H11490

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. N/A

Registry No. H11490

LOCALITY

State Alaska

General Locality Eastern Prince William Sound

Sublocality Bligh Island to Busby Island

2005

CHIEF OF PARTY

Commander Guy T. Noll, NOAA

LIBRARY & ARCHIVES

DATE

NOAA FORM 77-28 (11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

REGISTER NO.

HYDROGRAPHIC TITLE SHEET

H11490

INSTRUCTIONS - The hydrographic sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the office.

FIELD NO.

State: Alaska

General Locality: Eastern Prince William Sound

Sublocality: Bligh Island to Busby Island

Scale: 1:10,000

Date of Survey: 9/8/2005 - 10/3/2005

Instructions Date: 8/3/2005

Project No.: OPR-P132-RA-05

Vessel: RA1 (1101), RA2 (1103), RA3 (1021), RA4 (1016), RA5 (1006), RA6 (1015)

Chief of Party: Commander Guy T. Noll, NOAA

Surveyed by: RAINIER Personnel

Soundings taken by echo sounder: Reson SeABat 8101,, Seabeam/Elac 1180, Reson SeaBat 8125, Knudsen 320M

Graphic record checked by: RAINIER Personnel

Evaluation by: K. Reser, C. Barry

Automated plot by: HP Designjet 1050C

Verification by: C. Barry

Soundings in: Fathoms and feet at MLLW

REMARKS: Time in UTC. UTM Projection Zone 6

Revisions and annotations appearing as endnotes were generated during office processing. As a result, page numbering may be interrupted or non-sequential.

All depths listed in this report are referenced to mean lower low water unless otherwise noted

All separates are filed with the project or hydrographic data.

Descriptive Report to Accompany Hydrographic Survey H11490

Project OPR-P132-RA-05
Bligh Island to Busby Island, AK
Scale 1:10,000
September - October 2005
NOAA Ship RAINIER (s221)
Chief of Party: Commander Guy T. Noll, NOAA

A. AREA SURVEYED

This hydrographic survey was completed as specified by Hydrographic Survey Letter Instructions OPR-P132-RA-05 dated August 3, 2005, Standing Project Instructions dated March 23, 2004, and NOS Hydrographic Specifications and Deliverables dated March 5, 2003, with the exception of deviations noted in this report. The survey area is Eastern Prince William Sound from Bligh Island to Busby Island, AK. This survey corresponds to sheet "E" in the sheet layout provided with the Letter Instructions.

One hundred percent multi-beam echosounder (MBES) coverage was obtained in the survey area in waters 8 meters and deeper. In depths less than 8 meters additional MBES coverage was obtained to acquire least depths over significant features or shoals, as appropriate for this survey. Vertical-beam echo sounder (VBES) data were acquired in depths from 4 to 20 meters to define the navigable area limit, aid in the planning of SWMB data acquisition, and provide inshore bathymetry in navigationally significant areas.

Limited Shoreline Verification was performed in the survey area. A traditional Vertical Beam Echo Sounder (VBES) buffer was run at the 4 meter contour to define the inshore limit of shoreline feature investigation, except in areas where the 4 meter curve was dangerously close to shore or other exposed features.

Data acquisition was conducted from September 8 to October 3, 2005 (DN 251 to 276).

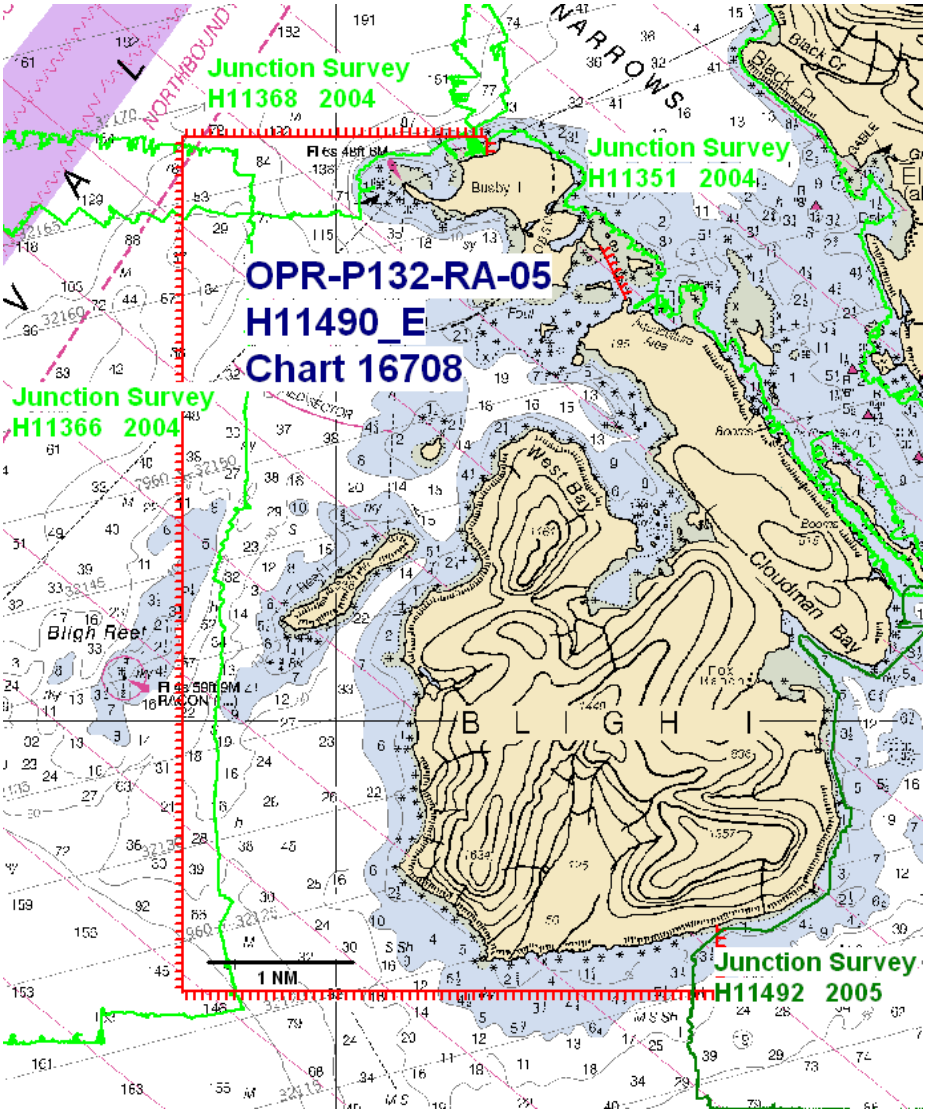

Figure 1. H11490 Survey Limits.

B. DATA ACQUISTION AND PROCESSING

A complete description of data acquisition and processing systems, survey vessels, quality control procedures and data processing methods can be found in the *OPR-P132-RA-05 Data Acquisition and Processing Report* (DAPR) , submitted under separate cover.[1] Items specific to this survey, and any deviations from the aforementioned report are discussed in the following sections.

FINAL APPROVED WATER LEVELS HAVE BEEN APPLIED to this survey. See Section C. for details.

B1. Equipment and Vessels

The following vessels acquired data for this survey:

Hull Number	Name	Acquisition Type
1101	RA-1	Vertical-Beam Echosounder Detached Positions Bottom Samples
1103	RA-2	Vertical-Beam Echosounder Detached Positions Bottom Samples
1021	RA-3	Multi-Beam Echosounder (Reson 8101)
1016	RA-4	Multi-Beam Echosounder (Reson 8125)
1006	RA-5	Multi-Beam Echosounder (Reson 8101)
1015	RA-6	Multi-Beam Echosounder (Elac 1180)
817	RA-7	Vertical-Beam Echosounder Detached Positions

Table 1. Data Acquisition Vessels for H11490.

Sound velocity profiles were measured with SEACAT SBE-19 and 19+ profilers in accordance with the Specifications and Deliverables.

No unusual vessel configurations were used for data acquisition.[2]

B2. Quality Control

Crosslines

Vertical Beam Echo Sounder (VBES) crosslines including buffer lines totaled 117.93 nautical miles, comprising 20.23% of mainscheme hydrography. The mainscheme bathymetry was manually compared to the XL nadir beams in CARIS HIPS Subset Mode and compared well with no significant differences noted.

A statistical Quality Control Report has been conducted on representative data collected with each system used on this survey and is included in the *OPR-P132-RA-05 DAPR*.[3]

Junctions

The following contemporary surveys junction with H11490 (See Figure 1):

Registry #	Scale	Date	Junction side
H11351	1:10,000	2004	Northeast
H11368	1:10,000	2004	North
H11366	1:10,000	2004	West
H11492	1:10,000	2005	Southeast

Survey H11490 junctions well with H11368 and H11366. A cursory junction comparison in CARIS HIPS and SIPS 5.4 subset mode indicates differences generally less than 0.2 meters in depths ranging from 15 to over 300 meters.

Survey H11490 junctions with H11351 in the foul area between Busby Island and Bligh Island. There is no overlapping bathymetry between the two surveys for comparison.

Survey H11490 junctions well with survey H11492. A cursory junction comparison in CARIS HIPS and SIPS 5.4 subset mode indicates differences are up to 0.35 meters in 15 meters of water. The hydrographer suggests that this may be due to the fact that final smooth tides had been applied to H11492 when the comparison was made.[4]

Data Quality Factors

A multitude of data quality issues were found in these data and are discussed below:

Water Level Corrections

Minor and intermittent vertical offset errors can be seen in these data, as in the example in figure 2. These appear to be tide-related errors. None of these offsets are greater than 0.2 meters, which is less than the allowable error for water levels,[5] and are therefore not addressed further. As noted above, final approved water levels have been applied to these data. (See section C. VERTICAL AND HORIZONTAL CONTROL.)

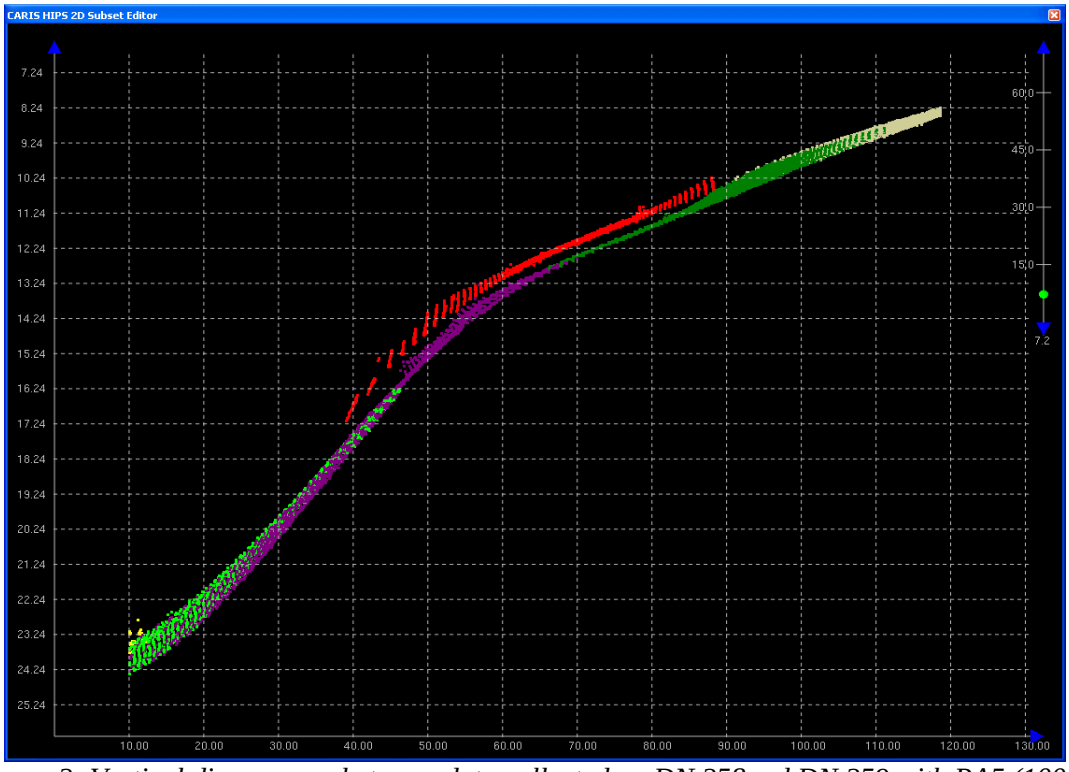

Figure 2: Vertical discrepancy between data collected on DN 258and DN 259 with RA5 (1006); approximately 0.2 meter vertical discrepancy in 16 meters of water.

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Positioning Problem:
There is a vertical offset that is up to four meters between several of the lines acquired by launch 1021 (RA-3, DN 272) and launch 1006 (RA-5, DN 258 and DN 273). The hydrographer believes that the most likely explanation of this discrepancy is an error in horizontal positioning, possibly due to a differential beacon outage or unavoidable poor satellite geometry close to the steep slope of Reef Island. The offset is isolated to just portions of the lines and was unchanged with the application of final approved tides and zoning.

The positioning problems occurred at the north end of West Bay, (specifically lines: 313_2052, DN274, 1006 and 443_2249, DN258, 1006). Lines were rejected in areas were coverage was sufficient. Figure 3 shows an area on the eastern side of Reef Island where it was necessary to retain lines for coverage. The hydrographer recommends retaining these data, although it does not met IHO Order 1 specifications for horizontal accuracy, as the affected data are near shore and it is unlikely that resurveying under the same conditions would produce better results.[6]

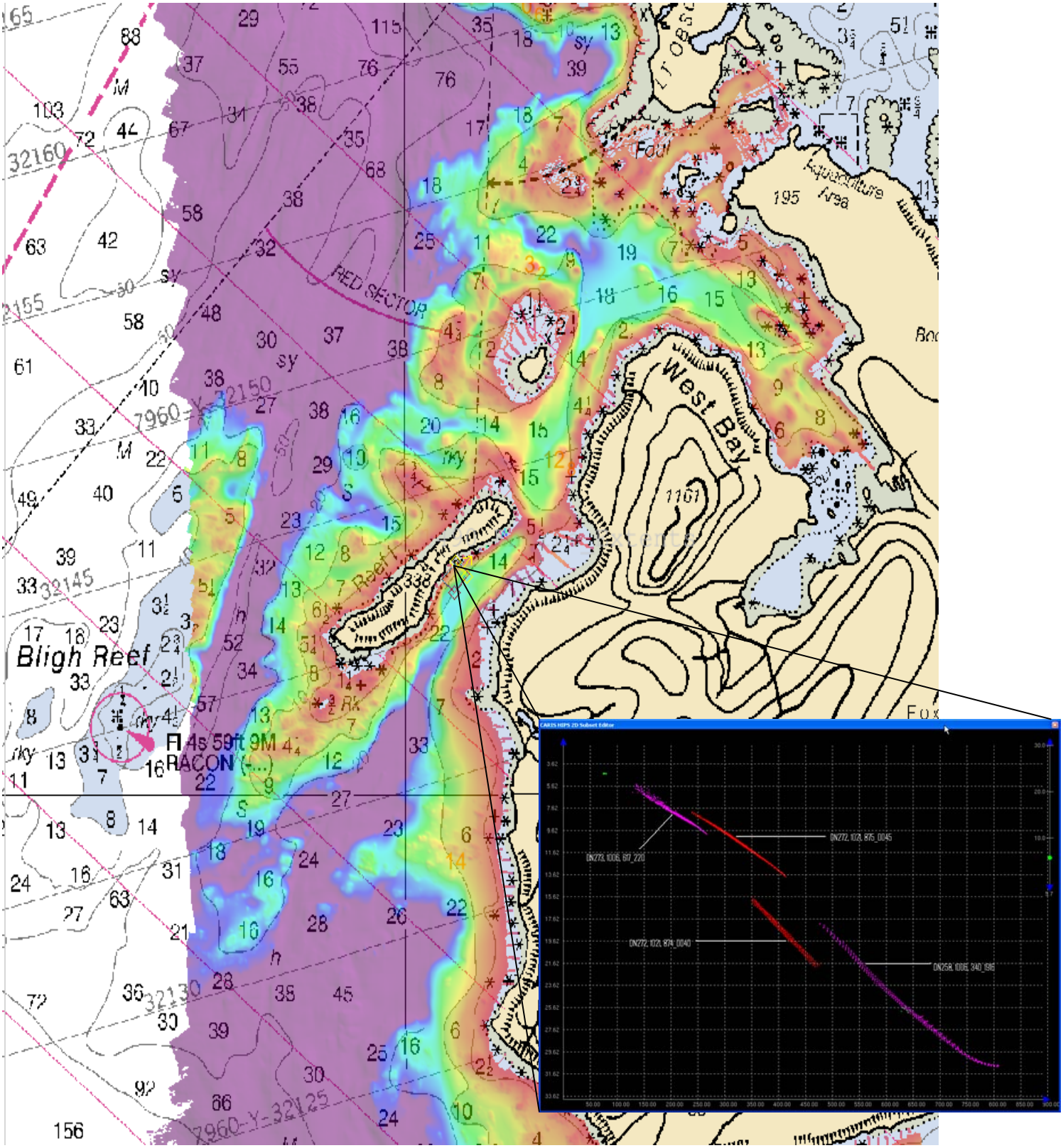


Figure 3: Horizontal offset of approximately four meters, displayed on Chart 16707

Vertical Beam / Multibeam echosounder agreement:
The hydrographer noticed a consistent 0.2m vertical offset between single beam data acquired on launch 1103 and co-located multibeam data; see figure 4.

To ensure that this offset was not related to an older, reportedly resolved, software bug in Caris Single Beam Editor in which the vessel's draft would be reapplied to the processed depth file each time the data were merged, a line of data was reconverted for comparison purposes. Line 342_1727, 1103, DN261 was copied, reconverted, and merged in order to compare the depths of the new line (that was merged only once) to the same line in the original dataset (merged multiple times). There was no difference in the depths between the two lines as would be expected if the offset was related to the Single Beam Editor bug.

It is unknown why the single beam data is deeper than the multibeam data. The 2006 Hydrographic Systems Readiness Package confirmed a small vertical offset of approximately this magnitude between the single beam data from launch 1103 when compared to co-located multibeam data and a leadline.[7]

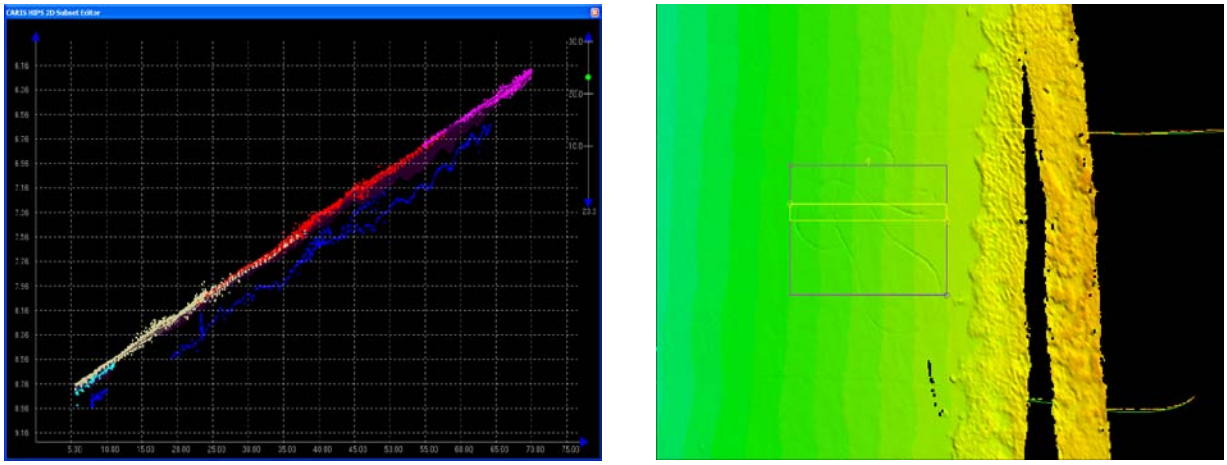


Figure 4: Vertical discrepancy between singlebeam (DN 261), RA-2 (1103)) and multibeam data (DN 272, RA-5 (1006)); approximately 0.2 meter vertical discrepancy.

Holidays in BASE Surface:
Holidays are present in the Center_50cm_Final (see Figure 5) and S_50cm_Final (see Figure 6) BASE Surfaces due to timing problem during acquisition. Although the outer-beams were accepted as much as possible, minor along-track holidays are present in the BASE surface at the specified resolutions. There is no indication of shoaling, and the hydrographer recommends superseding all charted and prior survey data in the common area.[8] See Figures 5 and 6.

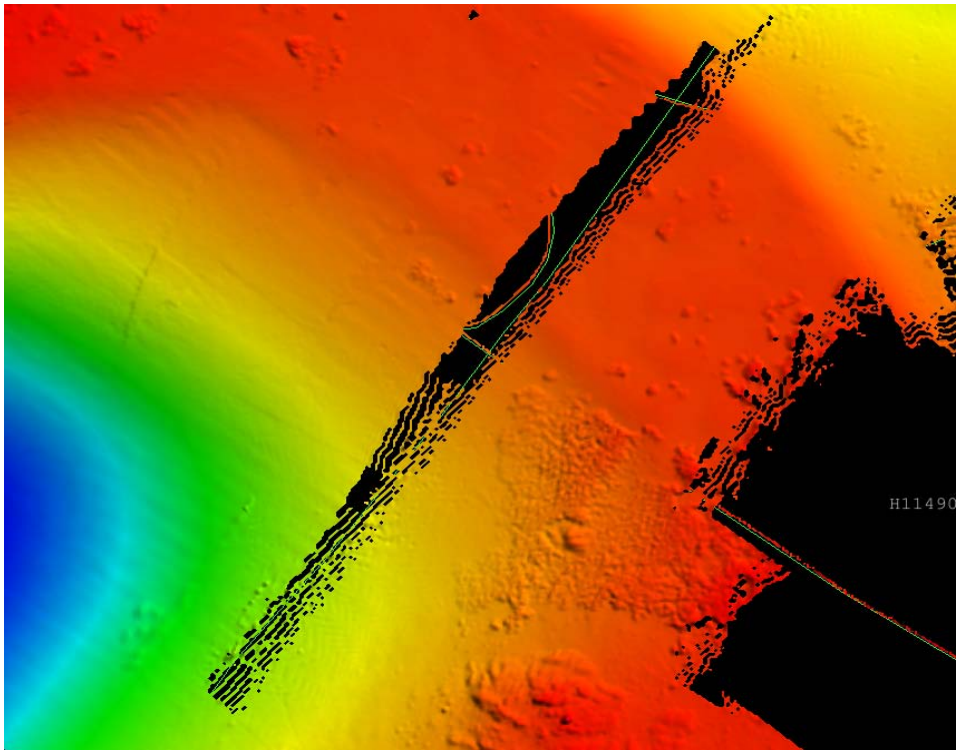


Figure 5: Missing data on part of line # 381_0016 on DN 272 with RA-5 (1006), approximately 10 x 200 meter in 4 to 15 meters of water.

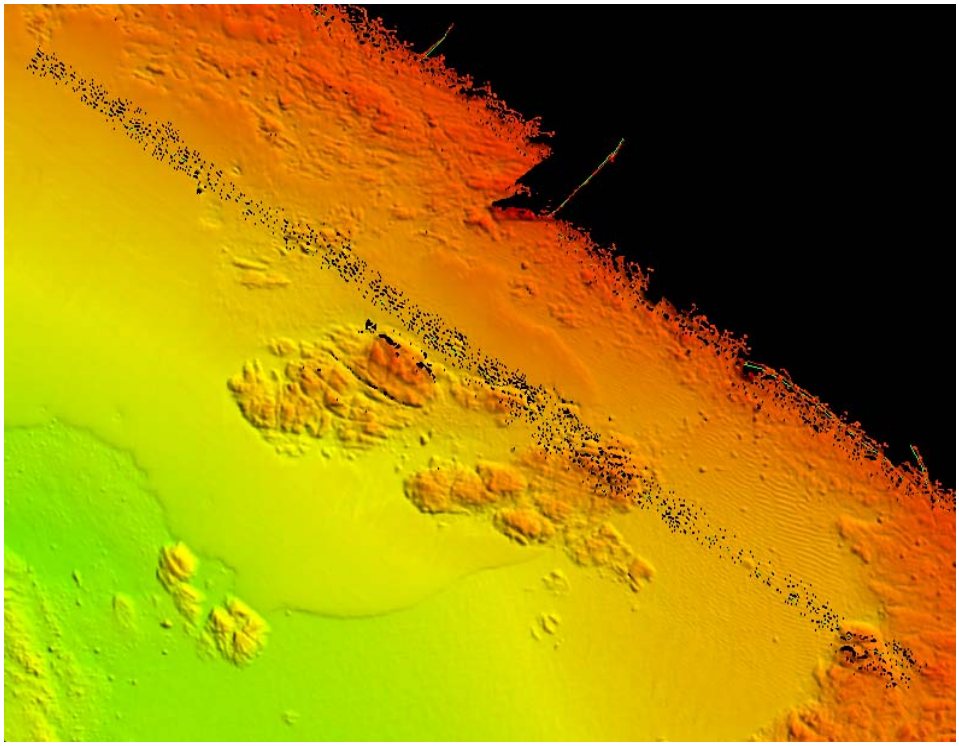


Figure 6: Sparse data on part of line # 308-2105 acquired on DN 273 with RA-5 (1006), approximately 10 x 450 meter in 5 to 7 meters of water.

Roll artifacts:

A constant roll bias was observed on bathymetry from RA-3 (1021) on DN 273. (See figure 7.) RA-3 (1021) 8101 Reson is mounted on a swing arm and this 0.6 degree error could have been caused by a foreign body (e.g., kelp) wedged between the swing arm and the striking plate which it abuts when deployed. The roll value for 1021's HVF (1021_reson8101_HVF) was changed from 1.175 to 0.57 for DN 273 only. The data were reprocessed using this value which corrected most of the roll error. Residual errors that exceeded the specified accuracy limits set forth in the NOS Hydrographic Surveys Specifications and Deliverables were manually rejected in CARIS HIPS and SIPS subset mode.

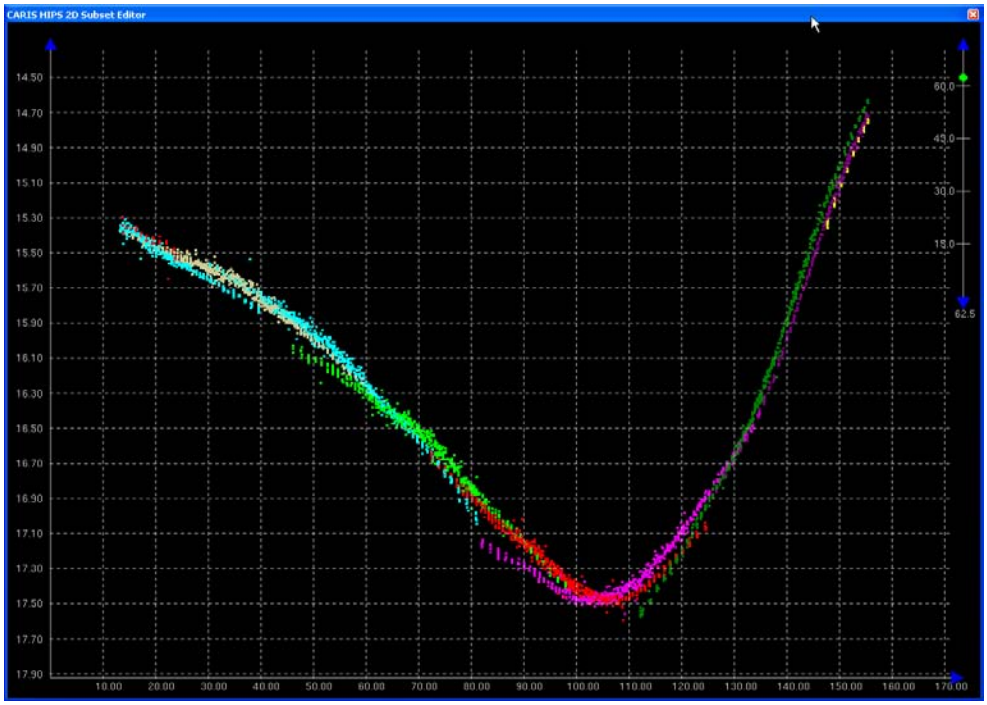


Figure 7: Roll artifacts on DN 273 with RA-3 (1021), approximately 0.1 meter vertical discrepancy in 17 meter of water

A variable latency between the position/attitude data and bathymetry resulted in a roll artifact on DN272 with RA-4 (1016) for the 8125. Depending on the magnitude of the roll and the depth of the water, errors at the edge of the swath are no greater than +/- 0.5m in 20 meters of water. Despite the error, the bathymetry meets specified NOS accuracy requirements[9] (see figure 8). A complete description of this issue can be found in the *OPR-P132-RA-05 Data Acquisition and Processing Report* (DAPR), submitted under separate cover.

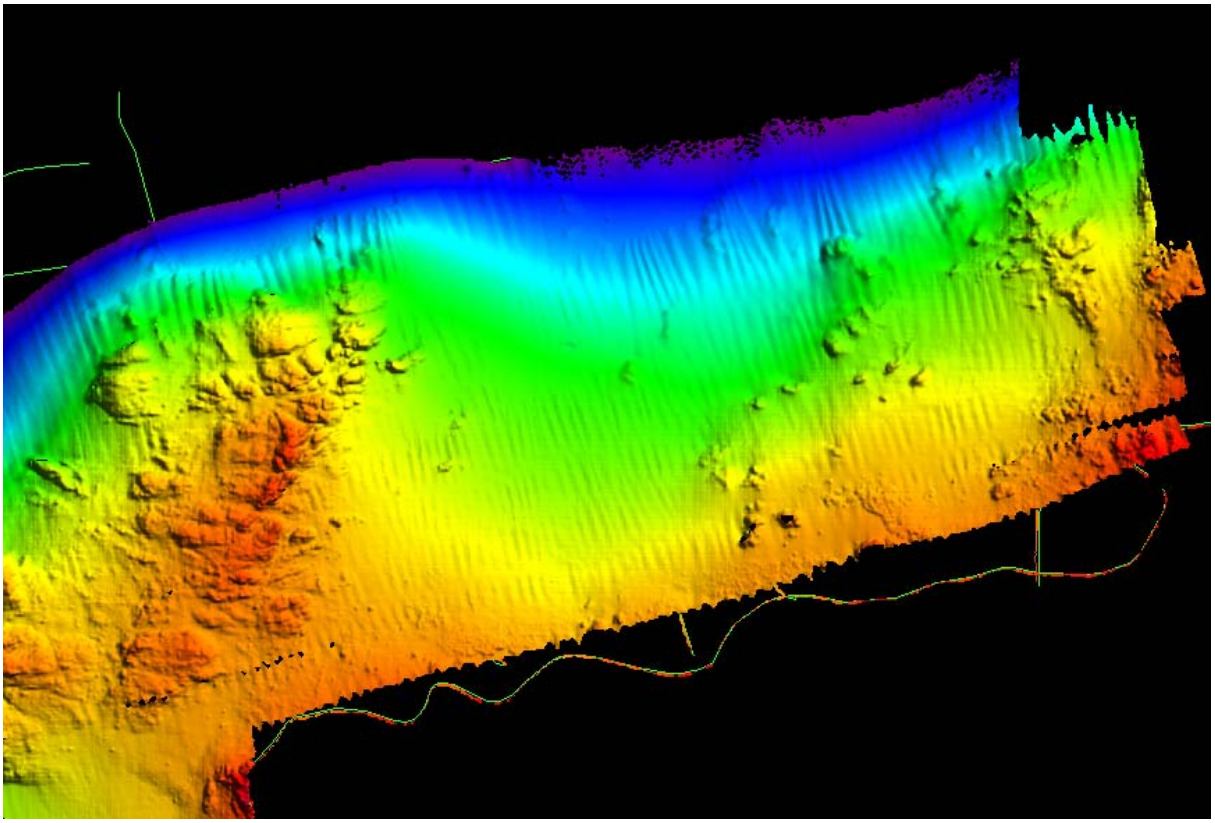


Figure 8: Variable latency between the position/attitude data and bathymetry (DN 272, RA-4 (1016)); approximately 0.5-meter vertical discrepancy in 20 meters of water (3m vertical exaggeration, sun illumination from the NE).

Eelgrass:

In several areas near shore 10 meters and shoaler, thick eelgrass often obscured the detection of the bottom. On the VBES fathograms, acoustic returns from eelgrass usually appeared as a faint trace clearly separated from the bottom that had a darker, more definitive trace. In this case, the VBES digital data were edited as necessary to reflect the true bottom. In the MBES data, removal of soundings obtained over eelgrass was not possible in CARIS HIPS and SIPS 5.4 Swath Editor mode, as there is no definitive way to determine if a sounding is on a feature such as a rock, or on eelgrass. In the Subset Editor mode, in some instances, it was possible to discern the true bottom, as eelgrass often appeared as soundings "disconnected" from the continuous seabed. In these instances soundings on eelgrass were rejected. However, when unable to clearly distinguish between the bottom and eelgrass, the eelgrass was not rejected, (see figure 9). Areas with eelgrass were noted by the Hydrographer during shoreline verification and are also indicated in the "H11490_add_Notebook" layer in notebook.[10]

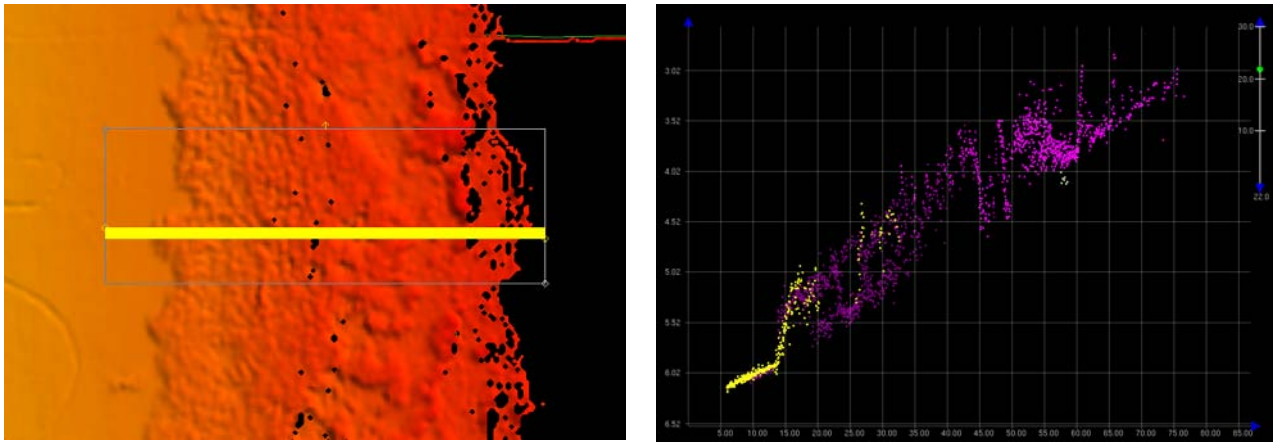


Figure 9: Example of Eelgrass in the Center_50cm_FinalBASE Surface

No unusual conditions were encountered during the survey that affected the expected accuracy and quality of survey data.

B3. Data Reduction

Data reduction procedures for survey H11490 conform to those detailed in the *OPR-P132-RA-05 DAPR.*

B4. Data Representation

Many BASE surfaces were used in processing H11490. Final BASE surface resolutions and depth ranges were set in accordance with the Field Procedures Manual, with field sheets smaller than $25x10^6$ nodes. The submission Field Sheet and BASE Surface structure are shown in Figures 10 and 11.

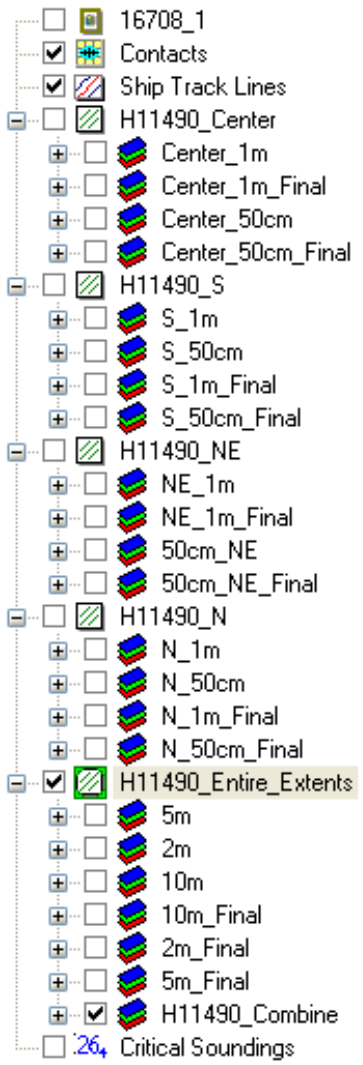


Figure 10: Field sheets and BASE surfaces submitted with H11490

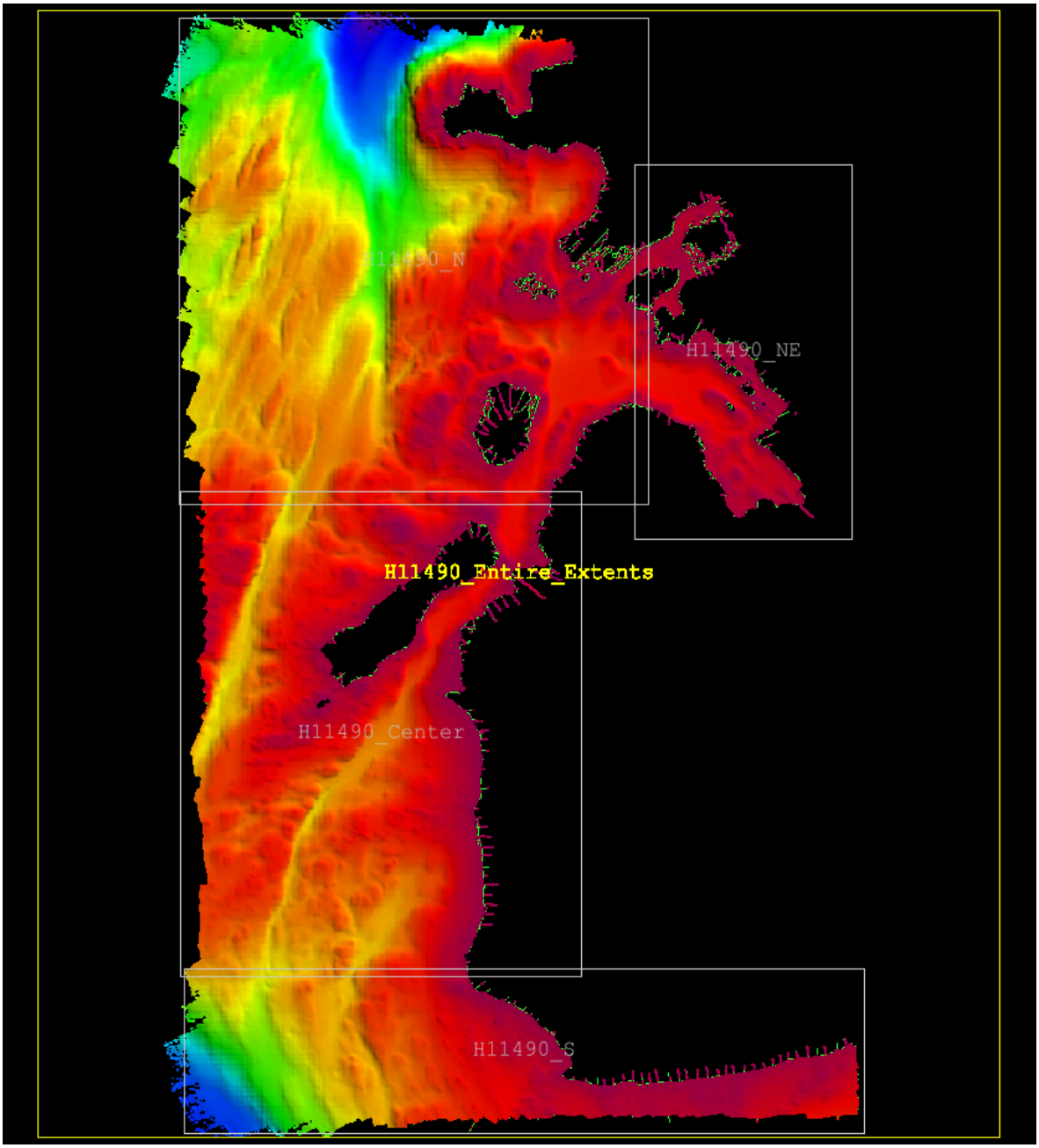


Figure 11: Layout of field sheets, BASE surfaces, and their resolutions for H11490.

C. VERTICAL AND HORIZONTAL CONTROL

A complete description of vertical and horizontal control for survey H11490 can be found in the *OPR-P132-RA-05 Horizontal and Vertical Control Report*, submitted under separate cover.[11] A summary of horizontal and vertical control for this survey follows.

Horizontal Control

The horizontal datum for this project is the North American Datum of 1983 (NAD83). Differential GPS (DGPS) was the sole method of positioning. The differential corrector beacons utilized for this survey are given in Table 2.

Location	Frequency	Custodian	Distance	Priority
Cape Hinchinbrook	292 kHz	USCG	36NM	Primary
Potato Point	298 kHz	USCG	15NM	Secondary

Table 2: Differential Corrector Sources for H11490.

The Cape Hinchinbrook beacon was used as the primary corrector source for this survey despite the longer distance from the survey grounds because of the more robust view of the satellite constellation available at this site.

Launch-to-launch DGPS performance checks were not performed during this survey.

Vertical Control

The vertical datum for this project is Mean Lower-Low Water (MLLW). The operating National Water Level Observation Network (NWLON) primary tide station at Valdez, AK (945-4240) served as control for datum determination and as the primary source for water level reducers for survey H11490.

RAINIER personnel installed two Sutron 8210 "bubbler" tide gauges at the same site for redundancy at the following subordinate station in accordance with the Letter Instructions (see table 3). This station is described in detail in the *OPR-P132-RA-05 Horizontal and Vertical Control Report*.

Station Name	Station Number	Type of Gauge	Date of Installation	Date of Removal
Columbia Bay Glacier 1, AK	944- 44601	30-day	August 31st, 2005	October 3rd, 2005
Columbia Bay Glacier 2, AK	944- 44602	30-day	August 31st, 2005	October 3rd, 2005

Table 3: Tide Stations installed by RAINIER personnel for H11490

All data were reduced to MLLW using **FINAL APPROVED WATER LEVELS** from stations Columbia Bay Glacier, AK (944-4460) (computed from both gauge data sets) and Valdez, AK (945-4240) using the tide files: 9454460.tid and 9454240.tid. Time and height correctors were from the final zone corrector file H11490CORF.zdf.

The request for Final Approved Water Levels for H11490 was submitted to CO-OPS on November 8th, 2005 and water level data were received by RAINIER on February 21st, 2006. This documentation is included in Appendix III.[12]

The final zoning ZDF file for Sheet H11490 designates the Columbia Glacier station (945-4460) as the primary station and the Valdez station (945-4240) as the secondary station for water level application. The Columbia Glacier tide gauge was disassembled and removed at 2048 GMT on October 3, 2005 (DN 276). Survey H11490 has data that were acquired after the Columbia Glacier gauge was removed.

When applying water level correctors to bathymetric data, Caris HIPS 5.4.1 applies data from the station designated as primary in the .ZDF file and will not defer to the data from the secondary station unless there is a gap in the data from the primary station. Since the missing data from the primary station is at the end of the times series, there is no gap, and therefore the program does not switch to the secondary gauge data. A "tide data out of range" error is produced when the water levels are applied. In order to solve this processing problem, a gap was created in the primary station data (Columbia Glacier 945-4460) by appending a false data point 24 hours after the last recorded water level. This point was given a value of 20 meters, which is significantly different from the measured water levels. The 20-meter water level value was chosen to ensure that there would be a detectable error if Caris HIPS 5.4.1 interpolated between primary station data points rather than switching to the secondary station. This obviously erroneous value would also alert any reviewer to the manual entry of the final data point. This "workaround" process required by a deficiency in the data processing software allowed successful application of final approved water levels to the data, and is not an error in the acquired data set.

D. RESULTS AND RECOMMENDATIONS

D.1. Chart Comparison

D.1.a. Survey Agreement with Chart

Survey H11490 was compared with the following charts:

Chart	Scale	Edition and Date	Corrected for Notice to Mariners through
16700	1:200,000	29th Ed, July 2004	October 2005
16707	1:40,000	12th Ed; December 2005	November 2005
16708	1:79,291	29th Ed; October 2005	September 2005

Table 4: Charts compared with H11490

Chart 16700

Depths from survey H11490 were generally in agreement with charted soundings within two fathoms.[13]

Chart 16707

All charted depths agree well with discrepancies no greater than two fathoms with the exception of the area between Busby Island and Bligh Island. This is a rocky area of variable bathymetry which is not accurately represented on the current chart. The hydrographer recommends that the full bottom coverage bathymetry of H11490 supersede all prior surveys and charted depths in the common area.[14]

Chart 16708

Depths from survey H11490 were generally in agreement with charted soundings within two fathoms.[15]

As per project instructions, raster charts were used for chart comparison. The survey data was not compared to the ENC charts. The full bottom coverage bathymetry of H11490 was completed and the hydrographer has determined that data accuracy standards and bottom coverage requirements have been met and survey data are adequate to supersede charted data in their common areas.[16]

D.1.b. Dangers to Navigation

Eight (8) Dangers to Navigation (DTONs) were identified in survey H11490 and reported to the Marine Chart Division via email on June 9, 2006. The original DTON submission package is included in Appendix I. Descriptions of each DTON are included in the H11490_DtoN Report in Appendix I.[17]

D.1.c. Other Features

Automated Wreck and Obstruction Information System (AWOIS) Investigations

One AWOIS item fell within the survey limits of H11490. Descriptions of this AWOIS item investigation are included in the Survey Feature Report in Appendix II.[18]

Additional Items

Additional features investigated within the limits of H11490 are described in the Survey Feature Report included in Appendix II.[19]

D.2. Additional Results

D.2.a. Prior Survey Comparison

Prior survey comparison with H11490 was not performed.

D.2.b. Shoreline Verification

Shoreline Source

Vector photogrammetric project AK-0210 was supplied by N/NGS3 in the form of cartographic feature file GC-10540 (CFF). RAINIER conducted limited shoreline verification of the CFF. In addition, features shown on the current editions of charts 16700, 16707 and 16708 that were not depicted on the shoreline source document were digitized in MapInfo by RAINIER personnel and displayed in Hypack for field verification.

Shoreline Verification

As per project instruction, the charted and CFF source files were used for shoreline comparison. The survey data was not compared to the ENCs. The shoreline for survey H11490 was completed methodically and supersedes all prior survey.

Limited shoreline verification was conducted near predicted low water in accordance with the Standing Project Instructions and FPM section 2.4. Detached positions (DPs) taken during shoreline verification were recorded in HYPACK on DP forms, and processed in Pydro. These indicate revisions to features and features not found on the verified shoreline. In addition, annotations describing shoreline were recorded on hard copy plots of digital shoreline. DP forms are included in the *Separates to be Included with Survey Data*.

All shoreline data is submitted in Caris Notebook .hob files. The session H11490_NTBK contains the following:

H11490_CFF_Shoreline.HOB (original source data)
H11490_CHD_ Shoreline. HOB (digitized charted shoreline not seen in CFF)
H11490_add_Notebook.HOB (new features digitized in Notebook using DPs or VBES)
H11490_modify_notebook.HOB (features modified in Notebook using DPs or VBES)
H11490_delete_notebook.HOB (original source or charted features that have been modified and disprovals not needing Pydro DPs, e.g. 100% SWMB)
H11490_Add_Pydro.HOB (new features or bottom samples processed in Pydro)
H11490_Modify_Pydro.HOB (modified features, bottom samples processed in Pydro, verified charted or CFF source features processed in Pydro)
H11490_Delete_Pydro.HOB (disprovals processed in Pydro)

The combination of *modify* and *add* layers depict the shoreline as surveyed. The *delete* tables depict all disproved or modified features. The CFF and charted shoreline tables reflect unchanged features that were noted in the field.

Source Shoreline Changes and New Features

Items for survey H11490 that require further discussion and are associated with a detached position, have been flagged “Report” in Pydro in H11490.pss. Investigation methods and

recommendations are listed in the Remarks and Recommendation tabs. These features are included in the Survey Feature Report in Appendix I. [20]

The CHD (16708) rocks at 60°53'39.50" N 146°49'14.14" W off the west point of Busby Island were not noted individually because the area is foul with kelp and rocks.

Recommendations

The hydrographer recommends that the shoreline as depicted in the CARIS Notebook .hob files supersede and complement shoreline information compiled on the CFF and charts as noted.[21]

D.2.c. Aids to Navigation

Survey H11490 included one aid to navigation (ATONs) which was found to be correctly charted and served its intended purpose.[22]

D.2.d. Overhead features

There are no overhead features in survey H11490.

D.2.e. Submarine Cables and Pipelines

There are no submarine cable and pipelines in survey H11490.

D.2.f. Ferry Routes

There are no ferry routes on H11490.

D.2.g. Bottom Samples

Bottom samples were collected in survey H11490 and are depicted on the Detached Position and Bottom Sample Plot.[23]

D.2.h Miscellaneous

The Hydrographer noted many areas of eelgrass in West Bay and between Busby Island and Bligh Island. These have been added to the "H11490_add_Notebook" layer in notebook.

E. ADDITIONAL DOCUMENTATION

Listed below are supplemental reports submitted separately that contain additional information relevant to this survey:

Title	Date Sent	Office
Data Acquisition and Processing Report for OPR- P132-RA-05	TBD	N/CS34
Horizontal and Vertical Control Report for OPR- P132-RA-05	06/02/06	N/CS34
Tides and Water Levels Package for OPR- P132-RA-05	10/11/05	N/OPS1
Coast Pilot Report for OPR- P132-RA-05	TBD	N/CS26

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of Marine and Aviation Operations
Marine Operations Center
1801 Fairview Avenue East
Seattle, Washington 98102-3767

MEMORANDUM FOR: CDR Donald Haines, NOAA
Chief, Pacific Hydrographic Branch

FROM: CDR Guy Noll, NOAA
Commanding Officer
NOAA Ship RAINIER

DATE: June 1, 2006

TITLE: Approval of Hydrographic Survey H11490

Field operations for hydrographic survey H11490 were conducted under my direct supervision with frequent personal checks of progress and adequacy. I have reviewed the attached survey data and reports. The survey data meets or exceeds requirements as set forth in the NOS Hydrographic Surveys and Specifications Deliverables Manual, Field Procedures Manual, Standing and Letter Instructions, and HSD Technical Directives. These data are adequate to supersede charted data in their common areas. This survey is complete and no additional work is required. Data and reports are respectfully submitted to N/CS34, Pacific Hydrographic Branch.

In addition, the following individuals were responsible for oversight of acquisition and processing of this survey:

Survey Manager:
Nicola Samuelson
Lieutenant (junior grade), NOAA

Chief Survey Technician:
James B. Jacobson
Chief Survey Technician, NOAA Ship RAINIER

Field Operations Officer:
Benjamin K. Evans
Lieutenant, NOAA

Revisions Compiled During Office Processing and Certification

[1] Filed with the Project Records
[2] Do Not Concur: See Section B2 Quality Control, Data Quality Factors, Roll Artifacts
[3] Do not concur. No such report is included in the *OPR-P132-RA-05 DAPR*
[4] Concur
[5] Concur
[6] Concur
[7] This discrepancy does not affect the BASE Surfaces.
[8] Concur.
[9] Do Not Concur. The variable latency resulted in roll artifact errors of as much as +/- 0.5 m in 20m of water. The maximum allowable error in 20 m of water is +/- 0.4m, however the error does not have any apparent affect on the BASE Surfaces. The data was accepted during Survey Acceptance Review and used during HCell compilation.
[10] Nine WEDKLP point objects were delivered, and have been compiled to the HCell.
[11] Filed with the project records
[12] Appended to this report
[13] Concur
[14] Concur
[15] Concur
[16] Concur
[17] See attached DTONs Report. Six of the eight DTONs submitted were compiled to the HCell as submerged rocks and two (Nos. 1.3 and 1.7) were compiled as soundings.
[18] See attached Features Report
[19] See attached Features Report. With the exception of AWOIS Items and DTONs, features described in the H11490 Shoreline (Features) Report do not represent a complete listing of features for this survey. Rather, they list Pydro features that were collected for insertion into CARIS Notebook. A final accounting of features addressed by the survey and/or included in the HCell are included as Blue Notes (see attached HCell Report, Section 7, Blue Notes), and as NINFOM attributes for all features.
[20] See attached Features Report. With the exception of AWOIS Items and DTONs, features described in the H11490 Shoreline (Features) Report do not represent a complete listing of features for this survey. Rather, they list Pydro features that were collected for insertion into CARIS Notebook. A final accounting of features addressed by the survey and/or included in the HCell are included as Blue Notes (see attached HCell Report, Section 7, Blue Notes), and as NINFOM attributes for all features.
[21] Concur
[22] Use latest ATONIS information.
[23] Three SBDARE point objects were delivered from the field and included in the HCell. Seven additional bottom characteristics were included in the HCell from the charts.

H11490 Dangesr to Navigation

Registry Number: H11490

State: Alaska

Locality: Eastern Prince William Sound

Sub-locality: Bligh Island to Busby Island

Project Number: OPR-P132-RA-05

Survey Dates: September 8, 2005 - October 3, 2005

Charts Affected

Number	Version	Date	Scale
16708	26th Ed.	10/01/2004	1:40000
16700	29th Ed.	07/01/2004	1:200000
16013	29th Ed.	11/01/2003	1:969761
531	23rd Ed.	01/01/2006	1:2100000
500	8th Ed.	06/01/2003	1:3500000
50	6th Ed.	06/01/2003	1:10000000

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude
1.1	320/12	Sounding	3.18 m	060° 52' 19.635" N	146° 48' 35.662" W
1.2	485/19	Sounding	6.40 m	060° 48' 09.076" N	146° 48' 21.059" W
1.3	442/53	Sounding	3.01 m	060° 51' 11.859" N	146° 48' 39.438" W
1.4	3206/91	Sounding	5.69 m	060° 52' 18.702" N	146° 48' 09.997" W
1.5	334/15	Sounding	3.17 m	060° 52' 04.688" N	146° 49' 24.720" W
1.6	1081/98	Sounding	1.69 m	060° 51' 27.924" N	146° 48' 53.797" W
1.7	474/169	Sounding	7.45 m	060° 51' 41.148" N	146° 48' 46.141" W
1.8	407/2	Sounding	0.66 m	060° 51' 24.262" N	146° 49' 57.178" W

1 - Danger To Navigation

1.1) Profile/Beam - 320/12 from h11490 / 1006_reson8101_hvf / 2005-259 / 430_1652

DANGER TO NAVIGATION

Survey Summary

Survey Position:	060° 52' 19.635" N, 146° 48' 35.662" W
Least Depth:	3.18 m
Timestamp:	2005-259.16:52:47.300 (09/16/2005)
Survey Line:	h11490 / 1006_reson8101_hvf / 2005-259 / 430_1652
Profile/Beam:	320/12
Charts Affected:	16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

A 3.18 m (1.7 fathom) sounding offshore of the 10 fathom curve, in the vicinity of a charted (16708) 22 fathom sounding.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1006_reson8101_hvf/2005-259/430_1652	320/12	0.00	000.0	Primary

Hydrographer Recommendations

Hydrographer recommends charting shoal sounding.

Cartographically-Rounded Depth (Affected Charts):

1 ¾fm (16708_1, 16700_1, 16013_1)

1fm 4ft (531_1)

3.2m (500_1, 50_1)

S-57 Data

Geo object 1:	Sounding (SOUNDG)
Attributes:	QUASOU - 1:depth known
	TECSOU - 3:found by multi-beam

1.2) Profile/Beam - 485/19 from h11490 / 1006_reson8101_hvf / 2005-251 / 428_1727

DANGER TO NAVIGATION

Survey Summary

Survey Position: 060° 48' 09.076" N, 146° 48' 21.059" W

Least Depth: 6.40 m

Timestamp: 2005-251.17:27:57.673 (09/08/2005)

Survey Line: h11490 / 1006_reson8101_hvf / 2005-251 / 428_1727

Profile/Beam: 485/19

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

A 6.4 m (3.5 fathom) sounding between charted (16708) 5.5 fathom and 4.5 fathom soundings.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1006_reson8101_hvf/2005-251/428_1727	485/19	0.00	000.0	Primary

Hydrographer Recommendations

Hydrographer recommends charting shoal sounding.

Cartographically-Rounded Depth (Affected Charts):

3 ½fm (16708_1, 16700_1, 16013_1)

3fm 3ft (531_1)

6.4m (500_1, 50_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)

Attributes: QUASOU - 1:depth known

TECSOU - 3:found by multi-beam

1.3) Profile/Beam - 442/53 from h11490 / 1006_reson8101_hvf / 2005-258 / 336_1907

DANGER TO NAVIGATION

Survey Summary

Survey Position: 060° 51' 11.859" N, 146° 48' 39.438" W

Least Depth: 3.01 m

Timestamp: 2005-258.19:08:34.624 (09/15/2005)

Survey Line: h11490 / 1006_reson8101_hvf / 2005-258 / 336_1907

Profile/Beam: 442/53

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

A 3.01 m (1.6 fathom) sounding on a charted (16708) 5.5 fathom sounding.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1006_reson8101_hvf/2005-258/336_1907	442/53	0.00	000.0	Primary

Hydrographer Recommendations

Hydrographer recommends charting shoal sounding.

Cartographically-Rounded Depth (Affected Charts):

1 ½fm (16708_1, 16700_1, 16013_1)

1fm 4ft (531_1)

3.0m (500_1, 50_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)

Attributes: QUASOU - 1:depth known

TECSOU - 3:found by multi-beam

1.4) Profile/Beam - 3206/91 from h11490 / 1006_reson8101_hvf / 2005-258 / 432_2304

DANGER TO NAVIGATION

Survey Summary

Survey Position:	060° 52' 18.702" N, 146° 48' 09.997" W
Least Depth:	5.69 m
Timestamp:	2005-258.23:12:43.792 (09/15/2005)
Survey Line:	h11490 / 1006_reson8101_hvf / 2005-258 / 432_2304
Profile/Beam:	3206/91
Charts Affected:	16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

A 5.69 m (3.1 fathom) sounding in the vicinity of a charted (16708) 9 fathom sounding.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1006_reson8101_hvf/2005-258/432_2304	3206/91	0.00	000.0	Primary

Hydrographer Recommendations

Hydrographer recommends charting shoal sounding.

Cartographically-Rounded Depth (Affected Charts):

3fm (16708_1, 16700_1, 16013_1)

3fm 0ft (531_1)

5.7m (500_1, 50_1)

S-57 Data

Geo object 1:	Sounding (SOUNDG)
Attributes:	QUASOU - 1:depth known
	TECSOU - 3:found by multi-beam

1.5) Profile/Beam - 334/15 from h11490 / 1006_reson8101_hvf / 2005-259 / 353_2130

DANGER TO NAVIGATION

Survey Summary

Survey Position:	060° 52' 04.688" N, 146° 49' 24.720" W
Least Depth:	3.17 m
Timestamp:	2005-259.21:31:05.131 (09/16/2005)
Survey Line:	h11490 / 1006_reson8101_hvf / 2005-259 / 353_2130
Profile/Beam:	334/15
Charts Affected:	16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

A 3.17 m (1.7 fathom) sounding in the vicinity of a charted (16708) 4.75 fathom sounding.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1006_reson8101_hvf/2005-259/353_2130	334/15	0.00	000.0	Primary

Hydrographer Recommendations

Hydrographer recommends charting shoal sounding.

Cartographically-Rounded Depth (Affected Charts):

1 ¾fm (16708_1, 16700_1, 16013_1)

1fm 4ft (531_1)

3.1m (500_1, 50_1)

S-57 Data

Geo object 1:	Sounding (SOUNDG)
Attributes:	QUASOU - 1:depth known
	TECSOU - 3:found by multi-beam

1.6) Profile/Beam - 1081/98 from h11490 / 1006_reson8101_hvf / 2005-273 / 504_2252

DANGER TO NAVIGATION

Survey Summary

Survey Position:	060° 51' 27.924" N, 146° 48' 53.797" W
Least Depth:	1.69 m
Timestamp:	2005-273.22:54:49.177 (09/30/2005)
Survey Line:	h11490 / 1006_reson8101_hvf / 2005-273 / 504_2252
Profile/Beam:	1081/98
Charts Affected:	16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

A 1.69 m (0.9 fathom) sounding offshore of the charted (16708) 10 fathom curve and in the vicinity of a charted (16708) 15 fathom sounding.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1006_reson8101_hvf/2005-273/504_2252	1081/98	0.00	000.0	Primary

Hydrographer Recommendations

Hydrographer recommends charting shoal sounding.

Cartographically-Rounded Depth (Affected Charts):

0 ¾fm (16708_1, 16700_1, 16013_1)

0fm 5ft (531_1)

1.7m (500_1, 50_1)

S-57 Data

Geo object 1:	Sounding (SOUNDG)
Attributes:	QUASOU - 1:depth known
	TECSOU - 3:found by multi-beam

1.7) Profile/Beam - 474/169 from h11490 / 1016_reson8125_hvf / 2005-259 / 418_1912

DANGER TO NAVIGATION

Survey Summary

Survey Position: 060° 51' 41.148" N, 146° 48' 46.141" W

Least Depth: 7.45 m

Timestamp: 2005-259.19:13:48.415 (09/16/2005)

Survey Line: h11490 / 1016_reson8125_hvf / 2005-259 / 418_1912

Profile/Beam: 474/169

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

A 7.45 m (4 fathom) sounding offshore of the charted (16708) 10 fathom curve.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1016_reson8125_hvf/2005-259/418_1912	474/169	0.00	000.0	Primary

Hydrographer Recommendations

Hydrographer recommends charting shoal sounding.

Cartographically-Rounded Depth (Affected Charts):

4fm (16708_1, 16700_1, 16013_1)

4fm 0ft (531_1)

7.4m (500_1, 50_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)

Attributes: QUASOU - 1:depth known

TECSOU - 3:found by multi-beam

1.8) Profile/Beam - 407/2 from h11490 / 1021_reson8101_hvf / 2005-272 / 577_2157

DANGER TO NAVIGATION

Survey Summary

Survey Position: 060° 51' 24.262" N, 146° 49' 57.178" W

Least Depth: 0.66 m

Timestamp: 2005-272.21:57:55.379 (09/29/2005)

Survey Line: h11490 / 1021_reson8101_hvf / 2005-272 / 577_2157

Profile/Beam: 407/2

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

A 0.66 m (0.3 fathom) sounding in the vicinity of a charted (16708) 1.75 fathom sounding.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1021_reson8101_hvf/2005-272/577_2157	407/2	0.00	000.0	Primary

Hydrographer Recommendations

Hydrographer recommends charting shoal sounding.

Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (16708_1, 16700_1, 16013_1)

0fm 2ft (531_1)

.6m (500_1, 50_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)

Attributes: QUASOU - 1:depth known

TECSOU - 3:found by multi-beam

AWOIS Report

1.5) Profile/Beam - 3/1 from h11490 / 1103_nonechosounder_dp / 2005-262 / dp_1103_262

Survey Summary

Survey Position: 60.89482548° N, 146.82266856° W

Least Depth: -0.29 m

Timestamp: 2005-262.18:18:50.000 (09/19/2005)

DP Dataset: h11490 / 1103_nonechosounder_dp / 2005-262 / dp_1103_262

Profile/Beam: 3/1

Charts Affected: 16707_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

CHD (16708) WRECK NEW POSITION SW MOST EXT CHD (16708) WRECK

AWOIS

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1103_nonechosounder_dp/2005-262/dp_1103_262	3/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0fm (16708_1, 16700_1, 16013_1)

0fm 1ft (16707_1, 531_1)

-.3m (500_1, 50_1)

S-57 Data

Geo object 1: Wreck (WRECKS)

Attributes: CATWRK - 3:distributed remains of wreck

INFORM - SWM EXT CHD (16708) WRECK AWOIS

VALSOU - -0.289 m

WATLEV - 4:covers and uncovers

OFFICE NOTES: New WRECKS extents were defined to encompass distributed remains of the wreck. The WRECKS feature should be compiled to the ENC as an area object, and to the RNC as a point object.

H11490 Shoreline Report

Registry Number: H11490

State: Alaska

Locality: Eastern Prince William Sound

Sub-locality: Bligh Island to Busby Island

Project Number: OPR-P132-RA-05

Survey Dates: 09/08/2005 - 10/02/2005

Items for survey H11490 that needed further discussion and are associated with a detached position, have been flagged "report" in Pydro in the H11490.pss. Investigations/survey methods and recommendations are listed in the remarks tab.

Charts Affected

Number	Version	Date	Scale
16707	12th Ed.	12/01/2005	1:40000
16708	26th Ed.	10/01/2004	1:40000
16700	29th Ed.	07/01/2004	1:200000
16013	29th Ed.	11/01/2003	1:969761
531	23rd Ed.	01/01/2006	1:2100000
500	8th Ed.	06/01/2003	1:3500000
50	6th Ed.	06/01/2003	1:10000000

Features

No.	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	Sounding	7.85 m	60.82459151° N	146.81734418° W	---
1.2	Sounding	7.17 m	60.81967318° N	146.81829586° W	---
1.3	Sounding	-0.04 m	60.84002080° N	146.84791240° W	---
1.4	Rock	0.30 m	60.84175876° N	146.84131192° W	---
1.5	Wreck	-0.29 m	60.89482548° N	146.82266856° W	---
1.6	Sounding	7.95 m	60.87811482° N	146.80143715° W	---
1.7	Bottom Sample	[None]	60.81022830° N	146.85010669° W	---
1.8	Bottom Sample	[None]	60.86480163° N	146.85284502° W	---
1.9	Bottom Sample	[None]	60.88620002° N	146.80373832° W	---

Generated by Pydro v6.2.9-HF4 on Fri Jun 16 18:01:25 2006 [UTC]

2.1	Rock	1.50 m	60.86388937° N	146.76061746° W	---
2.2	Rock	-0.28 m	60.87197254° N	146.76624563° W	---
2.3	Sounding	-0.54 m	60.86938306° N	146.76443588° W	---
2.4	Rock	0.28 m	60.80747886° N	146.79891866° W	---
2.5	Sounding	-0.75 m	60.80911088° N	146.80127048° W	---
2.6	Sounding	1.73 m	60.80830828° N	146.80065060° W	---
2.7	Rock	1.94 m	60.81058109° N	146.80577462° W	---
2.8	Rock	1.64 m	60.81668263° N	146.81938924° W	---
2.9	Rock	-1.37 m	60.84069460° N	146.82246728° W	---
2.10	Rock	0.29 m	60.88052737° N	146.79155982° W	---
2.11	Sounding	-1.24 m	60.88036832° N	146.78297771° W	---
2.12	Rock	0.05 m	60.87706333° N	146.78565835° W	---
2.13	Rock	-2.06 m	60.87481332° N	146.78127832° W	---
2.14	Bottom Sample	[None]	60.87042668° N	146.77995500° W	---
2.15	Bottom Sample	[None]	60.89968003° N	146.81176333° W	---
2.16	Rock	1.50 m	60.86388937° N	146.76061746° W	---
2.17	Rock	-0.28 m	60.87197254° N	146.76624563° W	---
2.18	Sounding	-0.54 m	60.86938306° N	146.76443588° W	---
2.19	Rock	0.28 m	60.80747886° N	146.79891866° W	---
2.20	Sounding	-0.75 m	60.80911088° N	146.80127048° W	---
2.21	Sounding	1.73 m	60.80830828° N	146.80065060° W	---
2.22	Rock	1.94 m	60.81058109° N	146.80577462° W	---
2.23	Rock	1.64 m	60.81668263° N	146.81938924° W	---
2.24	Rock	-1.37 m	60.84069460° N	146.82246728° W	---
2.25	Rock	0.29 m	60.88052737° N	146.79155982° W	---
2.26	Sounding	-1.24 m	60.88036832° N	146.78297771° W	---
2.27	Rock	0.05 m	60.87706333° N	146.78565835° W	---
2.28	Rock	-2.06 m	60.87481332° N	146.78127832° W	---
2.29	Bottom Sample	[None]	60.87042668° N	146.77995500° W	---
2.30	Bottom Sample	[None]	60.89968003° N	146.81176333° W	---
3.1	Sounding	3.18 m	60.87212082° N	146.80990599° W	---
3.2	Sounding	6.40 m	60.80252117° N	146.80584967° W	---
3.3	Sounding	3.01 m	60.85329406° N	146.81095507° W	---
3.4	Sounding	5.69 m	60.87186161° N	146.80277707° W	---
3.5	Sounding	3.17 m	60.86796888° N	146.82353333° W	---
3.6	Sounding	1.69 m	60.85775654° N	146.81494349° W	---

3.7	Sounding	7.45 m	60.86143006° N	146.81281701° W	---
3.8	Sounding	0.66 m	60.85673931° N	146.83254956° W	---

1 - Charted Features

1.1) Profile/Beam - 1/1 from h11490 / 1103_echosounder_dp / 2005-261 / dp_1103_261_am

Survey Summary

Survey Position: 60.82459151° N, 146.81734418° W

Least Depth: 7.85 m

Timestamp: 2005-261.17:30:32.000 (09/18/2005)

DP Dataset: h11490 / 1103_echosounder_dp / 2005-261 / dp_1103_261_am

Profile/Beam: 1/1

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

CHD (16708) RK DISPROVAL CONDUCTED STAR PATTERN

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1103_echosounder_dp/2005-261/dp_1103_261_am	1/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

1.2) Profile/Beam - 2/1 from h11490 / 1103_echosounder_dp / 2005-261 / dp_1103_261_am

Survey Summary

Survey Position: 60.81967318° N, 146.81829586° W

Least Depth: 7.17 m

Timestamp: 2005-261.17:40:33.000 (09/18/2005)

DP Dataset: h11490 / 1103_echosounder_dp / 2005-261 / dp_1103_261_am

Profile/Beam: 2/1

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

CHD (16708) RK DISPROVAL CONDUCTED STAR PATTERN

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1103_echosounder_dp/2005-261/dp_1103_261_am	2/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

1.3) Profile/Beam - 1/1 from h11490 / 1103_nonechosounder_dp / 2005-262 / dp_1103_262

Survey Summary

Survey Position: 60.84002080° N, 146.84791240° W

Least Depth: -0.04 m

Timestamp: 2005-262.15:54:55.000 (09/19/2005)

DP Dataset: h11490 / 1103_nonechosounder_dp / 2005-262 / dp_1103_262

Profile/Beam: 1/1

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

CHD (16708) RK VERIFIED FOR HEIGHT

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1103_nonechosounder_dp/2005-262/dp_1103_262	1/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

1.4) Profile/Beam - 2/1 from h11490 / 1103_nonechosounder_dp / 2005-262 / dp_1103_262

Survey Summary

Survey Position: 60.84175876° N, 146.84131192° W

Least Depth: 0.30 m

Timestamp: 2005-262.16:00:23.000 (09/19/2005)

DP Dataset: h11490 / 1103_nonechosounder_dp / 2005-262 / dp_1103_262

Profile/Beam: 2/1

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

CHD (16708) RK NEW POSITION

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1103_nonechosounder_dp/2005-262/dp_1103_262	2/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0fm (16708_1, 16700_1, 16013_1)

0fm 1ft (531_1)

.3m (500_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: INFORM - CHD (16708) RK NEW POSITION

VALSOU - 0.303 m

WATLEV - 3:always under water/submerged

1.5) Profile/Beam - 3/1 from h11490 / 1103_nonechosounder_dp / 2005-262 / dp_1103_262

Survey Summary

Survey Position: 60.89482548° N, 146.82266856° W

Least Depth: -0.29 m

Timestamp: 2005-262.18:18:50.000 (09/19/2005)

DP Dataset: h11490 / 1103_nonechosounder_dp / 2005-262 / dp_1103_262

Profile/Beam: 3/1

Charts Affected: 16707_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

CHD (16708) WRECK NEW POSITION SW MOST EXT CHD (16708) WRECK

AWOIS

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1103_nonechosounder_dp/2005-262/dp_1103_262	3/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0fm (16708_1, 16700_1, 16013_1)

0fm 1ft (16707_1, 531_1)

-.3m (500_1, 50_1)

S-57 Data

Geo object 1: Wreck (WRECKS)

Attributes: CATWRK - 3:distributed remains of wreck

INFORM - SWM EXT CHD (16708) WRECK AWOIS

VALSOU - -0.289 m

WATLEV - 4:covers and uncovers

1.6) Profile/Beam - 1/1 from h11490 / 817_echosounder_dp / 2005-262 / dp_817_262

Survey Summary

Survey Position: 60.87811482° N, 146.80143715° W

Least Depth: 7.95 m

Timestamp: 2005-262.18:08:53.000 (09/19/2005)

DP Dataset: h11490 / 817_echosounder_dp / 2005-262 / dp_817_262

Profile/Beam: 1/1

Charts Affected: 16707_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

CHD (16708) REEF AREA VERIFIED FOR HEIGHT

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/817_echosounder_dp/2005-262/dp_817_262	1/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

1.7) GP No. - 1 from H11490_DN275.tgt

Survey Summary

Survey Position: 60.81022830° N, 146.85010669° W

Least Depth: [None]

Timestamp: 2005-275.18:10:52.000 (10/02/2005)

GP Dataset: H11490_DN275.tgt

GP No.: 1

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

GREY STICKY MUD

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11490_DN275.tgt	1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Seabed area (SBDARE)

Attributes: COLOUR - 7:grey

INFORM - GREY STICKY MUD

NATQUA - 5:sticky

NATSUR - 1:mud

1.8) GP No. - 2 from H11490_DN275.tgt

Survey Summary

Survey Position: 60.86480163° N, 146.85284502° W

Least Depth: [None]

Timestamp: 2005-275.18:25:53.000 (10/02/2005)

GP Dataset: H11490_DN275.tgt

GP No.: 2

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

GREY STICKY MUD

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11490_DN275.tgt	2	0.00	000.0	Primary

Hydrographer Recommendations

CHANGE BOTTOM TYPE FROM STICKY TO GREY STICKY MUD

S-57 Data

Geo object 1: Seabed area (SBDARE)

Attributes: COLOUR - 7:grey

INFORM - GREY STICKY MUD

NATQUA - 5:sticky

NATSUR - 1:mud

1.9) GP No. - 4 from H11490_DN275.tgt

Survey Summary

Survey Position: 60.88620002° N, 146.80373832° W

Least Depth: [None]

Timestamp: 2005-275.18:50:27.000 (10/02/2005)

GP Dataset: H11490_DN275.tgt

GP No.: 4

Charts Affected: 16707_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

GREY STICKY CLAY WITH BROKEN SHELLS

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11490_DN275.tgt	4	0.00	000.0	Primary

Hydrographer Recommendations

CHANGE BOTTOM TYPE FROM STICKY TO GREY STICKY CLAY WITH BROKEN SHELLS

S-57 Data

Geo object 1: Seabed area (SBDARE)

Attributes: COLOUR - 7:grey

INFORM - Grey sticky clay with broken shell

NATQUA - 4:broken; 5:sticky

NATSUR - 2:clay; 17:shells

2 - New Features

2.1) Profile/Beam - 1/1 from h11490 / 817_nonechosounder_dp / 2005-261 / dp_817_216

Survey Summary

Survey Position: 60.86388937° N, 146.76061746° W

Least Depth: 1.50 m

Timestamp: 2005-261.16:46:27.000 (09/18/2005)

DP Dataset: h11490 / 817_nonechosounder_dp / 2005-261 / dp_817_216

Profile/Beam: 1/1

Charts Affected: 16708_2, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

DP IS EXT NEW LDG Depth taken w/ LL

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/817_nonechosounder_dp/2005-261/dp_817_216	1/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0 ¾fm (16708_1, 16700_1, 16013_1)

0fm 5ft (16708_2, 531_1)

1.5m (500_1, 50_1)

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

2.2) Profile/Beam - 2/1 from h11490 / 817_nonechosounder_dp / 2005-261 / dp_817_216

Survey Summary

Survey Position: 60.87197254° N, 146.76624563° W

Least Depth: -0.28 m

Timestamp: 2005-261.17:29:03.000 (09/18/2005)

DP Dataset: h11490 / 817_nonechosounder_dp / 2005-261 / dp_817_216

Profile/Beam: 2/1

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

NEW RK

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/817_nonechosounder_dp/2005-261/dp_817_216	2/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0fm (16708_1, 16700_1, 16013_1)

0fm 1ft (531_1)

-.3m (500_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: INFORM - NEW RK

QUASOU - 1:depth known

TECSOU - 5:found by lead-line

VALSOU - -0.275 m

2.3) Profile/Beam - 3/1 from h11490 / 817_nonechosounder_dp / 2005-261 / dp_817_216

Survey Summary

Survey Position: 60.86938306° N, 146.76443588° W

Least Depth: -0.54 m

Timestamp: 2005-261.17:46:09.000 (09/18/2005)

DP Dataset: h11490 / 817_nonechosounder_dp / 2005-261 / dp_817_216

Profile/Beam: 3/1

Charts Affected: 16708_2, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

DP IS N EXT NEW REEF

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/817_nonechosounder_dp/2005-261/dp_817_216	3/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (16708_1, 16700_1, 16013_1)

0fm 2ft (16708_2, 531_1)

-.6m (500_1, 50_1)

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

2.4) Profile/Beam - 2/1 from h11490 / 1103_nonechosounder_dp / 2005-261 / dp_1103_261_am

Survey Summary

Survey Position: 60.80747886° N, 146.79891866° W

Least Depth: 0.28 m

Timestamp: 2005-261.16:49:56.000 (09/18/2005)

DP Dataset: h11490 / 1103_nonechosounder_dp / 2005-261 / dp_1103_261_am

Profile/Beam: 2/1

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

NEW RK

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1103_nonechosounder_dp/2005-261/dp_1103_261_am	2/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0fm (16708_1, 16700_1, 16013_1)

0fm 1ft (531_1)

.3m (500_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: INFORM - NEW RK

VALSOU - 0.283 m

2.5) Profile/Beam - 3/1 from h11490 / 1103_nonechosounder_dp / 2005-261 / dp_1103_261_am

Survey Summary

Survey Position: 60.80911088° N, 146.80127048° W

Least Depth: -0.75 m

Timestamp: 2005-261.16:53:37.000 (09/18/2005)

DP Dataset: h11490 / 1103_nonechosounder_dp / 2005-261 / dp_1103_261_am

Profile/Beam: 3/1

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

CFF RK VERIFIED FOR HEIGHT

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1103_nonechosounder_dp/2005-261/dp_1103_261_am	3/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

2.6) Profile/Beam - 4/1 from h11490 / 1103_nonechosounder_dp / 2005-261 / dp_1103_261_am

Survey Summary

Survey Position: 60.80830828° N, 146.80065060° W

Least Depth: 1.73 m

Timestamp: 2005-261.16:56:17.000 (09/18/2005)

DP Dataset: h11490 / 1103_nonechosounder_dp / 2005-261 / dp_1103_261_am

Profile/Beam: 4/1

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

CFF RK VERIFIED FOR HEIGHT Depth taken w/ LL

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1103_nonechosounder_dp/2005-261/dp_1103_261_am	4/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

2.7) Profile/Beam - 5/1 from h11490 / 1103_nonechosounder_dp / 2005-261 / dp_1103_261_am

Survey Summary

Survey Position: 60.81058109° N, 146.80577462° W

Least Depth: 1.94 m

Timestamp: 2005-261.17:04:07.000 (09/18/2005)

DP Dataset: h11490 / 1103_nonechosounder_dp / 2005-261 / dp_1103_261_am

Profile/Beam: 5/1

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

NEW RK Depth taken w/ LL

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1103_nonechosounder_dp/2005-261/dp_1103_261_am	5/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

1fm (16708_1, 16700_1, 16013_1)

1fm 0ft (531_1)

1.9m (500_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: INFORM - NEW RK (USED LL FOR DEPTH)

VALSOU - 1.940 m

2.8) Profile/Beam - 6/1 from h11490 / 1103_nonechosounder_dp / 2005-261 / dp_1103_261_am

Survey Summary

Survey Position: 60.81668263° N, 146.81938924° W

Least Depth: 1.64 m

Timestamp: 2005-261.17:44:09.000 (09/18/2005)

DP Dataset: h11490 / 1103_nonechosounder_dp / 2005-261 / dp_1103_261_am

Profile/Beam: 6/1

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

DP IS MOST SEAWARD POINT OF NEW LDG Depth taken w/ LL

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1103_nonechosounder_dp/2005-261/dp_1103_261_am	6/1	0.00	000.0	Primary

Hydrographer Recommendations

REMOVE RK SYMBOL AND REPLACE W/ LDG SYMBOL

Cartographically-Rounded Depth (Affected Charts):

0 ¾fm (16708_1, 16700_1, 16013_1)

0fm 5ft (531_1)

1.6m (500_1, 50_1)

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

2.9) Profile/Beam - 1/1 from h11490 / 1103_nonechosounder_dp / 2005-262 / dp_1103_261_pm

Survey Summary

Survey Position: 60.84069460° N, 146.82246728° W

Least Depth: -1.37 m

Timestamp: 2005-262.02:06:43.000 (09/19/2005)

DP Dataset: h11490 / 1103_nonechosounder_dp / 2005-262 / dp_1103_261_pm

Profile/Beam: 1/1

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

DP IS MOST SEAWARD POINT OF NEW LDG

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1103_nonechosounder_dp/2005-262/dp_1103_261_pm	1/1	0.00	000.0	Primary

Hydrographer Recommendations

REMOVE RK SYMBOL AND REPLACE W/ LDG SYMBOL

Cartographically-Rounded Depth (Affected Charts):

0 ¾fm (16708_1, 16700_1, 16013_1)

0fm 4ft (531_1)

-1.4m (500_1, 50_1)

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

2.10) Profile/Beam - 1/1 from h11490 / 817_nonechosounder_dp / 2005-262 / dp_817_262

Survey Summary

Survey Position: 60.88052737° N, 146.79155982° W

Least Depth: 0.29 m

Timestamp: 2005-262.16:46:07.000 (09/19/2005)

DP Dataset: h11490 / 817_nonechosounder_dp / 2005-262 / dp_817_262

Profile/Beam: 1/1

Charts Affected: 16707_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

NEW RK IS HP S EXT FOUL

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/817_nonechosounder_dp/2005-262/dp_817_262	1/1	0.00	000.0	Primary
h11490/817_nonechosounder_dp/2005-262/dp_817_262	2/1	97.69	217.2	Secondary (grouped)

Hydrographer Recommendations

NEW RK IS S EXT OF FOUL

Cartographically-Rounded Depth (Affected Charts):

0fm (16708_1, 16700_1, 16013_1)

0fm 1ft (16707_1, 531_1)

.3m (500_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: VALSOU - 0.287 m

2.11) Profile/Beam - 3/1 from h11490 / 817_nonechosounder_dp / 2005-262 / dp_817_262

Survey Summary

Survey Position: 60.88036832° N, 146.78297771° W

Least Depth: -1.24 m

Timestamp: 2005-262.17:01:41.000 (09/19/2005)

DP Dataset: h11490 / 817_nonechosounder_dp / 2005-262 / dp_817_262

Profile/Beam: 3/1

Charts Affected: 16707_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

DP FOR HEIGHT OF NEW REEF

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/817_nonechosounder_dp/2005-262/dp_817_262	3/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

2.12) Profile/Beam - 1/1 from h11490 / 1103_nonechosounder_dp / 2005-272 / dp_1103_272

Survey Summary

Survey Position: 60.87706333° N, 146.78565835° W

Least Depth: 0.05 m

Timestamp: 2005-272.19:05:09.000 (09/29/2005)

DP Dataset: h11490 / 1103_nonechosounder_dp / 2005-272 / dp_1103_272

Profile/Beam: 1/1

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

NEW RK Depth taken w/ LL

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1103_nonechosounder_dp/2005-272/dp_1103_272	1/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0fm (16708_1, 16700_1, 16013_1)

0fm 0ft (531_1)

.0m (500_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: INFORM - NEW RK (USED LL TO DETERMINE DEPTH)

VALSOU - 0.046 m

2.13) Profile/Beam - 2/1 from h11490 / 1103_nonechosounder_dp / 2005-272 / dp_1103_272

Survey Summary

Survey Position: 60.87481332° N, 146.78127832° W

Least Depth: -2.06 m

Timestamp: 2005-272.19:26:13.000 (09/29/2005)

DP Dataset: h11490 / 1103_nonechosounder_dp / 2005-272 / dp_1103_272

Profile/Beam: 2/1

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

NEW RK Depth taken w/ LL

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1103_nonechosounder_dp/2005-272/dp_1103_272	2/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

-1fm (16708_1, 16700_1, 16013_1)

-1fm 1ft (531_1)

-2.1m (500_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: INFORM - New RK

VALSOU - -2.060 m

2.14) GP No. - 3 from H11490_DN275.tgt

Survey Summary

Survey Position: 60.87042668° N, 146.77995500° W

Least Depth: [None]

Timestamp: 2005-275.18:39:21.000 (10/02/2005)

GP Dataset: H11490_DN275.tgt

GP No.: 3

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

GREY CLAY WITH BROKEN SHELLS

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11490_DN275.tgt	3	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Seabed area (SBDARE)

Attributes: COLOUR - 7:grey

INFORM - GREY CLAY WITH BROKEN SHELLS

NATQUA - 4:broken

NATSUR - 2:clay; 17:shells

2.15) GP No. - 5 from H11490_DN275.tgt

Survey Summary

Survey Position: 60.89968003° N, 146.81176333° W

Least Depth: [None]

Timestamp: 2005-275.19:01:53.000 (10/02/2005)

GP Dataset: H11490_DN275.tgt

GP No.: 5

Charts Affected: 16707_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

GREY MUD, FINE, GRAVEL and BROKEN SHELLS

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11490_DN275.tgt	5	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Seabed area (SBDARE)

Attributes: COLOUR - 7:grey

INFORM - Grey mud, fine, gravel and broken shell

NATQUA - 1:fine; 4:broken; 5:sticky

NATSUR - 1:mud; 6:gravel; 17:shells

2.16) Profile/Beam - 1/1 from h11490 / 817_nonechosounder_dp / 2005-261 / dp_817_216

Survey Summary

Survey Position: 60.86388937° N, 146.76061746° W

Least Depth: 1.50 m

Timestamp: 2005-261.16:46:27.000 (09/18/2005)

DP Dataset: h11490 / 817_nonechosounder_dp / 2005-261 / dp_817_216

Profile/Beam: 1/1

Charts Affected: 16708_2, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

DP IS EXT NEW LDG Depth taken w/ LL

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/817_nonechosounder_dp/2005-261/dp_817_216	1/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0 ¾fm (16708_1, 16700_1, 16013_1)

0fm 5ft (16708_2, 531_1)

1.5m (500_1, 50_1)

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

2.17) Profile/Beam - 2/1 from h11490 / 817_nonechosounder_dp / 2005-261 / dp_817_216

Survey Summary

Survey Position: 60.87197254° N, 146.76624563° W

Least Depth: -0.28 m

Timestamp: 2005-261.17:29:03.000 (09/18/2005)

DP Dataset: h11490 / 817_nonechosounder_dp / 2005-261 / dp_817_216

Profile/Beam: 2/1

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

NEW RK

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/817_nonechosounder_dp/2005-261/dp_817_216	2/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0fm (16708_1, 16700_1, 16013_1)

0fm 1ft (531_1)

-.3m (500_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: INFORM - NEW RK

QUASOU - 1:depth known

TECSOU - 5:found by lead-line

VALSOU - -0.275 m

2.18) Profile/Beam - 3/1 from h11490 / 817_nonechosounder_dp / 2005-261 / dp_817_216

Survey Summary

Survey Position: 60.86938306° N, 146.76443588° W

Least Depth: -0.54 m

Timestamp: 2005-261.17:46:09.000 (09/18/2005)

DP Dataset: h11490 / 817_nonechosounder_dp / 2005-261 / dp_817_216

Profile/Beam: 3/1

Charts Affected: 16708_2, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

DP IS N EXT NEW REEF

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/817_nonechosounder_dp/2005-261/dp_817_216	3/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (16708_1, 16700_1, 16013_1)

0fm 2ft (16708_2, 531_1)

-.6m (500_1, 50_1)

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

2.19) Profile/Beam - 2/1 from h11490 / 1103_nonechosounder_dp / 2005-261 / dp_1103_261_am

Survey Summary

Survey Position: 60.80747886° N, 146.79891866° W

Least Depth: 0.28 m

Timestamp: 2005-261.16:49:56.000 (09/18/2005)

DP Dataset: h11490 / 1103_nonechosounder_dp / 2005-261 / dp_1103_261_am

Profile/Beam: 2/1

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

NEW RK

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1103_nonechosounder_dp/2005-261/dp_1103_261_am	2/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0fm (16708_1, 16700_1, 16013_1)

0fm 1ft (531_1)

.3m (500_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: INFORM - NEW RK

VALSOU - 0.283 m

2.20) Profile/Beam - 3/1 from h11490 / 1103_nonechosounder_dp / 2005-261 / dp_1103_261_am

Survey Summary

Survey Position: 60.80911088° N, 146.80127048° W

Least Depth: -0.75 m

Timestamp: 2005-261.16:53:37.000 (09/18/2005)

DP Dataset: h11490 / 1103_nonechosounder_dp / 2005-261 / dp_1103_261_am

Profile/Beam: 3/1

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

CFF RK VERIFIED FOR HEIGHT

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1103_nonechosounder_dp/2005-261/dp_1103_261_am	3/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

2.21) Profile/Beam - 4/1 from h11490 / 1103_nonechosounder_dp / 2005-261 / dp_1103_261_am

Survey Summary

Survey Position: 60.80830828° N, 146.80065060° W

Least Depth: 1.73 m

Timestamp: 2005-261.16:56:17.000 (09/18/2005)

DP Dataset: h11490 / 1103_nonechosounder_dp / 2005-261 / dp_1103_261_am

Profile/Beam: 4/1

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

CFF RK VERIFIED FOR HEIGHT Depth taken w/ LL

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1103_nonechosounder_dp/2005-261/dp_1103_261_am	4/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

2.22) Profile/Beam - 5/1 from h11490 / 1103_nonechosounder_dp / 2005-261 / dp_1103_261_am

Survey Summary

Survey Position: 60.81058109° N, 146.80577462° W

Least Depth: 1.94 m

Timestamp: 2005-261.17:04:07.000 (09/18/2005)

DP Dataset: h11490 / 1103_nonechosounder_dp / 2005-261 / dp_1103_261_am

Profile/Beam: 5/1

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

NEW RK Depth taken w/ LL

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1103_nonechosounder_dp/2005-261/dp_1103_261_am	5/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

1fm (16708_1, 16700_1, 16013_1)

1fm 0ft (531_1)

1.9m (500_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: INFORM - NEW RK (USED LL FOR DEPTH)

VALSOU - 1.940 m

2.23) Profile/Beam - 6/1 from h11490 / 1103_nonechosounder_dp / 2005-261 / dp_1103_261_am

Survey Summary

Survey Position: 60.81668263° N, 146.81938924° W

Least Depth: 1.64 m

Timestamp: 2005-261.17:44:09.000 (09/18/2005)

DP Dataset: h11490 / 1103_nonechosounder_dp / 2005-261 / dp_1103_261_am

Profile/Beam: 6/1

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

DP IS MOST SEAWARD POINT OF NEW LDG Depth taken w/ LL

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1103_nonechosounder_dp/2005-261/dp_1103_261_am	6/1	0.00	000.0	Primary

Hydrographer Recommendations

REMOVE RK SYMBOL AND REPLACE W/ LDG SYMBOL

Cartographically-Rounded Depth (Affected Charts):

0 ¾fm (16708_1, 16700_1, 16013_1)

0fm 5ft (531_1)

1.6m (500_1, 50_1)

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

2.24) Profile/Beam - 1/1 from h11490 / 1103_nonechosounder_dp / 2005-262 / dp_1103_261_pm

Survey Summary

Survey Position: 60.84069460° N, 146.82246728° W

Least Depth: -1.37 m

Timestamp: 2005-262.02:06:43.000 (09/19/2005)

DP Dataset: h11490 / 1103_nonechosounder_dp / 2005-262 / dp_1103_261_pm

Profile/Beam: 1/1

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

DP IS MOST SEAWARD POINT OF NEW LDG

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1103_nonechosounder_dp/2005-262/dp_1103_261_pm	1/1	0.00	000.0	Primary

Hydrographer Recommendations

REMOVE RK SYMBOL AND REPLACE W/ LDG SYMBOL

Cartographically-Rounded Depth (Affected Charts):

0 ¾fm (16708_1, 16700_1, 16013_1)

0fm 4ft (531_1)

-1.4m (500_1, 50_1)

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

2.25) Profile/Beam - 1/1 from h11490 / 817_nonechosounder_dp / 2005-262 / dp_817_262

Survey Summary

Survey Position: 60.88052737° N, 146.79155982° W

Least Depth: 0.29 m

Timestamp: 2005-262.16:46:07.000 (09/19/2005)

DP Dataset: h11490 / 817_nonechosounder_dp / 2005-262 / dp_817_262

Profile/Beam: 1/1

Charts Affected: 16707_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

NEW RK IS HP S EXT FOUL

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/817_nonechosounder_dp/2005-262/dp_817_262	1/1	0.00	000.0	Primary
h11490/817_nonechosounder_dp/2005-262/dp_817_262	2/1	97.69	217.2	Secondary (grouped)

Hydrographer Recommendations

NEW RK IS S EXT OF FOUL

Cartographically-Rounded Depth (Affected Charts):

0fm (16708_1, 16700_1, 16013_1)

0fm 1ft (16707_1, 531_1)

.3m (500_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: VALSOU - 0.287 m

2.26) Profile/Beam - 3/1 from h11490 / 817_nonechosounder_dp / 2005-262 / dp_817_262

Survey Summary

Survey Position: 60.88036832° N, 146.78297771° W

Least Depth: -1.24 m

Timestamp: 2005-262.17:01:41.000 (09/19/2005)

DP Dataset: h11490 / 817_nonechosounder_dp / 2005-262 / dp_817_262

Profile/Beam: 3/1

Charts Affected: 16707_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

DP FOR HEIGHT OF NEW REEF

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/817_nonechosounder_dp/2005-262/dp_817_262	3/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

2.27) Profile/Beam - 1/1 from h11490 / 1103_nonechosounder_dp / 2005-272 / dp_1103_272

Survey Summary

Survey Position: 60.87706333° N, 146.78565835° W

Least Depth: 0.05 m

Timestamp: 2005-272.19:05:09.000 (09/29/2005)

DP Dataset: h11490 / 1103_nonechosounder_dp / 2005-272 / dp_1103_272

Profile/Beam: 1/1

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

NEW RK Depth taken w/ LL

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1103_nonechosounder_dp/2005-272/dp_1103_272	1/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0fm (16708_1, 16700_1, 16013_1)

0fm 0ft (531_1)

.0m (500_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: INFORM - NEW RK (USED LL TO DETERMINE DEPTH)

VALSOU - 0.046 m

2.28) Profile/Beam - 2/1 from h11490 / 1103_nonechosounder_dp / 2005-272 / dp_1103_272

Survey Summary

Survey Position: 60.87481332° N, 146.78127832° W

Least Depth: -2.06 m

Timestamp: 2005-272.19:26:13.000 (09/29/2005)

DP Dataset: h11490 / 1103_nonechosounder_dp / 2005-272 / dp_1103_272

Profile/Beam: 2/1

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

NEW RK Depth taken w/ LL

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1103_nonechosounder_dp/2005-272/dp_1103_272	2/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

-1fm (16708_1, 16700_1, 16013_1)

-1fm 1ft (531_1)

-2.1m (500_1, 50_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: INFORM - New RK

VALSOU - -2.060 m

2.29) GP No. - 3 from H11490_DN275.tgt

Survey Summary

Survey Position: 60.87042668° N, 146.77995500° W

Least Depth: [None]

Timestamp: 2005-275.18:39:21.000 (10/02/2005)

GP Dataset: H11490_DN275.tgt

GP No.: 3

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

GREY CLAY WITH BROKEN SHELLS

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11490_DN275.tgt	3	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Seabed area (SBDARE)

Attributes: COLOUR - 7:grey

INFORM - GREY CLAY WITH BROKEN SHELLS

NATQUA - 4:broken

NATSUR - 2:clay; 17:shells

2.30) GP No. - 5 from H11490_DN275.tgt

Survey Summary

Survey Position: 60.89968003° N, 146.81176333° W

Least Depth: [None]

Timestamp: 2005-275.19:01:53.000 (10/02/2005)

GP Dataset: H11490_DN275.tgt

GP No.: 5

Charts Affected: 16707_1, 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

GREY MUD, FINE, GRAVEL and BROKEN SHELLS

Feature Correlation

Address	Feature	Range	Azimuth	Status
H11490_DN275.tgt	5	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1: Seabed area (SBDARE)

Attributes: COLOUR - 7:grey

INFORM - Grey mud, fine, gravel and broken shell

NATQUA - 1:fine; 4:broken; 5:sticky

NATSUR - 1:mud; 6:gravel; 17:shells

3 - Dangers to Navigation

3.1) Profile/Beam - 320/12 from h11490 / 1006_reson8101_hvf / 2005-259 / 430_1652

DANGER TO NAVIGATION

Survey Summary

Survey Position: 60.87212082° N, 146.80990599° W

Least Depth: 3.18 m

Timestamp: 2005-259.16:52:47.300 (09/16/2005)

Survey Line: h11490 / 1006_reson8101_hvf / 2005-259 / 430_1652

Profile/Beam: 320/12

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

A 3.18 m (1.7 fathom) sounding offshore of the 10 fathom curve, in the vicinity of a charted (16708) 22 fathom sounding.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1006_reson8101_hvf/2005-259/430_1652	320/12	0.00	000.0	Primary

Hydrographer Recommendations

Hydrographer recommends charting shoal sounding.

Cartographically-Rounded Depth (Affected Charts):

1 ¾fm (16708_1, 16700_1, 16013_1)

1fm 4ft (531_1)

3.2m (500_1, 50_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)

Attributes: QUASOU - 1:depth known

TECSOU - 3:found by multi-beam

3.2) Profile/Beam - 485/19 from h11490 / 1006_reson8101_hvf / 2005-251 / 428_1727

DANGER TO NAVIGATION

Survey Summary

Survey Position: 60.80252117° N, 146.80584967° W

Least Depth: 6.40 m

Timestamp: 2005-251.17:27:57.673 (09/08/2005)

Survey Line: h11490 / 1006_reson8101_hvf / 2005-251 / 428_1727

Profile/Beam: 485/19

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

A 6.4 m (3.5 fathom) sounding between charted (16708) 5.5 fathom and 4.5 fathom soundings.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1006_reson8101_hvf/2005-251/428_1727	485/19	0.00	000.0	Primary

Hydrographer Recommendations

Hydrographer recommends charting shoal sounding.

Cartographically-Rounded Depth (Affected Charts):

3 ½fm (16708_1, 16700_1, 16013_1)

3fm 3ft (531_1)

6.4m (500_1, 50_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)

Attributes: QUASOU - 1:depth known

TECSOU - 3:found by multi-beam

3.3) Profile/Beam - 442/53 from h11490 / 1006_reson8101_hvf / 2005-258 / 336_1907

DANGER TO NAVIGATION

Survey Summary

Survey Position: 60.85329406° N, 146.81095507° W

Least Depth: 3.01 m

Timestamp: 2005-258.19:08:34.624 (09/15/2005)

Survey Line: h11490 / 1006_reson8101_hvf / 2005-258 / 336_1907

Profile/Beam: 442/53

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

A 3.01 m (1.6 fathom) sounding on a charted (16708) 5.5 fathom sounding.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1006_reson8101_hvf/2005-258/336_1907	442/53	0.00	000.0	Primary

Hydrographer Recommendations

Hydrographer recommends charting shoal sounding.

Cartographically-Rounded Depth (Affected Charts):

1 ½fm (16708_1, 16700_1, 16013_1)

1fm 4ft (531_1)

3.0m (500_1, 50_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)

Attributes: QUASOU - 1:depth known

TECSOU - 3:found by multi-beam

3.4) Profile/Beam - 3206/91 from h11490 / 1006_reson8101_hvf / 2005-258 / 432_2304

DANGER TO NAVIGATION

Survey Summary

Survey Position: 60.87186161° N, 146.80277707° W

Least Depth: 5.69 m

Timestamp: 2005-258.23:12:43.792 (09/15/2005)

Survey Line: h11490 / 1006_reson8101_hvf / 2005-258 / 432_2304

Profile/Beam: 3206/91

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

A 5.69 m (3.1 fathom) sounding in the vicinity of a charted (16708) 9 fathom sounding.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1006_reson8101_hvf/2005-258/432_2304	3206/91	0.00	000.0	Primary

Hydrographer Recommendations

Hydrographer recommends charting shoal sounding.

Cartographically-Rounded Depth (Affected Charts):

3fm (16708_1, 16700_1, 16013_1)

3fm 0ft (531_1)

5.7m (500_1, 50_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)

Attributes: QUASOU - 1:depth known

TECSOU - 3:found by multi-beam

3.5) Profile/Beam - 334/15 from h11490 / 1006_reson8101_hvf / 2005-259 / 353_2130

DANGER TO NAVIGATION

Survey Summary

Survey Position: 60.86796888° N, 146.82353333° W

Least Depth: 3.17 m

Timestamp: 2005-259.21:31:05.131 (09/16/2005)

Survey Line: h11490 / 1006_reson8101_hvf / 2005-259 / 353_2130

Profile/Beam: 334/15

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

A 3.17 m (1.7 fathom) sounding in the vicinity of a charted (16708) 4.75 fathom sounding.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1006_reson8101_hvf/2005-259/353_2130	334/15	0.00	000.0	Primary

Hydrographer Recommendations

Hydrographer recommends charting shoal sounding.

Cartographically-Rounded Depth (Affected Charts):

1 ¾fm (16708_1, 16700_1, 16013_1)

1fm 4ft (531_1)

3.1m (500_1, 50_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)

Attributes: QUASOU - 1:depth known

TECSOU - 3:found by multi-beam

3.6) Profile/Beam - 1081/98 from h11490 / 1006_reson8101_hvf / 2005-273 / 504_2252

DANGER TO NAVIGATION

Survey Summary

Survey Position: 60.85775654° N, 146.81494349° W

Least Depth: 1.69 m

Timestamp: 2005-273.22:54:49.177 (09/30/2005)

Survey Line: h11490 / 1006_reson8101_hvf / 2005-273 / 504_2252

Profile/Beam: 1081/98

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

A 1.69 m (0.9 fathom) sounding offshore of the charted (16708) 10 fathom curve and in the vicinity of a charter (16708) 15 fathom sounding.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1006_reson8101_hvf/2005-273/504_2252	1081/98	0.00	000.0	Primary

Hydrographer Recommendations

Hydrographer recommends charting shoal sounding.

Cartographically-Rounded Depth (Affected Charts):

0 ¾fm (16708_1, 16700_1, 16013_1)

0fm 5ft (531_1)

1.7m (500_1, 50_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)

Attributes: QUASOU - 1:depth known

TECSOU - 3:found by multi-beam

3.7) Profile/Beam - 474/169 from h11490 / 1016_reson8125_hvf / 2005-259 / 418_1912

DANGER TO NAVIGATION

Survey Summary

Survey Position: 60.86143006° N, 146.81281701° W

Least Depth: 7.45 m

Timestamp: 2005-259.19:13:48.415 (09/16/2005)

Survey Line: h11490 / 1016_reson8125_hvf / 2005-259 / 418_1912

Profile/Beam: 474/169

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

A 7.45 m (4 fathom) sounding offshore of the charted (16708) 10 fathom curve.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1016_reson8125_hvf/2005-259/418_1912	474/169	0.00	000.0	Primary

Hydrographer Recommendations

Hydrographer recommends charting shoal sounding.

Cartographically-Rounded Depth (Affected Charts):

4fm (16708_1, 16700_1, 16013_1)

4fm 0ft (531_1)

7.4m (500_1, 50_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)

Attributes: QUASOU - 1:depth known

TECSOU - 3:found by multi-beam

3.8) Profile/Beam - 407/2 from h11490 / 1021_reson8101_hvf / 2005-272 / 577_2157

DANGER TO NAVIGATION

Survey Summary

Survey Position: 60.85673931° N, 146.83254956° W

Least Depth: 0.66 m

Timestamp: 2005-272.21:57:55.379 (09/29/2005)

Survey Line: h11490 / 1021_reson8101_hvf / 2005-272 / 577_2157

Profile/Beam: 407/2

Charts Affected: 16708_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

A 0.66 m (0.3 fathom) sounding in the vicinity of a charted (16708) 1.75 fathom sounding.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11490/1021_reson8101_hvf/2005-272/577_2157	407/2	0.00	000.0	Primary

Hydrographer Recommendations

Hydrographer recommends charting shoal sounding.

Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (16708_1, 16700_1, 16013_1)

0fm 2ft (531_1)

.6m (500_1, 50_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)

Attributes: QUASOU - 1:depth known

TECSOU - 3:found by multi-beam

UNITED STATES DEPARMENT OF COMMERCE
National Oceanic and Atmospheric Administration
National Ocean Service
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : January 11, 2006

HYDROGRAPHIC BRANCH: Pacific
HYDROGRAPHIC PROJECT: OPR-P132-RA-2005
HYDROGRAPHIC SHEET: H11490

LOCALITY: Bligh Island to Busby Island, Eastern Prince William Sound, AK
TIME PERIOD: September 8 - October 3, 2005

TIDE STATION USED: Columbia Glacier, AK 945-4460
Lat. 61 01.4' N Long. 147 05.1' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 3.384 meters

TIDE STATION USED: Valdez, AK 945-4240
Lat. 61 07.5' N Long. 146 21.8' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 3.417 meters

REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: PWS64, PWS65, PWS66, & PWS67

Refer to attachments for zoning information.

Note 1: Provided time series data are tabulated in metric units (meters), relative to MLLW and on Greenwich Mean Time on the 1983-2001 National Tidal Datum Epoch (NTDE).

Note 2: Use tide data from the appropriate station with applicable zoning correctors for each zone according to the order in which they are listed in the Tidezone corrector file (*.ZDF). For example, tide station one (TS1) would be the first choice for an applicable zone followed by TS2, etc. when data are not available.

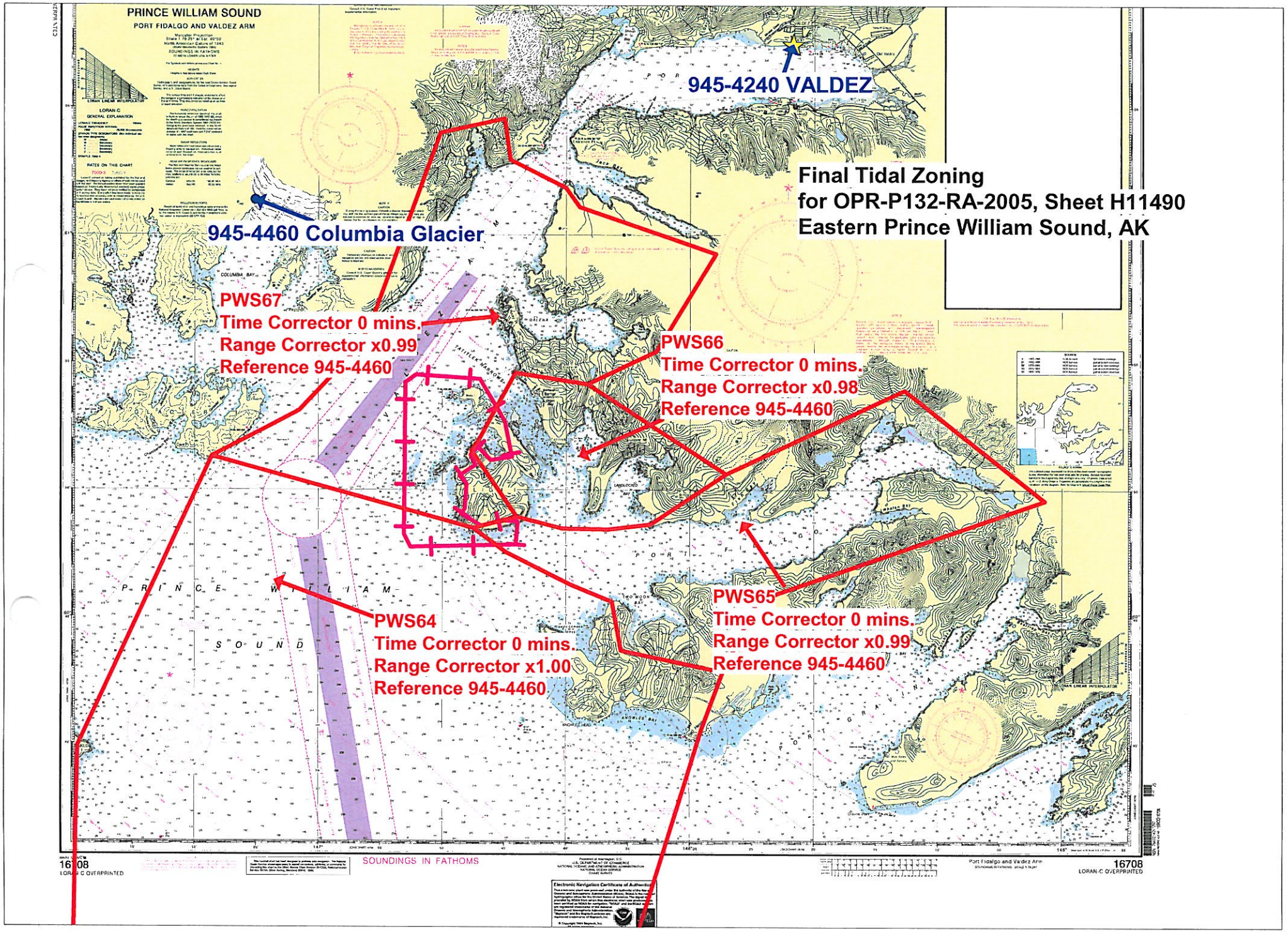
CHIEF, PRODUCTS AND SERVICES DIVISION

Final tide zone node point locations for OPR-P132-RA-2005, H11490

Format: Tide Station (in recommended order of use)
Average Time Correction (in minutes)
Range Correction
Longitude in decimal degrees (negative value denotes Longitude West),
Latitude in decimal degrees

Zone	Tide Station Order	AVG Time Correction	Range Correction
PWS64	945-4460	0	x1.00
	945-4240	0	x0.99
-147.330451 60.530561			
-147.324012 60.665001			
-147.1433 60.855198			
-146.791093 60.808252			
-146.747107 60.792346			
-146.660189 60.771173			
-146.604574 60.759989			
-146.592277 60.728034			
-146.45573 60.714099			
-146.484047 60.676438			
-146.603222 60.486673			
-146.751935 60.491074			
-147.002014 60.497978			
-147.183429 60.512725			
-147.305728 60.531336			
-147.330451 60.530561			
PWS65	945-4460	0	x0.99
	945-4240	0	x0.98
-146.791093 60.808252			
-146.732848 60.815648			
-146.671312 60.808023			
-146.609518 60.807419			
-146.552806 60.810766			
-146.451347 60.843741			
-146.211242 60.898892			
-146.022722 60.826313			
-146.408317 60.760989			
-146.45573 60.714099			
-146.592277 60.728034			
-146.604574 60.759989			
-146.660189 60.771173			
-146.747107 60.792346			
-146.791093 60.808252			

PWS66	945-4460	0	x0.98
	945-4240	0	x0.97
-146.734514 60.910021			
-146.76628 60.881842			
-146.784771 60.8652			
-146.793773 60.859141			
-146.732848 60.815648			
-146.671312 60.808023			
-146.609518 60.807419			
-146.552806 60.810766			
-146.451347 60.843741			
-146.637467 60.902731			
-146.734514 60.910021			
PWS67	945-4460	0	x0.99
	945-4240	0	x0.98
-147.1433 60.855198			
-147.025646 60.885186			
-146.948102 60.925559			
-146.928717 60.942475			
-146.835761 61.066624			
-146.749176 61.076016			
-146.741526 61.049043			
-146.666789 61.03092			
-146.648105 61.018294			
-146.465267 60.987839			
-146.544989 60.924153			
-146.637467 60.902731			
-146.734514 60.910021			
-146.76628 60.881842			
-146.784771 60.8652			
-146.793773 60.859141			
-146.732848 60.815648			
-146.791093 60.808252			
-147.1433 60.855198			


PRINCE WILLIAM SOUND
PORT FIDALGO AND VALDEZ ARM
945-4240 VALDEZ
945-4460 Columbia Glacier
Final Tidal Zoning
for OPR-P132-RA-2005, Sheet H11490
Eastern Prince William Sound, AK
PWS67
Time Corrector 0 mins.
Range Corrector x0.99
Reference 945-4460
PWS66
Time Corrector 0 mins.
Range Corrector x0.98
Reference 945-4460
PWS65
Time Corrector 0 mins.
Range Corrector x0.99
Reference 945-4460
PWS64
Time Corrector 0 mins.
Range Corrector x1.00
Reference 945-4460
P R I N C E W I L L I A M
S O U N D
SOUNDINGS IN FATHOMS
16708
LORAN-C OVERPRINTED

H11490 HCell Report

Cathleen Barry, Cartographer
Pacific Hydrographic Branch

Introduction

The primary purpose of the HCell is to provide new survey information in International Hydrographic Organization (IHO) format S-57 to update the largest scale ENCs and RNCs in the region: NOAA RNCs, 16707 (1:40,000), 16713 (1:50,000) and 16708 (1:79,291), with 16708 inset compiled in place, and corresponding NOAA ENCs, US5AK23M, US5AK11M, and US4AK24M. (See section 4. Meta Areas.)

HCell compilation of survey H11490 utilized Office of Coast Survey HCell Specifications Version 3.1, with approved modifications to better align with PHB's HCell process and to meet MCD needs.

1. Compilation Scale

Depths and features for HCell H11490 were compiled to the largest scale chart in the region, 16707, 1:40,000, with additional scales compiled using the M_CSCL meta area object. (See section 4. Meta Areas.)

2. Soundings

A survey-scale sounding (SOUNDG) feature object layer was built from the 10-meter Combined Surface in CARIS BASE Editor. A shoal-biased selection was made at 1:10,000 survey scale using a Radius Table file with values shown in the table, below. The resultant sounding layer contains 16,458 depths ranging from 0 to 331.534 meters.

Upper limit (m)	Lower limit (m)	Radius (mm)
0	10	3
10	20	4
20	50	5
50	500	7

In CARIS BASE Editor soundings were manually selected from the high density sounding layer and imported into a new layer created to accommodate chart density depths. Manual selection was used to accomplish a density and distribution that closely represents the seafloor morphology.

3. Depth Areas and Depth Contours

3.1 Depth Areas

The extents of the highest resolution BASE Surface together with the extents of the soundings layer were used to digitize the hydrographic extents, which were then used to create the single, all encompassing depth area (DEPARE). This extent was then modified as needed to accommodate nearshore area features.

3.2 Depth Contours

Depth contours at the intervals on the largest scale chart are included in the *_SS HCell for MCD raster charting division to use for guidance in creating chart contours. The metric and fathom equivalent contour values are shown in the table below.

Chart Contour Intervals in Fathoms from Chart 16708	Metric Equivalent to Chart Fathoms, Arithmetically Rounded	Metric Equivalent of Chart Fathoms, with NOAA Rounding Applied	Fathoms with NOAA Rounding Applied	Fathoms with NOAA Rounding Removed for Display on H11409_SS.000
0	0	0.229	0.125	0
3	5.4864	5.715	3.125	3
10	18.288	18.517	10.125	10
30	54.864	56.236	30.750	30
50	91.44	92.812	50.750	50
100	182.88	184.252	100.750	100

With the exception of the zero contours included in the *_CS file, contours have not been deconflicted against shoreline features, soundings and hydrography, as all other features in the *_CS file and soundings in the *_SS have been. This may result in conflicts between the *_SS file contours and HCell features at or near the survey limits. Conflicts with M_QUAL, DEPARE, COALNE and SBDARE objects, and with DEPCNT objects representing MLLW, should be expected. HCell features should be honored over *_SS.000 file contours in all cases where conflicts are found.

Some modifications made to GC shoreline MLLW contours, to bring the GC shoreline into agreement with H11490 hydrography, necessitated inclusion of several “0” DEPCNT features in the HCell. These 0 value contours have been generalized per the chart above. See 9.2 *Conflicts between Shoreline and Hydrography*.

4. Meta Areas

Meta area objects were constructed on the basis of the limits of the hydrography. (See 3.1 *Depth Areas*.) The following Meta object areas are included in HCell H11490:

M_QUAL
M_CSCL

M_CSCL was used to describe the extents of an inset as well as two additional compilation scales.

Chart	M_CSCL
16707	None (HCell Compilation Scale)
17608	79,291
16708 Inset	40,000
16713	50,000

5. Features

5.1 Generalization of Features to Chart Scale

Features gathered by field units were delivered to PHB and applied to the preliminary HCell without reduction in number or character. This preliminary HCell was used to perform evaluation and verification of survey soundings and features, features were deconflicted against hydrography, and geometry was corrected as needed. Linear and area features were also digitized against the BASE Surfaces, and features to be retained were imported from the chart. This features file was then used as the basis for the final HCell compilation with features reduced to the largest scale RNC and ENC. The product of the survey scale features file, H11490_Features.000, is archived at PHB.

Features generalization has been accomplished primarily through reduction in the number of features included in the HCell, and in some cases generalizing area features to point objects. Some reduction of area features to point objects, for instance, for rocky seabed areas that will remain area objects on the ENC, is entrusted to the RNC division. Where line and area objects are included in the HCell, complexity of the lines and edges comprising the features have been smoothed commensurate with chart scale.

5.2 Compilation of Features to the HCell

Shoreline features for H11490 were delivered from the field in eight different hob files defining new features, modification to GC or charted features, and disprovals. These were deconflicted against GC shoreline, the chart and hydrography during office processing.

During office processing numerous submerged rocks and rocky seabeds were digitized from the high resolution BASE Surfaces.

The source of all features included in the H11490 HCell can be determined by the SORIND field.

5.2 Mean High Water Used for HCells

For the purposes of determining the height at which a rock becomes an islet, the CO-OPS *"Tide Note for Hydrographic Survey", "Height of High Water Above the Plane of Reference"* is used.

For the purpose of compilation of intertidal depth areas, a MHW (-h) value is used for defining the DRVAL1 (Depth Range Value) attribute field for the DEPARE component of the feature, where DRVAL2 is always 0.0. The MHW value from US5AK23M was used for H11490.

6. S-57 Objects and Attributes

The *_CS HCell contains the following Objects:

$CSYMB	Blue Notes
COALNE	Modified chart or GC coastline
DEPARE	The all-encompassing depth area
DEPCNT	MLLW
LNDARE	Islands and islets retained from the chart

M_CSCL	Compilation scale meta areas to define an inset, and for delineation of two areas with soundings and features compiled at other than the designated HCell compilation scale.
M_QUAL	Data quality meta area object
OBSTRN	Obstruction area objects
SBDARE	Bottom characteristics, reefs and ledges and rocky seabed areas
SOUNDG	Soundings at chart scale density
UWTROC	Submerged, awash and 'covers and uncovers' rock features
WEDKLP	New and retained kelp areas
WRECKS	A wreck area

The *_SS HCell contains the following Objects:

DEPCNT	Generalized contours at chart scale intervals
SOUNDG	Soundings at the survey scale density

All S-57 Feature Objects in the *_CS HCell have been attributed as fully as possible based on information provided by the Hydrographer and in accordance with current guidance and the OCS HCell Specifications.

7. Blue Notes

Notes to the RNC and ENC chart compilers are included in the HCell as $CSYMB features with the Blue Note information located in the INFORM field. By agreement with MCD, the NINFOM field is populated with an abbreviated version of the Blue Note (30 characters or less), describing the chart disposition, to be used by MCD in generating their Chart History spreadsheet.

8. Spatial Framework

8.1 Coordinate System

All spatial map and base cell file deliverables are in an LLDG geographic coordinate system, with WGS84 horizontal, MHW vertical, and MLLW (1983-2001 NTDE) sounding datums.

8.2 Horizontal and Vertical Units

DUNI, HUNI and PUNI are used to define units for depth, height and horizontal position in the chart units HCell, as shown below.

Chart Unit Base Cell Units:

Depth Units (DUNI):	Fathoms and feet
Height Units (HUNI):	Feet
Positional Units (PUNI):	Meters

During creation of the HCell in CARIS BASE Editor and CARIS S-57 Composer, all soundings and features are maintained in metric units with as high precision as possible. Depth units for soundings measured with sonar maintain millimeter precision. Depths on rocks above MLLW and heights on islets above MHW are typically measured with range finder, so precision is less. Units and precision are shown below.

BASE Editor and S-57 Composer Units:

Sounding Units:	Meters rounded to the nearest millimeter
Spot Height Units:	Meters rounded to the nearest decimeter

Conversion to charting units and application of NOAA rounding is completed in the same step, at the end of the HCell compilation process.

Conversion to fathoms and feet charting units with NOAA rounding ensures that:

- All depths deeper or equal to 11 fathoms display as whole fathoms.
- All depth units between 0 fathoms (MLLW) and 11 fathoms display as fathoms and whole feet.
- All depth units above 0 fathoms (MLLW) to 2.0 feet above MHW display in feet for values that round to 5 feet or less, and in fathoms and feet above that. (This is a deviation from the traditional 'fathoms and feet' charting rule that requires that all depths above MLLW will be shown in feet. The display in fathoms and feet for depths between MLLW and 2 feet above MHW accommodates S-57 rules that require the same charting units to be used for all depth units (DUNI) in an ENC.)
- All height units (HUNI) which have been converted to charting units, and that are 2.00 feet above MHW and greater, are shown in feet.

In an ENC viewer fathoms and feet depth units (DUNI) display in the format X.YZZZ, where X is fathoms, Y is feet, and ZZZ is decimals of the foot. In an ENC viewer, heights (HUNI) display as whole feet.

9. Data Processing Notes

9.1 Junction with H11508

H11490 junctions with H11422, a 2005 survey that had yet to be compiled at the time H11490 was completed. The Surfaces for the two surveys were compared and soundings selected from H11490 to best represent the common area. The SE extent of H11490 should be used as the SW extent of H11422.

9.2 Conflicts between Shoreline and Hydrography

There are numerous instances of GC shoreline in conflict with hydrography. These were examined using the highest resolution Surfaces. Conflicts were resolved by either rejecting the hydrography and adjusting the survey limits accordingly, or by making modifications to the GC shoreline. Numerous adjustments were made to COALNE, DEPCNT (MLLW), OBSTRN and SBDARE (ledge) objects.

10. QA/QC and ENC Validation Checks

H11490 was subjected to QA checks in S-57 Composer prior to exporting to the metric HCell base cell (000) file. The millimeter precision metric S-57 HCell was converted to chart units and NOAA rounding applied. dKart Inspector was then used to further check the data set for conformity with the S-58 ver. 2 standard (formerly Appendix B.1 Annex C of the S-57 standard).

All tests were run and warnings and errors investigated and corrected unless they are MCD approved as inherent to and acceptable for HCells.

11. Products

11.1 HSD, MCD and CGTP Deliverables

- H11490 Base Cell File, Chart Units, Soundings and features compiled to 1:40,000.
- H11490 Base Cell File, Chart Units, Soundings and contours compiled to 1:10,000.
- H11490 Descriptive Report including end notes compiled during office processing and certification, the HCell Report, and supplemental items.
- H11490 Survey outline to populate the SURDEX.

In addition, a features-only Base Cell File, H11490_Features.000, with features resolved and compiled to 1:10,000, is archived at PHB.

11.2 File Naming Conventions

- Chart units base cell file, chart scale soundings — H11490 _CS.000
- Chart units base cell file, survey scale sounding set — H11490 _SS.000
- Descriptive Report package — H11490 _DR.pdf
- Survey outline — H11490_Outline.gml & *.xsd

11.3 Software

CARIS HIPS Ver. 7.0	Inspection of Combined BASE Surfaces
CARIS BASE Editor Ver. 2.3	Creation of soundings and bathy-derived features, creation of the depth area, meta area objects, and Blue Notes; Survey evaluation and verification; Initial HCell assembly.
CARIS S-57 Composer Ver. 2.1	Final compilation of the HCell, correct geometry and build topology, apply final attributes, export the HCell, and QA.
CARIS GIS 4.4a	Setting the sounding rounding variable for conversion of the metric HCell to NOAA charting units with NOAA rounding.
CARIS HOM Ver. 3.3	Perform conversion of the metric HCell to NOAA charting units with NOAA rounding.
HydroService AS, dKart Inspector Ver. 5.1	Validation of the base cell file.
Newport Systems, Inc., Fugawi View ENC Ver.1.0.0.3	Independent inspection of final HCells using a COTS viewer.

12. Contacts

Inquiries regarding this HCell content or construction should be directed to:

Cathleen Barry, Cartographer, PHB, Seattle, WA; 206-526-6841; Cathleen.Barry@noaa.gov.

APPROVAL SHEET
H11490

Initial Approvals:

The survey evaluation and verification has been conducted according to branch processing procedures and the HCell compiled per the latest OCS HCell Specifications.

Cathleen Barry
2010.02.24 11:29:20 -08'00'

The survey and associated records have been inspected with regard to survey coverage, delineation of the depth curves, development of critical depths, S-57 classification and attribution of soundings and features, cartographic characterization, and verification or disproval of charted data within the survey limits. The survey records and digital data comply with OCS requirements except where noted in the Descriptive Report and are adequate to supersede prior surveys and nautical charts in the common area.

Digitally signed by Pete Holmberg
DN: cn=Pete Holmberg, o=NOAA, ou=PHB, email=peter.holmberg@noaa.gov, c=US
Date: 2010.02.24 11:30:59 -08'00'

I have reviewed the HCell, accompanying data, and reports. This survey and accompanying digital data meet or exceed OCS requirements and standards for products in support of nautical charting except where noted in the Descriptive Report.

Gary C. Nelson
2010.02.24
12:35:42 -08'00'

Digitally signed by Rachel Soraruf
DN: cn=Rachel Soraruf, o=NOAA/NOS/OCS/HSD, ou=Operations Branch, email=Rachel.Sorasuf@noaa.gov, c=US
Reason: AWOIS and SURF check complete
Date: 2010.02.25 15:27:13 -05'00'