H11498

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. OPR-P158-FA-05

Registry No. H11498

LOCALITY

State ALASKA

General Locality Orca Bay

Sublocality Windy Bay to Channel Islands

2005

CHIEF OF PARTY

CAPT John E. Lowell, Jr., NOAA

LIBRARY & ARCHIVES

DATE

NOAA FORM 77-28 (11-72)

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

REGISTER NO.

H11498

HYDROGRAPHIC TITLE SHEET

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: Orca Bay

Sublocality: Windy Bay to Channel Islands

Scale: 1:10,000

Dates of Survey: 08/24/05 – 09/24/05

Instructions Date: 7/27/2005

Project No.: OPR-P158-FA-05

Vessel: Fairweather, Launch 1010, Launch 1018, MonArk 1706, Ambar 2302

Chief of Party: CAPT John E. Lowell, Jr., NOAA

Surveyed by: Morgan, Martin, Higgins

Soundings taken by echo sounders: Reson 8111 and Reson 8101ER

Graphic record scaled by: N/A

Graphic record checked by: N/A

Evaluation by: K. Reser

Automated plot by: HP Design Jet 500

Verification by: K.Brown

Soundings in: 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 separates are filed with the hydrographic data.

Descriptive Report to Accompany Hydrographic Survey H11498

Project OPR-P158-FA
Orca Bay, Alaska
Scale 1:10,000
August – September 2005
NOAA Ship FAIRWEATHER
Chief of Party: Captain John E. Lowell, Jr., NOAA

A. AREA SURVEYED

The survey area was located in Orca Bay, within the sub-locality of Windy Bay to Channel Islands. This survey corresponds to Sheet C in the sheet layout provided with the Letter Instructions, as shown in Figure 1 below. The survey area is bounded on the Southwest corner at 60°32'00"N, 146°01'00"W and the Northeast corner at 60°38'00"N, 145°46'00"W[1].

Data acquisition was conducted from August 24 to September 24,2005 (DN 236 to DN 267).

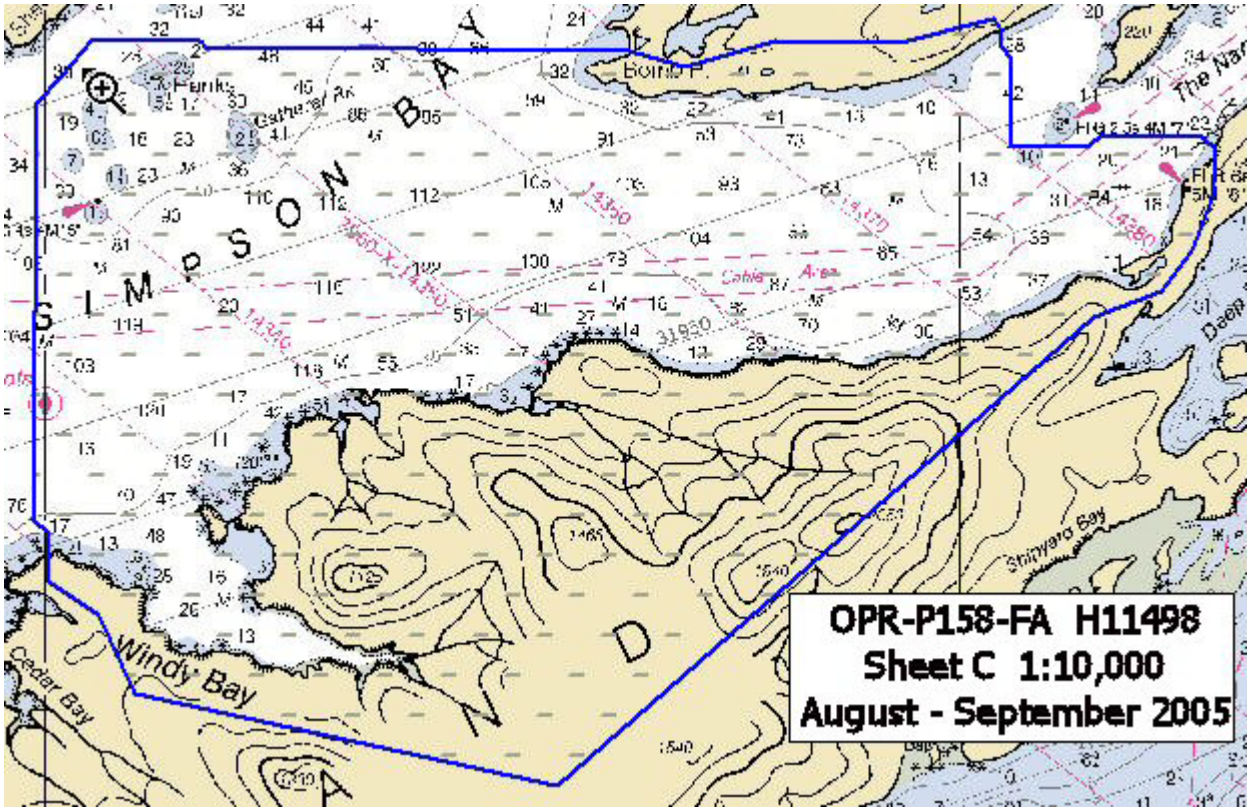

Figure 1: H11498 Sheet Limit

One hundred percent multibeam echosounder (MBES) coverage was obtained in the survey area at least to depths of eight meters. When conditions allowed, multibeam echosounder (MBES) data was acquired parallel to contours and at line spacing of no less than 25 meters in depths between four and eight meters. In some areas additional coverage was obtained in order to determine least depths over features or shoals.

Shoreline data were acquired for H11498. These data were attributed as S-57 objects for submittal.

B. DATA ACQUISTION AND PROCESSING

A complete description of data acquisition and processing systems and survey vessels can be found in the *NOAA Ship FAIRWEATHER Hydrographic Systems Certification Report 2005*[2], submitted under a separate cover. Quality control procedures and data processing methods are listed and described in the *OPR-P158-FA-05 Data Acquisition and Processing Report* (DAPR),[3] submitted under separate cover. Items specific to this survey and any deviations from the aforementioned report are discussed in the following sections.

B1. Equipment and Vessels

Equipment and vessels used for data acquisition and survey operations during this survey are listed below in Table 1.

	FAIRWEATHER	Launch 1010	Launch 1018	MonArk	Ambar 700
Hull Registration Number	S220	1010	1018	1706	2302
Builder	Aerojet-General Shipyard	The Boat Yard, Inc.	The Boat Yard, Inc.	MonArk	Marine Silverships, Inc
Length Overall	231 feet	28’ 10”	28’ 10”	17’	23’
Beam	42 feet	10’ 8”	10’ 8”	7’	9’ 4”
Draft, Maximum	15’ 6”	4’ 0” DWL	4’ 0” DWL	1’ 3”	1’ 4”
Cruising Speed	12.5 knots	24 knots	24 knots	20 knots	22 knots
Max Survey Speed	10 knots	10 knots	10 knots		
Primary Echosounder	RESON 8111 & RESON 8160	RESON 8101	RESON 8101		
Sound Velocity Equipment	SBE 19plus & 45, MVP 200	SBE 19plus	SBE19plus		
Attitude & Positioning Equipment	POS/MV V3	POS/MV V3	POS/MV V3		
Type of operations	MBES	MBES	MBES	Shoreline	Shoreline / Bottom Samples

Table 1: Vessel Inventory

No vessel configurations used during data acquisition deviated from the DAPR.

B2. Quality Control

Multibeam data for survey H11498 were manually examined by the Hydrographer in CARIS subset mode. The internal consistency and integrity were found to be good[4]. Limited problem areas are discussed in the data quality factors section below.

Crosslines

Shallow water multibeam crosslines for this survey totaled 13.64 linear nautical miles (lnm), comprising 9.9% of the 137.72 lnm of total SWMB hydrography[5].

The Hydrographer has determined, through manual examination of the data, that the crossline agreement with main scheme data meet the vertical accuracy requirements as stated in the *NOS Hydrographic Surveys Specifications and Deliverables*.[6]

Junctions

Survey H11498 junctions with H11496 and with H11499, which are Sheets A and D of the same project. The area of overlap between the sheets was approximately 300 meters wide. Data were reviewed in CARIS Subset Editor and depths were found to be consistent between the surveys, meeting the requirements as stated in the *NOS Hydrographic Surveys Specifications and Deliverables*.[7]

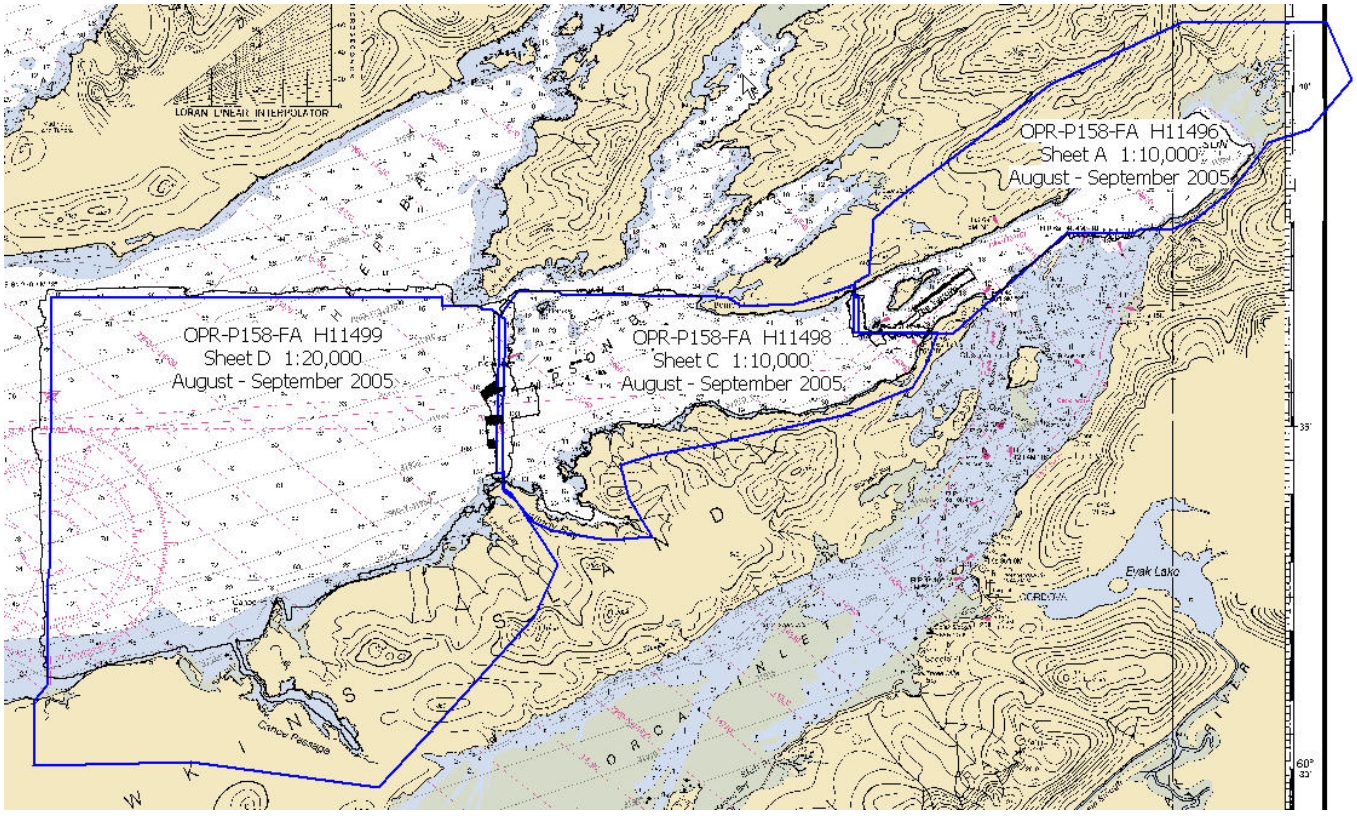

Figure 2: Junctions for Survey H11498

The sheet limits and areas of overlap for Sheets A, C and D are shown in Figure 2.

Quality Control Checks

MBES quality control checks were conducted as discussed in the quality control section of the *OPR-P158-FA-05 Data Acquisition and Processing Report.*

Data Quality Factors

COVERAGE ASSESSMENT:
Coverage assessment was determined using the following base surface resolutions listed below in Table 2.

Depth Ranges (m)		Resolution (m)
Low	High	
0	45	0.8
25	80	2
60	160	5
130	300	12

Table 2: Depth Ranges and Resolutions

There are small data gaps primarily in the northwest (near Hanks Island) and southwest (Windy Bay) corners of survey H11498. These gaps usually occur on steep slopes where line overlap is minimal. Due to time and equipment constraints these areas were not able to be reviewed for holidays in the field. For each data gap the corresponding multibeam backscatter sidescan was examined and no navigationally significant items were found. Least depths have been captured on each feature with a holiday.[8]

NOTE: Extreme surface overlap was needed in the survey area due to steep bathymetry. The overlap of the surfaces allowed the hydrographer to ensure full coverage in the area.

ROLL:
On August 27, an error occurred with the dropdown transducer mount for Launch 1010 before acquiring data on survey H11498. Debris was trapped between the transducer arm and the stop. This changed the Roll Bias, which remained steady for the day. An updated vessel report, *NOAA Hydrographic Survey Launch 1010 Vessel Report 2005 - Addendum 2*, was produced and submitted for these HVF alterations with the *OPR-0119-FA-05 Fall Data Acquisition and Processing Report.* For further information, see the document included in the Supplemental Correspondence file of the Descriptive Report Appendices for survey H11498.[9]

Accuracy Standards

All data meet the data accuracy specifications as stated in the *NOS Hydrographic Surveys Specifications and Deliverables*, dated March 2003.[10]

B3. Corrections to Echo Soundings

Data reduction procedures for survey H11498 conform to those detailed in the of the *OPR-P158-FA-05 Data Acquisition and Processing Report*, or as noted below.

Lines 1010 240 1716-1839 were filtered 60/60 to correct a roll error less than 0.1º. The HVF was changed for data collected on August 27, DN 239, due to an error with the transducer mount as discussed in Data Quality Factors – Roll. Data affected by this issue has been reviewed and it meets the horizontal accuracy required by the *NOS Hydrographic Surveys Specifications and Deliverables* dated March 2003.[11]

The northeastern extent of line 237-1704 displays a group of outstanding soundings in the CARIS critical sounding layer. These soundings cannot be located by the hydrographer. The display is thought to be a software error. The outstanding soundings do not affect the surfaces.[12]

C. HORIZONTAL AND VERTICAL CONTROL

A complete description of horizontal and vertical control for survey H11498 can be found in the *OPR-P158-FA-05 Horizontal and Vertical Control Report*,[13] submitted under separate cover. 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, with differential corrections received from the U.S. Coast Guard beacons at Potato Point (298 kHz) and Hinchinbrook (292 kHz).

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 Cordova, AK (945-4050) served as control for datum determination and as the primary source for water level reducers for survey H11498.

A request for delivery of approved water level data (smooth tides) for survey H11496 was forwarded to N/OPS1 on September 30, 2005 in accordance with the *Preliminary Field Procedures Manual v1.1*, dated March 2005 (FPM). A copy of the request is included in Appendix III.

Verified water level data (smooth tides) were received by the FAIRWEATHER on November 10, 2005 for NWLON primary tide station at Cordova, AK (945-4050). As per the letter instructions, all data were reduced to MLLW using the smooth tides, by applying tide file 9454050.tid and time and height correctors through the zone corrector file P158FA2005CORP.zdf. FAIRWEATHER received the Tide Note for Hydrographic Survey H11498 on November 3, 2005, which states that preliminary zoning is accepted as the final zoning for the project. A copy of the Tide Note is included in Appendix IV.[14] It will not be necessary for the Pacific Hydrographic Branch to reapply the verified water level data (smooth tides) to the survey data during final processing.

D. RESULTS AND RECOMMENDATIONS

D.1 Chart Comparison

The five meter resolution BASE surface was brought into Pydro by means of the Insert BASE/Weighted Grids function. The BASE surface soundings were then excessed to survey scale and shoal biased. The affected chart was opened in Pydro and the Hydrographer manually compared the charted soundings to the shoal biased, excessed soundings in the Pydro Chart window.

Survey H11498 was compared with chart 16700 (29th Ed.; July, 2004, 1:200,000).

Chart 16700[15]

Chart 16700 (29th Ed.; July, 2004, 1:200,000) has been updated with the Notice to Mariners through June 11, 2005 (24/05). The Notice to Mariners through December 31, 2005 (52/05) were consulted. There were no new changes within the survey area. Depths from survey H11498 generally agreed with depths on chart 16700 within three fathoms. Some notable differences between survey H11498 and depths on chart 16700 include the following:

- The shoal area north of "5" ATON has areas that are shoaler than the soundings on the chart.
- Near the 33 fathom sounding south of Bomb Point a least depth of 3.2 fathoms was found.[16]
- Near the 16 fathom sounding south of Bomb Point a least depth of 11.2 fathoms was found.[17]
- Offshore of the 21 fathom sounding west of Salmo Point a least depth of 13.2 fathoms was found.

Chart Comparison Recommendations

The Hydrographer has determined that bottom coverage requirements have been met and data accuracy meets requirements specified by the *NOS Hydrographic Surveys Specifications and Deliverables,* dated March 2003. The BASE surfaces with the application of designated soundings and associated HDCS data are adequate to supersede prior surveys in common areas.[18] Based on the application of verified water level data (smooth tides) by FAIRWEATHER, final chart comparisons are not required by the Pacific Hydrographic Branch.

Automated Wreck and Obstruction Information System (AWOIS) Investigations

There was one AWOIS item reported within the limits of survey H11498. It was not seen during low water investigation or with high water multibeam echosounder.This AWOIS item is addressed in the H11498_Features_Report.pdf in Appendix I.[19]

Dangers to Navigation

There were no dangers to navigation found within the survey limits.[20]

D.2 Additional Results

Shoreline Source

Source shoreline for this sheet was taken from photogrammetric survey AK0402 (NAD 83) GC-10570, at the scale of 1:30,000. The CFF shoreline was imported into CARIS Notebook 2.2 as an editable layer named H11498_Edited_CFF_Shoreline.hob, with all objects having S57 attribution. In addition, features from the current editions of chart 16700 that were not depicted by the source shoreline data were digitized with S57 attribution in CARIS Notebook into the file H11498_Charted_Shoreline.hob to be displayed for field verification.

Shoreline Verification

FAIRWEATHER personnel conducted limited shoreline verification at times near predicted low water, in accordance with the Standing Project Instructions. Detached positions (DPs) and generic positions (GPs) acquired during shoreline verification were recorded in TerraSync and on paper DP forms. Scanned copies of the DP forms are included in the digital Separates folder and hard copies can be found with the *Separates to be Included with Survey Data.*[21] In addition, annotations describing shoreline were recorded on hard copy plots of the digital shoreline.

Shoreline Data Processing

Positions acquired during shoreline verification operations were processed in GPS Pathfinder Office and inserted into Pydro using the Generic GPs/DPs Import tool. Features were entered as Detached Positions (DPs) when tide correctors were required, while Generic Positions (GPs) were used if no tide correction was needed. The DPs and GPs indicate new features, revisions to features, or features not found during shoreline verification. A Carto Action of 'add', 'modify', or 'delete' was assigned to each item in Pydro, and all features were S57 attributed.

All accepted primary detached and generic positions were imported from the Pydro .xml to three separate stand alone .hob files in CARIS Notebook 2.2. These were named H11498_Add_Pydro, H11498_Modify_Pydro, and H11498_Delete_Pydro.

Three rocks in survey H11498 had a DP acquired solely to record height. Due to software limitations in CARIS Notebook the smooth tide height in the VALSOU field does not display the correct value on a consistent basis in the .hob files. For the correct tide corrected height the Pydro session should be referenced.

Source Shoreline Changes, New Features and Charted Features

Items for survey H11498 associated with a detached or generic position that needed further discussion were flagged 'Report' in Pydro. Investigation or survey methods were listed under the 'Remarks' tab and, when appropriate, recommendations to the cartographer were included in the 'Recommendations' tab. A survey feature report for shoreline items was generated and included as H11498_Features_Report.pdf in Appendix I.[22]

Three additional .hob layers, named H11498_Add_Ntbk, H11498_Modify_Ntbk and H11498_Delete_Ntbk, were created in CARIS Notebook for features without associated DPs. New items were digitized to the 'Add' layer, while existing features from the CFF and chart were transferred to the 'Modify' or 'Delete' layers, depending on the cartographic action deemed appropriate by the Hydrographer. Features to be retained as depicted by the source shoreline files were left in the appropriate source layer as H11498_Edited_CFF_Shoreline or H11498_Charted_Shoreline. Field notes made by the Hydrographer on the boat sheets and DP forms were transferred to the remarks field for each feature.

Shoreline Recommendations

The Hydrographer recommends that the shoreline depicted in the CARIS Notebook files and final sounding files supersede and complement shoreline information compiled on the CFF and charts.[23]

Aids to Navigation

Survey H11498 included two (2) aids to navigation (ATONs). Each of the ATONs was found to serve its intended purpose.[24] One ATON (LL# 25560) was positioned using static GPS survey methods. See the *Horizontal and Vertical Control Report for OPR-P158-FA* for further information.

Light List Name	Light List Number	NAD83 (CORS 96) (EPOCH:2003.0000) N. Latitude (Pk to Pk Err. (m))	NAD83 (CORS 96) (EPOCH:2003.0000) W. Longitude (Pk to Pk Err. (m))	Ellipsoid Ht. (m) (Pk to Pk Err. (m))	NAVD88 Ortho Ht. (m) (Pk to Pk Err. (m))
The Narrows Light	25560	60° 36' 10.34527" (0.045)	145° 47' 33.07311" (0.053)	24.926 (0.051)	10.468 (0.057)

The other ATON (LL# 25550) was positioned using the Trimble backpack GPS for check purposes. The position was recorded in Terrasync and imported into Pydro for S-57 feature attribution. Finally, the position was exported to CARIS Notebook in the H11498_Modify_Pydro.hob file.

Bottom Samples

Bottom samples were collected on August 27, 2005 (DN 239) and August 28, 2005 (DN 240). They are included as seabed classifications along with the other S57 features in the Pydro Preliminary Smooth Sheet. The bottom sample positions were also imported to CARIS Notebook in the H11496_Add_Pydro.hob file.[25]

Miscellaneous

During shoreline investigations, eel grass was noted in the vicinity of the Windy Bay. The approximate position was marked in the H11498_Add_Notebook.hob layer in CARIS Notebook.

E. SUPPLEMENTAL REPORTS

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

Title	Date Sent	Office
Hydrographic Systems Certification Report 2005	April 18, 2005	N/CS34
OPR-P158-FA-05 Data Acquisition and Processing Report	November 15, 2005	N/CS34
OPR-P158-FA-05 Horizontal & Vertical Control Report	November 15, 2005	N/CS34, N/OPS1

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NOAA Marine and Aviation Operations
NOAA Ship FAIRWEATHER S-220
1010 Stedman Street
Ketchikan, AK 99901

June 21, 2006

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

FROM: CAPT John E. Lowell, Jr, NOAA
Commanding Officer

TITLE: Approval of Hydrographic Survey H11498,
OPR-P158-FA

As Chief of Party, I have ensured that standard field surveying and processing procedures were adhered to during acquisition and processing of hydrographic survey H11498 in accordance with the Hydrographic Manual, Fourth Edition; Hydrographic Survey Guidelines; Field Procedures Manual, March 2005 Version 1.1; and the NOS Hydrographic Surveys Specifications and Deliverables, as updated for March, 2003. Additional guidance was provided by applicable Hydrographic Technical Directives. These data are adequate to supersede charted data in their common areas. This survey is complete and no additional work is required. All data and reports are respectfully submitted to N/CS34, Pacific Hydrographic Branch.

I acknowledge that all of the information contained in this report is complete and accurate to the best of my knowledge.

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

FOR: ENS Allison R. Martin
Survey Manager

CST Lynnette V. Morgan
Chief Survey Technician

Attachment

Revisions Compiled During Office Processing and Certification

[1] Concur
[2] Filed with project records
[3] Filed with project records
[4] Concur
[5] Concur
[6] Concur
[7] Concur
[8] Concur
[9] After modification to the HVF, the data meets specification in the areas where the roll error was present.
[10] Concur. These data are adequate to supercede charted data in the common area.
[11] Concur. See endnote 9.
[12] Concur. This issue was resolved during the survey acceptance review.
[13] Filed with project records
[14] See attached Tide Note dated October 31, 2005.
[15] Charts 16709 (23rd Ed. 1:80,000) and 16710 (16th Ed. 1:30,000) are affected by survey H11498 but were not used in the chart comparison. The survey depths generally agree with the charted depths with several non-navigationally significant exceptions noted in the SAR and reflected in the H11498 HCell.
[16] Do not concur. The shoal sounding is located inshore of the 33 fathom sounding. The small scale of the chart and the steeply sloping bottom makes the chart comparison in this area inaccurate.
[17] Concur with clarification. When using Chart 16709 for the comparison an 10.5 fathom sounding was found just offshore of the charted 16 fathom sounding and is reflected in the HCell.
[18] Concur
[19] AWOIS item is charted wreck. No evidence of the charted wreck was found and it is recommended to be removed.
[20] Concur
[21] Filed with hydrographic records
[22] See attached feature report
[23] Concur
[24] Chart aids to navigation using the latest ATONIS information
[25] 12 bottom samples from the survey are included in the HCell and 10 were imported from the ENC.

H11498 Features Report

Registry Number:

State:

Locality:

Sub-locality:

Project Number:

Survey Date: [None]

Items for survey H11498 associated with a detached or generic position that needed further discussion were flagged 'Report' in Pydro. Investigation methods and recommendations were provided in the 'Remarks' and 'Recommendations' tabs.

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
16710	16th	12/13/1997	1:30,000 (16710_1)	[L]NTM: ?
16709	22nd	01/19/2002	1:80,000 (16709_1)	[L]NTM: ?
16700	29th	07/01/2004	1:200,000 (16700_1)	[L]NTM: ?
16013	29th	11/01/2003	1:969,761 (16013_1)	[L]NTM: ?
531	22nd	03/01/2004	1:2,100,000 (531_1)	[L]NTM: ?
500	8th	06/01/2003	1:3,500,000 (500_1)	[L]NTM: ?
50	6th	06/01/2003	1:10,000,000 (50_1)	[L]NTM: ?

* Correction(s) - *source: last correction applied (last correction reviewed--"cleared date")*

Features

Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude
12366	Shoal	-6.24 m	60° 35' 43.1" N	145° 48' 14.5" W
12367	Shoal	-3.14 m	60° 35' 37.8" N	145° 48' 04.8" W
123614	Shoal	-2.37 m	60° 34' 58.1" N	145° 56' 46.5" W
12381	Shoal	5.93 m	60° 36' 10.3" N	145° 47' 32.9" W
12382	Shoal	1.69 m	60° 36' 03.1" N	145° 59' 27.2" W
22441	Shoal	10.84 m	60° 33' 41.9" N	145° 58' 02.8" W
GP1	GP	[None]	60° 35' 23.2" N	145° 54' 03.5" W
GP2	GP	[None]	60° 35' 52.9" N	145° 47' 45.2" W

GP3	GP	[None]	60° 35' 23.0" N	145° 53' 45.4" W
GP4	GP	[None]	60° 35' 22.9" N	145° 53' 55.1" W
GP5	GP	[None]	60° 35' 18.9" N	145° 54' 23.6" W
GP6	GP	[None]	60° 35' 15.6" N	145° 54' 31.2" W
GP7	GP	[None]	60° 35' 10.7" N	145° 54' 35.8" W
GP8	GP	[None]	60° 35' 03.5" N	145° 55' 31.5" W
GP9	GP	[None]	60° 35' 03.2" N	145° 55' 50.3" W
GP12	GP	[None]	60° 34' 13.5" N	145° 58' 06.5" W
GP13	GP	[None]	60° 34' 02.3" N	145° 57' 46.4" W
140/24	Shoal	1.50 m	60° 34' 30.0" N	145° 58' 13.4" W
919/89	Shoal	8.39 m	60° 34' 31.4" N	145° 57' 53.3" W
F/V ST. PETER	AWOIS	[no data]	[no data]	[no data]

1 - New Features

1.1) 12366

Survey Summary

Survey Position:	60° 35' 43.1" N, 145° 48' 14.5" W
Least Depth:	-6.24 m (= -20.48 ft = -3.413 fm = -3 fm 2.48 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2005-236.10:34:32.000 (08/24/2005)
DP Dataset:	h11498 / trb1_dpne / 2005-236 / tr1_236_$csymb_p.shp
Profile/Beam:	5/1
Charts Affected:	16710_1, 16709_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

Ext chd islet (16710)

Hydrographer Recommendations

S-57 Data

Geo object 1:	Cartographic symbol ($CSYMB)
Attributes:	INFORM - CFF rk is new pos chd islet connected at lw
	RECDAT - 20050824

Office Notes

Retain islets as charted.

1.2) 12367

Survey Summary

Survey Position:	60° 35' 37.8" N, 145° 48' 04.8" W
Least Depth:	-3.14 m (= -10.30 ft = -1.717 fm = -1 fm 4.30 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2005-236.10:42:11.000 (08/24/2005)
DP Dataset:	h11498 / trb1_dpne / 2005-236 / tr1_236_$csymb_p.shp
Profile/Beam:	6/1
Charts Affected:	16710_1, 16709_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

Swm ext new ldg

The ledge connects the peninsula to high water at low water and blocks low water outflow of cove.

Hydrographer Recommendations

Chart new ledge connecting the penninsula to the land.

Cartographically-Rounded Depth (Affected Charts):

-11ft (16710_1)

-1 ¾fm (16709_1, 16700_1, 16013_1)

-1fm 4ft (531_1)

-3.1m (500_1, 50_1)

S-57 Data

Geo object 1:	Cartographic symbol ($CSYMB)
Attributes:	INFORM - swm ext new ldg ldg connects penisula to hw at lw and blocks outflow of cove at lw
	RECDAT - 20050824

Office Notes

Concur.

1.3) 123614

Survey Summary

Survey Position:	60° 34' 58.1" N, 145° 56' 46.5" W
Least Depth:	-2.37 m (= -7.78 ft = -1.296 fm = -1 fm 1.78 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2005-236.12:01:08.000 (08/24/2005)
DP Dataset:	h11498 / trb1_dpne / 2005-236 / tr1_236_$csymb_p.shp
Profile/Beam:	12/1
Charts Affected:	16709_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

New ext LW

Cove not accessible at low water.

Hydrographer Recommendations

Cartographically-Rounded Depth (Affected Charts):

-1 ¼fm (16709_1, 16700_1, 16013_1)

-1fm 2ft (531_1)

-2.4m (500_1, 50_1)

S-57 Data

Geo object 1:	Cartographic symbol ($CSYMB)
Attributes:	INFORM - new ext lw Cove not accessible at LW
	RECDAT - 20050824

Office Notes

Low water line has been edited in the HCell to include cove and area outside of cove to the DP.

1.4) 12381

Survey Summary

Survey Position:	60° 36' 10.3" N, 145° 47' 32.9" W
Least Depth:	5.93 m (= 19.46 ft = 3.244 fm = 3 fm 1.46 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2005-238.22:43:01.000 (08/26/2005)
DP Dataset:	h11498 / trb1_dpne / 2005-238 / tr1238_bcnlat_p.shp
Profile/Beam:	1/1
Charts Affected:	16710_1, 16709_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

New position chd ATON (16710); LL#: 25560 The Narrows Light 8 (Fl R 6s 12ft 5M "8")

Chd ATON was positioned using static GPS. The position was found to be 60° 36' 10.34527" N 145° 47; 33.07311" W. Consult OPR-P158-FA-05 Horizontal and Vertical Control Report submitted seperately.

Hydrographer Recommendations

The Hydrographer recommends the position of charted aid to navigation be moved to 60° 36' 10.34527" N 145° 47; 33.07311" W.

Cartographically-Rounded Depth (Affected Charts):

19ft (16710_1)

3 ¼fm (16709_1, 16700_1, 16013_1)

3fm 1ft (531_1)

5.9m (500_1, 50_1)

S-57 Data

Geo object 1:	Beacon, lateral (BCNLAT)
Attributes:	BCNSHP - 4:lattice beacon
	CATLAM - 2:starboard-hand lateral mark
	COLOUR - 7:grey
	COLPAT - 6:border stripes
	HEIGHT - 8.0 m
	INFORM - 25560 The Narrows Light 8 (Fl R 6s 12ft 5M "8")
	PICREP - r8_3.jpg

	RECDAT - 20050826
	STATUS - 1:permanent
	VERDAT - 12:Mean lower low water
Geo object 2:	Daymark (DAYMAR)
Attributes:	COLOUR - 3:red
	COLPAT - 6:border stripes
	HEIGHT - 8 m
	INFORM - 25560 The Narrows Light 8 (Fl R 6s 12ft 5M "8")
	PICREP - r8_3.jpg
	TOPSHP - 24:triangle, point up
	VERDAT - 12:Mean lower low water
Geo object 3:	Light (LIGHTS)
Attributes:	CATLIT - 1:directional function
	COLOUR - 3:red
	HEIGHT - 8 m
	INFORM - 25560 The Narrows Light 8 (Fl R 6s 12ft 5M "8")
	PICREP - r8_3.jpg
	VERDAT - 12:Mean lower low water

Office Notes

Concur with clarification. Chart using the latest ATONIS information. Not included in the HCell.

1.5) 12382

Survey Summary

Survey Position:	60° 36' 03.1" N, 145° 59' 27.2" W
Least Depth:	1.69 m (= 5.53 ft = 0.922 fm = 0 fm 5.53 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2005-238.23:18:35.000 (08/26/2005)
DP Dataset:	h11498 / trb1_dpne / 2005-238 / tr1238_bcnlat_p.shp
Profile/Beam:	2/1
Charts Affected:	16709_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

New position chd ATON (16709); LL#: 25550 Hanks Island Rock Light 5 (FL G 4s 4M "5")

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0 ¾fm (16709_1, 16700_1, 16013_1)

0fm 5ft (531_1)

1.7m (500_1, 50_1)

S-57 Data

Geo object 1:	Beacon, lateral (BCNLAT)
Attributes:	BCNSHP - 5:pile beacon
	CATLAM - 1:port-hand lateral mark
	COLOUR - 7:grey
	COLPAT - 6:border stripes
	CONRAD - 1:radar conspicuous
	HEIGHT - 4.0 m
	INFORM - LL#: 25550 Hanks Island Rock Light 5 (FL G 4s 4M "5")
	PICREP - g5_4.jpg
	RECDAT - 20050826
	STATUS - 1:permanent

	VERDAT - 12:Mean lower low water
Geo object 2:	Daymark (DAYMAR)
Attributes:	COLOUR - 4:green
	COLPAT - 6:border stripes
	HEIGHT - 4 m
	INFORM - LL#: 25550 Hanks Island Rock Light 5 (FL G 4s 4M "5")
	PICREP - g5_4.jpg
	STATUS - 1:permanent
	TOPSHP - 19:square
	VERDAT - 12:Mean lower low water
Geo object 3:	Light (LIGHTS)
Attributes:	CATLIT - 1:directional function
	COLOUR - 4:green
	INFORM - LL#: 25550 Hanks Island Rock Light 5 (FL G 4s 4M "5")
	PICREP - g5_4.jpg
	VERDAT - 12:Mean lower low water

Office Notes

Concur with clarification. Chart using the latest ATONIS information. Not included in the HCell.

1.6) 22441

Survey Summary

Survey Position:	60° 33' 41.9" N, 145° 58' 02.8" W
Least Depth:	10.84 m (= 35.56 ft = 5.927 fm = 5 fm 5.56 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2005-244.15:25:51.000 (09/01/2005)
DP Dataset:	h11498 / trb2_dpne / 2005-244 / tr2_244_$csymb_p.shp
Profile/Beam:	1/1
Charts Affected:	16709_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

Chd rk disproval (16709)

A search was conducted with a radius of 25 m, depth of 9 m, vertical visibility of 5 m, for 5 minutes during low water. Due to time and equipment constraints, multibeam was not run in the area.

Hydrographer Recommendations

The Hydrographer recommends removal of the rock.

Cartographically-Rounded Depth (Affected Charts):

5 ¾fm (16709_1, 16700_1, 16013_1)

5fm 5ft (531_1)

10.8m (500_1, 50_1)

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Office Notes

Concur.

1.7) GP1

Survey Summary

Survey Position: 60° 35' 23.2" N, 145° 54' 03.5" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2005-307.10:40:04 (11/03/2005)

GP Dataset: ChartGPs - Digitized

GP No.: 1

Charts Affected: 16709_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

Chd rk disproval (16709)

A search was conducted during low water with 20 m radius, 13 m depth, 2 min, 1.5 visibility, soft bottom, and ripple seas. Only partial multibeam coverage was collected due to time and equipment constraints.

Hydrographer Recommendations

The Hydrographer recommends removal of the rock.

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Office Notes

Concur.

1.8) GP2

Survey Summary

Survey Position: 60° 35' 52.9" N, 145° 47' 45.2" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2005-308.11:35:23 (11/04/2005)

GP Dataset: ChartGPs - Digitized

GP No.: 2

Charts Affected: 16710_1, 16709_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

Chd rk disproval (16709); chd rk is chd rk (16710) at pos 60°35'52.99"N , 145°47'39.23"W

A search was conducted with 30 m radius, more than 12 m of depth, with 0.5 m vertical visibility, for 2 minutes, in light seas, during low water.

Hydrographer Recommendations

The Hydrographer recommends the rock be removed. Due to cartographic scale this rock is displayed incorrectly on chart 16709. It is displayed correctly on chart 16710 at position 60°35'52.99"N , 145°47'39.23"W.

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Office Notes

Do not concur. Retain as charted. The islet depicted on chart 16710 is charted accurately and the rock on the smaller scale 16709 is correctly generalized for the scale of the chart.

1.9) GP3

Survey Summary

Survey Position: 60° 35' 23.0" N, 145° 53' 45.4" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2005-308.15:25:34 (11/04/2005)

GP Dataset: ChartGPs - Digitized

GP No.: 3

Charts Affected: 16709_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

Chd rk disproval (16709)

A search was conducted with a 25 m radius, in 5.5 m of depth, with 1.5 m of vertical visibility, with a soft bottom, in ripple seas, at low water. Multibeam was not run in the area due to time and equipment constraints.

Hydrographer Recommendations

The Hydrographer recommends removal of the rock.

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Office Notes

Concur.

1.10) GP4

Survey Summary

Survey Position: 60° 35' 22.9" N, 145° 53' 55.1" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2005-308.16:15:21 (11/04/2005)

GP Dataset: ChartGPs - Digitized

GP No.: 4

Charts Affected: 16709_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

Chd rk disproval (16709)

A search was conducted with 20 m radius, in 7.5 m depth, for 2 minutes, with 1.5 m vertical visibility, with a soft bottom and ripple seas at low water. Only partial multibeam was run in the area due to time and equipment constraints.

Hydrographer Recommendations

The Hydrographer recommends removal of the rock.

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Office Notes

Concur.

1.11) GP5

Survey Summary

Survey Position: 60° 35' 18.9" N, 145° 54' 23.6" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2005-311.18:00:10 (11/07/2005)

GP Dataset: ChartGPs - Digitized

GP No.: 5

Charts Affected: 16709_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

Chd rk disproval (16709)

A search was conducted with a radius of 20 m, greater than 13 m of depth, 1.5 m vertical visibility, for 2 minutes during low water. Partial multibeam coverage was collected. Due to time and equipment constraints full coverage could not be gathered.

Hydrographer Recommendations

The Hydrographer recommends removal of the rock.

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Office Notes

Concur.

1.12) GP6

Survey Summary

Survey Position: 60° 35' 15.6" N, 145° 54' 31.2" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2005-311.18:33:52 (11/07/2005)

GP Dataset: ChartGPs - Digitized

GP No.: 6

Charts Affected: 16709_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

Chd rk disproval (16709)

A search was conducted with a radius of 20 m, and depth of 12 m, in 1.5 m vertical visibility, for 2 minutes, with a soft bottom, at low water. Due to time and equipment constraints, multibeam was not able to be run in the area.

Hydrographer Recommendations

The Hydrographer recommends removal of the rock.

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Office Notes

Concur.

1.13) GP7

Survey Summary

Survey Position: 60° 35' 10.7" N, 145° 54' 35.8" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2005-311.18:43:49 (11/07/2005)

GP Dataset: ChartGPs - Digitized

GP No.: 7

Charts Affected: 16709_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

Chd rk disproval (16709)

A search was conducted with radius 20 m, depth of 8 m, for 2 minutes, with 2 m vertical visibility, during low water. Due to time and equipment constraints, no multibeam was collected in the area.

Hydrographer Recommendations

The Hydrographer recommends removal of the rock.

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Office Notes

Concur.

1.14) GP8

Survey Summary

Survey Position: 60° 35' 03.5" N, 145° 55' 31.5" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2005-311.18:54:33 (11/07/2005)

GP Dataset: ChartGPs - Digitized

GP No.: 8

Charts Affected: 16709_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

Chd rk disproval (16709)

A search was conducted with radius 20 m, depth of 12 m, vertical visibility of 1.5 m, for 2 minutes, with a soft bottom, during low water. Multibeam collected in the area shows no evidence of the rock.

Hydrographer Recommendations

The Hydrographer recommends removal of the rock.

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Office Notes

Concur

1.15) GP9

Survey Summary

Survey Position: 60° 35' 03.2" N, 145° 55' 50.3" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2005-311.19:01:22 (11/07/2005)

GP Dataset: ChartGPs - Digitized

GP No.: 9

Charts Affected: 16709_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

Chd rk disproval (16709)

A search was conducted with a radius of 20 m, depth of greater than 13 m, vertical visibility of 2 m, for 2 minutes, during low water. Due to time and equipment constraints, multibeam was not collected in the area.

Hydrographer Recommendations

The Hydrographer recommends removal of the rock.

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Office Notes

Concur.

1.16) GP12

Survey Summary

Survey Position: 60° 34' 13.5" N, 145° 58' 06.5" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2006-151.04:26:43 (05/31/2006)

GP Dataset: ChartGPs - Digitized

GP No.: 12

Charts Affected: 16709_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

Chd rk disproval (16709)

Charted rock was not seen during low water investigation. Due to time and equipment constraints, only partial multibeam was able to be run in the area.

Hydrographer Recommendations

The Hydrographer recommends removal of the rock.

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Office Notes

Concur.

1.17) GP13

Survey Summary

Survey Position: 60° 34' 02.3" N, 145° 57' 46.4" W

Least Depth: [None]

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2006-151.04:29:57 (05/31/2006)

GP Dataset: ChartGPs - Digitized

GP No.: 13

Charts Affected: 16709_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

Chd rk disproval (16709)

A search was conducted at low water and 100% multibeam was run in the area with no evidence of the charted rock.

Hydrographer Recommendations

The Hydrographer recommends removal of the rock.

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Office Notes

Do not concur. Retain as charted. Submerged rock seen in SWMB data.

1.18) 140/24

Survey Summary

Survey Position:	60° 34' 30.0" N, 145° 58' 13.4" W
Least Depth:	1.50 m (= 4.91 ft = 0.818 fm = 0 fm 4.91 ft)
TPU (±1.96σ):	**THU (TPEh)** ±0.981 m ; **TVU (TPEv)** ±0.146 m
Timestamp:	2005-253.23:14:20.614 (09/10/2005)
Survey Line:	h11498 / 1010_8101 / 2005-253 / 253-2314
Profile/Beam:	140/24
Charts Affected:	16709_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

Chd rk is subm feature (16709)

The charted rock was not seen during low water field investigations. However, after review of multibeam data in HIPS and SIPS outstanding feature appears to be the charted rock.

Hydrographer Recommendations

Retain Charted Rock

Cartographically-Rounded Depth (Affected Charts):

0 ¾fm (16709_1, 16700_1, 16013_1)

0fm 5ft (531_1)

1.5m (500_1, 50_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)

Office Notes

Concur.

1.19) 919/89

Survey Summary

Survey Position: 60° 34' 31.4" N, 145° 57' 53.3" W

Least Depth: 8.39 m (= 27.52 ft = 4.586 fm = 4 fm 3.52 ft)

TPU (±1.96σ): **THU (TPEh)** ±0.981 m ; **TVU (TPEv)** ±0.148 m

Timestamp: 2005-253.23:10:58.702 (09/10/2005)

Survey Line: h11498 / 1010_8101 / 2005-253 / 253-2308

Profile/Beam: 919/89

Charts Affected: 16709_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

Chd rk is subm feature (16709)

The charted rock was not seen during low water field investigations. However, after review of multibeam data in HIPS and SIPS outstanding submerged feature appears to be the charted rock.

Hydrographer Recommendations

Retain charted rock.

Cartographically-Rounded Depth (Affected Charts):

4 ½fm (16709_1, 16700_1, 16013_1)

4fm 3ft (531_1)

8.4m (500_1, 50_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)

Office Notes

Concur.

2 - AWOIS Features

2.1) AWOIS #53249 - F/V ST. PETER

No Primary Survey Feature for this AWOIS Item

Search Position: 60° 36' 11.0" N, 145° 48' 14.1" W

Historical Depth: [None]

Search Radius: 250

Search Technique: SSS, MB, ES, DI, SD

Technique Notes: [None]

History Notes:

LNM11/77--17TH CGD; THE F/V ST. PETER, A 65 FOOT FISH TENDER WITH BLUE STEEL HULL AND WHITE TRIM WAS REPORTED SUNK IN APPROXIMATE POSITION LAT. 60/36/13N LONG. 145/48/07W (NAD 27). (ENTERED 5/25/05 BY JCA)

Survey Summary

Charts Affected: 16710_1, 16709_1, 16700_1, 16013_1, 531_1, 500_1, 50_1

Remarks:

AWOIS Wreck Disproval

INVESTIGATION

VESSEL: 1010 DATE(S) TIME(S): 08/24/05 (DN:236) TIME 1000-1400

VESSEL: 1706 DATE(S) TIME(S): 08/24/05 (DN:236) SEE DP 12362

INVESTIGATION METHODS USED: 100% MBES, VISUAL

POSITION DETERMINED BY: DIFFERENTIAL GPS

INVESTIGATION SUMMARY: During a MBES and visual search of the area no evidence of a wreck was found.

Hydrographer Recommendations

The Hydrographer recommends the wreck be removed.

S-57 Data

Geo object 1: Cartographic symbol ($CSYMB)

Office Notes

Concur.

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : October 31, 2005

HYDROGRAPHIC BRANCH: Pacific
HYDROGRAPHIC PROJECT: OPR-P158-FA-2005
HYDROGRAPHIC SHEET: H11498

LOCALITY: Windy Bay to Channel Islands, Orca Bay, AK
TIME PERIOD: August 24 - September 24, 2005

TIDE STATION USED: 945-4050 Cordova, AK
Lat. 60° 33.5'N Long. 145° 45.2' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 3.559 meters

REMARKS: RECOMMENDED ZONING

Preliminary zoning is accepted as the final zoning for project OPR-P158-FA-2005, H11498, during the time period between August 24 to September 24, 2005.

Please use the zoning file "P158FA2005CORP" submitted with the project instructions for OPR-P158-FA-2005. Zones PWS59 & PWS60 are the applicable zones for H11498.

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).

Richard Dick

CHIEF, PRODUCTS AND SERVICES DIVISION

H11498 HCell Report

Kurt Brown, Physical Scientist
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 ENC US4AK25M, US4AK24M, US5AK2CM and NOAA RNCs 16709 and 16710.

HCell compilation of survey H11498 used Office of Coast Survey HCell Specifications Version 3.0 and HCell Reference Guide Version 1.0.

1. Compilation Scale

Depths for HCell H11498 were compiled to the largest scale charts in the region, 16709, 1:80,000 and 16710, 1:30,000. The density and distribution of soundings from H11498 were selected to emulate the distribution on chart 16709 and 16710. Non-bathymetric features have been generalized to chart scale.

2. Soundings

A survey-scale sounding (SOUNDG) feature object layer was built from the 12-meter combined surface, **H11498_Combined_12m**, in CARIS BASE Editor. A shoal-biased selection was made at 1:5000 scale for chart 16710 and 1:10,000 for chart 16709. The resultant sounding layer contains depths ranging from 0 to 223 meters.

In CARIS BASE Editor soundings were manually selected from the high density sounding layers 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). Two depth ranges, from 0 to 223 meters and from -3.6 to 0 meters, were used for depth area objects. Upon conversion to NOAA charting units, the depth ranges are 0 to 731 feet and -11.8 to 0 feet.

3.2 Depth Contours

Depth contours at the intervals on the largest scale chart are included in the H11498_SS HCell for MCD raster charting division to use for guidance in creating chart contours. The generalized metric and feet equivalent contour values are shown in the table below.

Chart Contours in Feet	Metric Equivalent of Chart Contours	Metric Equivalent of Chart Contours NOAA Rounded	Actual Value of Chart Contours
6	1.8288	2.0574	6.75
12	3.6576	3.8862	12.75
18	5.4864	5.715	18.75
30	9.144	9.3726	30.75
60	18.288	18.5166	60.75

Contours delivered in the H11498_SS file have not been deconflicted against shoreline features, soundings and hydrography as all other features in the H11498_CS file and soundings in the H11498_SS have been. This results in conflicts between the H11498_SS file contours and HCell features at or near the survey limits. Conflicts with M_COVR, M_QUAL, DEPARE, COALNE and SBDARE objects, and with DEPCNT objects representing MLLW, should be expected. HCell features should be honored over H11498_SS.000 file contours in all cases where conflicts are found.

4. Meta Areas

The following Meta object areas are included in HCell 11498:

M_QUAL M_CSCL
M_COVR

Meta area objects were constructed on the basis of the limits of the hydrography. (See 3.1 *Depth Areas*.)

5. Features

Shoreline features for H11498 were delivered from the field in several .hob files described in the DR. The files contained new features, modification to GC or charted features, and disprovals. These were deconflicted against GC shoreline, the chart and hydrography during office processing.

New rocky seabed areas were delineated using the high resolution BASE surfaces and are included in the H11498 HCell.

There were no DTONs reported from survey H11498.

One AWOIS item, a charted wreck, was recommended for removal.

The source of all features included in the H11498 HCell can be determined by the SORIND field.

6. S-57 Objects and Attributes

The H11498_CS HCell contains the following Objects:

SOUNDG	Chart scale soundings
DEPARE	All-encompassing depth area and intertidal areas
DEPCNT	Zero contour for ledges and intertidal areas
COALNE	GC and charted MHW line
LNDARE	Islet features
LNDELV	Height feature for islets
UWTROC	Rock features
OBSTRN	Foul areas
WEDKLP	Kelp features
SBDARE	Bottom samples, rocky seabed areas and ledges
MARCUL	Oyster Farm
M_COVR	Data coverage Meta object
M_QUAL	Data quality Meta object
M_CSCL	Compilation scale Meta object
$CSYMB	Blue notes

The H11498_SS HCell contains the following Objects:

DEPCNT	NOAA rounded contours at chart scale intervals
SOUNDG	Soundings at the survey scale density

All S-57 Feature Objects in the H11498_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. The NINFOM field is populated with the charting disposition

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):	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, and therefore have lower precision. 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 feet charting units with NOAA rounding ensures that soundings round to the deeper foot if the decimals of the foot is .75000 or greater.

In an ENC viewer feet display in whole feet. Soundings round to the deeper foot if the decimals of the foot are .75000 or greater and heights (HUNI) display as whole feet.

9. Data Processing Notes

9.1 Junctions

H11498 junctions with surveys H11496, H11499 and H11500. H11496 has been compiled and the limits of H11498 junctioned with this survey. H11499 and H11500 have not been compiled. Junctions with these surveys will be made when they are compiled.

10. QA/QC and ENC Validation Checks

H11498 was subjected to QA checks in S-57 Composer prior to exporting to the HCell base cell (000) file. The millimeter precision metric S-57 HCell was converted to a 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 have been approved by MCD as inherent to and acceptable for HCells.

11. Products

11.1 HSD, MCD and CGTP Deliverables

- H11498 Base Cell File, Chart Units, Soundings compiled to 1:80,000 and 1:30,000
- H11498 Base Cell File, Chart Units, Soundings compiled to 1:10,000
- H11498 Base Cell File, Metric Units, Features compiled to 1:10,000
- H11498 Descriptive Report including end notes compiled during office processing and certification, the HCell Report, and supplemental items
- H11498 Survey Outline to populate SURDEX

11.2 File Naming Conventions

- Chart units base cell file, chart scale soundings H11498_CS.000
- Chart units base cell file, survey scale soundings H11498_SS.000
- Metric base cell file, survey scale features H11498_Features.000
- Descriptive Report package H11498_DR.pdf
- Survey outline H11498_Outline.gml & *xsd

11.3 Software

CARIS HIPS Ver. 6.1	Inspection of Combined BASE Surfaces
CARIS BASE Editor Ver. 2.2	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. 2.0	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:

Kurt Brown, Physical Scientist, PHB, Seattle, WA; 206-526-6839;
Kurt.Brown@noaa.gov.

APPROVAL SHEET
H11498

Initial Approvals:

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

Digitally signed by
Kurt Brown
Date: 2009.07.07
15:14:33 -07'00'

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.

Gary C. Nelson
for Katie Reser
2009.07.09 10:24:09 -07'00'

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
2009.07.09
10:24:35 -07'00'

J. Corey Allen
AWOIS and SURF Check
Complete
2009.07.27 11:34:46 -04'00'