H11388

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey HYDROGRAPHIC

Field No. N/A

Registry No. H11388

LOCALITY

State Alaska

General Locality Prince William Sound

Sublocality N.E. Bainbridge Passage

2004

CHIEF OF PARTY

PS David A. Sinson, NOAA

LIBRARY & ARCHIVES

DATE

NOAA FORM 77-28 (11-72)

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

REGISTER NO.

H11388

HYDROGRAPHIC TITLE SHEET

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

FIELD NO.
N/A

State: Alaska

General Locality: Prince William Sound

Sublocality: N.E. Bainbridge Passage

Scale: 1:10,000

Dates of Survey: 9/28/2004 - 10/14/2004

Instructions Date: 9/23/2004

Project No.: OPR-P139-TC-04

Vessel: R.V. Davidson

Chief of Party: David A. Sinson, NOAA

Surveyed by: SAIC Personnel

Soundings taken by echo sounders: Reson Seabat 8101, Reson SeaBat 8125, Reson Seabat 8111

Graphic record scaled by: SAIC Personnel

Graphic record checked by: D. Sinson

Evaluation by: S. Lardy

Automated plot by: N/A

Verification by: S. Lardy, P. Holmberg

Soundings in: Fathoms and Feet at MLLW

REMARKS: Time in UTC. UTM Projection Zone 6

Revisions and annotations appearing as endnotes were generated during office processing.

All separates are filed with the hydrographic data.

As a result, page numbering may be interrupted or non-sequential

Descriptive Report to Accompany Hydrographic Survey H11388

Project OPR-P139-TC-04
N.E. Bainbridge Passage
Prince William Sound, Alaska
Scale 1:10,000
September-October 2004
NOAA Time Charter R/V DAVIDSON
Lead Hydrographer: PS David A. Sinson, NOAA
Survey Manager: PS David A. Sinson, NOAA

A. AREA SURVEYED

This hydrographic survey was completed as specified by Hydrographic Survey Letter Instructions OPR-P139-TC-04, dated September 22, 2004, and the Draft Standing Project Instructions dated March 23, 2004. The survey area includes the northern entrance of Bainbridge Passage, Prince William Sound, Alaska. H11388 junctions with survey H11387 and H11389, conducted concurrently at the eastern and western limits.[1]

Northern Limit	Southern Limit	Western Limit	Eastern Limit
60°10'20.46" N	60°10'20.46" N	148°13'11.9" W	147°59'41.68" W[2]

Data acquisition was conducted from September 28 to October 14, 2004 (Julian day numbers 272 to 288).

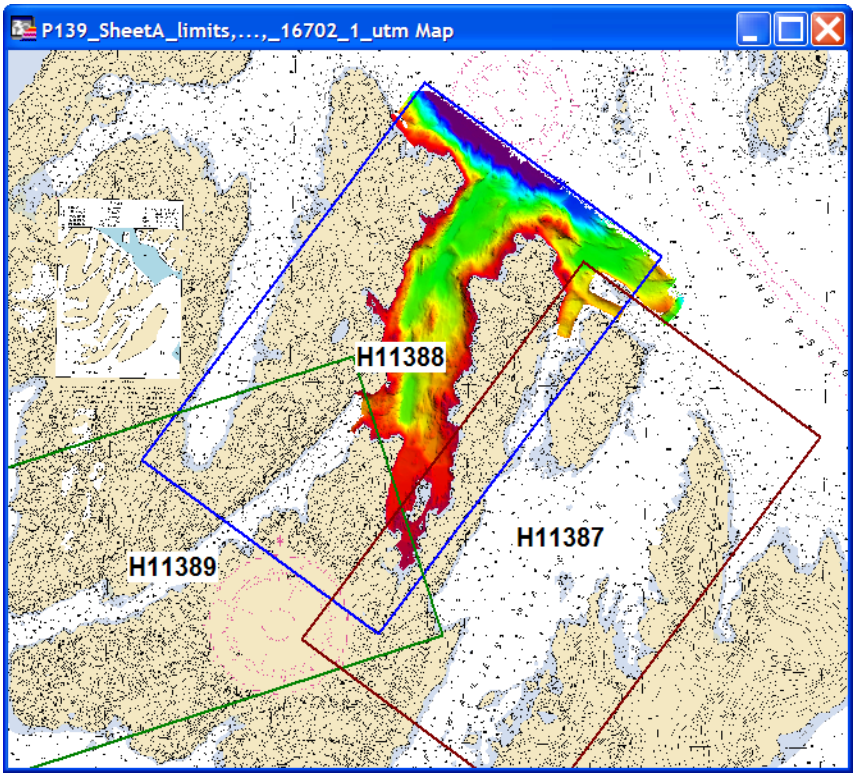


Figure 1 OPR-P139-TC-04 Survey H11388 limits and coverage

B. DATA ACQUISTION AND PROCESSING

Refer to ***OPR-P139-TC-04 Data Acquisition and Processing Report (DAPR)***[3] for a complete description of data acquisition and processing systems, survey vessels, quality control procedures and data processing methods, submitted under a separate cover. Additional information to supplement sounding and survey data, and any deviations from the DAPR are included in this descriptive report.

B1. Equipment and Vessels

Data were acquired by the R/V DAVIDSON, survey launches R2 and D2 and a skiff (DP). The ship was used to acquire mid-water multibeam soundings (MWMB) in depths generally greater than 40 meters, sound velocity profiles and bottom samples. Launch D2 acquired shallow-water multibeam sounding in depths generally less than 120 meters, sound velocity profiles and bottom samples. Launch R2 acquired high-resolution shallow water multibeam soundings in depths generally less than 60 meters, sound velocity profiles and bottom samples. The skiff acquired vertical-beam soundings for shoreline buffers and high-precision geographic positions for shoreline feature verification. Vessel configurations, equipment operation and data acquisition and processing were consistent with specifications described in the DAPR.

B2. Quality Control

B2.1 System Certification and Calibration

Refer to ***OPR-P139-TC-04 Data Acquisition and Processing Report (DAPR)*** for a description of SAIC's quality assurance (QA) and quality control (QC) plan. A System Acceptance Test Report, included as an appendix to the DAPR, describes system integration and initial calibration results for equipment and sensors utilized for this survey.

A system calibration survey was performed in Seward Harbor on September 27, 2004 (JD 271) to verify sensor performance as well as tide, sound velocity, alignment and offset corrections.

B2.2 Crosslines

Multibeam echosounder crosslines totaled 10.85 nautical miles, comprising 4.8%[4] of Shallow Water Multibeam (SWMB) hydrography. Crossline soundings were evaluated with respect to main scheme soundings in CARIS HIPS subset area editor and a gridded base surface model. In general, there was excellent agreement between mainscheme and crossline soundings. Observed sounding differences were generally less than 1 meter in less than 100 meter water depths and no significant systematic, sound velocity, or water level offsets were observed in the crossline evaluation.

B2.3 Junctions

The following contemporary surveys junction with H11388:

Registry #	Scale	Date	Junction side
H10716	1:10,000	1996	North
H11387	1:10,000	Concurrent	East
H11389	1:10,000	Concurrent	West

Junction survey soundings For H10716 were provided by the Pacific Hydrographic Branch in Microstation .dgn format, however, the projection and registration of the .dgn file was not compatible with lat./lon. or UTM projected ground units in Caris or MapInfo. Junction analysis was not perfomed for H10716, however, much of the area of H10716 was resurveyed by H11388. Charted depths agree very well with survey soundings. Figure 2 displays the boundaries of the junction surveys. H11388 junctions with survey H11387, conducted concurrently at the eastern limits, and H11389, conducted concurrently at the southern limits. Complete coverage was acquired with concurrent surveys.[5]

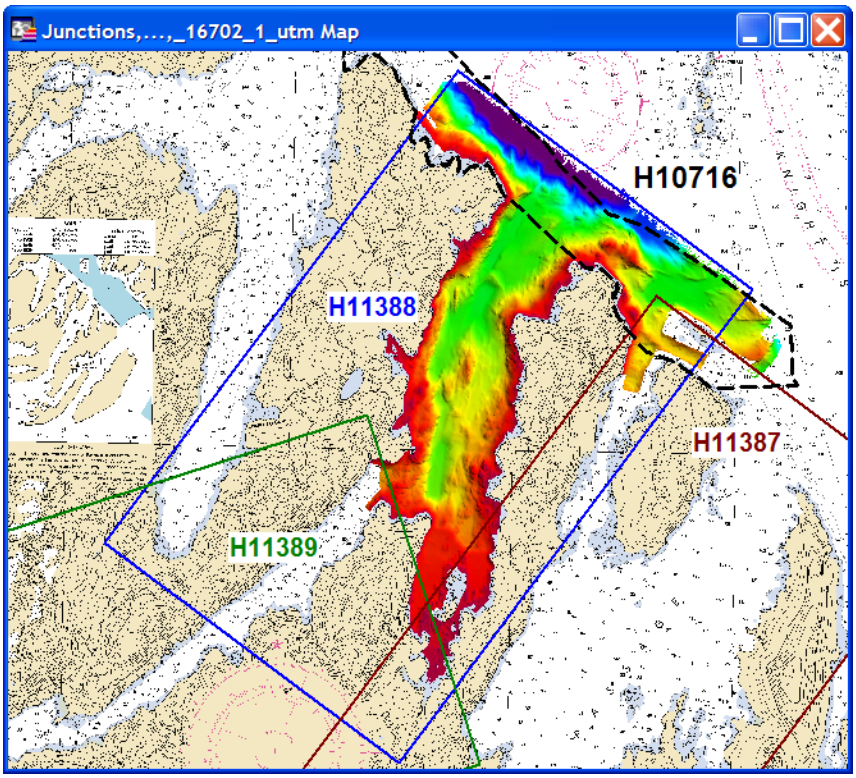


Figure 2. H11388 Junction Surveys

B2.4 Data Quality Factors

Caris QC review BASE surfaces were created at 5-meter resolution for ship soundings and 2 meter resolution for the launch soundings. BASE surfaces were used to focus full-density sounding evaluations and editing in areas of high standard deviation and total propagated error (TPE). Sounding subsets were evaluated in areas of high topographic relief to ensure that the depth BASE surface accurately represented shoal soundings and features. Significant soundings were designated from full raw data to ensure representation in the final BASE surface models.[6]

B2.4.1 Sound Velocity Profiles

ISS2000 applies sound velocity correction in real-time during echosounder acquitition. Sound velocity profiles were collected often to characterize the variable and complex water column conditions in the survey area. Surface sound velocity was monitored continuously on R2 with the Reson 8125 HRSWMB and on the DAVIDSON with the Reson 8111ER to ensure correct beam formation. Surface sound velocity was used by the 8125 system for correct beam formation on the flat-faced transducer for directional accuracy, and on the 8111ER for correct beam formation for pitch stabilization. Changes in surface sound velocity were also evaluated as an indicator of changes in the water column sound velocity. In general, there was good agreement of depths between overlapping outer beams of survey lines. There is no indication of significant sound velocity errors in the final base surface.

B2.4.2 Water level correction

ISS2000 applies predicted water-level correctors with CO-OPS supplied zoning in real-time during echosounder acquisition. Verified tides from the primary tide gauge are applied to soundings prior to NOAA quality review in Caris HIPS/SIPS. Soundings from crosslines and overlapping lines were examined using 3-D sounding subsets and base surfaces to identify temporal variation of water level modeling. In general, there was no indication of significant water level correction errors visible in line-to-line comparisons or the final base surfaces.

B2.4.3 Residual Sounding Fliers and Noise

CARIS BASE surfaces were evaluated by NOAA hydrographers to focus data editing on areas of high standard deviation of depth. Full-density sounding subsets were reviewed where high standard deviation was indicated. Residual gross flyers and noise were identified in areas of unusually high standard deviation and flagged as rejected. The total range of standard deviation was reduced to a value that corresponded to general bathymetric relief for the survey area. Soundings from multiple lines were evaluated when possible to distinguish noise from bathymetric features. In general, NOAA quality review required minimal editing and any significant quality deficiencies were corrected before final submission.

B2.4.4 Systematic Errors

CARIS BASE surfaces were evaluated by NOAA hydrographers to identify systematic errors in data correctors including motion, attitude, tide and sound velocity. Sunlight illuminated surface digital terrain models (DTM) were reviewed to find errors in heave, pitch and roll correction. Standard deviation surface models were reviewed to find areas where disagreement occurred between multiple lines – an indication of inaccurate tide or sound velocity correction. There were no significant systematic errors observed during review of this survey.

B2.4.5 Sounding Coverage

No significant holidays were observed within the general limits of mainscheme hydrography. Daily coverage was evaluated with DTM models created from preliminary, gridded sounding data. SAIC submitted 5-meter resolution, shoal-biased binned data for the ship and 2-meter

resolution, shoal-biased data for the launches. Easting, Northing, depth data were imported into MapInfo and re-gridded in Vertical Mapper. DTMs were subsequently evaluated for significant features, coverage and a preliminary assessment of data quality. Final sounding coverage was evaluated in CARIS using BASE surface DTM, TPE and sounding density models.

B2.4.6 Swath Angle Filtering

All soundings were filtered (flagged as offline) by SAIC processing software (ISS-2000) to within 55 degrees of nadir for mutibeam echosounder bathymetry to increase confidence in sounding accuracy and minimize sound velocity errors. In some cases, outer-beam soundings were re-accepted for holidays and general bathymetry in deeper water to fill in small gaps in the final BASE surface. All data used to create the final base surfaces were filtered to meet IHO Order 1 quality tolerances.

B2.4.7 Total Propagated Error (TPE)

Raw soundings were not filtered for TPE. BASE surfaces were created from soundings filtered for TPE values that met IHO Order 1 tolerance. TPE filtering increased the confidence of sounding accuracy based upon system parameter settings in the HIPS Vessel File (.hvf). The HVF was created from manufacturer system performance specifications and offsets provided by SAIC from the System Acceptance Test (SAT). CARIS configuration files for the ship were submitted to HSTP and PHB for review and validation. TPE was viewed in CARIS surface models to evaluate sounding accuracy and confidence for significant features and final coverage. Total propagated error for the survey ranged from 0.25 – 2.4 meters in depths from 0 – 477 meters. All soundings are qualified by an associated TPE confidence value.

B3. Water Level Datum Reduction

HDCS sounding data were reduced to mean lower-low water (MLLW) using verified tides from the primary stations at Cordova (945-4050) and Seward (945-5090). Verified tides were adjusted for zoned range and amplitude correctors provided by CO-Ops as specified in the project instructions and illustrated in Figure 4.

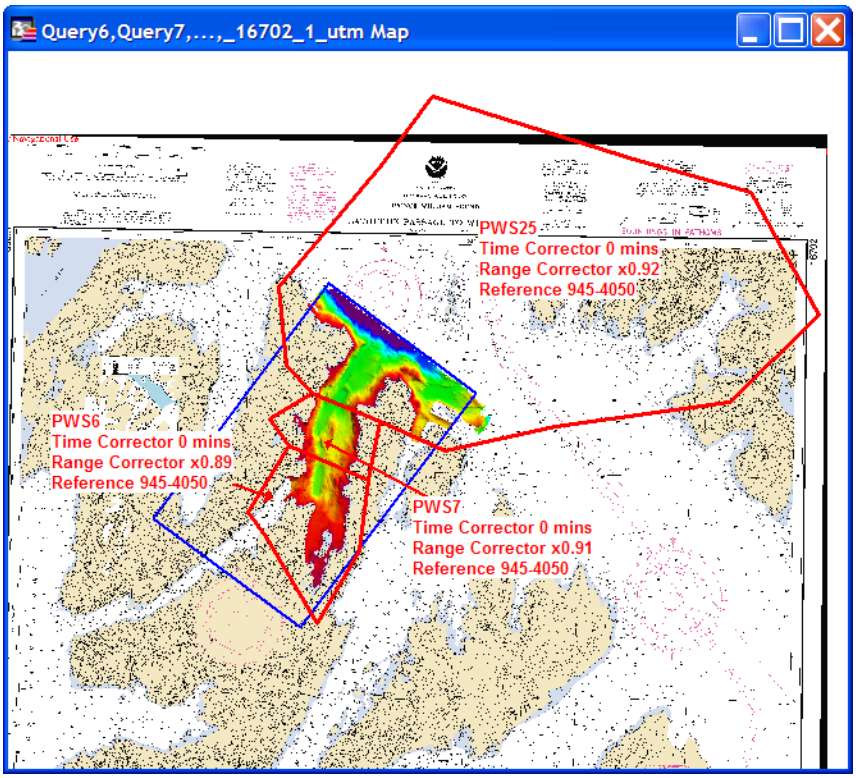


Figure 4. Tide Zoning for H11388

C. VERTICAL AND HORIZONTAL CONTROL

A complete description of vertical and horizontal control for survey H11388 can be found in the ***OPR-P139-TC-04 Horizontal and Vertical Control Report***.[7] A summary of horizontal and vertical control for this survey is included in the following sections.

C1.1 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 beacons at Potato Point (323 kHz) and Hichenbrook (288 kHz) were utilized during this survey. DGPS Confidence checks were performed daily by comparing positions acquired by primary (POS/MV) and secondary (Trimble MS 750) positioning systems on the ship and launches.

C1.2 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 Cordova, AK (945-4050) will serve as control for datum determination and as the primary source for water level reducers for survey H11388.

The Pacific Hydrographic Branch will apply final approved (smooth) tides to the survey data during final processing.[8] A request for delivery of final approved (smooth) tides for this survey was forwarded to N/OPS1 on December 01, 2004 in accordance with the FPM and project letter instructions.

D. RESULTS AND RECOMMENDATIONS

D.1 Automated Wreck and Obstruction Information System (AWOIS) Investigations

No AWOIS items were assigned to this survey.[9]

D.2 Chart Comparison

Survey H11388 was compared with charts 16702 (11th Ed.; July, 2002, 1: 40,000), shown in figure 5. Chart comparisons were performed in MapInfo using xyz (E,N,d) sounding data exported from the final QC base surface. Xyz data from the base surface were exported at 5-meter resolution from the finalized base surface. Base surface soundings were evaluated within an appropriate search radius of the charted depths and features. Chart comparison differences and comments were recorded as an attribute of a digital MapInfo radius table and compiled to a final chart comparison workspace and plot.

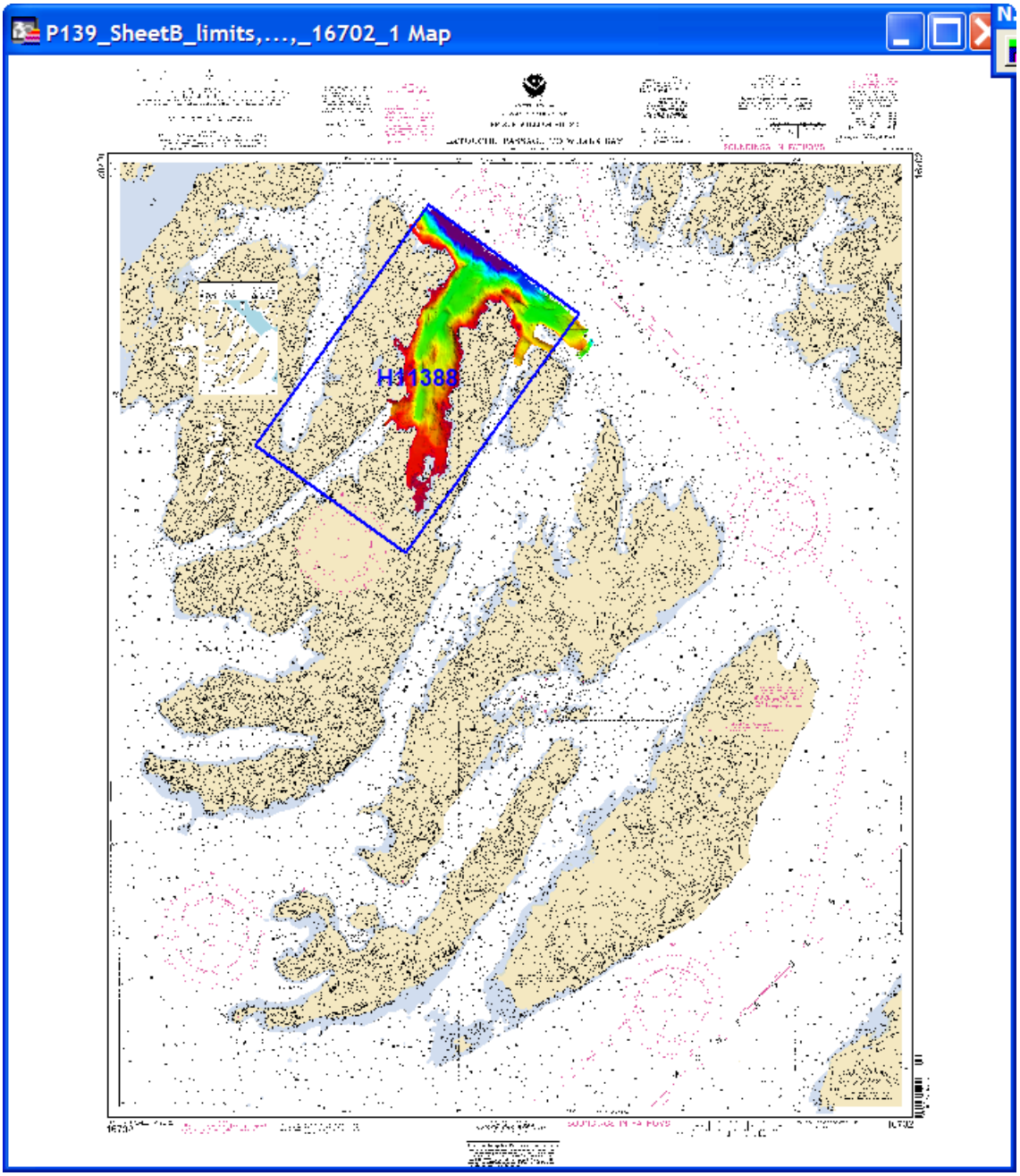


Figure 5. Chart 16702

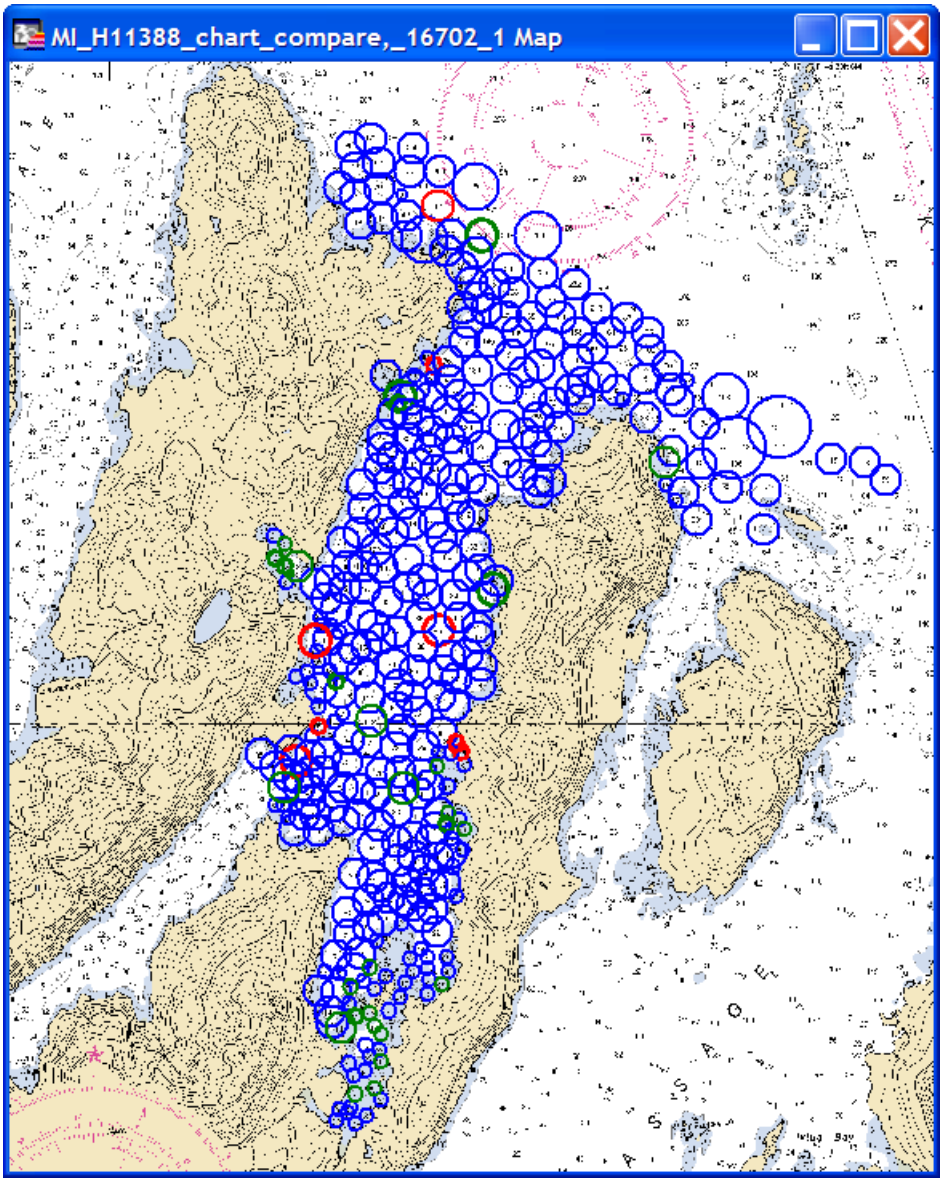


Figure 6. Chart Comparison: Differences > 10 fathom in red; > 1 < 5 fathom in green < 1 fathom in blue

Chart 16702

Most survey depths agreed within 0 - 1 fathoms with depths on chart 16702. Differences vary from 1 – 14 fathoms.

Differences greater than 2 fathoms were found in deep water locations, generally in areas of high relief. Differences between survey and charted soundings may be attributed modern techniques used for this survey and to localized mass wasting and uplifting caused by the 1964 earthquake[10]. In shallow areas, 1-2 fathom charted depth differences were observed where shoal soundings on features are navigationally significant to small boat traffic. In these areas, shoal features were

reviewed in full-density sounding subsets and least-depth soundings were designated to make sure they would be identified to the branch cartographer[11]. Designated soundings are preserved in the final base surfaces and converted to bathymetry features in the pydro PSS. Additional remarks and attributes were updated in pydro. Navigationally significant, dangerous shoal soundings were identified and reported as DtoN's.

D.3 Shoreline

Very limited shoreline data were acquired for this survey and full verification was not performed. Few low-water shoreline windows were available during the survey period. RSD source data digital manuscripts (DM) were converted to Trimble format and transferred to a Trimble ProXRS horizontal positioning system. Positions for source features (predominantly rocks) were verified with visual observations above or near the water surface. Awash, new, or misrepresented DM features were surveyed with detached positions (DP) and heights relative to the local stage of tide. DM features that were not observed were investigated with visual searches and disproved with multibeam sonar coverage when possible. Shoreline data were imported and processed in HSTP pydro software as geographic positions (GP) or detached positions with height or depth information (DP) and submitted with the final PSS. Refer to the DAPR and the FPM for a description of pydro processing procedures.

In most areas the shore face was steep, descending to deep water within close proximity to the shoreline. In general, the survey limits approximated the 8-meter depth curve[12] and a 100-meter buffer distance from the MHW shoreline.

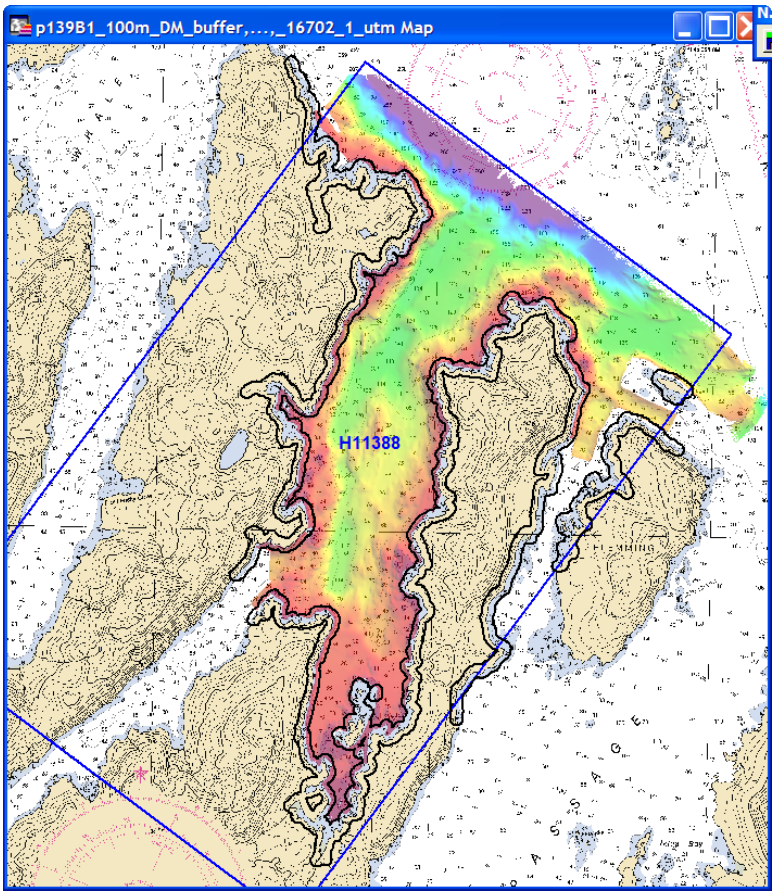


Figure 7. H11388 inshore limit. Black line is 100 meter MHW shoreline buffer.

D.4 Dangers to Navigation and Shoals

D4.1 DTON

11 dangers to navigation (DtoN) were observed and reported for this survey[13]. DtoNs were processed in pydro and are included in the final PSS and feature report. A DtoN report and pydro xml data file was reviewed at PHB and submitted to MCD.

D4.2 Shoals

Significant shoals or features were identified with least-depth soundings from full-density multibeam data and processed in pydro. Designated soundings were preserved in the final base surface and attributed as S-57 soundings and features in the pydro PSS. Navigationally significant, dangerous shoal soundings were identified and reported as DtoN's.

D.5 Aids to Navigation

No aids to navigation (ATONs) are located within the limits of H11388.[14]

D.6 Coast Pilot Information

Coast Pilot 8 was reviewed and revised with survey observations and a project Coast Pilot Report was submitted as a separate attachment with the project data.

D.7 Miscellaneous

Bottom Samples

Fourteen (14) bottom samples were collected within in accordance with the HSSDM and are attributed as SBDARE S-57 objects in the final Pydro PSS and XML data exchange sets[15].

BASE Surface Deliverables

BASE surfaces were compiled and submitted in accordance with section 4.2.6.3 of the Field Procedures Manual (FPM 2004). The submission field sheet contains 0.5 1, 2, and 5 meter resolution BASE surfaces.

Software Versions

The following list specifies what versions and updates of Pydro and CARIS were used during the processing of H11393 data.

Final PSS files were created with Pydro version 5.3.2

Data converted and processed with CARIS HIPS version 5.4, service pack 1 and hot fixes 12 - 21.

BASE surfaces created with CARIS HIPS version 5.4, service pack 1 and hot fix 21.

D.7 Statistics

Survey day	Linear nmi
272	16.1
273	40.83
274	55.13
275	101.24
287	38.14
288	57.41

Survey totals:

Survey days	Linear nmi	Square nmi	SVP	Bottom Samples
6	185.74	9.3	76	14

D.9 Adequacy of Survey

Summary and Recommendations for Additional Work

Survey H11388 is adequate to supersede charted soundings within the survey coverage and scope.

E. APPROVAL

As Lead Hydrographer, I have ensured that data acquired during this survey fulfils project requirements and conforms to the NOS Hydrographic Surveys Specifications and Deliverables, as updated for 2004.

The digital data and supporting records have been reviewed by me, are considered complete and adequate for charting purposes. All records are forwarded for final review and processing to N/CS34, Pacific Hydrographic Branch.

Survey H11388 is complete and adequate to supersede charted soundings within the scope and coverage of the survey. [16]

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

Title	Office
Data Acquisition and Processing Report for OPR-P139-TC-04	N/CS34
Horizontal and Vertical Control Report for OPR-P139-TC-04	N/CS34
Tides and Water Levels Package for OPR-P139-TC-04	N/OPS1
Coast Pilot Report for OPR-P139-TC-04	N/CS26

Approved and Forwarded: 

David A. Sinson
NOAA Physical Scientist
Lead Hydrographer

[1] Concur.
[2] This table shows the assigned “sheet” limits. The actual eastern limit of the survey is 147-58-59.09W
[3] Filed with project records.
[4] The FPM requires 5%, however the comparison with the 4.8% is sufficient.
[5] Do not concur, complete coverage was not acquired. Several charted features, mainly rocks were left unaddressed by survey H11388. Retain items as shown in the HCell.
[6] All designated soundings are included in the survey scale HCell. Not all designated soundings were compiled to the chart “scale” Hcell due to the high density of designated soundings.
[7] Filed with project records.
[8] Concur. Final Approved water levels were applied during the survey acceptance review. A tide note is attached to this report.
[9] Concur.
[10] Concur.
[11] All designated soundings were reviewed during survey compilation.
[12] Do not concur, in many areas the survey extents reached to 10 to 15 meter curve.
[13] Not all DTONs are shown in final compilation due to shoaler soundings in the vicinity.
[14] Concur.
[15] Charted bottom samples were retained unless replaced by new surveyed bottom samples.
[16] Concur.

H11388 DTON Report

Registry Number: H11388

State: Alaska

Locality: Prince William Sound

Sub-locality: Bainbridge Passage

Project Number: OPR-P139-TC-04

Survey Dates: 09/28/2004 - 10/13/2004

Charts Affected

Number	Version	Date	Scale
16702	13th Ed.	11/01/2005	1:40000
16701	21st Ed.	11/01/2006	1:81436
16700	29th Ed.	07/01/2004	1:200000
16013	30th Ed.	07/01/2006	1:969761
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.	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	Shoal	0.30 m	60° 12' 22.620" N	148° 05' 44.402" W	---
1.2	Shoal	0.34 m	60° 07' 42.306" N	148° 06' 28.329" W	---
1.3	Shoal	0.57 m	60° 08' 07.575" N	148° 06' 49.590" W	---
1.4	Shoal	1.47 m	60° 09' 26.147" N	148° 07' 52.809" W	---
1.5	Shoal	1.93 m	60° 08' 19.467" N	148° 05' 58.782" W	---
1.6	Shoal	2.23 m	60° 08' 01.327" N	148° 06' 43.857" W	---
1.7	Shoal	2.82 m	60° 11' 45.616" N	148° 02' 31.686" W	---
1.8	Shoal	3.59 m	60° 10' 38.552" N	148° 07' 05.301" W	---
1.9	Shoal	3.61 m	60° 11' 51.857" N	148° 03' 59.850" W	---
1.10	Shoal	6.03 m	60° 08' 21.805" N	148° 06' 30.904" W	---
1.11	Shoal	9.68 m	60° 09' 19.037" N	148° 05' 30.279" W	---

Generated by Pydro v7.3 (r2196) on Mon Oct 29 21:31:54 2007 [UTC]

1 - Features from Bathymetry

1.1) Profile/Beam - 1876/3 from h11388 / tpe_d2_mb_0 / 2004-287 / d2mba04287_d29

DANGER TO NAVIGATION

Survey Summary

Survey Position: 60° 12' 22.620" N, 148° 05' 44.402" W

Least Depth: 0.30 m

Timestamp: 2004-287.22:09:55.804 (10/13/2004)

Survey Line: h11388 / tpe_d2_mb_0 / 2004-287 / d2mba04287_d29

Profile/Beam: 1876/3

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

0.3 meter sounding is shoal depth in charted 10 fathoms

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/tpe_d2_mb_0/2004-287/d2mba04287_d29	1876/3	0.00	000.0	Primary

Hydrographer Recommendations

Chart shoal sounding on reef and revise contours

Cartographically-Rounded Depth (Affected Charts):

0fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

0fm 1ft (531_1)

.3m (500_1, 50_1)

Office Notes

Chart sounding.

1.2) Profile/Beam - 1240/1 from h11388 / tpe_r2_mb_0 / 2004-273 / r2mba04273_d61

DANGER TO NAVIGATION

Survey Summary

Survey Position: 60° 07' 42.306" N, 148° 06' 28.329" W

Least Depth: 0.34 m

Timestamp: 2004-273.22:12:26.627 (09/29/2004)

Survey Line: h11388 / tpe_r2_mb_0 / 2004-273 / r2mba04273_d61

Profile/Beam: 1240/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

0.34 meter sounding is shoal depth in charted 5 fathoms

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/tpe_r2_mb_0/2004-273/r2mba04273_d61	1240/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

0fm 1ft (531_1)

.3m (500_1, 50_1)

Office Notes

Do not chart sounding. Chart newly surveyed rock approx. 35 meters south.

1.3) Profile/Beam - 1362/129 from h11388 / tpe_r2_mb_0 / 2004-273 / r2mba04273b_d55

DANGER TO NAVIGATION

Survey Summary

Survey Position: 60° 08' 07.575" N, 148° 06' 49.590" W

Least Depth: 0.57 m

Timestamp: 2004-273.21:17:01.747 (09/29/2004)

Survey Line: h11388 / tpe_r2_mb_0 / 2004-273 / r2mba04273b_d55

Profile/Beam: 1362/129

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

0.57 meter sounding is shoal depth in charted 2.25 fathoms

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/tpe_r2_mb_0/2004-273/r2mba04273b_d55	1362/129	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

0fm 2ft (531_1)

.5m (500_1, 50_1)

Office Notes

Chart sounding.

1.4) Profile/Beam - 57/7 from h11388 / tpe_r2_mb_0 / 2004-274 / r2mba04274_d03

DANGER TO NAVIGATION

Survey Summary

Survey Position: 60° 09' 26.147" N, 148° 07' 52.809" W

Least Depth: 1.47 m

Timestamp: 2004-274.00:17:59.588 (09/30/2004)

Survey Line: h11388 / tpe_r2_mb_0 / 2004-274 / r2mba04274_d03

Profile/Beam: 57/7

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

1.47 meter sounding at seaward extent of ledge

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/tpe_r2_mb_0/2004-274/r2mba04274_d03	57/7	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0 ¾fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

0fm 5ft (531_1)

1.4m (500_1, 50_1)

Office Notes

Chart sounding.

1.5) Profile/Beam - 271/240 from h11388 / tpe_r2_mb_0 / 2004-287 / r2mba04287_d69

DANGER TO NAVIGATION

Survey Summary

Survey Position: 60° 08' 19.467" N, 148° 05' 58.782" W

Least Depth: 1.93 m

Timestamp: 2004-287.23:49:36.605 (10/13/2004)

Survey Line: h11388 / tpe_r2_mb_0 / 2004-287 / r2mba04287_d69

Profile/Beam: 271/240

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

1.9 meter sounding is shoal depth on feature in charted 3.25 fathoms

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/tpe_r2_mb_0/2004-287/r2mba04287_d69	271/240	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

1fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

1fm 0ft (531_1)

1.9m (500_1, 50_1)

Office Notes

Chart sounding.

1.6) Profile/Beam - 457/3 from h11388 / tpe_r2_mb_0 / 2004-273 / r2mba04273_d51

DANGER TO NAVIGATION

Survey Summary

Survey Position: 60° 08' 01.327" N, 148° 06' 43.857" W

Least Depth: 2.23 m

Timestamp: 2004-273.21:02:26.030 (09/29/2004)

Survey Line: h11388 / tpe_r2_mb_0 / 2004-273 / r2mba04273_d51

Profile/Beam: 457/3

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

2.23 meter sounding is shoal depth in charted 5 fathoms

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/tpe_r2_mb_0/2004-273/r2mba04273_d51	457/3	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

1 ¼fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

1fm 1ft (531_1)

2.2m (500_1, 50_1)

Office Notes

Chart sounding.

1.7) Profile/Beam - 2069/91 from h11388 / tpe_d2_mb_0 / 2004-273 / d2mba04273_d48

DANGER TO NAVIGATION

Survey Summary

Survey Position: 60° 11' 45.616" N, 148° 02' 31.686" W

Least Depth: 2.82 m

Timestamp: 2004-273.21:00:06.211 (09/29/2004)

Survey Line: h11388 / tpe_d2_mb_0 / 2004-273 / d2mba04273_d48

Profile/Beam: 2069/91

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

2.8 meter sounding is shoal depth in charted 5 fathoms

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/tpe_d2_mb_0/2004-273/d2mba04273_d48	2069/91	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

1 ½fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

1fm 3ft (531_1)

2.8m (500_1, 50_1)

Office Notes

Chart sounding.

1.8) Profile/Beam - 405/28 from h11388 / tpe_r2_mb_0 / 2004-273 / r2mba04273a_d05

DANGER TO NAVIGATION

Survey Summary

Survey Position: 60° 10' 38.552" N, 148° 07' 05.301" W

Least Depth: 3.59 m

Timestamp: 2004-273.00:25:20.553 (09/29/2004)

Survey Line: h11388 / tpe_r2_mb_0 / 2004-273 / r2mba04273a_d05

Profile/Beam: 405/28

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

3.6 meter sounding is seaward shoal depth of offshore feature

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/tpe_r2_mb_0/2004-273/r2mba04273a_d05	405/28	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

2fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

0fm 0ft (531_1)

3.6m (500_1, 50_1)

Office Notes

Chart sounding.

1.9) Profile/Beam - 126/24 from h11388 / tpe_d2_mb_0 / 2004-273 / d2mba04273_d57

DANGER TO NAVIGATION

Survey Summary

Survey Position: 60° 11' 51.857" N, 148° 03' 59.850" W

Least Depth: 3.61 m

Timestamp: 2004-273.22:54:49.774 (09/29/2004)

Survey Line: h11388 / tpe_d2_mb_0 / 2004-273 / d2mba04273_d57

Profile/Beam: 126/24

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

3.6 meter sounding is shoal depth in charted 5 fathoms

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/tpe_d2_mb_0/2004-273/d2mba04273_d57	126/24	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

2fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

0fm 0ft (531_1)

3.6m (500_1, 50_1)

Office Notes

Chart sounding.

1.10) Profile/Beam - 620/215 from h11388 / tpe_r2_mb_0 / 2004-273 / r2mba04273b_d15

DANGER TO NAVIGATION

Survey Summary

Survey Position: 60° 08' 21.805" N, 148° 06' 30.904" W

Least Depth: 6.03 m

Timestamp: 2004-273.17:05:51.548 (09/29/2004)

Survey Line: h11388 / tpe_r2_mb_0 / 2004-273 / r2mba04273b_d15

Profile/Beam: 620/215

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

6.0 meter sounding is shoal depth on feature in charted 7.5 fathoms

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/tpe_r2_mb_0/2004-273/r2mba04273b_d15	620/215	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

3 ¼fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

3fm 2ft (531_1)

6.0m (500_1, 50_1)

Office Notes

Chart sounding.

1.11) Profile/Beam - 1023/80 from h11388 / tpe_d2_mb_0 / 2004-272 / d2mba04272_d21

DANGER TO NAVIGATION

Survey Summary

Survey Position: 60° 09' 19.037" N, 148° 05' 30.279" W

Least Depth: 9.68 m

Timestamp: 2004-272.22:14:35.778 (09/28/2004)

Survey Line: h11388 / tpe_d2_mb_0 / 2004-272 / d2mba04272_d21

Profile/Beam: 1023/80

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

9.68 meter sounding is shoal depth in charted 10 fathoms

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/tpe_d2_mb_0/2004-272/d2mba04272_d21	1023/80	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

5 ¼fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

5fm 2ft (531_1)

9.7m (500_1, 50_1)

Office Notes

Chart sounding.

H11388 Features Report

Registry Number: H11388

State: Alaska

Locality: Prince William Sound

Sub-locality: Bainbridge Passage

Project Number: OPR-P139-TC-04

Survey Dates: 09/28/2004 - 07/28/2005

Charts Affected

Number	Version	Date	Scale
16702	13th Ed.	11/01/2005	1:40000
16701	21st Ed.	11/01/2006	1:81436
16700	29th Ed.	07/01/2004	1:200000
16013	30th Ed.	07/01/2006	1:969761
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.	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	Rock	-0.86 m	60° 07' 34.130" N	148° 06' 35.755" W	---
1.2	Shoal	0.39 m	60° 07' 20.466" N	148° 06' 45.222" W	---
1.3	Shoal	10.30 m	60° 08' 23.752" N	148° 05' 47.224" W	---
2.1	Rock	-4.83 m	60° 09' 57.020" N	148° 07' 13.444" W	---
2.2	Rock	-4.81 m	60° 11' 18.848" N	148° 07' 50.157" W	---
2.3	Rock	-3.46 m	60° 08' 25.519" N	148° 07' 13.498" W	---
2.4	Rock	-3.20 m	60° 08' 40.520" N	148° 05' 20.281" W	---
2.5	Rock	-2.86 m	60° 08' 19.410" N	148° 07' 14.855" W	---
2.6	Rock	-2.85 m	60° 08' 24.778" N	148° 06' 21.092" W	---
2.7	Rock	-2.83 m	60° 09' 14.800" N	148° 05' 10.604" W	---
2.8	Rock	-2.62 m	60° 08' 13.096" N	148° 06' 28.015" W	---

Generated by Pydro v7.3 (r2196) on Mon Oct 29 21:47:51 2007 [UTC]

2.9	Rock	-2.61 m	60° 08' 19.349" N	148° 05' 23.748" W	---
2.10	Rock	-2.61 m	60° 09' 03.002" N	148° 06' 53.676" W	---
2.11	Rock	-2.56 m	60° 08' 24.889" N	148° 06' 20.074" W	---
2.12	Rock	-2.46 m	60° 09' 31.910" N	148° 05' 29.083" W	---
2.13	Rock	-2.31 m	60° 09' 20.070" N	148° 07' 41.858" W	---
2.14	Rock	-2.17 m	60° 08' 35.970" N	148° 06' 08.917" W	---
2.15	Rock	-2.15 m	60° 07' 54.757" N	148° 06' 12.208" W	---
2.16	Rock	-1.85 m	60° 07' 21.547" N	148° 06' 51.026" W	---
2.17	Rock	-1.81 m	60° 10' 11.154" N	148° 07' 36.995" W	---
2.18	Rock	-1.66 m	60° 08' 04.859" N	148° 06' 31.424" W	---
2.19	Rock	-1.62 m	60° 08' 19.126" N	148° 06' 08.183" W	---
2.20	Rock	-1.59 m	60° 07' 48.068" N	148° 06' 21.956" W	---
2.21	Rock	-1.40 m	60° 08' 12.415" N	148° 06' 27.209" W	---
2.22	Rock	-1.31 m	60° 08' 36.920" N	148° 06' 20.272" W	---
2.23	Rock	-1.29 m	60° 07' 24.564" N	148° 06' 48.722" W	---
2.24	Rock	-1.24 m	60° 08' 37.021" N	148° 06' 15.023" W	---
2.25	Rock	-1.23 m	60° 08' 37.111" N	148° 06' 12.686" W	---
2.26	Rock	-1.21 m	60° 07' 54.516" N	148° 06' 49.673" W	---
2.27	Rock	-1.17 m	60° 07' 41.185" N	148° 06' 28.318" W	---
3.1	Rock	[None]	60° 09' 56.025" N	148° 07' 08.846" W	---
3.2	Rock	[None]	60° 07' 32.405" N	148° 06' 36.087" W	---

1 - Features from Bathymetry

1.1) Profile/Beam - 2277/1 from h11388 / tpe_r2_mb_0 / 2004-273 / r2mba04273_d61

Survey Summary

Survey Position: 60° 07' 34.130" N, 148° 06' 35.755" W

Least Depth: -0.86 m

Timestamp: 2004-273.22:13:58.722 (09/29/2004)

Survey Line: h11388 / tpe_r2_mb_0 / 2004-273 / r2mba04273_d61

Profile/Beam: 2277/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

Sounding is shoal depth on rock awash

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/tpe_r2_mb_0/2004-273/r2mba04273_d61	2277/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0 ½fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

0fm 3ft (531_1)

-.9m (500_1, 50_1)

Office Notes

Chart rock.

1.2) Profile/Beam - 3/1 from h11388 / dolphin / 2004-273 / 001b1804

Survey Summary

Survey Position: 60° 07' 20.466" N, 148° 06' 45.222" W

Least Depth: 0.39 m

Timestamp: 2004-273.18:25:58.000 (09/29/2004)

Survey Line: h11388 / dolphin / 2004-273 / 001b1804

Profile/Beam: 3/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

VBES 0.21 fathom shoal sounding in charted 2 fathoms

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin/2004-273/001b1804	3/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0 ¼fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

0fm 1ft (531_1)

.4m (500_1, 50_1)

Office Notes

Chart sounding.

1.3) Profile/Beam - 4656/28 from h11388 / tpe_d2_mb_0 / 2004-272 / d2mba04272a_d22

Survey Summary

Survey Position: 60° 08' 23.752" N, 148° 05' 47.224" W

Least Depth: 10.30 m

Timestamp: 2004-272.22:29:42.976 (09/28/2004)

Survey Line: h11388 / tpe_d2_mb_0 / 2004-272 / d2mba04272a_d22

Profile/Beam: 4656/28

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

Sounding is shoal depth on feature

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/tpe_d2_mb_0/2004-272/d2mba04272a_d22	4656/28	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Office Notes

Chart least depth on sounding.

2 - Detached Positions (DPs)

2.1) Profile/Beam - 1/1 from h11388 / dolphin_0 / 2004-274 / h11388_uwtroc_add2_point.shp

Survey Summary

Survey Position: 60° 09' 57.020" N, 148° 07' 13.444" W

Least Depth: -4.83 m

Timestamp: 2004-274.10:37:52.000 (09/30/2004)

DP Dataset: h11388 / dolphin_0 / 2004-274 / h11388_uwtroc_add2_point.shp

Profile/Beam: 1/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

dp27406 dm rk: v dm rk and height. Photo is view from north.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-274/h11388_uwtroc_add2_point.shp	1/1	0.00	000.0	Primary
h11388/dolphin/2004-274/001c1825	5187/1	11.39	211.6	Secondary

Hydrographer Recommendations

Revise location and height of rock

Cartographically-Rounded Depth (Affected Charts):

-2 ½fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

-2fm 4ft (531_1)

-4.9m (500_1, 50_1)

Office Notes

Chart new rock.

2.2) Profile/Beam - 26/1 from h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Survey Summary

Survey Position: 60° 11' 18.848" N, 148° 07' 50.157" W

Least Depth: -4.81 m

Timestamp: 2004-274.21:33:07.000 (09/30/2004)

DP Dataset: h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Profile/Beam: 26/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

dp27411 new rk: a new rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-273/h11388_uwtroc_add_point.shp	26/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

-2 ½fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

-2fm 4ft (531_1)

-4.8m (500_1, 50_1)

Office Notes

Do not chart rock, charted rocks in vicinity were unaddressed.

2.3) Profile/Beam - 21/1 from h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Survey Summary

Survey Position: 60° 08' 25.519" N, 148° 07' 13.498" W

Least Depth: -3.46 m

Timestamp: 2004-273.21:11:27.000 (09/29/2004)

DP Dataset: h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Profile/Beam: 21/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

DP27323 photo: a new rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-273/h11388_uwtroc_add_point.shp	21/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

-1 ¾fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

-1fm 5ft (531_1)

-3.5m (500_1, 50_1)

Office Notes

Chart new rock.

2.4) Profile/Beam - 17/1 from h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Survey Summary

Survey Position: 60° 08' 40.520" N, 148° 05' 20.281" W

Least Depth: -3.20 m

Timestamp: 2004-273.20:28:42.000 (09/29/2004)

DP Dataset: h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Profile/Beam: 17/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

DP27318 new rk: a new rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-273/h11388_uwtroc_add_point.shp	17/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

-1 ¾fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

-1fm 4ft (531_1)

-3.2m (500_1, 50_1)

Office Notes

Chart new rock.

2.5) Profile/Beam - 22/1 from h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Survey Summary

Survey Position: 60° 08' 19.410" N, 148° 07' 14.855" W

Least Depth: -2.86 m

Timestamp: 2004-273.21:18:57.000 (09/29/2004)

DP Dataset: h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Profile/Beam: 22/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

DP27325 new rock: a new rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-273/h11388_uwtroc_add_point.shp	22/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

-1 ½fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

-1fm 3ft (531_1)

-2.9m (500_1, 50_1)

Office Notes

Chart new rock.

2.6) Profile/Beam - 10/1 from h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Survey Summary

Survey Position: 60° 08' 24.778" N, 148° 06' 21.092" W

Least Depth: -2.85 m

Timestamp: 2004-273.19:39:02.000 (09/29/2004)

DP Dataset: h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Profile/Beam: 10/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

DP27311 photo: a new rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-273/h11388_uwtroc_add_point.shp	10/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

-1 ½fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

-1fm 3ft (531_1)

-2.9m (500_1, 50_1)

Office Notes

Chart new rock.

2.7) Profile/Beam - 18/1 from h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Survey Summary

Survey Position: 60° 09' 14.800" N, 148° 05' 10.604" W

Least Depth: -2.83 m

Timestamp: 2004-273.20:39:37.000 (09/29/2004)

DP Dataset: h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Profile/Beam: 18/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

DP27319: a new rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-273/h11388_uwtroc_add_point.shp	18/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

-1 ½fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

-1fm 3ft (531_1)

-2.9m (500_1, 50_1)

Office Notes

Chart new rock.

2.8) Profile/Beam - 8/1 from h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Survey Summary

Survey Position: 60° 08' 13.096" N, 148° 06' 28.015" W

Least Depth: -2.62 m

Timestamp: 2004-273.19:14:47.000 (09/29/2004)

DP Dataset: h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Profile/Beam: 8/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

DP27309: a new rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-273/h11388_uwtroc_add_point.shp	8/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

-1 ¼fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

-1fm 2ft (531_1)

-2.6m (500_1, 50_1)

Office Notes

Chart new rock.

2.9) Profile/Beam - 16/1 from h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Survey Summary

Survey Position: 60° 08' 19.349" N, 148° 05' 23.748" W

Least Depth: -2.61 m

Timestamp: 2004-273.20:21:27.000 (09/29/2004)

DP Dataset: h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Profile/Beam: 16/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

DP27317 new rk on shore: a new rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-273/h11388_uwtroc_add_point.shp	16/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

-1 ¼fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

-1fm 2ft (531_1)

-2.6m (500_1, 50_1)

Office Notes

Chart new rock.

2.10) Profile/Beam - 20/1 from h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Survey Summary

Survey Position: 60° 09' 03.002" N, 148° 06' 53.676" W

Least Depth: -2.61 m

Timestamp: 2004-273.21:00:42.000 (09/29/2004)

DP Dataset: h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Profile/Beam: 20/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

DP27322: a new rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-273/h11388_uwtroc_add_point.shp	20/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

-1 ¼fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

-1fm 2ft (531_1)

-2.6m (500_1, 50_1)

Office Notes

Chart new rock.

2.11) Profile/Beam - 11/1 from h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Survey Summary

Survey Position: 60° 08' 24.889" N, 148° 06' 20.074" W

Least Depth: -2.56 m

Timestamp: 2004-273.19:39:52.000 (09/29/2004)

DP Dataset: h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Profile/Beam: 11/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

DP27312: a new rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-273/h11388_uwtroc_add_point.shp	11/1	0.00	000.0	Primary

Hydrographer Recommendations

Cartographically-Rounded Depth (Affected Charts):

-1 ¼fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

-1fm 2ft (531_1)

-2.6m (500_1, 50_1)

Office Notes

Do not chart new rock.

2.12) Profile/Beam - 19/1 from h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Survey Summary

Survey Position: 60° 09' 31.910" N, 148° 05' 29.083" W

Least Depth: -2.46 m

Timestamp: 2004-273.20:49:57.000 (09/29/2004)

DP Dataset: h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Profile/Beam: 19/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

DP27320: a new rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-273/h11388_uwtroc_add_point.shp	19/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

-1 ¼fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

-1fm 2ft (531_1)

-2.5m (500_1, 50_1)

Office Notes

Chart new rock.

2.13) Profile/Beam - 24/1 from h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Survey Summary

Survey Position: 60° 09' 20.070" N, 148° 07' 41.858" W

Least Depth: -2.31 m

Timestamp: 2004-274.19:13:07.000 (09/30/2004)

DP Dataset: h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Profile/Beam: 24/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

dp27404 new rk: a new rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-273/h11388_uwtroc_add_point.shp	24/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

-1 ¼fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

-1fm 1ft (531_1)

-2.3m (500_1, 50_1)

Office Notes

Chart new rock.

2.14) Profile/Beam - 12/1 from h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Survey Summary

Survey Position: 60° 08' 35.970" N, 148° 06' 08.917" W

Least Depth: -2.17 m

Timestamp: 2004-273.19:47:07.000 (09/29/2004)

DP Dataset: h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Profile/Beam: 12/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

DP27313 photo: a new rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-273/h11388_uwtroc_add_point.shp	12/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

-1 ¼fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

-1fm 1ft (531_1)

-2.2m (500_1, 50_1)

Office Notes

Chart new rock.

2.15) Profile/Beam - 5/1 from h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Survey Summary

Survey Position: 60° 07' 54.757" N, 148° 06' 12.208" W

Least Depth: -2.15 m

Timestamp: 2004-273.18:57:57.000 (09/29/2004)

DP Dataset: h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Profile/Beam: 5/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

DP27306 new rk: a nw rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-273/h11388_uwtroc_add_point.shp	5/1	0.00	000.0	Primary

Hydrographer Recommendations

Cartographically-Rounded Depth (Affected Charts):

-1fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

-1fm 1ft (531_1)

-2.2m (500_1, 50_1)

Office Notes

Chart new rock.

2.16) Profile/Beam - 2/1 from h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Survey Summary

Survey Position: 60° 07' 21.547" N, 148° 06' 51.026" W

Least Depth: -1.85 m

Timestamp: 2004-273.18:23:47.000 (09/29/2004)

DP Dataset: h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Profile/Beam: 2/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

DP27302: a new rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-273/h11388_uwtroc_add_point.shp	2/1	0.00	000.0	Primary

Hydrographer Recommendations

Cartographically-Rounded Depth (Affected Charts):

-1fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

-1fm 0ft (531_1)

-1.9m (500_1, 50_1)

Office Notes

Chart new rock.

2.17) Profile/Beam - 2/1 from h11388 / dolphin_0 / 2004-274 / h11388_uwtroc_add_point.shp

Survey Summary

Survey Position: 60° 10' 11.154" N, 148° 07' 36.995" W

Least Depth: -1.81 m

Timestamp: 2004-274.19:47:22.000 (09/30/2004)

DP Dataset: h11388 / dolphin_0 / 2004-274 / h11388_uwtroc_add_point.shp

Profile/Beam: 2/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

dp27407 new rk: a new rk new ext ledge

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-274/h11388_uwtroc_add_point.shp	2/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

1fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

-1fm 0ft (531_1)

-1.8m (500_1, 50_1)

Office Notes

Chart new rock.

2.18) Profile/Beam - 6/1 from h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Survey Summary

Survey Position: 60° 08' 04.859" N, 148° 06' 31.424" W

Least Depth: -1.66 m

Timestamp: 2004-273.19:05:27.000 (09/29/2004)

DP Dataset: h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Profile/Beam: 6/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

DP27307 new rock: a new rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-273/h11388_uwtroc_add_point.shp	6/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0 ¾fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

0fm 5ft (531_1)

-1.7m (500_1, 50_1)

Office Notes

Chart new rock.

2.19) Profile/Beam - 9/1 from h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Survey Summary

Survey Position: 60° 08' 19.126" N, 148° 06' 08.183" W

Least Depth: -1.62 m

Timestamp: 2004-273.19:26:02.000 (09/29/2004)

DP Dataset: h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Profile/Beam: 9/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

DP27310 for foul area: a new rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-273/h11388_uwtroc_add_point.shp	9/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0 ¾fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

0fm 5ft (531_1)

-1.6m (500_1, 50_1)

Office Notes

Chart new rock.

2.20) Profile/Beam - 3/1 from h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Survey Summary

Survey Position: 60° 07' 48.068" N, 148° 06' 21.956" W

Least Depth: -1.59 m

Timestamp: 2004-273.18:40:32.000 (09/29/2004)

DP Dataset: h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Profile/Beam: 3/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

DP27303 new rock swd ext: a new rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-273/h11388_uwtroc_add_point.shp	3/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0 ¾fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

0fm 5ft (531_1)

-1.6m (500_1, 50_1)

Office Notes

Chart new rock.

2.21) Profile/Beam - 7/1 from h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Survey Summary

Survey Position: 60° 08' 12.415" N, 148° 06' 27.209" W

Least Depth: -1.40 m

Timestamp: 2004-273.19:13:47.000 (09/29/2004)

DP Dataset: h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Profile/Beam: 7/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

DP27308: a new rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-273/h11388_uwtroc_add_point.shp	7/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0 ¾fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

0fm 4ft (531_1)

-1.4m (500_1, 50_1)

Office Notes

Do not chart new rock.

2.22) Profile/Beam - 15/1 from h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Survey Summary

Survey Position: 60° 08' 36.920" N, 148° 06' 20.272" W

Least Depth: -1.31 m

Timestamp: 2004-273.19:57:17.000 (09/29/2004)

DP Dataset: h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Profile/Beam: 15/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

DP27316 part of ledge: a new rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-273/h11388_uwtroc_add_point.shp	15/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0 ¾fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

0fm 4ft (531_1)

-1.3m (500_1, 50_1)

Office Notes

Chart new rock.

2.23) Profile/Beam - 1/1 from h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Survey Summary

Survey Position: 60° 07' 24.564" N, 148° 06' 48.722" W

Least Depth: -1.29 m

Timestamp: 2004-273.18:19:57.000 (09/29/2004)

DP Dataset: h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Profile/Beam: 1/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

DP27301: a new rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-273/h11388_uwtroc_add_point.shp	1/1	0.00	000.0	Primary

Hydrographer Recommendations

Cartographically-Rounded Depth (Affected Charts):

0 ¾fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

0fm 4ft (531_1)

-1.3m (500_1, 50_1)

Office Notes

Chart new rock.

2.24) Profile/Beam - 14/1 from h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Survey Summary

Survey Position: 60° 08' 37.021" N, 148° 06' 15.023" W

Least Depth: -1.24 m

Timestamp: 2004-273.19:52:02.000 (09/29/2004)

DP Dataset: h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Profile/Beam: 14/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

DP27315 ledge: a new rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-273/h11388_uwtroc_add_point.shp	14/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0 ½fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

0fm 4ft (531_1)

-1.3m (500_1, 50_1)

Office Notes

Chart new rock.

2.25) Profile/Beam - 13/1 from h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Survey Summary

Survey Position: 60° 08' 37.111" N, 148° 06' 12.686" W

Least Depth: -1.23 m

Timestamp: 2004-273.19:50:52.000 (09/29/2004)

DP Dataset: h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Profile/Beam: 13/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

DP27314 ledge: a new rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-273/h11388_uwtroc_add_point.shp	13/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0 ½fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

0fm 4ft (531_1)

-1.3m (500_1, 50_1)

Office Notes

Chart new rock.

2.26) Profile/Beam - 23/1 from h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Survey Summary

Survey Position: 60° 07' 54.516" N, 148° 06' 49.673" W

Least Depth: -1.21 m

Timestamp: 2004-274.18:43:52.000 (09/30/2004)

DP Dataset: h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Profile/Beam: 23/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

dp27402 new rk: a new rk swd ext ledge

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-273/h11388_uwtroc_add_point.shp	23/1	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

0 ½fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

0fm 4ft (531_1)

-1.2m (500_1, 50_1)

Office Notes

Chart new rock.

2.27) Profile/Beam - 4/1 from h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Survey Summary

Survey Position: 60° 07' 41.185" N, 148° 06' 28.318" W

Least Depth: -1.17 m

Timestamp: 2004-273.18:45:57.000 (09/29/2004)

DP Dataset: h11388 / dolphin_0 / 2004-273 / h11388_uwtroc_add_point.shp

Profile/Beam: 4/1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

DP27304: a nw rk

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11388/dolphin_0/2004-273/h11388_uwtroc_add_point.shp	4/1	0.00	000.0	Primary

Hydrographer Recommendations

Cartographically-Rounded Depth (Affected Charts):

0 ½fm (16702_1, 16701_1, 16700_1, 16013_1, 530_1)

0fm 4ft (531_1)

-1.2m (500_1, 50_1)

Office Notes

Chart new rock.

3 - Geographical Positions (GPs)

3.1) GP No. - 1 from ChartGPs - Digitized

Survey Summary

Survey Position: 60° 09' 56.025" N, 148° 07' 08.846" W

Least Depth: [None]

Timestamp: 2005-202.14:22:18 (07/21/2005)

GP Dataset: ChartGPs - Digitized

GP No.: 1

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

Rock not found at charted location and disproved with multibeam.

Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	1	0.00	000.0	Primary

Hydrographer Recommendations

Move charted rock and danger circle to location of source shoreline rock and DP27406, approx. 75 meters to the west.

Office Notes

Added blue note to remove charted rock.

3.2) GP No. - 2 from ChartGPs - Digitized

Survey Summary

Survey Position: 60° 07' 32.405" N, 148° 06' 36.087" W

Least Depth: [None]

Timestamp: 2005-209.10:23:15 (07/28/2005)

GP Dataset: ChartGPs - Digitized

GP No.: 2

Charts Affected: 16702_1, 16701_1, 16700_1, 16013_1, 531_1, 500_1, 530_1, 50_1

Remarks:

Rock disproved with multibeam coverage at charted location.

Feature Correlation

Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	2	0.00	000.0	Primary

Hydrographer Recommendations

Revise contour and chart rock awash at locatoin of feature 2277/1

Office Notes

Added blue note to remove charted rock.

U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: April 25, 2005

HYDROGRAPHIC BRANCH: Pacific
HYDROGRAPHIC PROJECT: OPR-P139-TC-2004
HYDROGRAPHIC SHEET: H11388

LOCALITY: Bainbridge Pass, Alaska
TIME PERIOD: September 28 - October 14, 2004

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

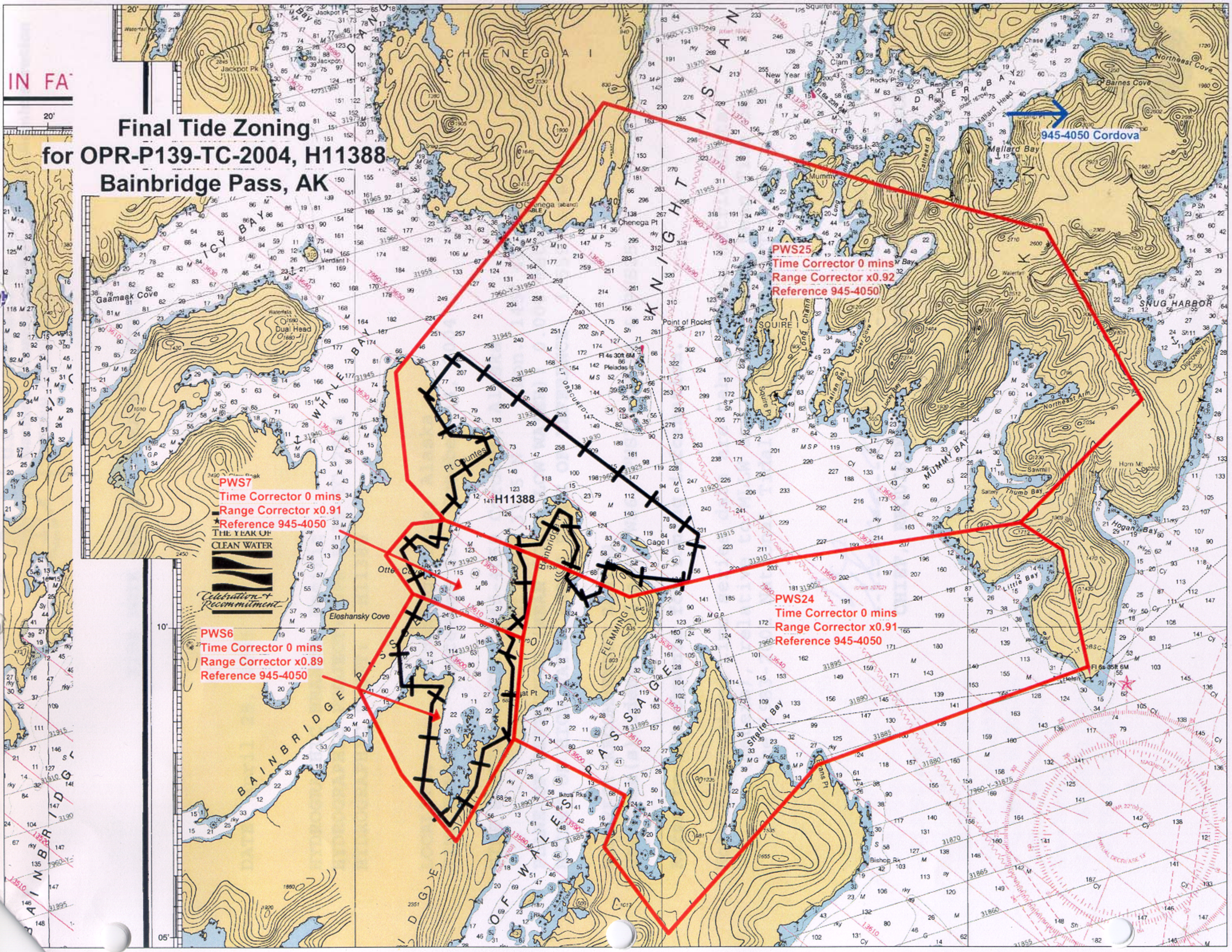
REMARKS: RECOMMENDED ZONING
Use zone(s) identified as: PWS6, PWS7, PWS24 & PWS25

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).

Thomas N. Neu 5/3/05

CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION



Final Tide Zoning
for OPR-P139-TC-2004, H11388
Bainbridge Pass, AK
945-4050 Cordova
PWS25
Time Corrector 0 mins
Range Corrector x0.92
Reference 945-4050
PWS7
Time Corrector 0 mins
Range Corrector x0.91
Reference 945-4050
H11388
PWS24
Time Corrector 0 mins
Range Corrector x0.91
Reference 945-4050
PWS6
Time Corrector 0 mins
Range Corrector x0.89
Reference 945-4050
THE YEAR OF CLEAN WATER
Celebration + Recommitment

H11388 HCell Supplemental Report

Peter Holmberg, Physical Scientist
Pacific Hydrographic Branch

Introduction

The primary purpose of the HCell is to directly update NOAA ENCs with new survey information in International Hydrographic Organization (IHO) format S-57. HCell compilation of survey H11388 utilized Office of Coast Survey HCell Specifications Version 2.0, April 2, 2007. HCell H11388 will be used to update chart 16702, 1:40,000 (13th Ed.; November, 2005, NM 9/1/2007) and US5AK28M.

1. Compilation Scale

The density of soundings in the HCell are compiled as appropriate to emulate those soundings of Chart 16702, 1:40,000. Position and density of non-bathymetric features included in the HCell have not been generalized from the scale of the hydrographic survey, 1:10,000.

2. Soundings

2.1 Source Data

A 5 meter resolution Combined BASE surface, **H11388_5m_cmbd** was used as the basis for HCell production following Branch certification.

A survey-scale full density sounding (SOUNDG) feature object source layer was built from the **H11388_5m_cmbd** surface in CARIS BASE Editor. A shoal-biased selection was made at 1:10,000 survey scale using a radius table with values shown in **Table 1**. The sounding feature object source layer was exported from BASE Editor as **H11388_SS**, and imported into HOM.

Upper limit (m)	Lower limit (m)	Radius (mm)
0	10	3
10	20	4
20	50	4.5
50	500	5

Table 1

2.2 Sounding Feature Objects

In CARIS BASE Editor soundings were manually selected from the high density sounding layer **H11388_SS**, and imported into a new layer 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 16702 than is possible using automated methods. See section 10.1, Data Processing Notes, for details about the use of manual sounding selection for H11388. The sounding feature object source layer was exported as **H11388_CS**, and imported into HOM.

3. Depth Areas

3.1 Source Data

The BASE surface **H11388_5m_cmbd** was used to generate encompassing depth areas, and, for survey evaluation and verification purposes only, sets of chart equivalent contours. No actual depth contours were delivered per OCS H-Cell Specifications ver. 2.0.

3.2 Depth Area Feature Objects

One all-encompassing depth range, 0 meters to 500 meters, was used for all depth area objects below MLLW. Upon conversion to NOAA charting units, this depth range is 0 fathoms to 273 fathoms.

Fourteen separate depth areas were created for shoreline features located beyond the extents of hydrography. Depth ranges for the areas were taken directly from the ENC.

4. Meta Areas

The following Meta object areas are included in HCell 11388:

M_QUAL M_NSYS
M_COVR

Meta area objects were constructed on the basis of perimeter lines delineating the surveyed limits, “islands of coverage” for point features surveyed outside the hydrographic 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 HCell Specifications, ver. 2.0.

5. Survey Features

All features for H11388 were delivered in Pydro and imported into HOM. Once in HOM the features were reviewed and incorrect and incomplete S-57 attribution was repaired. Final decisions on the charting of individual features were made in HOM. The office notes tab for each feature in Pydro was populated during HCell compilation to reflect the cartographic actions taken. The office notes are printed in red at the bottom of each page of the feature report exported from Pydro.

6. Shoreline / Tide Delineation

Depth areas (DEPARE) and Seabed areas (SBDARE) 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. 2.0.

8. Layout

8.1 CARIS HOM Layering Scheme

100	Chart scale soundings
101	Survey scale soundings
200	Group 1 objects (Skin of the Earth)
300	Point objects
600-602	Meta layers
800	Items used for creation of Blue Notes

8.2 Blue Notes

Notes regarding data sources are in CARIS HOM as layer 800 as Shapefile sets, **H11388_bluenotes_p** and **H11388_bluenotes_l** (with the appropriate extensions) for point and line figures, respectively.

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 HOM, 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.

HOM 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 HOM yields an acceptable density and distribution of depths, generally bunching soundings near shore 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

H11388 was subjected to QA and Validation checks in HOM 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 5.0 (Service Pack 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

- H11388 Base Cell File, Chart Units, Soundings compiled to 1:40,000
- H11388 Base Cell File, Chart Units, Soundings compiled to 1:10,000
- H11388 Descriptive Report including end notes compiled during office processing and certification
- H11388 HCell Supplemental Report
- Blue Notes shape files
- BAG (Bathymetry Attributes Grid)
- 000 Features File

11.2 File Naming Conventions

HOM file set prefix: *H11388_hc*

MCD Chart units base cell file: *US511388_CS.000*

MCD Chart units base cell file, survey scale soundings: *US511388_SS.000*

BAG (for CGTP): *H11388_5m.bag*

Features File (for CGTP): *H11388_Features.000*

11.3 Software

HIPS 6.1:	Management and inspection of Combined BASE surfaces
BASE Editor 1.0:	Combination of Product Surfaces and initial creation of the S-57 bathymetry-derived features
BASE Editor 2.0:	Creation of BAG deliverable
HOM 3.3:	Assembly of the H-Cell, S-57 products, QA
GIS 4.4a:	Setting the sounding rounding variable
Pydro v7.3 (r2014_TCfix)	Creation of features and DTON reports
dKart Inspector 5.0:	Validation of the base cell file

12. Contacts

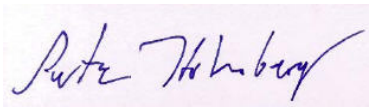
Inquiries regarding this HCell content or construction should be directed to:

Peter Holmberg, Physical Scientist, PHB, Seattle, WA; 206-526-6843;
Peter.Holmberg@noaa.gov.

APPROVAL SHEET
H11388

Initial Approvals:

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



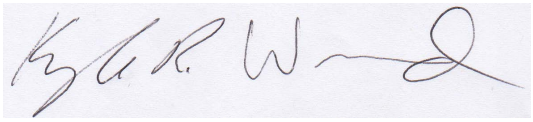
Pete Holmberg
2007.11.09 14:24:45 -08'00'

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

Digitally signed by Gary C. Nelson
DN: cn=Gary C. Nelson, c=US, o=NOAA, ou=Pacific Hydrographic Branch, email=gary.nelson@noaa.gov
Date: 2007.11.13 12:47:17 -08'00'

I have reviewed the H-Cell, 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.

David Neander
2007.11.13 14:34:24 -08'00'



Kyle R. Ward
AWOIS and SURF check
2007.11.30 11:09:38 -05'00'