

H11483

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. H11483

LOCALITY

State Alaska

General Locality Semidi Islands

Sublocality Vicinity of Semidi and Chirikof Islands

2005

CHIEF OF PARTY

..... Commander Guy T. Noll, NOAA

LIBRARY & ARCHIVES

DATE

HYDROGRAPHIC TITLE SHEET

H11483

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 Semidi Islands

Sublocality Vicinity of Semidi and Chirikof Islands

Scale 1:135,000

Date of Survey July 18, 2005-August 10, 2005

Instructions Dated 6/27/200

Project No. S-P909-RA/FA-05

Vessel NOAA Ship RAINIER

Chief of Party CDR Guy T. Noll, NOAA

Surveyed by ST King, CST Jacobson, LT Evans

Soundings taken by echo sounder Elac 1050D

Graphic record scaled by N/A

Graphic record checked by N/A

Evaluation by K. Brown

Automated plot by HP Designjet 1050C

Verification by K. Brown, K. Reser

Soundings in Fathoms and Feet

at

MLLW

REMARKS: Time in UTC. UTM Projection Zone 4

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 H11483

Project OPR-S-P909-RA/FA-05
Offshore Vicinity of Semidi Islands, Alaska
Scale 1:135,000
July-August 2005
NOAA Ship RAINIER
Chief of Party: Commander Guy T. Noll, NOAA

A. AREA SURVEYED

This hydrographic survey was completed as specified by Hydrographic Survey Letter Instructions OPR-P909-RA/FA-05 dated June 27, 2005 and all other applicable direction¹, with the exception of deviations noted in this report. The survey area is Vicinity of Semidi Islands, Alaska. This survey corresponds to sheet "A" in the sheet layout provided with the Letter Instructions. OPR-S-P909-RA-05 was assigned for completion as possible without significant interference with the higher priority project OPR-P182-RA-05 (Mitrofanina).

Figure 1 shows the area covered by this survey. RAINIER acquired data on the line plan supplied with the project instructions during transits to and from the OPR-P182-RA-05 working grounds. As a result of the lower priority placed on OPR-S-P909, only 4 of the 6 assigned north-south lines were completed. However, 2 additional lines west from the south end of the assigned lines were completed.

Data acquisition was conducted from July 18th to August 10th 2005 (DN 199 to 222).

¹ Standing Instructions for Hydrographic Surveys (March 2004), NOS Hydrographic Surveys Specifications and Deliverables (March 2004), OCS Field Procedures Manual for Hydrographic Surveying (March 2005), and all Hydrographic Surveys Technical Directives issued through August 2005.

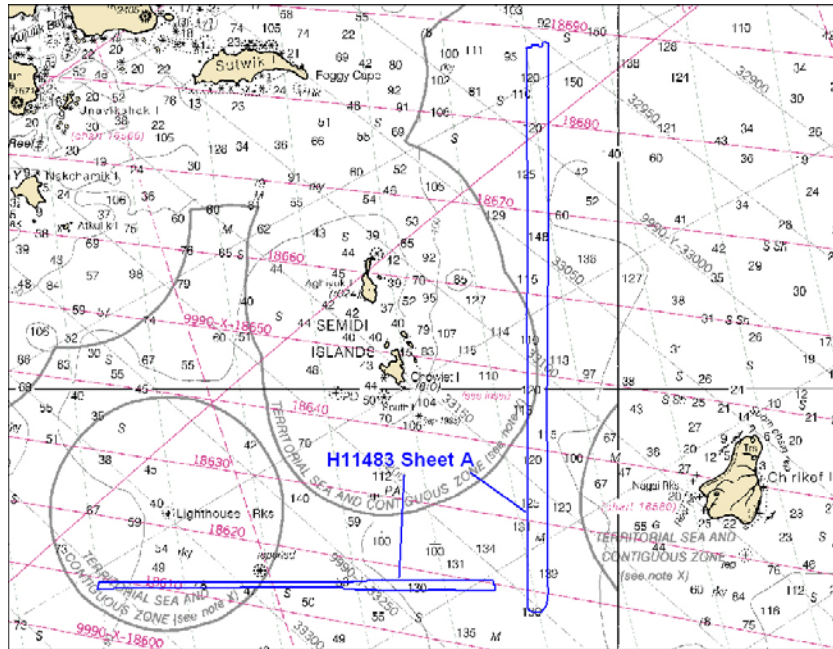


Figure 1. H11483 Survey Limits

B. DATA ACQUISITION AND PROCESSING

A complete description of data acquisition and processing systems, survey vessels, quality control procedures and data processing methods can be found in the *S-P909-RA/FA-05 Data Acquisition and Processing Report (DAPR)*¹, submitted under separate cover. Items specific to this survey, and any deviations from the aforementioned report are discussed in the following sections.

Final Approved Water Levels have been applied to these data.² See Section C. for additional information.

B1. Equipment and Vessels

RAINIER (s221) acquired all multi-beam echosounder data and sound velocity profiles. The ship's hull mounted Elac 1050D was operated in 50 kHz mode throughout the survey. No unusual vessel configurations were used for data acquisition.

B2. Quality Control

Crosslines

Crosslines were not required for project S-P909-RA-05.³

Junctions

Junctions with adjoining surveys were not required for OPR-S-P909-RA-05.⁴

Data Quality Factors

H11483 was specifically assigned as a “track line survey”, to be accomplished while transiting to and from the primary project area without significant impact on time allotted to that project. As a result, RAINIER’s standard data acquisition procedures were altered as follows:

- CTD cast frequency: 1 cast per visit to the area, rather than the usual cast every 4 hours.
- Vessel Speed: Approximately 10 kts, rather than the usual 7 kts for the Elac 1050D.
- Sonar Swath Width: 153° mode, rather than the usual 131°.

The result is bathymetry which is relatively sparse and shows signs of refraction errors (see below). Had any indications of hazards to surface navigation been found, they would have been investigated by methods compliant with standard RAINIER procedure to the accuracy requirements of the NOS Hydrographic Surveys Specifications and Deliverables. However, waters in the survey area were found to be universally deep and featureless, and no further investigation was required.⁵

Refraction Artifacts

As noted above, sound speed casts for survey H11483 were not taken at the standard 4 hour interval. Instead one cast was taken at the beginning of each transit through the survey area and applied to all data subsequently acquired, regardless of the amount of time that had passed. During post-acquisition processing, refraction errors were generally found to be no greater than 2 m in approximately 200m.⁶ Figure 2 shows a typical example of this effect.

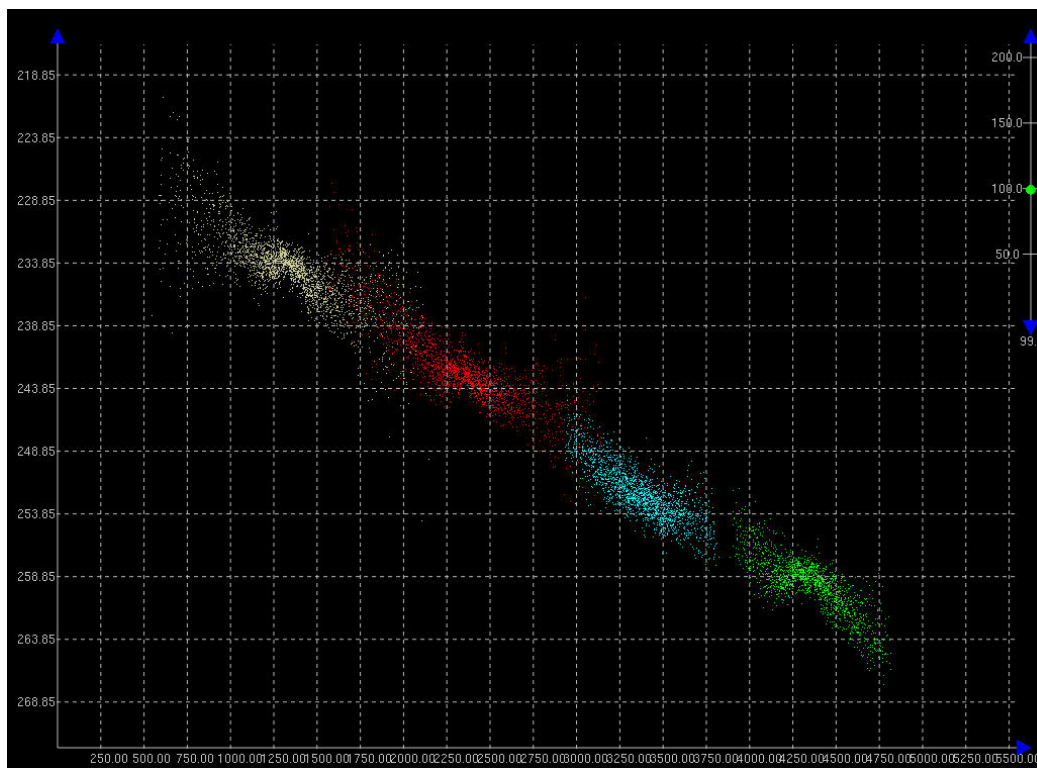


Figure 2. Typical refraction artifacts found in H11483.

B3. Data Reduction

Data reduction procedures for survey H11483 conform to those detailed in the *S-P909-RA/FA-05 DAPR*.

B4. Data Representation

The extremely large area covered by H11483 (~65km x 110km) made the standard approach to field sheet and BASE surface creation unworkable. In addition, the sparse coverage generated by the accelerated survey techniques described in Section B2 rendered the BASE surface resolutions recommended in the Field Procedures Manual inappropriate.⁷ To allow for efficient data processing, H11483 was segmented into three field sheets as shown in Figure 3, with the BASE surfaces structure and resolutions shown in Figure 4. CARIS HIPS 5.4 was unable to process a combined surface covering the entire survey area.

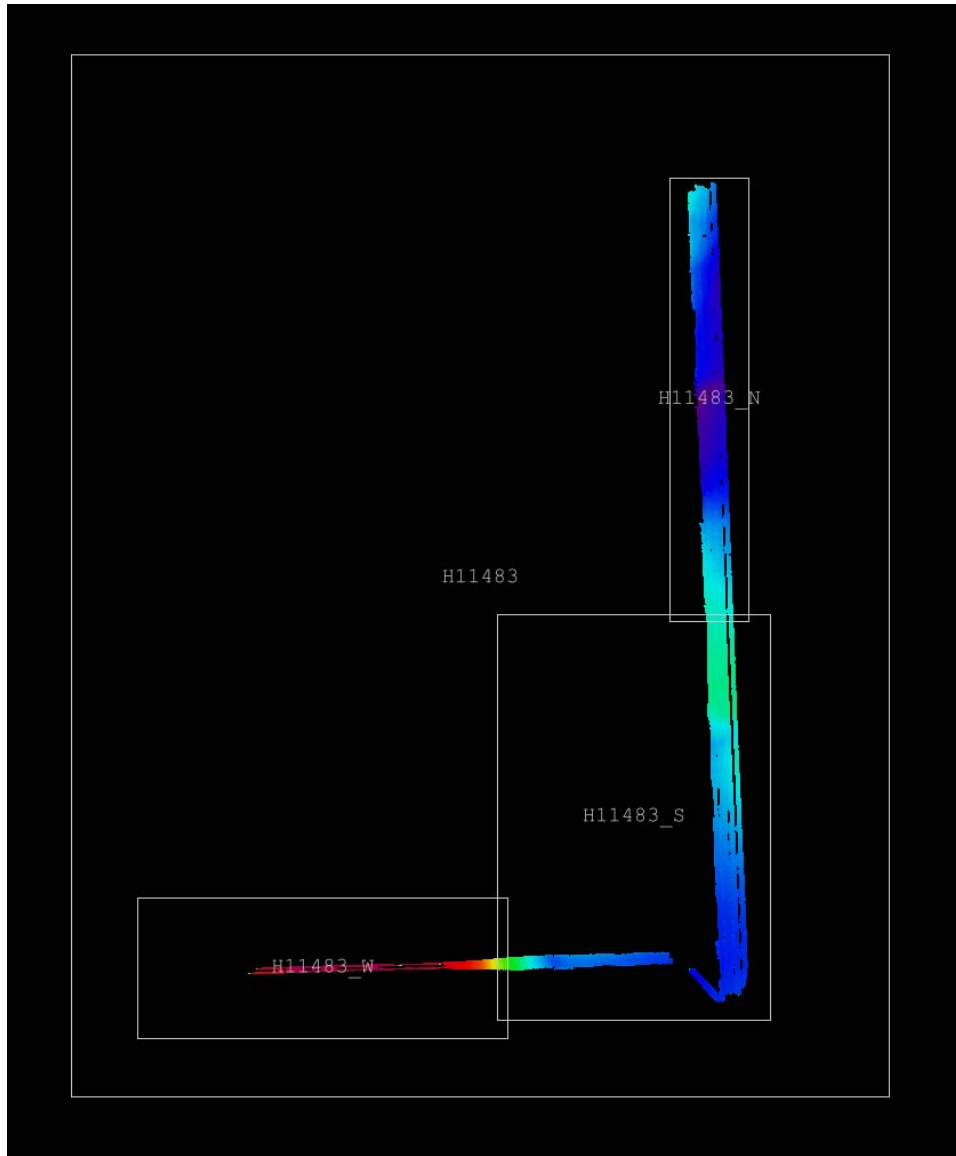


Figure 3. H11483 field sheet layout.

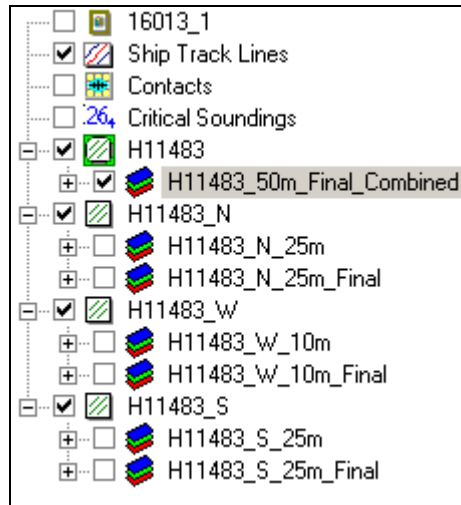


Figure 4. H11483 field sheet and BASE surface organization.

C. VERTICAL AND HORIZONTAL CONTROL

Project OPR-S-P909-RA-05 did not require static GPS observations or other horizontal control work, and all tide corrections were generated from CO-OPS maintained tide stations. Thus, no Horizontal and Vertical Control Report will be submitted.⁸ 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 from U.S. Coast Guard beacon at Kodiak (313 kHz) were utilized during this survey.

Vertical Control

The vertical datum for this project is Mean Lower-Low Water (MLLW). The operating National Water Level Observation Network (NWLON) primary tide stations at Kodiak Island, AK (945-7292) and Sand Point, AK (945-9450), served as control for datum determination and as the primary source for water level reducers for survey H11483.

Although not mentioned in the OPR-S-P909-RA/FA-05 letter instructions, the original Final Approved Water Levels file and memo produced by CO-OPS made use of station 945-9016 (Mitrofanina Island). This temporary gauge was installed by RAINIER in support of operations on OPR-P182-RA-05. However, because this station was not operational at the beginning of data acquisition on OPR-S-P909-RA-05, a known problem in CARIS HIPS 5.4 made utilization of these water levels impossible. CO-OPS then revised the final approved water levels files to remove the Mitrofanina gauge data. See Appendix IV for correspondence related to this issue.

All data were reduced to MLLW with **Final Approved Water Levels** from stations at Kodiak Island, AK (945-7292) and Sand Point, AK (945-9450).⁹ Tide files “9457292.tid” and “9459450.tid” and final zoning file “H11483CORF_rev.zdf” were supplied by CO-OPS and applied by RAINIER personnel.

The request for Final Approved Water Levels for H11483 was submitted to CO-OPS on October 30, 2005 and the Final Tide Note was received on December 20, 2005.¹⁰ This documentation is included in Appendix II.

D. RESULTS AND RECOMMENDATIONS

D.1.a Survey Agreement with Chart

Survey H11483 was compared with chart 16013 (29th Edition, 11/2003, NTM cleared through 7/15/2006). Survey soundings generally agreed with charted depths to within 5 fathoms, with occasional differences of up to 20 fathoms in depths greater than 100 fathoms.¹¹ No navigationally significant discrepancies were found. The hydrographer recommends that survey soundings supersede all charted depths in the common area.¹²

D.1.b. Dangers to Navigation

No Dangers to Navigation (DTONs) were found within the limits of H11483.¹³

D.1.c. Other Features

AWOIS 52755 was assigned to survey H11483 after issuance of the Letter Instructions (see email correspondence filed in Appendix V). Although survey data showed no indication of this feature, there was insufficient time for a full investigation of the entire search area. Full results of the investigation are included in the H11483 Survey Features Report, filed in Appendix II.¹⁴

D.2. Additional Results

D.2.a. Prior Survey Comparison

There are no prior surveys in the area covered by H11483.¹⁵

D.2.b. Shoreline Verification

No shoreline is located within the limits of H11483.¹⁶

D.2.c. Aids to Navigation

No Aids to Navigation (ATONS) are located within the limits of H11483.¹⁷

D.2.d. Overhead features (Cables, power lines, bridges)

No overhead features are located within the limits of H11483.¹⁸

D.2.e. Submarine Cables and Pipelines

No submarine cables and/or pipelines are located within the limits of H11483.¹⁹

D.2.f. Ferry Routes

No ferries were observed operating in the survey area during data acquisition. The Alaska Marine Highway System does service the communities of southwest Alaska from Kodiak, and may transit the waters covered by H11483.²⁰

D.2.g. Bottom Samples

Bottom Samples were not required for survey H11483.²¹

D.2.h. Other findings

None.

E. ADDITIONAL DOCUMENTATION

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> |
|---|-------------------------|----------------------|
| Data Acquisition and Processing Report for OPR-S-P909-RA-05 ²² | 9/15/2005 | N/CS34 |



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of Marine and Aviation Operations
NOAA Ship RAINIER (S221)
1801 Fairview Ave E, Seattle, WA 98102
September 15, 2006

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

FROM: CDR Guy T. Noll, NOAA
Commanding Officer

SUBJECT: Approval of Hydrographic Survey H11483

Field operations for hydrographic survey H11483 were conducted under my direct supervision with frequent personal checks of progress and adequacy. I have reviewed the attached survey data and reports. The survey data meets or exceeds requirements as set forth in the NOS Hydrographic Surveys and Specifications Deliverables Manual, Field Procedures Manual, Standing and Letter Instructions, and HSD Technical Directives. These data are adequate to supersede charted data in their common areas. This survey is complete and no additional work is required, with the exception of the deficiencies noted in the Descriptive Report. All data and reports are respectfully submitted to N/CS34, Pacific Hydrographic Branch.

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

Survey Sheet Manager:

for Gregory J. King
Survey Technician, NOAA

Chief Survey Technician:

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

Field Operations Officer:

Benjamin K. Evans
Lieutenant, NOAA



Revisions Compiled During Office Processing and Certification

- ¹ Do not concur. Refer to the OPR-P182-RA-05 DAPR for data acquisition information.
- ² Concur.
- ³ Concur.
- ⁴ Concur.
- ⁵ Concur. All data conforms to the requirements set forth in the Letter Instructions for S-P909-RA/FA-05.
- ⁶ These errors meet both IHO requirements and the sound velocity error budget set forth in the Hydrographic Surveys Specifications and Deliverables. Data is adequate to supersede charted data in the common area.
- ⁷ During the survey acceptance review, it was determined that the submitted 50 meter combined surface was inappropriate for the depth of water surveyed. A 25 meter combined surface was created during the review and was used as the basis for HCell H11483.
- ⁸ Concur with clarification. A memo indicating there is no Horizontal and Vertical Control Report for this project was submitted. See attached memo.
- ⁹ Concur.
- ¹⁰ See attached Tide Note dated December 19, 2005.
- ¹¹ Concur.
- ¹² Concur.
- ¹³ Concur.
- ¹⁴ See attached Feature Report.
- ¹⁵ Concur.
- ¹⁶ Concur.
- ¹⁷ Concur.
- ¹⁸ Concur.
- ¹⁹ Concur.
- ²⁰ Concur.
- ²¹ Concur. There were no bottom samples from Chart 16013 or ENC US2AK5FM to be retained.
- ²² Not included with project records. Refer to the OPR-P182-RA-05 DAPR



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

August 19, 2005

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

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

TITLE: S-P909-FA-05
Horizontal and Vertical Control Negative Report

A Horizontal and Vertical Control Report for S-P909-FA-05 has not been generated.

Section 5.8.1 of the Draft Hydrographic Survey Letter Instructions for project S-P909-FA-05, dated June, 2005, did not require subordinate water level stations. The National Water Level Observation Network (NWLON) station that the datum control for the project should be based off was not provided in the draft letter instructions received by the FAIRWEATHER. No leveling of any gauge was required by the NOAA Ship FAIRWEATHER.

No Aids to Navigation or prominent landmarks requiring high accuracy positioning were located within the project area. Position System Confidence Checks were not be conducted during this survey because USCG differential station correctors were very weak and only occasionally available. Section 5.5.2 of the NOS Hydrographic Surveys Specifications and Deliverables (HSSD), dated March 2003, describes the procedure as requiring the primary positioning system to be checked simultaneously against a separate system with a positional accuracy better than 10 meters.

Specific horizontal and vertical control information will be contained with the S-P909 Descriptive Reports as required.



Registry Number: H11483
State: AK
Locality: Offshore - Vicinity of the Semidi Islands, Alaska
Sub-locality: Vicinity of Semidi and Chirikof Islands
Project Number: S-P909-RA-FA-05
Survey Dates: 07/18/2005 - 08/10/2005

Charts Affected

| Number | Version | Date | Scale |
|--------|----------|------------|------------|
| 16013 | 29th Ed. | 11/01/2003 | 1:969761 |
| 16011 | 36th Ed. | 08/01/2004 | 1:1023188 |
| 16006 | 33rd Ed. | 12/23/2000 | 1:1534076 |
| 531 | 23rd Ed. | 01/01/2006 | 1:2100000 |
| 500 | 8th Ed. | 06/01/2003 | 1:3500000 |
| 530 | 31st Ed. | 06/01/2005 | 1:4860700 |
| 50 | 6th Ed. | 06/01/2003 | 1:10000000 |

Features

| No. | Name | Feature Type | Survey Depth | Survey Latitude | Survey Longitude | AWOIS Item |
|-----|-------------|--------------|--------------|-----------------|------------------|------------|
| 1.1 | OBSTRUCTION | AWOIS | [no data] | [no data] | [no data] | --- |

1 - AWOIS Features

1.1) AWOIS #52755 - OBSTRUCTION

No Primary Survey Feature for this AWOIS Item

Search Position: 055° 39' 17.310" N, 157° 10' 27.290" W
Historical Depth: [None]
Search Radius: 2700
Search Technique: VS,ES,MB
Technique Notes: Search for this item within in the search radius south of Lat 55/39/18 N. NAD 83.

History Notes:

CHARTED ROCK AWASH LNM 37/30-- CAPTAIN PAUL P. SLATHER, OF THE HALIBUT SCHOONER LINDY, REPORTS AN UNCHARTED ROCK E. 3/4 S. 10-12 MILES FROM LIGHTHOUSE ROCKS NEAR THE SEMIDI ISLANDS, ALASKA. THE ROCK WAS VISIBLE ONLY AT LOW WATER AT APPROXIMATE LAT. 55-39-20, LON. 157-10-20. CL 662/48-- ALASKA PILOT VOL. II (1947 ED.) PAGE 285, LINES12-13, ACCORDING TO CAPT. CHRIS YEDO OF THE M.V. LINDY, WHICH REPORTED THIS ROCK, THE BEARING OF THE ROCK WAS INTEDNED TO BE GIVEN AS MAGNETIC. THE APPROX. POSITION OF THE ROCK AS TAKEN FROM THE LINDY'S MARKED CHART IS "11 MILES 123 DEGREES" FROM THE LIGHTHOUSE ROCKS. (ENT DAS, 5 MAY 2001) ****PER TELEPHONE CONVERSATION WITH GARY NELSON (PHB) THIS ITEM HAS BEEN ADEQUATELY COVERED NORTH OF LAT. 55/39/18 N. BY SURVEY H11063. (ENT KRW 19 APR 2004)

Survey Summary

Charts Affected: 16013_1, 16011_1, 16006_1, 531_1, 500_1, 530_1, 50_1

Remarks:

AWOIS 52755 search area was partially investigated by MBES, with no indication of the reported pinnacle. The assigned search area was not fully covered due to time constraints on OPR-S-P909-RA-05.

Feature Correlation

| Address | Feature | Range | Azimuth | Status |
|--------------|---------------|-------|---------|---------|
| S-P909-RA-05 | AWOIS # 52755 | 0.00 | 000.0 | Primary |

Hydrographer Recommendations

Retain as charted, pending full investigation.

S-57 Data

[None]

Office Notes

Concur.

Feature Images

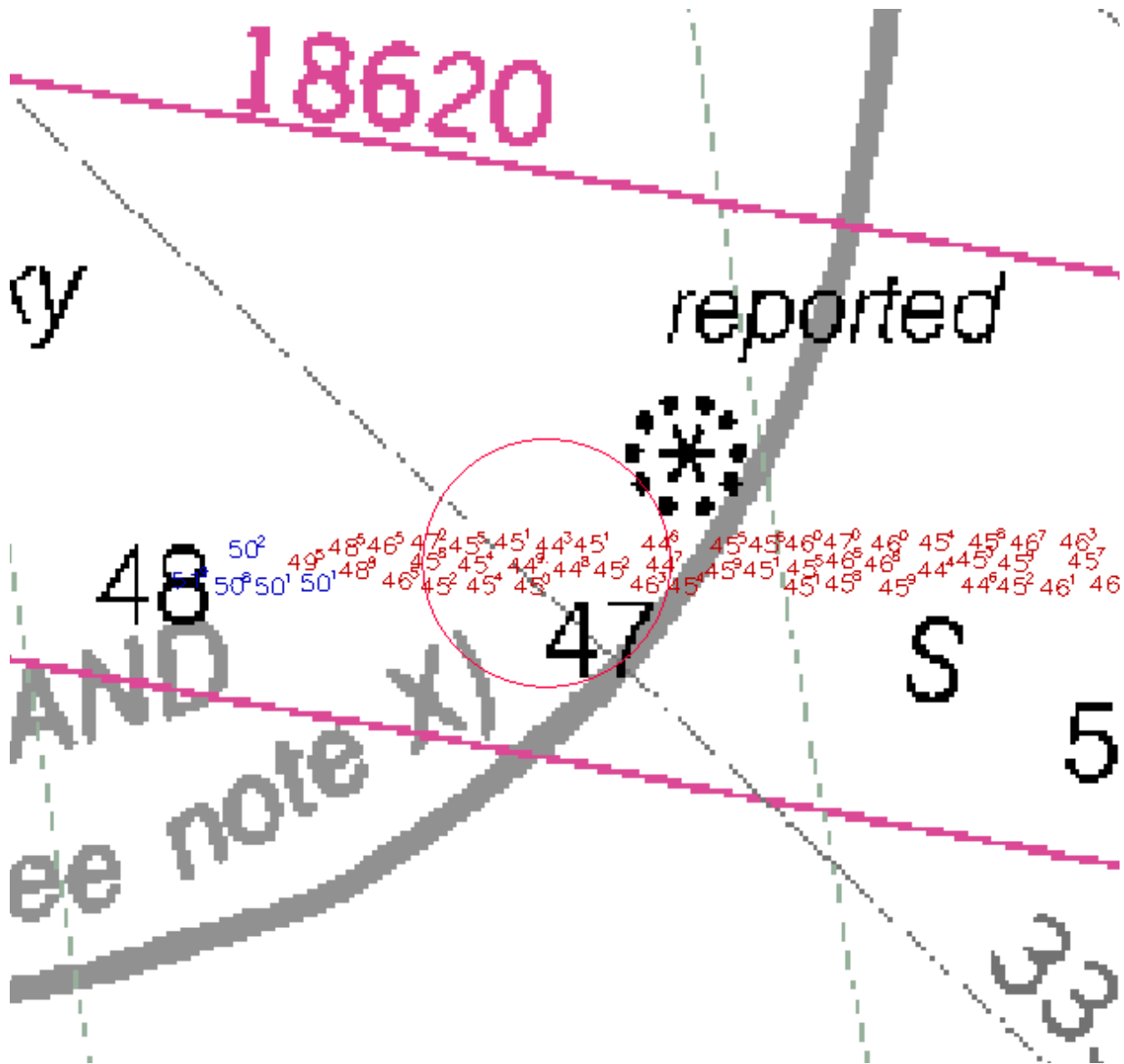


Figure 1.1.1



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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : December 19, 2005

HYDROGRAPHIC BRANCH: Pacific Hydrographic Branch

HYDROGRAPHIC PROJECT: OPR-P909-RA-2005

HYDROGRAPHIC SHEET: H11483

LOCALITY: Vicinity of Semidi Island, AK

TIME PERIOD: July 18 to August 10, 2005

TIDE STATION USED: Sand Point, AK 945-9450

Lat. 55 19.9' N Long. 160 30.3' W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters

HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.988 meters

TIDE STATION USED: Kodiak, AK 945-7292

Lat. 57 43.8' N Long. 152 30.8' W

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters

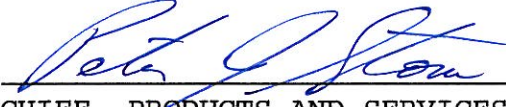
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.400 meters

REMARKS: RECOMMENDED ZONING

Use zone(s) identified as: SWA148, SWA149, SWA150, SWA151, SWA152,
SWA153, SWA154, SWA155, SWA169, SWA170,
SWA180, SWA181, SS91, SS94, SS101, SS104 &
SS105

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).



CHIEF, PRODUCTS AND SERVICES DIVISION



Final tide zone node point locations for OPR-P909-RV^A-2005, H11483

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 Station Order | AVG Time Correction | Range Correction |
|-----------------------|-----------------------|------------------------|---------------------|
| Zone SWA148 | 945-9450 | -18 | 1.21 |
| -155.089371 55.790272 | | | |
| -155.65796 55.784023 | | | |
| -156.425537 55.827042 | | | |
| -156.981997 55.897305 | | | |
| -157.142303 55.760791 | | | |
| -156.292961 55.629358 | | | |
| -155.671598 55.573477 | | | |
| -155.362993 55.560701 | | | |
| -155.089371 55.790272 | | | |
| Zone SWA149 | 945-9450 | -18 | 1.25 |
| -154.954487 55.937279 | | | |
| -155.081499 55.931725 | | | |
| -155.744446 55.919675 | | | |
| -156.814151 55.990896 | | | |
| -156.981997 55.897305 | | | |
| -156.425537 55.827042 | | | |
| -155.65796 55.784023 | | | |
| -155.089371 55.790272 | | | |
| -154.991989 55.885426 | | | |
| -154.954487 55.937279 | | | |
| Zone SWA150 | 945-9450 | -18 | 1.29 |
| -154.864755 56.102156 | | | |
| -155.133653 56.089296 | | | |
| -155.798963 56.053871 | | | |
| -156.640832 56.102324 | | | |
| -156.814151 55.990896 | | | |
| -155.744446 55.919675 | | | |
| -155.081499 55.931725 | | | |
| -154.954487 55.937279 | | | |
| -154.873558 56.048921 | | | |
| -154.864755 56.102156 | | | |
| Zone SWA151 | 945-9450 | -18 | 1.33 |
| -154.842056 56.230755 | | | |
| -154.864755 56.102156 | | | |

| | | | |
|-----------------------|----------|----|------|
| -155.133653 56.089296 | | | |
| -155.798963 56.053871 | | | |
| -156.640832 56.102324 | | | |
| -156.451752 56.212443 | | | |
| -155.871846 56.188861 | | | |
| -155.33695 56.20937 | | | |
| -154.956803 56.22315 | | | |
| -154.842056 56.230755 | | | |
| Zone SWA152 | 945-7292 | 18 | 1.05 |
| -154.82337 56.317191 | | | |
| -155.395724 56.297146 | | | |
| -155.892917 56.30017 | | | |
| -156.307887 56.317676 | | | |
| -156.451752 56.212443 | | | |
| -155.871846 56.188861 | | | |
| -155.33695 56.20937 | | | |
| -154.956803 56.22315 | | | |
| -154.842056 56.230755 | | | |
| -154.82337 56.317191 | | | |
| Zone SWA153 | 945-7292 | 18 | 1.08 |
| -154.757139 56.401913 | | | |
| -154.898488 56.394421 | | | |
| -155.159781 56.385702 | | | |
| -155.341686 56.384597 | | | |
| -155.59396 56.384607 | | | |
| -155.800583 56.384674 | | | |
| -156.199466 56.398178 | | | |
| -156.307887 56.317676 | | | |
| -155.892917 56.30017 | | | |
| -155.395724 56.297146 | | | |
| -154.82337 56.317191 | | | |
| -154.757139 56.401913 | | | |
| Zone SWA154 | 945-7292 | 30 | 1.08 |
| -156.199466 56.398178 | | | |
| -156.64511 56.424375 | | | |
| -156.927793 56.478454 | | | |
| -157.004841 56.503826 | | | |
| -157.107648 56.445969 | | | |
| -156.937857 56.395634 | | | |
| -156.704922 56.352554 | | | |
| -156.307887 56.317676 | | | |
| -156.199466 56.398178 | | | |
| Zone SWA155 | 945-7292 | 30 | 1.05 |
| -157.107648 56.445969 | | | |
| -157.241858 56.370111 | | | |
| -157.032765 56.306289 | | | |

-156.730153 56.246814
-156.451752 56.212443
-156.307887 56.317676
-156.704922 56.352554
-156.937857 56.395634
-157.107648 56.445969

Zone SWA169

945-9450

-6

1.18

-158.357095 56.192143
-158.352707 56.167654
-158.358384 56.13423
-158.152343 56.052012
-158.050094 56.010801
-157.661601 55.871655
-157.142303 55.760791
-157.229433 55.659196
-157.310831 55.570259
-157.934326 55.778669
-158.239463 55.914375
-158.421429 56.007001
-158.483459 56.039447
-158.510936 56.038617
-158.48576 56.070531
-158.523965 56.114338
-158.477124 56.130876
-158.477124 56.130876
-158.430272 56.19459
-158.357095 56.192143

Zone SWA170

945-9450

-18

1.18

-155.362993 55.560701
-155.671598 55.573477
-156.292961 55.629358
-157.142303 55.760791
-157.229433 55.659196
-157.310831 55.570259
-155.726846 55.307255
-155.362993 55.560701

Zone SWA180

945-9450

-6

1.14

-157.310831 55.570259
-157.934326 55.778669
-158.239463 55.914375
-158.421429 56.007001
-158.483459 56.039447
-158.510936 56.038617
-158.556712 56.03303
-158.646196 56.017708
-158.671891 55.997061

-158.695213 55.986881
-158.694834 55.973475
-158.681231 55.953931
-158.504524 55.833366
-158.207958 55.662824
-157.434421 55.337217
-157.310831 55.570259

Zone SWA181

945-9450

-6

1.1

-157.434421 55.337217
-157.556936 55.084911
-157.930575 55.210466
-158.571047 55.495877
-158.907942 55.693171
-159.13617 55.839591
-159.223754 55.922913
-159.31513 56.008739
-158.902585 56.094928
-158.671891 55.997061
-158.695213 55.986881
-158.694834 55.973475
-158.681231 55.953931
-158.504524 55.833366
-158.207958 55.662824
-157.434421 55.337217

Zone SS91

945-7292

30

1.18

-155.896845 56.665606
-156.053759 56.678119
-156.349558 56.713681
-156.625831 56.770567
-156.688491 56.795451
-156.724502 56.745546
-156.768919 56.698906
-156.693706 56.676334
-156.411185 56.62761
-156.024281 56.592796
-155.958501 56.588565
-155.896845 56.665606

Zone SS94

945-7292

30

1.16

-156.768919 56.698906
-156.805961 56.659028
-156.71866 56.63386
-156.439676 56.585981
-155.996183 56.55001
-155.958501 56.588565
-156.024281 56.592796
-156.411185 56.62761

| | | | |
|-----------------------|----------|----|------|
| -156.693706 56.676334 | | | |
| -156.768919 56.698906 | | | |
| Zone SS101 | 945-7292 | 30 | 1.14 |
| -155.996183 56.55001 | | | |
| -156.439676 56.585981 | | | |
| -156.71866 56.63386 | | | |
| -156.805961 56.659028 | | | |
| -156.895859 56.565337 | | | |
| -156.72051 56.52476 | | | |
| -156.478477 56.494118 | | | |
| -156.080347 56.475447 | | | |
| -155.996183 56.55001 | | | |
| Zone SS104 | 945-7292 | 30 | 1.11 |
| -156.080347 56.475447 | | | |
| -156.478477 56.494118 | | | |
| -156.72051 56.52476 | | | |
| -156.895859 56.565337 | | | |
| -157.004841 56.503826 | | | |
| -156.927793 56.478454 | | | |
| -156.64511 56.424375 | | | |
| -156.199466 56.398178 | | | |
| -156.080347 56.475447 | | | |
| Zone SS105 | 945-7292 | 24 | 1.11 |
| -155.59396 56.384607 | | | |
| -155.800583 56.384674 | | | |
| -156.199466 56.398178 | | | |
| -156.080347 56.475447 | | | |
| -155.606241 56.455911 | | | |
| -155.298961 56.456224 | | | |
| -155.341686 56.384597 | | | |
| -155.59396 56.384607 | | | |

Final Tide Zoning for OPR-P909-RA-2005, H11483

Vicinity of Semidi Islands, AK

SS10107
Time Corrector +30 mins
Range Corrector x 1.14
Reference 945-7292

SS94
Time Corrector +30 mins
Range Corrector x 1.16
Reference 945-7292

SS94
Time Corrector +30 mins
Range Corrector x 1.18
Reference 945-7292

SS1043
Time Corrector +30 mins
Range Corrector x 1.11
Reference 945-7292

SWA154
Time Corrector +30 mins
Range Corrector x 1.08
Reference 945-7292

SWA155
Time Corrector +30 mins
Range Corrector x 1.05
Reference 945-7292

SWA180
Time Corrector -6 mins
Range Corrector x 1.14
Reference 945-9450

SWA169
Time Corrector -6 mins
Range Corrector x 1.18
Reference 945-9450

SWA170
Time Corrector -18 mins
Range Corrector x 1.18
Reference 945-9450

SS105
Time Corrector +24 mins
Range Corrector x 1.11
Reference 945-7292

SWA153
Time Corrector +18 mins
Range Corrector x 1.08
Reference 945-7292

SWA152
Time Corrector +18 mins
Range Corrector x 1.05
Reference 945-7292

SWA151
Time Corrector -18 mins
Range Corrector x 1.33
Reference 945-9450

SWA150
Time Corrector -18 mins
Range Corrector x 1.29
Reference 945-9450

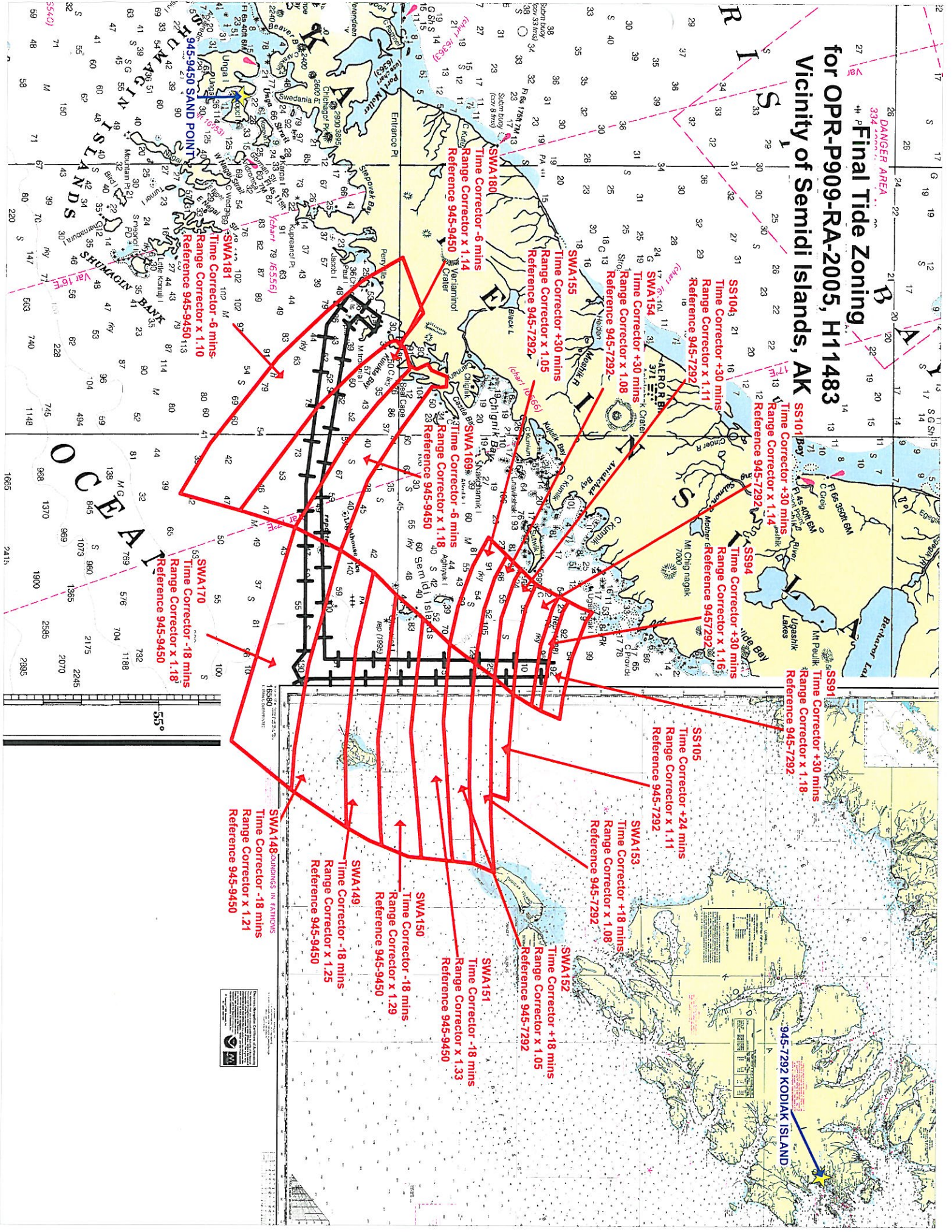
SWA149
Time Corrector -18 mins
Range Corrector x 1.25
Reference 945-9450

SWA148
Time Corrector -18 mins
Range Corrector x 1.21
Reference 945-9450

SWA181
Time Corrector -6 mins
Range Corrector x 1.10
Reference 945-9450

SWA181
Time Corrector -6 mins
Range Corrector x 1.10
Reference 945-9450

945-7292 KODIAK ISLAND



H11483 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 H11483 utilized Office of Coast Survey HCell Specifications Version 3.0, May 2008 and HCell User Guide Version 1.1, June 2008. HCell H11483 will be used to update chart 16013, 1:969,761 (30th Ed.; July 2006, NM 1/17/2009) and US2AK5FM.

1. Compilation Scale

The density of soundings in the HCell is compiled as appropriate to emulate those soundings of chart 16013, 1:969,761. Position and density of non-bathymetric features included in the HCell have not been generalized from the scales of the hydrographic survey H11483, 1:135,000.

2. Soundings

2.1 Source Data

A 25-meter resolution Combined BASE surface, **H11483_25m_Combined**, was used as the basis for HCell production following Branch certification.

A survey-scale sounding (SOUNDG) feature object source layer was built from the **H11483_25m_Combined** surface in CARIS BASE Editor. A shoal-biased selection was made at 1:200,000 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 75 | | 4.5 |
| 75 1000 | | 5 |

Table 1

2.2 Sounding Feature Objects

In CARIS BASE Editor soundings were manually selected from the high density sounding layers from H11483 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 16013 than is possible using automated methods. See section 10.1, Data Processing Notes, for details about the use of manual sounding selection for H11483. The sounding feature object source layer was imported into the

H11483_HCell_Features.hob file, which was used as a template to create the S-57 Composer product **H11483_CS.prd**.

3. Depth Areas

3.1 Source Data

Using the combined BASE surface **H11483_25m_Combined**, one depth area was generated. No depth contours were delivered per OCS HCell Specifications ver. 3.0 and HCell User Guide ver. 1.1.

3.2 Depth Area Feature Objects

One depth range, 80 meters to 290 meters, was used for all depth area objects. Upon conversion to NOAA charting units, this depth range is 43.7 fathoms to 158.6 fathoms.

4. Meta Areas

The following Meta object areas are included in HCell 11483:

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

H11483 contains no DTONs

H11483 contains one AWOIS item. The AWOIS item 52755 located at 55-39-17.31N, 157-10-27.29W was partially investigated with multibeam. It is recommended that the area be retained as charted and the item remain in the AWOIS database for future investigation.

No bottom samples were collected with H11483.

No additional features are included in the H11483 HCell.

Shoreline Features

There were no shoreline features for H11483.

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 H-Cell 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) |
| 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 **H11483_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

H11483 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

- H11483 Base Cell File, Chart Units, Soundings compiled to 1:969,761
- H11483 Base Cell File, Chart Units, Soundings compiled to 1:200,000
- H11483 Descriptive Report including end notes compiled during office processing and certification
- H11483 HCell Supplemental Report
- H11483 Blue Notes ASCII file

11.2 File Naming Conventions

S-57 Composer Product prefix: H11483_CS.prd and H11483_SS.prd

MCD Chart units base cell file: US211483_CS.000

MCD Chart units base cell file, survey scale soundings: US211483_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:

Katie Reser, Physical Scientist, PHB, Seattle, WA; 206-526-6864;
Katie.Reser@noaa.gov.

APPROVAL SHEET
H11483

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 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.

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.