H12011

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey: **Navigable Area**

Registry Number: **H12011**

LOCALITY

State: Rhode Island

General Locality: Block Island Sound

Sub-locality: 4 nautical miles South of Point Judith

2009

CHIEF OF PARTY
Shepard M. Smith
NOAA

LIBRARY & ARCHIVES

DATE

NOAA FORM 77-28 (11-72) U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTRY NUMBER:
HYDROGRAPHIC TITLE SHEET	**H12011**

INSTRUCTIONS: The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

State:	**Rhode Island**		
General Locality:	**Block Island Sound**		
Sub-Locality:	**4 nautical miles South of Point Judith**		
Scale:	**1:20,000**	Date of Survey:	**24 July 09 to 25 August 2009**
Instructions Dated:	**26 February 2009**	Project Number:	**OPR-B363-TJ-09**
Vessel:	**NOAA Ship *Thomas Jefferson***		
Chief of Party:	**Shepard M. Smith**		
Surveyed by:	***Thomas Jefferson* Personnel**		
Soundings by:	**Reson 7125 multibeam echosounders.**		
Graphic record scaled by:	**N/A**		
Graphic record checked by:	**N/A**		
Protracted by:	**N/A**	Automated Plot:	**N/A**
Verification by:	***Atlantic Hydrographic Branch Personnel***		
Soundings in:	**Meters at MLLW***		

H-Cell compilation units in: Feet at MLLW

Remarks:

1) All Times are in UTC.

2) This is a Navigable Area Hydrographic Survey.

3) Projection is UTM Zone 19, NAD83.

Bold italic red notes in the Descriptive Report were made during office processing.

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List of Tables

Descriptive Report to Accompany Hydrographic Survey H12011

Project OPR-B363-TJ-09
Block Island Sound
4 nautical miles South of Point Judith, Rhode Island
Scale 1:20,000
24 July to 25 August 2009
NOAA Ship *Thomas Jefferson*

A. AREA SURVEYED

This hydrographic survey was completed as specified by Hydrographic Survey Letter Instructions OPR-B363-TJ-09, dated 26 February 2009. The survey area includes the area 4 nautical miles south of Point Judith, Rhode Island.

North Eastern Limit	South Eastern Limit	North Western Limit	South Eastern Limit
41° 19’ 42.6” N 071° 25’ 58.8” W	41° 15’ 40.8” N 071° 25’ 15.6” W	41° 19’ 05.4” N 071° 38’ 19.8” W	41° 15’ 39.6” N 071° 38’ 18.0” W

Data acquisition was conducted from 24 July 09 to 25 August 09.

The purpose of this project is to update the nautical charts in the area. Most of the bathymetry is from surveys completed before 1940. This project responds, in part, to a request from the President of the Northeast Marine Pilots for new hydrographic survey to support deep draft (60') vessels carrying oil along the route that proceeds northwest from the precautionary area south of the Narragansett Bay and Buzzards Bay traffic lanes.

NOAA Ship *Thomas Jefferson* H12011	
LNM Single beam mainscheme only	N/A
LNM Multibeam mainscheme only	833.28
LNM Lidar mainscheme only	N/A
LNM Side Scan Sonar mainscheme only	N/A
Lineal nautical miles of any combination of the above techniques (specify methods)	833.28
LNM Crosslines singlebeam and multibeam combined	31.46
LNM Lidar Crosslines	N/A
LNM development lines non mainscheme	99.56
LNM shoreline/nearshore investigations	N/A
Number of Bottom Samples	13
Number of items investigated that required additional time/effort in the field beyond the above survey operations	16
Total number of square nautical miles	33.31

Table 1: Hydrographic Survey Statistics

Survey limits of H12011 are shown on the following page.

Calendar Date	Julian Day
24 July	205
25 July	206
26 July	207
27 July	208
28 July	209
4 August	216
5 August	217
6 August	218
7 August	219
8 August	220
11 August	223
20 August	232
21 August	233
25 August	237

Table 2: Dates of Multibeam Data Acquisition in Calendar and Julian Days

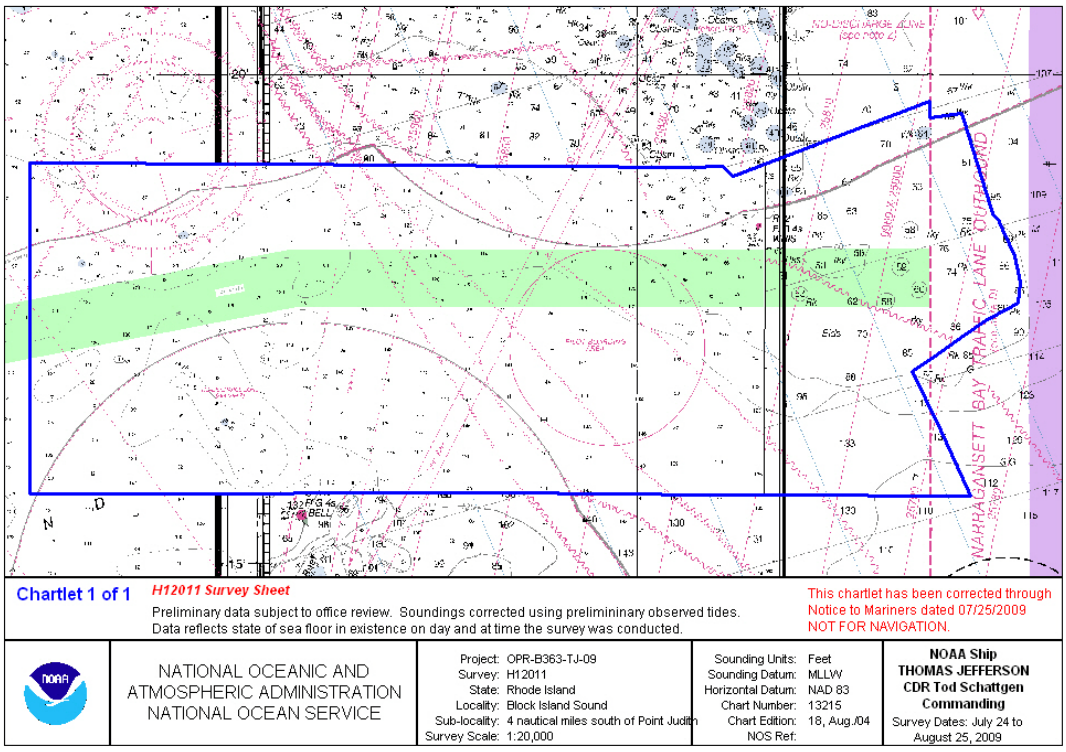


Figure 1: H12011 Survey Area

B. DATA ACQUISTION AND PROCESSING *See also the H-Cell report.*

Refer to ***OPR-B363-TJ-09 Data Acquisition and Processing Report (DAPR)**** for a complete description of data acquisition and processing systems, survey vessels, quality control procedures and data processing methods. Additional information to supplement sounding and survey data, and any deviations from the DAPR are included in this descriptive report.

B 1. EQUIPMENT AND VESSELS

Data were acquired by NOAA Ship *Thomas Jefferson* and Hydrographic Survey Launch (HSL) 3102. Both ship and launch acquired Reson 7125 multibeam echosounder soundings and sound velocity profiles. NOAA Ship *Thomas Jefferson* also collected bottom samples. Vessel configurations, equipment operation and data acquisition and processing were consistent with specifications described in the DAPR*.

B 2. QUALITY CONTROL

B 2.1 System Certification and Calibration

Refer to NOAA Ship *Thomas Jefferson's* DAPR and Hydrographic Systems Readiness Report (HSRR)** for a complete description of system integration and initial calibration results for equipment and sensors used for this survey.

B.2.2 Sounding Coverage

Per the Letter Instructions, survey H12011 was conducted using complete coverage multibeam in depths > 20m, and object detection multibeam coverage over features, and in depths ≤ 20m. In depths > 20m bathymetry coverage was monitored by creation of a CUBE surface gridded at 2m resolution. In depths ≤ 20m bathymetry coverage was monitored by creation of a CUBE surface gridded at 0.5m resolution.

The survey limits for H12011 were modified prior of acquisition to include a rectangle 2.7 nautical miles wide by 3.4 nautical miles tall, to the West of the original survey outline. ***Concur***

B 2.3 Crosslines

Multibeam echosounder cross-lines totaling 31.46 lineal nautical miles, comprising 3.5%* of mainscheam multibeam hydrography, were acquired during the course of the survey. Cross lines were acquired by NOAA Ship *Thomas Jefferson,* and analyzed using CARIS BASE Editor. A difference surface showed 90.8% of comparison nodes had an absolute difference of 0.10m or less. ***Do not concur. An office QC determined that crosslines represent 3.04% of mainscheme multibeam data.***

***Included with survey deliverables.**
****Included with original field unit submission.**

B 2.4 Junctions and Prior Surveys *See also the H-Cell report.*

The following contemporary surveys junction H12011:

Registry #	Scale	Date	Field Party	Junction side
H11322	1:10,000	2004	Rude	Northeast
H12009	1:20,000	2009	Thomas Jefferson	Southeast
H12010	1:7,500	2009	Thomas Jefferson	Southwest
H12015	1:20,000	2009	Thomas Jefferson	West
H12023	1:7,500	2009	Thomas Jefferson	North

Table 3. Junction Surveys

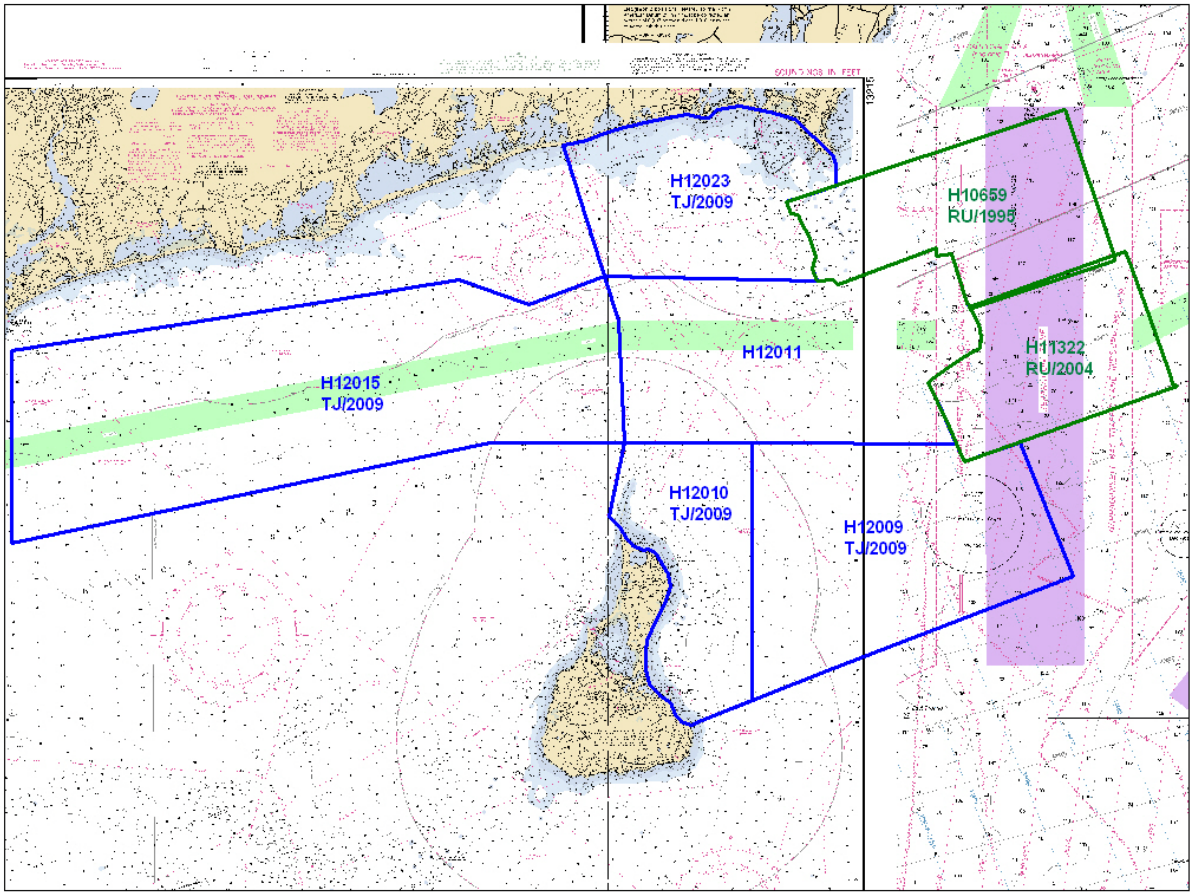


Figure 2. H12011 Junction Surveys.

Comparison between H12011 and junction surveys was monitored by creation of CARIS Base Editor Difference surfaces. Results are as follows:

H12011 compared to H12023: Out of 9620 comparison nodes, 32.0% were within 1 foot, and 92.0% were within 2 feet. ***Concur***

H12011 compared to H12015: Out of 235210 comparison nodes, 98.5% were within 1 foot, and 99.8% were within 2 feet**.** ***Concur***

H12011 compared to H12010: Out of 55121 comparison nodes, 97.9% were within 1 foot, and 99.4% were within 2 feet. ***Concur***

H12011 compared to H12009: Out of 110828 comparison nodes, 88.0% were within 1 foot, and 99.8% were within 2 feet. ***Concur***

H12011 compared to H11322: Out of 217 comparison nodes, 78% were within 1 foot, and 95.8% were within 2 feet. ***Concur***

H10659 was conducted over 5 years prior to H12011, and will not be compared.

B 2.5 Systematic Errors

Two systematic errors occurred during data acquisition on survey H12011.

B 2.5.1

On Julian Days 232 and 233, a roll error of unknown origins occurred in data collected with HSL 3102. The error varied in severity from negligible, to near 90° from horizontal. A review of navigation, attitude, and true heave data revealed no obvious inconsistencies. Lines affected by the error were filtered to 20 meters from nadir, and were reviewed in Subset Editor to remove any remaining outliers. The picture below is a screenshot of an un-filtered line showing the roll error. ***Concur with clarification. The error described by the field unit is due to an incorrect sound velocity profile and not a roll error.***

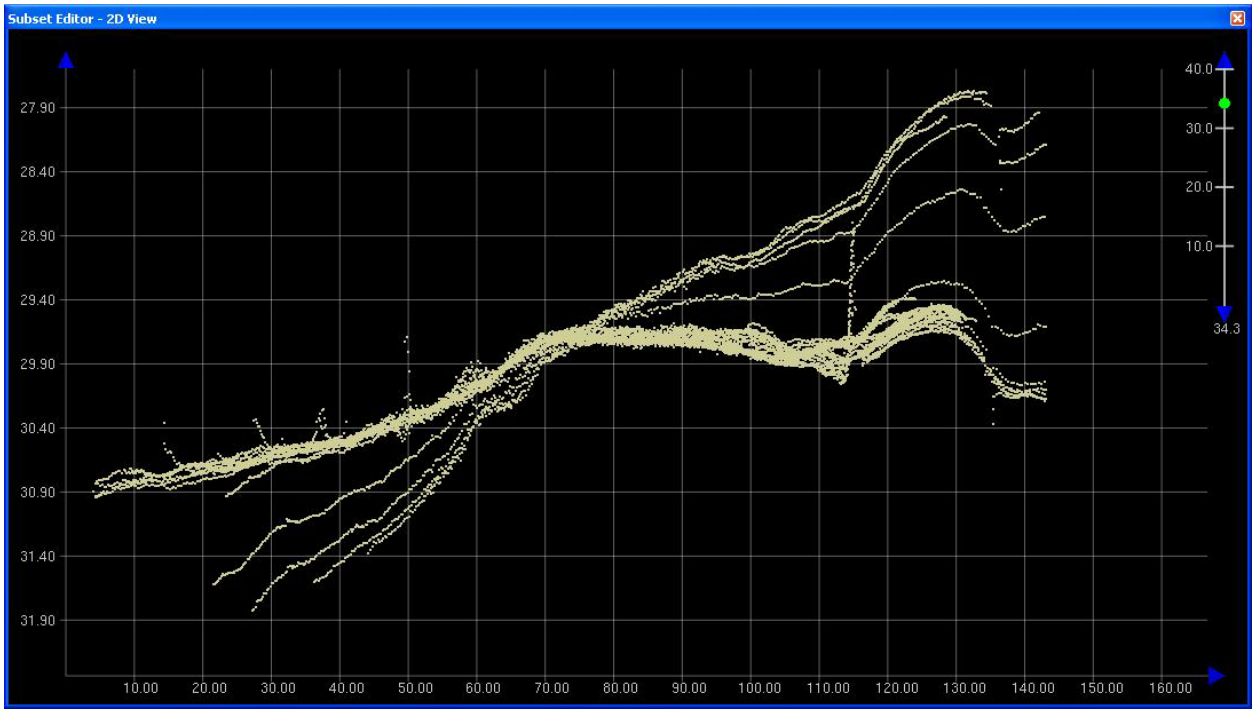


Figure 3: Subset Editor showing roll error from HSL 3102

B 2.5.2

An SVP error occurred in all data collected by NOAA Ship Thomas Jefferson. Over a 100m swath, the error was a standard 0.20m, remaining within the acceptable error budget. The picture below is a screenshot of the Standard Deviation layer of the H12011_East_2m_CUBE surface. The SVP error is clearly visible at the outer edges of each swath. ***Concur - A notable SVP error is present in the submitted data. This error is a random error that occurred during the acquisition of the svp data and cannot be resolved using normal editing techniques. The data was examined and meets NOS/IHO specifications.***

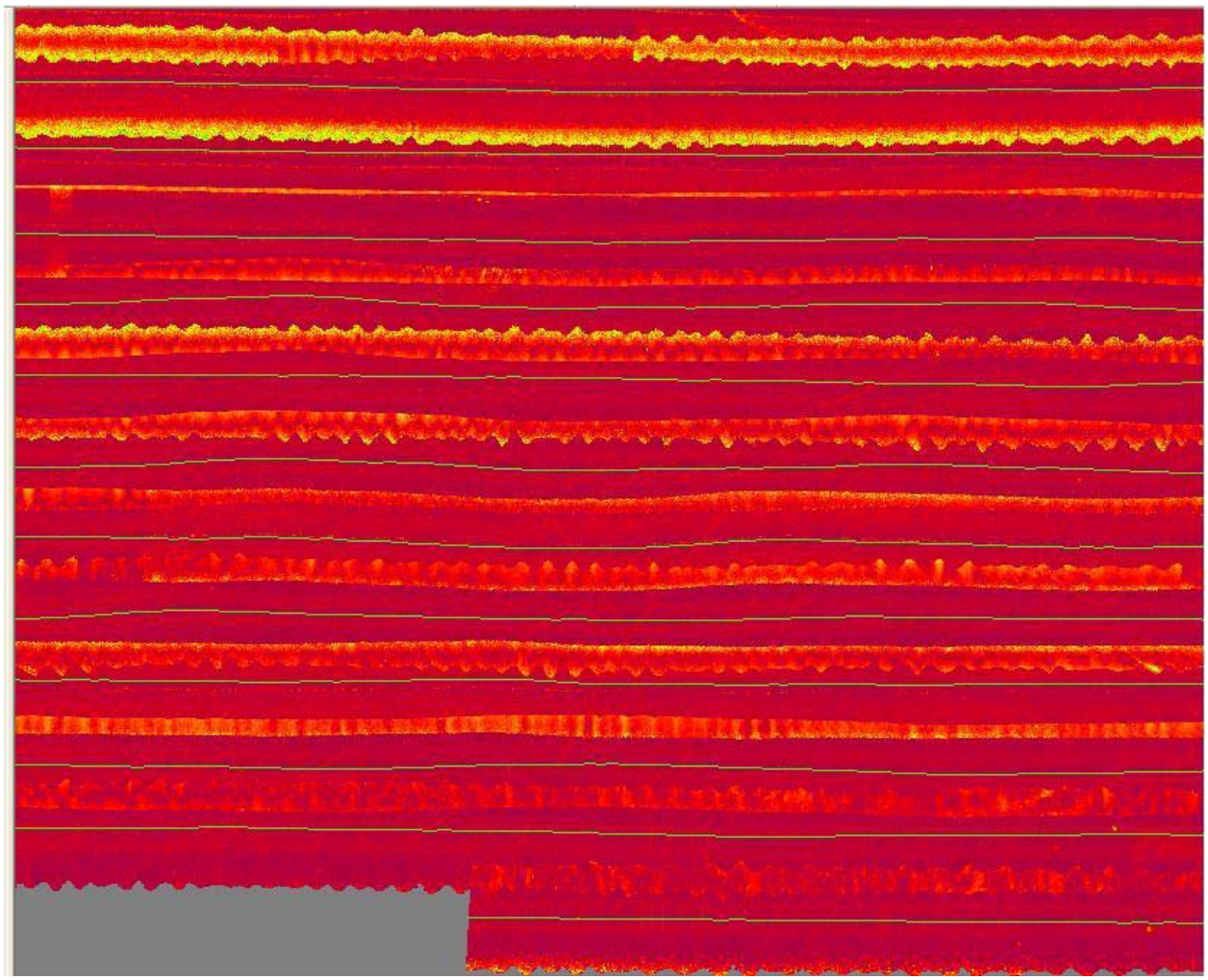


Figure 4: Standard deviation layer showing SVP error on edges

B 3. CORRECTIONS TO ECHO SOUNDING

HDCS sounding data were reduced to Mean Lower-Low Water (MLLW) using verified water levels from New London, CT (8461490), Newport, RI (8452660), and Montauk, NY (8510560) adjusted for tidal constituents and residuals provided by CO-OPS illustrated in Figure 5.

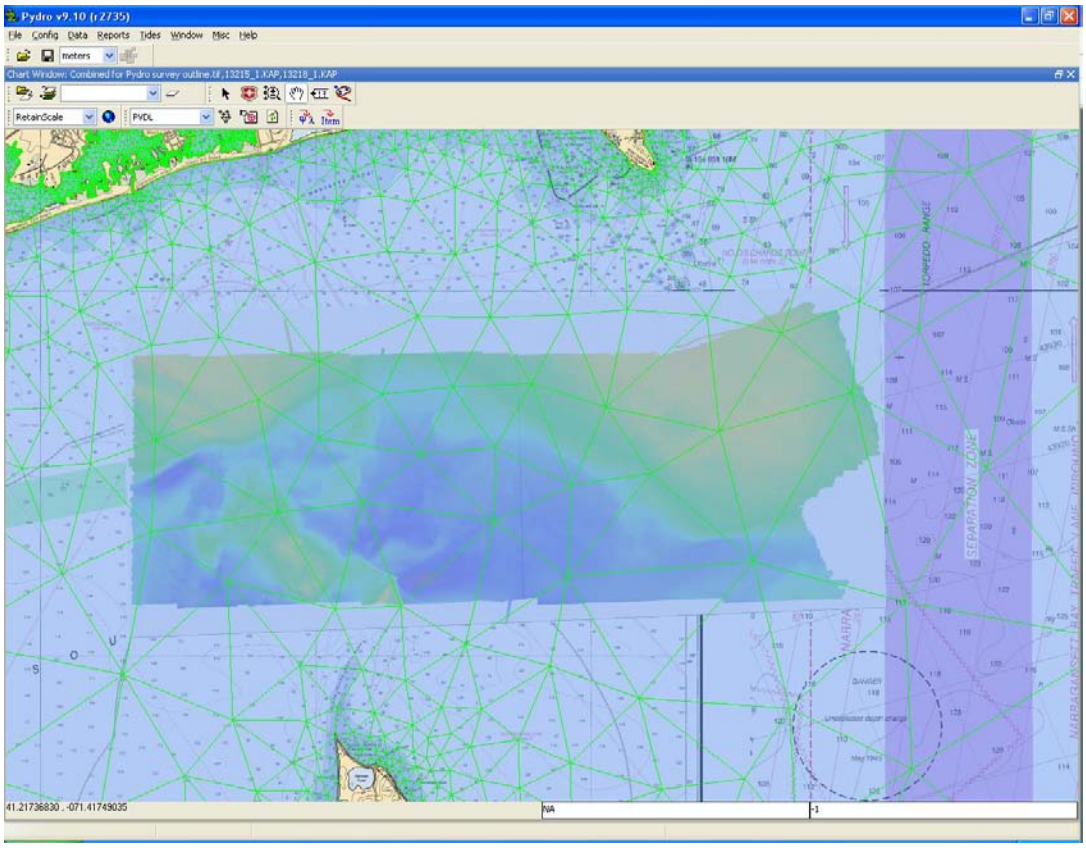


Figure 5: Final Tide Zoning

All other datum reduction procedures conform to those outlined in the DAPR**.**

All methods and instruments used for sound velocity correction were as described in the DAPR. A table detailing all sound velocity casts is located in Separate II of this Descriptive Report.

B 4. DATA PROCESSING

B 4.1 Total Propagated Error

For the 2009 field season, Total Propagated Error (TPE) parameters for sound speed and tides have been calculated separately for each project. The project-specific parameters for OPR-B363-TJ-09, Survey H12011 are as follows:

Project	Vessel	Tide Values		Sound Speed Values		
		Measured	Zoning	CTD	MVP	Surface
H12011	3102	TCARI	TCARI	4	NA	0.2
	S222	TCARI	TCARI	4	1	0.2

Table 4. TPE Parameters

These values were calculated for all MBES data immediately following CARIS Merge. ***Concur***

B 4.2 BASE Surfaces and Mosaics

The following table describes all BASE Surfaces and Mosaics submitted as part of Survey H12011:

Name of Fieldsheet	Resolution	Type	Purpose
H12011_West_Cube_NOAA_2m_Final	2m	CUBE	Complete coverage
H12011_East_ Cube_NOAA_2m_Final	2m	CUBE	Complete coverage
H12011_Object_Detection_NW_Cube_NOAA_50cm_Final	50cm	CUBE	Object Detection
H12011_Object_Detection_NE_ Cube_NOAA_50cm_Final	50cm	CUBE	Object Detection
H12011_Object_Detection_SW_Cube_NOAA_50cm_Final	50cm	CUBE	Object Detection
H12011_Object_Detection_SE_ Cube_NOAA_50cm_Final	50cm	CUBE	Object Detection
AWOIS_1856_ Cube_NOAA_50cm_Final	50cm	CUBE	Object Detection
AWOIS_2712_ Cube_NOAA_50cm_Final	50cm	CUBE	Object Detection
AWOIS_2917_Cube_NOAA_50cm_Final	50cm	CUBE	Object Detection
AWOIS_2923_ Cube_NOAA_50cm_Final	50cm	CUBE	Object Detection
AWOIS_8898_ Cube_NOAA_50cm_Final	50cm	CUBE	Object Detection
AWOIS_14442_Cube_NOAA_50cm_Final	50cm	CUBE	Object Detection
New_Wreck_1_ Cube_NOAA_50cm_Final	50cm	CUBE	Object Detection
New_Wreck_2_ Cube_NOAA_50cm_Final	50cm	CUBE	Object Detection
New_Wreck_3_ Cube_NOAA_50cm_Final	50cm	CUBE	Object Detection
New_Wreck_4_ Cube_NOAA_50cm_Final	50cm	CUBE	Object Detection
New_Wreck_5_ Cube_NOAA_50cm_Final	50cm	CUBE	Object Detection
New_Wreck_6_ Cube_NOAA_50cm_Final	50cm	CUBE	Object Detection
New_Wreck_7_ Cube_NOAA_1m_Final	1m	CUBE	Object Detection

Table 5. BASE Surfaces

This survey was processed using the Combined Uncertainty and Bathymetry Estimator (CUBE) algorithm. The CUBE configuration was set to NOAA_2m for the 2 meter coverage surface and NOAA_0.5m for the 50cm object detection, AWOIS, and feature surfaces. Refer to the 2009 Data Acquisition and Processing Report, 2009 Field Procedures Manual, and CARIS HIPS and SIPS User Guide for further discussion.

C. VERTICAL AND HORIZONTAL CONTROL

As per FPM section 5.2.3.2.3 a HVCR report was not filed as no horizontal and vertical control stations were established by the field party for this survey. A summary of horizontal and vertical control for this survey follows.

C 1.1 Horizontal Control *See also the H-Cell report.*

The horizontal datum for this project is the North American Datum of 1983 (NAD83), zone 19. Differential GPS (DGPS) was the sole method of positioning. Differential corrections from U.S. Coast Guard beacons at Moriches, NY (293 kHz), and Acushnet, MA (kHz 306), were used during this survey.

No horizontal control stations were established by the field party for this survey.

C 1.2 Vertical Control

The vertical datum for this project is Mean Lower-Low Water (MLLW). The operating National Water Level Observation Network (NWLON) station at New London, CT (8461490), Newport, RI (8452660), and Montauk, NY (8510560) will serve as datum control for H12011. Verified tides with final TCARI constituents and residuals were applied to all sounding data. A request for delivery of final approved (verified) tides for this survey was forwarded to N/OPS1 on 26 August 2009 in accordance with the FPM and project letter instructions. ***Conur – Approved tides and zoning were applied during field processing***

D. RESULTS AND RECOMMENDATIONS *See also the H-Cell report.*

D.1 Chart Comparison

Survey H12011 was compared with chart 13215 (28th Ed; August 2004, 1:40,000), and chart 13218 (40th Ed; February 2008, 1:80,000), the largest scale charts in the area to look for Dangers to Navigation, to ensure that all charted features were addressed, and to assess compilation priority of the survey. DTONs and charted features comparisons are located in the feature report and a compilation priority is contained in Section D.8. There were no additional observations as a result of this comparison.

D.2 Additional Results

D.2.1 Automated Wreck and Obstruction Information Service (AWOIS) Items

A total of 5 assigned AWOIS items were located within the modified limits of H12011 and investigated during this survey. AWOIS items were investigated with Object Detection resolution multibeam over the search radius. All AWOIS items are described in detail in Appendix II of this Descriptive Report. ***Concur***

D.2.4 Shoreline

There is no shoreline within the sheet limits of survey H12011 ***Concur***

D.2.5 Charted Features

All charted features and item investigations are described in detail in Appendix II of this Descriptive Report. ***Concur***.

D.2.6 Charted Pipelines and Cables

Several charted cables transect the survey area. None of these cables are visible in multibeam data. The Hydrographer has no recommendations on these cables. ***Concur.***

D.2.7 Bridges, Ferry Routes, and Overhead Cables

There are no ferry routes, bridges, or overhead cable crossings within the limits of the survey. ***Concur***

D.3 Dangers to Navigation and Shoals

D 3.1 Dangers to Navigation

No dangers to navigation were found or reported to NOAA's Office of Coast Survey. ***Concur.***

D 3.2 Shoals

There was no evidence of shoaling. ***Concur.***

D.4 Aids to Navigation

There is 1 charted Aids to Navigation (ATON) within the revised limits of H12011.

All Aids to Navigation were found to be on station and serving their intended purpose. The Hydrographer has no recommendations regarding these ATONs. ***Concur.***

D.5 Coast Pilot Information

The Hydrographer has no recommendations for changes or addenda to the Coast Pilot. ***Concur.***

D.6 Miscellaneous ***See also the H-Cell report.***

Bottom Samples

Bottom samples were collected in accordance with NOAA Hydrographic Survey Specifications and Deliverables. A complete description of all bottom samples acquired during Survey H12011 is contained in the Pydro PSS. A list of all bottom samples acquired during Survey H12011 is contained in Appendix V. ***Concur.***

Environmental Conditions and Notes

No environmental conditions occurred.

D.8 Adequacy of Survey *See also the H-Cell report.*

This survey is considered complete and adequate to supersede charted depths within the common area as per requirements specified in the Project Letter Instructions.

Summary and Recommendations for Additional Work

No additional work is needed to complete this survey. ***Concur***

E. APPROVAL

As Lead Hydrographer, I have ensured that standard field surveying and processing procedures were followed in producing this examination in accordance with the Office of Coast Survey Hydrographic Surveys Division's *Field Procedures Manual*, and NOS *Hydrographic Surveys Specifications and Deliverables*. Field operations for this basic hydrographic survey were conducted under my daily supervision with frequent checks of progress and adequacy.

All field sheets, this Descriptive Report, and all accompanying records and data are approved. All records are forwarded for final review and processing to N/CS33, Atlantic Hydrographic Branch.

The Data Acquisition and Processing Report for OPR-B363-TJ-09 is submitted separately and contains additional information relevant to this survey.

Approved and Forwarded:

Jasper Schaer
2009.11.16 03:14:21 -05'00'

LT Jasper D. Schaer, NOAA
Field Operations Officer

Digitally signed by Shepard Smith
Date: 2009.11.16 05:55:46 -05'00'

CDR Shepard M. Smith, NOAA
Commanding Officer

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

Survey Manager:

Megan Guberski
2009.11.16 03:13:32
-05'00'

LT(jg) Megan R. Guberski, NOAA
Junior Officer

Appendix I

Dangers to Navigation

NA

Appendix II

Survey Features Report

1. **AWOIS Items**

   ~~4~~ *6*

2. **Charted Features**

   ~~15~~ *10*

3. **Uncharted Features**

   ~~9~~ *1*

H12011 AWOIS Items

Registry Number: H12011

State: Rhode Island

Locality: Block Island Sound

Sub-locality: 4 nautical miles South of Point Judith

Project Number: OPR-B363-TJ-09

Survey Dates: 07/25/2009 - 08/21/2009

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
13215	19th	12/01/2009	1:40,000 (13215_1)	USCG LNM: 7/27/2010 (7/27/2010) CHS NTM: None (7/30/2010) NGA NTM: None (8/7/2010)
13205	38th	02/01/2007	1:80,000 (13205_1)	[L]NTM: ?
13218	41st	10/01/2009	1:80,000 (13218_1)	USCG LNM: 7/27/2010 (7/27/2010) CHS NTM: None (7/30/2010) NGA NTM: 11/15/2003 (8/7/2010)
12300	47th	05/01/2008	1:400,000 (12300_1)	[L]NTM: ?
13006	34th	05/01/2007	1:675,000 (13006_1)	[L]NTM: ?
5161	13th	10/01/2003	1:1,058,400 (5161_1)	[L]NTM: ?
13003	49th	04/01/2007	1:1,200,000 (13003_1)	[L]NTM: ?

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

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	AWOIS #8898	Wreck	21.62 m	41° 19' 25.7" N	071° 26' 07.7" W	8898
1.2	AWOIS #1856	Wreck	21.47 m	41° 18' 03.1" N	071° 37' 30.5" W	1856
1.3	AWOIS #14442	AWOIS	[no data]	[no data]	[no data]	---
1.4	AWOIS #2712	Wreck	22.05 m	41° 19' 33.2" N	071° 25' 45.3" W	---
1.5	AWOIS #2917	Wreck	35.81 m	41° 17' 05.3" N	071° 37' 00.3" W	2917
1.6	AWOIS #2923	Wreck	17.34 m	41° 18' 20.5" N	071° 36' 09.4" W	2923

1 - Final_AWOIS

1.1) AWOIS #8898

Primary Feature for AWOIS Item #8898

Search Position: 41° 19' 23.3" N, 071° 26' 06.3" W

Historical Depth: [None]

Search Radius: 100

Search Technique: [None]

Technique Notes: [None]

History Notes:

HISTORY

H10378/91--OPR-B660-RU; SIDE SCAN SONAR AND DIVER INVESTIGATION ì

LOCATED A STEEL BARGE WITH A LEAST DEPTH OF 19.7M IN POS. ì

LAT.41-19-23.31N, LONG.71-26-06.29W (NAD 83). BARGE ORIENTATED IN ì

A EAST-WEST POSITION. (ENTERED 5/94 MCR)

Survey Summary

Survey Position: 41° 19' 25.7" N, 071° 26' 07.7" W

Least Depth: 21.62 m (= 70.94 ft = 11.824 fm = 11 fm 4.94 ft)

TPU (±1.96σ): **THU (TPEh)** ±1.002 m ; **TVU (TPEv)** ±0.410 m

Timestamp: 2009-206.22:40:19.017 (07/25/2009)

Survey Line: h12011 / tj_s222_reson7125_stbd / 2009-206 / 908_2223

Profile/Beam: 8303/79

Charts Affected: 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

AWOIS Item #8898, located by Multibeam. Creation of a 50cm CUBE surface shows the charted wreck to be three individual wrecks.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12011/tj_s222_reson7125_stbd/2009-206/908_2223	8303/79	0.00	000.0	Primary
h12011/tj_s222_reson7125_stbd/2009-206/908_2223	8337/12	18.97	139.5	Secondary (grouped)
h12011/tj_s222_reson7125_stbd/2009-216/383_1853	1716/512	26.55	159.3	Secondary
BlockIslandAWOIS	AWOIS # 8898	79.48	335.9	Secondary

Hydrographer Recommendations

Revise as per designated sounding, possibly chart as wks.

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 1:non-dangerous wreck
	QUASOU - 6:least depth known
	SORDAT - 20090825
	SORIND - US,US,nsurf,H12011
	TECSOU - 3:found by multi-beam
	VALSOU - 21.624 m
	WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification - This item consist of three wrecks A shoaler wreck was located during field operations to the north. See section Appendix II (Uncharted 1.1) of this report for discussion of that wreck. Due to the chart scale (1;80,000), these wrecks fall within the danger circle of the northern wreck. It is recomended that these wrecks be combined with the northern wreck Delete 64 Wk.

Feature Images

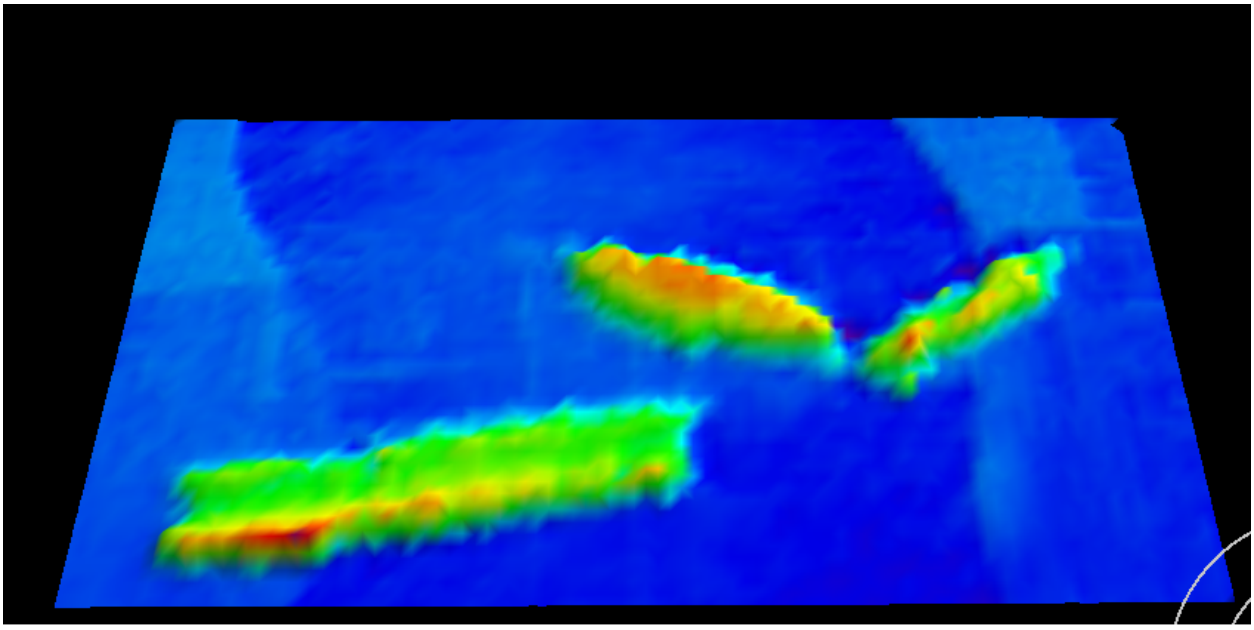
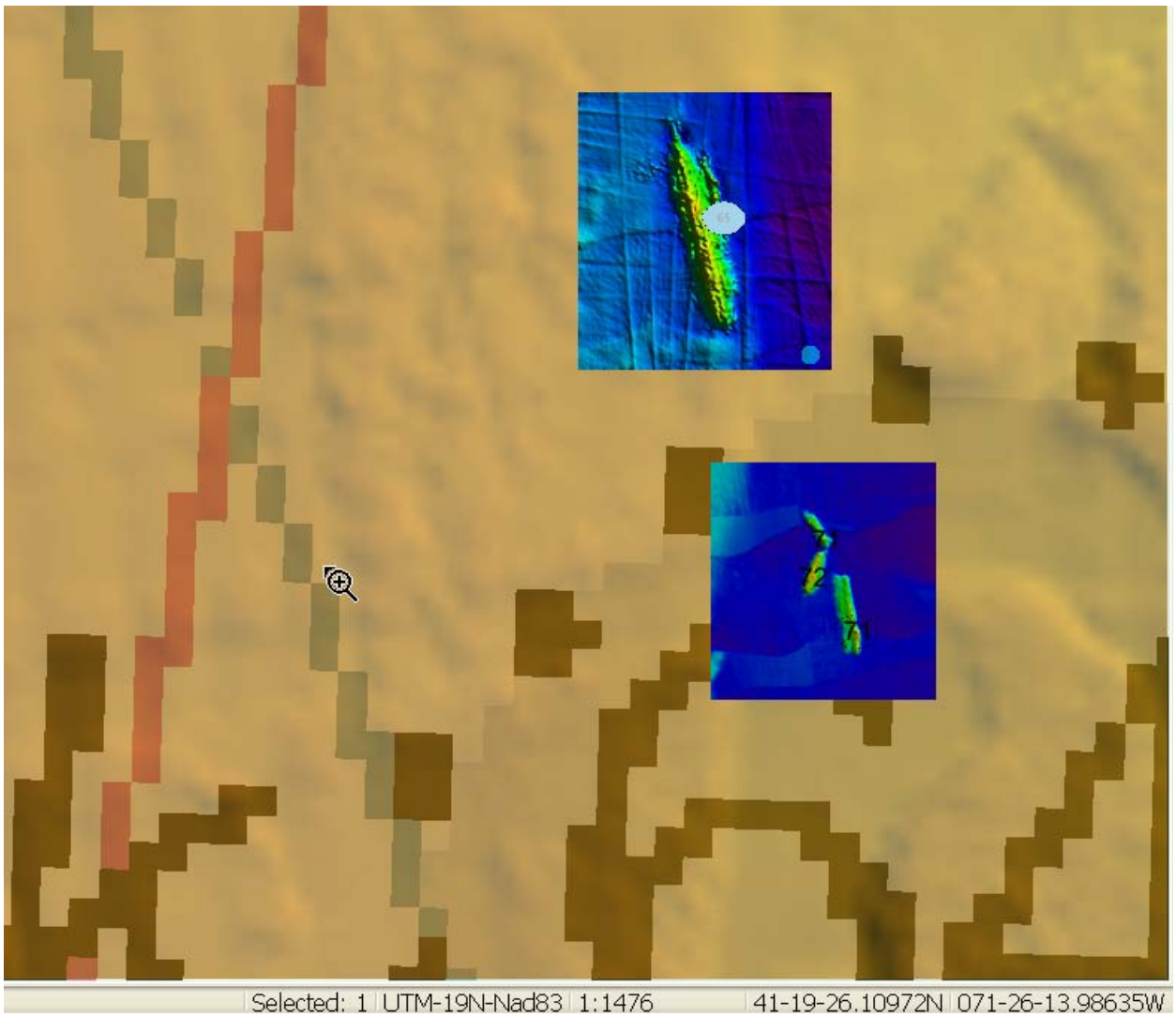


Figure 1.1.1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1:1476
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071-26-13.98635W

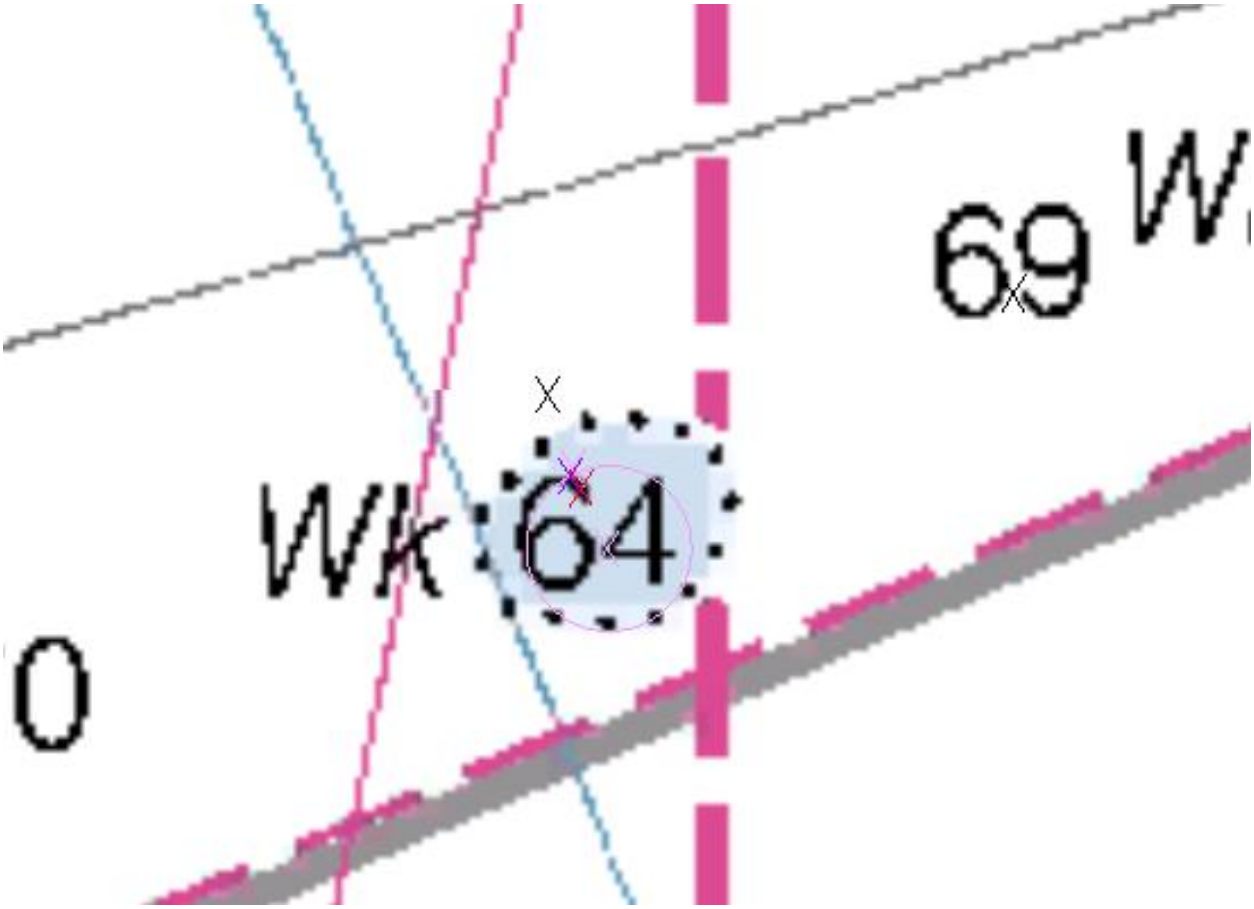


Figure 1.1.2

1.2) AWOIS #1856

Primary Feature for AWOIS Item #1856

Search Position:	41° 18' 02.9" N, 071° 37' 31.0" W
Historical Depth:	20.40 m
Search Radius:	50
Search Technique:	S2,DI,SD,ES,##
Technique Notes:	[None]

History Notes:

SURVEY REQUIREMENT COMMENTS
INITIALLY, SEARCH AROUND LORAN RATES RATHER THAN GP. DIVER INVESTIGATE TO ì
VERIFY IDENTITY. IF WRECK IS NOT LOCATED AT THIS POSITION, OR IF ì
WRECK DOES NOT FIT DESCRIPTION OF THE ANNAPOLIS, CONDUCT SEARCH ì
AROUND GP (3000 M SEARCH RADIUS).

HISTORY
NM8/45--WRECK OF A COAL BARGE WITH THE TOPS OF THE MASTS ì
PROJECTING OUT OF WATER HAS BEEN REPORTED IN 15 FMS OF WATER IN ì
LAT 41-17-54N, LONG 71-38-36W.
NM12/45--WRECK INVESTIGATED AND SEARCH MADE OF THE AREA WITH NO ì
TRACE OF WRECK FOUND.
FE270WD/84--OPR-B660-RU/HE-84; WRECK NEITHER VERIFIED NOR ì
DISPROVED BY THIS SURVEY, BUT THERE WAS NO INDICATION OF WRECK IN ì
LISTED POSITION; FALLS IN AREA CLEARED TO 71 FT. ON THIS SURVEY; ì
EVALUATOR RECOMMENDS WRECK REMAIN AS CHARTED BUT ADD NOTE "PD". ì
(ENTERED MSM 12/88)
FE363/91--OPR-B660-RU; BARGE ANNAPOLIS WAS LOCATED BY SIDE ì
SCAN SONAR IN POS. LAT.41-18-02.86N, LONG.71-37-31.02W (NAD 83) ì
WITH A LEAST DEPTH OF 20.4M (67FT). DIVERS REPORTED EXTENSIVE ì
WRECKAGE INCLUDING PROTRUDING TIMBERS (DIAG. AND VERT.) AND COAL.
(UPDATED 11/93 MCR)

DESCRIPTION
01 BARGE; 1371 GT; 228.7 FT LONG; 40 FT WIDE; 16 FT DRAFT; ì
BUILT 1918 IN WILMINGTON, DEL.; OWNED BY P. DAUGHERTY CO., MD.

24 NO.877; TRAWLER, 1371 GT,SUNK 2/17/45 BY MARINE CASUALTY; POSITION ì ACCURACY 1-3 MILES

195 LORAN C RATES PROVIDED BY MR. RICHARD TARACKA, GREENWICH ì CT. POLICE DEPARTMENT, TEL NO 203-622-8020; IDENTIFIED WRECK AS ì BLACK DIAMOND; 9960-X 25875.4, 9960-Y 43930-6. (ENTERED MSM 4/90)

Survey Summary

Survey Position:	41° 18' 03.1" N, 071° 37' 30.5" W
Least Depth:	21.47 m (= 70.45 ft = 11.742 fm = 11 fm 4.45 ft)
TPU (±1.96σ):	**THU (TPEh)** ±1.003 m ; **TVU (TPEv)** ±0.417 m
Timestamp:	2009-219.13:12:27.562 (08/07/2009)
Survey Line:	h12011 / tj_s222_reson7125_stbd / 2009-219 / 413_1308
Profile/Beam:	1504/18
Charts Affected:	13215_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

AWOIS item #1856, located by Multibeam.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12011/tj_s222_reson7125_stbd/2009-219/413_1308	1504/18	0.00	000.0	Primary
BlockIslandAWOIS	AWOIS # 1856	13.14	057.6	Secondary (grouped)

Hydrographer Recommendations

Revise as per designated sounding.

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 1:non-dangerous wreck
	QUASOU - 6:least depth known
	SORDAT - 20090825
	SORIND - US,US,nsurf,H12011
	TECSOU - 3:found by multi-beam
	VALSOU - 21.473 m

WATLEV - 3:always under water/submerged

Office Notes

Concur - Delete 67 Wk. Add 70 Wk.

Feature Images

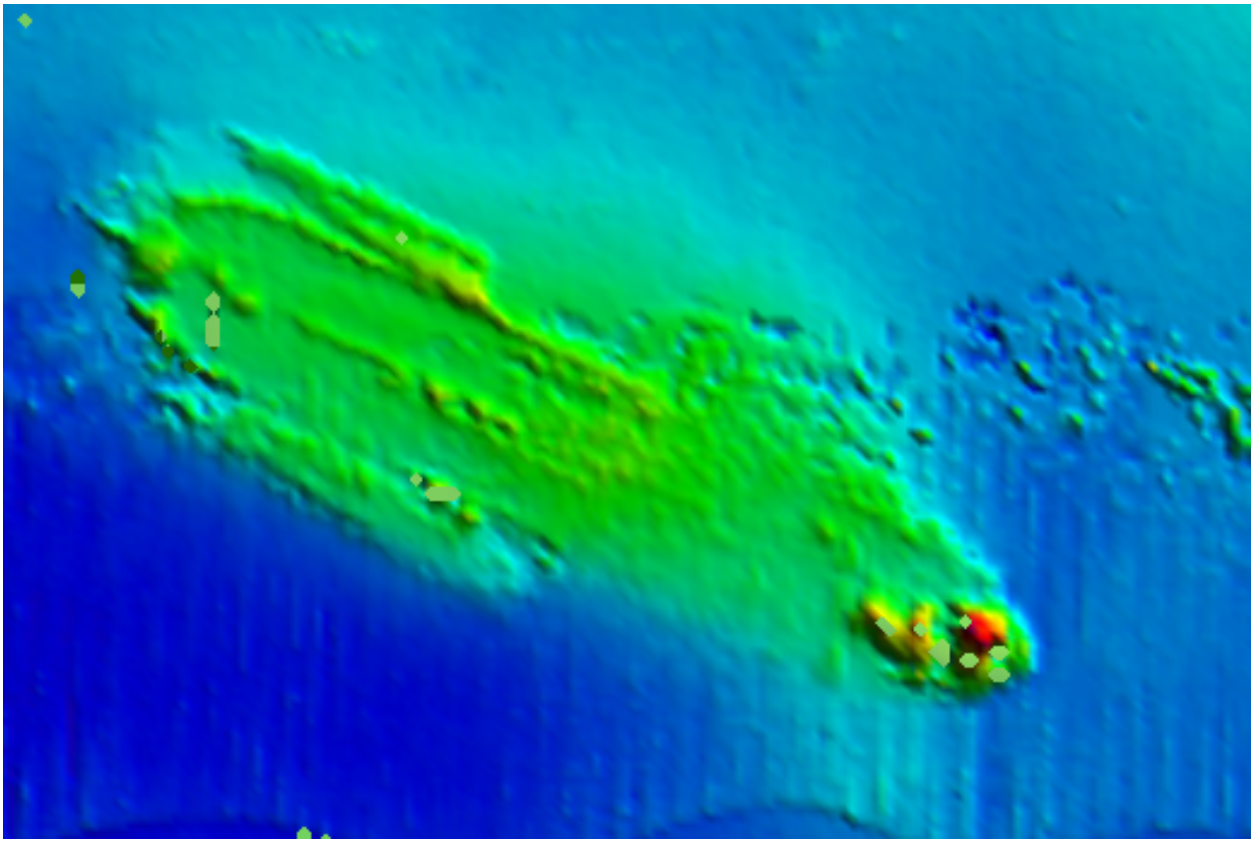


Figure 1.2.1

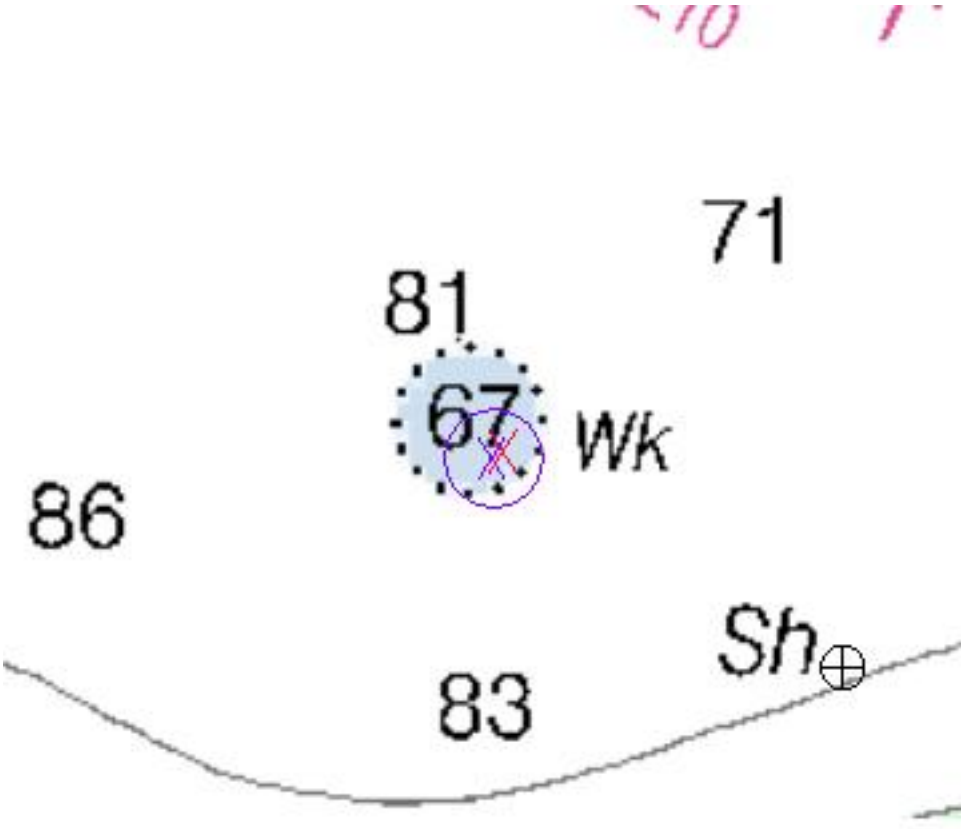


Figure 1.2.2

1.3) AWOIS #14442 - AWOIS #14442

No Primary Survey Feature for this AWOIS Item

Search Position: 41° 18' 48.0" N, 071° 28' 00.0" W

Historical Depth: [None]

Search Radius: 300

Search Technique: S2, MB

Technique Notes: [None]

History Notes:

LNM 36/95 (9/6/95)- add submerged dangerous wreck PA.

Survey Summary

Charts Affected: 13205_1, 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

AWOIS item #14442: a submerged dangerous wreck, position approximate, wreck with a 300m search radius. Not found using RESON 7125 Multibeam echosounder and a 50cm CUBE surface.

Feature Correlation

Address	Feature	Range	Azimuth	Status
BlockIslandAWOIS	AWOIS # 14442	0.00	000.0	Primary

Hydrographer Recommendations

Remove charted wreck.

S-57 Data

[None]

Office Notes

Concur - Delete charted dangerous sunken wreck, PA.

Feature Images

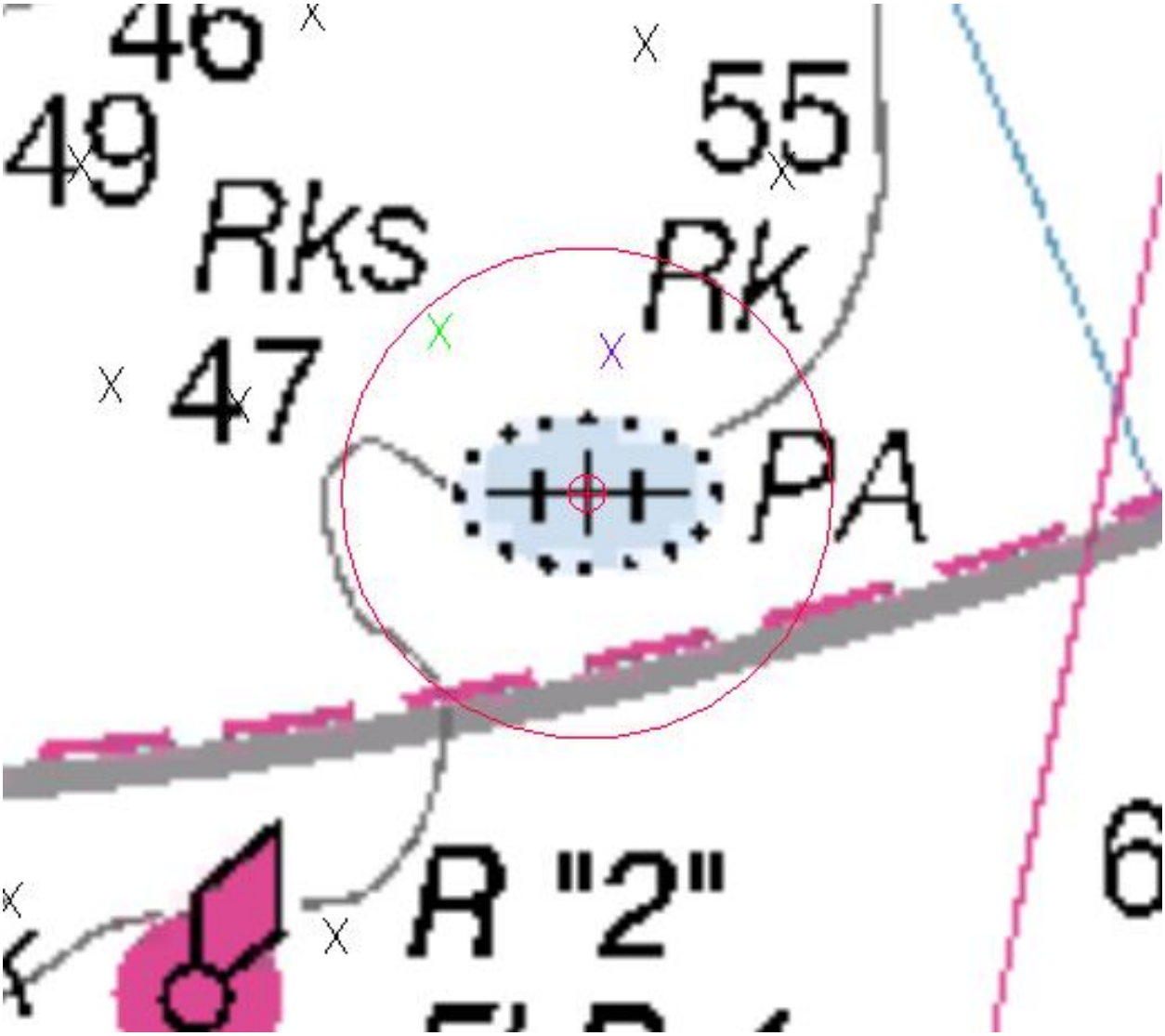


Figure 1.3.1

1.4) AWOIS #2712

Survey Summary

Survey Position:	41° 19' 33.2" N, 071° 25' 45.3" W
Least Depth:	22.05 m (= 72.33 ft = 12.054 fm = 12 fm 0.33 ft)
TPU (±1.96σ):	**THU (TPEh)** ±1.003 m ; **TVU (TPEv)** ±0.304 m
Timestamp:	2009-233.19:19:55.227 (08/21/2009)
Survey Line:	h12011 / tj_3102_reson7125_mb / 2009-233 / 613_1919
Profile/Beam:	353/314
Charts Affected:	13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Charted non-dangerous wreck, possibly AWOIS item #2712. Acquired by RESON 7125 Multibeam echosounder and corrected to MLLW using Observed water levels. Final Verified Water Levels and zoning resolved the sounding to 22.0m(72.3ft).

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12011/tj_3102_reson7125_mb/2009-233/613_1919	353/314	0.00	000.0	Primary

Hydrographer Recommendations

Chart wreck with depth of 72 feet.

Cartographically-Rounded Depth (Affected Charts):

72ft (13218_1)

12fm (12300_1, 13006_1, 13003_1)

22m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 1:non-dangerous wreck
	QUASOU - 6:least depth known
	SORDAT - 20090825
	SORIND - US,US,nsurf,H12011
	TECSOU - 3:found by multi-beam

VALSOU - 22.045 m

WATLEV - 3:always under water/submerged

Office Notes

Concur - Delete 69 Wk. Add 72 Wk.

Feature Images

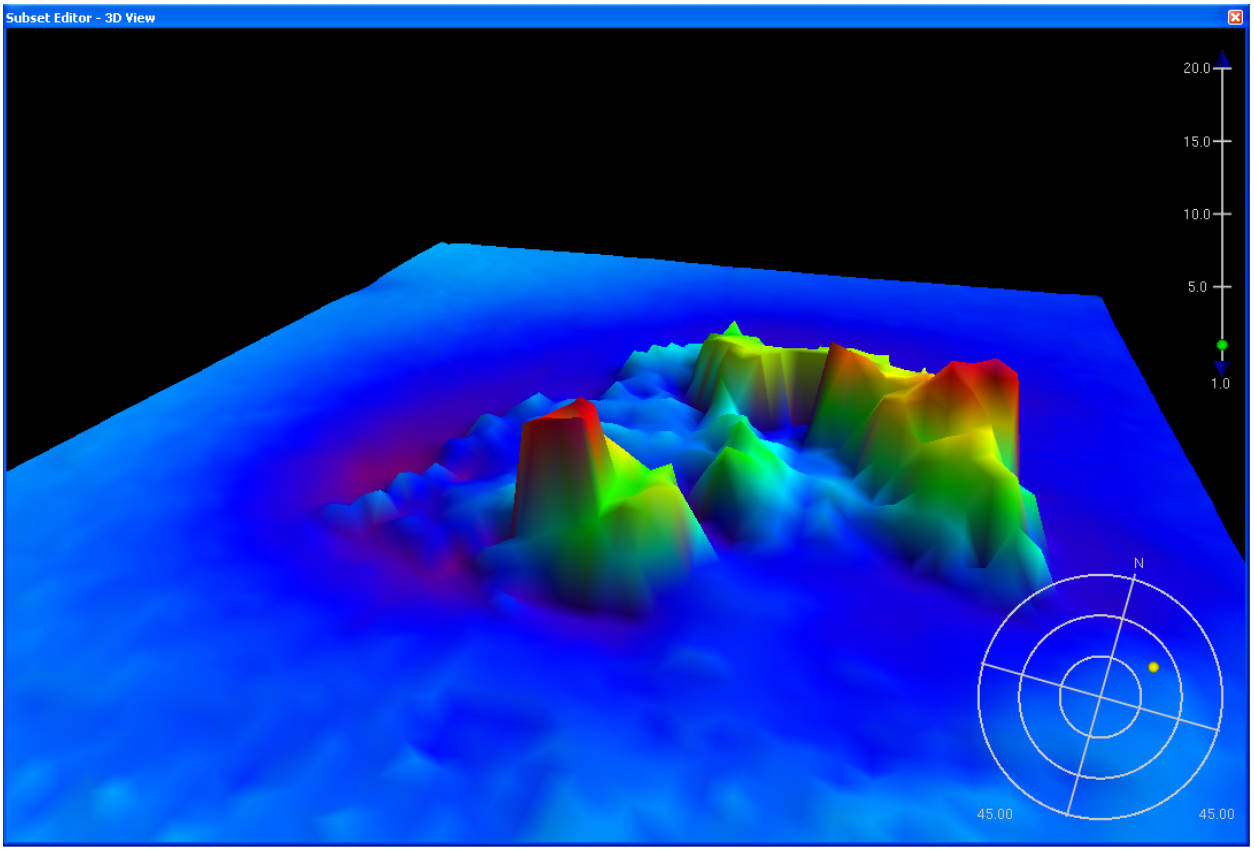


Figure 1.4.1

Figure 1.4.2

1.5) AWOIS #2917

Primary Feature for AWOIS Item #2917

Search Position:	41° 17' 05.3" N, 071° 37' 01.5" W
Historical Depth:	34.14 m
Search Radius:	100
Search Technique:	MB,S2,ES
Technique Notes:	[None]

History Notes:

HISTORY

MAR--8/84, OPR-B660-RU/HE-84; NON-DANG. SUBM. WK. COVERED 111.5FT ì (PREDICTED TIDES) IN SURROUNDING DEPTHS OF 140FT WAS OBTAINED BY DIVERS IN ì LAT.41-17-04.95N, LONG.71-37-03.29W. WRECK IS OF STEEL TAR BARGE. (ENTERED ì 10/84 RWD).

FE270WD/84--OPR-B660-RU/HE-84; LARGE BARGE WITH MAST LOCATED BY ì SIDE SCAN SONAR; IDENTIFIED THROUGH RESEARCH AT THE NEWPORT ì HISTORICAL SOCIETY; REPORTED SUNK 2/10/55 IN LAT 41-18-00N, LONG ì 71-38-30W; CORRECTED PNEUMATIC DEPTH GAGE LEAST DEPTH OF 112FT; ì 30-40 FT. VISIBILITY; TAR SURROUNDING BOTTOM; LOCATED IN LAT ì 41-17-04.95N, LONG 71-37-03.29W (LORAN C RATES: X-25890.9, ì Y-43938.2). (UPDATED MSM 12/88)

DESCRIPTION

195 LORAN C RATES PROVIDED BY MR. RICHARD TARACKA, GREENWICH, ì CT. POLICE DEPARTMENT, TEL NO. 203-622-8007; 9960-W 14535.3, ì 9960-Y 43937.3. (ENTERED MSM 3/89)

Survey Summary

Survey Position:	41° 17' 05.3" N, 071° 37' 00.3" W
Least Depth:	35.81 m (= 117.50 ft = 19.583 fm = 19 fm 3.50 ft)
TPU (±1.96σ):	**THU (TPEh)** ±1.009 m ; **TVU (TPEv)** ±0.339 m
Timestamp:	2009-232.17:47:16.867 (08/20/2009)
Survey Line:	h12011 / tj_3102_reson7125_mb / 2009-232 / 604_1746
Profile/Beam:	230/310

Charts Affected: 13215_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

AWOIS item #2917, located by Multibeam.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12011/tj_3102_reson7125_mb/2009-232/604_1746	230/310	0.00	000.0	Primary
BlockIslandAWOIS	AWOIS # 2917	28.21	091.6	Secondary

Hydrographer Recommendations

Revise as per designated sounding.

S-57 Data

Geo object 1: Wreck (WRECKS)

Attributes:

CATWRK - 1:non-dangerous wreck

QUASOU - 6:least depth known

SORDAT - 20090825

SORIND - US,US,nsurf,H12011

TECSOU - 3:found by multi-beam

VALSOU - 35.813 m

WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification - Delete 112 Wk. Add 117 Wk.

Feature Images

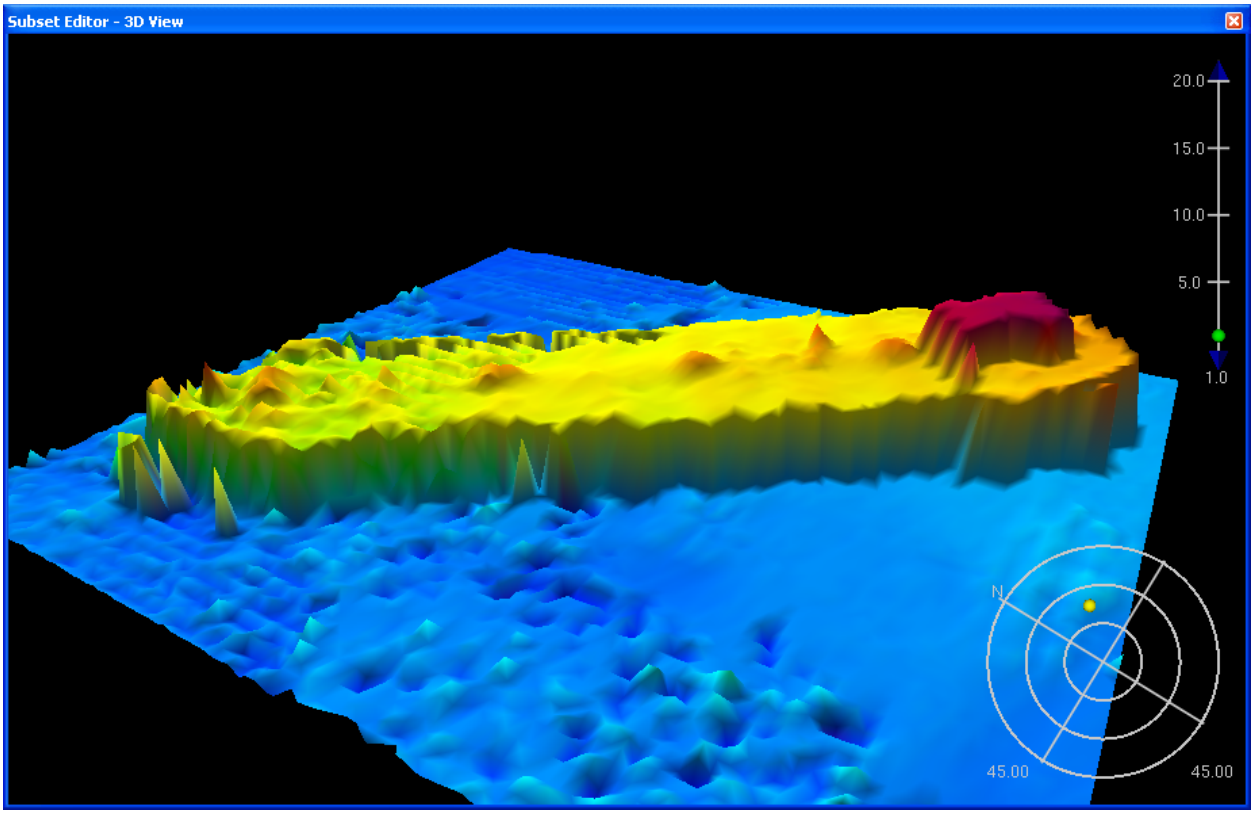


Figure 1.5.1

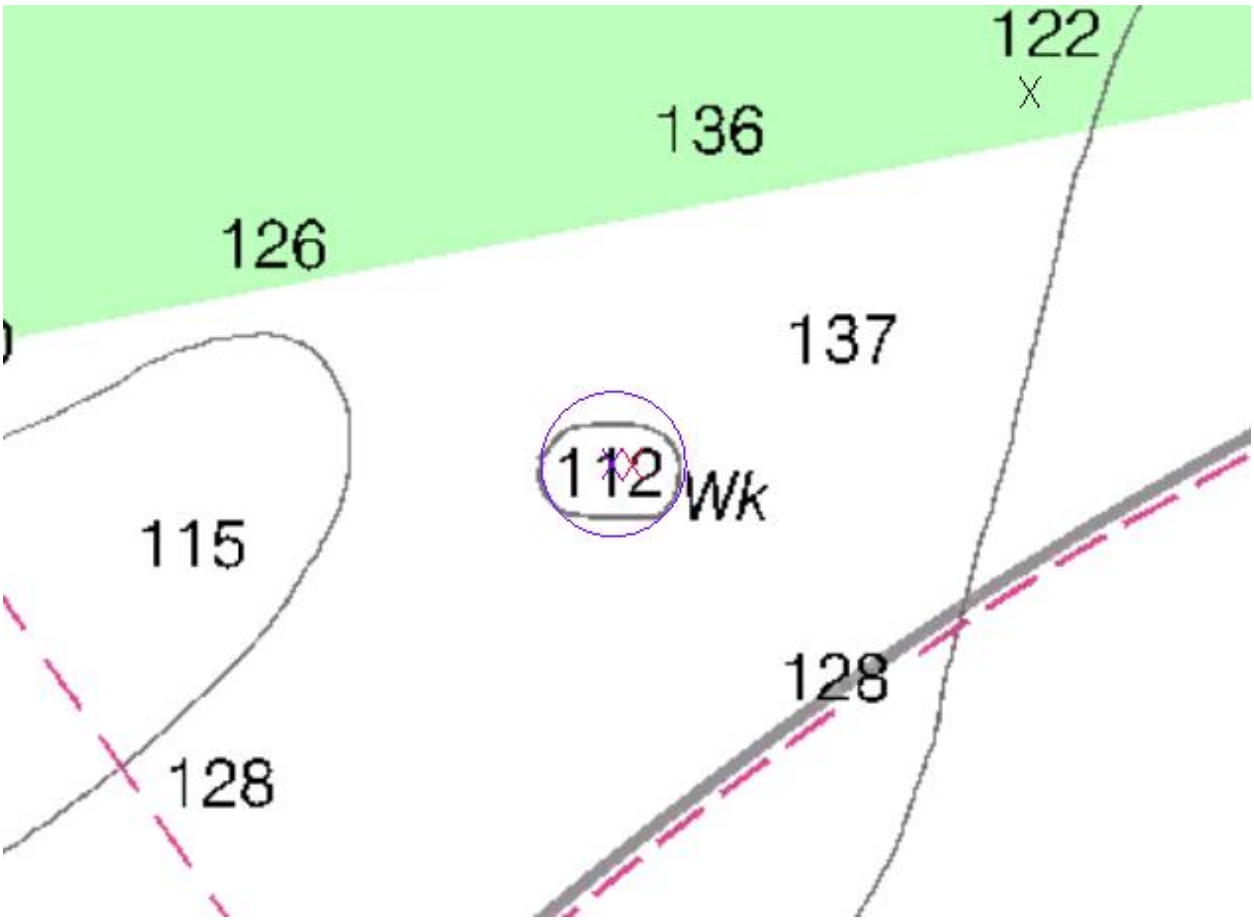


Figure 1.5.2

1.6) AWOIS #2923

Primary Feature for AWOIS Item #2923

Search Position:	41° 18' 22.0" N, 071° 36' 10.7" W
Historical Depth:	17.37 m
Search Radius:	100
Search Technique:	MB,S2,ES
Technique Notes:	[None]

History Notes:

HISTORY

MAR--9/84, OPR-B660-RU/HE-84; DANG. SUBM. WK, COVERED 56FT (PREDICTED ì TIDES) DETERMINED BY DIVERS IN LAT.41-18-21.78N, LONG.71-36-12.68W. ì WRECKAGE IS OF STEEL HULLED FISHING VESSEL, APPROX. 40FT LONG IN 69FT ì OF WATER. (ENTERED 11/84 RWD).

FE270WD/84--OPR-B660-RU/HE-84; STEEL-HULLED 60 FT. FISHING ì TRAWLER LOCATED IN LAT 41-18-21.68N, LONG 71-36-12.50W (LORAN C ì RATES: W-14525.8, X-25886.2, Y-43936.0); PNEUMATIC DEPTH GAGE ì LEAST DEPTH OF 57 FT. (UPDATED MSM 12/88)

DESCRIPTION

195 LORAN C RATES PROVIDED BY MR. RICHARD TARACKA, GREENWICH, ì CT. POLICE DEPARTMENT, TEL NO. 203-622-8007; WRECK IDENTIFIED AS ì HEROINE; 9960-W 14525.7, 9960-Y 43945.9. (ENTERED MSM 4/89)

**** ALSO SEE ITEM 7477.

Survey Summary

Survey Position:	41° 18' 20.5" N, 071° 36' 09.4" W
Least Depth:	17.34 m (= 56.90 ft = 9.484 fm = 9 fm 2.90 ft)
TPU (±1.96σ):	**THU (TPEh)** ±1.001 m ; **TVU (TPEv)** ±0.411 m
Timestamp:	2009-206.00:11:05.472 (07/25/2009)
Survey Line:	h12011 / tj_s222_reson7125_stbd / 2009-206 / 900_0004
Profile/Beam:	3702/31
Charts Affected:	13215_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

AWOIS item #2923, located by Multibeam.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12011/tj_s222_reson7125_stbd/2009-206/900_0004	3702/31	0.00	000.0	Primary
BlockIslandAWOIS	AWOIS # 2923	55.63	147.8	Secondary

Hydrographer Recommendations

Retain as charted.

S-57 Data

Geo object 1: Wreck (WRECKS)

Attributes:

CATWRK - 1:non-dangerous wreck

QUASOU - 6:least depth known

SORDAT - 20090825

SORIND - US,US,graph,H12011

TECSOU - 3:found by multi-beam

VALSOU - 17.344 m

WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification - Delete charted 57 Wk and danger curve. Add 57 Wk and danger curve in present survey location.

Feature Images

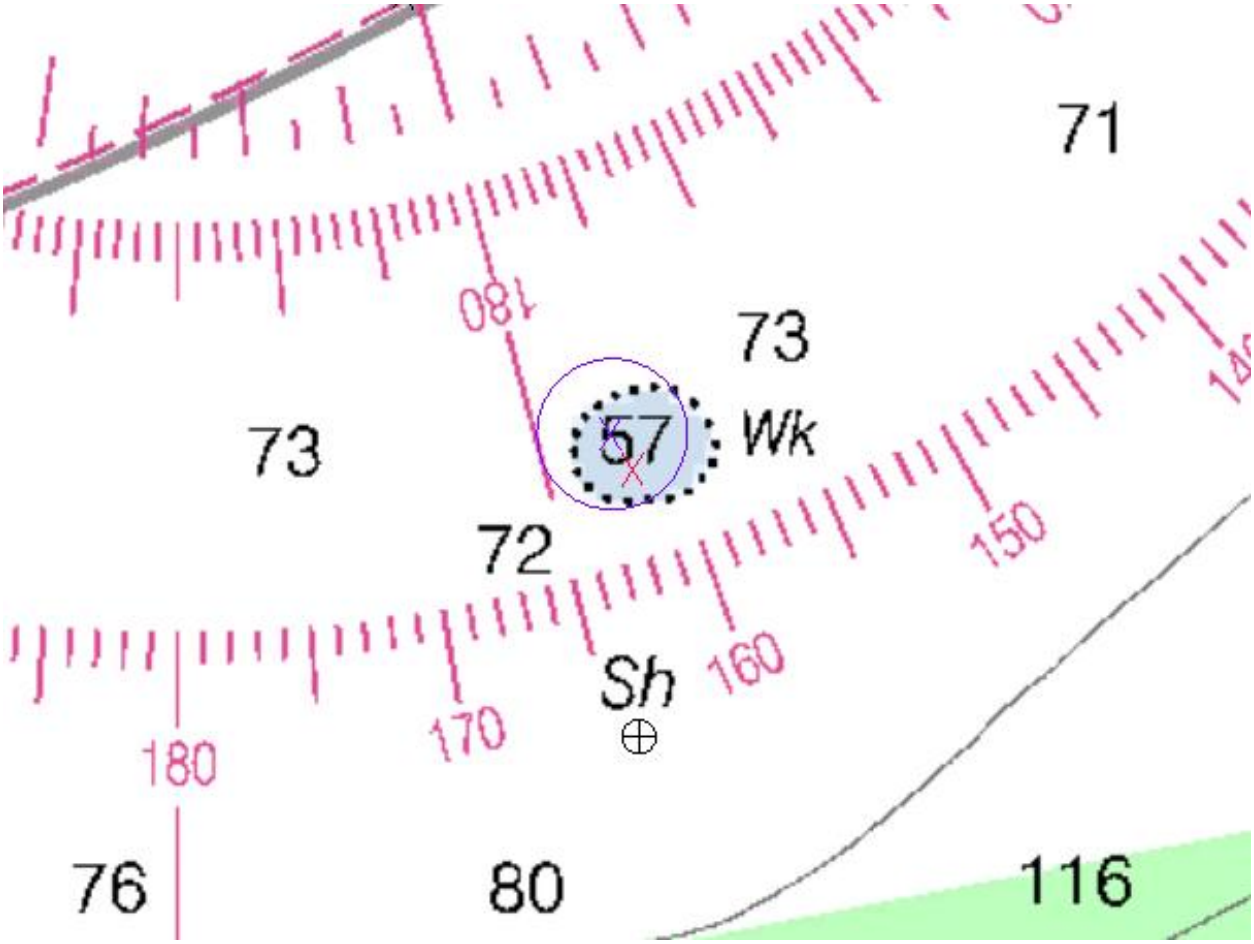


Figure 1.6.1

CHARTED

Registry Number: H12011

State: Rhode Island

Locality: Block Island Sound

Sub-locality: 4 nautical miles South of Point Judith

Project Number: OPR-B363-TJ-09

Survey Dates: 08/06/2009 - 08/21/2009

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
13215	19th	12/01/2009	1:40,000 (13215_1)	USCG LNM: 7/27/2010 (7/27/2010) CHS NTM: None (7/30/2010) NGA NTM: None (8/7/2010)
13205	38th	02/01/2007	1:80,000 (13205_1)	[L]NTM: ?
13218	41st	10/01/2009	1:80,000 (13218_1)	USCG LNM: 7/27/2010 (7/27/2010) CHS NTM: None (7/30/2010) NGA NTM: 11/15/2003 (8/7/2010)
12300	47th	05/01/2008	1:400,000 (12300_1)	[L]NTM: ?
13006	34th	05/01/2007	1:675,000 (13006_1)	[L]NTM: ?
5161	13th	10/01/2003	1:1,058,400 (5161_1)	[L]NTM: ?
13003	49th	04/01/2007	1:1,200,000 (13003_1)	[L]NTM: ?

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

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	62 Rk disproved	Shoal	19.47 m	41° 16' 26.5" N	071° 35' 35.1" W	---
1.2	51 Rk disproved	Shoal	15.12 m	41° 18' 32.6" N	071° 28' 42.7" W	---
1.3	65 Rk disproved	Shoal	19.15 m	41° 18' 34.4" N	071° 29' 54.3" W	---
1.4	53 Rk disproved	Shoal	17.97 m	41° 17' 45.4" N	071° 27' 48.6" W	---
1.5	89 Rk disporved	Shoal	27.05 m	41° 18' 19.1" N	071° 24' 58.0" W	---
1.6	75 Rk disproved	Shoal	23.15 m	41° 18' 31.1" N	071° 25' 26.5" W	---
1.7	61 & 62 Rks disproved	Shoal	19.33 m	41° 18' 11.4" N	071° 28' 04.0" W	---
1.8	74 Rk disproved	Shoal	22.57 m	41° 17' 58.7" N	071° 25' 43.9" W	---

1.9	80 Rk disporved	Shoal	23.82 m	41° 17' 36.5" N	071° 25' 03.3" W	---
1.10	55 Rk disproved	Shoal	15.97 m	41° 19' 00.7" N	071° 27' 49.7" W	---

1 - DR_Charted

1.1) 62 Rk disproved

Survey Summary

Survey Position: 41° 16' 26.5" N, 071° 35' 35.1" W

Least Depth: 19.47 m (= 63.87 ft = 10.646 fm = 10 fm 3.87 ft)

TPU (±1.96σ): **THU (TPEh)** ±1.001 m ; **TVU (TPEv)** ±0.301 m

Timestamp: 2009-232.12:51:49.682 (08/20/2009)

Survey Line: h12011 / tj_3102_reson7125_mb / 2009-232 / 909a1246

Profile/Beam: 1877/288

Charts Affected: 13215_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Charted 62' dangerous rock.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12011/tj_3102_reson7125_mb/2009-232/909a1246	1877/288	0.00	000.0	Primary
h12011/tj_3102_reson7125_mb/2009-232/909a1246	1908/233	20.76	062.5	Secondary (grouped)
h12011/tj_s222_reson7125_stbd/2009-206/459_1747	11945/477	82.55	284.8	Secondary (grouped)

Hydrographer Recommendations

Update sounding, retain as dangerous rock.

S-57 Data

Geo object 1: Sounding (SOUNDG)

Attributes: QUASOU - 1:depth known

TECSOU - 3:found by multi-beam

Office Notes

Concur with clarification - A rock with a depth of 59 ft was located in

Latitude 41°16'24.846"N, Longitude 071°35'26.853"W. It is recommended that the 62 Rk and danger curve be deleted. Delete 62 Rk and danger curve. Add 59 Rk and danger curve.

Feature Images

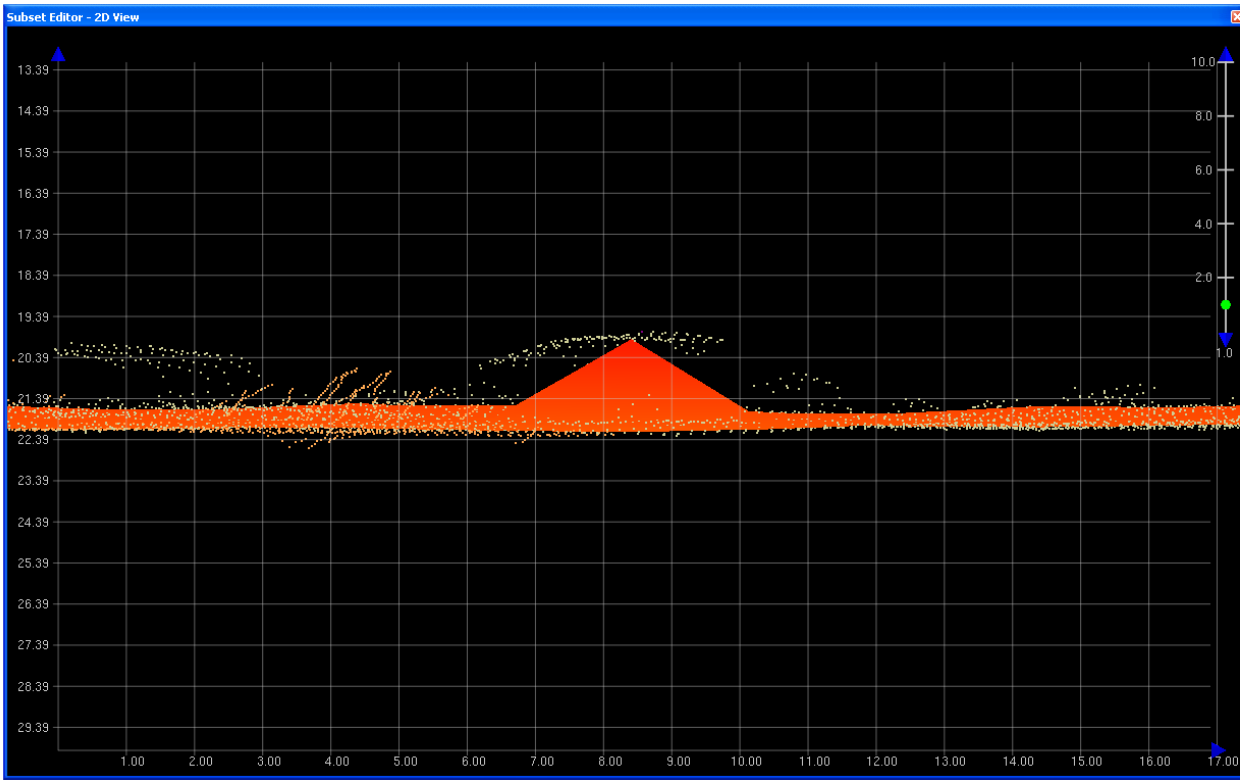


Figure 1.1.1

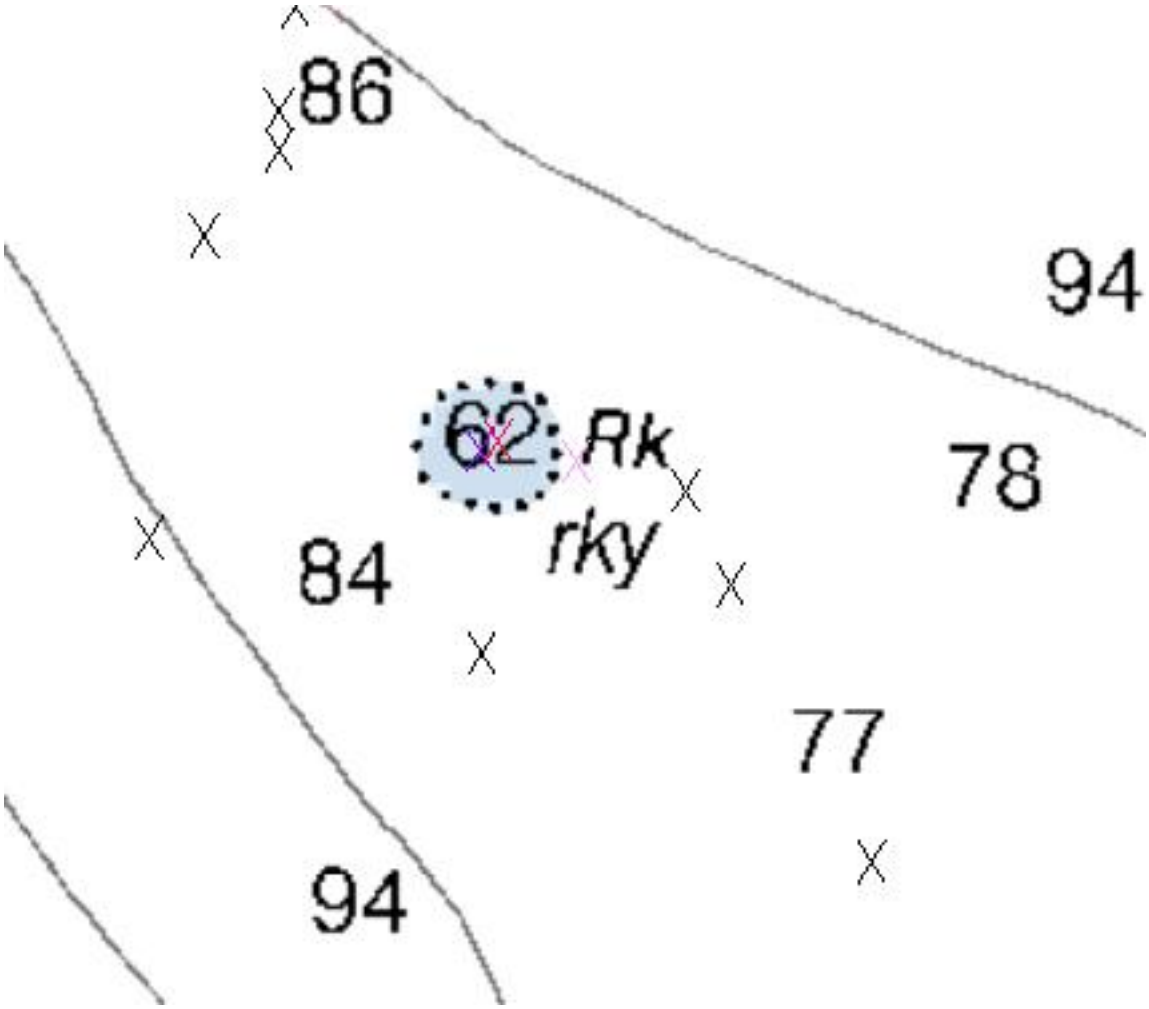


Figure 1.1.2

1.2) 51 Rk disproved

Survey Summary

Survey Position: 41° 18' 32.6" N, 071° 28' 42.7" W

Least Depth: 15.12 m (= 49.60 ft = 8.266 fm = 8 fm 1.60 ft)

TPU (±1.96σ): **THU (TPEh)** ±1.000 m ; **TVU (TPEv)** ±0.406 m

Timestamp: 2009-218.15:56:42.609 (08/06/2009)

Survey Line: h12011 / tj_s222_reson7125_stbd / 2009-218 / 359_1549

Profile/Beam: 3693/402

Charts Affected: 13215_1, 13205_1, 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Charted 51' rock, superceded by nearby 46' rock in position: 41.30959182 , -071.47683525

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12011/tj_s222_reson7125_stbd/2009-218/359_1549	3693/402	0.00	000.0	Primary
h12011/tj_s222_reson7125_stbd/2009-218/359_1549	3693/401	0.05	000.0	Secondary
h12011/tj_s222_reson7125_stbd/2009-218/360_1512	11729/100	46.49	135.6	Secondary

Hydrographer Recommendations

Remove 51' rock, chart 46' Rock in postion 41.30959182 , -071.47683525.

S-57 Data

Geo object 1: Sounding (SOUNDG)

Attributes: QUASOU - 1:depth known

TECSOU - 3:found by multi-beam

Office Notes

Concur with clarification - The charted 51 ft rock is located within a rocky seabed area which is being submitted as a "SBDARE" component of the H-Cell. Branch processing determined that significant rocks within these areas should be charted as soundings unless otherwise specified. Delete charted 51 ft rock and chart present survey shoal soundings within rocky seabed area.

Feature Images

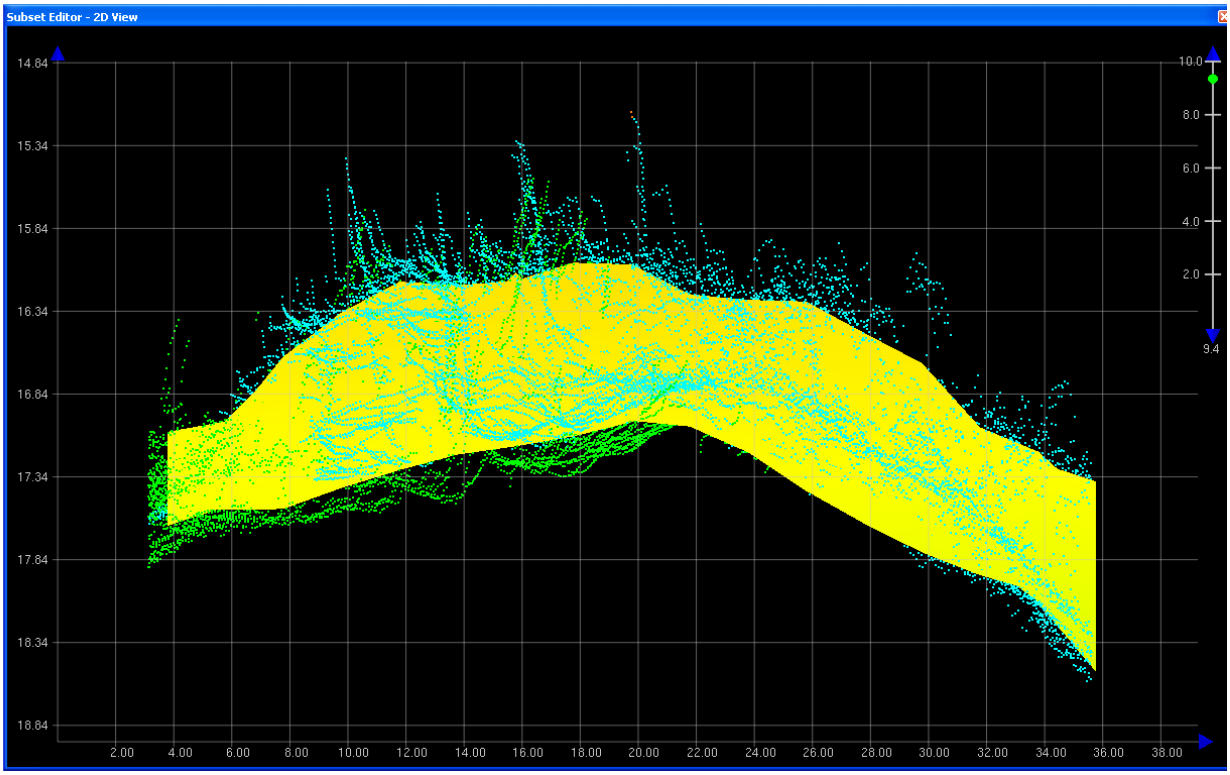


Figure 1.2.1

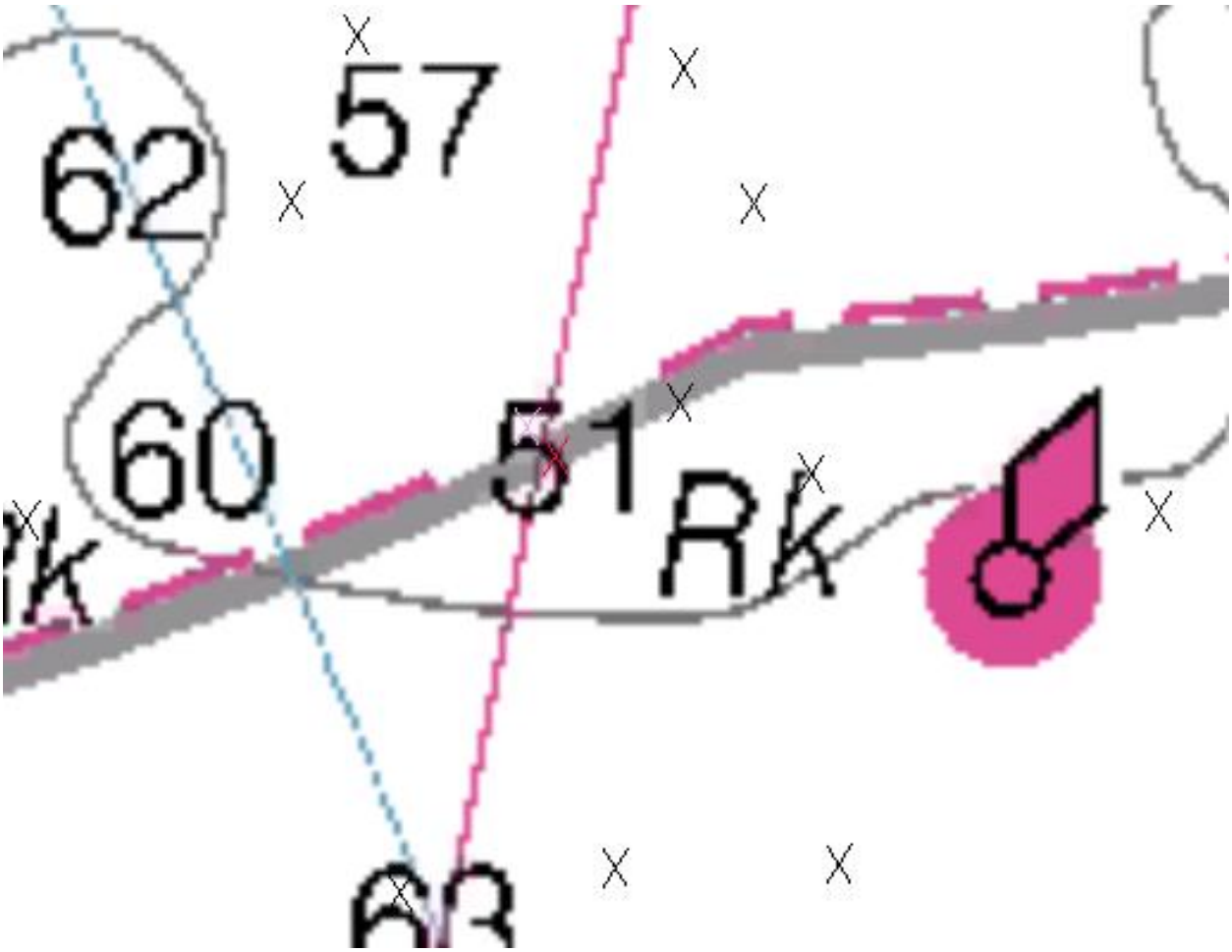


Figure 1.2.2

1.3) 65 Rk disproved

Survey Summary

Survey Position: 41° 18' 34.4" N, 071° 29' 54.3" W

Least Depth: 19.15 m (= 62.84 ft = 10.474 fm = 10 fm 2.84 ft)

TPU (±1.96σ): **THU (TPEh)** ±1.000 m ; **TVU (TPEv)** ±0.405 m

Timestamp: 2009-219.19:50:21.969 (08/07/2009)

Survey Line: h12011 / tj_s222_reson7125_stbd / 2009-219 / 367a1923

Profile/Beam: 16172/309

Charts Affected: 13215_1, 13205_1, 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Charted 65' rock.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12011/tj_s222_reson7125_stbd/2009-219/367a1923	16172/309	0.00	000.0	Primary

Hydrographer Recommendations

Chart as 63' rock.

S-57 Data

Geo object 1: Sounding (SOUNDG)

Attributes: QUASOU - 1:depth known

TECSOU - 3:found by multi-beam

Office Notes

Concur with clarification - The charted 65 ft rock is located within a rocky seabed area which is being submitted as a "SBDARE" component of the H-Cell. Branch processing determined that significant rocks within these areas should be charted as soundings unless otherwise specified. Delete charted 65 ft rock and chart present survey shoal soundings within rocky seabed area.

Feature Images

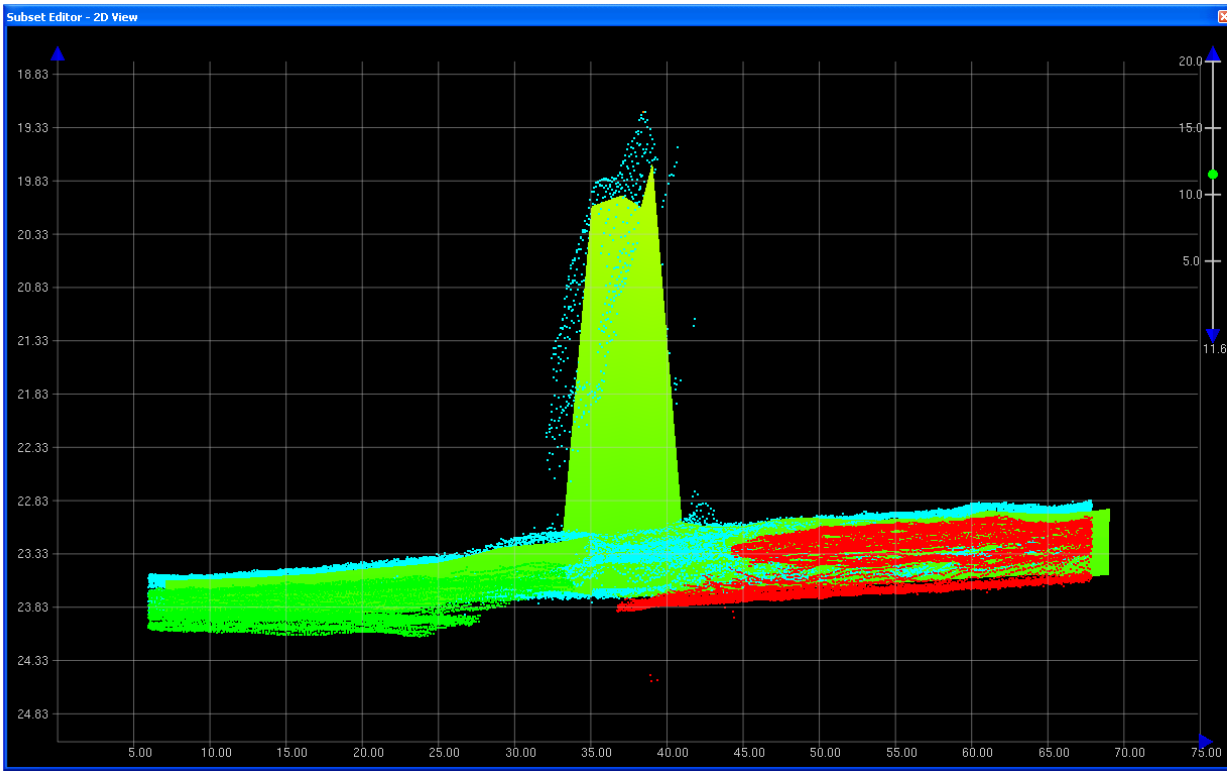


Figure 1.3.1

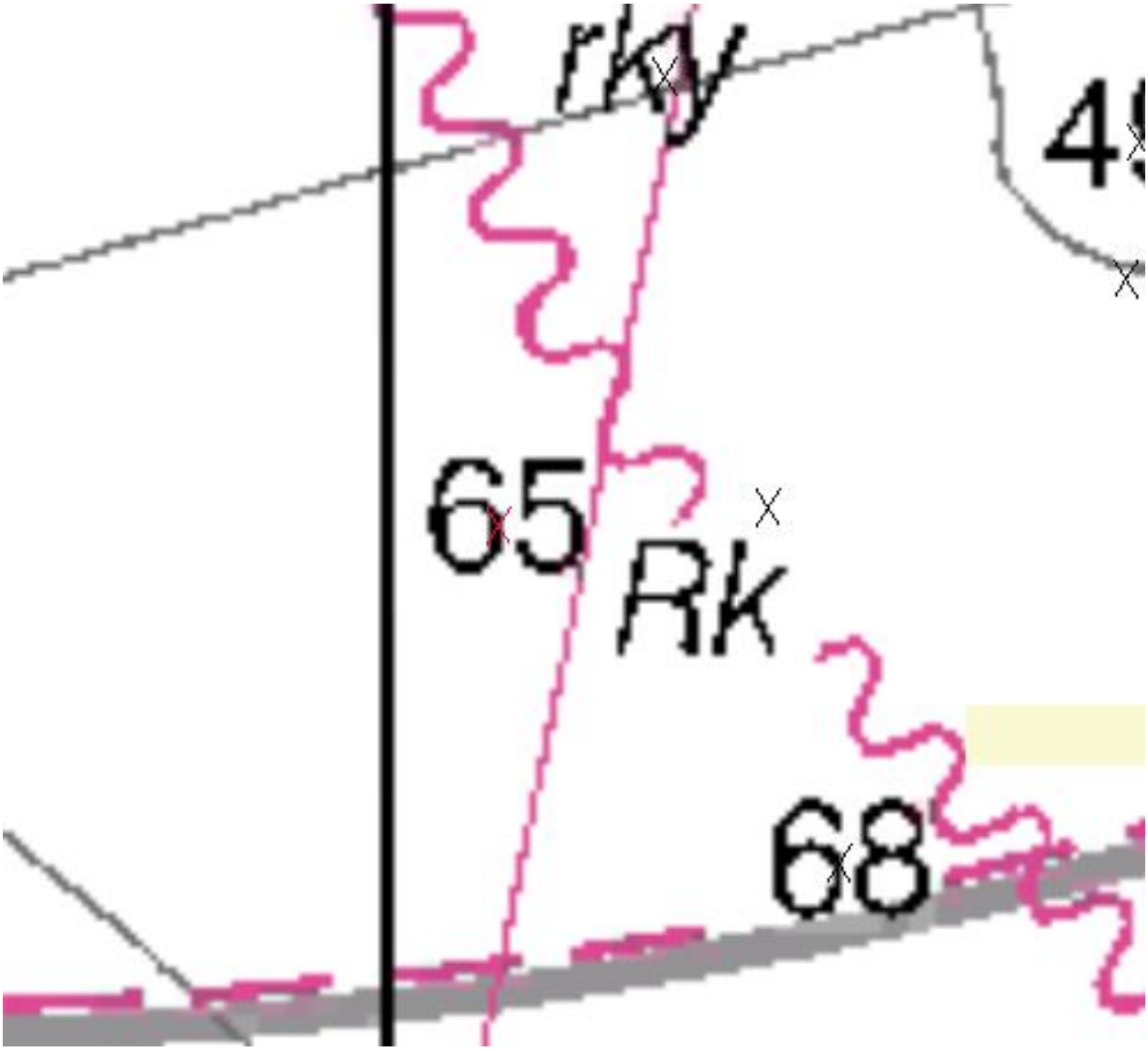


Figure 1.3.2

1.4) 53 Rk disproved

Survey Summary

Survey Position: 41° 17' 45.4" N, 071° 27' 48.6" W

Least Depth: 17.97 m (= 58.94 ft = 9.824 fm = 9 fm 4.94 ft)

TPU (±1.96σ): **THU (TPEh)** ±1.001 m ; **TVU (TPEv)** ±0.411 m

Timestamp: 2009-219.07:58:34.302 (08/07/2009)

Survey Line: h12011 / tj_s222_reson7125_stbd / 2009-219 / 322_0751

Profile/Beam: 4142/512

Charts Affected: 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Charted 53' rock.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12011/tj_s222_reson7125_stbd/2009-219/322_0751	4142/512	0.00	000.0	Primary

Hydrographer Recommendations

Update sounding.

S-57 Data

Geo object 1: Sounding (SOUNDG)

Attributes: QUASOU - 1:depth known

TECSOU - 3:found by multi-beam

Office Notes

Concur with clarification - The charted 53 ft rock is located within a rocky seabed area which is being submitted as a "SBDARE" component of the H-Cell. Branch processing determined that significant rocks within these areas should be charted as soundings unless otherwise specified. Delete charted 53 ft rock and chart present survey shoal soundings within rocky seabed area.

Feature Images

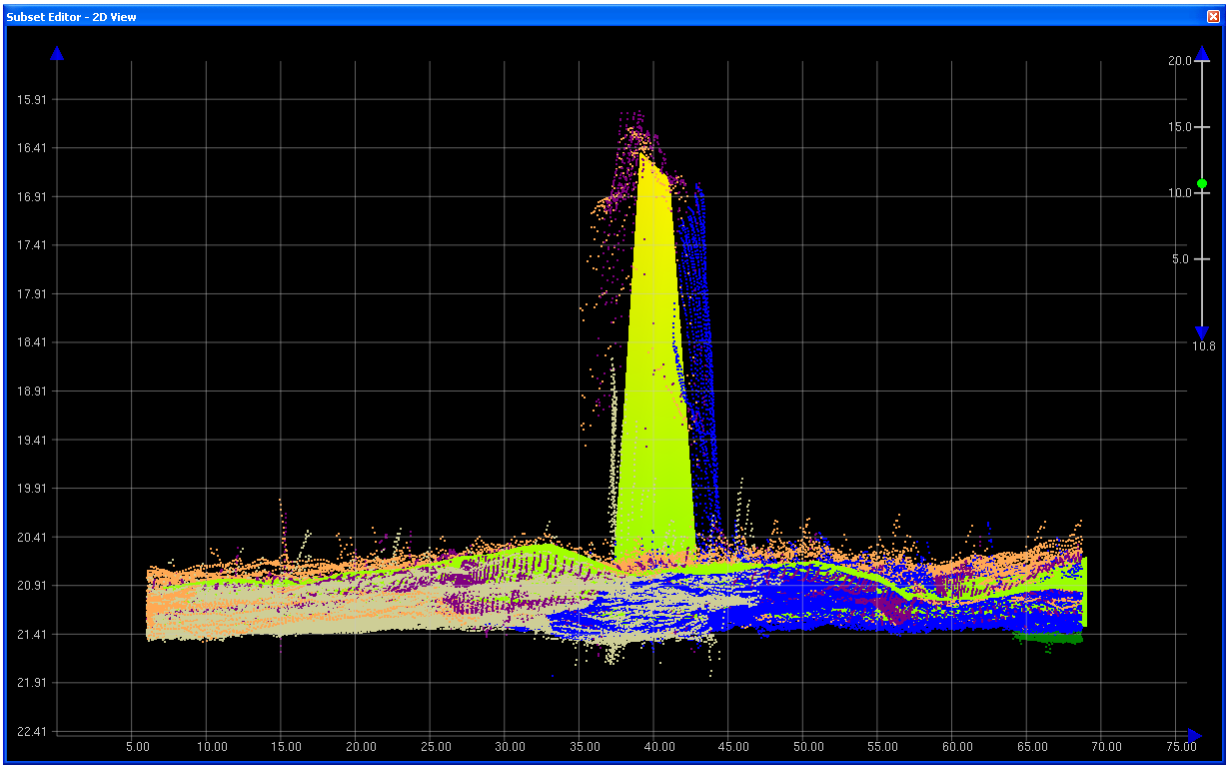


Figure 1.4.1

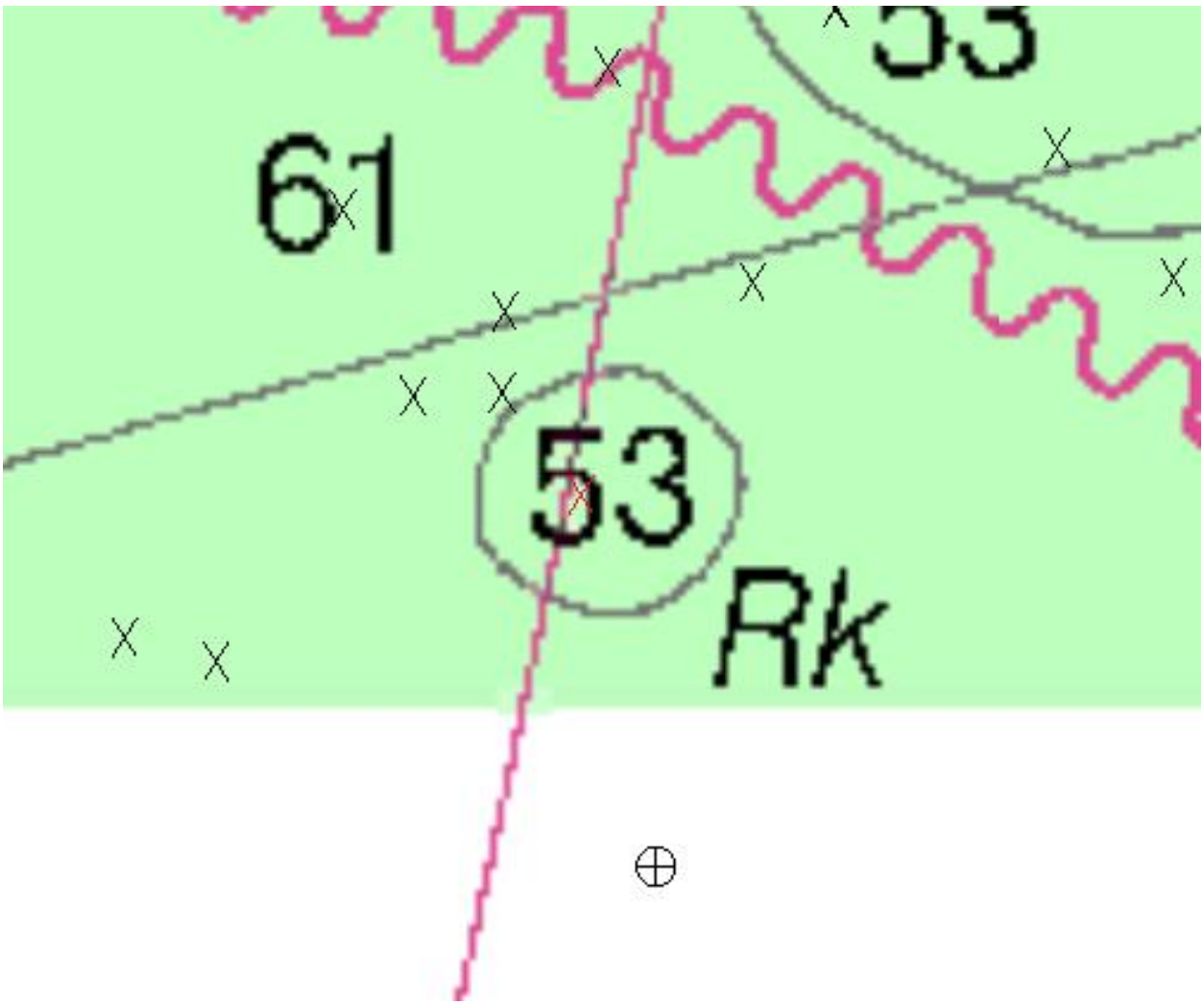


Figure 1.4.2

1.5) 89 Rk disporved

Survey Summary

Survey Position: 41° 18' 19.1" N, 071° 24' 58.0" W

Least Depth: 27.05 m (= 88.75 ft = 14.792 fm = 14 fm 4.75 ft)

TPU (±1.96σ): **THU (TPEh)** ±1.002 m ; **TVU (TPEv)** ±0.410 m

Timestamp: 2009-219.06:22:47.326 (08/07/2009)

Survey Line: h12011 / tj_s222_reson7125_stbd / 2009-219 / 327_0601

Profile/Beam: 12502/127

Charts Affected: 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Charted 89' rock.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12011/tj_s222_reson7125_stbd/2009-219/327_0601	12502/127	0.00	000.0	Primary

Hydrographer Recommendations

Least depth on rock matches general topography. Recommend remove rock, chart as sounding.

S-57 Data

Geo object 1: Sounding (SOUNDG)

Attributes: QUASOU - 1:depth known

TECSOU - 3:found by multi-beam

Office Notes

Concur - Delete 89 Rk. Chart present survey depths.

Feature Images

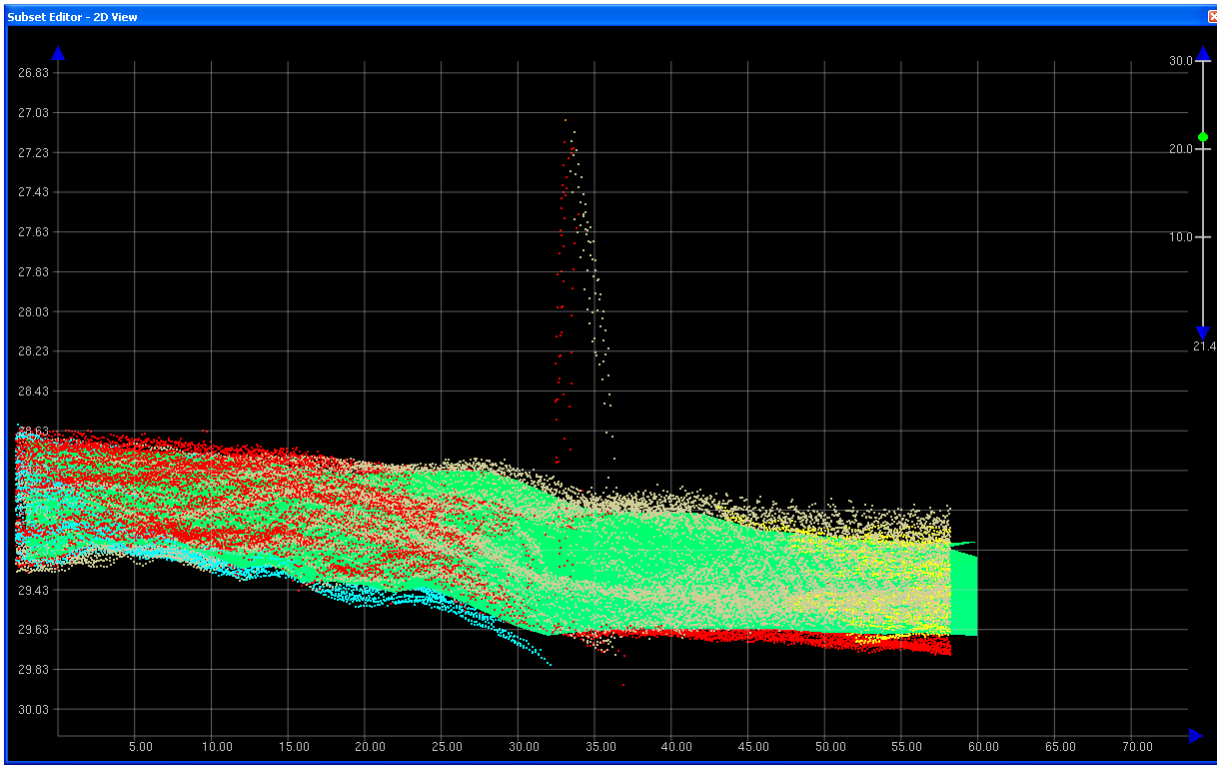


Figure 1.5.1

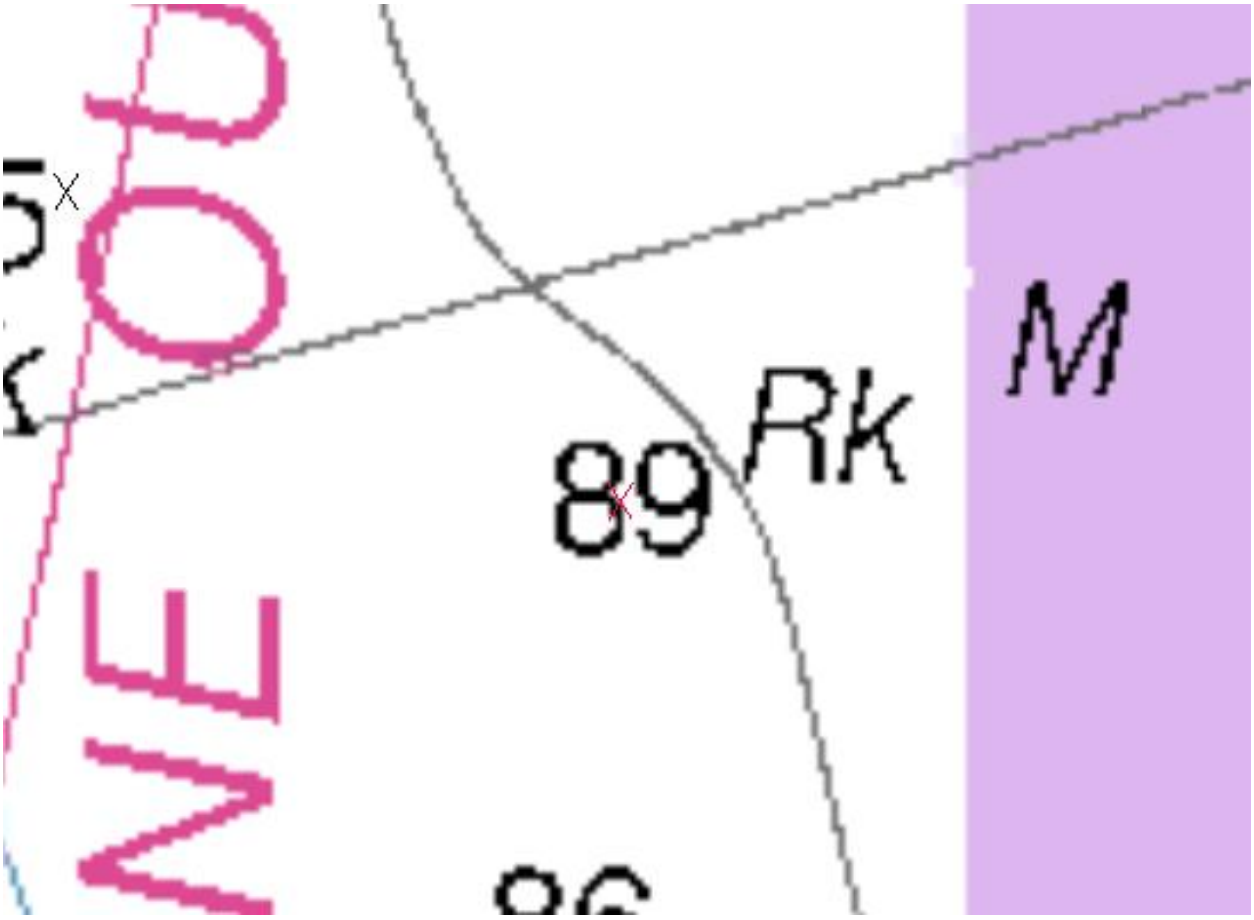


Figure 1.5.2

1.6) 75 Rk disproved

Survey Summary

Survey Position: 41° 18' 31.1" N, 071° 25' 26.5" W

Least Depth: 23.15 m (= 75.96 ft = 12.661 fm = 12 fm 3.96 ft)

TPU (±1.96σ): **THU (TPEh)** ±1.002 m ; **TVU (TPEv)** ±0.409 m

Timestamp: 2009-219.01:39:17.705 (08/07/2009)

Survey Line: h12011 / tj_s222_reson7125_stbd / 2009-219 / 338_0117

Profile/Beam: 11536/122

Charts Affected: 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Charted as 75' rock.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12011/tj_s222_reson7125_stbd/2009-219/338_0117	11536/122	0.00	000.0	Primary

Hydrographer Recommendations

Retain as charted.

S-57 Data

Geo object 1: Sounding (SOUNDG)

Attributes: QUASOU - 1:depth known

TECSOU - 3:found by multi-beam

Office Notes

Concur with clarification - The charted 75 ft rock is located within a rocky seabed area which is being submitted as a "SBDARE" component of the H-Cell. Branch processing determined that significant rocks within these areas should be charted as soundings unless otherwise specified. Delete charted 75 ft rock and chart present survey shoal soundings within rocky seabed area.

Feature Images

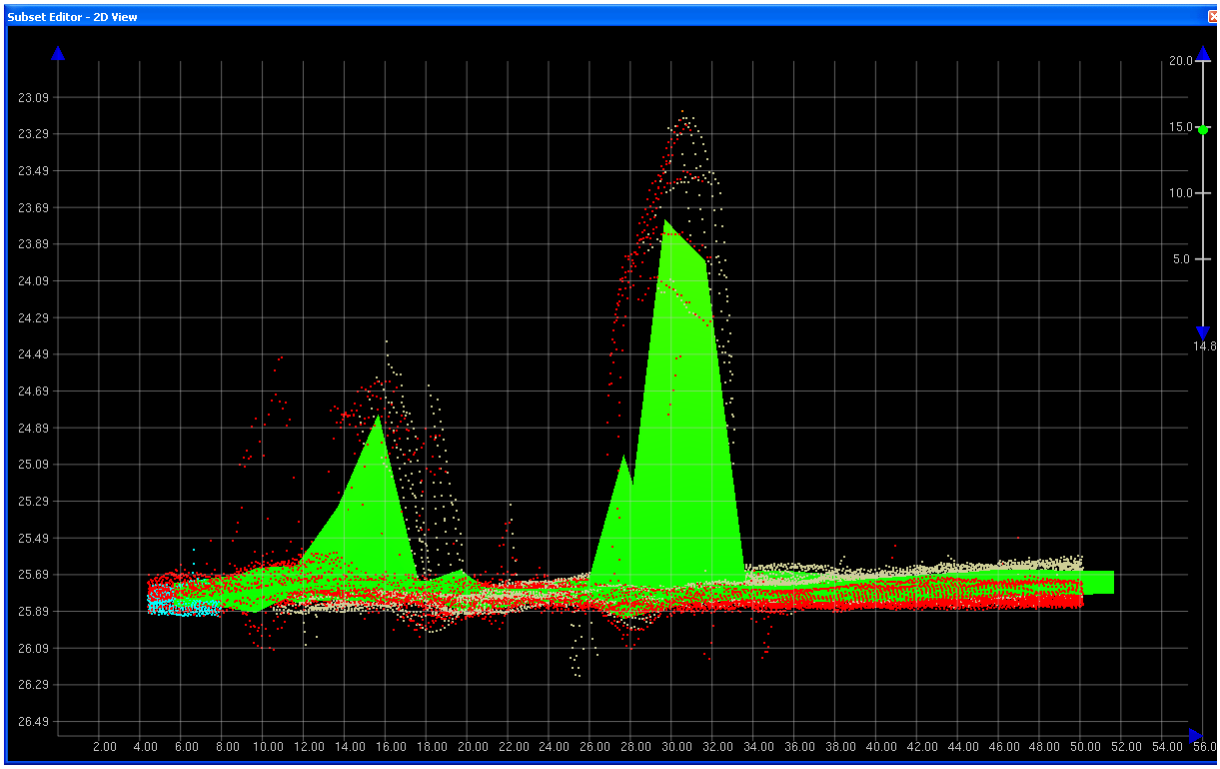


Figure 1.6.1

Figure 1.6.2

1.7) 61 62 Rks disproved

Survey Summary

Survey Position: 41° 18' 11.4" N, 071° 28' 04.0" W

Least Depth: 19.33 m (= 63.41 ft = 10.568 fm = 10 fm 3.41 ft)

TPU (±1.96σ): **THU (TPEh)** ±1.000 m ; **TVU (TPEv)** ±0.405 m

Timestamp: 2009-218.21:01:22.520 (08/06/2009)

Survey Line: h12011 / tj_s222_reson7125_stbd / 2009-218 / 341_2044

Profile/Beam: 9338/207

Charts Affected: 13205_1, 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Charted 62' rock found.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12011/tj_s222_reson7125_stbd/2009-218/341_2044	9338/207	0.00	000.0	Primary

Hydrographer Recommendations

Least depth on rock matches general topography. Recommend remove rock, chart as sounding.

S-57 Data

Geo object 1: Sounding (SOUNDG)

Office Notes

Concur with clarification - The charted 62 and 61 ft rocks in the vicinity of Latitude 41°18'03"N, Longitude 71°28'02"W are located within a rocky seabed area which is being submitted as a "SBDARE" component of the H-Cell. Branch processing determined that significant rocks within these areas should be charted as soundings unless otherwise specified. Delete charted 62 and 61 ft rocks and chart present survey shoal soundings within rocky seabed area.

Feature Images

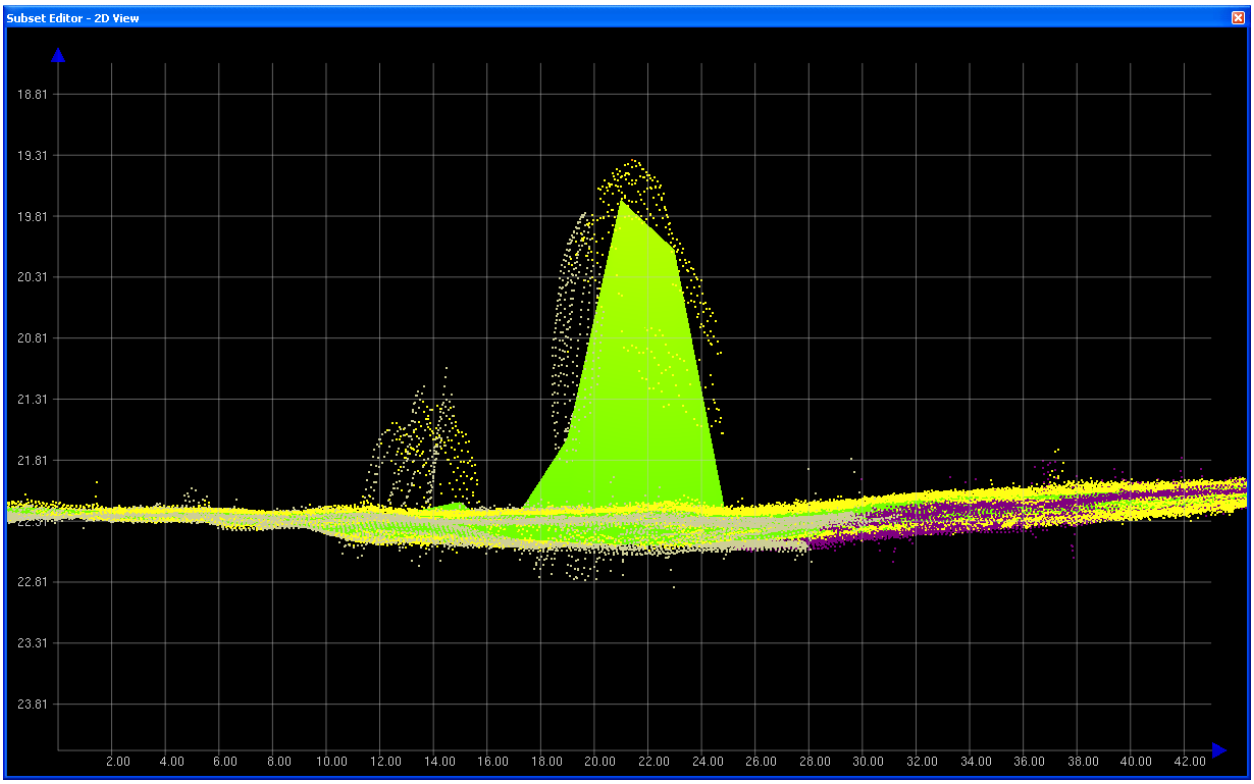


Figure 1.7.1

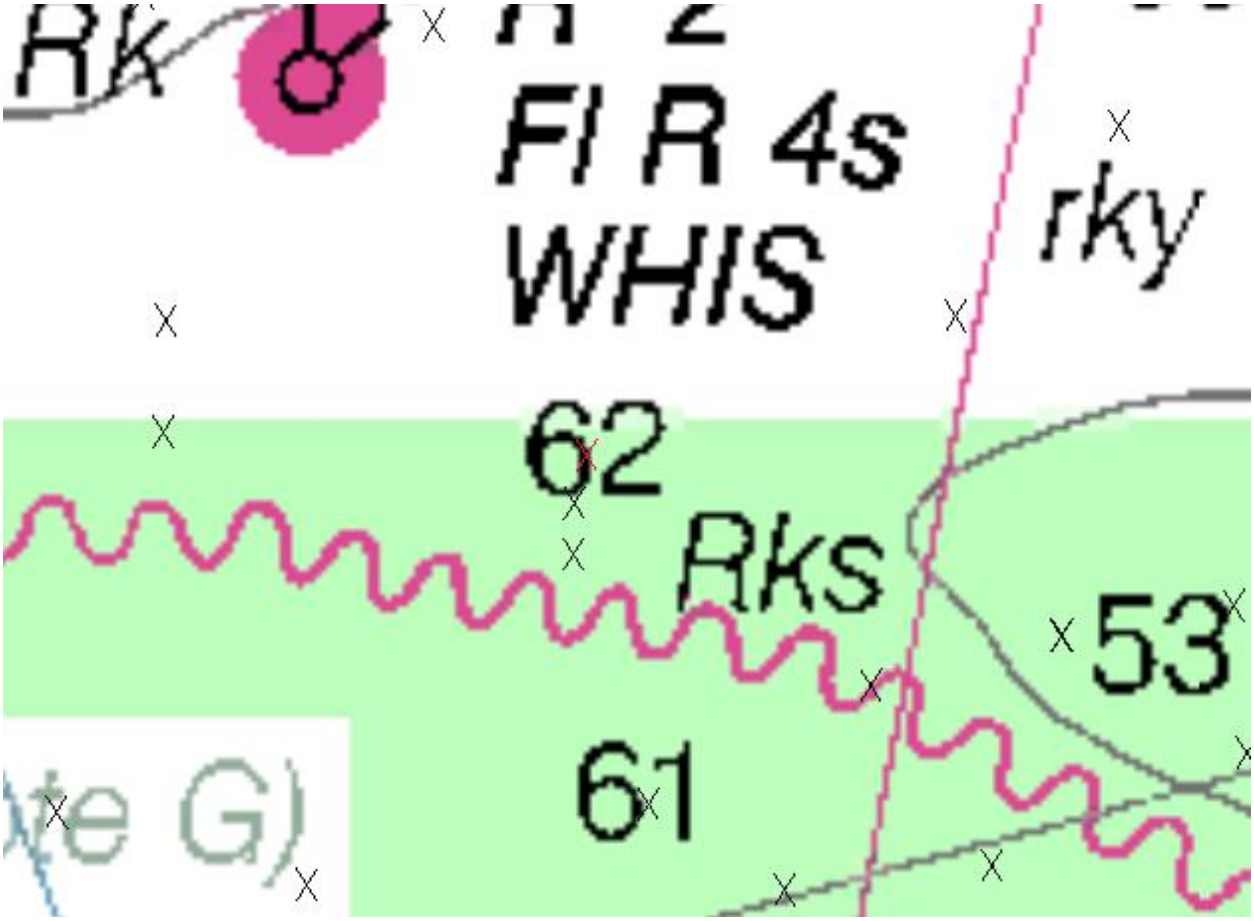


Figure 1.7.2

1.8) 74 Rk disproved

Survey Summary

Survey Position: 41° 17' 58.7" N, 071° 25' 43.9" W

Least Depth: 22.57 m (= 74.06 ft = 12.344 fm = 12 fm 2.06 ft)

TPU (±1.96σ): **THU (TPEh)** ±1.003 m ; **TVU (TPEv)** ±0.416 m

Timestamp: 2009-219.09:26:07.107 (08/07/2009)

Survey Line: h12011 / tj_s222_reson7125_stbd / 2009-219 / 319_0921

Profile/Beam: 1911/19

Charts Affected: 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Generally rocky area, with several rocks shoal of charted 74' rock.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12011/tj_s222_reson7125_stbd/2009-219/319_0921	1911/19	0.00	000.0	Primary

Hydrographer Recommendations

Least depth on rock matches general topography. Recommend remove rock, chart as sounding.

S-57 Data

Geo object 1: Sounding (SOUNDG)

Office Notes

Concur - Delete 74 Rk. Chart present survey depths.

Feature Images

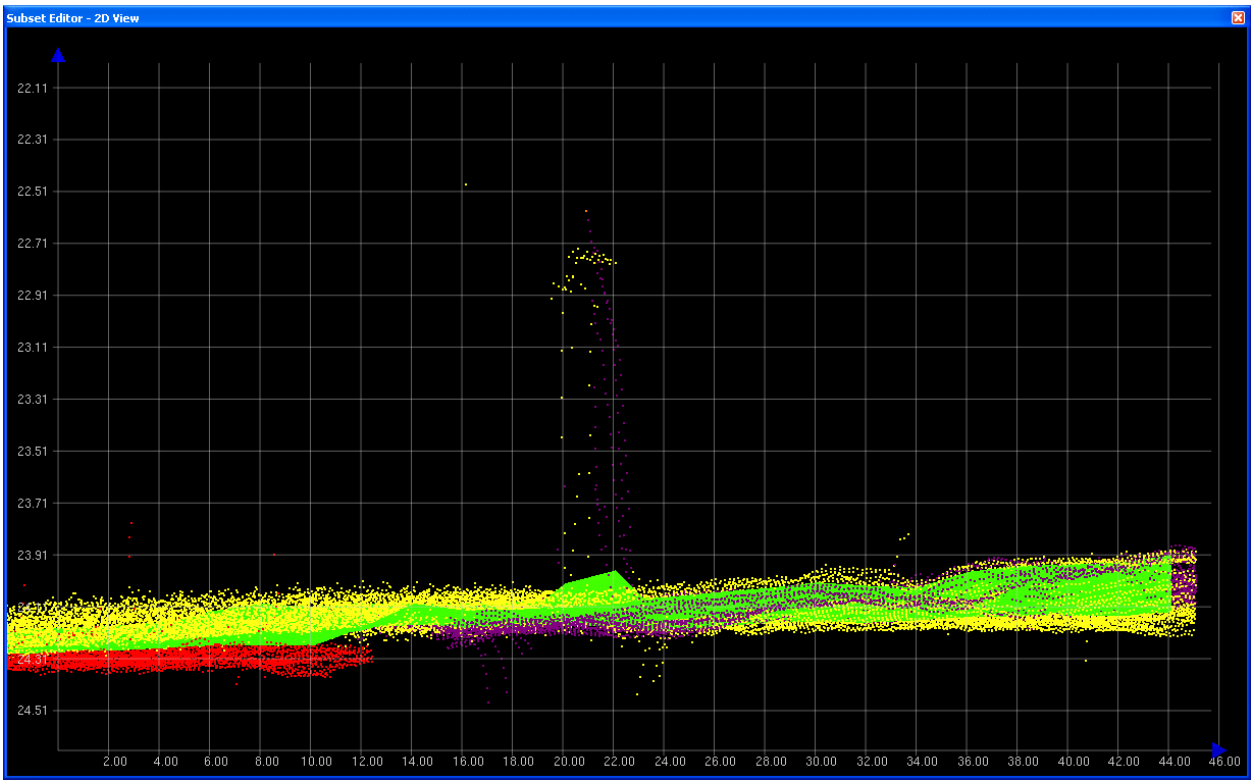


Figure 1.8.1

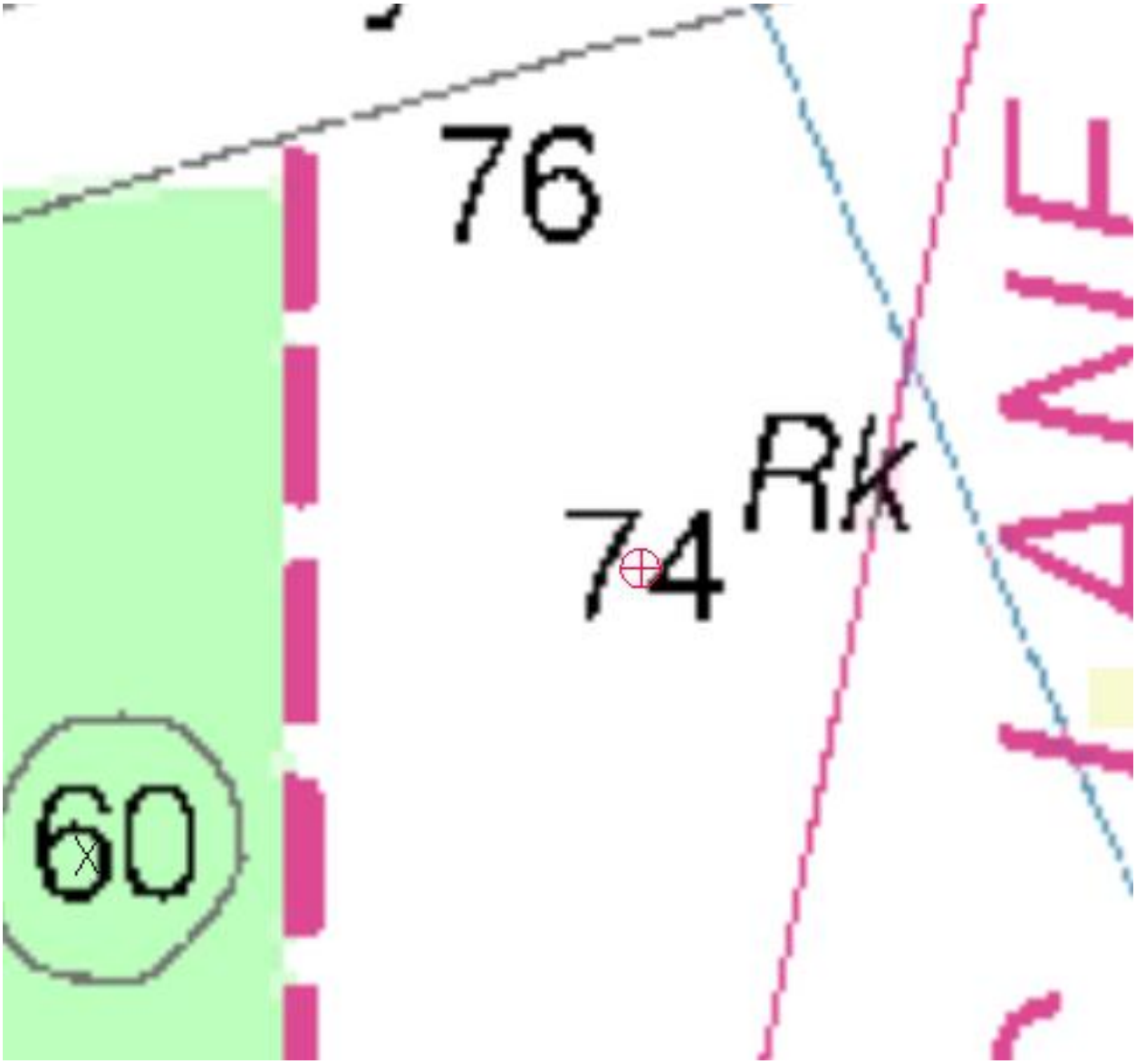


Figure 1.8.2

1.9) 80 Rk disporved

Survey Summary

Survey Position: 41° 17' 36.5" N, 071° 25' 03.3" W

Least Depth: 23.82 m (= 78.15 ft = 13.024 fm = 13 fm 0.15 ft)

TPU (±1.96σ): **THU (TPEh)** ±1.022 m ; **TVU (TPEv)** ±0.350 m

Timestamp: 2009-233.19:54:35.104 (08/21/2009)

Survey Line: h12011 / tj_3102_reson7125_mb / 2009-233 / 985_1953

Profile/Beam: 295/459

Charts Affected: 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Charted 80' rock

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12011/tj_3102_reson7125_mb/2009-233/985_1953	295/459	0.00	000.0	Primary

Hydrographer Recommendations

Least depth on rock matches general topography. Recommend remove rock, chart as sounding.

S-57 Data

Geo object 1: Sounding (SOUNDG)

Office Notes

Concur - Delete 80 Rk. Chart present survey depths.

Feature Images

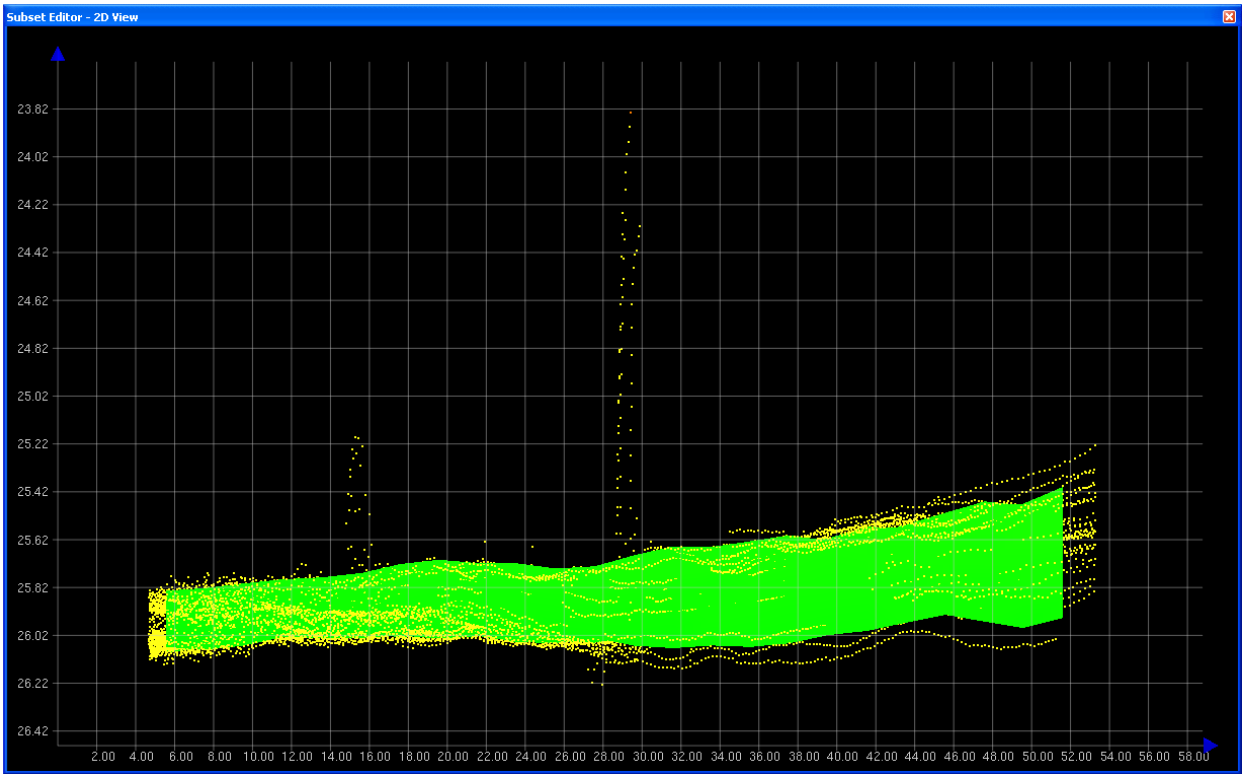


Figure 1.9.1

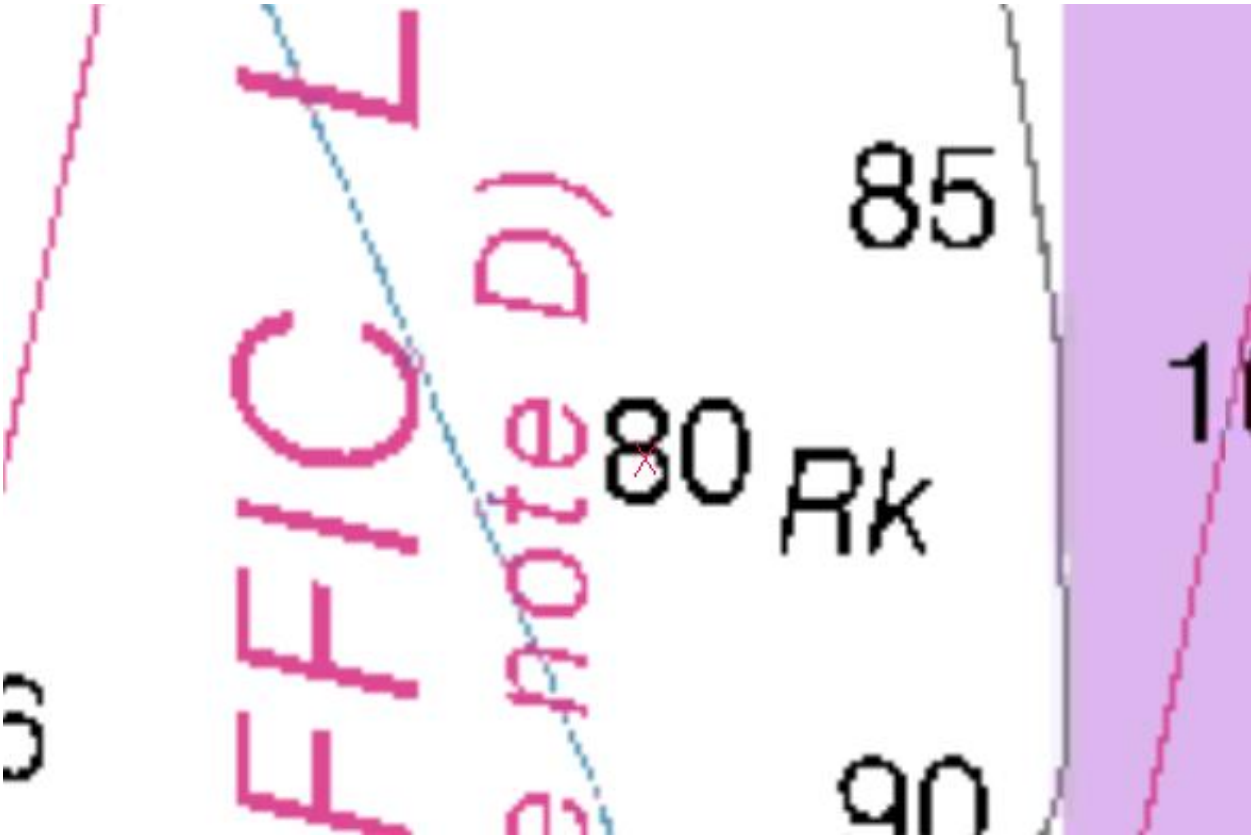


Figure 1.9.2

1.10) 55 Rk disproved

Survey Summary

Survey Position: 41° 19' 00.7" N, 071° 27' 49.7" W

Least Depth: 15.97 m (= 52.39 ft = 8.731 fm = 8 fm 4.39 ft)

TPU (±1.96σ): **THU (TPEh)** ±1.001 m ; **TVU (TPEv)** ±0.409 m

Timestamp: 2009-219.17:15:20.323 (08/07/2009)

Survey Line: h12011 / tj_s222_reson7125_stbd / 2009-219 / 372_1702

Profile/Beam: 7017/505

Charts Affected: 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Generally rocky area, with several rocks shoal of 55'.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12011/tj_s222_reson7125_stbd/2009-219/372_1702	7017/505	0.00	000.0	Primary

Hydrographer Recommendations

Least depth on rock matches general topography. Recommend remove rock, chart as sounding.

S-57 Data

Geo object 1: Sounding (SOUNDG)

Attributes: QUASOU - 1:depth known

TECSOU - 3:found by multi-beam

Office Notes

Concur with clarification - The charted 55 ft rock is located within a rocky seabed area which is being submitted as a "SBDARE" component of the H-Cell. Branch processing determined that significant rocks within these areas should be charted as soundings unless otherwise specified. Delete charted 55 ft rock and chart present survey shoal soundings within rocky seabed area.

Feature Images

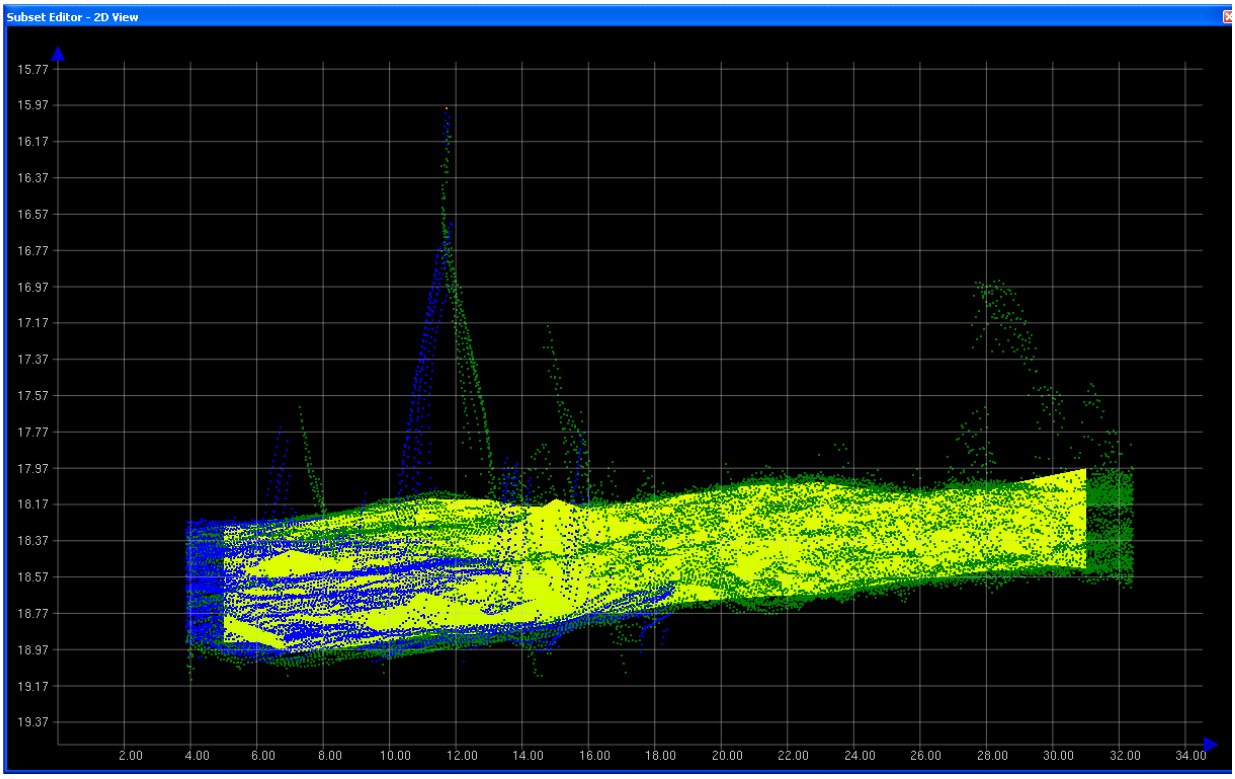


Figure 1.10.1

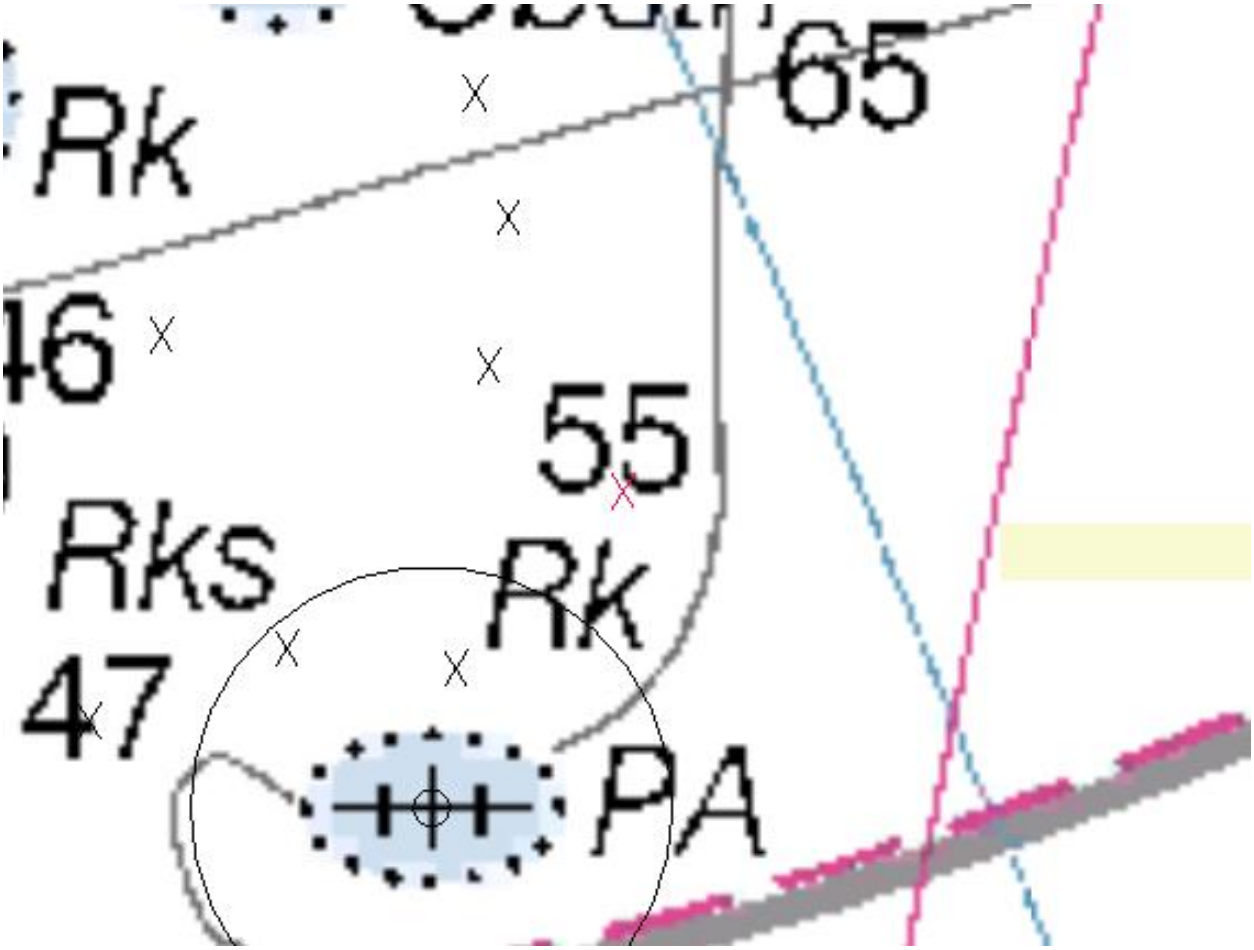


Figure 1.10.2

UNCHARTED

Registry Number: H12011

State: Rhode Island

Locality: Block Island Sound

Sub-locality: 4 nautical miles South of Point Judith

Project Number: OPR-B363-TJ-09

Survey Date: 08/04/2009

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
13218	41st	10/01/2009	1:80,000 (13218_1)	USCG LNM: 7/27/2010 (7/27/2010) CHS NTM: None (7/30/2010) NGA NTM: 11/15/2003 (8/7/2010)
12300	47th	05/01/2008	1:400,000 (12300_1)	[L]NTM: ?
13006	34th	05/01/2007	1:675,000 (13006_1)	[L]NTM: ?
5161	13th	10/01/2003	1:1,058,400 (5161_1)	[L]NTM: ?
13003	49th	04/01/2007	1:1,200,000 (13003_1)	[L]NTM: ?

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

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	65 Wk	Wreck	19.93 m	41° 19' 29.3" N	071° 26' 09.4" W	---

1 - DR_UnCharted

1.1) 65 Wk

Survey Summary

Survey Position: 41° 19' 29.3" N, 071° 26' 09.4" W

Least Depth: 19.93 m (= 65.38 ft = 10.897 fm = 10 fm 5.38 ft)

TPU (±1.96σ): **THU (TPEh)** ±1.000 m ; **TVU (TPEv)** ±0.406 m

Timestamp: 2009-216.17:46:42.769 (08/04/2009)

Survey Line: h12011 / tj_s222_reson7125_stbd / 2009-216 / 389_1738

Profile/Beam: 5055/343

Charts Affected: 13218_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Uncharted wreck of a sailboat. Acquired by RESON 7125 Multibeam echosounder and corrected to MLLW using Observed water levels. Final Verified Water Levels and Final zoning were applied and resolved the sounding to 19.9m(65.3ft).

Feature Correlation

Address	Feature	Range	Azimuth	Status
h12011/tj_s222_reson7125_stbd/2009-216/389_1738	5055/343	0.00	000.0	Primary

Hydrographer Recommendations

Chart dangerous wreck symbol.

S-57 Data

Geo object 1: Wreck (WRECKS)

Attributes:

CATWRK - 2:dangerous wreck

QUASOU - 6:least depth known

SORDAT - 20090825

SORIND - US,US,graph, H12011

TECSOU - 3:found by multi-beam

VALSOU - 19.928 m

VERDAT - 16:Mean high water

WATLEV - 3:always under water/submerged

Office Notes

Concur with clarification - Charted wrecks to the south have been recommended for charting with this wreck.
See section Appendix II (AWOIS #1.1) of this report for discussion of theses wrecks. Due to the chart scale (1:80,000) it is recommended that the southern wrecks be included in the danger circle of this wreck.
Add 65 Wks and danger curve.

Feature Images

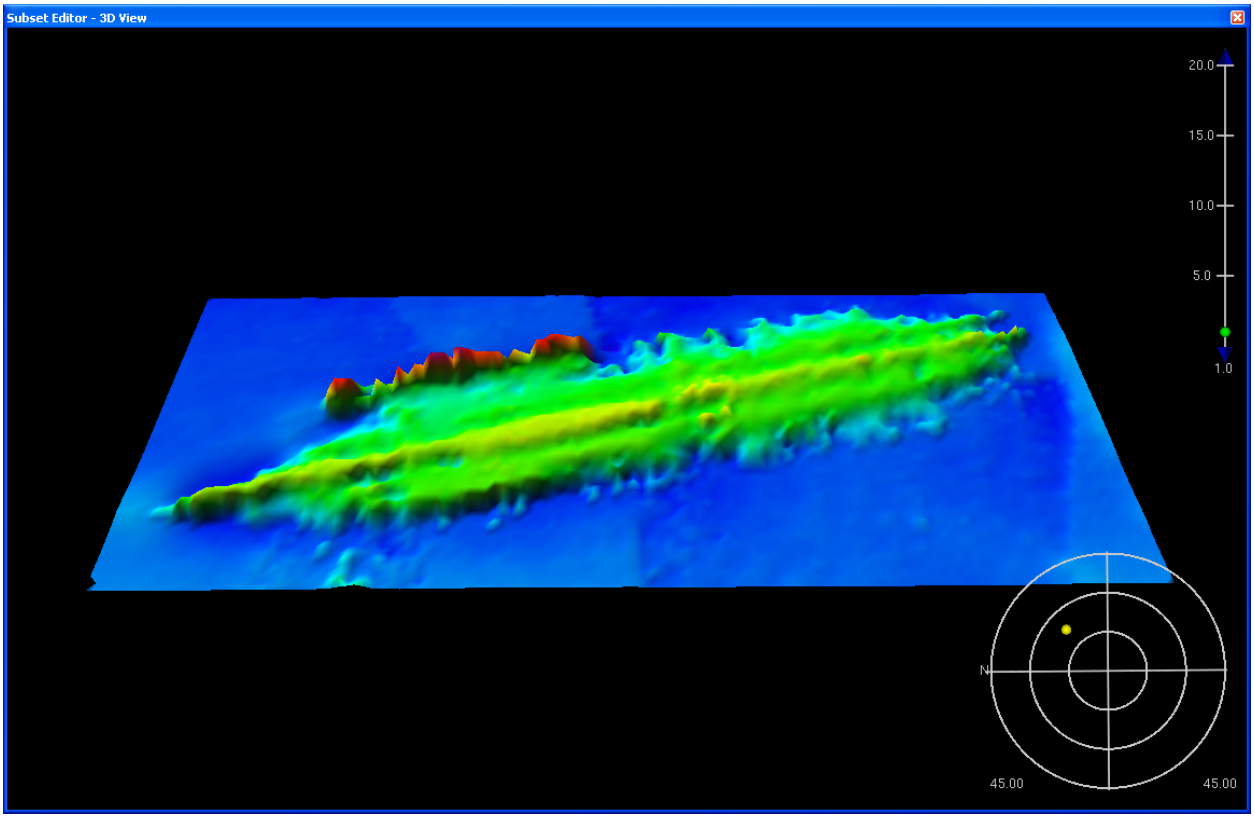


Figure 1.1.1

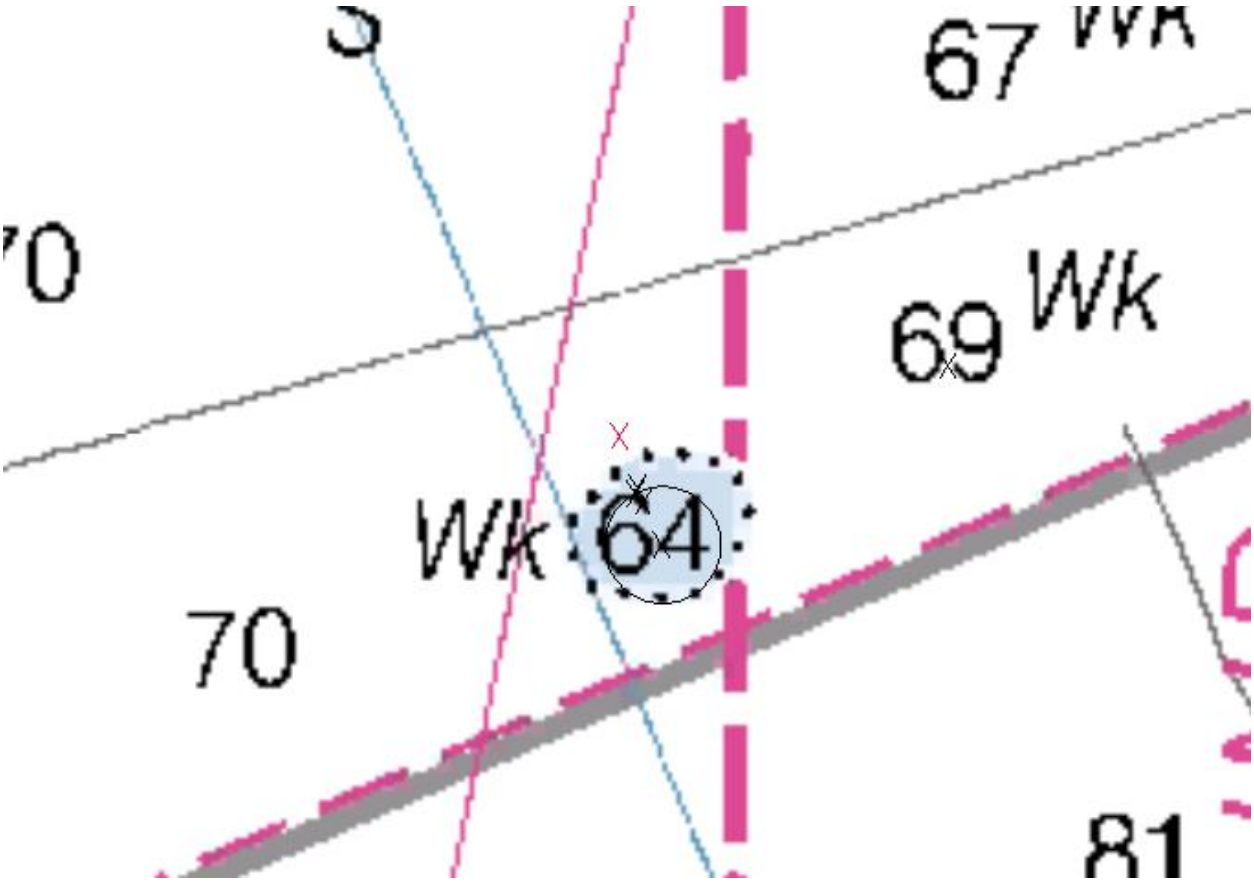
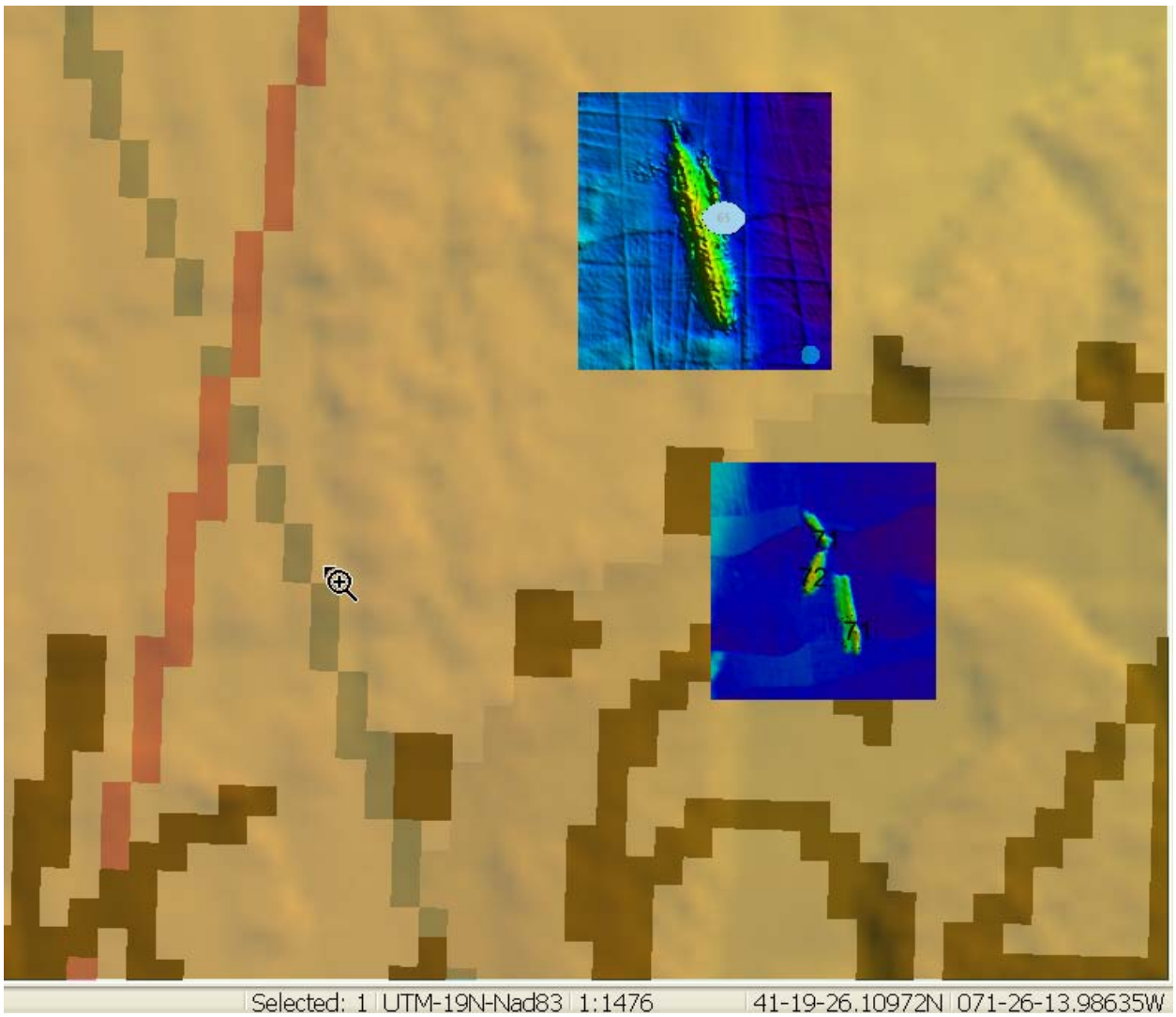
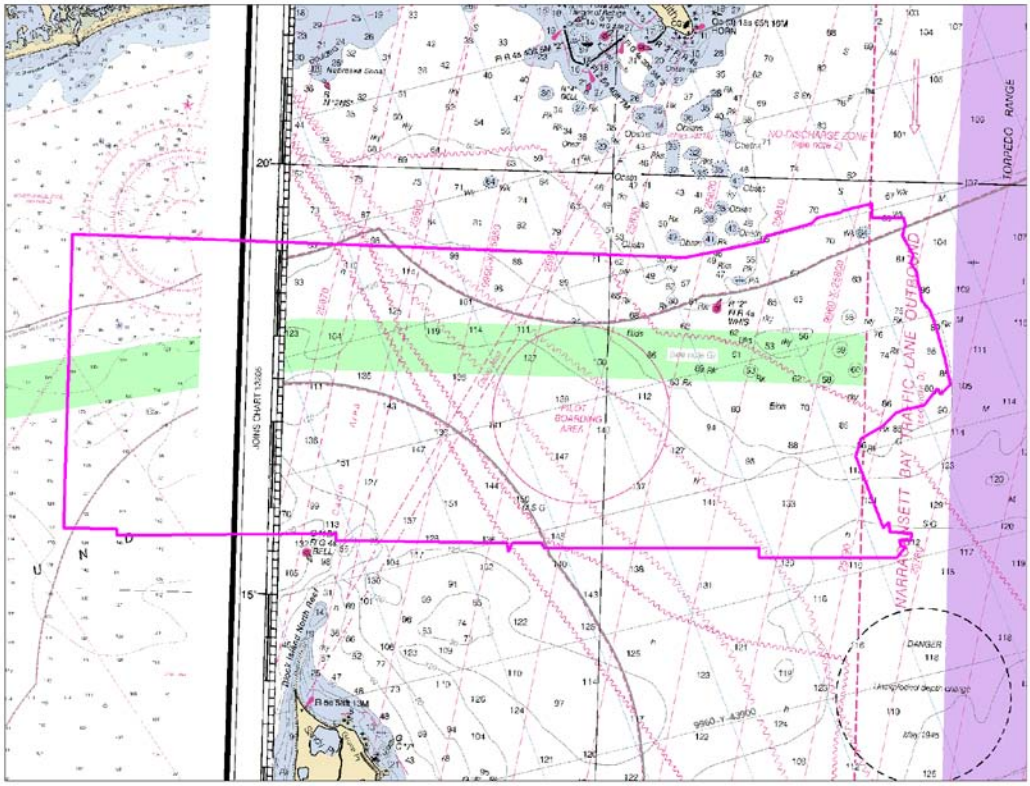


Figure 1.1.2


Selected: 1
UTM-19N-Nad83
1:1476
41-19-26.10972N
071-26-13.98635W

Appendix III

Progress Sketch



Sheet Identifier	Registry Number	HQ Estimated SNM	Sheet Start Date	Sheet End Date	Smooth Tides Request Date	Smooth Tides Received Date	Cumulative % Complete at the end of March	Cumulative % Complete at the end of April	Cumulative % Complete at the end of May	Cumulative % Complete at the end of June	Cumulative % Complete at the end of July	Cumulative % Complete at the end of August
1	H12009	25	4/7/09	5/19/09	5/27/09	6/23/09			100%			
2	H12010	13	7/23/09	8/19/09	8/27/09	9/11/09					75%	100%
3	H12033	14	8/7/09	8/21/09	8/23/09	9/11/09						100%
4	H12011	24	7/24/09	8/26/09	8/26/09	9/11/09					75%	100%
5	H12023	16	8/20/09									75%
10	H12137		8/8/09	8/22/09	8/24/09	9/11/09						100%
9	H12139		8/24/09	8/31/09	9/14/09							100%

Appendix IV

Tides and Water Levels

1. **Tide Notes**

2. **Request for Approved Tides**

3. **Final Tide Notes**

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : September 04, 2009

HYDROGRAPHIC BRANCH: Atlantic
HYDROGRAPHIC PROJECT: OPR-B363-TJ-2009
HYDROGRAPHIC SHEET: H12011

LOCALITY: 4 Nautical Miles South of Point Judith, RI
TIME PERIOD: July 24 - August 25, 2009

TIDE STATION USED: Newport, RI 845-2660
Lat.41° 30.3′ N Long. 71° 19.6' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.099 meters

TIDE STATION USED: New London, CT 846-1490
Lat. 41° 21.7' N Long. 72° 05.4' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.839 meters

Tide STATION USED: Montauk, NY 851-0560
Lat. 41° 02.9′ Long. 71° 57.6' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.683 meters

REMARKS: RECOMMENDED GRID

Please use the TCARI grid "B363TJ2009-TCARI-Revised" as the final grid for project OPR-B363-TJ-2009, H12011, during the time period between July 24 and August 25, 2009.

Refer to attachments for grid information.

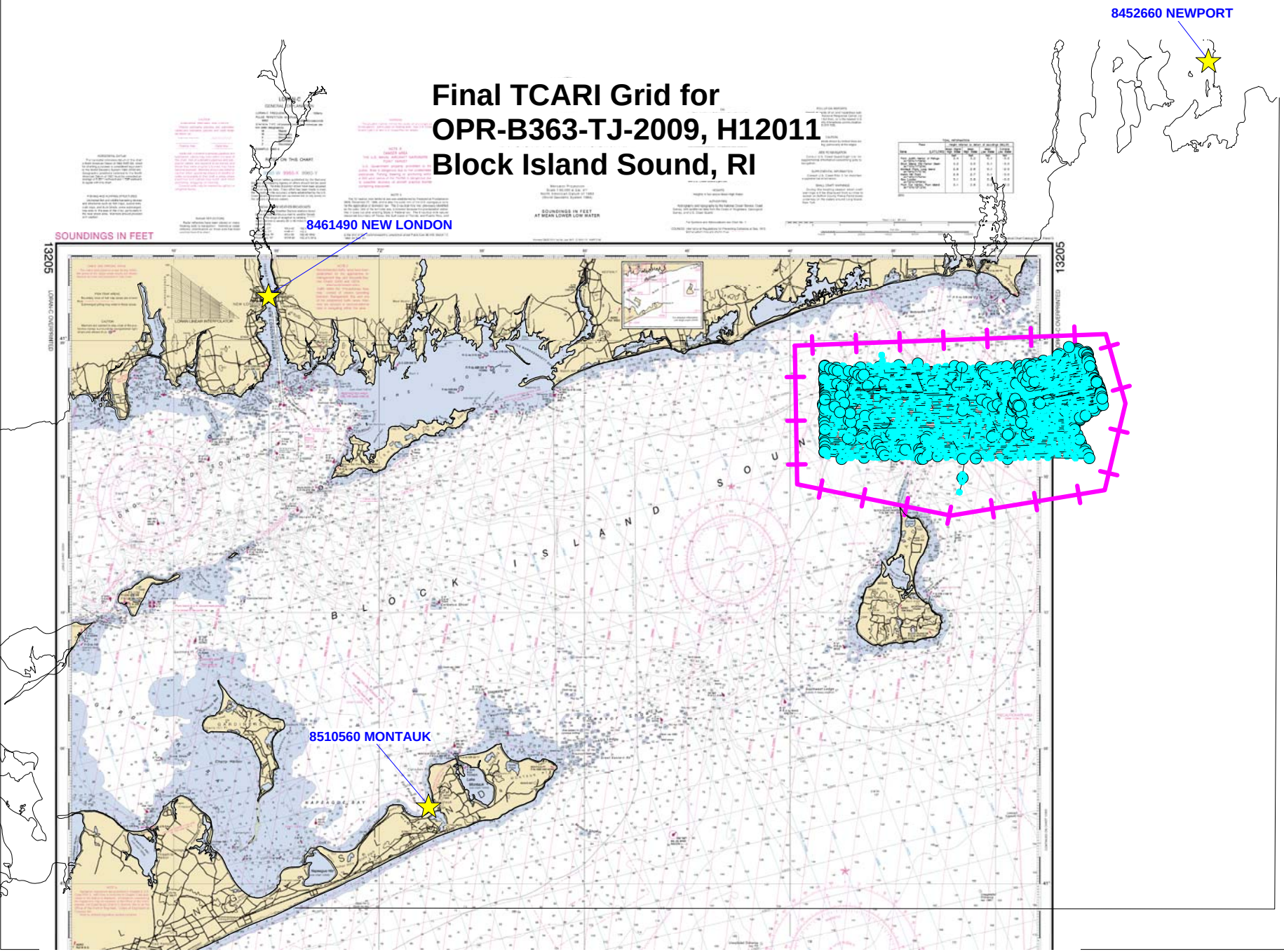
Note 1: Provided time series data are tabulated in metric units (meters), relative to MLLW and on Greenwich Mean Time on the 1983-2001 National Tidal Datum Epoch (NTDE).

Peter J. Stone

Digitally signed by Peter J. Stone
DN: cn=Peter J. Stone, o=CO-OPS, ou=NOAA/NOS, email=peter.stone@noaa.gov, c=US
Date: 2009.09.11 14:37:25 -04'00'

CHIEF, OCEANOGRAPHIC DIVISION

Final TCARI Grid for OPR-B363-TJ-2009, H12011 Block Island Sound, RI



Appendix V

Supplemental Survey Records & Correspondence

H12011_Bottom_Sample_Report

Registry Number: H12011

State: Rhode Island

Locality: Block Island Sound

Sub-locality: 4 nautical miles South of Point Judith

Project Number: OPR-B363-TJ-09

Survey Date: 08/19/2009

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
13215	18th	08/01/2004	1:40,000 (13215_1)	USCG LNM: 01/13/2009 (07/14/2009) CHS NTM: None (04/24/2009) NGA NTM: None (07/25/2009)
13205	38th	02/01/2007	1:80,000 (13205_1)	[L]NTM: ?
13218	40th	02/01/2008	1:80,000 (13218_1)	USCG LNM: 05/05/2009 (07/14/2009) NGA NTM: 11/15/2003 (07/25/2009)
12300	47th	05/01/2008	1:400,000 (12300_1)	[L]NTM: ?
13006	34th	05/01/2007	1:675,000 (13006_1)	[L]NTM: ?
5161	13th	10/01/2003	1:1,058,400 (5161_1)	[L]NTM: ?
13003	49th	04/01/2007	1:1,200,000 (13003_1)	[L]NTM: ?

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

Features

No.	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	Bottom Sample	[None]	41° 15' 59.9" N	071° 31' 00.9" W	---
1.2	Bottom Sample	[None]	41° 16' 36.0" N	071° 28' 35.5" W	---
1.3	Bottom Sample	[None]	41° 15' 56.4" N	071° 26' 14.6" W	---
1.4	Bottom Sample	[None]	41° 18' 43.1" N	071° 26' 46.2" W	---
1.5	Bottom Sample	[None]	41° 17' 31.6" N	071° 27' 45.0" W	---
1.6	Bottom Sample	[None]	41° 18' 13.5" N	071° 29' 31.3" W	---
1.7	Bottom Sample	[None]	41° 17' 01.9" N	071° 33' 11.1" W	---
1.8	Bottom Sample	[None]	41° 18' 27.6" N	071° 33' 02.2" W	---
1.9	Bottom Sample	[None]	41° 18' 46.1" N	071° 34' 07.4" W	---

1.10	Bottom Sample	[None]	41° 18' 09.1" N	071° 36' 09.2" W	---
1.11	Bottom Sample	[None]	41° 17' 55.9" N	071° 37' 15.7" W	---
1.12	Bottom Sample	[None]	41° 16' 42.9" N	071° 35' 55.6" W	---
1.13	Bottom Sample	[None]	41° 16' 01.4" N	071° 35' 25.1" W	---

H12011 COMPILATION LOG

General Survey Information	
REGISTRY No.	***H12011***
PROJECT No.	***OPR-B363-TJ-09***
FIELD UNIT	***NOAA SHIP THOMAS JEFFERSON***
DATE OF SURVEY	***July 24 to August 25, 2009***
LARGEST SCALE CHART	***13215, 19th Ed., 20091201***
SOUNDING UNITS	***Feet***
COMPILER	***Norris Wike***

Source Grids	File Name
	H12011_AWOIS_1856_Cube_NOAA_50cm_Final H12011_AWOIS_2712_Cube_NOAA_50cm_Final H12011_AWOIS_2917_Cube_NOAA_50cm_Final H12011_AWOIS_2923_Cube_NOAA_50cm_Final H12011_AWOIS_8898_Cube_NOAA_50cm_Final H12011_AWOIS_14442_Cube_NOAA_50cm_Final H12011_East_Cube_NOAA_1m_DT20 H12011_East_Cube_NOAA_2m_DT50 H12011_New_Wreck_1_Cube_NOAA_50cm_Final H12011_New_Wreck_2_Cube_NOAA_50cm_Final H12011_New_Wreck_3_Cube_NOAA_50cm_Final H12011_New_Wreck_4_Cube_NOAA_50cm_Final H12011_New_Wreck_5_Cube_NOAA_50cm_Final H12011_New_Wreck_6_Cube_NOAA_50cm_Final H12011_New_Wreck_7_Cube_NOAA_1m H12011_Object_Detection_NE_Cube_NOAA_50cm_Final H12011_Object_Detection_NW_Cube_NOAA_50cm_Final H12011_Object_Detection_SE_Cube_NOAA_50cm_Final H12011_Object_Detection_SW_Cube_NOAA_50cm_Final H12011_West_Cube_NOAA_1m_DT_20 H12011_West_Cube_NOAA_2m_DT_50
Surfaces	**File Name**
Combined	***H12011_Combined_4m.hns***
Interpolated TIN	***H12011_InterpTIN_8m.hns***
Shifted Interpolated TIN	***H12011_InterpTIN_Shifted_8m.hns***
Final HOBs	**File Name**
Survey Scale Soundings	***H12011_SS.hob***
Chart Scale Soundings	***H12011_CS.hob***
Contour Layer	***H12011_Contours.hob***
Feature Layer	***H12011_Features.hob***
Meta-Objects Layer	***H12011_MetaLayers.hob***
Blue Notes	***H12011_BlueNotes.hob***
Seabed Layer	***H12011_Seabed_Area.hob***
Bottom Characteristics	***H12011_BottomSamples.hob***
ENC Retain	***H12011_ENC_Retain.hob***

Meta-Objects Attribution	
Acronym	**Value**
M_COVR	
CATCOV	***1***
SORDAT	***20090825***
SORIND	***US,US,graph,H12011***

M_QUAL	
CATZOC	***6***
INFORM	***NOAA Ship Thomas Jefferson***
POSACC	***10***
SORDAT	***20090825***
SORIND	***US,US,graph,H12011***
SUREND	***20090825***
SURSTA	***20090724***
DEPARE	
DRVALV 1	***44.0 ft***
DRVALV2	***176.0 ft***
SORDAT	***20090825***
SORIND	***US,US,graph,H12011***
M_CSCL	
CSCALE	***80000***
SORDAT	***20090825***
SORIND	***US,US,graph,H12011***

SPECIFICATIONS:

I. COMBINED SURFACE:
   a. Number of ESAR Final Grids: ***21***
   b. Resolution of Combined (m): ***4M***

II. SURVEY SCALE SOUNDINGS (SS):
   a. Radius
   b. Shoal biased
   c. Use Radius Table File: ***H12011_SoundgsSpacingRange***
   d. Queried Depth of All Soundings
      i. Minimum: ***13.94M***
      ii. Maximum: ***53.34M***

III. INTERPOLATED TIN SURFACE:
   a. Resolution (m): ***8M***
   b. Linear
   c. Shifted value: *[-0.229m (feet), (≤ 10 fathoms)]*
      [-1.372m (fathoms), (> 10 fathoms)]

IV. CONTOURS:
   a. Use a Depth List: ***H12011_depth_curves_list.txt***
   b. Line Object: DEPCNT
   c. Value Attribute: VALDCO

V. FEATURES:
   a. Total Number of Features***:*** ***6***
   b. Number of Insignificant Features:

VI. CHART SURVEY SOUNDINGS (CS):
   a. Number of ENC CS Soundings: ***342***
   b. Radius
   c. Shoal biased
   d. Use Single-Defined Radius: m on the ground
      i. Radius Value (m):
      ii. Or use a Sounding Space Range Table (if applicable): ***H12011_CS_Sounding SpacingRange***
   e. Filter: Interpolated != 1
   f. Number Survey CS Soundings: ***353***

VII. Notes:

ATLANTIC HYDROGRAPHIC BRANCH
H-CELL REPORT to ACCOMPANY
SURVEY H12011 (2009)

This H-Cell Report has been written to supplement and/or clarify the original Descriptive Report. Sections in this report refer to the corresponding sections of the Descriptive Report.

B. DATA ACQUISITION AND PROCESSING

B.2. QUALITY CONTROL

H-Cell

The AHB source depth grid for the survey's nautical chart update product entailed the field's original 50cm, 1m, and 1m and 2m depth threshold grids produced during office processing. These grids were combined at 4 meter resolution. The survey scale soundings were created from the combined surface using the H12011_SoudingsSpacingRange file. Refer to the Compilation Log above for exact values used for this process. A TIN was created from the survey scale soundings from which an interpolated surface was generated. The chart scale soundings were selected from the filtered interpolated surface using a Sounding Spacing Range table at the 1:40,000 and 1:80,000 chart scales. The chart scale selected soundings are a subset of the survey scale selected soundings. The surface model was referenced when selecting the chart scale soundings, to ensure that the selected soundings portrayed the bathymetry within the common area.

Depth contours were created from a shifted interpolated TIN surface of 8m resolution and the contours were then derived from the interpolated and non-interpolated nodes. Therefore, using this method the contours are in harmony with the SS and CS soundings while maintaining the chart equivalent contour values as whole integers. The depth contours are being forwarded to MCD for reference only. The contours were utilized during chart scale sounding selection and quality assurance efforts at AHB. The depth contours are incorporated into the SS H-Cell product as per 2009 H-Cell Specifications.

The compilation components (Stand Alone HOB files (SAHOB)) are detailed in the Compile Log attached to the Descriptive Report. The SAHOB files included depth areas (DEPARE), depth contours (DEPCNT), sounding selections (SOUNDG), features (SBDARE, WRECKS), Meta objects (M_COVR, M_QUAL, M_CSCL), and cartographic Blue Notes ($CSYMB).

All of the components with the exception of the survey scale sounding selection and depth contours were inserted into one feature layer (including the Bluenotes, as dictated by Hydrographic Technical Directive 2008-8), and this layer was exported into S-57 format in order to create the H-Cell deliverable. Similarly, the survey

scale sounding selection and depth contours were exported into S-57 format separately, and then both S-57 files were processed in CARIS HOM to convert the metric units to feet. The final products are two S-57 files, in Lat/Lon NAD-83, one that contains the

Chart soundings, all the Features, Meta objects, and Bluenotes (H12011_CS.000), and one that contains the survey scale sounding selection and depth contours (H12011_SS.000). Finally, quality assurance checks were made utilizing CARIS S-57 Composer version 2.1 validation checks and DKART INSPECTOR version 5.

H12011 CARIS H-Cell final deliverables include the following products:

H12011_CS.000	1:40,000 Scale	H12011 H-Cell with Chart Scale Selected Soundings
H12011_SS.000	1:20,000 Scale	H12011 Selected Soundings (Survey Scale)

B.2.4 Junctions

Survey H12011 has a junction with surveys H12009 to the southeast, H12010 to the southwest and H12015 to the west. Present survey soundings compare within 1-2 feet with H12009, H12010 and H12015.

B.4 DATA PROCESSING

The following software was used to process data at the Atlantic Hydrographic Branch:

CARIS HIPS/SIPS version 6.1 SP2, HF 1-8
CARIS Bathy DataBASE version 2.1 SP1, HF 1-10
CARIS Bathy DataBASE version 2.3 HF 1-16
CARIS Bathy DataBASE version 3.0 HF 1, 3, 5
CARIS S-57 Composer version 2.1 HF 4
DKART INSPECTOR, version 5.0 Build 732 SP1
CARIS HOM ENC 3.3 SP3 HF 8
PYDRO 10.9 (r3009)

C. HORIZONTAL AND VERTICAL CONTROL

The Hydrographer makes adequate mention of all water level and vertical datum adjustments in the Descriptive Report.

The horizontal control used for this survey's data acquisition and H-Cell compilation is based upon the North American Datum of 1983 (NAD83), UTM projection zone 19.

D. RESULTS AND RECOMMENDATIONS

D.1 CHART COMPARISON

13215 (19th. Edition, Dec. /09)

Block Island Sound, Point Judith to Montauk
Corrected through NM 12/19/2009
Corrected through LNM 12/08/2009
Scale 1:40,000

13218 (41st. Edition, Oct. /09)

Martha's Vineyard to Block Island
Corrected through NM 10/03/2009
Corrected through LNM 09/22/2009
Scale 1:80,000

ENC Comparison

US5RI10M

Block Island Sound, Point Judith to Montauk
Edition 3
Application Date 2010-03-02
Issue Date 2010-07-06
Chart 13215

US4MA23MM

Martha's Vineyard to Block Island
Edition 20
Application Date 2010-08-16
Issue Date 2010-08-16
Chart 13218

Hydrography

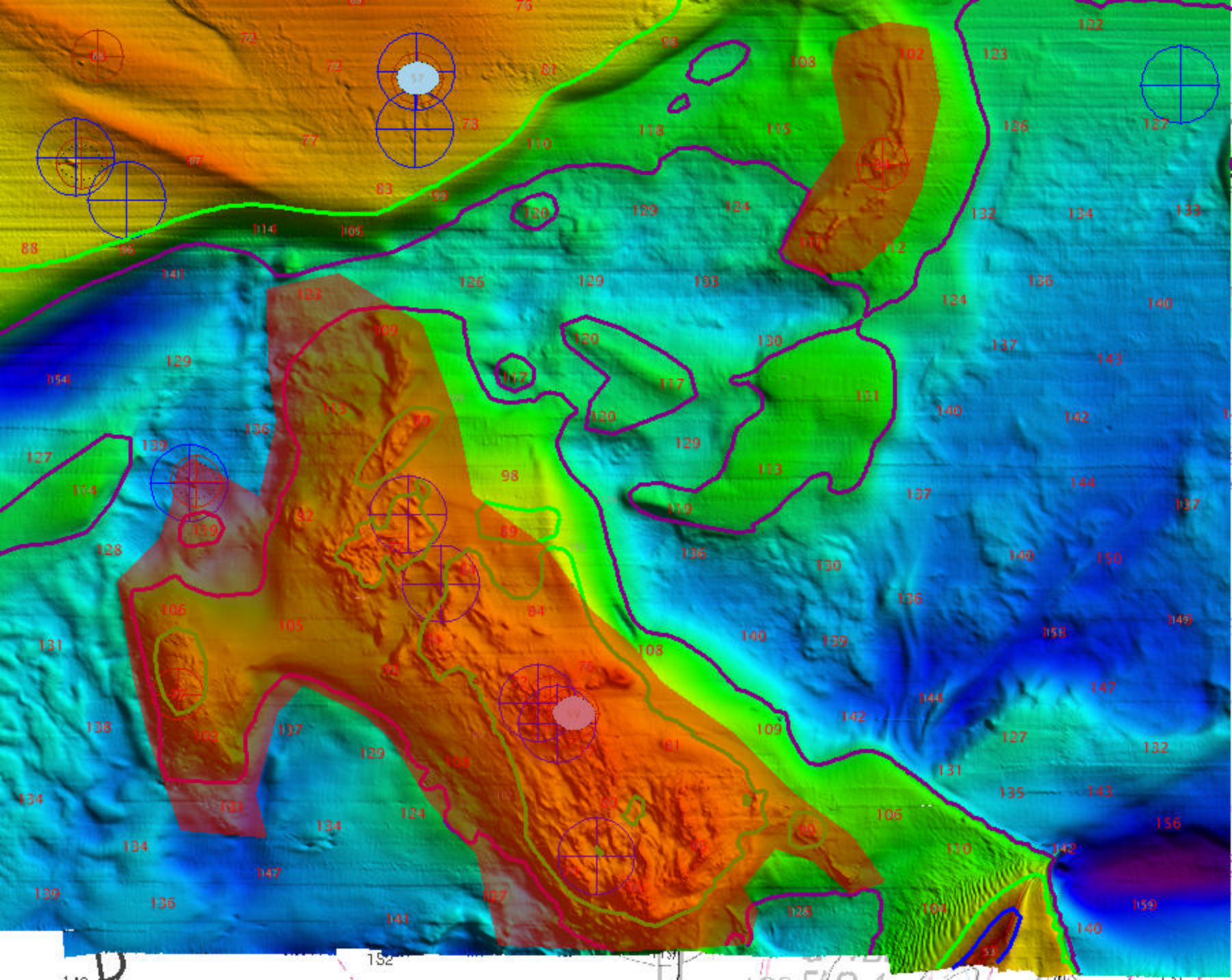
The charted hydrography originates with prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in section "D" and Appendix II of the Descriptive Report. The following exceptions are noted:

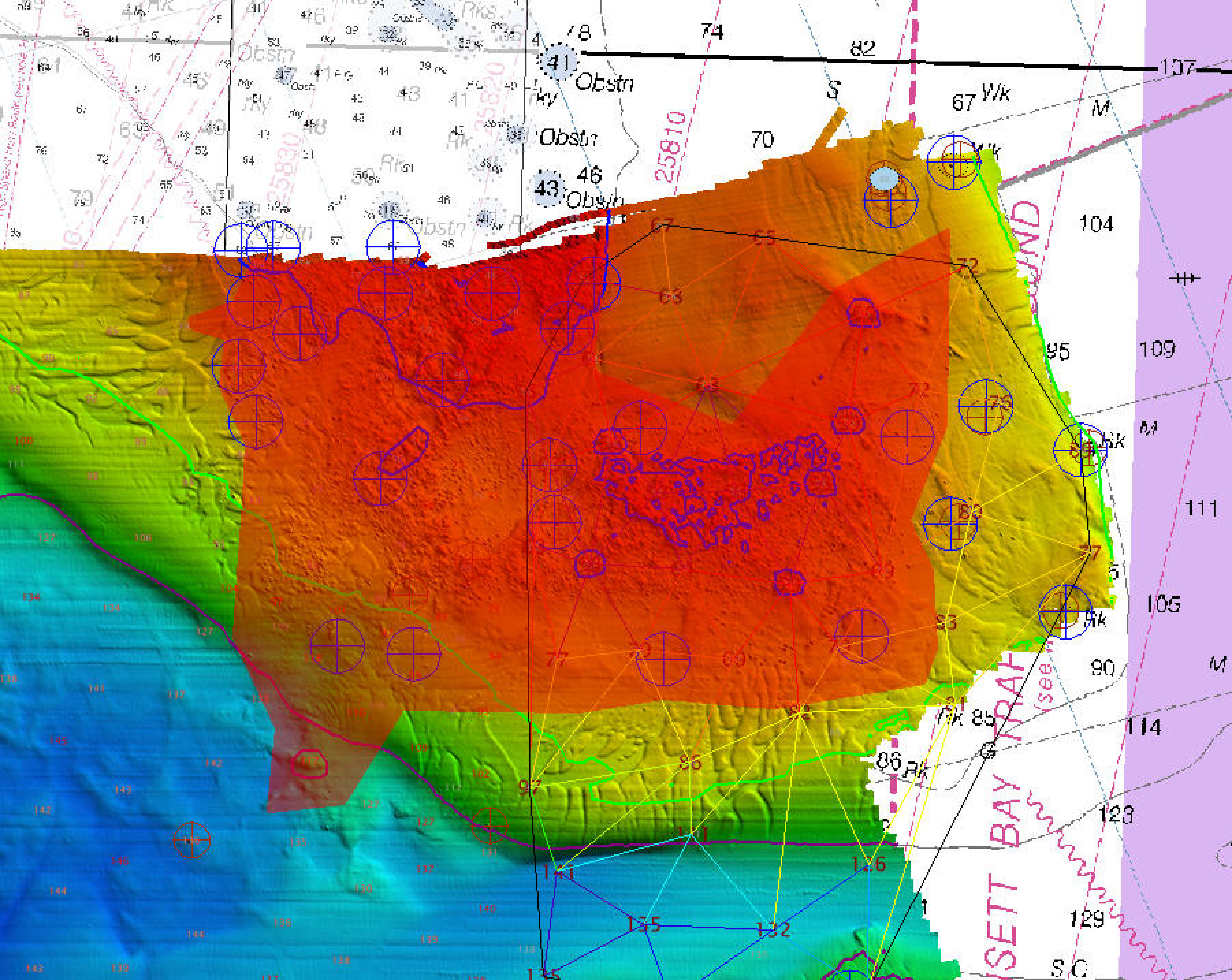
An uncharted ***rock*** with a depth no ***59 ft*** in Latitude 41°16'24.84"N, Longitude 071°35'26.85"W was located during present survey operations. It is recommended that the ***rock*** with a depth of ***59 ft*** be charted. Chart 59 Rk and danger curve.

Three rky seabed areas in the following locations were created from the grids of the present survey:

LATITUDE N	**LONGITUDE W**
41°16'46.00”	071°36’23.00"
41°18'04.00”	071°27’55.00"
41°18'06.00”	071°34’17.00"

All charted bottom characteristic with notations rky, Blds or hard were deleted from within the rky seabed areas. It is recommended that the areas be charted as shown on present survey.





78
74
82
107
41
Obstn
67 Wk
Obstn
70
25810
43
46
Obstn
104
95
109
111
105
90
114
123
129
Rk 85
86 Rk
BAY
SETT
S C

MISCELLANEOUS

Chart compilation was done by Atlantic Hydrographic Branch personnel, in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland. See Section D.1. of this report for a list of the Raster Charts and Electronic Navigation Charts (ENC) used for compiling the present survey.

ADEQUACY OF SURVEY

The present survey is adequate to supersede the charted bathymetry within the common area. Any features not specifically addressed either in the H-Cell BASE Cell File or the Blue Notes should be retained as charted. Refer to the Descriptive Report for further recommendations by the hydrographer.

APPROVAL SHEET
H12011

Initial Approvals:

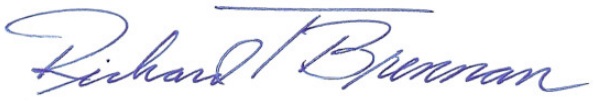
The completed survey has been inspected with regard to survey coverage, delineation of depth contours, disposition of critical depths, cartographic symbolization, and verification or disproval of charted data. All revisions and additions made to the H-Cell files during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with National Ocean Service and Office of Coast Survey requirements except where noted in the Descriptive Report and the Evaluation Report.

All final products have undergone a comprehensive reviews per the Hydrographic surveys Division Office Processing Manual and are verified to be accurate and complete except where noted.

_____

Norris A. Wike
Cartographer
Atlantic Hydrographic Branch

I have reviewed the H-Cell files, accompanying data, and reports. This survey and accompanying Marine Chart Division deliverables meet National Ocean Service requirements and standards for products in support of nautical charting except where noted.



Richard T. Brennan
I am approving this document
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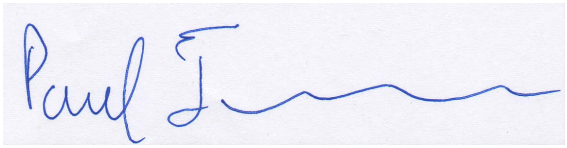
Approved: _____

Richard T. Brennan
Commander, NOAA
Chief, Atlantic Hydrographic Branch



Paul Turner
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