

H11507

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. ....

Registry No. .... H11507

### LOCALITY

State ..... Alaska

General Locality ..... Ernest Sound and Eastern Passage

Sublocality ..... Fools Inlet to Anan Bay

**2005**

### CHIEF OF PARTY

..... CAPT John E. Lowell, Jr., NOAA

### LIBRARY & ARCHIVES

DATE .....

## HYDROGRAPHIC TITLE SHEET

H11507

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 AlaskaGeneral Locality Ernest Sound and Eastern PassageSublocality Fools Inlet to Anan BayScale 1:10,000Date of Survey October 9, 2005-November 6, 2005Instructions Dated 1/4/2005Project No. OPR-O119-FA-05Vessel NOAA Ship FAIRWEATHER, Launch 1010, Launch 1018Chief of Party CAPT John E. Lowell, Jr., NOAASurveyed by ENS Guinevere Lewis, CST Morgan, LTjg HigginsSoundings taken by echo sounder RESON 8101ER and RESON 8111Graphic record scaled by N/AGraphic record checked by N/AEvaluation by M. Foss Automated plot by HP Designjet 1050CVerification by M. Foss, K. ReserSoundings in Fathoms and Feet at MLLWREMARKS: Time in UTC. UTM Projection Zone 9

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.



One hundred percent multibeam echosounder (MBES) coverage was obtained in the survey area at least to depths of eight meters where conditions allowed. The steep and deep bathymetry of the survey area did not always allow data to be collected safely to the 8 meter curve. When conditions allowed, multibeam echosounder (MBES) data was acquired parallel to contours in depths between four and eight meters. Additional coverage was obtained in order to determine least depths over features or shoals.

Shoreline data were acquired for H11507. These data were attributed as S-57 objects for submittal.

## B. DATA ACQUISITION 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*, submitted under separate cover.<sup>1</sup> Quality control procedures and data processing methods are listed and described in the *OPR-0119-FA-05 Fall Data Acquisition and Processing Report (DAPR)*, submitted under separate cover.<sup>2</sup> Items specific to this survey and any deviations from the aforementioned reports 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	Fast Rescue Boat	Ambar 700
<b>Hull Registration Number</b>	S220	1010	1018	2301	2302
<b>Builder</b>	Aerojet-General Shipyard	The Boat Yard, Inc.	The Boat Yard, Inc.	Zodiac of North America	Marine Silverships, Inc
<b>Length Overall</b>	231 feet	28' 10"	28' 10"	22'	23'
<b>Beam</b>	42 feet	10' 8"	10' 8"	8' 6"	9' 4"
<b>Draft, Maximum</b>	15' 6"	4' 0" DWL	4' 0" DWL	1' 10 "	1' 4"
<b>Cruising Speed</b>	12.5 knots	24 knots	24 knots	18 knots	22 knots
<b>Max Survey Speed</b>	10 knots	10 knots	10 knots		
<b>Primary Echosounder</b>	RESON 8111 & RESON 8160	RESON 8101	RESON 8101		
<b>Sound Velocity Equipment</b>	SBE 19plus & 45, MVP 200	SBE 19plus	SBE19plus		
<b>Attitude &amp; Positioning Equipment</b>	POS/MV V3	POS/MV V3	POS/MV V3		
<b>Type of operations</b>	MBES	MBES	MBES	Shoreline	Shoreline

**Table 1: Vessel Inventory**

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

## B2. Quality Control

Internal consistency and integrity of data collected for survey H11507 were manually examined by the Hydrographer in CARIS subset mode. The internal consistency and integrity of data collected for survey H11507 were found to be very good.

## Crosslines

Shallow water multibeam crosslines for this survey totaled 19.05 linear nautical miles (lnm), comprising 19.5% of the 97.25 lnm of total SWMB hydrography.

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*.<sup>3</sup>

## Junctions

Survey H11507 junctions with H11406 (Sheet D) and H11508 (Sheet F) of the same project. The area of overlap between the sheets was approximately 200 meters wide. Data were reviewed in CARIS Subset Editor and depths were found to be consistent among the three surveys, meeting the requirements as stated in the *NOS Hydrographic Surveys Specifications and Deliverables*.<sup>4</sup> The sheet limits and area of overlap for Sheets E, D, and F are shown in Figure 2.

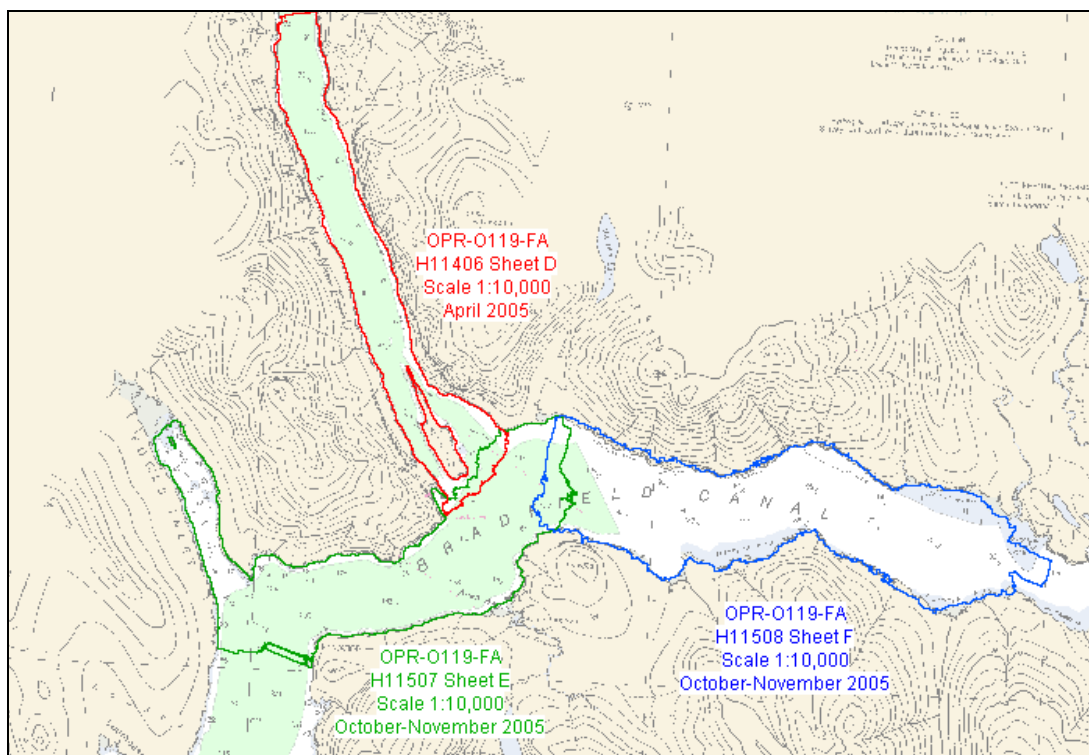


Figure 2: Junction between H11507, H11406 and H11508

## Quality Control Checks

MBES quality control checks were conducted as discussed in the quality control section of the *OPR-O119-FA-05 Fall Data Acquisition and Processing Report*.

## Data Quality Factors

### DESIGNATED SOUNDINGS:

In areas of navigational significance where the BASE surface did not depict the desired depth for the given area, a designated sounding was selected.

Designated soundings were selected based on the difference between the BASE surface and reliable shoaler sounding(s) being more than half of the allowable IHO error budget in depths less than 30m.

### COVERAGE ASSESSMENT:

Coverage assessment was determined using the following interpolated finalized base surface resolutions listed below in Table 2. The base surfaces were interpolated using a 5x5 matrix with 12 nearest neighbors, as per conversation with LCDR Shep Smith.

Depth ranges were adjusted so that adequate overlap was achieved in areas of steep bathymetry.

Depth Ranges (m)		Resolution (m)
Low	High	
0	45	0.8
25	90	2
60	200	5
150	400	12
280	550	22

**Table 2: Depth Ranges and Resolutions**

## Accuracy Standards

All data meet the data accuracy specifications as stated in the *NOS Hydrographic Surveys Specifications and Deliverables*, dated March 2003.<sup>5</sup>

## B3. Corrections to Echo Soundings

Data reduction procedures for survey H11507 conform to those detailed in the of the *Fall OPR-O119-FA-05 Data Acquisition and Processing Report*..

### C. HORIZONTAL AND VERTICAL CONTROL

A complete description of horizontal and vertical control for survey H11507 can be found in the *OPR-0119-FA-05 Fall Horizontal and Vertical Control Report*, submitted under separate cover.<sup>6</sup> 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. Differential corrections came from the U.S. Coast Guard beacons at Annette Island (323kHz) and Level Island (295 kHz).

Distances from the U.S. Coast Guard beacons combined with fjord-like topography created weak signal to noise ratios for the DGPS corrections within the project area. Occasionally the corrector signal from a beacon would be lost. When that occurred a launch would move away from the shoreline to re-acquire the signal or switch to another corrector station. Switching stations is known to shift the relative horizontal position by a few meters, which causes vertical errors in regions with steep slope. 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.<sup>7</sup>

#### 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 Ketchikan, AK (945-0460) served as control for datum determination and as the primary source for water level reducers for survey H11507 during acquisition. The NWLON tertiary 30 day tide station listed below served as the primary source for water level reducers for survey H11507 once verified tides were available.

FAIRWEATHER personnel installed one Sutron 8210 “bubbler” tide gauge (Gauge #12 S/N 023512) at the tertiary station listed below. The gauge was installed in order to provide information to Center for Operational Oceanographic Products and Services (CO-OPS N/OPS1) for the determination of time and height correctors, in accordance with the Project Instructions.

Station Name	Station Number	Type of Gauge	Date of Installation	Date of Removal
Bradfield Canal, AK	945-1012	Tertiary 30 Day	October 8, 2005	November 7, 2005

A request for delivery of approved water level data (smooth tides) for survey H11507 was forwarded to N/OPS1 on November 09, 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.<sup>8</sup>

FAIRWEATHER received verified water level data for NWLON tertiary 30 day tide station Bradfield Canal, AK (945-1012) and the Tide Note for Hydrographic Survey H11508 on December 22, 2005. The Tide Note included a new zone file which was applied to the data. Application of smooth tides and the new zone file by FAIRWEATHER were not required in Project Instructions, but because they were made available by CO-OPS they were applied. The Tide Note for Hydrographic Survey H11507 and ancillary

correspondence are included in Appendix IV.<sup>9</sup>

As per the letter instructions, all data were reduced to MLLW using the observed water level data from station Ketchikan, AK by applying tide file 9450460.tid and time and height correctors through the zone corrector file O119FA2005CORP.zdf during acquisition. Once verified tides and final zoning were available, all data were reduced to MLLW using the verified water level data (smooth tides) from station Bradfield Canal, AK by applying tide file 9451012.tid and time and height correctors through the revised zone corrector file H115072005CORF.zdf. 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.<sup>10</sup>

## **D. RESULTS AND RECOMMENDATIONS**

### **D.1 Chart Comparison**

Due to a split of UTM Zones, the Hydrographer was unable to use the Pydro “Insert BASE/Weighted Grids” function. Instead bathymetric depths were inserted in Pydro and survey H11507 was compared to the appropriate charts. The data was then excessed to survey scale and shoal biased. The hydrographer manually compared the charted soundings to the shoal biased, excessed soundings in the Chart window.

Survey H11507 was compared with charts 17360 (33<sup>rd</sup> Ed.; April 1, 2003, 1:217,828), and 17385 (15<sup>th</sup> Ed.; February 1, 2005, 1:80,000). Chart 17360 has been updated with the Notice to Mariners through March 4, 2006. Chart 17385 has been updated with the Notice to Mariners through March 4, 2006. There were no new changes within the survey area.<sup>11</sup>

#### **Chart 17360**

A 5.8 fathom sounding was found by MBES at a charted 8 fathom sounding in the north end of Fools Inlet (see figure 3).<sup>12</sup>

The rest of the depths from survey H11507 generally agreed within a few fathoms with depths on chart 17360.<sup>13</sup>

#### **Chart 17385<sup>14</sup>**

A 5.8 fathom sounding was found by MBES at a charted 8 fathom sounding in the north end of Fools Inlet (see figure 3).<sup>15</sup>

A 2.49 fathom sounding was found by MBES at a charted 6 ¼ fathom sounding on the east shore of Fools Inlet (see figure 3).<sup>16</sup>

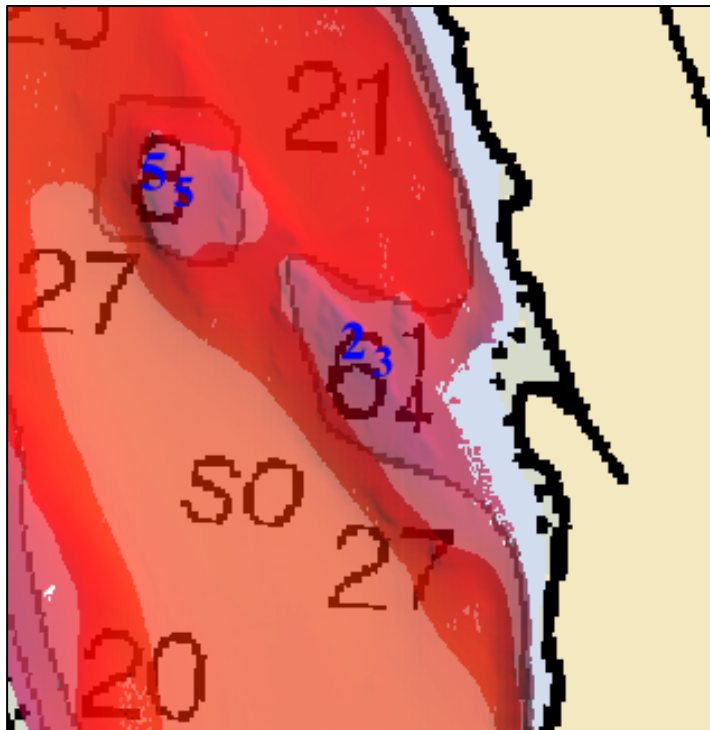
A 7.98 fathom sounding was found by MBES between a charted 17 fathom and 8 fathom sounding on the south east shore of Fools Inlet (see figure 4).<sup>17</sup>

Depths from survey H11507 generally agreed within a few fathoms with depths on chart 17385.<sup>18</sup>

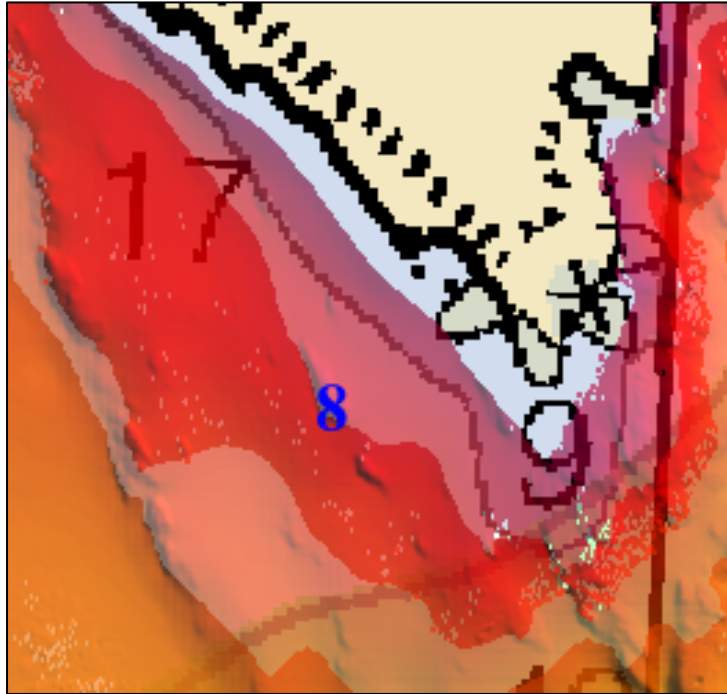


**Chart Comparison Recommendations**

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.<sup>19</sup> The BASE surfaces and associated soundings are adequate to supersede prior surveys in their common areas. Final chart comparisons will be made at the Pacific Hydrographic Branch.<sup>20</sup>



**Figure 3: Charted (17385) soundings near the north end of Fools Inlet, east shore, and corresponding least depths found by MBES.**



**Figure 4: Southeast shore Fools Inlet, 7.98 fathom sounding found by MBES between a charted (17385) 17 fathom and 9 fathom sounding.**

### **Automated Wreck and Obstruction Information System (AWOIS) Investigations**

There were no AWOIS items located within the limits of H11507.<sup>21</sup>

### **Dangers to Navigation**

Survey H11507 included four (4) dangers to navigation which were reported to the Mapping and Charting Division for verification and final submission to the Seventeenth Coast Guard District.<sup>22</sup> The first DTON was immediately reported as a mischarted ATON on November 16, 2005. The relocation of Blake Channel Light 1 was included in the U.S.C.G. Local Notice To Mariners 47/05. The other three (3) DTONs regarding mischarted shoals were reported on June 8, 2006. A copy of both preliminary Danger to Navigation Reports are included with the Pydro Preliminary Smooth Sheet (PSS).<sup>23</sup>

### **D.2 Additional Results**

#### **Shoreline Source**

Source shoreline for this sheet was taken from photogrammetric survey AK9702E (NAD 83) GC-10547, and survey AK9702D (NAD 83) GC-10493 both at a scale of 1:20,000. The CFF shoreline was imported into CARIS Notebook 2.2 as an editable layer named H11507\_Edited\_CFF\_Shoreline.hob, with all objects having S57 attribution. In addition, features from the current editions of charts 17360 and 17385 that were not depicted by the source shoreline data were digitized in MapInfo and then imported into in CARIS Notebook attributed with S57 into H11507\_Charted\_Shoreline.hob file.

## 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*.<sup>24</sup> 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, Delete, or None was assigned to each item in Pydro, and all features were S57 attributed.<sup>25</sup>

All accepted and primary detached and generic positions were imported from the Pydro .xml to two separate stand alone .hob files in CARIS Notebook 2.2. These were named H11507\_Add\_Pydro.hob and H11507\_Modify\_Pydro.hob.

## Source Shoreline Changes, New Features and Charted Features

Items for survey H11507 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 H11507\_Features\_Report.pdf in Appendix I.<sup>26</sup>

Three additional .hob layers, named H11507\_Add\_Ntbk.hob, H11507\_Modify\_Ntbk.hob and H11507\_Delete\_Ntbk.hob, 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 file were left in the H11507\_Edited\_CFF\_Shoreline.hob file. Field notes made by the Hydrographer on the boat sheets and DP forms<sup>27</sup> 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.<sup>28</sup>

## Aids to Navigation

Survey H11507 included one (1) aid to navigation (ATON). A detached position was taken on the ATON for check purposes only.<sup>29</sup> The ATON was found to serve its intended purpose, but is charted incorrectly by 115.0 meters to the NW at a bearing of 293° from the correct position. See the *OPR-O119-FA Fall Horizontal and Vertical Control Report*<sup>30</sup> for the position obtained by a 2 hour static GPS session.

Light List Name	Light List Number	NAD83 (CORS 96) (EPOCH:2003.0000)		Ellipsoid Ht. (m) (Pk to Pk Err. (m))	NAVD88 Ortho Ht. (m) (Pk to Pk Err. (m))	Satellite Ephemeris File
		N. Latitude (Pk to Pk Err. (m))	W. Longitude (Pk to Pk Err. (m))			
LIGHT1	22670	56° 12' 36.03990" (0.016)	131° 55' 19.89325" (0.027)	6.141 (0.065)	8.131 (0.069)	Rapid

## Bottom Samples

Bottom samples were collected on October 13, 2005 (DN 286) and 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 the Notebook H11507\_Add\_Features.hob file.<sup>31</sup>

## Miscellaneous

Shoreline for survey H11507 found two (2) locations of submerged power cables which prohibit anchorage due to high voltage. Charts (17385, 17360) both depict the cable area in Bradfield Canal, however GP's of the prohibited anchorage signs were taken for an accurate position and imported to the Notebook H11507\_Pydro\_Features.hob file.<sup>32</sup> The “no anchorage” areas are located on the north and south shore of Bradfield Canal near the vicinity of Blake Island.

## E. Supplemental Reports

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

<u>Title</u>	<u>Date Sent</u>	<u>Office</u>
Hydrographic Systems Certification Report 2005	April 18, 2005	N/CS34
OPR-O119-FA-05 Fall Data Acquisition and Processing Report	April 17, 2006	N/CS34
OPR-O119-FA-05 Fall Horizontal & Vertical Control Report	Nov 17, 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

July 12, 2006

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


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

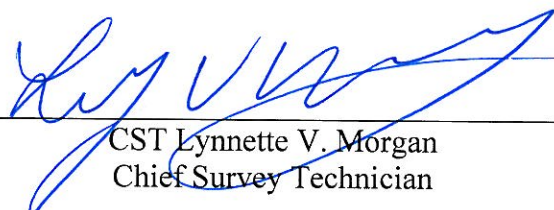
TITLE: Approval of Hydrographic Survey H11507,  
OPR-O119-FA-05

As Chief of Party, I have ensured that standard field surveying and processing procedures were adhered to during acquisition and processing of hydrographic survey H11507 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:

  
\_\_\_\_\_  
ENS Guinevere Lewis  
Survey Manager

  
\_\_\_\_\_  
CST Lynnette V. Morgan  
Chief Survey Technician

Attachment



## **Revisions Compiled During Office Processing and Certification**

<sup>1</sup> Filed with project records.

<sup>2</sup> Filed with project records.

<sup>3</sup> Concur with clarification. There were SV errors at the northern extent of Fools Inlet noted in the Survey Acceptance review that do not meet specifications. However, it was determined that there was enough data from other lines such that the BASE surface was unaffected by the SV errors and was within specifications.

<sup>4</sup> Concur with clarification. There were differences up to 10m between H11507 outer beams and the edge of H11406. The outer beams of H11507 were cleaned during the Survey Acceptance Review and the junction now agrees within 1m.

<sup>5</sup> Concur.

<sup>6</sup> Filed with project records.

<sup>7</sup> Concur.

<sup>8</sup> Filed with hydrographic records.

<sup>9</sup> See attached Tide Note dated December 22, 2005.

<sup>10</sup> Concur with clarification. According to the Survey Acceptance Review, final verified tides were re-applied at Pacific Hydrographic Branch. See attached Tide Note dated December 22, 2005.

<sup>11</sup> For final chart comparison and compilation of this survey, the following updated charts were used: 17385, 1:80,000 (16<sup>th</sup> Ed.; September 2006, NM 10/04/2008) and 17360, 1:217,828 (35<sup>th</sup> Ed.; June 2008, NM 10/04/2008)

<sup>12</sup> See DTON section of attached Features Report.

<sup>13</sup> Concur.

<sup>14</sup> Because of the 100% multibeam coverage on this survey, it is recommended that the green tint, wire drag area, should be removed from chart 17385 and superseded with depths from this survey within the common area.

<sup>15</sup> See DTON section of attached Features Report.

<sup>16</sup> See DTON section of attached Features Report.

<sup>17</sup> See DTON section of attached Features Report.

<sup>18</sup> Concur.

<sup>19</sup> Concur.

<sup>20</sup> Other than the DTON found during the survey acceptance review (see endnote 22) and a recommendation to remove the green tint, wire drag area, the final chart comparisons agreed with the field chart comparisons.

<sup>21</sup> Concur.

<sup>22</sup> Concur with clarification. A fifth DTON was submitted during the survey acceptance review. All reported DTONs from this survey have been applied to all applicable charts.

<sup>23</sup> See DTON section of attached Features Report.

<sup>24</sup> Filed with hydrographic records.

<sup>25</sup> See attached Features Report.

<sup>26</sup> See attached Features Report.

<sup>27</sup> Filed with hydrographic records.

<sup>28</sup> Concur with clarification. Upon review of the shoreline data during compilation, it was determined that some of the features were characterized incorrectly based on the descriptions given in the Pydro remarks field. The features were modified and are appropriately depicted in the HCell.

<sup>29</sup> See attached Features Report. Blake Channel Light #1 is now charted correctly. It is recommended that the latest ATONIS information be used for charting aids to navigation.

<sup>30</sup> Filed with project records.

<sup>31</sup> Ten bottom samples were collected with H11507 and are included in the HCell. Four additional bottom samples were imported from the ENC to be retained.

<sup>32</sup> The positions of the “no anchorage” signs are not included in the HCell because the nature of the charted Cable Area (a magenta chart feature) implies that there is a hazard within the delineated area, not just where the signs are located.

# H11507 Features Report

**Registry Number:** H11507  
**State:** AK  
**Locality:** Ernest Sound and Eastern Passage  
**Sub-locality:** Fools Inlet to Anan Bay  
**Project Number:** OPR-O119-FA-05  
**Survey Dates:** 10/09/05 - 11/06/05

Items for survey H11507 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	Version	Date	Scale
17385	15th Ed.	02/01/2005	1:80000
17360	34th Ed.	03/01/2006	1:217828
16016	20th Ed.	11/01/2003	1:969756
531	23rd Ed.	01/01/2006	1:2100000
530	31st Ed.	06/01/2005	1:4860700
50	6th Ed.	06/01/2003	1:10000000

## Features

Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude
12931	GP	[None]	056° 12' 26.497" N	132° 01' 57.892" W
23061	Sounding	-3.13 m	056° 10' 56.412" N	131° 53' 57.486" W
23062	Sounding	-2.14 m	056° 10' 29.950" N	131° 58' 14.765" W
13061	GP	[None]	056° 12' 06.194" N	131° 55' 30.158" W
13062	GP	[None]	056° 12' 12.185" N	131° 55' 16.929" W
13063	GP	[None]	056° 12' 35.757" N	131° 55' 38.171" W
13071	GP	[None]	056° 11' 11.294" N	131° 53' 27.032" W
23101	Sounding	-3.37 m	056° 11' 36.391" N	131° 58' 11.250" W
23102	Sounding	-1.07 m	056° 11' 17.331" N	132° 00' 12.234" W
23102	GP	[None]	056° 11' 44.203" N	131° 53' 17.706" W

Static GPS Position	GP	[None]	056° 12' 36.040" N	131° 55' 19.884" W
232/87	Sounding	10.75 m	056° 12' 33.961" N	132° 01' 34.650" W
401/77	Sounding	4.55 m	056° 12' 26.053" N	132° 01' 16.383" W
793/78	Sounding	14.60 m	056° 11' 15.024" N	132° 00' 23.354" W



## **1 - New Features**

## 1.1) 12931

### Survey Summary

**Survey Position:** 056° 12' 26.497" N, 132° 01' 57.892" W  
**Least Depth:** [None]  
**Timestamp:** 2005-293.16:17:53.000 (10/20/2005)  
**GP Dataset:** TR1\_293\_UWTROC\_P.shp  
**GP No.:** 1  
**Charts Affected:** 17385\_1, 17360\_1, 16016\_1, 531\_1, 530\_1, 50\_1

**Remarks:**

New pos chd (17385) rk  
 The rock is submerged at +3 ft tide, therefore unable to measure least depth

### Feature Correlation

Address	Feature	Range	Azimuth	Status
TR1_293_UWTROC_P.shp	1	0.00	000.0	Primary

### Hydrographer Recommendations

[None]

### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)  
**Attributes:** QUASOU - 2:depth unknown  
 RECDAT - 20051020  
 WATLEV - 3:always under water/submerged

### Office Notes

Re-position charted (17385) rock.

**1.2) 23061****Survey Summary**

**Survey Position:** 056° 10' 56.412" N, 131° 53' 57.486" W  
**Least Depth:** -3.13 m  
**Timestamp:** 2005-306.16:21:05.000 (11/02/2005)  
**DP Dataset:** h11507 / trb2\_dpne / 2005-306 / tr2306\_\$csymb\_p.shp  
**Profile/Beam:** 1/1  
**Charts Affected:** 17385\_1, 17360\_1, 16016\_1, 531\_1, 530\_1, 50\_1

**Remarks:**

Ext new ledge

Chd (17385) islet/CFE land areas are ldg

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
h11507/trb2_dpne/2005-306/tr2306_\$csymb_p.shp	1/1	0.00	000.0	Primary

**Hydrographer Recommendations**

[None]

**Cartographically-Rounded Depth (Affected Charts):**

-1 ¾fm (17385\_1, 17360\_1, 16016\_1, 530\_1)

-1fm 4ft (531\_1)

-3.2m (50\_1)

**S-57 Data**

**Geo object 1:** Cartographic symbol (\$CSYMB)

**Attributes:** RECDAT - 20051102

**Office Notes**

Chart new ledge.

## 1.3) 23062

### Survey Summary

**Survey Position:** 056° 10' 29.950" N, 131° 58' 14.765" W  
**Least Depth:** -2.14 m  
**Timestamp:** 2005-306.17:15:52.000 (11/02/2005)  
**DP Dataset:** h11507 / trb2\_dpne / 2005-306 / tr2306\_\$csymb\_p.shp  
**Profile/Beam:** 2/1  
**Charts Affected:** 17385\_1, 17360\_1, 16016\_1, 531\_1, 530\_1, 50\_1

**Remarks:**

HP new ldg

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h11507/trb2_dpne/2005-306/tr2306_\$csymb_p.shp	2/1	0.00	000.0	Primary

### Hydrographer Recommendations

[None]

**Cartographically-Rounded Depth (Affected Charts):**

-1fm (17385\_1, 17360\_1, 16016\_1, 530\_1)  
-1fm 1ft (531\_1)  
-2.2m (50\_1)

### S-57 Data

**Geo object 1:** Cartographic symbol (\$CSYMB)  
**Attributes:** RECDAT - 20051102

### Office Notes

Chart new rock.

**1.4) 13061****Survey Summary**

**Survey Position:** 056° 12' 06.194" N, 131° 55' 30.158" W  
**Least Depth:** [None]  
**Timestamp:** 2005-306.16:28:34.000 (11/02/2005)  
**GP Dataset:** TR1\_306\_OBSTRN\_P.shp  
**GP No.:** 1  
**Charts Affected:** 17385\_1, 17360\_1, 16016\_1, 531\_1, 530\_1, 50\_1

**Remarks:**

New ext CFF ldg

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
TR1_306_OBSTRN_P.shp	1	0.00	000.0	Primary

**Hydrographer Recommendations**

[None]

**S-57 Data**

**Geo object 1:** Cartographic symbol (\$CSYMB)

**Office Notes**

Chart new ledge.

**1.5) 13062****Survey Summary**

**Survey Position:** 056° 12' 12.185" N, 131° 55' 16.929" W  
**Least Depth:** [None]  
**Timestamp:** 2005-306.16:35:30.000 (11/02/2005)  
**GP Dataset:** TR1\_306\_OBSTRN\_P.shp  
**GP No.:** 2  
**Charts Affected:** 17385\_1, 17360\_1, 16016\_1, 531\_1, 530\_1, 50\_1

**Remarks:**

New ext CFF ldg

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
TR1_306_OBSTRN_P.shp	2	0.00	000.0	Primary

**Hydrographer Recommendations**

[None]

**S-57 Data**

**Geo object 1:** Cartographic symbol (\$CSYMB)

**Office Notes**

Chart new ledge.

**1.6) 13063****Survey Summary**

**Survey Position:** 056° 12' 35.757" N, 131° 55' 38.171" W  
**Least Depth:** [None]  
**Timestamp:** 2005-306.16:48:31.000 (11/02/2005)  
**GP Dataset:** TR1\_306\_OBSTRN\_P.shp  
**GP No.:** 3  
**Charts Affected:** 17385\_1, 17360\_1, 16016\_1, 531\_1, 530\_1, 50\_1

**Remarks:**

Subm power cable

No anchorage due to high voltage

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
TR1_306_OBSTRN_P.shp	3	0.00	000.0	Primary

**Hydrographer Recommendations**

[None]

**S-57 Data**

**Geo object 1:** Cartographic symbol (\$CSYMB)  
**Attributes:** SORDAT - 20051102

**Office Notes**

Retain Cable Area as charted.

**1.7) 13071****Survey Summary**

**Survey Position:** 056° 11' 11.294" N, 131° 53' 27.032" W  
**Least Depth:** [None]  
**Timestamp:** 2005-307.17:47:24.000 (11/03/2005)  
**GP Dataset:** 1307\_MORFAC\_L.shp  
**GP No.:** 1  
**Charts Affected:** 17385\_1, 17360\_1, 16016\_1, 531\_1, 530\_1, 50\_1

**Remarks:**

Floating dock for USFS cabin rec use

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
1307_MORFAC_L.shp	1	0.00	000.0	Primary

**Hydrographer Recommendations**

[None]

**S-57 Data**

**Geo object 1:** Mooring/warping facility (MORFAC)  
**Attributes:** CATMOR - 4:tie-up wall  
 RECDAT - 20051103

**Office Notes**

Chart floating dock as MORFAC with CATMOR 4.



**1.8) 23101****Survey Summary**

**Survey Position:** 056° 11' 36.391" N, 131° 58' 11.250" W  
**Least Depth:** -3.37 m  
**Timestamp:** 2005-310.18:45:10.000 (11/06/2005)  
**DP Dataset:** h11507 / trb2\_dpne / 2005-310 / tr2\_310\_uwtroc\_p.shp  
**Profile/Beam:** 1/1  
**Charts Affected:** 17385\_1, 17360\_1, 16016\_1, 531\_1, 530\_1, 50\_1

**Remarks:**

CFF Isl is rk cov/uncov. DP for HT. Use CFF pos

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
h11507/trb2_dpne/2005-310/tr2_310_uwtroc_p.shp	1/1	0.00	000.0	Primary

**Hydrographer Recommendations**

[None]

**Cartographically-Rounded Depth (Affected Charts):**

-1 ¾fm (17385\_1, 17360\_1, 16016\_1, 530\_1)  
-1fm 5ft (531\_1)  
-3.4m (50\_1)

**S-57 Data**

**Geo object 1:** Cartographic symbol (\$CSYMB)  
**Attributes:** RECDAT - 20051106

**Office Notes**

Re-position charted (17385) rock to CFF position. Update TECSOU, VALSOU, WATLEV, SORDAT and SORIND attributes.

**1.9) 23102****Survey Summary**

**Survey Position:** 056° 11' 17.331" N, 132° 00' 12.234" W  
**Least Depth:** -1.07 m  
**Timestamp:** 2005-310.19:12:54.000 (11/06/2005)  
**DP Dataset:** h11507 / trb2\_dpne / 2005-310 / tr2\_310\_uwtroc\_p.shp  
**Profile/Beam:** 2/1  
**Charts Affected:** 17385\_1, 17360\_1, 16016\_1, 531\_1, 530\_1, 50\_1

**Remarks:**

CFF rk bare is cov/uncov. DP for HT. Use CFF pos

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
h11507/trb2_dpne/2005-310/tr2_310_uwtroc_p.shp	2/1	0.00	000.0	Primary

**Hydrographer Recommendations**

[None]

**Cartographically-Rounded Depth (Affected Charts):**

-0 ½fm (17385\_1, 17360\_1, 16016\_1, 530\_1)  
-0fm 3ft (531\_1)  
-1.1m (50\_1)

**S-57 Data**

**Geo object 1:** Cartographic symbol (\$CSYMB)  
**Attributes:** RECDAT - 20051106

**Office Notes**

Chart new rock.

**1.10) 23102****Survey Summary**

**Survey Position:** 056° 11' 44.203" N, 131° 53' 17.706" W  
**Least Depth:** [None]  
**Timestamp:** 2005-310.20:06:26.000 (11/06/2005)  
**GP Dataset:** TR2\_310\_OBSTRN\_P.shp  
**GP No.:** 1  
**Charts Affected:** 17385\_1, 17360\_1, 16016\_1, 531\_1, 530\_1, 50\_1

**Remarks:**

Subm power cable.

No anchorage due to high voltage.

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
TR2_310_OBSTRN_P.shp	1	0.00	000.0	Primary

**Hydrographer Recommendations**

[None]

**S-57 Data**

**Geo object 1:** Cartographic symbol (\$CSYMB)  
**Attributes:** SORDAT - 20051102

**Office Notes**

Retain Cable Area as charted.

## **2 - Dangers to Navigation**

## 2.1) Static GPS Position

### DANGER TO NAVIGATION

#### Survey Summary

**Survey Position:** 056° 12' 36.040" N, 131° 55' 19.884" W  
**Least Depth:** [None]  
**Timestamp:** 2005-292.15:60:00.000 (10/19/2005)  
**GP Dataset:** H11507\_OPUS\_Light\_Position.xls  
**GP No.:** 1  
**Charts Affected:** 17385\_1, 17360\_1, 16016\_1, 531\_1, 530\_1, 50\_1

#### Remarks:

LL#:22670, Blake Channel Light 1 New pos chd (17385) light G "1"/ CFF light G "1" vrd

Light 22670 is in the Light List and Chd at pos: 56°12'37.621"N , 131°55'26.476"W ( 318657.42E , 6233349.58N )  
 but was found to be at pos: 56°12'36.052"N , 131°55'19.919"W ( 318768.28E , 6233296.29N )

#### Feature Correlation

Address	Feature	Range	Azimuth	Status
H11507_OPUS_Light_Position.xls	1	0.00	000.0	Primary
TR1_306_BCNLAT_P.shp	1	0.72	121.9	Secondary
ChartGPs - Digitized	1	127.84	115.3	Secondary (grouped)

#### Hydrographer Recommendations

Hydrographer recommends recharting Light 1 in the surveyed position.

#### S-57 Data

**Geo object 1:** Beacon, lateral (BCNLAT)  
**Attributes:** BCNSHP - 4:lattice beacon  
 CATLAM - 1:port-hand lateral mark  
 COLOUR - 7:grey  
 COLPAT - 6:border stripes  
**Geo object 2:** Daymark (DAYMAR)  
**Attributes:** COLOUR - 4:green

COLPAT - 6:border stripes

TOPSHP - 19:square

**Geo object 3:** Light (LIGHTS)

**Attributes:** CATLIT - 5:aero light

COLOUR - 4:green

## Office Notes

Light is now positioned correctly. No charting action required.

## Feature Images



*Figure 2.1.1*



**2.2) 232/87****DANGER TO NAVIGATION****Survey Summary**

**Survey Position:** 056° 12' 33.961" N, 132° 01' 34.650" W  
**Least Depth:** 10.75 m  
**Timestamp:** 2005-284.17:38:03.754 (10/11/2005)  
**Survey Line:** h11507 / 1010\_8101 / 2005-284 / 284-1736  
**Profile/Beam:** 232/87  
**Charts Affected:** 17385\_1, 17360\_1, 16016\_1, 531\_1, 530\_1, 50\_1

**Remarks:**

5.88 ftm sounding found on Chd (17385) 8 ftm shoal.

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
h11507/1010_8101/2005-284/284-1736	232/87	0.00	000.0	Primary

**Hydrographer Recommendations**

The Hydrographer recommends changing the charted 8 fathoms to the measured value of 5.88 fathoms

**Cartographically-Rounded Depth (Affected Charts):**

5 ¾fm (17385\_1, 17360\_1, 16016\_1, 530\_1)

5fm 5ft (531\_1)

10.7m (50\_1)

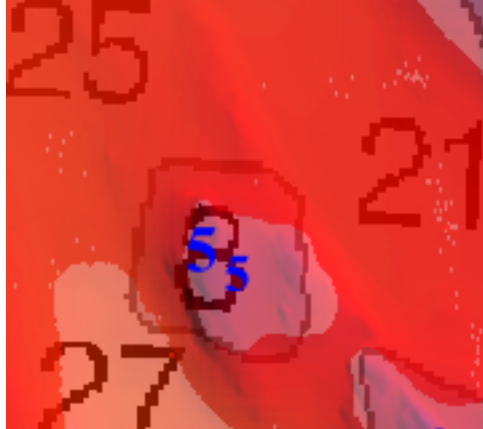
**S-57 Data**

**Geo object 1:** Sounding (SOUNDG)  
**Attributes:** QUASOU - 1,6:depth known,least depth known  
 TECSOU - 3:found by multi-beam

## Office Notes

Shoal sounding reported as DTON and has been applied to applicable charts. No further charting action required.

## Feature Images



*Figure 2.2.1 5.88 FM sounding*

**2.3) 401/77**

**DANGER TO NAVIGATION**

**Survey Summary**

**Survey Position:** 056° 12' 26.053" N, 132° 01' 16.383" W  
**Least Depth:** 4.55 m  
**Timestamp:** 2005-284.17:55:11.619 (10/11/2005)  
**Survey Line:** h11507 / 1010\_8101 / 2005-284 / 284-1753  
**Profile/Beam:** 401/77  
**Charts Affected:** 17385\_1, 17360\_1, 16016\_1, 531\_1, 530\_1, 50\_1

**Remarks:**

2.49 ftm sounding found on Chd (17385) 6 1/4 ftm shoal.

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
h11507/1010_8101/2005-284/284-1753	401/77	0.00	000.0	Primary

**Hydrographer Recommendations**

The Hydrographer recommends changing the charted 6 1/4 fathoms to the measured value of 2.49 fathoms

**Cartographically-Rounded Depth (Affected Charts):**

- 2 ½fm (17385\_1, 17360\_1, 16016\_1, 530\_1)
- 2fm 3ft (531\_1)
- 4.5m (50\_1)

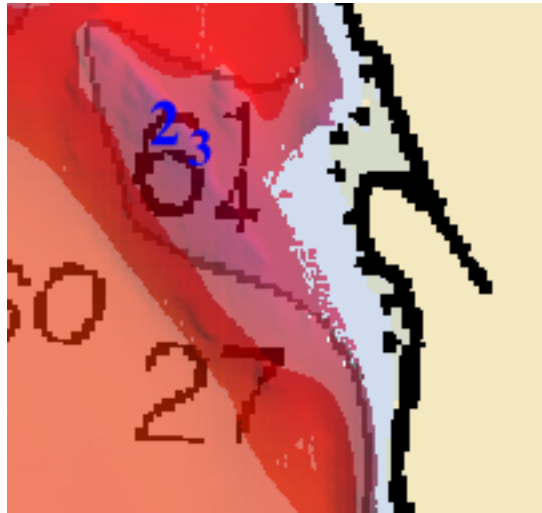
**S-57 Data**

**Geo object 1:** Sounding (SOUNDG)  
**Attributes:** QUASOU - 1,6:depth known,least depth known  
 TECSOU - 3:found by multi-beam

## Office Notes

Shoal sounding reported as DTON and has been applied to applicable charts. No further charting action required.

## Feature Images



*Figure 2.3.1 2.49 FM sounding*

**2.4) 793/78****DANGER TO NAVIGATION****Survey Summary**

**Survey Position:** 056° 11' 15.024" N, 132° 00' 23.354" W  
**Least Depth:** 14.60 m  
**Timestamp:** 2005-308.21:52:12.920 (11/04/2005)  
**Survey Line:** h11507 / 1018\_8101 / 2005-308 / 308-2150  
**Profile/Beam:** 793/78  
**Charts Affected:** 17385\_1, 17360\_1, 16016\_1, 531\_1, 530\_1, 50\_1

**Remarks:**

7.98 ftm sounding found between Chd (17385) 17 and 9 ftm sounding

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
h11507/1018_8101/2005-308/308-2150	793/78	0.00	000.0	Primary

**Hydrographer Recommendations**

The Hydrographer recommends adding the measured 8 fathom sounding in between the charted 17 and 9 fathom soundings

**Cartographically-Rounded Depth (Affected Charts):**

8fm (17385\_1, 17360\_1, 16016\_1, 530\_1)

8fm 0ft (531\_1)

14.6m (50\_1)

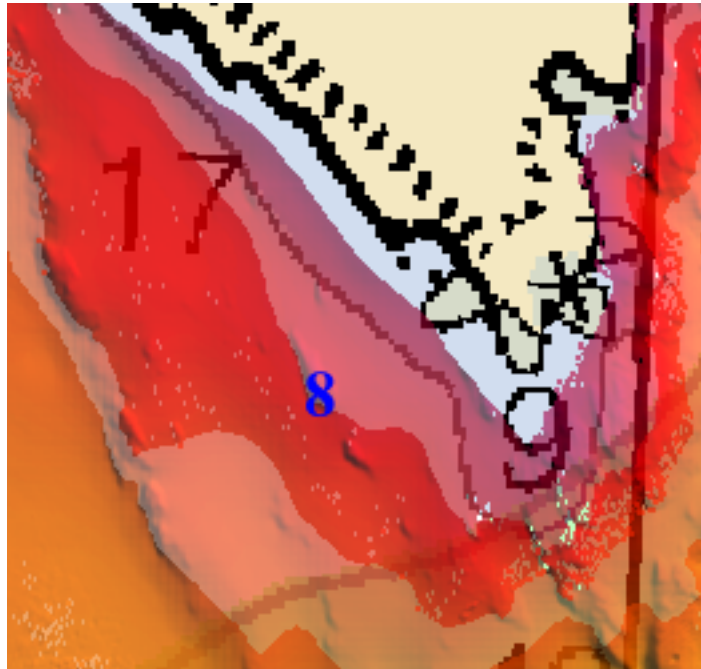
**S-57 Data**

**Geo object 1:** Sounding (SOUNDG)  
**Attributes:** QUASOU - 1,6:depth known,least depth known  
 TECSOU - 3:found by multi-beam

## Office Notes

Shoal sounding reported as DTON and has been applied to applicable charts. No further charting action required.

## Feature Images



*Figure 2.4.1 7.98 FM sounding*

# H11507 Danger to Navigation Report

**Registry Number:** H11507  
**State:** AK  
**Locality:** Ernest Sound and Eastern Passage  
**Sub-locality:** Fools Inlet to Anan Bay  
**Project Number:** OPR-O119-FA-05  
**Survey Dates:** 10/09/05 - 11/06/05

DTONs found during review of 100% MBES operations for survey H11507

## Charts Affected

Number	Version	Date	Scale
17385	15th Ed.	02/01/2005	1:80000
17360	34th Ed.	03/01/2006	1:217828
16016	20th Ed.	11/01/2003	1:969756
531	23rd Ed.	01/01/2006	1:2100000
530	31st Ed.	06/01/2005	1:4860700
50	6th Ed.	06/01/2003	1:10000000

## Features

No.	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	Shoal	3.41 m	056° 11' 13.964" N	132° 00' 08.306" W	---

## **1 - Danger To Navigation**



**1.1) 3425/2****DANGER TO NAVIGATION****Survey Summary**

**Survey Position:** 056° 11' 13.964" N, 132° 00' 08.306" W  
**Least Depth:** 3.41 m  
**Timestamp:** 2005-298.18:20:34.977 (10/25/2005)  
**Survey Line:** h11507 / 1018\_8101 / 2005-298 / 298-1816  
**Profile/Beam:** 3425/2  
**Charts Affected:** 17385\_1, 17360\_1, 16016\_1, 531\_1, 530\_1, 50\_1

**Remarks:**

1.8 ftm sounding found on Chd (17385) 9 ftm shoal.

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
h11507/1018_8101/2005-298/298-1816	3425/2	0.00	000.0	Primary

**Hydrographer Recommendations**

The Hydrographer recommends changing the charted 9 fathoms to the measured value of 1.8 fathoms

**Cartographically-Rounded Depth (Affected Charts):**

1 ¾fm (17385\_1, 17360\_1, 16016\_1, 530\_1)

1fm 5ft (531\_1)

3.4m (50\_1)

**Office Notes**

A 1.8 fm sounding found on a Chd (17385) 9 fm shoal after re-accepting deleted soundings during survey acceptance review. Shoal sounding reported as DTON and has been applied to applicable charts. No further charting action required.



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

**TIDE NOTE FOR HYDROGRAPHIC SURVEY**

**DATE :** December 22, 2005

**HYDROGRAPHIC BRANCH:** Pacific Hydrographic Branch  
**HYDROGRAPHIC PROJECT:** OPR-0119-FA-2005  
**HYDROGRAPHIC SHEET:** H11507

**LOCALITY:** Fools Inlet to Anan Bay, Ernest Sound and Eastern Passage, AK  
**TIME PERIOD:** October 10 - November 6, 2005

**TIDE STATION USED:** 945-1012 Bradfield Canal, AK  
Lat.56 11.75' N Long. 131 33.47' W

**PLANE OF REFERENCE (MEAN LOWER LOW WATER):** 0.000 meters  
**HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE:** 4.770 meters

**REMARKS: RECOMMENDED ZONING**  
Use zone(s) identified as: SA118 & SA118A

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).

*Fa* 

CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION

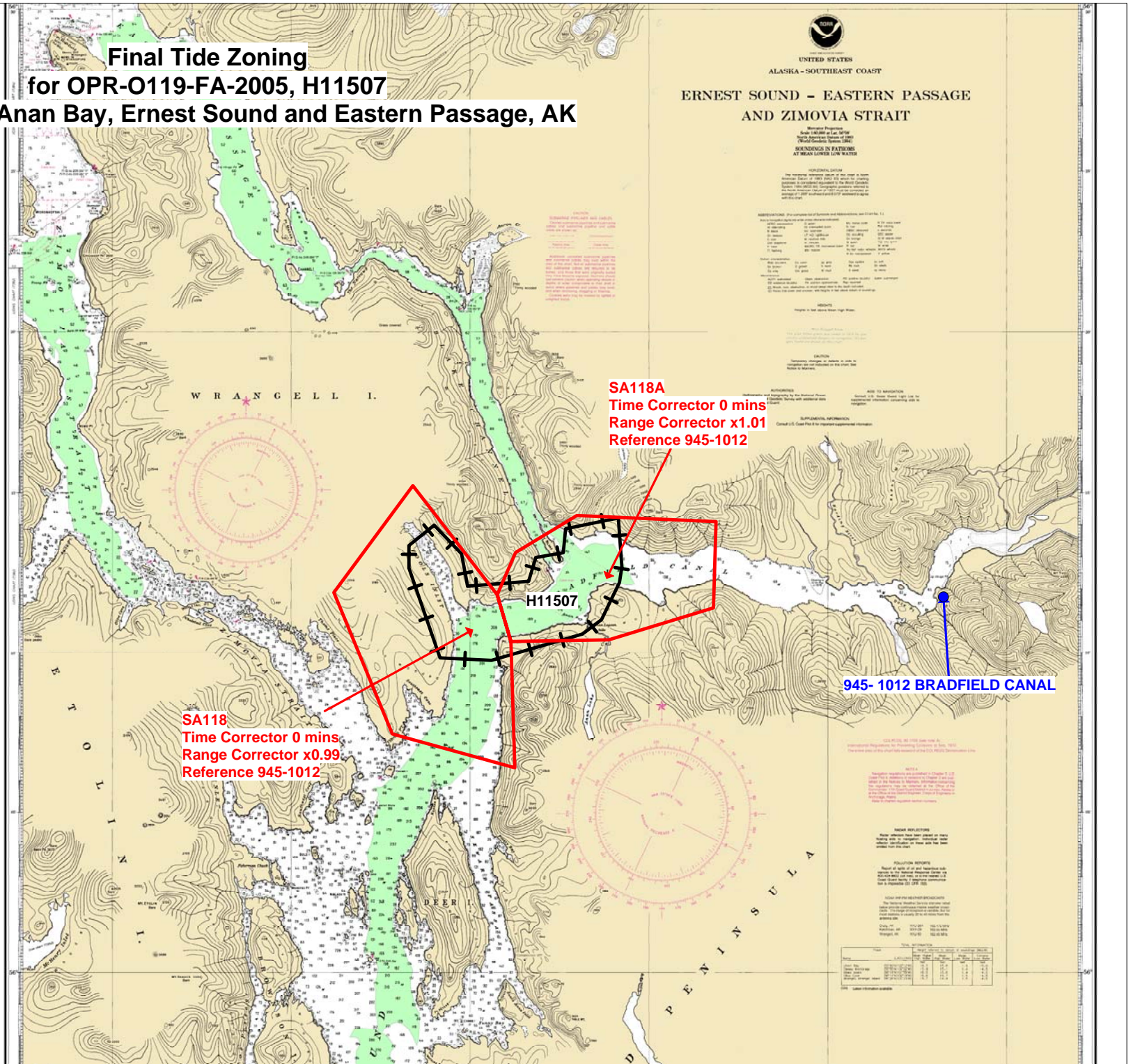


**Final tide zone node point locations for OPR-O119-FA-2005, H11507**

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

Tide Order	Station	AVG Correction	Time	Range Correction
Zone SA118	945-1012	0	0.99	
-131.957818	56.106856			
-131.961424	56.172575			
-131.974275	56.196942			
-132.052913	56.2536			
-132.126604	56.198078			
-132.072059	56.124445			
-131.957818	56.106856			
Zone SA118A	945-1012	0	1.01	
-131.974275	56.196942			
-131.961424	56.172575			
-131.870219	56.173438			
-131.772496	56.190087			
-131.77009	56.234928			
-131.899959	56.238113			
-131.957139	56.218907			
-131.974275	56.196942			

**Final Tide Zoning  
for OPR-0119-FA-2005, H11507  
Fools Inlet to Anan Bay, Ernest Sound and Eastern Passage, AK**





**H11507 HCell Report**  
Katie Reser, Physical Scientist  
Pacific Hydrographic Branch

**Introduction**

The primary purpose of the HCell is to directly update NOAA ENC's with new survey information in International Hydrographic Organization (IHO) format S-57. HCell compilation of survey H11507 utilized Office of Coast Survey HCell Specifications Version 3.0, May 2008 and HCell User Guide Version 1.1, June 2008. HCell H11507 will be used to update charts 17385, 1:80,000 (16<sup>th</sup> Ed.; September 2006, NM 10/04/2008), 17360, 1:217,828 (35<sup>th</sup> Ed.; June 2008, NM 10/04/2008) and US4AK3OM.

**1. Compilation Scale**

The density of soundings in the HCell are compiled as appropriate to emulate those soundings of Chart 17385, 1:80,000. Position and density of non-bathymetric features included in the HCell have not been generalized from the scale of the hydrographic survey H11507.

**2. Soundings**

**2.1 Source Data**

One 12-meter resolution Combined BASE surface, **H11507\_Combined\_12m** was used as the basis for HCell production following Branch certification.

A survey-scale sounding (SOUNDG) feature object source layer was built from the **H11507\_Combined\_12m** surface in CARIS BASE Editor. A shoal-biased selection was made at 1:20,000 survey scale using a radius table with values shown in **Table 1**.

Upper limit (m)	Lower limit (m)	Radius (mm)
0 10		3
10 20		4
20 50		4.5
50	410	5

**Table 1**

**2.2 Sounding Feature Objects**

In CARIS BASE Editor soundings were manually selected from the high density sounding layers from H11507 and imported into a new layer created to accommodate chart density depths. Manual selection was used to accomplish a density and distribution that more closely represents the seafloor morphology and that emulates density and

distribution of soundings on chart 17385 than is possible using automated methods. See section 10.1, Data Processing Notes, for details about the use of manual sounding selection for H11405. The sounding feature object source layer was imported into the **H11507\_HCell\_Features.hob** file, which was used as a template to create the S-57 Composer product **H11507\_CS.prd**.

### **3. Depth Areas**

#### **3.1 Source Data**

Using the combined BASE surface **H11507\_Combined\_12m** and areas delineated as ledges or extents of the mean lower low water line, two depth areas were generated and separated by a zero meter contour. No other depth contours were delivered per OCS HCell Specifications ver.3.0 and Hcell User Guide ver. 1.1.

#### **3.2 Depth Area Feature Objects**

Two depth ranges, -4.7 meters to 0 meters and 0 meters to 405 meters, were used for all depth area objects. Upon conversion to NOAA charting units, this depth range is -2.6 fathoms to 0 fathoms and 0 fathoms to 221.5 fathoms.

### **4. Meta Areas**

The following Meta object areas are included in HCell 11507:

M\_QUAL  
M\_COVR

Meta area objects were constructed on the basis of perimeter lines delineating the surveyed limits and extents of data gaps inside the survey area. These perimeters were first used to create the Skin of The Earth (SOTE) layer, then were duplicated to the Meta object layers and attributed per the H-Cell Specifications, ver. 3.0 and Hcell User Guide ver. 1.1.

### **5. Survey Features**

H11507 contains five DTONs. The first DTON reported was for a mischarted ATON. Static GPS observations were conducted on Blake Channel Light 1 (LL# 22670) and the correct position was reported in the USCG Local Notice to Mariners 47/05. The light is now charted correctly.

The second DTON is a 5 fm 5 ft shoal located on a charted (17385) 8 fm sounding at 56-12-33.961 N, 132-01-34.650 W. The charts have been updated with the correct depth. The third DTON is a 2 fm 3 ft shoal located on a charted (17385) 6.25 fm sounding at

56-12-26.053 N, 132-01-16.383 W. The charts have been updated with the correct depth.

The fourth DTON is an 8 fm shoal located at 56-11-15.024 N, 132-00-23.354 W between a charted (17385) 17 fm sounding and a then charted (17385) 9 fm sounding. The charts have been updated with the 8 fm sounding that was reported from this survey.

The fifth DTON is a 1.75 fm shoal on the then charted (17385) 9 fm sounding mentioned above located at 56-11-13.964 N, 132-00-08.306 W. The DTON was reported during the survey acceptance review and the charts have been updated with the correct depth.

H11507 contains no AWOIS items.

Ten bottom samples were collected with H11507 and are included in the HCell. Four additional bottom samples were imported from the ENC to be retained.

The source of all features included in the H11507 HCell can be determined by the SORIND or SORDAT field. For the rock /islet determination, the Tide Note value for MHW (-4.77 meters) was used. All features to be included in the HCell were addressed and deconflicted in BASE Editor and imported into the **H11507\_HCell\_Features.hob** file, which was used as a template to create the S-57 Composer product **H11507\_CS.prd**.

## **Shoreline Features**

Shoreline features for H11507 were delivered in eight different files. There is some redundancy of features between the files.

- H11507\_Edited\_CFF\_Shoreline.hob (Features to be retained as depicted in the source shoreline file)
- H11507\_Chd\_Shoreline.hob (Features digitized from charts 17385 and 17360 that were not included in the original CFF)
- H11507\_Add\_Notebook.hob (new features digitized in Notebook using DPs or VBES)
- H11507\_Modify\_Notebook.hob (features modified in Notebook using DPs or VBES)
- H11507\_Delete\_Notebook.hob (original source or charted features that were modified or disproved)
- H11507\_Add\_Pydro.hob (new feature or bottom samples processed in Pydro)
- H11507\_Modify\_Pydro.hob (modified features or bottom samples processed in Pydro)
- H11507\_Delete\_Pydro.hob (disprovals processed in Pydro)

## **6. Shoreline / Tide Delineation**

Depth areas (DEPARE) were created for all SOTE features.

## 7. Attribution

All S-57 Feature Objects have been attributed as fully as possible based on information provided by the Hydrographer and in accordance with OCS HCell Specifications, ver. 3.0 and Hcell User Guide ver. 1.1.

## 8. Layout

### 8.1 CARIS S-57 Composer Scheme

SOUNDG	Chart scale soundings
DEPARE	Group 1 objects (Skin of the Earth)
DEPCNT	0-meter depth contours defining intertidal areas
LNDARE	Islet area features
COALNE	MHW line defining islet area features
UWTROC	Rock features
MORFAC	Floating dock / tie-up wall
SBDARE	Bottom samples, reefs, ledges and rocky seabed areas
M_COVR	Data coverage meta object
M_QUAL	Data quality meta object
\$CSYMB	Blue notes

### 8.2 Blue Notes

Notes regarding data sources are in S-57 Composer as a \$CSYMB feature with the blue note located in the INFORM field and the survey registry number, chart number, chart edition and edition date located in the NINFOM field. The blue notes are included in the HCell when it is exported to .000. The blue notes are also included as a separate ASCII file **H11507\_Bluenotes.txt**.

## 9. Spatial Framework

### 9.1 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.

### 9.2 Horizontal and Vertical Units

During creation of sounding sets in CARIS BASE Editor, and creation of the HCell in CARIS S-57 Composer, units are maintained as metric with millimeter resolution. NOAA rounding is applied at the same time that conversion to chart units is made to the metric HCell base cell file, at the end of the HCell compilation process.



A CARIS environment variable, `uslXsounding_round`, controls the depth at which rounding occurs. Setting this variable to NOAA fathoms and feet displays all soundings from 0 to equal to or greater than 11 fathoms as whole units.

In an ENC viewer fathoms and feet display in the format `X.YZZZ`, where X is fathoms, Y is feet, and ZZZ is decimals of the foot. For fathoms and feet between 0 and 10 fathoms 4.5 feet (10.75 fms), soundings round to the deeper foot if the decimals of the foot are `X.Y75000` or greater. For fathoms and feet deeper or equal to 11 fathoms, soundings round to the deeper fathom if feet and decimals of the foot are `X.45000` (`X.Y75000`) or greater. Drying heights are in feet and are rounded using arithmetic methods. In an ENC viewer, heights greater than 6 feet will register in fathoms and feet using the above stated rules.

#### S-57 Composer Units

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

#### Chart Unit Base Cell Units

Depth Units (DUNI):	Fathoms and feet
Height Units (HUNI):	Feet (or fathoms and feet above 6 feet)
Positional Units (PUNI):	Meters

## **10. QA/QC**

### **10.1 Data Processing Notes**

Manual chart scale sounding selections were made for this survey. Experience has shown that in areas where bathymetry is steep sided, as in the case of this extremely steep edged fjord, automated sounding selection is impractical. None of the default sounding suppression options offered in CARIS BASE Editor or S-57 Composer yields an acceptable density and distribution of depths, generally bunching soundings nearshore with too sparse coverage seaward. While the customized options are more practical for this type of terrain, an inordinate amount of time must be spent in experimentation with variations on the algebraic terms in order to devise the most suitable formula, and manual adjustments are still required to the resulting sounding set.

### **10.2 ENC Validation Checks**

H11507 was subjected to QA and Validation checks in S-57 Composer prior to exporting to the HCell base cell (000) file. Full millimeter precision was retained in the export of the metric S-57 base cell data set. This data set was converted to a chart unit 000 file. dKart Inspector 5.1 was then used to further check the data set for conformity using the S-58 ver. 2 standard (formerly Appendix B.1 Annex C of the S-57 standard). All tests were run and errors investigated and corrected where necessary.

## 11. Products

### 11.1 HSD, MCD and CGTP Deliverables

- H11507 Base Cell File, Chart Units, Soundings compiled to 1:80,000
- H11507 Base Cell File, Chart Units, Soundings compiled to 1:20,000
- H11507 Descriptive Report including end notes compiled during office processing and certification
- H11507 HCell Supplemental Report
- H11507 Blue Notes ASCII file

### 11.2 File Naming Conventions

S-57 Composer Product prefix: *H11507\_CS.prd and H11507\_SS.prd*

MCD Chart units base cell file: *US511507\_CS.000*

MCD Chart units base cell file, survey scale soundings: *US511507\_SS.000*

### 11.3 Software

HIPS 6.1:	Management and inspection of Combined BASE surfaces
BASE Editor 2.1: S-57	Combination of Product Surfaces and initial creation of the bathymetry-derived features
CARIS Notebook 3.0:	Management and inspection of shoreline files
S-57 Composer 2.0:	Assembly of the HCell, S-57 products export, QA
HOM 3.3:	Assembly of the HCell, S-57 products unit conversion and sounding rounding
GIS 4.4a:	Setting the sounding rounding variable
Pydro v7.3 (r2252)	Creation of Feature and DTON reports
dKart Inspector 5.1:	Validation of the base cell file

## 12. Contacts

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

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APPROVAL SHEET  
H11507

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.

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 disproof 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.

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.