	084-074-0136	43-51-40	59-56-58	40	5	355	015(0702)	020(1970)	NA	NA	SEA STATE-1
894											NEARING E.O.L. #108
894											
896	084-074-0143	43-52-10	59-57-08	38	5	321	015(0852)	020(2070)	NA	NA	SEA STATE-1
896											TURNING SLOWLY ONTO LINE
896											#109

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
898	084-074-0151	43-52-04	59-57-51	0	5	0	015(0977)	020(2152)	NA	NA	SEA STATE-1
898											MISSED FIX MURF DRUNK
898											AGAIN? AIRGUN DOWN!!
900	084-074-0155	43-51-55	59-58-33	36	5	253	015(1101)	020(2235)	NA	NA	SEA STATE-1
900											AIR GUN BACK ON LINE
900											AGAIN
902	084-074-0201	43-51-46	59-59-17	35	5	256	015(1217)	020(3220)	NA	NA	MOVED NSRF EEL UP CLOSE
902											TO SHIP,RECORD APPEARS TO
902											BE IMPROVED IE.LESS NOISE
904	084-074-0207	43-51-41	60-00-07	42	5	262	015(1332)	020(2401)	NA	NA	SEA STATE-1
904											
904											
906	084-074-0213	43-51-37	60-00-44	36	5	266	015(1447)	020(2485)	NA	NA	SEA STATE-1
906											
906											
908	084-074-0220	43-51-32	60-01-29	43	6	261	015(1552)	020(2565)	NA	NA	SEA STATE-1
908											E.O.L.#109 A/C TO NEW LINE
908											
910	084-074-0225	43-51-29	60-02-13	37	5	255	015(1659)	021(0000)	NA	NA	SEA STATE-1
910											ON LINE #110
910											START SS TAPE #21

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
912	084-074-0234	43-50-58	60-02-23	42	4	185	015(1759)	021(0188)	NA	NA	SEA STATE-1
912											
912											
914	084-074-0242	43-50-47	60-02-30	45	4	208	015(1919)	021(0427)	NA	NA	SEA STATE-1
914											
914											
916	084-074-0250	43-49-57	60-02-42	45	4	206	015(2041)	021(0827)	NA	NA	SEA STATE-1
916											
916											
918	084-074-0258	43-49-26	60-02-54	51	4	201	015(2161)	021(0809)	NA	NA	SEA STATE-1
918											
918											
920	084-074-0306	43-48-55	60-03-06	55	4	195	015(2274)	021(0979)	NA	NA	SEA STATE-1
920											
920											
922	084-074-0314	43-48-24	60-03-19	56	4	196	015(2381)	021(1137)	NA	NA	SEA STATE-1
922											AIRGUN DOWN NO LEAK BUT
922	.										NOT FIRING
924	084-074-0322	43-47-53	60-03-32	58	4	195	015(2488)	021(1287)	NA	NA	SEA STATE-1
924											AIRGUN BACK ON LINE
924											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
926	084-074-0329	43-47-22	60-03-45	57	5	197	015(2580)	021(1416)	NA	NA	SEA STATE-1
926											
926											
928	084-074-0336	43-46-51	60-03-58	55	5	198	015(2669)	021(1535)	NA	NA	SEA STATE-1
928											
928											
930	084-074-0343	43-46-21	60-04-12	52	5	198	015(2755)	021(1655)	NA	NA	SEA STATE-1
930											
930											
932	084-074-0350	43-45-50	60-04-25	51	5	196	015(2842)	021(1766)	NA	NA	SEA STATE-1
932											
932											
934	084-074-0356	43-45-19	60-04-59	53	5	197	015(2925)	021(1874)	NA	NA	SEA STATE-1
934											E.O.L.#110 S.O.L.#111
934											
936	084-074-0403	43-44-48	60-04-52	57	5	193	015(3005)	021(1977)	NA	NA	SEA STATE-1
936											WINDS INCREASING TO 20 KTS
936											
938	084-074-0410	43-44-17	60-05-04	58	5	193	015(3084)	021(2079)	NA	NA	SEA STATE-1
938											
938											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU,(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
940	084-074-0417	43-43-45	60-05-13	59	5	191	016(0020)	021(2181)	NA	NA	SEA STATE-1
940											START SEISMIC TAPE# 16
940											
942	084-074-0424	43-43-13	60-05-21	60	5	189	016(0238)	021(2280)	NA	NA	SEA STATE-1
942											E.O.L.#111 S.O.L.#112
942											
944	084-074-0431	43-42-42	60-05-29	62	5	188	016(0438)	021(2382)	NA	NA	SEA STATE-1
944											NEW PAPER ON HUNTEC
944											INTERNAL PHONE E.P.C.
946	084-074-0438	43-42-09	60-05-34	63	4	186	016(0621)	021(2479)	NA	NA	SEA STATE-1
946											
946											
948	084-074-0446	43-41-37	60-05-42	65	5	187	016(0774)	021(2566)	NA	NA	SEA STATE-1
948											
948											
950	084-074-0453	43-41-05	60-05-45	67	5	186	016(0929_	021(2657)	NA	NA	SEA STATE 2
950											WINDS NOW 25 KTS
950											
952	084-074-0459	43-40-33	60-05-51	68	5	189	016(1074)	021(2747)	NA	NA	SEA STATE 2
952											
952											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG. (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
954	084-074-0506	43-40-01	60-05-58	71	5	189	016(1212)	022(0119)	NA	NA	SEA STATE 2 SHIP MOTION
954											NOTABLE NOW ALSO NOISE ON
954											SEISMIC INCREASING
956	084-074-0513	43-39-29	60-06-05	73	5	189	016(1339)	022(0317)	NA	NA	SEA STATE 2 INCREASING
956											
956											
958	084-074-0520	43-38-57	60-06-11	76	5	187	16(1460)	22(0497)	NA	NA	SEA STATE-2
958											ALT OF SIDESCAN FISH 29M
958											
960	084-074-0527	43-38-25	60-06-17	77	5	192	16(1572)	19(0657)	NA	NA	SEA STATE-2
960											ALT OF SIDESCAN FISH 32M
960											
962	084-074-0534	43-37-53	60-06-22	82	5	186	16(1688)	22(0818)	NA	NA	SEA STATE-1
962											ALT OF SIDESCAN FISH 28M
962											EOL-112, SOL-113
964	084-074-0540	43-37-26	60-06-38	85	5	251	16(1796)	22(0966)	NA	NA	SEA STATE-2
964											ALT OF SIDESCAN FISH 33M
964											CHANGING HUNTEC PAPER
966	084-074-0547	43-37-48	60-07-19	82	6	292	16(1889)	22(1087)	NA	NA	SEA STATE-2
966											
966											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
968	084-074-0551	43-37-44	60-07-53	81	6	259	16(1960)	22(1178)	NA	NA	SEA STATE-2
968											ALT OF SIDESCAN FISH 32M
968											
970	084-074-0557	43-37-33	60-08-35	81	6	252	16(2050)	22(1292)	NA	NA	SEA STATE-2
970											ALT OF SIDESCAN FISH 30M
970											
972	084-074-0603	43-37-25	60-09-18	80	5	257	16(2137)	22(1401)	NA	NA	SEA STATE-2
972											ALT OF SIDESCAN FISH 27M
972											
974	084-074-0609	43-37-15	60-10-00	80	5	254	16(2225)	22(1508)	NA	NA	SEA STATE-2
974											ALT OF SIDESCAN FISH 28M
974											
976	084-074-0615	43-37-06	60-10-43	79	5	257	16(2315)	22(1619)	NA	NA	SEA STATE-2
976											ALT OF SIDESCAN FISH 28.6M
976											ALL EQUIPMENT WORKING WELL
978	084-074-0622	43-37-06	60-11-24	76	4	305	16(2400)	22(1720)	NA	NA	SEA STATE-2
978											ALT OF SIDESCAN FISH 20M
978											STARTING LINE 114
980	084-074-0629	43-37-37	60-11-29	75	4	1	16(2507)	22(1847)	NA	NA	SEA STATE-2
980											ALT OF SIDESCAN FISH 18M
980											ON LINE 114

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
982	084-074-0636	43-38-08	60-11-39	72	5	347	16(2588)	22(1945)	NA	NA	SEA STATE-2
982											ALT OF SIDESCAN FISH 18M
982											CHANGING SIDESCAN PAPER
984	084-074-0642	43-38-40	60-11-49	70	5	348	16(2600)	22((2045)	NA	NA	SEA STATE-2
984											ALT OF SIDESCAN FISH 17M
984											
986	084-074-0649	43-39-11	60-11-59	66	5	348	16(2750)	22(2141)	NA	NA	SEA STATE-2
986											ALT OF SIDESCAN FISH 28M
986											
990	084-074-0701	43-40-15	60-12-09	62	5	346	16(2909)	22(2318)	NA	NA	SEA STATE-2
990											ALT OF SIDESCAN FISH 25M
990											
992	084-074-0707	43-40-46	60-12-30	61	5	349	16(2980)	22(2400)	NA	NA	SEA STATE-2
992											ALT OF SIDESCAN FISH 22M
992											
994	084-074-0713	43-41-17	60-12-42	59	5	349	16(3053)	22(2483)	NA	NA	SEA STATE-2
994											ALT OF SIDESCAN FISH 21M
994											
996	084-074-0720	43-42-36	60-13-04	59	5	345	016(3125)	22(2567)	NA	NA	SEA STATE-2
996											ALT OF SIDESCAN FISH 20M
996											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
998	084-074-0726	43-42-20	60-12-58	59	5	344	16(3192)	22(2640)	NA	NA	SEA STATE-2
998											END OF AIRGUN TAPE-16
998											ALT OF SIDESCAN FISH 20M
1001	084-074-0735	43-43-07	60-13-07	57	0	0	17(0091)	22(2755)	NA	NA	SEA STATE-2
1001											ALT OF SIDESCAN FISH 21.4M
1001											END OF LINE 114
1003	084-074-0741	43-43-38	60-13-44	55	6	338	17(0266)	22(2830)	NA	NA	SEA STATE-2
1003											ALT OF SIDESCAN FISH 19M
1003											START OF LINE-115
1004	084-074-0744	43-43-53	60-13-35	50	5	339	17(0355)	22(2871)	NA	NA	SEA STATE-2
1004											ALT OF SIDESCAN FISH 11.4M
1004											
1006	084-074-0750	43-44-23	60-13-50	51	5	345	17(0518)	22(2141)	NA	NA	SEA STATE-2
1006											ALT OF SIDESCAN FISH 21M
1006											END OF HUNTEC TAPE-22
1008	084-074-0756	43-44-54	60-14-04	62	5	341	17(0678)	23(0095)	NA	NA	SEA STATE-2
1008											ALT OF SS FISH 26M,EOL-115
1008											START HUNTEC/SS TAPE-23
1009	084-074-0800	43-45-10	60-14-11	70	5	345	17(0745)	23(0210)	NA	NA	SEA STATE-2
1009											ALT OF SIDESCAN FISH 32M
1009											START OF LINE 116

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
1010	084-074-0803	43-45-25	60-14-07	65	5	4	17(0818)	23(0294)	NA	NA	SEA STATE-2
1010											ALT OF SIDESCAN FISH 32M
1010											
1012	084-074-0810	43-45-57	60-14-00	62	5	9	17(0991)	23(0845)	NA	NA	SEA STATE-2
1012											ALT OF SIDESCAN FISH 18M
1012											
1014	084-074-0817	43-46-13	60-13-53	60	5	10	17(1112)	23(0660)	NA	NA	SEA STATE-2
1014											ALT OF SIDESCAN FISH 16M
1014											
1016	084-074-0825	43-47-01	60-13-47	60	5	5	17(1243)	23(0812)	NA	NA	SEA STATE-2
1016											ALT OF SIDESCAN FISH 15M
1016											
1020	084-074-0838	43-48-05	60-13-32	60	5	4	17(1501)	23(1096)	NA	NA	SEA STATE-2
1020											ALT OF SIDESCAN FISH 19M
1020											FIX 1018 MISSED
1021	084-074-0841	43-48-21	60-13-29	56	5	7	17(1557)	23(1165)	NA	NA	SEA STATE-2
1021											ALT OF SIDESCAN FISH 14M
1021											CHANNEL ON AIRGUN RECORD
1022	084-074-0844	43-48-37	60-13-26	52	5	8	17(1612)	23(1229)	NA	NA	SEA STATE-2
1022											ALT OF SIDESCAN FISH 21M
1022											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
1024	084-074-0851	43-49-09	60-13-19	49	5	9	17(1723)	23(1357)	NA	NA	SEA STATE-2
1024											ALT OF SIDESCAN FISH 16M
1024											
1026	084-074-0858	43-49-41	60-13-13	48	5	7	17(1830)	23(1475)	NA	NA	SEA STATE-2
1026											ALT OF SIDESCAN FISH 16M
1026											ALL EQUIPMENT WORKING WELL
1028	084-074-0905	43-50-13	60-13-06	45	5	5	17(1935)	23(1592)	NA	NA	SEA STATE-2
1028											ALT OF SIDESCAN FISH 17M
1028											
1030	084-074-0911	43-50-39	60-13-01	43	5	9	17(2034)	23(1707)	NA	NA	SEA STATE-2
1030											ALT OF SIDESCAN FISH 21M
1030											
1032	084-074-0918	43-51-16	60-12-52	43	5	8	17(2135)	23(1815)	NA	NA	SEA STATE-2
1032											ALT OF SIDESCAN FISH 23
1032											
1034	084-074-0925	43-51-48	60-12-45	36	5	8	17(2230)	23(1920)	NA	NA	SEA STATE-2
1034											ALT OF SIDESCAN FISH 16.5
1034											
1036	084-074-0932	43-52-20	60-12-40	33	5	8	17(2330)	23(2022)	NA	NA	SEA STATE-2
1036											ALT OF SIDESCAN FISH 16M
1036											ALL EQUIPMENT WORKING WELL

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
1038	084-074-0938	43-52-52	60-12-33	36	5	7	17(2419)	23(2118)	NA	NA	SEA STATE-2
1038											ALT OF SIDESCAN FISH 20M
1038											
1040	084-074-0945	43-53-24	60-12-26	27	5	4	17(2505)	23(2215)	NA	NA	SEA STATE-2
1040											ALT OF SIDESCAN FISH 12M
1040											
1042	084-074-0952	43-53-56	60-12-21	26	5	359	17(2590)	23(2305)	NA	NA	SEA STATE-2
1042											ALT OF SIDESCAN FISH 11
1042											EOL 116
1043	084-074-1455	44-05-01	59-28-54	36	5	310	018(0584)	024(0504)	NA	NA	SEA STATE 5-6 BLOWING UP
1043											START OF SABLE PIPE LINE
1043											SURVEY. WEATHER POOR!
1044	084-074-1458	44-05-11	59-29-10	52	5	326	018(0660)	024(0583)	NA	NA	SEA STATE 5-6 BLOWING UP
1044											MEGARIPPLE FIELDS/ACTIVE
1044											
1046	084-074-1505	44-05-39	59-29-34	56	5	325	018(0820)	024(0748)	NA	NA	SEA STATE 5-6 BLOWING UP
1046											FIRST COURSE CHANGE AT FIX
1046											1508
1048	084-074-1512	44-05-59	59-30-04	60	4	272	018(0969)	024(0896)	NA	NA	SEA STATE 5-6 BLOWING UP
1048											A/C 50 TO PORT QUALITY OF
1048											SEISMIC RECORD POOR

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FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
1050	084-074-1518	44-05-49	59-30-47	58	5	259	018(1094)	024(1026)	NA	NA	SEA STATE 5-6 BLOWING UP
1050											
1050											
1052	084-074-1524	44-05-47	59-31-32	59	5	266	018(1209)	024(1147)	NA	NA	SEA STATE 5-6 BLOWING UP
1052											SLIGHT CHANGE OF COURSE
1052											
1054	084-074-1531	44-05-44	59-32-16	60	5	262	018(1337)	024(1274)	NA	NA	SEA STATE 5-6 BLOWING UP
1054											WIND STEADY AT 35 KTS.
1054											
1056	084-074-1538	44-05-39	59-33-01	61	5	263	018(1458)	024(1400)	NA	NA	SEA STATE 5-6 BLOWING UP
1056											
1056											
1058	084-074-1544	44-05-35	59-33-45	61	5	263	018(1571)	024(1515)	NA	NA	SEA STATE 5-6 BLOWING UP
1058											
1058											
1060	084-074-1550	44-05-29	59-34-29	61	6	262	018(1670)	024(1617)	NA	NA	SEA STATE 5-6 BLOWING UP
1060											FAULT IN HUNTEC LEAK
1060											ALARM
1062	084-074-1556	44-05-27	59-35-14	60	6	262	018(1764)	024(1710)	NA	NA	SEA STATE 5-6 BLOWING UP
1062											NSRF EEL MOVED OUT OF PROP
1062											WASH TO REDUCE NOISE

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
1064	084-074-1602	44-05-23	59-35-59	60	6	259	018(1852)	024(1800)	NA	NA	SEA STATE 5-6 BLOWING UP
1064											
1064											
1066	084-074-1607	44-05-19	59-36-43	61	6	269	018(1940)	024(1887)	NA	NA	SEA STATE 5-6 BLOWING UP
1066											
1066											
1068	084-074-1613	44-05-15	59-37-28	61	6	268	018(2025)	024(1973)	NA	NA	SEA STATE 5-6 BLOWING UP
1068											
1068											
1070	084-074-1618	44-05-12	59-38-12	61	6	267	018(2106	024(2056)	NA	NA	SEA STATE 5-6 BLOWING UP
1070											
1070											
1072	084-074-1624	44-05-07	59-38-56	61	6	258	018(2200)	024(2139)	NA	NA	SEA STATE 5-6 BLOWING UP
1072											
1072											
1074	084-074-1630	44-05-04	59-39-41	62	6	268	018(2269)	024(2220)	NA	NA	SEA STATE 5-6 BLOWING UP
1074											POCK MARK ON SEA BED
1074											
1076	084-074-1636	44-05-01	59-40-26	61	6	262	018(1250)	024(2299)	NA	NA	SEA STATE 5-6 BLOWING UP
1076											ALT OF SIDESCAN FISH 21.3
1076											FOLLOWING SEA (APPOX 2M)

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FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
1078	084-074-1641	44-04-57	59-41-11	59	6	264	018(2425)	24(2378)	NA	NA	SEA STATE 5-6 BLOWING UP
1078											ALT OF SIDESCAN FISH 18.8M
1078											MOVED AIRGUN EEL
1080	084-074-1647	44-04-53	59-41-55	60	6	262	018(2505)	024(2455)	NA	NA	SEA STATE 5-6 BLOWING UP
1080											ALT OF SIDESCAN FISH 19M
1080											WINDS APPOX. 35 KNOTS
1082	084-074-1653	44-04-49	59-42-40	62	6	262	018(2576)	024(2529)	NA	NA	SEA STATE 5-6 BLOWING UP
1082											ALT OF SIDESCAN FISH 20M
1082											
1084	084-074-1658	44-04-45	59-43-24	61	6	267	018(2649)	024(2605)	NA	NA	SEA STATE 5-6 BLOWING UP
1084											ALT OF SIDESCAN FISH 20M
1084											
1086	084-074-1704	44-04-41	59-44-09	61	6	267	018(2720)	024(2677)	NA	NA	SEA STATE 5-6 BLOWING UP
1086											ALT OF SIDESCAN FISH 19M
1086											
1088	084-074-1710	44-04-37	59-44-53	60	6	261	018(2792)	024(2746)	NA	NA	SEA STATE 5-6 BLOWING UP
1088											ALT OF SIDESCAN FISH 20M
1088											
1090	084-074-1715	44-04-31	59-45-36	60	6	264	18(2862)	24(2816)	NA	NA	SEA STATE 5-6 BLOWING UP
1090											ALT OF SIDESCAN FISH 19M
1090											END OF HUNTEC/SS TAPE-24

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FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
1092	084-074-1721	44-04-30	59-46-21	61	6	269	018(2926)	025(0000)	NA	NA	SEA STATE 5-6 BLOWING UP
1092											ALT OF SIDESCAN FISH 20M
1092											START OF HUNTEC/SS TAPE 25
1094	084-074-1727	44-04-27	59-47-06	60	6	264	018(2994)	025(0164)	NA	NA	SEA STATE 5-6 BLOWING UP
1094											ALT OF SIDESCAN FISH 20M
1094											END OF AIRGUN TAPE-18
1096	084-074-1732	44-04-24	59-47-50	60	6	265	019(0000)	025(0323)	NA	NA	SEA STATE 5-6 BLOWING UP
1096											ALT OF SIDESCAN FISH 19M
1096											START OF AIRGUN TAPE-19
1098	084-074-1738	44-04-19	59-48-35	61	6	263	019(DOWN)	025(0469)	NA	NA	SEA STATE 5-6 BLOWING UP
1098											ALT OF SIDESCAN FISH 21M
1098											AIRGUN DOWN
1100	084-074-1743	44-04-17	59-49-20	62	6	266	019(0630)	025(0569)	NA	NA	SEA STATE 5-6 BLOWING UP
1100											ALT OF SIDESCAN FISH 22M
1100											CHANGING AIRGUNS
1102	084-074-1748	44-04-16	59-50-04	63	6	267	019(DOWN)	025(0734)	NA	NA	SEA STATE 5-6 BLOWING UP
1102											ALT OF SIDESCAN FISH 22M
1102											
1104	084-074-1764	44-04-14	59-50-49	63	6	267	019(3100)	25(0854)	NA	NA	SEA STATE 5-6 BLOWING UP
1104											ALT OF SIDESCAN FISH 21.9M
1104											AIRGUN WORKING

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
1106	084-074-1759	44-04-12	59-51-34	64	6	267	019(3165)	025(0975)	NA	NA	SEA STATE 5-6 BLOWING UP
1106											ALT OF SIDESCAN FISH 24M
1106											HUNTEC LOWERED
1110	084-074-1811	44-04-09	59-53-03	65	6	267	019(3211)	025(1199)	NA	NA	SEA STATE 5-6 BLOWING UP
1110											ALT OF SIDESCAN FISH 17M
1110											END OF AIRGUN TAPE-19
1114	084-074-1822	44-04-08	59-54-33	64	6	268	020(0260)	025(1400)	NA	NA	SEA STATE 5-6 BLOWING UP
1114											ALT OF SIDESCAN FISH 18.1M
1114											START OF AIRGUN TAPE-20
1116	084-074-1827	44-04-04	59-55-18	63	6	268	020(0410)	025(1499)	NA	NA	SEA STATE 5-6 BLOWING UP
1116											ALT OF SIDESCAN FISH 15M
1116											
1118	084-020-1833	44-04-03	59-56-02	62	6	267	020(0550)	025(1600)	NA	NA	SEA STATE 5-6 BLOWING UP
1118											ALT OF SIDESCAN FISH 15.7M
1118											ALL EQUIPMENT WORKING WELL
1120	084-074-1838	44-04-01	59-56-47	61	6	269	020(0682)	025(1688)	NA	NA	SEA STATE 5-6 BLOWING UP
1120											ALT OF SIDESCAN FISH 15M
1120											
1122	084-074-1844	44-04-02	59-57-32	61	6	270	020(0814)	025(1780)	NA	NA	SEA STATE 5-6 BLOWING UP
1122											ALT OF SIDESCAN FISH 13.5M
1122											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG. (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
1124	084-074-1848	44-04-10	59-58-09	60	6	269	020(0915)	025(1855)	NA	NA	SEA STATE 5-6 BLOWING UP
1124											ALT OF SIDESCAN FISH 14M
1124											
1126	084-074-1854	44-04-07	59-58-54	60	6	266	019(1035)	025(1943)	NA	NA	SEA STATE 5-6 BLOWING UP
1126											ALT OF SIDESCAN FISH 17M
1126											
1128	084-074-1900	44-04-03	59-59-39	60	6	263	019(1148)	025(2031)	NA	NA	SEA STATE 5-6 BLOWING UP
1128											ALT OF SIDESCAN FISH 17.5M
1128											
1130	084-074-1906	44-04-02	60-00-24	59	6	270	019(1252)	025(2115)	NA	NA	SEA STATE 5-6 BLOWING UP
1130											ALT OF SIDESCAN FISH 14.7
1130											HEAVY FOLLOWING SEA
1132	084-074-1911	44-04-00	60-01-08	57	6	269	019(1260)	025(2200)	NA	NA	SEA STATE 5-6 BLOWING UP
1132											ALT OF SIDESCAN FISH 13.2
1132											
1134	084-074-1917	44-04-00	60-01-53	57	6	268	019(1463)	025(2277)	NA	NA	SEA STATE 5-6 BLOWING UP
1134											ALT OF SIDESCAN FISH 12.5
1134											ALL EQUIPMENT WORKING WELL
1136	084-074-1923	44-04-00	60-02-38	57	6	271	019(1558)	025(2360)	NA	NA	SEA STATE 5-6 BLOWING UP
1136											ALT OF SIDESCAN FISH 13.6
1136											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
1140	084-074-1934	44-04-00	60-04-08	57	6	269	019(1754)	025(2512)	NA	NA	SEA STATE 5-6 BLOWING UP
1140											ALT OF SIDESCAN FISH 12M
1140											
1142	084-074-1940	44-03-59	60-04-52	57	6	268	019(1845)	025(2590)	NA	NA	SEA STATE 5-6 BLOWING UP
1142											ALT OF SIDESCAN FISH 14.7M
1142											
1144	084-074-1946	44-03-59	60-05-37	58	6	268	019(1930)	025(2662)	NA	NA	SEA STATE 5-6 BLOWING UP
1144											ALT OF SIDESCAN FISH 15.4M
1144											
1146	084-074-1952	44-03-59	60-06-22	56	5	270	019(2025)	025(2740)	NA	NA	SEA STATE 5-6 BLOWING UP
1146											AIRGUN DOWN
1146											
1148	084-074-1958	44-03-58	60-07-07	52	6	266	019(DOWN)	025(2815)	NA	NA	SEA STATE 5-6 BLOWING UP
1148											ALT OF SIDESCAN FISH 13M
1148											GOING OVER RIDGE
1152	084-074-2009	44-03-59	60-08-37	55	6	270	019(2275)	025(2951)	NA	NA	SEA STATE 5-6 BLOWING UP
1152											ALT OF SIDESCAN FISH 19M
1152											
1156	084-074-2021	44-04-00	60-10-06	50	6	273	019(2440)	025(3083)	NA	NA	SEA STATE-5,FOLLOWING SEA
1156											ALT OF SIDESCAN FISH 17M
1156											END OF HUNTEC/SS TAPE-25

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
1158	084-074-2027	44-04-02	60-10-51	50	6	272	019(2515)	026(0000)	NA	NA	SEA STATE-5,FOLLOWING SEA
1158											START OF HUNTEC/SS TAPE-26
1158											ALT OF SIDESCAN FISH 16.5M
1162	084-074-2039	44-04-03	60-12-20	49	5	273	019(2675)	026(0500)	NA	NA	SEA STATE-5,FOLLOWING SEA
1162											ALT OF SIDESCAN FISH 14M
1162											AIRGUN FIRE RATE FROM 2-3
1164	084-074-2045	44-04-05	60-13-05	51	5	274	019(2750)	026(0564)	NA	NA	SEA STATE-5,FOLLOWING SEA
1164											ALT OF SIDESCAN FISH 15.3
1164											
1168	084-074-2057	44-04-10	60-14-32	51	6	273	019(2900)	026(0842)	NA	NA	SEA STATE-5,FOLLOWING SEA
1168											ALT OF SIDESCAN FISH 17M
1168											
1172	084-074-2109	44-04-14	60-16-02	50	6	274	019(3040)	026(1089)	NA	NA	SEA STATE-5,FOLLOWING SEA
1172											ALT OF SIDESCAN FISH 16M
1172											
1176	084-074-2121	44-04-17	60-17-31	54	6	273	019(3180)	026(1319)	NA	NA	SEA STATE-5,FOLLOWING SEA
1176											ALT OF SIDESCAN FISH 19M
1176											END AIRGUN TAPE-19
1180	084-074-2133	44-04-27	60-19-01	55	6	278	020(0008)	026(1533)	NA	NA	SEA STATE-5,FOLLOWING SEA
1180											ALT OF SIDESCAN FISH 20M
1180											START OF AIRGUN TAPE-20

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FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
1185	084-074-2147	44-04-30	60-20-52	55	5	284	020(0377)	026(1777)	NA	NA	SEA STATE-5,FOLLOWING SEA
1185											ALT OF SIDESCAN FISH 18M
1185											
1188	084-074-2157	44-04-37	60-21-57	55	5	273	020(0590)	026(1919)	NA	NA	SEA STATE-5,FOLLOWING SEA
1188											ALT OF SIDESCAN FISH 19M
1188											
1190	084-074-2202	44-04-42	60-22-42	50	6	281	020(0714)	026(2009)	NA	NA	SEA STATE-5,FOLLOWING SEA
1190											ALT OF SIDESCAN FISH 19.3
1190											
1192	084-074-2208	44-04-46	60-23-26	53	6	276	020(0833)	026(2092)	NA	NA	SEA STATE-5,FOLLOWING SEA
1192											ALT OF SIDESCAN FISH 16.5
1192											
1194	084-074-2214	44-04-50	60-24-10	53	6	278	020(0935)	026(2173)	NA	NA	SEA STATE-5,FOLLOWING SEA
1194											ALT OF SIDESCAN FISH 17.5M
1194											
1196	084-074-2219	44-04-54	60-24-55	53	6	278	020(1040)	025(2252)	NA	NA	SEA STATE-5,FOLLOWING SEA
1196											ALT OF SIDESCAN FISH 17.5M
1196											
1198	084-074-2225	44-04-58	60-25-39	50	6	278	020(1140)	026(2330)	NA	NA	SEA STATE-5,FOLLOWING SEA
1198											ALT OF SIDESCAN FISH 15.5
1198											ALL EQUIPMENT WORKING WELL

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU,(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
1200	084-074-2230	44-05-01	60-26-24	50	6	276	020(1244)	025(2408)	NA	NA	SEA STATE-5,FOLLOWING SEA
1200											ALT OF SIDESCAN FISH 14.5M
1200											
1202	084-074-2236	44-05-05	60-27-08	50	6	280	020(1340)	026(2488)	NA	NA	SEA STATE-5,FOLLOWING SEA
1202											
1202											
1204	084-074-2242	44-05-10	60-27-52	50	6	276	020(1435)	027(2560)	NA	NA	SEA STATE-5,FOLLOWING SEA
1204											
1204											
1206	084-074-2248	44-05-11	60-28-36	48	5	295	020(1530)	027(2637)	NA	NA	SEA STATE-5,FOLLOWING SEA
1206											
1206											
1208	084-742-2253	44-05-21	60-29-18	49	6	285	020(1619)	027(2710)	NA	NA	SEA STATE-5,FOLLOWING SEA
1208											
1208											
1210	084-074-2259	44-05-27	60-30-02	51	6	281	020(1708)	027(2780)	NA	NA	SEA STATE-5,FOLLOWING SEA
1210											
1210											
1214	084-074-2310	44-05-40	60-31-29	52	6	281	020(1870)	027(2918)	NA	NA	SEA STATE-5,FOLLOWING SEA
1214											
1214											

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FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
1216	084-074-2317	44-05-47	60-33-13	51	6	280	020(1960)	027(2990)	NA	NA	SEA STATE-5,FOLLOWING SEA
1216											
1216											
1218	084-074-2322	44-05-53	60-32-57	50	6	282	020(2035)	027(3048)	NA	NA	SEA STATE-5,FOLLOWING SEA
1218											
1218											
1220	084-074-2328	44-05-60	60-33-41	50	6	281	020(2112)	027(3100)	NA	NA	SEA STATE-5,FOLLOWING SEA
1220											
1220											
1222	084-074-2333	44-06-06	60-34-25	50	5	279	020(2195)	027(0095)	NA	NA	SEA STATE-5,FOLLOWING SEA
1222											START HUNTEC TAPE #27
1222											
1224	084-074-2339	44-06-12	60-35-08	52	5	300	020(2270)	027(0275)	NA	NA	SEA STATE-5,FOLLOWING SEA
1224											
1224											
1226	084-074-2345	44-06-26	60-35-48	54	5	293	020(2343)	027(0417)	NA	NA	SEA STATE-5,FOLLOWING SEA
1226											
1226											
1228	084-074-2351	44-06-37	60-36-30	56	6	288	020(2420)	027(0562)	NA	NA	SEA STATE-5,FOLLOWING SEA
1228											
1228											

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FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
1230	084-074-2357	44-06-51	60-37-10	57	6	294	020(2488)	027(0697)	NA	NA	SEA STATE-5,FOLLOWING SEA
1230											
1230											
1232	084-075-0002	44-07-05	60-37-51	58	6	295	020(2559)	027(0824)	NA	NA	SEA STATE-5,FOLLOWING SEA
1232											
1232											
1234	084-075-0008	44-07-19	60-38-31	58	6	294	020(2624)	027(0944)	NA	NA	SEA STATE-5,FOLLOWING SEA
1234											
1234											
1236	084-075-0014	44-07-32	60-39-12	57	6	294	020(2690)	027(1056)	NA	NA	SEA STATE-5,FOLLOWING SEA
1236											
1236											
1238	084-075-0019	44-07-47	60-39-52	55	6	296	020(2758)	027(1163)	NA	NA	SEA STATE-5,FOLLOWING SEA
1238											
1238											
1240	084-075-0025	44-08-02	60-40-32	52	6	297	020(2823)	027(1268)	NA	NA	SEA STATE-5,FOLLOWING SEA
1240											
1240											
1242	084-075-0030	44-08-18	60-41-11	49	6	298	020(2884)	027(1365)	NA	NA	SEA STATE-5,FOLLOWING SEA
1242											
1242											

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FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
1244	084-075-0036	44-08-33	60-41-51	48	6	298	021(0081)	027(1460)	NA	NA	SEA STATE-5,FOLLOWING SEA
1244											START SEISMIC TAPE #21
1244											
1246	084-075-0041	44-08-48	60-42-30	46	6	298	021(0254)	027(1550)	NA	NA	SEA STATE-5,FOLLOWING SEA
1246											
1246											
1248	084-075-0046	44-09-04	60-43-10	45	6	298	021(0405)	027(1638)	NA	NA	SEA STATE-5,FOLLOWING SEA
1248											
1248											
1250	084-075-0051	44-09-18	60-43-50	43	6	296	021(-531)	027(1722)	NA	NA	SEA STATE-5,FOLLOWING SEA
1250											
1250											
1252	084-075-0056	44-09-34	60-44-29	40	6	297	021(0660)	027(1817)	NA	NA	SEA STATE-5,FOLLOWING SEA
1252											
1252											
1254	084-075-0102	44-09-49	60-45-09	24	6	298	021(752)	027(1884)	NA	NA	SEISMIC TAPE TWISTED,WAS
1254											REWOUND,CORRECTED AND FAST
1254											FORWARDED TO 0734 REVS.
1256	084-075-0107	44-10-04	60-45-49	25	7	297	021(0857)	027(1955)	NA	NA	HUNTEC HAVING TROUBLE
1256											TRACKING BOTTOM IN THIS
1256											SHALLOW WATER DEPTH

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
1230	084-074-2357	44-06-51	60-37-10	57	6	294	020(2488)	027(0697)	NA	NA	SEA STATE-5,FOLLOWING SEA
1230											
1230											
1232	084-075-0002	44-07-05	60-37-51	58	6	295	020(2559)	027(0824)	NA	NA	SEA STATE-5,FOLLOWING SEA
1232											
1232											
1234	084-075-0008	44-07-19	60-38-31	58	6	294	020(2624)	027(0944)	NA	NA	SEA STATE-5,FOLLOWING SEA
1234											
1234											
1236	084-075-0014	44-07-32	60-39-12	57	6	294	020(2690)	027(1056)	NA	NA	SEA STATE-5,FOLLOWING SEA
1236											
1236											
1238	084-075-0019	44-07-47	60-39-52	55	6	296	020(2758)	027(1163)	NA	NA	SEA STATE-5,FOLLOWING SEA
1238											
1238											
1240	084-075-0025	44-08-02	60-40-32	52	6	297	020(2823)	027(1268)	NA	NA	SEA STATE-5,FOLLOWING SEA
1240											
1240											
1242	084-075-0030	44-08-18	60-41-11	49	6	298	020(2884)	027(1365)	NA	NA	SEA STATE-5,FOLLOWING SEA
1242											
1242											

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FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
1244	084-075-0036	44-08-33	60-41-51	48	6	298	021(0081)	027(1460)	NA	NA	SEA STATE-5,FOLLOWING SEA
1244											START SEISMIC TAPE #21
1244											
1246	084-075-0041	44-08-48	60-42-30	46	6	298	021(0254)	027(1550)	NA	NA	SEA STATE-5,FOLLOWING SEA
1246											
1246											
1248	084-075-0046	44-09-04	60-43-10	45	6	298	021(0405)	027(1638)	NA	NA	SEA STATE-5,FOLLOWING SEA
1248											
1248											
1250	084-075-0051	44-09-18	60-43-50	43	6	296	021(-531)	027(1722)	NA	NA	SEA STATE-5,FOLLOWING SEA
1250											
1250											
1252	084-075-0056	44-09-34	60-44-29	40	6	297	021(0660)	027(1817)	NA	NA	SEA STATE-5,FOLLOWING SEA
1252											
1252											
1254	084-075-0102	44-09-49	60-45-09	24	6	298	021(752)	027(1884)	NA	NA	SEISMIC TAPE TWISTED,WAS
1254											REWOUND,CORRECTED AND FAST
1254											FORWARDED TO 0734 REVS.
1256	084-075-0107	44-10-04	60-45-49	25	7	297	021(0857)	027(1955)	NA	NA	HUNTEC HAVING TROUBLE
1256											TRACKING BOTTOM IN THIS
1256											SHALLOW WATER DEPTH

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU,(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
1258	084-075-0112	44-10-19	60-45-29	24	6	297	021(0968)	027(2031)	NA	NA	SEA STATE-5,FOLLOWING SEA
1258											SIDE/SCAN SHOWING NOTHING
1258											BUT SEA SURFACE
1260	084-075-0117	44-10-34	60-47-08	25	6	296	021(1071)	027(2105)	NA	NA	SEA STATE-5,FOLLOWING SEA
1260											HUNTEC BACK AND FORTH
1260											LOSING TRACK
1262	084-075-0122	44-10-49	60-47-48	27	6	296	021(1171)	027(2178)	NA	NA	SEA STATE-5,FOLLOWING SEA
1262											
1262											
1264	084-075-0127	44-11-05	60-48-27	29	6	297	021(1259)	027(2247)	NA	NA	SEA STATE-5,FOLLOWING SEA
1264											
1264											
1266	084-075-0132	44-11-21	60-49-07	29	6	301	021(1358)	027(2318)	NA	NA	SEA STATE-5,FOLLOWING SEA
1266											
1266											
1268	084-075-0138	44-11-35	60-49-47	28	6	297	021(1448)	027(2391)	NA	NA	SEA STATE-5,FOLLOWING SEA
1268											
1268											
1270	084-075-0143	44-11-50	60-50-26	31	6	295	021(1546)	027(2466)	NA	NA	SEA STATE-5,FOLLOWING SEA
1270											
1270											

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FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
1272	084-075-0149	44-12-05	60-51-06	32	6	300	021(1649)	027(2538)	NA	NA	SEA STATE-5,FOLLOWING SEA
1272											
1272											
1274	084-075-0255	44-12-21	60-51-46	33	6	297	021(1734)	027(2611)	NA	NA	SEA STATE-5,FOLLOWING SEA
1274											STARTING TO COME OF BANK,
1274											HUNTEC TRACKING WELL
1276	084-075-0201	44-12-38	60-52-23	28	6	300	021(1822)	SEE NOTE	NA	NA	SEA STATE-5,FOLLOWING SEA
1276											NEW TAPE #28 CHANGED DOING
1276											FIX
1278	084-075-0206	44-12-54	60-53-03	38	6	300	021(1906)	028(0128)	NA	NA	SEA STATE-5,FOLLOWING SEA
1278											
1278											
1280	084-075-0212	44-13-10	60-53-42	43	6	302	021(1988)	028(0294)	NA	NA	SEA STATE-5,FOLLOWING SEA
1280											HUNTEC OFF WHILE CHANGING
1280											PAPER ON MAIN E.P.C.
1282	084-075-0218	44-13-25	60-54-21	53	6	301	021(2072)	028(0448)	NA	NA	SEA STATE-5,FOLLOWING SEA
1282											
1282											
1284	084-075-0223	44-13-42	60-54-59	62	6	305	021(2154)	028(0590)	NA	NA	SEA STATE-5,FOLLOWING SEA
1284											
1284											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
1286	084-075-0230	44-13-58	60-55-38	65	5	304	021(2239)	028(0739)	NA	NA	SEA STATE-5,FOLLOWING SEA
1286											ADJUSTED EEL CLOSER TO
1286											SHIP TO REDUCE NOISE
1288	084-075-0236	44-14-13	60-56-18	65	5	291	021(2323)	028(0871)	NA	NA	SEA STATE-5,FOLLOWING SEA
1288											
1288											
1290	084-075-0242	44-14-28	60-56-57	65	5	295	021(2404)	028(0999)	NA	NA	SEA STATE-5,FOLLOWING SEA
1290											
1290											
1292	084-075-0248	44-14-44	60-57-36	66	5	298	021(2481)	028(1123)	NA	NA	SEA STATE-5,FOLLOWING SEA
1292											SEISMIC RECORD DISAPPEARED
1292											TROUBLE IN T.V.G. UNIT?
1294	084-075-0254	44-15-00	60-58-15	67	5	301	021(2556)	028(1233)	NA	NA	SEA STATE-5,FOLLOWING SEA
1294											SWITCH T.V.G. TO A 1 SEC.
1294											SWEEP,RECORD BACK ON NOW
1296	084-075-0300	44-15-17	60-58-54	68	5	299	021(2631)	028(1343)	NA	NA	SEA STATE-5,FOLLOWING SEA
1296											
1296											
1298	084-075-0306	44-15-33	60-59-32	68	6	299	021(2705)	028(1452)	NA	NA	SEA STATE-5,FOLLOWING SEA
1298											
1298											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
1300	084-075-0312	44-15-50	60-00-11	72	6	300	021(2774)	028(1547)	NA	NA	SEA STATE-5,FOLLOWING SEA
1300											
1300											
1302	084-075-0317	44-16-07	61-00-49	70	6	302	021(2844)	028(1643)	NA	NA	SEA STATE-5,FOLLOWING SEA
1302											
1302											
1304	084-075-0323	44-16-25	61-01-26	70	6	303	021(2908)	028(1734)	NA	NA	SEA STATE-5,FOLLOWING SEA
1304											
1304											
1306	084-075-0329	44-16-43	61-02-04	69	6	304	021(2975)	028	NA	NA	SEA STATE-5,FOLLOWING SEA
1306											
1306											
1308	084-075-0334	44-17-02	61-02-40	68	6	305	021(3041)	028(1909)	NA	NA	SEA STATE-5,FOLLOWING SEA
1308											END OF SEISMIC TAPE #21
1308											
1310	084-075-0340	44-17-21	61-03-16	68	6	306	022(0118)	028(1997)	NA	NA	SEA STATE-5,FOLLOWING SEA
1310											HUNTEC EXT. RECORD PHASED
1310											NO DATA BETWEEN 1280-1310
1312	084-075-0346	44-17-41	61-03-53	72	6	306	022(0290)	028(2077)	NA	NA	SEA STATE-5,FOLLOWING SEA
1312											
1312											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS,	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
1314	084-075-0351	44-18-00	61-04-29	75	6	306	022(0438)	028(2157)	NA	NA	SEA STATE-5,FOLLOWING SEA
1314											
1314											
1316	084-075-0357	44-18-19	61-05-24	77	6	305	022(0576)	028(2237)	NA	NA	SEA STATE-5,FOLLOWING SEA
1316											
1316											
1318	084-075-0403	44-18-38	61-05-41	80	6	307	022(0709)	028(2314)	NA	NA	SEA STATE-5,FOLLOWING SEA
1318											
1318											
1320	084-075-0409	44-18-56	61-06-19	85	6	305	022(0842)	028(2392)	NA	NA	SEA STATE-5,FOLLOWING SEA
1320											
1320											
1322	084-075-0415	44-19-14	61-06-56	85	6	304	022(0964)	028(2469)	NA	NA	SEA STATE-5,FOLLOWING SEA
1322											
1322											
1324	084-075-0420	44-19-34	61-07-31	87	5	308	022(1084)	028(2545)	NA	NA	SEA STATE-5,FOLLOWING SEA
1324											
1324											
1326	084-075-0426	44-19-52	61-08-08	88	5	307	022(1196)	028(2619)	NA	NA	SEA STATE-5,FOLLOWING SEA
1326											
1326											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
1328	084-075-0432	44-20-12	61-08-44	86	5	306	022(1306)	028(2695)	NA	NA	SEA STATE-5,FOLLOWING SEA
1328											
1328											
1330	084-075-0438	44-20-32	61-09-20	90	5	307	022(1416)	028(2767)	NA	NA	SEA STATE-5,FOLLOWING SEA
1330											
1330											
1332	084-075-0444	44-20-51	61-09-56	94	5	307	022(1516)	029(088)	NA	NA	SEA STATE-5,FOLLOWING SEA
1332											
1332											
1334	084-075-0450	44-21-09	61-10-33	96	5	304	022(1616)	029(0264)	NA	NA	SEA STATE-5,FOLLOWING SEA
1334											
1334											
1336	084-075-0457	44-21-28	61-11-09	88	5	303	022(1713)	029(0432)	NA	NA	SEA STATE-5,FOLLOWING SEA
1336											
1336											
1338	084-075-0503	44-21-47	61-11-46	88	6	304	022(1809)	028(0580),	NA	NA	SEA STATE-5,FOLLOWING SEA
1338											
1338											
1340	084-075-0508	44-22-07	61-12-21	88	5	308	022(1902)	029(0721)	NA	NA	SEA STATE-5,FOLLOWING SEA
1340											
1340											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
1342	084-075-0515	44-22-25	61-12-59	88	5	300	022(1985)	029(0852)	NA	NA	SEA STATE-5,FOLLOWING SEA
1342											CHANGE SIDE SCAN PAPER
1342											
1344	084-075-0520	44-22-48	61-13-32	88	5	312	022(2072)	029(0978)	NA	NA	SEA STATE-5,FOLLOWING SEA
1344											ALT OF SIDESCAN FISH 23M
1344											
1346	084-075-0527	44-23-09	61-14-06	88	5	309	022(2157)	029(1099)	NA	NA	SEA STATE-5,FOLLOWING SEA
1346											ALT OF SIDESCAN FISH 23M
1346											
1348	084-074-0532	44-23-19	61-14-24	100	5	311	022(2244)	029(1212)	NA	NA	SEA STATE-5,FOLLOWING SEA
1348											ALT OF SIDESCAN FISH 31M
1348											
1350	084-075-0539	44-23-51	61-15-13	142	5	326	022(2321)	029(1323)	NA	NA	SEA STATE-5,FOLLOWING SEA
1350											
1350											
1352	084-075-0545	44-24-17	61-15-39	140	5	322	022(2404)	029(1435)	NA	NA	SEA STATE-5,FOLLOWING SEA
1352											
1352											
1354	084-075-0551	44-24-43	61-16-08	144	6	321	022(2480)	029(1336)	NA	NA	SEA STATE-5,FOLLOWING SEA
1354											
1354											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
1358	084-075-0602	44-25-34	61-17-01	143	5	332	022(2630)	029(1725)	NA	NA	SEA STATE-5,FOLLOWING SEA
1358											
1358											
1360	084-074-0609	44-26-04	61-17-20	130	5	336	022(2720)	029)1825)	NA	NA	SEA STATE-5,FOLLOWING SEA
1360											
1360											
1364	084-074-0621	44-27-02	61-18-00	145	5	338	022(2855)	029(2013)	NA	NA	SEA STATE-5,FOLLOWING SEA
1364											AIRGUN DELAY CHANGED FROM
1364											110 TO 50 MS
1368	084-075-0636	44-28-04	61-18-24	140	4	348	022(3022)	029(2215)	NA	NA	SEA STATE-5,FOLLOWING SEA
1368											
1368											
1370	084-075-0643	44-48-34	61-18-38	137	5	340	022(3100)	029(2310)	NA	NA	SEA STATE-5,FOLLOWING SEA
1370											
1370											
1373	084-075-0653	44-29-21	61-18-27	131	4	351	023(0242)	029(2450)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1373											START OF AIRGUN TAPE-23
1373											
1374	084-075-0657	44-29-37	61-18-59	130	4	356	023(0340)	029(2500)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1374											
1374											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
1376	084-075-0705	44-30-09	61-19-06	126	4	353	023(0535)	029(2600)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1376											
1376											
1378	084-075-0712	44-30-41	61-19-13	125	5	351	023(0715)	029(2690)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1378											
1378											
1380	084-075-0719	44-31-29	61-19-22	127	4	353	023(0875)	029(2775)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1380											
1380											
1382	084-075-0727	44-31-44	61-19-26	112	4	354	023(1020)	029(2860)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1382											
1382											
1384	084-075-0734	44-32-17	61-19-31	112	4	349	023(1170)	029(2940)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1384											
1384											
1386	084-075-0742	44-32-48	61-19-39	112	4	360	023(1210)	030(0060)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1386											START OF HUNTEC/SS TAPE-30
1386											
1388	084-075-0749	44-33-20	61-19-43	120	5	351	23(1435)	030(0276)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1388											
1388											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
1390	084-075-0757	44-33-53	61-19-46	120	5	359	023(1556)	030(0454)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1390											
1390											
1392	084-075-0802	44-34-24	61-19-51	107	6	357	023(1646)	030(0595)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1392											
1392											
1394	084-075-0808	44-34-57	61-19-54	115	6	58	023(1740)	030(0731)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1394											
1394											
1396	084-075-0814	44-35-29	61-19-57	107	6	355	023(1831)	030(0856)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1396											ALT OF SIDESCAN FISH 49M
1396											
1398	084-075-0819	44-36-01	61-20-01	107	5	351	023(1920)	030(0984)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1398											ALT OF SIDESCAN FISH 42M
1398											
1400	084-075-0826	44-36-33	61-20-04	108	5	356	023(2024)	030(1111)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1400											ALT OF SIDESCAN FISH 41M
1400											
1402	084-075-0832	44-37-06	61-20-07	107	5	354	23(2103)	030(1228)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1402											ALT OF SIDESCAN FISH 42M
1402											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU,(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
1404	084-075-0839	44-37-37	61-20-09	107	5	357	023(2196)	030(1350)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1404											ALT OF SIDESCAN FISH 44.6M
1404											
1406	084-075-0845	44-38-09	61-20-13	107	5	6	023(2278)	030(1457)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1406											ALT OF SIDESCAN FISH 38M
1406											
1408	084-075-0851	44-38-41	61-20-16	107	5	358	023(2365)	030(1562)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1408											ALT OF SIDESCAN FISH 40M
1408											
1410	084-075-0858	44-39-14	61-20-16	106	5	1	023(2450)	030(1670)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1410											ALT OF SIDESCAN FISH 40.7
1410											
1412	084-075-0904	44-39-46	61-20-17	103	5	355	023(2531)	030(1765)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1412											ALT OF SIDESCAN FISH 38
1412											
1414	084-075-0910	44-40-18	61-20-18	106	5	1	023(2605)	030(1862)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1414											ALT OF SIDESCAN FISH 41M
1414											
1416	084-075-0917	44-40-51	61-20-19	107	5	356	023(2683)	030(1960)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1416											ALT OF SIDESCAN FISH 38M
1416											

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
1418	084-075-0923	44-41-23	61-20-21	111	5	358	023(2756)	030(2044)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1418											ALT OF SIDESCAN FISH 43.2
1418											
1420	084-075-0929	44-41-55	61-20-22	112	5	359	023(2829)	030(2131)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1420											ALT OF SIDESCAN FISH 42.8
1420											
1422	084-075-0935	44-42-27	61-20-23	112	5	355	023(2905)	030(2222)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1422											ALT OF SIDESCAN FISH 44.7M
1422											
1424	084-075-0941	44-42-59	61-20-26	111	5	66	023(2974)	030(2309)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1424											ALT OF SIDESCAN 44M
1424											
1426	084-075-0948	44-43-31	61-20-26	113	5	353	023(3045)	030(2386)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1426											ALT OF SIDESCAN FISH 42.4
1426											ALL EQUIPMENT WORKING WELL
1428	084-075-0954	44-44-03	61-20-28	111	6	354	023(3119)	030(2464)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1428											ALT OF SIDESCAN FISH 46M
1428											END OF AIRGUN TAPE-23
1430	084-075-1000	44-44-36	61-20-28	112	5	3	024(0070)	030(2541)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1430											ALT OF SIDESCAN FISH 43.7
1430											START OF AIRGUN TAPE-24

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	TAPE(REV) HUNTEC/SS.	TAPE(REV) BRUTIV VIDEO	TAPE(REV) BRUTIV SLIDES	NOTES
1432	084-075-1006	44-45-08	61-20-30	110	5	353	024(0270)	030(2622)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1432											ALT OF SIDESCAN FISH 34.5M
1432											
1434	084-075-1013	44-45-40	61-20-34	107	5	2	024(0450)	030(2700)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1434											ALT OF SIDESCAN FISH 34.5M
1434											
1436	084-075-1019	44-46-12	61-20-35	105	5	353	024(0606)	030(2785)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1436											ALT OF SIDESCAN FISH 35M
1436											
1438	084-075-1026	44-46-44	61-20-37	100	5	0	024(0740)	030(2852)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1438											ALT OF SIDESCAN FISH 29.6M
1438											
1440	084-075-1032	44-47-17	61-20-38	90	5	356	024(0890)	030(2924)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1440											ALT OF SIDESCAN FISH 19M
1440											
1442	084-075-1039	44-47-48	61-20-47	105	5	337	024(1030)	030(2988)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1442											ALT OF SIDESCAN FISH 25M
1442											END OF HUNTEC/SS TAPE-30
1444	084-075-1045	44-48-18	61-20-58	107	5	339	024(1150)	031(0000)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1444											ALT OF SIDESCAN FISH 50M
1444											START OF HUNTEC/SS TAPE-31

CSS DAWSON CRUISE SABLE ISLAND BANK/BANQUEREAU.(6-16 MARCH,1984)

FIX NUMBER	YR-DAY-TIME (AST)	LATITUDE (N)	LONGITUDE (W)	WATER DEPTH (M)	SPEED (KTS)	HDG (T)	TAPE(REV) AIRGUN	HUNTEC/SS.	BRUTIV VIDEO	BRUTIV SLIDES	NOTES
1446	084-075-1052	44-48-48	61-21-05	135	5	330	024(1269)	031(0211)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1446											ALT OF SIDESCAN FISH 73M
1446											
1448	084-075-1058	44-49-11	61-21-34	145	5	340	024(1377)	031(0380)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1448											ALT OF SIDESCAN FISH 74M
1448											HUNTEC PRINTING ON CENTRE
1450	084-075-1105	44-49-42	61-21-43	138	5	335	024(1497)	031(0545)	NA	NA	SEA STATE-5 WINDS 40 KNOTS
1450											ALT OF SIDESCAN FISH 75M
1450											END OF SURVEY

CRUISE REPORT

ARCTIC PROWLER, SABLE ISLAND BANK
22 - 29 SEPTEMBER, 1984.

by

Carl L. Amos
Geol. Surv. Canada,
P.O. Box 1006,
Dartmouth, N.S.
B2Y 4A2

S. Davidson,
Martec Ltd.,
5670 Spring Garden Rd.,
Halifax, N.S.
B3J 1H6

Geological Survey of Canada
Project 800036

CRUISE SUMMARY SHEET
ARCTIC PROWLER, SABLE ISLAND BANK

CRUISE DATES : 2400 (GMT), 22 SEPT - 1100 (GMT), 29 SEPT, 1984

NAVIGATION : SYLEDIS
ARGO
SATNAV

NAVIGATION ACCURACY : +—3 METRES

CAPTAIN : I. WILLIAMS

STAFF :

T. WINDEYER	MCELHANNEY SERVICES LTD.
P. SLAUNWAITE	MCELHANNEY SERVICES LTD.
R. CLARK	MCELHANNEY SERVICES LTD.
A. CIGOLETTI	MCELHANNEY SERVICES LTD.
B. LONG	INRS - OCEANOLOGIE, RIMOUSKI
S. LEBLANC	INRS - OCEANOLOGIE, RIMOUSKI
D. LEVESQUE	INRS - OCEANOLOGIE, RIMOUSKI
C. AMOS	ATLANTIC GEOSCIENCE CENTRE
S. DAVIDSON	MARTEC LTD.

INTRODUCTION

This cruise was the first of a series of four proposed cruises to Sable Island Bank during the fall/winter of 1984/85. The cruise was funded by the Environmental Studies Revolving Fund sediment transport sub-committee under an agreement with Seaconsult Ltd, and the work reported was carried out in association with the Geological Survey of Canada. The purpose of this project is to provide a set of measurements of the relevant hydrodynamic and seabed parameters presently used in the modelling of sediment transport on continental shelves, along with concurrent measurements of the sediment motion.

CRUISE OBJECTIVES

1. To deploy four marker buoys and one Seadata current meter and to release radio-active tracer material at the Olympia and Venture well sites, Sable Island Bank (see fig.1) in accordance with a Seaconsult Ltd. proposal to study sediment dispersion on Sable Island Bank.

2. To detect the distribution and movement (if any) of the tracer cloud at each of the two sites after establishing baseline conditions.

3. To collect bottom photographs at four locations around each dump site in order to observe bottom roughness and changes in texture.

4. To collect bottom samples at each of the dump sites and at four locations around the dump site in order to establish grain size trends.

OVERVIEW

All of the objectives for the first cruise were met.

The two sites designated for radio-isotope tracer detection were established by deployment of the marker buoys and Seadata meters.

Bottom grab samples were taken at and around the deployment site in order to determine detailed grain size distributions and local variations in seabed texture. At each sample site the bottom camera was used to observe the nature of small scale roughnesses. The bed at the time of deployment was devoid of bedforms, having been browsed by abundant sand dollars.

The tracer was successfully released at the specified sites and two detections were carried out on subsequent days. The tracer clouds (defined as that area where the radiation exceeded 10 times the background level) were approximately 100 m in diameter although most of the radioactive material was concentrated in a small area, or peak. The radiation peaks showed no obvious short term migration although the tracer cloud appeared to be slowly growing in size. Positional accuracy of the ship was adequate but a significant degree of uncertainty was involved in determining the position of the tracer detection sled relative to the ship. Full detections were made in approximately 6-8 hours.

There was some doubt about the stability of the Seadata current meter stands. The attachment of ground lines to the top of the meter frames

may well have resulted in overturning of the meters. Subsequent sidescan surveys using a 100 khz system could not resolve the meters well enough to determine their orientation.

As well, the position of the Seadata meters caused some concern during tracer detection surveys, and indeed, the detection sled did snag the ground line during one survey. Subsequent surveys should be equipped with a monitor, available on the bridge, on which are plotted the positions of all moorings.

MOORING DESCRIPTION

Four marker buoys and one Seadata meter were deployed at each of the Olympia and Venture well sites (see fig.1). The coordinates of the moorings and their relative positions to the tracer dump sites are shown in figure 2. Header floats with radar reflectors and beacons were attached to the marker buoys but ground lines were not used.

The two deployment sites are contained by the moorings which define a square about 2 km on each side with the dump site at the centre. The current meter stands are situated on the study site perimeter and were successfully deployed, each with a 100 m ground line and header floats on the stands and at the ends of the ground lines. The stands were placed about 1 km from the tracer dump site.

The ground lines were attached to the apex of the Seadata stands. This arrangement caused some concern regarding the stability of the frame. The Olympia system was thought to have been pulled over on its side when snagged by the tracer detection sled. The system was subsequently lifted by its header float, however, sidescan surveys over the mooring were unable to resolve its resulting orientation.

TRACER DEPLOYMENT

A bottom sample was collected from each of the tracer dump sites prior to deploying the tracer. Both samples contained sand. The grain size was medium/coarse at Olympia and fine/medium at the Venture site.

Three containers of irradiated sand (Ir 192) were deployed at Olympia. A mass of 2 kg of sand, irradiated to 1.75 Curies, was used. The grain size of the sand ranged from 0.5-0.6 mm. Deployment began at 2203 (GMT), 23 Sept. and was completed at 2241 (GMT), 23 Sept. The sample was successfully released at a height of 5 m above the sea floor. An exposure dosage of 50 mrem was experienced by the operators. The deck contamination was checked throughout the deployment. The maximum radiation level after deployment was no greater than 0.1-0.2 mrem. All materials were thoroughly washed subsequent to the deployment.

Two containers of irradiated sand (Ir 192) were deployed at the Venture site. The grain size of the material ranged from 0.3-0.4 mm. A mass of 2 kg of sand, irradiated to 1.75 Curies, was deployed. Deployment began at 1030 (GMT) and was completed at 1056 (GMT). The sample was released 5 m above the sea floor. Some contamination of the release mechanism was measured immediately upon recovery but was eliminated by washing. A total

dosage of 25 mrem was experienced by the operators.

The entire deployment exercise took place with only authorized people present and was supervised at all times by monitoring radiation levels at a distance of 1 m from the deployment equipment. All personnel were equipped with dose meters.

RECOMMENDATIONS

The short term detections showed little, if any, movement of sediment during the calm conditions experienced during the cruise. The schedule for future detections (monthly) therefore appears to be appropriate.

There are two major sources of error in positioning the radioactive cloud. The first appears to be in the scaling of the analog radiation records. A paper output rate of 120 mm/min with every second navigation fix directly registered on the radiation record is considered necessary to ensure the required accuracy. All analog records should be duplicated immediately upon disembarkation, as they represent the only record of the radiation survey.

The second source of error arises in determining the position of the tracer sled relative to the ship. This error is minimized when the ship steams along a straight line and the tracer sled follows the same line; however, this was very difficult to achieve even under the relatively calm conditions encountered on this cruise. The ship could not navigate a straight line at speeds less than about 3.5 knots, but this speed occasionally caused the detection sled to lift off the seabed and thus lose the signal. Increasing the weight of the sled would aid in keeping the sled on the bottom at higher ship speeds, but would still require the ship to steam a straight line. This will increase in difficulty as weather conditions worsen. It is strongly recommended that a transponder interfaced with the ship's navigation system be mounted on the detection sled for all future cruises. If such a device is used, straight lines become unnecessary.

Manoeuvering the ship between survey lines during the detections was difficult due to the location of the current meter moorings which were often close to the ship's track. The problem of fouling the towed sled in the moorings could be minimised by providing the bridge with a track plot which includes the location of the moorings.

An onboard track plotting system capable of plotting ships track and fix position at the appropriate scale (1:500) in hard copy form should be provided during each cruise. These plots are necessary in view of the fact that the ship's actual track varied considerably from that proposed.

Since the centre of gravity of the tracer cloud is largely determined by the position of the radioactivity peak (or peaks), the identification of these peaks becomes very important. Therefore, it is recommended that each detection survey consist of a grid of at least twenty lines, with additional lines to be added at the discretion of the survey chief.

Changes in seabed characteristics over the course of the winter are likely to significantly influence the magnitude of sediment transport. The

easiest way to monitor these changes is by time-lapse photography; cameras mounted on the current meter tripods would yield useful information on the state of the seabed. In addition to the cameras, equipment for bottom sampling should be carried on every cruise.

ITINERARY

DAY/TIME(LOCAL)	OPERATION	LAT(N) (or fix number - see Appendix)	LONG(W)	
22 SEPT.	LOADING GEAR			
1700, 22 SEPT	TRACER ARRIVES			
1900, 22 SEPT	CHECK ON MOORINGS			
2130, 22 SEPT	LEAVING FOR SABLE			
1245, 22 SEPT	ARRIVE OLYMPIA SITE			
1245, 23 SEPT	CALIBRATION OF ARGO AND SYLEDIS			
1400, 23 SEPT	CIRCUIT OF VINLAND			
1530, 23 SEPT	BEGIN SEADATA(1) DEPLOYMENT			
1553, 23 SEPT	ARRAY DEPLOYED	43 59 42.208	59 51 54.611	
1615, 23 SEPT	MARKER(1) DEPLOYED (SW CORNER)	43 59 46.458	59 52 48.106	
1647, 23 SEPT	MARKER(2) DEPLOYED (NW CORNER)	44 00 57.340	59 52 48.305	
1707, 23 SEPT	MARKER(3) DEPLOYED (NE CORNER)	44 00 57.909	59 51 12.106	
1730, 23 SEPT	MARKER(4) DEPLOYED (SE CORNER)	43 59 45.317	59 51 11.834	
1902, 23 SEPT	GRAB SAMPLE 1 OLYMPIA DUMP SITE	44 00 22.949	59 51 46.293	
1941, 23 SEPT	TRACER 1 DEPLOYED	44 00 22.750	59 51 57.211	
23 SEPT	ARRIVE VENTURE SITE			
2340, 23 SEPT	MARKER(1) DEPLOYED (SE CORNER)	43 55 48.458	59 38 46.795	
2359, 23 SEPT	MARKER(2) DEPLOYED (SW CORNER)	43 55 48.802	59 40 23.309	
0030, 24 SEPT	MARKER(3) DEPLOYED (NW CORNER)	43 56 59.448	59 40 24.272	
0113, 24 SEPT	MARKER(4) DEPLOYED (NE CORNER)	43 57 00.419	59 38 46.644	
0723, 24 SEPT	GRAB SAMPLE 2 VENTURE DUMP SITE	43 56 25.042	59 39 33.886	
0756, 24 SEPT	TRACER 2 DEPLOYED	43 56 22.362	59 39 36.510	
0846, 24 SEPT	GRAB SAMPLE 3 VENTURE DUMP SITE	43 56 22.280	59 39 33.150	
0855, 24 SEPT	FIRST CAMERA SHOT - ROLL 1	43 56 24.499	59 39 18.729	
0910, 24 SEPT	LAST CAMERA SHOT - ROLL 1	43 56 27.640	59 38 59.226	
0935, 24 SEPT	GRAB SAMPLE 4 VENTURE DUMP SITE	43 56 24.876	59 44 28.794	
0944, 24 SEPT	FIRST CAMERA SHOT - ROLL 2	43 56 34.540	59 39 21.826	
0955, 24 SEPT	LAST CAMERA SHOT - ROLL 2	43 56 33.770	59 39 07.878	
1030, 24 SEPT	BEGIN SEADATA(2) DEPLOYMENT			
1117, 24 SEPT	ARRAY DEPLOYED	43 57 01.754	59 39 35.491	
1244, 24 SEPT	GRAB SAMPLE 5 VENTURE DUMP SITE	43 56 28.433	59 39 33.088	
1254, 24 SEPT	FIRST CAMERA SHOT - ROLL 3	43 56 28.989	59 39 20.845	
1300, 24 SEPT	LAST CAMERA SHOT - ROLL 3	43 56 30.399	59 39 13.829	
1335, 24 SEPT	GRAB SAMPLE 6 VENTURE DUMP SITE	43 56 27.408	59 39 43.688	
1344, 24 SEPT	FIRST CAMERA SHOT - ROLL 4	43 56 27.550	59 39 38.410	
1354, 24 SEPT	LAST CAMERA SHOT - ROLL 4	43 56 30.774	59 39 31.814	
1400, 24 SEPT	CALIBRATE NAVIGATION			
	LEAVE FOR OLYMPIA			
2100, 24 SEPT	ARRIVE OLYMPIA			
	CALIBRATE NAVIGATION			
2330, 24 SEPT	PREPARATION FOR TRACER SURVEY			
0030, 25 SEPT	OLYMPIA SURVEY 1 STARTED			
0040, 25 SEPT	ABORTED LINE 1 DUE TO OFFSET			
0100, 25 SEPT	MISSED LINE 1.1			
0130, 25 SEPT	LINE OLYM 1.1 (E-W)			OLYM 44
0137, 25 SEPT	EOL 1.1			OLYM 97
0225, 25 SEPT	LINE OLYM 2 (S-N)			OLYM 98
0230, 25 SEPT	EOL 2			OLYM 138

0300, 25 SEPT	MISSED LINE OLYM 2 (RESHOOT)							
0310, 25 SEPT	LINE OLYM 2 (N-S) (RESHOOT)						OLYM 139	
0315, 25 SEPT	EOL 2						OLYM 171	
0335, 25 SEPT	LINE OLYM 4 (S-N)						OLYM 172	
0340, 25 SEPT	EOL 4						OLYM 205	
0420, 25 SEPT	LINE OLYM 6 (N-S)						OLYM 206	
0425, 25 SEPT	EOL 6						OLYM 238	
0452, 25 SEPT	LINE OLYM 3 (SW-NE)						OLYM 239	
0455, 25 SEPT	LINE ABORTED DUE TO OFFSET							
0515, 25 SEPT	LINE OLYM 3.1 (NE-SW)						OLYM 254	
0520, 25 SEPT	EOL 3.1						OLYM 288	
0540, 25 SEPT	LINE OLYM 4 (S-N)						OLYM 289	
0545, 25 SEPT	EOL 4						OLYM 323	
0649, 25 SEPT	LINE OLYM 5 (W-E)						OLYM 324	
0652, 25 SEPT	EOL 5						OLYM 354	
0715, 25 SEPT	LINE OLYM 7 (E-W)						OLYM 355	
0721, 25 SEPT	EOL 7						OLYM 390	
0752, 25 SEPT	LINE OLYM 8 (NE-SW)						OLYM 391	
0800, 25 SEPT	EOL 8						OLYM 428	
	END OF OLYMPIA SURVEY 1							
1006, 25 SEPT	GRAB SAMPLE 7 OLYMPIA DUMP SITE	44	00	20.175	59	51	55.100	
1011, 25 SEPT	FIRST CAMERA SHOT - ROLL 5	44	00	20.937	59	51	48.850	
1018, 25 SEPT	LAST CAMERA SHOT - ROLL 5	44	00	22.562	59	51	41.972	
1035, 25 SEPT	GRAB SAMPLE 8 OLYMPIA DUMP SITE	44	00	23.130	59	51	52.102	
1041, 25 SEPT	FIRST CAMERA SHOT - ROLL 6	44	00	24.001	59	51	51.671	
1104, 25 SEPT	LAST CAMERA SHOT - ROLL 6	44	00	23.124	59	51	46.493	
1110, 25 SEPT	GRAB SAMPLE 9 OLYMPIA DUMP SITE	44	00	26.376	59	51	56.793	
25 SEPT	FIRST CAMERA SHOT - ROLL 7	44	00	27.014	59	51	57.869	
1116, 25 SEPT	LAST CAMERA SHOT - ROLL 7	44	00	27.624	59	51	54.884	
1127, 25 SEPT	GRAB SAMPLE 10 OLYMPIA DUMP SITE	44	00	22.671	59	52	01.158	
1132, 25 SEPT	FIRST CAMERA SHOT - ROLL 8	44	00	23.174	59	51	59.932	
1137, 25 SEPT	LAST CAMERA SHOT - ROLL 8	44	00	22.615	59	51	55.788	
	LEAVE FOR VENTURE							
1500, 25 SEPT	ARRIVE VENTURE SITE							
	RECALIBRATION OF ARGO							
1530, 25 SEPT	DEPLOY TRACER SLED							
1556, 25 SEPT	START VENT 1 (E-W)						VENT 1	
1603, 25 SEPT	EOL 1						VENT 35	
1628, 25 SEPT	START VENT 2 (N-S)						VENT 36	
1634, 25 SEPT	EOL 2						VENT 75	
1651, 25 SEPT	START VENT 3 (S-N)						VENT 76	
1655, 25 SEPT	EOL 3						VENT 110	
1730, 25 SEPT	START VENT 4 (NW-SE)						VENT 119	
1735, 25 SEPT	EOL 4						VENT 154	
1824, 25 SEPT	START VENT 5 (NE-SW)						VENT 155	
1828, 25 SEPT	EOL 5						VENT 194	
1855, 25 SEPT	START VENT 6 (NE-SW)						VENT 195	
1903, 25 SEPT	EOL 6						VENT 229	
1933, 25 SEPT	START VENT 7 (S-N)						VENT 230	
1938, 25 SEPT	EOL 7						VENT 262	
2006, 25 SEPT	START VENT 8 (N-S)						VENT 263	
2011, 25 SEPT	EOL 8						VENT 296	
2043, 25 SEPT	START VENT 9 (E-W)						VENT 297	
2050, 25 SEPT	EOL 9						VENT 333	
2107, 25 SEPT	START VENT 10 (W-E)						VENT 334	
2113, 25 SEPT	EOL 10						VENT 369	

2145, 25 SEPT	START VENT 11 (E-W)	VENT 370
2151, 25 SEPT	EOL 11	VENT 407
	END OF VENTURE SURVEY 1	
	TRANSIT TO OLYMPIA	
0102, 26 SEPT	ARRIVE OLYMPIA	
	DEPTH SOUNDER CALIBRATION	
	OLYMPIA SURVEY 2	
0236, 26 SEPT	START OLYM 9 (W-E)	OLYM 429
0241, 26 SEPT	EOL 9	OLYM 468
0316, 26 SEPT	START OLYM 10 (S-N)	OLYM 469
0321, 26 SEPT	EOL 10	OLYM 506
0321, 26 SEPT	START OLYM 11 (NE-SW)	OLYM 507
0403, 26 SEPT	EOL 11	OLYM 530
0429, 26 SEPT	START OLYM 12 (S-N)	OLYM 531
0434, 26 SEPT	EOL 12 (ABANDONED)	OLYM 555
0451, 26 SEPT	START OLYM 13 (N-S) (RESHOOT OF 12)	OLYM 556
0456, 26 SEPT	EOL 13	OLYM 586
0526, 26 SEPT	START OLYM 14 (N-S)	OLYM 587
0530, 26 SEPT	EOL 14	OLYM 619
0549, 26 SEPT	START OLYM 15 (S-N) (RESHOOT OF 13)	OLYM 620
0553, 26 SEPT	EOL 15	OLYM 649
0615, 26 SEPT	START OLYM 16 (N-S)	OLYM 650
0620, 26 SEPT	EOL 16	OLYM 683
0633, 26 SEPT	START OLYM 17 (S-N)	OLYM 684
0637, 26 SEPT	EOL 17	OLYM 713
0658, 26 SEPT	START OLYM 18 (N-S)	OLYM 714
0703, 26 SEPT	EOL 18	OLYM 748
0727, 26 SEPT	START OLYM 19 (S-N)	OLYM 749
0733, 26 SEPT	EOL 19	OLYM 785
0801, 26 SEPT	START OLYM 20 (N-S)	OLYM 786
0806, 26 SEPT	EOL 20	OLYM 814
0836, 26 SEPT	START OLYM 21 (S-N) (RESHOOT OF 20)	OLYM 815
0844, 26 SEPT	EOL 21	OLYM 851
0924, 26 SEPT	START OLYM 22 (N-S)	OLYM 852
0927, 26 SEPT	EOL 22	OLYM 889
0935, 26 SEPT	SLED HOOKED IN SEADATA GROUND LINE	
1040, 26 SEPT	SLED RELEASED	
1228, 26 SEPT	RUNNING SIDESCAN OVER SEADATA SITE	
	SEVERAL ATTEMPTS MADE	
1430, 26 SEPT	SIDESCAN SURVEY OVER OLYMPIA DUMP SITE	
1455, 26 SEPT	SLED ON BOTTOM	
1515, 26 SEPT	START OLYM 23 (S-N)	OLYM 940
1522, 26 SEPT	EOL 23	OLYM 978
	END OF OLYMPIA SURVEY 2	
1540, 26 SEPT	TRANSIT TO VENTURE	
1900, 26 SEPT	ARRIVE VENTURE SITE	
	BEGIN VENTURE SURVEY 2	
1922, 26 SEPT	START VENT 12 (N-S)	VENT 408
1929, 26 SEPT	EOL 12	VENT 441
1939, 26 SEPT	START VENT 13 (S-N)	VENT 442
1944, 26 SEPT	EOL 13	VENT 473
2000, 26 SEPT	START VENT 14 (N-S)	VENT 474
2004, 26 SEPT	EOL 14	VENT 495
2017, 26 SEPT	START VENT 15 (S-N)	VENT 496
2022, 26 SEPT	EOL 15	VENT 527
2042, 26 SEPT	START VENT 18 (E-W)	VENT 528

		LINE ABORTED-LOSS OF SIGNAL						
2145,	26 SEPT	START VENT 18.1 (W-E)					VENT 550	
2147,	26 SEPT	EOL 18.1					VENT 590	
2228,	26 SEPT	START VENT 21 (N-S)					VENT 591	
2234,	26 SEPT	EOL 21					VENT 624	
2257,	26 SEPT	START VENT 17 (E-W)					VENT 625	
2304,	26 SEPT	EOL 17					VENT 658	
2326,	26 SEPT	START VENT 23 (N-S)					VENT 659	
2335,	26 SEPT	EOL 23					VENT 691	
2350,	26 SEPT	START VENT 20 (S-N)					VENT 692	
2355,	26 SEPT	EOL 20					VENT 724	
0016,	27 SEPT	START VENT 19 (E-W)					VENT 725	
0020,	27 SEPT	EOL 19					VENT 755	
0044,	27 SEPT	START VENT 22 (S-N)					VENT 756	
0049,	27 SEPT	EOL 22					VENT 789	
0112,	27 SEPT	START VENT 16 (W-E)					VENT 790	
0116,	27 SEPT	EOL 16					VENT 818	
0137,	27 SEPT	START VENT 14 (S-N) (RERUN)					VENT 819	
0142,	27 SEPT	EOL 14					VENT 854	
		END OF VENTURE SURVEY 2						
0325,	27 SEPT	SIDESCAN SURVEY VENTURE DUMP SITE (E-W)						
0405,	27 SEPT	SIDESCAN SURVEY OVER SEADATA SITE (N-S)						
0444,	27 SEPT	SIDESCAN SURVEY OVER SEADATA SITE (W-E)						
	27 SEPT	SIDESCAN SURVEY ABANDONED - PROBLEMS WITH						
	27 SEPT	AVOIDING CURRENT METER IN THE DARK						
0600,	27 SEPT	GRAB SAMPLE 11 VENTURE DUMP SITE	43	56	22.508	59	39	41.989
0606,	27 SEPT	FIRST CAMERA SHOT - ROLL 9	43	56	21.749	59	39	45.407
0612,	27 SEPT	LAST CAMERA SHOT - ROLL 9	43	56	16.614	59	39	49.870
0625,	27 SEPT	GRAB SAMPLE 12 VENTURE DUMP SITE	43	56	19.526	59	39	41.014
0628,	27 SEPT	FIRST CAMERA SHOT - ROLL 10	43	56	17.985	59	39	41.510
0637,	27 SEPT	LAST CAMERA SHOT - ROLL 10	43	56	08.464	59	39	38.573
0656,	27 SEPT	GRAB SAMPLE 13 VENTURE DUMP SITE	43	56	18.324	59	39	36.041
	27 SEPT	FIRST CAMERA SHOT - ROLL 11	43	56	15.124	59	39	38.341
0706,	27 SEPT	LAST CAMERA SHOT - ROLL 11	43	56	11.037	59	39	41.352
0716,	27 SEPT	GRAB SAMPLE 14 VENTURE DUMP SITE	43	56	19.270	59	39	28.903
0721,	27 SEPT	FIRST CAMERA SHOT - ROLL 12	43	56	16.327	59	39	32.631
0725,	27 SEPT	LAST CAMERA SHOT - ROLL 12	43	56	14.070	59	39	35.403
0741,	27 SEPT	GRAB SAMPLE 15 VENTURE DUMP SITE	43	56	22.556	59	39	29.642
	27 SEPT	FIRST CAMERA SHOT - ROLL 13	43	56	20.997	59	39	31.221
0749,	27 SEPT	LAST CAMERA SHOT - ROLL 13	43	56	19.762	59	39	30.973
0800,	27 SEPT	LEAVE FOR OLYMPIA SITE						
	27 SEPT	ARRIVE OLYMPIA SITE						
	27 SEPT	BEGIN SIDESCAN OVER CURRENT METER POSITION						
	27 SEPT	ABANDON SIDESCAN OF CURRENT METER DUE TO						
		POOR RESOLUTION						
1500,	27 SEPT	LEAVE FOR DARTMOUTH						
0800,	28 SEPT	ARRIVE DARTMOUTH						

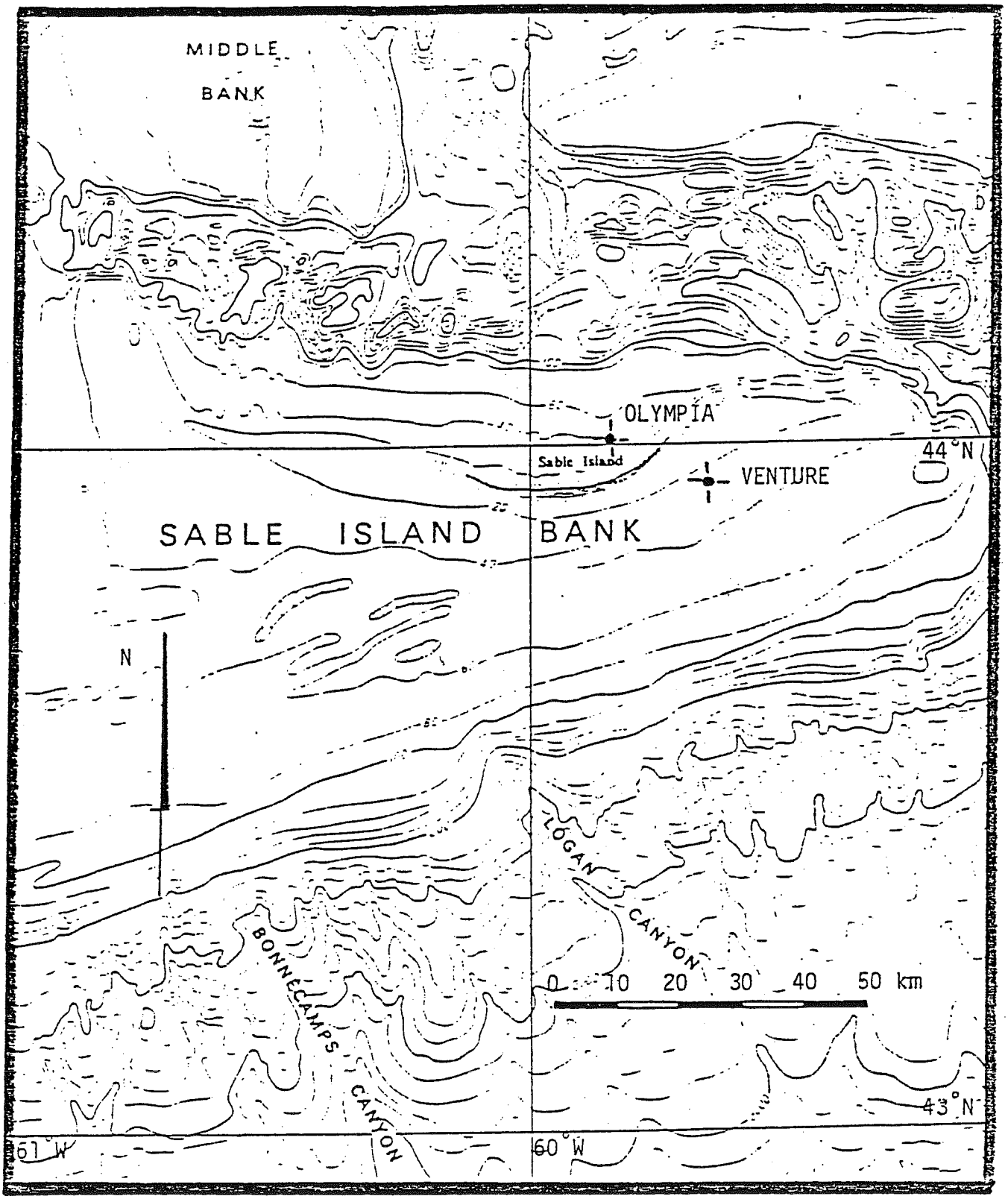
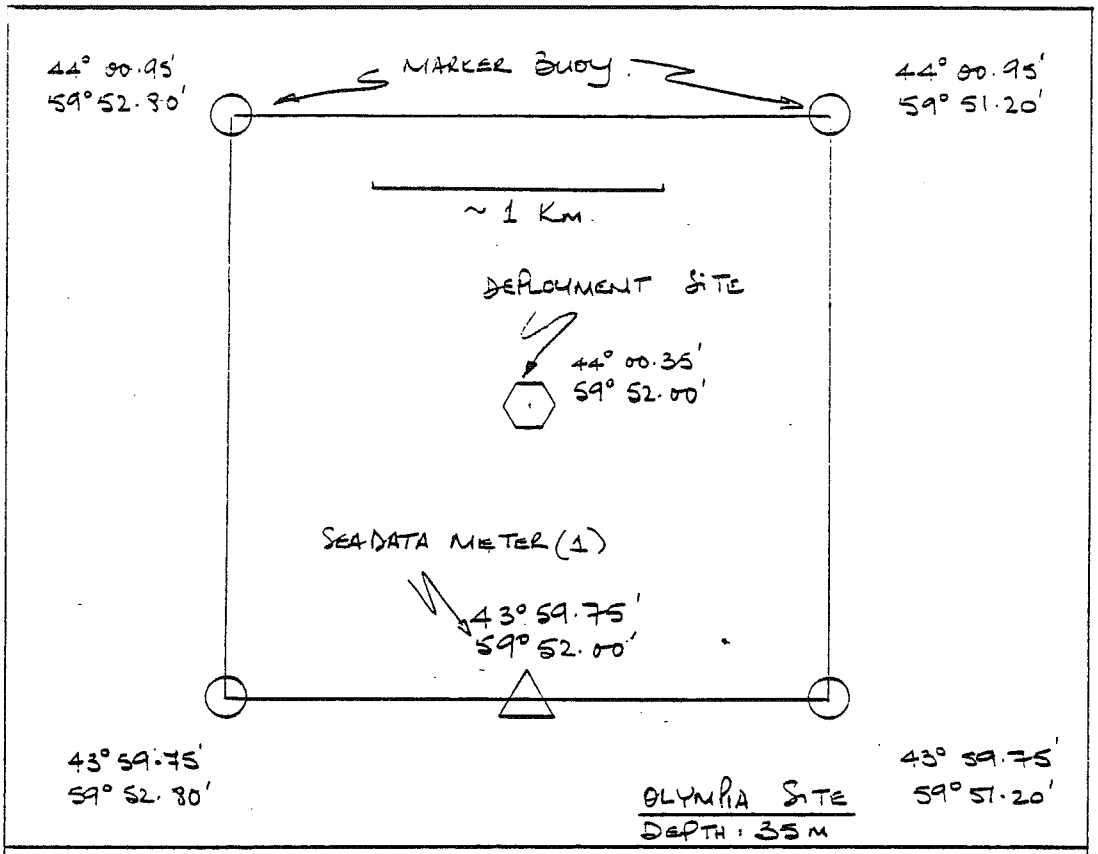


FIGURE 1. LOCATION DIAGRAM OF THE TWO DUMP SITES.



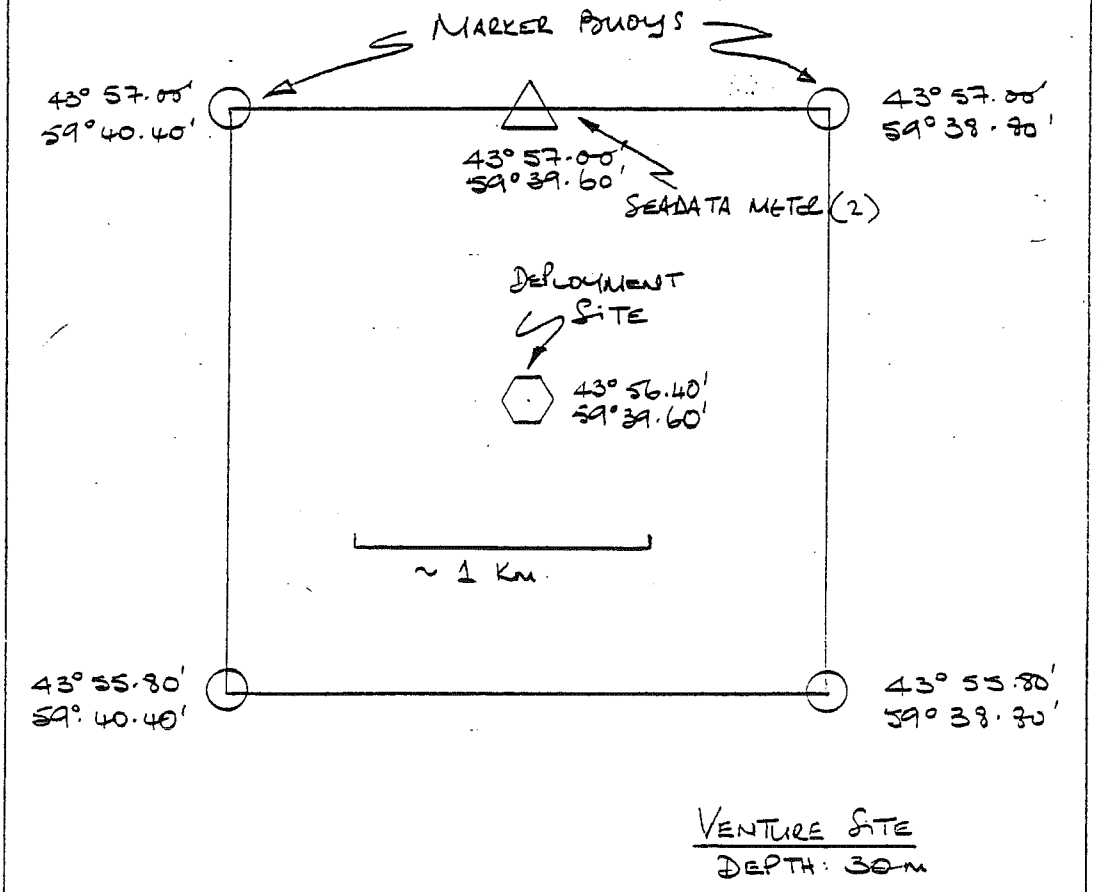


FIG. 2. SITES OF TWO TRACER EXPERIMENTS.

APPENDIX

NAVIGATION DATA- MCELHANNEY LTD.

CRUISE REPORT

ARCTIC PROWLER, SABLE ISLAND BANK
25 – 29 OCTOBER, 1984

by

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Geological Survey of Canada
Project 800036

APPENDIX

NAVIGATION DATA - MCELHANNEY LTD.

OLYMPIA SITE

STA SS RANGE(M) RESID SD STA SS RANGE(M) RESID SD TIME/EV TP/DP LAT/LON N/E OFF/TR SP/HD

DATA DUMP TIME 0:34:21.8 DATE 26/10/1984

PHYSICAL CONSTANTS

R/T ELEVATION (m)?	12.00(	SAT)LOC DAT SHFT dX=?	0.00(
COORDS PLANE=0;UTM=1?	1.00(	SAT)LOC DAT SHFT dY=?	0.00(
MID-LATITUDE (deg)?	44.00(	SAT)LOC DAT SHFT dZ=?	0.00(
UTM CENT MERID (deg)?	-57.00(	SEMI MAJOR AXIS (a)?	6378206.40(
UTM FALSE EASTING(m)?	500000.00(	SEMI MINOR AXIS (b)?	6356583.80(
UTM CEN MER SCL FACT?	0.999600(	1/f=	294.97869821(
UTM FALSE NORTHNG(m)?	0.00(	REFRACTIVITY(N=(n-1)e6)?	0.00(

CLOCK DEPTH & MAG

Clock Model No (2 or 3)?	3.0(	Depth Scale Factor?	1.000000(
Clock CRT 0=off;1=on?	1.0(	Depth Draft Correction?	0.0(
Depth Digitizer 0=off;1=on?	1.0(	Magnetometer Input 0=off;1=on?	0.0(

ARGO SYSTEM DATA

Argo Ant Offset (P- S+)?	0.0(	HPIB Address 21 or 19 CDU only?	21.0(
Argo Ant Offset (F+ A-)?	0.0(	Argo Serial Int Sel Code (14)?	0.0(
Argo 0=CD;2=26;3=Ser;4=IntEM;5=ExtN	2.0(	Argo Lane Width (M)?	0.000000(

SATNAV SYSTEM DATA

Satnav Ant Offset (P- S+)?	0.0(	Satnav 0=off;1=on?	0.0(
Satnav Ant Offset (F+ A-)?	0.0(	Sat Buffer 0=off;1=on?	0.0(

MINI RANGER SYSTEM DATA

MR sys Ant Offset (P- S+)?	0.0(	Mr sys Ant Offset (P- S+)?	0.0(
MR sys Ant Offset (F+ A-)?	0.0(	Mr sys Ant Offset (F+ A-)?	0.0(
MR sys Sel Code (3)?	3.0(	Mr sys Sel Code?	0.0(

TRISPONDER SYSTEM DATA

Trisponder Ant Offset (P- S+)?	0.0(	Trisponder Delay (secs)?	0.000(
Trisponder Ant Offset (F+ A-)?	0.0(		

SYLEDIS SYSTEM DATA

SY sys Ant Offset (P- S+)?	4.0(	Sy sys Ant Offset (P- S+)?	0.0(
SY sys Ant Offset (F+ A-)?	9.0(	Sy sys Ant Offset (F+ A-)?	0.0(
Syledis Input 0=GPIO;1=ExtN?	0.0(		

LORAN C SYSTEM DATA

Loran Ant Offset (P- S+)?	0.0(	Loran Input 0=Ser;1=CDEM;2=ExtN?	0.0(
Loran Ant Offset (F+ A-)?	0.0(	Loran Type 0=404;1=408?	0.0(

ACOUSTIC SYSTEM DATA

Acoutic Ant Offset (P- S+)?	0.0(	Acoustic F1 Chan (0-16)?	0.0(
Acoustic Ant Offset (F+ A-)?	0.0(	Acoustic Module Depth?	0.00(
Acoustic Sel Code (7=Int HBIB)?	0.0(		

AUXILARY OUTPUTS

CMS Argo Output 0=no;1=yes?	0.0(	Aux Argo Ser Out 0=no;1=yes?	0.0(
CMS Loran Output 0=no;1=yes?	0.0(	Aux Ser Argo Sel Code (14)?	0.0(
Aux Argo Out on HPIB 721 0=no;1=yes	0.0(	Shell Out On=Sel Code;Off=0?	0.0(

GYRO & TRACKPOINT

Gyro On=1;Off=0?	1.000000000000(	Trackpoint On=Sel Code;Off=0?	8.0(

SPOT SYSTEM DATA

STA SS	RANGE(M)	RESID	SD	STA SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD

Spot Ant Offset (P- S+)?	0.0(	Spot Select Code (5)?	0.0(
Spot Ant Offset (F+ A-)?	0.0(	Spot Lane Width (m)?	0.000000(

EVENT PARAMETERS

NEXT EVENT NUMBER?	1.00(	PRINT INTERVAL(evs)?	1.00(
DIR(+-)&EV INC(evs)?	1.00(	PLOT INTERVAL(evs)?	0.00(
TAPE SWITCH MAN=0;1=AUTO?	1.00(	PLT ANOTATE INT(evs)?	0.00(
EV: T=1;LD=2;D=3;EX=4;9826CD=5?	1.00(	TAPE INTERVAL(evs)?	1.00(
EV INT(metre or sec)?	10.00(	TAPE DEPTH INT(evs)?	0.00(
CLOSURE 'A' INT(evs)?	1.00(	MIN EVENT INT(sec)?	0.00(
CLOSURE 'B' INT(evs)?	1.00(		

REFERENCE STATION DATA

STA	N	E	ELEV	CAL	EMIS DEL	BIAS	TIME	DATE	DRFTm/d	R GATE(m)
LH 0	5241840.7	-333428.5	0	0.0	0.00	0.00	0.00	0	0.00	0.00
LH 1	4648690.8	-588456.0	0	-950.0	13131.88	0.00	0.00	0	0.00	0.00
LH 2	5187119.0	791985.0	0	-750.0	28755.20	0.00	0.00	0	0.00	0.00
LH 3	5803472.6	587904.1	0	-50.0	41594.58	0.00	0.00	0	0.00	0.00
SY 1	4876485.6	282537.6	3	-203.7	0.00	0.00	0.00	0	0.00	0.00
SY 2	4868686.4	264526.4	31	-202.4	0.00	0.00	0.00	0	0.00	0.00
SY 3	4873481.3	279318.3	25	-345.7	0.00	0.00	0.00	0	0.00	0.00

LINE DATA

REF#	TYPE	LINE IDENT	START N	START E	END N	END E	LIN AZ(UTM)	LENGTH	BL NO	OFFSET
1	W/P	OLYMPIA	4876352.3	270244.0	4876352.3	270244.0	0 00 00.0	0.0	0.0	0.0
2	W/P	NE BUOY	4877402.2	271286.0	4877402.2	271286.0	0 00 00.0	0.0	0.0	0.0
3	W/P	SE BUOY	4875162.3	271214.5	4875162.3	271214.5	0 00 00.0	0.0	0.0	0.0
4	W/P	SW BUOY	4875272.1	269071.4	4875272.1	269071.4	0 00 00.0	0.0	0.0	0.0
5	W/P	NW BUOY	4877459.2	269143.4	4877459.2	269143.4	0 00 00.0	0.0	0.0	0.0
6	W/P	CM	4875099.4	270258.4	4875099.5	270258.4	0 00 00.0	0.0	0.0	0.0
7	Line	OLYM-100N	4876250.0	270100.0	4876500.0	270100.0	0 00 00.0	250.0	0.0	0.0
8	Ofst	OLYM-250S	4876250.0	270250.0	4876500.0	270250.0	0 00 00.0	250.0	7.0	150.0
9	Ofst	OLYM-125N	4876250.0	270125.0	4876500.0	270125.0	0 00 00.0	250.0	7.0	25.0
10	Ofst	OLYM-270S	4876250.0	270270.0	4876500.0	270270.0	0 00 00.0	250.0	7.0	170.0
11	Ofst	OLYM-150N	4876250.0	270150.0	4876500.0	270150.0	0 00 00.0	250.0	7.0	50.0
12	Ofst	OLYM-290S	4876250.0	270290.0	4876500.0	270290.0	0 00 00.0	250.0	7.0	190.0
13	Ofst	OLYM-175N	4876250.0	270175.0	4876500.0	270175.0	0 00 00.0	250.0	7.0	75.0
14	Ofst	OLYM-310S	4876250.0	270310.0	4876500.0	270310.0	0 00 00.0	250.0	7.0	210.0
15	Ofst	OLYM-200N	4876250.0	270200.0	4876500.0	270200.0	0 00 00.0	250.0	7.0	100.0
16	Ofst	OLYM-320S	4876250.0	270320.0	4876500.0	270320.0	0 00 00.0	250.0	7.0	220.0
17	Ofst	OLYM-210N	4876250.0	270210.0	4876500.0	270210.0	0 00 00.0	250.0	7.0	110.0
18	Ofst	OLYM-330S	4876250.0	270330.0	4876500.0	270330.0	0 00 00.0	250.0	7.0	230.0
19	Ofst	OLYM-220N	4876250.0	270220.0	4876500.0	270220.0	0 00 00.0	250.0	7.0	120.0
20	Ofst	OLYM-340S	4876250.0	270340.0	4876500.0	270340.0	0 00 00.0	250.0	7.0	240.0

SYSTEM LINE DATA

Ref#: 7 Type: SYS Ident: OLYM-100N

Start Pt	End Pt				
4876250.0	4876500.0	Az	0 00 00.0	BL	7.0
270100.0	270100.0	Length	250.0	OF	0.0

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
SY11		12624.0	2.4	1	SY22		9612.7	0.8	1	1:13:53	0.6	44 00 19.3	4876251	11	3.2
SY33		9960.5	-2.0	1	LH 1		-179219.5	30.6	0	1.0	0.0	-59 52 03.0	270111	1	0.5
LH 2		96578.4	-46.5	0	LH 3		-277358.1	-45.6	0	Ang = -8.8; D = 117; Mag = 0; Gyro =342.3					
										EV 1.0	1:13:52.6 T		1 N4876251 E 270110		
SY11		12621.5	3.8	1	SY22		9625.9	1.2	1	1:14:03	0.7	44 00 19.9	4876270	11	3.8
SY33		9965.7	-3.2	1	LH 1		-179219.5	5.6	0	2.0	0.0	-59 52 03.0	270111	20	356.2
LH 2		96582.9	-59.1	0	LH 3		-277327.2	-67.9	0	Ang = -7.1; D = 117; Mag = 0; Gyro =341.5					
										EV 2.0	1:14:02.6 T		18 N4876268 E 270111		
SY11		12629.7	-1.0	1	SY22		9639.8	-0.3	1	1:14:13	0.8	44 00 20.5	4876288	11	3.2
SY33		9970.5	0.8	1	LH 1		-179222.5	7.3	0	3.0	0.0	-59 52 03.1	270111	38	356.8
LH 2		96588.9	-51.5	0	LH 3		-277301.1	-90.8	0	Ang = -9.3; D = 117; Mag = 0; Gyro =340.8					
										EV 3.0	1:14:12.6 T		37 N4876287 E 270111		
SY11		12624.3	2.0	1	SY22		9653.2	0.6	1	1:14:23	0.9	44 00 21.0	4876304	11	3.1
SY33		9975.7	-1.7	1	LH 1		-179258.5	30.4	0	4.0	0.0	-59 52 03.1	270111	54	0.4
LH 2		96579.9	-48.8	0	LH 3		-277340.1	-42.3	0	Ang = -11.4; D = 117; Mag = 0; Gyro =330.0					
										EV 4.0	1:14:22.6 T		53 N4876303 E 270111		
SY11		12621.0	4.0	1	SY22		9666.9	1.3	1	1:14:34	1.0	44 00 21.6	4876321	12	3.1
SY33		9981.4	-3.4	1	LH 1		-179258.5	17.1	0	5.0	0.0	-59 52 03.1	270112	71	359.8
LH 2		96576.9	-43.6	0	LH 3		-277331.1	-42.4	0	Ang = -10.9; D = 117; Mag = 0; Gyro =338.5					
										EV 5.0	1:14:32.6 T		68 N4876318 E 270111		
SY11		12630.4	-0.6	1	SY22		9681.2	-0.2	1	1:14:44	1.1	44 00 22.1	4876338	11	3.3
SY33		9988.1	0.5	1	LH 1		-179276.5	20.6	0	6.0	0.0	-59 52 03.1	270111	88	355.0
LH 2		96579.9	-55.3	0	LH 3		-277310.1	-61.0	0	Ang = -7.9; D = 117; Mag = 0; Gyro =339.2					
										EV 6.0	1:14:42.6 T		84 N4876334 E 270112		
SY11		12628.9	0.4	1	SY22		9693.8	0.1	1	1:14:54	1.2	44 00 22.7	4876355	11	3.2
SY33		9993.4	-0.4	1	LH 1		-179288.5	20.3	0	7.0	0.0	-59 52 03.2	270111	105	357.2
LH 2		96582.9	-57.9	0	LH 3		-277307.1	-56.9	0	Ang = -19.2; D = 117; Mag = 0; Gyro =339.0					
										EV 7.0	1:14:52.6 T		101 N4876351 E 270111		
SY11		12625.4	1.9	1	SY22		9707.8	0.6	1	1:15:04	1.3	44 00 23.2	4876372	10	3.2
SY33		9997.8	-1.6	1	LH 1		-179300.5	19.3	0	8.0	0.0	-59 52 03.3	270110	122	356.7
LH 2		96576.9	-48.8	0	LH 3		-277301.1	-53.6	0	Ang = -12.3; D = 115; Mag = 0; Gyro =338.8					
										EV 8.0	1:15:02.6 T		118 N4876368 E 270110		
SY11		12631.0	-0.1	1	SY22		9719.7	-0.0	1	1:15:14	1.4	44 00 23.8	4876389	9	3.2
SY33		10004.6	0.1	1	LH 1		-179321.5	27.9	0	9.0	0.0	-59 52 03.3	270109	139	355.2
LH 2		96564.9	-43.3	0	LH 3		-277316.1	-35.9	0	Ang = -13.0; D = 115; Mag = 0; Gyro =337.5					
										EV 9.0	1:15:12.6 T		135 N4876385 E 270109		
SY11		12625.3	4.5	1	SY22		9732.2	1.5	1	1:15:24	1.5	44 00 24.3	4876406	7	3.2
SY33		10012.6	-3.8	1	LH 1		-179330.5	23.9	0	10.0	0.0	-59 52 03.4	270107	156	355.7
LH 2		96570.9	-47.0	0	LH 3		-277301.1	-42.2	0	Ang = -14.4; D = 115; Mag = 0; Gyro =336.7					
										EV 10.0	1:15:22.6 T		152 N4876402 E 270108		
SY11		12636.3	-0.7	1	SY22		9746.2	-0.2	1	1:15:34	1.6	44 00 24.9	4876423	5	3.4
SY33		10019.7	0.6	1	LH 1		-179336.4	15.5	0	11.0	0.0	-59 52 03.5	270105	173	351.6
LH 2		96567.9	-54.2	0	LH 3		-277283.1	-58.8	0	Ang = -15.4; D = 117; Mag = 0; Gyro =336.0					
										EV 11.0	1:15:32.7 T		169 N4876419 E 270106		
SY11		12633.0	2.1	1	SY22		9757.1	0.7	1	1:15:44	1.7	44 00 25.4	4876439	4	3.2
SY33		10026.1	-1.8	1	LH 1		-179366.4	34.4	0	12.0	0.0	-59 52 03.6	270104	189	354.6
LH 2		96556.0	-41.3	0	LH 3		-277304.1	-31.0	0	Ang = -5.5; D = 120; Mag = 0; Gyro =334.7					
										EV 12.0	1:15:42.6 T		186 N4876436 E 270104		

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
SY11		12632.2	4.2	1	SY22		9759.8	1.4	1	1:15:55	1.8	44 00 25.0	4876457	1	3.2
SY33		10034.4	-3.6	1	LH 1		-179378.4	33.0	0	13.0	0.0	-59 52 03.8	270101	207	351.8
LH 2		96550.0	-37.2	0	LH 3		-277298.1	-30.8	0	Ang = -15.8; D = 117; Mag = 0; Gyro =334.5					
										EV 13.0	1:15:52.6 T	202	N4876452	E 270102	
SY11		12647.2	-1.9	1	SY22		9781.5	-0.6	1	1:16:05	1.9	44 00 26.5	4876473	-1	3.3
SY33		10043.4	1.6	1	LH 1		-179378.4	19.8	0	14.0	0.0	-59 52 03.9	270099	223	347.8
LH 2		96556.0	-58.7	0	LH 3		-277271.1	-60.5	0	Ang = -13.0; D = 115; Mag = 0; Gyro =336.0					
										EV 14.0	1:16:02.6 T	219	N4876469	E 270100	
SY11		12645.1	0.4	1	SY22		9796.0	0.1	1	1:16:16	2.0	44 00 27.1	4876492	-5	3.3
SY33		10051.3	-0.3	1	LH 1		-179396.4	23.3	0	15.0	0.0	-59 52 04.1	270095	242	350.2
LH 2		96544.0	-47.4	0	LH 3		-277294.2	-29.8	0	Ang = -5.4; D = 117; Mag = 0; Gyro =338.2					
										EV 15.0	1:16:12.6 T	236	N4876486	E 270096	
SY11		12642.7	1.9	1	SY22		9805.6	0.6	1	1:16:23	2.1	44 00 27.5	4876504	-7	3.3
SY33		10055.5	-1.6	1	LH 1		-179405.4	23.1	0	16.0	0.0	-59 52 04.2	270093	254	350.4
LH 2		96544.0	-46.6	0	LH 3		-277271.1	-47.2	0	Ang = -8.5; D = 115; Mag = 0; Gyro =340.5					
										EV 16.0	1:16:22.6 T	253	N4876503	E 270093	
SY11		12648.3	-1.1	1	SY22		9818.3	-0.4	1	1:16:33	2.2	44 00 28.0	4876521	-8	3.3
SY33		10060.4	0.9	1	LH 1		-179432.4	37.8	0	17.0	0.0	-59 52 04.3	270092	271	351.3
LH 2		96526.0	-34.2	0	LH 3		-277262.2	-53.0	0	Ang = -4.7; D = 120; Mag = 0; Gyro =342.3					
										EV 17.0	1:16:32.6 T	270	N4876520	E 270092	
SY11		12643.0	2.4	1	SY22		9833.2	0.8	1	1:16:43	2.3	44 00 28.6	4876538	-9	3.3
SY33		10067.3	-2.0	1	LH 1		-179423.4	14.5	0	18.0	0.0	-59 52 04.4	270091	288	354.5
LH 2		96544.0	-49.0	0	LH 3		-277259.2	-45.9	0	Ang = -7.5; D = 115; Mag = 0; Gyro =342.5					
										EV 18.0	1:16:42.7 T	287	N4876537	E 270090	
SY11		12640.0	4.3	1	SY22		9846.8	1.4	1	1:16:53	2.4	44 00 29.2	4876556	-10	3.3
SY33		10073.1	-3.7	1	LH 1		-179444.4	22.5	0	19.0	0.0	-59 52 04.4	270090	306	355.4
LH 2		96544.0	-47.5	0	LH 3		-277265.2	-31.7	0	Ang = -8.3; D = 117; Mag = 0; Gyro =342.5					
										EV 19.0	1:16:52.5 T	304	N4876554	E 270090	
SY11		12547.8	0.1	1	SY22		9860.6	0.0	1	1:17:03	2.5	44 00 29.7	4876573	-10	3.3
SY33		10078.4	-0.1	1	LH 1		-179456.4	21.1	0	20.0	0.0	-59 52 04.5	270090	323	354.6
LH 2		96541.0	-50.6	0	LH 3		-277226.2	-67.2	0	Ang = -9.1; D = 117; Mag = 0; Gyro =342.7					
										EV 20.0	1:17:02.6 T	322	N4876572	E 270090	
SY11		12644.8	2.4	1	SY22		9874.4	0.8	1	1:17:13	2.6	44 00 30.3	4876591	-10	3.3
SY33		10085.1	-2.1	1	LH 1		-179477.4	28.7	0	21.0	0.0	-59 52 04.5	270090	341	356.8
LH 2		96535.0	-43.3	0	LH 3		-277223.2	-61.8	0	Ang = 2.3; D = 117; Mag = 0; Gyro =342.5					
										EV 21.0	1:17:12.6 T	339	N4876589	E 270090	
SY11		12644.0	3.1	1	SY22		9889.4	1.0	1	1:17:23	2.7	44 00 30.9	4876608	-11	3.4
SY33		10091.4	-2.7	1	LH 1		-179477.4	14.4	0	22.0	0.0	-59 52 04.6	270089	358	355.9
LH 2		96550.0	-58.0	0	LH 3		-277217.2	-59.6	0	Ang = -7.2; D = 120; Mag = 0; Gyro =343.2					
										EV 22.0	1:17:22.7 T	357	N4876607	E 270089	
SY11		12645.0	2.4	1	SY22		9904.0	0.8	1	1:17:33	2.8	44 00 31.4	4876626	-10	3.4
SY33		10096.5	-2.1	1	LH 1		-179507.3	30.8	0	23.0	0.0	-59 52 04.6	270090	376	357.5
LH 2		96532.0	-40.5	0	LH 3		-277220.2	-49.4	0	Ang = -14.3; D = 120; Mag = 0; Gyro =345.0					
										EV 23.0	1:17:32.6 T	375	N4876625	E 270089	
SY11		12542.8	2.9	1	SY22		9918.4	0.9	1	1:17:43	2.9	44 00 32.0	4876644	-10	3.3
SY33		10100.4	-2.5	1	LH 1		-179501.3	11.9	0	24.0	0.0	-59 52 04.6	270090	394	358.3
LH 2		96550.0	-55.6	0	LH 3		-277211.2	-49.3	0	Ang = -10.4; D = 117; Mag = 0; Gyro =346.2					
										EV 24.0	1:17:42.6 T	392	N4876642	E 270090	

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
SY11		12646.5	0.9	1	SY22		9935.7	0.3	1	1:17:55	3.0	44 00 32.7	4876664	-9	3.4
SY33		10107.0	-0.8	1	LH 1		-179525.3	19.5	0	25.0	0.0	-59 52 04.6	270091	414	358.5
LH 2		96541.0	-49.2	0	LH 3		-277232.2	-20.8	0	Ang = -5.8; D = 120; Mag = 0; Gyro =346.7					
										EV 25.0	1:17:52.8 T		410 N4876660 E 270091		
SY11		12642.0	2.6	1	SY22		9953.8	0.9	1	1:18:07	4.0	44 00 33.3	4876685	-8	3.4
SY33		10112.3	-2.3	1	LH 1		-179537.3	16.3	0	26.0	0.0	-59 52 04.5	270092	435	1.4
LH 2		96556.0	-58.5	0	LH 3		-277199.2	-40.3	0	Ang = -5.1; D = 117; Mag = 0; Gyro =346.8					
										EV 26.0	1:18:02.6 T		427 N4876677 E 270091		

SYSTEM LINE DATA

Ref#: 8 Type: SYS Ident: OLYM-250S

Start Pt	End Pt			
4876250.0	4876500.0	Az	0 00 00.0	BL 8.0
270250.0	270250.0	Length	250.0	BF 0.0

McElhanney

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD

SYSTEM LINE DATA

Ref#: 8 Type: SYS Ident: OLYM-250S
Start Pt End Pt
4876500.0 4876250.0 Az 180 00 00.0 BL 8.0
270250.0 270250.0 Lengtn 250.0 OF 0.0

SY11	12471.4	3.0	1	SY22	9881.3	1.6	1	1:38:03	4.6	44 00 27.3	4876493	-18	3.3
SY33	9889.9	-4.2	1	LH 1	-179420.4	28.2	0	1.0	0.0	-59 51 56.4	270268	7	178.4
LH 2	96813.8	-12.5	0	LH 3	-277109.3	-4.0	0	Ang = 10.4; D = 120; Mag = 0; Gyro =201.8					
								EV 1.0	1:38:00.6 T		3 N4876497 E 270267		
SY11	12475.7	1.8	1	SY22	9868.7	0.6	1	1:38:13	4.7	44 00 26.8	4876477	-17	3.2
SY33	9883.1	-1.5	1	LH 1	-179395.8	16.3	0	2.0	0.0	-59 51 56.4	270267	23	181.2
LH 2	96825.8	-26.2	0	LH 3	-277130.2	8.8	0	Ang = 8.7; D = 120; Mag = 0; Gyro =201.5					
								EV 2.0	1:38:10.6 T		19 N4876481 E 270267		
SY11	12481.0	-2.2	1	SY22	9856.6	-0.7	1	1:38:23	4.8	44 00 26.3	4876461	-17	3.2
SY33	9876.0	1.9	1	LH 1	-179365.8	-1.5	0	3.0	0.0	-59 51 56.3	270267	39	179.2
LH 2	96831.8	-34.6	0	LH 3	-277121.3	-8.5	0	Ang = 10.8; D = 120; Mag = 0; Gyro =201.2					
								EV 3.0	1:38:20.6 T		35 N4876465 E 270267		
SY11	12467.9	5.9	1	SY22	9844.2	2.0	1	1:38:33	4.9	44 00 25.8	4876445	-16	3.3
SY33	9873.2	-5.0	1	LH 1	-179363.4	13.4	0	4.0	0.0	-59 51 56.3	270266	55	186.3
LH 2	96834.8	-57.9	0	LH 3	-277100.3	-52.4	0	Ang = 12.1; D = 122; Mag = 0; Gyro =201.3					
								EV 4.0	1:38:30.6 T		50 N4876450 E 270267		
SY11	12477.9	-0.1	1	SY22	9832.2	-0.0	1	1:38:45	5.0	44 00 25.3	4876429	-15	2.9
SY33	9867.3	0.1	1	LH 1	-179341.8	-2.2	0	5.0	0.0	-59 51 56.4	270265	71	179.5
LH 2	96831.8	-32.5	0	LH 3	-277100.3	-41.2	0	Ang = 13.1; D = 120; Mag = 0; Gyro =203.2					
								EV 5.0	1:38:40.6 T		66 N4876434 E 270265		
SY11	12471.8	3.0	1	SY22	9823.8	1.0	1	1:38:52	5.1	44 00 24.9	4876419	-16	2.9
SY33	9863.5	-2.5	1	LH 1	-179339.4	4.1	0	6.0	0.0	-59 51 56.3	270266	81	175.3
LH 2	96834.8	-29.8	0	LH 3	-277106.3	-36.3	0	Ang = 13.8; D = 120; Mag = 0; Gyro =202.3					
								EV 6.0	1:38:51.0 T		80 N4876420 E 270266		
SY11	12477.3	-0.7	1	SY22	9812.5	-0.2	1	1:39:01	5.2	44 00 24.5	4876405	-19	2.9
SY33	9857.7	0.6	1	LH 1	-179339.4	15.4	0	7.0	0.0	-59 51 56.2	270269	95	176.6
LH 2	96828.8	-26.7	0	LH 3	-277115.3	-35.5	0	Ang = 15.6; D = 120; Mag = 0; Gyro =202.0					
								EV 7.0	1:39:00.8 T		93 N4876407 E 270268		
SY11	12472.7	2.0	1	SY22	9802.2	0.7	1	1:39:12	5.3	44 00 24.1	4876391	-20	2.8
SY33	9854.0	-1.7	1	LH 1	-179309.5	-4.7	0	8.0	0.0	-59 51 56.1	270270	109	175.5
LH 2	96836.0	-30.6	0	LH 3	-277106.3	-47.9	0	Ang = 15.2; D = 117; Mag = 0; Gyro =202.5					
								EV 8.0	1:39:11.0 T		107 N4876393 E 270270		
SY11	12477.1	-0.9	1	SY22	9790.9	-0.3	1	1:39:22	5.4	44 00 23.6	4876378	-21	2.7
SY33	9848.4	0.8	1	LH 1	-179318.5	15.5	0	9.0	0.0	-59 51 56.0	270271	122	176.8
LH 2	96836.0	-32.8	0	LH 3	-277133.2	-28.6	0	Ang = 14.6; D = 117; Mag = 0; Gyro =202.0					
								EV 9.0	1:39:21.0 T		121 N4876379 E 270271		
SY11	12469.0	3.6	1	SY22	9779.7	1.2	1	1:39:31	5.5	44 00 23.2	4876364	-22	2.8
SY33	9844.3	-3.1	1	LH 1	-179306.5	14.6	0	10.0	0.0	-59 51 56.0	270272	136	175.0
LH 2	96837.8	-28.3	0	LH 3	-277151.2	-12.7	0	Ang = 13.6; D = 117; Mag = 0; Gyro =203.0					
								EV 10.0	1:39:30.8 T		134 N4876366 E 270272		
SY11	12477.2	-1.8	1	SY22	9768.4	-0.6	1	1:39:42	5.6	44 00 22.7	4876350	-23	2.8
SY33	9837.8	1.5	1	LH 1	-179288.5	8.1	0	11.0	0.0	-59 51 55.9	270273	150	177.9
LH 2	96834.8	-29.6	0	LH 3	-277172.2	-0.9	0	Ang = 17.2; D = 117; Mag = 0; Gyro =203.2					

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV TP/DP LAT/LON N/E OFF/TR SP/HD
										EV 11.0 1:39:41.0 T 149 N4876351 E 270273
SY11		12467.8	3.0	1	SY22		9756.0	1.0	1	1:39:52 5.7 44 00 22.2 4876334 -24 2.9
SY33		9832.1	-2.5	1	LH 1		-179276.5	9.0	0	12.0 0.0 -59 51 55.9 270274 166 173.5
LH 2		96843.8	-30.0	0	LH 3		-277181.2	6.6	0	Ang = 13.3; D = 120; Mag = 0; Gyro =203.0
										EV 12.0 1:39:50.6 T 163 N4876337 E 270273
SY11		12476.0	-0.6	1	SY22		9744.3	-0.2	1	1:40:02 5.8 44 00 21.7 4876319 -24 2.8
SY33		9829.5	0.5	1	LH 1		-179279.5	22.3	0	13.0 0.0 -59 51 55.8 270274 181 179.1
LH 2		96840.8	-34.5	0	LH 3		-277160.2	-25.1	0	Ang = 17.8; D = 120; Mag = 0; Gyro =206.0
										EV 13.0 1:40:00.6 T 178 N4876322 E 270274
SY11		12477.3	-1.0	1	SY22		9732.2	-0.3	1	1:40:12 5.9 44 00 21.2 4876304 -24 2.8
SY33		9825.5	0.8	1	LH 1		-179255.5	10.1	0	14.0 0.0 -59 51 55.8 270274 196 178.3
LH 2		96849.8	-44.1	0	LH 3		-277148.2	-44.1	0	Ang = 15.5; D = 117; Mag = 0; Gyro =208.2
										EV 14.0 1:40:10.6 T 193 N4876307 E 270274
SY11		12469.6	3.9	1	SY22		9716.9	1.3	1	1:40:24 6.0 44 00 20.7 4876287 -23 2.9
SY33		9820.8	-3.3	1	LH 1		-179240.5	9.0	0	15.0 0.0 -59 51 55.8 270273 213 178.3
LH 2		96840.8	-30.2	0	LH 3		-277167.1	-31.0	0	Ang = 18.9; D = 117; Mag = 0; Gyro =209.2
										EV 15.0 1:40:20.6 T 208 N4876292 E 270273
SY11		12482.2	-2.0	1	SY22		9707.3	-0.7	1	1:40:31 6.1 44 00 20.3 4876275 -22 2.9
SY33		9819.2	1.7	1	LH 1		-179218.9	-4.5	0	16.0 0.0 -59 51 55.8 270272 225 182.6
LH 2		96843.8	-44.3	0	LH 3		-277169.2	-40.6	0	Ang = 18.9; D = 117; Mag = 0; Gyro =209.8
										EV 16.0 1:40:30.6 T 223 N4876277 E 270273
SY11		12474.7	3.7	1	SY22		9694.6	1.2	1	1:40:41 6.2 44 00 19.8 4876260 -20 2.9
SY33		9817.5	-3.1	1	LH 1		-179216.5	4.9	0	17.0 0.0 -59 51 55.9 270270 240 181.3
LH 2		96836.0	-32.4	0	LH 3		-277184.2	-29.5	0	Ang = 20.5; D = 117; Mag = 0; Gyro =210.2
										EV 17.0 1:40:40.7 T 239 N4876261 E 270270
SY11		12486.0	-0.7	1	SY22		9680.9	-0.2	1	1:40:51 6.3 44 00 19.3 4876245 -18 2.9
SY33		9816.2	0.6	1	LH 1		-179216.5	16.4	0	18.0 0.0 -59 51 56.0 270268 255 186.1
LH 2		96831.8	-39.6	0	LH 3		-277190.2	-37.4	0	Ang = 21.0; D = 117; Mag = 0; Gyro =209.2
										EV 18.0 1:40:50.6 T 254 N4876246 E 270269
SY11		12483.5	1.9	1	SY22		9668.1	0.6	1	1:41:01 6.4 44 00 18.8 4876230 -15 2.8
SY33		9813.7	-1.6	1	LH 1		-179192.5	4.0	0	19.0 0.0 -59 51 56.1 270265 270 184.3
LH 2		96828.8	-36.3	0	LH 3		-277208.2	-25.7	0	Ang = -15.3; D = 122; Mag = 0; Gyro =209.0
										EV 19.0 1:41:00.6 T 268 N4876232 E 270266
SY11		12486.0	1.4	1	SY22		9655.4	0.5	1	1:41:11 6.5 44 00 18.4 4876216 -12 2.9
SY33		9810.6	-1.2	1	LH 1		-179174.6	-2.3	0	20.0 0.0 -59 51 56.2 270262 284 186.6
LH 2		96834.8	-45.1	0	LH 3		-277202.2	-40.0	0	Ang = 16.0; D = 117; Mag = 0; Gyro =208.0
										EV 20.0 1:41:10.7 T 283 N4876217 E 270263
SY11		12494.1	-1.7	1	SY22		9641.6	-0.6	1	1:41:21 6.6 44 00 17.9 4876201 -10 2.9
SY33		9808.2	1.4	1	LH 1		-179183.6	18.7	0	21.0 0.0 -59 51 56.2 270260 299 187.4
LH 2		96819.8	-38.3	0	LH 3		-277214.2	-40.1	0	Ang = 17.4; D = 120; Mag = 0; Gyro =207.8
										EV 21.0 1:41:20.9 T 298 N4876202 E 270261
SY11		12492.0	1.9	1	SY22		9627.3	0.6	1	1:41:31 6.7 44 00 17.4 4876186 -7 2.9
SY33		9807.7	-1.6	1	LH 1		-179156.6	4.0	0	22.0 0.0 -59 51 56.4 270257 314 185.6
LH 2		96825.8	-46.0	0	LH 3		-277238.2	-24.1	0	Ang = 14.5; D = 120; Mag = 0; Gyro =208.3
										EV 22.0 1:41:30.8 T 313 N4876187 E 270258
SY11		12497.0	1.0	1	SY22		9613.6	0.3	1	1:41:42 6.8 44 00 16.9 4876170 -5 2.9
SY33		9806.3	-0.8	1	LH 1		-179150.6	9.9	0	23.0 0.0 -59 51 56.5 270255 330 187.4

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
LH 2		96810.8	-37.3	0	LH 3		-277253.2	-19.8	0	Ang = 11.3; D = 120; Mag = 0; Gyro =207.8					
										EV 23.0	1:41:41.0 T		328 N4876172 E 270255		
SY11		12495.1	2.2	1	SY22		9599.7	0.7	1	1:41:52	6.9	44 00 16.4 4876154		-2	3.0
SY33		9801.2	-1.8	1	LH 1		-179132.6	5.6	0	24.0	0.0	-59 51 56.5 270252		346	184.2
LH 2		96809.0	-33.5	0	LH 3		-277265.2	-14.1	0	Ang = 12.2; D = 120; Mag = 0; Gyro =206.7					
										EV 24.0	1:41:50.6 T		343 N4876157 E 270252		
SY11		12491.8	6.4	1	SY22		9584.1	2.1	1	1:42:03	7.0	44 00 15.8 4876137		0	3.1
SY33		9800.0	-5.3	1	LH 1		-179129.6	16.2	0	25.0	0.0	-59 51 56.6 270250		363	183.8
LH 2		96807.8	-32.9	0	LH 3		-277262.2	-25.2	0	Ang = 13.4; D = 120; Mag = 0; Gyro =207.2					
										EV 25.0	1:42:00.6 T		359 N4876141 E 270250		
SY11		12503.4	1.5	1	SY22		9570.2	0.5	1	1:42:13	7.1	44 00 15.3 4876121		3	3.0
SY33		9798.0	-1.3	1	LH 1		-179111.6	10.3	0	26.0	0.0	-59 51 56.7 270247		379	188.8
LH 2		96804.8	-40.7	0	LH 3		-277268.2	-32.9	0	Ang = 12.3; D = 120; Mag = 0; Gyro =206.5					
										EV 26.0	1:42:10.6 T		375 N4876125 E 270249		
SY11		12514.0	-3.0	1	SY22		9556.0	-1.0	1	1:42:23	7.2	44 00 14.7 4876104		5	3.3
SY33		9795.3	2.5	1	LH 1		-179093.6	11.9	0	27.0	0.0	-59 51 56.8 270245		396	187.6
LH 2		96795.8	-38.6	0	LH 3		-277280.1	-36.3	0	Ang = 13.9; D = 117; Mag = 0; Gyro =206.0					
										EV 27.0	1:42:20.6 T		390 N4876110 E 270246		
SY11		12506.9	2.4	1	SY22		9543.6	0.8	1	1:42:32	9.0	44 00 14.2 4876089		7	3.1
SY33		9793.6	-2.0	1	LH 1		-179084.6	7.3	0	28.0	0.0	-59 51 56.8 270243		411	186.9
LH 2		96795.8	-37.5	0	LH 3		-277304.1	-14.1	0	Ang = 12.5; D = 117; Mag = 0; Gyro =206.7					
										EV 28.0	1:42:31.5 T		409 N4876091 E 270243		

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD

SYSTEM LINE DATA

Ref#: 9 Type: SYS Ident: OLYM-125N
Start Pt End Pt
4876250.0 4876500.0 Az 0 00 00.0 BL 9.0
270125.0 270125.0 Length 250.0 OF 0.0

SY11		12600.7	0.2	1	SY22		9629.5	0.1	1	2:04:27	9.6	44 00 19.4	4876253	16	2.9
SY33		9934.6	-0.1	1	LH 1		-179204.5	11.8	0	1.0	0.0	-59 52 01.7	270141	3	355.9
LH 2		96648.9	-70.8	0	LH 3		-277319.1	-52.4	0	Ang = -17.6; D = 115; Mag = 0; Gyro =335.5					
										EV 1.0	2:04:26.7 T		2 N4876252 E 270141		
SY11		12597.4	2.6	1	SY22		9640.5	0.8	1	2:04:37	9.7	44 00 19.9	4876268	15	2.9
SY33		9940.2	-2.2	1	LH 1		-179219.5	15.7	0	2.0	0.0	-59 52 01.8	270140	18	354.7
LH 2		96642.9	-63.8	0	LH 3		-277328.1	-36.6	0	Ang = -15.1; D = 115; Mag = 0; Gyro =335.5					
										EV 2.0	2:04:36.7 T		17 N4876267 E 270140		
SY11		12605.3	-1.3	1	SY22		9652.0	-0.4	1	2:04:47	9.8	44 00 20.4	4876283	14	2.9
SY33		9945.6	1.1	1	LH 1		-179222.5	6.9	0	3.0	0.0	-59 52 01.8	270139	33	353.2
LH 2		96636.9	-65.2	0	LH 3		-277331.1	-31.9	0	Ang = -22.3; D = 115; Mag = 0; Gyro =335.3					
										EV 3.0	2:04:46.7 T		31 N4876281 E 270139		
SY11		12591.9	5.1	1	SY22		9665.8	1.7	1	2:04:57	9.9	44 00 20.9	4876298	13	2.9
SY33		9948.9	-4.3	1	LH 1		-179237.5	9.7	0	4.0	0.0	-59 52 01.9	270138	48	358.4
LH 2		96630.9	-47.4	0	LH 3		-277343.1	-5.4	0	Ang = -9.9; D = 117; Mag = 0; Gyro =336.3					
										EV 4.0	2:04:56.7 T		46 N4876296 E 270138		
SY11		12603.0	-0.6	1	SY22		9677.5	-0.2	1	2:05:09	10.0	44 00 21.4	4876314	13	2.9
SY33		9954.3	0.5	1	LH 1		-179252.5	12.7	0	5.0	0.0	-59 52 01.9	270138	64	354.4
LH 2		96636.9	-63.3	0	LH 3		-277331.1	-17.1	0	Ang = -13.0; D = 117; Mag = 0; Gyro =335.3					
										EV 5.0	2:05:07.0 T		61 N4876311 E 270138		
SY11		12600.4	1.4	1	SY22		9687.6	0.4	1	2:05:19	10.1	44 00 21.9	4876329	13	2.8
SY33		9959.3	-1.1	1	LH 1		-179273.5	23.6	0	6.0	0.0	-59 52 01.9	270138	79	357.1
LH 2		96627.9	-53.5	0	LH 3		-277319.1	-22.9	0	Ang = -17.1; D = 115; Mag = 0; Gyro =334.5					
										EV 6.0	2:05:16.7 T		75 N4876325 E 270137		
SY11		12603.5	0.0	1	SY22		9698.6	0.0	1	2:05:29	10.2	44 00 22.3	4876342	11	2.8
SY33		9964.3	-0.0	1	LH 1		-179285.5	24.6	0	7.0	0.0	-59 52 02.0	270136	92	353.0
LH 2		96624.9	-53.9	0	LH 3		-277283.1	-55.0	0	Ang = -19.8; D = 115; Mag = 0; Gyro =334.3					
										EV 7.0	2:05:26.7 T		89 N4876339 E 270137		
SY11		12604.0	0.4	1	SY22		9709.5	0.1	1	2:05:39	10.3	44 00 22.7	4876356	11	2.8
SY33		9970.0	-0.4	1	LH 1		-179282.5	10.5	0	8.0	0.0	-59 52 02.1	270136	106	355.8
LH 2		96627.9	-58.4	0	LH 3		-277271.1	-61.8	0	Ang = -20.0; D = 115; Mag = 0; Gyro =334.0					
										EV 8.0	2:05:36.7 T		103 N4876353 E 270136		
SY11		12603.0	1.4	1	SY22		9720.2	0.5	1	2:05:49	10.4	44 00 23.2	4876370	9	2.8
SY33		9975.0	-1.2	1	LH 1		-179302.9	20.3	0	9.0	0.0	-59 52 02.1	270134	120	353.5
LH 2		96626.4	-57.1	0	LH 3		-277275.0	-52.1	0	Ang = -17.4; D = 115; Mag = 0; Gyro =334.7					
										EV 9.0	2:05:46.7 T		117 N4876367 E 270135		
SY11		12607.0	0.1	1	SY22		9731.1	0.0	1	2:05:59	10.5	44 00 23.7	4876385	9	2.8
SY33		9981.2	-0.1	1	LH 1		-179308.9	14.9	0	10.0	0.0	-59 52 02.2	270134	135	353.4
LH 2		96620.4	-56.1	0	LH 3		-277290.0	-34.1	0	Ang = -18.7; D = 142; Mag = 0; Gyro =334.3					
										EV 10.0	2:05:56.7 T		131 N4876381 E 270134		
SY11		12606.6	1.5	1	SY22		9741.7	0.5	1	2:06:09	10.6	44 00 24.1	4876399	6	2.9
SY33		9987.7	-1.2	1	LH 1		-179326.9	21.9	0	11.0	0.0	-59 52 02.3	270131	149	351.9
LH 2		96620.4	-58.0	0	LH 3		-277287.0	-32.1	0	Ang = -15.8; D = 115; Mag = 0; Gyro =334.5					

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
										EV 11.0	2:06:06.7 T		145 N4876395 E 270132		
SY11		12510.0	0.1	1	SY22		9753.0	0.0	1	2:06:19	10.7	44 00 24.6 4876414		5	2.8
SY33		9993.1	-0.1	1	LH 1		-179339.4	23.1	0	12.0	0.0	-59 52 02.4 270130		164	352.7
LH 2		96615.9	-57.3	0	LH 3		-277289.1	-26.1	0	Ang = -14.4; D = 122; Mag = 0; Gyro =334.2					
										EV 12.0	2:06:16.8 T		160 N4876410 E 270130		
SY11		12608.5	1.9	1	SY22		9754.4	0.6	1	2:06:29	10.8	44 00 25.1 4876429		3	2.9
SY33		9999.6	-1.6	1	LH 1		-179351.4	23.5	0	13.0	0.0	-59 52 02.5 270128		179	351.6
LH 2		96615.9	-58.4	0	LH 3		-277292.1	-17.4	0	Ang = -7.1; D = 117; Mag = 0; Gyro =335.7					
										EV 13.0	2:06:26.7 T		175 N4876425 E 270129		
SY11		12616.7	-1.7	1	SY22		9776.0	-0.6	1	2:06:39	10.9	44 00 25.6 4876444		2	2.9
SY33		10005.9	1.5	1	LH 1		-179348.4	8.5	0	14.0	0.0	-59 52 02.6 270127		194	350.5
LH 2		96609.9	-60.4	0	LH 3		-277274.1	-33.9	0	Ang = -7.7; D = 117; Mag = 0; Gyro =336.7					
										EV 14.0	2:06:36.7 T		190 N4876440 E 270127		
SY11		12603.1	6.9	1	SY22		9788.7	2.3	1	2:06:51	11.0	44 00 26.2 4876462		-1	2.9
SY33		10013.4	-5.9	1	LH 1		-179372.4	19.9	0	15.0	0.0	-59 52 02.7 270124		212	354.3
LH 2		96615.9	-58.6	0	LH 3		-277238.2	-57.7	0	Ang = -9.4; D = 117; Mag = 0; Gyro =336.8					
										EV 15.0	2:06:46.7 T		205 N4876455 E 270125		
SY11		12619.2	-1.8	1	SY22		9796.4	-0.6	1	2:06:58	11.1	44 00 26.5 4876472		-2	3.0
SY33		10016.5	1.5	1	LH 1		-179390.4	30.0	0	16.0	0.0	-59 52 02.8 270123		222	349.1
LH 2		96600.9	-56.3	0	LH 3		-277250.2	-49.6	0	Ang = -10.1; D = 120; Mag = 0; Gyro =337.5					
										EV 16.0	2:06:57.0 T		221 N4876471 E 270124		
SY11		12602.7	7.7	1	SY22		9808.0	2.5	1	2:07:08	11.2	44 00 27.0 4876487		-3	2.8
SY33		10021.9	-6.5	1	LH 1		-179390.4	19.1	0	17.0	0.0	-59 52 02.9 270122		237	357.3
LH 2		96609.9	-53.3	0	LH 3		-277244.2	-41.7	0	Ang = -12.2; D = 117; Mag = 0; Gyro =338.2					
										EV 17.0	2:07:07.1 T		236 N4876486 E 270122		
SY11		12617.0	0.2	1	SY22		9820.0	0.1	1	2:07:18	11.3	44 00 27.5 4876502		-4	2.9
SY33		10027.1	-0.1	1	LH 1		-179402.4	19.0	0	18.0	0.0	-59 52 03.0 270121		252	351.4
LH 2		96606.9	-62.5	0	LH 3		-277244.2	-42.9	0	Ang = -12.7; D = 115; Mag = 0; Gyro =337.7					
										EV 18.0	2:07:17.0 T		250 N4876500 E 270121		
SY11		12515.0	2.1	1	SY22		9831.0	0.7	1	2:07:28	11.4	44 00 27.9 4876517		-4	2.9
SY33		10033.1	-1.8	1	LH 1		-179417.4	23.0	0	19.0	0.0	-59 52 03.0 270121		267	354.9
LH 2		96609.9	-65.4	0	LH 3		-277229.2	-51.7	0	Ang = -12.9; D = 115; Mag = 0; Gyro =337.8					
										EV 19.0	2:07:27.0 T		265 N4876515 E 270121		
SY11		12613.0	3.6	1	SY22		9843.3	1.2	1	2:07:38	11.5	44 00 28.4 4876532		-5	2.9
SY33		10038.7	-3.1	1	LH 1		-179420.4	14.1	0	20.0	0.0	-59 52 03.1 270120		282	354.2
LH 2		96612.9	-67.5	0	LH 3		-277223.2	-50.5	0	Ang = -11.5; D = 120; Mag = 0; Gyro =338.8					
										EV 20.0	2:07:37.1 T		280 N4876530 E 270120		
SY11		12619.0	0.5	1	SY22		9854.4	0.2	1	2:07:48	11.6	44 00 28.9 4876547		-6	2.9
SY33		10043.2	-0.4	1	LH 1		-179441.4	24.2	0	21.0	0.0	-59 52 03.1 270119		297	353.6
LH 2		96603.9	-63.4	0	LH 3		-277238.2	-32.6	0	Ang = -12.1; D = 115; Mag = 0; Gyro =338.7					
										EV 21.0	2:07:47.0 T		295 N4876545 E 270119		
SY11		12612.4	4.5	1	SY22		9856.6	1.5	1	2:07:58	11.7	44 00 29.4 4876561		-6	2.8
SY33		10048.9	-3.9	1	LH 1		-179447.4	18.6	0	22.0	0.0	-59 52 03.2 270119		311	357.0
LH 2		96597.9	-53.5	0	LH 3		-277238.2	-23.5	0	Ang = -13.7; D = 115; Mag = 0; Gyro =339.8					
										EV 22.0	2:07:57.1 T		310 N4876560 E 270118		
SY11		12617.0	2.0	1	SY22		9879.1	0.7	1	2:08:08	11.8	44 00 29.9 4876577		-7	2.9
SY33		10053.6	-1.7	1	LH 1		-179456.4	15.6	0	23.0	0.0	-59 52 03.2 270118		327	354.9

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
LH 2		96606.9	-66.2	0	LH 3		-277220.2	-37.3	0	Ang = -9.9; D = 115; Mag = 0; Gyro =340.7					
										EV 23.0	2:08:06.7 T		324	N4876574	E 270118
SY11		12617.0	2.3	1	SY22		9892.2	0.7	1	2:08:18	11.9	44 00 30.4	4876592	-7	2.9
SY33		10059.1	-1.9	1	LH 1		-179477.4	24.1	0	24.0	0.0	-59 52 03.2	270118	342	357.3
LH 2		96597.9	-57.5	0	LH 3		-277202.2	-48.5	0	Ang = -9.1; D = 122; Mag = 0; Gyro =340.5					
										EV 24.0	2:08:16.8 T		339	N4876589	E 270118
SY11		12613.9	4.3	1	SY22		9905.8	1.4	1	2:08:30	12.0	44 00 30.9	4876609	-7	2.9
SY33		10065.1	-3.7	1	LH 1		-179489.3	23.0	0	25.0	0.0	-59 52 03.3	270118	359	356.2
LH 2		96603.9	-61.6	0	LH 3		-277202.2	-39.9	0	Ang = -12.2; D = 120; Mag = 0; Gyro =340.3					
										EV 25.0	2:08:26.8 T		354	N4876604	E 270118
SY11		12615.1	3.3	1	SY22		9915.2	1.1	1	2:08:37	12.1	44 00 31.3	4876620	-7	2.9
SY33		10067.8	-2.8	1	LH 1		-179504.3	29.4	0	26.0	0.0	-59 52 03.3	270118	370	358.1
LH 2		96600.9	-58.7	0	LH 3		-277184.2	-53.2	0	Ang = -11.6; D = 120; Mag = 0; Gyro =340.8					
										EV 26.0	2:08:36.7 T		369	N4876619	E 270118
SY11		12616.2	2.3	1	SY22		9927.7	0.8	1	2:08:47	12.2	44 00 31.8	4876635	-6	2.9
SY33		10071.8	-2.0	1	LH 1		-179501.3	14.9	0	27.0	0.0	-59 52 03.3	270119	385	357.5
LH 2		96606.9	-64.7	0	LH 3		-277193.2	-37.8	0	Ang = -10.6; D = 115; Mag = 0; Gyro =340.0					
										EV 27.0	2:08:46.7 T		385	N4876635	E 270118
SY11		12614.6	3.7	1	SY22		9939.8	1.2	1	2:08:57	12.3	44 00 32.3	4876651	-5	2.9
SY33		10077.5	-3.2	1	LH 1		-179525.3	28.3	0	28.0	0.0	-59 52 03.3	270120	401	359.0
LH 2		96597.9	-54.3	0	LH 3		-277193.2	-29.7	0	Ang = -12.8; D = 115; Mag = 0; Gyro =339.7					
										EV 28.0	2:08:56.7 T		399	N4876649	E 270119
SY11		12618.0	2.0	1	SY22		9954.5	0.7	1	2:09:09	13.0	44 00 32.8	4876668	-6	2.9
SY33		10083.4	-1.7	1	LH 1		-179528.3	17.3	0	29.0	0.0	-59 52 03.3	270119	418	356.8
LH 2		96600.9	-59.5	0	LH 3		-277172.2	-44.3	0	Ang = -13.9; D = 115; Mag = 0; Gyro =338.7					
										EV 29.0	2:09:06.7 T		414	N4876664	E 270119

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD

SYSTEM LINE DATA

Ref#: 10 Type: SYS Ident: OLYM-270S
Start Pt End Pt
4876500.0 4876250.0 Az 180 00 00.0 BL 10.0
270270.0 270270.0 Length 250.0 OF 0.0

SY11	12478.1	-2.0	1	SY22	9880.5	-0.7	1	2:35:17	13.6	44 00 27.2	4876489	-3	3.2
SY33	9882.4	1.7	1	LH 1	-179408.4	8.9	0	1.0	0.0	-59 51 56.1	270273	11	183.6
LH 2	96839.0	22.7	0	LH 3	-277133.2	68.2	0	Ang = 9.3; D = 120; Mag = 0; Gyro =204.7					
								EV 1.0	2:35:14.6 T		6 N4876494 E 270273		
SY11	12462.5	7.6	1	SY22	9865.4	2.5	1	2:35:27	13.7	44 00 26.7	4876472	-1	3.3
SY33	9878.8	-6.4	1	LH 1	-179389.8	4.6	0	2.0	0.0	-59 51 56.2	270271	28	180.2
LH 2	96831.8	40.3	0	LH 3	-277133.2	67.0	0	Ang = 9.4; D = 120; Mag = 0; Gyro =204.2					
								EV 2.0	2:35:24.6 T		22 N4876478 E 270272		
SY11	12480.5	-0.7	1	SY22	9850.8	-0.2	1	2:35:37	13.8	44 00 26.1	4876456	1	3.2
SY33	9876.5	0.6	1	LH 1	-179372.4	-0.6	0	3.0	0.0	-59 51 56.2	270269	44	186.3
LH 2	96827.0	28.6	0	LH 3	-277133.2	49.4	0	Ang = 12.2; D = 120; Mag = 0; Gyro =203.7					
								EV 3.0	2:35:34.6 T		39 N4876461 E 270271		
SY11	12481.8	-0.2	1	SY22	9835.2	-0.1	1	2:35:48	13.9	44 00 25.6	4876438	2	3.3
SY33	9873.0	0.2	1	LH 1	-179384.4	25.5	0	4.0	0.0	-59 51 56.3	270268	62	184.1
LH 2	96815.0	37.7	0	LH 3	-277136.2	42.7	0	Ang = 7.8; D = 120; Mag = 0; Gyro =202.3					
								EV 4.0	2:35:44.6 T		56 N4876444 E 270268		
SY11	12478.0	2.7	1	SY22	9823.6	0.9	1	2:35:56	14.0	44 00 25.1	4876425	4	3.2
SY33	9870.2	-2.3	1	LH 1	-179357.4	9.0	0	5.0	0.0	-59 51 56.4	270266	75	185.3
LH 2	96815.0	39.1	0	LH 3	-277151.2	52.7	0	Ang = 7.6; D = 115; Mag = 0; Gyro =201.3					
								EV 5.0	2:35:54.6 T		73 N4876427 E 270266		
SY11	12484.1	-0.9	1	SY22	9809.5	-0.3	1	2:36:06	14.1	44 00 24.6	4876408	6	3.3
SY33	9864.2	0.7	1	LH 1	-179348.4	13.6	0	6.0	0.0	-59 51 56.4	270264	92	185.1
LH 2	96815.0	34.9	0	LH 3	-277172.2	63.4	0	Ang = 7.8; D = 120; Mag = 0; Gyro =200.2					
								EV 6.0	2:36:04.6 T		89 N4876411 E 270264		
SY11	12480.0	2.8	1	SY22	9794.8	0.9	1	2:36:16	14.2	44 00 24.0	4876391	8	3.3
SY33	9861.4	-2.3	1	LH 1	-179327.5	5.8	0	7.0	0.0	-59 51 56.5	270262	109	183.1
LH 2	96818.0	32.8	0	LH 3	-277175.2	59.6	0	Ang = 7.6; D = 120; Mag = 0; Gyro =198.3					
								EV 7.0	2:36:14.6 T		106 N4876394 E 270262		
SY11	12485.7	-0.4	1	SY22	9781.6	-0.1	1	2:36:26	14.3	44 00 23.5	4876374	9	3.2
SY33	9856.2	0.3	1	LH 1	-179312.5	3.3	0	8.0	0.0	-59 51 56.5	270261	126	183.7
LH 2	96815.0	31.5	0	LH 3	-277169.2	43.8	0	Ang = 3.6; D = 120; Mag = 0; Gyro =197.7					
								EV 8.0	2:36:24.6 T		123 N4876377 E 270261		
SY11	12486.0	-0.2	1	SY22	9766.8	-0.1	1	2:36:36	14.4	44 00 22.9	4876357	10	3.3
SY33	9851.1	0.2	1	LH 1	-179297.5	2.3	0	9.0	0.0	-59 51 56.5	270260	143	180.5
LH 2	96815.0	30.8	0	LH 3	-277199.2	65.6	0	Ang = 5.7; D = 120; Mag = 0; Gyro =198.0					
								EV 9.0	2:36:34.6 T		139 N4876361 E 270260		
SY11	12481.3	3.0	1	SY22	9753.3	1.0	1	2:36:46	14.5	44 00 22.4	4875341	11	3.3
SY33	9847.2	-2.5	1	LH 1	-179299.9	17.5	0	10.0	0.0	-59 51 56.5	270259	159	180.7
LH 2	96810.8	38.0	0	LH 3	-277211.2	72.3	0	Ang = 7.6; D = 122; Mag = 0; Gyro =199.0					
								EV 10.0	2:36:44.6 T		156 N4876344 E 270259		
SY11	12491.8	-2.2	1	SY22	9738.7	-0.7	1	2:36:56	14.6	44 00 21.8	4876323	11	3.3
SY33	9842.7	1.8	1	LH 1	-179279.5	10.6	0	11.0	0.0	-59 51 56.5	270259	177	183.0
LH 2	96815.0	25.4	0	LH 3	-277205.2	53.3	0	Ang = 8.5; D = 120; Mag = 0; Gyro =199.2					

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
										EV 11.0	2:36:54.6 T		173 N4876327 E 270259		
SY11		12490.0	-0.2	1	SY22		9724.1	-0.1	1	2:37:07	14.7	44 00 21.2	4876305	12	3.3
SY33		9839.0	0.2	1	LH 1		-179243.5	-11.8	0	12.0	0.0	-59 51 56.5	270258	195	181.4
LH 2		96812.0	28.7	0	LH 3		-277199.2	42.0	0	Ang = 8.8; D = 115; Mag = 0; Gyro =198.3					
										EV 12.0	2:37:04.6 T		191 N4876309 E 270258		
SY11		12482.9	4.0	1	SY22		9709.4	1.3	1	2:37:17	14.8	44 00 20.7	4876288	13	3.3
SY33		9833.8	-3.3	1	LH 1		-179252.5	11.5	0	13.0	0.0	-59 51 56.5	270257	212	179.9
LH 2		96809.0	37.1	0	LH 3		-277220.2	56.5	0	Ang = 8.9; D = 120; Mag = 0; Gyro =196.0					
										EV 13.0	2:37:14.6 T		208 N4876292 E 270257		
SY11		12490.0	-0.2	1	SY22		9696.0	-0.1	1	2:37:27	14.9	44 00 20.1	4876271	13	3.3
SY33		9828.1	0.1	1	LH 1		-179228.5	0.5	0	14.0	0.0	-59 51 56.5	270257	229	181.6
LH 2		96806.0	35.2	0	LH 3		-277211.2	37.1	0	Ang = 4.3; D = 125; Mag = 0; Gyro =196.0					
										EV 14.0	2:37:24.6 T		225 N4876275 E 270257		
SY11		12493.7	-1.1	1	SY22		9680.2	-0.4	1	2:37:38	15.0	44 00 19.5	4876252	13	3.3
SY33		9824.3	0.9	1	LH 1		-179221.9	8.4	0	15.0	0.0	-59 51 56.5	270257	248	179.4
LH 2		96804.8	32.3	0	LH 3		-277226.2	41.3	0	Ang = 6.0; D = 120; Mag = 0; Gyro =195.2					
										EV 15.0	2:37:34.6 T		242 N4876258 E 270256		
SY11		12485.4	3.5	1	SY22		9670.6	1.2	1	2:37:45	15.1	44 00 19.1	4876239	14	3.3
SY33		9820.5	-2.9	1	LH 1		-179207.5	3.7	0	16.0	0.0	-59 51 56.5	270256	261	177.9
LH 2		96800.0	44.0	0	LH 3		-277250.2	64.4	0	Ang = 6.0; D = 120; Mag = 0; Gyro =195.3					
										EV 16.0	2:37:44.6 T		259 N4876241 E 270256		
SY11		12495.0	-1.1	1	SY22		9654.9	-0.4	1	2:37:55	15.2	44 00 18.5	4876221	14	3.3
SY33		9815.7	1.0	1	LH 1		-179186.6	-2.8	0	17.0	0.0	-59 51 56.4	270256	279	180.1
LH 2		96806.0	30.0	0	LH 3		-277244.2	45.1	0	Ang = 9.7; D = 117; Mag = 0; Gyro =194.0					
										EV 17.0	2:37:54.6 T		276 N4876224 E 270257		
SY11		12493.6	-0.7	1	SY22		9641.8	-0.2	1	2:38:06	15.3	44 00 17.9	4876203	13	3.4
SY33		9809.8	0.6	1	LH 1		-179177.6	1.5	0	18.0	0.0	-59 51 56.4	270257	297	178.5
LH 2		96807.8	30.8	0	LH 3		-277262.2	57.3	0	Ang = 5.6; D = 115; Mag = 0; Gyro =194.7					
										EV 18.0	2:38:04.8 T		295 N4876205 E 270257		
SY11		12488.6	2.8	1	SY22		9628.5	0.9	1	2:38:16	15.4	44 00 17.4	4876186	13	3.3
SY33		9806.1	-2.3	1	LH 1		-179162.6	-0.7	0	19.0	0.0	-59 51 56.4	270257	314	177.3
LH 2		96806.0	36.0	0	LH 3		-277262.2	52.4	0	Ang = 8.7; D = 117; Mag = 0; Gyro =196.2					
										EV 19.0	2:38:15.0 T		312 N4876188 E 270257		
SY11		12490.5	1.4	1	SY22		9615.5	0.4	1	2:38:26	15.5	44 00 16.9	4876169	13	3.3
SY33		9900.1	-1.1	1	LH 1		-179141.6	-8.6	0	20.0	0.0	-59 51 56.3	270257	331	178.1
LH 2		96813.8	28.2	0	LH 3		-277269.1	52.0	0	Ang = 8.4; D = 115; Mag = 0; Gyro =196.8					
										EV 20.0	2:38:25.0 T		329 N4876171 E 270257		
SY11		12492.0	0.9	1	SY22		9602.4	0.3	1	2:38:36	15.6	44 00 16.3	4876153	13	3.2
SY33		9795.8	-0.8	1	LH 1		-179147.0	9.5	0	21.0	0.0	-59 51 56.3	270257	347	177.6
LH 2		96798.8	42.5	0	LH 3		-277295.1	70.6	0	Ang = 10.2; D = 122; Mag = 0; Gyro =197.2					
										EV 21.0	2:38:34.6 T		345 N4876155 E 270257		
SY11		12488.5	4.8	1	SY22		9587.4	1.6	1	2:38:46	15.7	44 00 15.8	4876136	13	3.3
SY33		9793.9	-4.0	1	LH 1		-179129.0	5.1	0	22.0	0.0	-59 51 56.3	270257	364	177.0
LH 2		96798.8	43.3	0	LH 3		-277310.1	78.5	0	Ang = 8.9; D = 120; Mag = 0; Gyro =197.7					
										EV 22.0	2:38:44.6 T		361 N4876139 E 270257		
SY11		12483.0	7.6	1	SY22		9575.1	2.5	1	2:38:56	15.8	44 00 15.2	4876119	14	3.2
SY33		9788.6	-6.3	1	LH 1		-179114.6	3.2	0	23.0	0.0	-59 51 56.3	270256	381	178.0

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
LH 2		96810.8	36.4	0	LH 3		-277314.0	78.7	0	Ang = 36.0; D = 120; Mag = 0; Gyro =197.2					
										EV 23.0	2:38:54.6 T		378 N4876122 E 270256		
SY11		12493.8	1.6	1	SY22		9560.9	0.5	1	2:39:05	15.9	44 00 14.7 4876103		14	3.2
SY33		9782.8	-1.3	1	LH 1		-179093.6	-3.9	0	24.0	0.0	-59 51 56.3 270256		397	179.3
LH 2		96803.0	37.2	0	LH 3		-277295.1	47.5	0	Ang = 10.5; D = 117; Mag = 0; Gyro =197.0					
										EV 24.0	2:39:04.6 T		394 N4876106 E 270256		

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD

SYSTEM LINE DATA

Ref#: 11 Type: SYS Ident: CLYM-150N

Start Pt 4876250.0 270150.0 End Pt 4876500.0 270150.0 Az 0 00 00.0 Length 250.0 BL 11.0 OF 0.0

SY11	12595.6	-0.5	1	SY22	9637.8	-0.3	1	3:03:11	18.6	44 00 19.6	4876257	-2	2.9
SY33	9929.4	0.8	1	LH 1	-179210.5	2.6	0	1.0	0.0	-59 52 01.4	270148	7	353.4
LH 2	96657.9	-9.6	0	LH 3	-277305.0	-7.5	0	Ang = -12.6; D = 115; Mag = 0; Gyro =337.5					
								EV 1.0	3:03:09.0 T		3 N4876253 E 270148		
SY11	12587.7	4.0	1	SY22	9648.1	1.3	1	3:03:22	18.7	44 00 20.1	4876272	-4	2.9
SY33	9934.7	-3.4	1	LH 1	-179237.5	19.4	0	2.0	0.0	-59 52 01.5	270146	22	355.1
LH 2	96642.9	9.4	0	LH 3	-277310.1	6.0	0	Ang = -10.8; D = 120; Mag = 0; Gyro =337.8					
								EV 2.0	3:03:19.0 T		18 N4876268 E 270146		
SY11	12595.0	0.2	1	SY22	9660.1	0.1	1	3:03:32	18.8	44 00 20.5	4876288	-5	3.0
SY33	9939.7	-0.1	1	LH 1	-179243.5	13.3	0	3.0	0.0	-59 52 01.6	270145	38	353.0
LH 2	96645.9	0.0	0	LH 3	-277313.1	11.5	0	Ang = -12.7; D = 120; Mag = 0; Gyro =338.5					
								EV 3.0	3:03:29.0 T		33 N4876283 E 270145		
SY11	12595.1	0.0	1	SY22	9672.9	0.0	1	3:03:42	18.9	44 00 21.0	4876303	-5	2.9
SY33	9944.5	-0.0	1	LH 1	-179261.5	19.0	0	4.0	0.0	-59 52 01.6	270145	53	356.8
LH 2	96639.9	5.1	0	LH 3	-277289.1	-6.2	0	Ang = -12.3; D = 120; Mag = 0; Gyro =339.8					
								EV 4.0	3:03:39.0 T		48 N4876298 E 270144		
SY11	12587.4	3.7	1	SY22	9688.2	1.2	1	3:03:53	19.0	44 00 21.6	4876320	-6	3.0
SY33	9949.2	-3.1	1	LH 1	-179255.5	-1.1	0	5.0	0.0	-59 52 01.6	270144	70	356.2
LH 2	96648.9	2.2	0	LH 3	-277286.1	2.7	0	Ang = -12.8; D = 115; Mag = 0; Gyro =340.3					
								EV 5.0	3:03:49.0 T		63 N4876313 E 270144		
SY11	12596.0	-0.7	1	SY22	9696.4	-0.2	1	3:04:00	19.1	44 00 22.0	4876331	-6	3.0
SY33	9953.0	0.6	1	LH 1	-179281.9	16.8	0	6.0	0.0	-59 52 01.6	270144	81	355.4
LH 2	96636.9	6.7	0	LH 3	-277292.1	8.5	0	Ang = -12.8; D = 115; Mag = 0; Gyro =340.7					
								EV 6.0	3:03:59.0 T		79 N4876329 E 270144		
SY11	12586.7	4.1	1	SY22	9709.5	1.3	1	3:04:10	19.2	44 00 22.5	4876347	-6	3.0
SY33	9957.4	-3.4	1	LH 1	-179288.5	11.3	0	7.0	0.0	-59 52 01.7	270144	97	357.5
LH 2	96633.9	17.0	0	LH 3	-277301.1	29.0	0	Ang = -12.7; D = 115; Mag = 0; Gyro =339.7					
								EV 7.0	3:04:09.0 T		95 N4876345 E 270144		
SY11	12596.7	-1.6	1	SY22	9720.8	-0.5	1	3:04:20	19.3	44 00 23.0	4876363	-6	3.0
SY33	9961.4	1.3	1	LH 1	-179291.5	3.2	0	8.0	0.0	-59 52 01.7	270144	113	355.7
LH 2	96651.9	-8.4	0	LH 3	-277301.1	30.4	0	Ang = -12.6; D = 115; Mag = 0; Gyro =338.0					
								EV 8.0	3:04:19.0 T		110 N4876360 E 270144		
SY11	12591.6	1.7	1	SY22	9732.8	0.5	1	3:04:30	19.4	44 00 23.5	4876378	-5	2.9
SY33	9967.0	-1.4	1	LH 1	-179327.5	27.4	0	9.0	0.0	-59 52 01.7	270144	128	357.6
LH 2	96635.1	11.3	0	LH 3	-277292.1	29.8	0	Ang = -12.2; D = 115; Mag = 0; Gyro =338.2					
								EV 9.0	3:04:29.1 T		126 N4876375 E 270144		
SY11	12596.8	-0.2	1	SY22	9744.9	-0.1	1	3:04:40	19.5	44 00 24.0	4875394	-7	3.0
SY33	9973.8	0.2	1	LH 1	-179309.5	-3.2	0	10.0	0.0	-59 52 01.8	270143	144	353.9
LH 2	96651.9	-11.6	0	LH 3	-277245.1	-14.2	0	Ang = -13.7; D = 117; Mag = 0; Gyro =339.2					
								EV 10.0	3:04:39.1 T		141 N4876391 E 270144		
SY11	12591.1	3.5	1	SY22	9756.9	1.1	1	3:04:50	19.6	44 00 24.5	4876409	-8	3.0
SY33	9979.6	-3.0	1	LH 1	-179333.5	9.1	0	11.0	0.0	-59 52 01.9	270142	159	356.6
LH 2	96633.9	9.6	0	LH 3	-277256.2	5.6	0	Ang = -8.3; D = 115; Mag = 0; Gyro =340.3					

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV TP/DP LAT/LON N/E OFF/TR SP/-D
										EV 11.0 3:04:49.1 T 157 N4876407 E 270142
SY11		12597.4	-0.6	1	SY22		9769.7	-0.2	1	3:05:01 19.7 44 00 25.0 4876425 -9 3.0
SY33		9983.1	0.5	1	LH 1		-179336.4	0.1	0	12.0 0.0 -59 52 01.9 270141 175 354.3
LH 2		96648.9	-9.7	0	LH 3		-277262.2	15.4	0	Ang = -9.0; D = 120; Mag = 0; Gyro =341.8
										EV 12.0 3:04:59.0 T 172 N4876422 E 270142
SY11		12598.0	-0.0	1	SY22		9781.0	-0.0	1	3:05:11 19.8 44 00 25.5 4876440 -9 3.0
SY33		9989.5	0.0	1	LH 1		-179350.8	2.9	0	13.0 0.0 -59 52 01.9 270141 190 356.8
LH 2		96645.9	-9.6	0	LH 3		-277247.2	5.0	0	Ang = -9.3; D = 120; Mag = 0; Gyro =343.2
										EV 13.0 3:05:09.0 T 187 N4876437 E 270141
SY11		12591.8	3.8	1	SY22		9795.0	1.2	1	3:05:21 19.9 44 00 25.0 4876457 -10 3.1
SY33		9995.8	-3.2	1	LH 1		-179369.4	8.0	0	14.0 0.0 -59 52 02.0 270140 207 355.2
LH 2		96648.9	-8.7	0	LH 3		-277232.2	0.1	0	Ang = -6.8; D = 120; Mag = 0; Gyro =343.3
										EV 14.0 3:05:19.0 T 203 N4876453 E 270140
SY11		12600.8	-1.3	1	SY22		9808.9	-0.4	1	3:05:32 20.0 44 00 26.6 4876474 -10 3.1
SY33		10000.6	1.1	1	LH 1		-179381.4	6.6	0	15.0 0.0 -59 52 02.1 270140 224 354.7
LH 2		96639.9	-6.8	0	LH 3		-277253.2	23.9	0	Ang = -10.2; D = 117; Mag = 0; Gyro =342.8
										EV 15.0 3:05:29.0 T 219 N4876469 E 270140
SY11		12586.5	6.1	1	SY22		9820.1	2.0	1	3:05:40 20.1 44 00 27.0 4876487 -10 3.1
SY33		10004.2	-5.2	1	LH 1		-179381.4	-2.3	0	16.0 0.0 -59 52 02.1 270140 237 359.0
LH 2		96651.9	-6.4	0	LH 3		-277241.2	26.3	0	Ang = -11.0; D = 115; Mag = 0; Gyro =344.3
										EV 16.0 3:05:39.0 T 235 N4876485 E 270140
SY11		12594.7	0.6	1	SY22		9832.9	0.2	1	3:05:50 20.2 44 00 27.5 4876503 -10 3.1
SY33		10006.9	-0.5	1	LH 1		-179408.4	13.0	0	17.0 0.0 -59 52 02.1 270140 253 356.9
LH 2		96639.9	0.5	0	LH 3		-277223.2	11.5	0	Ang = -5.8; D = 120; Mag = 0; Gyro =346.0
										EV 17.0 3:05:49.1 T 252 N4876502 E 270140
SY11		12596.0	-0.2	1	SY22		9846.9	-0.1	1	3:06:00 20.3 44 00 28.0 4876519 -9 3.1
SY33		10012.0	0.2	1	LH 1		-179405.4	-3.3	0	18.0 0.0 -59 52 02.1 270141 269 359.4
LH 2		96648.9	-9.3	0	LH 3		-277184.2	-20.6	0	Ang = -9.3; D = 120; Mag = 0; Gyro =345.7
										EV 18.0 3:05:59.1 T 267 N4876517 E 270141
SY11		12584.0	5.6	1	SY22		9859.9	1.8	1	3:06:10 20.4 44 00 28.6 4876535 -8 3.1
SY33		10015.4	-4.8	1	LH 1		-179435.4	15.3	0	19.0 0.0 -59 52 02.1 270142 285 2.1
LH 2		96633.9	16.0	0	LH 3		-277214.2	22.5	0	Ang = -10.9; D = 120; Mag = 0; Gyro =346.7
										EV 19.0 3:06:09.0 T 283 N4876533 E 270142
SY11		12591.4	0.6	1	SY22		9874.8	0.2	1	3:06:20 20.5 44 00 29.1 4876551 -6 3.1
SY33		10019.0	-0.5	1	LH 1		-179429.4	-4.3	0	20.0 0.0 -59 52 02.0 270144 301 0.0
LH 2		96645.9	-0.0	0	LH 3		-277208.2	21.4	0	Ang = -8.5; D = 117; Mag = 0; Gyro =347.2
										EV 20.0 3:06:19.0 T 299 N4876549 E 270144
SY11		12587.9	1.7	1	SY22		9888.9	0.5	1	3:06:30 20.6 44 00 29.6 4876568 -4 3.1
SY33		10022.6	-1.4	1	LH 1		-179461.8	15.4	0	21.0 0.0 -59 52 01.9 270146 318 2.7
LH 2		96636.9	12.8	0	LH 3		-277194.1	17.0	0	Ang = -11.4; D = 117; Mag = 0; Gyro =347.2
										EV 21.0 3:06:29.2 T 316 N4876566 E 270145
SY11		12582.6	3.8	1	SY22		9903.6	1.3	1	3:06:40 20.7 44 00 30.1 4876584 -3 3.2
SY33		10026.7	-3.3	1	LH 1		-179461.8	2.2	0	22.0 0.0 -59 52 01.9 270147 334 2.9
LH 2		96654.9	8.3	0	LH 3		-277196.2	30.0	0	Ang = -10.8; D = 117; Mag = 0; Gyro =347.7
										EV 22.0 3:06:39.1 T 332 N4876582 E 270147
SY11		12586.3	0.8	1	SY22		9917.7	0.3	1	3:06:50 20.8 44 00 30.7 4876600 -0 3.1
SY33		10029.9	-0.7	1	LH 1		-179483.3	11.1	0	23.0 0.0 -59 52 01.8 270150 350 3.0

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
LH 2		96648.9	5.4	0	LH 3		-277193.2	33.4	0	Ang = -11.6; D = 115; Mag =			0; Gyro =		348.3
										EV 23.0	3:06:49.2 T		348	N4876598 E	270150
SY11		12579.1	3.7	1	SY22		9931.2	1.2	1	3:07:00	20.9	44 00 31.2	4875617	2	3.1
SY33		10032.8	-3.2	1	LH 1		-179486.3	2.4	0	24.0	0.0	-59 52 01.8	270152	367	5.0
LH 2		96669.9	-8.0	0	LH 3		-277145.2	-3.0	0	Ang = -11.8; D = 120; Mag =			0; Gyro =		347.7
										EV 24.0	3:06:59.0 T		364	N4876614 E	270151
SY11		12582.1	1.5	1	SY22		9946.9	0.5	1	3:07:12	21.0	44 00 31.8	4875634	4	3.1
SY33		10037.7	-1.3	1	LH 1		-179494.7	-3.8	0	25.0	0.0	-59 52 01.7	270154	384	3.5
LH 2		96678.9	-18.6	0	LH 3		-277154.2	13.1	0	Ang = -13.9; D = 120; Mag =			0; Gyro =		347.3
										EV 25.0	3:07:09.0 T		380	N4876630 E	270154
SY11		12575.0	4.2	1	SY22		9961.5	1.4	1	3:07:22	21.1	44 00 32.3	4876650	7	3.1
SY33		10040.7	-3.6	1	LH 1		-179513.3	2.2	0	26.0	0.0	-59 52 01.6	270157	400	6.0
LH 2		96672.9	-4.3	0	LH 3		-277142.2	13.5	0	Ang = -14.7; D = 120; Mag =			0; Gyro =		347.8
										EV 26.0	3:07:19.0 T		396	N4876646 E	270156
SY11		12577.5	1.2	1	SY22		9975.7	0.4	1	3:07:31	23.0	44 00 32.8	4876665	9	3.1
SY33		10042.6	-1.0	1	LH 1		-179537.3	14.0	0	27.0	0.0	-59 52 01.5	270159	415	6.0
LH 2		96672.9	-3.1	0	LH 3		-277143.1	22.0	0	Ang = -12.8; D = 120; Mag =			0; Gyro =		347.8
										EV 27.0	3:07:30.2 T		413	N4876663 E	270159

STA SS	RANGE(M)	RESID	SD	STA SS	RANGE(M)	RESID	SD	TIME/EV TP/DP LAT/LON N/E OFF/TR SP/HD

SYSTEM LINE DATA

Ref#: 12 Type: SYS Ident: OLYM-290S

Start Pt	End Pt			
4876500.0	4876250.0	Az	180 00 00.0	BL 12.0
270290.0	270290.0	Length	250.0	OF 0.0

SY11	12388.6	-0.5	1	SY22	9907.2	-0.2	1	3:29:05 23.7 44 00 26.4 4875460 -74 3.4
SY33	9790.2	0.4	1	LH 1	-179399.4	13.3	0	2.0 0.0 -59 51 52.0 270364 40 165.1
LH 2	96988.9	20.7	0	LH 3	-276998.3	22.0	0	Ang = 14.1; D = 120; Mag = 0; Gyro =188.8
								EV 1.0 3:28:45.0 T 6 N4876494 E 270355
								EV 2.0 3:29:05.0 T 38 N4876462 E 270364
SY11	12381.4	1.3	1	SY22	9897.3	0.4	1	3:29:15 24.6 44 00 25.9 4876444 -76 3.4
SY33	9781.6	-1.1	1	LH 1	-179384.4	9.9	0	3.0 0.0 -59 51 51.9 270366 56 165.1
LH 2	96991.9	27.1	0	LH 3	-277034.3	57.6	0	Ang = 14.6; D = 117; Mag = 0; Gyro =188.5
								EV 3.0 3:29:12.8 T 52 N4876448 E 270367
SY11	12379.0	2.0	1	SY22	9885.1	0.7	1	3:29:25 24.7 44 00 25.3 4876428 -77 3.3
SY33	9775.5	-1.7	1	LH 1	-179363.4	1.3	0	4.0 0.0 -59 51 51.8 270367 72 168.3
LH 2	97012.8	9.2	0	LH 3	-277013.3	31.7	0	Ang = 13.3; D = 117; Mag = 0; Gyro =189.7
								EV 4.0 3:29:22.8 T 69 N4876431 E 270368
SY11	12381.7	0.4	1	SY22	9873.4	0.1	1	3:29:34 24.8 44 00 24.8 4876412 -78 3.2
SY33	9770.4	-0.3	1	LH 1	-179351.4	0.8	0	5.0 0.0 -59 51 51.7 270368 88 170.3
LH 2	97011.6	8.9	0	LH 3	-277004.3	15.4	0	Ang = 13.3; D = 112; Mag = 0; Gyro =189.7
								EV 5.0 3:29:32.8 T 85 N4876415 E 270369
SY11	12372.6	4.0	1	SY22	9861.5	1.4	1	3:29:44 24.9 44 00 24.3 4876396 -79 3.2
SY33	9762.8	-3.4	1	LH 1	-179339.4	1.8	0	6.0 0.0 -59 51 51.7 270369 104 170.0
LH 2	97006.8	23.6	0	LH 3	-277007.3	17.5	0	Ang = 11.5; D = 117; Mag = 0; Gyro =190.8
								EV 6.0 3:29:42.8 T 101 N4876399 E 270368
SY11	12379.4	-0.9	1	SY22	9846.5	-0.3	1	3:29:56 25.0 44 00 23.7 4876377 -80 3.2
SY33	9754.2	0.8	1	LH 1	-179339.4	17.3	0	7.0 0.0 -59 51 51.6 270370 123 173.1
LH 2	97002.6	25.4	0	LH 3	-277050.2	50.2	0	Ang = 13.4; D = 117; Mag = 0; Gyro =190.7
								EV 7.0 3:29:52.8 T 117 N4876383 E 270370
SY11	12371.1	3.4	1	SY22	9837.2	1.1	1	3:30:03 25.1 44 00 23.3 4876365 -81 3.3
SY33	9749.8	-2.8	1	LH 1	-179315.5	3.0	0	8.0 0.0 -59 51 51.5 270371 135 170.5
LH 2	97009.8	25.4	0	LH 3	-277076.3	75.6	0	Ang = 10.6; D = 120; Mag = 0; Gyro =189.7
								EV 8.0 3:30:02.8 T 134 N4876366 E 270371
SY11	12372.4	1.8	1	SY22	9824.3	0.6	1	3:30:13 25.2 44 00 22.7 4876347 -82 3.3
SY33	9742.9	-1.5	1	LH 1	-179311.9	12.5	0	9.0 0.0 -59 51 51.5 270372 153 173.2
LH 2	97011.6	24.0	0	LH 3	-277073.3	65.5	0	Ang = 7.7; D = 120; Mag = 0; Gyro =189.5
								EV 9.0 3:30:12.8 T 151 N4876349 E 270372
SY11	12377.3	-1.7	1	SY22	9811.8	-0.6	1	3:30:23 25.3 44 00 22.2 4876329 -83 3.3
SY33	9736.0	1.5	1	LH 1	-179282.5	-4.1	0	10.0 0.0 -59 51 51.4 270373 171 174.0
LH 2	97023.6	10.2	0	LH 3	-277044.2	28.1	0	Ang = 8.2; D = 117; Mag = 0; Gyro =187.8
								EV 10.0 3:30:22.8 T 169 N4876331 E 270373
SY11	12366.3	2.9	1	SY22	9798.9	1.0	1	3:30:33 25.4 44 00 21.6 4876312 -84 3.4
SY33	9727.6	-2.4	1	LH 1	-179273.5	1.1	0	11.0 0.0 -59 51 51.3 270374 188 170.3
LH 2	97030.8	14.1	0	LH 3	-277040.3	23.5	0	Ang = 6.6; D = 120; Mag = 0; Gyro =186.8
								EV 11.0 3:30:32.8 T 187 N4876313 E 270374
SY11	12364.5	2.9	1	SY22	9786.8	1.0	1	3:30:43 25.5 44 00 21.0 4876294 -86 3.4
SY33	9720.7	-2.4	1	LH 1	-179254.9	-4.7	0	12.0 0.0 -59 51 51.2 270375 206 170.8

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
LH 2		97029.6	18.8	0	LH 3		-277037.3	15.7	0	Ang = 7.6; D = 134; Mag = 0; Gyro =186.3					
										EV 12.0	3:30:42.8 T		204 N4876296 E 270376		
SY11		12369.3	-1.2	1	SY22		9774.7	-0.4	1	3:30:54	25.6	44 00 20.5 4876277		-89	3.3
SY33		9712.7	1.0	1	LH 1		-179254.9	8.2	0	13.0	0.0	-59 51 51.0 270379		223	172.2
LH 2		97023.6	23.9	0	LH 3		-277068.2	38.8	0	Ang = 9.2; D = 117; Mag = 0; Gyro =187.7					
										EV 13.0	3:30:53.0 T		222 N4876278 E 270379		
SY11		12364.4	-0.0	1	SY22		9762.4	-0.0	1	3:31:04	25.7	44 00 20.0 4876261		-92	3.4
SY33		9704.4	0.0	1	LH 1		-179246.5	13.5	0	14.0	0.0	-59 51 50.9 270382		239	169.9
LH 2		97030.8	24.1	0	LH 3		-277076.3	44.0	0	Ang = 7.0; D = 120; Mag = 0; Gyro =187.7					
										EV 14.0	3:31:03.1 T		237 N4876263 E 270381		
SY11		12356.0	3.7	1	SY22		9749.0	1.3	1	3:31:14	25.8	44 00 19.3 4876242		-94	3.6
SY33		9697.0	-3.1	1	LH 1		-179225.5	7.0	0	15.0	0.0	-59 51 50.7 270384		258	169.2
LH 2		97033.8	30.4	0	LH 3		-277079.3	45.0	0	Ang = 9.4; D = 120; Mag = 0; Gyro =190.3					
										EV 15.0	3:31:12.8 T		255 N4876245 E 270384		
SY11		12362.4	0.3	1	SY22		9736.3	0.1	1	3:31:24	25.9	44 00 18.7 4876224		-96	3.4
SY33		9692.2	-0.3	1	LH 1		-179207.5	1.3	0	16.0	0.0	-59 51 50.6 270386		276	172.2
LH 2		97048.8	11.2	0	LH 3		-277088.3	44.4	0	Ang = 10.6; D = 122; Mag = 0; Gyro =192.8					
										EV 16.0	3:31:22.8 T		274 N4876226 E 270386		
SY11		12361.2	-0.4	1	SY22		9723.0	-0.1	1	3:31:35	26.0	44 00 18.1 4876204		-99	3.4
SY33		9683.8	0.3	1	LH 1		-179186.0	-5.7	0	17.0	0.0	-59 51 50.5 270389		296	172.9
LH 2		97050.6	14.0	0	LH 3		-277103.3	54.2	0	Ang = 24.9; D = 73; Mag = 0; Gyro =194.5					
										EV 17.0	3:31:32.8 T		291 N4876209 E 270388		
SY11		12361.5	0.8	1	SY22		9708.3	0.3	1	3:31:45	26.1	44 00 17.5 4876186		-100	3.4
SY33		9680.7	-0.6	1	LH 1		-179177.6	-0.4	0	18.0	0.0	-59 51 50.4 270390		314	174.3
LH 2		97048.8	14.5	0	LH 3		-277106.3	48.8	0	Ang = 15.7; D = 115; Mag = 0; Gyro =195.2					
										EV 18.0	3:31:42.8 T		308 N4876192 E 270389		
SY11		12360.4	1.4	1	SY22		9694.8	0.5	1	3:31:55	26.2	44 00 17.0 4876169		-100	3.4
SY33		9675.3	-1.2	1	LH 1		-179177.6	13.1	0	19.0	0.0	-59 51 50.4 270390		331	175.5
LH 2		97035.6	29.4	0	LH 3		-277112.3	48.3	0	Ang = 14.0; D = 147; Mag = 0; Gyro =196.2					
										EV 19.0	3:31:52.8 T		326 N4876174 E 270390		
SY11		12364.0	-0.5	1	SY22		9681.9	-0.2	1	3:32:05	26.3	44 00 16.4 4876152		-100	3.3
SY33		9670.2	0.4	1	LH 1		-179171.6	19.9	0	20.0	0.0	-59 51 50.4 270390		348	177.2
LH 2		97036.8	26.6	0	LH 3		-277118.3	46.1	0	Ang = 14.2; D = 117; Mag = 0; Gyro =196.2					
										EV 20.0	3:32:02.8 T		343 N4876157 E 270390		
SY11		12364.5	-1.6	1	SY22		9669.6	-0.6	1	3:32:16	26.4	44 00 15.9 4876135		-100	3.3
SY33		9663.4	1.4	1	LH 1		-179147.6	9.0	0	21.0	0.0	-59 51 50.3 270390		365	177.0
LH 2		97044.6	20.7	0	LH 3		-277110.2	32.0	0	Ang = 13.5; D = 117; Mag = 0; Gyro =195.8					
										EV 21.0	3:32:12.8 T		360 N4876140 E 270390		
SY11		12358.5	3.7	1	SY22		9654.4	1.2	1	3:32:26	26.5	44 00 15.3 4876118		-100	3.3
SY33		9661.5	-3.0	1	LH 1		-179129.0	4.2	0	22.0	0.0	-59 51 50.3 270390		382	175.1
LH 2		97047.6	20.0	0	LH 3		-277118.3	33.8	0	Ang = 11.5; D = 117; Mag = 0; Gyro =196.2					
										EV 22.0	3:32:22.8 T		376 N4876124 E 270389		
SY11		12354.6	6.3	1	SY22		9641.4	2.1	1	3:32:36	26.6	44 00 14.8 4876102		-99	3.3
SY33		9657.3	-5.2	1	LH 1		-179108.6	-3.4	0	23.0	0.0	-59 51 50.3 270389		398	175.9
LH 2		97066.8	3.9	0	LH 3		-277057.3	7.7	0	Ang = 11.7; D = 117; Mag = 0; Gyro =195.3					
										EV 23.0	3:32:32.8 T		393 N4876107 E 270389		

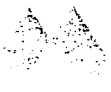
STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD

SYSTEM LINE DATA

Ref#: 8 Type: SYS Ident: OLYM-300E
Start Pt End Pt
4876300.0 4876300.0 Az 90 00 00.0 BL 8.0
270100.0 270450.0 Length 350.0 OF 0.0

SY11	12619.5	2.7	1	SY22	9689.8	0.9	1	4:07:33	27.6	44 00 22.5	4876350	-50	4.0
SY33	9985.6	-2.3	1	LH 1	-179261.5	-17.3	0	1.0	0.0	-59 52 03.4	270105	5	82.9
LH 2	96606.9	-24.6	0	LH 3	-277298.1	-15.8	0	Ang = -22.3; D = 117; Mag = 0; Gyro = 71.0					
								EV 1.0	4:07:31.8 T		2 N4876349 E 270102		
SY11	12596.7	3.1	1	SY22	9702.5	1.0	1	4:07:43	27.7	44 00 22.7	4876355	-55	4.5
SY33	9964.5	-2.6	1	LH 1	-179291.5	3.0	0	2.0	0.0	-59 52 02.4	270128	28	78.4
LH 2	96615.9	17.9	0	LH 3	-277298.1	22.1	0	Ang = -16.3; D = 115; Mag = 0; Gyro = 74.3					
								EV 2.0	4:07:41.8 T		23 N4876353 E 270123		
SY11	12579.4	2.0	1	SY22	9718.8	0.7	1	4:07:53	27.8	44 00 22.9	4876361	-61	4.1
SY33	9948.0	-1.7	1	LH 1	-179285.5	-3.2	0	3.0	0.0	-59 52 01.4	270151	51	78.6
LH 2	96663.9	-11.6	0	LH 3	-277265.2	1.4	0	Ang = -5.5; D = 117; Mag = 0; Gyro = 77.7					
								EV 3.0	4:07:51.8 T		47 N4876359 E 270147		
SY11	12561.9	0.6	1	SY22	9733.4	0.2	1	4:08:03	27.9	44 00 23.1	4876365	-66	3.9
SY33	9929.9	-0.5	1	LH 1	-179282.5	-11.7	0	4.0	0.0	-59 52 00.5	270170	70	78.0
LH 2	96708.8	-23.9	0	LH 3	-277214.2	-25.3	0	Ang = 4.9; D = 117; Mag = 0; Gyro = 84.5					
								EV 4.0	4:08:01.8 T		67 N4876364 E 270167		
SY11	12535.7	1.7	1	SY22	9748.0	0.6	1	4:08:15	28.0	44 00 23.3	4876370	-70	4.0
SY33	9906.9	-1.5	1	LH 1	-179297.5	-0.4	0	5.0	0.0	-59 51 59.6	270192	92	80.1
LH 2	96744.8	-16.3	0	LH 3	-277190.2	-18.8	0	Ang = 5.5; D = 117; Mag = 0; Gyro = 90.3					
								EV 5.0	4:08:11.8 T		86 N4876369 E 270186		
SY11	12521.0	1.0	1	SY22	9756.0	0.3	1	4:08:22	28.1	44 00 23.3	4876371	-71	4.0
SY33	9891.1	-0.9	1	LH 1	-179288.5	-10.3	0	6.0	0.0	-59 51 58.9	270207	107	83.2
LH 2	96768.8	-13.3	0	LH 3	-277172.2	-18.7	0	Ang = 4.6; D = 117; Mag = 0; Gyro = 90.8					
								EV 6.0	4:08:21.8 T		106 N4876371 E 270206		
SY11	12497.5	3.2	1	SY22	9764.7	1.1	1	4:08:32	28.2	44 00 23.3	4876369	-69	4.0
SY33	9871.4	-2.7	1	LH 1	-179291.5	-6.6	0	7.0	0.0	-59 51 57.9	270228	128	86.6
LH 2	96798.8	-6.6	0	LH 3	-277142.2	-25.2	0	Ang = 3.9; D = 117; Mag = 0; Gyro = 90.3					
								EV 7.0	4:08:31.8 T		127 N4876369 E 270227		
SY11	12477.3	3.8	1	SY22	9779.0	1.3	1	4:08:42	28.3	44 00 23.3	4876368	-68	4.1
SY33	9854.3	-3.2	1	LH 1	-179288.5	-5.2	0	8.0	0.0	-59 51 57.0	270250	150	90.7
LH 2	96837.8	-7.0	0	LH 3	-277115.3	-29.4	0	Ang = 7.8; D = 117; Mag = 0; Gyro = 86.8					
								EV 8.0	4:08:41.8 T		148 N4876369 E 270248		
SY11	12455.3	4.1	1	SY22	9793.2	1.3	1	4:08:52	28.4	44 00 23.2	4876365	-65	4.0
SY33	9834.2	-3.4	1	LH 1	-179306.5	0.4	0	9.0	0.0	-59 51 56.0	270271	171	85.4
LH 2	96867.7	-5.2	0	LH 3	-277106.3	-10.8	0	Ang = -9.5; D = 117; Mag = 0; Gyro = 84.0					
								EV 9.0	4:08:51.8 T		170 N4876365 E 270270		
SY11	12434.3	4.1	1	SY22	9802.7	1.4	1	4:09:03	28.5	44 00 23.2	4876366	-66	3.9
SY33	9813.0	-3.4	1	LH 1	-179291.5	-13.5	0	10.0	0.0	-59 51 55.1	270292	192	84.6
LH 2	96915.7	-17.4	0	LH 3	-277076.3	-18.1	0	Ang = -11.9; D = 117; Mag = 0; Gyro = 81.2					
								EV 10.0	4:09:01.9 T		190 N4876365 E 270290		
SY11	12416.0	2.3	1	SY22	9814.9	0.8	1	4:09:13	28.6	44 00 23.3	4876367	-67	3.9
SY33	9792.2	-1.9	1	LH 1	-179300.5	-5.7	0	11.0	0.0	-59 51 54.2	270312	212	86.4
LH 2	96942.7	-10.4	0	LH 3	-277064.3	-7.3	0	Ang = -9.2; D = 115; Mag = 0; Gyro = 78.7					

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
										EV 11.0	4:09:12.2 T		210 N4876367 E 270310		
SY11		12395.8	1.4	1	SY22		9832.5	0.5	1	4:09:23	28.7	44 00 23.3	4876367	-67	3.9
SY33		9773.2	-1.2	1	LH 1		-179309.5	-3.5	0	12.0	0.0	-59 51 53.2	270333	233	85.1
LH 2		96987.7	-19.3	0	LH 3		-277025.3	-19.3	0	Ang = -10.8; D = 115; Mag = 0; Gyro = 76.3					
										EV 12.0	4:09:21.8 T		229 N4876367 E 270329		
SY11		12374.4	3.1	1	SY22		9842.5	1.0	1	4:09:33	28.8	44 00 23.4	4876368	-68	3.8
SY33		9755.2	-2.6	1	LH 1		-179319.1	5.7	0	13.0	0.0	-59 51 52.4	270352	252	84.9
LH 2		97012.8	-10.8	0	LH 3		-277018.4	-3.6	0	Ang = -14.2; D = 134; Mag = 0; Gyro = 75.2					
										EV 13.0	4:09:31.8 T		248 N4876367 E 270348		
SY11		12356.7	1.0	1	SY22		9855.4	0.3	1	4:09:44	28.9	44 00 23.4	4876369	-69	3.8
SY33		9734.8	-0.8	1	LH 1		-179315.5	-0.2	0	14.0	0.0	-59 51 51.5	270372	272	85.7
LH 2		97044.6	-8.8	0	LH 3		-276980.4	-18.4	0	Ang = -14.4; D = 115; Mag = 0; Gyro = 74.3					
										EV 14.0	4:09:41.8 T		267 N4876368 E 270367		
SY11		12338.9	-0.2	1	SY22		9875.1	-0.1	1	4:09:55	29.0	44 00 23.5	4876370	-70	3.7
SY33		9718.9	0.1	1	LH 1		-179324.5	-0.6	0	15.0	0.0	-59 51 50.6	270392	292	82.9
LH 2		97086.6	-18.6	0	LH 3		-276926.4	-46.2	0	Ang = -12.6; D = 142; Mag = 0; Gyro = 74.2					
										EV 15.0	4:09:51.8 T		286 N4876370 E 270386		
SY11		12328.0	-0.8	1	SY22		9883.8	-0.3	1	4:10:02	29.1	44 00 23.6	4876372	-72	3.6
SY33		9708.0	0.7	1	LH 1		-179321.5	-6.6	0	16.0	0.0	-59 51 50.0	270405	305	82.4
LH 2		97098.6	-10.7	0	LH 3		-276923.4	-34.6	0	Ang = -7.2; D = 117; Mag = 0; Gyro = 75.3					
										EV 16.0	4:10:01.8 T		304 N4876371 E 270404		
SY11		12309.0	0.5	1	SY22		9893.3	0.2	1	4:10:12	29.2	44 00 23.7	4876375	-75	3.5
SY33		9692.0	-0.5	1	LH 1		-179312.5	-16.9	0	17.0	0.0	-59 51 49.3	270422	322	80.2
LH 2		97143.5	-25.3	0	LH 3		-276890.4	-47.0	0	Ang = -7.3; D = 115; Mag = 0; Gyro = 76.3					
										EV 17.0	4:10:11.8 T		321 N4876374 E 270421		
SY11		12290.9	-0.3	1	SY22		9905.7	-0.1	1	4:10:22	29.3	44 00 23.8	4876378	-78	3.5
SY33		9673.6	0.2	1	LH 1		-179330.5	-1.8	0	18.0	0.0	-59 51 48.5	270439	339	80.7
LH 2		97163.0	-12.4	0	LH 3		-276893.4	-21.2	0	Ang = -6.7; D = 115; Mag = 0; Gyro = 76.3					
										EV 18.0	4:10:21.8 T		338 N4876378 E 270438		
SY11		12274.1	-1.1	1	SY22		9919.7	-0.4	1	4:10:32	29.4	44 00 23.9	4876381	-81	3.5
SY33		9657.3	0.9	1	LH 1		-179333.5	-3.6	0	19.0	0.0	-59 51 47.7	270457	357	81.1
LH 2		97197.5	-16.6	0	LH 3		-276851.4	-40.8	0	Ang = -7.0; D = 112; Mag = 0; Gyro = 77.3					
										EV 19.0	4:10:31.8 T		355 N4876381 E 270455		
SY11		12253.9	-1.3	1	SY22		9934.4	-0.4	1	4:10:42	29.5	44 00 24.0	4876383	-83	3.6
SY33		9638.7	1.1	1	LH 1		-179327.5	-14.2	0	20.0	0.0	-59 51 46.9	270475	375	82.2
LH 2		97221.5	-5.7	0	LH 3		-276830.5	-36.5	0	Ang = 2.9; D = 117; Mag = 0; Gyro = 78.7					
										EV 20.0	4:10:41.8 T		374 N4876383 E 270474		
SY11		12235.1	-1.2	1	SY22		9942.3	-0.4	1	4:10:53	29.6	44 00 24.1	4876384	-84	3.6
SY33		9619.6	1.0	1	LH 1		-179339.4	-0.5	0	21.0	0.0	-59 51 46.0	270495	395	83.8
LH 2		97260.5	-11.3	0	LH 3		-276838.5	-7.8	0	Ang = -3.4; D = 115; Mag = 0; Gyro = 80.0					
										EV 21.0	4:10:51.8 T		392 N4876384 E 270492		
SY11		12216.1	-0.1	1	SY22		9957.5	-0.0	1	4:11:03	29.7	44 00 24.1	4876386	-86	3.6
SY33		9605.3	0.1	1	LH 1		-179339.4	-7.2	0	22.0	0.0	-59 51 45.2	270514	414	81.5
LH 2		97291.9	-12.0	0	LH 3		-276818.5	-4.1	0	Ang = -2.4; D = 115; Mag = 0; Gyro = 80.5					
										EV 22.0	4:11:01.9 T		411 N4876385 E 270511		
SY11		12196.0	1.2	1	SY22		9970.5	0.4	1	4:11:13	29.8	44 00 24.2	4876388	-88	3.6
SY33		9589.4	-1.0	1	LH 1		-179342.4	-8.2	0	23.0	0.0	-59 51 44.4	270532	432	81.3



STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
LH 2		97329.4	-17.4	0	LH 3		-276794.5	-4.9	0	Ang = 4.8; D = 115; Mag = 0; Gyro = 80.5					
										EV 23.0	4:11:11.8 T		429	N4876387 E 270529	
SY11		12177.8	0.9	1	SY22		9980.9	0.3	1	4:11:23	29.9	44 00 24.3	4876389	-99	3.6
SY33		9571.1	-0.8	1	LH 1		-179330.5	-21.3	0	24.0	0.0	-59 51 43.5	270551	451	82.7
LH 2		97362.4	-18.4	0	LH 3		-276749.5	-28.4	0	Ang = -4.1; D = 117; Mag = 0; Gyro = 81.3					
										EV 24.0	4:11:21.8 T		447	N4876389 E 270547	
SY11		12158.1	0.6	1	SY22		9994.5	0.2	1	4:11:35	30.0	44 00 24.4	4876391	-91	3.5
SY33		9552.3	-0.5	1	LH 1		-179357.4	2.3	0	25.0	0.0	-59 51 42.6	270571	471	83.2
LH 2		97386.4	-8.1	0	LH 3		-276713.5	-40.2	0	Ang = -7.9; D = 120; Mag = 0; Gyro = 82.2					
										EV 25.0	4:11:31.8 T		466	N4876390 E 270566	
SY11		12144.7	0.8	1	SY22		10000.5	0.3	1	4:11:42	30.1	44 00 24.4	4876391	-91	3.6
SY33		9539.1	-0.7	1	LH 1		-179342.4	-12.1	0	26.0	0.0	-59 51 42.0	270584	484	85.5
LH 2		97416.4	-15.4	0	LH 3		-276713.5	-25.8	0	Ang = 2.9; D = 117; Mag = 0; Gyro = 82.2					
										EV 26.0	4:11:41.8 T		484	N4876392 E 270584	
SY11		12124.8	1.5	1	SY22		10016.9	0.5	1	4:11:52	30.2	44 00 24.4	4876392	-92	3.6
SY33		9523.3	-1.2	1	LH 1		-179342.4	-19.0	0	27.0	0.0	-59 51 41.2	270603	503	84.2
LH 2		97452.3	-18.4	0	LH 3		-276698.5	-15.3	0	Ang = -6.8; D = 117; Mag = 0; Gyro = 81.8					
										EV 27.0	4:11:51.8 T		502	N4876392 E 270602	
SY11		12105.0	0.6	1	SY22		10026.1	0.2	1	4:12:03	31.0	44 00 24.5	4876392	-92	3.5
SY33		9501.4	-0.5	1	LH 1		-179351.4	-8.4	0	28.0	0.0	-59 51 40.2	270625	525	88.8
LH 2		97485.3	-15.9	0	LH 3		-276674.6	-17.1	0	Ang = -0.2; D = 112; Mag = 0; Gyro = 82.8					
										EV 28.0	4:12:01.8 T		521	N4876392 E 270621	

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD

SYSTEM LINE DATA

Ref#: 9 Type: SYS Ident: OLYM-350W

Start Pt	End Pt			
4876350.0	4876350.0	Az 270 00 00.0	BL	9.0
270450.0	270100.0	Length 350.0	OF	0.0

SY11	12307.9	-1.5	1	SY22	9880.2	-0.5	1	4:32:30	31.6	44 00 22.8	4876348	-2	3.3
SY33	9681.0	1.2	1	LH 1	-179324.5	14.8	0	1.0	0.0	-59 51 48.3	270442	8	284.3
LH 2	97137.6	18.6	0	LH 3	-276893.4	-30.8	0	Ang = -2.7; D = 112; Mag = 0; Gyro =278.2					
								EV 1.0	4:32:27.8 T		3 N4876346 E 270447		
SY11	12318.8	-0.7	1	SY22	9873.3	-0.2	1	4:32:38	31.7	44 00 22.9	4876350	0	3.2
SY33	9692.9	0.6	1	LH 1	-179312.5	3.0	0	2.0	0.0	-59 51 48.9	270429	21	281.8
LH 2	97110.6	25.1	0	LH 3	-276902.4	-35.0	0	Ang = -16.2; D = 117; Mag = 0; Gyro =275.0					
								EV 2.0	4:32:37.8 T		20 N4876350 E 270430		
SY11	12334.6	0.4	1	SY22	9862.7	0.1	1	4:32:48	31.8	44 00 23.0	4876353	3	3.1
SY33	9709.9	-0.3	1	LH 1	-179330.5	22.3	0	3.0	0.0	-59 51 49.6	270413	37	279.4
LH 2	97067.1	40.3	0	LH 3	-276935.4	-21.2	0	Ang = -8.9; D = 117; Mag = 0; Gyro =271.2					
								EV 3.0	4:32:47.8 T		36 N4876353 E 270414		
SY11	12349.0	1.3	1	SY22	9851.8	0.4	1	4:32:58	31.9	44 00 23.0	4876354	4	3.0
SY33	9724.7	-1.1	1	LH 1	-179315.5	9.7	0	4.0	0.0	-59 51 50.3	270398	52	275.5
LH 2	97062.6	19.1	0	LH 3	-276968.4	-6.3	0	Ang = -11.3; D = 115; Mag = 0; Gyro =267.2					
								EV 4.0	4:32:57.8 T		51 N4876355 E 270399		
SY11	12369.0	-0.2	1	SY22	9839.0	-0.1	1	4:33:10	32.0	44 00 23.0	4876354	4	3.0
SY33	9740.3	0.2	1	LH 1	-179330.5	28.5	0	5.0	0.0	-59 51 51.1	270380	70	271.6
LH 2	97011.6	38.7	0	LH 3	-277012.4	15.2	0	Ang = -13.6; D = 115; Mag = 0; Gyro =263.8					
								EV 5.0	4:33:07.8 T		67 N4876355 E 270383		
SY11	12386.8	-1.3	1	SY22	9828.4	-0.4	1	4:33:20	32.1	44 00 22.9	4876352	2	3.1
SY33	9754.9	1.1	1	LH 1	-179301.1	1.4	0	6.0	0.0	-59 51 51.8	270364	86	268.3
LH 2	96993.7	28.4	0	LH 3	-277010.3	-6.5	0	Ang = -14.9; D = 115; Mag = 0; Gyro =262.2					
								EV 6.0	4:33:17.8 T		82 N4876354 E 270368		
SY11	12402.1	-1.1	1	SY22	9816.4	-0.4	1	4:33:30	32.2	44 00 22.8	4876349	-1	3.1
SY33	9768.9	0.9	1	LH 1	-179300.5	4.8	0	7.0	0.0	-59 51 52.5	270348	102	264.3
LH 2	96969.7	26.0	0	LH 3	-277007.3	-29.0	0	Ang = -11.7; D = 112; Mag = 0; Gyro =261.8					
								EV 7.0	4:33:27.8 T		98 N4876351 E 270352		
SY11	12415.3	0.4	1	SY22	9801.7	0.1	1	4:33:40	32.3	44 00 22.6	4876344	-6	3.0
SY33	9781.9	-0.3	1	LH 1	-179288.5	-0.5	0	8.0	0.0	-59 51 53.2	270332	118	257.6
LH 2	96942.7	28.2	0	LH 3	-277031.3	-24.9	0	Ang = -8.9; D = 117; Mag = 0; Gyro =261.3					
								EV 8.0	4:33:37.8 T		114 N4876347 E 270336		
SY11	12426.0	3.2	1	SY22	9788.7	1.1	1	4:33:50	32.4	44 00 22.4	4876338	-12	2.9
SY33	9795.6	-2.7	1	LH 1	-179306.5	22.8	0	9.0	0.0	-59 51 53.9	270318	132	253.8
LH 2	96903.7	44.1	0	LH 3	-277081.4	7.1	0	Ang = -5.4; D = 115; Mag = 0; Gyro =264.0					
								EV 9.0	4:33:47.8 T		129 N4876341 E 270321		
SY11	12443.7	2.6	1	SY22	9774.4	0.9	1	4:34:00	32.5	44 00 22.1	4876331	-19	3.1
SY33	9809.9	-2.2	1	LH 1	-179288.5	11.2	0	10.0	0.0	-59 51 54.5	270304	146	251.1
LH 2	96888.7	29.5	0	LH 3	-277082.3	-14.8	0	Ang = 3.6; D = 115; Mag = 0; Gyro =265.5					
								EV 10.0	4:33:57.8 T		143 N4876334 E 270307		
SY11	12462.0	0.6	1	SY22	9762.8	0.2	1	4:34:10	32.6	44 00 21.9	4876325	-25	3.2
SY33	9822.8	-0.5	1	LH 1	-179288.5	15.6	0	11.0	0.0	-59 51 55.2	270288	162	253.5
LH 2	96873.7	16.4	0	LH 3	-277076.3	-41.5	0	Ang = 4.9; D = 117; Mag = 0; Gyro =267.7					

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
										EV 11.0	4:34:07.8 T		158 N4876327 E 270292		
SY11		12479.0	-0.1	1	SY22		9752.3	-0.0	1	4:34:20	32.7	44 00 21.8 4876320		-30	3.2
SY33		9837.4	0.0	1	LH 1		-179282.5	12.7	0	12.0	0.0	-59 51 56.0 270271		179	255.4
LH 2		96837.8	24.2	0	LH 3		-277109.3	-28.7	0	Ang = 6.2; D = 117; Mag = 0; Gyro =270.0					
										EV 12.0	4:34:17.8 T		174 N4876322 E 270276		
SY11		12496.0	-0.1	1	SY22		9738.2	-0.0	1	4:34:30	32.8	44 00 21.6 4876317		-33	3.2
SY33		9851.9	0.1	1	LH 1		-179291.5	27.6	0	13.0	0.0	-59 51 56.7 270254		196	255.7
LH 2		96804.8	28.1	0	LH 3		-277151.2	-8.9	0	Ang = 8.0; D = 117; Mag = 0; Gyro =272.7					
										EV 13.0	4:34:27.8 T		191 N4876318 E 270259		
SY11		12512.0	-0.3	1	SY22		9728.5	-0.1	1	4:34:40	32.9	44 00 21.5 4876315		-35	3.2
SY33		9866.7	0.3	1	LH 1		-179270.5	9.2	0	14.0	0.0	-59 51 57.5 270237		213	258.5
LH 2		96798.8	6.5	0	LH 3		-277142.2	-37.3	0	Ang = 10.2; D = 122; Mag = 0; Gyro =275.2					
										EV 14.0	4:34:37.8 T		207 N4876315 E 270243		
SY11		12531.3	-0.7	1	SY22		9718.5	-0.2	1	4:34:52	33.0	44 00 21.5 4876314		-36	3.2
SY33		9884.9	0.6	1	LH 1		-179280.1	19.9	0	15.0	0.0	-59 51 58.3 270218		232	261.9
LH 2		96741.8	30.8	0	LH 3		-277181.2	-20.3	0	Ang = 11.6; D = 120; Mag = 0; Gyro =278.2					
										EV 15.0	4:34:47.8 T		224 N4876314 E 270226		
SY11		12542.5	-1.4	1	SY22		9715.0	-0.5	1	4:34:59	33.1	44 00 21.5 4876314		-36	3.1
SY33		9895.3	1.2	1	LH 1		-179273.5	12.3	0	16.0	0.0	-59 51 58.8 270207		243	265.2
LH 2		96744.8	9.4	0	LH 3		-277166.2	-46.7	0	Ang = 14.0; D = 117; Mag = 0; Gyro =280.0					
										EV 16.0	4:34:57.8 T		240 N4876313 E 270210		
SY11		12557.2	-0.3	1	SY22		9703.5	-0.1	1	4:35:09	33.2	44 00 21.5 4876315		-35	3.1
SY33		9910.8	0.2	1	LH 1		-179271.1	13.7	0	17.0	0.0	-59 51 59.5 270191		259	266.1
LH 2		96708.8	17.6	0	LH 3		-277190.2	-42.9	0	Ang = 13.7; D = 117; Mag = 0; Gyro =282.8					
										EV 17.0	4:35:07.8 T		257 N4876314 E 270193		
SY11		12570.1	1.2	1	SY22		9696.7	0.4	1	4:35:19	33.3	44 00 21.5 4876317		-33	3.0
SY33		9926.7	-1.1	1	LH 1		-179267.5	9.6	0	18.0	0.0	-59 52 00.2 270175		275	269.5
LH 2		96672.9	28.6	0	LH 3		-277214.2	-35.0	0	Ang = 16.1; D = 115; Mag = 0; Gyro =283.7					
										EV 18.0	4:35:17.8 T		272 N4876316 E 270178		
SY11		12580.9	3.6	1	SY22		9690.8	1.2	1	4:35:29	33.4	44 00 21.6 4876319		-31	2.9
SY33		9942.2	-3.0	1	LH 1		-179258.5	-0.3	0	19.0	0.0	-59 52 00.9 270160		290	271.1
LH 2		96656.4	22.2	0	LH 3		-277220.2	-43.4	0	Ang = 11.7; D = 117; Mag = 0; Gyro =283.2					
										EV 19.0	4:35:27.8 T		287 N4876318 E 270163		
SY11		12599.5	1.4	1	SY22		9684.8	0.4	1	4:35:39	33.5	44 00 21.7 4876322		-28	2.9
SY33		9957.2	-1.2	1	LH 1		-179261.5	1.6	0	20.0	0.0	-59 52 01.6 270146		304	276.1
LH 2		96627.9	22.5	0	LH 3		-277250.2	-31.2	0	Ang = 9.7; D = 117; Mag = 0; Gyro =282.2					
										EV 20.0	4:35:37.8 T		301 N4876321 E 270149		
SY11		12618.9	-0.0	1	SY22		9675.8	-0.0	1	4:35:50	33.6	44 00 21.8 4876327		-23	3.1
SY33		9973.7	0.0	1	LH 1		-179277.1	17.9	0	21.0	0.0	-59 52 02.3 270130		320	277.8
LH 2		96597.9	21.8	0	LH 3		-277295.1	-6.6	0	Ang = 4.9; D = 117; Mag = 0; Gyro =281.0					
										EV 21.0	4:35:47.8 T		316 N4876325 E 270134		
SY11		12634.7	-0.9	1	SY22		9669.8	-0.3	1	4:36:00	33.7	44 00 21.9 4876330		-20	3.1
SY33		9988.1	0.8	1	LH 1		-179285.5	25.4	0	22.0	0.0	-59 52 03.0 270114		336	276.5
LH 2		96570.9	23.3	0	LH 3		-277300.2	-17.6	0	Ang = 3.3; D = 115; Mag = 0; Gyro =279.2					
										EV 22.0	4:35:57.8 T		332 N4876329 E 270118		
SY11		12650.3	-1.5	1	SY22		9662.3	-0.5	1	4:36:10	33.8	44 00 22.0 4876334		-16	3.0
SY33		10002.5	1.2	1	LH 1		-179270.5	10.7	0	23.0	0.0	-59 52 03.7 270099		351	277.6

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
LH 2		96553.0	15.8	0	LH 3		-277310.1	-24.5	0	Ang = 2.8; D = 117; Mag = 0; Gyro =277.3					
										EV 23.0	4:36:07.8 T		348	N4876333 E 270102	
SY11		12665.9	-1.8	1	SY22		9654.6	-0.5	1	4:36:20	33.9	44 00 22.0	4876335	-14	2.9
SY33		10017.2	1.5	1	LH 1		-179276.5	17.1	0	24.0	0.0	-59 52 04.4	270083	367	275.4
LH 2		96515.5	27.4	0	LH 3		-277328.1	-23.6	0	Ang = -0.2; D = 117; Mag = 0; Gyro =276.0					
										EV 24.0	4:36:17.8 T		363	N4876336 E 270087	
SY11		12682.3	-1.5	1	SY22		9647.1	-0.5	1	4:36:32	34.0	44 00 22.1	4876338	-12	2.9
SY33		10034.4	1.2	1	LH 1		-179255.5	-4.5	0	25.0	0.0	-59 52 05.1	270067	383	275.9
LH 2		96514.0	0.3	0	LH 3		-277313.1	-56.9	0	Ang = -0.5; D = 115; Mag = 0; Gyro =274.8					
										EV 25.0	4:36:27.8 T		377	N4876337 E 270073	
SY11		12692.6	-1.1	1	SY22		9639.2	-0.4	1	4:36:39	34.1	44 00 22.1	4876339	-11	2.9
SY33		10044.3	0.9	1	LH 1		-179288.5	31.0	0	26.0	0.0	-59 52 05.6	270057	393	273.2
LH 2		96469.0	27.2	0	LH 3		-277355.1	-28.1	0	Ang = -0.2; D = 117; Mag = 0; Gyro =274.0					
										EV 26.0	4:36:38.1 T		392	N4876339 E 270058	
SY11		12708.0	-0.8	1	SY22		9630.8	-0.3	1	4:36:49	34.2	44 00 22.1	4876340	-10	2.9
SY33		10059.9	0.7	1	LH 1		-179259.1	2.3	0	27.0	0.0	-59 52 06.3	270041	409	271.7
LH 2		96442.0	27.5	0	LH 3		-277363.2	-37.7	0	Ang = -2.4; D = 122; Mag = 0; Gyro =271.8					
										EV 27.0	4:36:48.2 T		407	N4876340 E 270043	
SY11		12722.8	-0.6	1	SY22		9622.7	-0.2	1	4:36:59	34.3	44 00 22.1	4876340	-10	2.9
SY33		10074.7	0.5	1	LH 1		-179270.5	14.5	0	28.0	0.0	-59 52 07.0	270026	424	272.0
LH 2		96422.5	21.4	0	LH 3		-277388.1	-30.0	0	Ang = -5.4; D = 117; Mag = 0; Gyro =271.2					
										EV 28.0	4:36:58.1 T		422	N4876340 E 270028	
SY11		12742.4	0.2	1	SY22		9608.0	0.1	1	4:37:11	34.4	44 00 22.1	4876340	-10	3.0
SY33		10093.9	-0.2	1	LH 1		-179273.5	22.1	0	29.0	0.0	-59 52 07.8	270007	443	267.4
LH 2		96385.1	24.2	0	LH 3		-277421.0	-22.2	0	Ang = -0.7; D = 117; Mag = 0; Gyro =270.3					
										EV 29.0	4:37:07.8 T		437	N4876341 E 270013	
SY11		12755.1	-0.2	1	SY22		9599.6	-0.0	1	4:37:18	34.5	44 00 22.0	4876339	-11	3.1
SY33		10104.9	0.1	1	LH 1		-179261.5	12.7	0	30.0	0.0	-59 52 08.3	269995	455	265.9
LH 2		96361.1	27.0	0	LH 3		-277432.1	-26.4	0	Ang = -2.6; D = 117; Mag = 0; Gyro =270.3					
										EV 30.0	4:37:17.8 T		453	N4876339 E 269997	
SY11		12770.0	-0.4	1	SY22		9592.6	-0.1	1	4:37:28	34.6	44 00 22.0	4876338	-12	3.0
SY33		10119.3	0.3	1	LH 1		-179264.5	16.0	0	31.0	0.0	-59 52 09.0	269980	470	267.6
LH 2		96346.1	16.8	0	LH 3		-277430.0	-45.0	0	Ang = -0.7; D = 117; Mag = 0; Gyro =271.2					
										EV 31.0	4:37:27.8 T		469	N4876338 E 269981	
SY11		12785.2	-0.2	1	SY22		9582.9	-0.1	1	4:37:38	34.7	44 00 22.0	4876337	-13	3.0
SY33		10133.8	0.2	1	LH 1		-179255.5	9.6	0	32.0	0.0	-59 52 09.8	269964	486	266.2
LH 2		96307.1	29.3	0	LH 3		-277468.1	-25.7	0	Ang = 2.4; D = 117; Mag = 0; Gyro =271.9					
										EV 32.0	4:37:37.8 T		485	N4876338 E 269965	
SY11		12799.1	0.2	1	SY22		9573.0	0.1	1	4:37:48	34.8	44 00 21.9	4876335	-15	3.0
SY33		10147.4	-0.2	1	LH 1		-179270.5	27.6	0	33.0	0.0	-59 52 10.5	269948	502	263.8
LH 2		96283.1	28.7	0	LH 3		-277499.0	-12.5	0	Ang = 1.9; D = 120; Mag = 0; Gyro =273.3					
										EV 33.0	4:37:47.8 T		501	N4876336 E 269949	
SY11		12820.0	-0.8	1	SY22		9563.0	-0.3	1	4:38:00	35.0	44 00 21.8	4876334	-15	3.0
SY33		10165.9	0.7	1	LH 1		-179246.5	4.6	0	34.0	0.0	-59 52 11.3	269929	521	265.6
LH 2		96255.2	20.2	0	LH 3		-277504.1	-30.9	0	Ang = 4.9; D = 117; Mag = 0; Gyro =274.7					
										EV 34.0	4:37:57.8 T		516	N4876334 E 269934	

McElhanney

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD

SYSTEM LINE DATA

Ref#: 13 Type: SYS Ident: OLYM-175X/S
Start Pt End Pt
4876500.0 4876250.0 Az 180 00 00.0 BL 13.0
270175.0 270175.0 Length 250.0 OF 0.0

SY11		12549.5	4.6	1	SY22		9835.7	1.5	1	4:58:56	35.6	44 00 27.2	4876493	-18	3.2
SY33		9963.4	-3.9	1	LH 1		-179393.4	-0.7	0	1.0	0.0	-59 51 59.7	270193	7	179.2
LH 2		96696.9	30.8	0	LH 3		-277148.2	-7.2	0	Ang = 20.6; D = 117; Mag = 0; Gyro =205.0					
										EV 1.0	4:58:53.8 T		4 N4876496 E 270193		
SY11		12560.9	-0.5	1	SY22		9821.6	-0.1	1	4:59:06	35.7	44 00 26.7	4876477	-15	3.2
SY33		9960.5	0.4	1	LH 1		-179381.4	-0.4	0	2.0	0.0	-59 51 59.8	270191	23	183.0
LH 2		96689.4	27.8	0	LH 3		-277145.2	-24.0	0	Ang = 19.6; D = 120; Mag = 0; Gyro =206.7					
										EV 2.0	4:59:03.8 T		20 N4876480 E 270192		
SY11		12567.1	-1.4	1	SY22		9806.5	-0.5	1	4:59:15	35.8	44 00 26.2	4876461	-14	3.2
SY33		9959.9	1.2	1	LH 1		-179381.4	12.0	0	3.0	0.0	-59 51 59.9	270189	39	183.5
LH 2		96686.4	22.0	0	LH 3		-277136.2	-45.6	0	Ang = 21.6; D = 117; Mag = 0; Gyro =208.2					
										EV 3.0	4:59:13.8 T		35 N4876465 E 270190		
SY11		12559.9	4.0	1	SY22		9792.2	1.3	1	4:59:26	35.9	44 00 25.7	4876446	-10	3.1
SY33		9957.5	-3.4	1	LH 1		-179363.4	7.0	0	4.0	0.0	-59 52 00.0	270185	54	186.0
LH 2		96678.9	32.9	0	LH 3		-277168.3	-18.5	0	Ang = 16.3; D = 120; Mag = 0; Gyro =208.3					
										EV 4.0	4:59:23.8 T		51 N4876449 E 270187		
SY11		12575.0	-2.3	1	SY22		9776.4	-0.8	1	4:59:37	36.0	44 00 25.2	4876429	-6	3.1
SY33		9955.6	2.0	1	LH 1		-179348.4	5.2	0	5.0	0.0	-59 52 00.1	270181	71	187.2
LH 2		96684.9	12.1	0	LH 3		-277183.3	-20.5	0	Ang = 16.3; D = 117; Mag = 0; Gyro =207.5					
										EV 5.0	4:59:33.8 T		66 N4876434 E 270183		
SY11		12568.8	2.3	1	SY22		9757.0	0.8	1	4:59:44	36.1	44 00 24.8	4876418	-3	3.1
SY33		9954.7	-2.0	1	LH 1		-179345.4	10.4	0	6.0	0.0	-59 52 00.3	270178	82	187.1
LH 2		96665.4	34.4	0	LH 3		-277214.2	7.5	0	Ang = 14.8; D = 120; Mag = 0; Gyro =206.3					
										EV 6.0	4:59:43.8 T		81 N4876419 E 270179		
SY11		12575.4	-0.3	1	SY22		9752.7	-0.1	1	4:59:54	36.2	44 00 24.3	4876403	0	3.0
SY33		9951.3	0.3	1	LH 1		-179324.5	2.1	0	7.0	0.0	-59 52 00.4	270175	97	187.6
LH 2		96672.9	20.1	0	LH 3		-277208.2	-9.9	0	Ang = 11.3; D = 117; Mag = 0; Gyro =204.0					
										EV 7.0	4:59:53.8 T		96 N4876404 E 270175		
SY11		12573.1	2.5	1	SY22		9737.4	0.8	1	5:00:04	36.3	44 00 23.8	4876388	4	3.1
SY33		9948.7	-2.1	1	LH 1		-179291.5	-17.4	0	8.0	0.0	-59 52 00.5	270171	112	187.1
LH 2		96672.9	19.2	0	LH 3		-277214.2	-12.0	0	Ang = 8.5; D = 117; Mag = 0; Gyro =201.5					
										EV 8.0	5:00:03.8 T		111 N4876389 E 270172		
SY11		12579.7	-1.4	1	SY22		9724.5	-0.4	1	5:00:14	36.4	44 00 23.3	4876372	7	3.1
SY33		9943.2	1.2	1	LH 1		-179306.5	9.6	0	9.0	0.0	-59 52 00.6	270168	128	187.1
LH 2		96660.9	26.1	0	LH 3		-277238.2	1.9	0	Ang = 6.2; D = 117; Mag = 0; Gyro =198.7					
										EV 9.0	5:00:13.8 T		125 N4876374 E 270169		
SY11		12578.6	0.9	1	SY22		9710.4	0.3	1	5:00:24	36.5	44 00 22.8	4876356	9	3.1
SY33		9941.3	-0.7	1	LH 1		-179291.5	6.9	0	10.0	0.0	-59 52 00.7	270166	144	184.7
LH 2		96657.9	27.2	0	LH 3		-277226.2	-18.2	0	Ang = 5.4; D = 117; Mag = 0; Gyro =196.7					
										EV 10.0	5:00:23.8 T		142 N4876358 E 270166		
SY11		12578.7	1.3	1	SY22		9697.0	0.4	1	5:00:34	36.6	44 00 22.3	4876341	11	3.1
SY33		9937.2	-1.1	1	LH 1		-179279.5	7.4	0	11.0	0.0	-59 52 00.8	270164	159	184.3
LH 2		96657.9	26.3	0	LH 3		-277226.2	-25.7	0	Ang = 5.1; D = 117; Mag = 0; Gyro =196.3					

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
										EV 11.0	5:00:33.8 T		158 N4876342 E 270164		
SY11		12584.4	-2.2	1	SY22		9683.5	-0.7	1	5:00:45	36.7	44 00 21.8	4876324	12	3.1
SY33		9931.0	1.9	1	LH 1		-179261.5	2.6	0	12.0	0.0	-59 52 00.8	270163	176	182.9
LH 2		96657.9	23.1	0	LH 3		-277244.2	-17.2	0	Ang = 4.5; D = 117; Mag = 0; Gyro =196.0					
										EV 12.0	5:00:44.1 T		174 N4876326 E 270163		
SY11		12575.4	3.8	1	SY22		9668.3	1.2	1	5:00:55	36.8	44 00 21.2	4876308	12	3.2
SY33		9928.6	-3.2	1	LH 1		-179249.5	4.4	0	13.0	0.0	-59 52 00.8	270163	192	180.7
LH 2		96657.9	27.1	0	LH 3		-277253.2	-13.3	0	Ang = 7.1; D = 122; Mag = 0; Gyro =194.7					
										EV 13.0	5:00:54.2 T		190 N4876310 E 270163		
SY11		12579.6	1.6	1	SY22		9655.5	0.5	1	5:01:05	36.9	44 00 20.7	4876291	13	3.2
SY33		9922.8	-1.4	1	LH 1		-179231.5	-1.1	0	14.0	0.0	-59 52 00.8	270162	209	181.7
LH 2		96660.9	22.5	0	LH 3		-277253.2	-21.3	0	Ang = 4.6; D = 115; Mag = 0; Gyro =193.2					
										EV 14.0	5:01:03.8 T		207 N4876293 E 270162		
SY11		12587.0	-1.7	1	SY22		9640.2	-0.6	1	5:01:16	37.0	44 00 20.1	4876272	13	3.2
SY33		9918.5	1.4	1	LH 1		-179222.5	3.7	0	15.0	0.0	-59 52 00.8	270162	228	180.6
LH 2		96651.9	24.3	0	LH 3		-277244.2	-42.7	0	Ang = 4.3; D = 122; Mag = 0; Gyro =190.3					
										EV 15.0	5:01:13.8 T		224 N4876276 E 270162		
SY11		12582.6	0.4	1	SY22		9626.1	0.1	1	5:01:27	37.1	44 00 19.5	4876255	13	3.2
SY33		9912.3	-0.3	1	LH 1		-179210.5	5.8	0	16.0	0.0	-59 52 00.7	270162	245	178.7
LH 2		96641.4	39.1	0	LH 3		-277289.1	-2.8	0	Ang = 0.4; D = 122; Mag = 0; Gyro =188.0					
										EV 16.0	5:01:23.8 T		240 N4876260 E 270162		
SY11		12576.8	3.9	1	SY22		9611.6	1.3	1	5:01:37	37.2	44 00 18.9	4876237	13	3.3
SY33		9907.3	-3.3	1	LH 1		-179196.1	5.4	0	17.0	0.0	-59 52 00.7	270162	263	178.1
LH 2		96651.9	32.6	0	LH 3		-277289.1	-8.0	0	Ang = -0.7; D = 132; Mag = 0; Gyro =184.8					
										EV 17.0	5:01:33.8 T		257 N4876243 E 270162		
SY11		12583.2	-0.5	1	SY22		9599.7	-0.2	1	5:01:47	37.3	44 00 18.4	4876220	12	3.2
SY33		9900.8	0.4	1	LH 1		-179168.6	-10.2	0	18.0	0.0	-59 52 00.6	270163	280	177.8
LH 2		96666.9	14.2	0	LH 3		-277258.2	-37.9	0	Ang = 1.1; D = 117; Mag = 0; Gyro =185.7					
										EV 18.0	5:01:43.8 T		274 N4876226 E 270163		
SY11		12575.9	3.2	1	SY22		9590.4	1.1	1	5:01:54	37.4	44 00 18.0	4876208	11	3.2
SY33		9896.5	-2.7	1	LH 1		-179168.6	-0.5	0	19.0	0.0	-59 52 00.6	270164	292	176.4
LH 2		96660.9	27.4	0	LH 3		-277274.1	-32.6	0	Ang = 2.6; D = 120; Mag = 0; Gyro =185.5					
										EV 19.0	5:01:53.8 T		291 N4876209 E 270163		
SY11		12573.4	4.0	1	SY22		9578.0	1.3	1	5:02:04	37.5	44 00 17.4	4876191	10	3.2
SY33		9890.4	-3.4	1	LH 1		-179157.2	0.9	0	20.0	0.0	-59 52 00.5	270165	309	175.8
LH 2		96663.9	28.1	0	LH 3		-277292.1	-19.3	0	Ang = 0.9; D = 117; Mag = 0; Gyro =185.7					
										EV 20.0	5:02:03.8 T		308 N4876192 E 270165		
SY11		12580.1	0.7	1	SY22		9563.1	0.2	1	5:02:14	37.6	44 00 16.9	4876174	8	3.3
SY33		9885.4	-0.6	1	LH 1		-179148.2	6.0	0	21.0	0.0	-59 52 00.4	270167	326	175.4
LH 2		96654.9	32.2	0	LH 3		-277304.1	-18.4	0	Ang = 2.4; D = 117; Mag = 0; Gyro =185.5					
										EV 21.0	5:02:13.8 T		325 N4876175 E 270166		
SY11		12574.0	2.6	1	SY22		9551.9	0.9	1	5:02:24	37.7	44 00 16.3	4876156	7	3.3
SY33		9877.9	-2.2	1	LH 1		-179123.6	-6.1	0	22.0	0.0	-59 52 00.3	270168	344	174.4
LH 2		96666.9	28.2	0	LH 3		-277301.1	-23.1	0	Ang = 4.6; D = 120; Mag = 0; Gyro =184.8					
										EV 22.0	5:02:23.8 T		343 N4876157 E 270168		
SY11		12572.1	4.0	1	SY22		9536.7	1.3	1	5:02:34	37.8	44 00 15.7	4876138	5	3.3
SY33		9872.6	-3.3	1	LH 1		-179108.6	-6.4	0	23.0	0.0	-59 52 00.2	270170	362	174.6

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
LH 2		96663.9	32.8	0	LH 3		-277319.1	-12.3	0	Ang = 3.2; D = 120; Mag = 0; Gyro =184.0					
										EV 23.0	5:02:33.8 T		360 N4876140 E 270169		
SY11		12573.3	2.1	1	SY22		9524.4	0.7	1	5:02:44	37.9	44 00 15.2 4876120	4	3.4	
SY33		9865.0	-1.7	1	LH 1		-179105.6	3.7	0	24.0	0.0	-59 52 00.1 270171	380	174.5	
LH 2		96666.9	31.6	0	LH 3		-277322.1	-15.5	0	Ang = 2.2; D = 117; Mag = 0; Gyro =181.8					
										EV 24.0	5:02:43.8 T		378 N4876122 E 270171		
SY11		12574.0	0.9	1	SY22		9509.0	0.3	1	5:02:56	38.0	44 00 14.5 4876099	1	3.4	
SY33		9857.3	-0.8	1	LH 1		-179096.6	10.5	0	25.0	0.0	-59 51 60.0 270174	401	173.5	
LH 2		96662.4	37.7	0	LH 3		-277307.1	-38.2	0	Ang = 1.2; D = 132; Mag = 0; Gyro =180.8					
										EV 25.0	5:02:53.9 T		396 N4876104 E 270173		
SY11		12575.4	-1.1	1	SY22		9499.0	-0.4	1	5:03:06	40.0	44 00 14.0 4876083	-1	3.3	
SY33		9850.7	0.9	1	LH 1		-179087.6	12.4	0	26.0	0.0	-59 51 59.8 270176	417	171.6	
LH 2		96675.9	26.2	0	LH 3		-277319.1	-31.0	0	Ang = -0.2; D = 120; Mag = 0; Gyro =180.3					
										EV 26.0	5:03:04.8 T		414 N4876086 E 270175		

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD

SYSTEM LINE DATA

Ref#: 17 Type: SYS Ident: OLYM-210N
Start Pt End Pt
4876250.0 4875500.0 Az 0 00 00.0 BL 17.0
270210.0 270210.0 Length 250.0 OF 0.0

SY11	12498.4	2.2	1	SY22	9687.1	0.7	1	5:27:19	40.6	44 00 19.6	4876254	27	2.8
SY33	9839.7	-1.8	1	LH 1	-179240.5	28.0	0	1.0	0.0	-59 51 57.4	270237	4	6.7
LH 2	96798.8	8.8	0	LH 3	-277163.2	-43.0	0	Ang = -13.5; D = 117; Mag = 0; Gyro =343.7					
								EV 1.0	5:27:18.1 T		2 N4876252 E 270237		
SY11	12499.0	-0.6	1	SY22	9701.5	-0.2	1	5:27:29	40.7	44 00 20.0	4875268	29	2.8
SY33	9840.1	0.5	1	LH 1	-179246.5	21.8	0	2.0	0.0	-59 51 57.3	270239	18	5.9
LH 2	96800.3	10.5	0	LH 3	-277145.2	-52.1	0	Ang = -12.5; D = 117; Mag = 0; Gyro =343.7					
								EV 2.0	5:27:28.2 T		16 N4876266 E 270239		
SY11	12496.1	0.7	1	SY22	9713.7	0.2	1	5:27:39	40.8	44 00 20.5	4876282	32	2.8
SY33	9844.1	-0.6	1	LH 1	-179253.1	16.9	0	3.0	0.0	-59 51 57.2	270242	32	6.9
LH 2	96816.8	-3.6	0	LH 3	-277145.2	-44.1	0	Ang = -21.2; D = 112; Mag = 0; Gyro =341.5					
								EV 3.0	5:27:37.8 T		30 N4876280 E 270241		
SY11	12492.2	3.0	1	SY22	9725.6	1.0	1	5:27:49	40.9	44 00 20.9	4876296	34	3.1
SY33	9849.1	-2.5	1	LH 1	-179258.5	-3.1	0	4.0	0.0	-59 51 57.1	270244	46	6.2
LH 2	96816.8	13.5	0	LH 3	-277139.2	-24.8	0	Ang = -22.1; D = 134; Mag = 0; Gyro =338.3					
								EV 4.0	5:27:47.8 T		43 N4876293 E 270243		
SY11	12500.9	-1.5	1	SY22	9737.4	-0.5	1	5:28:01	41.0	44 00 21.5	4876314	36	2.9
SY33	9854.4	1.3	1	LH 1	-179276.5	16.6	0	5.0	0.0	-59 51 57.0	270246	64	4.9
LH 2	96812.3	-2.7	0	LH 3	-277112.3	-55.2	0	Ang = 38.8; D = 112; Mag = 0; Gyro =333.8					
								EV 5.0	5:27:57.8 T		59 N4876309 E 270246		
SY11	12494.4	2.4	1	SY22	9743.6	0.8	1	5:28:08	41.1	44 00 21.8	4876324	37	2.8
SY33	9857.6	-2.0	1	LH 1	-179283.1	17.0	0	6.0	0.0	-59 51 57.0	270247	74	2.7
LH 2	96795.8	18.7	0	LH 3	-277154.2	-17.5	0	Ang = 33.3; D = 112; Mag = 0; Gyro =330.8					
								EV 6.0	5:28:07.8 T		74 N4876324 E 270247		
SY11	12502.0	-1.3	1	SY22	9753.1	-0.4	1	5:28:18	41.2	44 00 22.3	4876337	37	2.9
SY33	9862.3	1.1	1	LH 1	-179297.5	6.4	0	7.0	0.0	-59 51 57.1	270247	87	1.9
LH 2	96804.8	8.7	0	LH 3	-277148.2	-10.3	0	Ang = 35.2; D = 112; Mag = 0; Gyro =329.3					
								EV 7.0	5:28:17.8 T		86 N4876336 E 270247		
SY11	12497.1	1.9	1	SY22	9763.1	0.6	1	5:28:28	41.3	44 00 22.7	4876350	36	2.6
SY33	9867.4	-1.6	1	LH 1	-179289.1	3.0	0	8.0	0.0	-59 51 57.1	270246	100	358.1
LH 2	96807.8	3.7	0	LH 3	-277115.3	-47.4	0	Ang = 37.1; D = 112; Mag = 0; Gyro =329.5					
								EV 8.0	5:28:27.9 T		100 N4876350 E 270246		
SY11	12503.0	0.4	1	SY22	9771.6	0.1	1	5:28:38	41.4	44 00 23.1	4876362	34	2.4
SY33	9874.4	-0.3	1	LH 1	-179321.5	25.6	0	9.0	0.0	-59 51 57.2	270244	112	356.1
LH 2	96792.8	10.9	0	LH 3	-277127.2	-35.0	0	Ang = 35.2; D = 112; Mag = 0; Gyro =327.7					
								EV 9.0	5:28:37.8 T		112 N4876362 E 270245		
SY11	12502.1	2.0	1	SY22	9780.8	0.7	1	5:28:48	41.5	44 00 23.5	4876374	31	2.5
SY33	9880.4	-1.7	1	LH 1	-179321.5	15.8	0	10.0	0.0	-59 51 57.4	270241	124	352.1
LH 2	96795.8	7.2	0	LH 3	-277136.2	-21.0	0	Ang = 35.2; D = 115; Mag = 0; Gyro =325.3					
								EV 10.0	5:28:47.8 T		123 N4876373 E 270242		
SY11	12506.4	1.5	1	SY22	9788.4	0.5	1	5:28:58	41.6	44 00 23.8	4876385	28	2.4
SY33	9887.5	-1.3	1	LH 1	-179330.5	15.7	0	11.0	0.0	-59 51 57.5	270238	136	351.7
LH 2	96786.8	9.8	0	LH 3	-277121.3	-35.1	0	Ang = -24.6; D = 112; Mag = 0; Gyro =324.5					

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
										EV 11.0	5:28:57.8 T		135 N4876385 E 270238		
SY11		12512.3	-0.4	1	SY22		9797.2	-0.1	1	5:29:08	41.7	44 00 24.2	4875398	24	2.4
SY33		9893.8	0.3	1	LH 1		-179349.0	24.5	0	12.0	0.0	-59 51 57.7	270234	148	348.0
LH 2		96783.8	6.1	0	LH 3		-277130.2	-25.0	0	Ang = -22.9; D = 112; Mag = 0; Gyro =325.5					
										EV 12.0	5:29:07.8 T		147 N4876397 E 270235		
SY11		12510.7	2.6	1	SY22		9804.0	0.9	1	5:29:18	41.8	44 00 24.6	4876409	30	2.4
SY33		9901.1	-2.2	1	LH 1		-179339.4	6.7	0	13.0	0.0	-59 51 57.9	270230	159	347.2
LH 2		96789.8	-2.5	0	LH 3		-277121.3	-31.1	0	Ang = -19.5; D = 117; Mag = 0; Gyro =326.2					
										EV 13.0	5:29:17.8 T		158 N4876408 E 270231		
SY11		12520.7	-0.6	1	SY22		9812.6	-0.2	1	5:29:28	41.9	44 00 25.0	4876421	16	2.5
SY33		9909.2	0.5	1	LH 1		-179351.4	8.4	0	14.0	0.0	-59 51 58.1	270226	171	344.4
LH 2		96773.3	1.7	0	LH 3		-277094.3	-60.3	0	Ang = -21.8; D = 112; Mag = 0; Gyro =326.8					
										EV 14.0	5:29:27.8 T		170 N4876420 E 270227		
SY11		12512.3	6.5	1	SY22		9821.9	2.1	1	5:29:40	42.0	44 00 25.4	4876436	11	2.5
SY33		9918.2	-5.5	1	LH 1		-179346.0	-7.6	0	15.0)	0.0	-59 51 58.4	270221	186	345.1
LH 2		96777.8	-0.7	0	LH 3		-277088.3	-59.1	0	Ang = -21.1; D = 112; Mag = 0; Gyro =327.8					
										EV 15.0	5:29:37.8 T		183 N4876433 E 270222		
SY11		12529.8	-0.9	1	SY22		9829.8	-0.3	1	5:29:50	42.1	44 00 25.9	4876449	7	2.6
SY33		9926.0	0.8	1	LH 1		-179372.4	10.1	0	16.0	0.0	-59 51 58.6	270217	199	341.8
LH 2		96759.8	0.2	0	LH 3		-277135.3	-17.0	0	Ang = -17.7; D = 112; Mag = 0; Gyro =328.7					
										EV 16.0	5:29:47.8 T		196 N4876446 E 270219		
SY11		12515.3	8.0	1	SY22		9839.3	2.6	1	5:30:00	42.2	44 00 25.3	4876462	3	2.5
SY33		9931.9	-6.8	1	LH 1		-179387.4	15.7	0	17.0	0.0	-59 51 58.8	270213	212	345.4
LH 2		96756.8	11.7	0	LH 3		-277094.3	-47.3	0	Ang = -18.7; D = 117; Mag = 0; Gyro =332.0					
										EV 17.0	5:29:57.8 T		209 N4876459 E 270214		
SY11		12534.5	-0.9	1	SY22		9848.6	-0.3	1	5:30:10	42.3	44 00 26.7	4876475	-1	2.6
SY33		9938.9	0.8	1	LH 1		-179390.4	8.0	0	18.0	0.0	-59 51 58.9	270209	225	343.1
LH 2		96759.8	-9.8	0	LH 3		-277108.4	-39.3	0	Ang = -10.2; D = 117; Mag = 0; Gyro =335.0					
										EV 18.0	5:30:07.8 T		221 N4876471 E 270211		
SY11		12527.2	3.9	1	SY22		9850.1	1.3	1	5:30:20	42.4	44 00 27.1	4876489	-4	2.6
SY33		9945.0	-3.3	1	LH 1		-179414.4	20.7	0	19.0	0.0	-59 51 59.1	270205	239	346.3
LH 2		96740.3	13.1	0	LH 3		-277109.3	-29.9	0	Ang = -9.1; D = 112; Mag = 0; Gyro =337.5					
										EV 19.0	5:30:17.8 T		234 N4876484 E 270207		
SY11		12534.2	1.2	1	SY22		9868.8	0.4	1	5:30:30	42.5	44 00 27.6	4876503	-7	2.7
SY33		9950.9	-1.0	1	LH 1		-179397.0	-6.1	0	20.0	0.0	-59 51 59.3	270203	253	346.1
LH 2		96756.8	-11.3	0	LH 3		-277070.3	-68.7	0	Ang = -8.6; D = 117; Mag = 0; Gyro =337.8					
										EV 20.0	5:30:27.8 T		248 N4876498 E 270204		
SY11		12534.7	0.8	1	SY22		9880.7	0.3	1	5:30:40	42.6	44 00 28.0	4876517	-9	2.7
SY33		9955.3	-0.7	1	LH 1		-179420.4	6.0	0	21.0	0.0	-59 51 59.4	270201	267	349.5
LH 2		96756.8	-11.9	0	LH 3		-277100.3	-32.9	0	Ang = -4.3; D = 120; Mag = 0; Gyro =340.2					
										EV 21.0	5:30:37.8 T		262 N4876512 E 270201		
SY11		12529.0	3.6	1	SY22		9892.9	1.2	1	5:30:51	42.7	44 00 28.5	4876531	-10	2.7
SY33		9959.3	-3.1	1	LH 1		-179432.4	6.8	0	22.0	0.0	-59 51 59.5	270200	281	351.5
LH 2		96749.3	0.2	0	LH 3		-277097.3	-26.6	0	Ang = -6.5; D = 112; Mag = 0; Gyro =342.3					
										EV 22.0	5:30:47.8 T		276 N4876526 E 270200		
SY11		12535.4	0.6	1	SY22		9904.4	0.2	1	5:31:00	42.8	44 00 28.9	4876545	-10	2.7
SY33		9964.7	-0.5	1	LH 1		-179435.4	-1.7	0	23.0	0.0	-59 51 59.5	270200	295	353.2

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
LH 2		96753.8	-10.9	0	LH 3		-277076.3	-45.5	0	Ang = -1.6; D = 120; Mag = 0; Gyro =344.0					
										EV 23.0	5:30:57.8 T		291 N4876541 E 270199		
SY11		12528.0	4.0	1	SY22		9913.8	1.3	1	5:31:08	42.9	44 00 29.3 4876556		-10	2.8
SY33		9967.0	-3.4	1	LH 1		-179471.4	26.1	0	24.0	0.0	-59 51 59.5 270200		306	354.3
LH 2		96735.8	14.0	0	LH 3		-277082.3	-30.4	0	Ang = -8.4; D = 112; Mag = 0; Gyro =345.5					
										EV 24.0	5:31:07.8 T		305 N4876555 E 270199		
SY11		12535.0	0.3	1	SY22		9927.1	0.1	1	5:31:19	43.0	44 00 29.8 4876573		-10	2.8
SY33		9972.4	-0.3	1	LH 1		-179465.4	7.1	0	25.0	0.0	-59 51 59.5 270200		323	355.7
LH 2		96746.3	-2.6	0	LH 3		-277064.3	-45.1	0	Ang = 2.0; D = 122; Mag = 0; Gyro =347.3					
										EV 25.0	5:31:17.8 T		320 N4876570 E 270200		
SY11		12524.9	4.3	1	SY22		9941.8	1.4	1	5:31:29	43.1	44 00 30.3 4876588		-9	2.8
SY33		9974.8	-3.7	1	LH 1		-179477.4	6.6	0	26.0	0.0	-59 51 59.5 270201		338	358.8
LH 2		96750.8	2.5	0	LH 3		-277052.3	-43.8	0	Ang = -2.8; D = 120; Mag = 0; Gyro =349.8					
										EV 26.0	5:31:27.8 T		335 N4876585 E 270200		
SY11		12529.4	0.8	1	SY22		9954.7	0.3	1	5:31:39	43.2	44 00 30.8 4876604		-7	2.9
SY33		9977.6	-0.7	1	LH 1		-179477.4	-5.1	0	27.0	0.0	-59 51 59.4 270203		354	359.9
LH 2		96755.3	-4.0	0	LH 3		-277034.3	-56.6	0	Ang = -7.0; D = 120; Mag = 0; Gyro =351.3					
										EV 27.0	5:31:37.8 T		350 N4876600 E 270202		
SY11		12523.9	3.2	1	SY22		9968.1	1.0	1	5:31:49	43.3	44 00 31.3 4876619		-5	2.9
SY33		9981.4	-2.7	1	LH 1		-179501.3	6.9	0	28.0	0.0	-59 51 59.4 270205		369	2.5
LH 2		96750.8	5.7	0	LH 3		-277043.3	-37.5	0	Ang = -4.5; D = 112; Mag = 0; Gyro =351.2					
										EV 28.0	5:31:47.8 T		366 N4876616 E 270204		
SY11		12522.9	1.9	1	SY22		9982.2	0.6	1	5:31:59	43.4	44 00 31.9 4876635		-2	2.9
SY33		9982.8	-1.6	1	LH 1		-179516.3	10.0	0	29.0	0.0	-59 51 59.3 270208		385	3.3
LH 2		96765.8	-5.1	0	LH 3		-277010.3	-61.1	0	Ang = -5.9; D = 117; Mag = 0; Gyro =351.8					
										EV 29.0	5:31:57.8 T		382 N4876632 E 270207		
SY11		12518.8	3.3	1	SY22		9995.4	1.1	1	5:32:09	43.5	44 00 32.4 4876650		1	2.9
SY33		9986.1	-2.8	1	LH 1		-179531.3	13.2	0	30.0	0.0	-59 51 59.2 270211		400	5.2
LH 2		96765.8	-0.2	0	LH 3		-277022.3	-39.4	0	Ang = -9.1; D = 115; Mag = 0; Gyro =349.7					
										EV 30.0	5:32:07.8 T		397 N4876647 E 270210		
SY11		12519.8	0.9	1	SY22		10010.4	0.3	1	5:32:19	43.6	44 00 32.9 4876666		5	2.9
SY33		9988.0	-0.8	1	LH 1		-179540.3	9.4	0	31.0	0.0	-59 51 59.0 270215		416	6.3
LH 2		96768.8	-0.1	0	LH 3		-277015.4	-37.2	0	Ang = -14.2; D = 117; Mag = 0; Gyro =347.7					
										EV 31.0	5:32:17.8 T		413 N4876663 E 270213		
SY11		12513.7	4.1	1	SY22		10021.3	1.4	1	5:32:29	45.8	44 00 33.3 4876680		7	2.9
SY33		9992.8	-3.5	1	LH 1		-179549.3	8.4	0	32.0	0.0	-59 51 58.9 270217		430	6.0
LH 2		96786.8	-12.4	0	LH 3		-276989.3	-54.0	0	Ang = -16.2; D = 120; Mag = 0; Gyro =345.0					
										EV 32.0	5:32:27.8 T		428 N4876678 E 270217		

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD

SYSTEM LINE DATA

Ref#: 14 Type: SYS Ident: OLYM-310S
Start Pt End Pt
4876500.0 4876250.0 Az 180 00 00.0 BL 14.0
270310.0 270310.0 Length 250.0 CF 0.0

SY11		12451.1	-0.2	1	SY22		9894.7	-0.1	1	5:49:24	45.6	44 00 27.4	4876494	30	3.6
SY33		9859.9	0.2	1	LH 1		-179399.4	-3.6	0	1.0	0.0	-59 51 55.8	270280	6	151.1
LH 2		96879.7	11.4	0	LH 3		-277010.3	-32.6	0	Ang = -2.3; D = 117; Mag = 0; Gyro =150.2					
										EV 1.0	5:49:23.9 T		5 N4876495 E 270278		
SY11		12425.8	7.0	1	SY22		9891.7	2.3	1	5:49:34	45.7	44 00 26.9	4876477	18	3.7
SY33		9844.4	-5.9	1	LH 1		-179387.4	-6.8	0	2.0	0.0	-59 51 55.2	270292	23	147.3
LH 2		96906.7	16.5	0	LH 3		-277016.3	-10.6	0	Ang = -6.2; D = 117; Mag = 0; Gyro =156.0					
										EV 2.0	5:49:34.1 T		22 N4876478 E 270290		
SY11		12425.0	0.9	1	SY22		9881.1	0.3	1	5:49:45	45.8	44 00 26.3	4876460	4	3.8
SY33		9826.2	-0.8	1	LH 1		-179375.4	-4.5	0	3.0	0.0	-59 51 54.6	270306	40	146.8
LH 2		96927.7	8.5	0	LH 3		-277006.4	-21.2	0	Ang = 13.2; D = 117; Mag = 0; Gyro =165.0					
										EV 3.0	5:49:43.9 T		38 N4876462 E 270303		
SY11		12420.1	-0.8	1	SY22		9872.1	-0.3	1	5:49:55	45.9	44 00 25.7	4876442	-10	3.9
SY33		9813.1	0.7	1	LH 1		-179372.4	4.9	0	4.0	0.0	-59 51 54.0	270320	58	146.5
LH 2		96924.7	25.9	0	LH 3		-277016.3	-8.9	0	Ang = 17.8; D = 117; Mag = 0; Gyro =174.5					
										EV 4.0	5:49:53.9 T		54 N4876446 E 270316		
SY11		12408.2	3.2	1	SY22		9859.4	1.1	1	5:50:07	46.0	44 00 25.1	4876422	-22	3.8
SY33		9802.5	-2.7	1	LH 1		-179348.4	-4.1	0	5.0	0.0	-59 51 53.4	270332	78	149.2
LH 2		96942.7	24.4	0	LH 3		-276998.3	-24.5	0	Ang = 22.3; D = 117; Mag = 0; Gyro =181.7					
										EV 5.0	5:50:03.9 T		72 N4876428 E 270328		
SY11		12409.0	1.3	1	SY22		9848.2	0.4	1	5:50:14	46.1	44 00 24.7	4876409	-28	3.8
SY33		9794.9	-1.1	1	LH 1		-179357.4	17.1	0	6.0	0.0	-59 51 53.1	270338	91	152.1
LH 2		96945.7	24.6	0	LH 3		-277004.3	-23.2	0	Ang = 26.3; D = 117; Mag = 0; Gyro =183.8					
										EV 6.0	5:50:13.9 T		90 N4876410 E 270338		
SY11		12402.6	3.1	1	SY22		9840.6	1.0	1	5:50:24	46.2	44 00 24.1	4876390	-34	3.7
SY33		9788.2	-2.6	1	LH 1		-179330.5	-0.8	0	7.0	0.0	-59 51 52.8	270344	110	155.1
LH 2		96951.7	27.3	0	LH 3		-276995.3	-31.6	0	Ang = 23.4; D = 120; Mag = 0; Gyro =184.3					
										EV 7.0	5:50:23.9 T		109 N4876391 E 270344		
SY11		12404.9	0.9	1	SY22		9826.7	0.3	1	5:50:34	46.3	44 00 23.5	4876373	-39	3.5
SY33		9780.6	-0.7	1	LH 1		-179330.5	13.5	0	8.0	0.0	-59 51 52.6	270349	127	159.6
LH 2		96944.2	35.5	0	LH 3		-276992.3	-42.2	0	Ang = 23.3; D = 115; Mag = 0; Gyro =185.5					
										EV 8.0	5:50:33.9 T		126 N4876374 E 270349		
SY11		12408.8	-1.3	1	SY22		9815.8	-0.4	1	5:50:44	46.4	44 00 23.0	4876357	-41	3.3
SY33		9776.2	1.1	1	LH 1		-179303.5	-2.9	0	9.0	0.0	-59 51 52.4	270351	143	162.7
LH 2		96960.7	16.4	0	LH 3		-277016.3	-25.8	0	Ang = 19.7; D = 120; Mag = 0; Gyro =185.0					
										EV 9.0	5:50:43.9 T		143 N4876357 E 270352		
SY11		12391.4	6.0	1	SY22		9803.0	2.0	1	5:50:54	46.5	44 00 22.5	4876341	-41	3.3
SY33		9766.2	-5.1	1	LH 1		-179303.5	12.1	0	10.0	0.0	-59 51 52.4	270351	159	165.3
LH 2		96957.7	37.2	0	LH 3		-277022.3	-16.5	0	Ang = 18.4; D = 117; Mag = 0; Gyro =187.5					
										EV 10.0	5:50:53.9 T		159 N4876341 E 270352		
SY11		12406.1	-1.8	1	SY22		9789.2	-0.5	1	5:51:04	46.6	44 00 21.9	4876324	-42	3.3
SY33		9751.2	1.5	1	LH 1		-179288.5	10.2	0	11.0	0.0	-59 51 52.3	270352	176	168.6
LH 2		96956.2	28.5	0	LH 3		-277046.3	-6.5	0	Ang = 24.1; D = 117; Mag = 0; Gyro =195.7					

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV TP/DP LAT/LON N/E OFF/TR SP/HD
										EV 11.0 5:51:03.9 T 176 N4876324 E 270353
SY11		12403.7	-1.1	1	SY22		9777.4	-0.4	1	5:51:14 46.7 44 00 21.4 4876306 -43 3.3
SY33		9755.3	0.9	1	LH 1		-179267.5	1.9	0	12.0 0.0 -59 51 52.3 270353 194 169.1
LH 2		96969.7	20.2	0	LH 3		-277030.4	-26.1	0	Ang = 26.9; D = 115; Mag = 0; Gyro =203.3
										EV 12.0 5:51:13.9 T 192 N4876308 E 270353
SY11		12401.5	2.8	1	SY22		9763.9	1.0	1	5:51:25 46.8 44 00 20.8 4876289 -42 3.2
SY33		9755.7	-2.4	1	LH 1		-179277.1	23.4	0	13.0 0.0 -59 51 52.3 270352 211 173.2
LH 2		96954.7	34.4	0	LH 3		-277051.4	-12.3	0	Ang = 26.9; D = 142; Mag = 0; Gyro =210.7
										EV 13.0 5:51:23.9 T 209 N4876291 E 270352
SY11		12413.4	-1.5	1	SY22		9747.8	-0.5	1	5:51:35 46.9 44 00 20.3 4876273 -39 3.2
SY33		9754.2	1.2	1	LH 1		-179255.5	16.0	0	14.0 0.0 -59 51 52.4 270349 227 177.8
LH 2		96953.2	24.4	0	LH 3		-277067.3	-11.7	0	Ang = 26.9; D = 112; Mag = 0; Gyro =216.0
										EV 14.0 5:51:34.2 T 226 N4876274 E 270351
SY11		12414.0	1.5	1	SY22		9732.4	0.5	1	5:51:47 47.0 44 00 19.7 4876254 -35 3.1
SY33		9755.2	-1.3	1	LH 1		-179240.5	14.0	0	15.0 0.0 -59 51 52.5 270345 246 182.0
LH 2		96942.7	30.1	0	LH 3		-277103.3	13.8	0	Ang = 25.9; D = 112; Mag = 0; Gyro =220.8
										EV 15.0 5:51:43.9 T 241 N4876259 E 270347
SY11		12424.0	-1.9	1	SY22		9722.9	-0.6	1	5:51:54 47.1 44 00 19.4 4876244 -31 3.0
SY33		9756.1	1.6	1	LH 1		-179237.5	18.6	0	16.0 0.0 -59 51 52.7 270341 256 185.7
LH 2		96930.7	31.4	0	LH 3		-277120.4	19.8	0	Ang = 25.9; D = 132; Mag = 0; Gyro =222.7
										EV 16.0 5:51:53.9 T 256 N4876244 E 270343
SY11		12420.0	4.1	1	SY22		9709.2	1.4	1	5:52:04 47.2 44 00 18.9 4876230 -25 2.9
SY33		9758.7	-3.4	1	LH 1		-179223.1	15.0	0	17.0 0.0 -59 51 52.9 270335 270 188.6
LH 2		96924.7	34.8	0	LH 3		-277091.3	-17.1	0	Ang = 25.9; D = 132; Mag = 0; Gyro =223.5
										EV 17.0 5:52:03.9 T 270 N4876230 E 270336
SY11		12437.2	-1.8	1	SY22		9695.5	-0.6	1	5:52:14 47.3 44 00 18.5 4876217 -18 2.8
SY33		9761.1	1.5	1	LH 1		-179207.5	9.5	0	18.0 0.0 -59 51 53.2 270328 283 194.2
LH 2		96921.7	19.1	0	LH 3		-277097.3	-28.9	0	Ang = 25.0; D = 117; Mag = 0; Gyro =225.2
										EV 18.0 5:52:13.9 T 283 N4876217 E 270329
SY11		12433.4	4.2	1	SY22		9680.7	1.4	1	5:52:24 47.4 44 00 18.1 4876205 -10 2.8
SY33		9763.7	-3.5	1	LH 1		-179189.5	3.3	0	19.0 0.0 -59 51 53.6 270320 295 196.9
LH 2		96912.7	25.1	0	LH 3		-277112.3	-22.5	0	Ang = 26.0; D = 112; Mag = 0; Gyro =225.8
										EV 19.0 5:52:23.9 T 295 N4876205 E 270321
SY11		12452.0	-1.8	1	SY22		9668.7	-0.6	1	5:52:34 47.5 44 00 17.7 4876193 -2 2.8
SY33		9768.1	1.5	1	LH 1		-179189.5	11.3	0	20.0 0.0 -59 51 53.9 270312 307 201.7
LH 2		96897.7	19.2	0	LH 3		-277142.2	-10.6	0	Ang = 25.3; D = 115; Mag = 0; Gyro =228.5
										EV 20.0 5:52:33.9 T 307 N4876193 E 270313
SY11		12450.7	3.5	1	SY22		9653.8	1.2	1	5:52:44 47.6 44 00 17.3 4876182 7 2.7
SY33		9772.1	-2.9	1	LH 1		-179165.6	-1.6	0	21.0 0.0 -59 51 54.3 270303 318 203.4
LH 2		96891.7	19.0	0	LH 3		-277157.2	-5.8	0	Ang = 25.9; D = 117; Mag = 0; Gyro =225.0
										EV 21.0 5:52:43.9 T 318 N4876182 E 270304
SY11		12465.0	0.4	1	SY22		9638.3	0.1	1	5:52:54 47.7 44 00 16.9 4876170 15 2.8
SY33		9776.5	-0.3	1	LH 1		-179153.6	-3.1	0	22.0 0.0 -59 51 54.7 270294 330 206.6
LH 2		96876.7	15.0	0	LH 3		-277145.2	-36.0	0	Ang = 22.2; D = 117; Mag = 0; Gyro =221.7
										EV 22.0 5:52:53.9 T 329 N4876171 E 270295
SY11		12468.0	2.8	1	SY22		9622.7	0.9	1	5:53:04 47.8 44 00 16.5 4876159 26 2.8
SY33		9779.0	-2.3	1	LH 1		-179144.6	-0.7	0	23.0 0.0 -59 51 55.1 270284 341 207.0

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
LH 2		96861.7	20.9	0	LH 3		-277166.2	-27.3	0	Ang = 11.4; D = 120; Mag = 0; Gyro =214.7					
										EV 23.0	5:53:04.1 T		341 N4876159 E 270286		
SY11		12478.0	0.5	1	SY22		9608.8	0.2	1	5:53:15	47.9	44 00 16.1 4876146		34	2.8
SY33		9780.6	-0.4	1	LH 1		-179150.6	15.2	0	24.0	0.0	-59 51 55.5 270276		354	206.8
LH 2		96843.8	25.2	0	LH 3		-277196.2	-11.7	0	Ang = 2.5; D = 117; Mag = 0; Gyro =208.2					
										EV 24.0	5:53:14.2 T		353 N4876147 E 270277		
SY11		12482.6	1.2	1	SY22		9591.0	0.4	1	5:53:27	48.0	44 00 15.6 4876132		42	2.9
SY33		9780.5	-1.0	1	LH 1		-179129.6	12.9	0	25.0	0.0	-59 51 55.8 270268		368	207.3
LH 2		96834.8	-4.3	0	LH 3		-277199.2	-44.3	0	Ang = -0.1; D = 117; Mag = 0; Gyro = 76.7					
										EV 25.0	5:53:23.9 T		364 N4876136 E 270270		
SY11		12475.4	7.4	1	SY22		9576.7	2.4	1	5:53:37	48.1	44 00 15.1 4876117		53	3.0
SY33		9779.5	-6.1	1	LH 1		-179087.6	-21.4	0	26.0	0.0	-59 51 56.3 270257		383	203.9
LH 2		96843.8	17.4	0	LH 3		-277202.2	-25.5	0	Ang = -5.9; D = 117; Mag = 0; Gyro =196.3					
										EV 26.0	5:53:34.0 T		378 N4876122 E 270262		
SY11		12490.6	-0.1	1	SY22		9563.5	-0.0	1	5:53:44	48.2	44 00 14.8 4876106		57	2.8
SY33		9776.3	0.1	1	LH 1		-179096.6	-0.7	0	27.0	0.0	-59 51 56.4 270253		394	194.3
LH 2		96834.8	13.8	0	LH 3		-277235.2	-7.3	0	Ang = -8.8; D = 120; Mag = 0; Gyro =193.8					
										EV 27.0	5:53:43.9 T		393 N4876107 E 270253		
SY11		12496.2	-1.5	1	SY22		9550.9	-0.5	1	5:53:54	48.3	44 00 14.3 4876090		57	2.8
SY33		9775.0	1.3	1	LH 1		-179084.6	-2.0	0	28.0	0.0	-59 51 56.4 270253		410	186.4
LH 2		96828.8	12.5	0	LH 3		-277238.2	-15.0	0	Ang = -10.6; D = 117; Mag = 0; Gyro =191.7					
										EV 28.0	5:53:53.9 T		409 N4876091 E 270252		

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD

SYSTEM LINE DATA

Ref#: 15 Type: SYS Ident: OLYM-200N
Start Pt End Pt
4876250.0 4876500.0 Az 0 00 00.0 BL 15.0
270200.0 270200.0 Length 250.0 OF 0.0

SY11	12573.8	1.4	1	SY22	9646.2	0.4	1	6:12:49	0.6	44 00 19.5	4876255	-42	3.9		
SY33	9911.7	-1.1	1	LH 1	-179208.1	0.4	0	1.0	0.0	-59 52 00.9	270158	5	356.0		
LH 2	96672.9	4.8	0	LH 3	-277259.2	-34.4	0	Ang = -4.1; D = 117; Mag = 0; Gyro =350.5							
								EV 1.0	6:12:47.8 T		1 N4876251 E 270157				
SY11	12568.5	4.7	1	SY22	9661.9	1.5	1	6:12:59	0.7	44 00 20.2	4876276	-42	3.9		
SY33	9918.7	-3.9	1	LH 1	-179237.5	14.3	0	2.0	0.0	-59 52 00.9	270158	26	356.6		
LH 2	96672.9	7.4	0	LH 3	-277259.2	-24.0	0	Ang = -6.6; D = 117; Mag = 0; Gyro =350.5							
								EV 2.0	6:12:57.8 T		22 N4876272 E 270158				
SY11	12573.8	1.1	1	SY22	9577.6	0.4	1	6:13:09	0.8	44 00 20.8	4876296	-42	3.8		
SY33	9923.3	-0.9	1	LH 1	-179252.5	14.4	0	3.0	0.0	-59 52 01.0	270158	46	356.6		
LH 2	96672.9	3.9	0	LH 3	-277256.2	-21.0	0	Ang = -6.1; D = 117; Mag = 0; Gyro =350.3							
								EV 3.0	6:13:07.8 T		42 N4876292 E 270158				
SY11	12581.6	-2.6	1	SY22	9692.8	-0.8	1	6:13:19	0.9	44 00 21.5	4876315	-41	3.8		
SY33	9930.6	2.2	1	LH 1	-179271.1	17.5	0	4.0	0.0	-59 52 01.0	270159	65	356.6		
LH 2	96666.9	2.1	0	LH 3	-277256.2	-17.4	0	Ang = -4.5; D = 117; Mag = 0; Gyro =349.7							
								EV 4.0	6:13:17.8 T		61 N4876311 E 270158				
SY11	12582.0	-2.1	1	SY22	9710.1	-0.7	1	6:13:31	1.0	44 00 22.2	4876338	-42	3.9		
SY33	9938.7	1.8	1	LH 1	-179276.5	5.6	0	5.0	0.0	-59 52 01.0	270158	88	356.7		
LH 2	96672.9	-5.9	0	LH 3	-277235.2	-30.1	0	Ang = -4.6; D = 117; Mag = 0; Gyro =350.2							
								EV 5.0	6:13:27.8 T		81 N4876331 E 270158				
SY11	12571.6	3.7	1	SY22	9721.3	1.2	1	6:13:38	1.1	44 00 22.6	4876352	-42	3.8		
SY33	9943.4	-3.2	1	LH 1	-179294.5	13.0	0	6.0	0.0	-59 52 01.1	270158	102	357.1		
LH 2	96663.9	10.5	0	LH 3	-277238.2	-16.3	0	Ang = -4.6; D = 112; Mag = 0; Gyro =350.2							
								EV 6.0	6:13:37.8 T		101 N4876351 E 270158				
SY11	12575.0	2.4	1	SY22	9741.6	0.8	1	6:13:51	1.2	44 00 23.5	4876378	-42	3.9		
SY33	9952.3	-2.0	1	LH 1	-179318.5	16.9	0	7.0	0.0	-59 52 01.1	270158	128	356.7		
LH 2	96663.9	6.5	0	LH 3	-277214.2	-31.7	0	Ang = -9.6; D = 112; Mag = 0; Gyro =350.7							
								EV 7.0	6:13:47.8 T		121 N4876371 E 270158				
SY11	12580.8	-0.3	1	SY22	9757.6	-0.1	1	6:14:00	1.3	44 00 24.1	4876396	-43	3.9		
SY33	9959.6	0.2	1	LH 1	-179333.5	15.9	0	8.0	0.0	-59 52 01.2	270157	146	356.6		
LH 2	96657.9	6.7	0	LH 3	-277223.2	-17.5	0	Ang = -6.4; D = 115; Mag = 0; Gyro =349.7							
								EV 8.0	6:13:57.8 T		141 N4876391 E 270158				
SY11	12584.0	-1.1	1	SY22	9771.7	-0.4	1	6:14:10	1.4	44 00 24.7	4876417	-43	3.9		
SY33	9967.0	1.0	1	LH 1	-179342.4	10.5	0	9.0	0.0	-59 52 01.2	270157	167	356.8		
LH 2	96660.9	-0.1	0	LH 3	-277208.2	-27.0	0	Ang = -8.0; D = 117; Mag = 0; Gyro =347.8							
								EV 9.0	6:14:07.8 T		161 N4876411 E 270157				
SY11	12580.3	1.9	1	SY22	9782.4	0.6	1	6:14:18	1.5	44 00 25.2	4876433	-44	3.9		
SY33	9973.4	-1.7	1	LH 1	-179351.4	9.6	0	10.0	0.0	-59 52 01.3	270156	183	355.5		
LH 2	96653.9	-1.6	0	LH 3	-277196.2	-31.3	0	Ang = -13.4; D = 117; Mag = 0; Gyro =346.5							
								EV 10.0	6:14:17.8 T		182 N4876432 E 270156				
SY11	12588.6	-2.1	1	SY22	9798.8	-0.7	1	6:14:28	1.6	44 00 25.9	4876453	-45	3.8		
SY33	9980.8	1.8	1	LH 1	-179381.4	23.2	0	11.0	0.0	-59 52 01.4	270155	203	353.9		
LH 2	96641.4	14.0	0	LH 3	-277187.2	-35.7	0	Ang = -9.2; D = 117; Mag = 0; Gyro =346.0							

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV TP/DP LAT/LON N/E OFF/TR SP/HD
										EV 11.0 6:14:27.8 T 202 N4876452 E 270155
SY11		12592.0	-2.2	1	SY22		9812.5	-0.7	1	6:14:39 1.7 44 00 26.6 4876474 -48 3.8
SY33		9989.8	1.9	1	LH 1		-179388.0	15.3	0	12.0 0.0 -59 52 01.5 270152 224 351.2
LH 2		96657.9	-8.3	0	LH 3		-277184.2	-34.3	0	Ang = -8.5; D = 132; Mag = 0; Gyro =347.5
										EV 12.0 6:14:37.8 T 221 N4876471 E 270153
SY11		12580.5	4.8	1	SY22		9826.2	1.5	1	6:14:49 1.8 44 00 27.2 4876494 -50 4.3
SY33		9996.5	-4.0	1	LH 1		-179393.4	-7.0	0	13.0 0.0 -59 52 01.7 270150 244 359.1
LH 2		96651.9	19.2	0	LH 3		-277187.2	-1.9	0	Ang = -8.0; D = 132; Mag = 0; Gyro =348.3
										EV 13.0 6:14:47.8 T 240 N4876490 E 270149
SY11		12589.7	0.8	1	SY22		9838.2	0.3	1	6:14:59 1.9 44 00 27.8 4876512 -51 3.5
SY33		10003.5	-0.7	1	LH 1		-179420.4	21.9	0	14.0 0.0 -59 52 01.7 270149 262 352.3
LH 2		96642.9	5.0	0	LH 3		-277177.3	-27.9	0	Ang = -4.0; D = 117; Mag = 0; Gyro =348.3
										EV 14.0 6:14:57.8 T 260 N4876510 E 270150
SY11		12592.0	-0.2	1	SY22		9852.8	-0.1	1	6:15:10 2.0 44 00 28.3 4876529 -53 3.3
SY33		10009.5	0.2	1	LH 1		-179417.4	4.8	0	15.0 0.0 -59 52 01.8 270147 279 352.6
LH 2		96648.9	-3.1	0	LH 3		-277166.2	-32.5	0	Ang = -8.8; D = 115; Mag = 0; Gyro =349.3
										EV 15.0 6:15:07.8 T 275 N4876525 E 270148
SY11		12586.3	3.4	1	SY22		9863.3	1.1	1	6:15:20 2.1 44 00 28.8 4876543 -54 3.1
SY33		10014.7	-2.9	1	LH 1		-179420.4	-2.5	0	16.0 0.0 -59 52 01.9 270146 293 356.1
LH 2		96648.9	-0.4	0	LH 3		-277157.2	-34.0	0	Ang = -4.5; D = 117; Mag = 0; Gyro =351.7
										EV 16.0 6:15:17.8 T 289 N4876539 E 270146
SY11		12589.1	1.0	1	SY22		9876.1	0.3	1	6:15:31 2.2 44 00 29.2 4876556 -56 3.0
SY33		10017.6	-0.8	1	LH 1		-179450.4	15.9	0	17.0 0.0 -59 52 02.0 270144 306 354.5
LH 2		96645.9	1.0	0	LH 3		-277181.2	-4.6	0	Ang = 0.3; D = 120; Mag = 0; Gyro =353.3
										EV 17.0 6:15:27.8 T 303 N4876553 E 270145
SY11		12586.7	2.0	1	SY22		9887.7	0.7	1	6:15:41 2.3 44 00 29.7 4876570 -55 2.8
SY33		10021.5	-1.7	1	LH 1		-179471.4	26.1	0	18.0 0.0 -59 52 02.0 270145 320 359.0
LH 2		96639.9	9.2	0	LH 3		-277178.2	-0.1	0	Ang = -0.3; D = 117; Mag = 0; Gyro =357.0
										EV 18.0 6:15:37.8 T 316 N4876566 E 270144
SY11		12584.0	2.2	1	SY22		9900.2	0.7	1	6:15:51 2.4 44 00 30.1 4876583 -54 2.8
SY33		10023.5	-1.9	1	LH 1		-179459.4	3.2	0	19.0 0.0 -59 52 02.0 270146 333 359.4
LH 2		96666.9	-14.5	0	LH 3		-277130.2	-39.9	0	Ang = 2.5; D = 120; Mag = 0; Gyro = 2.7
										EV 19.0 6:15:47.8 T 329 N4876579 E 270145
SY11		12575.9	5.9	1	SY22		9908.8	1.9	1	6:15:58 2.5 44 00 30.4 4876592 -53 2.7
SY33		10025.3	-5.1	1	LH 1		-179478.0	14.2	0	20.0 0.0 -59 52 01.9 270147 342 4.9
LH 2		96657.9	1.1	0	LH 3		-277106.3	-55.4	0	Ang = 5.5; D = 120; Mag = 0; Gyro = 5.2
										EV 20.0 6:15:57.8 T 341 N4876591 E 270147
SY11		12580.6	0.7	1	SY22		9921.9	0.2	1	6:16:08 2.6 44 00 30.8 4876604 -50 2.7
SY33		10024.6	-0.6	1	LH 1		-179483.3	8.9	0	21.0 0.0 -59 52 01.8 270150 354 4.1
LH 2		96672.9	-14.1	0	LH 3		-277112.3	-43.5	0	Ang = 7.5; D = 120; Mag = 0; Gyro = 9.0
										EV 21.0 6:16:07.8 T 354 N4876604 E 270150
SY11		12569.0	3.0	1	SY22		9935.5	1.0	1	6:16:18 2.7 44 00 31.2 4876617 -45 2.7
SY33		10021.2	-2.6	1	LH 1		-179492.3	8.2	0	22.0 0.0 -59 52 01.6 270155 367 13.0
LH 2		96681.9	-7.7	0	LH 3		-277118.3	-22.0	0	Ang = 8.5; D = 120; Mag = 0; Gyro = 12.2
										EV 22.0 6:16:17.8 T 367 N4876617 E 270154
SY11		12565.1	1.3	1	SY22		9950.7	0.4	1	6:16:28 2.8 44 00 31.6 4876630 -38 2.7
SY33		10018.8	-1.1	1	LH 1		-179510.3	14.5	0	23.0 0.0 -59 52 01.3 270162 380 17.5

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
LH 2		96681.9	1.2	0	LH 3		-277106.3	-21.7	0	Ang = 10.5; D = 117; Mag = 0; Gyro = 16.7					
										EV 23.0	6:16:27.8	T	379	N4876629	E 270161
SY11		12556.0	1.7	1	SY22		9956.0	0.5	1	6:16:38	2.9	44 00 32.1	4876643	-30	2.8
SY33		10014.8	-1.4	1	LH 1		-175510.3	3.4	0	24.0	0.0	-59 52 01.0	270170	393	21.8
LH 2		96711.8	-14.6	0	LH 3		-277072.4	-40.2	0	Ang = 9.7; D = 117; Mag = 0; Gyro = 19.5					
										EV 24.0	6:16:37.8	T	392	N4876642	E 270168
SY11		12541.4	3.7	1	SY22		9982.8	1.2	1	6:16:50	4.0	44 00 32.5	4876657	-19	2.8
SY33		10008.6	-3.2	1	LH 1		-175525.3	7.3	0	25.0	0.0	-59 52 00.5	270181	407	29.6
LH 2		96726.8	-8.2	0	LH 3		-277048.4	-44.0	0	Ang = 4.0; D = 120; Mag = 0; Gyro = 20.5					
										EV 25.0	6:16:47.8	T	404	N4876654	E 270178

SYSTEM LINE DATA

Ref#: 16 Type: SYS Ident: OLYM-320S

Start Pt	End Pt				
4876250.0	4876500.0	Az	0 00 00.0	BL	16.0
270320.0	270320.0	Length	250.0	OF	0.0

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD

SYSTEM LINE DATA

Ref#: 16 Type: SYS Ident: OLYM-320S

Start Pt	End Pt				
4876500.0	4876250.0	Az	180 00 00.0	BL	16.0
270320.0	270320.0	Length	250.0	CF	0.0

SY11	12417.0	-1.7	1	SY22	9914.9	-0.6	1	6:33:39	4.6	44 00 27.2	4876488	-18	4.2		
SY33	9824.4	1.4	1	LH 1	-179408.4	3.7	0	1.0	0.0	-59 51 53.2	270338	12	182.1		
LH 2	96945.7	19.3	0	LH 3	-276979.5	-14.9	0	Ang = 14.9; D = 117; Mag = 0; Gyro =199.5							
								EV 1.0	6:33:38.1 T		10 N4876490 E 270339				
SY11	12410.5	3.4	1	SY22	9898.4	1.1	1	6:33:49	4.7	44 00 26.6	4876467	-15	4.1		
SY33	9821.2	-2.9	1	LH 1	-179403.0	13.4	0	2.0	0.0	-59 51 53.3	270335	33	182.3		
LH 2	96939.7	28.2	0	LH 3	-277004.3	3.5	0	Ang = 14.3; D = 117; Mag = 0; Gyro =201.3							
								EV 2.0	6:33:48.2 T		31 N4876469 E 270335				
SY11	12412.0	5.2	1	SY22	9880.3	1.7	1	6:33:59	4.8	44 00 25.9	4876447	-9	4.2		
SY33	9819.6	-4.4	1	LH 1	-179378.4	8.4	0	3.0	0.0	-59 51 53.6	270329	53	193.1		
LH 2	96929.2	5.8	0	LH 3	-276995.3	-37.9	0	Ang = 13.4; D = 120; Mag = 0; Gyro =200.7							
								EV 3.0	6:33:57.9 T		50 N4876450 E 270331				
SY11	12421.9	1.1	1	SY22	9862.8	0.4	1	6:34:09	4.9	44 00 25.3	4876428	-3	3.9		
SY33	9815.6	-0.9	1	LH 1	-179363.4	4.8	0	4.0	0.0	-59 51 53.8	270323	72	187.5		
LH 2	96932.2	20.7	0	LH 3	-276977.4	-50.5	0	Ang = 10.6; D = 117; Mag = 0; Gyro =198.0							
								EV 4.0	6:34:07.8 T		69 N4876431 E 270324				
SY11	12428.1	0.2	1	SY22	9846.7	0.1	1	6:34:20	5.0	44 00 24.7	4876409	1	3.5		
SY33	9814.7	-0.2	1	LH 1	-179351.4	6.0	0	5.0	0.0	-59 51 53.9	270319	91	186.4		
LH 2	96921.7	21.6	0	LH 3	-277016.3	-25.2	0	Ang = 6.0; D = 117; Mag = 0; Gyro =195.0							
								EV 5.0	6:34:17.8 T		86 N4876414 E 270320				
SY11	12423.4	3.5	1	SY22	9830.1	1.2	1	6:34:31	5.1	44 00 24.2	4876393	4	3.6		
SY33	9809.7	-3.0	1	LH 1	-179336.4	6.6	0	6.0	0.0	-59 51 54.0	270316	107	185.5		
LH 2	96909.7	35.9	0	LH 3	-277070.3	21.6	0	Ang = 3.6; D = 117; Mag = 0; Gyro =192.7							
								EV 6.0	6:34:27.8 T		102 N4876398 E 270317				
SY11	12435.2	-2.3	1	SY22	9819.9	-0.8	1	6:34:38	5.2	44 00 23.7	4876380	6	3.6		
SY33	9807.0	2.0	1	LH 1	-179324.5	3.5	0	7.0	0.0	-59 51 54.1	270314	120	186.6		
LH 2	96906.7	28.5	0	LH 3	-277049.3	-11.0	0	Ang = 0.3; D = 129; Mag = 0; Gyro =190.2							
								EV 7.0	6:34:37.8 T		119 N4876381 E 270314				
SY11	12432.5	0.5	1	SY22	9800.4	0.2	1	6:34:50	5.3	44 00 23.0	4876358	8	3.6		
SY33	9802.3	-0.4	1	LH 1	-179300.5	-2.9	0	8.0	0.0	-59 51 54.2	270312	142	185.5		
LH 2	96903.7	30.5	0	LH 3	-277037.3	-33.6	0	Ang = -7.9; D = 115; Mag = 0; Gyro =183.2							
								EV 8.0	6:34:47.8 T		137 N4876363 E 270312				
SY11	12428.3	3.5	1	SY22	9783.1	1.2	1	6:35:00	5.4	44 00 22.4	4876340	11	3.6		
SY33	9796.9	-3.0	1	LH 1	-179285.5	-1.6	0	9.0	0.0	-59 51 54.3	270309	150	184.0		
LH 2	96906.7	28.7	0	LH 3	-277064.3	-14.9	0	Ang = -6.3; D = 115; Mag = 0; Gyro =175.7							
								EV 9.0	6:34:57.8 T		155 N4876345 E 270309				
SY11	12433.4	-1.1	1	SY22	9771.9	-0.4	1	6:35:10	5.5	44 00 21.9	4876323	12	3.5		
SY33	9788.5	0.9	1	LH 1	-179258.5	-16.7	0	10.0	0.0	-59 51 54.3	270308	177	183.0		
LH 2	96909.7	23.2	0	LH 3	-277049.3	-38.2	0	Ang = -19.2; D = 115; Mag = 0; Gyro =168.3							
								EV 10.0	6:35:07.8 T		172 N4876328 E 270308				
SY11	12431.2	-3.0	1	SY22	9761.4	-1.0	1	6:35:20	5.6	44 00 21.3	4876305	10	3.5		
SY33	9777.7	2.5	1	LH 1	-179261.5	-0.9	0	11.0	0.0	-59 51 54.2	270310	195	177.9		
LH 2	96918.7	20.2	0	LH 3	-277076.3	-14.4	0	Ang = -19.3; D = 117; Mag = 0; Gyro =154.2							

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
										EV 11.0	6:35:17.8 T	190	N4876310	E 270308	
SY11		12416.8	3.8	1	SY22		9751.8	1.3	1	6:35:28	5.7	44 00 20.9	4876292	8	3.5
SY33		9771.2	-3.1	1	LH 1		-179252.5	1.0	0	12.0	0.0	-59 51 54.1	270312	208	174.1
LH 2		96918.7	32.7	0	LH 3		-277100.3	11.6	0	Ang = -19.6; D = 115; Mag = 0; Gyro =161.7					
										EV 12.0	6:35:27.8 T	208	N4876292	E 270311	
SY11		12419.5	0.0	1	SY22		9737.6	0.0	1	6:35:38	5.8	44 00 20.3	4876274	4	3.5
SY33		9760.7	-0.0	1	LH 1		-179222.5	-13.3	0	13.0	0.0	-59 51 53.8	270316	226	171.1
LH 2		96948.7	4.5	0	LH 3		-277067.3	-29.0	0	Ang = -18.2; D = 112; Mag = 0; Gyro =152.0					
										EV 13.0	6:35:37.8 T	225	N4876275	E 270315	
SY11		12414.0	-1.2	1	SY22		9723.3	-0.4	1	6:35:49	5.9	44 00 19.7	4876254	-4	3.6
SY33		9748.1	1.0	1	LH 1		-179231.5	6.5	0	14.0	0.0	-59 51 53.5	270324	246	165.9
LH 2		96933.7	30.8	0	LH 3		-277082.3	-13.9	0	Ang = -9.6; D = 117; Mag = 0; Gyro =160.8					
										EV 14.0	6:35:47.9 T	244	N4876256	E 270322	
SY11		12410.5	-1.3	1	SY22		9713.8	-0.4	1	6:36:00	6.0	44 00 19.0	4876233	-12	3.7
SY33		9737.5	1.1	1	LH 1		-179210.5	2.6	0	15.0	0.0	-59 51 53.1	270332	267	163.0
LH 2		96951.7	20.5	0	LH 3		-277103.3	2.5	0	Ang = -0.2; D = 117; Mag = 0; Gyro =157.7					
										EV 15.0	6:35:58.1 T	262	N4876238	E 270330	
SY11		12397.0	2.6	1	SY22		9704.9	0.9	1	6:36:10	6.1	44 00 18.4	4876214	-20	3.7
SY33		9726.2	-2.2	1	LH 1		-179205.1	9.6	0	16.0	0.0	-59 51 52.7	270340	286	159.3
LH 2		96957.7	33.3	0	LH 3		-277085.3	-10.1	0	Ang = 5.6; D = 117; Mag = 0; Gyro =174.5					
										EV 16.0	6:36:07.8 T	280	N4876220	E 270336	
SY11		12394.7	3.1	1	SY22		9689.9	1.0	1	6:36:20	6.2	44 00 17.8	4876196	-26	3.8
SY33		9718.3	-2.5	1	LH 1		-179165.6	-14.1	0	17.0	0.0	-59 51 52.4	270346	304	161.2
LH 2		96981.7	15.9	0	LH 3		-277064.3	-35.7	0	Ang = 17.7; D = 117; Mag = 0; Gyro =182.8					
										EV 17.0	6:36:17.8 T	298	N4876202	E 270344	
SY11		12398.4	1.2	1	SY22		9676.2	0.4	1	6:36:31	6.3	44 00 17.2	4876175	-31	3.7
SY33		9713.3	-1.0	1	LH 1		-179162.6	-3.5	0	18.0	0.0	-59 51 52.1	270351	324	165.0
LH 2		96986.2	10.8	0	LH 3		-277055.3	-52.7	0	Ang = 18.7; D = 117; Mag = 0; Gyro =189.2					
										EV 18.0	6:36:27.8 T	317	N4876183	E 270350	
SY11		12397.7	2.3	1	SY22		9667.7	0.8	1	6:36:38	6.4	44 00 16.8	4876163	-33	3.5
SY33		9711.4	-1.9	1	LH 1		-179144.6	-13.3	0	19.0	0.0	-59 51 52.0	270353	337	167.3
LH 2		96972.7	25.2	0	LH 3		-277091.3	-20.7	0	Ang = 18.7; D = 117; Mag = 0; Gyro =193.7					
										EV 19.0	6:36:37.8 T	336	N4876164	E 270354	
SY11		12396.9	3.3	1	SY22		9653.4	1.1	1	6:36:48	6.5	44 00 16.2	4876145	-33	3.5
SY33		9706.8	-2.7	1	LH 1		-179156.6	12.9	0	20.0	0.0	-59 51 52.0	270353	355	172.9
LH 2		96966.7	32.9	0	LH 3		-277112.3	-6.5	0	Ang = 24.3; D = 117; Mag = 0; Gyro =196.8					
										EV 20.0	6:36:47.8 T	354	N4876146	E 270354	
SY11		12408.6	-1.3	1	SY22		9636.9	-0.4	1	6:36:58	6.6	44 00 15.6	4876128	-31	3.3
SY33		9704.2	1.1	1	LH 1		-179126.6	-2.4	0	21.0	0.0	-59 51 52.1	270351	372	179.1
LH 2		96963.7	25.5	0	LH 3		-277112.3	-21.5	0	Ang = 22.5; D = 117; Mag = 0; Gyro =199.0					
										EV 21.0	6:36:57.8 T	371	N4876129	E 270352	
SY11		12417.4	-2.7	1	SY22		9618.7	-0.9	1	6:37:08	6.7	44 00 15.0	4876110	-28	3.5
SY33		9704.5	2.2	1	LH 1		-179114.6	0.8	0	22.0	0.0	-59 51 52.2	270348	390	183.9
LH 2		96954.7	23.6	0	LH 3		-277148.2	-1.1	0	Ang = 20.8; D = 115; Mag = 0; Gyro =202.0					
										EV 22.0	6:37:07.8 T	388	N4876112	E 270349	
SY11		12414.6	2.1	1	SY22		9603.5	0.7	1	6:37:18	6.8	44 00 14.4	4876092	-23	3.4
SY33		9705.4	-1.7	1	LH 1		-179096.6	-4.4	0	23.0	0.0	-59 51 52.4	270343	408	185.6

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
LH 2		96950.2	26.0	0	LH 3		-277139.2	-18.6	0	Ang = 16.7; D = 122; Mag = 0; Gyro =203.2					
										EV 23.0	6:37:17.8 T		406 N4876094 E 270344		
SY11		12415.0	4.5	1	SY22		9584.8	1.5	1	6:37:30	7.0	44 00 13.8	4876078	-17	3.4
SY33		9703.5	-3.7	1	LH 1		-179105.6	21.3	0	24.0	0.0	-59 51 52.6	270337	428	188.6
LH 2		96926.2	46.7	0	LH 3		-277154.2	-15.0	0	Ang = 16.9; D = 117; Mag = 0; Gyro =202.5					
										EV 24.0	6:37:27.8 T		423 N4876077 E 270339		

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD

SYSTEM LINE DATA

Ref#: 19 Type: SYS Ident: OLYM-220N

Start Pt	End Pt			
4876250.0	4876500.0	Az	0 00 00.0	BL 19.0
270220.0	270220.0	Length	250.0	CF 0.0

SY11	12515.1	-1.5	1	SY22	9691.8	-0.5	1	6:57:10	7.6	44 00 19.9	4876263	10	3.0
SY33	9853.4	1.3	1	LH 1	-179228.5	6.0	0	1.0	0.0	-59 51 57.7	270230	13	346.5
LH 2	96789.8	-4.6	0	LH 3	-277163.2	-52.4	0	Ang = -11.7; D = 117; Mag = 0; Gyro =343.7					
								EV 1.0	6:57:07.8 T		9 N4876259 E 270232		
SY11	12512.0	1.7	1	SY22	9701.5	0.6	1	6:57:20	7.7	44 00 20.3	4876279	6	2.9
SY33	9860.5	-1.4	1	LH 1	-179244.1	11.0	0	2.0	0.0	-59 51 57.9	270226	29	348.1
LH 2	96780.8	3.0	0	LH 3	-277187.2	-23.4	0	Ang = -10.9; D = 112; Mag = 0; Gyro =345.2					
								EV 2.0	6:57:17.8 T		25 N4876275 E 270227		
SY11	12520.0	-0.3	1	SY22	9711.1	-0.1	1	6:57:30	7.8	44 00 20.8	4876294	1	3.0
SY33	9869.5	0.2	1	LH 1	-179252.5	7.8	0	3.0	0.0	-59 51 58.1	270221	44	344.0
LH 2	96771.8	0.8	0	LH 3	-277184.2	-27.3	0	Ang = -5.6; D = 117; Mag = 0; Gyro =348.2					
								EV 3.0	6:57:27.8 T		40 N4876290 E 270223		
SY11	12527.0	-2.6	1	SY22	9722.0	-0.9	1	6:57:40	7.9	44 00 21.3	4876309	-2	3.0
SY33	9877.0	2.2	1	LH 1	-179261.5	4.7	0	4.0	0.0	-59 51 58.3	270218	59	344.9
LH 2	96765.8	-2.6	0	LH 3	-277166.2	-44.6	0	Ang = -0.4; D = 112; Mag = 0; Gyro =353.2					
								EV 4.0	6:57:37.8 T		55 N4876305 E 270219		
SY11	12518.5	1.8	1	SY22	9732.2	0.6	1	6:57:49	8.0	44 00 21.8	4876323	-5	3.1
SY33	9880.5	-1.5	1	LH 1	-179292.1	26.9	0	5.0	0.0	-59 51 58.5	270215	73	345.9
LH 2	96753.8	15.5	0	LH 3	-277172.2	-28.6	0	Ang = 2.9; D = 117; Mag = 0; Gyro =357.2					
								EV 5.0	6:57:47.8 T		70 N4876320 E 270215		
SY11	12526.6	-2.6	1	SY22	9744.7	-0.9	1	6:57:59	8.1	44 00 22.3	4876339	-8	3.1
SY33	9885.4	2.2	1	LH 1	-179288.5	10.7	0	6.0	0.0	-59 51 58.6	270212	89	346.3
LH 2	96753.8	7.3	0	LH 3	-277169.2	-30.0	0	Ang = 9.2; D = 120; Mag = 0; Gyro = 1.3					
								EV 6.0	6:57:57.8 T		86 N4876336 E 270213		
SY11	12516.0	2.5	1	SY22	9757.8	0.8	1	6:58:09	8.2	44 00 22.8	4876356	-9	3.7
SY33	9889.0	-2.1	1	LH 1	-179297.5	-7.1	0	7.0	0.0	-59 51 58.7	270211	106	358.6
LH 2	96771.8	8.7	0	LH 3	-277171.3	-0.2	0	Ang = 11.7; D = 117; Mag = 0; Gyro = 5.7					
								EV 7.0	6:58:07.8 T		102 N4876352 E 270210		
SY11	12519.4	-0.3	1	SY22	9771.4	-0.1	1	6:58:19	8.3	44 00 23.4	4876375	-8	3.1
SY33	9892.4	0.2	1	LH 1	-179300.5	-2.0	0	8.0	0.0	-59 51 58.7	270212	125	355.5
LH 2	96774.8	-8.1	0	LH 3	-277138.3	-43.4	0	Ang = 11.2; D = 117; Mag = 0; Gyro = 8.5					
								EV 8.0	6:58:17.8 T		121 N4876371 E 270211		
SY11	12513.0	0.7	1	SY22	9788.0	0.2	1	6:58:29	8.4	44 00 23.9	4876389	-5	3.1
SY33	9893.3	-0.6	1	LH 1	-179325.1	8.6	0	9.0	0.0	-59 51 58.6	270215	139	1.9
LH 2	96774.8	0.5	0	LH 3	-277145.2	-23.1	0	Ang = 14.5; D = 120; Mag = 0; Gyro = 8.0					
								EV 9.0	6:58:27.8 T		137 N4876387 E 270213		
SY11	12506.0	1.4	1	SY22	9803.9	2.5	1	6:58:39	8.5	44 00 24.5	4876406	-1	3.7
SY33	9892.9	-1.2	1	LH 1	-179337.0	-5.0	0	10.0	0.0	-59 51 58.4	270219	156	5.2
LH 2	96789.8	-3.3	0	LH 3	-277124.3	-22.4	0	Ang = 2.7; D = 117; Mag = 0; Gyro = 5.5					
								EV 10.0	6:58:37.8 T		152 N4876402 E 270217		
SY11	12508.5	-0.7	1	SY22	9819.4	-0.2	1	6:58:50	8.6	44 00 25.1	4875424	4	3.2
SY33	9897.3	0.6	1	LH 1	-179360.4	17.1	0	11.0	0.0	-59 51 58.2	270224	174	7.3
LH 2	96783.8	2.3	0	LH 3	-277117.4	-29.0	0	Ang = 2.8; D = 120; Mag = 0; Gyro = 3.5					

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TD/DP	LAT/LON	N/E	OFF/TR	SP/HD
										EV 11.0	6:58:47.8 T		170 N4876420 E 270222		
SY11		12492.8	5.0	1	SY22		9835.6	1.6	1	6:59:00	8.7	44 00 25.6 4876440	9	3.1	
SY33		9897.3	-4.2	1	LH 1		-179357.4	1.3	0	12.0	0.0	-59 51 58.0 270229	190	12.2	
LH 2		96801.8	1.3	0	LH 3		-277100.3	-27.8	0	Ang = -4.0; D = 112; Mag = 0; Gyro = 1.3					
										EV 12.0	6:58:57.8 T		187 N4876437 E 270227		
SY11		12500.1	-0.5	1	SY22		9851.0	-0.2	1	6:59:10	8.8	44 00 26.1 4876456	13	3.2	
SY33		9900.2	0.4	1	LH 1		-179372.4	2.4	0	13.0	0.0	-59 51 57.9 270233	206	7.1	
LH 2		96804.8	-4.7	0	LH 3		-277100.3	-22.0	0	Ang = -6.1; D = 112; Mag = 0; Gyro =359.0					
										EV 13.0	6:59:07.8 T		202 N4876452 E 270233		
SY11		12500.5	-1.3	1	SY22		9864.8	-0.4	1	6:59:20	8.9	44 00 26.5 4876472	17	3.2	
SY33		9904.3	1.1	1	LH 1		-179384.4	1.7	0	14.0	0.0	-59 51 57.7 270237	222	8.3	
LH 2		96806.3	-5.0	0	LH 3		-277079.3	-35.1	0	Ang = -7.9; D = 117; Mag = 0; Gyro =358.0					
										EV 14.0	6:59:17.8 T		218 N4876468 E 270236		
SY11		12486.0	6.1	1	SY22		9881.0	2.0	1	6:59:31	9.0	44 00 27.2 4876490	19	3.2	
SY33		9909.5	-5.2	1	LH 1		-179402.4	5.1	0	15.0	0.0	-59 51 57.6 270239	240	7.5	
LH 2		96815.3	-1.6	0	LH 3		-277067.3	-30.9	0	Ang = -6.2; D = 112; Mag = 0; Gyro =359.2					
										EV 15.0	6:59:27.8 T		234 N4876484 E 270238		
SY11		12498.0	-1.2	1	SY22		9890.6	-0.4	1	6:59:38	9.1	44 00 27.6 4876502	20	3.2	
SY33		9911.6	1.0	1	LH 1		-179406.0	-0.3	0	16.0	0.0	-59 51 57.6 270240	252	3.4	
LH 2		96822.8	-17.2	0	LH 3		-277064.3	-34.1	0	Ang = -8.6; D = 112; Mag = 0; Gyro =358.2					
										EV 16.0	6:59:37.8 T		251 N4876501 E 270241		
SY11		12488.9	2.0	1	SY22		9906.2	0.7	1	6:59:48	9.2	44 00 28.1 4876519	23	3.2	
SY33		9913.8	-1.7	1	LH 1		-179423.4	3.8	0	17.0	0.0	-59 51 57.5 270243	269	6.4	
LH 2		96813.8	1.9	0	LH 3		-277054.4	-30.0	0	Ang = -10.0; D = 112; Mag = 0; Gyro =354.3					
										EV 17.0	6:59:47.8 T		267 N4876517 E 270242		
SY11		12485.9	4.2	1	SY22		9919.0	1.4	1	6:59:58	9.3	44 00 28.7 4876535	24	3.2	
SY33		9920.1	-3.6	1	LH 1		-179447.4	15.3	0	18.0	0.0	-59 51 57.5 270244	285	5.2	
LH 2		96810.8	7.7	0	LH 3		-277048.4	-27.3	0	Ang = -15.9; D = 112; Mag = 0; Gyro =350.3					
										EV 18.0	6:59:57.8 T		284 N4876534 E 270244		
SY11		12493.8	0.2	1	SY22		9932.7	0.1	1	7:00:08	9.4	44 00 29.2 4876552	25	3.2	
SY33		9926.1	-0.2	1	LH 1		-179435.4	-10.1	0	19.0	0.0	-59 51 57.5 270245	302	0.5	
LH 2		96828.8	-15.8	0	LH 3		-277022.3	-49.4	0	Ang = -17.3; D = 112; Mag = 0; Gyro =346.0					
										EV 19.0	7:00:07.8 T		300 N4876550 E 270246		
SY11		12491.0	3.6	1	SY22		9942.7	1.2	1	7:00:18	9.5	44 00 29.7 4876568	25	3.1	
SY33		9933.9	-3.1	1	LH 1		-179466.0	9.7	0	20.0	0.0	-59 51 57.5 270245	318	0.5	
LH 2		96807.8	5.5	0	LH 3		-277037.3	-28.2	0	Ang = -20.4; D = 115; Mag = 0; Gyro =342.8					
										EV 20.0	7:00:17.8 T		317 N4876567 E 270246		
SY11		12493.1	3.9	1	SY22		9954.4	1.3	1	7:00:28	9.6	44 00 30.2 4876584	23	3.1	
SY33		9941.5	-3.3	1	LH 1		-179472.0	3.4	0	21.0	0.0	-59 51 57.6 270243	334	355.3	
LH 2		96819.8	-9.9	0	LH 3		-277013.3	-47.5	0	Ang = -17.6; D = 112; Mag = 0; Gyro =341.7					
										EV 21.0	7:00:27.8 T		332 N4876582 E 270244		
SY11		12503.0	1.1	1	SY22		9962.9	0.4	1	7:00:38	9.7	44 00 30.7 4876598	21	3.0	
SY33		9950.4	-0.9	1	LH 1		-179489.3	10.4	0	22.0	0.0	-59 51 57.7 270241	348	351.5	
LH 2		96801.8	-3.0	0	LH 3		-277049.3	-13.0	0	Ang = -23.4; D = 112; Mag = 0; Gyro =339.2					
										EV 22.0	7:00:37.8 T		347 N4876597 E 270241		
SY11		12501.1	5.6	1	SY22		9971.8	1.8	1	7:00:48	9.8	44 00 31.2 4876613	16	3.0	
SY33		9961.3	-4.8	1	LH 1		-179498.3	8.4	0	23.0	0.0	-59 51 58.0 270236	363	348.1	

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
LH 2		96792.8	2.1	0	LH 3		-277040.3	-18.4	0	Ang = -19.7; D = 112; Mag = 0; Gyro =337.8					
										EV 23.0	7:00:47.8 T		362 N4876612 E 270237		
SY11		12511.2	2.8	1	SY22		9982.2	0.9	1	7:00:59	9.9	44 00 31.7 4876628	10	3.1	
SY33		9971.1	-2.4	1	LH 1		-179516.3	14.2	0	24.0	0.0	-59 51 58.2 270230	378	344.0	
LH 2		96780.8	1.8	0	LH 3		-277040.3	-19.6	0	Ang = -15.6; D = 122; Mag = 0; Gyro =338.2					
										EV 24.0	7:00:58.1 T		377 N4876627 E 270232		
SY11		12516.1	2.8	1	SY22		9992.6	0.9	1	7:01:10	10.0	44 00 32.2 4876646	3	3.0	
SY33		9980.9	-2.4	1	LH 1		-179534.3	20.2	0	25.0	0.0	-59 51 58.6 270223	396	341.3	
LH 2		96765.8	8.6	0	LH 3		-277022.3	-36.2	0	Ang = -10.1; D = 112; Mag = 0; Gyro =342.7					
										EV 25.0	7:01:08.2 T		392 N4876642 E 270225		
SY11		12522.5	1.8	1	SY22		10003.2	0.6	1	7:01:20	10.1	44 00 32.7 4876660	-3	3.1	
SY33		9990.4	-1.6	1	LH 1		-179531.3	5.1	0	26.0	0.0	-59 51 58.9 270217	410	340.7	
LH 2		96768.8	-5.2	0	LH 3		-277016.3	-42.5	0	Ang = -7.8; D = 115; Mag = 0; Gyro =347.3					
										EV 26.0	7:01:17.8 T		406 N4876656 E 270219		
SY11		12523.0	2.9	1	SY22		10014.7	0.9	1	7:01:31	10.2	44 00 33.2 4876676	-9	3.1	
SY33		9997.6	-2.5	1	LH 1		-179561.3	23.2	0	27.0	0.0	-59 51 59.2 270211	426	341.9	
LH 2		96758.3	1.7	0	LH 3		-277016.3	-38.3	0	Ang = 4.6; D = 117; Mag = 0; Gyro =351.3					
										EV 27.0	7:01:27.8 T		421 N4876671 E 270213		
SY11		12523.0	2.5	1	SY22		10026.4	0.8	1	7:01:39	11.0	44 00 33.6 4876689	-12	3.1	
SY33		10001.3	-2.1	1	LH 1		-179540.3	-8.5	0	28.0	0.0	-59 51 59.3 270208	439	346.1	
LH 2		96774.8	-14.5	0	LH 3		-275978.1	-1070.2	0	Ang = 11.7; D = 134; Mag = 0; Gyro =356.0					
										EV 28.0	7:01:37.8 T		436 N4876686 E 270209		

STA SS RANGE(M) RESID SD STA SS RANGE(M) RESID SD TIME/EV TP/DP LAT/LON N/E OFF/TR SP/HD

SYSTEM LINE DATA

Ref#: 18 Type: SYS Ident: OLYM-330S

Start Pt	End Pt			
4876500.0	4876250.0	Az 180 00 00.0	BL	18.0
270330.0	270330.0	Length 250.0	OF	0.0

DATA DUMP TIME 7:26:13.1 DATE 26/10/1984

PHYSICAL CONSTANTS

R/T ELEVATION (m)?	12.00(	SAT>LOC DAT SHFT dX=?	0.00(
COORDS PLANE=0;UTM=1?	1.00(	SAT>LOC DAT SHFT dY=?	0.00(
MID-LATITUDE (deg)?	44.00(	SAT>LOC DAT SHFT dZ=?	0.00(
UTM CENT MERID (deg)?	-57.00(	SEMI MAJOR AXIS (a)?	6378206.40(
UTM FALSE EASTING(m)?	500000.00(	SEMI MINOR AXIS (b)?	6356583.80(
UTM CEN MER SCL FACT?	0.999600(	1/f=	294.97869821(
UTM FALSE NORTHNG(m)?	0.00(	REFRACTIVITY(N=(n-1)e6)?	0.00(

CLOCK DEPTH & MAG

Clock Model No (2 or 3)?	3.0(	Depth Scale Factor?	1.000000(
Clock CRT 0=off;1=on?	1.0(	Depth Draft Correction?	0.0(
Depth Digitizer 0=off;1=on?	1.0(	Magnetometer Input 0=off;1=on?	0.0(

ARGO SYSTEM DATA

Argo Ant Offset (P- S+)?	0.0(	HPIB Address 21 or 19 CDU only?	21.0(
Argo Ant Offset (F+ A-)?	0.0(	Argo Serial Int Sel Code (14)?	0.0(
Argo 0=CD;2=26;3=Ser;4=IntEM;5=ExtN	2.0(	Argo Lane Width (M)?	0.000000(

SATNAV SYSTEM DATA

Satnav Ant Offset (P- S+)?	0.0(	Satnav 0=off;1=on?	0.0(
Satnav Ant Offset (F+ A-)?	0.0(	Sat Buffer 0=off;1=on?	0.0(

MINI RANGER SYSTEM DATA

MR sys Ant Offset (P- S+)?	0.0(	Mr sys Ant Offset (P- S+)?	0.0(
MR sys Ant Offset (F+ A-)?	0.0(	Mr sys Ant Offset (F+ A-)?	0.0(
MR sys Sel Code (3)?	3.0(	Mr sys Sel Code?	0.0(

TRISPONDER SYSTEM DATA

Trisponder Ant Offset (P- S+)?	0.0(	Trisponder Delay (secs)?	0.200(
Trisponder Ant Offset (F+ A-)?	0.0(		

SYLEDIS SYSTEM DATA

SY sys Ant Offset (P- S+)?	4.0(	Sy sys Ant Offset (P- S+)?	0.0(
SY sys Ant Offset (F+ A-)?	9.0(	Sy sys Ant Offset (F+ A-)?	0.0(
Syledis Input 0=GPIO;1=ExtN?	0.0(		

LORAN C SYSTEM DATA

Loran Ant Offset (P- S+)?	0.0(	Loran Input 0=Ser;1=CDEM;2=ExtN?	0.0(
Loran Ant Offset (F+ A-)?	0.0(	Loran Type 0=404;1=408?	0.0(

ACOUSTIC SYSTEM DATA

Acoutic Ant Offset (P- S+)?	0.0(	Acoustic Fi Char (0-15)?	0.0(
Acoustic Ant Offset (F+ A-)?	0.0(	Acoustic Module Depth?	0.00(
Acoustic Sel Code (7=Int HBIB)?	0.0(		

AUXILARY OUTPUTS

CMS Argo Output 0=no;1=yes?	0.0(	Aux Argo Ser Out 0=no;1=yes?	0.0(
CMS Loran Output 0=no;1=yes?	0.0(	Aux Ser Argo Sel Code (14)?	0.0(

STA SS	RANGE(M)	RESID SD	STA SS	RANGE(M)	RESID SD	TIME/EV TP/DP	LAT/LON	N/E	OFF/TR SP/HD

Aux Argo Out on HPIB 721 0=no;1=yes 0.0(Shell Out On=Sel Code;Off=0? 0.0(

GYRO & TRACKPOINT

Gyro On=1;Off=0? 1.000000000000(Trackpoint On=Sel Code;Off=0? 8.0(

SPOT SYSTEM DATA

Spot Ant Offset (P- S+)? 0.0(Spot Select Code (5)? 0.0(
Spot Ant Offset (F+ A-)? 0.0(Spot Lane Width (m)? 0.000000(

EVENT PARAMETERS

NEXT EVENT NUMBER? 29.00(PRINT INTERVAL(evs)? 1.00(
DIR(+-)&EV INC(evs)? 1.00(PLOT INTERVAL(evs)? 0.00(
TAPE SWITCH MAN=0;1=AUTO? 1.00(PLT ANOTATE INT(evs)? 0.00(
EV: T=1;LD=2;D=3;EX=4;9826CD=5? 1.00(TAPE INTERVAL(evs)? 1.00(
EV INT(metre or sec)? 10.00(TAPE DEPTH INT(evs)? 0.00(
CLOSURE 'A' INT(evs)? 1.00(MIN EVENT INT(sec)? 0.00(
CLOSURE 'B' INT(evs)? 1.00(

REFERENCE STATION DATA

STA	N	E	ELEV	CAL	EMIS DEL	BIAS	TIME	DATE	DRFTm/d	R GATE(m)
LH 0	5241840.7	-333428.5	0	0.0	0.00	0.00	0.00	0	0.00	0.00
LH 1	4648650.8	-588456.0	0	-940.0	13131.88	0.00	0.00	0	0.00	0.00
LH 2	5187119.0	791985.0	0	-810.0	28755.20	0.00	0.00	0	0.00	0.00
LH 3	5803472.6	587904.1	0	-100.0	41594.58	0.00	0.00	0	0.00	0.00
SY 1	4876485.6	282537.6	3	-203.7	0.00	0.00	0.00	0	0.00	0.00
SY 2	4868686.4	264526.4	31	-202.4	0.00	0.00	0.00	0	0.00	0.00
SY 3	4873481.3	279318.3	25	-345.7	0.00	0.00	0.00	0	0.00	0.00

LINE DATA

REF#	TYPE	LINE IDENT	START N	START E	END N	END E	LIN AZ(UTM)	LENGTH	BL NO	OFFSET
1	W/P	OLYMPIA	4876352.3	270244.0	4876352.3	270244.0	0 00 00.0	0.0	0.0	0.0
2	W/P	NE BUOY	4877402.2	271286.0	4877402.2	271286.0	0 00 00.0	0.0	0.0	0.0
3	W/P	SE BUOY	4875162.3	271214.5	4875162.3	271214.5	0 00 00.0	0.0	0.0	0.0
4	W/P	SW BUOY	4875272.1	269071.4	4875272.1	269071.4	0 00 00.0	0.0	0.0	0.0
5	W/P	NW BUOY	4877459.2	269143.4	4877459.2	269143.4	0 00 00.0	0.0	0.0	0.0
6	W/P	CM	4875099.4	270258.4	4875099.5	270258.4	0 00 00.0	0.0	0.0	0.0
7	Line	OLYM-100N	4876250.0	270100.0	4876500.0	270100.0	0 00 00.0	250.0	0.0	0.0
8	Ofst	OLYM-230N	4876250.0	270230.0	4876500.0	270230.0	0 00 00.0	250.0	7.0	130.0
9	Ofst	OLYM-350S	4876250.0	270350.0	4876500.0	270350.0	0 00 00.0	250.0	7.0	250.0
10	Ofst	OLYM-400E	4876400.0	270100.0	4876400.0	270450.0	90 00 00.0	350.0	8.0	-100.0
11	Ofst	OLYM-240N	4876250.0	270240.0	4876500.0	270240.0	0 00 00.0	250.0	7.0	140.0
12	Ofst	OLYM-375S	4876250.0	270375.0	4876500.0	270375.0	0 00 00.0	250.0	7.0	275.0
13	Ofst	OLYM-260N	4876250.0	270260.0	4876500.0	270260.0	0 00 00.0	250.0	7.0	160.0
14	Ofst	OLYM-310S	4876250.0	270310.0	4876500.0	270310.0	0 00 00.0	250.0	7.0	210.0
15	Ofst	OLYM-200N	4876250.0	270200.0	4876500.0	270200.0	0 00 00.0	250.0	7.0	100.0
16	Ofst	OLYM-320S	4876250.0	270320.0	4876500.0	270320.0	0 00 00.0	250.0	7.0	220.0
17	Line	OLYM-210N	4876250.0	270210.0	4876500.0	270210.0	0 00 00.0	250.0	7.0	110.0
18	Line	OLYM-330S	4876250.0	270330.0	4876500.0	270330.0	0 00 00.0	250.0	7.0	230.0
19	Line	OLYM-220N	4876250.0	270220.0	4876500.0	270220.0	0 00 00.0	250.0	7.0	120.0
20	Ofst	OLYM-340S	4876250.0	270340.0	4876500.0	270340.0	0 00 00.0	250.0	7.0	240.0

SYSTEM LINE DATA

Ref#: 18 Type: SYS Ident: OLYM-330S

Start Pt	End Pt				
4876500.0	4876250.0	Az	180 00 00.0	BL	18.0
270330.0	270330.0	Length	250.0	CF	0.0

STA SS RANGE(M) RESID SD STA SS RANGE(M) RESID SD TIME/EV TP/DP LAT/LON N/E OFF/TR SP/HD

SYSTEM LINE DATA

Ref#: 6 Type: SYS Ident: OLYM-230N
Start Pt End Pt
4876250.0 4876500.0 Az 0 00 00.0 BL 8.0
270230.0 270230.0 Length 250.0 OF 0.0

SYSTEM LINE DATA

Ref#: 8 Type: SYS Ident: OLYM-230N
Start Pt End Pt
4876250.0 4876500.0 Az 0 00 00.0 BL 8.0
270230.0 270230.0 Length 250.0 OF 0.0

SYSTEM LINE DATA

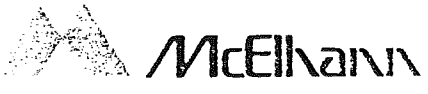
Ref#: 8 Type: SYS Ident: OLYM-230N
Start Pt End Pt
4876500.0 4876250.0 Az 180 00 00.0 BL 8.0
270230.0 270230.0 Length 250.0 OF 0.0

SYSTEM LINE DATA

Ref#: 18 Type: SYS Ident: OLYM-330S
Start Pt End Pt
4876500.0 4876250.0 Az 180 00 00.0 BL 18.0
270330.0 270330.0 Length 250.0 OF 0.0

SY11	12434.0	-2.3	1	SY22	9902.8	-0.8	1	7:30:27	11.6	44 00 27.2	4876487	90	3.9
SY33	9838.4	1.9	1	LH 1	-179396.4	-5.8	0	1.0	0.0	-59 51 54.5	270310	13	175.6
LH 2	96909.7	20.4	0	LH 3	-277028.3	9.3	0	Ang = -7.8; D = 117; Mag = 0; Gyro =172.2					
								EV 1.0	7:30:26.1 T		11 N4876489 E 270310		
SY11	12432.8	-3.3	1	SY22	9887.5	-1.1	1	7:30:37	11.7	44 00 26.5	4876467	17	4.0
SY33	9828.7	2.8	1	LH 1	-179387.4	1.3	0	2.0	0.0	-59 51 54.3	270313	33	173.7
LH 2	96911.2	22.9	0	LH 3	-277034.3	8.9	0	Ang = 8.2; D = 120; Mag = 0; Gyro =172.8					
								EV 2.0	7:30:35.8 T		30 N4876470 E 270313		
SY11	12420.3	2.8	1	SY22	9871.4	0.9	1	7:30:47	11.8	44 00 25.9	4875446	14	4.1
SY33	9820.7	-2.3	1	LH 1	-179372.4	2.9	0	3.0	0.0	-59 51 54.1	270316	54	171.9
LH 2	96915.7	29.6	0	LH 3	-277052.3	25.0	0	Ang = -2.5; D = 117; Mag = 0; Gyro =173.8					
								EV 3.0	7:30:45.8 T		51 N4876449 E 270315		
SY11	12415.6	3.0	1	SY22	9857.1	1.0	1	7:30:57	11.9	44 00 25.2	4875424	12	4.2
SY33	9810.0	-2.5	1	LH 1	-179342.4	-11.1	0	4.0	0.0	-59 51 54.0	270318	76	171.0
LH 2	96924.7	29.0	0	LH 3	-277034.3	3.6	0	Ang = 2.4; D = 117; Mag = 0; Gyro =174.0					
								EV 4.0	7:30:55.8 T		73 N4876427 E 270318		
SY11	12419.6	1.0	1	SY22	9837.5	0.3	1	7:31:08	12.0	44 00 24.4	4875400	8	4.1
SY33	9802.6	-0.8	1	LH 1	-179330.5	-4.3	0	5.0	0.0	-59 51 53.8	270322	100	172.1
LH 2	96930.7	20.1	0	LH 3	-277043.3	0.2	0	Ang = -1.4; D = 117; Mag = 0; Gyro =173.0					
								EV 5.0	7:31:05.8 T		94 N4876406 E 270321		
SY11	12420.1	-1.6	1	SY22	9824.3	-0.5	1	7:31:18	12.1	44 00 23.7	4875379	5	4.0
SY33	9792.4	1.3	1	LH 1	-179318.5	-1.6	0	6.0	0.0	-59 51 53.6	270325	121	172.2
LH 2	96927.7	27.6	0	LH 3	-277058.3	9.9	0	Ang = 1.2; D = 117; Mag = 0; Gyro =174.3					
								EV 6.0	7:31:15.8 T		115 N4876385 E 270324		
SY11	12419.0	-1.0	1	SY22	9806.3	-0.3	1	7:31:28	12.2	44 00 23.0	4875357	3	4.1
SY33	9785.2	0.8	1	LH 1	-179291.5	-11.0	0	7.0	0.0	-59 51 53.5	270327	143	171.8
LH 2	96927.7	28.7	0	LH 3	-277064.3	6.7	0	Ang = 14.1; D = 117; Mag = 0; Gyro =175.3					

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
										EV 7.0	7:31:25.8 T		136	N4876364 E 270326	
SY11		12408.2	2.1	1	SY22		9795.9	0.7	1	7:31:39	12.3	44 00 22.3	4875336	0	4.0
SY33		9774.8	-1.7	1	LH 1		-179288.5	-1.1	0	8.0	0.0	-59 51 53.3	270330	164	170.1
LH 2		96938.2	31.9	0	LH 3		-277043.3	-12.5	0	Ang = 3.4; D = 117; Mag =			0; Gyro =	176.0	
										EV 8.0	7:31:35.8 T		157	N4876343 E 270329	
SY11		12405.1	4.3	1	SY22		9775.6	1.4	1	7:31:49	12.4	44 00 21.7	4875315	-2	4.1
SY33		9767.8	-3.6	1	LH 1		-179277.1	7.2	0	9.0	0.0	-59 51 53.2	270332	185	170.4
LH 2		96942.7	30.5	0	LH 3		-277049.3	-15.5	0	Ang = 0.8; D = 117; Mag =			0; Gyro =	177.2	
										EV 9.0	7:31:45.8 T		178	N4876322 E 270331	
SY11		12417.0	-2.8	1	SY22		9764.3	-0.9	1	7:31:55	12.5	44 00 21.2	4875300	-4	4.1
SY33		9762.3	2.3	1	LH 1		-179258.5	-0.3	0	10.0	0.0	-59 51 53.1	270334	200	173.4
LH 2		96939.7	25.6	0	LH 3		-277091.3	15.2	0	Ang = 4.0; D = 115; Mag =			0; Gyro =	178.3	
										EV 10.0	7:31:55.8 T		199	N4876301 E 270334	
SY11		12417.9	-2.2	1	SY22		9746.4	-0.7	1	7:32:06	12.6	44 00 20.5	4875278	-5	4.1
SY33		9757.5	1.8	1	LH 1		-179231.5	-10.5	0	11.0	0.0	-59 51 53.0	270335	222	174.9
LH 2		96951.7	12.1	0	LH 3		-277111.4	24.9	0	Ang = -0.3; D = 117; Mag =			0; Gyro =	179.5	
										EV 11.0	7:32:05.8 T		220	N4876280 E 270335	
SY11		12408.4	-0.0	1	SY22		9735.6	-0.8	1	7:32:16	12.7	44 00 19.8	4875258	-6	4.0
SY33		9746.5	0.0	1	LH 1		-179232.1	3.6	0	12.0	0.0	-59 51 52.9	270336	242	172.3
LH 2		96948.7	28.7	0	LH 3		-277100.3	15.1	0	Ang = 5.6; D = 117; Mag =			0; Gyro =	182.0	
										EV 12.0	7:32:15.8 T		241	N4876259 E 270336	
SY11		12409.4	1.4	1	SY22		9715.9	0.5	1	7:32:25	12.8	44 00 19.1	4876237	-7	4.1
SY33		9742.9	-1.2	1	LH 1		-179207.5	-2.9	0	13.0	0.0	-59 51 52.9	270337	263	173.6
LH 2		96939.7	36.0	0	LH 3		-277118.3	21.9	0	Ang = 9.1; D = 117; Mag =			0; Gyro =	187.0	
										EV 13.0	7:32:25.8 T		262	N4876238 E 270337	
SY11		12408.9	3.8	1	SY22		9697.7	1.3	1	7:32:35	12.9	44 00 18.4	4876216	-6	4.1
SY33		9740.2	-3.2	1	LH 1		-179204.5	10.5	0	14.0	0.0	-59 51 52.9	270336	284	177.3
LH 2		96930.7	43.0	0	LH 3		-277127.2	20.5	0	Ang = 9.6; D = 117; Mag =			0; Gyro =	186.8	
										EV 14.0	7:32:35.8 T		282	N4876218 E 270337	
SY11		12411.4	3.3	1	SY22		9680.2	1.1	1	7:32:48	13.0	44 00 17.7	4876193	-4	4.0
SY33		9735.0	-2.7	1	LH 1		-179180.6	3.1	0	15.0	0.0	-59 51 52.9	270334	307	180.5
LH 2		96939.7	31.6	0	LH 3		-277115.3	-2.3	0	Ang = 8.6; D = 117; Mag =			0; Gyro =	187.0	
										EV 15.0	7:32:45.8 T		303	N4876197 E 270335	
SY11		12418.0	2.0	1	SY22		9660.8	0.7	1	7:32:58	13.1	44 00 17.0	4876173	-2	4.0
SY33		9732.3	-1.6	1	LH 1		-179165.6	5.2	0	16.0	0.0	-59 51 53.0	270332	327	182.7
LH 2		96933.7	29.6	0	LH 3		-277151.2	18.9	0	Ang = 7.7; D = 117; Mag =			0; Gyro =	186.5	
										EV 16.0	7:32:55.8 T		323	N4876177 E 270333	
SY11		12422.9	-0.5	1	SY22		9644.9	-0.2	1	7:33:08	13.2	44 00 16.4	4876153	1	4.0
SY33		9726.5	0.4	1	LH 1		-179150.6	5.7	0	17.0	0.0	-59 51 53.1	270329	347	183.2
LH 2		96936.7	23.5	0	LH 3		-277165.3	22.3	0	Ang = 6.3; D = 117; Mag =			0; Gyro =	187.7	
										EV 17.0	7:33:05.8 T		342	N4876158 E 270330	
SY11		12427.7	-1.6	1	SY22		9627.7	-0.5	1	7:33:18	13.3	44 00 15.7	4876132	3	4.0
SY33		9723.0	1.3	1	LH 1		-179130.2	1.0	0	18.0	0.0	-59 51 53.2	270327	368	183.3
LH 2		96930.7	24.2	0	LH 3		-277154.2	-1.0	0	Ang = 4.3; D = 117; Mag =			0; Gyro =	187.3	
										EV 18.0	7:33:15.8 T		363	N4876137 E 270327	
SY11		12430.8	-1.3	1	SY22		9610.4	-0.4	1	7:33:28	13.4	44 00 15.1	4876112	5	3.9
SY33		9720.5	1.0	1	LH 1		-179111.6	-2.1	0	19.0	0.0	-59 51 53.2	270325	388	183.2



STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
LH 2		96927.7	22.5	0	LH 3		-277148.2	-15.7	0	Ang = 2.1; D = 115; Mag = 0; Gyro =186.2					
										EV 19.0	7:33:25.8 T		383 N4876117	E 270325	
SY11		12431.2	-0.0	1	SY22		9594.0	-0.0	1	7:33:38	13.5	44 00 14.4	4875892	8	3.8
SY33		9717.0	0.0	1	LH 1		-179084.6	-13.9	0	20.0	0.0	-59 51 53.3	270322	408	183.6
LH 2		96933.7	14.9	0	LH 3		-277160.2	-16.2	0	Ang = 1.4; D = 117; Mag = 0; Gyro =186.2					
										EV 20.0	7:33:35.8 T		402 N4876098	E 270323	
SY11		12435.2	-0.3	1	SY22		9573.5	-0.1	1	7:33:50	14.0	44 00 13.7	4875070	10	3.9
SY33		9713.0	0.3	1	LH 1		-179078.6	-1.1	0	21.0	0.0	-59 51 53.4	270320	430	182.7
LH 2		96927.7	16.0	0	LH 3		-277199.2	9.1	0	Ang = 1.6; D = 117; Mag = 0; Gyro =186.5					
										EV 21.0	7:33:45.8 T		421 N4876079	E 270320	

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD

SYSTEM LINE DATA

Ref#: 8 Type: SYS Ident: OLYM-330N
Start Pt 4876250.0 270230.0 End Pt 4876500.0 270230.0 Az 0 00 00.0 Length 250.0 BL 8.0 OF 0.0

SY11	12484.2	3.5	1	SY22	9693.2	1.1	1	7:51:01	14.6	44 00 19.5	4876253	15	3.1
SY33	9827.9	-2.9	1	LH 1	-179237.5	24.6	0	1.0	0.0	-59 51 57.0	270246	3	359.3
LH 2	96804.8	21.7	0	LH 3	-277172.2	-21.5	0	Ang = -7.5; D = 117; Mag = 0; Gyro =353.7					
								EV 1.0	7:50:59.8 T	0 N4876250 E 270246			
SY11	12485.4	-2.3	1	SY22	9704.9	-0.8	1	7:51:11	14.7	44 00 20.0	4876268	16	3.1
SY33	9833.4	1.9	1	LH 1	-179234.5	9.4	0	2.0	0.0	-59 51 57.0	270246	18	355.2
LH 2	96810.8	6.1	0	LH 3	-277172.2	-20.9	0	Ang = -13.6; D = 122; Mag = 0; Gyro =351.7					
								EV 2.0	7:51:09.8 T	16 N4876266 E 270246			
SY11	12493.9	-0.2	1	SY22	9717.5	-0.1	1	7:51:21	14.8	44 00 20.5	4876283	16	3.1
SY33	9841.1	0.2	1	LH 1	-179240.5	2.2	0	3.0	0.0	-59 51 57.0	270246	33	356.8
LH 2	96818.3	-1.8	0	LH 3	-277181.2	-4.8	0	Ang = -12.1; D = 117; Mag = 0; Gyro =348.8					
								EV 3.0	7:51:19.8 T	31 N4876281 E 270246			
SY11	12490.0	3.7	1	SY22	9727.9	1.2	1	7:51:31	14.9	44 00 21.0	4876299	14	3.1
SY33	9848.9	-3.1	1	LH 1	-179265.1	15.4	0	4.0	0.0	-59 51 57.1	270244	49	354.9
LH 2	96795.8	20.6	0	LH 3	-277178.2	-1.5	0	Ang = -10.1; D = 117; Mag = 0; Gyro =346.2					
								EV 4.0	7:51:29.8 T	46 N4876296 E 270244			
SY11	12501.7	-1.9	1	SY22	9741.3	-0.6	1	7:51:43	15.0	44 00 21.6	4876318	12	3.1
SY33	9856.1	1.6	1	LH 1	-179279.5	15.6	0	5.0	0.0	-59 51 57.3	270242	68	351.2
LH 2	96807.8	-1.7	0	LH 3	-277181.2	2.6	0	Ang = -16.9; D = 112; Mag = 0; Gyro =345.3					
								EV 5.0	7:51:39.8 T	62 N4876312 E 270243			
SY11	12495.2	2.8	1	SY22	9748.6	0.9	1	7:51:50	15.1	44 00 22.0	4876329	10	3.0
SY33	9861.4	-2.4	1	LH 1	-179270.5	-1.1	0	6.0	0.0	-59 51 57.4	270240	79	352.7
LH 2	96806.3	2.6	0	LH 3	-277154.2	-18.2	0	Ang = -13.3; D = 115; Mag = 0; Gyro =344.5					
								EV 6.0	7:51:49.8 T	78 N4876328 E 270240			
SY11	12506.7	-1.3	1	SY22	9757.8	-0.4	1	7:52:00	15.2	44 00 22.5	4876344	6	3.1
SY33	9869.9	1.1	1	LH 1	-179307.1	24.3	0	7.0	0.0	-59 51 57.6	270236	94	346.8
LH 2	96789.8	6.3	0	LH 3	-277166.2	-8.3	0	Ang = -7.1; D = 122; Mag = 0; Gyro =344.7					
								EV 7.0	7:51:59.8 T	93 N4876343 E 270237			
SY11	12508.4	-0.6	1	SY22	9769.8	-0.2	1	7:52:10	15.3	44 00 23.0	4876359	3	3.1
SY33	9878.1	0.5	1	LH 1	-179321.5	25.7	0	8.0	0.0	-59 51 57.7	270233	109	348.3
LH 2	96771.8	19.8	0	LH 3	-277169.2	-1.0	0	Ang = -10.2; D = 151; Mag = 0; Gyro =346.3					
								EV 8.0	7:52:09.8 T	108 N4876358 E 270233			
SY11	12507.5	2.0	1	SY22	9781.3	0.7	1	7:52:20	15.4	44 00 23.5	4876375	-2	3.2
SY33	9887.1	-1.7	1	LH 1	-179324.5	16.0	0	9.0	0.0	-59 51 58.0	270228	125	346.4
LH 2	96777.8	10.1	0	LH 3	-277181.2	15.7	0	Ang = -8.4; D = 117; Mag = 0; Gyro =348.7					
								EV 9.0	7:52:19.8 T	125 N4876375 E 270228			
SY11	12515.6	-1.4	1	SY22	9791.2	-0.5	1	7:52:30	15.5	44 00 24.0	4876391	-5	3.1
SY33	9893.2	1.2	1	LH 1	-179315.5	-3.7	0	10.0	0.0	-59 51 58.1	270225	141	346.9
LH 2	96780.8	-1.9	0	LH 3	-277148.2	-17.1	0	Ang = -3.3; D = 115; Mag = 0; Gyro =351.3					
								EV 10.0	7:52:29.8 T	141 N4876391 E 270225			
SY11	12508.1	2.7	1	SY22	9803.8	0.9	1	7:52:40	15.6	44 00 24.5	4876407	-8	3.0
SY33	9898.0	-2.3	1	LH 1	-179348.4	17.4	0	11.0	0.0	-59 51 58.3	270222	157	350.7
LH 2	96771.8	12.2	0	LH 3	-277144.3	-11.0	0	Ang = -4.2; D = 117; Mag = 0; Gyro =353.5					

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
										EV 11.0	7:52:35.8 T		156	N4876406	E 270222
SY11		12516.7	-1.2	1	SY22		9815.2	-0.4	1	7:52:50	15.7	44 00 25.0	4875423	-9	3.1
SY33		9904.2	1.0	1	LH 1		-179351.4	8.4	0	12.0	0.0	-59 51 58.4	270221	173	349.4
LH 2		96774.8	0.1	0	LH 3		-277127.2	-27.4	0	Ang = 4.0; D = 120; Mag = 0; Gyro =355.0					
										EV 12.0	7:52:49.8 T		172	N4876422	E 270221
SY11		12505.4	4.8	1	SY22		9827.6	1.5	1	7:53:00	15.8	44 00 25.5	4876438	-11	2.9
SY33		9908.6	-4.0	1	LH 1		-179372.4	17.8	0	13.0	0.0	-59 51 58.4	270219	188	355.3
LH 2		96762.8	20.1	0	LH 3		-277154.2	11.2	0	Ang = 5.1; D = 120; Mag = 0; Gyro = 0.0					
										EV 13.0	7:52:59.8 T		187	N4876437	E 270219
SY11		12515.7	-1.3	1	SY22		9840.6	-0.4	1	7:53:10	15.9	44 00 26.0	4876454	-11	3.0
SY33		9912.8	1.1	1	LH 1		-179381.4	14.1	0	14.0	0.0	-59 51 58.5	270219	204	352.4
LH 2		96773.3	0.9	0	LH 3		-277157.2	15.6	0	Ang = 6.6; D = 115; Mag = 0; Gyro = 5.2					
										EV 14.0	7:53:09.8 T		202	N4876452	E 270219
SY11		12510.7	-1.1	1	SY22		9855.7	-0.4	1	7:53:23	16.0	44 00 26.6	4876471	-10	2.8
SY33		9913.1	1.0	1	LH 1		-179396.4	17.7	0	15.0	0.0	-59 51 58.5	270220	221	0.6
LH 2		96789.8	-7.8	0	LH 3		-277115.3	-13.6	0	Ang = 10.3; D = 120; Mag = 0; Gyro = 8.7					
										EV 15.0	7:53:19.9 T		217	N4876467	E 270219
SY11		12507.1	-0.4	1	SY22		9866.3	-0.1	1	7:53:30	16.1	44 00 26.9	4876482	-8	2.9
SY33		9914.6	0.3	1	LH 1		-179390.4	2.4	0	16.0	0.0	-59 51 58.4	270222	232	1.2
LH 2		96791.3	-5.0	0	LH 3		-277100.3	-20.6	0	Ang = 14.4; D = 117; Mag = 0; Gyro = 11.0					
										EV 16.0	7:53:29.8 T		231	N4876481	E 270221
SY11		12501.1	0.9	1	SY22		9881.0	0.3	1	7:53:40	16.2	44 00 27.5	4876499	-2	3.0
SY33		9915.9	-0.7	1	LH 1		-179411.4	11.0	0	17.0	0.0	-59 51 58.2	270228	249	8.5
LH 2		96804.8	-11.0	0	LH 3		-277094.3	-14.7	0	Ang = 9.1; D = 120; Mag = 0; Gyro = 11.2					
										EV 17.0	7:53:39.8 T		248	N4876498	E 270227
SY11		12490.9	3.7	1	SY22		9895.0	1.2	1	7:53:50	16.3	44 00 27.9	4876512	2	2.8
SY33		9915.5	-3.2	1	LH 1		-179420.4	9.0	0	18.0	0.0	-59 51 58.0	270232	262	11.2
LH 2		96804.8	1.6	0	LH 3		-277103.3	8.6	0	Ang = 10.1; D = 117; Mag = 0; Gyro = 10.2					
										EV 18.0	7:53:49.8 T		262	N4876512	E 270231
SY11		12492.6	0.5	1	SY22		9913.1	0.2	1	7:54:03	16.4	44 00 28.5	4876529	10	2.8
SY33		9917.7	-0.5	1	LH 1		-179429.4	2.5	0	19.0	0.0	-59 51 57.7	270240	279	11.0
LH 2		96813.8	-4.3	0	LH 3		-277085.3	1.3	0	Ang = -5.2; D = 117; Mag = 0; Gyro = 4.0					
										EV 19.0	7:53:59.8 T		275	N4876525	E 270237
SY11		12485.7	2.9	1	SY22		9923.5	1.0	1	7:54:10	16.5	44 00 28.8	4876539	14	2.9
SY33		9918.7	-2.5	1	LH 1		-179444.4	9.1	0	20.0	0.0	-59 51 57.5	270244	289	14.4
LH 2		96828.8	-10.3	0	LH 3		-277067.3	-6.2	0	Ang = -8.0; D = 112; Mag = 0; Gyro =359.7					
										EV 20.0	7:54:09.8 T		289	N4876539	E 270243
SY11		12482.5	2.8	1	SY22		9939.4	0.9	1	7:54:20	16.6	44 00 29.3	4876555	18	3.0
SY33		9920.9	-2.4	1	LH 1		-179462.4	13.7	0	21.0	0.0	-59 51 57.3	270248	305	11.7
LH 2		96819.8	5.9	0	LH 3		-277040.3	-21.0	0	Ang = -11.5; D = 117; Mag = 0; Gyro =356.2					
										EV 21.0	7:54:19.8 T		304	N4876554	E 270248
SY11		12486.1	0.0	1	SY22		9952.6	0.0	1	7:54:30	16.7	44 00 29.8	4876570	22	3.0
SY33		9924.3	-0.0	1	LH 1		-179465.4	4.7	0	22.0	0.0	-59 51 57.2	270252	320	9.6
LH 2		96830.3	-5.0	0	LH 3		-277019.3	-35.5	0	Ang = -17.3; D = 112; Mag = 0; Gyro =353.2					
										EV 22.0	7:54:29.9 T		319	N4876569	E 270252
SY11		12477.3	4.7	1	SY22		9963.6	1.6	1	7:54:40	16.8	44 00 30.3	4875585	24	2.9
SY33		9928.3	-4.0	1	LH 1		-179480.3	9.7	0	23.0	0.0	-59 51 57.1	270254	335	8.6

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
LH 2		96822.8	10.1	0	LH 3		-277034.3	-10.0	0	Ang = -16.0; D = 115; Mag = 0; Gyro =352.2					
										EV 23.0	7:54:39.8 T	334	N4876584	E 270254	
SY11		12487.2	-0.1	1	SY22		9976.4	-0.0	1	7:54:50	16.9	44 00 30.8	4876600	25	2.9
SY33		9934.5	0.1	1	LH 1		-179489.3	5.7	0	24.0	0.0	-59 51 57.1	270255	350	1.8
LH 2		96828.8	-4.4	0	LH 3		-277037.3	-5.3	0	Ang = -13.3; D = 117; Mag = 0; Gyro =352.5					
										EV 24.0	7:54:49.8 T	349	N4876599	E 270256	
SY11		12480.0	4.1	1	SY22		9950.0	1.4	1	7:55:02	17.0	44 00 31.3	4876617	24	2.9
SY33		9940.5	-3.5	1	LH 1		-179501.3	4.8	0	25.0	0.0	-59 51 57.2	270254	367	1.3
LH 2		96834.8	-5.1	0	LH 3		-277046.3	14.3	0	Ang = -15.5; D = 115; Mag = 0; Gyro =352.3					
										EV 25.0	7:54:59.8 T	364	N4876614	E 270255	
SY11		12485.4	1.3	1	SY22		10002.6	0.4	1	7:55:12	17.1	44 00 31.8	4876633	23	2.9
SY33		9945.6	-1.1	1	LH 1		-179519.3	10.6	0	26.0	0.0	-59 51 57.2	270253	383	357.9
LH 2		96821.3	4.5	0	LH 3		-277019.3	-8.4	0	Ang = -17.6; D = 115; Mag = 0; Gyro =352.2					
										EV 26.0	7:55:09.8 T	379	N4876629	E 270254	
SY11		12484.4	2.7	1	SY22		10014.1	0.9	1	7:55:22	17.2	44 00 32.3	4876648	21	2.9
SY33		9952.0	-2.3	1	LH 1		-179537.3	17.1	0	27.0	0.0	-59 51 57.3	270251	398	357.4
LH 2		96818.3	7.0	0	LH 3		-277022.3	0.7	0	Ang = -14.6; D = 112; Mag = 0; Gyro =352.0					
										EV 27.0	7:55:19.8 T	394	N4876644	E 270252	
SY11		12488.1	1.4	1	SY22		10025.8	0.5	1	7:55:31	19.0	44 00 32.8	4876662	21	2.9
SY33		9957.9	-1.2	1	LH 1		-179528.3	-3.6	0	28.0	0.0	-59 51 57.4	270251	412	357.1
LH 2		96830.3	-8.7	0	LH 3		-276995.3	-22.1	0	Ang = -12.8; D = 117; Mag = 0; Gyro =353.0					
										EV 28.0	7:55:30.3 T	410	N4876660	E 270251	

SYSTEM LINE DATA

Ref#: 20 Type: SYS Ident: OLYM-340S

Start Pt	End Pt			
4876500.0	4876250.0	Az 180 00 00.0	BL	20.0
270340.0	270340.0	Length 250.0	OF	0.0

SY11	12380.0	-1.7	1	SY22	9938.9	-0.6	1	8:06:41	19.6	44 00 27.4	4876492	-31	4.4
SY33	9790.1	1.4	1	LH 1	-179405.4	-6.8	0	29.0	0.0	-59 51 51.7	270371	8	166.5
LH 2	97001.1	22.0	0	LH 3	-276956.4	3.7	0	Ang = 14.4; D = 120; Mag = 0; Gyro =180.2					
								EV 29.0	8:06:39.9 T	5	N4876495	E 270371	
SY11	12374.2	1.5	1	SY22	9920.1	0.5	1	8:06:51	19.7	44 00 26.7	4876470	-34	4.4
SY33	9782.5	-1.2	1	LH 1	-179390.4	-3.2	0	30.0	0.0	-59 51 51.6	270374	30	168.7
LH 2	96993.7	35.3	0	LH 3	-276959.4	0.1	0	Ang = 12.6; D = 117; Mag = 0; Gyro =182.3					
								EV 30.0	8:06:50.3 T	28	N4876472	E 270374	
SY11	12368.0	3.6	1	SY22	9905.7	1.2	1	8:07:01	19.8	44 00 26.0	4876448	-34	4.3
SY33	9773.9	-3.0	1	LH 1	-179378.4	0.2	0	31.0	0.0	-59 51 51.5	270374	52	170.6
LH 2	97005.6	31.3	0	LH 3	-276974.4	11.7	0	Ang = 15.2; D = 115; Mag = 0; Gyro =184.8					
								EV 31.0	8:06:59.8 T	49	N4876451	E 270374	
SY11	12373.0	2.3	1	SY22	9887.7	0.8	1	8:07:11	19.9	44 00 25.3	4876427	-33	4.1
SY33	9770.0	-1.9	1	LH 1	-179354.4	-7.7	0	32.0	0.0	-59 51 51.5	270373	73	174.5
LH 2	96999.6	31.1	0	LH 3	-277010.3	34.6	0	Ang = 11.4; D = 117; Mag = 0; Gyro =186.0					
								EV 32.0	8:07:09.8 T	70	N4876430	E 270374	
SY11	12381.7	-0.1	1	SY22	9866.7	-2.0	1	8:07:23	20.0	44 00 24.5	4876403	-31	4.1
SY33	9766.8	0.1	1	LH 1	-179342.4	-1.2	0	33.0	0.0	-59 51 51.6	270371	97	178.5
LH 2	96996.7	24.7	0	LH 3	-276998.3	6.2	0	Ang = 14.5; D = 117; Mag = 0; Gyro =190.7					
								EV 33.0	8:07:19.9 T	90	N4876410	E 270372	

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	BP/HD
SY11		12379.2	2.1	1	SY22		9854.5	0.7	1	8:07:30	20.1	44 00 24.1	4876388	-30	4.0
SY33		9763.6	-1.7	1	LH 1		-179336.4	4.3	0	34.0	0.0	-59 51 51.6	270370	112	178.0
LH 2		96983.2	39.7	0	LH 3		-277034.3	36.8	0	Ang = 12.5; D = 117; Mag = 0; Gyro =191.5					
										EV 34.0	8:07:29.8 T		111 N4876389 E 270371		
SY11		12376.0	4.2	1	SY22		9838.5	1.4	1	8:07:40	20.2	44 00 23.4	4876368	-27	4.0
SY33		9757.9	-3.5	1	LH 1		-179318.5	1.9	0	35.0	0.0	-59 51 51.7	270367	132	180.2
LH 2		96984.7	41.1	0	LH 3		-277037.3	32.9	0	Ang = 10.3; D = 117; Mag = 0; Gyro =193.3					
										EV 35.0	8:07:39.8 T		131 N4876369 E 270367		
SY11		12390.0	-0.7	1	SY22		9819.2	-0.2	1	8:07:50	20.3	44 00 22.7	4876348	-23	3.9
SY33		9756.5	0.5	1	LH 1		-179306.5	6.0	0	36.0	0.0	-59 51 51.9	270363	152	185.5
LH 2		96978.7	31.8	0	LH 3		-277040.3	17.0	0	Ang = 13.6; D = 120; Mag = 0; Gyro =194.0					
										EV 36.0	8:07:49.8 T		151 N4876349 E 270364		
SY11		12396.5	-1.7	1	SY22		9802.4	-0.6	1	8:08:00	20.4	44 00 22.1	4876329	-18	3.8
SY33		9755.2	1.5	1	LH 1		-179279.5	-6.7	0	37.0	0.0	-59 51 52.0	270358	171	186.4
LH 2		96972.7	29.4	0	LH 3		-277058.3	21.5	0	Ang = 13.6; D = 120; Mag = 0; Gyro =195.8					
										EV 37.0	8:07:59.8 T		170 N4876330 E 270359		
SY11		12390.5	3.5	1	SY22		9785.4	1.2	1	8:08:10	20.5	44 00 21.5	4876311	-13	3.8
SY33		9752.5	-2.9	1	LH 1		-179276.5	5.8	0	38.0	0.0	-59 51 52.3	270353	189	186.2
LH 2		96960.7	43.6	0	LH 3		-277073.3	29.3	0	Ang = 10.6; D = 117; Mag = 0; Gyro =196.0					
										EV 38.0	8:08:09.8 T		188 N4876312 E 270354		
SY11		12399.0	2.5	1	SY22		9767.0	0.8	1	8:08:20	20.6	44 00 20.9	4876293	-7	3.7
SY33		9753.3	-2.1	1	LH 1		-179261.5	5.5	0	39.0	0.0	-59 51 52.5	270347	207	190.2
LH 2		96953.2	38.5	0	LH 3		-277112.3	51.9	0	Ang = 7.7; D = 117; Mag = 0; Gyro =194.7					
										EV 39.0	8:08:19.8 T		206 N4876294 E 270348		
SY11		12410.0	-1.1	1	SY22		9749.0	-0.4	1	8:08:30	20.7	44 00 20.3	4876274	-2	3.8
SY33		9751.4	0.9	1	LH 1		-179231.5	-9.2	0	40.0	0.0	-59 51 52.7	270342	225	192.4
LH 2		96950.2	29.5	0	LH 3		-277109.3	32.5	0	Ang = 5.5; D = 117; Mag = 0; Gyro =192.8					
										EV 40.0	8:08:29.8 T		224 N4876276 E 270343		
SY11		12414.5	-1.8	1	SY22		9731.1	-0.6	1	8:08:40	20.8	44 00 19.7	4876256	3	3.7
SY33		9748.1	1.5	1	LH 1		-179237.5	12.7	0	41.0	0.0	-59 51 52.9	270337	244	190.3
LH 2		96933.7	39.6	0	LH 3		-277109.3	19.5	0	Ang = 2.1; D = 115; Mag = 0; Gyro =191.5					
										EV 41.0	8:08:39.8 T		242 N4876258 E 270337		
SY11		12409.4	3.8	1	SY22		9714.7	1.3	1	8:08:51	20.9	44 00 19.1	4876237	7	3.7
SY33		9747.6	-3.2	1	LH 1		-179219.5	8.9	0	42.0	0.0	-59 51 53.1	270333	263	188.6
LH 2		96933.7	39.8	0	LH 3		-277118.3	20.7	0	Ang = 9.8; D = 117; Mag = 0; Gyro =192.7					
										EV 42.0	8:08:49.9 T		261 N4876239 E 270333		
SY11		12413.4	3.5	1	SY22		9696.6	1.2	1	8:09:02	21.0	44 00 18.4	4876216	12	3.6
SY33		9744.4	-2.9	1	LH 1		-179195.5	1.1	0	43.0	0.0	-59 51 53.2	270328	284	189.3
LH 2		96936.7	31.1	0	LH 3		-277124.3	13.9	0	Ang = -0.5; D = 122; Mag = 0; Gyro =189.8					
										EV 43.0	8:09:00.2 T		280 N4876220 E 270329		
SY11		12421.1	1.9	1	SY22		9677.3	0.6	1	8:09:12	21.1	44 00 17.8	4876198	16	3.7
SY33		9742.6	-1.6	1	LH 1		-179183.6	5.5	0	44.0	0.0	-59 51 53.4	270324	302	190.8
LH 2		96927.7	30.0	0	LH 3		-277166.2	40.1	0	Ang = -3.1; D = 115; Mag = 0; Gyro =188.5					
										EV 44.0	8:09:09.8 T		297 N4876203 E 270325		
SY11		12425.8	1.4	1	SY22		9662.5	0.5	1	8:09:22	21.2	44 00 17.2	4876179	20	3.6
SY33		9741.1	-1.1	1	LH 1		-179177.6	12.1	0	45.0	0.0	-59 51 53.5	270320	321	190.3
LH 2		96917.2	33.1	0	LH 3		-277169.2	31.4	0	Ang = -11.5; D = 115; Mag = 0; Gyro =183.3					
										EV 45.0	8:09:19.8 T		316 N4876184 E 270321		

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
SY11		12424.8	2.2	1	SY22		9651.9	0.7	1	8:09:30	21.3	44 00 16.8	4876165	22	3.5
SY33		9737.5	-1.9	1	LH 1		-179153.6	-1.6	0	46.0	0.0	-59 51 53.6	270318	335	188.7
LH 2		96915.7	35.0	0	LH 3		-277190.2	46.8	0	Ang = -4.8; D = 117; Mag = 0; Gyro =182.2					
										EV 46.0	8:09:29.8 T		334 N4876166 E 270318		
SY11		12430.8	1.0	1	SY22		9634.0	0.3	1	8:09:40	21.4	44 00 15.2	4875148	25	3.5
SY33		9734.8	-0.8	1	LH 1		-179141.6	2.2	0	47.0	0.0	-59 51 53.7	270315	352	188.1
LH 2		96906.7	36.6	0	LH 3		-277193.2	36.2	0	Ang = -3.3; D = 117; Mag = 0; Gyro =179.3					
										EV 47.0	8:09:39.8 T		351 N4876149 E 270315		
SY11		12434.2	-1.7	1	SY22		9619.2	-0.6	1	8:09:50	21.5	44 00 15.6	4875129	26	3.6
SY33		9727.1	1.4	1	LH 1		-179117.6	-6.5	0	48.0	0.0	-59 51 53.7	270314	371	185.8
LH 2		96908.2	34.3	0	LH 3		-277184.2	18.2	0	Ang = -5.1; D = 117; Mag = 0; Gyro =178.8					
										EV 48.0	8:09:49.8 T		369 N4876131 E 270314		
SY11		12436.3	-1.8	1	SY22		9606.8	-0.6	1	8:10:00	21.6	44 00 15.0	4876110	26	3.4
SY33		9724.6	1.5	1	LH 1		-179105.6	-7.2	0	49.0	0.0	-59 51 53.7	270314	390	184.3
LH 2		96915.7	23.8	0	LH 3		-277184.2	9.9	0	Ang = -10.8; D = 117; Mag = 0; Gyro =175.7					
										EV 49.0	8:09:59.8 T		389 N4876111 E 270314		
SY11		12435.9	-1.6	1	SY22		9587.6	-0.5	1	8:10:13	22.0	44 00 14.3	4876089	27	3.5
SY33		9716.8	1.3	1	LH 1		-179081.6	-13.1	0	50.0	0.0	-59 51 53.7	270313	411	181.2
LH 2		96933.7	5.7	0	LH 3		-277202.2	16.5	0	Ang = -5.6; D = 115; Mag = 0; Gyro =171.2					
										EV 50.0	8:10:09.8 T		406 N4876094 E 270313		

SYSTEM LINE DATA

Ref#: 11 Type: SYS Ident: OLYM-240N

Start Pt	End Pt				
4876250.0	4875500.0	Az	0 00 00.0	BL	11.0
270240.0	270240.0	Length	250.0	OF	0.0

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
SY11		12477.0	2.8	1	SY22		9700.4	0.9	1	8:25:22	22.5	44 00 19.6	4876255	12	2.8
SY33		9820.7	-2.3	1	LH 1		-179231.5	15.0	0	1.0	0.0	-59 51 56.7	270253	5	11.5
LH 2		96834.8	2.6	0	LH 3		-277154.2	-30.6	0	Ang = -3.8; D = 115; Mag = 0; Gyro = 3.3					
										EV 1.0	8:26:21.8 T		5 N4876255 E 270252		
SY11		12480.7	-1.7	1	SY22		9714.9	-0.6	1	8:26:32	22.7	44 00 20.1	4876259	16	2.8
SY33		9821.0	1.5	1	LH 1		-179252.5	23.7	0	2.0	0.0	-59 51 56.6	270256	19	8.5
LH 2		96816.8	22.2	0	LH 3		-277160.2	-16.7	0	Ang = -9.1; D = 117; Mag = 0; Gyro =357.8					
										EV 2.0	8:26:31.8 T		18 N4876268 E 270256		
SY11		12480.3	-0.9	1	SY22		9725.2	-0.3	1	8:26:42	22.8	44 00 20.5	4876283	20	2.8
SY33		9826.4	0.8	1	LH 1		-179255.5	16.4	0	3.0	0.0	-59 51 56.4	270260	33	10.6
LH 2		96837.8	1.8	0	LH 3		-277151.2	-19.6	0	Ang = -14.5; D = 117; Mag = 0; Gyro =352.3					
										EV 3.0	8:26:41.8 T		33 N4876283 E 270259		
SY11		12471.0	3.3	1	SY22		9739.8	1.1	1	8:25:52	22.9	44 00 21.0	4876298	22	2.8
SY33		9830.2	-2.8	1	LH 1		-179262.1	9.8	0	4.0	0.0	-59 51 56.3	270262	48	7.2
LH 2		96843.8	4.7	0	LH 3		-277148.2	-9.4	0	Ang = -15.3; D = 117; Mag = 0; Gyro =351.7					
										EV 4.0	8:26:51.8 T		47 N4876297 E 270262		
SY11		12481.4	-1.8	1	SY22		9752.6	-0.6	1	8:27:04	23.0	44 00 21.5	4876315	23	2.9
SY33		9836.5	1.5	1	LH 1		-179279.5	13.9	0	5.0	0.0	-59 51 56.3	270263	65	1.6
LH 2		96839.3	-0.0	0	LH 3		-277154.2	-2.0	0	Ang = -16.8; D = 120; Mag = 0; Gyro =351.5					
										EV 5.0	8:27:01.8 T		61 N4876311 E 270263		
SY11		12471.9	3.0	1	SY22		9762.8	1.0	1	8:27:14	23.1	44 00 22.0	4876329	22	2.8
SY33		9839.7	-2.5	1	LH 1		-179291.5	16.6	0	6.0	0.0	-59 51 56.3	270262	79	3.1
LH 2		96828.8	18.1	0	LH 3		-277169.2	23.2	0	Ang = -13.8; D = 117; Mag = 0; Gyro =352.3					
										EV 6.0	8:27:11.8 T		76 N4876326 E 270263		
SY11		12482.3	-0.8	1	SY22		9772.7	-0.3	1	8:27:24	23.2	44 00 22.5	4876344	20	2.8
SY33		9847.8	0.6	1	LH 1		-179300.5	14.0	0	7.0	0.0	-59 51 56.5	270260	94	353.7
LH 2		96828.8	6.1	0	LH 3		-277132.3	-15.1	0	Ang = -7.6; D = 117; Mag = 0; Gyro =355.0					
										EV 7.0	8:27:21.8 T		90 N4876340 E 270262		
SY11		12477.0	2.3	1	SY22		9782.4	0.8	1	8:27:34	23.3	44 00 22.9	4876357	18	2.6
SY33		9851.9	-1.9	1	LH 1		-179306.5	10.6	0	8.0	0.0	-59 51 56.6	270258	107	356.8
LH 2		96831.8	5.7	0	LH 3		-277147.3	6.9	0	Ang = -6.5; D = 127; Mag = 0; Gyro =357.0					
										EV 8.0	8:27:31.8 T		105 N4876355 E 270259		
SY11		12483.6	-1.0	1	SY22		9791.9	-0.3	1	8:27:44	23.4	44 00 23.4	4876371	16	2.6
SY33		9856.5	0.8	1	LH 1		-179324.5	19.8	0	9.0	0.0	-59 51 56.7	270256	121	351.9
LH 2		96828.8	2.8	0	LH 3		-277145.2	7.1	0	Ang = 1.3; D = 120; Mag = 0; Gyro = 0.3					
										EV 9.0	8:27:41.8 T		117 N4876367 E 270257		
SY11		12473.6	2.6	1	SY22		9804.1	0.9	1	8:27:54	23.5	44 00 23.8	4876383	15	2.5
SY33		9857.2	-2.2	1	LH 1		-179345.4	30.8	0	10.0	0.0	-59 51 56.8	270255	133	359.2
LH 2		96819.8	22.0	0	LH 3		-277144.3	18.5	0	Ang = -0.3; D = 115; Mag = 0; Gyro = 1.8					
										EV 10.0	8:27:51.8 T		130 N4876380 E 270255		
SY11		12481.1	-1.0	1	SY22		9814.5	-0.3	1	8:28:05	23.6	44 00 24.2	4876396	15	2.6
SY33		9862.2	0.9	1	LH 1		-179333.5	8.0	0	11.0	0.0	-59 51 56.8	270255	146	356.8
LH 2		96834.8	-0.1	0	LH 3		-277135.3	10.8	0	Ang = -1.1; D = 117; Mag = 0; Gyro = 0.7					
										EV 11.0	8:28:01.8 T		142 N4876392 E 270255		
SY11		12471.5	3.7	1	SY22		9826.5	1.2	1	8:28:15	23.7	44 00 24.6	4876409	16	2.6
SY33		9865.7	-3.1	1	LH 1		-179342.4	6.3	0	12.0	0.0	-59 51 56.8	270256	159	2.8
LH 2		96827.3	16.1	0	LH 3		-277118.3	5.4	0	Ang = -3.4; D = 115; Mag = 0; Gyro =358.2					
										EV 12.0	8:28:11.8 T		155 N4876405 E 270255		

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
SY11		12477.4	-0.0	1	SY22		9835.9	-0.0	1	8:28:22	23.8	44 00 24.9	4876419	17	2.6
SY33		9868.4	0.0	1	LH 1		-179369.4	24.4	0	13.0	0.0	-59 51 56.7	270257	169	1.3
LH 2		96825.8	14.0	0	LH 3		-277118.3	6.0	0	Ang = -11.6; D = 122; Mag = 0; Gyro =356.0					
										EV 13.0	8:28:21.8 T		168 N4876418 E 270257		
SY11		12471.6	3.7	1	SY22		9847.1	1.2	1	8:28:32	23.9	44 00 25.4	4876434	18	2.7
SY33		9873.9	-3.1	1	LH 1		-179369.4	13.5	0	14.0	0.0	-59 51 56.7	270258	184	2.0
LH 2		96828.8	15.7	0	LH 3		-277082.3	-18.9	0	Ang = -13.7; D = 115; Mag = 0; Gyro =350.8					
										EV 14.0	8:28:31.8 T		182 N4876432 E 270258		
SY11		12481.0	-1.7	1	SY22		9860.9	-0.6	1	8:28:44	24.0	44 00 25.9	4876450	19	2.7
SY33		9878.8	1.5	1	LH 1		-179378.4	9.2	0	15.0	0.0	-59 51 56.7	270259	200	358.5
LH 2		96840.8	-2.0	0	LH 3		-277052.3	-45.1	0	Ang = -20.3; D = 112; Mag = 0; Gyro =344.5					
										EV 15.0	8:28:41.8 T		197 N4876447 E 270259		
SY11		12472.7	5.5	1	SY22		9866.9	1.8	1	8:28:54	24.1	44 00 26.4	4876464	19	2.5
SY33		9887.0	-4.7	1	LH 1		-179393.4	16.6	0	16.0	0.0	-59 51 56.7	270259	214	359.6
LH 2		96828.8	13.8	0	LH 3		-277073.3	-17.4	0	Ang = -17.2; D = 117; Mag = 0; Gyro =342.2					
										EV 16.0	8:28:51.8 T		210 N4876460 E 270259		
SY11		12485.0	-0.9	1	SY22		9878.1	-0.3	1	8:29:04	24.2	44 00 26.8	4876477	17	2.6
SY33		9892.1	0.7	1	LH 1		-179399.4	11.2	0	17.0	0.0	-59 51 56.8	270257	227	351.2
LH 2		96822.8	9.1	0	LH 3		-277103.3	12.0	0	Ang = -17.6; D = 115; Mag = 0; Gyro =342.0					
										EV 17.0	8:29:01.8 T		224 N4876474 E 270259		
SY11		12476.7	6.4	1	SY22		9883.4	2.1	1	8:29:14	24.3	44 00 27.2	4876489	14	2.4
SY33		9900.0	-5.4	1	LH 1		-179417.4	22.2	0	18.0	0.0	-59 51 57.0	270254	239	353.3
LH 2		96822.8	11.6	0	LH 3		-277115.3	29.5	0	Ang = -19.5; D = 115; Mag = 0; Gyro =338.3					
										EV 18.0	8:29:11.8 T		236 N4876486 E 270255		
SY11		12493.3	0.0	1	SY22		9890.6	0.0	1	8:29:24	24.4	44 00 27.5	4876500	11	2.5
SY33		9908.7	-0.0	1	LH 1		-179426.4	21.7	0	19.0	0.0	-59 51 57.1	270251	250	343.3
LH 2		96816.8	0.5	0	LH 3		-277091.3	-0.3	0	Ang = -19.2; D = 117; Mag = 0; Gyro =336.5					
										EV 19.0	8:29:21.8 T		248 N4876498 E 270253		
SY11		12487.5	5.5	1	SY22		9897.4	1.8	1	8:29:34	24.5	44 00 27.9	4876512	6	2.4
SY33		9916.3	-4.7	1	LH 1		-179435.4	22.5	0	20.0	0.0	-59 51 57.4	270246	262	344.6
LH 2		96804.8	13.8	0	LH 3		-277102.4	16.2	0	Ang = -18.3; D = 117; Mag = 0; Gyro =335.2					
										EV 20.0	8:29:31.8 T		259 N4876509 E 270248		
SY11		12503.2	0.4	1	SY22		9903.5	0.1	1	8:29:44	24.6	44 00 28.3	4876523	1	2.5
SY33		9926.2	-0.4	1	LH 1		-179444.4	22.5	0	21.0	0.0	-59 51 57.6	270241	273	336.9
LH 2		96785.3	15.5	0	LH 3		-277115.3	22.5	0	Ang = -19.3; D = 115; Mag = 0; Gyro =333.7					
										EV 21.0	8:29:41.8 T		270 N4876520 E 270243		
SY11		12502.4	4.8	1	SY22		9907.7	1.6	1	8:29:54	24.7	44 00 28.6	4876535	-6	2.4
SY33		9936.3	-4.1	1	LH 1		-179441.4	12.5	0	22.0	0.0	-59 51 58.0	270234	285	336.4
LH 2		96783.8	11.3	0	LH 3		-277094.3	1.8	0	Ang = -15.0; D = 117; Mag = 0; Gyro =333.5					
										EV 22.0	8:29:51.8 T		282 N4876532 E 270236		
SY11		12515.7	0.4	1	SY22		9914.2	0.1	1	8:30:04	24.8	44 00 29.0	4876547	-14	2.6
SY33		9946.2	-0.4	1	LH 1		-179444.4	6.2	0	23.0	0.0	-59 51 58.3	270226	297	331.0
LH 2		96780.8	-2.7	0	LH 3		-277067.3	-31.1	0	Ang = -18.0; D = 112; Mag = 0; Gyro =336.7					
										EV 23.0	8:30:01.8 T		293 N4876543 E 270230		
SY11		12512.5	5.8	1	SY22		9921.4	1.9	1	8:30:14	24.9	44 00 29.4	4876559	-21	2.5
SY33		9955.6	-4.9	1	LH 1		-179450.4	3.2	0	24.0	0.0	-59 51 58.7	270219	309	333.6
LH 2		96771.8	2.6	0	LH 3		-277070.3	-25.5	0	Ang = 1.4; D = 117; Mag = 0; Gyro =345.3					
										EV 24.0	8:30:11.8 T		306 N4876556 E 270221		

McElhanney

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
SY11		12527.3	-0.3	1	SY22		9931.5	-0.1	1	8:30:26	25.0	44 00 29.8	4876573	-28	2.6
SY33		9963.8	0.2	1	LH 1		-179469.0	10.2	0	25.0	0.0	-59 51 59.0	270212	323	331.5
LH 2		96765.8	-9.1	0	LH 3		-277100.3	-0.6	0	Ang = 8.9; D = 117; Mag = 0; Gyro =336.7					
										EV 25.0	8:30:21.8 T	217	N4876567	E 270215	
SY11		12523.2	2.7	1	SY22		9936.4	0.9	1	8:30:33	25.1	44 00 30.1	4876581	-32	2.5
SY33		9967.4	-2.3	1	LH 1		-179480.3	16.3	0	26.0	0.0	-59 51 59.2	270208	331	334.5
LH 2		96753.8	2.6	0	LH 3		-277085.3	-12.8	0	Ang = 14.4; D = 120; Mag = 0; Gyro = 0.3					
										EV 26.0	8:30:32.1 T	330	N4876580	E 270208	
SY11		12528.0	0.5	1	SY22		9946.0	0.2	1	8:30:43	25.2	44 00 30.5	4876594	-35	2.5
SY33		9972.0	-0.5	1	LH 1		-179480.3	6.5	0	27.0	0.0	-59 51 59.3	270205	344	340.1
LH 2		96762.8	-11.7	0	LH 3		-277087.4	-8.7	0	Ang = 18.5; D = 117; Mag = 0; Gyro = 3.0					
										EV 27.0	8:30:42.1 T	342	N4876592	E 270205	
SY11		12523.5	1.9	1	SY22		9957.8	0.6	1	8:30:53	25.3	44 00 30.9	4876607	-37	2.5
SY33		9974.1	-1.6	1	LH 1		-179492.3	8.2	0	28.0	0.0	-59 51 59.5	270203	357	346.1
LH 2		96758.3	-2.6	0	LH 3		-277076.3	-11.1	0	Ang = 19.6; D = 117; Mag = 0; Gyro = 6.7					
										EV 28.0	8:30:52.2 T	355	N4876605	E 270202	
SY11		12523.0	1.8	1	SY22		9969.1	0.6	1	8:31:03	25.4	44 00 31.4	4876620	-35	2.5
SY33		9977.8	-1.6	1	LH 1		-179516.3	21.5	0	29.0	0.0	-59 51 59.4	270204	370	353.6
LH 2		96750.8	5.2	0	LH 3		-277085.3	4.1	0	Ang = 18.3; D = 120; Mag = 0; Gyro = 8.2					
										EV 29.0	8:31:01.8 T	368	N4876618	E 270203	
SY11		12521.6	1.8	1	SY22		9980.9	0.6	1	8:31:13	25.5	44 00 31.8	4876634	-34	2.5
SY33		9980.6	-1.5	1	LH 1		-179516.3	11.0	0	30.0	0.0	-59 51 59.3	270206	384	357.9
LH 2		96758.3	0.4	0	LH 3		-277055.3	-18.3	0	Ang = 16.1; D = 117; Mag = 0; Gyro = 8.0					
										EV 30.0	8:31:11.8 T	381	N4876631	E 270205	
SY11		12515.0	3.6	1	SY22		9994.6	1.2	1	8:31:23	25.6	44 00 32.3	4876647	-30	2.6
SY33		9982.0	-3.0	1	LH 1		-179531.3	14.6	0	31.0	0.0	-59 51 59.2	270210	397	3.9
LH 2		96768.8	-1.6	0	LH 3		-277031.3	-30.4	0	Ang = 12.0; D = 115; Mag = 0; Gyro = 7.5					
										EV 31.0	8:31:21.8 T	395	N4876645	E 270209	
SY11		12514.0	1.5	1	SY22		10009.2	0.5	1	8:31:34	26.0	44 00 32.8	4876663	-25	2.6
SY33		9982.0	-1.3	1	LH 1		-179534.3	5.7	0	32.0	0.0	-59 51 59.0	270215	413	7.8
LH 2		96786.8	-14.5	0	LH 3		-277049.3	-2.5	0	Ang = 10.9; D = 120; Mag = 0; Gyro = 10.7					
										EV 32.0	8:31:31.8 T	409	N4876659	E 270213	

SYSTEM LINE DATA

Ref#: 9 Type: SYS Ident: OLYM-350S

Start Pt	End Pt						
4876500.0	4876250.0	Az	180	00	00.0	BL	9.0
270350.0	270350.0	Length		250.0		OF	0.0

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TD/DP	LAT/LON	N/E	OFF/TR	SP/HD
SY11		12401.3	-2.7	1	SY22		9823.3	-0.9	1	8:46:37	26.6	44 00 27.3	4876489	5	3.6
SY33		9807.0	2.2	1	LH 1		-179399.4	-6.5	0	1.0	0.0	-59 51 52.9	270345	11	171.4
LH 2		96978.7	7.8	0	LH 3		-276977.4	-2.0	0	Ang = -3.1; D = 117; Mag =			0; Gyro =	168.3	
										EV 1.0	8:46:33.8 T		5 N4876495 E	270344	
SY11		12381.0	7.0	1	SY22		9914.7	2.3	1	8:46:44	26.7	44 00 26.9	4876475	2	3.7
SY33		9800.4	-5.9	1	LH 1		-179409.0	13.3	0	2.0	0.0	-59 51 52.7	270348	24	167.4
LH 2		96957.7	47.1	0	LH 3		-277031.3	58.2	0	Ang = 2.0; D = 117; Mag =			0; Gyro =	168.0	
										EV 2.0	8:46:43.8 T		23 N4876477 E	270347	
SY11		12386.0	1.5	1	SY22		9902.5	0.6	1	8:46:54	26.8	44 00 26.3	4876457	-1	3.6
SY33		9789.9	-1.4	1	LH 1		-179387.4	5.4	0	3.0	0.0	-59 51 52.6	270351	43	170.0
LH 2		96978.7	26.9	0	LH 3		-277019.3	39.1	0	Ang = -12.3; D = 115; Mag =			0; Gyro =	169.2	
										EV 3.0	8:46:53.8 T		42 N4876458 E	270350	
SY11		12387.3	-1.0	1	SY22		9888.6	-0.3	1	8:47:05	26.9	44 00 25.6	4876437	-5	3.6
SY33		9780.1	0.9	1	LH 1		-179369.4	1.5	0	4.0	0.0	-59 51 52.4	270355	63	168.5
LH 2		96993.7	13.0	0	LH 3		-276998.3	9.8	0	Ang = -2.6; D = 117; Mag =			0; Gyro =	166.3	
										EV 4.0	8:47:03.9 T		61 N4876439 E	270354	
SY11		12382.2	-0.8	1	SY22		9873.3	-0.3	1	8:47:16	27.0	44 00 24.9	4876415	-10	3.7
SY33		9768.4	0.7	1	LH 1		-179357.4	6.6	0	5.0	0.0	-59 51 52.1	270360	85	166.6
LH 2		96987.7	27.9	0	LH 3		-277010.3	18.0	0	Ang = -2.6; D = 117; Mag =			0; Gyro =	167.7	
										EV 5.0	8:47:14.1 T		80 N4876420 E	270358	
SY11		12373.0	2.5	1	SY22		9851.7	0.9	1	8:47:26	27.1	44 00 24.3	4876395	-12	3.6
SY33		9760.1	-2.1	1	LH 1		-179337.0	-0.7	0	6.0	0.0	-59 51 52.0	270362	104	167.8
LH 2		96996.7	30.2	0	LH 3		-277019.3	27.1	0	Ang = -3.0; D = 117; Mag =			0; Gyro =	171.0	
										EV 6.0	8:47:23.8 T		99 N4876401 E	270362	
SY11		12377.2	-1.5	1	SY22		9848.5	-0.5	1	8:47:35	27.2	44 00 23.7	4876378	-15	3.6
SY33		9751.0	1.3	1	LH 1		-179330.5	6.9	0	7.0	0.0	-59 51 51.8	270366	122	168.3
LH 2		97001.1	26.3	0	LH 3		-277010.3	10.6	0	Ang = 1.0; D = 117; Mag =			0; Gyro =	172.8	
										EV 7.0	8:47:33.8 T		117 N4876383 E	270365	
SY11		12380.5	-2.7	1	SY22		9831.2	-0.9	1	8:47:47	27.3	44 00 23.1	4876359	-19	3.7
SY33		9745.5	2.3	1	LH 1		-179315.5	8.3	0	8.0	0.0	-59 51 51.6	270369	141	169.0
LH 2		97011.6	13.8	0	LH 3		-277007.3	-2.9	0	Ang = 6.2; D = 120; Mag =			0; Gyro =	178.2	
										EV 8.0	8:47:43.8 T		135 N4876365 E	270368	
SY11		12367.1	3.9	1	SY22		9820.4	1.3	1	8:47:57	27.4	44 00 22.5	4876339	-22	3.7
SY33		9739.4	-3.2	1	LH 1		-179294.5	-0.8	0	9.0	0.0	-59 51 51.5	270372	161	168.8
LH 2		97008.6	29.7	0	LH 3		-277025.3	16.9	0	Ang = 6.3; D = 137; Mag =			0; Gyro =	182.2	
										EV 9.0	8:47:53.8 T		154 N4876346 E	270371	
SY11		12370.9	1.6	1	SY22		9805.0	0.5	1	8:48:07	27.5	44 00 21.9	4876321	-23	3.6
SY33		9732.8	-1.3	1	LH 1		-179285.5	5.6	0	10.0	0.0	-59 51 51.4	270373	179	172.7
LH 2		97002.6	35.4	0	LH 3		-277034.3	17.1	0	Ang = 15.0; D = 117; Mag =			0; Gyro =	186.5	
										EV 10.0	8:48:03.8 T		173 N4876327 E	270373	
SY11		12379.0	-2.0	1	SY22		9792.8	-0.7	1	8:48:14	27.6	44 00 21.4	4876307	-24	3.7
SY33		9729.8	1.7	1	LH 1		-179273.5	4.7	0	11.0	0.0	-59 51 51.3	270374	193	174.0
LH 2		97005.6	25.4	0	LH 3		-277037.3	9.4	0	Ang = 11.9; D = 120; Mag =			0; Gyro =	187.3	
										EV 11.0	8:48:13.8 T		192 N4876308 E	270374	
SY11		12371.1	4.0	1	SY22		9777.3	1.3	1	8:48:24	27.7	44 00 20.8	4876288	-23	3.6
SY33		9727.1	-3.3	1	LH 1		-179258.5	4.2	0	12.0	0.0	-59 51 51.3	270373	212	176.0
LH 2		96996.7	39.3	0	LH 3		-277034.3	1.4	0	Ang = 11.9; D = 120; Mag =			0; Gyro =	189.3	
										EV 12.0	8:48:23.8 T		211 N4876289 E	270373	

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/-D
SY11		12380.0	0.3	1	SY22		9764.8	0.1	1	8:48:34	27.8	44 00 22.3	4876271	-30	3.3
SY33		9724.8	-0.3	1	LH 1		-179243.5	0.1	0	13.0	0.0	-59 51 51.4	270370	229	181.3
LH 2		97005.6	21.7	0	LH 3		-277060.4	15.8	0	Ang = 13.3; D = 134; Mag = 0; Gyro =190.7					
										EV 13.0	8:48:33.8 T		228 N4876272 E 270371		
SY11		12389.0	-1.9	1	SY22		9746.6	-0.5	1	8:48:44	27.9	44 00 19.7	4876255	-17	3.4
SY33		9723.5	1.6	1	LH 1		-179234.5	6.6	0	14.0	0.0	-59 51 51.6	270367	245	184.1
LH 2		96992.2	24.6	0	LH 3		-277067.3	7.2	0	Ang = 12.0; D = 120; Mag = 0; Gyro =191.5					
										EV 14.0	8:48:43.8 T		244 N4876256 E 270368		
SY11		12384.9	2.2	1	SY22		9731.0	0.7	1	8:48:55	28.0	44 00 19.1	4876236	-12	3.4
SY33		9721.2	-1.8	1	LH 1		-179204.5	-9.2	0	15.0	0.0	-59 51 51.7	270362	264	184.3
LH 2		97002.6	15.3	0	LH 3		-277046.3	-21.0	0	Ang = 12.3; D = 120; Mag = 0; Gyro =191.8					
										EV 15.0	8:48:53.8 T		261 N4876239 E 270363		
SY11		12387.7	3.2	1	SY22		9714.7	1.1	1	8:49:06	28.1	44 00 18.6	4876219	-8	3.3
SY33		9720.1	-2.6	1	LH 1		-179207.5	7.8	0	16.0	0.0	-59 51 51.9	270358	281	187.3
LH 2		96975.7	36.5	0	LH 3		-277094.3	15.5	0	Ang = 3.8; D = 117; Mag = 0; Gyro =191.5					
										EV 16.0	8:49:03.8 T		277 N4876223 E 270360		
SY11		12398.6	-0.4	1	SY22		9700.3	-0.1	1	8:49:16	28.2	44 00 18.0	4876203	-4	3.3
SY33		9719.6	0.4	1	LH 1		-179186.6	-1.3	0	17.0	0.0	-59 51 52.1	270354	297	190.0
LH 2		96984.7	15.7	0	LH 3		-277109.3	16.1	0	Ang = 9.7; D = 117; Mag = 0; Gyro =191.2					
										EV 17.0	8:49:13.8 T		293 N4876207 E 270355		
SY11		12401.3	-0.7	1	SY22		9685.4	-0.2	1	8:49:26	28.3	44 00 17.5	4876187	-0	3.3
SY33		9716.2	0.6	1	LH 1		-179165.6	-8.6	0	18.0	0.0	-59 51 52.2	270350	313	188.8
LH 2		96972.7	24.1	0	LH 3		-277124.3	21.1	0	Ang = 9.7; D = 117; Mag = 0; Gyro =191.3					
										EV 18.0	8:49:23.8 T		309 N4876191 E 270351		
SY11		12403.0	1.7	1	SY22		9668.9	0.6	1	8:49:36	28.4	44 00 17.0	4876170	4	3.3
SY33		9717.0	-1.4	1	LH 1		-179159.6	-1.1	0	19.0	0.0	-59 51 52.4	270346	330	190.0
LH 2		96965.2	25.3	0	LH 3		-277124.3	9.5	0	Ang = 3.7; D = 117; Mag = 0; Gyro =191.0					
										EV 19.0	8:49:33.8 T		326 N4876174 E 270347		
SY11		12411.0	-0.3	1	SY22		9653.7	-0.1	1	8:49:46	28.5	44 00 16.4	4876154	8	3.3
SY33		9716.2	0.2	1	LH 1		-179156.6	8.7	0	20.0	0.0	-59 51 52.5	270342	346	191.3
LH 2		96954.7	26.2	0	LH 3		-277139.2	11.1	0	Ang = 3.9; D = 117; Mag = 0; Gyro =191.3					
										EV 20.0	8:49:43.8 T		342 N4876158 E 270343		
SY11		12409.4	2.4	1	SY22		9638.8	0.8	1	8:49:56	28.6	44 00 15.9	4876138	12	3.3
SY33		9714.0	-2.0	1	LH 1		-179141.6	7.3	0	21.0	0.0	-59 51 52.7	270338	362	188.3
LH 2		96951.7	28.7	0	LH 3		-277136.2	0.2	0	Ang = 4.4; D = 117; Mag = 0; Gyro =192.5					
										EV 21.0	8:49:53.8 T		358 N4876142 E 270339		
SY11		12407.2	6.1	1	SY22		9622.3	2.2	1	8:50:06	28.7	44 00 15.4	4876121	16	3.3
SY33		9712.7	-5.0	1	LH 1		-179132.6	12.8	0	22.0	0.0	-59 51 52.8	270334	379	187.9
LH 2		96942.7	36.2	0	LH 3		-277163.2	18.1	0	Ang = 4.7; D = 117; Mag = 0; Gyro =193.0					
										EV 22.0	8:50:03.8 T		374 N4876126 E 270335		
SY11		12418.4	2.6	1	SY22		9608.4	0.9	1	8:50:16	28.8	44 00 14.8	4876105	20	3.2
SY33		9713.0	-2.1	1	LH 1		-179105.6	-2.9	0	23.0	0.0	-59 51 53.0	270330	395	192.3
LH 2		96941.2	25.3	0	LH 3		-277175.2	15.8	0	Ang = 1.9; D = 122; Mag = 0; Gyro =192.8					
										EV 23.0	8:50:13.8 T		391 N4876109 E 270332		
SY11		12432.1	-1.7	1	SY22		9592.6	-0.5	1	8:50:25	28.9	44 00 14.3	4876089	24	3.2
SY33		9714.0	1.4	1	LH 1		-179087.6	-8.5	0	24.0	0.0	-59 51 53.1	270326	411	194.5
LH 2		96933.7	17.5	0	LH 3		-277165.3	-11.1	0	Ang = 2.8; D = 115; Mag = 0; Gyro =192.0					
										EV 24.0	8:50:23.8 T		407 N4876093 E 270327		

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
SY11		12434.3	-0.6	1	SY22		9575.9	-0.2	1	8:50:33	39.0	44 00 13.7	4876071	29	3.2
SY33		9712.2	0.5	1	LH 1		-175079.2	-2.1	0	25.0	0.0	-59 51 53.3	270321	429	191.5
LH 2		96934.7	22.1	0	LH 3		-277198.3	10.8	0	Ang = 4.2; D = 117; Mag = 0; Gyro =191.0					
										EV 25.0 8:50:33.8 T 422 N4876078 E 270323					
SY11		12429.0	4.4	1	SY22		9562.0	1.5	1	8:50:46	30.0	44 00 13.3	4876057	32	3.2
SY33		9711.1	-3.6	1	LH 1		-175084.6	15.7	0	26.0	0.0	-59 51 53.4	270318	443	189.8
LH 2		96909.7	38.3	0	LH 3		-277238.2	44.6	0	Ang = 0.8; D = 117; Mag = 0; Gyro =191.0					
										EV 26.0 8:50:43.8 T 438 N4876062 E 270319					

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD

SYSTEM LINE DATA

Ref#: 13 Type: SYS Ident: OLYM-350N
Start Pt End Pt
4876250.0 4876500.0 Az 0 00 00.0 BL 13.0
270250.0 270250.0 Length 250.0 OF 0.0

SY11	12460.8	3.3	1	SY22	9707.2	1.1	1	9:17:05	30.5	44 00 19.5	4876252	8	3.0
SY33	9805.0	-2.7	1	LH 1	-179225.5	10.7	0		1.0	0.0 -59 51 56.0	270268	2	356.5
LH 2	96854.2	12.3	0	LH 3	-277148.2	-17.7	0	Ang = 4.1; D = 117; Mag =			0; Gyro =	2.0	
								EV 1.0	9:17:03.8 T		-0 N4876250 E 270268		
SY11	12470.9	-3.5	1	SY22	9719.4	-0.8	1	9:17:15	30.7	44 00 20.0	4876267	9	3.0
SY33	9809.4	2.1	1	LH 1	-179231.5	4.4	0		2.0	0.0 -59 51 56.0	270269	17	355.4
LH 2	96857.7	-9.9	0	LH 3	-277121.3	-43.5	0	Ang = 4.7; D = 112; Mag =			0; Gyro =	2.8	
								EV 2.0	9:17:13.8 T		14 N4876264 E 270269		
SY11	12456.0	4.5	1	SY22	9733.5	1.5	1	9:17:25	30.8	44 00 20.5	4876282	10	3.0
SY33	9812.3	-3.7	1	LH 1	-179243.5	4.1	0		3.0	0.0 -59 51 55.9	270270	32	2.0
LH 2	96870.7	-0.3	0	LH 3	-277121.3	-28.4	0	Ang = 3.4; D = 115; Mag =			0; Gyro =	2.2	
								EV 3.0	9:17:23.8 T		29 N4876279 E 270269		
SY11	12462.0	0.8	1	SY22	9746.5	0.3	1	9:17:35	30.9	44 00 21.0	4876298	11	3.1
SY33	9816.7	-0.7	1	LH 1	-179282.5	30.4	0		4.0	0.0 -59 51 55.9	270271	48	359.1
LH 2	96855.7	12.5	0	LH 3	-277141.3	-4.0	0	Ang = 3.7; D = 117; Mag =			0; Gyro =	0.8	
								EV 4.0	9:17:33.8 T		45 N4876295 E 270270		
SY11	12465.7	-2.0	1	SY22	9762.2	-0.7	1	9:17:47	31.0	44 00 21.6	4876316	13	3.1
SY33	9821.2	1.7	1	LH 1	-179279.5	12.6	0		5.0	0.0 -59 51 55.9	270273	65	359.8
LH 2	96857.7	-3.2	0	LH 3	-277115.3	-22.9	0	Ang = -2.2; D = 117; Mag =			0; Gyro =	358.7	
								EV 5.0	9:17:43.8 T		61 N4876311 E 270272		
SY11	12454.5	3.5	1	SY22	9771.6	1.2	1	9:17:54	31.1	44 00 22.0	4876328	14	3.0
SY33	9823.6	-3.0	1	LH 1	-179282.5	7.4	0		6.0	0.0 -59 51 55.8	270274	78	3.0
LH 2	96870.7	3.7	0	LH 3	-277109.3	-17.9	0	Ang = -5.3; D = 117; Mag =			0; Gyro =	356.5	
								EV 6.0	9:17:53.8 T		76 N4876326 E 270273		
SY11	12463.8	-1.5	1	SY22	9783.8	-0.5	1	9:18:04	31.2	44 00 22.5	4876344	14	3.0
SY33	9828.7	1.2	1	LH 1	-179303.5	16.2	0		7.0	0.0 -59 51 55.8	270274	94	358.0
LH 2	96860.2	7.0	0	LH 3	-277118.3	-6.7	0	Ang = -8.5; D = 117; Mag =			0; Gyro =	353.5	
								EV 7.0	9:18:03.8 T		92 N4876342 E 270275		
SY11	12457.9	3.4	1	SY22	9795.1	0.8	1	9:18:14	31.3	44 00 23.0	4876359	15	2.9
SY33	9834.5	-2.0	1	LH 1	-179324.5	26.0	0		8.0	0.0 -59 51 55.8	270275	109	0.7
LH 2	96864.7	6.6	0	LH 3	-277088.3	-27.8	0	Ang = -6.1; D = 112; Mag =			0; Gyro =	353.2	
								EV 8.0	9:18:13.8 T		108 N4876358 E 270274		
SY11	12455.2	-0.3	1	SY22	9804.7	-0.1	1	9:18:24	31.4	44 00 23.5	4876374	14	2.9
SY33	9841.1	0.2	1	LH 1	-179327.5	18.3	0		9.0	0.0 -59 51 55.9	270274	124	355.4
LH 2	96861.7	1.4	0	LH 3	-277109.3	-6.2	0	Ang = -8.8; D = 117; Mag =			0; Gyro =	353.5	
								EV 9.0	9:18:23.8 T		123 N4876373 E 270274		
SY11	12466.1	-0.1	1	SY22	9815.8	-0.0	1	9:18:34	31.5	44 00 23.9	4876388	13	2.9
SY33	9847.0	0.1	1	LH 1	-179342.4	22.0	0		10.0	0.0 -59 51 56.0	270273	138	355.3
LH 2	96852.8	8.2	0	LH 3	-277097.3	-13.3	0	Ang = -8.4; D = 115; Mag =			0; Gyro =	354.3	
								EV 10.0	9:18:33.8 T		137 N4876387 E 270273		
SY11	12465.8	0.4	1	SY22	9827.0	0.1	1	9:18:44	31.6	44 00 24.4	4876402	11	2.8
SY33	9851.4	-0.3	1	LH 1	-179333.5	2.2	0		11.0	0.0 -59 51 56.1	270271	152	353.8
LH 2	96857.7	-6.4	0	LH 3	-277058.3	-46.0	0	Ang = -3.8; D = 115; Mag =			0; Gyro =	355.5	

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
										EV 11.0	9:18:43.8 T		151 N4876401 E 270271		
SY11		12466.1	0.3	1	SY22		9837.7	0.3	1	9:18:54	31.7	44 00 24.8	4876415	12	3.7
SY33		9857.6	-0.7	1	LH 1		-179354.4	11.9	0	12.0	0.0	-59 51 56.2	270270	166	354.6
LH 2		96854.2	3.3	0	LH 3		-277091.3	-8.9	0	Ang = -3.5; D = 117; Mag = 0; Gyro =357.7					
										EV 12.0	9:18:53.8 T		165 N4876416 E 270270		
SY11		12468.0	0.0	1	SY22		9848.0	0.0	1	9:19:04	31.8	44 00 25.3	4876430	3	3.7
SY33		9862.1	-0.0	1	LH 1		-179357.4	4.6	0	13.0	0.0	-59 51 56.3	270268	180	351.5
LH 2		96855.7	-0.8	0	LH 3		-277100.3	3.8	0	Ang = 1.8; D = 117; Mag = 0; Gyro = 1.5					
										EV 13.0	9:19:03.8 T		178 N4876428 E 270268		
SY11		12462.2	2.7	1	SY22		9858.9	0.9	1	9:19:14	31.9	44 00 25.7	4876443	7	3.0
SY33		9865.3	-2.3	1	LH 1		-179369.4	-1.8	0	14.0	0.0	-59 51 56.3	270267	193	354.7
LH 2		96867.7	-16.5	0	LH 3		-277061.3	-27.3	0	Ang = 6.2; D = 117; Mag = 0; Gyro = 3.2					
										EV 14.0	9:19:13.8 T		191 N4876441 E 270267		
SY11		12463.2	2.2	1	SY22		9871.7	0.7	1	9:19:25	32.0	44 00 26.3	4876460	6	2.7
SY33		9870.5	-1.9	1	LH 1		-179375.4	-0.0	0	15.0	0.0	-59 51 56.4	270266	210	356.3
LH 2		96864.7	-6.9	0	LH 3		-277045.4	-36.5	0	Ang = 5.5; D = 112; Mag = 0; Gyro = 4.5					
										EV 15.0	9:19:23.8 T		207 N4876457 E 270266		
SY11		12464.9	-1.4	1	SY22		9887.0	-0.5	1	9:19:35	32.1	44 00 26.7	4876474	9	2.8
SY33		9870.7	1.2	1	LH 1		-179406.0	17.8	0	16.0	0.0	-59 51 56.3	270269	224	1.3
LH 2		96855.7	4.9	0	LH 3		-277070.3	-2.7	0	Ang = 4.1; D = 117; Mag = 0; Gyro = 7.5					
										EV 16.0	9:19:33.8 T		220 N4876470 E 270267		
SY11		12448.5	6.5	1	SY22		9900.1	2.2	1	9:19:46	32.2	44 00 27.2	4876488	11	2.8
SY33		9873.5	-5.5	1	LH 1		-179411.4	11.8	0	17.0	0.0	-59 51 56.2	270271	238	7.0
LH 2		96867.7	6.7	0	LH 3		-277037.3	-20.3	0	Ang = 7.7; D = 117; Mag = 0; Gyro = 10.3					
										EV 17.0	9:19:43.8 T		234 N4876484 E 270269		
SY11		12455.0	-0.8	1	SY22		9915.9	-0.2	1	9:19:56	32.3	44 00 27.6	4876503	15	2.9
SY33		9871.7	0.6	1	LH 1		-179423.4	11.3	0	18.0	0.0	-59 51 56.1	270275	253	6.8
LH 2		96876.7	-1.1	0	LH 3		-277019.3	-30.5	0	Ang = 7.6; D = 120; Mag = 0; Gyro = 11.5					
										EV 18.0	9:19:53.8 T		249 N4876499 E 270273		
SY11		12449.0	1.7	1	SY22		9928.2	0.6	1	9:20:05	32.4	44 00 28.1	4876517	20	2.9
SY33		9874.8	-1.5	1	LH 1		-179432.4	9.2	0	19.0	0.0	-59 51 55.8	270280	267	11.6
LH 2		96891.7	-10.6	0	LH 3		-277006.4	-33.6	0	Ang = 5.6; D =$$$$$; Mag = 0; Gyro = 10.8					
										EV 19.0	9:20:03.8 T		263 N4876513 E 270277		
SY11		12440.0	3.0	1	SY22		9944.3	1.0	1	9:20:16	32.5	44 00 28.6	4876532	25	2.9
SY33		9873.3	-2.6	1	LH 1		-179442.0	6.5	0	20.0	0.0	-59 51 55.7	270285	282	12.0
LH 2		96897.7	-2.9	0	LH 3		-276986.3	-38.0	0	Ang = 1.3; D = 117; Mag = 0; Gyro = 7.5					
										EV 20.0	9:20:13.8 T		278 N4876528 E 270283		
SY11		12445.6	-0.6	1	SY22		9956.8	-0.2	1	9:20:25	32.6	44 00 29.1	4876548	30	3.3
SY33		9876.9	0.5	1	LH 1		-179456.4	0.8	0	21.0	0.0	-59 51 55.5	270290	298	7.3
LH 2		96906.7	-21.3	0	LH 3		-277001.3	-17.9	0	Ang = -5.3; D = 117; Mag = 0; Gyro = 1.0					
										EV 21.0	9:20:23.8 T		293 N4876543 E 270288		
SY11		12429.3	5.8	1	SY22		9972.1	1.9	1	9:20:36	32.7	44 00 29.7	4876564	34	2.9
SY33		9877.6	-4.9	1	LH 1		-179480.3	20.7	0	22.0	0.0	-59 51 55.3	270294	314	14.5
LH 2		96903.7	3.5	0	LH 3		-276983.3	-19.3	0	Ang = -10.2; D = 115; Mag = 0; Gyro =357.0					
										EV 22.0	9:20:33.8 T		310 N4876560 E 270292		
SY11		12439.4	1.3	1	SY22		9984.1	0.4	1	9:20:46	32.8	44 00 30.1	4876579	37	2.9
SY33		9884.4	-1.1	1	LH 1		-179489.3	18.1	0	23.0	0.0	-59 51 55.2	270297	328	8.7

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
LH 2		96903.7	-1.4	0	LH 3		-276983.3	-16.1	0	Ang = -15.9; D = 115; Mag =			0; Gyro =	355.0	
										EV 23.0	9:20:43.8 T		324 N4876574 E	270297	
SY11		12437.7	1.9	1	SY22		9997.8	0.6	1	9:20:56	32.9	44 00 30.6	4876593	39	2.9
SY33		9889.2	-1.7	1	LH 1		-179486.3	2.4	0	24.0	0.0	-59 51 55.1	270299	343	6.6
LH 2		96912.7	-7.6	0	LH 3		-276971.4	-19.2	0	Ang = -15.6; D = 117; Mag =			0; Gyro =	353.3	
										EV 24.0	9:20:53.8 T		338 N4876588 E	270299	
SY11		12437.9	2.1	1	SY22		10009.9	1.0	1	9:21:08	33.0	44 00 31.2	4876611	39	2.9
SY33		9896.6	-2.6	1	LH 1		-179519.3	22.9	0	25.0	0.0	-59 51 55.1	270299	361	1.0
LH 2		96897.7	5.9	2	LH 3		-276956.4	-28.2	0	Ang = -15.7; D = 112; Mag =			0; Gyro =	351.7	
										EV 25.0	9:21:03.8 T		354 N4876604 E	270300	
SY11		12441.4	2.0	1	SY22		10017.1	0.7	1	9:21:15	33.1	44 00 31.3	4876621	38	2.9
SY33		9901.1	-1.7	1	LH 1		-179534.3	30.4	0	26.0	0.0	-59 51 55.2	270298	371	358.6
LH 2		96888.7	10.9	0	LH 3		-276962.4	-20.6	0	Ang = -12.7; D = 120; Mag =			0; Gyro =	351.7	
										EV 26.0	9:21:14.1 T		370 N4876620 E	270299	
SY11		12441.4	2.3	1	SY22		10028.3	0.8	1	9:21:25	33.2	44 00 32.0	4876636	36	2.8
SY33		9906.3	-2.0	1	LH 1		-179531.3	16.4	0	27.0	0.0	-59 51 55.3	270296	386	356.2
LH 2		96903.7	-4.5	0	LH 3		-276944.4	-32.7	0	Ang = -10.6; D = 115; Mag =			0; Gyro =	352.2	
										EV 27.0	9:21:24.2 T		384 N4876634 E	270296	
SY11		12442.2	3.2	1	SY22		10038.9	1.1	1	9:21:35	33.3	44 00 32.4	4876650	34	2.8
SY33		9913.2	-2.7	1	LH 1		-179540.3	14.3	0	28.0	0.0	-59 51 55.4	270294	400	355.4
LH 2		96896.2	-0.0	0	LH 3		-276980.4	7.5	0	Ang = -6.7; D = 117; Mag =			0; Gyro =	353.3	
										EV 28.0	9:21:33.8 T		358 N4876648 E	270294	

STA SS	RANGE(M)	RESID	SD	STA SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD

SYSTEM LINE DATA

Ref#: 12 Type: SYS Ident: OLYM-375S

Start Pt	End Pt				
4876500.0	4876250.0	Az	180 00 00.0	BL	12.0
270375.0	270375.0	Length	250.0	CF	0.0

SYSTEM LINE DATA

Ref#: 15 Type: SYS Ident: OLYM-400S

Start Pt	End Pt				
4876500.0	4876250.0	Az	180 00 00.0	BL	15.0
270400.0	270400.0	Length	250.0	CF	0.0

SYSTEM LINE DATA

Ref#: 16 Type: SYS Ident: OLYM-280N

Start Pt	End Pt				
4876250.0	4876500.0	Az	0 00 00.0	BL	16.0
270280.0	270280.0	Length	250.0	CF	0.0

STA SS RANGE(M) RESID SD STA SS RANGE(M) RESID SD TIME/EV TP/DP LAT/LON N/E OFF/TR SP/HD

LINE DATA

REF#	TYPE	LINE IDENT	START N	START E	END N	END E	LIN AZ(UTM)	LENGTH	BL NO	OFFSET
1	W/P	OLYMPIA	4876252.3	270244.0	4876252.3	270244.0	0 00 00.0	0.0	0.0	0.0
2	W/P	NE BUOY	4877402.2	271286.0	4877402.2	271286.0	0 00 00.0	0.0	0.0	0.0
3	W/P	SE BUOY	4875162.3	271214.5	4875162.3	271214.5	0 00 00.0	0.0	0.0	0.0
4	W/P	SW BUOY	4875272.1	269071.4	4875272.1	269071.4	0 00 00.0	0.0	0.0	0.0
5	W/P	NW BUOY	4877459.2	269143.4	4877459.2	269143.4	0 00 00.0	0.0	0.0	0.0
6	W/P	CM	4875099.4	270258.4	4875099.5	270258.4	0 00 00.0	0.0	0.0	0.0
7	Line	OLYM-100N	4876250.0	270100.0	4876500.0	270100.0	0 00 00.0	250.0	0.0	0.0
8	Ofst	OLYM-230N	4876250.0	270230.0	4876500.0	270230.0	0 00 00.0	250.0	7.0	130.0
9	Ofst	OLYM-350S	4876250.0	270350.0	4876500.0	270350.0	0 00 00.0	250.0	7.0	250.0
10	Ofst	OLYM-400E	4876400.0	270100.0	4876400.0	270450.0	90 00 00.0	350.0	8.0	-100.0
11	Ofst	OLYM-240N	4876250.0	270240.0	4876500.0	270240.0	0 00 00.0	250.0	7.0	140.0
12	Ofst	OLYM-375S	4876250.0	270375.0	4876500.0	270375.0	0 00 00.0	250.0	7.0	275.0
13	Ofst	OLYM-260N	4876250.0	270260.0	4876500.0	270260.0	0 00 00.0	250.0	7.0	160.0
14	Ofst	OLYM-310S	4876250.0	270310.0	4876500.0	270310.0	0 00 00.0	250.0	7.0	210.0
15	Ofst	OLYM-400S	4876250.0	270400.0	4876500.0	270400.0	0 00 00.0	250.0	7.0	300.0
16	Ofst	OLYM-280N	4876250.0	270280.0	4876500.0	270280.0	0 00 00.0	250.0	7.0	180.0
17	Ofst	OLYM-425S	4876250.0	270425.0	4876500.0	270425.0	0 00 00.0	250.0	7.0	325.0
18	Ofst	OLYM-300N	4876250.0	270300.0	4876500.0	270300.0	0 00 00.0	250.0	7.0	200.0
19	Ofst	OLYM-450S	4876250.0	270450.0	4876500.0	270450.0	0 00 00.0	250.0	7.0	350.0
20	Ofst	OLYM-340S	4876250.0	270340.0	4876500.0	270340.0	0 00 00.0	250.0	7.0	240.0

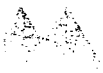
SYSTEM LINE DATA

Ref#: 19 Type: SYS Ident: OLYM-280N

Start Pt	End Pt				
4875250.0	4876500.0	Az	0 00 00.0	BL	16.0
270280.0	270280.0	Length	250.0	OF	0.0

McElhanney

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	FP/DP	LAT/LON	N/E	OFF/TR	SP/HD
SY11		12447.3	2.3	1	SY22		9735.6	0.3	1	10:06:23	34.6	44 20 20.3	4875272	3	3.7
SY33		9795.3	-0.7	1	LH 1		-179246.5	11.5	0	1.0	0.0	-59 51 55.1	270289	23	357.5
LH 2		96894.7	-1.3	0	LH 3		-277073.3	-53.7	0	Ang = -6.5; D = 122; Mag = 0; Gyro =358.2					
										EV 1.0	10:06:23.8 T		21 N4876271 E 270289		
SY11		12453.1	-2.0	1	SY22		9753.2	-0.7	1	10:06:35	34.7	44 20 20.9	4875293	8	3.8
SY33		9801.5	1.7	1	LH 1		-179261.5	10.2	0	2.0	0.0	-59 51 55.1	270288	43	355.7
LH 2		96900.7	-11.4	0	LH 3		-277073.3	-57.3	0	Ang = 0.5; D = 117; Mag = 0; Gyro =359.3					
										EV 2.0	10:06:33.9 T		41 N4876291 E 270289		
SY11		12452.0	-3.5	1	SY22		9759.6	-1.3	1	10:06:45	34.8	44 20 21.5	4875313	8	3.8
SY33		9804.6	2.9	1	LH 1		-179279.5	13.3	0	3.0	0.0	-59 51 55.2	270288	63	357.5
LH 2		96891.7	-0.5	0	LH 3		-277073.3	-47.8	0	Ang = -2.5; D = 117; Mag = 0; Gyro =357.8					
										EV 3.0	10:06:44.1 T		61 N4876311 E 270288		
SY11		12446.3	1.0	1	SY22		9783.9	0.3	1	10:06:55	34.9	44 20 22.2	4875333	9	3.7
SY33		9813.1	-0.8	1	LH 1		-179291.5	10.6	0	4.0	0.0	-59 51 55.2	270289	83	359.2
LH 2		96891.7	1.8	0	LH 3		-277076.3	-35.1	0	Ang = -4.3; D = 117; Mag = 0; Gyro =355.2					
										EV 4.0	10:06:54.2 T		81 N4876331 E 270289		
SY11		12437.3	5.5	1	SY22		9802.1	1.8	1	10:07:06	35.0	44 20 22.9	4875355	9	3.7
SY33		9819.5	-4.7	1	LH 1		-179297.5	-0.5	0	5.0	0.0	-59 51 55.2	270289	105	359.1
LH 2		96897.7	3.2	0	LH 3		-277043.3	-53.7	0	Ang = -5.9; D = 117; Mag = 0; Gyro =353.0					
										EV 5.0	10:07:03.8 T		100 N4876350 E 270289		
SY11		12449.0	-1.1	1	SY22		9815.8	-0.4	1	10:07:16	35.1	44 20 23.5	4875375	9	3.7
SY33		9824.5	0.9	1	LH 1		-179321.5	9.9	0	6.0	0.0	-59 51 55.2	270289	125	355.7
LH 2		96894.7	-2.5	0	LH 3		-277049.3	-45.8	0	Ang = -9.2; D = 115; Mag = 0; Gyro =352.5					
										EV 6.0	10:07:13.8 T		119 N4876369 E 270289		
SY11		12450.0	-0.3	1	SY22		9829.1	-0.1	1	10:07:26	35.2	44 20 24.1	4875392	8	3.5
SY33		9832.6	0.3	1	LH 1		-179321.5	-4.1	0	7.0	0.0	-59 51 55.3	270288	142	355.8
LH 2		96900.7	-11.5	0	LH 3		-277019.3	-59.9	0	Ang =5271.2; D = 508; Mag = 0; Gyro =351.8					
										EV 7.0	10:07:23.8 T		138 N4876388 E 270288		
SY11		12445.4	2.7	1	SY22		9842.3	0.9	1	10:07:36	35.3	44 20 24.7	4875410	7	3.5
SY33		9838.9	-2.3	1	LH 1		-179348.4	9.9	0	8.0	0.0	-59 51 55.4	270287	160	355.0
LH 2		96894.7	-3.1	0	LH 3		-277033.4	-47.0	0	Ang = -8.1; D = 117; Mag = 0; Gyro =353.5					
										EV 8.0	10:07:33.8 T		155 N4876405 E 270287		
SY11		12452.9	-1.0	1	SY22		9855.3	-0.3	1	10:07:46	35.4	44 20 25.2	4875427	5	3.4
SY33		9844.8	0.9	1	LH 1		-179381.4	29.6	0	9.0	0.0	-59 51 55.5	270285	177	353.4
LH 2		96879.7	4.3	0	LH 3		-277025.3	-52.6	0	Ang = -11.3; D = 115; Mag = 0; Gyro =356.7					
										EV 9.0	10:07:43.8 T		172 N4876422 E 270286		
SY11		12441.7	5.3	1	SY22		9867.1	1.8	1	10:07:56	35.5	44 00 25.7	4875442	5	3.2
SY33		9849.9	-4.5	1	LH 1		-179372.4	9.4	0	10.0	0.0	-59 51 55.5	270285	192	358.4
LH 2		96894.7	-2.8	0	LH 3		-276998.3	-58.2	0	Ang = -3.0; D = 117; Mag = 0; Gyro =358.5					
										EV 10.0	10:07:53.8 T		188 N4876438 E 270284		
SY11		12453.0	-1.5	1	SY22		9879.3	-0.5	1	10:08:06	35.6	44 00 26.3	4875457	4	3.1
SY33		9853.1	1.4	1	LH 1		-179394.0	19.4	0	11.0	0.0	-59 51 55.6	270284	207	354.1
LH 2		96885.7	-3.0	0	LH 3		-277019.3	-46.1	0	Ang = -2.7; D = 117; Mag = 0; Gyro =358.5					
										EV 11.0	10:08:03.8 T		203 N4876453 E 270285		
SY11		12451.1	2.1	1	SY22		9891.7	0.0	1	10:08:17	35.7	44 20 26.7	4875472	4	3.1
SY33		9859.4	-0.1	1	LH 1		-179399.4	12.4	0	12.0	0.0	-59 51 55.6	270284	222	357.9
LH 2		96885.7	-1.8	0	LH 3		-277007.3	-51.0	0	Ang = -2.3; D = 115; Mag = 0; Gyro =357.8					
										EV 12.0	10:08:13.8 T		218 N4876468 E 270284		



STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
SY11		12449.8	0.8	1	SY22		9900.5	0.3	1	10:08:24	35.8	44 00 27.0	4876483	3	3.1
SY33		9862.9	-0.7	1	LH 1		-179408.4	12.9	0	13.0	0.0	-59 51 55.6	270283	233	355.1
LH 2		96897.7	-12.9	0	LH 3		-276998.3	-54.7	0	Ang = -1.9; D = 117; Mag = 0; Gyro =357.3					
										EV 13.0	10:08:23.8 T		233 N4876483 E 270284		
SY11		12453.2	-1.4	1	SY22		9911.5	-0.5	1	10:08:34	35.9	44 00 27.5	4876498	4	2.9
SY33		9866.5	1.2	1	LH 1		-179420.4	14.6	0	14.0	0.0	-59 51 55.6	270284	248	357.8
LH 2		96891.7	-8.4	0	LH 3		-276988.4	-59.8	0	Ang = -6.5; D = 117; Mag = 0; Gyro =355.8					
										EV 14.0	10:08:33.8 T		247 N4876497 E 270284		
SY11		12441.6	4.6	1	SY22		9925.3	1.5	1	10:08:46	36.0	44 00 28.0	4876513	4	2.8
SY33		9871.1	-3.9	1	LH 1		-179423.4	5.0	0	15.0	0.0	-59 51 55.6	270284	263	359.6
LH 2		96888.7	4.2	0	LH 3		-276991.4	-43.5	0	Ang = -2.4; D = 117; Mag = 0; Gyro =358.8					
										EV 15.0	10:08:43.8 T		261 N4876511 E 270284		
SY11		12451.1	-0.3	1	SY22		9935.7	-0.1	1	10:08:55	36.1	44 00 28.4	4876526	5	2.8
SY33		9875.9	0.2	1	LH 1		-179435.4	6.3	0	16.0	0.0	-59 51 55.6	270285	276	356.1
LH 2		96912.7	-28.3	0	LH 3		-276971.4	-53.2	0	Ang = -4.9; D = 117; Mag = 0; Gyro =359.3					
										EV 16.0	10:08:53.8 T		274 N4876524 E 270285		
SY11		12440.3	4.3	1	SY22		9948.2	1.4	1	10:09:06	36.2	44 00 28.9	4876540	6	2.7
SY33		9878.0	-3.7	1	LH 1		-179444.4	4.7	0	17.0	0.0	-59 51 55.6	270286	290	1.6
LH 2		96897.7	-3.0	0	LH 3		-276959.4	-62.5	0	Ang = -3.9; D = 117; Mag = 0; Gyro =359.5					
										EV 17.0	10:09:03.8 T		287 N4876537 E 270285		
SY11		12448.8	-0.1	1	SY22		9958.7	-0.0	1	10:09:15	36.3	44 00 29.3	4876553	6	2.7
SY33		9882.5	0.1	1	LH 1		-179463.0	12.8	0	18.0	0.0	-59 51 55.6	270286	303	358.0
LH 2		96888.7	-0.8	0	LH 3		-276974.4	-46.2	0	Ang = -0.7; D = 117; Mag = 0; Gyro =359.5					
										EV 18.0	10:09:13.8 T		300 N4876550 E 270285		
SY11		12437.8	4.6	1	SY22		9971.4	1.5	1	10:09:25	36.4	44 00 29.7	4876566	8	2.6
SY33		9884.7	-3.9	1	LH 1		-179480.3	19.4	0	19.0	0.0	-59 51 55.5	270288	316	5.1
LH 2		96897.7	1.0	0	LH 3		-276965.4	-42.1	0	Ang = -6.7; D = 120; Mag = 0; Gyro =357.0					
										EV 19.0	10:09:23.8 T		313 N4876563 E 270287		
SY11		12442.3	2.1	1	SY22		9983.4	0.7	1	10:09:35	36.5	44 00 30.2	4876580	10	2.7
SY33		9889.2	-1.7	1	LH 1		-179477.4	5.0	0	20.0	0.0	-59 51 55.5	270290	330	0.9
LH 2		96906.7	-10.4	0	LH 3		-276956.4	-46.2	0	Ang = -9.1; D = 112; Mag = 0; Gyro =353.8					
										EV 20.0	10:09:33.8 T		327 N4876577 E 270289		
SY11		12445.3	1.6	1	SY22		9994.3	0.5	1	10:09:45	36.6	44 00 30.6	4876594	11	2.8
SY33		9896.0	-1.4	1	LH 1		-179501.3	17.7	0	21.0	0.0	-59 51 55.5	270291	344	0.9
LH 2		96893.2	2.0	0	LH 3		-276956.4	-42.0	0	Ang = -13.5; D = 115; Mag = 0; Gyro =350.7					
										EV 21.0	10:09:43.8 T		341 N4876591 E 270291		
SY11		12442.9	2.8	1	SY22		10006.7	0.9	1	10:09:55	36.7	44 00 31.1	4876608	11	2.8
SY33		9900.6	-2.4	1	LH 1		-179495.3	0.1	0	22.0	0.0	-59 51 55.5	270291	358	358.6
LH 2		96903.7	-7.5	0	LH 3		-276935.4	-54.5	0	Ang = -15.1; D = 117; Mag = 0; Gyro =351.2					
										EV 22.0	10:09:53.8 T		355 N4876605 E 270291		
SY11		12446.2	1.5	1	SY22		10016.0	0.5	1	10:10:05	36.8	44 00 31.5	4876623	11	2.7
SY33		9905.6	-1.4	1	LH 1		-179519.3	14.6	0	23.0	0.0	-59 51 55.5	270291	373	357.7
LH 2		96891.7	0.6	0	LH 3		-276938.4	-48.8	0	Ang = 8.2; D = 117; Mag = 0; Gyro =350.8					
										EV 23.0	10:10:03.8 T		370 N4876620 E 270291		
SY11		12446.3	1.1	1	SY22		10025.5	0.4	1	10:10:15	36.9	44 00 32.0	4876636	10	2.6
SY33		9908.3	-0.9	1	LH 1		-179516.3	3.0	0	24.0	0.0	-59 51 55.6	270290	386	356.3
LH 2		96906.7	-13.5	0	LH 3		-276914.4	-57.4	0	Ang = -13.4; D = 115; Mag = 0; Gyro =350.0					
										EV 24.0	10:10:13.8 T		383 N4876633 E 270291		

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TD/DP	LAT/LON	N/E	OFF/TR	SP/HD
SY11		12446.2	2.9	1	SY22		10036.2	1.0	1	10:10:27	37.0	44 00 32.4	4876650	9	2.5
SY33		9916.3	-2.5	1	LH 1		-179543.9	19.1	0	25.0	0.0	-59 51 55.6	270289	400	356.2
LH 2		96894.7	-3.9	0	LH 3		-276914.4	-62.5	0	Ang = -10.8; D = 115; Mag = 0; Gyro =350.0					
										EV 25.0 10:10:23.8 T			395 N4876645 E 270290		
SY11		12450.4	1.8	1	SY22		10043.3	0.6	1	10:10:34	37.1	44 00 32.7	4876659	8	2.6
SY33		9921.5	-1.5	1	LH 1		-179549.3	16.8	0	26.0	0.0	-59 51 55.7	270288	409	353.6
LH 2		96888.7	-3.0	0	LH 3		-276917.4	-58.5	0	Ang = -10.3; D = 117; Mag = 0; Gyro =349.3					
										EV 26.0 10:10:33.8 T			408 N4876658 E 270289		
SY11		12448.8	3.0	1	SY22		10054.4	1.0	1	10:10:45	37.2	44 00 33.2	4876673	6	2.6
SY33		9926.5	-2.5	1	LH 1		-179561.3	18.1	0	27.0	0.0	-59 51 55.8	270286	423	353.0
LH 2		96890.2	-3.1	0	LH 3		-276932.4	-35.5	0	Ang = -10.8; D = 112; Mag = 0; Gyro =348.8					
										EV 27.0 10:10:43.8 T			421 N4876671 E 270286		
SY11		12451.0	2.9	1	SY22		10061.9	1.0	1	10:10:54	37.3	44 00 33.6	4876685	5	2.5
SY33		9931.8	-2.5	1	LH 1		-179567.3	16.1	0	28.0	0.0	-59 51 55.9	270285	435	354.8
LH 2		96894.7	-11.3	0	LH 3		-276926.4	-40.6	0	Ang = -2.4; D = 115; Mag = 0; Gyro =351.2					
										EV 28.0 10:10:53.8 T			434 N4876684 E 270285		
SY11		12453.9	1.3	1	SY22		10075.1	0.4	1	10:11:05	28.0	44 00 34.1	4876700	3	2.6
SY33		9936.9	-1.1	1	LH 1		-179564.3	0.4	0	29.0	0.0	-59 51 56.0	270283	450	352.8
LH 2		96905.7	-26.5	0	LH 3		-276881.4	-80.6	0	Ang = -1.7; D = 117; Mag = 0; Gyro =355.3					
										EV 29.0 10:11:03.8 T			447 N4876697 E 270284		

STA SS	RANGE(M)	RESID	SD	STA SS	RANGE(M)	RESID	SD	TIME/EV TP/DP LAT/LON N/E OFF/TR SP/HD

SYSTEM LINE DATA

Ref#: 12 Type: SYS Ident: OLYM-375S
Start Pt End Pt
4875500.0 4876250.0 Az 180 00 00.0 BL 12.0
270375.0 270375.0 Length 250.0 CF 0.0

SY11	12370.5	-1.2	1	SY22	9940.4	-0.3	1	10:29:18 38.6 44 00 27.3 4876487 -1 3.8
SY33	9780.9	2.8	1	LH 1	-179399.4	-9.5	0	1.0 0.0 -59 51 51.5 270376 13 183.3
LH 2	97029.6	10.7	0	LH 3	-276869.4	-73.3	0	Ang = 0.1; D = 9988; Mag = 0; Gyro =181.3
								EV 1.0 10:29:15.8 T 8 N4876492 E 270377
SY11	12370.0	-1.5	1	SY22	9925.3	-0.5	1	10:29:28 38.7 44 00 26.6 4876467 -1 3.7
SY33	9773.1	1.3	1	LH 1	-179408.4	14.7	0	2.0 0.0 -59 51 51.5 270376 33 180.9
LH 2	97017.6	24.2	0	LH 3	-276902.4	-47.8	0	Ang =5761.6; D = 276; Mag = 0; Gyro =181.5
								EV 2.0 10:29:25.8 T 27 N4876473 E 270375
SY11	12363.0	3.8	1	SY22	9907.5	1.3	1	10:29:38 38.8 44 00 26.0 4876448 0 3.8
SY33	9769.2	-3.2	1	LH 1	-179384.4	7.1	0	3.0 0.0 -59 51 51.5 270375 52 179.3
LH 2	97020.6	24.4	0	LH 3	-276911.4	-45.9	0	Ang = -5.2; D = 9714; Mag = 0; Gyro =179.5
								EV 3.0 10:29:35.8 T 46 N4876454 E 270375
SY11	12364.0	2.0	1	SY22	9894.4	0.7	1	10:29:48 38.9 44 00 25.4 4876429 0 3.7
SY33	9761.2	-1.7	1	LH 1	-179354.4	-9.2	0	4.0 0.0 -59 51 51.5 270375 71 179.7
LH 2	97026.6	19.6	0	LH 3	-276908.4	-55.7	0	Ang = -5.2; D = 9714; Mag = 0; Gyro =178.7
								EV 4.0 10:29:45.8 T 66 N4876434 E 270375
SY11	12369.3	-1.3	1	SY22	9875.2	-0.4	1	10:29:59 39.0 44 00 24.7 4876407 -0 3.8
SY33	9752.8	1.1	1	LH 1	-179367.0	22.2	0	5.0 0.0 -59 51 51.4 270375 93 179.0
LH 2	97011.6	31.4	0	LH 3	-276926.4	-50.3	0	Ang = -5.2; D = 9714; Mag = 0; Gyro =177.7
								EV 5.0 10:29:55.8 T 85 N4876415 E 270375
SY11	12360.1	4.1	1	SY22	9866.2	1.4	1	10:30:06 39.1 44 00 24.2 4876393 -0 3.7
SY33	9749.8	-3.4	1	LH 1	-179336.4	0.4	0	6.0 0.0 -59 51 51.4 270375 107 177.0
LH 2	97020.6	28.9	0	LH 3	-276935.4	-42.0	0	Ang = -5.2; D = 9714; Mag = 0; Gyro =177.8
								EV 6.0 10:30:05.8 T 105 N4876395 E 270375
SY11	12365.0	1.0	1	SY22	9851.4	0.3	1	10:30:16 39.2 44 00 23.6 4876374 -1 3.7
SY33	9743.0	-0.8	1	LH 1	-179330.6	8.9	0	7.0 0.0 -59 51 51.3 270376 126 178.2
LH 2	97019.1	27.0	0	LH 3	-276938.4	-49.3	0	Ang = -17.7; D = 117; Mag = 0; Gyro =175.2
								EV 7.0 10:30:15.8 T 124 N4876376 E 270376
SY11	12368.2	-2.2	1	SY22	9836.7	-0.7	1	10:30:27 39.3 44 00 23.0 4876354 -2 3.7
SY33	9734.2	1.8	1	LH 1	-179315.5	9.3	0	8.0 0.0 -59 51 51.2 270377 146 177.2
LH 2	97017.5	28.8	0	LH 3	-276944.4	-51.7	0	Ang = 0.2; D = 117; Mag = 0; Gyro =175.2
								EV 8.0 10:30:25.8 T 143 N4876357 E 270377
SY11	12364.1	-1.2	1	SY22	9821.9	-0.4	1	10:30:37 39.4 44 00 22.3 4876335 -4 3.8
SY33	9725.4	1.0	1	LH 1	-179291.5	1.1	0	9.0 0.0 -59 51 51.1 270379 165 174.4
LH 2	97023.6	29.1	0	LH 3	-276941.4	-59.4	0	Ang = -4.4; D = 117; Mag = 0; Gyro =178.8
								EV 9.0 10:30:35.8 T 163 N4876337 E 270379
SY11	12355.0	2.9	1	SY22	9805.1	1.0	1	10:30:47 39.5 44 00 21.6 4876313 -6 3.9
SY33	9717.9	-2.4	1	LH 1	-179264.5	-5.9	0	10.0 0.0 -59 51 51.0 270381 187 172.3
LH 2	97035.6	23.9	0	LH 3	-275932.4	-74.2	0	Ang = -2.4; D = 120; Mag = 0; Gyro =178.0
								EV 10.0 10:30:45.8 T 182 N4876318 E 270380
SY11	12355.7	4.2	1	SY22	9788.5	1.4	1	10:30:58 39.6 44 00 21.0 4875292 -8 3.8
SY33	9713.7	-3.5	1	LH 1	-179264.5	5.7	0	11.0 0.0 -59 51 50.9 270383 208 174.1
LH 2	97029.6	29.7	0	LH 3	-276938.4	-77.1	0	Ang = 1.6; D = 117; Mag = 0; Gyro =181.0

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
										EV 11.0	10:30:55.8 T		203 N4876297 E 270382		
SY11		12362.5	0.0	1	SY22		9776.8	0.0	1	10:31:08	39.7	44 00 20.3	4876273	-9	3.6
SY33		9708.0	-0.0	1	LH 1		-179252.5	5.3	0	12.0	0.0	-59 51 50.8	270384	227	176.5
LH 2		97032.6	32.3	0	LH 3		-276968.4	-56.4	0	Ang = 3.5; D = 117; Mag = 0; Gyro =179.7					
										EV 12.0	10:31:05.8 T		222 N4876278 E 270384		
SY11		12363.2	-0.6	1	SY22		9753.5	-0.2	1	10:31:18	39.8	44 00 19.8	4876255	-9	3.4
SY33		9702.2	0.5	1	LH 1		-179231.5	-2.2	0	13.0	0.0	-59 51 50.8	270384	245	175.7
LH 2		97038.6	17.6	0	LH 3		-276944.4	-87.1	0	Ang = 6.5; D = 117; Mag = 0; Gyro =182.7					
										EV 13.0	10:31:15.8 T		240 N4876260 E 270384		
SY11		12355.1	3.8	1	SY22		9748.1	1.3	1	10:31:28	39.9	44 00 19.2	4876238	-9	3.5
SY33		9695.7	-3.2	1	LH 1		-179222.5	4.5	0	14.0	0.0	-59 51 50.7	270384	262	174.9
LH 2		97038.6	24.8	0	LH 3		-276953.4	-82.1	0	Ang = 4.8; D = 112; Mag = 0; Gyro =183.5					
										EV 14.0	10:31:25.8 T		257 N4876243 E 270385		
SY11		12361.0	3.2	1	SY22		9732.6	1.1	1	10:31:40	40.0	44 00 18.6	4876219	-9	3.3
SY33		9695.3	-2.7	1	LH 1		-179207.5	2.5	0	15.0	0.0	-59 51 50.7	270384	281	178.7
LH 2		97041.6	13.7	0	LH 3		-276968.4	-79.7	0	Ang = 5.1; D = 115; Mag = 0; Gyro =184.3					
										EV 15.0	10:31:35.8 T		274 N4876226 E 270385		
SY11		12368.4	-1.9	1	SY22		9725.1	-0.6	1	10:31:47	40.1	44 00 18.2	4876208	-9	3.2
SY33		9690.1	1.6	1	LH 1		-179199.1	2.2	0	16.0	0.0	-59 51 50.7	270384	292	178.8
LH 2		97038.6	13.5	0	LH 3		-276971.4	-83.2	0	Ang = 5.6; D = 120; Mag = 0; Gyro =185.2					
										EV 16.0	10:31:45.8 T		290 N4876210 E 270384		
SY11		12362.5	2.9	1	SY22		9711.3	1.0	1	10:31:57	40.2	44 00 17.8	4876193	-8	3.1
SY33		9687.7	-2.4	1	LH 1		-179186.6	2.4	0	17.0	0.0	-59 51 50.7	270383	307	177.9
LH 2		97035.6	19.6	0	LH 3		-276986.3	-73.4	0	Ang = 7.9; D = 117; Mag = 0; Gyro =187.2					
										EV 17.0	10:31:55.9 T		305 N4876195 E 270383		
SY11		12363.9	1.0	1	SY22		9700.8	0.3	1	10:32:07	40.3	44 00 17.3	4876178	-7	3.1
SY33		9681.0	-0.8	1	LH 1		-179180.6	7.9	0	18.0	0.0	-59 51 50.7	270382	322	178.7
LH 2		97032.6	24.6	0	LH 3		-276992.3	-72.5	0	Ang = 7.3; D = 120; Mag = 0; Gyro =187.7					
										EV 18.0	10:32:05.8 T		319 N4876181 E 270383		
SY11		12363.0	3.8	1	SY22		9685.4	1.3	1	10:32:17	40.4	44 00 16.8	4876163	-7	3.1
SY33		9679.8	-3.1	1	LH 1		-179162.6	3.3	0	19.0	0.0	-59 51 50.7	270382	337	178.7
LH 2		97026.6	28.2	0	LH 3		-277001.3	-72.6	0	Ang = 5.9; D = 117; Mag = 0; Gyro =187.7					
										EV 19.0	10:32:15.8 T		334 N4876166 E 270382		
SY11		12371.7	1.1	1	SY22		9672.6	0.4	1	10:32:27	40.5	44 00 16.3	4876148	-5	3.0
SY33		9679.2	-0.9	1	LH 1		-179156.6	8.2	0	20.0	0.0	-59 51 50.8	270380	352	183.6
LH 2		97017.6	28.2	0	LH 3		-277000.4	-85.4	0	Ang = 13.5; D = 117; Mag = 0; Gyro =189.3					
										EV 20.0	10:32:25.8 T		350 N4876150 E 270381		
SY11		12376.9	-2.4	1	SY22		9661.9	-0.8	1	10:32:37	40.6	44 00 15.8	4876133	-3	2.9
SY33		9673.6	2.0	1	LH 1		-179138.6	1.3	0	21.0	0.0	-59 51 50.8	270378	367	184.0
LH 2		97026.6	17.4	0	LH 3		-276989.3	-103.9	0	Ang = 7.1; D = 117; Mag = 0; Gyro =190.5					
										EV 21.0	10:32:35.8 T		364 N4876136 E 270379		
SY11		12368.9	3.7	1	SY22		9648.7	1.2	1	10:32:47	40.7	44 00 15.3	4876119	-2	2.9
SY33		9671.9	-3.1	1	LH 1		-179120.6	-4.6	0	22.0	0.0	-59 51 50.9	270377	381	180.0
LH 2		97026.6	21.4	0	LH 3		-277001.3	-96.0	0	Ang = 8.9; D = 117; Mag = 0; Gyro =189.0					
										EV 22.0	10:32:45.8 T		379 N4876121 E 270377		
SY11		12371.0	4.9	1	SY22		9634.9	1.7	1	10:32:58	40.8	44 00 14.9	4875105	0	2.9
SY33		9671.5	-4.1	1	LH 1		-179117.6	4.2	0	23.0	0.0	-59 51 51.0	270375	395	184.3

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
LH 2		97017.6	25.6	0	LH 3		-277019.3	-87.7	0	Ang = 7.3; D = 117; Mag = 0; Gyro =190.0					
										EV 23.0	10:32:55.6	T	393	N4876107	E 270375
SY11		12380.6	2.8	1	SY22		9621.3	0.3	1	10:33:09	41.0	44 00 14.3	4876088	3	2.8
SY33		9668.5	-0.6	1	LH 1		-179102.6	1.4	0		24.0	0.0 -59 51 51.0	270372	412	186.6
LH 2		97014.6	19.8	0	LH 3		-277025.3	-94.3	0	Ang = 5.5; D = 134; Mag = 0; Gyro =187.3					
										EV 24.0	10:33:05.8	T	407	N4876093	E 270374

SYSTEM LINE DATA

Ref#: 18 Type: SYS Ident: OLYM-300N

Start Pt	End Pt				
4876250.0	4876500.0	Az	0 00 00.0	BL	18.0
270300.0	270300.0	Length	250.0	OF	0.0

SYSTEM LINE DATA

Ref#: 18 Type: SYS Ident: OLYM-300N

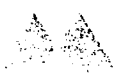
Start Pt	End Pt				
4876500.0	4876250.0	Az	180 00 00.0	BL	18.0
270300.0	270300.0	Length	250.0	OF	0.0

SYSTEM LINE DATA

Ref#: 18 Type: SYS Ident: OLYM-300N

Start Pt	End Pt				
4876250.0	4876500.0	Az	0 00 00.0	BL	18.0
270300.0	270300.0	Length	250.0	OF	0.0

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TD/DP	LAT/LON	N/E	OFF/TR	SP/HD
SY11		12422.0	2.7	1	SY22		9735.2	0.9	1	10:54:27	41.6	44 00 19.7	4876255	13	3.3
SY33		9768.4	-2.2	1	LH 1		-179870.5	46.8	0	25.0	0.0	-59 51 53.9	270313	5	355.6
LH 2		96924.7	11.5	0	LH 3		-276911.4	-205.3	0	Ang = -8.9; D = 117; Mag = 0; Gyro =349.0					
										EV 25.0 10:54:25.9 T			3 N4876253 E 270313		
SY11		12427.7	0.4	1	SY22		9748.1	0.1	1	10:54:37	41.7	44 00 20.2	4876271	12	3.2
SY33		9775.5	-0.3	1	LH 1		-179876.5	39.2	0	26.0	0.0	-59 51 54.1	270312	21	352.8
LH 2		96927.7	2.0	0	LH 3		-276899.4	-213.9	0	Ang = -8.9; D = 117; Mag = 0; Gyro =349.2					
										EV 26.0 10:54:36.1 T			19 N4876269 E 270312		
SY11		12435.0	-2.5	1	SY22		9761.3	-0.9	1	10:54:47	41.8	44 00 20.8	4876289	10	3.2
SY33		9782.9	2.2	1	LH 1		-179303.5	53.2	0	27.0	0.0	-59 51 54.2	270310	39	350.1
LH 2		96924.7	-2.1	0	LH 3		-276890.4	-219.0	0	Ang = -12.7; D = 115; Mag = 0; Gyro =349.8					
										EV 27.0 10:54:45.9 T			35 N4876285 E 270310		
SY11		12429.0	2.1	1	SY22		9771.7	0.7	1	10:54:58	41.9	44 00 21.3	4876306	7	3.2
SY33		9790.1	-1.8	1	LH 1		-179297.5	36.1	0	28.0	0.0	-59 51 54.3	270307	56	352.2
LH 2		96921.7	2.3	0	LH 3		-276890.4	-211.9	0	Ang = -8.8; D = 117; Mag = 0; Gyro =349.3					
										EV 28.0 10:54:55.9 T			52 N4876302 E 270307		
SY11		12430.6	1.7	1	SY22		9785.2	0.6	1	10:55:09	42.0	44 00 21.9	4876325	3	3.2
SY33		9796.6	-1.5	1	LH 1		-179312.5	37.4	0	29.0	0.0	-59 51 54.5	270303	75	350.1
LH 2		96924.7	-3.4	0	LH 3		-276881.4	-215.0	0	Ang = 0.6; D = 117; Mag = 0; Gyro =353.3					
										EV 29.0 10:55:05.8 T			69 N4876319 E 270305		
SY11		12438.5	-1.2	1	SY22		9794.4	-0.4	1	10:55:16	42.1	44 00 22.3	4876337	2	3.2
SY33		9803.3	1.0	1	LH 1		-179339.4	53.9	0	30.0	0.0	-59 51 54.6	270302	87	349.5
LH 2		96909.7	1.7	0	LH 3		-276887.4	-209.6	0	Ang = -1.8; D = 115; Mag = 0; Gyro =355.7					
										EV 30.0 10:55:15.9 T			86 N4876336 E 270302		
SY11		12425.0	5.2	1	SY22		9807.2	1.7	1	10:55:25	42.2	44 00 22.8	4876353	-0	3.2
SY33		9807.3	-4.4	1	LH 1		-179348.4	51.2	0	31.0	0.0	-59 51 54.7	270300	103	354.6
LH 2		96912.7	9.2	0	LH 3		-276872.4	-211.9	0	Ang = 4.9; D = 117; Mag = 0; Gyro =359.8					
										EV 31.0 10:55:25.9 T			102 N4876352 E 270299		
SY11		12434.7	-0.2	1	SY22		9821.8	-0.1	1	10:55:36	42.3	44 00 23.4	4876369	-1	3.3
SY33		9811.9	0.1	1	LH 1		-179361.0	49.5	0	32.0	0.0	-59 51 54.8	270299	119	353.3
LH 2		96900.7	12.9	0	LH 3		-276887.4	-193.7	0	Ang = 4.0; D = 117; Mag = 0; Gyro = 0.2					
										EV 32.0 10:55:35.8 T			118 N4876368 E 270299		
SY11		12429.6	1.7	1	SY22		9835.7	0.6	1	10:55:46	42.4	44 00 23.9	4876387	0	3.3
SY33		9815.3	-1.4	1	LH 1		-179360.4	36.3	0	33.0	0.0	-59 51 54.7	270300	137	359.2
LH 2		96918.7	0.1	0	LH 3		-276878.4	-192.3	0	Ang = 0.0; D = 117; Mag = 0; Gyro =359.8					
										EV 33.0 10:55:45.9 T			135 N4876385 E 270299		
SY11		12429.9	1.4	1	SY22		9850.1	0.5	1	10:55:56	42.5	44 00 24.5	4876404	1	3.3
SY33		9820.7	-1.2	1	LH 1		-179390.4	51.6	0	34.0	0.0	-59 51 54.7	270301	154	358.3
LH 2		96909.7	5.2	0	LH 3		-276863.4	-201.6	0	Ang = 0.0; D = 293; Mag = 0; Gyro = 0.2					
										EV 34.0 10:55:55.9 T			153 N4876403 E 270301		
SY11		12430.1	-1.1	1	SY22		9865.5	-0.4	1	10:56:06	42.6	44 00 25.0	4876421	4	3.3
SY33		9821.6	1.0	1	LH 1		-179393.4	42.4	0	35.0	0.0	-59 51 54.6	270304	171	1.5
LH 2		96930.7	-8.3	0	LH 3		-276860.4	-192.9	0	Ang = -1.9; D = 117; Mag = 0; Gyro =358.8					
										EV 35.0 10:56:05.8 T			170 N4876420 E 270303		
SY11		12416.0	5.8	1	SY22		9880.0	1.9	1	10:56:16	42.7	44 00 25.6	4876438	7	3.3
SY33		9825.6	-4.9	1	LH 1		-179405.4	41.6	0	36.0	0.0	-59 51 54.5	270307	188	5.0
LH 2		96933.7	1.4	0	LH 3		-276848.4	-189.5	0	Ang = -1.9; D = 117; Mag = 0; Gyro =355.8					
										EV 36.0 10:56:15.8 T			187 N4876437 E 270306		



STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
SY11		12427.0	0.1	1	SY22		9894.7	0.0	1	10:56:26	42.8	44 00 26.1	4876453	9	3.4
SY33		9822.0	-0.0	1	LH 1		-179420.4	41.8	0		37.0	0.0 -59 51 54.5	270309	205	0.8
LH 2		96933.7	-7.4	0	LH 3		-276815.5	-219.9	0	Ang = -1.9; D = 117; Mag =			0; Gyro =		355.5
										EV 37.0	10:56:25.8 T		203 N4876453 E 270309		
SY11		12428.5	-1.7	1	SY22		9908.4	-0.6	1	10:56:36	42.9	44 00 26.7	4876472	11	3.3
SY33		9835.4	1.4	1	LH 1		-179436.0	44.9	0		38.0	0.0 -59 51 54.4	270311	222	2.2
LH 2		96930.7	-4.1	0	LH 3		-276818.5	-209.7	0	Ang = -1.9; D = 117; Mag =			0; Gyro =		355.8
										EV 38.0	10:56:35.8 T		221 N4876471 E 270311		
SY11		12414.8	5.7	1	SY22		9923.2	1.3	1	10:56:48	43.0	44 00 27.3	4875491	11	3.3
SY33		9841.0	-4.8	1	LH 1		-179438.4	33.5	0		39.0	0.0 -59 51 54.4	270311	241	2.3
LH 2		96927.7	9.6	0	LH 3		-276812.5	-201.1	0	Ang = -6.7; D = 115; Mag =			0; Gyro =		355.2
										EV 39.0	10:56:45.9 T		238 N4876488 E 270311		
SY11		12426.9	3.0	1	SY22		10046.6	1.0	1	10:58:25	43.1	44 00 32.4	4876647	19	3.1
SY33		9897.9	-2.6	1	LH 1		-179570.3	44.7	0		40.0	0.0 -59 51 54.3	270319	397	3.6
LH 2		96918.7	5.1	0	LH 3		-276758.5	-195.8	0	Ang = -8.1; D = 117; Mag =			0; Gyro =		351.7
										EV 40.0	10:58:26.0 T		396 N4876646 E 270321		
SY11		12432.9	0.9	1	SY22		10058.1	0.3	1	10:58:36	43.2	44 00 32.9	4876663	14	3.1
SY33		9904.9	-0.8	1	LH 1		-179588.3	50.7	0		41.0	0.0 -59 51 54.5	270314	413	358.6
LH 2		96921.7	-4.3	0	LH 3		-276758.5	-193.3	0	Ang = -6.9; D = 112; Mag =			0; Gyro =		351.7
										EV 41.0	10:58:35.8 T		413 N4876663 E 270316		
SY11		12428.6	3.6	1	SY22		10072.6	1.2	1	10:58:46	43.3	44 00 33.5	4876683	9	3.0
SY33		9911.3	-3.1	1	LH 1		-179594.3	42.9	0		42.0	0.0 -59 51 54.8	270309	433	359.7
LH 2		96924.7	-4.1	0	LH 3		-276746.5	-195.5	0	Ang = -6.9; D = 112; Mag =			0; Gyro =		350.7
										EV 42.0	10:58:45.8 T		428 N4876678 E 270311		
SY11		12434.8	1.4	1	SY22		10085.5	0.5	1	10:58:58	43.4	44 00 34.0	4876697	5	3.1
SY33		9918.8	-1.2	1	LH 1		-179606.3	41.6	0		43.0	0.0 -59 51 55.0	270306	447	354.6
LH 2		96918.7	-4.5	0	LH 3		-276731.5	-207.3	0	Ang = -6.9; D = 112; Mag =			0; Gyro =		349.7
										EV 43.0	10:58:55.8 T		443 N4876693 E 270308		
SY11		12433.0	3.3	1	SY22		10097.9	1.1	1	10:59:08	43.5	44 00 34.5	4875713	4	3.1
SY33		9925.7	-2.8	1	LH 1		-179615.3	38.3	0		44.0	0.0 -59 51 55.1	270304	463	356.4
LH 2		96915.7	-0.9	0	LH 3		-276725.5	-205.9	0	Ang = -6.3; D = 117; Mag =			0; Gyro =		350.5
										EV 44.0	10:59:05.9 T		459 N4876709 E 270305		
SY11		12438.2	1.7	1	SY22		10109.8	0.5	1	10:59:18	45.0	44 00 35.0	4875729	2	3.2
SY33		9933.0	-1.5	1	LH 1		-179630.2	40.9	0		45.0	0.0 -59 51 55.2	270302	479	353.7
LH 2		96915.7	-6.6	0	LH 3		-276722.5	-205.8	0	Ang = -7.2; D = 117; Mag =			0; Gyro =		349.7
										EV 45.0	10:59:16.6 T		477 N4876727 E 270303		

SYSTEM LINE DATA

Ref#: 15 Type: SYS Ident: OLYM-400S

Start Pt	End Pt				
4876500.0	4876250.0	Az	180 00 00.0	BL	15.0
270400.0	270400.0	Length	250.0	CF	0.0

STA SS	RANGE(M)	RESID	SD	STA SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
SY11		12343.0	-0.4	1	SY22		9959.7	-0.1	1	11:15:09	45.6	44 00 27.5	4875494	-3	3.6
SY33		9757.2	0.3	1	LH 1		-179441.4	26.7	0	46.0	0.0	-59 51 50.3	270403	6	177.8
LH 2		97086.6	1.0	0	LH 3		-276758.5	-149.9	0	Ang = 0.7; D = 115; Mag = 0; Gyro =186.7					
										EV 46.0	11:16:06.7 T		4 N4876456 E 270403		
SY11		12333.8	6.5	1	SY22		9942.8	2.2	1	11:15:21	45.7	44 00 26.8	4875472	-3	3.6
SY33		9753.8	-5.5	1	LH 1		-179423.4	23.3	0	2.0	0.0	-59 51 50.3	270403	28	176.5
LH 2		97077.6	14.6	0	LH 3		-276773.5	-141.2	0	Ang = 1.8; D = 115; Mag = 0; Gyro =188.2					
										EV 2.0	11:16:18.5 T		22 N4875478 E 270403		
SY11		12342.0	1.9	1	SY22		9930.4	0.6	1	11:15:30	45.8	44 00 25.3	4875456	-3	3.5
SY33		9749.3	-1.6	1	LH 1		-179414.4	25.8	0	3.0	0.0	-59 51 50.3	270403	44	178.2
LH 2		97068.6	16.6	0	LH 3		-276809.5	-116.2	0	Ang = 2.0; D = 117; Mag = 0; Gyro =188.5					
										EV 3.0	11:16:28.5 T		41 N4876459 E 270403		
SY11		12347.2	-0.7	1	SY22		9916.0	-0.2	1	11:15:40	45.9	44 00 25.6	4876436	-1	3.5
SY33		9744.0	0.6	1	LH 1		-179405.4	30.5	0	4.0	0.0	-59 51 50.3	270401	64	178.6
LH 2		97071.6	9.6	0	LH 3		-276803.5	-132.5	0	Ang = 3.4; D = 115; Mag = 0; Gyro =186.7					
										EV 4.0	11:16:38.5 T		61 N4876439 E 270401		
SY11		12343.7	1.1	1	SY22		9900.5	0.4	1	11:15:51	46.0	44 00 25.0	4876417	-0	3.3
SY33		9737.5	-0.9	1	LH 1		-179369.4	9.8	0	5.0	0.0	-59 51 50.3	270400	83	176.1
LH 2		97071.6	12.4	0	LH 3		-276791.5	-151.2	0	Ang = 4.1; D = 117; Mag = 0; Gyro =185.3					
										EV 5.0	11:16:48.9 T		79 N4876421 E 270400		
SY11		12347.1	0.5	1	SY22		9886.1	0.2	1	11:17:01	45.1	44 00 24.5	4876402	0	3.2
SY33		9734.5	-0.4	1	LH 1		-179366.4	19.7	0	6.0	0.0	-59 51 50.3	270400	98	179.4
LH 2		97068.6	10.8	0	LH 3		-276809.5	-143.4	0	Ang = 1.7; D = 117; Mag = 0; Gyro =185.0					
										EV 6.0	11:16:58.5 T		94 N4876406 E 270400		
SY11		12344.5	0.5	1	SY22		9873.7	0.2	1	11:17:11	45.2	44 00 24.0	4876386	1	3.3
SY33		9726.5	-0.4	1	LH 1		-179351.4	18.0	0	7.0	0.0	-59 51 50.3	270399	114	177.9
LH 2		97071.6	12.2	0	LH 3		-276833.5	-124.0	0	Ang = -2.4; D = 115; Mag = 0; Gyro =184.3					
										EV 7.0	11:17:08.5 T		109 N4876391 E 270399		
SY11		12345.0	2.0	1	SY22		9856.0	0.7	1	11:17:21	46.3	44 00 23.5	4876369	2	3.4
SY33		9723.2	-1.7	1	LH 1		-179336.4	18.8	0	8.0	0.0	-59 51 50.3	270398	131	179.1
LH 2		97068.6	11.8	0	LH 3		-276824.5	-144.0	0	Ang = 0.9; D = 117; Mag = 0; Gyro =183.3					
										EV 8.0	11:17:18.5 T		126 N4876374 E 270398		
SY11		12350.4	-1.8	1	SY22		9844.6	-0.6	1	11:17:31	46.4	44 00 23.9	4876351	2	3.4
SY33		9716.9	1.5	1	LH 1		-179333.5	27.4	0	9.0	0.0	-59 51 50.3	270398	149	180.4
LH 2		97065.6	12.4	0	LH 3		-276854.4	-132.1	0	Ang = -2.0; D = 117; Mag = 0; Gyro =183.0					
										EV 9.0	11:17:28.5 T		144 N4876356 E 270398		
SY11		12348.2	-0.7	1	SY22		9830.9	-0.2	1	11:17:40	46.5	44 00 22.3	4876334	2	3.4
SY33		9711.0	0.6	1	LH 1		-179318.5	26.1	0	10.0	0.0	-59 51 50.3	270398	166	177.4
LH 2		97059.6	20.8	0	LH 3		-276848.4	-134.1	0	Ang = 0.0; D = 117; Mag = 0; Gyro =184.0					
										EV 10.0	11:17:38.4 T		162 N4876338 E 270398		
SY11		12342.6	3.8	1	SY22		9819.3	1.3	1	11:17:50	46.6	44 00 21.8	4875317	3	3.3
SY33		9707.1	-3.2	1	LH 1		-179303.5	22.6	0	11.0	0.0	-59 51 50.3	270397	183	176.8
LH 2		97062.6	23.9	0	LH 3		-276848.4	-136.6	0	Ang = 4.3; D = 117; Mag = 0; Gyro =186.0					
										EV 11.0	11:17:48.5 T		180 N4876320 E 270398		
SY11		12348.7	-1.2	1	SY22		9805.2	-0.4	1	11:18:00	45.7	44 00 21.2	4875300	2	3.3
SY33		9700.3	1.0	1	LH 1		-179273.5	6.8	0	12.0	0.0	-59 51 50.2	270398	200	177.6
LH 2		97074.6	7.4	0	LH 3		-276863.4	-132.4	0	Ang = 2.5; D = 132; Mag = 0; Gyro =185.7					
										EV 12.0	11:17:58.5 T		196 N4876304 E 270398		

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	DEP/TR	BP/-D
SY11		12352.7	-2.5	1	SY22		9790.7	-0.9	1	11:18:10	46.8	44 00 20.7	4876282	1	3.3
SY33		9696.3	2.1	1	LH 1		-179276.5	23.2	0	13.0	0.0	-59 51 50.2	270399	218	178.3
LH 2		97068.6	9.5	0	LH 3		-276884.4	-121.5	0	Ang = 7.6; D = 117; Mag = 0; Gyro = 187.0					
										EV 13.0 11:18:08.4 T			213 N4876287 E 270396		
SY11		12342.3	3.8	1	SY22		9777.4	1.3	1	11:18:20	46.9	44 00 20.1	4876286	2	3.3
SY33		9692.3	-3.2	1	LH 1		-179264.5	24.3	0	14.0	0.0	-59 51 50.2	270398	234	177.0
LH 2		97068.6	17.1	0	LH 3		-276878.4	-129.8	0	Ang = 2.0; D = 117; Mag = 0; Gyro = 185.8					
										EV 14.0 11:18:18.4 T			230 N4876270 E 270398		
SY11		12350.2	-0.6	1	SY22		9762.1	-0.2	1	11:18:32	47.0	44 00 19.5	4876247	2	3.3
SY33		9686.0	0.5	1	LH 1		-179231.5	6.2	0	15.0	0.0	-59 51 50.1	270398	253	180.1
LH 2		97065.6	14.3	0	LH 3		-276893.4	-126.6	0	Ang = 6.4; D = 117; Mag = 0; Gyro = 187.0					
										EV 15.0 11:18:28.4 T			247 N4876253 E 270398		
SY11		12350.0	0.1	1	SY22		9752.3	0.0	1	11:18:39	47.1	44 00 19.1	4876235	2	3.3
SY33		9683.3	-0.1	1	LH 1		-179228.5	12.5	0	16.0	0.0	-59 51 50.1	270398	265	178.5
LH 2		97062.6	17.7	0	LH 3		-276917.4	-107.8	0	Ang = 6.4; D = 117; Mag = 0; Gyro = 187.0					
										EV 16.0 11:18:38.5 T			264 N4876236 E 270398		
SY11		12343.9	4.1	1	SY22		9739.9	1.4	1	11:18:49	47.2	44 00 18.6	4876219	3	3.2
SY33		9679.5	-3.4	1	LH 1		-179213.5	9.5	0	17.0	0.0	-59 51 50.1	270397	281	179.3
LH 2		97062.6	21.7	0	LH 3		-276908.4	-121.0	0	Ang = 3.7; D = 117; Mag = 0; Gyro = 185.3					
										EV 17.0 11:18:48.4 T			280 N4876220 E 270397		
SY11		12352.7	-0.3	1	SY22		9726.0	-0.1	1	11:18:59	47.3	44 00 18.1	4876202	4	3.2
SY33		9674.9	0.3	1	LH 1		-179195.5	4.8	0	18.0	0.0	-59 51 50.1	270396	298	180.7
LH 2		97068.6	9.4	0	LH 3		-276911.4	-129.5	0	Ang = 2.1; D = 117; Mag = 0; Gyro = 187.0					
										EV 18.0 11:18:58.5 T			297 N4876203 E 270397		
SY11		12350.3	1.4	1	SY22		9713.1	0.5	1	11:19:09	47.4	44 00 17.5	4876186	4	3.2
SY33		9670.6	-1.2	1	LH 1		-179180.6	2.3	0	19.0	0.0	-59 51 50.1	270396	314	179.2
LH 2		97068.6	10.9	0	LH 3		-276911.4	-135.5	0	Ang = 5.5; D = 117; Mag = 0; Gyro = 185.5					
										EV 19.0 11:19:08.4 T			313 N4876187 E 270396		
SY11		12351.0	1.3	1	SY22		9699.9	0.5	1	11:19:19	47.5	44 00 17.0	4876169	5	3.2
SY33		9665.9	-1.1	1	LH 1		-179180.6	15.3	0	20.0	0.0	-59 51 50.1	270395	331	180.0
LH 2		97050.6	28.9	0	LH 3		-276938.4	-115.7	0	Ang = 4.7; D = 117; Mag = 0; Gyro = 185.2					
										EV 20.0 11:19:18.5 T			330 N4876170 E 270395		
SY11		12357.8	-1.4	1	SY22		9686.6	-0.5	1	11:19:28	47.6	44 00 16.5	4876154	5	3.2
SY33		9662.8	1.1	1	LH 1		-179162.6	9.4	0	21.0	0.0	-59 51 50.1	270395	345	180.1
LH 2		97065.6	7.4	0	LH 3		-276909.3	-155.8	0	Ang = 5.0; D = 117; Mag = 0; Gyro = 185.0					
										EV 21.0 11:19:28.5 T			346 N4876154 E 270395		
SY11		12351.4	-2.3	1	SY22		9669.5	-0.8	1	11:19:41	47.7	44 00 15.8	4876133	6	3.1
SY33		9658.3	1.9	1	LH 1		-179156.6	19.5	0	22.0	0.0	-59 51 50.1	270394	367	184.1
LH 2		97059.6	9.9	0	LH 3		-276947.4	-129.0	0	Ang = 2.7; D = 117; Mag = 0; Gyro = 185.0					
										EV 22.0 11:19:38.5 T			362 N4876138 E 270395		
SY11		12363.6	-3.2	1	SY22		9653.9	-1.1	1	11:19:51	47.8	44 00 15.3	4876117	7	3.2
SY33		9653.4	2.6	1	LH 1		-179135.6	11.8	0	23.0	0.0	-59 51 50.1	270393	383	181.8
LH 2		97072.8	-4.5	0	LH 3		-276938.4	-146.2	0	Ang = 3.3; D = 122; Mag = 0; Gyro = 185.3					
										EV 23.0 11:19:48.5 T			378 N4876122 E 270393		
SY11		12352.1	3.4	1	SY22		9643.0	1.1	1	11:20:01	47.9	44 00 14.8	4876100	7	3.3
SY33		9648.5	-2.8	1	LH 1		-179123.6	13.1	0	24.0	0.0	-59 51 50.2	270393	400	177.9
LH 2		97062.6	15.2	0	LH 3		-276957.3	-128.5	0	Ang = 5.1; D = 115; Mag = 0; Gyro = 184.3					
										EV 24.0 11:19:58.4 T			395 N4876105 E 270392		

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/SP	LAT/LON	N/E	OFF/TR	SP/HD
SY11		12353.2	3.8	1	SY22		9627.1	1.3	1	11:20:13	48.0	44 00 14.1	4875850	8	3.2
SY33		9644.2	-3.1	1	LH 1		-179111.6	16.2	0	25.0	0.0	-59 51 50.2	270352	420	180.2
LH 2		97056.6	19.6	0	LH 3		-276977.4	-117.9	0	Amp = 5.4; D = 117; Mag = 0; Gyro =184.3					
										EV 25.0 11:20:06.4 T 412 N4876088 E 270392					
SY11		12359.2	1.8	1	SY22		9615.2	0.6	1	11:20:21	49.0	44 00 13.6	4875855	9	3.2
SY33		9642.3	-1.5	1	LH 1		-179099.6	14.9	0	26.0	0.0	-59 51 50.2	270391	434	180.9
LH 2		97056.6	13.6	0	LH 3		-276983.3	-121.7	0	Amp = 5.4; D = 117; Mag = 0; Gyro =183.7					
										EV 26.0 11:20:18.5 T 429 N4876071 E 270391					

STA SS	RANGE(M)	RESID	SD	STA SS	RANGE(M)	RESID	SD	TIME/EV	TD/DP	LAT/LON	N/E	OFF/TR SP/HD

SYSTEM LINE DATA

Ref#: 19 Type: SYS Chart: CLYM-4005
Start Pt End Pt
4876250.2 4875500.2 Az 2 00 22.2 SL 19.0
270450.2 270450.0 Length 750.0 CP 0.0

SY11	12273.9	3.3	1	SY22	9886.2	2.3	1	11:38:58	49.6	44 00 19.8	4876234	11 3.7
SY33	9626.4	-1.9	1	LH 1	-179264.5	24.7	0	1.0	0.0	-59 51 47.3	270461	4 354.6
LH 2	97182.5	8.8	0	LH 3	-276833.5	-107.6	0	Ang = -7.2; D = 117; Mag = 0; Gyro =349.0				
								EV 1.0 11:38:50.5 T			1 N4876251 E 270461	
SY11	12282.4	-1.6	1	SY22	9840.1	-0.5	1	11:39:02	49.7	44 00 20.4	4876273	9 3.7
SY33	9633.8	1.3	1	LH 1	-179270.5	15.9	0	2.0	0.0	-59 51 47.4	270459	23 352.7
LH 2	97188.5	-6.2	0	LH 3	-276833.5	-105.3	0	Ang = -7.8; D = 9419; Mag = 0; Gyro =350.5				
								EV 2.0 11:39:00.5 T			20 N4876270 E 270459	
SY11	12284.3	-1.3	1	SY22	9852.2	-0.5	1	11:39:12	49.8	44 00 21.0	4876291	7 3.6
SY33	9641.6	1.1	1	LH 1	-179288.5	20.7	0	3.0	0.0	-59 51 47.5	270457	41 352.4
LH 2	97176.5	1.5	0	LH 3	-276836.5	-97.7	0	Ang = -7.3; D = 117; Mag = 0; Gyro =348.8				
								EV 3.0 11:39:11.0 T			40 N4876290 E 270458	
SY11	12275.0	4.7	1	SY22	9863.8	1.6	1	11:39:22	49.9	44 00 21.6	4876310	5 3.5
SY33	9648.2	-3.9	1	LH 1	-179312.5	32.8	0	4.0	0.0	-59 51 47.7	270455	60 355.1
LH 2	97179.5	4.1	0	LH 3	-276812.5	-111.4	0	Ang = -6.7; D = 117; Mag = 0; Gyro =350.2				
								EV 4.0 11:39:20.5 T			57 N4876307 E 270455	
SY11	12280.8	1.5	1	SY22	9875.3	0.5	1	11:39:33	50.0	44 00 22.2	4876329	4 3.4
SY33	9654.8	-1.3	1	LH 1	-179327.5	32.1	0	5.0	0.0	-59 51 47.8	270454	79 351.6
LH 2	97176.5	1.1	0	LH 3	-276803.5	-115.5	0	Ang = -5.9; D = 117; Mag = 0; Gyro =351.0				
								EV 5.0 11:39:30.9 T			75 N4875325 E 270454	
SY11	12286.6	-1.4	1	SY22	9892.2	-0.5	1	11:39:43	50.1	44 00 22.8	4876346	2 3.4
SY33	9660.5	1.2	1	LH 1	-179333.5	25.0	0	6.0	0.0	-59 51 47.9	270452	96 350.5
LH 2	97179.5	-7.1	0	LH 3	-276794.5	-120.6	0	Ang = 0.4; D = 117; Mag = 0; Gyro =352.5				
								EV 6.0 11:39:40.5 T			91 N4876341 E 270453	
SY11	12278.9	3.8	1	SY22	9904.3	1.3	1	11:39:53	50.2	44 00 23.3	4876362	1 3.3
SY33	9667.5	-3.2	1	LH 1	-179333.5	12.6	0	7.0	0.0	-59 51 48.0	270451	112 354.4
LH 2	97185.5	-9.5	0	LH 3	-276785.5	-120.4	0	Ang = 0.4; D = 117; Mag = 0; Gyro =354.5				
								EV 7.0 11:39:50.5 T			107 N4876357 E 270451	
SY11	12281.8	1.4	1	SY22	9917.5	0.5	1	11:40:03	50.3	44 00 23.8	4876378	-0 3.3
SY33	9671.1	-1.2	1	LH 1	-179353.4	30.1	0	8.0	0.0	-59 51 48.0	270450	128 354.9
LH 2	97176.5	-2.3	0	LH 3	-276800.5	-99.3	0	Ang = 0.4; D = 117; Mag = 0; Gyro =357.2				
								EV 8.0 11:40:00.5 T			124 N4876374 E 270450	
SY11	12284.1	-0.5	1	SY22	9933.2	-0.2	1	11:40:12	50.4	44 00 24.4	4876395	1 3.4
SY33	9676.1	0.4	1	LH 1	-179369.4	21.0	0	9.0	0.0	-59 51 48.0	270451	145 356.7
LH 2	97176.5	-4.4	0	LH 3	-276779.5	-113.4	0	Ang = 0.4; D = 117; Mag = 0; Gyro =358.2				
								EV 9.0 11:40:10.5 T			141 N4876391 E 270450	
SY11	12278.0	2.5	1	SY22	9947.3	0.9	1	11:40:22	50.5	44 00 24.9	4876413	1 3.5
SY33	9681.1	-2.1	1	LH 1	-179393.4	31.7	0	10.0	0.0	-59 51 48.0	270451	163 358.5
LH 2	97175.5	0.6	0	LH 3	-276752.5	-123.7	0	Ang = 0.4; D = 117; Mag = 0; Gyro =358.9				
								EV 10.0 11:40:20.5 T			159 N4876409 E 270450	
SY11	12282.4	-0.1	1	SY22	9962.7	-0.0	1	11:40:32	50.6	44 00 25.5	4876431	2 3.6
SY33	9686.8	0.1	1	LH 1	-179405.4	28.6	0	11.0	0.0	-59 51 48.0	270452	181 357.4
LH 2	97179.5	-5.9	0	LH 3	-276743.5	-132.6	0	Ang = -2.3; D = 1231; Mag = 0; Gyro =358.3				

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	DEP/TR	SP/-D
										EV 11.0	11:40:30.5 T	177 N4876427 E 270451			
SY11		12283.8	-2.3	1	SY22		9950.2	-0.7	1	11:40:43	50.7	44 00 26.2 4876451		3	3.6
SY33		9691.1	1.8	1	LH 1		-179438.4	15.7	0	12.0	0.0	-59 51 48.0 270453		201	359.6
LH 2		97182.5	-7.1	0	LH 3		-276742.5	-124.8	0	Ang = -3.0; D = 117; Mag =		0; Gyro =357.0			
										EV 12.0	11:40:40.5 T	195 N4876448 E 270452			
SY11		12272.5	3.2	1	SY22		9955.2	1.1	1	11:40:53	50.8	44 00 26.8 4876470		5	3.6
SY33		9695.4	-2.7	1	LH 1		-179441.4	36.2	0	13.0	0.0	-59 51 47.9 270455		220	4.0
LH 2		97188.5	-2.5	0	LH 3		-276748.5	-110.3	0	Ang = -6.3; D = 476; Mag =		0; Gyro =355.5			
										EV 13.0	11:40:50.5 T	215 N4876465 E 270454			
SY11		12271.1	5.5	1	SY22		10008.9	1.9	1	11:41:02	50.9	44 00 27.4 4876483		5	3.6
SY33		9704.2	-4.6	1	LH 1		-179435.4	15.7	0	14.0	0.0	-59 51 47.9 270456		239	1.2
LH 2		97194.5	-9.7	0	LH 3		-276713.5	-130.1	0	Ang = -2.6; D = 117; Mag =		0; Gyro =354.0			
										EV 14.0	11:41:00.5 T	234 N4876484 E 270456			
SY11		12276.8	1.5	1	SY22		10027.0	0.5	1	11:41:14	51.0	44 00 28.1 4876510		7	3.7
SY33		9709.6	-1.3	1	LH 1		-179456.4	19.7	0	15.0	0.0	-59 51 47.9 270457		260	358.4
LH 2		97188.5	-6.3	0	LH 3		-276716.5	-119.2	0	Ang = -13.3; D = 120; Mag =		0; Gyro =352.8			
										EV 15.0	11:41:10.5 T	253 N4876503 E 270457			
SY11		12279.9	0.5	1	SY22		10036.7	0.2	1	11:41:21	51.1	44 00 28.6 4876524		8	3.6
SY33		9715.0	-0.4	1	LH 1		-179471.4	24.7	0	16.0	0.0	-59 51 47.9 270458		274	358.4
LH 2		97179.5	-0.5	0	LH 3		-276704.5	-127.8	0	Ang = -5.8; D = 117; Mag =		0; Gyro =352.8			
										EV 16.0	11:41:20.5 T	273 N4876523 E 270458			
SY11		12270.8	5.2	1	SY22		10050.1	2.1	1	11:41:31	51.2	44 00 29.1 4876542		7	3.6
SY33		9722.0	-5.2	1	LH 1		-179480.3	20.4	0	17.0	0.0	-59 51 48.0 270457		292	358.8
LH 2		97188.5	-3.7	0	LH 3		-276698.5	-122.6	0	Ang = -6.7; D = 115; Mag =		0; Gyro =353.2			
										EV 17.0	11:41:30.5 T	291 N4876541 E 270457			
SY11		12276.0	3.8	1	SY22		10065.1	1.3	1	11:41:41	51.3	44 00 29.7 4876561		6	3.6
SY33		9728.9	-3.2	1	LH 1		-179498.3	23.4	0	18.0	0.0	-59 51 48.0 270456		311	355.8
LH 2		97182.5	-2.4	0	LH 3		-276698.5	-117.2	0	Ang = -4.1; D = 76; Mag =		0; Gyro =353.8			
										EV 18.0	11:41:40.5 T	310 N4876560 E 270456			
SY11		12281.3	1.1	1	SY22		10082.1	0.4	1	11:41:52	51.4	44 00 30.4 4876581		5	3.6
SY33		9736.3	-1.0	1	LH 1		-179510.3	18.7	0	19.0	0.0	-59 51 48.1 270455		331	355.4
LH 2		97188.5	-12.7	0	LH 3		-276680.6	-8.7	0	Ang = -14.0; D = 9829; Mag =		0; Gyro =354.5			
										EV 19.0	11:41:50.5 T	328 N4876578 E 270455			
SY11		12284.5	0.1	1	SY22		10098.1	0.0	1	11:42:03	51.5	44 00 31.1 4876602		4	3.7
SY33		9744.3	-0.1	1	LH 1		-179528.3	20.5	0	20.0	0.0	-59 51 48.2 270454		352	355.0
LH 2		97191.5	-13.7	0	LH 3		-276659.6	-33.3	0	Ang = -8.0; D = 115; Mag =		0; Gyro =354.3			
										EV 20.0	11:42:00.5 T	346 N4876596 E 270454			
SY11		12281.0	1.4	1	SY22		10114.4	0.5	1	11:42:13	51.6	44 00 31.7 4876622		3	3.7
SY33		9749.4	-1.2	1	LH 1		-179543.3	20.5	0	21.0	0.0	-59 51 48.2 270453		372	357.1
LH 2		97185.5	-9.6	0	LH 3		-276652.6	-9.2	0	Ang = -5.9; D = 117; Mag =		0; Gyro =353.7			
										EV 21.0	11:42:10.5 T	366 N4876616 E 270453			
SY11		12279.0	2.4	1	SY22		10129.3	0.8	1	11:42:23	51.7	44 00 32.3 4876641		3	3.7
SY33		9755.3	-2.1	1	LH 1		-179567.3	20.3	0	22.0	0.0	-59 51 48.3 270453		391	357.7
LH 2		97176.5	1.3	0	LH 3		-276577.6	14.9	0	Ang = -5.3; D = 115; Mag =		0; Gyro =354.5			
										EV 22.0	11:42:20.5 T	385 N4876635 E 270453			
SY11		12282.4	0.9	1	SY22		10144.7	0.3	1	11:42:33	51.8	44 00 32.9 4876660		3	3.7
SY33		9762.2	-0.7	1	LH 1		-179579.3	21.3	0	23.0	0.0	-59 51 48.3 270453		410	357.6

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TD/DD	LAT/LON	N/E	OFF/TR	SP/HD
LH 2		97176.5	-1.5	0	LH 3		-276647.6	-8.4	0	Ang = -6.5; D = 113; Mag = 0; Sxmg =353.8					
										EV 23.0	11:42:32.5 T	-04	N4876684 E 278453		
SY11		12277.2	3.4	1	SY22		10158.0	1.1	1	11:42:42	52.0	44 00 32.5	4876677	4	3.7
SY33		9766.7	-2.9	1	LH 1		-179588.3	23.9	0	24.0	0.0	-59 01 48.3	278454	427	358.9
LH 2		97176.5	3.4	0	LH 3		-276644.6	-1.4	0	Ang = -4.2; D = 120; Mag = 21; Sxmg =354.2					
										EV 24.0	11:42:40.5 T	424	N4876674 E 278453		

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD

SYSTEM LINE DATA

Ref#: 10 Type: SYS Ident: OLYM-400E
Start Pt End Pt
4876400.0 4876400.0 Az 270 00 00.0 BL 10.0
270450.0 270100.0 Length 350.0 OF 0.0

SY11	12322.3	2.2	1	SY22	9929.5	0.8	1	12:04:02	52.6	44 00 25.0	4876414	14	3.2		
SY33	9702.3	-1.9	1	LH 1	-179384.4	25.7	0		1.0	0.0	-59 51 48.4	270443	7	268.5	
LH 2	97134.6	34.3	0	LH 3	-276909.5	34.6	0	Ang =	1.5; D =	120; Mag =	0; Gyro =	277.0			
								EV	1.0	12:04:00.4 T		3 N4876414 E 270447			
SY11	12317.3	2.3	1	SY22	9921.4	0.8	1	12:04:12	52.7	44 00 25.0	4876414	14	3.1		
SY33	9717.0	-1.9	1	LH 1	-179387.4	29.4	0		2.0	0.0	-59 51 49.1	270427	23	269.2	
LH 2	97100.1	33.0	0	LH 3	-276842.4	50.4	0	Ang =	2.9; D =	1395; Mag =	0; Gyro =	276.8			
								EV	2.0	12:04:10.5 T		19 N4876415 E 270431			
SY11	12335.0	1.7	1	SY22	9911.0	0.6	1	12:04:22	52.8	44 00 24.9	4876414	14	3.2		
SY33	9732.6	-1.4	1	LH 1	-179369.4	13.4	0		3.0	0.0	-59 51 49.8	270411	39	268.5	
LH 2	97086.6	17.4	0	LH 3	-276848.4	36.3	0	Ang =	4.1; D =	117; Mag =	0; Gyro =	275.8			
								EV	3.0	12:04:20.5 T		35 N4876415 E 270415			
SY11	12352.1	2.4	1	SY22	9898.2	0.8	1	12:04:33	52.9	44 00 24.9	4876414	14	3.2		
SY33	9749.5	-2.0	1	LH 1	-179378.4	25.9	0		4.0	0.0	-59 51 50.6	270394	56	267.7	
LH 2	97056.6	15.7	0	LH 3	-276863.4	29.0	0	Ang =	0.9; D =	117; Mag =	0; Gyro =	274.5			
								EV	4.0	12:04:30.5 T		52 N4876414 E 270398			
SY11	12370.1	2.7	1	SY22	9888.6	0.9	1	12:04:44	53.0	44 00 24.9	4876413	13	3.2		
SY33	9767.8	-2.3	1	LH 1	-179372.4	20.2	0		5.0	0.0	-59 51 51.4	270375	75	267.3	
LH 2	97017.6	23.5	0	LH 3	-276878.4	23.5	0	Ang =	1.2; D =	117; Mag =	0; Gyro =	272.5			
								EV	5.0	12:04:40.5 T		69 N4876413 E 270381			
SY11	12381.6	3.2	1	SY22	9879.1	1.1	1	12:04:51	53.1	44 00 24.8	4876413	13	3.2		
SY33	9778.8	-2.7	1	LH 1	-179354.4	5.4	0		5.0	0.0	-59 51 52.0	270363	87	266.4	
LH 2	-8552813.88	549634.6	0	LH 3	12342275.0	$$$$$$$$$	0	Ang =	3.3; D =	459; Mag =	0; Gyro =	271.6			
								EV	6.0	12:04:50.5 T		85 N4876413 E 270365			
SY11	12397.4	3.2	1	SY22	9869.8	1.1	1	12:05:01	53.2	44 00 24.8	4876412	12	3.2		
SY33	9793.8	-2.7	1	LH 1	-179369.4	21.8	0		7.0	0.0	-59 51 52.7	270347	103	265.7	
LH 2	96963.7	30.3	0	LH 3	-276935.4	47.1	0	Ang =	-0.2; D =	120; Mag =	0; Gyro =	272.5			
								EV	7.0	12:05:00.5 T		102 N4876412 E 270348			
SY11	12414.6	3.8	1	SY22	9859.1	0.9	1	12:05:11	53.3	44 00 24.7	4876412	10	3.2		
SY33	9809.2	-2.4	1	LH 1	-179366.4	21.4	0		8.0	0.0	-59 51 53.4	270330	120	265.0	
LH 2	-8552814.48	549779.5	0	LH 3	12342274.7	$$$$$$$$$	0	Ang =	3.4; D =	117; Mag =	0; Gyro =	273.2			
								EV	8.0	12:05:10.5 T		119 N4876411 E 270331			
SY11	12435.0	3.8	1	SY22	9843.6	0.9	1	12:05:23	53.4	44 00 24.6	4876408	8	3.3		
SY33	9826.5	-2.4	1	LH 1	-179362.4	23.6	0		9.0	0.0	-59 51 54.4	270309	141	262.4	
LH 2	96897.7	30.5	0	LH 3	-276974.4	35.2	0	Ang =	3.4; D =	117; Mag =	0; Gyro =	275.8			
								EV	9.0	12:05:20.5 T		136 N4876409 E 270314			
SY11	12453.9	2.2	1	SY22	9831.7	0.7	1	12:05:33	53.5	44 00 24.6	4876405	5	3.3		
SY33	9843.6	-1.8	1	LH 1	-179360.4	24.6	0		10.0	0.0	-59 51 55.2	270292	158	263.6	
LH 2	96876.7	21.5	0	LH 3	-277004.3	47.2	0	Ang =	7.4; D =	117; Mag =	0; Gyro =	277.2			
								EV	10.0	12:05:30.5 T		153 N4876407 E 270297			
SY11	12470.0	1.7	1	SY22	9824.5	0.5	1	12:05:43	53.6	44 00 24.5	4876405	5	3.2		
SY33	9858.8	-1.4	1	LH 1	-179357.4	21.6	0		11.0	0.0	-59 51 55.9	270275	175	264.5	
LH 2	96834.8	35.6	0	LH 3	-277019.3	44.6	0	Ang =	7.4; D =	117; Mag =	0; Gyro =	278.3			

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/-D
										EV 11.0	12:05:40.5 T		170 N4876405 E 270260		
SY11		12485.4	3.1	1	SY22		9815.0	0.7	1	12:05:53	53.7	44 00 24.5	4875405	5	3.2
SY33		9874.2	-1.7	1	LH 1		-179360.4	26.4	0	12.0	0.0	-59 51 56.6	270259	191	266.7
LH 2		96813.8	32.2	0	LH 3		-277046.3	52.7	0	Ang = 7.4; D = 117; Mag =		0; Gyro =	279.0		
										EV 12.0	12:05:50.5 T		186 N4876404 E 270264		
SY11		12501.6	1.4	1	SY22		9805.4	0.5	1	12:06:03	53.8	44 00 24.5	4875405	5	3.1
SY33		9888.2	-1.2	1	LH 1		-179360.4	28.7	0	13.0	0.0	-59 51 57.3	270243	207	267.3
LH 2		96792.8	24.6	0	LH 3		-277043.3	31.1	0	Ang = 7.4; D = 117; Mag =		0; Gyro =	281.2		
										EV 13.0	12:06:00.5 T		203 N4876405 E 270247		
SY11		12516.3	1.9	1	SY22		9796.5	0.6	1	12:06:13	53.9	44 00 24.4	4875405	5	3.1
SY33		9903.1	-1.6	1	LH 1		-179357.4	27.3	0	14.0	0.0	-59 51 58.0	270228	222	266.9
LH 2		96765.8	25.4	0	LH 3		-277088.3	58.1	0	Ang = 7.1; D = 39; Mag =		0; Gyro =	280.7		
										EV 14.0	12:06:10.5 T		218 N4876405 E 270232		
SY11		12534.3	1.6	1	SY22		9787.2	0.5	1	12:06:24	54.0	44 00 24.4	4875406	6	3.1
SY33		9920.2	-1.3	1	LH 1		-179351.4	22.3	0	15.0	0.0	-59 51 58.8	270211	239	269.6
LH 2		96738.8	21.8	0	LH 3		-277091.3	40.6	0	Ang = 6.0; D = 117; Mag =		0; Gyro =	281.3		
										EV 15.0	12:06:20.5 T		234 N4876405 E 270216		
SY11		12544.9	1.3	1	SY22		9782.2	0.4	1	12:06:31	54.1	44 00 24.5	4875407	7	3.0
SY33		9930.2	-1.1	1	LH 1		-179348.4	19.5	0	16.0	0.0	-59 51 59.3	270200	250	271.2
LH 2		96723.8	19.0	0	LH 3		-277082.3	20.0	0	Ang = 13.3; D = 115; Mag =		0; Gyro =	282.8		
										EV 16.0	12:06:30.5 T		249 N4876406 E 270201		
SY11		12561.5	1.0	1	SY22		9774.0	0.3	1	12:06:41	54.2	44 00 24.5	4875406	8	3.1
SY33		9946.0	-0.9	1	LH 1		-179348.4	20.1	0	17.0	0.0	-59 51 60.0	270184	266	271.4
LH 2		96696.9	17.9	0	LH 3		-277115.3	34.3	0	Ang = 0.1; D = 120; Mag =		0; Gyro =	281.2		
										EV 17.0	12:06:40.5 T		265 N4876408 E 270185		
SY11		12578.2	1.0	1	SY22		9763.8	0.3	1	12:06:50	54.3	44 00 24.5	4875410	10	3.8
SY33		9961.7	-0.8	1	LH 1		-179342.4	12.1	0	18.0	0.0	-59 52 00.7	270167	283	275.1
LH 2		96675.9	-19.7	0	LH 3		-277124.3	6.2	0	Ang = 9.7; D = 71; Mag =		0; Gyro =	281.2		
										EV 18.0	12:06:50.5 T		281 N4876409 E 270165		
SY11		12601.4	-0.1	1	SY22		9753.6	-0.0	1	12:07:03	54.4	44 00 24.6	4875412	12	3.1
SY33		9982.7	0.1	1	LH 1		-179351.4	25.3	0	19.0	0.0	-59 52 01.7	270145	305	271.0
LH 2		96636.9	11.5	0	LH 3		-277151.2	25.9	0	Ang = 5.5; D = 117; Mag =		0; Gyro =	282.5		
										EV 19.2	12:07:00.5 T		300 N4876412 E 270150		
SY11		12618.5	0.0	1	SY22		9742.7	0.0	1	12:07:13	54.5	44 00 24.6	4875413	13	3.2
SY33		9999.0	-0.0	1	LH 1		-179348.4	24.9	0	20.0	0.0	-59 52 02.4	270129	321	270.7
LH 2		96603.9	15.0	0	LH 3		-277166.2	20.1	0	Ang = 6.1; D = 117; Mag =		0; Gyro =	278.3		
										EV 20.0	12:07:10.5 T		316 N4876413 E 270134		
SY11		12534.3	1.0	1	SY22		9732.5	0.3	1	12:07:23	54.6	44 00 24.6	4875414	14	3.2
SY33		10015.8	-0.9	1	LH 1		-179336.4	14.8	0	21.0	0.0	-59 52 03.2	270113	337	270.5
LH 2		96585.9	4.2	0	LH 3		-277184.2	18.3	0	Ang = 3.5; D = 9404; Mag =		0; Gyro =	275.5		
										EV 21.0	12:07:20.5 T		332 N4876414 E 270118		
SY11		12649.2	0.7	1	SY22		9726.4	0.2	1	12:07:33	54.7	44 00 24.6	4875414	14	3.1
SY33		10030.4	-0.6	1	LH 1		-179339.4	16.6	0	22.0	0.0	-59 52 03.9	270096	354	271.3
LH 2		96547.0	18.9	0	LH 3		-277202.2	21.1	0	Ang = 3.5; D = 117; Mag =		0; Gyro =	274.8		
										EV 22.0	12:07:30.5 T		349 N4876414 E 270101		
SY11		12653.2	0.5	1	SY22		9715.8	0.2	1	12:07:43	54.8	44 00 24.5	4875415	15	3.1
SY33		10044.7	-0.4	1	LH 1		-179336.4	16.7	0	23.0	0.0	-59 52 04.6	270081	359	269.9

STA	SS	RANGE(M)	RESID	SD	STA	SS	RANGE(M)	RESID	SD	TIME/EV	TP/DP	LAT/LON	N/E	OFF/TR	SP/HD
LH 2		96523.0	15.8	0	LH 3		-277280.2	15.7	0	Amp = 5.5; D =12087; Mag =		0; Gyro =274.8			
										EV 23.0	12:07:40.5 T		365	N4876415	E 270085
SY11		12582.1	0.3	1	SY22		9705.4	0.1	1	12:07:53	54.9	44 00 24.5	4876414	14	3.1
SY33		10060.0	-0.2	1	LH 1		-179333.5	16.4	0	24.0	0.0	-59 52 05.3	270065	385	267.1
LH 2		96499.0	11.3	0	LH 3		-277244.2	23.7	0	Amp = 4.1; D = 7907; Mag =		0; Gyro =275.2			
										EV 24.0	12:07:50.5 T		381	N4876414	E 270069
SY11		12599.4	1.4	1	SY22		9691.5	0.4	1	12:08:04	55.0	44 00 24.5	4876412	12	3.2
SY33		10077.5	-1.2	1	LH 1		-179330.5	18.1	0	25.0	0.0	-59 52 05.1	270047	403	265.6
LH 2		96457.0	21.7	0	LH 3		-277277.1	33.4	0	Amp = 2.1; D = 117; Mag =		0; Gyro =271.8			
										EV 25.0	12:08:00.5 T		397	N4876413	E 270053
SY11		12709.3	1.6	1	SY22		9685.5	0.5	1	12:08:11	55.1	44 00 24.4	4876412	12	3.1
SY33		10087.3	-1.4	1	LH 1		-179333.5	21.9	0	26.0	0.0	-59 52 06.6	270036	414	266.1
LH 2		96430.0	31.8	0	LH 3		-277292.1	37.0	0	Amp = 2.1; D = 144; Mag =		0; Gyro =271.2			
										EV 26.0	12:08:10.5 T		413	N4876412	E 270037
SY11		12725.1	2.1	1	SY22		9674.8	0.7	1	12:08:20	55.2	44 00 24.4	4876410	10	3.1
SY33		10102.9	-1.8	1	LH 1		-179339.4	30.5	0	27.0	0.0	-59 52 07.3	270021	429	265.2
LH 2		96400.1	34.1	0	LH 3		-277328.1	33.4	0	Amp = 7.1; D = 120; Mag =		0; Gyro =270.7			
										EV 27.0	12:08:20.5 T		429	N4876411	E 270021
SY11		12743.0	2.7	1	SY22		9661.6	0.9	1	12:08:33	55.3	44 00 24.3	4876407	7	3.1
SY33		10120.1	-2.3	1	LH 1		-179324.5	20.0	0	28.0	0.0	-59 52 08.2	270001	449	261.3
LH 2		96373.1	29.3	0	LH 3		-277331.1	33.2	0	Amp = 1.8; D = 117; Mag =		0; Gyro =270.3			
										EV 28.0	12:08:30.5 T		444	N4876409	E 270006
SY11		12759.0	2.8	1	SY22		9650.0	0.9	1	12:08:43	55.4	44 00 24.1	4876404	4	3.1
SY33		10134.7	-2.4	1	LH 1		-179324.5	23.4	0	29.0	0.0	-59 52 08.9	269985	465	259.4
LH 2		96343.1	32.2	0	LH 3		-277334.1	16.6	0	Amp = 0.8; D = 112; Mag =		0; Gyro =270.8			
										EV 29.0	12:08:40.5 T		460	N4876405	E 269990
SY11		12778.0	1.9	1	SY22		9634.1	0.6	1	12:08:53	55.5	44 00 24.0	4876401	1	3.1
SY33		10149.0	-1.6	1	LH 1		-179327.5	34.4	0	30.0	0.0	-59 52 09.6	269970	480	258.8
LH 2		96319.1	24.9	0	LH 3		-277379.1	36.8	0	Amp = 9.4; D = 117; Mag =		0; Gyro =274.2			
										EV 30.0	12:08:50.5 T		476	N4876402	E 269974
SY11		12794.7	0.9	1	SY22		9627.2	0.3	1	12:09:03	55.6	44 00 23.9	4876398	-2	3.2
SY33		10164.0	-0.8	1	LH 1		-179312.5	19.8	0	31.0	0.0	-59 52 10.3	269953	497	259.6
LH 2		96304.1	12.3	0	LH 3		-277415.0	54.5	0	Amp = 12.8; D = 117; Mag =		0; Gyro =277.7			
										EV 31.0	12:09:00.5 T		492	N4876399	E 269958
SY11		12811.2	0.8	1	SY22		9616.0	0.3	1	12:09:13	57.0	44 00 23.8	4875395	-4	3.2
SY33		10178.9	-0.7	1	LH 1		-179300.5	11.6	0	32.0	0.0	-59 52 11.0	269937	513	261.4
LH 2		96277.1	10.8	0	LH 3		-277394.1	12.8	0	Amp = 15.8; D = 120; Mag =		0; Gyro =277.2			
										EV 32.0	12:09:11.3 T		510	N4876396	E 269940