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NOAA *Ocean Exploration*

MAPPING DATA ACQUISITION AND PROCESSING REPORT

CRUISE EX-14-04 Leg III

Exploring Atlantic Canyons and Seamounts (ROV and Mapping)

September 16 to October 7, 2014
Baltimore, MD – N. Kingston, RI

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November 10, 2015

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1. Introduction

NOAA Ship *Okeanos Explorer*

Commissioned in August 2008, the NOAA Ship *Okeanos Explorer* is the nation's only federal vessel dedicated to ocean exploration. With 95% of the world's oceans left unexplored, the ship's combination of scientific and technological tools uniquely positions it to systematically explore new areas of our largely unknown ocean. These exploration cruises are explicitly designed in collaboration with the broad science community to provide a foundation of publicly accessible baseline data and information to support science and management needs. This baseline information often leads to further, more detailed, investigations by other parties.

The unique combination of mission capabilities including a high-resolution multibeam sonar, deep water remotely operated vehicles, telepresence technology, and integrated data management system quicken the scientific discovery and dissemination process. These systems enable us to identify new targets in real time, dive on those targets shortly after initial detection, and then send this information back to shore for immediate near-real-time collaboration with scientists and experts at Exploration Command Centers around the world. The integrated data management system provide for the quick dissemination of information-rich products to the scientific community. This ensures that discoveries are immediately available to experts in relevant disciplines for research and analysis.

Through the operation and maintenance of the mission capabilities, NOAA's Office of Ocean Exploration and Research (OER) provides the nation with unparalleled capacity to discover and investigate new oceanic regions and phenomena, conduct baseline research required to document discoveries, and seamlessly disseminate data and information-rich products to a multitude of users. OER strives to develop technological solutions and innovative applications to critical problems in undersea exploration and to provide resources for developing, testing, and transitioning solutions to meet these needs.

Okeanos Explorer Management – a unique partnership within NOAA

The *Okeanos Explorer* combines the capabilities of a NOAA research ship with shore-based high speed networks and infrastructure to conduct systematic telepresence-enabled exploration of the world ocean. The ship is operated, managed and maintained by NOAA's Office of Marine and Aviation Operations, which includes commissioned officers of the NOAA Corps and civilian wage mariners. OER owns and is responsible for operating and managing the cutting-edge ocean exploration systems on the vessel (ROV, mapping and telepresence) and ashore including Exploration Command Centers and terrestrial high speed networks. The ship and shore-based infrastructure combine to be the only federal program dedicated to systematic telepresence-enabled exploration of the planet's largely unknown ocean.

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2. Report Purpose

The purpose of this report is to briefly describe the mapping data collection and processing methods, and to report the results of the mapping portion of the cruise. For a detailed description of *Okeanos Explorer* mapping capabilities, see the appendices section 'Kongsberg EM 302 Multibeam Sonar Desciption and Operational Specifications' and the ship's readiness report, which can be obtained by contacting the Okeanos Explorer Mapping Team (oar.oer.exmappingteam@noaa.gov).

This report focuses on the mapping exploration of EX-14-04 Leg III. The cruise was a combined ROV exploration and mapping of the Atlantic Canyons and New England Seamounts.

3. Cruise Objectives

The cruise objectives for EX-14-04 Leg III were defined in EX-14-04 Leg III Project Instructions. EX-14-04 Leg III operations focused on the Atlantic Canyons and New England Seamount Chain. The primary goals for this cruise included collecting baseline-characterization data of poorly known areas along the New England Seamount Chain and U.S. northeast continental shelf canyons including ROV observations and seafloor bathymetry (Figure 1). The mapping specific objectives included the following.

Mapping Objectives

a. Collect high resolution mapping data using available sonars
b. Support ROV operations with mapping products and expertise
c. Conduct mapping operations during transit, with possible further development of exploration targets
d. Collect XBT cast at regular intervals during mapping operations
e. Create daily standard mapping products
f. Collect sun photometer measurements

All objectives were achieved except objectives f and g.

Overall Data Collection Objectives

During EX 14-04 Leg III, ROV operations were conducted during the day light hours. Mapping operations were conducted during night time, during inclement weather when ROV operations were suspended and while transiting between ROV dive locations. Transits between the dive target sites were primarily over previously mapped seafloor carried out during *Okeanos Explorer* cruises EX-11-06, EX-12-01, EX-12-04, EX-12-05 Leg II, EX-12-06, EX-13-01, EX-13-03, EX-14-01, and EX-14-04 Leg I. Transit mapping focused on filling in any holidays in the existing datasets. Multibeam, single beam, and sub-bottom profile data was generally collected for 12 hours during overnight transits between dive target sites. Expendable bathythermograph (XBT) casts were conducted at an interval defined by prevailing oceanographic conditions, generally every two to three hours. All multibeam sonar data were fully processed according to established onboard procedures. All multibeam data along with ancillary sonar datasets have been archived at National Centers for Environmental Information (NCEI) formerly known as National Oceanographic Data Center or the National Geophysical Data Center.

During inclement weather mapping operations were conducted along the continental slope focused primarily on collecting Knudson sub-bottom profile lines along various canyon axes (Figures 2,3) and

collecting EK60 lines across the head of Ryan canyon to observe biomass migrations. The Knudsen data were provided to USGS (Dr. Jason Chayder) while EK 60 data has been provided to University of Connecticut researchers (Dr. Peter Auster) for further analysis. Repeat multibeam survey lines were collected along the southern portion of the head of Hudson Canyon and across Gosnold and Sheldrake Seamounts to supplement data collected during EX-14-01.

4. Participating Mapping Personnel

NAME	ROLE	AFFILIATION
CDR Ricardo Ramos	Commanding Officer	NOAA Corps
LT Emily Rose	Field Operations Officer	NOAA Corps
LT Brian Kennedy	Expedition Coordinator	NOOA Corps
Lindsay McKenna	Mapping Team Lead	NOAA OER (ERT Inc.)
James Miller	Watch Lead	NOAA AHB

5. Summary of Major Findings

Cruise Map

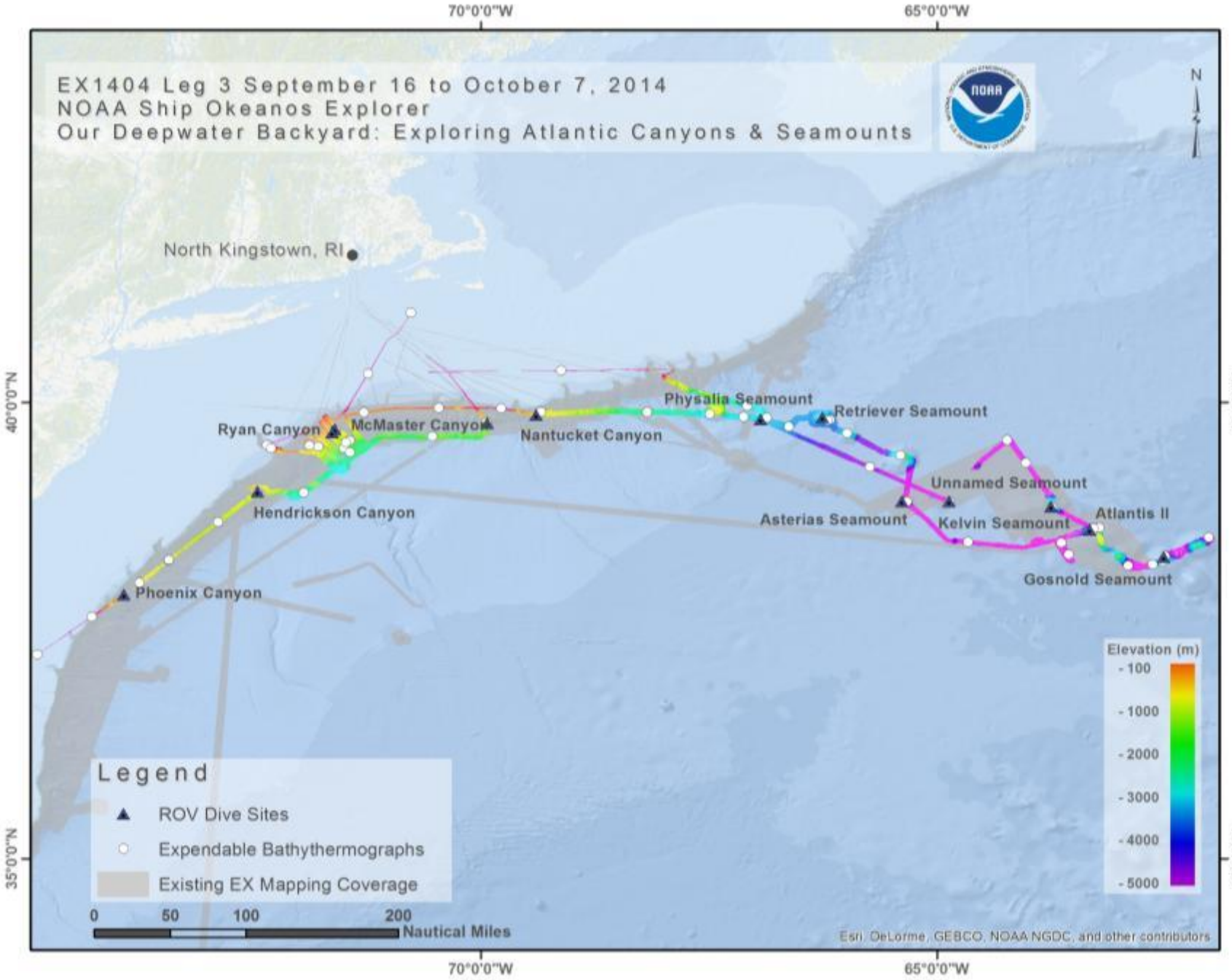

Figure 1. Cruise map made in ArcMap 10.2 showing overall cruise track and key operational areas.

Features of Interest

Subbottom Profile Features

Subbottom profile lines were run along canyon axis in and around McMaster Canyon. The data were sent to USGS for further processing. Several landslide headwall scarps and mass transport deposits were identified by Dr. Jason Chaytor at the US Geological Survey (Figure 2).

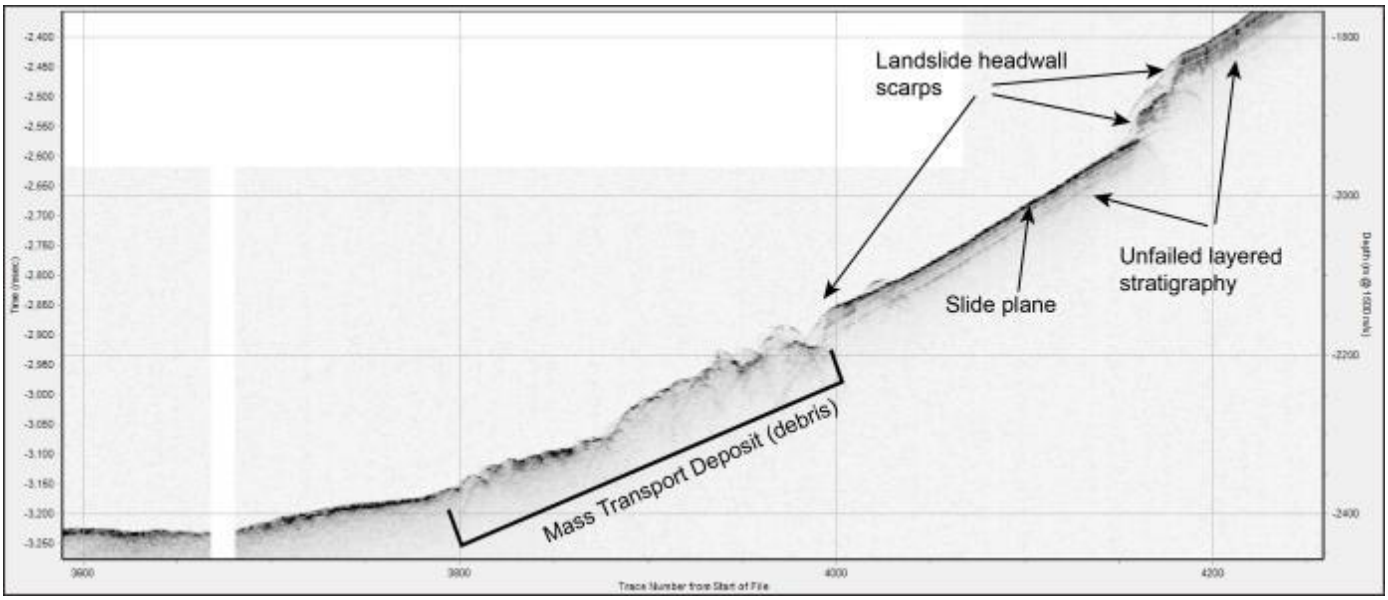

Figure 2. Knudson sub-bottom profile data from McMaster Canyon, processed by Dr. Jason Chaytor (USGS).

Between Picket and Balanus Seamounts, Dr. Chaytor identified a mass-transport deposit from the Munson-Nygren-Retriever Landslide Complex that can be seen adjacent to layered stratigraphy (Figure 3).

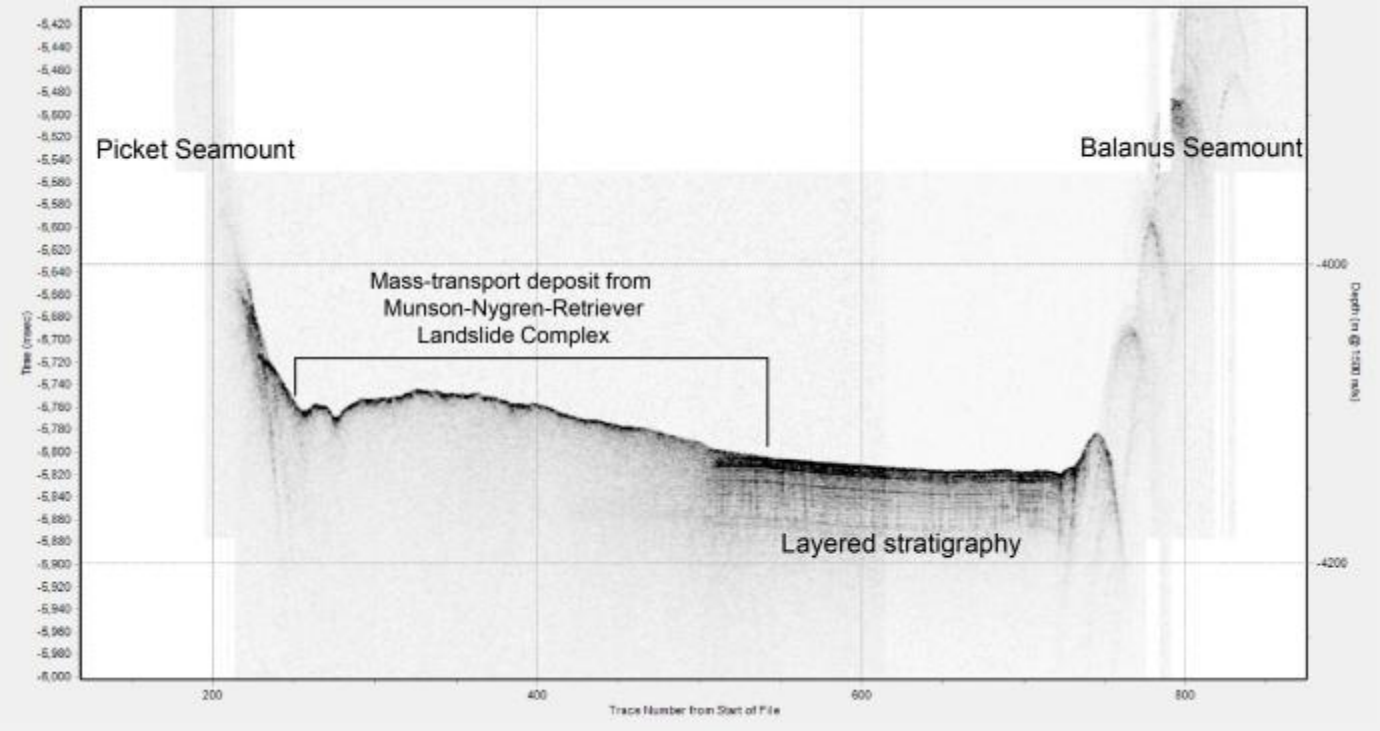

Figure 3. Image of Knudson sub-bottom profile data between Picket and Balanus Seamounts processed by Dr. Jason Chaytor (USGS).

Hudson Canyon

The southern portion of the head of Hudson Canyon was mapped using the high resolution multibeam sonar to support a requested from the NOAA Center for Tsunami Research.

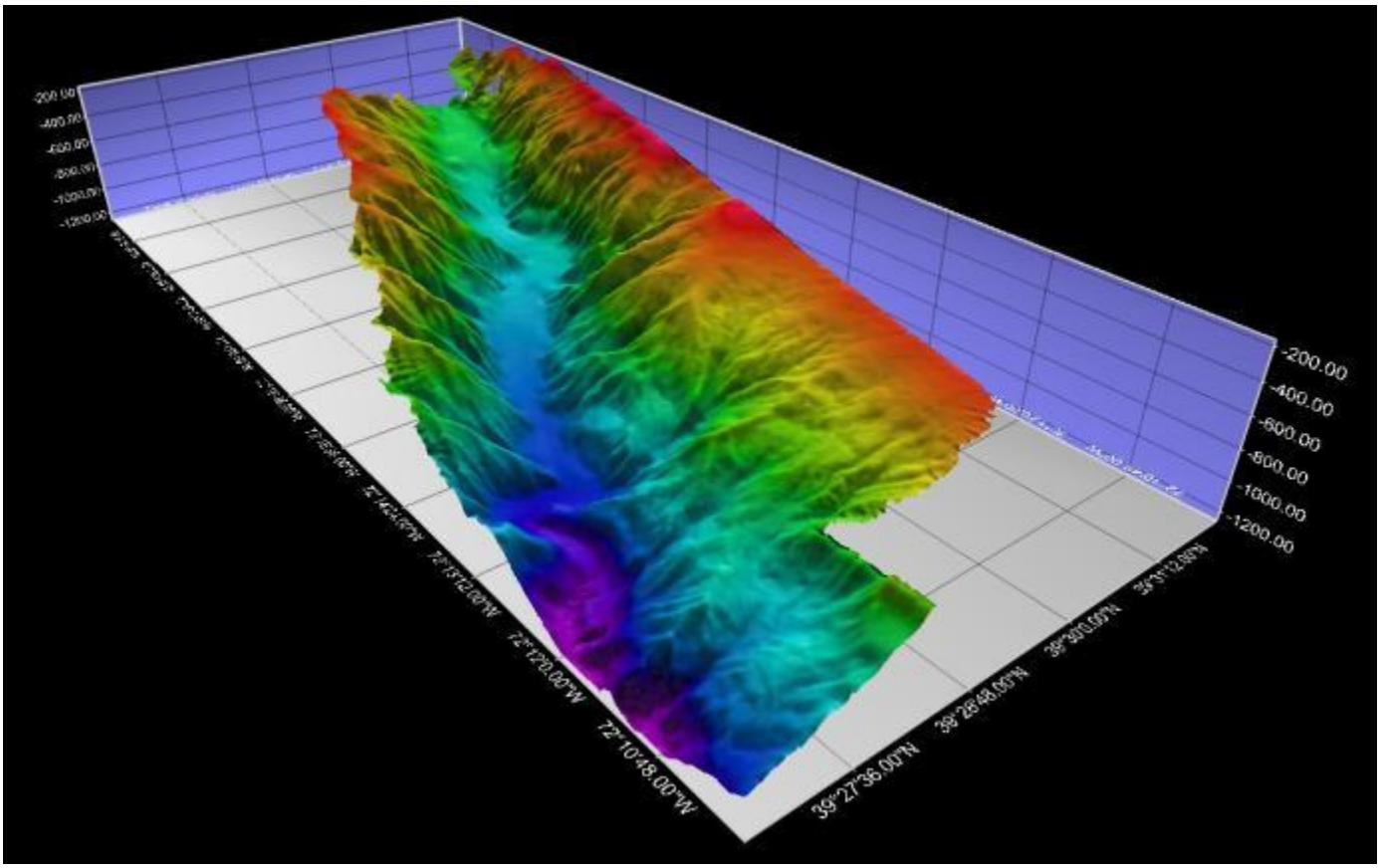

Figure 4. Hudson Canyon. EM 302 multibeam data gridded to 30 meters in Fledermaus v7. 4.1., x3 vertical exaggeration.

Retriever Seamount

Multibeam mapping of Retriever Seamount was conducted to add to the multibeam data in vicinity of the seamount. The Retriever seamount summit was observed to rise ~ 1900 m above the adjacent seafloor (Figure 5).

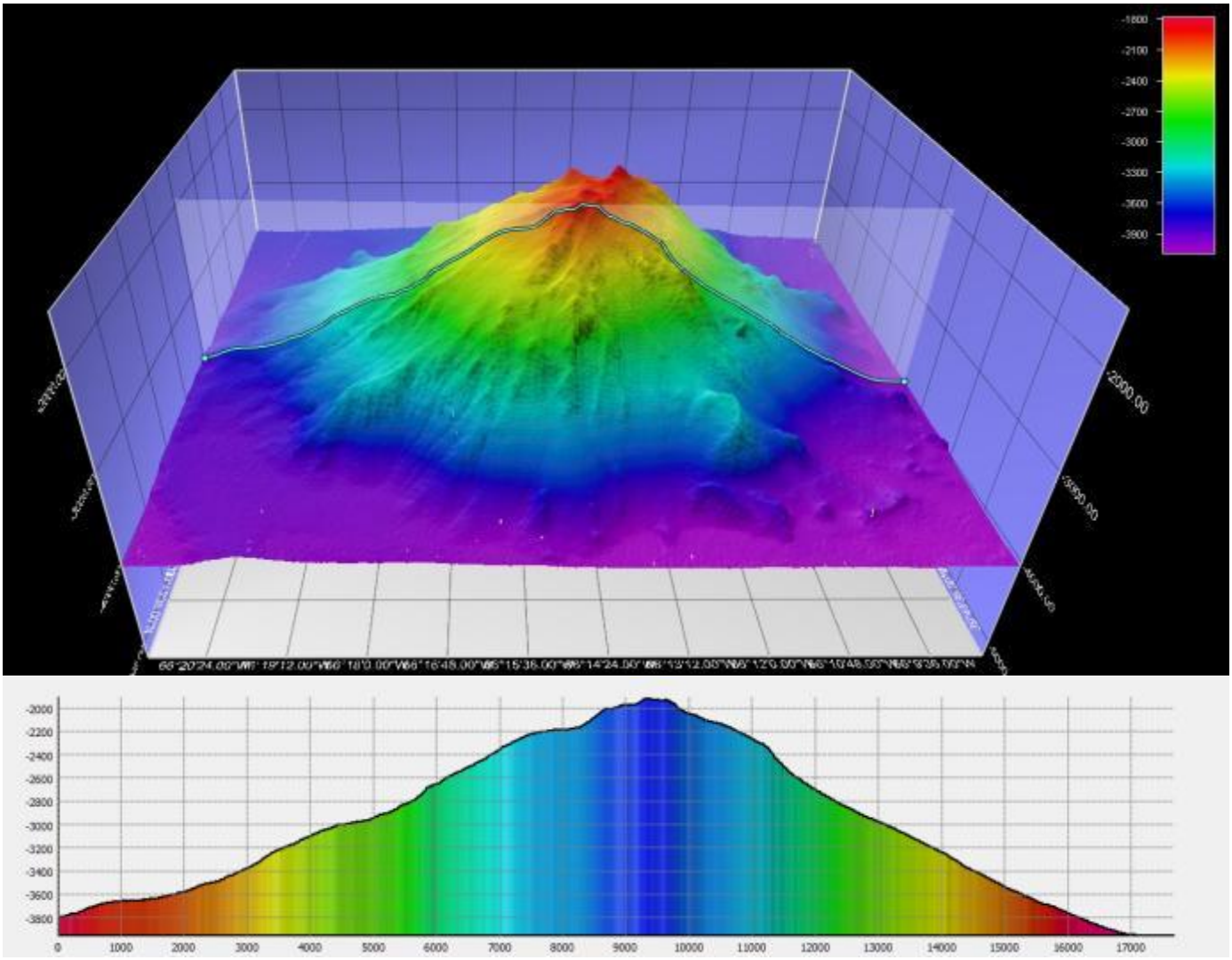

Figure 5. Retriever Seamount. EM 302 multibeam data gridded to 30 meters in Fledermaus v7. 4.1(top), x3 vertical exaggeration. East-west profile over the entire seamount (bottom).

6. Mapping Statistics

Dates	September 16 – October 7, 2014
Days lost to weather	2.7 days
Total mapping days	9.8 days
Total non-mapping days	8.6 days
Line kilometers of survey	3800.5 km
Square kilometers mapped	14,700 km^2
Number / Data Volume of EM 302 raw bathymetric / bottom backscatter multibeam files	639 files / 28 GB
Number / Data Volume of EM 302 water column multibeam files	639 files / 83 GB
Number / Data Volume of EK 60 water column singlebeam files	141 files / 6 GB
Number / Data Volume of subbottom sonar files	160 files / 2 GB
Number of XBT casts	55
Number of CTD casts (including test casts)	0
Number of ROV dives conducted	13
Beginning draft	Forward: 15'; Aft: 13'8"
Ending draft	Forward: 13'; Aft: 14'7.5"
Average ship speed for survey	8.47 kts

7. Mapping Sonar Setup

The NOAA Ship *Okeanos Explorer* is equipped with a 30 kHz Kongsberg EM 302 multibeam sonar capable of mapping the seafloor in 0 to 8000 meters of water. The system generates a 150° beam fan containing up to 432 soundings per ping in waters deeper than 3000 meters. In waters less than 3000 meters, the system is operated in multiping, or dual swath mode, and obtains up to 864 soundings per ping, by generating two swaths per ping cycle. Appendix D contains a detailed description of sonar system functionality and technical specifications, including crosstrack and alongtrack data resolutions.

The ship is also equipped with a Kongsberg EK 60 singlebeam fisheries sonar. The transducer operates at 18 kHz and transmits a 7° beam fan.

Additionally the ship is equipped with a Knudsen 3260 subbottom profiler. The transducers produce a 3.5 kHz chirp signal.

8. Data Acquisition Summary

EX-14-04 Leg III operations included EM 302 multibeam, EK 60 singlebeam, and Knudsen subbottom profile data collection. The schedule of operations included 12-hour overnight multibeam, singlebeam, and subbottom data collection, weather permitting. Additionally, mapping operations were conducted during the days when ROV dives were canceled. The multibeam coverage can be seem in Figure 1, while the EK60 and Knudsen tracklines are shown in Figures 6 and 7, respectively.

Expendable bathythermographs were collected every three to six hours to correct multibeam data for changes in sound speed in the water column, and were applied in real time using Seafloor Information

Software (SIS). Sound speed at the sonar head was determined using a Reson SVP-70 probe and the thermosalinograph (TSG). Data from these two systems was monitored for consistency throughout the cruise, and whichever was performing better was applied in realtime using SIS. The TSG was secured on October 4 due to air intake, and was not used during the rest of the cruise.

Background data used for operational planning included existing multibeam data collected by *the Okeanos Explorer* and the Extended Continental Shelf project, and Sandwell and Smith satellite altimetry bathymetric data.

Tables listing all sonar files collected and products created during the cruise are provided in the appendices of this report.

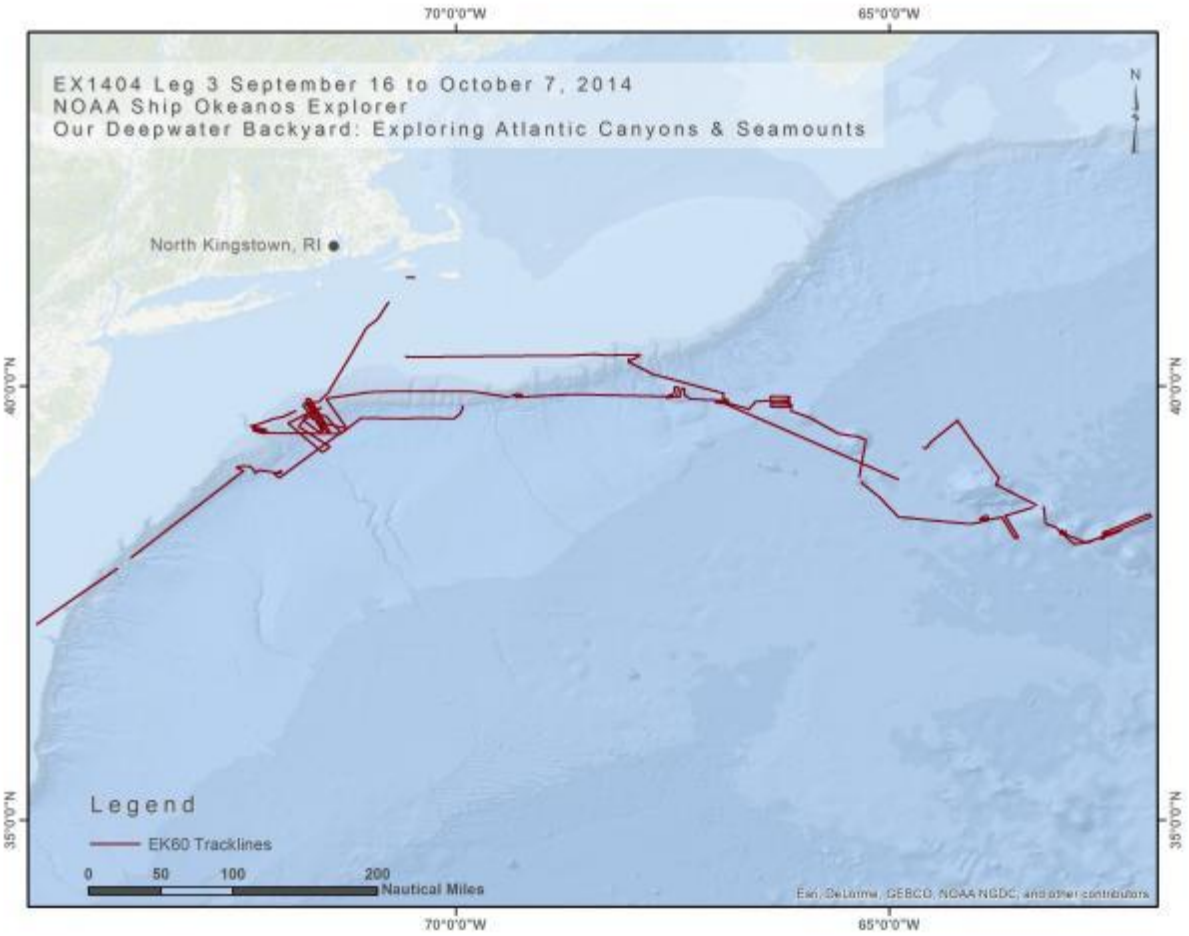

Figure 6. Tracklines of EK 60 singlebeam sonar data collected during EX-14-04 Leg III.

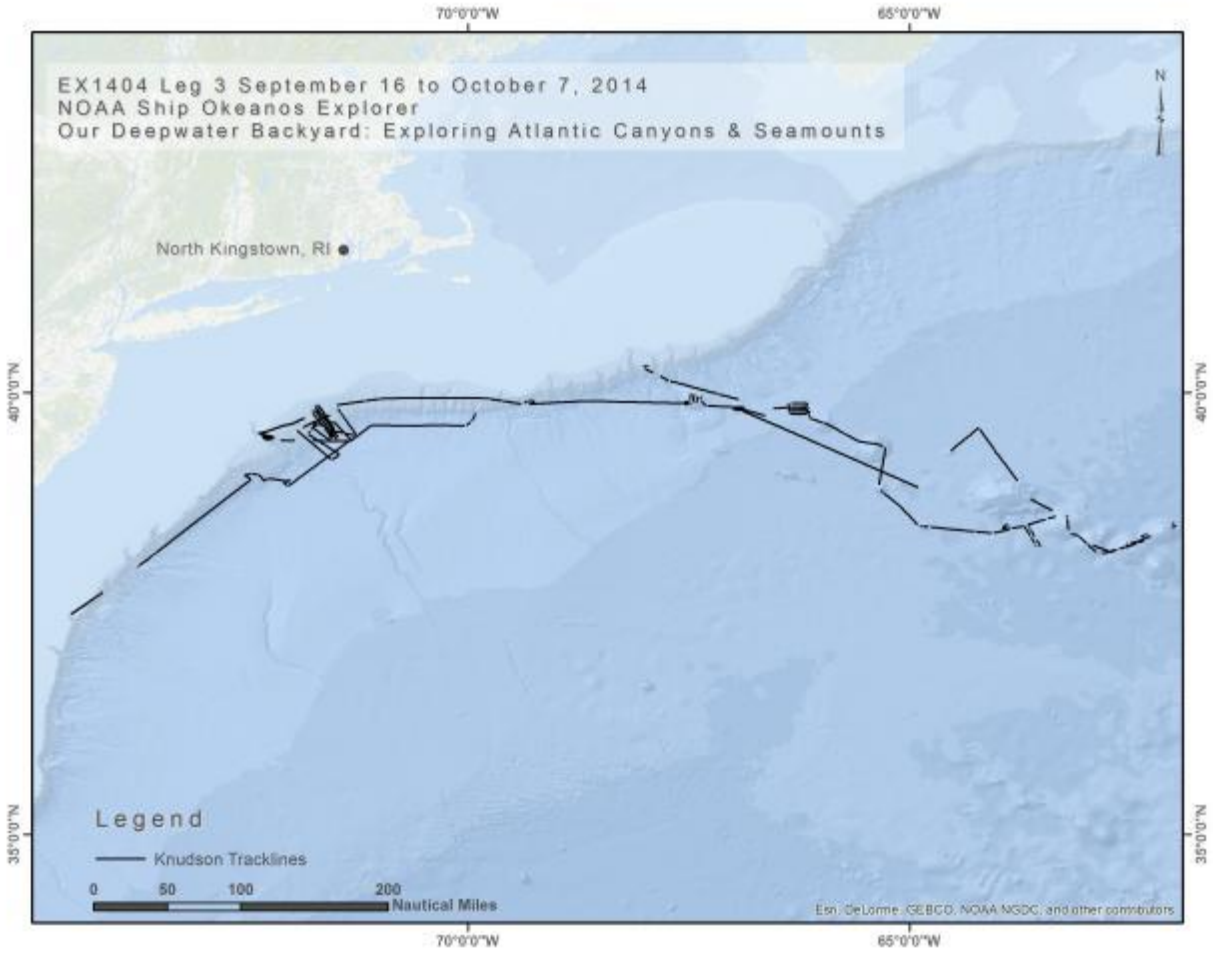

Figure 7. Tracklines of Knudsen subbottom profiler data collected during EX-14-04 Leg III.

9. Sonar Data Quality Assessment and Data Processing

Throughout the cruise, multibeam data quality was monitored in realtime by acquisition watchstanders. XBTs were conducted every three to six hours as necessary to maintain data quality. Ship speed was adjusted to maintain data quality as necessary. Line spacing was planned to ensure ¼ to ½ overlap between adjancent lines at all times. Cutoff angles in SIS were generally set between 60° and 70° on both the port and starboard sides.

In very deep water (> 4500 m), the best quality bathymetry data were observed to be collected using Auto Ping and Auto Sector coverage modes. Setting auto ping mode set the system to perform in Very Deep mode, however the quality of outerbeams in the bottom backscatter was degraded due to low SNR. Taking SIS out of Auto Depth mode and forcing the system into Extra Deep ping mode resulted in better quality data in the outerbeams. However, it became apparent that the bathymetry coverage was reduced by operating the system Extra Deep mode (Figure 8). To collect wider swath coverage EM 302 was set to operate in Auto Ping mode and bad bottom detections in outerbeams were manually edited in CARIS during data processing.

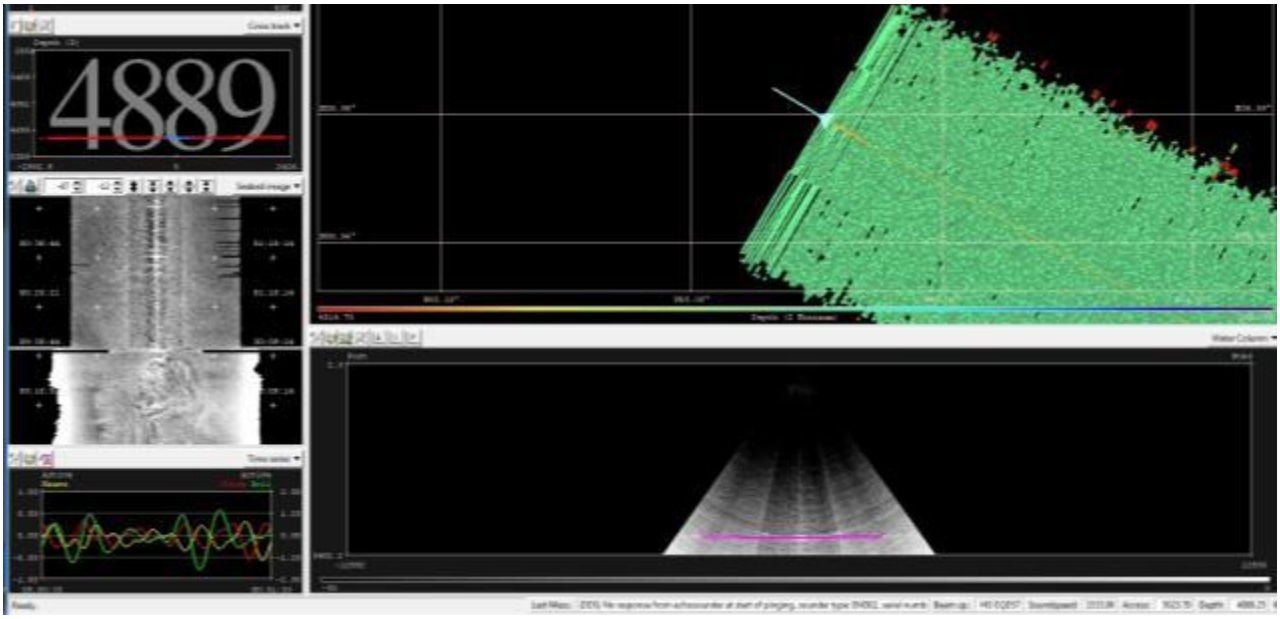

Figure 8. The backscatter seabed image shows the change between Very Deep Ping Mode (bottom, whitewashed portion of the image) and manually selecting Extra Deep Ping Mode (top portion of the seabed image). The bathymetry in Extra Deep Mode is reduced to three sectors and data coverage is compromised compared to Very Deep Ping Mode.

Raw multibeam bathymetry data files were acquired by SIS, and were imported into CARIS. In CARIS, attitude and navigation data stored in each file were checked, and erroneous soundings were removed using CARIS Subset Editor. Once per day, cleaned, gridded bathymetric data were exported to ASCII text files (y,x,z) at 50 meter cell size in WGS84 datum. The ASCII files were then used to create Fledermaus SD objects. These SD objects were then exported to geotiff and Google Earth KMZ, which were copied to the shoreside FTP on a daily basis for analysis by shoreside scientist.

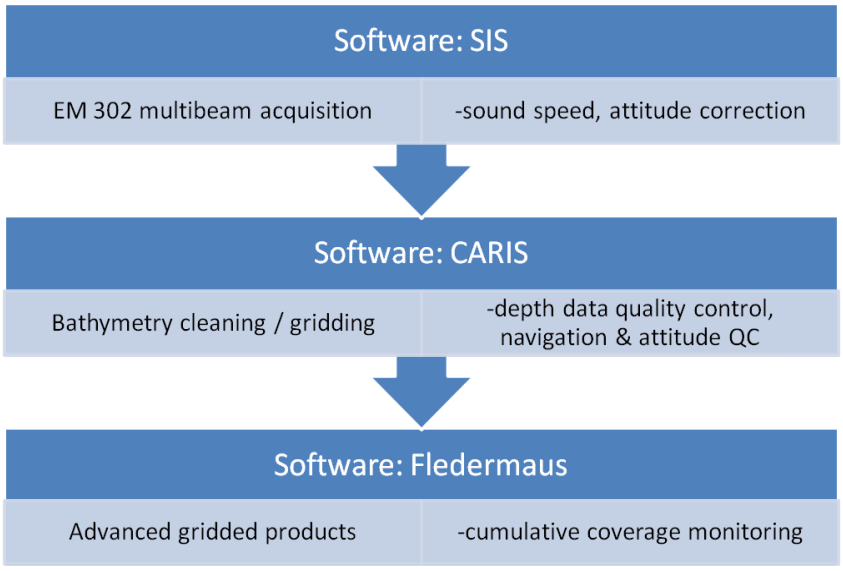

Figure 9. Shipboard multibeam data flow.

The EM302 was only shut down once during the entire cruise, during a 24-hour weather transit to shallow water.

EM 302 Built In System Tests (BISTs)

Prior to this cruise, while in-port, several BISTs test failed. Four EM302 TRU TX boards (#11, #12, #13 and #24) were replaced with refurbished boards provided by Kongsberg prior to ship's departure from port. Later BISTs showed all systems working properly throughout the cruise.

Twenty-one built in system tests (BIST) were run during the cruise to monitor the system health of the EM 302 sonar electronics. After the four TX boards were replaced, the sonar appeared to be performing well. A summary table of BIST results and a sample full BIST result is provided in the appendices of this report.

Cross Lines

Crossline analysis was conducted using surface differencing in Caris near 39.108 N, 65.317 W, in an average of 4750 m of water. Two reference surfaces were computed, the first surface using multibeam line # 0429, run in the N/S direction. The second surface was computed using line # 0272 oriented E/W, Figure 10. The two surfaces were differenced, and statistics were computed based on the differences. The lines showed good agreement with each other within a mean difference of 1.3 m.

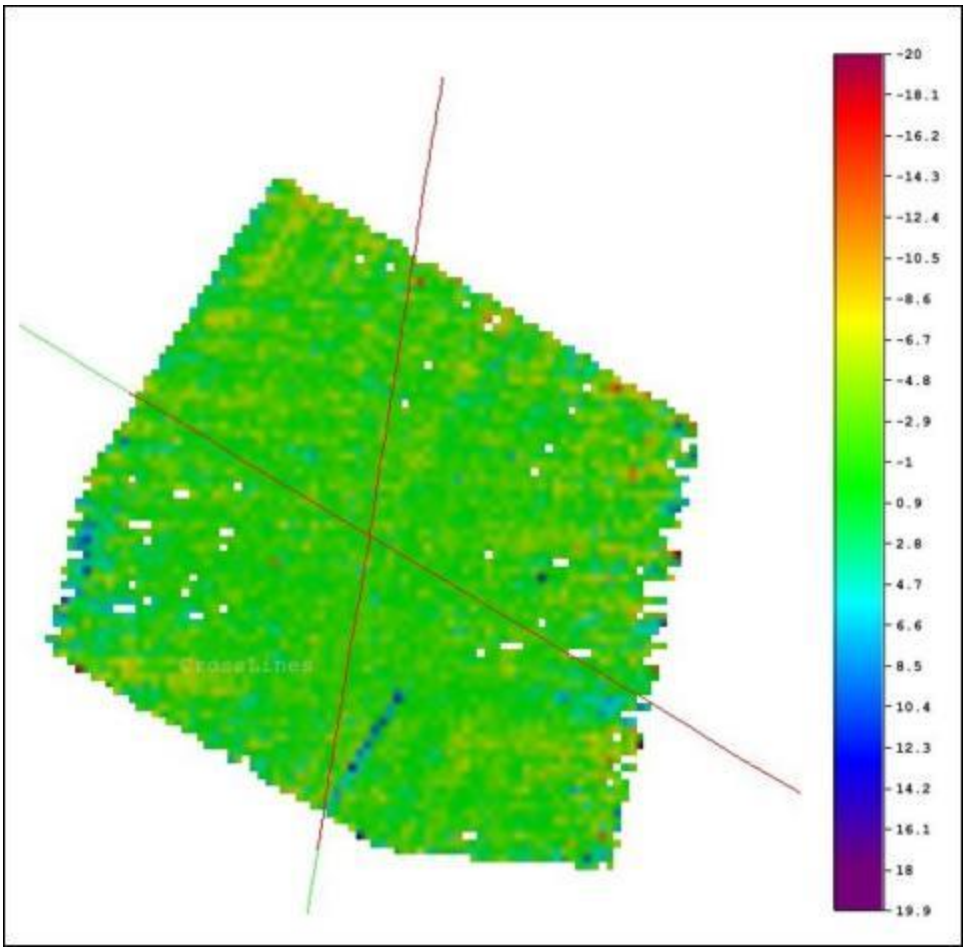

Figure 10. Cross line analysis results, differences are greater where outerbeams overlap. The colorbar shows differences in meters.

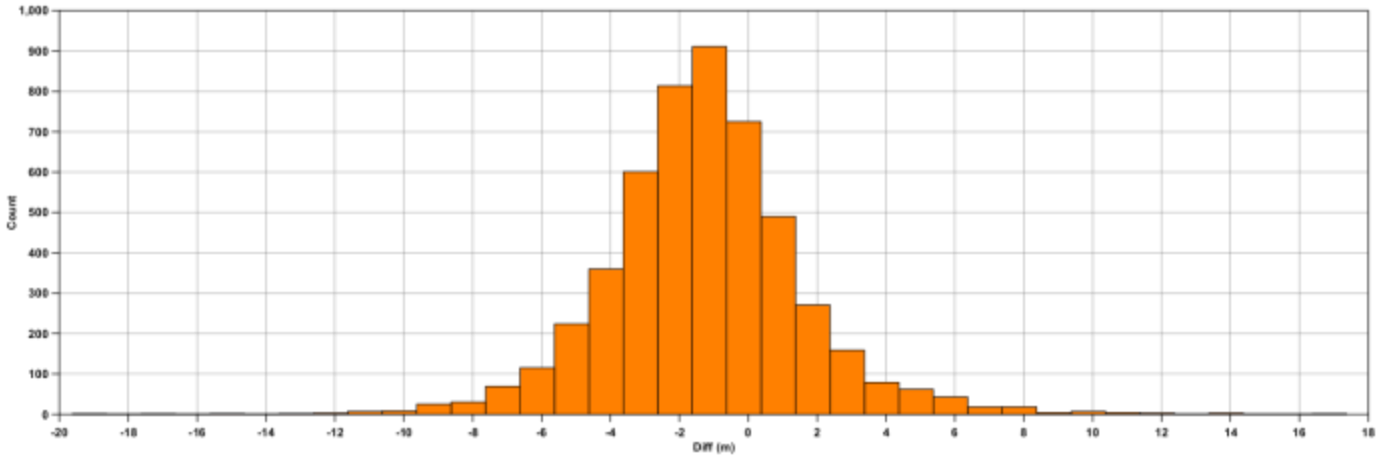

Figure 11. Difference histogram. The water depth of the cross-line analysis ranged from 4739 m to 4839 m. Statistics of the differencing are shown in Table 1.

Table 1. Differencing statistics.

Differencing Statistics	
Minimum (m)	-19.55
Maximum (m)	17.29
Mean (m)	-1.3
Standard Deviation (m)	2.84
Total Count	5,060

10. Data Archival Procedures

All mapping data collected by *Okeanos Explorer* are archived and publically available within 90 days of the end of each cruise via the National Centers for Environmental Information (NCEI) formerly known as National Geophysical Data Center's (NGDC). Data can be accessed via the following website (last accessed 11/09/2015):

- the NGDC Interactive Bathymetry Data Viewer at http://maps.ngdc.noaa.gov/viewers/bathymetry/

The complete EX-14-04 Leg III *Okeanos Explorer* data management plan is provided in the appendices of this report.

11. Telepresence

A 20 mb/s ship-to-shore connection was available throughout the cruise.

Live video was available throughout the cruise on the Ocean Explorer Website. http://oceanexplorer.noaa.gov/okeanos/media/exstream/exstream.html.

12. Cruise Calendar.

All times listed are in UTC. Local ship time was -4 hours from UTC.

September/October 2014						
Sun	Mon	Tues	Wed	Thur	Fri	Sat
9/14	9/15 Mission personnel arrived on the ship in Baltimore, MD. Replace four EM302 TX boards.	9/16 Depart Baltimore at 1000.	9/17 Arrive at MOC-A Norfolk, VA to await ship replacement part.	9/18 Departed Norfolk,VA. Started collecting MB data, started TSG.	9/19 Conducted overnight transit mapping, data quality was poor due to weather.	9/20 Mapped between Hendrickson and McMaster Canyons with all three sonars.
9/21 Collected overnight transit mapping data, data quality was poor due to weather.	9/22 Collected EK60 and SBP data throughout day and data from all three sonars overnight.	9/23 Overnight transit speeds were fast, so overnight mapping data quality suffered.	9/24 Mapped for 20 hours over Bear, Physalia, and Retriever Seamounts.TSG secured overnight.	9/25 Overnight transit mapping, data quality suffered due to high transit speed. Ship was re-ballasted and TSG turned back on.	9/26 Mapped Panulirus and Atlantis II seamount. Suspended XBT operations due to a lighting storm.	9/27 Mapped over Atlantis II on way to Gosnold Seamount.
9/28 Collected reciprocal backscatter lines over Gosnold Seamount and cross lines over Sheldrake and Gosnold Seamounts.	9/29 Overnight transit mapping between Kelvin and Kiwi.	9/30 Overnight transit mapping. Sector coverage and pings modes adjusted in SIS during a long straight transit.	10/01 Began transit mapping, at 0130 mapping operations were suspended due to rough sea conditions. The ship headed inshore to seek shelter.	10/02 Seeking shelter from weather between Martha's Vineyard and Nantucket islands.	10/03 Offshore weather improves. Transit mapping in very shallow water with all three sonars.	10/04 Collected EK60 and SBP. Data quality was poor due to weather.
10/05 Collected MB data in the southern portion of the head of Hudson Canyon, and conducted overnight transit mapping.	10/06 Collected reciprocal backscatter lines over dive site. Transit mapping back to port. Sonars secured at 70 m.	10/07 Arrive port North Kingstown, RI. Mission personnel depart ship.				

13. Daily Cruise Log

All times listed are local ship time, which was -4 hours from UTC.

September 17, 2014
Ran a successful BIST in the morning started to generate some dive planning products. The XO was unsuccessful at finding an augmenting survey tech that could meet the ship while we were tied up in Norfolk.

September 18, 2014
Started logging multibeam about midnight and collected data until we arrived at the dive site. The bridge watch stander assisted the overnight watch stander with the XBTs. We are not securing the multibeam TRU while the ROV is in the water we are just not pinging. The ET and Mapping lead were able to start the TSG shortly after clearing the sea buoy.

September 19, 2014
The TRU closet got a little warm overnight. The security watch did a great job notifying the overnight mapping staff when the temperature crossed 80 degree F. The temperature decreased after the sonars were stopped pinging in preparation for the ROV dive. Data quality was poor to moderate overnight due to weather.

September 20, 2014
Mapped between Hendrickson and McMaster Canyons. Overnight data quality was good. The temperature in the TRU rooms was normal throughout the night.

September 21, 2014
Collected data overnight on all three sonars. Data quality was moderate to poor due to the weather.

September 22, 2014
Collected SBP and EK60 data through the day. Collected data from all three sonars overnight with moderate to good quality.

September 23, 2014
Overnight data quality was moderate. The ship was making best speed to make it to the dive site so the mapping data quality suffered. During the night the ship transited over several known seep locations. All the seeps were confirmed in EM 302 data. The POS MV heading l dropped out several times a day and the mapping lead has noticed some noise issue in the nadir of the multibeam over the last couple days.

September 24, 2014
Mapped for approximately 20 hours Sept 24 into the morning of Sept 25. Collected data with all three sonar systems. Ran survey lines over Bear, Physalia, and Retriever Seamounts. Data quality over the seamounts was good, however during transits between seamounts, data quality was poor to moderate because of wind and swell direction. TSG is currently secured because the pump was losing suction due to air in the line. CET and CME have requested permission to re-ballast the ship to bring the bow down in order to reduce the number of bubbles introduced into the system.

September 25, 2014
Overnight mapping was conducted with all three sonars. Data quality was fair due to deepwater and required transit speeds to make the next dive site. The ship re-ballasted allowing the TSG to be turned on again.

September 26, 2014
Mapping coverage included Panulirus Seamount, extending the coverage around Atlantis II seamount and running sub bottom profiles for USGS. We missed one XBT overnight due to a lighting storm. Data quality over night was good.

September 27, 2014
Mapped over Atlantis II on way to Gosnold Seamount. Ran all three sonars continuously. Data quality was fair to good. Night watch stander noticed that in auto ping mode the EM302 was picking ping modes that washed out the outerbeams in the backscatter, and caused deep false returns in near nadir. Switching to manual mode and selecting an appropriate ping depth helped alleviate these issues. As we continue to transit through the Gulf Stream surface sound speeds are changing quickly, but this does not appear to adversely affect the data.

September 28, 2014
After the ROVs were secured from the dive at Gosnold, we mapped over the dive site collecting backscatter data. ~1 km long lines were run over the dive site from various directions. The EM302 had to be set to Very Deep ping mode even though we were only in 1800-2000 m of water. In Deep ping mode the backscatter was over-saturated. After the test we steamed to the eastern edge of Sheldrake Seamount and transited west, collecting a long crossline over Sheldrake and Gosnold Seamounts, to compliment data collected during EX1404L1. After the crossline was complete we steamed to the Atlantis II Caldera site. Once on site we collected another series of ~1 km long lines for a backscatter test. At the Caldera site the currents were so strong that the ship was crabbing and had a hard time maintaining a steady survey speed of 8.5 knots.

September 29, 2014
Transit mapped between Kelvin and Kiwi seamount with all 3 sonars. We are continuing to run ping mode in manual. Overall data quality was moderate to good.

September 30, 2014
Conducted overnight transit mapping between the unnamed seamount and Physalia. Transit speeds were faster than normal survey speed (11-12 knots vs 8.5-9) to get on the dive site by the morning. The mapping team tested a few of the EM302 settings, adjusting the Ping Mode between Very Deep and Extra Deep and the Angular Coverage mode between Manual and Auto. There were noticeable differences between the settings in both the bathymetry and backscatter returns. For the majority of the transit depths were ~4,000 m to 4,500 m, and the Very Deep ping mode and Auto angular coverage results in the best quality data. Screen shots of SIS were taken of the different settings. After mapping in shallower waters and conducting similar tests, the screen shots will be sent to Kongsberg to help them with their evaluation of the EM302.

October 1, 2014
Once the ROVs were on deck we commenced transit mapping with all three sonars. At 0130 the seas had built to a level that mapping data quality was poor and ship discontinued mapping operations and started heading towards sheltered waters.

October 2, 2014
Catching up on processing and paperwork. The TRU was fully powered down once the seas were too rough to map in.

October 3, 2014
Powered up the TRU and let it warm up for 30 minutes and had no problems getting the sonar to start pinging and logging. Started logging multibeam and EK60 at 50 meter started logging SBP at 200 meters. Data quality was good for shallow water.

October 4, 2014
Collected 4 EK60 lines at the request of University of Connecticut researchers and SBP lines for USGS. Data quality was moderate to poor due to weather. The TSG was secured due to air intake. The current belief is that because the ship is light on fuel and is riding higher than normal in the bow

October 5, 2014
After the dive was called off the ship steamed to Hudson Canyon to map an area 12 km by 5 km for the NOAA Tsunami Group. All three sonars were run, with a focus on the multibeam. At times the EK60 and

Knudson were not logging because data quality was so poor due to weather. Data quality in the morning was poor but improved throughout the day as the seas and wind laid down. In the afternoon we began the transit to Nantucket Canyon, extending existing EX multibeam coverage to the south.

October 6, 2014
Conducted a short line plan over the dive site to compare backscatter to the ROV video. All three sonars were run until 70 meters water depth then secured.

October 1, 2014
Ship alongside in North Kingstown, RI.

14. References

The 2014 Survey Readiness Report can be obtained by contacting NOAA Ship *Okeanos Explorer* at ops.explorer@noaa.gov.

EX-14-04 Leg III Project Instructions can be obtained by contacting NOAA Ship *Okeanos Explorer* at ops.explorer@noaa.gov.

15. Appendices

Appendix A: EX-14-04 Data Management Plans

Data Management Plan
Okeanos Explorer (EX1404L3): Northeast Seamounts and Canyons

OCEAN EXPLORATION & RESEARCH

Data Management Objectives

1) verify that the data pathways for nav and sensors from ROV are established and stable 2) verify data consolidation is operational 3) verify and monitor push to shore is operational 4) provide video support 5) continue work on data warehouse functionality migration to warehouse replacement systems

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2.1 Name

1. General Description of Data to be Managed

1.1 Name and Purpose of the Data Collection Project

Okeanos Explorer (EX1404L3): Northeast Seamounts and Canyons

Leg III of EX1404 will concentrate on mapping and exploring the New England Seamount Chain using a combination of ROV operations during the day and CTD/Rosette operations in the evening and overnight. Mapping operations will include subbottom data collection over key features, multibeam data collection over canyon heads requiring coverage development, and holiday lines completing previous multibeam data coverages.

1.2 If this mission is part of a series of missions, what is the series name?

Okeanos ROV Cruises

1.3 Summary description of the data to be collected.

High resolution mapping data from vessel multibeam and submersible sonar systems; singlebeam and sub-botoom profile data; periodic CTD casts; submersible CTD data; underwater video from two-body submersible systems; underway oceanographic, meteorological, and flow-through sensors from vessel

1.4 Keywords that could be used to characterize the data.

expedition, exploration, explorer, marine education, noaa, ocean, ocean discovery, ocean education, ocean exploration, ocean exploration and research, ocean literacy, ocean research, OER, science, scientific mission, scientific research, sea, stewardship, systematic exploration, technology, transformational research, undersea, underwater, Davisville, mapping survey, multibeam, multibeam backscatter, multibeam sonar, multi-beam sonar, noaa fleet, okeanos, okeanos explorer, R337, Rhode Island, scientific computing system, SCS, single beam sonar, singlebeam sonar, single-beam sonar, sub-bottom profile, water column backscatter, New England Seamount Chain, Northeast U.S. Canyons, Bear Seamount, Sheldrake Seamount, benthic habitats, benthic ecosystems, Chesapeake Bay

1.5 Anticipated temporal coverage of the data.

Cruise Dates: 9/16/2014 to 10/7/2014

1.6 Anticipated geographic coverage of the data.

Latitude Boundaries: 40.25 to 37.33

Longitude Boundaries: -68 to -56.5

1.7 What platforms will be employed during this mission?

NOAA Ship Okeanos Explorer, Deep Discoverer ROV, SEIRIOS Camera Sled

1.8 What data types will you be creating or capturing?

Cruise Plan, Cruise Summary, Data Management Plan, Highlight Images, Quick Look Report, CTD (processed), CTD (product), CTD (raw), EK60 Singlebeam Data, Multibeam (image), Multibeam (processed), Multibeam (product), Multibeam (raw), Mapping Summary, Raw Video (digital), SCS Output (compressed), SCS Output (native), Sub-Bottom Profile data, Water Column Backscatter, Raw video inventory logs, Dive Summaries

1.8 What data types will you be submitting for archive?

Cruise Plan, Cruise Summary, Data Management Plan, Highlight Images, Quick Look Report, CTD (processed), CTD (product), CTD (raw), EK60 Singlebeam Data, Multibeam (image), Multibeam (processed), Multibeam (product), Multibeam (raw), Mapping Summary, Raw Video (digital), SCS Output (compressed), SCS Output (native), Sub-Bottom Profile data, Water Column Backscatter, Raw video inventory logs, Dive Summaries

2. Point of Contact for this Data Management Plan

2.1 Name Brian Kennedy

2.2 Title Commissioned Officer

2.3 Affil NOAA Office of Ocean Exploration and Research

2.4 email brian.kennedy@noaa.gov

2.4 phone (401) 874-6150

3. Data Lineage and Quality

3.1 What quality control procedures will be employed?

Quality control procedures for the data from the Kongsberg EM302 is handled at UNH CCOM/JHC. Raw (level-0) bathymetry files are cleaned/edited into new data files (level-1) and converted to a variety of products (level-2). Data from sensors monitored through the SCS are archived in their native format and are not quality controlled. Data from CTD casts and XBT firings are archived in their native format and are not quality controlled. CTDs are processed into profiles for display only on the Okeanos Atlas.

3.2 What is the processing workflow from collection to public release?

SCS data shall be delivered in its native format as well as an archive-ready, documented, and compressed NetCDF-4 format to NODC; multibeam data and metadata will be compressed and delivered in a bagit format to NGDC.

4. Data Documentation

4.1 Which metadata repository will be used to document this data collection?

An ISO format collection-level metadata record will be generated during pre-cruise planning and published in an OER catalog and Web Accessible Folder (WAF) hosted at NCDDC for public discovery and access. The record will be harvested by data.gov.

4.2 What additional metadata or other documentation is necessary to fully describe the data and ensure its long-term usefulness?

Additional metadata includes: Multibeam metadata to file level; Scientific Computing System (SCS) metadata; MAchine Readable Catalog (MARC) metadata for Library items.

4.3 What standards will be used to represent data and metadata elements in this data collection?

ISO 19115-2 Geographic Information with Extensions for Imagery and Gridded Data will be the metadata standard

employed; a NetCDF-4 standard for oceanographic data will be employed for the SCS data; the Library of Congress standard, MAchine Readable Catalog (MARC), will be employed for NOAA Central Library records.

5. Data Sharing

5.1 What date will the data be made available to the public?

All data from this mission is expected to be documented, archived and accessible within 60-90 days post-mission through the NOAA National Data Centers and public access GIS map applications. Meteorological and Oceanographic (METOC) sensor data from the SCS, and CTD data are converted in a post-mission model into archive ready compressed NetCDF-4 format and stored within the NCDDC THREDDS open-access server.

5.2 If the data are not to be made publicly available, under what authority are the data restricted?

Not Applicable

5.2a Access Constraints Statement?

No data access constraints, unless data are protected under the National Historic Preservation Act of 1966.

5.2b Use Constraints Statement?

Data use shall be credited to NOAA Office of Ocean Exploration and Research.

6. Initial Data Storage and Protection

6.1 Where and how will the data be stored initially (prior to archive submission)?

Data are recorded and stored on NOAA shipboard systems compliant with NOAA IT procedures. Data are moved from ship to shore using a variety of standard, documented data custody transfer procedures. Data are transferred to NOAA Data Centers using digital and physical data transfer models depending upon the data volume.

6.2 Discuss data back-up, disaster recovery, contingency planning and off-site storage relevant to this data collection.

Data management standard operating procedures minimizing accidental or malicious modification or deletion are in place aboard the Okeanos Explorer and will be enforced.

6.3 Describe how the data will be protected from unauthorized access, how permissions will be managed and what process will be followed in the event of unauthorized access.

Account access to mission systems are maintained and controlled by the Program. Data access prior to public accessibility is documented through the use of Data Request forms and standard operating procedures.

7. Long-Term Archiving and Preservation

7.1 In what NOAA Data Center(s) will the data be archived and preserved?

Data from this mission will be preserved and stewarded through the NOAA National Data Centers. Refer to the Okeanos Explorer FY14 Data Management Plan at NOAA's EDMC DMP Repository (EX_FY14_DMP_Final.pdf) for detailed descriptions of the processes, procedures, and partners involved in this collaborative effort.

7.1a If you do not plan to archive in the NOAA Data Centers, what is your long-term strategy for maintaining, curating, and archiving the data?

Not Applicable

Data and Product Pipelines (excerpt from EX_FY13_DMP.pdf)

Oceanographic/Meteorological/Navigational Data Archive Pipeline

Data from hull-mounted and off-board oceanographic and meteorological (METOC) sensors; integrated oceanographic sensors from the submersibles; and navigational instrumentation on both the vessel and its submersibles are monitored through the ship's Scientific Computer System (SCS). Some of these data will be used in a near real-time mode to update the *Okeanos Atlas.* All of these data will be archived at the National Oceanographic Data Center (NODC) Marine Data Stewardship Division (MDSD) in Silver Spring, MD. A collection level metadata record describing the data inventory to be archived at the NODC/MDSD will be included with the data submission.

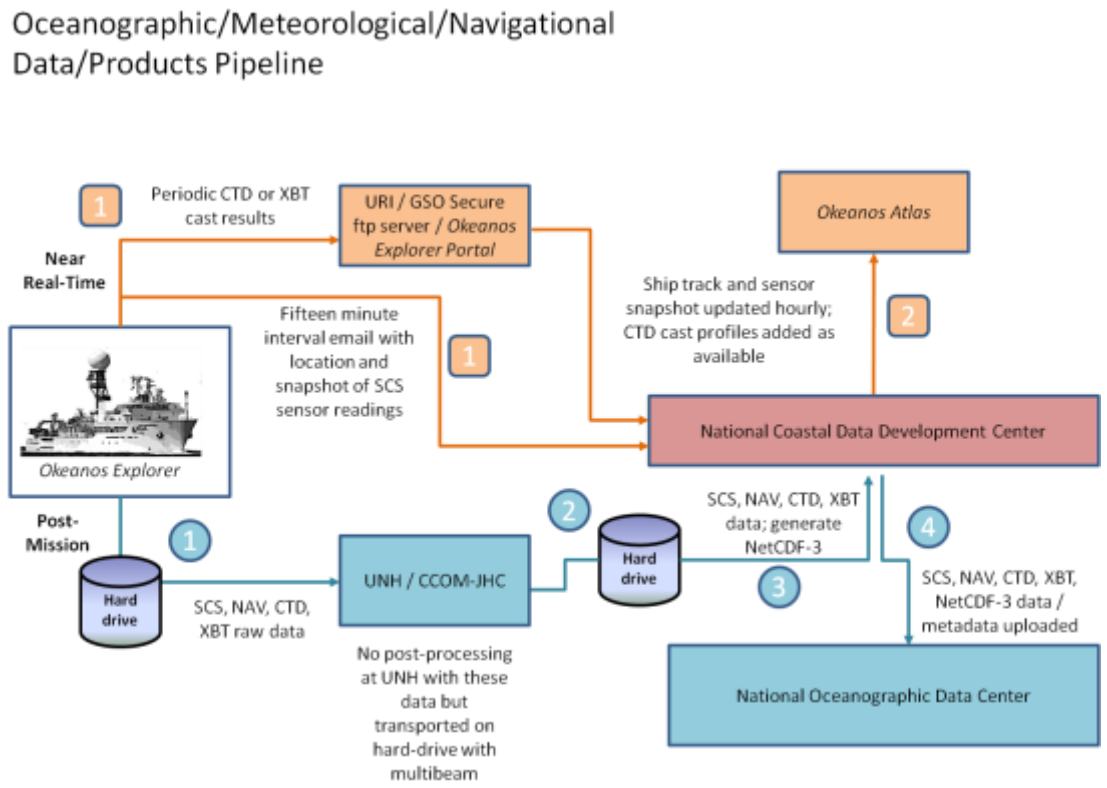

Fig 1: Oceanographic/Meteorological/Navigational Data Archive Pipeline

1 At periodic (currently twenty minutes) intervals, an email from the ship to NCDDC is delivered with the ship's position and a snapshot of the SCS sensor suite. As CTD or XBT casts are deployed, the results of the cast are included in the hourly synchronizations to the SRS.

2

The GIS team at NCDDC processes CTD cast data into thinned profiles for comparison to World Ocean Atlas historical profiles in the same region and month. The thinned profiles are geo-located on the Okeanos Atlas. Ship track and sensor snapshot readings are geo-located on the Okeanos Atlas.

1. All SCS data, including navigation and CTD/XBT cast data are saved to a hard-drive. This hard-drive is the same that will hold the multibeam survey raw data and products generated on-board. This hard-drive will be either brought back or shipped to the University of New Hampshire Center for Coastal and Ocean Mapping (UNH CCOM) for post-processing, after which it will be shipped to NCDDC.
2. The Data Management team will post-process the SCS, NAV, CTD, and XBT raw data files, adding ASCII headers to each file and generating NetCDF-3 formatted files for the entire cruise for both SCS/NAV data and CTD/XBT data. FGDC CSDGM metadata will be generated for the navigational data and for the METOC sensor data.
3. The ASCII files, and the metadata will be uploaded to the National Oceanographic Data Center (NODC), where they will be accessioned and archived.
4. The NetCDF3 files will be stored within an NCDDC hosted Thematic Real-time Environmental Distributed Data Services (THREDDS) server for user discoverability and access.

Data Class	Instrument	Data Type	Format	Metadata Granularity	Archive Center
OCN/ MET	All SCS monitored sensors	Meteorological and Oceanographic data sensors	ASCII	1 meta rec	NODC/MDSD
NAV	DGPS, CNAV	EX, ROV, and sled navigation	ASCII	1 meta rec	NODC/MDSD
ALL	All	Archive Ready	NetCDF-3	1 meta rec	NODC/MDSD

Table 1: Oceanographic/Meteorological/Navigational Metadata Granularity and Target Archive

Multibeam Survey Data Archive Pipeline

The multibeam survey data collected by bottom-looking and complementary sensors, data from the calibration instruments, and the products generated after the data is returned to and post-processed at UNH will be archived at the NGDC. These data will be accompanied with a collection level metadata record for the NGDC as well as individual metadata records for each

raw (level-0) file, each edited (level-1) file and each data product (level-2) and report (level-3) generated as a result. In addition, the submission to NGDC will include the following:

- raw (level-0) mapping survey and water column data files,
- CTD and/or XBT profile data used for calibration in multibeam survey,
- post-processed, quality assured, and edited (level-1) data files,
- specific data products (level-2) including cumulative GeoTIF images, gridded bathymetric files, KML files, Fledermaus output files, and an ArcGrid format, and
- comprehensive mapping survey data summary (level-3) report.

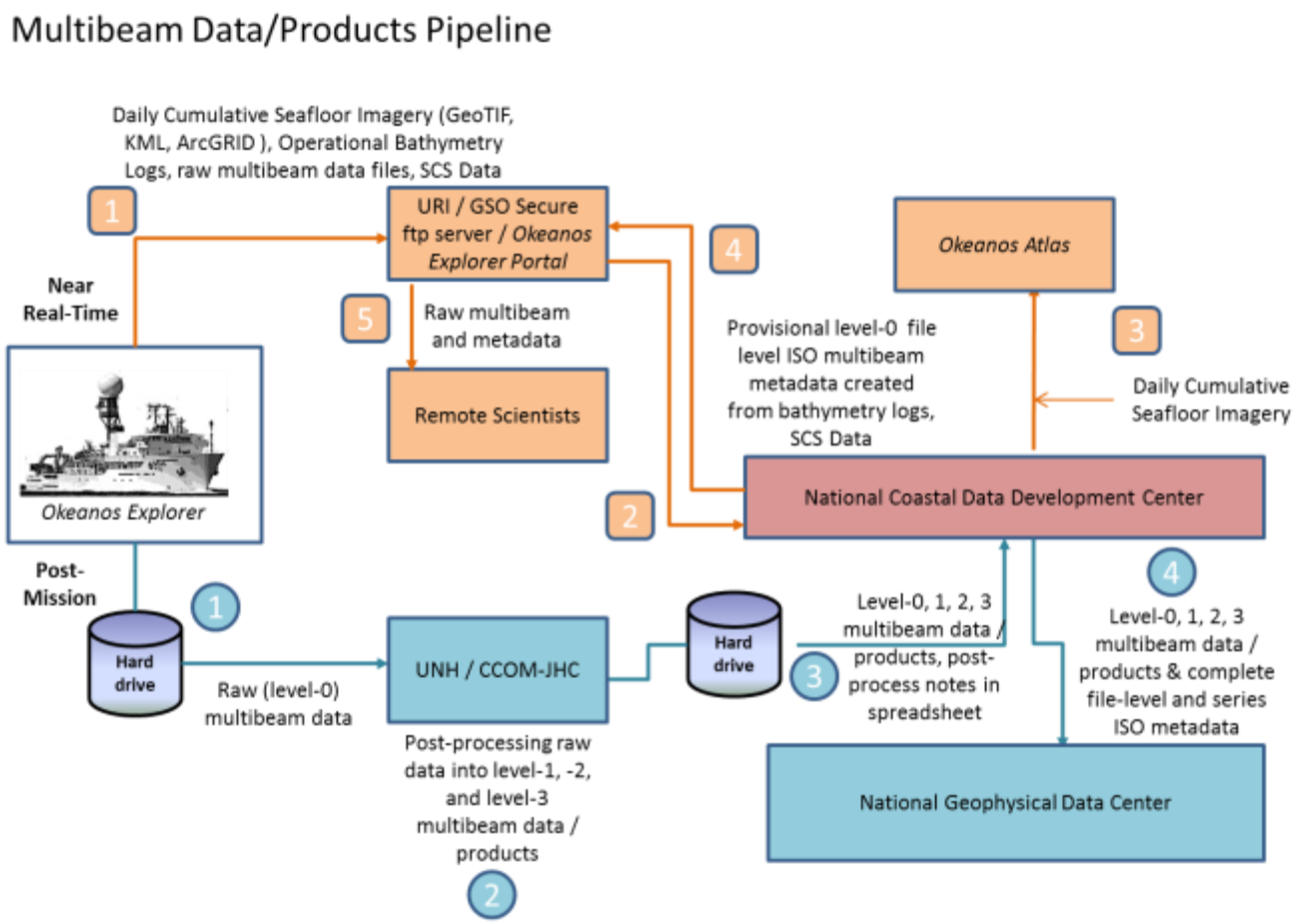

Figure 2: Multibeam Survey Data Archive Pipeline

Near Real-Time

1 The mapping survey team on the EX will include their operational processing spreadsheet in the folder that is targeted for synchronization to the SRS periodically throughout the day. As operational GeoTIFF images are created, these will also be saved to this folder.

2 The data management team at NCDDC pulls the GeoTIFF images, operational bathymetry processing spreadsheet and the SCS data streams for near real-time metadata generation

and Okeanos Atlas update procedures.

3 Daily cumulative GeoTIFF images of the seafloor imagery are geo-located on the Okeanos Atlas by the GIS team at NCDDC.

4 Provisional metadata in an ISO format is generated for each raw (level-0) multibeam raw files using the SCS exported data, the operational processing spreadsheet and saved to the SRS.

5 Participating scientists wanting access to the raw multibeam in near real-time can pull the individual files with the metadata that provides operational and provisional processing steps and a disclaimer for non-QC status of the data.

Post-Mission

1 All bottom-looking sensor data and complementary data (water column and sound velocity) are saved to a hard-drive. This hard-drive will be either brought back or shipped to the University of New Hampshire Center for Coastal and Ocean Mapping (UNH CCOM) for post-processing.

2 A full complement of multibeam data from a 30-day EX cruise on which the Kongsberg EM302 multibeam system runs continuously will produce 200-300 Gigabytes of raw multibeam (37.5% of total volume) and water column data (62.5% of total volume). At UNH, the mapping team will post-process the multibeam data through the following steps:

- The raw (level-0) data will be saved to the CCOM file servers, where they will be quality checked and post-processed.
- The edited level-0 data is saved as level-1 data filesin a non-proprietary format – ASCII xyz files (cleaned not gridded).
- The post-processing steps used to produce the level-1 data will be documented.
- Level-2 products will be generated from the level-1 data files.
- The post-processing steps used to produce the level-2 data products will be documented.
- The level-1 data, level-2 products, post-processing steps, and working data processing spreadsheets will be copied to the hard drive in a new folder. A processing spreadsheet for FY12 will contain the temporal and spatial limits of each file and any supplemental information documenting problems or issues that affected the quality of the data in that file.

3 The hard-drive will be shipped to the NCDDC within approximately 3 weeks from cruise end date.

4 At NCDDC, all multibeam related files will be post-processed through metadata generation procedures. Metadata will be generated for each individual survey track file (level-0 and -1), for

accompanying CTD/XBT profile data sets, for composite xyz files, KMLs, GeoTIFs, png images, and Fledermaus output (level-2), and a set of data products and reports (level-3). The metadata will be added to the hard-drive and the hard-drive will be shipped to NGDC.

NOAA Ship Okeanos Explorer					
Data Class	**Instrument**	**Data Type**	**Format**	**Metadata Granularity**	**Archive Center**
GEO	Kongsberg EM302 (30 kHz)	Multibeam Bathymetry, Bottom Backscatter, Water Column Backscatter (proprietary format read into MBSystem)	.all, .wcd (proprietary)	1 meta rec per .all file in Multibeam Data folder and subfolders	NGDC
GEO	Simrad EK60	Singlebeam (time,depth)	.txt, (ASCII), .raw (proprietary)	Included in the SCS feed	TBD
GEO	Knudsen CHIRP 3260 (3.5 kHz)	Sub-bottom profile	.sgy, .kea, .keb (proprietary)	1 meta rec = Subbottom Profile Data folder	NGDC
OCN	SeaBird SBE-911plus	CTD Cast	.hex, .con (Proprietary); .cnv, .hdr, .bl, .jpg (processed)	1 meta rec = CTD folder	NGDC
OCN	Sippican MK-21 eXpendable BathyThermograph (XBT)	XBT	.edf (ASCII), .rdf (proprietary)	1 meta rec = XBT folder	NGDC
OCN	RESON	Sound Velocity (m/s)	TBD	1 meta rec = RESON folder	NGDC
OCN	Calculated	Sound Velocity (m/s)	.asvp (ASCII)	1 meta rec = Profile_Data/SVP or Profile_Data/ASVP	NGDC

Table 5: Multibeam Survey Metadata Granularity and Target Archive

Appendix B: Categorical Exclusion Letter

August 5, 2014

MEMORANDUM FOR: The Record

FROM: John McDonough
Acting Director NOAA Office of Ocean Exploration and Research (OER)

SUBJECT: Categorical Exclusion for NOAA Ship *Okeanos Explorer* cruise EX1404, Legs 2 & 3

NAO 216-6, Environmental Review Procedures, requires all proposed projects to be reviewed with respect to environmental consequences on the human environment. This memorandum addresses the NOAA Ship *Okeanos Explorer's* scientific sensors possible affect on the human environment.

Description of Projects
This project is part of the Office of Ocean Exploration and Research's "Science Program." It will conduct remotely operated vehicle (ROV) operations and ocean mapping activities designed to increase knowledge of the marine environment. This project is entitled "EX1404 Our Deepwater Backyard: Exploring the Atlantic Canyons and Seamounts" and will be led by Brian Kennedy, an Expedition Manager for NOAA OER. The work will be conducted in September and October at various locations in the North Atlantic: an area from the North Carolina Virginia boarder north to the Canadian Maritime border and up to 650 nm offshore. A tandem 6,000 meter ROV system will be deployed and CTD rosette casts may be conducted during the expedition. The Kongsberg EM 302 multibeam (30 kHz), Kongsberg EK 60 singlebeam (18 kHz), and Knudsen 3260 Sub-Bottom Profiler (3.5 kHz) will be operated during the project. Additionally, expendable bathythermographs (XBTs) will be conducted in conjunction with multibeam data collection. Multibeam mapping operations will be conducted at all times during the transit.

Effect of Projects
As expected with ocean research with limited time or presence in the marine environment, this project will not have the potential for significant impacts. Knowledgeable experts who are aware of the sensitivities of the marine environment will conduct the at-sea portions of this project.

Categorical Exclusion
This project would not result in any changes to the human environment. As defined in Sections 5.05 and 6.03.c.3 (a) of NAO 216-6, this is a research project of limited size or magnitude or

with only short-term effects on the environment and for which any cumulative effects are negligible. As such, this project is categorically excluded from the need to prepare an environmental assessment.

John Mcdonough

Signed:_____ Date:_____

John McDonough, Acting Director

Appendix C: NASA Maritime Aerosols Survey of Opportunity

Survey or Project Name

Maritime Aerosol Network

Points of Contact (POC)

Lead POC or Principle Investigator (PI & Affiliation)	*Supporting Team Members ashore*
POC: Dr. Alexander Smirnov	*Supporting Team Members aboard (if required)*

Activities Description(s) *(Include goals, objectives and tasks)*

The Maritime Aerosol Network (MAN) component of AERONET provides ship-borne aerosol optical depth measurements from the Microtops II sun photometers. These data provide an alternative to observations from islands as well as establish validation points for satellite and aerosol transport models. Since 2004, these instruments have been deployed periodically on ships of opportunity and research vessels to monitor aerosol properties over the World Oceans.

Appendix D: EM 302 Processing Parameters

```
#// Database Parameters

#// Seafloor Information System
#// Kongsberg Maritime AS
#// Saved:  2014.10.07 13:06:28

#// Build info:
#* SIS:              [Version: 4.1.3, Build: 14, DBVersion 24.0 CD
generated: Fri Dec 13 10:06:08 2013]
[Fox ver = 1.6.47]
[db ver = 24, proc = 24.0]
[OTL = 4.0.-95]
[ACE ver = 5.8.3]
[Coin ver = 2.5.0]
[Simage ver = 1.6.2a]
[Dime ver = DIME v0.9]
[FreeType ver = 2.3.7]
[TIFF ver = 3.9.2]
[GeoTIFF ver = 1250]
[GridEngine ver = 3.1.5]

#* Language          [3] #// Current language, 1-Norwegian, 2-
German,3-English, 4-Spanish|Remember to restart SIS after a
change.
German is currently not available.

#* Type              [302]
#* Serial no.        [101]
#* Number of heads   [2]
#* System descriptor  [50331650] #// 03000002


#// ************************************************************************
#// Installation parameters


#{ Input Setup #// All Input setup parameters

  #{ COM1 #// Link settings.

    #{ Com. settings #// Serial line parameter settings.
      #* Baud rate:        [9600]
      #* Data bits         [8]
      #* Stop bits:        [1]
      #* Parity:           [NONE]
      #* Interface:        [RS232]
    #} Com. settings

    #{ Position #// Position input settings.
      #* None             [1] [0]
      #* GGK              [1] [0]
      #* GGA              [1] [1]
      #* GGA_RTK          [1] [0]
      #* SIMRAD90         [1] [0]
    #} Position

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      #* MK39 Mod2 Attitude,  [0] [0]
      #* ZDA Clock        [1] [1]
      #* HDT Heading      [0] [0]
      #* SKR82 Heading    [0] [0]
      #* DBS Depth        [1] [0]
      #* DPT Depth        [1] [0]
      #* EA500 Depth      [0] [0]
      #* ROV. depth       [0] [0]
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      #* Attitude/Velocity  [0] [0]
    #} Input Formats

  #} COM1

  #{ COM2 #// Link settings.

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      #* Interface:        [RS232]
    #} Com. settings

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      #* GGK              [0] [0]
      #* GGA              [0] [0]
      #* GGA_RTK          [0] [0]
      #* SIMRAD90         [0] [0]
    #} Position

    #{ Input Formats #// Format input settings.
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      #* MK39 Mod2 Attitude,  [0] [0]
      #* ZDA Clock        [0] [0]
      #* HDT Heading      [0] [0]
      #* SKR82 Heading    [0] [0]
      #* DBS Depth        [0] [0]
      #* DPT Depth        [0] [0]
      #* EA500 Depth      [0] [0]
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    #{ Com. settings #// Serial line parameter settings.
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      #* Stop bits:        [1]
      #* Parity:           [NONE]
      #* Interface:        [RS232]
    #} Com. settings

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      #* GGK              [1] [0]
      #* GGA              [1] [0]
      #* GGA_RTK          [1] [0]
      #* SIMRAD90         [1] [0]
    #} Position

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      #* MK39 Mod2 Attitude,  [0] [0]
      #* ZDA Clock        [0] [0]
      #* HDT Heading      [1] [1]
```

```
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    #* DPT Depth            [1] [0]
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    #* Interface:           [RS232]
  #} Com. settings

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    #* GGA                  [1] [0]
    #* GGA_RTK              [1] [0]
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    #* SKR82 Heading        [0] [0]
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    #* DPT Depth            [1] [0]
    #* EA500 Depth          [0] [0]
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  #} Com. settings

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    #* GGA                  [1] [0]
    #* GGA_RTK              [1] [0]
    #* SIMRAD90             [1] [0]
  #} Position

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    #* MK39 Mod2 Attitude,  [0] [0]
    #* ZDA Clock            [0] [0]
    #* HDT Heading          [0] [0]
    #* SKR82 Heading        [0] [0]
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    #* DPT Depth            [0] [0]
    #* EA500 Depth          [1] [0]
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    #* ZDA Clock            [0] [0]
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    #* DPT Depth            [1] [0]
    #* EA500 Depth          [0] [0]
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  #} Com. settings

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    #* GGA                  [0] [0]
    #* GGA_RTK              [0] [0]
    #* SIMRAD90             [0] [0]
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    #* MK39 Mod2 Attitude,  [0] [0]
    #* ZDA Clock            [0] [0]
    #* HDT Heading          [1] [0]
    #* SKR82 Heading        [0] [0]
    #* DBS Depth            [1] [0]
    #* DPT Depth            [1] [0]
    #* EA500 Depth          [0] [0]
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#} UDP4

#{ UDP5 #// Link settings.

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    #* GGA               [0] [0]
    #* GGA_RTK           [0] [0]
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    #* MK39 Mod2 Attitude,  [0] [0]
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    #* DBS Depth         [0] [0]
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    #* ROV. depth        [0] [0]
    #* Height, special purp [0] [0]
    #* Attitude/Velocity  [1] [1]
  #} Input Formats

  #{ Ethernet Interface Settings #// Only relevant for UDP5 on
EM122, EM302, EM710, EM2040 currently
    #* VSU               [5602] #// UDP5:
    #* VSE               [2] #// 0= Not in use, 1= Use legacy
Ethernet, 2=Use Ethernet 2
    #* VSI               [192.168.2.20] #// IP addr.:
    #* VSM               [255.255.255.0] #// Net mask:
  #} Ethernet Interface Settings

#} UDP5

#{ UDP6 #// Link settings.

  #{ Com. settings #// Serial line parameter settings.
    #// N/A
  #} Com. settings

  #{ Position #// Position input settings.
    #* None              [0] [0]
    #* GGK               [0] [0]
    #* GGA               [0] [0]
    #* GGA_RTK           [0] [0]
    #* SIMRAD90          [0] [0]
  #} Position

  #{ Input Formats #// Format input settings.
    #* Attitude          [0] [0]
    #* MK39 Mod2 Attitude,  [0] [0]
    #* ZDA Clock         [0] [0]
    #* HDT Heading       [0] [0]
    #* SKR82 Heading     [0] [0]
    #* DBS Depth         [0] [0]
    #* DPT Depth         [0] [0]
    #* EA500 Depth       [0] [0]
    #* ROV. depth        [0] [0]
    #* Height, special purp [0] [0]
    #* Attitude/Velocity  [1] [0]
  #} Input Formats

  #{ Ethernet Interface Settings #// Only relevant for UDP6 on
EM122, EM302, EM710, EM2040 currently
    #* VTU               [3000] #// UDP6:
    #* VTE               [0] #// 0= Not in use, 1= Use legacy
Ethernet, 2=Use Ethernet 2
    #* VSI               [192.168.2.20] #// IP addr.:
    #* VSM               [255.255.255.0] #// Net mask:
  #} Ethernet Interface Settings

#} UDP6

#{ MCAST1 #// Link settings.

  #{ Com. settings #// Serial line parameter settings.
    #// N/A
  #} Com. settings

  #{ Position #// Position input settings.
    #* None              [1] [1]
    #* GGK               [0] [0]
    #* GGA               [0] [0]
    #* GGA_RTK           [0] [0]
    #* SIMRAD90          [0] [0]
  #} Position

  #{ Input Formats #// Format input settings.
    #* Attitude          [0] [0]
    #* MK39 Mod2 Attitude,  [0] [0]
    #* ZDA Clock         [1] [0]
    #* HDT Heading       [0] [0]
    #* SKR82 Heading     [0] [0]
    #* DBS Depth         [0] [0]
    #* DPT Depth         [0] [0]
    #* EA500 Depth       [0] [0]
    #* ROV. depth        [0] [0]
    #* Height, special purp [0] [0]
    #* Attitude/Velocity  [1] [0]
  #} Input Formats

#} MCAST1

#{ MCAST2 #// Link settings.

  #{ Com. settings #// Serial line parameter settings.
    #// N/A
  #} Com. settings

  #{ Position #// Position input settings.
    #* None              [1] [1]
    #* GGK               [1] [0]
    #* GGA               [1] [0]
    #* GGA_RTK           [1] [0]
    #* SIMRAD90          [1] [0]
  #} Position

  #{ Input Formats #// Format input settings.
    #* Attitude          [0] [0]
    #* MK39 Mod2 Attitude,  [0] [0]
    #* ZDA Clock         [1] [0]
    #* HDT Heading       [0] [0]
    #* SKR82 Heading     [0] [0]
    #* DBS Depth         [0] [0]
    #* DPT Depth         [0] [0]
    #* EA500 Depth       [0] [0]
    #* ROV. depth        [0] [0]
    #* Height, special purp [0] [0]
    #* Attitude/Velocity  [1] [0]
  #} Input Formats

#} MCAST2

#{ MCAST3 #// Link settings.

  #{ Com. settings #// Serial line parameter settings.
```

```
    #// N/A
  #} Com. settings

  #{ Position #// Position input settings.
    #* None               [1] [1]
    #* GGK                [1] [0]
    #* GGA                [1] [0]
    #* GGA_RTK            [1] [0]
    #* SIMRAD90           [1] [0]
  #} Position

  #{ Input Formats #// Format input settings.
    #* Attitude           [0] [0]
    #* MK39 Mod2 Attitude,  [0] [0]
    #* ZDA Clock          [1] [0]
    #* HDT Heading        [0] [0]
    #* SKR82 Heading      [0] [0]
    #* DBS Depth          [0] [0]
    #* DPT Depth          [0] [0]
    #* EA500 Depth        [0] [0]
    #* ROV. depth         [0] [0]
    #* Height, special purp [0] [0]
    #* Attitude/Velocity   [1] [0]
  #} Input Formats

#} MCAST3

#{ MCAST4 #// Link settings.

  #{ Com. settings #// Serial line parameter settings.
    #// N/A
  #} Com. settings

  #{ Position #// Position input settings.
    #* None               [0] [1]
    #* GGK                [0] [0]
    #* GGA                [0] [0]
    #* GGA_RTK            [0] [0]
    #* SIMRAD90           [0] [0]
  #} Position

  #{ Input Formats #// Format input settings.
    #* Attitude           [0] [0]
    #* MK39 Mod2 Attitude,  [0] [0]
    #* ZDA Clock          [1] [0]
    #* HDT Heading        [0] [0]
    #* SKR82 Heading      [0] [0]
    #* DBS Depth          [0] [0]
    #* DPT Depth          [0] [0]
    #* EA500 Depth        [0] [0]
    #* ROV. depth         [0] [0]
    #* Height, special purp [0] [0]
    #* Attitude/Velocity   [1] [0]
  #} Input Formats

#} MCAST4


  #{ Misc. #// Misc. input settings.
    #* External Trigger    [1] [0]
  #} Misc.

#} Input Setup

#{ Output Setup #// All Output setup parameters

  #* Log watercolumn to s [1] [1]

  #{ Host UDP1 #// Host UDP1 Port: 16100

    #{ Datagram subscription #//
      #* Depth              [0] [0]
      #* Raw range and beam a [0] [0]
      #* Seabed Image       [0] [0]
      #* Central Beams      [0] [0]
      #* Position           [0] [0]
      #* Attitude           [0] [0]
      #* Heading            [0] [0]
      #* Height             [0] [0]
      #* Clock              [0] [0]
      #* Single beam echosoun [0] [0]
      #* Sound Speed Profile  [0] [1]
      #* Runtime Parameters   [0] [1]
      #* Installation Paramet [0] [1]
      #* BIST Reply          [0] [1]
      #* Status parameters    [0] [1]
      #* PU Broadcast        [0] [0]
      #* Detection quality    [0] [0]
      #* Stave Display       [0] [0]
      #* Water Column        [0] [0]
      #* Internal, Range Data [0] [0]
      #* Internal, Scope Data [0] [0]
    #} Datagram subscription

#} Host UDP1


#{ Host UDP2 #// Host UDP2 Port: 16101

  #{ Datagram subscription #//
    #* Depth              [1] [1]
    #* Raw range and beam a [1] [1]
    #* Seabed Image       [1] [1]
    #* Central Beams      [1] [0]
    #* Position           [1] [1]
    #* Attitude           [1] [1]
    #* Heading            [1] [1]
    #* Height             [1] [1]
    #* Clock              [1] [1]
    #* Single beam echosoun [1] [1]
    #* Sound Speed Profile  [0] [1]
    #* Runtime Parameters   [0] [1]
    #* Installation Paramet [0] [1]
    #* BIST Reply          [1] [1]
    #* Status parameters    [0] [1]
    #* PU Broadcast        [1] [0]
    #* Detection quality    [1] [0]
    #* Stave Display       [0] [1]
    #* Water Column        [0] [1]
    #* Internal, Range Data [1] [0]
    #* Internal, Scope Data [1] [0]
  #} Datagram subscription

#} Host UDP2


#{ Host UDP3 #// Host UDP3 Port: 16102

  #{ Datagram subscription #//
    #* Depth              [0] [1]
    #* Raw range and beam a [0] [0]
    #* Seabed Image       [0] [0]
    #* Central Beams      [0] [0]
    #* Position           [0] [0]
    #* Attitude           [0] [1]
    #* Heading            [0] [0]
    #* Height             [0] [1]
    #* Clock              [0] [0]
```

```
    #* Single beam echosoun [0] [1]
    #* Sound Speed Profile  [0] [1]
    #* Runtime Parameters   [0] [0]
    #* Installation Paramet [0] [1]
    #* BIST Reply          [0] [0]
    #* Status parameters    [0] [0]
    #* PU Broadcast        [0] [0]
    #* Detection quality    [0] [0]
    #* Stave Display       [0] [0]
    #* Water Column         [0] [0]
    #* Internal, Range Data [0] [0]
    #* Internal, Scope Data [0] [1]
  #} Datagram subscription

#} Host UDP3


#{ Host UDP4 #// Host UDP4 Port 16103

  #{ Datagram subscription #//
    #* Depth              [1] [1]
    #* Raw range and beam a [1] [0]
    #* Seabed Image        [1] [0]
    #* Central Beams       [1] [0]
    #* Position           [1] [1]
    #* Attitude           [1] [0]
    #* Heading             [1] [0]
    #* Height             [1] [0]
    #* Clock              [1] [0]
    #* Single beam echosoun [1] [0]
    #* Sound Speed Profile  [1] [1]
    #* Runtime Parameters   [1] [1]
    #* Installation Paramet [1] [0]
    #* BIST Reply          [1] [0]
    #* Status parameters    [1] [0]
    #* PU Broadcast        [1] [0]
    #* Detection quality    [1] [0]
    #* Stave Display       [1] [0]
    #* Water Column         [1] [0]
    #* Internal, Range Data [1] [0]
    #* Internal, Scope Data [1] [0]
  #} Datagram subscription

#} Host UDP4
```

```
#{ Watercolumn #// Host UDP4 Port 16103

  #{ Datagram subscription #//
    #* Depth              [1] [0]
    #* Raw range and beam a [1] [0]
    #* Seabed Image        [1] [0]
    #* Central Beams       [1] [0]
    #* Position           [1] [1]
    #* Attitude           [1] [1]
    #* Heading             [1] [1]
    #* Height             [1] [0]
    #* Clock              [1] [0]
    #* Single beam echosoun [1] [0]
    #* Sound Speed Profile  [1] [1]
    #* Runtime Parameters   [1] [1]
    #* Installation Paramet [1] [1]
    #* BIST Reply          [1] [0]
    #* Status parameters    [1] [0]
    #* PU Broadcast        [1] [0]
    #* Detection quality    [1] [0]
    #* Stave Display       [1] [0]
    #* Water Column         [1] [1]
    #* Internal, Range Data [1] [0]
    #* Internal, Scope Data [1] [0]
  #} Datagram subscription

  #} Watercolumn

#} Output Setup

#{ Clock Setup #// All Clock setup parameters

  #{ Clock #// All clock settings.
    #* Source:            [1] #// External ZDA Clock
    #* 1PPS Clock Synch.   [1] #// Falling Edge
    #* Offset (sec.):      [0]
  #} Clock

#} Clock Setup

#{ Settings #// Sensor setup parameters

  #{ Positioning System Settings #// Position related settings.

    #{ COM1 #// Positioning System Ports:
      #* P1S              [1] #// Serial
      #* P1T              [1] #// Datagram
      #* P1M              [0] #// Enable position motion correction
      #* P1D              [0.000] #// Position delay (sec.):
      #* P1G              [WGS84] #// Datum:
      #* P1Q              [1] #// Enable
      #* Pos. qual. indicator [] #//
    #} COM1

  #} Positioning System Settings

  #{ Attitude Sensor Settings #// Attitude related settings.

    #{ COM2 #// Attitude Sensor Ports:
      #* MRP              [RP] #// Rotation (POSMV/MRU)
      #* MSD              [0] #// Attitude Delay (msec.):
      #* MAS              [1.00] #// Motion Sensor Roll Scaling:
    #} COM2

    #{ UDP5 #// Attitude Sensor Ports:
      #* MRP              [RP] #// Rotation (POSMV/MRU)
      #* MSD              [0] #// Attitude Delay (msec.):
      #* MAS              [1.00] #// Motion Sensor Roll Scaling:
    #} UDP5

  #} Attitude Sensor Settings

  #{ Active Sensors #//
    #* APS              [0] [COM1] #// Position:
    #* ARO               [2] [COM2] #// Attitude:
    #* AHE              [2] [COM2] #// Attitude:
    #* AHS              [2] [COM2] #// Heading:
    #* VSN              [1] [UDP5] #// Velocity:
  #} Active Sensors

#} Settings

#{ Locations #// All location parameters

  #{ Location offset (m) #//

    #{ Pos, COM1: #//
      #* P1X              [0.00] #// Forward (X)
      #* P1Y              [0.00] #// Starboard (Y)
      #* P1Z              [0.00] #// Downward (Z)
    #} Pos, COM1:
```

```
    #{ Pos, COM3: #//
      #* P2X              [0.00] #// Forward (X)
      #* P2Y              [0.00] #// Starboard (Y)
      #* P2Z              [0.00] #// Downward (Z)
    #} Pos, COM3:

    #{ Pos, COM4/UDP2: #//
      #* P3X              [0.00] #// Forward (X)
      #* P3Y              [0.00] #// Starboard (Y)
      #* P3Z              [0.00] #// Downward (Z)
    #} Pos, COM4/UDP2:

    #{ TX Transducer: #//
      #* S1X              [6.147] #// Forward (X)
      #* S1Y              [1.822] #// Starboard (Y)
      #* S1Z              [6.796] #// Downward (Z)
    #} TX Transducer:

    #{ RX Transducer: #//
      #* S2X              [2.497] #// Forward (X)
      #* S2Y              [2.481] #// Starboard (Y)
      #* S2Z              [6.790] #// Downward (Z)
    #} RX Transducer:

    #{ Attitude 1, COM2/UDP5: #//
      #* MSX              [0.00] #// Forward (X)
      #* MSY              [0.00] #// Starboard (Y)
      #* MSZ              [0.00] #// Downward (Z)
    #} Attitude 1, COM2/UDP5:

    #{ Attitude 2, COM3/UDP6: #//
      #* NSX              [0.00] #// Forward (X)
      #* NSY              [0.00] #// Starboard (Y)
      #* NSZ              [0.00] #// Downward (Z)
    #} Attitude 2, COM3/UDP6:

    #{ Waterline: #//
      #* WLZ              [4.42] #// Downward (Z)
    #} Waterline:

  #} Location offset (m)

#} Locations

#{ Angular Offsets #// All angular offset parameters

  #{ Offset angles (deg.) #//

    #{ TX Transducer: #//
      #* S1R              [0.00] #// Roll
      #* S1P              [0.00] #// Pitch
      #* S1H              [359.98] #// Heading
      #* SonarHead1 orient.   [1] #// 1=port, 2=starb.
    #} TX Transducer:

    #{ RX Transducer: #//
      #* S2R              [0.00] #// Roll
      #* S2P              [0.00] #// Pitch
      #* S2H              [0.03] #// Heading
      #* SonarHead2 orient.   [1] #// 1=forw., 2=aft
    #} RX Transducer:

    #{ Attitude 1, COM2/UDP5: #//
      #* MSR              [0.00] #// Roll
      #* MSP              [-0.725] #// Pitch
      #* MSG              [-0.13] #// Heading
    #} Attitude 1, COM2/UDP5:

    #{ Attitude 2, COM3/UDP6: #//
      #* NSR              [0.00] #// Roll
      #* NSP              [0.00] #// Pitch
      #* NSG              [0.00] #// Heading
    #} Attitude 2, COM3/UDP6:

    #{ Stand-alone Heading: #//
      #* GCG              [0.00] #// Heading
    #} Stand-alone Heading:

  #} Offset angles (deg.)

#} Angular Offsets

#{ ROV. Specific #// All ROV specific parameters

  #{ Depth/Pressure Sensor #//
    #* DSF              [1.00] #// Scaling:
    #* DSO              [0.00] #// Offset:
    #* DSD              [0.00] #// Delay (msec.):
    #* DSH              [NI] #// Disable Heave Sensor
  #} Depth/Pressure Sensor

#} ROV. Specific

#{ System Parameters #// All system parameters

  #{ System Gain Offset #//
    #* GO1              [0.0] #// BS Offset (dB)
  #} System Gain Offset

  #{ Opening angles #//
    #* S1S              [0] #// TX Opening angle: 0.5
    #* S2S              [1] #// RX Opening angle: 1
  #} Opening angles

  #{ Misc. parameters #//
    #* SNL              [0] #// Ship's noise level: NORMAL
  #} Misc. parameters

#} System Parameters

#// ************************************************************************
#// Runtime parameters


#{ Sounder Main #//

  #{ Sector Coverage #//

    #{ Max. angle (deg.): #//
      #* MPA              [70] #// Port
      #* MSA              [70] #// Starboard
    #} Max. angle (deg.):

    #{ Max. Coverage (m): #//
      #* MPC              [5000] #// Port
      #* MSC              [5000] #// Starboard
    #} Max. Coverage (m):

    #* ACM              [1] #// Angular Coverage mode: AUTO
    #* BSP              [2] #// Beam Spacing: HD EQDST

  #} Sector Coverage

  #{ Depth Settings #//
    #* FDE              [390] #// Force Depth (m):
    #* MID              [10] #// Min. Depth (m):
    #* MAD              [500] #// Max. Depth (m):
    #* DSM              [2] #// Dual swath mode: DYNAMIC
```

```
    #* PMO              [0] #// Ping Mode: AUTO
    #* FME              [1] #// FM disable
  #} Depth Settings

  #{ Stabilization #//
#// For EM 122, EM 302, EM 710, EM 2040, EM 2040C, EM
2040Q this block is now called Transmit Control in SIS GUI.
    #* YPS              [1] #// Pitch stabilization
    #* MPK              [0.0] #// Min. Swath Dist. (m)
            Required minimum distance between individual
swats. 0 is off.
    #* TXA              [0] #// Along Direction (deg.):

    #{ Yaw Stabilization #//
      #* YSM            [2] #// Mode: REL. MEAN HEADING
      #* YMA            [300] #// Heading:
      #* HFI            [1] #// Heading filter: MEDIUM
    #} Yaw Stabilization

    #{ 3D Scanning #//
      #* Enable scanning    [1] [0]
      #* SM1              [-5] #// Min. (deg.):
      #* SM2              [5] #// Max. (deg.):
      #* SCS              [0.0] #// Step (deg.):
    #} 3D Scanning

  #} Stabilization
#} Sounder Main

#{ Sound Speed #//

  #{ Sound Speed at Transducer #//
    #* SHS              [0] #// Source SENSOR
    #* SST              [15000] #// Sound Speed (dm/sec.):
    #* Sensor Offset (m/sec [0] #//
    #* Filter (sec.):    [4] #//
  #} Sound Speed at Transducer

#} Sound Speed

#{ Filter and Gains #//

  #{ Filtering #//
    #* SFS              [2] #// Spike Filter Strength: MEDIUM
    #* PEF              [0] #// Penetration Filter Strength: OFF
    #* RGS              [1] #// Range Gate: NORMAL
    #* PHR              [1] #// Phase ramp: NORMAL
    #* SLF              [0] #// Slope
    #* AEF              [0] #// Aeration
    #* STF              [0] #// Sector Tracking
    #* IFF              [1] #// Interference
  #} Filtering

  #{ Absorption Coefficient #//
    #* Source:          [0] #// Salinity. Note: This is not a PU
parameter.
    #* ABS315           [5.738] #// 31.5 kHz
  #} Absorption Coefficient

  #{ Backscatter Adjustment #//
    #* TCA              [6] #// Normal incidence corr. (deg.):
    #* BIC              [0] #// Use Lambert's law
  #} Backscatter Adjustment


  #{ Mammal protection #//
    #* TXP              [0] #// TX power level (dB): Max.
    #* SSR              [5] #// Soft startup ramp time (min.):
  #} Mammal protection

  #{ Water Column #//
    #* WCX              [30] #// log R
    #* WCO              [20] #// dB Offset
  #} Water Column

  #{ Special Mode #//
    #* SOM              [0] #// Sonar
    #* PAM              [0] #// Passive
  #} Special Mode
#} Filter and Gains

#{ Data Cleaning #//
  #* Number of user rules [1]
  #* User rule 1        [STANDARD] #//

  #* Active rule:       [AUTOMATIC1] #//

  #{ AUTOMATIC1 #//
    #* PingProc.maxPingCountRadius          [10]
    #* PingProc.radiusFactor                [0.050000]
    #* PingProc.medianFactor                [1.500000]
    #* PingProc.beamNumberRadius            [3]
    #* PingProc.sufficientPointCount        [40]
    #* PingProc.neighborhoodType            [Elliptical]
    #* PingProc.timeRule.use                [false]
    #* PingProc.overhangRule.use            [false]
    #* PingProc.medianRule.use              [false]
    #* PingProc.medianRule.depthFactor      [0.050000]
    #* PingProc.medianRule.minPointCount    [6]
    #* PingProc.quantileRule.use            [false]
    #* PingProc.quantileRule.quantile       [0.100000]
    #* PingProc.quantileRule.scaleFactor    [6.000000]
    #* PingProc.quantileRule.minPointCount  [40]
    #* GridProc.minPoints                   [8]
    #* GridProc.depthFactor                 [0.200000]
    #* GridProc.removeTooFewPoints          [false]
    #* GridProc.surfaceFitting.surfaceDegree  [1]
    #* GridProc.surfaceFitting.tukeyConstant  [6.000000]
    #* GridProc.surfaceFitting.maxIteration  [10]
    #* GridProc.surfaceFitting.convCriterion  [0.010000]
    #* GridProc.surfaceDistanceDepthRule.use  [false]
    #* GridProc.surfaceDistanceDepthRule.depthFactor
[0.050000]
    #* GridProc.surfaceDistancePointRule.use  [false]
    #* GridProc.surfaceDistancePointRule.scaleFactor
[1.000000]
    #* GridProc.surfaceDistanceUnitRule.use  [false]
    #* GridProc.surfaceDistanceUnitRule.scaleFactor
[1.000000]
    #* GridProc.surfaceDistanceStDevRule.use  [false]
    #* GridProc.surfaceDistanceStDevRule.scaleFactor
[2.000000]
    #* GridProc.surfaceAngleRule.use        [false]
    #* GridProc.surfaceAngleRule.minAngle
[20.000000]
    #* SonarProc.use                       [false]
    #* SonarProc.gridSizeFactor            [4]
    #* SonarProc.mergerType                [Average]
    #* SonarProc.interpolatorType          [TopHat]
    #* SonarProc.interpolatorRadius        [1]
    #* SonarProc.fillInOnly                [true]
  #} AUTOMATIC1
  #{ STANDARD #//
    #* PingProc.maxPingCountRadius          [10]
    #* PingProc.radiusFactor                [0.050000]
    #* PingProc.medianFactor                [1.500000]
    #* PingProc.beamNumberRadius            [3]
    #* PingProc.sufficientPointCount        [40]
```

```
#* PingProc.neighborhoodType [Elliptical]
#* PingProc.timeRule.use [false]
#* PingProc.overhangRule.use [false]
#* PingProc.medianRule.use [false]
#* PingProc.medianRule.depthFactor [0.050000]
#* PingProc.medianRule.minPointCount [6]
#* PingProc.quantileRule.use [false]
#* PingProc.quantileRule.quantile [0.100000]
#* PingProc.quantileRule.scaleFactor [6.000000]
#* PingProc.quantileRule.minPointCount [40]
#* GridProc.minPoints [8]
#* GridProc.depthFactor [0.200000]
#* GridProc.removeTooFewPoints [false]
#* GridProc.surfaceFitting.surfaceDegree [1]
#* GridProc.surfaceFitting.tukeyConstant [6.000000]
#* GridProc.surfaceFitting.maxIteration [10]
    #* GridProc.surfaceFitting.convCriterion [0.010000]
    #* GridProc.surfaceDistanceDepthRule.use [false]
    #* GridProc.surfaceDistanceDepthRule.depthFactor
[0.050000]
    #* GridProc.surfaceDistancePointRule.use [false]
    #* GridProc.surfaceDistancePointRule.scaleFactor
[1.000000]
    #* GridProc.surfaceDistanceUnitRule.use [false]
    #* GridProc.surfaceDistanceUnitRule.scaleFactor
[1.000000]
    #* GridProc.surfaceDistanceStDevRule.use [false]
    #* GridProc.surfaceDistanceStDevRule.scaleFactor
[2.000000]
    #* GridProc.surfaceAngleRule.use [false]
    #* GridProc.surfaceAngleRule.minAngle
[20.000000]
    #* SonarProc.use [false]
    #* SonarProc.gridSizeFactor [4]
    #* SonarProc.mergerType [Average]
    #* SonarProc.interpolatorType [TopHat]
    #* SonarProc.interpolatorRadius [1]
    #* SonarProc.fillInOnly [true]
  #} STANDARD

  #{ Seabed Image Processing #//
    #* Seabed Image Process [1] [0]
  #} Seabed Image Processing
#} Data Cleaning

#{ Advanced param. #//
#} Advanced param.
```

Appendix E: EM 302 Built In System Test (BIST) Results

Saved: 2014.10.07 11:52:53
Sounder Type: 302, Serial no.: 101
Date Time Ser. No. BIST Result

2014.10.07 11:46:33.639 101 0 OK
Number of BSP67B boards: 2
BSP 1 Master 2.2.3 090702 4.3 070913 4.3 070913
BSP 1 Slave 2.2.3 090702 4.4 070911
BSP 1 RXI FPGA 3.6 080821
BSP 1 DSP FPGA A 4.0 070531
BSP 1 DSP FPGA B 4.0 070531
BSP 1 DSP FPGA C 4.0 070531
BSP 1 DSP FPGA D 4.0 070531
BSP 1 PCI TO SLAVE A1 FIFO: ok
BSP 1 PCI TO SLAVE A2 FIFO: ok
BSP 1 PCI TO SLAVE A3 FIFO: ok
BSP 1 PCI TO SLAVE B1 FIFO: ok
BSP 1 PCI TO SLAVE B2 FIFO: ok
BSP 1 PCI TO SLAVE B3 FIFO: ok
BSP 1 PCI TO SLAVE C1 FIFO: ok
BSP 1 PCI TO SLAVE C2 FIFO: ok
BSP 1 PCI TO SLAVE C3 FIFO: ok
BSP 1 PCI TO SLAVE D1 FIFO: ok
BSP 1 PCI TO SLAVE D2 FIFO: ok
BSP 1 PCI TO SLAVE D3 FIFO: ok
BSP 1 PCI TO MASTER A HPI: ok
BSP 1 PCI TO MASTER B HPI: ok
BSP 1 PCI TO MASTER C HPI: ok
BSP 1 PCI TO MASTER D HPI: ok
BSP 1 PCI TO SLAVE A1 HPI: ok
BSP 1 PCI TO SLAVE A2 HPI: ok
BSP 1 PCI TO SLAVE A3 HPI: ok
BSP 1 PCI TO SLAVE B1 HPI: ok
BSP 1 PCI TO SLAVE B2 HPI: ok
BSP 1 PCI TO SLAVE B3 HPI: ok
BSP 1 PCI TO SLAVE C1 HPI: ok
BSP 1 PCI TO SLAVE C2 HPI: ok
BSP 1 PCI TO SLAVE C3 HPI: ok
BSP 1 PCI TO SLAVE D1 HPI: ok
BSP 1 PCI TO SLAVE D2 HPI: ok
BSP 1 PCI TO SLAVE D3 HPI: ok
BSP 2 Master 2.2.3 090702 4.3 070913 4.3 070913
BSP 2 Slave 2.2.3 090702 4.4 070911
BSP 2 RXI FPGA 3.6 080821
BSP 2 DSP FPGA A 4.0 070531
BSP 2 DSP FPGA B 4.0 070531
BSP 2 DSP FPGA C 4.0 070531
BSP 2 DSP FPGA D 4.0 070531
BSP 2 PCI TO SLAVE A1 FIFO: ok
BSP 2 PCI TO SLAVE A2 FIFO: ok
BSP 2 PCI TO SLAVE A3 FIFO: ok
BSP 2 PCI TO SLAVE B1 FIFO: ok
BSP 2 PCI TO SLAVE B2 FIFO: ok
BSP 2 PCI TO SLAVE B3 FIFO: ok
BSP 2 PCI TO SLAVE C1 FIFO: ok
BSP 2 PCI TO SLAVE C2 FIFO: ok
BSP 2 PCI TO SLAVE C3 FIFO: ok
BSP 2 PCI TO SLAVE D1 FIFO: ok
BSP 2 PCI TO SLAVE D2 FIFO: ok
BSP 2 PCI TO SLAVE D3 FIFO: ok
BSP 2 PCI TO MASTER A HPI: ok
BSP 2 PCI TO MASTER B HPI: ok
BSP 2 PCI TO MASTER C HPI: ok
BSP 2 PCI TO MASTER D HPI: ok
BSP 2 PCI TO SLAVE A1 HPI: ok
BSP 2 PCI TO SLAVE A2 HPI: ok
BSP 2 PCI TO SLAVE A3 HPI: ok
BSP 2 PCI TO SLAVE B1 HPI: ok
BSP 2 PCI TO SLAVE B2 HPI: ok
BSP 2 PCI TO SLAVE B3 HPI: ok
BSP 2 PCI TO SLAVE C1 HPI: ok
BSP 2 PCI TO SLAVE C2 HPI: ok
BSP 2 PCI TO SLAVE C3 HPI: ok
BSP 2 PCI TO SLAVE D1 HPI: ok
BSP 2 PCI TO SLAVE D2 HPI: ok
BSP 2 PCI TO SLAVE D3 HPI: ok

Summary:
BSP 1: OK
BSP 2: OK

2014.10.07 11:46:36.523 101 1 OK
High Voltage Br. 1

TX36 Spec: 90.0 - 145.0
0-1 120.9
0-2 120.9
0-3 120.5
0-4 120.5
0-5 120.5
0-6 120.9
0-7 120.1
0-8 119.3
0-9 120.5
0-10 120.9
0-11 119.7
0-12 120.1
0-13 120.1
0-14 121.3
0-15 120.5
0-16 121.3
0-17 119.7
0-18 120.1
0-19 121.3
0-20 120.5
0-21 120.5
0-22 120.1
0-23 120.9
0-24 119.3

High Voltage Br. 2

TX36 Spec: 90.0 - 145.0
0-1 121.3
0-2 120.5
0-3 120.5
0-4 120.1
0-5 120.1
0-6 120.1
0-7 120.5
0-8 119.7
0-9 120.9
0-10 120.5
0-11 120.5
0-12 120.5
0-13 119.3

0-14 120.9
0-15 120.9
0-16 120.9
0-17 120.5
0-18 120.5
0-19 120.9
0-20 120.9
0-21 120.5
0-22 120.1
0-23 120.5
0-24 119.3

Input voltage 12V

TX36 Spec: 11.0 - 13.0
0-1 12.0
0-2 11.9
0-3 11.9
0-4 11.9
0-5 11.9
0-6 11.9
0-7 11.9
0-8 11.9
0-9 11.9
0-10 11.9
0-11 11.9
0-12 11.9
0-13 11.9
0-14 11.9
0-15 11.9
0-16 12.0
0-17 11.8
0-18 11.9
0-19 11.9
0-20 11.9
0-21 11.9
0-22 11.9
0-23 11.9
0-24 11.9

Digital 3.3V

TX36 Spec: 2.8 - 3.5
0-1 3.3
0-2 3.3
0-3 3.3
0-4 3.3
0-5 3.3
0-6 3.3
0-7 3.3
0-8 3.3
0-9 3.3
0-10 3.3
0-11 3.3
0-12 3.3
0-13 3.3
0-14 3.3
0-15 3.3
0-16 3.3
0-17 3.3
0-18 3.3
0-19 3.3
0-20 3.3
0-21 3.3
0-22 3.3
0-23 3.3
0-24 3.3

Digital 2.5V

TX36 Spec: 2.4 - 2.6
0-1 2.5
0-2 2.5
0-3 2.5
0-4 2.5
0-5 2.5
0-6 2.5
0-7 2.5
0-8 2.5
0-9 2.5
0-10 2.5
0-11 2.5
0-12 2.5
0-13 2.5
0-14 2.5
0-15 2.5
0-16 2.5
0-17 2.5
0-18 2.5
0-19 2.5
0-20 2.5
0-21 2.5
0-22 2.5
0-23 2.5
0-24 2.5

Digital 1.5V

TX36 Spec: 1.4 - 1.6
0-1 1.5
0-2 1.5
0-3 1.5
0-4 1.5
0-5 1.5
0-6 1.5
0-7 1.5
0-8 1.5
0-9 1.5
0-10 1.5
0-11 1.5
0-12 1.5
0-13 1.5
0-14 1.5
0-15 1.5
0-16 1.5
0-17 1.5
0-18 1.5
0-19 1.5
0-20 1.5
0-21 1.5
0-22 1.5
0-23 1.5
0-24 1.5

Temperature

TX36 Spec: 15.0 - 75.0
0-1 37.2
0-2 35.2
0-3 35.6
0-4 34.8
0-5 35.2
0-6 36.0

0-7 36.4
0-8 36.8
0-9 36.4
0-10 33.6
0-11 33.2
0-12 34.4
0-13 36.8
0-14 35.2
0-15 36.4
0-16 35.6
0-17 36.8
0-18 36.4
0-19 37.2
0-20 37.6
0-21 36.8
0-22 36.0
0-23 37.2
0-24 38.4

Input Current 12V

TX36 Spec: 0.3 - 1.5
0-1 0.6
0-2 0.5
0-3 0.5
0-4 0.5
0-5 0.5
0-6 0.6
0-7 0.5
0-8 0.5
0-9 0.5
0-10 0.5
0-11 0.5
0-12 0.5
0-13 0.6
0-14 0.6
0-15 0.6
0-16 0.5
0-17 0.5
0-18 0.8
0-19 0.5
0-20 0.7
0-21 0.6
0-22 0.6
0-23 0.7
0-24 0.5

TX36 power test passed

IO TX PPC Embedded PPC Download
2.11 1.14 Mar 5 2007/1.07 May 7 2013/1.11

TX36 unique firmware test OK

2014.10.07 11:46:36.706 101 2 OK
Input voltage 12V

RX32 Spec: 11.0 - 13.0
7-1 11.6
7-2 11.7
7-3 11.7
7-4 11.7

Input voltage 6V

RX32 Spec: 5.0 - 7.0
7-1 5.7
7-2 5.7
7-3 5.7
7-4 5.7

Digital 3.3V

RX32 Spec: 2.8 - 3.5
7-1 3.3
7-2 3.3
7-3 3.3
7-4 3.3

Digital 2.5V

RX32 Spec: 2.4 - 2.6
7-1 2.5
7-2 2.5
7-3 2.4
7-4 2.5

Digital 1.5V

RX32 Spec: 1.4 - 1.6
7-1 1.5
7-2 1.5
7-3 1.5
7-4 1.5

Temperature

RX32 Spec: 15.0 - 75.0
7-1 41.0
7-2 42.0
7-3 41.0
7-4 36.0

Input Current 12V

RX32 Spec: 0.4 - 1.5
7-1 0.7
7-2 0.7
7-3 0.7
7-4 0.6

Input Current 6V

RX32 Spec: 2.4 - 3.3
7-1 2.7
7-2 2.8
7-3 2.8
7-4 2.8

RX32 power test passed

IO RX MB Embedded PPC Embedded PPC Download
1.12 1.14 May 5 2006/1.06 May 5 2006/1.07 Feb 18 2010/1.11

RX32 unique firmware test OK

2014.10.07 11:46:36.840 101 3 OK
High Voltage Br. 1

TX36 Spec: 90.0 - 145.0
0-1 120.9
0-2 120.9
0-3 120.5
0-4 120.5
0-5 120.5
0-6 120.9
0-7 120.1
0-8 119.3
0-9 120.5
0-10 120.9
0-11 119.7
0-12 120.1
0-13 119.7
0-14 121.3
0-15 120.5
0-16 121.3
0-17 119.7
0-18 120.1
0-19 121.3
0-20 120.1
0-21 120.5
0-22 120.1
0-23 120.9
0-24 119.3

High Voltage Br. 2

TX36 Spec: 90.0 - 145.0
0-1 121.3
0-2 120.5
0-3 120.5
0-4 120.1
0-5 120.1
0-6 120.1
0-7 120.1
0-8 119.7
0-9 120.5
0-10 120.5
0-11 120.5
0-12 120.5
0-13 119.3
0-14 120.9
0-15 120.9
0-16 120.9
0-17 120.5
0-18 120.5
0-19 120.9
0-20 120.9
0-21 120.5
0-22 120.1
0-23 120.5
0-24 119.3

Input voltage 12V

TX36 Spec: 11.0 - 13.0
0-1 12.0
0-2 11.9
0-3 11.9
0-4 11.9
0-5 11.9
0-6 11.9
0-7 11.9
0-8 11.9
0-9 11.9
0-10 11.9
0-11 11.9
0-12 11.9
0-13 11.9
0-14 11.9
0-15 11.9
0-16 12.0
0-17 11.8
0-18 11.9
0-19 11.9
0-20 11.9
0-21 11.9
0-22 11.9
0-23 11.9
0-24 11.9

RX32 Spec: 11.0 - 13.0
7-1 11.6
7-2 11.7
7-3 11.7
7-4 11.7

Input voltage 6V

RX32 Spec: 5.0 - 7.0
7-1 5.7
7-2 5.7
7-3 5.7
7-4 5.7

TRU power test passed

2014.10.07 11:46:36.990 101 4 OK
EM 302 High Voltage Ramp Test
Test Voltage:20.00 Measured Voltage: 19.00 PASSED
Test Voltage:40.00 Measured Voltage: 38.00 PASSED
Test Voltage:60.00 Measured Voltage: 59.00 PASSED
Test Voltage:80.00 Measured Voltage: 79.00 PASSED
Test Voltage:100.00 Measured Voltage: 100.00 PASSED
Test Voltage:120.00 Measured Voltage: 119.00 PASSED
Test Voltage:120.00 Measured Voltage: 119.00 PASSED
Test Voltage:100.00 Measured Voltage: 106.00 PASSED
Test Voltage:80.00 Measured Voltage: 85.00 PASSED
Test Voltage:60.00 Measured Voltage: 65.00 PASSED
Test Voltage:40.00 Measured Voltage: 45.00 PASSED

11 of 11 tests OK

2014.10.07 11:49:10.849 101 5 OK

BSP 1 RXI TO RAW FIFO: ok
BSP 2 RXI TO RAW FIFO: ok

2014.10.07 11:49:16.316 101 6 OK

Receiver impedance limits [600.0 1000.0] ohm

Board	1	2	3	4
1:	843.5	833.6	801.0	853.1
2:	821.9	851.9	804.9	856.9
3:	797.2	833.0	834.3	852.4
4:	830.1	818.4	847.4	849.3
5:	834.0	825.8	783.3	861.8
6:	843.0	839.0	818.3	863.3
7:	820.4	834.4	814.3	867.1
8:	828.3	824.8	839.2	843.0
9:	360.7*	828.3	810.3	836.1
10:	802.8	847.3	772.9	851.2
11:	825.1	818.8	820.8	834.9
12:	831.4	808.9	839.5	849.7
13:	828.1	817.4	801.0	848.7
14:	809.4	820.8	840.7	852.4
15:	806.7	836.3	835.8	846.4
16:	836.9	809.0	836.7	842.3
17:	810.1	899.6	841.0	848.9
18:	833.5	810.0	842.1	858.1
19:	797.5	819.8	830.4	843.9
20:	812.4	861.9	832.4	850.9
21:	843.7	825.2	865.1	856.0
22:	860.7	837.1	815.3	856.0
23:	852.0	852.5	837.3	855.8
24:	866.3	879.0	856.9	866.5
25:	826.3	821.1	828.3	856.7
26:	828.2	810.0	836.6	851.6
27:	808.4	822.6	827.4	853.2
28:	797.3	822.7	799.2	852.1
29:	798.3	833.2	821.7	852.0
30:	840.0	810.9	835.9	853.7
31:	812.3	809.2	834.7	842.2
32:	836.6	864.3	847.6	856.6

Transducer impedance limits [250.0 2000.0] ohm

Board	1	2	3	4
1:	328.5	355.5	349.8	361.9
2:	343.1	351.8	356.0	359.2
3:	330.8	338.1	362.3	344.2
4:	336.8	351.4	366.3	349.3
5:	325.4	361.3	362.0	338.5
6:	319.9	341.6	346.4	350.0
7:	332.3	344.6	382.2	353.3
8:	323.0	336.7	356.2	355.2
9:	151.4*	353.7	371.5	353.3
10:	353.5	345.3	369.7	353.1
11:	323.5	356.4	358.4	356.9
12:	335.9	360.4	354.0	343.8
13:	330.6	343.2	375.8	344.3
14:	359.8	344.2	370.4	339.5
15:	324.7	337.2	362.4	335.2
16:	326.8	355.3	371.3	340.3
17:	325.6	363.8	346.2	351.6
18:	335.5	347.2	357.8	353.4
19:	344.9	352.3	351.9	358.6
20:	344.8	337.6	350.9	338.5
21:	338.0	346.7	354.1	353.0
22:	349.4	353.8	371.5	344.8
23:	352.5	337.4	358.0	354.0
24:	350.5	352.7	345.6	334.3
25:	335.2	360.6	355.0	346.3
26:	344.1	370.0	357.2	352.6
27:	335.2	351.3	364.3	352.1
28:	352.3	363.6	363.3	336.0
29:	345.8	356.1	375.2	354.2
30:	327.3	345.5	344.5	361.1
31:	343.5	361.2	358.8	349.4
32:	335.0	353.3	356.4	358.9

Receiver Phase limits [-50.0 20.0] deg

Board	1	2	3	4
1:	-2.0	2.4	4.9	2.2
2:	0.3	-5.3	4.1	0.9
3:	4.0	-1.8	-0.4	0.1
4:	-1.2	2.0	-2.8	0.4
5:	-1.4	1.3	5.3	-0.9
6:	-3.7	-2.3	0.5	-1.6
7:	1.6	0.1	3.8	-0.7
8:	-1.7	0.8	-3.3	0.9
9:	0.2	2.4	3.4	1.9
10:	3.1	-3.6	6.8	-0.1
11:	-2.4	2.2	-0.8	3.2
12:	-0.9	2.2	-4.0	-0.9
13:	0.5	1.7	4.5	-0.7
14:	2.4	0.4	-0.3	-1.5
15:	1.3	-4.4	-1.5	0.4
16:	-2.4	3.4	-1.6	-1.4
17:	0.7	-4.9	-2.9	1.7
18:	-3.2	4.7	-2.6	-1.9
19:	2.6	2.8	-3.5	2.6
20:	2.2	-4.2	-0.5	1.0
21:	-0.5	2.8	-4.5	-1.8
22:	-1.9	-1.8	2.2	-1.5
23:	0.2	-3.5	0.1	-2.0
24:	-2.8	-5.4	-3.4	-3.1
25:	-0.5	2.4	1.6	0.4
26:	-0.9	5.0	-3.1	-0.3
27:	2.2	-0.8	0.4	-0.5
28:	5.6	-0.9	2.6	-1.4
29:	2.8	1.9	1.1	0.3
30:	-2.8	2.0	-1.9	1.6
31:	1.4	2.8	-0.9	3.2
32:	-2.8	-4.6	-3.2	-0.4

Transducer Phase limits [-100.0 0.0] deg

Board	1	2	3	4
1:	-37.8	-40.5	-37.0	-35.1
2:	-39.2	-42.1	-34.2	-39.7
3:	-33.7	-44.5	-36.8	-37.4
4:	-40.6	-38.1	-40.9	-30.7
5:	-40.7	-42.7	-40.8	-33.4
6:	-39.4	-37.4	-37.7	-33.2
7:	-36.8	-42.2	-37.5	-34.2
8:	-39.5	-42.3	-43.9	-33.5
9:	-40.3	-38.3	-37.1	-35.2
10:	-44.1	-41.0	-31.1	-29.7
11:	-40.7	-40.4	-44.3	-33.1
12:	-38.0	-38.6	-47.3	-34.1
13:	-38.3	-44.2	-35.1	-37.6
14:	-39.6	-45.7	-37.7	-34.5
15:	-33.5	-48.8	-39.9	-26.4
16:	-40.9	-41.2	-37.0	-33.1
17:	-31.8	-39.1	-43.4	-31.5
18:	-36.1	-36.3	-41.5	-34.6
19:	-38.4	-38.6	-39.4	-33.5
20:	-35.9	-43.2	-43.6	-33.3
21:	-36.2	-40.1	-39.3	-33.5
22:	-38.8	-42.7	-35.3	-33.0
23:	-38.9	-45.6	-36.9	-31.9
24:	-39.4	-42.7	-42.3	-28.0
25:	-32.9	-37.6	-39.1	-32.7
26:	-43.6	-38.6	-37.0	-36.0
27:	-34.6	-39.8	-38.6	-35.0
28:	-38.8	-40.6	-35.6	-32.1
29:	-39.7	-42.8	-41.4	-31.4

30: -36.9 -40.4 -41.6 -28.3
31: -42.6 -42.4 -37.2 -25.8
32: -41.5 -42.6 -38.7 -35.8
Rx Channels test passed

2014.10.07 11:49:44.484 101 7 OK
Tx Channels test passed

2014.10.07 11:52:25.477 101 8 OK
RX NOISE LEVEL

Board No:	1	2	3	4	
0:	60.3	61.0	60.6	64.8	dB
1:	59.8	62.3	62.3	63.3	dB
2:	60.8	60.3	62.7	62.4	dB
3:	61.3	61.0	60.7	61.5	dB
4:	59.9	61.6	61.9	60.7	dB
5:	60.8	61.0	62.8	60.5	dB
6:	62.8	61.3	62.1	61.3	dB
7:	61.3	60.4	61.7	60.9	dB
8:	57.1	59.9	62.1	60.4	dB
9:	60.9	60.1	63.2	60.8	dB
10:	59.9	61.5	61.5	60.8	dB
11:	60.2	61.0	61.8	62.8	dB
12:	60.1	59.4	61.3	62.4	dB
13:	60.7	60.5	62.3	63.5	dB
14:	61.1	59.8	61.7	62.6	dB
15:	62.5	61.7	61.2	63.9	dB
16:	61.9	61.4	60.3	62.8	dB
17:	61.9	62.2	60.6	62.6	dB
18:	61.1	61.5	60.3	60.8	dB
19:	62.3	63.7	60.8	60.5	dB
20:	62.4	62.3	62.1	61.8	dB
21:	63.9	62.0	61.9	62.5	dB
22:	63.2	61.1	61.7	63.0	dB
23:	64.4	60.5	62.5	61.3	dB
24:	63.4	60.3	60.6	62.0	dB
25:	63.4	61.3	60.9	61.3	dB
26:	64.3	60.5	61.9	61.7	dB
27:	61.5	61.2	62.5	63.8	dB
28:	60.9	61.4	62.9	64.9	dB
29:	60.0	59.7	61.0	61.9	dB
30:	60.5	62.0	60.8	63.6	dB
31:	60.9	62.6	62.2	62.8	dB

Maximum noise at Board 4 Channel 28 Level: 64.9 dB

Broadband noise test

Average noise at Board 1 61.7 dB OK
Average noise at Board 2 61.2 dB OK
Average noise at Board 3 61.7 dB OK
Average noise at Board 4 62.4 dB OK

2014.10.07 11:52:32.311 101 9 OK
RX NOISE SPECTRUM

Board No:	1	2	3	4	
26.1 kHz:	59.4	58.8	58.8	58.9	dB
26.3 kHz:	59.6	59.4	59.2	59.2	dB
26.5 kHz:	59.7	59.4	59.7	59.3	dB
26.7 kHz:	60.0	59.6	59.5	59.6	dB
26.9 kHz:	59.8	59.6	59.2	59.3	dB
27.1 kHz:	59.9	59.7	59.6	59.6	dB
27.3 kHz:	59.8	59.3	59.6	59.6	dB
27.5 kHz:	59.9	58.8	59.3	59.3	dB
27.7 kHz:	59.0	59.1	59.7	59.4	dB
27.9 kHz:	59.7	59.1	59.7	59.8	dB
28.1 kHz:	59.6	59.3	59.4	59.5	dB
28.3 kHz:	59.4	59.3	59.6	59.5	dB
28.5 kHz:	59.5	59.4	59.5	59.9	dB
28.7 kHz:	59.2	58.6	59.3	59.3	dB
28.9 kHz:	59.5	59.0	59.5	59.4	dB
29.1 kHz:	59.2	59.1	59.5	59.4	dB
29.3 kHz:	59.7	59.6	59.6	59.4	dB
29.5 kHz:	59.1	58.8	59.0	59.3	dB
29.7 kHz:	58.9	58.8	59.2	59.1	dB
29.9 kHz:	59.3	59.0	59.0	59.3	dB
30.1 kHz:	58.9	58.0	58.6	58.4	dB
30.3 kHz:	58.3	58.5	58.5	58.7	dB
30.5 kHz:	58.9	58.3	58.9	59.1	dB
30.7 kHz:	59.1	59.3	60.1	59.9	dB
30.9 kHz:	58.6	58.5	58.8	58.8	dB
31.1 kHz:	58.4	58.4	58.2	58.7	dB
31.4 kHz:	58.5	57.8	58.0	58.1	dB
31.6 kHz:	59.0	58.4	58.5	58.9	dB
31.8 kHz:	59.0	58.7	58.1	58.3	dB
32.0 kHz:	58.2	57.9	58.1	58.3	dB
32.2 kHz:	57.9	58.2	58.2	58.2	dB
32.4 kHz:	58.2	58.1	58.3	57.8	dB
32.6 kHz:	58.3	57.7	57.9	58.1	dB
32.8 kHz:	58.0	57.8	57.8	58.0	dB
33.0 kHz:	57.3	56.9	57.1	57.1	dB
33.2 kHz:	56.9	56.7	56.8	56.7	dB
33.4 kHz:	57.1	56.7	56.9	56.4	dB
33.6 kHz:	56.9	56.4	56.8	56.7	dB
33.8 kHz:	56.1	55.9	55.9	55.8	dB
34.0 kHz:	55.2	54.8	55.2	54.7	dB

Maximum noise at Board 3 Frequency 30.7 kHz Level: 60.1 dB

Spectral noise test

Average noise at Board 1 58.8 dB OK
Average noise at Board 2 58.5 dB OK
Average noise at Board 3 58.7 dB OK
Average noise at Board 4 58.8 dB OK

2014.10.07 11:52:39.145 101 10 OK
CPU: KOM CP6011
Clock 1795 MHz
Die 37 oC (peak: 55 oC @ 2014-10-04 - 23:41:50)
Board 38 oC (peak: 54 oC @ 2014-10-04 - 01:44:20)
Core 1.34 V
3V3 3.28 V
12V 11.98 V
-12V -12.04 V
BATT 0.00 V
Primary network: 157.237.14.60:0xffff0000
Secondary network: 192.168.2.20:0xffffff00

2014.10.07 11:52:39.211 101 15 OK

EM 302
BSP67B Master: 2.2.3 090702
BSP67B Slave: 2.2.3 090702
CPU: 1.5.7 140129
DDS: 3.5.9 130926
DSV: 3.1.6 130104
RX32 version : Feb 18 2010 Rev 1.11
TX36 LC version : May 7 2013 Rev 1.11
VxWorks 5.5.1 Build 1.2/2-IX0100 May 16 2007, 11:31:17

Appendix F: Data Tables

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0000_20140919_042340_EX1404L3_MB	EX1404L3_XBT002_140919	10.4	49	09/19/14	074.840077W	074.755814W	37.250430N	37.309292N	2014-09-19 04:23:40.194	2014-09-19 04:53:50.200
0001_20140919_045340_EX1404L3_MB	EX1404L3_XBT002_140919	10.5	49	09/19/14	074.757685W	074.672450W	37.307500N	37.366904N	2014-09-19 04:53:31.199	2014-09-19 05:23:50.210
0002_20140919_052340_EX1404L3_MB	EX1404L3_XBT002_140919	10.5	49	09/19/14	074.674770W	074.589355W	37.364910N	37.424599N	2014-09-19 05:23:30.709	2014-09-19 05:53:40.216
0003_20140919_055340_EX1404L3_MB	EX1404L3_XBT002_140919	10.5	49	09/19/14	074.591922W	074.501501W	37.422171N	37.483473N	2014-09-19 05:53:30.716	2014-09-19 06:23:50.724
0004_20140919_062340_EX1404L3_MB	EX1404L3_XBT002_140919	10.4	49	09/19/14	074.510506W	074.422906W	37.475856N	37.539888N	2014-09-19 06:23:31.724	2014-09-19 06:53:49.233
0005_20140919_065340_EX1404L3_MB	EX1404L3_XBT002_140919	10.5	49	09/19/14	074.426691W	074.339304W	37.536275N	37.597502N	2014-09-19 06:53:30.233	2014-09-19 07:23:40.242
0006_20140919_072340_EX1404L3_MB	EX1404L3_XBT002_140919, EX1404L3_XBT003_140919	10.7	49	09/19/14	074.343211W	074.253979W	37.593874N	37.656339N	2014-09-19 07:23:30.741	2014-09-19 07:53:50.247
0007_20140919_075340_EX1404L3_MB	EX1404L3_XBT003_140919	10.7	49	09/19/14	074.259403W	074.163441W	37.651413N	37.718394N	2014-09-19 07:53:30.747	2014-09-19 08:23:50.255
0008_20140919_082340_EX1404L3_MB	EX1404L3_XBT003_140919	10.5	49	09/19/14	074.179208W	074.079759W	37.704279N	37.776784N	2014-09-19 08:23:30.758	2014-09-19 08:53:51.765
0009_20140919_085342_EX1404L3_MB	EX1404L3_XBT003_140919	10.5	48	09/19/14	074.097330W	073.992280W	37.760274N	37.834704N	2014-09-19 08:53:33.263	2014-09-19 09:23:51.272
0010_20140919_092341_EX1404L3_MB	EX1404L3_XBT003_140919	9.5	48	09/19/14	074.015671W	073.916265W	37.814339N	37.887769N	2014-09-19 09:23:32.271	2014-09-19 09:53:40.278
0011_20140919_095340_EX1404L3_MB	EX1404L3_XBT003_140919	3.3	50	09/19/14	073.940754W	073.879483W	37.865525N	37.914359N	2014-09-19 09:53:30.781	2014-09-19 10:20:07.786
0012_20140919_221903_EX1404L3_MB	EX1404L3_XBT004_140919	9.3	45	09/19/14	073.740520W	073.636766W	38.020777N	38.107131N	2014-09-19 22:19:03.980	2014-09-19 22:49:11.983
0013_20140919_224902_EX1404L3_MB	EX1404L3_XBT004_140919	9.0	45	09/19/14	073.665478W	073.563535W	38.078133N	38.164183N	2014-09-19 22:48:52.488	2014-09-19 23:19:11.996
0014_20140919_231902_EX1404L3_MB	EX1404L3_XBT004_140919	6.5	44	09/19/14	073.603004W	073.546986W	38.126676N	38.176589N	2014-09-19 23:18:52.994	2014-09-19 23:28:41.996
0015_20140919_235856_EX1404L3_MB	EX1404L3_XBT004_140919	7.6	45	09/20/14	073.585571W	073.497435W	38.141467N	38.211246N	2014-09-19 23:58:56.004	2014-09-20 00:29:07.511
0016_20140920_002857_EX1404L3_MB	EX1404L3_XBT004_140919	7.6	44	09/20/14	073.521112W	073.440869W	38.190304N	38.257667N	2014-09-20 00:28:48.515	2014-09-20 00:59:07.520

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0017_20140920_005857_EX1404L3_MB	EX1404L3_XBT004_140919, EX1404L3_XBT006_140920	7.3	45	09/20/14	073.465637W	073.384692W	38.235418N	38.300150N	2014-09-20 00:58:48.520	2014-09-20 01:29:06.529
0018_20140920_012857_EX1404L3_MB	EX1404L3_XBT006_140920	7.3	44	09/20/14	073.412748W	073.333972W	38.275741N	38.340762N	2014-09-20 01:28:47.531	2014-09-20 01:59:12.035
0019_20140920_015902_EX1404L3_MB	EX1404L3_XBT006_140920	7.5	45	09/20/14	073.356219W	073.275666W	38.320203N	38.385231N	2014-09-20 01:58:52.536	2014-09-20 02:29:07.545
0020_20140920_022858_EX1404L3_MB	EX1404L3_XBT006_140920	7.3	44	09/20/14	073.300280W	073.218582W	38.362877N	38.429354N	2014-09-20 02:28:48.044	2014-09-20 02:58:56.553
0021_20140920_025856_EX1404L3_MB	EX1404L3_XBT006_140920	7.4	45	09/20/14	073.248055W	073.163093W	38.403827N	38.471814N	2014-09-20 02:58:47.053	2014-09-20 03:28:58.059
0022_20140920_032858_EX1404L3_MB	EX1404L3_XBT006_140920	7.7	44	09/20/14	073.190606W	073.104674W	38.447317N	38.516147N	2014-09-20 03:28:48.561	2014-09-20 03:59:05.567
0023_20140920_035855_EX1404L3_MB	EX1404L3_XBT006_140920	7.9	44	09/20/14	073.133191W	073.045770W	38.492202N	38.562070N	2014-09-20 03:58:46.069	2014-09-20 04:29:06.579
0024_20140920_042857_EX1404L3_MB	EX1404L3_XBT006_140920	7.9	44	09/20/14	073.073186W	072.984974W	38.539063N	38.609099N	2014-09-20 04:28:47.580	2014-09-20 04:58:58.087
0025_20140920_045858_EX1404L3_MB	EX1404L3_XBT006_140920	7.9	44	09/20/14	073.014431W	072.926240W	38.583324N	38.654219N	2014-09-20 04:58:49.084	2014-09-20 05:29:06.594
0026_20140920_052857_EX1404L3_MB	EX1404L3_XBT006_140920	8.0	44	09/20/14	072.953005W	072.865580W	38.631485N	38.701578N	2014-09-20 05:28:47.593	2014-09-20 05:59:05.102
0027_20140920_055855_EX1404L3_MB	EX1404L3_XBT006_140920, EX1404L3_XBT007_140920	8.0	44	09/20/14	072.893796W	072.797175W	38.678169N	38.753648N	2014-09-20 05:58:45.604	2014-09-20 06:28:57.608
0028_20140920_062857_EX1404L3_MB	EX1404L3_XBT007_140920	8.1	44	09/20/14	072.837739W	072.735282W	38.716613N	38.800837N	2014-09-20 06:28:48.144	2014-09-20 06:59:06.142
0029_20140920_065856_EX1404L3_MB	EX1404L3_XBT007_140920	8.2	44	09/20/14	072.774498W	072.673998W	38.763924N	38.848474N	2014-09-20 06:58:46.621	2014-09-20 07:29:07.141
0030_20140920_072857_EX1404L3_MB	EX1404L3_XBT007_140920	6.8	44	09/20/14	072.711751W	072.623829W	38.814091N	38.886809N	2014-09-20 07:28:48.138	2014-09-20 07:58:55.630
0031_20140920_075855_EX1404L3_MB	EX1404L3_XBT007_140920	6.6	44	09/20/14	072.657265W	072.568302W	38.855365N	38.931160N	2014-09-20 07:58:46.146	2014-09-20 08:29:07.141
0032_20140920_082858_EX1404L3_MB	EX1404L3_XBT007_140920	6.7	44	09/20/14	072.613330W	072.520299W	38.888457N	38.966957N	2014-09-20 08:28:48.141	2014-09-20 08:58:56.649
0033_20140920_085857_EX1404L3_MB	EX1404L3_XBT007_140920	6.6	44	09/20/14	072.558394W	072.467993W	38.930319N	39.010447N	2014-09-20 08:58:47.647	2014-09-20 09:29:07.658
0034_20140920_092858_EX1404L3_MB	EX1404L3_XBT007_140920	5.8	42	09/20/14	072.514707W	072.431419W	38.967867N	39.033576N	2014-09-20 09:28:48.657	2014-09-20 09:54:04.663

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0035_20140920_211959_EX1404L3_MB	EX1404L3_XBT008_140920	8.1	303	09/20/14	072.547494W	072.443862W	39.004626N	39.080468N	2014-09-20 21:19:59.347	2014-09-20 21:50:10.855
0036_20140920_215001_EX1404L3_MB	EX1404L3_XBT008_140920	4.5	93	09/20/14	072.559175W	072.511296W	39.034370N	39.076554N	2014-09-20 21:49:51.854	2014-09-20 21:59:37.857
0037_20140920_215928_EX1404L3_MB	EX1404L3_XBT008_140920	7.2	71	09/20/14	072.529823W	072.466096W	39.039717N	39.093477N	2014-09-20 21:59:18.358	2014-09-20 22:23:06.361
0038_20140920_222256_EX1404L3_MB	EX1404L3_XBT008_140920	8.4	91	09/20/14	072.468993W	072.374800W	39.050296N	39.095294N	2014-09-20 22:22:46.867	2014-09-20 22:53:04.874
0039_20140920_225255_EX1404L3_MB	EX1404L3_XBT008_140920	8.4	97	09/20/14	072.377868W	072.365737W	39.048705N	39.094594N	2014-09-20 22:52:45.874	2014-09-20 22:54:39.874
0040_20140920_225430_EX1404L3_MB	EX1404L3_XBT008_140920	8.2	144	09/20/14	072.389592W	072.293071W	39.001056N	39.093175N	2014-09-20 22:54:20.375	2014-09-20 23:24:35.880
0041_20140920_232426_EX1404L3_MB	EX1404L3_XBT008_140920	7.9	153	09/20/14	072.350730W	072.275436W	38.985179N	39.030956N	2014-09-20 23:24:16.879	2014-09-20 23:34:02.884
0042_20140920_233353_EX1404L3_MB	EX1404L3_XBT008_140920	7.8	316	09/20/14	072.349037W	072.277006W	38.969694N	39.023688N	2014-09-20 23:33:43.882	2014-09-20 23:39:35.881
0043_20140920_233926_EX1404L3_MB	EX1404L3_XBT008_140920	8.6	54	09/20/14	072.333586W	072.244171W	38.976458N	39.054415N	2014-09-20 23:39:16.883	2014-09-21 00:00:53.892
0044_20140921_000044_EX1404L3_MB	EX1404L3_XBT008_140920	8.1	100	09/21/14	072.267177W	072.168170W	38.985459N	39.056227N	2014-09-21 00:00:34.892	2014-09-21 00:30:53.902
0045_20140921_003044_EX1404L3_MB	EX1404L3_XBT008_140920	8.4	100	09/21/14	072.186903W	072.080113W	38.971578N	39.042959N	2014-09-21 00:30:35.400	2014-09-21 01:00:54.406
0046_20140921_010044_EX1404L3_MB	EX1404L3_XBT008_140920	7.9	91	09/21/14	072.099425W	072.014718W	38.963753N	39.030770N	2014-09-21 01:00:34.909	2014-09-21 01:23:45.411
0047_20140921_012345_EX1404L3_MB	EX1404L3_XBT008_140920	7.9	332	09/21/14	072.063847W	071.971275W	38.968726N	39.051985N	2014-09-21 01:23:36.411	2014-09-21 01:44:22.918
0048_20140921_014413_EX1404L3_MB	EX1404L3_XBT008_140920	8.8	230	09/21/14	072.117358W	072.005997W	38.957742N	39.036616N	2014-09-21 01:44:03.920	2014-09-21 02:06:24.424
0049_20140921_020614_EX1404L3_MB	EX1404L3_XBT008_140920	4.4	145	09/21/14	072.125034W	072.052853W	38.953278N	39.002196N	2014-09-21 02:06:05.422	2014-09-21 02:09:15.923
0050_20140921_020906_EX1404L3_MB	EX1404L3_XBT008_140920	7.8	130	09/21/14	072.111108W	072.008396W	38.918543N	39.001700N	2014-09-21 02:08:56.926	2014-09-21 02:33:55.932
0051_20140921_023346_EX1404L3_MB	EX1404L3_XBT008_140920	4.6	60	09/21/14	072.054195W	072.013742W	38.914339N	38.971175N	2014-09-21 02:33:36.930	2014-09-21 02:36:30.930
0052_20140921_023621_EX1404L3_MB	EX1404L3_XBT008_140920	9.2	45	09/21/14	072.057116W	071.936816W	38.918785N	39.017333N	2014-09-21 02:36:11.929	2014-09-21 03:06:23.439
0053_20140921_030623_EX1404L3_MB	EX1404L3_XBT008_140920, EX1404L3_XBT009_140921	9.5	44	09/21/14	071.987933W	071.861242W	38.973895N	39.073063N	2014-09-21 03:06:14.436	2014-09-21 03:36:27.948

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0054_20140921_033628_EX1404L3_MB	EX1404L3_XBT009_140921	9.6	45	09/21/14	071.913739W	071.787454W	39.026819N	39.128416N	2014-09-21 03:36:18.946	2014-09-21 04:06:30.953
0055_20140921_040621_EX1404L3_MB	EX1404L3_XBT009_140921	9.0	44	09/21/14	071.838652W	071.718278W	39.082505N	39.179010N	2014-09-21 04:06:12.452	2014-09-21 04:36:36.463
0056_20140921_043627_EX1404L3_MB	EX1404L3_XBT009_140921	8.8	44	09/21/14	071.769640W	071.649497W	39.137014N	39.230536N	2014-09-21 04:36:17.466	2014-09-21 05:06:33.969
0057_20140921_050624_EX1404L3_MB	EX1404L3_XBT009_140921	8.8	44	09/21/14	071.701878W	071.579126W	39.186127N	39.280932N	2014-09-21 05:06:14.968	2014-09-21 05:36:29.980
0058_20140921_053620_EX1404L3_MB	EX1404L3_XBT009_140921	9.3	44	09/21/14	071.634330W	071.506225W	39.234585N	39.333593N	2014-09-21 05:36:11.477	2014-09-21 06:06:32.486
0059_20140921_060622_EX1404L3_MB	EX1404L3_XBT009_140921	9.1	44	09/21/14	071.561274W	071.437088W	39.288899N	39.387442N	2014-09-21 06:06:12.987	2014-09-21 06:36:31.992
0060_20140921_063622_EX1404L3_MB	EX1404L3_XBT009_140921	9.1	44	09/21/14	071.488756W	071.365073W	39.339509N	39.438906N	2014-09-21 06:36:12.493	2014-09-21 07:06:37.501
0061_20140921_070628_EX1404L3_MB	EX1404L3_XBT009_140921	8.8	44	09/21/14	071.417311W	071.301434W	39.392824N	39.488213N	2014-09-21 07:06:18.501	2014-09-21 07:34:35.509
0062_20140921_073425_EX1404L3_MB	EX1404L3_XBT009_140921	6.0	350	09/21/14	071.367004W	071.288347W	39.444286N	39.484549N	2014-09-21 07:34:16.011	2014-09-21 07:36:39.012
0063_20140921_073639_EX1404L3_MB	EX1404L3_XBT009_140921	8.7	321	09/21/14	071.418219W	071.293860W	39.449143N	39.542152N	2014-09-21 07:36:30.009	2014-09-21 08:06:52.017
0064_20140921_080642_EX1404L3_MB	EX1404L3_XBT009_140921	8.7	322	09/21/14	071.470915W	071.349644W	39.508993N	39.599986N	2014-09-21 08:06:33.018	2014-09-21 08:36:41.526
0065_20140921_083641_EX1404L3_MB	EX1404L3_XBT009_140921, EX1404L3_XBT010_140921	8.6	322	09/21/14	071.523116W	071.406156W	39.567733N	39.656056N	2014-09-21 08:36:32.026	2014-09-21 09:06:51.536
0066_20140921_090642_EX1404L3_MB	EX1404L3_XBT010_140921	8.6	296	09/21/14	071.537899W	071.464452W	39.627451N	39.681036N	2014-09-21 09:06:32.535	2014-09-21 09:22:58.038
0067_20140921_092248_EX1404L3_MB	EX1404L3_XBT010_140921	8.7	276	09/21/14	071.582312W	071.528810W	39.630625N	39.685796N	2014-09-21 09:22:39.037	2014-09-21 09:36:48.543
0068_20140921_093648_EX1404L3_MB	EX1404L3_XBT010_140921	6.9	331	09/21/14	071.621094W	071.550677W	39.638066N	39.707930N	2014-09-21 09:36:39.044	2014-09-21 09:58:37.046
0069_20140921_212015_EX1404L3_MB	EX1404L3_XBT010_140921	8.7	338	09/21/14	071.624931W	071.576922W	39.699495N	39.715769N	2014-09-21 21:20:15.225	2014-09-21 21:24:21.226
0070_20140921_212412_EX1404L3_MB	EX1404L3_XBT011_140921	8.3	334	09/21/14	071.658471W	071.584196W	39.703156N	39.778990N	2014-09-21 21:24:02.226	2014-09-21 21:54:21.735
0071_20140921_215412_EX1404L3_MB	EX1404L3_XBT011_140921	8.5	334	09/21/14	071.693511W	071.621426W	39.767449N	39.841227N	2014-09-21 21:54:03.237	2014-09-21 22:24:21.742
0072_20140921_222412_EX1404L3_MB	EX1404L3_XBT011_140921	8.6	328	09/21/14	071.700373W	071.665625W	39.832091N	39.862987N	2014-09-21 22:24:02.245	2014-09-21 22:33:05.244

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0073_20140921_223255_EX1404L3_MB	EX1404L3_XBT011_140921	8.4	246	09/21/14	071.733353W	071.687882W	39.836026N	39.863886N	2014-09-21 22:32:46.245	2014-09-21 22:45:48.746
0074_20140921_224539_EX1404L3_MB	EX1404L3_XBT011_140921	7.6	171	09/21/14	071.738214W	071.717356W	39.834783N	39.848664N	2014-09-21 22:45:29.746	2014-09-21 22:48:21.250
0075_20140921_224811_EX1404L3_MB	EX1404L3_XBT011_140921	8.4	148	09/21/14	071.737565W	071.666374W	39.771822N	39.842865N	2014-09-21 22:48:01.750	2014-09-21 23:18:21.258
0076_20140921_231812_EX1404L3_MB	EX1404L3_XBT011_140921	8.1	147	09/21/14	071.697039W	071.609192W	39.710037N	39.785171N	2014-09-21 23:18:02.256	2014-09-21 23:48:26.766
0077_20140921_234817_EX1404L3_MB	EX1404L3_XBT011_140921	8.2	148	09/22/14	071.656757W	071.563550W	39.646265N	39.734346N	2014-09-21 23:48:07.762	2014-09-22 00:18:17.769
0078_20140922_001817_EX1404L3_MB	EX1404L3_XBT011_140921	8.1	147	09/22/14	071.619928W	071.515476W	39.587179N	39.675465N	2014-09-22 00:18:08.769	2014-09-22 00:48:22.277
0079_20140922_004813_EX1404L3_MB	EX1404L3_XBT011_140921	8.1	148	09/22/14	071.579464W	071.471534W	39.527894N	39.618910N	2014-09-22 00:48:03.279	2014-09-22 01:18:27.787
0080_20140922_011818_EX1404L3_MB	EX1404L3_XBT011_140921	8.1	147	09/22/14	071.535736W	071.399252W	39.470685N	39.560489N	2014-09-22 01:18:08.784	2014-09-22 01:48:26.295
0081_20140922_014816_EX1404L3_MB	EX1404L3_XBT011_140921	8.1	148	09/22/14	071.493170W	071.422685W	39.460726N	39.503572N	2014-09-22 01:48:07.295	2014-09-22 01:52:30.795
0082_20140922_015220_EX1404L3_MB	EX1404L3_XBT011_140921	8.5	207	09/22/14	071.491877W	071.422256W	39.452183N	39.494806N	2014-09-22 01:52:11.795	2014-09-22 01:55:57.798
0083_20140922_015548_EX1404L3_MB	EX1404L3_XBT011_140921	8.7	267	09/22/14	071.514016W	071.437151W	39.440542N	39.498379N	2014-09-22 01:55:39.294	2014-09-22 02:05:40.799
0084_20140922_020531_EX1404L3_MB	EX1404L3_XBT011_140921	8.3	327	09/22/14	071.549026W	071.453483W	39.450196N	39.524379N	2014-09-22 02:05:22.298	2014-09-22 02:24:55.302
0085_20140922_022455_EX1404L3_MB	EX1404L3_XBT012_140922	8.3	327	09/22/14	071.592266W	071.478332W	39.495171N	39.582843N	2014-09-22 02:24:46.301	2014-09-22 02:54:59.310
0086_20140922_025449_EX1404L3_MB	EX1404L3_XBT012_140922	8.0	327	09/22/14	071.632770W	071.526799W	39.554836N	39.640282N	2014-09-22 02:54:40.312	2014-09-22 03:24:57.816
0087_20140922_032448_EX1404L3_MB	EX1404L3_XBT012_140922	8.3	327	09/22/14	071.673129W	071.571790W	39.613540N	39.697419N	2014-09-22 03:24:38.318	2014-09-22 03:54:54.328
0088_20140922_035445_EX1404L3_MB	EX1404L3_XBT012_140922	8.5	327	09/22/14	071.714890W	071.622637W	39.674568N	39.755997N	2014-09-22 03:54:35.825	2014-09-22 04:24:51.334
0089_20140922_042442_EX1404L3_MB	EX1404L3_XBT012_140922	8.6	327	09/22/14	071.752200W	071.676466W	39.738078N	39.807856N	2014-09-22 04:24:32.832	2014-09-22 04:51:03.338
0090_20140922_045053_EX1404L3_MB	EX1404L3_XBT012_140922	8.1	239	09/22/14	071.761441W	071.723402W	39.787831N	39.815331N	2014-09-22 04:50:43.839	2014-09-22 04:56:25.342
0091_20140922_045615_EX1404L3_MB	EX1404L3_XBT012_140922	8.2	202	09/22/14	071.774876W	071.728675W	39.769110N	39.802100N	2014-09-22 04:56:05.841	2014-09-22 05:08:30.345
0092_20140922_050820_EX1404L3_MB	EX1404L3_XBT012_140922	7.6	153	09/22/14	071.774939W	071.744026W	39.759397N	39.773096N	2014-09-22 05:08:10.845	2014-09-22 05:12:12.347

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0093_20140922_051212_EX1404L3_MB	EX1404L3_XBT012_140922	8.3	144	09/22/14	071.770239W	071.688678W	39.699062N	39.770675N	2014-09-22 05:12:03.345	2014-09-22 05:42:28.353
0094_20140922_054218_EX1404L3_MB	EX1404L3_XBT012_140922	8.4	144	09/22/14	071.725006W	071.630545W	39.640287N	39.714112N	2014-09-22 05:42:08.856	2014-09-22 06:12:22.365
0095_20140922_061213_EX1404L3_MB	EX1404L3_XBT012_140922	8.5	144	09/22/14	071.676572W	071.590227W	39.583693N	39.660902N	2014-09-22 06:12:03.364	2014-09-22 06:42:24.869
0096_20140922_064214_EX1404L3_MB	EX1404L3_XBT012_140922	8.5	144	09/22/14	071.623132W	071.539814W	39.525975N	39.598235N	2014-09-22 06:42:05.867	2014-09-22 07:12:22.878
0097_20140922_071213_EX1404L3_MB	EX1404L3_XBT012_140922	8.5	145	09/22/14	071.573781W	071.512441W	39.497802N	39.540190N	2014-09-22 07:12:04.374	2014-09-22 07:26:18.383
0098_20140922_072609_EX1404L3_MB	EX1404L3_XBT012_140922	8.3	195	09/22/14	071.553764W	071.505443W	39.484393N	39.515298N	2014-09-22 07:25:59.380	2014-09-22 07:30:22.882
0099_20140922_073013_EX1404L3_MB	EX1404L3_XBT012_140922	8.5	222	09/22/14	071.584671W	071.515665W	39.451605N	39.509822N	2014-09-22 07:30:03.881	2014-09-22 07:47:42.382
0100_20140922_074733_EX1404L3_MB	EX1404L3_XBT012_140922	8.8	288	09/22/14	071.596678W	071.554243W	39.445564N	39.483401N	2014-09-22 07:47:23.387	2014-09-22 07:51:51.889
0101_20140922_075152_EX1404L3_MB	EX1404L3_XBT012_140922	8.3	313	09/22/14	071.668735W	071.566165W	39.453744N	39.540313N	2014-09-22 07:51:42.885	2014-09-22 08:22:08.394
0102_20140922_082158_EX1404L3_MB	EX1404L3_XBT012_140922	8.5	312	09/22/14	071.733980W	071.624319W	39.498077N	39.587053N	2014-09-22 08:21:48.894	2014-09-22 08:52:03.899
0103_20140922_085154_EX1404L3_MB	EX1404L3_XBT012_140922	8.5	313	09/22/14	071.778872W	071.691678W	39.549097N	39.619666N	2014-09-22 08:51:44.404	2014-09-22 09:14:37.408
0104_20140922_091427_EX1404L3_MB	EX1404L3_XBT012_140922	8.8	21	09/22/14	071.789129W	071.731511W	39.591160N	39.628160N	2014-09-22 09:14:18.407	2014-09-22 09:18:49.406
0105_20140922_091849_EX1404L3_MB	EX1404L3_XBT012_140922	8.2	67	09/22/14	071.768081W	071.673639W	39.590515N	39.658149N	2014-09-22 09:18:40.404	2014-09-22 09:49:00.416
0106_20140922_094850_EX1404L3_MB	EX1404L3_XBT012_140922	7.9	127	09/22/14	071.687710W	071.635769W	39.613842N	39.658045N	2014-09-22 09:48:41.413	2014-09-22 09:57:54.419
0107_20140922_095754_EX1404L3_MB	EX1404L3_XBT012_140922	7.8	139	09/22/14	071.679769W	071.629165W	39.605976N	39.639137N	2014-09-22 09:57:45.419	2014-09-22 10:03:31.916
0109_20140922_164045_EX1404L3_MB	EX1404L3_XBT013_140922	8.6	107	09/22/14	071.465762W	071.393940W	39.510286N	39.579846N	2014-09-22 16:40:45.518	2014-09-22 17:00:38.021
0110_20140922_170028_EX1404L3_MB	EX1404L3_XBT013_140922	8.0	109	09/22/14	071.407755W	071.392820W	39.509994N	39.569737N	2014-09-22 17:00:19.023	2014-09-22 17:00:43.021
0111_20140922_172625_EX1404L3_MB	EX1404L3_XBT013_140922	8.4	107	09/22/14	071.407669W	071.302135W	39.489899N	39.568702N	2014-09-22 17:26:26.030	2014-09-22 17:56:41.538
0112_20140922_175631_EX1404L3_MB	EX1404L3_XBT013_140922	8.4	106	09/22/14	071.322837W	071.266773W	39.481535N	39.552262N	2014-09-22 17:56:22.540	2014-09-22 18:10:14.537
0113_20140922_181005_EX1404L3_MB	EX1404L3_XBT013_140922	7.9	340	09/22/14	071.338911W	071.232369W	39.483472N	39.584494N	2014-09-22 18:09:55.039	2014-09-22 18:40:14.546

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0114_20140922_184004_EX1404L3_MB	EX1404L3_XBT013_140922	8.2	333	09/22/14	071.374447W	071.266356W	39.557903N	39.642826N	2014-09-22 18:39:55.050	2014-09-22 19:10:12.056
0115_20140922_191002_EX1404L3_MB	EX1404L3_XBT013_140922	8.2	333	09/22/14	071.410720W	071.313263W	39.619285N	39.701406N	2014-09-22 19:09:53.054	2014-09-22 19:40:10.062
0116_20140922_194000_EX1404L3_MB	EX1404L3_XBT013_140922	8.3	334	09/22/14	071.445831W	071.361402W	39.681377N	39.760774N	2014-09-22 19:39:51.063	2014-09-22 20:10:13.070
0117_20140922_201003_EX1404L3_MB	EX1404L3_XBT013_140922	8.5	333	09/22/14	071.482532W	071.408832W	39.744714N	39.819955N	2014-09-22 20:09:54.069	2014-09-22 20:40:10.077
0118_20140922_204000_EX1404L3_MB	EX1404L3_XBT013_140922	8.6	333	09/22/14	071.500160W	071.460312W	39.810443N	39.847997N	2014-09-22 20:39:50.577	2014-09-22 20:53:53.582
0119_20140922_205344_EX1404L3_MB	EX1404L3_XBT013_140922	8.5	30	09/22/14	071.502637W	071.475627W	39.840457N	39.864255N	2014-09-22 20:53:35.080	2014-09-22 21:00:42.583
0120_20140922_210033_EX1404L3_MB	EX1404L3_XBT013_140922	8.4	81	09/22/14	071.485988W	071.389527W	39.849929N	39.880508N	2014-09-22 21:00:24.081	2014-09-22 21:30:42.587
0121_20140922_213033_EX1404L3_MB	EX1404L3_XBT013_140922	8.4	81	09/22/14	071.395756W	071.300723W	39.858099N	39.893887N	2014-09-22 21:30:23.586	2014-09-22 22:00:42.597
0122_20140922_220033_EX1404L3_MB	EX1404L3_XBT013_140922	8.2	80	09/22/14	071.306902W	071.262966W	39.871078N	39.899668N	2014-09-22 22:00:24.094	2014-09-22 22:13:37.600
0123_20140922_221328_EX1404L3_MB	EX1404L3_XBT014_140922	8.2	81	09/22/14	071.269318W	071.175426W	39.877158N	39.912069N	2014-09-22 22:13:19.098	2014-09-22 22:43:37.608
0124_20140922_224328_EX1404L3_MB	EX1404L3_XBT014_140922	7.9	81	09/22/14	071.182456W	071.091368W	39.889101N	39.924449N	2014-09-22 22:43:19.141	2014-09-22 23:13:37.614
0125_20140922_231328_EX1404L3_MB	EX1404L3_XBT014_140922	7.8	80	09/22/14	071.098637W	071.009838W	39.901616N	39.937215N	2014-09-22 23:13:19.139	2014-09-22 23:43:38.141
0126_20140922_234328_EX1404L3_MB	EX1404L3_XBT014_140922	7.7	81	09/22/14	071.015596W	070.991920W	39.914372N	39.938875N	2014-09-22 23:43:18.623	2014-09-22 23:50:29.622
0127_20140922_235020_EX1404L3_MB	EX1404L3_XBT014_140922	7.7	88	09/22/14	070.996015W	070.957110W	39.918066N	39.939984N	2014-09-22 23:50:10.138	2014-09-23 00:03:29.144
0128_20140923_000320_EX1404L3_MB	EX1404L3_XBT014_140922	7.7	87	09/23/14	070.958805W	070.873630W	39.920298N	39.944015N	2014-09-23 00:03:10.145	2014-09-23 00:33:29.142
0129_20140923_003319_EX1404L3_MB	EX1404L3_XBT014_140922	7.7	89	09/23/14	070.875304W	070.868959W	39.924772N	39.944255N	2014-09-23 00:33:10.633	2014-09-23 00:35:21.634
0130_20140923_003511_EX1404L3_MB	EX1404L3_XBT014_140922	7.6	91	09/23/14	070.869599W	070.787213W	39.922919N	39.945245N	2014-09-23 00:35:02.139	2014-09-23 01:05:21.644
0131_20140923_010511_EX1404L3_MB	EX1404L3_XBT014_140922	8.0	91	09/23/14	070.787405W	070.700914W	39.925132N	39.944942N	2014-09-23 01:05:02.642	2014-09-23 01:35:21.648
0132_20140923_013511_EX1404L3_MB	EX1404L3_XBT014_140922	7.8	91	09/23/14	070.701292W	070.617045W	39.926015N	39.944290N	2014-09-23 01:35:02.150	2014-09-23 02:05:20.659
0133_20140923_020511_EX1404L3_MB	EX1404L3_XBT014_140922	7.7	91	09/23/14	070.617054W	070.533233W	39.923988N	39.947146N	2014-09-23 02:05:02.155	2014-09-23 02:35:21.165

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0134_20140923_023512_EX1404L3_MB	EX1404L3_XBT014_140922	7.7	90	09/23/14	070.533192W	070.449903W	39.916075N	39.953521N	2014-09-23 02:35:02.166	2014-09-23 03:05:19.671
0135_20140923_030509_EX1404L3_MB	EX1404L3_XBT014_140922	7.7	89	09/23/14	070.450151W	070.446935W	39.926401N	39.945651N	2014-09-23 03:05:00.673	2014-09-23 03:06:13.171
0136_20140923_030613_EX1404L3_MB	EX1404L3_XBT015_140923	7.7	91	09/23/14	070.447164W	070.363117W	39.924849N	39.946219N	2014-09-23 03:06:04.171	2014-09-23 03:36:23.180
0137_20140923_033613_EX1404L3_MB	EX1404L3_XBT015_140923	7.8	90	09/23/14	070.363422W	070.278778W	39.921841N	39.951127N	2014-09-23 03:36:04.679	2014-09-23 04:06:24.187
0138_20140923_040614_EX1404L3_MB	EX1404L3_XBT015_140923	7.8	91	09/23/14	070.279253W	070.194292W	39.916617N	39.954085N	2014-09-23 04:06:05.186	2014-09-23 04:36:14.694
0139_20140923_043615_EX1404L3_MB	EX1404L3_XBT015_140923	7.4	91	09/23/14	070.195272W	070.113963W	39.926252N	39.945812N	2014-09-23 04:36:05.194	2014-09-23 05:06:24.203
0140_20140923_050614_EX1404L3_MB	EX1404L3_XBT015_140923	7.4	90	09/23/14	070.115062W	070.033455W	39.927680N	39.945224N	2014-09-23 05:06:05.202	2014-09-23 05:36:23.714
0141_20140923_053614_EX1404L3_MB	EX1404L3_XBT015_140923	7.4	90	09/23/14	070.034663W	069.953858W	39.927400N	39.944849N	2014-09-23 05:36:04.712	2014-09-23 06:06:23.717
0142_20140923_060613_EX1404L3_MB	EX1404L3_XBT015_140923	7.5	90	09/23/14	069.954717W	069.872893W	39.927227N	39.945519N	2014-09-23 06:06:04.718	2014-09-23 06:36:23.227
0143_20140923_063613_EX1404L3_MB	EX1404L3_XBT015_140923	7.6	96	09/23/14	069.873565W	069.791217W	39.927348N	39.942650N	2014-09-23 06:36:04.227	2014-09-23 07:06:22.232
0144_20140923_070612_EX1404L3_MB	EX1404L3_XBT015_140923	6.9	96	09/23/14	069.791642W	069.767058W	39.925977N	39.936843N	2014-09-23 07:06:03.233	2014-09-23 07:15:56.237
0145_20140923_071556_EX1404L3_MB	EX1404L3_XBT016_140923	7.0	102	09/23/14	069.767285W	069.692073W	39.912279N	39.934710N	2014-09-23 07:15:46.739	2014-09-23 07:46:06.242
0146_20140923_074556_EX1404L3_MB	EX1404L3_XBT016_140923	7.1	102	09/23/14	069.694681W	069.614866W	39.894023N	39.923743N	2014-09-23 07:45:47.244	2014-09-23 08:16:06.752
0147_20140923_081556_EX1404L3_MB	EX1404L3_XBT016_140923	7.2	102	09/23/14	069.621532W	069.539830W	39.882354N	39.922674N	2014-09-23 08:15:47.252	2014-09-23 08:45:56.258
0148_20140923_084556_EX1404L3_MB	EX1404L3_XBT016_140923	7.1	102	09/23/14	069.544247W	069.463513W	39.862515N	39.904226N	2014-09-23 08:45:46.763	2014-09-23 09:15:56.766
0149_20140923_091556_EX1404L3_MB	EX1404L3_XBT016_140923	6.9	102	09/23/14	069.471743W	069.388991W	39.843604N	39.897248N	2014-09-23 09:15:47.270	2014-09-23 09:45:46.775
0150_20140923_225336_EX1404L3_MB	EX1404L3_XBT016_140923	5.2	71	09/23/14	NaNW	NaNW	NaNS	NaNS	2014-09-23 22:53:36.466	2014-09-23 22:54:15.963
0151_20140923_225914_EX1404L3_MB	EX1404L3_XBT016_140923	8.4	64	09/23/14	069.368622W	069.308465W	39.863140N	39.910915N	2014-09-23 22:59:14.963	2014-09-23 23:11:57.967
0152_20140923_231148_EX1404L3_MB	EX1404L3_XBT017_140923	8.4	67	09/23/14	069.333951W	069.283335W	39.874443N	39.922083N	2014-09-23 23:11:38.470	2014-09-23 23:21:46.971
0153_20140923_232137_EX1404L3_MB	EX1404L3_XBT017_140923	8.5	91	09/23/14	069.300946W	069.273414W	39.879373N	39.925446N	2014-09-23 23:21:27.472	2014-09-23 23:28:59.973

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0154_20140923_232850_EX1404L3_MB	EX1404L3_XBT017_140923	8.3	106	09/23/14	069.281000W	069.228556W	39.874956N	39.925528N	2014-09-23 23:28:40.975	2014-09-23 23:40:41.978
0155_20140923_234033_EX1404L3_MB	EX1404L3_XBT017_140923	4.2	163	09/23/14	069.272775W	069.205461W	39.880032N	39.918883N	2014-09-23 23:40:22.978	2014-09-23 23:42:40.477
0156_20140923_234230_EX1404L3_MB	EX1404L3_XBT017_140923	7.6	195	09/23/14	069.273902W	069.205788W	39.873335N	39.906782N	2014-09-23 23:42:20.980	2014-09-23 23:49:28.480
0157_20140923_234918_EX1404L3_MB	EX1404L3_XBT017_140923	5.9	244	09/23/14	069.273930W	069.215164W	39.856538N	39.907070N	2014-09-23 23:49:08.981	2014-09-23 23:51:10.481
0158_20140923_235101_EX1404L3_MB	EX1404L3_XBT017_140923	7.8	268	09/23/14	069.287778W	069.242882W	39.852995N	39.906011N	2014-09-23 23:50:50.982	2014-09-24 00:05:08.483
0159_20140924_000458_EX1404L3_MB	EX1404L3_XBT017_140923	8.2	269	09/24/14	069.310576W	069.285248W	39.852603N	39.903432N	2014-09-24 00:04:48.985	2014-09-24 00:12:39.987
0160_20140924_001230_EX1404L3_MB	EX1404L3_XBT017_140923	8.0	208	09/24/14	069.344143W	069.281836W	39.855100N	39.902766N	2014-09-24 00:12:21.484	2014-09-24 00:15:23.484
0161_20140924_001513_EX1404L3_MB	EX1404L3_XBT017_140923	8.6	175	09/24/14	069.344073W	069.276519W	39.869311N	39.880107N	2014-09-24 00:15:03.984	2014-09-24 00:17:54.484
0162_20140924_001744_EX1404L3_MB	EX1404L3_XBT017_140923	7.8	118	09/24/14	069.343220W	069.279714W	39.839674N	39.893619N	2014-09-24 00:17:35.486	2014-09-24 00:19:29.984
0163_20140924_001930_EX1404L3_MB	EX1404L3_XBT017_140923	8.8	86	09/24/14	069.312433W	069.211859W	39.838930N	39.901156N	2014-09-24 00:19:20.985	2014-09-24 00:49:29.994
0164_20140924_004930_EX1404L3_MB	EX1404L3_XBT017_140923	9.3	86	09/24/14	069.215591W	069.111508W	39.844917N	39.906423N	2014-09-24 00:49:20.493	2014-09-24 01:19:42.498
0165_20140924_011933_EX1404L3_MB	EX1404L3_XBT017_140923	9.4	86	09/24/14	069.113892W	069.010729W	39.851528N	39.913768N	2014-09-24 01:19:22.998	2014-09-24 01:49:44.504
0166_20140924_014934_EX1404L3_MB	EX1404L3_XBT017_140923	9.1	86	09/24/14	069.012790W	068.911001W	39.854319N	39.920789N	2014-09-24 01:49:25.008	2014-09-24 02:19:47.512
0167_20140924_021937_EX1404L3_MB	EX1404L3_XBT017_140923	9.3	86	09/24/14	068.914489W	068.809961W	39.860504N	39.924696N	2014-09-24 02:19:28.511	2014-09-24 02:49:41.019
0168_20140924_024931_EX1404L3_MB	EX1404L3_XBT017_140923	9.3	86	09/24/14	068.815779W	068.706165W	39.865512N	39.932551N	2014-09-24 02:49:21.521	2014-09-24 03:19:47.026
0169_20140924_031937_EX1404L3_MB	EX1404L3_XBT017_140923	9.2	89	09/24/14	068.717378W	068.611059W	39.869790N	39.935568N	2014-09-24 03:19:27.527	2014-09-24 03:49:42.535
0170_20140924_034933_EX1404L3_MB	EX1404L3_XBT017_140923	9.0	90	09/24/14	068.614608W	068.511574W	39.869281N	39.935976N	2014-09-24 03:49:24.034	2014-09-24 04:19:47.042
0171_20140924_041937_EX1404L3_MB	EX1404L3_XBT017_140923	9.0	92	09/24/14	068.518399W	068.417701W	39.867065N	39.936638N	2014-09-24 04:19:27.543	2014-09-24 04:49:43.548
0172_20140924_044933_EX1404L3_MB	EX1404L3_XBT017_140923	9.0	93	09/24/14	068.417710W	068.315812W	39.862392N	39.933672N	2014-09-24 04:49:24.549	2014-09-24 05:19:45.556
0173_20140924_051936_EX1404L3_MB	EX1404L3_XBT017_140923	8.8	91	09/24/14	068.324885W	068.219256W	39.860721N	39.928206N	2014-09-24 05:19:26.056	2014-09-24 05:49:46.564

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0174_20140924_054937_EX1404L3_MB	EX1404L3_XBT017_140923	8.4	91	09/24/14	068.230495W	068.156343W	39.858991N	39.925839N	2014-09-24 05:49:27.563	2014-09-24 06:10:35.568
0175_20140924_061026_EX1404L3_MB	EX1404L3_XBT018_140924	8.4	91	09/24/14	068.167792W	068.068186W	39.857268N	39.925223N	2014-09-24 06:10:16.569	2014-09-24 06:40:22.576
0176_20140924_064013_EX1404L3_MB	EX1404L3_XBT018_140924	8.6	91	09/24/14	068.075027W	067.975095W	39.855015N	39.924417N	2014-09-24 06:40:03.574	2014-09-24 07:10:28.582
0177_20140924_071019_EX1404L3_MB	EX1404L3_XBT018_140924	8.5	91	09/24/14	067.981919W	067.884976W	39.852697N	39.921858N	2014-09-24 07:10:09.082	2014-09-24 07:40:25.089
0178_20140924_074015_EX1404L3_MB	EX1404L3_XBT018_140924	8.4	91	09/24/14	067.888935W	067.796173W	39.851545N	39.920508N	2014-09-24 07:40:06.090	2014-09-24 08:10:12.098
0179_20140924_081012_EX1404L3_MB	EX1404L3_XBT018_140924	8.3	92	09/24/14	067.795620W	067.704811W	39.850178N	39.916346N	2014-09-24 08:10:02.597	2014-09-24 08:40:12.139
0180_20140924_084012_EX1404L3_MB	EX1404L3_XBT018_140924	8.0	89	09/24/14	067.707452W	067.616923W	39.847864N	39.913709N	2014-09-24 08:40:02.604	2014-09-24 09:10:18.141
0181_20140924_091018_EX1404L3_MB	EX1404L3_XBT018_140924	8.0	91	09/24/14	067.620680W	067.530511W	39.846568N	39.913045N	2014-09-24 09:10:08.611	2014-09-24 09:40:18.617
0182_20140924_094008_EX1404L3_MB	EX1404L3_XBT018_140924	7.5	91	09/24/14	067.534738W	067.459243W	39.846914N	39.908143N	2014-09-24 09:39:59.138	2014-09-24 10:06:27.625
0183_20140924_161559_EX1404L3_MB	EX1404L3_XBT019_140924	9.0	264	09/24/14	067.575056W	067.501431W	39.831455N	39.901867N	2014-09-24 16:15:59.215	2014-09-24 16:35:49.722
0184_20140924_163539_EX1404L3_MB	EX1404L3_XBT019_140924	9.1	29	09/24/14	067.612294W	067.527068W	39.838286N	39.907501N	2014-09-24 16:35:30.723	2014-09-24 16:44:39.223
0185_20140924_164429_EX1404L3_MB	EX1404L3_XBT019_140924	8.3	57	09/24/14	067.580283W	067.457486W	39.850089N	39.932300N	2014-09-24 16:44:19.724	2014-09-24 17:13:57.231
0186_20140924_171347_EX1404L3_MB	EX1404L3_XBT019_140924	9.1	5.8	09/24/14	067.525777W	067.433424W	39.906829N	39.987453N	2014-09-24 17:13:38.228	2014-09-24 17:42:38.237
0187_20140924_174228_EX1404L3_MB	EX1404L3_XBT019_140924	9.1	96	09/24/14	067.506593W	067.392773W	39.955008N	40.020737N	2014-09-24 17:42:18.737	2014-09-24 17:56:48.242
0188_20140924_175648_EX1404L3_MB	EX1404L3_XBT019_140924	8.2	186	09/24/14	067.482193W	067.393498W	39.909062N	39.982384N	2014-09-24 17:56:39.241	2014-09-24 18:27:00.249
0189_20140924_182650_EX1404L3_MB	EX1404L3_XBT019_140924	8.5	184	09/24/14	067.487231W	067.418660W	39.881191N	39.917477N	2014-09-24 18:26:41.251	2014-09-24 18:40:45.752
0190_20140924_184036_EX1404L3_MB	EX1404L3_XBT019_140924	8.8	87	09/24/14	067.482323W	067.382202W	39.847824N	39.897837N	2014-09-24 18:40:26.753	2014-09-24 18:54:25.252
0191_20140924_185415_EX1404L3_MB	EX1404L3_XBT019_140924	8.3	7.3	09/24/14	067.443429W	067.362485W	39.876147N	39.953728N	2014-09-24 18:54:05.752	2014-09-24 19:24:23.265
0192_20140924_192414_EX1404L3_MB	EX1404L3_XBT019_140924	8.2	9.7	09/24/14	067.440025W	067.354565W	39.946803N	39.984387N	2014-09-24 19:24:04.261	2014-09-24 19:33:55.766
0193_20140924_193355_EX1404L3_MB	EX1404L3_XBT019_140924	7.1	118	09/24/14	067.421930W	067.320199W	39.941737N	40.004683N	2014-09-24 19:33:46.265	2014-09-24 19:52:21.772

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0194_20140924_195212_EX1404L3_MB	EX1404L3_XBT019_140924	7.5	181	09/24/14	067.404641W	067.321496W	39.900040N	39.959073N	2014-09-24 19:52:02.770	2014-09-24 20:20:02.276
0195_20140924_201952_EX1404L3_MB	EX1404L3_XBT019_140924	7.9	130	09/24/14	067.392812W	067.331491W	39.876948N	39.919323N	2014-09-24 20:19:42.778	2014-09-24 20:23:18.277
0196_20140924_202308_EX1404L3_MB	EX1404L3_XBT019_140924	8.2	131	09/24/14	067.380211W	067.270119W	39.819781N	39.916612N	2014-09-24 20:22:59.277	2014-09-24 20:53:10.782
0197_20140924_205301_EX1404L3_MB	EX1404L3_XBT019_140924	8.4	93	09/24/14	067.302909W	067.197420W	39.812220N	39.879906N	2014-09-24 20:52:51.284	2014-09-24 21:23:12.290
0198_20140924_212302_EX1404L3_MB	EX1404L3_XBT019_140924	8.4	92	09/24/14	067.210188W	067.109359W	39.805488N	39.876787N	2014-09-24 21:22:52.789	2014-09-24 21:53:08.298
0199_20140924_215258_EX1404L3_MB	EX1404L3_XBT019_140924	8.4	93	09/24/14	067.118532W	067.097153W	39.805543N	39.874515N	2014-09-24 21:52:48.800	2014-09-24 21:56:46.797
0200_20140924_215636_EX1404L3_MB	EX1404L3_XBT020_140924	8.4	91	09/24/14	067.108769W	067.005769W	39.801560N	39.874651N	2014-09-24 21:56:27.797	2014-09-24 22:26:49.805
0201_20140924_222640_EX1404L3_MB	EX1404L3_XBT020_140924	8.1	90	09/24/14	067.017958W	066.918403W	39.801139N	39.870310N	2014-09-24 22:26:30.308	2014-09-24 22:56:37.313
0202_20140924_225637_EX1404L3_MB	EX1404L3_XBT020_140924	8.0	90	09/24/14	066.930066W	066.865858W	39.796161N	39.869760N	2014-09-24 22:56:27.813	2014-09-24 23:15:59.819
0203_20140924_231549_EX1404L3_MB	EX1404L3_XBT020_140924	6.2	125	09/24/14	066.898309W	066.815028W	39.799855N	39.863310N	2014-09-24 23:15:40.818	2014-09-24 23:20:23.821
0204_20140924_232013_EX1404L3_MB	EX1404L3_XBT020_140924	6.0	170	09/24/14	066.898878W	066.812171W	39.811998N	39.832551N	2014-09-24 23:20:04.820	2014-09-24 23:28:28.823
0205_20140924_232819_EX1404L3_MB	EX1404L3_XBT020_140924	5.7	252	09/24/14	066.896950W	066.817524W	39.780161N	39.850901N	2014-09-24 23:28:09.326	2014-09-24 23:31:05.324
0206_20140924_233105_EX1404L3_MB	EX1404L3_XBT020_140924	7.6	270	09/24/14	066.947054W	066.856268W	39.779381N	39.851004N	2014-09-24 23:30:55.825	2014-09-25 00:01:13.836
0207_20140925_000104_EX1404L3_MB	EX1404L3_XBT020_140924	8.0	271	09/25/14	066.975404W	066.943448W	39.782829N	39.851267N	2014-09-25 00:00:54.832	2014-09-25 00:10:46.834
0208_20140925_001036_EX1404L3_MB	EX1404L3_XBT020_140924	7.9	272	09/25/14	067.003450W	066.970749W	39.783706N	39.856461N	2014-09-25 00:10:27.836	2014-09-25 00:21:02.837
0209_20140925_002053_EX1404L3_MB	EX1404L3_XBT020_140924	5.5	204	09/25/14	067.047137W	066.962898W	39.787300N	39.852149N	2014-09-25 00:20:43.839	2014-09-25 00:23:51.338
0210_20140925_002341_EX1404L3_MB	EX1404L3_XBT020_140924	6.4	171	09/25/14	067.044787W	066.961732W	39.807917N	39.819749N	2014-09-25 00:23:31.837	2014-09-25 00:28:40.339
0211_20140925_002830_EX1404L3_MB	EX1404L3_XBT020_140924	6.9	103	09/25/14	067.027033W	066.963741W	39.775773N	39.844997N	2014-09-25 00:28:21.338	2014-09-25 00:31:30.337
0212_20140925_003120_EX1404L3_MB	EX1404L3_XBT020_140924	7.4	92	09/25/14	066.999036W	066.916269W	39.767950N	39.840656N	2014-09-25 00:31:10.838	2014-09-25 01:01:34.845
0213_20140925_010125_EX1404L3_MB	EX1404L3_XBT020_140924	7.5	97	09/25/14	066.917921W	066.822485W	39.765360N	39.837682N	2014-09-25 01:01:16.345	2014-09-25 01:31:19.855

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0214_20140925_013120_EX1404L3_MB	EX1404L3_XBT020_140924	9.0	109	09/25/14	066.853273W	066.731464W	39.738245N	39.827580N	2014-09-25 01:31:10.854	2014-09-25 02:01:28.862
0215_20140925_020119_EX1404L3_MB	EX1404L3_XBT020_140924	9.3	109	09/25/14	066.761006W	066.638254W	39.709884N	39.800844N	2014-09-25 02:01:09.862	2014-09-25 02:31:27.870
0216_20140925_023117_EX1404L3_MB	EX1404L3_XBT020_140924	8.0	110	09/25/14	066.666876W	066.611901W	39.704760N	39.777301N	2014-09-25 02:31:08.370	2014-09-25 02:42:36.370
0217_20140925_024226_EX1404L3_MB	EX1404L3_XBT020_140924	6.2	66	09/25/14	066.647936W	066.592499W	39.702308N	39.766983N	2014-09-25 02:42:16.871	2014-09-25 02:47:08.874
0218_20140925_024659_EX1404L3_MB	EX1404L3_XBT021_140925	8.5	34	09/25/14	066.649904W	066.526316W	39.721612N	39.806697N	2014-09-25 02:46:50.372	2014-09-25 03:16:55.881
0219_20140925_031656_EX1404L3_MB	EX1404L3_XBT021_140925	8.1	21	09/25/14	066.602319W	066.512899W	39.782059N	39.823521N	2014-09-25 03:16:46.880	2014-09-25 03:28:59.885
0220_20140925_032850_EX1404L3_MB	EX1404L3_XBT021_140925	10.0	80	09/25/14	066.581349W	066.513437W	39.789153N	39.855211N	2014-09-25 03:28:40.883	2014-09-25 03:34:36.885
0221_20140925_033437_EX1404L3_MB	EX1404L3_XBT021_140925	8.6	83	09/25/14	066.533206W	066.425118W	39.789646N	39.862707N	2014-09-25 03:34:27.385	2014-09-25 04:04:53.891
0222_20140925_040444_EX1404L3_MB	EX1404L3_XBT021_140925	8.3	83	09/25/14	066.445014W	066.339313W	39.793014N	39.866770N	2014-09-25 04:04:34.393	2014-09-25 04:34:48.899
0223_20140925_043439_EX1404L3_MB	EX1404L3_XBT021_140925	7.1	88	09/25/14	066.351812W	066.261128W	39.797053N	39.871202N	2014-09-25 04:34:29.900	2014-09-25 05:04:53.409
0224_20140925_050444_EX1404L3_MB	EX1404L3_XBT021_140925	7.3	87	09/25/14	066.277677W	066.183351W	39.799478N	39.870086N	2014-09-25 05:04:34.408	2014-09-25 05:34:52.916
0225_20140925_053443_EX1404L3_MB	EX1404L3_XBT021_140925	7.3	86	09/25/14	066.196621W	066.148332W	39.798406N	39.871524N	2014-09-25 05:34:34.416	2014-09-25 05:47:50.921
0226_20140925_054741_EX1404L3_MB	EX1404L3_XBT021_140925	8.1	146	09/25/14	066.192409W	066.107734W	39.800796N	39.867358N	2014-09-25 05:47:32.419	2014-09-25 05:51:00.420
0227_20140925_055050_EX1404L3_MB	EX1404L3_XBT021_140925	7.7	167	09/25/14	066.192544W	066.100656W	39.802023N	39.840625N	2014-09-25 05:50:40.920	2014-09-25 06:01:09.425
0228_20140925_060100_EX1404L3_MB	EX1404L3_XBT021_140925	6.5	244	09/25/14	066.193864W	066.105264W	39.769912N	39.843889N	2014-09-25 06:00:50.425	2014-09-25 06:07:37.924
0229_20140925_060728_EX1404L3_MB	EX1404L3_XBT021_140925	7.2	270	09/25/14	066.193424W	066.147575W	39.766528N	39.843753N	2014-09-25 06:07:18.427	2014-09-25 06:18:56.929
0230_20140925_061857_EX1404L3_MB	EX1404L3_XBT022_140925	7.1	268	09/25/14	066.269136W	066.180300W	39.767203N	39.840502N	2014-09-25 06:18:47.927	2014-09-25 06:48:51.435
0231_20140925_064841_EX1404L3_MB	EX1404L3_XBT022_140925	7.1	269	09/25/14	066.344754W	066.255825W	39.770947N	39.842237N	2014-09-25 06:48:32.435	2014-09-25 07:18:51.443
0232_20140925_071841_EX1404L3_MB	EX1404L3_XBT022_140925	7.3	269	09/25/14	066.361135W	066.330319W	39.770217N	39.841977N	2014-09-25 07:18:32.442	2014-09-25 07:24:47.944
0233_20140925_072438_EX1404L3_MB	EX1404L3_XBT022_140925	7.6	208	09/25/14	066.403643W	066.310954W	39.773635N	39.842093N	2014-09-25 07:24:28.943	2014-09-25 07:29:00.945

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0234_20140925_072851_EX1404L3_MB	EX1404L3_XBT022_140925	7.3	179	09/25/14	066.405300W	066.309491W	39.770895N	39.801319N	2014-09-25 07:28:41.445	2014-09-25 07:43:36.948
0235_20140925_074327_EX1404L3_MB	EX1404L3_XBT022_140925	6.0	131	09/25/14	066.398386W	066.315141W	39.737018N	39.803244N	2014-09-25 07:43:17.448	2014-09-25 07:46:15.950
0236_20140925_074616_EX1404L3_MB	EX1404L3_XBT022_140925	7.3	87	09/25/14	066.359684W	066.270453W	39.733968N	39.806492N	2014-09-25 07:46:06.949	2014-09-25 08:16:25.457
0237_20140925_081615_EX1404L3_MB	EX1404L3_XBT022_140925	7.2	88	09/25/14	066.282677W	066.190653W	39.733322N	39.801164N	2014-09-25 08:16:05.956	2014-09-25 08:46:17.964
0238_20140925_084618_EX1404L3_MB	EX1404L3_XBT022_140925	7.7	87	09/25/14	066.207838W	066.116868W	39.732932N	39.808104N	2014-09-25 08:46:08.965	2014-09-25 09:13:46.969
0239_20140925_091337_EX1404L3_MB	EX1404L3_XBT022_140925	7.2	354	09/25/14	066.166838W	066.079750W	39.740511N	39.802746N	2014-09-25 09:13:27.471	2014-09-25 09:18:00.974
0240_20140925_091801_EX1404L3_MB	EX1404L3_XBT022_140925	8.4	305	09/25/14	066.223780W	066.093594W	39.749945N	39.844017N	2014-09-25 09:17:51.972	2014-09-25 09:48:13.979
0241_20140925_094804_EX1404L3_MB	EX1404L3_XBT022_140925	8.6	304	09/25/14	066.246732W	066.166922W	39.795912N	39.861901N	2014-09-25 09:47:54.482	2014-09-25 10:02:02.486
0242_20140925_220840_EX1404L3_MB	EX1404L3_XBT023_140925	8.9	26	09/25/14	066.217830W	066.105615W	39.807965N	39.887370N	2014-09-25 22:08:40.168	2014-09-25 22:35:26.675
0243_20140925_223517_EX1404L3_MB	EX1404L3_XBT023_140925	6.9	288	09/25/14	066.190487W	066.111886W	39.842571N	39.910870N	2014-09-25 22:35:07.675	2014-09-25 22:38:34.179
0244_20140925_223824_EX1404L3_MB	EX1404L3_XBT023_140925	8.5	271	09/25/14	066.249949W	066.148466W	39.840235N	39.915848N	2014-09-25 22:38:15.678	2014-09-25 23:08:39.186
0245_20140925_230829_EX1404L3_MB	EX1404L3_XBT023_140925	8.5	270	09/25/14	066.342113W	066.241816W	39.845581N	39.918407N	2014-09-25 23:08:20.185	2014-09-25 23:38:32.195
0246_20140925_233822_EX1404L3_MB	EX1404L3_XBT023_140925	9.8	269	09/25/14	066.362842W	066.333690W	39.847189N	39.916898N	2014-09-25 23:38:13.195	2014-09-25 23:44:34.696
0247_20140925_234425_EX1404L3_MB	EX1404L3_XBT023_140925	10.1	218	09/25/14	066.408936W	066.327883W	39.848109N	39.914316N	2014-09-25 23:44:15.696	2014-09-25 23:48:28.697
0248_20140925_234819_EX1404L3_MB	EX1404L3_XBT023_140925	9.4	177	09/26/14	066.414627W	066.316282W	39.791557N	39.881071N	2014-09-25 23:48:10.193	2014-09-26 00:18:20.703
0249_20140926_001810_EX1404L3_MB	EX1404L3_XBT023_140925	9.3	181	09/26/14	066.409155W	066.315443W	39.764139N	39.801405N	2014-09-26 00:18:01.702	2014-09-26 00:30:08.704
0250_20140926_002959_EX1404L3_MB	EX1404L3_XBT023_140925	9.0	130	09/26/14	066.407187W	066.319402W	39.730953N	39.793780N	2014-09-26 00:29:49.704	2014-09-26 00:34:26.706
0251_20140926_003417_EX1404L3_MB	EX1404L3_XBT023_140925	9.5	88	09/26/14	066.362005W	066.253876W	39.726718N	39.795932N	2014-09-26 00:34:08.207	2014-09-26 01:04:27.712
0252_20140926_010417_EX1404L3_MB	EX1404L3_XBT023_140925	10.2	90	09/26/14	066.255954W	066.142571W	39.722380N	39.795500N	2014-09-26 01:04:08.216	2014-09-26 01:34:22.220
0253_20140926_013412_EX1404L3_MB	EX1404L3_XBT023_140925	9.4	93	09/26/14	066.147602W	066.133408W	39.720678N	39.791675N	2014-09-26 01:34:03.220	2014-09-26 01:37:32.224

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0254_20140926_013722_EX1404L3_MB	EX1404L3_XBT023_140925	8.0	163	09/26/14	066.178321W	066.087449W	39.724279N	39.781995N	2014-09-26 01:37:13.223	2014-09-26 01:40:58.224
0255_20140926_014048_EX1404L3_MB	EX1404L3_XBT023_140925	10.0	181	09/26/14	066.179599W	066.080042W	39.713053N	39.751611N	2014-09-26 01:40:38.726	2014-09-26 01:53:56.226
0256_20140926_015347_EX1404L3_MB	EX1404L3_XBT023_140925	9.3	140	09/26/14	066.172563W	066.086229W	39.683418N	39.738919N	2014-09-26 01:53:37.229	2014-09-26 01:56:15.232
0257_20140926_015605_EX1404L3_MB	EX1404L3_XBT023_140925	8.6	112	09/26/14	066.148793W	066.032606W	39.651405N	39.740790N	2014-09-26 01:55:56.229	2014-09-26 02:26:20.737
0258_20140926_022611_EX1404L3_MB	EX1404L3_XBT023_140925	7.9	112	09/26/14	066.056379W	065.966519W	39.629137N	39.712041N	2014-09-26 02:26:01.236	2014-09-26 02:53:12.743
0259_20140926_025313_EX1404L3_MB	EX1404L3_XBT024_140926	8.4	116	09/26/14	065.983926W	065.880036W	39.594231N	39.683718N	2014-09-26 02:53:03.246	2014-09-26 03:23:17.252
0260_20140926_032307_EX1404L3_MB	EX1404L3_XBT024_140926	10.2	124	09/26/14	065.910851W	065.788766W	39.547285N	39.653496N	2014-09-26 03:22:58.251	2014-09-26 03:53:07.262
0261_20140926_035307_EX1404L3_MB	EX1404L3_XBT024_140926	10.6	124	09/26/14	065.826333W	065.696889W	39.495660N	39.598227N	2014-09-26 03:52:58.259	2014-09-26 04:23:15.766
0262_20140926_042305_EX1404L3_MB	EX1404L3_XBT024_140926	10.4	123	09/26/14	065.731634W	065.603206W	39.446723N	39.548792N	2014-09-26 04:22:56.266	2014-09-26 04:53:19.271
0263_20140926_045309_EX1404L3_MB	EX1404L3_XBT024_140926	9.6	111	09/26/14	065.642205W	065.525050W	39.407434N	39.495814N	2014-09-26 04:52:59.775	2014-09-26 05:23:16.279
0264_20140926_052306_EX1404L3_MB	EX1404L3_XBT024_140926	8.2	100	09/26/14	065.534625W	065.439984W	39.397435N	39.474802N	2014-09-26 05:22:57.279	2014-09-26 05:53:10.786
0265_20140926_055301_EX1404L3_MB	EX1404L3_XBT024_140926	8.0	96	09/26/14	065.447331W	065.386786W	39.399537N	39.451536N	2014-09-26 05:52:51.789	2014-09-26 06:12:03.793
0266_20140926_061154_EX1404L3_MB	EX1404L3_XBT025_140926	8.2	110	09/26/14	065.392758W	065.293595W	39.367980N	39.440797N	2014-09-26 06:11:44.795	2014-09-26 06:41:59.802
0267_20140926_064150_EX1404L3_MB	EX1404L3_XBT025_140926	8.7	114	09/26/14	065.323977W	065.258882W	39.352489N	39.423601N	2014-09-26 06:41:40.801	2014-09-26 06:53:49.805
0268_20140926_065340_EX1404L3_MB	EX1404L3_XBT025_140926	9.4	158	09/26/14	065.314240W	065.229243W	39.353646N	39.409466N	2014-09-26 06:53:30.305	2014-09-26 06:57:57.305
0269_20140926_065747_EX1404L3_MB	EX1404L3_XBT025_140926	8.1	185	09/26/14	065.326105W	065.228560W	39.305489N	39.372944N	2014-09-26 06:57:37.807	2014-09-26 07:27:57.815
0270_20140926_072748_EX1404L3_MB	EX1404L3_XBT025_140926	9.1	185	09/26/14	065.336723W	065.243069W	39.227816N	39.306485N	2014-09-26 07:27:38.814	2014-09-26 07:57:47.321
0271_20140926_075747_EX1404L3_MB	EX1404L3_XBT025_140926	9.0	185	09/26/14	065.339333W	065.259772W	39.154866N	39.234556N	2014-09-26 07:57:38.322	2014-09-26 08:28:03.328
0272_20140926_082754_EX1404L3_MB	EX1404L3_XBT025_140926	9.0	185	09/26/14	065.352137W	065.276304W	39.080882N	39.158043N	2014-09-26 08:27:44.329	2014-09-26 08:57:47.334
0273_20140926_085747_EX1404L3_MB	EX1404L3_XBT025_140926	9.2	185	09/26/14	065.365117W	065.290102W	39.005793N	39.083020N	2014-09-26 08:57:37.835	2014-09-26 09:27:50.345

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0274_20140926_092750_EX1404L3_MB	EX1404L3_XBT025_140926	9.1	185	09/26/14	065.380351W	065.304072W	38.940394N	39.005578N	2014-09-26 09:27:40.845	2014-09-26 09:53:48.351
0275_20140926_161510_EX1404L3_MB	EX1404L3_XBT026_140926	8.7	142	09/26/14	065.359387W	065.240275W	38.824510N	38.913501N	2014-09-26 16:15:10.947	2014-09-26 16:45:15.954
0276_20140926_164506_EX1404L3_MB	EX1404L3_XBT026_140926	7.9	132	09/26/14	065.290017W	065.181199W	38.779834N	38.856709N	2014-09-26 16:44:56.459	2014-09-26 17:15:16.966
0277_20140926_171507_EX1404L3_MB	EX1404L3_XBT026_140926	8.4	134	09/26/14	065.230128W	065.121937W	38.730237N	38.810457N	2014-09-26 17:14:57.964	2014-09-26 17:45:11.971
0278_20140926_174502_EX1404L3_MB	EX1404L3_XBT026_140926	8.6	137	09/26/14	065.165533W	065.060721W	38.678876N	38.758322N	2014-09-26 17:44:52.471	2014-09-26 18:15:07.482
0279_20140926_181508_EX1404L3_MB	EX1404L3_XBT026_140926	8.8	141	09/26/14	065.108807W	065.003503W	38.620942N	38.701040N	2014-09-26 18:14:58.479	2014-09-26 18:45:10.485
0280_20140926_184500_EX1404L3_MB	EX1404L3_XBT026_140926	9.0	140	09/26/14	065.054789W	064.947080W	38.560904N	38.643124N	2014-09-26 18:44:50.988	2014-09-26 19:15:11.494
0281_20140926_191502_EX1404L3_MB	EX1404L3_XBT026_140926	9.0	141	09/26/14	064.995402W	064.890599W	38.500618N	38.582506N	2014-09-26 19:14:52.492	2014-09-26 19:45:12.499
0282_20140926_194502_EX1404L3_MB	EX1404L3_XBT026_140926	8.7	142	09/26/14	064.938367W	064.867670W	38.478322N	38.521680N	2014-09-26 19:44:53.003	2014-09-26 19:57:03.005
0283_20140926_195653_EX1404L3_MB	EX1404L3_XBT026_140926	9.4	101	09/26/14	064.911250W	064.870945W	38.464362N	38.510937N	2014-09-26 19:56:44.501	2014-09-26 19:59:57.003
0284_20140926_195947_EX1404L3_MB	EX1404L3_XBT026_140926	8.3	91	09/26/14	064.892475W	064.788800W	38.447697N	38.513656N	2014-09-26 19:59:37.507	2014-09-26 20:30:04.013
0285_20140926_202954_EX1404L3_MB	EX1404L3_XBT026_140926	8.7	93	09/26/14	064.804126W	064.753713W	38.447935N	38.511057N	2014-09-26 20:29:44.513	2014-09-26 20:42:19.015
0286_20140926_204209_EX1404L3_MB	EX1404L3_XBT026_140926	8.7	96	09/26/14	064.763973W	064.661642W	38.442705N	38.501134N	2014-09-26 20:42:00.015	2014-09-26 21:12:17.523
0287_20140926_211207_EX1404L3_MB	EX1404L3_XBT026_140926	9.0	95	09/26/14	064.673592W	064.632516W	38.440711N	38.490013N	2014-09-26 21:11:58.024	2014-09-26 21:21:07.026
0288_20140926_212057_EX1404L3_MB	EX1404L3_XBT027_140926	8.9	95	09/26/14	064.646695W	064.539998W	38.428883N	38.487399N	2014-09-26 21:20:48.027	2014-09-26 21:51:10.531
0289_20140926_215100_EX1404L3_MB	EX1404L3_XBT027_140926	8.9	94	09/26/14	064.551656W	064.445502W	38.422658N	38.477466N	2014-09-26 21:50:51.534	2014-09-26 22:21:11.542
0290_20140926_222102_EX1404L3_MB	EX1404L3_XBT027_140926	8.1	94	09/26/14	064.457563W	064.360647W	38.414670N	38.467893N	2014-09-26 22:20:52.540	2014-09-26 22:51:14.548
0291_20140926_225104_EX1404L3_MB	EX1404L3_XBT027_140926	8.3	94	09/26/14	064.370641W	064.269726W	38.404673N	38.463136N	2014-09-26 22:50:55.547	2014-09-26 23:21:00.554
0292_20140926_232101_EX1404L3_MB	EX1404L3_XBT027_140926	8.8	94	09/26/14	064.287290W	064.179886W	38.395817N	38.455325N	2014-09-26 23:20:51.557	2014-09-26 23:51:13.563
0293_20140926_235104_EX1404L3_MB	EX1404L3_XBT027_140926	8.8	94	09/27/14	064.192780W	064.087560W	38.386915N	38.446764N	2014-09-26 23:50:54.562	2014-09-27 00:21:12.070

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0294_20140927_002102_EX1404L3_MB	EX1404L3_XBT027_140926	9.0	87	09/27/14	064.099386W	064.041649W	38.384828N	38.435749N	2014-09-27 00:20:53.070	2014-09-27 00:36:02.070
0295_20140927_003552_EX1404L3_MB	EX1404L3_XBT027_140926	9.1	73	09/27/14	064.051346W	063.947951W	38.387664N	38.453446N	2014-09-27 00:35:42.573	2014-09-27 01:06:05.083
0296_20140927_010555_EX1404L3_MB	EX1404L3_XBT027_140926	9.0	72	09/27/14	063.959492W	063.855602W	38.408342N	38.470974N	2014-09-27 01:05:46.077	2014-09-27 01:35:58.585
0297_20140927_013549_EX1404L3_MB	EX1404L3_XBT027_140926	8.8	45	09/27/14	063.880371W	063.835053W	38.425956N	38.471506N	2014-09-27 01:35:40.085	2014-09-27 01:37:31.086
0298_20140927_013721_EX1404L3_MB	EX1404L3_XBT027_140926	8.7	356	09/27/14	063.888127W	063.825819W	38.440456N	38.463893N	2014-09-27 01:37:12.085	2014-09-27 01:41:48.091
0299_20140927_014138_EX1404L3_MB	EX1404L3_XBT027_140926	9.1	351	09/27/14	063.892369W	063.824735W	38.458356N	38.504570N	2014-09-27 01:41:28.590	2014-09-27 01:55:36.592
0300_20140927_015526_EX1404L3_MB	EX1404L3_XBT027_140926	8.2	295	09/27/14	063.889939W	063.835138W	38.480438N	38.527884N	2014-09-27 01:55:17.092	2014-09-27 02:02:37.094
0301_20140927_020227_EX1404L3_MB	EX1404L3_XBT027_140926	9.0	233	09/27/14	063.974698W	063.875124W	38.447681N	38.526802N	2014-09-27 02:02:18.093	2014-09-27 02:31:40.101
0302_20140927_023130_EX1404L3_MB	EX1404L3_XBT027_140926	7.3	116	09/27/14	063.981818W	063.926709W	38.437037N	38.483435N	2014-09-27 02:31:20.602	2014-09-27 02:35:25.101
0303_20140927_023516_EX1404L3_MB	EX1404L3_XBT027_140926	9.1	79	09/27/14	063.952235W	063.880234W	38.436507N	38.492676N	2014-09-27 02:35:06.104	2014-09-27 02:56:06.609
0304_20140927_025557_EX1404L3_MB	EX1404L3_XBT027_140926	9.2	97	09/27/14	063.891961W	063.830613W	38.434720N	38.489937N	2014-09-27 02:55:47.607	2014-09-27 03:11:09.612
0305_20140927_031059_EX1404L3_MB	EX1404L3_XBT027_140926	8.8	73	09/27/14	063.842146W	063.739913W	38.438016N	38.501921N	2014-09-27 03:10:50.611	2014-09-27 03:41:12.146
0306_20140927_034102_EX1404L3_MB	EX1404L3_XBT027_140926	9.0	73	09/27/14	063.752349W	063.697615W	38.456444N	38.513615N	2014-09-27 03:40:53.144	2014-09-27 03:55:13.141
0307_20140927_035503_EX1404L3_MB	EX1404L3_XBT027_140926	8.0	124	09/27/14	063.724797W	063.669816W	38.466587N	38.510424N	2014-09-27 03:54:53.624	2014-09-27 03:57:57.621
0308_20140927_035747_EX1404L3_MB	EX1404L3_XBT027_140926	8.5	151	09/27/14	063.725276W	063.626798W	38.415266N	38.494068N	2014-09-27 03:57:38.145	2014-09-27 04:27:42.143
0309_20140927_042742_EX1404L3_MB	EX1404L3_XBT027_140926	8.4	151	09/27/14	063.686896W	063.589326W	38.355914N	38.427243N	2014-09-27 04:27:33.142	2014-09-27 04:57:55.638
0310_20140927_045745_EX1404L3_MB	EX1404L3_XBT027_140926	8.1	151	09/27/14	063.648133W	063.550262W	38.297941N	38.360367N	2014-09-27 04:57:36.145	2014-09-27 05:27:51.648
0311_20140927_052742_EX1404L3_MB	EX1404L3_XBT027_140926	8.4	150	09/27/14	063.611105W	063.520471W	38.246538N	38.297556N	2014-09-27 05:27:33.144	2014-09-27 05:51:57.157
0312_20140927_055148_EX1404L3_MB	EX1404L3_XBT027_140926	10.4	85	09/27/14	063.576337W	063.519684W	38.222588N	38.273546N	2014-09-27 05:51:38.151	2014-09-27 05:57:12.154
0313_20140927_055702_EX1404L3_MB	EX1404L3_XBT027_140926	9.5	62	09/27/14	063.544639W	063.501021W	38.221161N	38.275934N	2014-09-27 05:56:53.150	2014-09-27 06:03:19.650

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0314_20140927_060310_EX1404L3_MB	EX1404L3_XBT027_140926	7.7	349	09/27/14	063.537400W	063.483968W	38.236151N	38.286038N	2014-09-27 06:03:00.653	2014-09-27 06:08:36.155
0315_20140927_060826_EX1404L3_MB	EX1404L3_XBT027_140926	8.3	331	09/27/14	063.572934W	063.496792W	38.243109N	38.348261N	2014-09-27 06:08:17.154	2014-09-27 06:38:39.164
0316_20140927_063829_EX1404L3_MB	EX1404L3_XBT027_140926	8.6	329	09/27/14	063.584088W	063.532450W	38.307478N	38.365661N	2014-09-27 06:38:20.162	2014-09-27 06:46:57.663
0317_20140927_064648_EX1404L3_MB	EX1404L3_XBT028_140927	8.9	331	09/27/14	063.628731W	063.543455W	38.324987N	38.428579N	2014-09-27 06:46:38.666	2014-09-27 07:16:45.173
0318_20140927_071635_EX1404L3_MB	EX1404L3_XBT028_140927	8.7	331	09/27/14	063.668578W	063.577562W	38.394700N	38.480208N	2014-09-27 07:16:26.172	2014-09-27 07:43:17.177
0319_20140927_074317_EX1404L3_MB	EX1404L3_XBT029_140927	8.6	332	09/27/14	063.685888W	063.615533W	38.456357N	38.512518N	2014-09-27 07:43:07.677	2014-09-27 07:58:19.681
0320_20140927_075809_EX1404L3_MB	EX1404L3_XBT029_140927	6.4	28	09/27/14	063.692446W	063.626705W	38.481690N	38.534752N	2014-09-27 07:58:00.184	2014-09-27 08:02:36.184
0321_20140927_080236_EX1404L3_MB	EX1404L3_XBT029_140927	8.5	67	09/27/14	063.665427W	063.562113W	38.480384N	38.553695N	2014-09-27 08:02:27.183	2014-09-27 08:32:43.690
0322_20140927_083234_EX1404L3_MB	EX1404L3_XBT029_140927	8.9	66	09/27/14	063.580691W	063.474836W	38.503204N	38.582184N	2014-09-27 08:32:24.690	2014-09-27 09:02:36.195
0323_20140927_090236_EX1404L3_MB	EX1404L3_XBT029_140927	9.0	65	09/27/14	063.495332W	063.382636W	38.523726N	38.618413N	2014-09-27 09:02:26.700	2014-09-27 09:32:48.203
0324_20140927_093238_EX1404L3_MB	EX1404L3_XBT029_140927	8.7	66	09/27/14	063.409109W	063.329942W	38.547300N	38.630828N	2014-09-27 09:32:29.207	2014-09-27 09:52:29.708
0325_20140928_003214_EX1404L3_MB	EX1404L3_XBT030_140928	8.3	171	09/28/14	063.255811W	063.170970W	38.535082N	38.615955N	2014-09-28 00:32:14.936	2014-09-28 01:02:29.939
0326_20140928_010220_EX1404L3_MB	EX1404L3_XBT030_140928	8.2	171	09/28/14	063.239041W	063.169029W	38.466664N	38.544680N	2014-09-28 01:02:10.443	2014-09-28 01:32:26.449
0327_20140928_013217_EX1404L3_MB	EX1404L3_XBT030_140928	8.3	172	09/28/14	063.237632W	063.156300W	38.416429N	38.477573N	2014-09-28 01:32:07.448	2014-09-28 01:55:35.956
0328_20140928_015526_EX1404L3_MB	EX1404L3_XBT030_140928	10.0	126	09/28/14	063.222222W	063.148395W	38.385942N	38.429569N	2014-09-28 01:55:17.456	2014-09-28 02:04:45.956
0329_20140928_020436_EX1404L3_MB	EX1404L3_XBT030_140928	8.8	109	09/28/14	063.192778W	063.049943W	38.358089N	38.422040N	2014-09-28 02:04:27.456	2014-09-28 02:34:46.467
0330_20140928_023437_EX1404L3_MB	EX1404L3_XBT030_140928	8.0	131	09/28/14	063.121971W	063.046075W	38.360767N	38.390493N	2014-09-28 02:34:27.466	2014-09-28 02:35:30.963
0331_20140928_023521_EX1404L3_MB	EX1404L3_XBT030_140928	8.9	135	09/28/14	063.120864W	062.995290W	38.309285N	38.387835N	2014-09-28 02:35:11.469	2014-09-28 03:05:30.970
0332_20140928_030521_EX1404L3_MB	EX1404L3_XBT030_140928	9.0	135	09/28/14	063.057514W	062.925175W	38.249690N	38.327065N	2014-09-28 03:05:11.473	2014-09-28 03:35:41.983
0333_20140928_033532_EX1404L3_MB	EX1404L3_XBT030_140928	8.6	136	09/28/14	063.000051W	062.867784W	38.192619N	38.274279N	2014-09-28 03:35:22.979	2014-09-28 04:05:40.989

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0334_20140928_040531_EX1404L3_MB	EX1404L3_XBT030_140928	8.7	134	09/28/14	062.936523W	062.858783W	38.183605N	38.224637N	2014-09-28 04:05:21.986	2014-09-28 04:11:20.489
0335_20140928_041120_EX1404L3_MB	EX1404L3_XBT031_140928	8.2	136	09/28/14	062.920493W	062.838874W	38.169811N	38.211137N	2014-09-28 04:11:11.488	2014-09-28 04:21:51.491
0336_20140928_042141_EX1404L3_MB	EX1404L3_XBT031_140928	8.5	95	09/28/14	062.894916W	062.841131W	38.153807N	38.206695N	2014-09-28 04:21:31.991	2014-09-28 04:24:23.993
0337_20140928_042414_EX1404L3_MB	EX1404L3_XBT031_140928	8.5	80	09/28/14	062.864995W	062.765007W	38.152844N	38.213858N	2014-09-28 04:24:04.989	2014-09-28 04:54:25.997
0338_20140928_045416_EX1404L3_MB	EX1404L3_XBT031_140928	8.5	66	09/28/14	062.782769W	062.681447W	38.161959N	38.239588N	2014-09-28 04:54:06.500	2014-09-28 05:24:34.005
0339_20140928_052424_EX1404L3_MB	EX1404L3_XBT031_140928	8.3	66	09/28/14	062.696002W	062.597000W	38.182246N	38.271811N	2014-09-28 05:24:14.507	2014-09-28 05:54:28.015
0340_20140928_055418_EX1404L3_MB	EX1404L3_XBT031_140928	8.2	66	09/28/14	062.619429W	062.521777W	38.201585N	38.280058N	2014-09-28 05:54:09.011	2014-09-28 06:22:02.525
0341_20140928_062153_EX1404L3_MB	EX1404L3_XBT031_140928	7.1	93	09/28/14	062.554355W	062.484264W	38.219881N	38.289435N	2014-09-28 06:21:43.519	2014-09-28 06:26:33.025
0342_20140928_062623_EX1404L3_MB	EX1404L3_XBT031_140928	6.5	149	09/28/14	062.554112W	062.479686W	38.242209N	38.269420N	2014-09-28 06:26:14.021	2014-09-28 06:30:00.527
0343_20140928_062951_EX1404L3_MB	EX1404L3_XBT031_140928	6.0	210	09/28/14	062.557444W	062.484502W	38.227080N	38.267812N	2014-09-28 06:29:41.526	2014-09-28 06:32:29.025
0344_20140928_063219_EX1404L3_MB	EX1404L3_XBT031_140928	7.3	239	09/28/14	062.570642W	062.501396W	38.209699N	38.267562N	2014-09-28 06:32:10.025	2014-09-28 06:44:47.527
0345_20140928_064437_EX1404L3_MB	EX1404L3_XBT031_140928	7.6	4.5	09/28/14	062.586873W	062.514002W	38.209929N	38.274100N	2014-09-28 06:44:28.029	2014-09-28 06:51:42.026
0346_20140928_065132_EX1404L3_MB	EX1404L3_XBT031_140928	8.6	60	09/28/14	062.560025W	062.499354W	38.210356N	38.282153N	2014-09-28 06:51:22.528	2014-09-28 07:04:59.032
0347_20140928_070459_EX1404L3_MB	EX1404L3_XBT032_140928	8.7	60	09/28/14	062.522918W	062.415376W	38.235519N	38.318581N	2014-09-28 07:04:49.532	2014-09-28 07:35:05.038
0348_20140928_073505_EX1404L3_MB	EX1404L3_XBT032_140928	8.7	60	09/28/14	062.441534W	062.329643W	38.261908N	38.349426N	2014-09-28 07:34:56.040	2014-09-28 08:05:16.046
0349_20140928_080506_EX1404L3_MB	EX1404L3_XBT032_140928	7.6	54	09/28/14	062.360731W	062.284838W	38.289253N	38.363172N	2014-09-28 08:04:57.047	2014-09-28 08:16:31.552
0350_20140928_081621_EX1404L3_MB	EX1404L3_XBT032_140928	6.0	279	09/28/14	062.360662W	062.284914W	38.300389N	38.373849N	2014-09-28 08:16:12.552	2014-09-28 08:25:10.055
0351_20140928_082500_EX1404L3_MB	EX1404L3_XBT032_140928	8.3	245	09/28/14	062.429085W	062.319423W	38.286052N	38.364083N	2014-09-28 08:24:51.555	2014-09-28 08:55:10.562
0352_20140928_085500_EX1404L3_MB	EX1404L3_XBT032_140928	8.4	246	09/28/14	062.512023W	062.401294W	38.261528N	38.343049N	2014-09-28 08:54:51.562	2014-09-28 09:25:07.570
0353_20140928_092458_EX1404L3_MB	EX1404L3_XBT032_140928	8.4	248	09/28/14	062.532769W	062.484853W	38.259525N	38.314639N	2014-09-28 09:24:49.069	2014-09-28 09:31:56.071

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0354_20140928_093147_EX1404L3_MB	EX1404L3_XBT032_140928	8.3	319	09/28/14	062.557736W	062.495252W	38.258199N	38.312508N	2014-09-28 09:31:37.071	2014-09-28 09:35:30.074
0355_20140928_093530_EX1404L3_MB	EX1404L3_XBT032_140928	5.9	349	09/28/14	062.565224W	062.489338W	38.284987N	38.314423N	2014-09-28 09:35:21.073	2014-09-28 09:46:30.075
0356_20140928_214020_EX1404L3_MB	EX1404L3_XBT033_140928	7.6	157	09/28/14	062.559652W	062.481741W	38.286774N	38.314269N	2014-09-28 21:40:20.755	2014-09-28 21:47:12.256
0357_20140928_214703_EX1404L3_MB	EX1404L3_XBT033_140928	7.9	143	09/28/14	062.536835W	062.476356W	38.283672N	38.304498N	2014-09-28 21:46:53.258	2014-09-28 21:48:46.256
0358_20140928_214836_EX1404L3_MB	EX1404L3_XBT033_140928	7.7	308	09/28/14	062.533189W	062.456551W	38.262087N	38.326067N	2014-09-28 21:48:27.257	2014-09-28 22:03:44.264
0359_20140928_220334_EX1404L3_MB	EX1404L3_XBT033_140928	8.4	307	09/28/14	062.539841W	062.500348W	38.282492N	38.330403N	2014-09-28 22:03:25.760	2014-09-28 22:06:40.262
0360_20140928_220630_EX1404L3_MB	EX1404L3_XBT033_140928	7.2	180	09/28/14	062.566906W	062.499469W	38.276287N	38.334577N	2014-09-28 22:06:21.261	2014-09-28 22:14:08.762
0361_20140928_221359_EX1404L3_MB	EX1404L3_XBT033_140928	9.1	68	09/28/14	062.531068W	062.505144W	38.275930N	38.336710N	2014-09-28 22:13:50.261	2014-09-28 22:21:06.268
0362_20140928_222056_EX1404L3_MB	EX1404L3_XBT033_140928	5.8	27	09/28/14	062.539637W	062.458344W	38.270117N	38.337172N	2014-09-28 22:20:47.265	2014-09-28 22:30:04.768
0363_20140928_222955_EX1404L3_MB	EX1404L3_XBT033_140928	7.1	228	09/28/14	062.546943W	062.470257W	38.272940N	38.323838N	2014-09-28 22:29:45.769	2014-09-28 22:39:08.273
0364_20140928_223858_EX1404L3_MB	EX1404L3_XBT033_140928	6.7	218	09/28/14	062.560530W	062.496219W	38.269341N	38.326089N	2014-09-28 22:38:49.769	2014-09-28 22:48:08.771
0365_20140928_224759_EX1404L3_MB	EX1404L3_XBT033_140928	8.8	25	09/28/14	062.554244W	062.484548W	38.269917N	38.323644N	2014-09-28 22:47:49.770	2014-09-28 22:55:42.273
0366_20140928_225533_EX1404L3_MB	EX1404L3_XBT033_140928	10.8	56	09/28/14	062.544126W	062.428661W	38.281990N	38.370863N	2014-09-28 22:55:23.274	2014-09-28 23:17:49.782
0367_20140928_231750_EX1404L3_MB	EX1404L3_XBT033_140928	11.3	58	09/28/14	062.457564W	062.325573W	38.310653N	38.407687N	2014-09-28 23:17:40.779	2014-09-28 23:48:00.289
0368_20140928_234750_EX1404L3_MB	EX1404L3_XBT033_140928	11.2	57	09/28/14	062.348326W	062.281662W	38.358598N	38.424892N	2014-09-28 23:47:41.786	2014-09-29 00:00:09.290
0369_20140929_000009_EX1404L3_MB	EX1404L3_XBT033_140928	11.2	58	09/29/14	062.306986W	062.176920W	38.375827N	38.474401N	2014-09-28 23:59:59.791	2014-09-29 00:30:27.797
0370_20140929_003018_EX1404L3_MB	EX1404L3_XBT033_140928	11.0	57	09/29/14	062.204737W	062.071201W	38.421191N	38.519070N	2014-09-29 00:30:08.297	2014-09-29 01:00:17.805
0371_20140929_010008_EX1404L3_MB	EX1404L3_XBT033_140928	10.8	59	09/29/14	062.103322W	061.993329W	38.455172N	38.551068N	2014-09-29 00:59:58.307	2014-09-29 01:25:55.819
0372_20140929_012546_EX1404L3_MB	EX1404L3_XBT034_140929	8.9	144	09/29/14	062.023974W	061.945585W	38.486371N	38.550343N	2014-09-29 01:25:36.316	2014-09-29 01:40:31.319
0373_20140929_014021_EX1404L3_MB	EX1404L3_XBT034_140929	8.8	217	09/29/14	062.010711W	061.945807W	38.472853N	38.513552N	2014-09-29 01:40:11.820	2014-09-29 01:41:42.817

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0374_20140929_014143_EX1404L3_MB	EX1404L3_XBT034_140929	8.7	238	09/29/14	062.088428W	061.963739W	38.426565N	38.515393N	2014-09-29 01:41:33.320	2014-09-29 02:11:53.826
0375_20140929_021144_EX1404L3_MB	EX1404L3_XBT034_140929	8.3	238	09/29/14	062.159059W	062.029756W	38.400653N	38.488641N	2014-09-29 02:11:34.828	2014-09-29 02:41:48.335
0376_20140929_024138_EX1404L3_MB	EX1404L3_XBT034_140929	8.3	238	09/29/14	062.238088W	062.119054W	38.364219N	38.455099N	2014-09-29 02:41:28.838	2014-09-29 03:11:49.340
0377_20140929_031139_EX1404L3_MB	EX1404L3_XBT034_140929	8.8	238	09/29/14	062.317913W	062.189894W	38.340514N	38.425510N	2014-09-29 03:11:29.840	2014-09-29 03:41:52.847
0378_20140929_034143_EX1404L3_MB	EX1404L3_XBT034_140929	9.1	238	09/29/14	062.402478W	062.280262W	38.306299N	38.381941N	2014-09-29 03:41:33.350	2014-09-29 04:11:41.356
0379_20140929_041141_EX1404L3_MB	EX1404L3_XBT034_140929	9.5	239	09/29/14	062.495722W	062.368811W	38.265575N	38.350751N	2014-09-29 04:11:32.354	2014-09-29 04:41:52.363
0380_20140929_044143_EX1404L3_MB	EX1404L3_XBT034_140929	9.4	239	09/29/14	062.578319W	062.451245W	38.226588N	38.316456N	2014-09-29 04:41:33.362	2014-09-29 05:11:47.870
0381_20140929_051138_EX1404L3_MB	EX1404L3_XBT034_140929	9.0	239	09/29/14	062.668482W	062.540593W	38.188826N	38.277854N	2014-09-29 05:11:28.871	2014-09-29 05:41:58.379
0382_20140929_054148_EX1404L3_MB	EX1404L3_XBT034_140929	8.4	238	09/29/14	062.672555W	062.622718W	38.185466N	38.250241N	2014-09-29 05:41:38.881	2014-09-29 05:44:24.378
0383_20140929_054424_EX1404L3_MB	EX1404L3_XBT035_140929	8.5	239	09/29/14	062.731023W	062.628992W	38.165507N	38.245942N	2014-09-29 05:44:14.878	2014-09-29 06:08:16.390
0384_20140929_060807_EX1404L3_MB	EX1404L3_XBT035_140929	9.0	278	09/29/14	062.731809W	062.701110W	38.166382N	38.219367N	2014-09-29 06:07:57.387	2014-09-29 06:10:39.885
0385_20140929_061030_EX1404L3_MB	EX1404L3_XBT035_140929	8.1	293	09/29/14	062.809129W	062.710265W	38.167931N	38.244453N	2014-09-29 06:10:20.386	2014-09-29 06:40:33.894
0386_20140929_064034_EX1404L3_MB	EX1404L3_XBT035_140929	8.0	293	09/29/14	062.882548W	062.788322W	38.197108N	38.278104N	2014-09-29 06:40:24.893	2014-09-29 07:10:38.900
0387_20140929_071029_EX1404L3_MB	EX1404L3_XBT035_140929	6.8	293	09/29/14	062.941030W	062.864592W	38.222913N	38.312678N	2014-09-29 07:10:19.905	2014-09-29 07:40:35.410
0388_20140929_074025_EX1404L3_MB	EX1404L3_XBT035_140929	6.5	289	09/29/14	063.013375W	062.932231W	38.239509N	38.324371N	2014-09-29 07:40:15.912	2014-09-29 08:07:39.918
0389_20140929_080740_EX1404L3_MB	EX1404L3_XBT035_140929	7.4	323	09/29/14	063.038446W	062.975958W	38.268632N	38.353573N	2014-09-29 08:07:30.418	2014-09-29 08:25:43.422
0390_20140929_082533_EX1404L3_MB	EX1404L3_XBT035_140929	7.1	86	09/29/14	063.061961W	062.952546W	38.304130N	38.374590N	2014-09-29 08:25:23.922	2014-09-29 08:42:57.928
0391_20140929_084248_EX1404L3_MB	EX1404L3_XBT035_140929	7.1	197	09/29/14	063.050922W	062.964990W	38.276387N	38.342514N	2014-09-29 08:42:38.924	2014-09-29 09:01:50.932
0392_20140929_090141_EX1404L3_MB	EX1404L3_XBT035_140929	7.1	336	09/29/14	063.065882W	062.987909W	38.259600N	38.343528N	2014-09-29 09:01:31.932	2014-09-29 09:16:29.433
0393_20140929_091620_EX1404L3_MB	EX1404L3_XBT035_140929	9.0	85	09/29/14	063.039258W	062.978999W	38.280394N	38.342552N	2014-09-29 09:16:10.436	2014-09-29 09:28:00.937

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0394_20140929_092801_EX1404L3_MB	EX1404L3_XBT035_140929	8.0	74	09/29/14	062.996508W	062.918380W	38.280494N	38.350003N	2014-09-29 09:27:51.435	2014-09-29 09:40:14.939
0395_20140929_094005_EX1404L3_MB	EX1404L3_XBT035_140929	6.0	262	09/29/14	062.992525W	062.917839W	38.285647N	38.352868N	2014-09-29 09:39:55.939	2014-09-29 09:51:11.942
0396_20140929_130154_EX1404L3_MB	EX1404L3_XBT036_140929	9.9	301	09/29/14	063.396579W	063.282882W	38.598772N	38.691080N	2014-09-29 13:01:54.992	2014-09-29 13:32:12.999
0397_20140929_133203_EX1404L3_MB	EX1404L3_XBT036_140929	10.5	299	09/29/14	063.491858W	063.370983W	38.642489N	38.736110N	2014-09-29 13:31:54.497	2014-09-29 14:02:05.006
0398_20140929_140156_EX1404L3_MB	EX1404L3_XBT036_140929	10.8	299	09/29/14	063.588143W	063.462931W	38.691747N	38.784752N	2014-09-29 14:01:46.005	2014-09-29 14:32:06.512
0399_20140929_143157_EX1404L3_MB	EX1404L3_XBT036_140929	10.9	299	09/29/14	063.689150W	063.558248W	38.743347N	38.833047N	2014-09-29 14:31:47.513	2014-09-29 15:02:06.021
0400_20140929_150156_EX1404L3_MB	EX1404L3_XBT036_140929	9.9	303	09/29/14	063.763861W	063.656047W	38.789022N	38.868768N	2014-09-29 15:01:46.522	2014-09-29 15:30:29.528
0401_20140930_002901_EX1404L3_MB	EX1404L3_XBT037_140930	9.1	269	09/30/14	063.767315W	063.759788W	38.823428N	38.866244N	2014-09-30 00:29:01.665	2014-09-30 00:31:15.169
0402_20140930_003105_EX1404L3_MB	EX1404L3_XBT037_140930	7.6	356	09/30/14	063.802532W	063.740947W	38.826821N	38.872574N	2014-09-30 00:30:56.167	2014-09-30 00:41:07.668
0403_20140930_004058_EX1404L3_MB	EX1404L3_XBT037_140930	8.8	16	09/30/14	063.798283W	063.699798W	38.851856N	38.944946N	2014-09-30 00:40:48.667	2014-09-30 01:11:09.175
0404_20140930_011059_EX1404L3_MB	EX1404L3_XBT037_140930	9.1	343	09/30/14	063.782514W	063.695326W	38.920422N	38.962445N	2014-09-30 01:10:49.677	2014-09-30 01:17:39.180
0405_20140930_011739_EX1404L3_MB	EX1404L3_XBT037_140930	8.9	327	09/30/14	063.821170W	063.702666W	38.935718N	39.020474N	2014-09-30 01:17:30.179	2014-09-30 01:47:48.687
0406_20140930_014739_EX1404L3_MB	EX1404L3_XBT037_140930	8.9	327	09/30/14	063.865725W	063.759673W	39.003687N	39.084136N	2014-09-30 01:47:30.188	2014-09-30 02:17:52.195
0407_20140930_021742_EX1404L3_MB	EX1404L3_XBT037_140930	8.9	327	09/30/14	063.910309W	063.804135W	39.071292N	39.148962N	2014-09-30 02:17:33.196	2014-09-30 02:47:48.203
0408_20140930_024738_EX1404L3_MB	EX1404L3_XBT037_140930	8.9	327	09/30/14	063.958658W	063.853824W	39.134615N	39.209188N	2014-09-30 02:47:29.701	2014-09-30 03:17:51.210
0409_20140930_031741_EX1404L3_MB	EX1404L3_XBT037_140930	8.7	328	09/30/14	064.004911W	063.899321W	39.202896N	39.271683N	2014-09-30 03:17:31.711	2014-09-30 03:47:51.216
0410_20140930_034741_EX1404L3_MB	EX1404L3_XBT037_140930	8.6	328	09/30/14	064.020604W	063.945257W	39.267046N	39.294314N	2014-09-30 03:47:31.718	2014-09-30 03:57:43.718
0411_20140930_035733_EX1404L3_MB	EX1404L3_XBT037_140930	8.9	322	09/30/14	064.057055W	063.960187W	39.282066N	39.334083N	2014-09-30 03:57:24.219	2014-09-30 04:17:53.223
0412_20140930_041743_EX1404L3_MB	EX1404L3_XBT037_140930	8.6	330	09/30/14	064.071957W	063.990954W	39.328396N	39.358508N	2014-09-30 04:17:33.726	2014-09-30 04:28:39.729
0413_20140930_042830_EX1404L3_MB	EX1404L3_XBT038_140930	8.6	328	09/30/14	064.114742W	064.004416W	39.350193N	39.421392N	2014-09-30 04:28:20.229	2014-09-30 04:58:15.237

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0414_20140930_045815_EX1404L3_MB	EX1404L3_XBT038_140930	8.7	328	09/30/14	064.160452W	064.050162W	39.411320N	39.486710N	2014-09-30 04:58:05.737	2014-09-30 05:28:18.742
0415_20140930_052809_EX1404L3_MB	EX1404L3_XBT038_140930	9.1	328	09/30/14	064.205898W	064.095768W	39.473560N	39.556043N	2014-09-30 05:27:59.744	2014-09-30 05:58:23.749
0416_20140930_055813_EX1404L3_MB	EX1404L3_XBT038_140930	8.8	328	09/30/14	064.244365W	064.143255W	39.537773N	39.607335N	2014-09-30 05:58:04.750	2014-09-30 06:22:52.759
0417_20140930_062243_EX1404L3_MB	EX1404L3_XBT038_140930	6.8	357	09/30/14	064.246744W	064.174838W	39.582527N	39.631830N	2014-09-30 06:22:34.258	2014-09-30 06:33:15.759
0418_20140930_063306_EX1404L3_MB	EX1404L3_XBT038_140930	7.8	220	09/30/14	064.268656W	064.182527W	39.562844N	39.611863N	2014-09-30 06:32:56.259	2014-09-30 06:48:54.763
0419_20140930_064855_EX1404L3_MB	EX1404L3_XBT039_140930	8.8	221	09/30/14	064.335177W	064.215704W	39.510622N	39.587304N	2014-09-30 06:48:45.264	2014-09-30 07:18:56.771
0420_20140930_071847_EX1404L3_MB	EX1404L3_XBT039_140930	9.5	221	09/30/14	064.402816W	064.280452W	39.453579N	39.535635N	2014-09-30 07:18:37.769	2014-09-30 07:48:57.278
0421_20140930_074847_EX1404L3_MB	EX1404L3_XBT039_140930	9.6	221	09/30/14	064.478555W	064.351576W	39.398495N	39.478187N	2014-09-30 07:48:38.280	2014-09-30 08:19:00.785
0422_20140930_081851_EX1404L3_MB	EX1404L3_XBT039_140930	9.4	221	09/30/14	064.547576W	064.422179W	39.342823N	39.419859N	2014-09-30 08:18:41.785	2014-09-30 08:49:00.794
0423_20140930_084851_EX1404L3_MB	EX1404L3_XBT039_140930	8.8	209	09/30/14	064.603951W	064.492212W	39.283877N	39.361889N	2014-09-30 08:48:41.792	2014-09-30 09:18:58.303
0424_20140930_091848_EX1404L3_MB	EX1404L3_XBT039_140930	8.9	209	09/30/14	064.606398W	064.527975W	39.280591N	39.296402N	2014-09-30 09:18:38.803	2014-09-30 09:20:42.802
0425_20140930_092032_EX1404L3_MB	EX1404L3_XBT039_140930	10.3	280	09/30/14	064.628264W	064.535952W	39.253331N	39.320055N	2014-09-30 09:20:23.304	2014-09-30 09:32:14.804
0426_20141001_001858_EX1404L3_MB	EX1404L3_XBT040_140930	11.6	297	10/01/14	065.030611W	064.892472W	38.907249N	38.994235N	2014-10-01 00:18:58.530	2014-10-01 00:49:09.040
0427_20141001_004859_EX1404L3_MB	EX1404L3_XBT040_140930	11.6	297	10/01/14	065.137131W	065.001627W	38.954710N	39.040275N	2014-10-01 00:48:50.038	2014-10-01 01:19:14.548
0428_20141001_011905_EX1404L3_MB	EX1404L3_XBT040_140930	11.7	297	10/01/14	065.246129W	065.109074W	39.004922N	39.089313N	2014-10-01 01:18:55.546	2014-10-01 01:49:10.052
0429_20141001_014900_EX1404L3_MB	EX1404L3_XBT040_140930	11.7	297	10/01/14	065.355525W	065.217604W	39.052458N	39.137102N	2014-10-01 01:48:50.557	2014-10-01 02:19:10.064
0430_20141001_021900_EX1404L3_MB	EX1404L3_XBT040_140930	11.5	297	10/01/14	065.462444W	065.327794W	39.100248N	39.184395N	2014-10-01 02:18:51.061	2014-10-01 02:49:11.068
0431_20141001_024901_EX1404L3_MB	EX1404L3_XBT040_140930	11.4	297	10/01/14	065.569544W	065.435645W	39.146860N	39.230878N	2014-10-01 02:48:51.569	2014-10-01 03:19:15.577
0432_20141001_031906_EX1404L3_MB	EX1404L3_XBT040_140930	11.0	297	10/01/14	065.672653W	065.541646W	39.193470N	39.275230N	2014-10-01 03:18:56.575	2014-10-01 03:49:08.585
0433_20141001_034859_EX1404L3_MB	EX1404L3_XBT040_140930	10.8	297	10/01/14	065.767606W	065.644048W	39.238908N	39.315998N	2014-10-01 03:48:50.086	2014-10-01 04:17:01.593

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0434_20141001_041651_EX1404L3_MB	EX1404L3_XBT041_141001	10.6	297	10/01/14	065.866802W	065.737421W	39.280234N	39.359235N	2014-10-01 04:16:42.095	2014-10-01 04:46:53.600
0435_20141001_044644_EX1404L3_MB	EX1404L3_XBT041_141001	10.4	297	10/01/14	065.968891W	065.836181W	39.323545N	39.405753N	2014-10-01 04:46:34.599	2014-10-01 05:17:01.605
0436_20141001_051651_EX1404L3_MB	EX1404L3_XBT041_141001	10.7	298	10/01/14	066.069684W	065.930906W	39.361962N	39.451035N	2014-10-01 05:16:42.144	2014-10-01 05:46:56.146
0437_20141001_054646_EX1404L3_MB	EX1404L3_XBT041_141001	10.6	297	10/01/14	066.168197W	066.027586W	39.406296N	39.494947N	2014-10-01 05:46:36.616	2014-10-01 06:17:03.143
0438_20141001_061653_EX1404L3_MB	EX1404L3_XBT041_141001	10.4	298	10/01/14	066.263819W	066.126886W	39.450150N	39.538648N	2014-10-01 06:16:43.624	2014-10-01 06:46:54.145
0439_20141001_064644_EX1404L3_MB	EX1404L3_XBT041_141001	10.4	298	10/01/14	066.324374W	066.224794W	39.492368N	39.558639N	2014-10-01 06:46:35.145	2014-10-01 07:06:16.635
0440_20141001_070607_EX1404L3_MB	EX1404L3_XBT042_141001	10.3	298	10/01/14	066.420142W	066.295333W	39.522719N	39.600594N	2014-10-01 07:05:57.145	2014-10-01 07:35:55.642
0441_20141001_073555_EX1404L3_MB	EX1404L3_XBT042_141001	10.3	298	10/01/14	066.517031W	066.390803W	39.564343N	39.642832N	2014-10-01 07:35:46.644	2014-10-01 08:06:13.649
0442_20141001_080603_EX1404L3_MB	EX1404L3_XBT042_141001	9.8	298	10/01/14	066.608907W	066.488067W	39.606387N	39.683124N	2014-10-01 08:05:54.151	2014-10-01 08:36:08.158
0443_20141001_083558_EX1404L3_MB	EX1404L3_XBT042_141001	10.0	298	10/01/14	066.703262W	066.580910W	39.646356N	39.724256N	2014-10-01 08:35:49.156	2014-10-01 09:06:02.668
0444_20141001_090602_EX1404L3_MB	EX1404L3_XBT042_141001	9.7	298	10/01/14	066.794239W	066.675702W	39.687253N	39.763898N	2014-10-01 09:05:53.666	2014-10-01 09:36:05.174
0445_20141001_093555_EX1404L3_MB	EX1404L3_XBT042_141001	9.6	298	10/01/14	066.884776W	066.767399W	39.726653N	39.803266N	2014-10-01 09:35:46.175	2014-10-01 10:06:09.678
0446_20141001_100559_EX1404L3_MB	EX1404L3_XBT042_141001	9.7	298	10/01/14	066.907238W	066.858127W	39.766034N	39.813087N	2014-10-01 10:05:50.679	2014-10-01 10:13:19.680
0447_20141001_201823_EX1404L3_MB	EX1404L3_XBT043_141001	8.4	317	10/01/14	066.948139W	066.862869W	39.823212N	39.882569N	2014-10-01 20:18:23.837	2014-10-01 20:38:25.838
0448_20141001_203816_EX1404L3_MB	EX1404L3_XBT043_141001	8.4	6	10/01/14	066.959572W	066.865368W	39.870460N	39.924727N	2014-10-01 20:38:07.334	2014-10-01 20:56:53.845
0449_20141001_205644_EX1404L3_MB	EX1404L3_XBT043_141001	8.6	288	10/01/14	067.011347W	066.881040W	39.885284N	39.970132N	2014-10-01 20:56:34.843	2014-10-01 21:26:50.349
0450_20141001_212640_EX1404L3_MB	EX1404L3_XBT043_141001	8.3	288	10/01/14	067.094470W	066.985425W	39.908011N	39.993384N	2014-10-01 21:26:30.852	2014-10-01 21:56:53.859
0451_20141001_215644_EX1404L3_MB	EX1404L3_XBT043_141001	8.0	288	10/01/14	067.103493W	067.075216W	39.932416N	39.993725N	2014-10-01 21:56:34.861	2014-10-01 22:00:03.361
0452_20141001_215953_EX1404L3_MB	EX1404L3_XBT044_141001	8.7	288	10/01/14	067.194307W	067.079593W	39.936032N	40.015883N	2014-10-01 21:59:44.361	2014-10-01 22:30:00.369
0453_20141001_222951_EX1404L3_MB	EX1404L3_XBT044_141001	8.9	288	10/01/14	067.282502W	067.167781W	39.958404N	40.038149N	2014-10-01 22:29:41.367	2014-10-01 22:59:59.876

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0454_20141001_225950_EX1404L3_MB	EX1404L3_XBT044_141001	8.8	288	10/01/14	067.372936W	067.259840W	39.986840N	40.058181N	2014-10-01 22:59:40.875	2014-10-01 23:29:58.383
0455_20141001_232948_EX1404L3_MB	EX1404L3_XBT044_141001	9.1	289	10/01/14	067.466340W	067.350029W	40.014702N	40.082293N	2014-10-01 23:29:38.886	2014-10-01 23:59:59.391
0456_20141001_235949_EX1404L3_MB	EX1404L3_XBT044_141001	8.8	289	10/01/14	067.467397W	067.442583W	40.039664N	40.082634N	2014-10-01 23:59:39.893	2014-10-02 00:00:14.392
0457_20141002_000014_EX1404L3_MB	EX1404L3_XBT044_141001	8.5	289	10/02/14	067.558282W	067.444327W	40.039933N	40.104759N	2014-10-02 00:00:14.894	2014-10-02 00:30:25.400
0458_20141002_003016_EX1404L3_MB	EX1404L3_XBT044_141001	8.8	288	10/02/14	067.647623W	067.528409W	40.062722N	40.132199N	2014-10-02 00:30:06.397	2014-10-02 01:00:21.407
0459_20141002_010011_EX1404L3_MB	EX1404L3_XBT044_141001	8.7	286	10/02/14	067.734849W	067.617373W	40.085520N	40.150650N	2014-10-02 01:00:02.405	2014-10-02 01:30:23.917
0460_20141002_013014_EX1404L3_MB	EX1404L3_XBT044_141001	8.6	305	10/02/14	067.817829W	067.709323W	40.110209N	40.193533N	2014-10-02 01:30:05.411	2014-10-02 02:00:22.924
0461_20141002_020013_EX1404L3_MB	EX1404L3_XBT044_141001	9.0	302	10/02/14	067.899535W	067.776933W	40.150937N	40.237138N	2014-10-02 02:00:03.919	2014-10-02 02:30:26.426
0462_20141002_023016_EX1404L3_MB	EX1404L3_XBT044_141001	9.1	302	10/02/14	067.977280W	067.856532W	40.192691N	40.268025N	2014-10-02 02:30:07.428	2014-10-02 03:00:21.938
0463_20141002_030012_EX1404L3_MB	EX1404L3_XBT044_141001	9.0	302	10/02/14	068.012625W	067.949679W	40.238871N	40.280562N	2014-10-02 03:00:03.436	2014-10-02 03:16:13.939
0464_20141002_031604_EX1404L3_MB	EX1404L3_XBT044_141001	7.9	341	10/02/14	068.016671W	067.998780W	40.270559N	40.280453N	2014-10-02 03:15:54.441	2014-10-02 03:18:15.442
0465_20141002_031806_EX1404L3_MB	EX1404L3_XBT044_141001	7.4	355	10/02/14	068.017424W	067.999466W	40.279150N	40.302374N	2014-10-02 03:17:56.435	2014-10-02 03:29:26.942
0466_20141002_032917_EX1404L3_MB	EX1404L3_XBT044_141001	6.7	65	10/02/14	068.015698W	067.997417W	40.300722N	40.311998N	2014-10-02 03:29:08.440	2014-10-02 03:37:15.947
0467_20141002_033707_EX1404L3_MB	EX1404L3_XBT044_141001	8.4	178	10/02/14	068.010887W	067.993320W	40.278476N	40.306281N	2014-10-02 03:36:56.946	2014-10-02 03:48:17.448
0468_20141002_034808_EX1404L3_MB	EX1404L3_XBT044_141001	6.1	52	10/02/14	068.009445W	067.982837W	40.271169N	40.286198N	2014-10-02 03:47:58.448	2014-10-02 03:57:17.947
0469_20141002_035708_EX1404L3_MB	EX1404L3_XBT044_141001	7.1	356	10/02/14	068.000348W	067.983134W	40.282958N	40.298059N	2014-10-02 03:56:58.945	2014-10-02 04:03:45.951
0470_20141002_040336_EX1404L3_MB	EX1404L3_XBT044_141001	6.3	78	10/02/14	067.996225W	067.967776W	40.292612N	40.305517N	2014-10-02 04:03:27.449	2014-10-02 04:14:51.949
0471_20141002_041442_EX1404L3_MB	EX1404L3_XBT044_141001	5.9	55	10/02/14	067.976095W	067.916071W	40.296038N	40.330610N	2014-10-02 04:14:32.452	2014-10-02 04:44:51.457
0472_20141002_044442_EX1404L3_MB	EX1404L3_XBT044_141001	5.5	51	10/02/14	067.921882W	067.894411W	40.324240N	40.344038N	2014-10-02 04:44:32.459	2014-10-02 04:59:37.964
0473_20141002_045928_EX1404L3_MB	EX1404L3_XBT044_141001	5.4	58	10/02/14	067.896447W	067.864942W	40.338432N	40.360238N	2014-10-02 04:59:18.965	2014-10-02 05:17:17.968

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0474_20141002_053212_EX1404L3_MB	EX1404L3_XBT044_141001	11.1	267	10/02/14	068.025256W	067.903719W	40.356242N	40.363822N	2014-10-02 05:32:12.472	2014-10-02 06:02:20.982
0475_20141002_060212_EX1404L3_MB	EX1404L3_XBT044_141001	11.5	269	10/02/14	068.149362W	068.024986W	40.346760N	40.365258N	2014-10-02 06:02:01.980	2014-10-02 06:32:23.486
0476_20141002_063213_EX1404L3_MB	EX1404L3_XBT044_141001	11.2	267	10/02/14	068.271109W	068.149016W	40.348204N	40.364584N	2014-10-02 06:32:03.987	2014-10-02 07:02:21.496
0477_20141002_070212_EX1404L3_MB	EX1404L3_XBT044_141001	10.9	277	10/02/14	068.389526W	068.270937W	40.349425N	40.366877N	2014-10-02 07:02:02.496	2014-10-02 07:32:22.001
0478_20141002_073212_EX1404L3_MB	EX1404L3_XBT044_141001	10.9	266	10/02/14	068.507824W	068.388771W	40.356870N	40.367204N	2014-10-02 07:32:02.500	2014-10-02 08:02:12.010
0479_20141002_080212_EX1404L3_MB	EX1404L3_XBT044_141001	10.8	266	10/02/14	068.625554W	068.507432W	40.351086N	40.361567N	2014-10-02 08:02:03.011	2014-10-02 08:32:21.018
0480_20141002_083212_EX1404L3_MB	EX1404L3_XBT044_141001	10.5	267	10/02/14	068.740043W	068.625096W	40.347506N	40.355178N	2014-10-02 08:32:02.018	2014-10-02 09:02:21.519
0481_20141002_090212_EX1404L3_MB	EX1404L3_XBT044_141001	10.2	269	10/02/14	068.851114W	068.739886W	40.346729N	40.351495N	2014-10-02 09:02:02.524	2014-10-02 09:32:21.530
0482_20141002_093212_EX1404L3_MB	EX1404L3_XBT044_141001	10.1	269	10/02/14	068.961389W	068.850898W	40.346007N	40.350941N	2014-10-02 09:32:02.030	2014-10-02 10:02:22.036
0483_20141002_100212_EX1404L3_MB	EX1404L3_XBT044_141001	10.1	269	10/02/14	069.071755W	068.961248W	40.345076N	40.350091N	2014-10-02 10:02:02.539	2014-10-02 10:32:22.043
0484_20141002_103212_EX1404L3_MB	EX1404L3_XBT044_141001	10.5	270	10/02/14	069.133055W	069.071613W	40.344929N	40.349372N	2014-10-02 10:32:02.546	2014-10-02 10:48:27.051
0485_20141002_104817_EX1404L3_MB	EX1404L3_XBT045_141002	10.6	269	10/02/14	069.248715W	069.132974W	40.343852N	40.349045N	2014-10-02 10:48:08.546	2014-10-02 11:18:17.555
0486_20141002_111817_EX1404L3_MB	EX1404L3_XBT045_141002	10.4	270	10/02/14	069.361879W	069.248386W	40.342949N	40.347786N	2014-10-02 11:18:08.056	2014-10-02 11:48:27.062
0487_20141002_114817_EX1404L3_MB	EX1404L3_XBT045_141002	10.7	270	10/02/14	069.478291W	069.361745W	40.341923N	40.346563N	2014-10-02 11:48:07.564	2014-10-02 12:18:27.068
0488_20141002_121817_EX1404L3_MB	EX1404L3_XBT045_141002	10.7	270	10/02/14	069.594920W	069.478011W	40.340906N	40.345318N	2014-10-02 12:18:08.071	2014-10-02 12:48:27.574
0489_20141002_124817_EX1404L3_MB	EX1404L3_XBT045_141002	10.8	270	10/02/14	069.712073W	069.594579W	40.339618N	40.344323N	2014-10-02 12:48:08.574	2014-10-02 13:18:27.085
0490_20141002_131817_EX1404L3_MB	EX1404L3_XBT045_141002	10.9	270	10/02/14	069.830303W	069.711806W	40.338434N	40.343104N	2014-10-02 13:18:07.582	2014-10-02 13:48:27.091
0491_20141002_134817_EX1404L3_MB	EX1404L3_XBT045_141002	10.9	270	10/02/14	069.949308W	069.830036W	40.337217N	40.342194N	2014-10-02 13:48:08.091	2014-10-02 14:18:26.597
0492_20141002_141817_EX1404L3_MB	EX1404L3_XBT045_141002	11.0	270	10/02/14	070.068705W	069.949066W	40.335917N	40.341059N	2014-10-02 14:18:07.595	2014-10-02 14:48:27.106
0493_20141002_144817_EX1404L3_MB	EX1404L3_XBT045_141002	10.9	270	10/02/14	070.187575W	070.068553W	40.334788N	40.339895N	2014-10-02 14:48:08.106	2014-10-02 15:18:27.612

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0494_20141002_151817_EX1404L3_MB	EX1404L3_XBT045_141002	11.1	270	10/02/14	070.308133W	070.187478W	40.333494N	40.338742N	2014-10-02 15:18:08.614	2014-10-02 15:48:27.617
0495_20141002_154817_EX1404L3_MB	EX1404L3_XBT045_141002	11.1	270	10/02/14	070.429050W	070.307905W	40.332190N	40.337573N	2014-10-02 15:48:08.617	2014-10-02 16:18:27.625
0496_20141002_161818_EX1404L3_MB	EX1404L3_XBT045_141002	11.0	270	10/02/14	070.549343W	070.428795W	40.331024N	40.336603N	2014-10-02 16:18:08.148	2014-10-02 16:48:27.631
0497_20141002_164817_EX1404L3_MB	EX1404L3_XBT045_141002	10.7	272	10/02/14	070.574362W	070.549142W	40.330697N	40.335474N	2014-10-02 16:48:08.144	2014-10-02 16:54:43.145
0498_20141002_165433_EX1404L3_MB	EX1404L3_XBT045_141002	7.0	8.7	10/02/14	070.579617W	070.569508W	40.331259N	40.342486N	2014-10-02 16:54:24.146	2014-10-02 17:00:08.637
0499_20141003_233735_EX1404L3_MB	EX1404L3_XBT046_141003	9.1	207	10/03/14	070.821040W	070.773827W	40.898173N	40.967491N	2014-10-03 23:37:36.046	2014-10-04 00:07:35.549
0500_20141004_000735_EX1404L3_MB	EX1404L3_XBT046_141003	9.1	207	10/04/14	070.865379W	070.818232W	40.829889N	40.899225N	2014-10-04 00:07:36.050	2014-10-04 00:37:45.554
0501_20141004_003736_EX1404L3_MB	EX1404L3_XBT046_141003	9.2	211	10/04/14	070.914683W	070.862386W	40.762742N	40.831026N	2014-10-04 00:37:26.056	2014-10-04 01:07:45.564
0502_20141004_010736_EX1404L3_MB	EX1404L3_XBT046_141003	9.5	225	10/04/14	070.986442W	070.911800W	40.705601N	40.764301N	2014-10-04 01:07:26.562	2014-10-04 01:37:45.571
0503_20141004_013736_EX1404L3_MB	EX1404L3_XBT046_141003	9.4	219	10/04/14	071.048161W	070.983880W	40.644815N	40.707604N	2014-10-04 01:37:27.066	2014-10-04 02:07:45.575
0504_20141004_020736_EX1404L3_MB	EX1404L3_XBT046_141003	9.3	204	10/04/14	071.087585W	071.044398W	40.573772N	40.645877N	2014-10-04 02:07:26.574	2014-10-04 02:37:46.084
0505_20141004_023736_EX1404L3_MB	EX1404L3_XBT046_141003	9.7	205	10/04/14	071.130458W	071.083626W	40.499698N	40.574918N	2014-10-04 02:37:27.081	2014-10-04 03:07:46.089
0506_20141004_030736_EX1404L3_MB	EX1404L3_XBT046_141003	9.6	205	10/04/14	071.173287W	071.126215W	40.426652N	40.500877N	2014-10-04 03:07:27.089	2014-10-04 03:37:46.094
0507_20141004_033736_EX1404L3_MB	EX1404L3_XBT046_141003	9.4	205	10/04/14	071.214404W	071.168609W	40.354613N	40.427675N	2014-10-04 03:37:26.597	2014-10-04 04:07:45.601
0508_20141004_040736_EX1404L3_MB	EX1404L3_XBT046_141003	9.4	206	10/04/14	071.246813W	071.209449W	40.300980N	40.355883N	2014-10-04 04:07:26.600	2014-10-04 04:30:07.606
0509_20141004_043008_EX1404L3_MB	EX1404L3_XBT047_141004	9.1	207	10/04/14	071.288719W	071.241882W	40.232392N	40.302443N	2014-10-04 04:29:58.606	2014-10-04 05:00:17.145
0510_20141004_050007_EX1404L3_MB	EX1404L3_XBT047_141004	9.1	207	10/04/14	071.330601W	071.283680W	40.163702N	40.233909N	2014-10-04 04:59:58.147	2014-10-04 05:30:17.140
0511_20141004_053008_EX1404L3_MB	EX1404L3_XBT047_141004	9.1	207	10/04/14	071.372446W	071.325652W	40.095144N	40.165287N	2014-10-04 05:29:58.139	2014-10-04 06:00:17.628
0512_20141004_060008_EX1404L3_MB	EX1404L3_XBT047_141004	9.0	207	10/04/14	071.414382W	071.367355W	40.026903N	40.096733N	2014-10-04 05:59:58.626	2014-10-04 06:30:17.145
0513_20141004_063008_EX1404L3_MB	EX1404L3_XBT047_141004	9.1	206	10/04/14	071.456222W	071.408434W	39.958277N	40.028572N	2014-10-04 06:29:58.632	2014-10-04 07:00:08.140

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0514_20141004_070008_EX1404L3_MB	EX1404L3_XBT047_141004	9.2	211	10/04/14	071.507430W	071.447701W	39.889183N	39.959821N	2014-10-04 06:59:58.641	2014-10-04 07:30:19.148
0515_20141004_073009_EX1404L3_MB	EX1404L3_XBT047_141004	9.2	220	10/04/14	071.572537W	071.491369W	39.826874N	39.897962N	2014-10-04 07:29:59.648	2014-10-04 08:00:09.154
0516_20141004_080009_EX1404L3_MB	EX1404L3_XBT047_141004	8.9	253	10/04/14	071.649612W	071.549991W	39.793804N	39.839302N	2014-10-04 08:00:00.152	2014-10-04 08:30:20.160
0517_20141004_083010_EX1404L3_MB	EX1404L3_XBT047_141004	8.7	265	10/04/14	071.723743W	071.646719W	39.793433N	39.823989N	2014-10-04 08:30:01.165	2014-10-04 08:51:21.165
0518_20141004_085112_EX1404L3_MB	EX1404L3_XBT047_141004	7.7	155	10/04/14	071.726242W	071.696693W	39.788432N	39.809236N	2014-10-04 08:51:02.164	2014-10-04 08:56:26.664
0519_20141004_085627_EX1404L3_MB	EX1404L3_XBT047_141004	8.1	146	10/04/14	071.718241W	071.637503W	39.731626N	39.801739N	2014-10-04 08:56:17.166	2014-10-04 09:26:36.172
0520_20141004_092626_EX1404L3_MB	EX1404L3_XBT047_141004	8.0	148	10/04/14	071.672040W	071.624364W	39.718623N	39.752845N	2014-10-04 09:26:16.676	2014-10-04 09:33:29.673
0521_20141004_093330_EX1404L3_MB	EX1404L3_XBT047_141004	8.4	169	10/04/14	071.666095W	071.607122W	39.686696N	39.738391N	2014-10-04 09:33:20.674	2014-10-04 09:49:39.179
0522_20141004_183423_EX1404L3_MB	EX1404L3_XBT048_141004	9.2	281	10/04/14	071.726295W	071.640877W	39.655141N	39.703495N	2014-10-04 18:34:23.802	2014-10-04 18:59:22.309
0523_20141004_185912_EX1404L3_MB	EX1404L3_XBT048_141004	8.3	63	10/04/14	071.708684W	071.614590W	39.671593N	39.735081N	2014-10-04 18:59:03.309	2014-10-04 19:29:20.817
0524_20141004_192911_EX1404L3_MB	EX1404L3_XBT048_141004	8.4	63	10/04/14	071.630848W	071.574536W	39.699285N	39.749816N	2014-10-04 19:29:01.816	2014-10-04 19:44:19.323
0525_20141004_195345_EX1404L3_MB	EX1404L3_XBT048_141004	7.6	242	10/04/14	071.667660W	071.568316W	39.687324N	39.746837N	2014-10-04 19:53:45.321	2014-10-04 20:23:54.829
0526_20141004_202344_EX1404L3_MB	EX1404L3_XBT048_141004	8.0	243	10/04/14	071.739449W	071.636910W	39.661022N	39.721611N	2014-10-04 20:23:35.829	2014-10-04 20:53:55.339
0527_20141004_205345_EX1404L3_MB	EX1404L3_XBT048_141004	8.1	240	10/04/14	071.815098W	071.718029W	39.624038N	39.681983N	2014-10-04 20:53:35.836	2014-10-04 21:23:54.847
0528_20141004_212345_EX1404L3_MB	EX1404L3_XBT048_141004	7.8	239	10/04/14	071.885644W	071.789624W	39.590701N	39.647594N	2014-10-04 21:23:36.344	2014-10-04 21:53:55.852
0529_20141004_215346_EX1404L3_MB	EX1404L3_XBT048_141004	7.8	240	10/04/14	071.938995W	071.864050W	39.565954N	39.610960N	2014-10-04 21:53:36.851	2014-10-04 22:18:02.358
0530_20141004_221752_EX1404L3_MB	EX1404L3_XBT048_141004	6.1	178	10/04/14	071.944455W	071.921701W	39.564879N	39.581144N	2014-10-04 22:17:42.859	2014-10-04 22:22:52.361
0531_20141004_222242_EX1404L3_MB	EX1404L3_XBT048_141004	7.3	139	10/04/14	071.943117W	071.865662W	39.515540N	39.571495N	2014-10-04 22:22:32.864	2014-10-04 22:52:54.367
0532_20141004_225244_EX1404L3_MB	EX1404L3_XBT048_141004	6.4	143	10/04/14	071.895426W	071.859428W	39.510979N	39.532488N	2014-10-04 22:52:35.366	2014-10-04 22:55:26.370
0533_20141004_225517_EX1404L3_MB	EX1404L3_XBT049_141004	8.0	139	10/04/14	071.893352W	071.798881W	39.457135N	39.529489N	2014-10-04 22:55:07.866	2014-10-04 23:25:14.379

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0534_20141004_232514_EX1404L3_MB	EX1404L3_XBT049_141004	8.3	139	10/04/14	071.842336W	071.732150W	39.402899N	39.486847N	2014-10-04 23:25:05.377	2014-10-04 23:55:24.884
0535_20141004_235515_EX1404L3_MB	EX1404L3_XBT049_141004	8.5	139	10/04/14	071.785767W	071.722403W	39.392760N	39.437158N	2014-10-04 23:55:05.881	2014-10-05 00:00:23.383
0536_20141005_000023_EX1404L3_MB	EX1404L3_XBT049_141004	8.6	139	10/05/14	071.776493W	071.660326W	39.339732N	39.430427N	2014-10-05 00:00:23.883	2014-10-05 00:30:35.396
0537_20141005_003026_EX1404L3_MB	EX1404L3_XBT049_141004	8.4	139	10/05/14	071.715695W	071.600157W	39.287219N	39.378678N	2014-10-05 00:30:16.893	2014-10-05 01:00:29.400
0538_20141005_010019_EX1404L3_MB	EX1404L3_XBT049_141004	8.5	139	10/05/14	071.655862W	071.537081W	39.233991N	39.327617N	2014-10-05 01:00:09.902	2014-10-05 01:30:33.906
0539_20141005_013024_EX1404L3_MB	EX1404L3_XBT049_141004	8.6	139	10/05/14	071.594856W	071.518271W	39.221351N	39.275869N	2014-10-05 01:30:14.408	2014-10-05 01:38:16.411
0540_20141005_013807_EX1404L3_MB	EX1404L3_XBT049_141004	8.0	98	10/05/14	071.579603W	071.509383W	39.209564N	39.268074N	2014-10-05 01:37:57.409	2014-10-05 01:43:35.907
0541_20141005_014326_EX1404L3_MB	EX1404L3_XBT049_141004	8.0	48	10/05/14	071.566492W	071.444935W	39.214796N	39.302929N	2014-10-05 01:43:16.910	2014-10-05 02:13:37.414
0542_20141005_021327_EX1404L3_MB	EX1404L3_XBT049_141004	7.6	35	10/05/14	071.506427W	071.424672W	39.259718N	39.318221N	2014-10-05 02:13:17.915	2014-10-05 02:24:26.420
0543_20141005_022417_EX1404L3_MB	EX1404L3_XBT049_141004	8.2	311	10/05/14	071.547487W	071.430473W	39.273369N	39.365731N	2014-10-05 02:24:07.420	2014-10-05 02:54:27.429
0544_20141005_025417_EX1404L3_MB	EX1404L3_XBT049_141004	8.2	311	10/05/14	071.616072W	071.495296W	39.319964N	39.407885N	2014-10-05 02:54:07.928	2014-10-05 03:24:32.438
0545_20141005_032423_EX1404L3_MB	EX1404L3_XBT049_141004	7.8	311	10/05/14	071.680296W	071.562435W	39.365038N	39.448604N	2014-10-05 03:24:13.434	2014-10-05 03:54:30.944
0546_20141005_035421_EX1404L3_MB	EX1404L3_XBT049_141004	7.5	311	10/05/14	071.741907W	071.627938W	39.407006N	39.486257N	2014-10-05 03:54:11.943	2014-10-05 04:24:32.452
0547_20141005_042422_EX1404L3_MB	EX1404L3_XBT049_141004	7.4	311	10/05/14	071.801732W	071.694219W	39.447929N	39.522806N	2014-10-05 04:24:13.451	2014-10-05 04:54:31.456
0548_20141005_045421_EX1404L3_MB	EX1404L3_XBT049_141004	7.0	312	10/05/14	071.812941W	071.758217W	39.490904N	39.529703N	2014-10-05 04:54:12.459	2014-10-05 05:01:07.964
0549_20141005_050058_EX1404L3_MB	EX1404L3_XBT050_141005	6.7	312	10/05/14	071.828044W	071.773539W	39.500095N	39.544717N	2014-10-05 05:00:48.960	2014-10-05 05:10:11.462
0550_20141005_051001_EX1404L3_MB	EX1404L3_XBT050_141005	7.0	10	10/05/14	071.835178W	071.781293W	39.511608N	39.544627N	2014-10-05 05:09:52.461	2014-10-05 05:14:30.460
0551_20141005_051420_EX1404L3_MB	EX1404L3_XBT050_141005	8.0	30	10/05/14	071.830475W	071.743967W	39.527597N	39.601534N	2014-10-05 05:14:10.964	2014-10-05 05:44:29.467
0552_20141005_054419_EX1404L3_MB	EX1404L3_XBT050_141005	8.1	30	10/05/14	071.789594W	071.706502W	39.585989N	39.658891N	2014-10-05 05:44:09.968	2014-10-05 06:14:29.979
0553_20141005_061420_EX1404L3_MB	EX1404L3_XBT050_141005	8.1	31	10/05/14	071.743454W	071.685488W	39.648021N	39.693062N	2014-10-05 06:14:11.475	2014-10-05 06:30:36.981

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0554_20141005_063027_EX1404L3_MB	EX1404L3_XBT050_141005	5.2	141	10/05/14	071.721142W	071.686855W	39.669409N	39.697320N	2014-10-05 06:30:17.480	2014-10-05 06:34:56.981
0555_20141005_063457_EX1404L3_MB	EX1404L3_XBT050_141005	8.5	63	10/05/14	071.718925W	071.611163W	39.672077N	39.729100N	2014-10-05 06:34:47.480	2014-10-05 07:05:05.987
0556_20141005_070456_EX1404L3_MB	EX1404L3_XBT050_141005	8.5	61	10/05/14	071.633451W	071.547385W	39.699443N	39.759329N	2014-10-05 07:04:46.486	2014-10-05 07:29:04.495
0557_20141005_072854_EX1404L3_MB	EX1404L3_XBT050_141005	6.8	252	10/05/14	071.580501W	071.548045W	39.732080N	39.758391N	2014-10-05 07:28:44.996	2014-10-05 07:35:09.999
0558_20141005_073500_EX1404L3_MB	EX1404L3_XBT050_141005	6.3	239	10/05/14	071.625258W	071.557436W	39.705483N	39.756792N	2014-10-05 07:34:50.999	2014-10-05 08:05:10.006
0559_20141005_080500_EX1404L3_MB	EX1404L3_XBT050_141005	5.8	245	10/05/14	071.626393W	071.619259W	39.705802N	39.730237N	2014-10-05 08:04:51.007	2014-10-05 08:06:43.006
0560_20141005_102257_EX1404L3_MB	EX1404L3_XBT050_141005	7.6	242	10/05/14	071.921599W	071.843822W	39.672935N	39.719167N	2014-10-05 10:22:58.038	2014-10-05 10:53:08.048
0561_20141005_105258_EX1404L3_MB	EX1404L3_XBT050_141005	7.8	241	10/05/14	071.991763W	071.912892W	39.641332N	39.685913N	2014-10-05 10:52:49.048	2014-10-05 11:23:06.555
0562_20141005_112257_EX1404L3_MB	EX1404L3_XBT050_141005	7.4	257	10/05/14	072.066707W	071.986935W	39.626952N	39.650803N	2014-10-05 11:22:47.553	2014-10-05 11:53:06.561
0563_20141005_115257_EX1404L3_MB	EX1404L3_XBT050_141005	7.5	251	10/05/14	072.142427W	072.065560W	39.604494N	39.633850N	2014-10-05 11:52:47.560	2014-10-05 12:23:06.570
0564_20141005_122257_EX1404L3_MB	EX1404L3_XBT050_141005	7.7	247	10/05/14	072.217076W	072.139723W	39.578363N	39.611046N	2014-10-05 12:22:47.569	2014-10-05 12:53:07.076
0565_20141005_125257_EX1404L3_MB	EX1404L3_XBT050_141005	7.5	249	10/05/14	072.291211W	072.215241W	39.554030N	39.583242N	2014-10-05 12:52:48.076	2014-10-05 13:23:07.582
0566_20141005_132257_EX1404L3_MB	EX1404L3_XBT050_141005	7.2	255	10/05/14	072.364107W	072.289769W	39.532655N	39.559218N	2014-10-05 13:22:48.082	2014-10-05 13:53:07.089
0567_20141005_135257_EX1404L3_MB	EX1404L3_XBT050_141005	5.5	129	10/05/14	072.374430W	072.357034W	39.525793N	39.543983N	2014-10-05 13:52:47.591	2014-10-05 13:59:33.590
0568_20141005_135923_EX1404L3_MB	EX1404L3_XBT050_141005	8.9	109	10/05/14	072.362203W	072.334143W	39.519565N	39.541456N	2014-10-05 13:59:14.091	2014-10-05 14:06:59.090
0569_20141005_140659_EX1404L3_MB	EX1404L3_XBT051_141005	8.8	110	10/05/14	072.339494W	072.243178W	39.498027N	39.534635N	2014-10-05 14:06:49.592	2014-10-05 14:37:07.599
0570_20141005_143657_EX1404L3_MB	EX1404L3_XBT051_141005	8.3	110	10/05/14	072.247640W	072.183416W	39.484536N	39.511892N	2014-10-05 14:36:48.102	2014-10-05 14:57:51.103
0571_20141005_145741_EX1404L3_MB	EX1404L3_XBT051_141005	7.2	221	10/05/14	072.201144W	072.177142W	39.471783N	39.497470N	2014-10-05 14:57:31.603	2014-10-05 15:04:49.105
0572_20141005_150439_EX1404L3_MB	EX1404L3_XBT051_141005	7.0	291	10/05/14	072.270434W	072.192679W	39.474038N	39.511291N	2014-10-05 15:04:30.105	2014-10-05 15:34:49.612
0573_20141005_153439_EX1404L3_MB	EX1404L3_XBT051_141005	7.3	291	10/05/14	072.345413W	072.262841W	39.490344N	39.529353N	2014-10-05 15:34:30.611	2014-10-05 16:02:56.618

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0574_20141005_160246_EX1404L3_MB	EX1404L3_XBT051_141005	8.6	112	10/05/14	072.335246W	072.238337W	39.484474N	39.527127N	2014-10-05 16:02:37.143	2014-10-05 16:32:56.143
0575_20141005_163246_EX1404L3_MB	EX1404L3_XBT051_141005	8.7	113	10/05/14	072.244742W	072.191856W	39.469818N	39.500777N	2014-10-05 16:32:36.624	2014-10-05 16:48:01.144
0576_20141005_164751_EX1404L3_MB	EX1404L3_XBT051_141005	7.3	233	10/05/14	072.208879W	072.180546W	39.464348N	39.490460N	2014-10-05 16:47:42.144	2014-10-05 16:53:17.146
0577_20141005_165308_EX1404L3_MB	EX1404L3_XBT051_141005	7.8	291	10/05/14	072.287597W	072.201167W	39.465455N	39.508304N	2014-10-05 16:52:58.629	2014-10-05 17:23:17.140
0578_20141005_172307_EX1404L3_MB	EX1404L3_XBT051_141005	7.8	292	10/05/14	072.338414W	072.277774W	39.485602N	39.522758N	2014-10-05 17:22:58.141	2014-10-05 17:42:52.638
0579_20141005_174242_EX1404L3_MB	EX1404L3_XBT051_141005	8.0	218	10/05/14	072.355379W	072.322357W	39.499477N	39.525268N	2014-10-05 17:42:33.146	2014-10-05 17:46:52.641
0580_20141005_174652_EX1404L3_MB	EX1404L3_XBT051_141005	8.2	114	10/05/14	072.343938W	072.271855W	39.477567N	39.520651N	2014-10-05 17:46:43.639	2014-10-05 18:09:15.646
0581_20141005_180905_EX1404L3_MB	EX1404L3_XBT052_141005	8.4	112	10/05/14	072.282962W	072.201316W	39.450078N	39.502336N	2014-10-05 18:08:56.147	2014-10-05 18:34:46.651
0582_20141005_183437_EX1404L3_MB	EX1404L3_XBT052_141005	7.9	273	10/05/14	072.263413W	072.175434W	39.437026N	39.484926N	2014-10-05 18:34:27.653	2014-10-05 19:04:49.660
0583_20141005_190439_EX1404L3_MB	EX1404L3_XBT052_141005	8.3	291	10/05/14	072.338294W	072.252915W	39.461497N	39.502869N	2014-10-05 19:04:30.660	2014-10-05 19:32:32.164
0584_20141005_193222_EX1404L3_MB	EX1404L3_XBT052_141005	8.7	117	10/05/14	072.347873W	072.249890W	39.454620N	39.501956N	2014-10-05 19:32:13.163	2014-10-05 20:02:33.673
0585_20141005_200224_EX1404L3_MB	EX1404L3_XBT052_141005	8.5	108	10/05/14	072.260435W	072.238795W	39.445394N	39.479504N	2014-10-05 20:02:15.172	2014-10-05 20:07:35.172
0586_20141005_200725_EX1404L3_MB	EX1404L3_XBT052_141005	8.6	95	10/05/14	072.242375W	072.226725W	39.441746N	39.476119N	2014-10-05 20:07:15.671	2014-10-05 20:12:39.172
0587_20141005_201229_EX1404L3_MB	EX1404L3_XBT052_141005	9.3	93	10/05/14	072.226925W	072.126676W	39.435038N	39.475348N	2014-10-05 20:12:20.173	2014-10-05 20:42:40.178
0588_20141005_204230_EX1404L3_MB	EX1404L3_XBT052_141005	9.5	93	10/05/14	072.127740W	072.025036W	39.444225N	39.468822N	2014-10-05 20:42:20.679	2014-10-05 21:12:38.686
0589_20141005_211229_EX1404L3_MB	EX1404L3_XBT052_141005	9.3	93	10/05/14	072.026088W	071.924614W	39.433976N	39.478255N	2014-10-05 21:12:19.187	2014-10-05 21:42:42.194
0590_20141005_214232_EX1404L3_MB	EX1404L3_XBT052_141005	9.5	93	10/05/14	071.925892W	071.822176W	39.427612N	39.479403N	2014-10-05 21:42:23.193	2014-10-05 22:12:43.700
0591_20141005_221234_EX1404L3_MB	EX1404L3_XBT052_141005	9.4	93	10/05/14	071.824776W	071.722371W	39.424390N	39.482468N	2014-10-05 22:12:24.200	2014-10-05 22:42:32.207
0592_20141005_224232_EX1404L3_MB	EX1404L3_XBT052_141005	9.4	92	10/05/14	071.722522W	071.620726W	39.421008N	39.485183N	2014-10-05 22:42:23.204	2014-10-05 23:12:45.214
0593_20141005_231235_EX1404L3_MB	EX1404L3_XBT052_141005	9.4	92	10/05/14	071.621264W	071.518625W	39.420475N	39.484217N	2014-10-05 23:12:25.713	2014-10-05 23:42:44.721

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0594_20141005_234235_EX1404L3_MB	EX1404L3_XBT052_141005	9.1	92	10/05/14	071.521864W	071.461327W	39.421252N	39.483494N	2014-10-05 23:42:25.223	2014-10-06 00:00:04.226
0595_20141006_000004_EX1404L3_MB	EX1404L3_XBT052_141005	9.0	92	10/06/14	071.463589W	071.416918W	39.418196N	39.483673N	2014-10-06 00:00:04.725	2014-10-06 00:14:16.725
0596_20141006_001407_EX1404L3_MB	EX1404L3_XBT053_141006	9.2	92	10/06/14	071.418374W	071.328434W	39.417165N	39.482758N	2014-10-06 00:13:57.728	2014-10-06 00:41:11.230
0597_20141006_004101_EX1404L3_MB	EX1404L3_XBT053_141006	8.8	49	10/06/14	071.354779W	071.298271W	39.424385N	39.476137N	2014-10-06 00:40:52.231	2014-10-06 00:42:43.233
0598_20141006_004233_EX1404L3_MB	EX1404L3_XBT053_141006	9.2	47	10/06/14	071.354693W	071.227857W	39.430933N	39.527434N	2014-10-06 00:42:24.732	2014-10-06 01:12:43.740
0599_20141006_011234_EX1404L3_MB	EX1404L3_XBT053_141006	9.4	47	10/06/14	071.283322W	071.154570W	39.485016N	39.582629N	2014-10-06 01:12:24.738	2014-10-06 01:42:44.248
0600_20141006_014234_EX1404L3_MB	EX1404L3_XBT053_141006	9.4	47	10/06/14	071.210916W	071.083349W	39.539029N	39.637365N	2014-10-06 01:42:25.744	2014-10-06 02:12:45.757
0601_20141006_021236_EX1404L3_MB	EX1404L3_XBT053_141006	9.2	47	10/06/14	071.137154W	071.064458W	39.595198N	39.649971N	2014-10-06 02:12:26.754	2014-10-06 02:19:46.754
0602_20141006_021937_EX1404L3_MB	EX1404L3_XBT053_141006	5.7	73	10/06/14	071.120280W	071.063650W	39.598725N	39.660727N	2014-10-06 02:19:27.758	2014-10-06 02:22:21.756
0603_20141006_022212_EX1404L3_MB	EX1404L3_XBT053_141006	9.3	93	10/06/14	071.090740W	070.987274W	39.597138N	39.660787N	2014-10-06 02:22:02.755	2014-10-06 02:52:25.760
0604_20141006_025216_EX1404L3_MB	EX1404L3_XBT053_141006	9.4	92	10/06/14	070.988914W	070.886215W	39.596154N	39.659567N	2014-10-06 02:52:06.764	2014-10-06 03:22:26.769
0605_20141006_032217_EX1404L3_MB	EX1404L3_XBT053_141006	9.2	93	10/06/14	070.887176W	070.787722W	39.593575N	39.658028N	2014-10-06 03:22:07.770	2014-10-06 03:52:25.278
0606_20141006_035215_EX1404L3_MB	EX1404L3_XBT053_141006	8.5	92	10/06/14	070.788105W	070.694967W	39.592434N	39.657324N	2014-10-06 03:52:06.277	2014-10-06 04:22:26.785
0607_20141006_042217_EX1404L3_MB	EX1404L3_XBT053_141006	8.6	92	10/06/14	070.697936W	070.602411W	39.590827N	39.655395N	2014-10-06 04:22:07.783	2014-10-06 04:52:23.289
0608_20141006_045213_EX1404L3_MB	EX1404L3_XBT053_141006	8.6	88	10/06/14	070.606193W	070.517272W	39.590771N	39.657712N	2014-10-06 04:52:04.288	2014-10-06 05:20:10.794
0609_20141006_052001_EX1404L3_MB	EX1404L3_XBT054_141006	7.6	89	10/06/14	070.519527W	070.436088W	39.594058N	39.659954N	2014-10-06 05:19:51.799	2014-10-06 05:50:02.805
0610_20141006_054953_EX1404L3_MB	EX1404L3_XBT054_141006	7.3	90	10/06/14	070.437803W	070.356461W	39.595889N	39.661664N	2014-10-06 05:49:43.802	2014-10-06 06:20:04.311
0611_20141006_061955_EX1404L3_MB	EX1404L3_XBT054_141006	7.5	91	10/06/14	070.360233W	070.275393W	39.597009N	39.662552N	2014-10-06 06:19:45.310	2014-10-06 06:50:05.316
0612_20141006_064955_EX1404L3_MB	EX1404L3_XBT054_141006	8.5	93	10/06/14	070.278918W	070.184811W	39.595669N	39.661713N	2014-10-06 06:49:45.818	2014-10-06 07:19:49.825
0613_20141006_071950_EX1404L3_MB	EX1404L3_XBT054_141006	8.5	93	10/06/14	070.187590W	070.093533W	39.593246N	39.659498N	2014-10-06 07:19:40.822	2014-10-06 07:50:04.831

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0614_20141006_074955_EX1404L3_MB	EX1404L3_XBT054_141006	8.7	93	10/06/14	070.094174W	070.021482W	39.590827N	39.656351N	2014-10-06 07:49:45.832	2014-10-06 08:13:14.837
0615_20141006_081305_EX1404L3_MB	EX1404L3_XBT054_141006	7.7	45	10/06/14	070.046446W	069.934013W	39.591062N	39.689297N	2014-10-06 08:12:55.338	2014-10-06 08:43:15.344
0616_20141006_084305_EX1404L3_MB	EX1404L3_XBT054_141006	7.6	36	10/06/14	069.994789W	069.913859W	39.646581N	39.696120N	2014-10-06 08:42:56.345	2014-10-06 08:49:39.843
0617_20141006_084930_EX1404L3_MB	EX1404L3_XBT054_141006	6.8	23	10/06/14	069.994690W	069.889363W	39.673082N	39.741670N	2014-10-06 08:49:20.840	2014-10-06 09:19:39.849
0618_20141006_091930_EX1404L3_MB	EX1404L3_XBT054_141006	6.8	23	10/06/14	069.963497W	069.882816W	39.721084N	39.753728N	2014-10-06 09:19:20.854	2014-10-06 09:27:43.854
0619_20141006_092734_EX1404L3_MB	EX1404L3_XBT054_141006	5.7	350	10/06/14	069.954372W	069.885864W	39.740150N	39.755160N	2014-10-06 09:27:24.355	2014-10-06 09:29:12.857
0620_20141006_092913_EX1404L3_MB	EX1404L3_XBT054_141006	3.2	342	10/06/14	069.956696W	069.884801W	39.739585N	39.788514N	2014-10-06 09:29:03.860	2014-10-06 09:54:58.863
0621_20141006_215938_EX1404L3_MB	EX1404L3_XBT054_141006	8.4	141	10/06/14	069.968280W	069.899657W	39.753051N	39.795151N	2014-10-06 21:59:39.035	2014-10-06 22:03:58.539
0622_20141006_220349_EX1404L3_MB	EX1404L3_XBT055_141006	8.1	148	10/06/14	069.956903W	069.896088W	39.751976N	39.787545N	2014-10-06 22:03:40.038	2014-10-06 22:05:13.039
0623_20141006_220503_EX1404L3_MB	EX1404L3_XBT055_141006	7.4	285	10/06/14	069.965069W	069.891602W	39.735665N	39.796561N	2014-10-06 22:04:54.040	2014-10-06 22:09:48.540
0624_20141006_220938_EX1404L3_MB	EX1404L3_XBT055_141006	8.3	5.6	10/06/14	069.971133W	069.892135W	39.759099N	39.780677N	2014-10-06 22:09:29.040	2014-10-06 22:14:28.539
0625_20141006_221418_EX1404L3_MB	EX1404L3_XBT055_141006	7.5	120	10/06/14	069.967361W	069.887626W	39.751085N	39.809861N	2014-10-06 22:14:09.536	2014-10-06 22:19:41.543
0626_20141006_221931_EX1404L3_MB	EX1404L3_XBT055_141006	7.7	231	10/06/14	069.960937W	069.896969W	39.747001N	39.797996N	2014-10-06 22:19:22.042	2014-10-06 22:25:20.545
0627_20141006_222511_EX1404L3_MB	EX1404L3_XBT055_141006	7.5	0.4	10/06/14	069.975776W	069.903819W	39.741379N	39.801184N	2014-10-06 22:25:01.043	2014-10-06 22:30:00.545
0628_20141006_222951_EX1404L3_MB	EX1404L3_XBT055_141006	8.3	95	10/06/14	069.942134W	069.920621W	39.740689N	39.805508N	2014-10-06 22:29:41.543	2014-10-06 22:35:06.043
0629_20141006_223456_EX1404L3_MB	EX1404L3_XBT055_141006	9.5	326	10/06/14	069.963276W	069.885172W	39.741557N	39.812957N	2014-10-06 22:34:47.043	2014-10-06 22:45:34.051
0630_20141006_224525_EX1404L3_MB	EX1404L3_XBT055_141006	10.8	329	10/06/14	070.018939W	069.915054W	39.771508N	39.875943N	2014-10-06 22:45:15.047	2014-10-06 23:15:34.056
0631_20141006_231524_EX1404L3_MB	EX1404L3_XBT055_141006	10.7	330	10/06/14	070.068744W	069.988004W	39.860967N	39.948783N	2014-10-06 23:15:15.053	2014-10-06 23:45:22.063
0632_20141006_234522_EX1404L3_MB	EX1404L3_XBT055_141006	10.9	330	10/07/14	070.126859W	070.055414W	39.942118N	40.025292N	2014-10-06 23:45:22.563	2014-10-07 00:15:31.571
0633_20141007_001522_EX1404L3_MB	EX1404L3_XBT055_141006	11.3	331	10/07/14	070.186953W	070.118145W	40.021014N	40.106211N	2014-10-07 00:15:12.571	2014-10-07 00:45:31.577

MB LINE FILENAME (from Log)	SVP FILE APPLIED	SOG (kt)	HDG	DATE (UTC)	MIN LONG (dec min)	MAX LONG (dec min)	MIN LAT (dec min)	MAX LAT (dec min)	MIN TIME (UTC)	MAX TIME (UTC)
0634_20141007_004522_EX1404L3_MB	EX1404L3_XBT055_141006	11.1	328	10/07/14	070.250484W	070.178897W	40.103484N	40.184461N	2014-10-07 00:45:12.577	2014-10-07 01:15:22.082
0635_20141007_011522_EX1404L3_MB	EX1404L3_XBT055_141006	11.0	330	10/07/14	070.311691W	070.245133W	40.181963N	40.262803N	2014-10-07 01:15:12.586	2014-10-07 01:45:32.090
0636_20141007_014522_EX1404L3_MB	EX1404L3_XBT055_141006	10.8	328	10/07/14	070.374713W	070.306820W	40.260517N	40.338923N	2014-10-07 01:45:13.093	2014-10-07 02:15:32.097
0637_20141007_021522_EX1404L3_MB	EX1404L3_XBT055_141006	10.8	315	10/07/14	070.458376W	070.370596W	40.336403N	40.401916N	2014-10-07 02:15:12.601	2014-10-07 02:45:31.142
0638_20141007_024521_EX1404L3_MB	EX1404L3_XBT055_141006	10.7	316	10/07/14	070.540835W	070.455166W	40.399254N	40.464937N	2014-10-07 02:45:12.143	2014-10-07 03:15:32.143
0639_20141007_031522_EX1404L3_MB	EX1404L3_XBT055_141006	10.5	317	10/07/14	070.607752W	070.537712W	40.462601N	40.517254N	2014-10-07 03:15:12.617	2014-10-07 03:40:27.619

EX1404 Leg 3 EM 302 Water Column Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
0000_20140919_042340_EX1404L3_MB.wcd	442,031,736	9/19/2014	
0001_20140919_045340_EX1404L3_MB.wcd	477,376,992	9/19/2014	
0002_20140919_052340_EX1404L3_MB.wcd	482,189,498	9/19/2014	
0003_20140919_055340_EX1404L3_MB.wcd	478,854,658	9/19/2014	
0004_20140919_062340_EX1404L3_MB.wcd	488,479,402	9/19/2014	
0005_20140919_065340_EX1404L3_MB.wcd	477,225,270	9/19/2014	
0006_20140919_072340_EX1404L3_MB.wcd	479,727,132	9/19/2014	
0007_20140919_075340_EX1404L3_MB.wcd	485,264,996	9/19/2014	
0008_20140919_082340_EX1404L3_MB.wcd	435,697,132	9/19/2014	
0009_20140919_085342_EX1404L3_MB.wcd	195,290,586	9/19/2014	
0010_20140919_092341_EX1404L3_MB.wcd	132,153,492	9/19/2014	
0011_20140919_095340_EX1404L3_MB.wcd	135,005,686	9/19/2014	
0012_20140919_221903_EX1404L3_MB.wcd	155,202,154	9/19/2014	
0013_20140919_224902_EX1404L3_MB.wcd	161,333,084	9/19/2014	
0014_20140919_231902_EX1404L3_MB.wcd	54,054,640	9/19/2014	
0015_20140919_235856_EX1404L3_MB.wcd	182,404,720	9/19/2014	
0016_20140920_002857_EX1404L3_MB.wcd	200,085,256	9/19/2014	
0017_20140920_005857_EX1404L3_MB.wcd	210,017,900	9/19/2014	
0018_20140920_012857_EX1404L3_MB.wcd	204,000,458	9/19/2014	
0019_20140920_015902_EX1404L3_MB.wcd	205,007,620	9/19/2014	

EX1404 Leg 3 EM 302 Water Column Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
0020_20140920_022858_EX1404L3_MB.wcd	216,766,750	9/19/2014	
0021_20140920_025856_EX1404L3_MB.wcd	213,966,518	9/19/2014	
0022_20140920_032858_EX1404L3_MB.wcd	214,089,918	9/19/2014	
0023_20140920_035855_EX1404L3_MB.wcd	205,155,558	9/20/2014	
0024_20140920_042857_EX1404L3_MB.wcd	210,267,788	9/20/2014	
0025_20140920_045858_EX1404L3_MB.wcd	203,422,860	9/20/2014	
0026_20140920_052857_EX1404L3_MB.wcd	196,336,062	9/20/2014	
0027_20140920_055855_EX1404L3_MB.wcd	179,020,118	9/20/2014	
0028_20140920_062857_EX1404L3_MB.wcd	164,182,496	9/20/2014	
0029_20140920_065856_EX1404L3_MB.wcd	164,599,438	9/20/2014	
0030_20140920_072857_EX1404L3_MB.wcd	161,228,994	9/20/2014	
0031_20140920_075855_EX1404L3_MB.wcd	159,239,164	9/20/2014	
0032_20140920_082858_EX1404L3_MB.wcd	163,263,688	9/20/2014	
0033_20140920_085857_EX1404L3_MB.wcd	155,400,770	9/20/2014	
0034_20140920_092858_EX1404L3_MB.wcd	127,619,546	9/20/2014	
0035_20140920_211959_EX1404L3_MB.wcd	146,888,794	9/20/2014	
0036_20140920_215001_EX1404L3_MB.wcd	43,337,992	9/20/2014	
0037_20140920_215928_EX1404L3_MB.wcd	123,546,070	9/20/2014	
0038_20140920_222256_EX1404L3_MB.wcd	153,428,584	9/20/2014	
0039_20140920_225255_EX1404L3_MB.wcd	9,584,100	9/20/2014	

EX1404 Leg 3 EM 302 Water Column Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
0040_20140920_225430_EX1404L3_MB.wcd	181,835,322	9/20/2014	
0041_20140920_232426_EX1404L3_MB.wcd	54,863,020	9/20/2014	
0042_20140920_233353_EX1404L3_MB.wcd	27,976,288	9/20/2014	
0043_20140920_233926_EX1404L3_MB.wcd	113,575,906	9/20/2014	
0044_20140921_000044_EX1404L3_MB.wcd	153,275,540	9/20/2014	
0045_20140921_003044_EX1404L3_MB.wcd	162,784,436	9/20/2014	
0046_20140921_010044_EX1404L3_MB.wcd	124,164,874	9/20/2014	
0047_20140921_012345_EX1404L3_MB.wcd	106,339,098	9/20/2014	
0048_20140921_014413_EX1404L3_MB.wcd	118,096,984	9/20/2014	
0049_20140921_020614_EX1404L3_MB.wcd	14,710,692	9/20/2014	
0050_20140921_020906_EX1404L3_MB.wcd	135,759,248	9/20/2014	
0051_20140921_023346_EX1404L3_MB.wcd	12,321,252	9/20/2014	
0052_20140921_023621_EX1404L3_MB.wcd	162,664,350	9/20/2014	
0053_20140921_030623_EX1404L3_MB.wcd	162,281,686	9/20/2014	
0054_20140921_033628_EX1404L3_MB.wcd	159,932,712	9/21/2014	
0055_20140921_040621_EX1404L3_MB.wcd	164,249,894	9/21/2014	
0056_20140921_043627_EX1404L3_MB.wcd	158,023,706	9/21/2014	
0057_20140921_050624_EX1404L3_MB.wcd	159,395,094	9/21/2014	
0058_20140921_053620_EX1404L3_MB.wcd	160,996,244	9/21/2014	
0059_20140921_060622_EX1404L3_MB.wcd	159,062,662	9/21/2014	
0060_20140921_063622_EX1404L3_MB.wcd	164,178,518	9/21/2014	
0061_20140921_070628_EX1404L3_MB.wcd	151,252,420	9/21/2014	
0062_20140921_073425_EX1404L3_MB.wcd	10,490,972	9/21/2014	
0063_20140921_073639_EX1404L3_MB.wcd	164,349,892	9/21/2014	
0064_20140921_080642_EX1404L3_MB.wcd	166,299,362	9/21/2014	
0065_20140921_083641_EX1404L3_MB.wcd	162,929,002	9/21/2014	
0066_20140921_090642_EX1404L3_MB.wcd	81,398,612	9/21/2014	
0067_20140921_092248_EX1404L3_MB.wcd	77,883,926	9/21/2014	
0068_20140921_093648_EX1404L3_MB.wcd	139,189,226	9/21/2014	
0069_20140921_212015_EX1404L3_MB.wcd	25,134,564	9/21/2014	
0070_20140921_212412_EX1404L3_MB.wcd	178,250,052	9/21/2014	
0071_20140921_215412_EX1404L3_MB.wcd	135,497,194	9/21/2014	
0072_20140921_222412_EX1404L3_MB.wcd	25,047,760	9/21/2014	
0073_20140921_223255_EX1404L3_MB.wcd	28,116,722	9/21/2014	

EX1404 Leg 3 EM 302 Water Column Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
0074_20140921_224539_EX1404L3_MB.wcd	5,503,084	9/21/2014	
0075_20140921_224811_EX1404L3_MB.wcd	83,539,058	9/21/2014	
0076_20140921_231812_EX1404L3_MB.wcd	113,487,804	9/21/2014	
0077_20140921_234817_EX1404L3_MB.wcd	128,769,594	9/21/2014	
0078_20140922_001817_EX1404L3_MB.wcd	168,097,586	9/21/2014	
0079_20140922_004813_EX1404L3_MB.wcd	158,226,112	9/21/2014	
0080_20140922_011818_EX1404L3_MB.wcd	122,953,498	9/21/2014	
0081_20140922_014816_EX1404L3_MB.wcd	15,082,070	9/21/2014	
0082_20140922_015220_EX1404L3_MB.wcd	11,501,084	9/21/2014	
0083_20140922_015548_EX1404L3_MB.wcd	31,320,490	9/21/2014	
0084_20140922_020531_EX1404L3_MB.wcd	75,430,252	9/21/2014	
0085_20140922_022455_EX1404L3_MB.wcd	144,715,108	9/21/2014	
0086_20140922_025449_EX1404L3_MB.wcd	163,569,622	9/21/2014	
0087_20140922_032448_EX1404L3_MB.wcd	171,322,838	9/21/2014	
0088_20140922_035445_EX1404L3_MB.wcd	180,939,280	9/22/2014	
0089_20140922_042442_EX1404L3_MB.wcd	120,209,258	9/22/2014	
0090_20140922_045053_EX1404L3_MB.wcd	19,234,270	9/22/2014	
0091_20140922_045615_EX1404L3_MB.wcd	40,077,320	9/22/2014	
0092_20140922_050820_EX1404L3_MB.wcd	10,393,204	9/22/2014	
0093_20140922_051212_EX1404L3_MB.wcd	98,643,252	9/22/2014	
0094_20140922_054218_EX1404L3_MB.wcd	131,230,824	9/22/2014	
0095_20140922_061213_EX1404L3_MB.wcd	171,425,090	9/22/2014	
0096_20140922_064214_EX1404L3_MB.wcd	207,000,026	9/22/2014	
0097_20140922_071213_EX1404L3_MB.wcd	103,570,320	9/22/2014	
0098_20140922_072609_EX1404L3_MB.wcd	31,368,174	9/22/2014	
0099_20140922_073013_EX1404L3_MB.wcd	126,021,544	9/22/2014	
0100_20140922_074733_EX1404L3_MB.wcd	32,807,482	9/22/2014	
0101_20140922_075152_EX1404L3_MB.wcd	177,930,998	9/22/2014	
0102_20140922_082158_EX1404L3_MB.wcd	169,871,846	9/22/2014	
0103_20140922_085154_EX1404L3_MB.wcd	137,025,742	9/22/2014	
0104_20140922_091427_EX1404L3_MB.wcd	22,358,662	9/22/2014	
0105_20140922_091849_EX1404L3_MB.wcd	135,743,418	9/22/2014	
0106_20140922_094850_EX1404L3_MB.wcd	44,014,184	9/22/2014	
0107_20140922_095754_EX1404L3_MB.wcd	29,203,194	9/22/2014	

EX1404 Leg 3 EM 302 Water Column Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
0109_20140922_164045_EX1404L3_MB.wcd	112,273,658	9/22/2014	
0110_20140922_170028_EX1404L3_MB.wcd	1,444,000	9/22/2014	
0111_20140922_172625_EX1404L3_MB.wcd	174,707,414	9/22/2014	
0112_20140922_175631_EX1404L3_MB.wcd	78,612,490	9/22/2014	
0113_20140922_181005_EX1404L3_MB.wcd	178,251,092	9/22/2014	
0114_20140922_184004_EX1404L3_MB.wcd	180,436,622	9/22/2014	
0115_20140922_191002_EX1404L3_MB.wcd	170,096,274	9/22/2014	
0116_20140922_194000_EX1404L3_MB.wcd	169,128,580	9/22/2014	
0117_20140922_201003_EX1404L3_MB.wcd	138,843,646	9/22/2014	
0118_20140922_204000_EX1404L3_MB.wcd	42,626,836	9/22/2014	
0119_20140922_205344_EX1404L3_MB.wcd	18,031,322	9/22/2014	
0120_20140922_210033_EX1404L3_MB.wcd	86,111,208	9/22/2014	
0121_20140922_213033_EX1404L3_MB.wcd	96,185,578	9/22/2014	
0122_20140922_220033_EX1404L3_MB.wcd	46,441,604	9/22/2014	
0123_20140922_221328_EX1404L3_MB.wcd	99,393,044	9/22/2014	
0124_20140922_224328_EX1404L3_MB.wcd	99,026,302	9/22/2014	
0125_20140922_231328_EX1404L3_MB.wcd	96,762,958	9/22/2014	
0126_20140922_234328_EX1404L3_MB.wcd	20,434,366	9/22/2014	
0127_20140922_235020_EX1404L3_MB.wcd	36,112,672	9/22/2014	
0128_20140923_000320_EX1404L3_MB.wcd	81,200,482	9/22/2014	
0129_20140923_003319_EX1404L3_MB.wcd	5,034,508	9/22/2014	
0130_20140923_003511_EX1404L3_MB.wcd	86,329,632	9/22/2014	
0131_20140923_010511_EX1404L3_MB.wcd	77,268,450	9/22/2014	
0132_20140923_013511_EX1404L3_MB.wcd	72,069,530	9/22/2014	
0133_20140923_020511_EX1404L3_MB.wcd	73,549,296	9/22/2014	
0134_20140923_023512_EX1404L3_MB.wcd	113,812,914	9/22/2014	
0135_20140923_030509_EX1404L3_MB.wcd	2,870,748	9/22/2014	
0136_20140923_030613_EX1404L3_MB.wcd	77,124,390	9/22/2014	
0137_20140923_033613_EX1404L3_MB.wcd	87,283,100	9/23/2014	
0138_20140923_040614_EX1404L3_MB.wcd	123,734,498	9/23/2014	
0139_20140923_043615_EX1404L3_MB.wcd	73,995,950	9/23/2014	
0140_20140923_050614_EX1404L3_MB.wcd	59,073,948	9/23/2014	
0141_20140923_053614_EX1404L3_MB.wcd	59,859,004	9/23/2014	
0142_20140923_060613_EX1404L3_MB.wcd	57,106,072	9/23/2014	

EX1404 Leg 3 EM 302 Water Column Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
0143_20140923_063613_EX1404L3_MB.wcd	147,577,584	9/23/2014	
0144_20140923_070612_EX1404L3_MB.wcd	131,591,316	9/23/2014	
0145_20140923_071556_EX1404L3_MB.wcd	483,160,882	9/23/2014	
0146_20140923_074556_EX1404L3_MB.wcd	504,531,592	9/23/2014	
0147_20140923_081556_EX1404L3_MB.wcd	564,972,966	9/23/2014	
0148_20140923_084556_EX1404L3_MB.wcd	270,883,074	9/23/2014	
0149_20140923_091556_EX1404L3_MB.wcd	131,769,644	9/23/2014	
0150_20140923_225336_EX1404L3_MB.wcd	1,615,988	9/23/2014	
0151_20140923_225914_EX1404L3_MB.wcd	57,637,872	9/23/2014	
0152_20140923_231148_EX1404L3_MB.wcd	43,997,956	9/23/2014	
0153_20140923_232137_EX1404L3_MB.wcd	31,810,962	9/23/2014	
0154_20140923_232850_EX1404L3_MB.wcd	54,528,014	9/23/2014	
0155_20140923_234033_EX1404L3_MB.wcd	8,927,340	9/23/2014	
0156_20140923_234230_EX1404L3_MB.wcd	34,397,984	9/23/2014	
0157_20140923_234918_EX1404L3_MB.wcd	7,381,688	9/23/2014	
0158_20140923_235101_EX1404L3_MB.wcd	65,612,604	9/23/2014	
0159_20140924_000458_EX1404L3_MB.wcd	35,954,126	9/23/2014	
0160_20140924_001230_EX1404L3_MB.wcd	12,880,072	9/23/2014	
0161_20140924_001513_EX1404L3_MB.wcd	13,241,918	9/23/2014	
0162_20140924_001744_EX1404L3_MB.wcd	8,332,356	9/23/2014	
0163_20140924_001930_EX1404L3_MB.wcd	142,610,836	9/23/2014	
0164_20140924_004930_EX1404L3_MB.wcd	142,185,774	9/23/2014	
0165_20140924_011933_EX1404L3_MB.wcd	151,282,494	9/23/2014	
0166_20140924_014934_EX1404L3_MB.wcd	139,345,622	9/23/2014	
0167_20140924_021937_EX1404L3_MB.wcd	139,584,654	9/23/2014	
0168_20140924_024931_EX1404L3_MB.wcd	148,071,484	9/23/2014	
0169_20140924_031937_EX1404L3_MB.wcd	139,324,590	9/23/2014	
0170_20140924_034933_EX1404L3_MB.wcd	141,763,798	9/24/2014	
0171_20140924_041937_EX1404L3_MB.wcd	136,342,276	9/24/2014	
0172_20140924_044933_EX1404L3_MB.wcd	125,911,024	9/24/2014	
0173_20140924_051936_EX1404L3_MB.wcd	119,474,336	9/24/2014	
0174_20140924_054937_EX1404L3_MB.wcd	85,859,742	9/24/2014	
0175_20140924_061026_EX1404L3_MB.wcd	121,654,400	9/24/2014	
0176_20140924_064013_EX1404L3_MB.wcd	129,949,990	9/24/2014	

EX1404 Leg 3 EM 302 Water Column Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
0177_20140924_071019_EX1404L3_MB.wcd	123,676,612	9/24/2014	
0178_20140924_074015_EX1404L3_MB.wcd	111,808,454	9/24/2014	
0179_20140924_081012_EX1404L3_MB.wcd	114,484,694	9/24/2014	
0180_20140924_084012_EX1404L3_MB.wcd	110,862,138	9/24/2014	
0181_20140924_091018_EX1404L3_MB.wcd	102,539,038	9/24/2014	
0182_20140924_094008_EX1404L3_MB.wcd	82,019,298	9/24/2014	
0183_20140924_161559_EX1404L3_MB.wcd	83,708,514	9/24/2014	
0184_20140924_163539_EX1404L3_MB.wcd	57,805,296	9/24/2014	
0185_20140924_164429_EX1404L3_MB.wcd	171,668,772	9/24/2014	
0186_20140924_171347_EX1404L3_MB.wcd	146,251,246	9/24/2014	
0187_20140924_174228_EX1404L3_MB.wcd	75,236,700	9/24/2014	
0188_20140924_175648_EX1404L3_MB.wcd	148,816,236	9/24/2014	
0189_20140924_182650_EX1404L3_MB.wcd	63,846,138	9/24/2014	
0190_20140924_184036_EX1404L3_MB.wcd	49,676,464	9/24/2014	
0191_20140924_185415_EX1404L3_MB.wcd	150,965,788	9/24/2014	
0192_20140924_192414_EX1404L3_MB.wcd	50,607,294	9/24/2014	
0193_20140924_193355_EX1404L3_MB.wcd	92,362,910	9/24/2014	
0194_20140924_195212_EX1404L3_MB.wcd	81,013,682	9/24/2014	
0195_20140924_201952_EX1404L3_MB.wcd	8,637,166	9/24/2014	
0196_20140924_202308_EX1404L3_MB.wcd	97,973,132	9/24/2014	
0197_20140924_205301_EX1404L3_MB.wcd	97,757,720	9/24/2014	
0198_20140924_212302_EX1404L3_MB.wcd	98,735,714	9/24/2014	
0199_20140924_215258_EX1404L3_MB.wcd	12,157,508	9/24/2014	
0200_20140924_215636_EX1404L3_MB.wcd	98,630,948	9/24/2014	
0201_20140924_222640_EX1404L3_MB.wcd	95,228,126	9/24/2014	
0202_20140924_225637_EX1404L3_MB.wcd	60,244,136	9/24/2014	
0203_20140924_231549_EX1404L3_MB.wcd	16,038,824	9/24/2014	
0204_20140924_232013_EX1404L3_MB.wcd	26,998,978	9/24/2014	
0205_20140924_232819_EX1404L3_MB.wcd	9,007,690	9/24/2014	
0206_20140924_233105_EX1404L3_MB.wcd	94,314,366	9/24/2014	
0207_20140925_000104_EX1404L3_MB.wcd	29,116,418	9/24/2014	
0208_20140925_001036_EX1404L3_MB.wcd	33,477,008	9/24/2014	
0209_20140925_002053_EX1404L3_MB.wcd	9,127,198	9/24/2014	
0210_20140925_002341_EX1404L3_MB.wcd	15,950,792	9/24/2014	

EX1404 Leg 3 EM 302 Water Column Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
0211_20140925_002830_EX1404L3_MB.wcd	9,364,544	9/24/2014	
0212_20140925_003120_EX1404L3_MB.wcd	99,500,130	9/24/2014	
0213_20140925_010125_EX1404L3_MB.wcd	108,159,150	9/24/2014	
0214_20140925_013120_EX1404L3_MB.wcd	101,460,600	9/24/2014	
0215_20140925_020119_EX1404L3_MB.wcd	106,149,720	9/24/2014	
0216_20140925_023117_EX1404L3_MB.wcd	38,517,086	9/24/2014	
0217_20140925_024226_EX1404L3_MB.wcd	16,898,950	9/24/2014	
0218_20140925_024659_EX1404L3_MB.wcd	102,296,076	9/24/2014	
0219_20140925_031656_EX1404L3_MB.wcd	40,363,960	9/24/2014	
0220_20140925_032850_EX1404L3_MB.wcd	19,170,252	9/24/2014	
0221_20140925_033437_EX1404L3_MB.wcd	100,899,470	9/25/2014	
0222_20140925_040444_EX1404L3_MB.wcd	100,637,486	9/25/2014	
0223_20140925_043439_EX1404L3_MB.wcd	96,151,592	9/25/2014	
0224_20140925_050444_EX1404L3_MB.wcd	95,639,216	9/25/2014	
0225_20140925_053443_EX1404L3_MB.wcd	42,862,100	9/25/2014	
0226_20140925_054741_EX1404L3_MB.wcd	10,823,580	9/25/2014	
0227_20140925_055050_EX1404L3_MB.wcd	34,876,498	9/25/2014	
0228_20140925_060100_EX1404L3_MB.wcd	22,565,170	9/25/2014	
0229_20140925_060728_EX1404L3_MB.wcd	38,986,706	9/25/2014	
0230_20140925_061857_EX1404L3_MB.wcd	91,938,452	9/25/2014	
0231_20140925_064841_EX1404L3_MB.wcd	95,189,482	9/25/2014	
0232_20140925_071841_EX1404L3_MB.wcd	19,989,842	9/25/2014	
0233_20140925_072438_EX1404L3_MB.wcd	14,397,696	9/25/2014	
0234_20140925_072851_EX1404L3_MB.wcd	49,499,784	9/25/2014	
0235_20140925_074327_EX1404L3_MB.wcd	9,347,916	9/25/2014	
0236_20140925_074616_EX1404L3_MB.wcd	96,719,842	9/25/2014	
0237_20140925_081615_EX1404L3_MB.wcd	98,274,184	9/25/2014	
0238_20140925_084618_EX1404L3_MB.wcd	90,173,444	9/25/2014	
0239_20140925_091337_EX1404L3_MB.wcd	14,219,162	9/25/2014	
0240_20140925_091801_EX1404L3_MB.wcd	99,004,780	9/25/2014	
0241_20140925_094804_EX1404L3_MB.wcd	42,513,326	9/25/2014	
0242_20140925_220840_EX1404L3_MB.wcd	87,686,084	9/25/2014	
0243_20140925_223517_EX1404L3_MB.wcd	10,207,120	9/25/2014	
0244_20140925_223824_EX1404L3_MB.wcd	99,925,060	9/25/2014	

EX1404 Leg 3 EM 302 Water Column Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
0245_20140925_230829_EX1404L3_MB.wcd	99,875,864	9/25/2014	
0246_20140925_233822_EX1404L3_MB.wcd	20,112,778	9/25/2014	
0247_20140925_234425_EX1404L3_MB.wcd	12,783,264	9/25/2014	
0248_20140925_234819_EX1404L3_MB.wcd	101,052,772	9/25/2014	
0249_20140926_001810_EX1404L3_MB.wcd	39,886,926	9/25/2014	
0250_20140926_002959_EX1404L3_MB.wcd	14,114,218	9/25/2014	
0251_20140926_003417_EX1404L3_MB.wcd	96,640,828	9/25/2014	
0252_20140926_010417_EX1404L3_MB.wcd	98,538,226	9/25/2014	
0253_20140926_013412_EX1404L3_MB.wcd	10,475,628	9/25/2014	
0254_20140926_013722_EX1404L3_MB.wcd	11,194,782	9/25/2014	
0255_20140926_014048_EX1404L3_MB.wcd	43,253,288	9/25/2014	
0256_20140926_015347_EX1404L3_MB.wcd	7,565,200	9/25/2014	
0257_20140926_015605_EX1404L3_MB.wcd	97,009,764	9/25/2014	
0258_20140926_022611_EX1404L3_MB.wcd	80,870,106	9/25/2014	
0259_20140926_025313_EX1404L3_MB.wcd	96,083,022	9/25/2014	
0260_20140926_032307_EX1404L3_MB.wcd	100,123,592	9/25/2014	
0261_20140926_035307_EX1404L3_MB.wcd	100,867,888	9/26/2014	
0262_20140926_042305_EX1404L3_MB.wcd	115,876,468	9/26/2014	
0263_20140926_045309_EX1404L3_MB.wcd	102,346,584	9/26/2014	
0264_20140926_052306_EX1404L3_MB.wcd	101,033,182	9/26/2014	
0265_20140926_055301_EX1404L3_MB.wcd	66,182,460	9/26/2014	
0266_20140926_061154_EX1404L3_MB.wcd	97,635,568	9/26/2014	
0267_20140926_064150_EX1404L3_MB.wcd	37,445,486	9/26/2014	
0268_20140926_065340_EX1404L3_MB.wcd	13,649,374	9/26/2014	
0269_20140926_065747_EX1404L3_MB.wcd	101,173,090	9/26/2014	
0270_20140926_072748_EX1404L3_MB.wcd	111,079,736	9/26/2014	
0271_20140926_075747_EX1404L3_MB.wcd	117,110,228	9/26/2014	
0272_20140926_082754_EX1404L3_MB.wcd	124,390,998	9/26/2014	
0273_20140926_085747_EX1404L3_MB.wcd	126,373,960	9/26/2014	
0274_20140926_092750_EX1404L3_MB.wcd	106,927,070	9/26/2014	
0275_20140926_161510_EX1404L3_MB.wcd	102,414,308	9/26/2014	
0276_20140926_164506_EX1404L3_MB.wcd	117,322,742	9/26/2014	
0277_20140926_171507_EX1404L3_MB.wcd	119,136,842	9/26/2014	
0278_20140926_174502_EX1404L3_MB.wcd	121,341,716	9/26/2014	

EX1404 Leg 3 EM 302 Water Column Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
0279_20140926_181508_EX1404L3_MB.wcd	120,497,962	9/26/2014	
0280_20140926_184500_EX1404L3_MB.wcd	121,178,734	9/26/2014	
0281_20140926_191502_EX1404L3_MB.wcd	121,145,274	9/26/2014	
0282_20140926_194502_EX1404L3_MB.wcd	48,001,634	9/26/2014	
0283_20140926_195653_EX1404L3_MB.wcd	11,578,062	9/26/2014	
0284_20140926_195947_EX1404L3_MB.wcd	112,801,424	9/26/2014	
0285_20140926_202954_EX1404L3_MB.wcd	45,709,620	9/26/2014	
0286_20140926_204209_EX1404L3_MB.wcd	121,759,546	9/26/2014	
0287_20140926_211207_EX1404L3_MB.wcd	35,472,550	9/26/2014	
0288_20140926_212057_EX1404L3_MB.wcd	121,578,312	9/26/2014	
0289_20140926_215100_EX1404L3_MB.wcd	120,422,402	9/26/2014	
0290_20140926_222102_EX1404L3_MB.wcd	120,399,060	9/26/2014	
0291_20140926_225104_EX1404L3_MB.wcd	120,409,812	9/26/2014	
0292_20140926_232101_EX1404L3_MB.wcd	121,165,228	9/26/2014	
0293_20140926_235104_EX1404L3_MB.wcd	121,027,332	9/26/2014	
0294_20140927_002102_EX1404L3_MB.wcd	59,715,900	9/26/2014	
0295_20140927_003552_EX1404L3_MB.wcd	121,111,694	9/26/2014	
0296_20140927_010555_EX1404L3_MB.wcd	120,713,142	9/26/2014	
0297_20140927_013549_EX1404L3_MB.wcd	6,212,662	9/26/2014	
0298_20140927_013721_EX1404L3_MB.wcd	17,190,772	9/26/2014	
0299_20140927_014138_EX1404L3_MB.wcd	55,742,790	9/26/2014	
0300_20140927_015526_EX1404L3_MB.wcd	28,195,176	9/26/2014	
0301_20140927_020227_EX1404L3_MB.wcd	117,026,782	9/26/2014	
0302_20140927_023130_EX1404L3_MB.wcd	15,154,192	9/26/2014	
0303_20140927_023516_EX1404L3_MB.wcd	83,169,470	9/26/2014	
0304_20140927_025557_EX1404L3_MB.wcd	60,614,400	9/26/2014	
0305_20140927_031059_EX1404L3_MB.wcd	120,838,494	9/26/2014	
0306_20140927_034102_EX1404L3_MB.wcd	56,441,664	9/26/2014	
0307_20140927_035503_EX1404L3_MB.wcd	11,031,700	9/26/2014	
0308_20140927_035747_EX1404L3_MB.wcd	120,311,952	9/27/2014	
0309_20140927_042742_EX1404L3_MB.wcd	121,048,748	9/27/2014	
0310_20140927_045745_EX1404L3_MB.wcd	120,962,548	9/27/2014	
0311_20140927_052742_EX1404L3_MB.wcd	98,145,154	9/27/2014	
0312_20140927_055148_EX1404L3_MB.wcd	21,386,610	9/27/2014	

EX1404 Leg 3 EM 302 Water Column Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
0313_20140927_055702_EX1404L3_MB.wcd	25,057,154	9/27/2014	
0314_20140927_060310_EX1404L3_MB.wcd	21,383,248	9/27/2014	
0315_20140927_060826_EX1404L3_MB.wcd	121,580,574	9/27/2014	
0316_20140927_063829_EX1404L3_MB.wcd	33,639,142	9/27/2014	
0317_20140927_064648_EX1404L3_MB.wcd	120,470,600	9/27/2014	
0318_20140927_071635_EX1404L3_MB.wcd	107,816,800	9/27/2014	
0319_20140927_074317_EX1404L3_MB.wcd	59,800,704	9/27/2014	
0320_20140927_075809_EX1404L3_MB.wcd	17,959,930	9/27/2014	
0321_20140927_080236_EX1404L3_MB.wcd	120,849,618	9/27/2014	
0322_20140927_083234_EX1404L3_MB.wcd	120,528,980	9/27/2014	
0323_20140927_090236_EX1404L3_MB.wcd	100,541,838	9/27/2014	
0324_20140927_093238_EX1404L3_MB.wcd	61,707,410	9/27/2014	
0325_20140928_003214_EX1404L3_MB.wcd	156,478,464	9/27/2014	
0326_20140928_010220_EX1404L3_MB.wcd	160,541,924	9/27/2014	
0327_20140928_013217_EX1404L3_MB.wcd	115,447,128	9/27/2014	
0328_20140928_015526_EX1404L3_MB.wcd	37,085,672	9/27/2014	
0329_20140928_020436_EX1404L3_MB.wcd	100,568,244	9/27/2014	
0330_20140928_023437_EX1404L3_MB.wcd	2,390,858	9/27/2014	
0331_20140928_023521_EX1404L3_MB.wcd	112,188,880	9/27/2014	
0332_20140928_030521_EX1404L3_MB.wcd	98,939,926	9/27/2014	
0333_20140928_033532_EX1404L3_MB.wcd	98,197,416	9/28/2014	
0334_20140928_040531_EX1404L3_MB.wcd	22,342,316	9/28/2014	
0335_20140928_041120_EX1404L3_MB.wcd	42,106,050	9/28/2014	
0336_20140928_042141_EX1404L3_MB.wcd	10,414,610	9/28/2014	
0337_20140928_042414_EX1404L3_MB.wcd	122,164,328	9/28/2014	
0338_20140928_045416_EX1404L3_MB.wcd	122,555,792	9/28/2014	
0339_20140928_052424_EX1404L3_MB.wcd	104,688,378	9/28/2014	
0340_20140928_055418_EX1404L3_MB.wcd	101,767,168	9/28/2014	
0341_20140928_062153_EX1404L3_MB.wcd	22,375,402	9/28/2014	
0342_20140928_062623_EX1404L3_MB.wcd	9,819,826	9/28/2014	
0343_20140928_062951_EX1404L3_MB.wcd	10,304,864	9/28/2014	
0344_20140928_063219_EX1404L3_MB.wcd	82,208,786	9/28/2014	
0345_20140928_064437_EX1404L3_MB.wcd	30,493,590	9/28/2014	
0346_20140928_065132_EX1404L3_MB.wcd	75,853,686	9/28/2014	

EX1404 Leg 3 EM 302 Water Column Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
0347_20140928_070459_EX1404L3_MB.wcd	171,924,648	9/28/2014	
0348_20140928_073505_EX1404L3_MB.wcd	101,463,048	9/28/2014	
0349_20140928_080506_EX1404L3_MB.wcd	37,948,100	9/28/2014	
0350_20140928_081621_EX1404L3_MB.wcd	29,542,224	9/28/2014	
0351_20140928_082500_EX1404L3_MB.wcd	103,455,462	9/28/2014	
0352_20140928_085500_EX1404L3_MB.wcd	120,830,546	9/28/2014	
0353_20140928_092458_EX1404L3_MB.wcd	28,085,110	9/28/2014	
0354_20140928_093147_EX1404L3_MB.wcd	17,028,088	9/28/2014	
0355_20140928_093530_EX1404L3_MB.wcd	54,200,780	9/28/2014	
0356_20140928_214020_EX1404L3_MB.wcd	27,048,730	9/28/2014	
0357_20140928_214703_EX1404L3_MB.wcd	4,579,570	9/28/2014	
0358_20140928_214836_EX1404L3_MB.wcd	44,817,560	9/28/2014	
0359_20140928_220334_EX1404L3_MB.wcd	9,706,822	9/28/2014	
0360_20140928_220630_EX1404L3_MB.wcd	21,984,328	9/28/2014	
0361_20140928_221359_EX1404L3_MB.wcd	21,349,284	9/28/2014	
0362_20140928_222056_EX1404L3_MB.wcd	26,824,996	9/28/2014	
0363_20140928_222955_EX1404L3_MB.wcd	28,608,892	9/28/2014	
0364_20140928_223858_EX1404L3_MB.wcd	26,730,434	9/28/2014	
0365_20140928_224759_EX1404L3_MB.wcd	23,359,710	9/28/2014	
0366_20140928_225533_EX1404L3_MB.wcd	69,838,838	9/28/2014	
0367_20140928_231750_EX1404L3_MB.wcd	106,068,560	9/28/2014	
0368_20140928_234750_EX1404L3_MB.wcd	50,027,814	9/28/2014	
0369_20140929_000009_EX1404L3_MB.wcd	104,041,402	9/28/2014	
0370_20140929_003018_EX1404L3_MB.wcd	93,729,256	9/28/2014	
0371_20140929_010008_EX1404L3_MB.wcd	100,446,654	9/28/2014	
0372_20140929_012546_EX1404L3_MB.wcd	59,582,234	9/28/2014	
0373_20140929_014021_EX1404L3_MB.wcd	5,576,490	9/28/2014	
0374_20140929_014143_EX1404L3_MB.wcd	118,447,854	9/28/2014	
0375_20140929_021144_EX1404L3_MB.wcd	90,249,034	9/28/2014	
0376_20140929_024138_EX1404L3_MB.wcd	91,156,552	9/28/2014	
0377_20140929_031139_EX1404L3_MB.wcd	109,942,844	9/28/2014	
0378_20140929_034143_EX1404L3_MB.wcd	119,117,536	9/29/2014	
0379_20140929_041141_EX1404L3_MB.wcd	110,847,358	9/29/2014	
0380_20140929_044143_EX1404L3_MB.wcd	108,708,290	9/29/2014	

EX1404 Leg 3 EM 302 Water Column Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
0381_20140929_051138_EX1404L3_MB.wcd	98,778,448	9/29/2014	
0382_20140929_054148_EX1404L3_MB.wcd	8,431,498	9/29/2014	
0383_20140929_054424_EX1404L3_MB.wcd	94,771,392	9/29/2014	
0384_20140929_060807_EX1404L3_MB.wcd	9,717,620	9/29/2014	
0385_20140929_061030_EX1404L3_MB.wcd	122,253,074	9/29/2014	
0386_20140929_064034_EX1404L3_MB.wcd	122,262,378	9/29/2014	
0387_20140929_071029_EX1404L3_MB.wcd	113,688,826	9/29/2014	
0388_20140929_074025_EX1404L3_MB.wcd	86,070,900	9/29/2014	
0389_20140929_080740_EX1404L3_MB.wcd	54,499,114	9/29/2014	
0390_20140929_082533_EX1404L3_MB.wcd	53,521,304	9/29/2014	
0391_20140929_084248_EX1404L3_MB.wcd	59,614,958	9/29/2014	
0392_20140929_090141_EX1404L3_MB.wcd	44,544,338	9/29/2014	
0393_20140929_091620_EX1404L3_MB.wcd	36,479,032	9/29/2014	
0394_20140929_092801_EX1404L3_MB.wcd	39,149,390	9/29/2014	
0395_20140929_094005_EX1404L3_MB.wcd	34,491,718	9/29/2014	
0396_20140929_130154_EX1404L3_MB.wcd	100,100,944	9/29/2014	
0397_20140929_133203_EX1404L3_MB.wcd	119,968,564	9/29/2014	
0398_20140929_140156_EX1404L3_MB.wcd	121,249,278	9/29/2014	
0399_20140929_143157_EX1404L3_MB.wcd	120,850,834	9/29/2014	
0400_20140929_150156_EX1404L3_MB.wcd	112,417,286	9/29/2014	
0401_20140930_002901_EX1404L3_MB.wcd	6,251,978	9/29/2014	
0402_20140930_003105_EX1404L3_MB.wcd	31,788,684	9/29/2014	
0403_20140930_004058_EX1404L3_MB.wcd	97,084,406	9/29/2014	
0404_20140930_011059_EX1404L3_MB.wcd	20,453,948	9/29/2014	
0405_20140930_011739_EX1404L3_MB.wcd	102,936,550	9/29/2014	
0406_20140930_014739_EX1404L3_MB.wcd	121,300,906	9/29/2014	
0407_20140930_021742_EX1404L3_MB.wcd	120,603,478	9/29/2014	
0408_20140930_024738_EX1404L3_MB.wcd	120,868,994	9/29/2014	
0409_20140930_031741_EX1404L3_MB.wcd	121,364,896	9/29/2014	
0410_20140930_034741_EX1404L3_MB.wcd	37,182,672	9/29/2014	
0411_20140930_035733_EX1404L3_MB.wcd	70,798,538	9/30/2014	
0412_20140930_041743_EX1404L3_MB.wcd	37,455,454	9/30/2014	
0413_20140930_042830_EX1404L3_MB.wcd	103,370,068	9/30/2014	
0414_20140930_045815_EX1404L3_MB.wcd	103,243,934	9/30/2014	

EX1404 Leg 3 EM 302 Water Column Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
0415_20140930_052809_EX1404L3_MB.wcd	105,584,368	9/30/2014	
0416_20140930_055813_EX1404L3_MB.wcd	84,935,984	9/30/2014	
0417_20140930_062243_EX1404L3_MB.wcd	41,411,062	9/30/2014	
0418_20140930_063306_EX1404L3_MB.wcd	63,283,706	9/30/2014	
0419_20140930_064855_EX1404L3_MB.wcd	120,106,388	9/30/2014	
0420_20140930_071847_EX1404L3_MB.wcd	120,204,682	9/30/2014	
0421_20140930_074847_EX1404L3_MB.wcd	120,480,520	9/30/2014	
0422_20140930_081851_EX1404L3_MB.wcd	120,630,330	9/30/2014	
0423_20140930_084851_EX1404L3_MB.wcd	108,354,738	9/30/2014	
0424_20140930_091848_EX1404L3_MB.wcd	5,886,942	9/30/2014	
0425_20140930_092032_EX1404L3_MB.wcd	40,047,746	9/30/2014	
0426_20141001_001858_EX1404L3_MB.wcd	120,456,644	9/30/2014	
0427_20141001_004859_EX1404L3_MB.wcd	116,384,744	9/30/2014	
0428_20141001_011905_EX1404L3_MB.wcd	126,876,650	9/30/2014	
0429_20141001_014900_EX1404L3_MB.wcd	126,503,174	9/30/2014	
0430_20141001_021900_EX1404L3_MB.wcd	126,230,968	9/30/2014	
0431_20141001_024901_EX1404L3_MB.wcd	126,233,930	9/30/2014	
0432_20141001_031906_EX1404L3_MB.wcd	125,045,892	9/30/2014	
0433_20141001_034859_EX1404L3_MB.wcd	116,152,700	10/1/2014	
0434_20141001_041651_EX1404L3_MB.wcd	124,748,898	10/1/2014	
0435_20141001_044644_EX1404L3_MB.wcd	116,151,848	10/1/2014	
0436_20141001_051651_EX1404L3_MB.wcd	99,036,566	10/1/2014	
0437_20141001_054646_EX1404L3_MB.wcd	100,089,818	10/1/2014	
0438_20141001_061653_EX1404L3_MB.wcd	99,770,700	10/1/2014	
0439_20141001_064644_EX1404L3_MB.wcd	70,379,904	10/1/2014	
0440_20141001_070607_EX1404L3_MB.wcd	123,039,648	10/1/2014	
0441_20141001_073555_EX1404L3_MB.wcd	123,565,678	10/1/2014	
0442_20141001_080603_EX1404L3_MB.wcd	122,297,318	10/1/2014	
0443_20141001_083558_EX1404L3_MB.wcd	122,180,588	10/1/2014	
0444_20141001_090602_EX1404L3_MB.wcd	119,753,572	10/1/2014	
0445_20141001_093555_EX1404L3_MB.wcd	120,286,806	10/1/2014	
0446_20141001_100559_EX1404L3_MB.wcd	29,451,104	10/1/2014	
0447_20141001_201823_EX1404L3_MB.wcd	156,865,148	10/1/2014	
0448_20141001_203816_EX1404L3_MB.wcd	82,191,978	10/1/2014	

EX1404 Leg 3 EM 302 Water Column Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
0449_20141001_205644_EX1404L3_MB.wcd	100,529,736	10/1/2014	
0450_20141001_212640_EX1404L3_MB.wcd	103,485,998	10/1/2014	
0451_20141001_215644_EX1404L3_MB.wcd	10,756,320	10/1/2014	
0452_20141001_215953_EX1404L3_MB.wcd	170,324,758	10/1/2014	
0453_20141001_222951_EX1404L3_MB.wcd	106,623,604	10/1/2014	
0454_20141001_225950_EX1404L3_MB.wcd	101,028,738	10/1/2014	
0455_20141001_232948_EX1404L3_MB.wcd	96,867,784	10/1/2014	
0456_20141001_235949_EX1404L3_MB.wcd	1,342,494	10/1/2014	
0457_20141002_000014_EX1404L3_MB.wcd	96,806,530	10/1/2014	
0458_20141002_003016_EX1404L3_MB.wcd	95,495,604	10/1/2014	
0459_20141002_010011_EX1404L3_MB.wcd	100,621,716	10/1/2014	
0460_20141002_013014_EX1404L3_MB.wcd	158,811,410	10/1/2014	
0461_20141002_020013_EX1404L3_MB.wcd	186,364,320	10/1/2014	
0462_20141002_023016_EX1404L3_MB.wcd	154,696,388	10/1/2014	
0463_20141002_030012_EX1404L3_MB.wcd	129,341,742	10/1/2014	
0464_20141002_031604_EX1404L3_MB.wcd	18,933,646	10/1/2014	
0465_20141002_031806_EX1404L3_MB.wcd	119,597,988	10/1/2014	
0466_20141002_032917_EX1404L3_MB.wcd	143,671,572	10/1/2014	
0467_20141002_033707_EX1404L3_MB.wcd	190,502,734	10/1/2014	
0468_20141002_034808_EX1404L3_MB.wcd	191,561,682	10/1/2014	
0469_20141002_035708_EX1404L3_MB.wcd	138,671,466	10/2/2014	
0470_20141002_040336_EX1404L3_MB.wcd	246,496,228	10/2/2014	
0471_20141002_041442_EX1404L3_MB.wcd	660,912,428	10/2/2014	
0472_20141002_044442_EX1404L3_MB.wcd	327,391,058	10/2/2014	
0473_20141002_045928_EX1404L3_MB.wcd	233,406,738	10/2/2014	
0474_20141002_053212_EX1404L3_MB.wcd	650,694,174	10/2/2014	
0475_20141002_060212_EX1404L3_MB.wcd	557,743,842	10/2/2014	
0476_20141002_063213_EX1404L3_MB.wcd	474,846,954	10/2/2014	
0477_20141002_070212_EX1404L3_MB.wcd	516,975,982	10/2/2014	
0478_20141002_073212_EX1404L3_MB.wcd	508,773,864	10/2/2014	
0479_20141002_080212_EX1404L3_MB.wcd	503,315,040	10/2/2014	
0480_20141002_083212_EX1404L3_MB.wcd	514,238,120	10/2/2014	
0481_20141002_090212_EX1404L3_MB.wcd	491,199,508	10/2/2014	
0482_20141002_093212_EX1404L3_MB.wcd	511,054,648	10/2/2014	

EX1404 Leg 3 EM 302 Water Column Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
0483_20141002_100212_EX1404L3_MB.wcd	498,453,058	10/2/2014	
0484_20141002_103212_EX1404L3_MB.wcd	266,948,110	10/2/2014	
0485_20141002_104817_EX1404L3_MB.wcd	512,398,760	10/2/2014	
0486_20141002_111817_EX1404L3_MB.wcd	507,736,118	10/2/2014	
0487_20141002_114817_EX1404L3_MB.wcd	503,773,532	10/2/2014	
0488_20141002_121817_EX1404L3_MB.wcd	505,555,362	10/2/2014	
0489_20141002_124817_EX1404L3_MB.wcd	502,629,798	10/2/2014	
0490_20141002_131817_EX1404L3_MB.wcd	501,415,470	10/2/2014	
0491_20141002_134817_EX1404L3_MB.wcd	500,898,430	10/2/2014	
0492_20141002_141817_EX1404L3_MB.wcd	496,727,836	10/2/2014	
0493_20141002_144817_EX1404L3_MB.wcd	510,884,744	10/2/2014	
0494_20141002_151817_EX1404L3_MB.wcd	508,391,490	10/2/2014	
0495_20141002_154817_EX1404L3_MB.wcd	504,051,744	10/2/2014	
0496_20141002_161818_EX1404L3_MB.wcd	500,506,018	10/2/2014	
0497_20141002_164817_EX1404L3_MB.wcd	105,880,420	10/2/2014	
0498_20141002_165433_EX1404L3_MB.wcd	107,743,672	10/2/2014	
0499_20141003_233735_EX1404L3_MB.wcd	417,112,032	10/3/2014	
0500_20141004_000735_EX1404L3_MB.wcd	467,494,114	10/3/2014	
0501_20141004_003736_EX1404L3_MB.wcd	466,079,816	10/3/2014	
0502_20141004_010736_EX1404L3_MB.wcd	473,614,072	10/3/2014	
0503_20141004_013736_EX1404L3_MB.wcd	471,689,390	10/3/2014	
0504_20141004_020736_EX1404L3_MB.wcd	479,599,538	10/3/2014	
0505_20141004_023736_EX1404L3_MB.wcd	488,006,626	10/3/2014	
0506_20141004_030736_EX1404L3_MB.wcd	492,179,330	10/3/2014	
0507_20141004_033736_EX1404L3_MB.wcd	486,566,042	10/4/2014	
0508_20141004_040736_EX1404L3_MB.wcd	368,051,650	10/4/2014	
0509_20141004_043008_EX1404L3_MB.wcd	496,255,216	10/4/2014	
0510_20141004_050007_EX1404L3_MB.wcd	499,539,606	10/4/2014	
0511_20141004_053008_EX1404L3_MB.wcd	501,338,988	10/4/2014	
0512_20141004_060008_EX1404L3_MB.wcd	500,943,466	10/4/2014	
0513_20141004_063008_EX1404L3_MB.wcd	502,260,632	10/4/2014	
0514_20141004_070008_EX1404L3_MB.wcd	349,350,612	10/4/2014	
0515_20141004_073009_EX1404L3_MB.wcd	262,540,276	10/4/2014	
0516_20141004_080009_EX1404L3_MB.wcd	258,253,778	10/4/2014	

EX1404 Leg 3 EM 302 Water Column Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
0517_20141004_083010_EX1404L3_MB.wcd	139,495,340	10/4/2014	
0518_20141004_085112_EX1404L3_MB.wcd	46,096,048	10/4/2014	
0519_20141004_085627_EX1404L3_MB.wcd	202,482,264	10/4/2014	
0520_20141004_092626_EX1404L3_MB.wcd	24,757,034	10/4/2014	
0521_20141004_093330_EX1404L3_MB.wcd	65,108,934	10/4/2014	
0522_20141004_183423_EX1404L3_MB.wcd	105,531,226	10/4/2014	
0523_20141004_185912_EX1404L3_MB.wcd	118,486,022	10/4/2014	
0524_20141004_192911_EX1404L3_MB.wcd	64,449,018	10/4/2014	
0525_20141004_195345_EX1404L3_MB.wcd	125,265,558	10/4/2014	
0526_20141004_202344_EX1404L3_MB.wcd	117,025,368	10/4/2014	
0527_20141004_205345_EX1404L3_MB.wcd	102,864,048	10/4/2014	
0528_20141004_212345_EX1404L3_MB.wcd	121,406,406	10/4/2014	
0529_20141004_215346_EX1404L3_MB.wcd	158,628,924	10/4/2014	
0530_20141004_221752_EX1404L3_MB.wcd	45,007,512	10/4/2014	
0531_20141004_222242_EX1404L3_MB.wcd	172,022,746	10/4/2014	
0532_20141004_225244_EX1404L3_MB.wcd	9,487,608	10/4/2014	
0533_20141004_225517_EX1404L3_MB.wcd	142,244,888	10/4/2014	
0534_20141004_232514_EX1404L3_MB.wcd	163,855,210	10/4/2014	
0535_20141004_235515_EX1404L3_MB.wcd	28,418,454	10/4/2014	
0536_20141005_000023_EX1404L3_MB.wcd	178,773,570	10/4/2014	
0537_20141005_003026_EX1404L3_MB.wcd	178,277,322	10/4/2014	
0538_20141005_010019_EX1404L3_MB.wcd	181,883,724	10/4/2014	
0539_20141005_013024_EX1404L3_MB.wcd	46,873,670	10/4/2014	
0540_20141005_013807_EX1404L3_MB.wcd	32,158,324	10/4/2014	
0541_20141005_014326_EX1404L3_MB.wcd	182,243,400	10/4/2014	
0542_20141005_021327_EX1404L3_MB.wcd	65,219,212	10/4/2014	
0543_20141005_022417_EX1404L3_MB.wcd	178,241,912	10/4/2014	
0544_20141005_025417_EX1404L3_MB.wcd	173,246,052	10/4/2014	
0545_20141005_032423_EX1404L3_MB.wcd	166,407,710	10/4/2014	
0546_20141005_035421_EX1404L3_MB.wcd	166,594,840	10/5/2014	
0547_20141005_042422_EX1404L3_MB.wcd	157,043,764	10/5/2014	
0548_20141005_045421_EX1404L3_MB.wcd	34,071,794	10/5/2014	
0549_20141005_050058_EX1404L3_MB.wcd	45,536,950	10/5/2014	
0550_20141005_051001_EX1404L3_MB.wcd	21,712,076	10/5/2014	

EX1404 Leg 3 EM 302 Water Column Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
0551_20141005_051420_EX1404L3_MB.wcd	157,175,630	10/5/2014	
0552_20141005_054419_EX1404L3_MB.wcd	130,282,912	10/5/2014	
0553_20141005_061420_EX1404L3_MB.wcd	56,951,736	10/5/2014	
0554_20141005_063027_EX1404L3_MB.wcd	17,209,018	10/5/2014	
0555_20141005_063457_EX1404L3_MB.wcd	126,937,410	10/5/2014	
0556_20141005_070456_EX1404L3_MB.wcd	101,757,224	10/5/2014	
0557_20141005_072854_EX1404L3_MB.wcd	25,835,754	10/5/2014	
0558_20141005_073500_EX1404L3_MB.wcd	146,624,078	10/5/2014	
0559_20141005_080500_EX1404L3_MB.wcd	8,591,016	10/5/2014	
0560_20141005_102257_EX1404L3_MB.wcd	314,858,460	10/5/2014	
0561_20141005_105258_EX1404L3_MB.wcd	305,897,812	10/5/2014	
0562_20141005_112257_EX1404L3_MB.wcd	519,319,592	10/5/2014	
0563_20141005_115257_EX1404L3_MB.wcd	548,836,594	10/5/2014	
0564_20141005_122257_EX1404L3_MB.wcd	585,618,616	10/5/2014	
0565_20141005_125257_EX1404L3_MB.wcd	591,196,280	10/5/2014	
0566_20141005_132257_EX1404L3_MB.wcd	575,798,700	10/5/2014	
0567_20141005_135257_EX1404L3_MB.wcd	71,796,070	10/5/2014	
0568_20141005_135923_EX1404L3_MB.wcd	91,251,046	10/5/2014	
0569_20141005_140659_EX1404L3_MB.wcd	318,608,000	10/5/2014	
0570_20141005_143657_EX1404L3_MB.wcd	203,489,184	10/5/2014	
0571_20141005_145741_EX1404L3_MB.wcd	68,822,804	10/5/2014	
0572_20141005_150439_EX1404L3_MB.wcd	327,508,102	10/5/2014	
0573_20141005_153439_EX1404L3_MB.wcd	319,879,802	10/5/2014	
0574_20141005_160246_EX1404L3_MB.wcd	285,890,286	10/5/2014	
0575_20141005_163246_EX1404L3_MB.wcd	141,899,810	10/5/2014	
0576_20141005_164751_EX1404L3_MB.wcd	57,155,432	10/5/2014	
0577_20141005_165308_EX1404L3_MB.wcd	234,211,164	10/5/2014	
0578_20141005_172307_EX1404L3_MB.wcd	92,523,070	10/5/2014	
0579_20141005_174242_EX1404L3_MB.wcd	15,539,044	10/5/2014	
0580_20141005_174652_EX1404L3_MB.wcd	100,949,286	10/5/2014	
0581_20141005_180905_EX1404L3_MB.wcd	104,303,348	10/5/2014	
0582_20141005_183437_EX1404L3_MB.wcd	151,440,680	10/5/2014	
0583_20141005_190439_EX1404L3_MB.wcd	221,068,026	10/5/2014	
0584_20141005_193222_EX1404L3_MB.wcd	266,044,522	10/5/2014	

EX1404 Leg 3 EM 302 Water Column Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
0585_20141005_200224_EX1404L3_MB.wcd	20,561,978	10/5/2014	
0586_20141005_200725_EX1404L3_MB.wcd	23,969,908	10/5/2014	
0587_20141005_201229_EX1404L3_MB.wcd	149,162,038	10/5/2014	
0588_20141005_204230_EX1404L3_MB.wcd	275,279,980	10/5/2014	
0589_20141005_211229_EX1404L3_MB.wcd	177,069,020	10/5/2014	
0590_20141005_214232_EX1404L3_MB.wcd	160,310,556	10/5/2014	
0591_20141005_221234_EX1404L3_MB.wcd	155,947,078	10/5/2014	
0592_20141005_224232_EX1404L3_MB.wcd	166,896,836	10/5/2014	
0593_20141005_231235_EX1404L3_MB.wcd	179,604,008	10/5/2014	
0594_20141005_234235_EX1404L3_MB.wcd	102,196,782	10/5/2014	
0595_20141006_000004_EX1404L3_MB.wcd	82,895,528	10/5/2014	
0596_20141006_001407_EX1404L3_MB.wcd	158,792,280	10/5/2014	
0597_20141006_004101_EX1404L3_MB.wcd	9,352,372	10/5/2014	
0598_20141006_004233_EX1404L3_MB.wcd	179,570,836	10/5/2014	
0599_20141006_011234_EX1404L3_MB.wcd	178,450,756	10/5/2014	
0600_20141006_014234_EX1404L3_MB.wcd	177,460,012	10/5/2014	
0601_20141006_021236_EX1404L3_MB.wcd	39,872,510	10/5/2014	
0602_20141006_021937_EX1404L3_MB.wcd	14,512,778	10/5/2014	
0603_20141006_022212_EX1404L3_MB.wcd	170,820,908	10/5/2014	
0604_20141006_025216_EX1404L3_MB.wcd	183,265,436	10/5/2014	
0605_20141006_032217_EX1404L3_MB.wcd	173,077,872	10/5/2014	
0606_20141006_035215_EX1404L3_MB.wcd	178,313,150	10/6/2014	
0607_20141006_042217_EX1404L3_MB.wcd	170,634,188	10/6/2014	
0608_20141006_045213_EX1404L3_MB.wcd	158,677,430	10/6/2014	
0609_20141006_052001_EX1404L3_MB.wcd	168,164,092	10/6/2014	
0610_20141006_054953_EX1404L3_MB.wcd	169,212,662	10/6/2014	
0611_20141006_061955_EX1404L3_MB.wcd	169,852,222	10/6/2014	
0612_20141006_064955_EX1404L3_MB.wcd	174,045,014	10/6/2014	

EX1404 Leg 3 EM 302 Water Column Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
0613_20141006_071950_EX1404L3_MB.wcd	170,906,322	10/6/2014	
0614_20141006_074955_EX1404L3_MB.wcd	131,700,928	10/6/2014	
0615_20141006_081305_EX1404L3_MB.wcd	170,642,176	10/6/2014	
0616_20141006_084305_EX1404L3_MB.wcd	36,125,806	10/6/2014	
0617_20141006_084930_EX1404L3_MB.wcd	165,902,662	10/6/2014	
0618_20141006_091930_EX1404L3_MB.wcd	46,399,160	10/6/2014	
0619_20141006_092734_EX1404L3_MB.wcd	9,710,230	10/6/2014	
0620_20141006_092913_EX1404L3_MB.wcd	154,767,648	10/6/2014	
0621_20141006_215938_EX1404L3_MB.wcd	23,006,372	10/6/2014	
0622_20141006_220349_EX1404L3_MB.wcd	7,383,378	10/6/2014	
0623_20141006_220503_EX1404L3_MB.wcd	26,275,546	10/6/2014	
0624_20141006_220938_EX1404L3_MB.wcd	26,987,444	10/6/2014	
0625_20141006_221418_EX1404L3_MB.wcd	29,336,236	10/6/2014	
0626_20141006_221931_EX1404L3_MB.wcd	32,328,216	10/6/2014	
0627_20141006_222511_EX1404L3_MB.wcd	26,150,824	10/6/2014	
0628_20141006_222951_EX1404L3_MB.wcd	28,126,416	10/6/2014	
0629_20141006_223456_EX1404L3_MB.wcd	58,454,510	10/6/2014	
0630_20141006_224525_EX1404L3_MB.wcd	119,737,546	10/6/2014	
0631_20141006_231524_EX1404L3_MB.wcd	188,894,952	10/6/2014	
0632_20141006_234522_EX1404L3_MB.wcd	446,084,674	10/6/2014	
0633_20141007_001522_EX1404L3_MB.wcd	504,192,618	10/6/2014	
0634_20141007_004522_EX1404L3_MB.wcd	499,221,280	10/6/2014	
0635_20141007_011522_EX1404L3_MB.wcd	500,662,690	10/6/2014	
0636_20141007_014522_EX1404L3_MB.wcd	503,326,890	10/6/2014	
0637_20141007_021522_EX1404L3_MB.wcd	501,452,206	10/6/2014	
0638_20141007_024521_EX1404L3_MB.wcd	497,252,710	10/6/2014	
0639_20141007_031522_EX1404L3_MB.wcd	411,981,320	10/6/2014	

EX-14-04 Leg III Knudsen Subbottom Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments

EX-14-04 Leg III Knudsen Subbottom Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
EX1404L3_EK60_-D20140919-T042405.bot	13,528	9/19/2014	
EX1404L3_EK60_-D20140919-T042405.idx	23,032	9/19/2014	
EX1404L3_EK60_-D20140919-T042405.raw	52,471,312	9/19/2014	
EX1404L3_EK60_-D20140919-T052514.bot	13,496	9/19/2014	
EX1404L3_EK60_-D20140919-T052514.idx	22,976	9/19/2014	
EX1404L3_EK60_-D20140919-T052514.raw	52,497,116	9/19/2014	
EX1404L3_EK60_-D20140919-T062655.bot	13,496	9/19/2014	
EX1404L3_EK60_-D20140919-T062655.idx	22,976	9/19/2014	
EX1404L3_EK60_-D20140919-T062655.raw	52,508,432	9/19/2014	
EX1404L3_EK60_-D20140919-T072846.bot	13,464	9/19/2014	
EX1404L3_EK60_-D20140919-T072846.idx	22,920	9/19/2014	
EX1404L3_EK60_-D20140919-T072846.raw	52,513,040	9/19/2014	
EX1404L3_EK60_-D20140919-T083208.bot	13,272	9/19/2014	
EX1404L3_EK60_-D20140919-T083208.idx	22,584	9/19/2014	
EX1404L3_EK60_-D20140919-T083208.raw	52,436,656	9/19/2014	
EX1404L3_EK60_-D20140919-T094321.bot	7,096	9/19/2014	
EX1404L3_EK60_-D20140919-T094321.idx	11,776	9/19/2014	
EX1404L3_EK60_-D20140919-T094321.raw	26,391,764	9/19/2014	
EX1404L3_EK60_-D20140919-T220900.bot	13,304	9/19/2014	
EX1404L3_EK60_-D20140919-T220900.idx	22,640	9/19/2014	
EX1404L3_EK60_-D20140919-T220900.raw	52,526,600	9/19/2014	
EX1404L3_EK60_-D20140919-T231954.bot	2,328	9/19/2014	
EX1404L3_EK60_-D20140919-T231954.idx	3,432	9/19/2014	
EX1404L3_EK60_-D20140919-T231954.raw	6,214,392	9/19/2014	
EX1404L3_EK60_-D20140919-T235907.bot	1,432	9/19/2014	
EX1404L3_EK60_-D20140919-T235907.idx	1,864	9/19/2014	
EX1404L3_EK60_-D20140919-T235907.raw	2,372,784	9/19/2014	
EX1404L3_EK60_-D20140920-T000357.bot	34,232	9/19/2014	
EX1404L3_EK60_-D20140920-T000357.idx	59,264	9/19/2014	

EX-14-04 Leg III Knudsen Subbottom Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
EX1404L3_EK60_-D20140920-T000357.raw	52,443,536	9/19/2014	
EX1404L3_EK60_-D20140920-T032040.bot	52,152	9/20/2014	
EX1404L3_EK60_-D20140920-T032040.idx	90,624	9/20/2014	
EX1404L3_EK60_-D20140920-T032040.raw	52,456,688	9/20/2014	
EX1404L3_EK60_-D20140920-T081103.bot	15,960	9/20/2014	
EX1404L3_EK60_-D20140920-T081103.idx	27,288	9/20/2014	
EX1404L3_EK60_-D20140920-T081103.raw	39,929,560	9/20/2014	
EX1404L3_EK60_-D20140920-T212037.bot	20,376	9/20/2014	
EX1404L3_EK60_-D20140920-T212037.idx	35,016	9/20/2014	
EX1404L3_EK60_-D20140920-T212037.raw	52,492,364	9/20/2014	
EX1404L3_EK60_-D20140920-T231015.bot	19,224	9/20/2014	
EX1404L3_EK60_-D20140920-T231015.idx	33,000	9/20/2014	
EX1404L3_EK60_-D20140920-T231015.raw	52,505,472	9/20/2014	
EX1404L3_EK60_-D20140921-T013047.bot	19,992	9/20/2014	
EX1404L3_EK60_-D20140921-T013047.idx	34,344	9/20/2014	
EX1404L3_EK60_-D20140921-T013047.raw	52,481,404	9/20/2014	
EX1404L3_EK60_-D20140921-T033007.bot	19,800	9/21/2014	
EX1404L3_EK60_-D20140921-T033007.idx	34,008	9/21/2014	
EX1404L3_EK60_-D20140921-T033007.raw	52,472,300	9/21/2014	
EX1404L3_EK60_-D20140921-T053446.bot	20,760	9/21/2014	
EX1404L3_EK60_-D20140921-T053446.idx	35,688	9/21/2014	
EX1404L3_EK60_-D20140921-T053446.raw	52,429,348	9/21/2014	
EX1404L3_EK60_-D20140921-T071243.bot	19,544	9/21/2014	
EX1404L3_EK60_-D20140921-T071243.idx	33,560	9/21/2014	
EX1404L3_EK60_-D20140921-T071243.raw	52,440,368	9/21/2014	
EX1404L3_EK60_-D20140921-T092337.bot	6,616	9/21/2014	
EX1404L3_EK60_-D20140921-T092337.idx	10,936	9/21/2014	
EX1404L3_EK60_-D20140921-T092337.raw	15,703,792	9/21/2014	
EX1404L3_EK60_-D20140921-T211730.bot	19,480	9/21/2014	

EX-14-04 Leg III Knudsen Subbottom Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
EX1404L3_EK60_-D20140921-T211730.idx	33,448	9/21/2014	
EX1404L3_EK60_-D20140921-T211730.raw	52,492,316	9/21/2014	
EX1404L3_EK60_-D20140921-T231316.bot	19,704	9/21/2014	
EX1404L3_EK60_-D20140921-T231316.idx	33,840	9/21/2014	
EX1404L3_EK60_-D20140921-T231316.raw	52,461,004	9/21/2014	
EX1404L3_EK60_-D20140922-T012017.bot	19,928	9/21/2014	
EX1404L3_EK60_-D20140922-T012017.idx	34,232	9/21/2014	
EX1404L3_EK60_-D20140922-T012017.raw	52,492,136	9/21/2014	
EX1404L3_EK60_-D20140922-T032140.bot	19,992	9/22/2014	
EX1404L3_EK60_-D20140922-T032140.idx	34,344	9/22/2014	
EX1404L3_EK60_-D20140922-T032140.raw	52,440,880	9/22/2014	
EX1404L3_EK60_-D20140922-T052033.bot	29,720	9/22/2014	
EX1404L3_EK60_-D20140922-T052033.idx	51,368	9/22/2014	
EX1404L3_EK60_-D20140922-T052033.raw	52,452,652	9/22/2014	
EX1404L3_EK60_-D20140922-T080941.bot	19,960	9/22/2014	
EX1404L3_EK60_-D20140922-T080941.idx	34,288	9/22/2014	
EX1404L3_EK60_-D20140922-T080941.raw	52,075,200	9/22/2014	
EX1404L3_EK60_-D20140922-T103026.bot	19,672	9/22/2014	
EX1404L3_EK60_-D20140922-T103026.idx	33,784	9/22/2014	
EX1404L3_EK60_-D20140922-T103026.raw	52,498,948	9/22/2014	
EX1404L3_EK60_-D20140922-T123906.bot	20,024	9/22/2014	
EX1404L3_EK60_-D20140922-T123906.idx	34,400	9/22/2014	
EX1404L3_EK60_-D20140922-T123906.raw	52,443,968	9/22/2014	
EX1404L3_EK60_-D20140922-T143718.bot	19,928	9/22/2014	
EX1404L3_EK60_-D20140922-T143718.idx	34,232	9/22/2014	
EX1404L3_EK60_-D20140922-T143718.raw	52,518,296	9/22/2014	
EX1404L3_EK60_-D20140922-T163834.bot	3,736	9/22/2014	
EX1404L3_EK60_-D20140922-T163834.idx	5,896	9/22/2014	
EX1404L3_EK60_-D20140922-T163834.raw	8,236,012	9/22/2014	

EX-14-04 Leg III Knudsen Subbottom Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
EX1404L3_EK60_-D20140922-T172640.bot	19,288	9/22/2014	
EX1404L3_EK60_-D20140922-T172640.idx	33,112	9/22/2014	
EX1404L3_EK60_-D20140922-T172640.raw	52,465,620	9/22/2014	
EX1404L3_EK60_-D20140922-T194504.bot	20,088	9/22/2014	
EX1404L3_EK60_-D20140922-T194504.idx	34,512	9/22/2014	
EX1404L3_EK60_-D20140922-T194504.raw	52,470,764	9/22/2014	
EX1404L3_EK60_-D20140922-T214157.bot	17,656	9/22/2014	
EX1404L3_EK60_-D20140922-T214157.idx	30,256	9/22/2014	
EX1404L3_EK60_-D20140922-T214157.raw	52,516,184	9/22/2014	
EX1404L3_EK60_-D20140922-T232653.bot	19,992	9/22/2014	
EX1404L3_EK60_-D20140922-T232653.idx	34,344	9/22/2014	
EX1404L3_EK60_-D20140922-T232653.raw	52,447,756	9/22/2014	
EX1404L3_EK60_-D20140923-T012629.bot	19,960	9/22/2014	
EX1404L3_EK60_-D20140923-T012629.idx	34,288	9/22/2014	
EX1404L3_EK60_-D20140923-T012629.raw	52,435,460	9/22/2014	
EX1404L3_EK60_-D20140923-T032651.bot	19,960	9/23/2014	
EX1404L3_EK60_-D20140923-T032651.idx	34,288	9/23/2014	
EX1404L3_EK60_-D20140923-T032651.raw	52,439,316	9/23/2014	
EX1404L3_EK60_-D20140923-T052716.bot	20,184	9/23/2014	
EX1404L3_EK60_-D20140923-T052716.idx	34,680	9/23/2014	
EX1404L3_EK60_-D20140923-T052716.raw	52,497,864	9/23/2014	
EX1404L3_EK60_-D20140923-T072221.bot	20,472	9/23/2014	
EX1404L3_EK60_-D20140923-T072221.idx	35,184	9/23/2014	
EX1404L3_EK60_-D20140923-T072221.raw	52,481,332	9/23/2014	
EX1404L3_EK60_-D20140923-T090910.bot	6,648	9/23/2014	
EX1404L3_EK60_-D20140923-T090910.idx	10,992	9/23/2014	
EX1404L3_EK60_-D20140923-T090910.raw	15,916,044	9/23/2014	
EX1404L3_EK60_-D20140923-T225657.bot	46,104	9/23/2014	
EX1404L3_EK60_-D20140923-T225657.idx	80,040	9/23/2014	

EX-14-04 Leg III Knudsen Subbottom Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
EX1404L3_EK60_-D20140923-T225657.raw	52,439,772	9/23/2014	
EX1404L3_EK60_-D20140924-T035940.bot	50,456	9/24/2014	
EX1404L3_EK60_-D20140924-T035940.idx	87,656	9/24/2014	
EX1404L3_EK60_-D20140924-T035940.raw	52,460,436	9/24/2014	
EX1404L3_EK60_-D20140924-T090215.bot	9,368	9/24/2014	
EX1404L3_EK60_-D20140924-T090215.idx	15,752	9/24/2014	
EX1404L3_EK60_-D20140924-T090215.raw	9,987,668	9/24/2014	
EX1404L3_EK60_-D20140924-T161612.bot	36,600	9/24/2014	
EX1404L3_EK60_-D20140924-T161612.idx	63,408	9/24/2014	
EX1404L3_EK60_-D20140924-T161612.raw	52,447,708	9/24/2014	
EX1404L3_EK60_-D20140924-T201754.bot	32,504	9/24/2014	
EX1404L3_EK60_-D20140924-T201754.idx	56,240	9/24/2014	
EX1404L3_EK60_-D20140924-T201754.raw	52,430,752	9/24/2014	
EX1404L3_EK60_-D20140924-T234710.bot	34,648	9/24/2014	
EX1404L3_EK60_-D20140924-T234710.idx	59,992	9/24/2014	
EX1404L3_EK60_-D20140924-T234710.raw	52,457,948	9/24/2014	
EX1404L3_EK60_-D20140925-T024659.bot	33,976	9/25/2014	
EX1404L3_EK60_-D20140925-T024659.idx	58,816	9/25/2014	
EX1404L3_EK60_-D20140925-T024659.raw	52,473,048	9/25/2014	
EX1404L3_EK60_-D20140925-T055637.bot	34,200	9/25/2014	
EX1404L3_EK60_-D20140925-T055637.idx	59,208	9/25/2014	
EX1404L3_EK60_-D20140925-T055637.raw	52,464,628	9/25/2014	
EX1404L3_EK60_-D20140925-T090301.bot	11,352	9/25/2014	
EX1404L3_EK60_-D20140925-T090301.idx	19,224	9/25/2014	
EX1404L3_EK60_-D20140925-T090301.raw	16,549,220	9/25/2014	
EX1404L3_EK60_-D20140925-T220919.bot	34,232	9/25/2014	
EX1404L3_EK60_-D20140925-T220919.idx	59,264	9/25/2014	
EX1404L3_EK60_-D20140925-T220919.raw	52,467,696	9/25/2014	
EX1404L3_EK60_-D20140926-T011411.bot	33,016	9/26/2014	

EX-14-04 Leg III Knudsen Subbottom Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
EX1404L3_EK60_-D20140926-T011411.idx	57,136	9/26/2014	
EX1404L3_EK60_-D20140926-T011411.raw	52,453,384	9/26/2014	
EX1404L3_EK60_-D20140926-T043426.bot	33,016	9/26/2014	
EX1404L3_EK60_-D20140926-T043426.idx	57,136	9/26/2014	
EX1404L3_EK60_-D20140926-T043426.raw	52,440,656	9/26/2014	
EX1404L3_EK60_-D20140926-T075504.bot	24,056	9/26/2014	
EX1404L3_EK60_-D20140926-T075504.idx	41,456	9/26/2014	
EX1404L3_EK60_-D20140926-T075504.raw	35,632,272	9/26/2014	
EX1404L3_EK60_-D20140926-T161558.bot	34,232	9/26/2014	
EX1404L3_EK60_-D20140926-T161558.idx	59,264	9/26/2014	
EX1404L3_EK60_-D20140926-T161558.raw	52,433,808	9/26/2014	
EX1404L3_EK60_-D20140926-T191955.bot	34,136	9/26/2014	
EX1404L3_EK60_-D20140926-T191955.idx	59,096	9/26/2014	
EX1404L3_EK60_-D20140926-T191955.raw	52,453,152	9/26/2014	
EX1404L3_EK60_-D20140926-T222518.bot	34,488	9/26/2014	
EX1404L3_EK60_-D20140926-T222518.idx	59,712	9/26/2014	
EX1404L3_EK60_-D20140926-T222518.raw	52,476,300	9/26/2014	
EX1404L3_EK60_-D20140927-T012625.bot	34,552	9/27/2014	
EX1404L3_EK60_-D20140927-T012625.idx	59,824	9/27/2014	
EX1404L3_EK60_-D20140927-T012625.raw	52,443,952	9/27/2014	
EX1404L3_EK60_-D20140927-T042641.bot	34,552	9/27/2014	
EX1404L3_EK60_-D20140927-T042641.idx	59,824	9/27/2014	
EX1404L3_EK60_-D20140927-T042641.raw	52,439,812	9/27/2014	
EX1404L3_EK60_-D20140927-T072647.bot	26,392	9/27/2014	
EX1404L3_EK60_-D20140927-T072647.idx	45,544	9/27/2014	
EX1404L3_EK60_-D20140927-T072647.raw	40,422,900	9/27/2014	
EX1404L3_EK60_-D20140928-T003214.bot	17,496	9/27/2014	
EX1404L3_EK60_-D20140928-T003214.idx	29,976	9/27/2014	
EX1404L3_EK60_-D20140928-T003214.raw	52,472,400	9/27/2014	

EX-14-04 Leg III Knudsen Subbottom Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
EX1404L3_EK60_-D20140928-T022012.bot	13,176	9/27/2014	
EX1404L3_EK60_-D20140928-T022012.idx	22,416	9/27/2014	
EX1404L3_EK60_-D20140928-T022012.raw	52,565,368	9/27/2014	
EX1404L3_EK60_-D20140928-T033716.bot	16,568	9/28/2014	
EX1404L3_EK60_-D20140928-T033716.idx	28,352	9/28/2014	
EX1404L3_EK60_-D20140928-T033716.raw	52,443,196	9/28/2014	
EX1404L3_EK60_-D20140928-T050707.bot	20,024	9/28/2014	
EX1404L3_EK60_-D20140928-T050707.idx	34,400	9/28/2014	
EX1404L3_EK60_-D20140928-T050707.raw	52,435,308	9/28/2014	
EX1404L3_EK60_-D20140928-T070529.bot	19,864	9/28/2014	
EX1404L3_EK60_-D20140928-T070529.idx	34,120	9/28/2014	
EX1404L3_EK60_-D20140928-T070529.raw	52,505,568	9/28/2014	
EX1404L3_EK60_-D20140928-T090839.bot	6,232	9/28/2014	
EX1404L3_EK60_-D20140928-T090839.idx	10,264	9/28/2014	
EX1404L3_EK60_-D20140928-T090839.raw	15,052,976	9/28/2014	
EX1404L3_EK60_-D20140928-T212719.bot	19,864	9/28/2014	
EX1404L3_EK60_-D20140928-T212719.idx	34,120	9/28/2014	
EX1404L3_EK60_-D20140928-T212719.raw	52,445,628	9/28/2014	
EX1404L3_EK60_-D20140928-T232939.bot	20,088	9/28/2014	
EX1404L3_EK60_-D20140928-T232939.idx	34,512	9/28/2014	
EX1404L3_EK60_-D20140928-T232939.raw	52,442,492	9/28/2014	
EX1404L3_EK60_-D20140929-T012546.bot	20,248	9/28/2014	
EX1404L3_EK60_-D20140929-T012546.idx	34,792	9/28/2014	
EX1404L3_EK60_-D20140929-T012546.raw	52,447,796	9/28/2014	
EX1404L3_EK60_-D20140929-T031748.bot	20,312	9/29/2014	
EX1404L3_EK60_-D20140929-T031748.idx	34,904	9/29/2014	
EX1404L3_EK60_-D20140929-T031748.raw	52,431,068	9/29/2014	
EX1404L3_EK60_-D20140929-T050739.bot	20,376	9/29/2014	
EX1404L3_EK60_-D20140929-T050739.idx	35,016	9/29/2014	

EX-14-04 Leg III Knudsen Subbottom Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
EX1404L3_EK60_-D20140929-T050739.raw	52,435,108	9/29/2014	
EX1404L3_EK60_-D20140929-T065557.bot	20,184	9/29/2014	
EX1404L3_EK60_-D20140929-T065557.idx	34,680	9/29/2014	
EX1404L3_EK60_-D20140929-T065557.raw	52,470,260	9/29/2014	
EX1404L3_EK60_-D20140929-T085022.bot	10,008	9/29/2014	
EX1404L3_EK60_-D20140929-T085022.idx	16,872	9/29/2014	
EX1404L3_EK60_-D20140929-T085022.raw	25,351,760	9/29/2014	
EX1404L3_EK60_-D20140929-T130154.bot	20,344	9/29/2014	
EX1404L3_EK60_-D20140929-T130154.idx	34,960	9/29/2014	
EX1404L3_EK60_-D20140929-T130154.raw	52,459,264	9/29/2014	
EX1404L3_EK60_-D20140929-T145057.bot	7,064	9/29/2014	
EX1404L3_EK60_-D20140929-T145057.idx	11,720	9/29/2014	
EX1404L3_EK60_-D20140929-T145057.raw	17,115,696	9/29/2014	
EX1404L3_EK60_-D20140930-T003054.bot	32,984	9/29/2014	
EX1404L3_EK60_-D20140930-T003054.idx	57,080	9/29/2014	
EX1404L3_EK60_-D20140930-T003054.raw	52,465,696	9/29/2014	
EX1404L3_EK60_-D20140930-T033315.bot	33,048	9/30/2014	
EX1404L3_EK60_-D20140930-T033315.idx	57,192	9/30/2014	
EX1404L3_EK60_-D20140930-T033315.raw	52,442,368	9/30/2014	
EX1404L3_EK60_-D20140930-T065344.bot	29,688	9/30/2014	
EX1404L3_EK60_-D20140930-T065344.idx	51,312	9/30/2014	
EX1404L3_EK60_-D20140930-T065344.raw	45,120,244	9/30/2014	
EX1404L3_EK60_-D20141001-T001604.bot	31,736	9/30/2014	
EX1404L3_EK60_-D20141001-T001604.idx	54,896	9/30/2014	
EX1404L3_EK60_-D20141001-T001604.raw	52,475,908	9/30/2014	
EX1404L3_EK60_-D20141001-T035321.bot	31,320	10/1/2014	
EX1404L3_EK60_-D20141001-T035321.idx	54,168	10/1/2014	
EX1404L3_EK60_-D20141001-T035321.raw	52,447,684	10/1/2014	
EX1404L3_EK60_-D20141001-T073620.bot	19,960	10/1/2014	

EX-14-04 Leg III Knudsen Subbottom Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
EX1404L3_EK60_-D20141001-T073620.idx	34,288	10/1/2014	
EX1404L3_EK60_-D20141001-T073620.raw	34,275,052	10/1/2014	
EX1404L3_EK60_-D20141001-T201852.bot	15,928	10/1/2014	
EX1404L3_EK60_-D20141001-T201852.idx	27,232	10/1/2014	
EX1404L3_EK60_-D20141001-T201852.raw	27,177,008	10/1/2014	
EX1404L3_EK60_-D20141001-T222520.bot	31,864	10/1/2014	
EX1404L3_EK60_-D20141001-T222520.idx	55,120	10/1/2014	
EX1404L3_EK60_-D20141001-T222520.raw	52,444,032	10/1/2014	
EX1404L3_EK60_-D20141002-T020122.bot	22,040	10/2/2014	
EX1404L3_EK60_-D20141002-T020122.idx	37,928	10/2/2014	
EX1404L3_EK60_-D20141002-T020122.raw	52,522,324	10/2/2014	
EX1404L3_EK60_-D20141002-T040227.bot	13,464	10/2/2014	
EX1404L3_EK60_-D20141002-T040227.idx	22,920	10/2/2014	
EX1404L3_EK60_-D20141002-T040227.raw	52,438,568	10/2/2014	
EX1404L3_EK60_-D20141002-T050523.bot	3,192	10/2/2014	
EX1404L3_EK60_-D20141002-T050523.idx	4,944	10/2/2014	
EX1404L3_EK60_-D20141002-T050523.raw	9,728,108	10/2/2014	
EX1404L3_EK60_-D20141002-T053207.bot	13,880	10/2/2014	
EX1404L3_EK60_-D20141002-T053207.idx	23,648	10/2/2014	
EX1404L3_EK60_-D20141002-T053207.raw	52,556,992	10/2/2014	
EX1404L3_EK60_-D20141002-T063635.bot	13,464	10/2/2014	
EX1404L3_EK60_-D20141002-T063635.idx	22,920	10/2/2014	
EX1404L3_EK60_-D20141002-T063635.raw	52,464,832	10/2/2014	
EX1404L3_EK60_-D20141002-T073845.bot	13,496	10/2/2014	
EX1404L3_EK60_-D20141002-T073845.idx	22,976	10/2/2014	
EX1404L3_EK60_-D20141002-T073845.raw	52,557,652	10/2/2014	
EX1404L3_EK60_-D20141002-T084036.bot	13,496	10/2/2014	
EX1404L3_EK60_-D20141002-T084036.idx	22,976	10/2/2014	
EX1404L3_EK60_-D20141002-T084036.raw	52,529,560	10/2/2014	

EX-14-04 Leg III Knudsen Subbottom Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
EX1404L3_EK60_-D20141002-T094210.bot	13,496	10/2/2014	
EX1404L3_EK60_-D20141002-T094210.idx	22,976	10/2/2014	
EX1404L3_EK60_-D20141002-T094210.raw	52,532,244	10/2/2014	
EX1404L3_EK60_-D20141002-T104348.bot	13,496	10/2/2014	
EX1404L3_EK60_-D20141002-T104348.idx	22,976	10/2/2014	
EX1404L3_EK60_-D20141002-T104348.raw	52,524,580	10/2/2014	
EX1404L3_EK60_-D20141002-T114517.bot	13,496	10/2/2014	
EX1404L3_EK60_-D20141002-T114517.idx	22,976	10/2/2014	
EX1404L3_EK60_-D20141002-T114517.raw	52,524,644	10/2/2014	
EX1404L3_EK60_-D20141002-T124644.bot	13,496	10/2/2014	
EX1404L3_EK60_-D20141002-T124644.idx	22,976	10/2/2014	
EX1404L3_EK60_-D20141002-T124644.raw	52,524,144	10/2/2014	
EX1404L3_EK60_-D20141002-T134812.bot	13,496	10/2/2014	
EX1404L3_EK60_-D20141002-T134812.idx	22,976	10/2/2014	
EX1404L3_EK60_-D20141002-T134812.raw	52,525,208	10/2/2014	
EX1404L3_EK60_-D20141002-T144938.bot	13,496	10/2/2014	
EX1404L3_EK60_-D20141002-T144938.idx	22,976	10/2/2014	
EX1404L3_EK60_-D20141002-T144938.raw	52,540,484	10/2/2014	
EX1404L3_EK60_-D20141002-T155116.bot	13,496	10/2/2014	
EX1404L3_EK60_-D20141002-T155116.idx	22,976	10/2/2014	
EX1404L3_EK60_-D20141002-T155116.raw	52,518,544	10/2/2014	
EX1404L3_EK60_-D20141002-T165236.bot	2,456	10/2/2014	
EX1404L3_EK60_-D20141002-T165236.idx	3,656	10/2/2014	
EX1404L3_EK60_-D20141002-T165236.raw	6,642,864	10/2/2014	
EX1404L3_EK60_-D20141003-T153630.bot	920	10/3/2014	
EX1404L3_EK60_-D20141003-T153630.idx	968	10/3/2014	
EX1404L3_EK60_-D20141003-T153630.raw	135,476	10/3/2014	
EX1404L3_EK60_-D20141003-T153719.bot	5,304	10/3/2014	
EX1404L3_EK60_-D20141003-T153719.idx	8,640	10/3/2014	

EX-14-04 Leg III Knudsen Subbottom Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
EX1404L3_EK60_-D20141003-T153719.raw	18,281,164	10/3/2014	
EX1404L3_EK60_-D20141003-T160129.bot	920	10/3/2014	
EX1404L3_EK60_-D20141003-T160129.idx	968	10/3/2014	
EX1404L3_EK60_-D20141003-T160129.raw	139,460	10/3/2014	
EX1404L3_EK60_-D20141003-T160339.bot	6,360	10/3/2014	
EX1404L3_EK60_-D20141003-T160339.idx	10,488	10/3/2014	
EX1404L3_EK60_-D20141003-T160339.raw	22,790,560	10/3/2014	
EX1404L3_EK60_-D20141003-T233744.bot	13,560	10/3/2014	
EX1404L3_EK60_-D20141003-T233744.idx	23,088	10/3/2014	
EX1404L3_EK60_-D20141003-T233744.raw	52,540,432	10/3/2014	
EX1404L3_EK60_-D20141004-T003913.bot	13,496	10/3/2014	
EX1404L3_EK60_-D20141004-T003913.idx	22,976	10/3/2014	
EX1404L3_EK60_-D20141004-T003913.raw	52,471,532	10/3/2014	
EX1404L3_EK60_-D20141004-T014022.bot	13,496	10/3/2014	
EX1404L3_EK60_-D20141004-T014022.idx	22,976	10/3/2014	
EX1404L3_EK60_-D20141004-T014022.raw	52,485,444	10/3/2014	
EX1404L3_EK60_-D20141004-T024142.bot	13,496	10/3/2014	
EX1404L3_EK60_-D20141004-T024142.idx	22,976	10/3/2014	
EX1404L3_EK60_-D20141004-T024142.raw	52,486,092	10/3/2014	
EX1404L3_EK60_-D20141004-T034259.bot	13,496	10/4/2014	
EX1404L3_EK60_-D20141004-T034259.idx	22,976	10/4/2014	
EX1404L3_EK60_-D20141004-T034259.raw	52,479,644	10/4/2014	
EX1404L3_EK60_-D20141004-T044414.bot	13,464	10/4/2014	
EX1404L3_EK60_-D20141004-T044414.idx	22,920	10/4/2014	
EX1404L3_EK60_-D20141004-T044414.raw	52,437,068	10/4/2014	
EX1404L3_EK60_-D20141004-T054628.bot	13,496	10/4/2014	
EX1404L3_EK60_-D20141004-T054628.idx	22,976	10/4/2014	
EX1404L3_EK60_-D20141004-T054628.raw	52,504,924	10/4/2014	
EX1404L3_EK60_-D20141004-T064802.bot	13,432	10/4/2014	

EX-14-04 Leg III Knudsen Subbottom Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
EX1404L3_EK60_-D20141004-T064802.idx	22,864	10/4/2014	
EX1404L3_EK60_-D20141004-T064802.raw	52,494,608	10/4/2014	
EX1404L3_EK60_-D20141004-T075222.bot	13,368	10/4/2014	
EX1404L3_EK60_-D20141004-T075222.idx	22,752	10/4/2014	
EX1404L3_EK60_-D20141004-T075222.raw	52,433,048	10/4/2014	
EX1404L3_EK60_-D20141004-T085851.bot	9,624	10/4/2014	
EX1404L3_EK60_-D20141004-T085851.idx	16,200	10/4/2014	
EX1404L3_EK60_-D20141004-T085851.raw	37,049,792	10/4/2014	
EX1404L3_EK60_-D20141004-T183243.bot	13,272	10/4/2014	
EX1404L3_EK60_-D20141004-T183243.idx	22,584	10/4/2014	
EX1404L3_EK60_-D20141004-T183243.raw	52,474,296	10/4/2014	
EX1404L3_EK60_-D20141004-T194458.bot	1,272	10/4/2014	
EX1404L3_EK60_-D20141004-T194458.idx	1,584	10/4/2014	
EX1404L3_EK60_-D20141004-T194458.raw	1,768,692	10/4/2014	
EX1404L3_EK60_-D20141004-T195158.bot	13,336	10/4/2014	
EX1404L3_EK60_-D20141004-T195158.idx	22,696	10/4/2014	
EX1404L3_EK60_-D20141004-T195158.raw	52,537,732	10/4/2014	
EX1404L3_EK60_-D20141004-T210215.bot	13,304	10/4/2014	
EX1404L3_EK60_-D20141004-T210215.idx	22,640	10/4/2014	
EX1404L3_EK60_-D20141004-T210215.raw	52,502,308	10/4/2014	
EX1404L3_EK60_-D20141004-T221259.bot	13,336	10/4/2014	
EX1404L3_EK60_-D20141004-T221259.idx	22,696	10/4/2014	
EX1404L3_EK60_-D20141004-T221259.raw	52,482,028	10/4/2014	
EX1404L3_EK60_-D20141004-T232143.bot	13,048	10/4/2014	
EX1404L3_EK60_-D20141004-T232143.idx	22,192	10/4/2014	
EX1404L3_EK60_-D20141004-T232143.raw	52,480,556	10/4/2014	
EX1404L3_EK60_-D20141005-T004326.bot	12,728	10/4/2014	
EX1404L3_EK60_-D20141005-T004326.idx	21,632	10/4/2014	
EX1404L3_EK60_-D20141005-T004326.raw	52,570,768	10/4/2014	

EX-14-04 Leg III Knudsen Subbottom Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
EX1404L3_EK60_-D20141005-T022108.bot	12,760	10/4/2014	
EX1404L3_EK60_-D20141005-T022108.idx	21,688	10/4/2014	
EX1404L3_EK60_-D20141005-T022108.raw	52,496,036	10/4/2014	
EX1404L3_EK60_-D20141005-T035626.bot	13,144	10/5/2014	
EX1404L3_EK60_-D20141005-T035626.idx	22,360	10/5/2014	
EX1404L3_EK60_-D20141005-T035626.raw	52,490,800	10/5/2014	
EX1404L3_EK60_-D20141005-T051416.bot	13,336	10/5/2014	
EX1404L3_EK60_-D20141005-T051416.idx	22,696	10/5/2014	
EX1404L3_EK60_-D20141005-T051416.raw	52,450,316	10/5/2014	
EX1404L3_EK60_-D20141005-T062304.bot	13,304	10/5/2014	
EX1404L3_EK60_-D20141005-T062304.idx	22,640	10/5/2014	
EX1404L3_EK60_-D20141005-T062304.raw	52,523,388	10/5/2014	
EX1404L3_EK60_-D20141005-T073403.bot	13,208	10/5/2014	
EX1404L3_EK60_-D20141005-T073403.idx	22,472	10/5/2014	
EX1404L3_EK60_-D20141005-T073403.raw	52,436,560	10/5/2014	
EX1404L3_EK60_-D20141005-T084811.bot	4,760	10/5/2014	
EX1404L3_EK60_-D20141005-T084811.idx	7,688	10/5/2014	
EX1404L3_EK60_-D20141005-T084811.raw	14,912,564	10/5/2014	
EX1404L3_EK60_-D20141005-T102322.bot	13,432	10/5/2014	
EX1404L3_EK60_-D20141005-T102322.idx	22,864	10/5/2014	
EX1404L3_EK60_-D20141005-T102322.raw	52,461,844	10/5/2014	
EX1404L3_EK60_-D20141005-T112740.bot	13,464	10/5/2014	
EX1404L3_EK60_-D20141005-T112740.idx	22,920	10/5/2014	
EX1404L3_EK60_-D20141005-T112740.raw	52,466,992	10/5/2014	
EX1404L3_EK60_-D20141005-T123015.bot	5,240	10/5/2014	
EX1404L3_EK60_-D20141005-T123015.idx	8,528	10/5/2014	
EX1404L3_EK60_-D20141005-T123015.raw	18,225,860	10/5/2014	
EX1404L3_EK60_-D20141005-T125216.bot	952	10/5/2014	
EX1404L3_EK60_-D20141005-T125216.idx	1,024	10/5/2014	

EX-14-04 Leg III Knudsen Subbottom Data Log			
File Name	File Size (bytes)	Collection Date (Local)	Comments
EX1404L3_EK60_-D20141005-T125216.raw	286,112	10/5/2014	
EX1404L3_EK60_-D20141005-T125321.bot	13,496	10/5/2014	
EX1404L3_EK60_-D20141005-T125321.idx	22,976	10/5/2014	
EX1404L3_EK60_-D20141005-T125321.raw	52,451,384	10/5/2014	
EX1404L3_EK60_-D20141005-T135531.bot	13,400	10/5/2014	
EX1404L3_EK60_-D20141005-T135531.idx	22,808	10/5/2014	
EX1404L3_EK60_-D20141005-T135531.raw	52,471,748	10/5/2014	
EX1404L3_EK60_-D20141005-T150108.bot	3,736	10/5/2014	
EX1404L3_EK60_-D20141005-T150108.idx	5,896	10/5/2014	
EX1404L3_EK60_-D20141005-T150108.raw	12,025,136	10/5/2014	
EX1404L3_EK60_-D20141005-T160254.bot	13,368	10/5/2014	
EX1404L3_EK60_-D20141005-T160254.idx	22,752	10/5/2014	
EX1404L3_EK60_-D20141005-T160254.raw	52,530,492	10/5/2014	
EX1404L3_EK60_-D20141005-T171042.bot	13,336	10/5/2014	
EX1404L3_EK60_-D20141005-T171042.idx	22,696	10/5/2014	
EX1404L3_EK60_-D20141005-T171042.raw	52,443,608	10/5/2014	
EX1404L3_EK60_-D20141005-T181852.bot	13,272	10/5/2014	
EX1404L3_EK60_-D20141005-T181852.idx	22,584	10/5/2014	
EX1404L3_EK60_-D20141005-T181852.raw	52,519,512	10/5/2014	
EX1404L3_EK60_-D20141005-T193056.bot	13,336	10/5/2014	
EX1404L3_EK60_-D20141005-T193056.idx	22,696	10/5/2014	
EX1404L3_EK60_-D20141005-T193056.raw	52,489,364	10/5/2014	
EX1404L3_EK60_-D20141005-T203946.bot	13,336	10/5/2014	
EX1404L3_EK60_-D20141005-T203946.idx	22,696	10/5/2014	
EX1404L3_EK60_-D20141005-T203946.raw	52,527,432	10/5/2014	
EX1404L3_EK60_-D20141005-T214915.bot	13,112	10/5/2014	
EX1404L3_EK60_-D20141005-T214915.idx	22,304	10/5/2014	
EX1404L3_EK60_-D20141005-T214915.raw	52,533,868	10/5/2014	
EX1404L3_EK60_-D20141005-T230905.bot	12,792	10/5/2014	

EX-14-04 Leg III Knudsen Subbottom Data Log			
File Name	**File Size (bytes)**	**Collection Date (Local)**	**Comments**
EX1404L3_EK60_-D20141005-T230905.idx	21,744	10/5/2014	
EX1404L3_EK60_-D20141005-T230905.raw	52,548,672	10/5/2014	
EX1404L3_EK60_-D20141006-T004345.bot	12,728	10/5/2014	
EX1404L3_EK60_-D20141006-T004345.idx	21,632	10/5/2014	
EX1404L3_EK60_-D20141006-T004345.raw	52,458,400	10/5/2014	
EX1404L3_EK60_-D20141006-T022016.bot	12,760	10/5/2014	
EX1404L3_EK60_-D20141006-T022016.idx	21,688	10/5/2014	
EX1404L3_EK60_-D20141006-T022016.raw	52,519,876	10/5/2014	
EX1404L3_EK60_-D20141006-T035603.bot	12,760	10/6/2014	
EX1404L3_EK60_-D20141006-T035603.idx	21,688	10/6/2014	

EX-14-04 Leg III Knudsen Subbottom Data Log			
File Name	**File Size (bytes)**	**Collection Date (Local)**	**Comments**
EX1404L3_EK60_-D20141006-T035603.raw	52,500,240	10/6/2014	
EX1404L3_EK60_-D20141006-T053145.bot	12,760	10/6/2014	
EX1404L3_EK60_-D20141006-T053145.idx	21,688	10/6/2014	
EX1404L3_EK60_-D20141006-T053145.raw	52,544,656	10/6/2014	
EX1404L3_EK60_-D20141006-T070809.bot	12,760	10/6/2014	
EX1404L3_EK60_-D20141006-T070809.idx	21,688	10/6/2014	
EX1404L3_EK60_-D20141006-T070809.raw	52,538,252	10/6/2014	
EX1404L3_EK60_-D20141006-T084420.bot	10,296	10/6/2014	
EX1404L3_EK60_-D20141006-T084420.idx	17,376	10/6/2014	
EX1404L3_EK60_-D20141006-T084420.raw	41,150,672	10/6/2014	

EX1404L3 SVP LOG						
DATE (UTC)	TIME (UTC)	XBT/CTD FILE NAME	LAT (WGS84) (dec min)	LONG (WGS84) (dec min)	PROBE TYPE	NOTES
9/19/2014	2:40:17	EX1404L3_XBT001_140919	37 3.66089N	75 6.80029W	Deep Blue	
9/19/2014	04:15:39	EX1404L3_XBT002_140919	37 14.16406N	74 51.66553W	Deep Blue	
9/19/2014	07:50:44	EX1404L3_XBT003_140919	37 38.89722N	74 15.9043W	Deep Blue	
9/19/2014	22:10:00	EX1404L3_XBT004_140919	38 1.41797N	73 44.64014W	Deep Blue	
9/20/2014	1:13:32	EX1404L3_XBT005_140920	38 16.09229N	73 25.58154W	Deep Blue	Error -- redo launch
9/20/2014	01:16:33	EX1404L3_XBT006_140920	38 16.35791N	73 25.23584W	Deep Blue	
9/20/2014	05:56:33	EX1404L3_XBT007_140920	38 41.28784N	72 52.94043W	Deep Blue	
9/20/2014	21:11:48	EX1404L3_XBT008_140921	39 0.71143N	72 27.11523W	Deep Blue	
9/21/2014	03:14:15	EX1404L3_XBT009_140921	39 0.63062N	71 56.54004W	Deep Blue	
9/21/2014	08:35:27	EX1404L3_XBT010_140921	39 34.91089N	71 26.21875W	Deep Blue	
9/21/2014	21:19:03	EX1404L3_XBT011_140921	39 41.85962N	71 36.05127W	Deep Blue	
9/22/2014	02:16:49	EX1404L3_XBT012_140922	39 29.62769N	71 30.125W	Deep Blue	
9/22/2014	16:34:13	EX1404L3_XBT013_140922	39 33.46509N	71 28.66455W	Deep Blue	
9/22/2014	22:07:27	EX1404L3_XBT014_140922	39 53.1792N	71 17.02393W	Deep Blue	
9/23/2014	03:01:11	EX1404L3_XBT015_140923	39 56.18481N	70 27.65137W	Deep Blue	
9/23/2014	07:12:50	EX1404L3_XBT016_140923	39 55.8623N	69 46.48828W	Deep Blue	
9/23/2014	23:05:46	EX1404L3_XBT017_140923	39 53.47119N	69 20.42627W	Deep Blue	
9/24/2014	06:05:05	EX1404L3_XBT018_140924	39 53.53223N	68 10.66309W	Deep Blue	
9/24/2014	16:10:41	EX1404L3_XBT019_140924	39 52.19458N	67 29.45264W	Deep Blue	
9/24/2014	21:51:27	EX1404L3_XBT020_140924	39 50.45264N	67 7.06934W	Deep Blue	

EX1404L3 SVP LOG						
DATE (UTC)	TIME (UTC)	XBT/CTD FILE NAME	LAT (WGS84) (dec min)	LONG (WGS84) (dec min)	PROBE TYPE	NOTES
9/25/2014	02:42:22	EX1404L3_XBT021_140925	39 43.97925N	66 37.34277W	Deep Blue	
9/25/2014	06:14:24	EX1404L3_XBT022_140925	39 48.375N	66 10.47461W	Deep Blue	
9/25/2014	22:00:38	EX1404L3_XBT023_140925	39 47.97583N	66 12.10645W	Deep Blue	
9/26/2014	02:48:20	EX1404L3_XBT024_140926	39 39.61987N	65 59.23877W	Deep Blue	
9/26/2014	06:07:26	EX1404L3_XBT025_140926	39 25.28955N	65 24.13477W	Deep Blue	
9/26/2014	16:08:47	EX1404L3_XBT026_140926	38 54.57251N	65 19.80029W	Deep Blue	
9/26/2014	21:13:58	EX1404L3_XBT027_140926	38 27.99023N	64 39.66943W	Deep Blue	
9/27/2014	06:41:04	EX1404L3_XBT028_140927	38 19.90894N	63 33.46094W	Deep Blue	
9/27/2014	07:38:36	EX1404L3_XBT029_140927	38 27.47583N	63 38.17969W	Deep Blue	
9/28/2014	00:24:49	EX1404L3_XBT030_140928	38 37.53223N	63 13.15869W	Deep Blue	
9/28/2014	04:04:29	EX1404L3_XBT031_140928	38 12.60327N	62 54.12598W	Deep Blue	
9/28/2014	06:59:42	EX1404L3_XBT032_140928	38 15.21948N	62 31.5415W	Deep Blue	
9/28/2014	21:03:31	EX1404L3_XBT033_140928	38 18.76245N	62 29.8418W	Deep Blue	
9/29/2014	01:19:44	EX1404L3_XBT034_140929	38 31.06128N	62 1.24707W	Deep Blue	
9/29/2014	05:38:32	EX1404L3_XBT035_140929	38 13.39819N	62 38.21875W	Deep Blue	
9/29/2014	12:57:02	EX1404L3_XBT036_140929	38 36.89209N	63 16.92139W	Deep Blue	
9/30/2014	00:21:58	EX1404L3_XBT037_140930	38 50.76636N	63 44.29395W	Deep Blue	
9/30/2014	04:18:45	EX1404L3_XBT038_140930	39 20.02588N	64 1.57324W	Deep Blue	
9/30/2014	06:43:33	EX1404L3_XBT039_140930	39 35.03882N	64 13.95752W	Deep Blue	
10/1/2014	00:06:02	EX1404L3_XBT040_140930	38 54.36816N	64 51.63428W	Deep Blue	
10/1/2014	04:11:55	EX1404L3_XBT041_141001	39 17.47021N	65 44.19238W	Deep Blue	

EX1404L3 SVP LOG						
DATE (UTC)	TIME (UTC)	XBT/CTD FILE NAME	LAT (WGS84) (dec min)	LONG (WGS84) (dec min)	PROBE TYPE	NOTES
10/1/2014	07:01:39	EX1404L3_XBT042_141001	39 32.08887N	39 32.08887N	Deep Blue	
10/1/2014	20:12:07	EX1404L3_XBT043_141001	39 49.80957N	66 52.0166W	Deep Blue	
10/1/2014	21:55:10	EX1404L3_XBT044_141001	39 57.6416N	67 4.80566W	Deep Blue	
10/2/2014	10:44:49	EX1404L3_XBT045_141002	40 20.82251N	69 7.18262W	Deep Blue	
10/3/2014	23:31:27	EX1404L3_XBT046_141003	40 58.85303N	70 45.9751W	Deep Blue	
10/4/2014	04:26:18	EX1404L3_XBT047_141004	40 18.64111N	71 14.33008W	Deep Blue	
10/4/2014	18:28:33	EX1404L3_XBT048_141004	39 40.63135N	71 37.46533W	Deep Blue	
10/4/2014	22:50:33	EX1404L3_XBT049_141004	39 31.51489N	71 52.93018W	Deep Blue	
10/5/2014	04:55:44	EX1404L3_XBT050_141005	39 30.67627N	71 46.97461W	Deep Blue	
10/5/2014	14:03:16	EX1404L3_XBT051_141005	39 31.98267N	72 20.77686W	Deep Blue	
10/5/2014	18:01:00	EX1404L3_XBT052_141005	39 29.76025N	72 17.9707W	Deep Blue	
10/6/2014	00:09:09	EX1404L3_XBT053_141006	39 27.05737N	71 25.99805W	Deep Blue	
10/6/2014	05:15:25	EX1404L3_XBT054_141006	39 37.521N	70 31.92529W	Deep Blue	
10/6/2014	22:00:01	EX1404L3_XBT055_141006	39 46.62573N	69 56.11963W	Deep Blue	

BIST FILE NAME	Date (Local)	TIME (Local)
EX1404L3_BIST_01.txt	9/15/2014	6:52 AM
EX1404L3_BIST_02.txt	9/15/2014	7:17 AM
EX1404L3_BIST_03.txt	9/15/2014	7:28 AM
EX1404L3_BIST_04_Failed.txt	9/15/2014	8:12 AM
EX1404L3_BIST_05.txt	9/15/2014	11:25 AM
EX1404L3_BIST_06.txt	9/15/2014	11:42 AM
EX1404L3_BIST_07.txt	9/16/2014	6:11 PM
EX1404L3_BIST_08.txt	9/18/2014	5:47 PM
EX1404L3_BIST_09.txt	9/20/2014	5:32 AM
EX1404L3_BIST_10.txt	9/20/2014	3:58 PM
EX1404L3_BIST_11.txt	9/21/2014	4:00 PM
EX1404L3_BIST_12.txt	9/23/2014	4:19 PM
EX1404L3_BIST_13.txt	9/26/2014	11:04 AM
EX1404L3_BIST_14.txt	9/27/2014	7:09 PM
EX1404L3_BIST_15.txt	9/28/2014	4:04 PM
EX1404L3_BIST_16.txt	9/29/2014	7:08 PM
EX1404L3_BIST_17.txt	9/30/2014	7:09 PM
EX1404L3_BIST_18.txt	10/1/2014	3:04 PM
EX1404L3_BIST_19.txt	10/4/2014	1:20 PM
EX1404L3_BIST_20.txt	10/6/2014	4:26 PM
EX1404L3_BIST_21_Final.txt	10/7/2014	6:52 AM
EX1404L3_PUparameters.txt	10/7/2014	8:06 AM

Appendix G: Kongsberg EM 302 Multibeam Sonar Description and Operational Specifications

Several features of the *Okeanos Explorer's* 30 kHz multibeam make it an excellent tool for ocean exploration. The following is a brief description of these features.

Depth Range

The system is designed to map the seafloor in water depths of 10 to 7000 meters. This leaves only the deepest parts of the deeper ocean trenches out of the EM 302's reach. In fact, when the ship transited over the Mariana Trench going to and from Indonesia in 2010, the system was able to detect the bottom at depths of up to 8000 meters.

High Density Data

In multibeam data, the denser the data, the finer resolution maps can be produced. In water deptsh 3000 meters and shallower, the system can operate in dual swath, or multiping mode, which results in increased along track data density. This is achieved by detecting two swaths per ping cycle, resulting in up to 864 beams per ping.

The *Okeanos Explorer* mapping team typically operates the multibeam in high density equidistant ping mode, which results in up to 864 evenly spaced soundings on the seafloor per ping.

Multiple Data Types Collected

The system collects seafloor backscatter data, which provides information about the character of the seafloor in terms of bottom type.

The system also collects water column backscatter data, which has the ability to detect gaseous plumes in the water column. The full value of this feature is still being realized.

FM chirp mode is utilized in water depths greater than 1000 meters, and allows for the detection of the bottom further out from nadir than with previous 30 kHz systems. This results in wider swath widths, giving a higher likelihood of new discoveries as well as efficiency of survey operations.

Multibeam Primer

The area of the seafloor covered, or ensonified, by a single beam within a pulse of sound, or ping, is called the beam footprint. This beam footprint is defined in terms of the across track and along track values. Both of these values are dependent on water depth and the beam width at which the sound pulse is transmitted and received. The across track beam width value is also dependent on the receive angle, or "listening" angle, of the system, and the angle from nadir which it is received. The transmit angle for the transmit transducer is 0.5°, which is the smallest possible angle currently available for the EM302 system. The further out from nadir a sounding occurs, the larger the footprint will be. The receive angle for the receive transducer is 1°. As an example, as seen in Table 1 below, in 2000 meters of water, a beam footprint will have a radius of 18 meters at nadir but 25 meters by the time it hits the seafloor at an angle 140 degrees out from nadir.

Calculated acrosstrack acoustic beam footprint in meters for EM 302 (high density ping mode, 432 soundings/profile)				
Water depth (m)	**Angle from nadir**			
50	1 deg RX center	90 deg	120 deg	140 deg
100	1	0.5	1	1
200	2	1	2	3
400	4	2	3	5
1000	7	4	6	10
2000	18	9	16	25
4000	35	19	32	-
6000	70	37	-	-
7000	105	56	-	-

Table 1. Calculated across track EM302 beam footprint. Reference: Kongsberg Product description, Kongsberg document 302675 Rev B, Date 14/06/06, p. 17.

Calculated acrosstrack sounding density for EM 302 (high density ping mode, 432 soundings/profile)			
Water depth (m)	**Swath Width**		
50	90 deg	120 deg	140 deg
100	0.2	0.4	0.9
200	0.5	0.8	1.7
400	0.9	1.6	3.5
1000	1.9	3.2	6.9
2000	4.6	8.1	17.4
4000	9.3	16.2	-

Table 2. Calculated across track EM302 sounding density. Reference: Kongsberg Product description, Kongsberg document 302675 Rev B, Date 14/06/06, p. 17.

Acrosstrack sounding density describes the spacing between individual soundings on the seafloor in the acrosstrack direction. The maximum swath of the EM 302 is 150 degrees. At this swath, the sounding density will be the least dense, since the beams will be spread out over a larger horizontal distance over the seafloor. As the swath angle (width) is decreased, the sounding density will increase, as the same number of beams are now spread out over a smaller horizontal distance over the seafloor.

Calculated ping rate and alongtrack resolution for EM 302					
140 deg swath, one profile per ping					
			Alongtrack distance between profiles (m)		
Water depth (m)	Swath Width (m)	Ping Rate (pings/second)	@4 kts	@8 kts	@12 kts
50	275	3.2	0.7	1.2	1.9
100	550	1.8	1.1	2.2	3.3
200	1100	1	2.1	4.2	6.3
400	2200	0.5	4.1	8.2	12.2
1000	5500	0.2	10	20	30
2000	8000	0.1	15.2	30.5	45.7
4000	8000	0.06	19.2	38.5	57.7
6000	8000	0.04	24.5	49	73.4

Table 3. Calculated ping rate and along track EM302 sounding density, one profile per ping. Reference: Kongsberg Product description, Kongsberg document 302675 Rev B, Date 14/06/06, p. 15.

Calculated ping rate and alongtrack resolution for EM 302					
140 deg swath, two profiles per ping					
			Alongtrack distance between profiles (m)		
Water depth (m)	Swath Width (m)	Ping Rate	@4 kts	@8 kts	@12 kts
50	275	3.2	0.3	0.6	0.9
100	550	1.8	0.6	1.1	1.7
200	1100	1	1.1	2.1	3.2
400	2200	0.5	2	4.1	6.1
1000	5500	0.2	5	10	15
2000	8000	0.1	7.6	15.2	22.8

Table 4. Calculated ping rate and along track EM302 sounding density, two profiles per ping. Reference: Kongsberg Product description, Kongsberg document 302675 Rev B, Date 14/06/06, p. 15.

Reference: Kongsberg Product Description: EM 302 multibeam echosounder

Appendix H: Acronyms

- AERONET – Aerosols Robotic Network
- AHB – Atlantic Hydrographic Branch
- ASCII – American Standard Code for Information Interchange
- BIST – built in system test
- CDR – Commander
- CO – Commanding Officer
- CTD – conductivity, temperature, depth
- dB - decibel
- DNP – do not process
- DP - dynamic position(ing)
- ERT – Earth Resources Technology Inc.
- ET – Electronics Technician
- EX – NOAA Ship *Okeanos Explorer*
- FM – frequency modulated / modulation
- FTP – file transfer protocol
- GB - gigabytes(s)
- KB - kilobytes(s)
- kHz – kilohertz
- km – kilometer
- kts – knots
- LT – Lieutenant
- LSS - light scattering sensor
- m - meters
- MAN – Maritime Aerosols Network
- MB – multibeam sonar
- MB – megabytes(s)
- NASA – National Aeronautics and Space Agency
- NCDDC – National Coastal Data Development Center
- NGDC – National Geophysical Data Center
- NMEA – National Marine Electronics Association
- NOAA – National Oceanic and Atmospheric Administration
- NODC – National Oceanographic Data Center
- OER – NOAA Office of Ocean Exploration and Research
- OMAO – NOAA Office of Marine and Aviation Operations
- OPS – Operations Officer
- ROV – remotely operated vehicle
- SBP – subbottom profiler
- SCS – scientific computer system
- SIS – Seafloor Information System
- SVP – sound velocity profile
- TRU – transceiver unit
- TSG - thermosalinograph
- TX – transmit boards
- USGS – United States Geological Survey

- W - watt
- XBT – expendable bathythermograph
- XO – Executive Officer

Appendix I: Weather Log

This weather log is provided to give environmental conditions related to multibeam data quality.

EX1404 Leg 3 WEATHER LOG									
LOCAL DATE	LOCAL TIME	UTC TIME	UTC DATE	WIND DIRECTION (deg)	WIND SPEED (kt)	WAVE HEIGHT (ft)	SWELL DIRECTION (deg)	SWELL HEIGHT (ft)	NOTES
9/16/2014	1800	2200	9/16/2014	353	10	0-1			
9/19/2014	2100	0100	9/17/2014	030	8	0-1			
9/17/2014	0000	0400	9/17/2014	035	10	0-1			
9/17/2014	0600	1000	9/17/2014	55	07	0-1			
9/17/2014	0900	1300	9/17/2014	050	4	0-1			
9/18/2014	1800	2200	9/18/2014	117	9	0-1			
9/21/2014	2100	0100	9/19/2014	060	9	0-1			
9/19/2014	0000	0400	9/19/2014	060	7	0-1	055	1-2	
9/19/2014	0300	0700	9/19/2014	075	7	0-1	055	1-2	
9/19/2014	0600	1000	9/19/2014	356	10	0-1	067	1-2	
9/19/2014	0900	1300	9/19/2014	050	10	<1	060	0-2	
9/19/2014	1200	1600	9/19/2014						
9/19/2014	1500	1900	9/19/2014	040	8	0-1	020	1-3	
9/19/2014	1800	2200	9/19/2014	090	11	1-2	030/060	2-4	
9/19/2014	2100	0100	9/20/2014	090	22	2-4	060	3-6	
9/20/2014	0000	0400	9/20/2014	095	22	2-4	60	3-6	
9/20/2014	0300	0700	9/20/2014	105	18	2-4	060	3-6	
9/20/2014	0600	1000	9/20/2014	116	17	2-4	060	3-6	
9/20/2014	0900	1300	9/20/2014	090	18	1-3	100	2-4	
9/20/2014	1200	1600	9/20/2014	115	17	1-3	100/130	2-4	
9/20/2014	1500	1900	9/20/2014	135	18	1-3	100/130	2-4	
9/20/2014	1800	2200	9/20/2014	135	22	1-3	100/130	2-4	
9/20/2014	2100	0100	9/21/2014	140	21	2-3	120	4-6	
9/21/2014	0000	0400	9/21/2014	130	20	1-3	130	3-5	
9/21/2014	0300	0700	9/21/2014	145	16	3-Jan	130	3-5	
9/21/2014	0600	1000	9/21/2014	120	12	1-2		2-4	
9/21/2014	0900	1300	9/21/2014	110	15	1-2	130	1-3	
9/21/2014	1200	1600	9/21/2014	165	10	1-2	130/170	2-4	
9/21/2014	1500	1900	9/21/2014	105	15	1-2	130/170	2-4	
9/21/2014	1800	2200	9/21/2014	070	13	1-2	120	2-4	
9/21/2014	2100	0100	9/22/2014	330	10	0-2	150/080	2-4	
9/22/2014	0000	0400	9/22/2014	280	17	1-2	170	2-4	
9/22/2014	0300	0700	9/22/2014	245	23	1-2	160	3-5	
9/22/2014	0600	1000	9/22/2014	277	19	1-2	155	5-8	
9/22/2014	0900	1300	9/22/2014	270	21	2-4	280/175	8-10	
9/22/2014	1200	1600	9/22/2014	285	19	2-4	270/175	6-8	

EX1404 Leg 3 WEATHER LOG									
LOCAL DATE	LOCAL TIME	UTC TIME	UTC DATE	WIND DIRECTION (deg)	WIND SPEED (kt)	WAVE HEIGHT (ft)	SWELL DIRECTION (deg)	SWELL HEIGHT (ft)	NOTES
9/22/2014	1500	1900	9/22/2014	275	20	2-4	270/175	6-8	
9/22/2014	1800	2200	9/22/2014	219	20	2-4	270/17	6-8	
9/22/2014	2100	0100	9/23/2014	300	21	2-3	270/175	6-8	
9/23/2014	0000	0400	9/23/2014	295	22	2-3	175/270	5-7	
9/23/2014	0300	0700	9/23/2014	330	10	2-3	175/270	5-7	
9/23/2014	0600	1000	9/23/2014	005	12	2-4	260/325	4-6	
9/23/2014	0900	1300	9/23/2014	350	10	2-4	320/380	3-6	
9/23/2014	1200	1600	9/23/2014	000	12	1-3	330/350	4-6	
9/23/2014	1500	1900	9/23/2014	355	8	1-2	350	2-4	
9/23/2014	1800	2200	9/23/2014	340	8	1-2	005	2-4	
9/23/2014	2100	0100	9/24/2014	004	8	0-2	010	1-3	
9/24/2014	0000	0400	9/24/2014	030	16	0-2	010	1-3	
9/24/2014	0300	0700	9/24/2014	030	20	1-2	020	2-4	
9/24/2014	0600	1000	9/24/2014	035	20	1-2	060	2-4	
9/24/2014	0900	1300	9/24/2014	050	20	1-3	040	2-5	
9/24/2014	1200	1600	9/24/2014	070	24	1-3	040	4-6	
9/24/2014	1500	1900	9/24/2014	060	17	1-3	060	3-5	
9/24/2014	1800	2200	9/24/2014	040	17	1-3	050/090	3-5	
9/24/2014	2100	0100	9/25/2014	055	20	1-3	050/090	3-6	
9/25/2014	0000	0400	9/25/2014	090	21	1-3	050/090	3-6	
9/25/2014	0300	0700	9/25/2014	095	12	1-3	050/090	3-6	
9/25/2014	0600	1000	9/25/2014	105	13	1-3	100	3-5	
9/25/2014	0900	1300	9/25/2014	120	12	<2	075/130	2-3	
9/25/2014	1200	1600	9/25/2014	115	15	1-2	120	1-3	
9/25/2014	1500	1900	9/25/2014	140	14	1-2	120	2-3	
9/25/2014	1800	2200	9/25/2014	130	15	1-2	140	2-4	
9/25/2014	2100	0100	9/26/2014	130	20	2-3	110	3-5	
9/26/2014	0000	0400	9/26/2014	160	16	1-2	120	2-4	
9/26/2014	0300	0700	9/26/2014	120	17	1-2	120	2-4	
9/26/2014	0600	1000	9/26/2014	170	20	1-2	155	2-4	
9/26/2014	0900	1300	9/26/2014	155	23	1-2	155	2-4	
9/26/2014	1200	1600	9/26/2014	165	18	1-3	155	4-6	
9/26/2014	1500	1900	9/26/2014	175	17	1-3	165	4-6	
9/26/2014	1800	2200	9/26/2014	180	19	1-3	160/190	3-5	
9/26/2014	2100	0100	9/27/2014	160	18	1-3	160/190	2-4	
9/27/2014	0000	0400	9/27/2014	195	7	1-2	160	2-4	
9/27/2014	0300	0700	9/27/2014	100	5	1-2	160	2-4	
9/27/2014	0600	1000	9/27/2014	190	8	1-2	060/110	2-4	

EX1404 Leg 3 WEATHER LOG									
LOCAL DATE	**LOCAL TIME**	**UTC TIME**	**UTC DATE**	**WIND DIRECTION (deg)**	**WIND SPEED (kt)**	**WAVE HEIGHT (ft)**	**SWELL DIRECTION (deg)**	**SWELL HEIGHT (ft)**	**NOTES**
9/27/2014	0900	1300	9/27/2014	030	10	<1	120/180	1-3	
9/27/2014	1200	1600	9/27/2014	010	10	0-1	110/170	1-3	
9/27/2014	1500	1900	9/27/2014	030	10	0-1	010/110	1-3	
9/27/2014	1800	2200	9/27/2014	040	11	1-2	010/100	2-4	
9/27/2014	2100	0100	9/28/2014	030	17	1-2	000	3-5	
9/28/2014	0000	0400	9/28/2014	045	16	2-3	000	3-5	
9/28/2014	0300	0700	9/28/2014	055	14	2-3	040	2-4	
9/28/2014	0600	1000	9/28/2014	040	15	1-3	045/085	2-4	
9/28/2014	0900	1300	9/28/2014	040	9	1-3	060/100	2-4	
9/28/2014	1200	1600	9/28/2014	050	9	1-2	040/100	2-4	
9/28/2014	1500	1900	9/28/2014	070	11	1-2	070	2-3	
9/28/2014	1800	2200	9/28/2014	080	10	<1	070	2-3	
9/28/2014	2100	0100	9/29/2014	115	9	<1	070	2-3	
9/29/2014	0000	0400	9/29/2014	150	5	0-1	070	1-2	
9/29/2014	0300	0700	9/29/2014	330	2	0-1	070	1-2	
9/29/2014	0600	1000	9/29/2014	090	5	0-1	110	1-2	
9/29/2014	0900	1300	9/29/2014	VAR	LT	<1	045	1-3	
9/29/2014	1200	1600	9/29/2014	185	5	0-1	080	1-2	
9/29/2014	1500	1900	9/29/2014	175	5	0-1	080	1-2	
9/29/2014	1800	2200	9/29/2014	150	7	0-1	080	1-2	
9/29/2014	2100	0100	9/30/2014	140	10	<1	140	<2	
9/30/2014	0000	0400	9/30/2014	145	9	0-1	140	0-1	
9/30/2014	0300	0700	9/30/2014	125	12	0-1	140	1-3	
9/30/2014	0600	1000	9/30/2014	140	9	0-1	235/170	1-3	
9/30/2014	0900	1300	9/30/2014	100	12	0-1	140	1-3	
9/30/2014	1200	1600	9/30/2014	085	10	0-1	140	1-3	
9/30/2014	1500	1900	9/30/2014	135	22	0-1	140	1-3	
9/30/2014	1800	2200	9/30/2014						
9/30/2014	2100	0100	10/1/2014	070	14	1-2	145	2-4	
10/1/2014	0000	0400	10/1/2014	075	13	0-1	070	1-3	
10/1/2014	0300	0700	10/1/2014	065	14	0-1	070	1-3	
10/1/2014	0600	1000	10/1/2014	060	16	1-3	080	3-5	
10/1/2014	0900	1300	10/1/2014	070	10	1-3	040/100	3-5	
10/1/2014	1200	1600	10/1/2014	050	20	1-3	050/110	3-4	
10/1/2014	1500	1900	10/1/2014	030	19	1-3	050/110	4-6	
10/1/2014	1800	2200	10/1/2014	050	20	2-4	050/110	4-6	
10/1/2014	2100	0100	10/2/2014	060	25	1-3	050	4-6	
10/2/2014	0000	0400	10/2/2014	10	16	0-2	045	1-3	

EX1404 Leg 3 WEATHER LOG									
LOCAL DATE	**LOCAL TIME**	**UTC TIME**	**UTC DATE**	**WIND DIRECTION (deg)**	**WIND SPEED (kt)**	**WAVE HEIGHT (ft)**	**SWELL DIRECTION (deg)**	**SWELL HEIGHT (ft)**	**NOTES**
10/2/2014	0300	0700	10/2/2014	015	15	0-2	045	1-3	
10/2/2014	0600	1000	10/2/2014	10	24	0-2	045	1-3	
10/2/2014	0900	1300	10/2/2014	10	15	0-2	030/160	1-3	
10/2/2014	1200	1600	10/2/2014	20	19	0-2	050/130	1-3	
10/2/2014	1500	1900	10/2/2014	10	20	0-2	050/130	1-3	
10/2/2014	1800	2200	10/2/2014	10	14	0-2	050/130	1-3	
10/2/2014	2100	0100	10/3/2014	50	13	1-2	080	2-4	
10/3/2014	0000	0400	10/3/2014	30	35	2-4	050	5-7	
10/3/2014	0300	0700	10/3/2014	45	18	2-5	050	6-8	
10/3/2014	0600	1000	10/3/2014	40	30	3-6	050	6-8	
10/3/2014	0900	1300	10/3/2014	45	29	3-6	040	7-9	
10/3/2014	1200	1600	10/3/2014	35	25	2-5	040	6-9	
10/3/2014	1500	1900	10/3/2014	030	30	2-5	040	6-9	
10/3/2014	1800	2200	10/3/2014	45	30	4-6	050	5-7	
10/3/2014	2100	0100	10/4/2014	005	23	1-3	045	2-4	
10/4/2014	0000	0400	10/4/2014	070	13	1-2	050	1-3	
10/4/2014	0300	0700	10/4/2014	105	4	1-2	050	1-3	
10/4/2014	0600	1000	10/4/2014	180	5	0-2	050	2-4	
10/4/2014	0900	1300	10/4/2014	140	11	0-2	070	3-5	
10/4/2014	1200	1600	10/4/2014	145	22	2-4	090/120	3-6	
10/4/2014	1500	1900	10/4/2014	165	30	2-4	170	3-6	
10/4/2014	1800	2200	10/4/2014	160	29	3-5	190	5-7	
10/4/2014	2100	0100	10/5/2014	290	15	2-5	180	5-7	
10/5/2014	0000	0400	10/5/2014	290	27	1-3	180	4-6	
10/5/2014	0300	0700	10/5/2014	300	18	1-3	300/180	4-6	
10/5/2014	0600	1000	10/5/2014	320	21	4-6	300/180	6-9	
10/5/2014	0900	1300	10/5/2014	320	25	2-3	300	4-6	
10/5/2014	1200	1600	10/5/2014	275	13	2-4	300	4-6	
10/5/2014	1500	1900	10/5/2014	285	15	2-4	300	4-6	
10/5/2014	1800	2200	10/5/2014	270	13	2-4	300	3-5	
10/5/2014	2100	0100	10/06/2014	265	15	1-3	310/350	3-5	
10/06/2014	0000	0400	10/06/2014	180	12	1-2	310/000	2-4	
10/06/2014	0300	0700	10/06/2014	200	15	1-2	310/000	2-4	
10/06/2014	0600	1000	10/06/2014	300	14	1-2	310/000	2-4	
10/06/2014	0900	1300	10/06/2014	270	6	1-2	290	2-4	
10/06/2014	1200	1600	10/06/2014	Var	<5	0-2	290	2-4	
10/06/2014	1500	1900	10/06/2014	095	7	0-2	280	2-3	
10/06/2014	1800	2200	10/06/2014						

EX1404 Leg 3 WEATHER LOG									
LOCAL DATE	**LOCAL TIME**	**UTC TIME**	**UTC DATE**	**WIND DIRECTION (deg)**	**WIND SPEED (kt)**	**WAVE HEIGHT (ft)**	**SWELL DIRECTION (deg)**	**SWELL HEIGHT (ft)**	**NOTES**
10/06/2014	2100	0100	10/7/2014	185	12	0-1	230	1-3	

Appendix J: Software Inventory

Velocipy	Version	Computer	License	Expiration Date	Agreements	Hot fix	Contract Duration	Warranty Expiration	Contact	Notes	
SIS EM 302	3.9.2	Multibeam	Dongle # 6C87FC13	N/A	N/A	N/A	No info available	No info available	Email:tony.dahlheim@kongsberg.com	purchased & maintained by OER personel	
Velocipy	13.2 (r4476)	CTD	N/A	N/A	N/A	N/A	N/A	N/A	Support email:km.support.lynnwood@kongsberg.com		
POS Controller/Applanix	320 MV V4 SN# 2572 Firmware: 4.0.2.0	EX-Hypack	998777	N/A	N/A	N/A	N/A		NOAA Internal - HSTP Caryn Arnold - 206.526.4762 (caryn.arnold@noaa.gov)		
Caris HIPS	7.1.2	MBPROC1	CW9605165	12/31/2014 Yearly update via website	Service pack 2 (7.0): Upgrade Protection & Technical support	5 (7.0)	5 years for both dongles (2014)		Leon Quick at CARIS customer support (leon.quick@caris.com) Downloads: http://support.caris.com		
	7.1.2	MBPROC2	CW9605164								
	build 337507		2 Dongle ID's								
Fledermaus (IVS 3D)	7.3.4c build 371	MBPROC2	Dongle ID: 1187753821	8/31/2014		N/A	1 year (09/2015	30-Sep-15	support@ivs3d.com, 1.506.454.4487 License # 1601472614 use dongle ID to download	purchased & maintained by OER personel	
	7.3.4c build 371	MBPROC3	Dongle ID: 1181442213	8/31/2014	1 yr of support w/ dongle	N/A	1 year (09/2015				
Chart Reprojector	2.0.6	Hypack	N/A	N/A	N/A	N/A	N/A		NOAA Internal - HSTP Caryn Arnold - 206.526.4762 (caryn.arnold@noaa.gov)		

Velocipy	Version	Computer	License	Expiration Date	Agreements	Hot fix	Contract Duration	Warranty Expiration	Contact	Notes	
KAP Converter	4.0.0.10	N/A	N/A	N/A	N/A	N/A	N/A		NOAA Internal - HSTP Caryn Arnold - 206.526.4762 (caryn.arnold@noaa.gov)		
MapInfo	10.5 (NOT YET INSTALLED)	MBPROC1 & 2	(SN#) MINWEU0950038973 & MINWEU0950038974	2012	Upgrade protection & Technical support	Release Build 35	3 years		NOAA Contact - Kyle Ward (official MapInfo contact through HSD) Kyle.Ward@noaa.gov		
Pydro	13.2	MBPROC2	Python22	1/1/2010	N/A	N/A	N/A		NOAA Internal - HSTP Caryn Arnold - 206.526.4762 (caryn.arnold@noaa.gov)		
Hypack ROV	11.01.49	EX-Hypack	Dongle ID: 15682355	9/30/2014	Maintenance	N/A	N/A	8/30/2012	Mike Annis (HSTP POC) Michael.J.Annis@noaa.gov www.hypack.com & http://support.hypack.com/support		
Hypack	11.01.49	EXPlanning	Dongle ID: 15688239	2/18/2012	Maintenance	N/A	N/A	2/18/2012		purchased & maintained by OER personel	
DP Line Conversion Utility (Matlab)	1.0	N/A	N/A	N/A	N/A	N/A	N/A	N/A	OER Internal Program - Mashkoor Malik author		

Velocipy	Version	Computer	License	Expiration Date	Agreements	Hot fix	Contract Duration	Warranty Expiration	Contact	Notes	
Seasave	7.22	CTD & Hydrophone	N/A	N/A	N/A	www.seabird.com	N/A	N/A	1.425.643.9954 Sea-Bird Electronics, Bellingham WA		
SCS	v4.7.0.2430	SCS-A	N/A	N/A	N/A	N/A	N/A	N/A	EEB - Tom Stepka 240.472.5351 (cell) 301.713.7678 (work) 703.641.0195 (home); tom.stepka@noaa.gov		
Hydro_MI	8.3	MBPROC1 & 2	N/A	N/A	N/A	N/A	N/A		NOAA Internal - HSTP Caryn Arnold - 206.526.4762		
C-NAV	5.1.18	N/A	License Code :48F7152A-75FB62D8-7D1DE299-A83896A0	7/27/2014	3 years	N/A	3 years		CC Technology - 1.337.261.0660 cnav.support@cctechnol.com		
Snagit	9.1.2	MBPROC1 & SURVEY2	CAWCM-QG4PF-MGYCA-34SNM-P4695 & D494F-5AKSZ-CQ8FV-CHA4U-S4F36	N/A	N/A	N/A	N/A		http://www.techsmith.com		
Knudson SBP, Sounder Suite Echo Control Server and Client	Client: V.272 Server: V.2.77	Knudsen SBP	Client Part # D409-04184 Server Part # D409-04185	N/A	N/A	N/A	N/A		Technical Operations Manager - Darren Gibson - 613.267.1165	Server= V.273 Part# D409-04185 Client=V 2.71	software updated March 3, 2013 Chirp Firmware 2.85; Client v2.73; Server v2.77
SonarWiz	5.04.0006	EXSCSCL2	Dongle ID: SN 2175	10-Apr-14	EMA 05/14/12	N/A	3 Years	7-Feb-14	Cheasapeake Technologies Inc. Eileen Gann (etgann@chesapeaketech.com)	purchased & maintained by OER personel	
Geocoder	4.1 Level 1	MBPROC1, 2, 3	N/A	9-Dec-09	CCOM		Annual		Expires every December. This license is shared by CCOM and cannot be distributed.		
ESRI ArcMap	10.1 Build 3035	EXSCSCL2	Customer Number: 291779	25-Sep-14	Software Updates	N/A	1 year		http://www.esri.com ESRI - Customer Service Nicholas Twohig (ntwohig@esri.com) 909.793.2853 x2947	purchased & maintained by OER personel	

Velocipy	Version	Computer	License	Expiration Date	Agreements	Hot fix	Contract Duration	Warranty Expiration	Contact	Notes	
Global Mapper	11.01 Build January 11, 2010	EXSCSCL2	RegName: mamalik@cisunix.unh.edu RegCode: 3309497171	13-Jan-11	Support	N/A	1 year		support@globalmapper.com		
SIMRAD ER60	2.2.1	EXEK60	RegName: mamalik@cisunix.unh.edu RegCode: 3309497171						Email:tony.dahlheim@kongsberg.com; Support email:km.support.lynnwood@kongsberg.com		