H11446

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: **H11446**

LOCALITY

State: New York

General Locality: Eastern Long Island Sound

Sub-locality: Orient Point to Terry Point

2008

CHIEF OF PARTY
CDR P. Tod Schattgen
NOAA

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DATE

NOAA FORM 77-28 (11-72) U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTRY NUMBER:
HYDROGRAPHIC TITLE SHEET	**H11446**

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:	**New York**		
General Locality:	**Eastern Long Island Sound**		
Sub-Locality:	**Orient Point to Terry Point**		
Scale:	**1:10,000**	Date of Survey:	**22 Sep to 21 Oct, 2008**
Instructions Dated:	**28 July 2008**	Project Number:	**OPR-B307-TJ-08**
Vessel:	**NOAA Ship *Thomas Jefferson***		
Chief of Party:	**CDR P. Tod Schattgen**		
Surveyed by:	**NOAA Ship *Thomas Jefferson* Personnel**		
Soundings by:	**RESON 8101 and 8125 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:	***Feet*** **Meters at MLLW**		

Remarks: ***Bold, Italic, Red notes in the Descriptive Report were made during office processing.***
1) All Times are in UTC.
2) This is a Navigable Area Hydrographic Survey.
3) Projection is NAD83, UTM Zone 18.

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Descriptive Report to Accompany Hydrographic Survey H11446

Project OPR-B307-TJ-08
Orient Point to Terry Point
Eastern Long Island Sound, New York
Scale 1:10,000
22 September to 21 October, 2008
NOAA Ship *Thomas Jefferson*

A. AREA SURVEYED

This hydrographic survey was completed as specified by Hydrographic Survey Letter Instructions* OPR-B307-TJ-08, dated 28 July, 2008. The survey area includes the Orient Point to Terry Point, Eastern Long Island Sound, New York. ***Filed with original field records.***

Northwest Corner	Northeast Corner	Southwest Corner	Southwest Corner
41° 09' 35.0" N 072° 19' 26.9" W	41° 10' 46" N 072° 13' 47" W	41° 08' 26" N 072° 19' 20" W	41° 09' 43" N 072° 13' 47" W

Data acquisition was conducted from 22 September to 21 October, 2008.

This project responds to a request from the Northeast Marine Pilots Association for contemporary hydrographic surveys to update the nautical charts in the Eastern Long Island Sound. The current vintage of hydrography dates back to as early as 1883 in the southern part of the project area. Petroleum and coal products constitute the bulk of the goods transported through the Sound.

LNM Single beam mainscheme only	**n/a**
LNM Multibeam mainscheme only	**252.0**
LNM Lidar mainscheme only	**n/a**
LNM Side Scan Sonar mainscheme only	**25.5 lnm**
Lineal nautical miles of any combination of the above techniques (specify methods)	**277.5**
LNM Crosslines singlebeam and multibeam combined	**n/a**
LNM Lidar Crosslines	**n/a**
LNM development lines non mainscheme	**n/a**
LNM shoreline/nearshore investigations	**n/a**
Number of Bottom Samples	**0**
Number of items investigated that required additional time/effort in the field beyond the above survey operations	**1**
Total number of square nautical miles	**277.5**

Table A-1: Hydrographic Survey Statistics.

Calendar Date	Julian Day
21 September	266
22 September	267
23 September	268
1 October	275
4 October	278
5 October	279
6 October	280
7 October	281

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

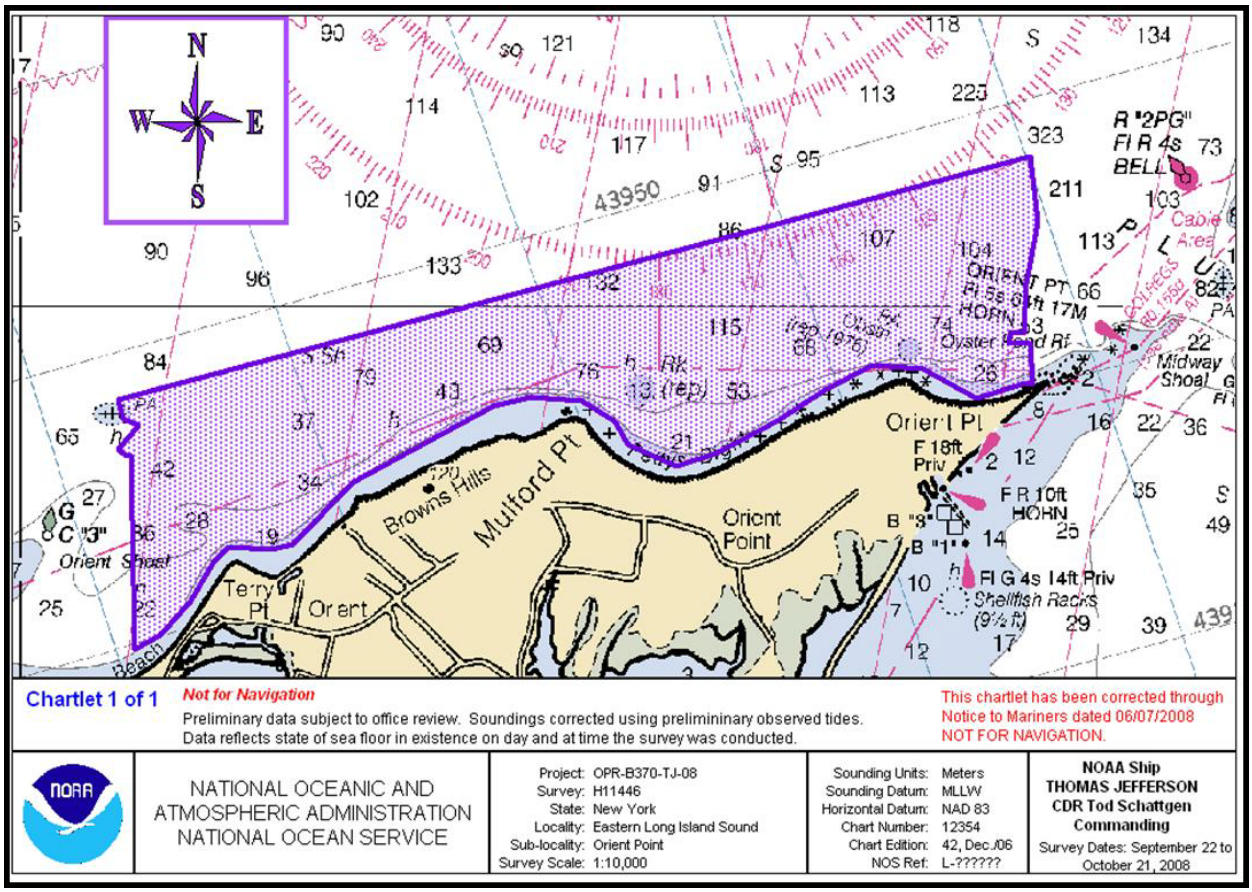


Figure A-1: H11446 Survey Limits.

B. DATA ACQUISTION AND PROCESSING

Refer to OPR-B307-TJ-08 *Data Acquisition and Processing Report* (2008 Fall *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. ***Filed with original field records.***

B 1. EQUIPMENT AND VESSELS

Data were acquired by Survey Launch *3101* and Survey Launch *3102*. Launch *3101* acquired, multibeam echosounder soundings (MBES), and sound velocity profiles. Launch *3102* acquired side scan SONAR (SSS) imagery, multibeam echosounder soundings, and sound velocity profiles. Vessel configurations, equipment operation and data acquisition and processing were consistent with specifications described in the *DAPR* with the exception of pitch, roll and yaw biases for Launches *3101* and *3102*. A patch test was preformed for Launch *3102* on DN 279 after the launch touched bottom. The Roll bias for Launch *3101* was adjusted in post processing to alleviate a visible roll error in the data.

B 2. QUALITY CONTROL

B 2.1 System Certification and Calibration

Refer to NOAA Ship *Thomas Jefferson Data Acquisition and Processing Report* (2008 Fall *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. ***Filed with original field records.***

B.2.2 Sounding Coverage

As per the Letter Instructions, this survey was conducted using complete multibeam and 100% SSS Coverage in depths ≤ 20 meters.

SSS coverage was proven by creation of 100% coverage mosaics, with 1m resolution.

Bathymetry coverage was proven by the creation of a Combined Uncertainty Bathymetric Estimator (CUBE) surface. For depths 4 – 20 meters the CUBE grid resolution is 0.5 meters, for depths greater than 20 meters grid resolution is 2 meters.

There are 21 minor gaps in the MBES coverage that exceed the 3 node maximum, 17 of which exist over rocky features. In addition, a significant holiday exists over a 1000m long by 30m wide swath between 41° 09’ 39.85”N 072° 17’ 30.31”W and 41° 09’ 38.79”N ~~076°~~ 072° 16’ 48.65”W.

B 2.3 Crosslines

No crosslines were acquired for this survey. ***See Survey Correspondence, surface standard deviation comparison was used in place of crossline comparisons to identify systematic errors.***

B 2.4 Junctions and Prior Surveys

The following contemporary surveys junction with H11446: ***See also Evaluation Report.***

Registry #	Scale	Date	Field Party	Junction side
H11251	1:10,000	2008	*Thomas Jefferson*	West
H11445	1:10,000	2008	*Thomas Jefferson*	East
H11997	1:10,000	2008	*Thomas Jefferson*	North

For the all junction surveys, areas of overlap were analyzed using the surface difference tool in CARIS BASE Editor using 2m CUBE surfaces.

H11251: Depth differences ranged from 1.97 to -1.17 meters. The modal difference was 0.0 and the average was 0.008.

H11445: Depth difference ranged from 3.81 to -14.06 meters. The modal difference was 0.118 and the average was 0.26.

H11997: Depth differences ranged from 21.81 to -15.74 meters. The modal difference was 0.26 and the average was 0.11.

Surveys H11250, H11252, H11255, and H11361 were listed in the project instructions as junction surveys, however no junction data was provided to *Thomas Jefferson* for comparison.

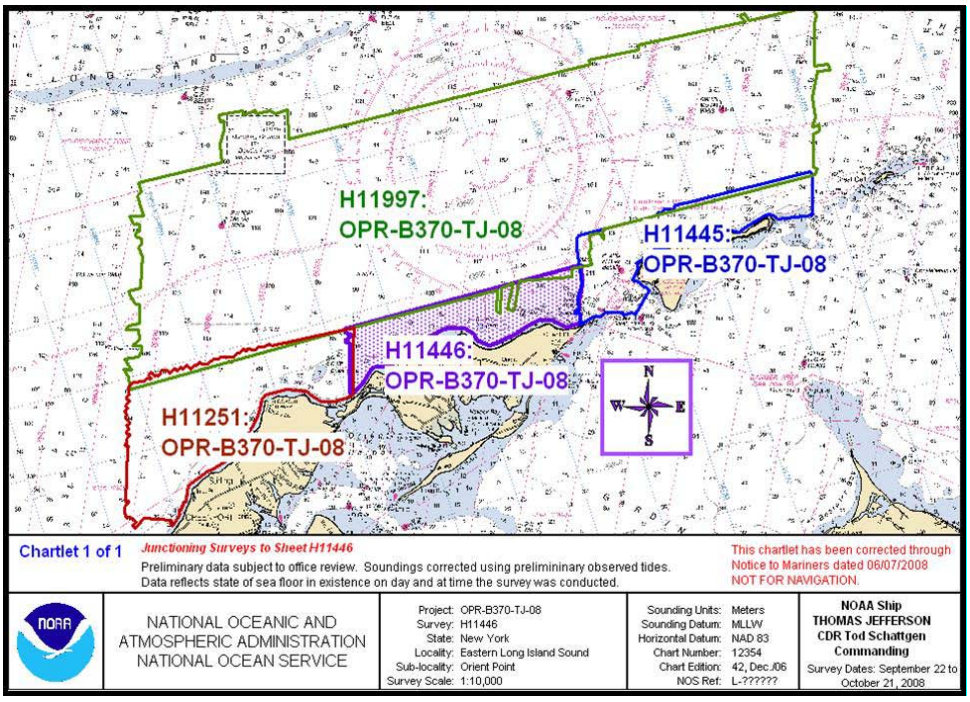


Figure B-1: H111446 Junction Surveys.

B 2.5 Systematic Errors

B 2.5.1 Dynamic Draft Error: The most prevalent systematic error for this survey is errors in dynamic draft due to high current. In areas exposed to high current the amount of error ranges up to 0.20 meters, while protected areas show lower to no draft error. At junctions between days the dynamic draft error is exacerbated by changes in draft due to fuel consumption; this is particularly visible between days 268 and 278 for HSL *3102* where the total draft error is 0.30 meters. The effect of current on dynamic draft is negated at approximately 20 meters of depth. All errors due to draft remain within IHO Order 1 error budget.

B 2.5.2 Positional Error: A positional error of up to 1.25 meters was noted in the data. This error occurs only on lines run near to the shoreline and appears to be the result of either multipath or blocking of the DGPS beacon. All errors due to position remain within IHO Order 1 error budget.

B 3. CORRECTIONS TO ECHO SOUNDING

HDCS sounding data were reduced to mean lower-low water (MLLW) using approved tides from the primary station at 8461490, New London, CT and secondary station at 8465705, New Haven, CT, adjusted for tidal constituents and residuals provided by CO-OPS as specified in the Letter Instructions and illustrated in Figure 4.

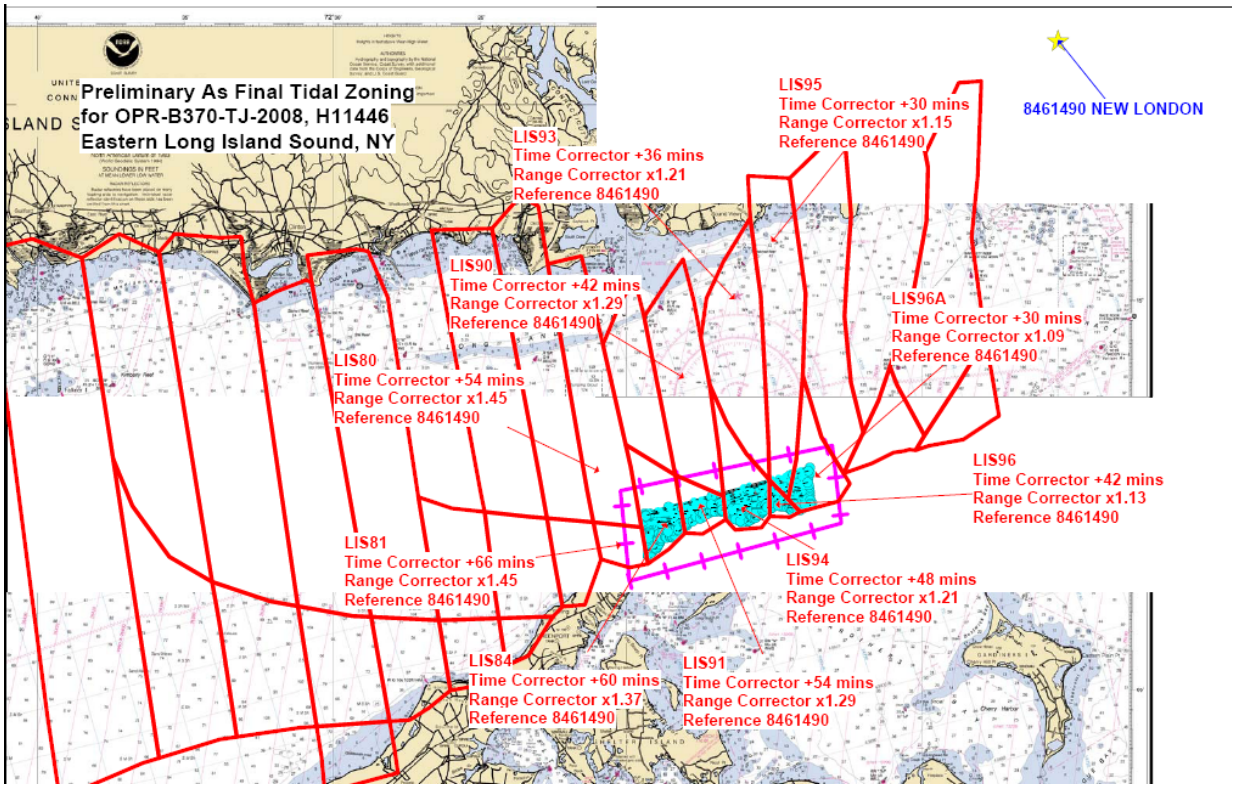


Figure B-2: Final Tide Zoning.

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.
Filed with original field records.

B 4. DATA PROCESSING

B 4.1 Total Propagated Error

For the 2008 field season, Total Propagated Error (TPE) parameters for sound speed and tides are calculated separately for each project. The project-specific parameters for OPR-B370-TJ-08, Survey H11446 are as follows:

Vessel	Tide Values		Sound Speed Values	
	Measured	Zoning	Measured	Surface
3101	0	0.19	4.0	0.2
3102	0	0.19	4.0	0.2

Table B-1: TPE Parameters.

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

B 4.2 BASE Surfaces and Mosaics

Table B-2 describes all BASE Surfaces and Mosaics submitted as part of Survey H11446:

Name of Fieldsheet	***Resolution***	***Type***	***Purpose***
H11446_East	≤20m depth, 0.5m resolution, 20m depth, 2m resolution	CUBE	≤20m object detection, > 20m complete coverage
H11446_West	≤20m depth, 0.5m resolution, 20m depth, 2m resolution	CUBE	≤20m object detection, > 20m complete coverage
H11446_SSS_Mosaic	1 meter	SSS Mosaic	Side Scan Coverage
H11446_Combined_2m	2 meter	CUBE	Not a deliverable for survey

Table B-2: submitted BASE surfaces.

This survey was processed using the Combined Uncertainty and Bathymetry Estimator (CUBE) algorithm. The CUBE configuration was set to "Shallow" for this entire survey. Refer to the 2007 Data Acquisition and Processing Report, 2007 Field Procedures Manual, and CARIS HIPS/SIPS 6.1 manual for further discussion.

C. VERTICAL AND HORIZONTAL CONTROL *See also Evaluation Report*

As Per FPM section 5.2.3.2.3 guidance a *HVCR* report was not filed as no horizontal 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

The horizontal datum for this project is the North American Datum of 1983 (NAD83), zone 18. 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 (306 kHz), 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) and secondary station at New Haven Harbor, CT (8465705) will serve as datum control for H11446. Finalized water levels were applied to all sounding data.

A request for delivery of final approved (verified) tides for this survey was forwarded to N/OPS1 on December 1st, 2008 in accordance with the FPM and project letter instructions. Preliminary zoning was accepted as final from final smooth tide report from COOPS. Verified water levels were applied to all bathymetry for the survey.

D. RESULTS AND RECOMMENDATIONS *See also Evaluation Report*

D.1 Chart Comparison

Survey H11446 was compared with chart 12358 (20th Ed.; April 2008, 1:40,000), chart 12354 (42nd Ed.; December 2006, 1:80,000), and chart 13209 (27th ED; April 2007). Chart comparisons were performed in CARIS, and in Pydro using survey-scale excessed soundings.

D.1.1 Chart 12358 Comparison *Concur.*

Comparison between chart 12358 and the current survey show a significant difference between contours and depths acquired by the current survey, and those charted.

Contours

- The 18’ contour has moved offshore of the charted line, with the exception of the Terry Pt. area where the opposite is true.
- The 30’ contour has moved up to 200m offshore of the charted line.
- The 60’contour has moved up to 140m away from the charted line.
- The 90’, 120’, 180’ and 270’ charted contours accurately match current soundings.

Charted depths

- In areas greater than 60’, the charted depths are within 1’ of soundings acquired by the current survey.
- Shoreward of the 60’, contour charted depths are generally within 2’ of survey depths, with outliers up to 8’ deeper than survey soundings. However, the charted depths often do not represent the least depth of the area triangulated by three charted depths. The Hydrographer recommends generating a new sounding set that reflects surveyed least depths.

D.1.2 Chart 12354 Comparison *Concur.*

Contours

- The 18’ contour is up to 300m further offshore than the charted line, particularly in the Petty’s Bight region.
- The 30’ contour is a close match for the charted line, with the exception of the Terry Point area where the charted line is up to 128m shoreward of the currently acquired line.

Depths

- Charted depths are 0 – 10 feet shoal of current survey depths, with the exception of the Western edge of the survey area. Charted depths for this region are up to 10’ deeper than acquired depths.

D.1.3 Chart 13209 Comparison

There exists very little agreement between this chart, and soundings collected by the current survey. Charted depths are consistently 1 – 3 feet deeper than surveyed depths, increasing to a maximum of 10' of difference in the Mulfort Pt area. The charted 30', 18', 12', and 6' contours are biased both offshore and shoreward of surveyed contours. ***Concur.***

D.1.4 Chart 13205 Comparison

There is good correlation between charted and surveyed depths up to the 90' contour. Charted depths outside the contour are approximately 20' shoal of surveyed depths. Charted contour lines are biased both offshore and shoreward of surveyed contours. ***Concur.***

D.2 Additional Results

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

A total of 2 assigned AWOIS items were assigned within the modified limits of H11446 and investigated during this survey. AWOIS items were investigated with Object Detection Multibeam and 100% Side Scan Sonar coverage over the search radius. All AWOIS items are described in detail in Appendix II of this report. ***See Appendix II, AWOIS Items section for AWOIS recommendations.***

D.2.2 Shoreline

There is no shoreline within the sheet limits of survey H11446,

D.2.3 Charted Features

All charted features and item investigations are described in detail in Appendix II of this report. ***Concur. See Appendix II for additional feature recommendations.***

D.2.4 Charted Pipelines and Cables

The entire near shore area of this survey is a cable area. There is another cable area for cables to Plum Island on the east end of the survey. As no cables or pipelines were seen in the MBES or side scan data they are assumed to be buried or nonexistent.

D.2.5 Bridges, Ferry Routes, and Overhead Cables

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

D.3 Dangers to Navigation and Shoals

D 3.1 Dangers to Navigation

~~Five~~ Six dangers to navigation were found and reported to the NOAA's Office of Coast Survey, Marine Chart Division (MCD) for verification and final submission to the First Coast Guard District. A copy of each Danger to Navigation Report is included in Appendix I. ***Concur w/clarification. See the Evaluation Report for DtoNs that were resubmitted by the Atlantic Hydrographic Branch and see Appendix II, DtoNs, for recommendations concerning field submitted DtoNs.***

Table B-3 shows all Dangers to Navigation identified in this survey, with their submission date to MCD.

DtoN Number	*Description*	*Latitude*	*Longitude*	*Date Submitted*
DTON 1	Uncharted Rock	41° 08' 31.96"	072° 19' 12.12"	10 Oct 2008
DTON 2	Rock	41° 09' 44.0"	072° 15' 27.7"	15 Jan 2009
DTON 3	Large Rock	41° 09' 35.5"	072° 15' 44.5"	15 Jan 2009
DTON 4	Uncharted Rock	41° 09' 39.6"	072° 15' 24.7"	15 Jan 2009
DTON 5	Uncharted Rock	41° 09' 33.3"	072° 17' 29.9"	9 March 2009
DTON 6	Large Rock	41° 09' 37.7"	072° 15' 24.4"	15 Jan 2009

Table B-3: submitted DTON items.

D 3.2 Shoals

D 3.2.1 At position 41° 09' 37.7"N 072° 15' 24.43"W a charted depth of 20' is directly over a shoal with a least depth of 5.26' at MLLW, corrected with approved tides and final tide zoning. This shoal is further addressed under section D 3.1 as DTON 6. ***Concur.***

D 3.2.2 In the vicinity of 41° 09' 32.8"N 072° 15' 46.6"W a shoal with a least depth of 10.3' at MLLW, corrected with approved tides and final tide zoning is not captured by the charted depths. The Hydrographer recommends charting present survey soundings and adjusting the 6' contour. ***Do not concur. See Appendix II for charting recommendations.***

D 3.2.3 In the vicinity of 41° 09' 32.0"N 072° 15' 31.1"W a shoal with a least depth of 18.8' at MLLW, corrected with approved tides and final tide zoning is not reflected by charted depths. The Hydrographer recommends charting present survey soundings and adjusting the 6' contour. ***Do not concur. See Appendix II for charting recommendations.***

D.4 Aids to Navigation

There are no charted Aids to Navigation (ATON) within the revised limits of H11446.

D.5 Coast Pilot Information

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

D.6 Miscellaneous

Bottom Samples

No bottom samples were acquired.

Environmental Conditions and Notes

The Hydrographer has no recommendations.

D.7 Adequacy of Survey

Except as noted in section B.2.2, this survey is considered complete and adequate to supersede charted depths within the common area as per requirements specified in the Project Letter Instructions.

D.8 Summary and Recommendations for Additional Work

The Hydrographer recommends revisiting the area to acquired data over the data gap discussed in section B.2.2.

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.

Survey H11251 is adequate to supersede charted soundings in their common areas.

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

Title	Date Sent	Office
Data Acquisition and Processing Report Spring Addendem 2008	4 Feb 2009	N/CS33
Horizontal and Vertical Control Report for OPR-B370-TJ-08	n/a	N/CS33
Tides and Water Levels Package for OPR-B370-TJ-08	n/a	N/OPS1
Coast Pilot Report for OPR-B370-TJ-08	n/a	N/CS26

Approved and Forwarded:

jasper.schaer
I have reviewed this document
2009.03.12 21:45:45 Z

LT Jasper D. Schaer, NOAA
Field Operations Officer

CDR P. Tod Schattgen
I am approving this document
2009.03.12 21:49:59 Z

CDR P. Tod Schattgen, NOAA
Commanding Officer

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

Survey Manager:

SST Peter Lewit
Senior Survey Tech, NOAA

Appendix I

Dangers to Navigation

H11446 Field DtoNs

Registry Number: H11446

State: New York

Locality: Eastern Long Island Sound

Sub-locality: Orient Point to Terry Point

Project Number: OPR-B307-TJ-08

Survey Dates: 09/23/2008 - 10/07/2008

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
13209	25th	04/01/2007	1:40,000 (13209_1)	USCG LNM: 02/26/2008 (06/03/2008) CHS NTM: None (04/25/2008) NGA NTM: 04/11/1998 (06/07/2008)
12358	20th	04/01/2008	1:40,000 (12358_1)	NGA NTM: None (06/07/2008) USCG LNM: None (06/03/2008) CHS NTM: None (04/25/2008)
12354	42nd	12/01/2006	1:80,000 (12354_1)	USCG LNM: 04/29/2008 (06/03/2008) CHS NTM: None (04/25/2008) NGA NTM: 12/04/1999 (06/07/2008)
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	DtoN#4 - 18 ft Rock	Rock	5.69 m	41° 09' 39.6" N	072° 15' 24.7" W	---
1.2	DtoN#1 - 1 ft Rock	Rock	0.40 m	41° 08' 32.0" N	072° 19' 12.1" W	---
1.3	DtoN#5 - 19 ft Rock	Rock	5.82 m	41° 09' 33.3" N	072° 17' 29.9" W	---

1.1) DtoN#4 - 18 ft Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position:	41° 09' 39.6" N, 072° 15' 24.7" W
Least Depth:	5.69 m (= 18.66 ft = 3.110 fm = 3 fm 0.66 ft)
TPU (±1.96σ):	**THU (TPEh)** ±0.980 m ; **TVU (TPEv)** ±0.387 m
Timestamp:	2008-267.20:58:56.404 (09/23/2008)
Survey Line:	h11446 / tj_3101_reson8125 / 2008-267 / 471_2058
Profile/Beam:	211/109
Charts Affected:	12358_1, 13209_1, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Uncharted dangerous rock - The 5.7 meter (18.66 foot) least depth on this rock was acquired by multi-beam echosounder and corrected to MLLW using verified water levels. This 18.66 foot rock lies outsided the charted 30 foot contour.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11446/tj_3101_reson8125/2008-267/471_2058	211/109	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

18ft (12358_1, 13209_1, 12354_1)

3fm (12300_1, 13006_1, 13003_1)

5.7m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	QUASOU - 6:least depth known
	TECSOU - 3:found by multi-beam
	VALSOU - 5.688 m

WATLEV - 3:always under water/submerged

Office Notes

Do not concur. Delete dangerous 18 Rk due to proximity or more prominent 5 Rk and revise to charted dangerous 5 Rk.

Feature Images

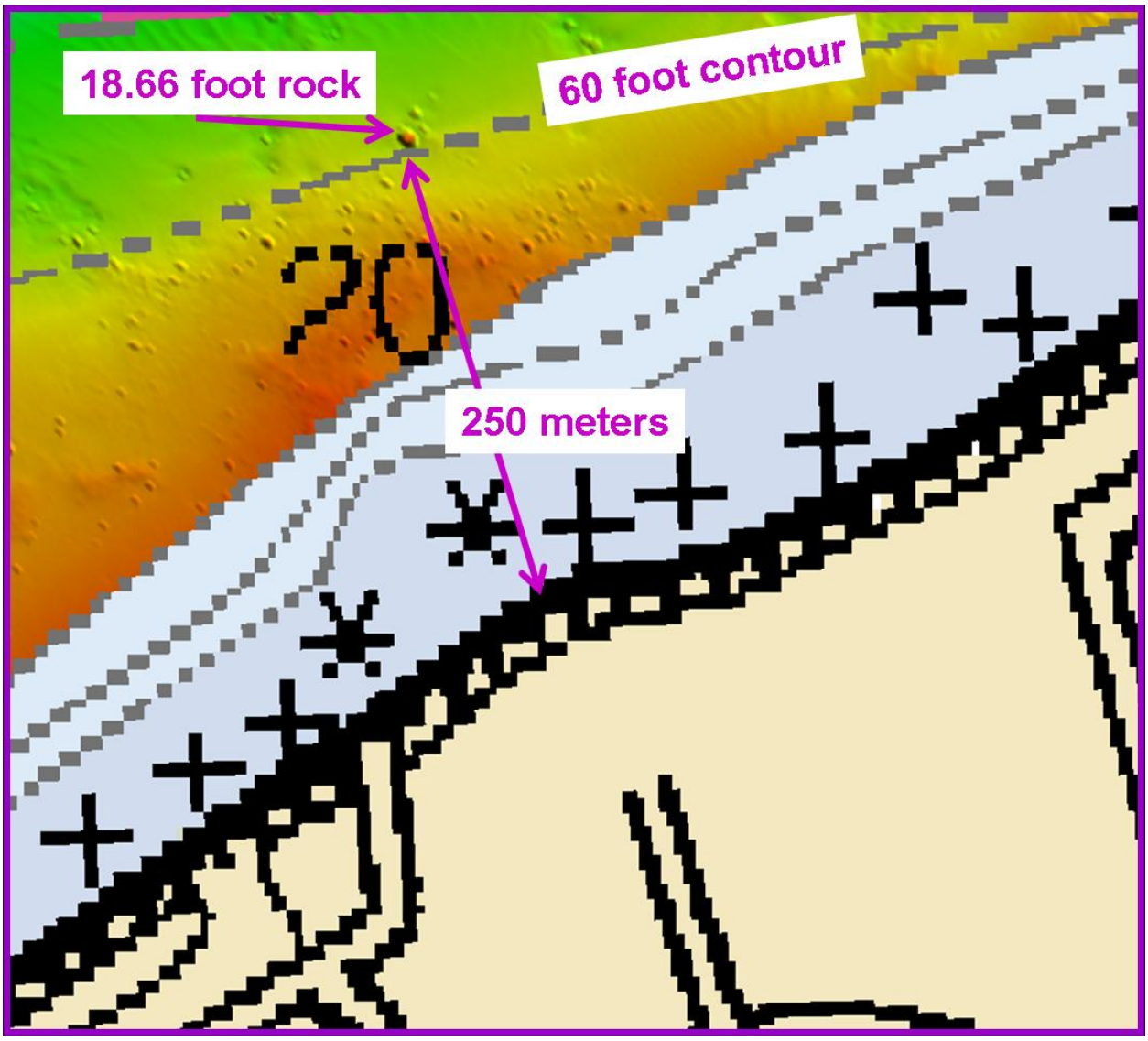


Figure 1.1.1

1.1) DtoN#1 - 1 ft Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position: 41° 08' 32.0" N, 072° 19' 12.1" W

Least Depth: 0.40 m (= 1.33 ft = 0.221 fm = 0 fm 1.33 ft)

TPU (±1.96σ): **THU (TPEh)** ±0.980 m ; **TVU (TPEv)** ±0.386 m

Timestamp: 2008-275.17:29:11.190 (10/01/2008)

Survey Line: h11446 / tj_3101_reson8125 / 2008-275 / 080_1728

Profile/Beam: 611/240

Charts Affected: 12358_1, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Chart dangerous submerged rock at 41°08'31.957"N , -072°19'12.117"W, least depth 0.40 m.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11446/tj_3101_reson8125/2008-275/080_1728	611/240	0.00	000.0	Primary
h11446/tj_3102_klein5000_sss100/2008-282/005_1642	0003	4.35	195.6	Secondary (grouped)
h11446/tj_3101_reson8125/2008-275/639_1722	902/240	5.36	150.4	Secondary (grouped)
h11446/tj_3101_reson8125/2008-275/637_1720	1695/117	5.94	301.3	Secondary (grouped)
h11446/tj_3101_reson8125/2008-275/637_1720	1674/35	9.72	282.7	Secondary (grouped)
h11446/tj_3101_reson8125/2008-275/639_1722	960/234	13.34	224.5	Secondary (grouped)
h11446/tj_3101_reson8125/2008-275/639_1722	962/230	13.75	222.9	Secondary (grouped)
h11446/tj_3102_klein5000_sss100/2008-266/130_2053	0002	25.27	166.5	Secondary (grouped)
h11446/tj_3101_reson8125/2008-275/640_1730	963/187	26.08	168.8	Secondary (grouped)
h11446/tj_3102_klein5000_sss100/2008-282/005_1642	0002	28.59	168.5	Secondary (grouped)
h11446/tj_3101_reson8125/2008-275/635_1632	47785/240	32.06	289.6	Secondary (grouped)
h11446/tj_3101_reson8125/2008-275/080_1728	877/86	40.41	057.2	Secondary (grouped)
h11446/tj_3102_reson8101/2008-278/522_1454	405/97	59.59	102.1	Secondary (grouped)
h11446/tj_3102_klein5000_sss100/2008-282/005_1642	0004	62.55	105.3	Secondary (grouped)

Hydrographer Recommendations

Chart dangerous submerged rock at 41°08'31.957"N , -072°19'12.117"W, least depth 0.40 m.

Cartographically-Rounded Depth (Affected Charts):

1ft (12358_1, 12354_1)

0 ¼fm (12300_1, 13006_1, 13003_1)

.4m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	QUASOU - 6:least depth known
	STATUS - 1:permanent
	TECSOU - 3:found by multi-beam
	VALSOU - 0.404 m
	VERDAT - 12:Mean lower low water
	WATLEV - 3:always under water/submerged

Office Notes

Concur. DtoN already applied to latest raster for chart 12358, 20th Ed., Apr./08, Corrected through NM Apr. 12/08, Corrected through LNM Apr. 1/08. Retain as charted.

Feature Images

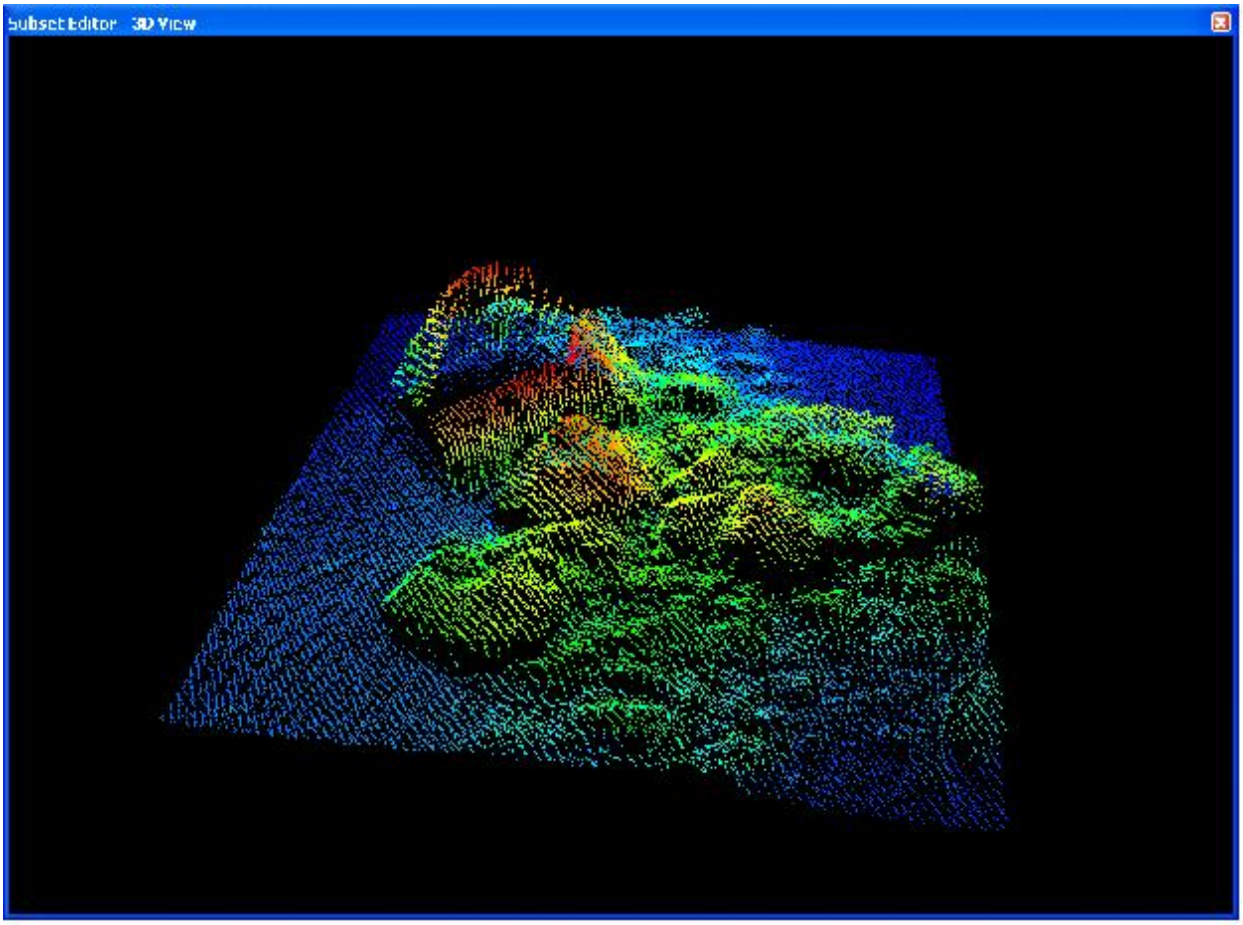


Figure 1.1.1

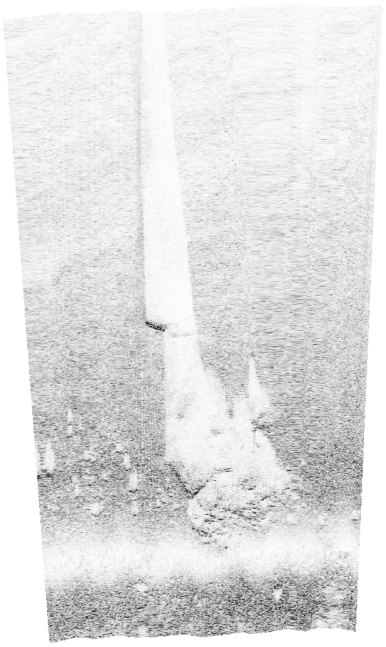


Figure 1.1.2

1.3) DtoN#5 - 19 ft Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position: 41° 09' 33.3" N, 072° 17' 29.9" W

Least Depth: 5.82 m (= 19.09 ft = 3.182 fm = 3 fm 1.09 ft)

TPU (±1.96σ): **THU (TPEh)** ±0.981 m ; **TVU (TPEv)** ±0.387 m

Timestamp: 2008-281.15:13:57.960 (10/07/2008)

Survey Line: h11446 / tj_3101_reson8125 / 2008-281 / 114_1513

Profile/Beam: 359/212

Charts Affected: 12358_1, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

The minimum sounding in this rocky area was acquired with a Reson 8125 MBES SONAR and corrected to MLLW with verified tide data. The depth was thus resolved to 5.82 meters (19.09 feet) which is significantly shoal of the adjacent charted '43' and 30 foot isobath.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11446/tj_3101_reson8125/2008-281/114_1513	359/212	0.00	000.0	Primary
h11446/tj_3101_reson8125/2008-281/464_1439	498/233	18.42	046.8	Secondary (grouped)
h11446/tj_3101_reson8125/2008-281/465_1421	3384/220	30.96	106.7	Secondary (grouped)
h11446/tj_3102_reson8101/2008-278/579_1750	1438/91	42.40	014.5	Secondary (grouped)
h11446/tj_3102_reson8101/2008-278/579_1750	1413/28	45.57	037.6	Secondary (grouped)
h11446/tj_3101_reson8125/2008-281/466_1410	823/9	58.48	137.2	Secondary (grouped)
h11446/tj_3101_reson8125/2008-281/464_1439	271/229	59.90	274.7	Secondary (grouped)
h11446/tj_3101_reson8125/2008-281/465_1421	3296/235	71.59	092.7	Secondary (grouped)
h11446/tj_3102_reson8101/2008-278/579_1750	1330/10	78.01	056.2	Secondary (grouped)
h11446/tj_3101_reson8125/2008-281/466_1410	912/1	85.60	117.9	Secondary (grouped)
h11446/tj_3101_reson8125/2008-281/463_1500	5231/91	86.42	053.4	Secondary (grouped)

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

19ft (12358_1, 12354_1)

3fm (12300_1, 13006_1, 13003_1)

5.8m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	QUASOU - 6:least depth known
	STATUS - 1:permanent
	TECSOU - 3:found by multi-beam
	VALSOU - 5.820 m
	VERDAT - 12:Mean lower low water
	WATLEV - 3:always under water/submerged

Office Notes

Concur. DtoN already applied to latest raster for chart 12358, 20th Ed., Apr./08, Corrected through NM Apr. 12/08, Corrected through LNM Apr. 1/08. Retain as charted.

Feature Images

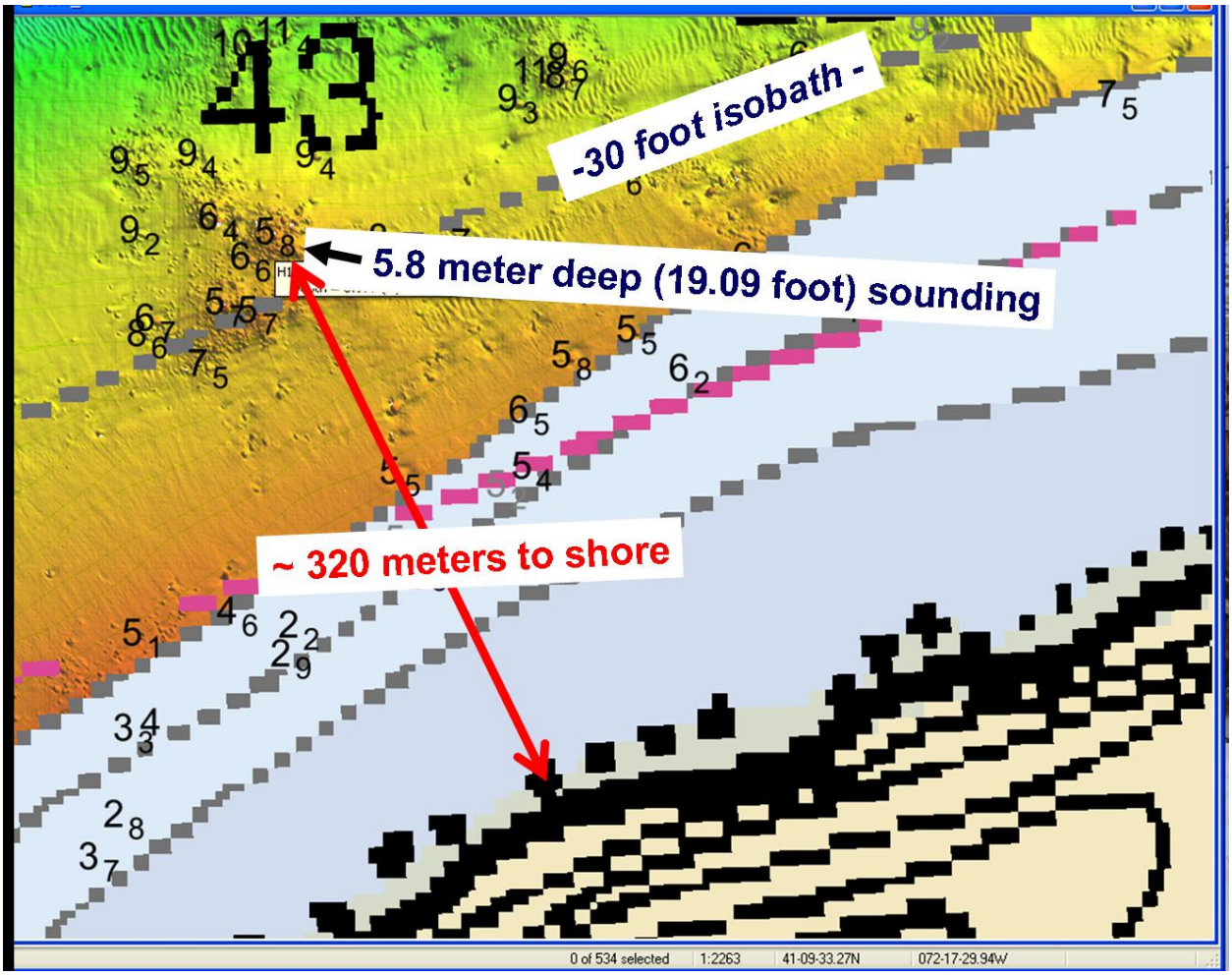


Figure 1.3.1

Appendix II

Survey Features Report

1. **Charted Features**
2. **Uncharted Features**
3. **AWOIS Items**

H11446 Features Report

Registry Number: H11446
State: New York
Locality: Eastern Long Island Sound
Sub-locality: Orient Point to Terry Point
Project Number: OPR-B307-TJ-08
Survey Dates: 09/23/2008 - 10/07/2008

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
13209	25th	04/01/2007	1:40,000 (13209_1)	USCG LNM: 02/26/2008 (06/03/2008) CHS NTM: None (04/25/2008) NGA NTM: 04/11/1998 (06/07/2008)
12358	20th	04/01/2008	1:40,000 (12358_1)	NGA NTM: None (06/07/2008) USCG LNM: None (06/03/2008) CHS NTM: None (04/25/2008)
13205	38th	02/01/2007	1:80,000 (13205_1)	USCG LNM: 05/20/2008 (06/03/2008) NGA NTM: 04/11/1998 (06/07/2008)
12354	42nd	12/01/2006	1:80,000 (12354_1)	USCG LNM: 04/29/2008 (06/03/2008) CHS NTM: None (04/25/2008) NGA NTM: 12/04/1999 (06/07/2008)
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	5/103 - Chart 11 Rk	Rock	3.44 m	41° 09' 37.1" N	072° 17' 00.8" W	---
1.2	2463/142 - Chart 12 ft Rock	Rock	3.79 m	41° 09' 44.8" N	072° 14' 38.8" W	---
1.3	617/13 - Chart 26 ft Rock	Rock	8.08 m	41° 09' 12.4" N	072° 19' 07.8" W	---
1.4	1276/80 - Chart 22 ft Rock	Rock	6.64 m	41° 09' 11.7" N	072° 18' 55.5" W	---
1.5	2109/1 - Chart 10 ft Rock	Rock	3.07 m	41° 09' 29.3" N	072° 15' 56.5" W	---

1.6	1573/19 - Chart 10 ft Rock	Rock	3.09 m	41° 09' 32.8" N	072° 15' 46.6" W	---
1.7	4360/14 - Chart 15 ft Rock	Rock	4.63 m	41° 09' 32.6" N	072° 16' 28.4" W	---
1.8	885/88 - Chart 15 ft Rock	Rock	4.68 m	41° 09' 22.6" N	072° 17' 48.8" W	---
1.9	1661/20 - add 88 Wk	Wreck	26.91 m	41° 10' 05.8" N	072° 14' 37.3" W	---
2.1	AWOIS #7087, delete Obstn PA and chart 41 Wk	Wreck	12.61 m	41° 09' 50.7" N	072° 14' 52.7" W	7087
2.2	13 Rk (reported) - disproved	AWOIS	[no data]	[no data]	[no data]	---
3.1	DtoN#6 - 5 ft Rock	Rock	1.60 m	41° 09' 37.7" N	072° 15' 24.4" W	---
3.2	DtoN#3 - 14 ft Rock	Shoal	4.47 m	41° 09' 35.5" N	072° 15' 44.5" W	---
3.3	DtoN#2 - 39 ft Rock	Rock	11.93 m	41° 09' 44.0" N	072° 15' 27.7" W	---

1 - New Features

1.1) 5/103 - Chart 11 Rk

Survey Summary

Survey Position: 41° 09' 37.1" N, 072° 17' 00.8" W

Least Depth: 3.44 m (= 11.29 ft = 1.881 fm = 1 fm 5.29 ft)

TPU (±1.96σ): **THU (TPEh)** ±0.980 m ; **TVU (TPEv)** ±0.386 m

Timestamp: 2008-275.19:15:41.516 (10/01/2008)

Survey Line: h11446 / tj_3101_reson8125 / 2008-275 / 083_1915

Profile/Beam: 5/103

Charts Affected: 12358_1, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

11' sounding located between the 18' and 30' contour. Recommend adjusting contour.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11446/tj_3101_reson8125/2008-275/083_1915	5/103	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

11ft (12358_1, 12354_1)

1 ¾fm (12300_1, 13006_1, 13003_1)

3.4m (5161_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes:

QUASOU - 6:least depth known

STATUS - 1:permanent

TECSOU - 3:found by multi-beam

VALSOU - 3.440 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Do not concur, chart a Rk with a depth of 11 ft. in Latitude 41°09'37.116"N, Longitude 72°17'00.827"W.

1.2) 2463/142 - Chart 12 ft Rock

Survey Summary

Survey Position: 41° 09' 44.8" N, 072° 14' 38.8" W

Least Depth: 3.79 m (= 12.42 ft = 2.070 fm = 2 fm 0.42 ft)

TPU (±1.96σ): **THU (TPEh)** ±0.980 m ; **TVU (TPEv)** ±0.386 m

Timestamp: 2008-278.15:55:41.443 (10/04/2008)

Survey Line: h11446 / tj_3101_reson8125 / 2008-278 / 694_1553

Profile/Beam: 2463/142

Charts Affected: 12358_1, 13209_1, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Rocks, shoal of charted contour.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11446/tj_3101_reson8125/2008-278/694_1553	2463/142	0.00	000.0	Primary
h11446/tj_3101_reson8125/2008-278/434_1918	1372/1	19.80	157.8	Secondary (grouped)
h11446/tj_3101_reson8125/2008-280/823_1838	443/240	48.70	142.8	Secondary (grouped)
h11446/tj_3101_reson8125/2008-280/823_1838	266/147	49.34	237.0	Secondary (grouped)
h11446/tj_3102_klein5000_sss100/2008-282/003_1511	0001	58.30	115.5	Secondary (grouped)
h11446/tj_3101_reson8125/2008-280/823_1838	501/37	59.04	112.9	Secondary (grouped)
h11446/tj_3101_reson8125/2008-278/487_1902	2162/104	59.60	184.9	Secondary (grouped)
h11446/tj_3101_reson8125/2008-280/823_1838	252/239	62.03	232.4	Secondary (grouped)
h11446/tj_3101_reson8125/2008-268/477_1501	4898/215	75.85	136.1	Secondary (grouped)
h11446/tj_3101_reson8125/2008-268/435_1517	2880/234	78.05	120.1	Secondary (grouped)
h11446/tj_3101_reson8125/2008-278/488_1851	4128/82	85.89	175.3	Secondary (grouped)

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

12ft (12358_1, 13209_1, 12354_1, 13205_1)

2fm (12300_1, 13006_1, 13003_1)

3.8m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	QUASOU - 6:least depth known
	STATUS - 1:permanent
	TECSOU - 3:found by multi-beam
	VALSOU - 3.786 m
	VERDAT - 12:Mean lower low water
	WATLEV - 3:always under water/submerged

Office Notes

Concur. Chart a Rk with a depth of 12 ft. in Latitude 41°09'44.782"N, Longitude 72°14'38.833"W.

1.3) 617/13 - Chart 26 ft Rock

Survey Summary

Survey Position: 41° 09' 12.4" N, 072° 19' 07.8" W

Least Depth: 8.08 m (= 26.52 ft = 4.420 fm = 4 fm 2.52 ft)

TPU (±1.96σ): **THU (TPEh)** ±0.984 m ; **TVU (TPEv)** ±0.395 m

Timestamp: 2008-267.19:53:46.606 (09/23/2008)

Survey Line: h11446 / tj_3102_reson8101 / 2008-267 / 441_1952

Profile/Beam: 617/13

Charts Affected: 12358_1, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Rocky area, minimum depth is shoal of charted sounding.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11446/tj_3102_reson8101/2008-267/441_1952	617/13	0.00	000.0	Primary
h11446/tj_3102_reson8101/2008-267/442_2001	3594/79	19.41	196.2	Secondary (grouped)
h11446/tj_3102_reson8101/2008-267/441_1952	568/16	22.18	077.2	Secondary (grouped)
h11446/tj_3102_reson8101/2008-267/442_2001	3445/7	60.52	284.0	Secondary (grouped)
h11446/tj_3102_reson8101/2008-267/439_1936	624/86	89.89	344.7	Secondary (grouped)
h11446/tj_3102_reson8101/2008-267/444_2018	2885/94	101.48	209.6	Secondary (grouped)
h11446/tj_3102_reson8101/2008-267/440_1944	3272/61	114.06	065.8	Secondary (grouped)
h11446/tj_3102_reson8101/2008-267/444_2018	2783/61	121.13	234.5	Secondary (grouped)
h11446/tj_3102_reson8101/2008-267/446_2038	3123/9	126.95	216.8	Secondary (grouped)
h11446/tj_3102_reson8101/2008-267/444_2018	2728/7	136.04	249.9	Secondary (grouped)
h11446/tj_3102_reson8101/2008-267/444_2018	2650/16	171.23	252.2	Secondary (grouped)

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

26ft (12358_1, 12354_1)

4 ¼fm (12300_1, 13006_1, 13003_1)

8.1m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	QUASOU - 6:least depth known
	STATUS - 1:permanent
	TECSOU - 3:found by multi-beam
	VALSOU - 8.083 m
	VERDAT - 12:Mean lower low water
	WATLEV - 3:always under water/submerged

Office Notes

Concur. Chart a Rk with a depth of 26 ft. in Latitude 41°09'12.354"N, Longitude 72°19'07.847"W.

1.4) 1276/80 - Chart 22 ft Rock

Survey Summary

Survey Position:	41° 09' 11.7" N, 072° 18' 55.5" W
Least Depth:	6.64 m (= 21.78 ft = 3.630 fm = 3 fm 3.78 ft)
TPU (±1.96σ):	**THU (TPEh)** ±0.981 m ; **TVU (TPEv)** ±0.391 m
Timestamp:	2008-267.19:55:18.778 (09/23/2008)
Survey Line:	h11446 / tj_3102_reson8101 / 2008-267 / 441_1952
Profile/Beam:	1276/80
Charts Affected:	12358_1, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Large rock, minimum depth is shoal of charted soundings.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11446/tj_3102_reson8101/2008-267/441_1952	1276/80	0.00	000.0	Primary
h11446/tj_3102_reson8101/2008-267/441_1952	1350/89	34.45	285.6	Secondary (grouped)
h11446/tj_3102_reson8101/2008-267/439_1936	1287/7	46.66	319.8	Secondary (grouped)
h11446/tj_3102_reson8101/2008-267/441_1952	1141/38	58.90	093.8	Secondary (grouped)
h11446/tj_3102_reson8101/2008-280/918_1732	822/52	73.65	016.4	Secondary (grouped)
h11446/tj_3102_reson8101/2008-267/438_1928	2306/86	74.86	015.6	Secondary (grouped)
h11446/tj_3102_reson8101/2008-267/438_1928	2307/16	96.14	014.0	Secondary (grouped)
h11446/tj_3102_reson8101/2008-267/437_1921	1714/87	126.13	008.1	Secondary (grouped)

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

22ft (12358_1, 12354_1)

3 ½fm (12300_1, 13006_1, 13003_1)

6.6m (5161_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes:

QUASOU - 6:least depth known

STATUS - 1:permanent

TECSOU - 3:found by multi-beam

VALSOU - 6.638 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concur. Chart a Rk with a depth of 22 ft. in Latitude 41°09'11.657"N, Longitude 72°18'55.496"W.

1.5) 2109/1 - Chart 10 ft Rock

Survey Summary

Survey Position: 41° 09' 29.3" N, 072° 15' 56.5" W

Least Depth: 3.07 m (= 10.08 ft = 1.680 fm = 1 fm 4.08 ft)

TPU (±1.96σ): **THU (TPEh)** ±0.983 m ; **TVU (TPEv)** ±0.400 m

Timestamp: 2008-275.20:27:50.498 (10/01/2008)

Survey Line: h11446 / tj_3102_reson8101 / 2008-275 / 595_2024

Profile/Beam: 2109/1

Charts Affected: 12358_1, 13209_1, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Rock, significantly shoal of charted depths.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11446/tj_3102_reson8101/2008-275/595_2024	2109/1	0.00	000.0	Primary
h11446/tj_3102_reson8101/2008-275/594_2030	1584/7	35.25	013.6	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/599_1952	2814/11	63.83	176.7	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/594_2030	1820/16	83.96	067.4	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/602_1920	2164/26	110.62	195.5	Secondary (grouped)
h11446/tj_3102_reson8101/2008-278/591_1907	1846/59	117.05	052.6	Secondary (grouped)
h11446/tj_3102_reson8101/2008-279/855_1328	507/92	120.40	124.7	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/602_1920	2277/93	121.00	175.8	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/597_2009	2303/7	122.15	110.0	Secondary (grouped)
h11446/tj_3102_reson8101/2008-278/591_1907	1156/13	138.66	307.4	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/601_1938	2350/94	139.67	140.4	Secondary (grouped)
h11446/tj_3102_reson8101/2008-278/588_1926	2290/20	145.15	323.6	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/603_1911	2438/9	145.40	194.9	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/605_1854	1547/87	152.37	190.6	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/601_1938	2416/95	154.53	134.0	Secondary (grouped)

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

10ft (12358_1, 13209_1, 12354_1)

1 ½fm (12300_1, 13006_1, 13003_1)

3.1m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	QUASOU - 6:least depth known
	STATUS - 1:permanent
	TECSOU - 3:found by multi-beam
	VALSOU - 3.072 m
	VERDAT - 12:Mean lower low water
	WATLEV - 3:always under water/submerged

Office Notes

Concur. Chart a Rk with a depth of 10 ft. in Latitude 41°09'29.329"N, Longitude 72°15'56.502"W.

1.6) 1573/19 - Chart 10 ft Rock

Survey Summary

Survey Position: 41° 09' 32.8" N, 072° 15' 46.6" W

Least Depth: 3.09 m (= 10.14 ft = 1.690 fm = 1 fm 4.14 ft)

TPU (±1.96σ): **THU (TPEh)** ±0.981 m ; **TVU (TPEv)** ±0.388 m

Timestamp: 2008-275.19:22:22.233 (10/01/2008)

Survey Line: h11446 / tj_3102_reson8101 / 2008-275 / 602_1920

Profile/Beam: 1573/19

Charts Affected: 12358_1, 13209_1, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Rocky area. Minimum depth significantly shoal of charted soundings.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11446/tj_3102_reson8101/2008-275/602_1920	1573/19	0.00	000.0	Primary
h11446/tj_3102_reson8101/2008-279/835_1353	405/6	26.16	293.4	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/600_1930	3427/33	35.66	020.8	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/599_1952	3567/14	42.63	002.1	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/601_1938	1553/19	46.01	070.6	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/604_1903	1600/93	49.54	179.8	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/599_1952	3512/48	52.12	021.7	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/604_1903	1426/7	60.95	245.6	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/598_2001	1319/89	63.35	344.5	Secondary (grouped)
h11446/tj_3102_reson8101/2008-279/833_1404	127/95	72.79	269.4	Secondary (grouped)
h11446/tj_3102_reson8101/2008-279/845_1352	254/19	83.02	065.0	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/598_2001	1622/37	86.83	040.5	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/601_1938	1144/93	95.16	274.4	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/604_1903	1321/39	95.93	249.1	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/599_1952	3288/7	97.65	068.4	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/600_1930	3190/36	100.98	074.0	Secondary (grouped)
h11446/tj_3102_reson8101/2008-279/840_1343	139/14	119.62	352.5	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/599_1952	3149/11	137.44	075.5	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/595_2024	2604/93	137.47	020.4	Secondary (grouped)

h11446/tj_3102_reson8101/2008-275/594_2030	637/23	141.62	345.8	Secondary (grouped)
h11446/tj_3102_reson8101/2008-279/838_1348	98/11	162.36	336.5	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/594_2030	1152/94	167.00	043.1	Secondary (grouped)
h11446/tj_3102_reson8101/2008-278/592_1901	2943/12	169.94	351.2	Secondary (grouped)
h11446/tj_3102_reson8101/2008-278/591_1907	636/96	177.23	355.7	Secondary (grouped)
h11446/tj_3102_reson8101/2008-278/591_1907	742/53	188.97	002.1	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/594_2030	1247/47	194.42	046.9	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/599_1952	2815/11	238.47	079.2	Secondary (grouped)

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

10ft (12358_1, 13209_1, 12354_1)

1 ¾fm (12300_1, 13006_1, 13003_1)

3.1m (5161_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes:

QUASOU - 6:least depth known

STATUS - 1:permanent

TECSOU - 3:found by multi-beam

VALSOU - 3.090 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concur. Chart a Rk with a depth of 10 ft. in Latitude 41°09'32.837"N, Longitude 72°15'46.609"W.

1.7) 4360/14 - Chart 15 ft Rock

Survey Summary

Survey Position: 41° 09' 32.6" N, 072° 16' 28.4" W

Least Depth: 4.63 m (= 15.20 ft = 2.533 fm = 2 fm 3.20 ft)

TPU (±1.96σ): **THU (TPEh)** ±0.982 m ; **TVU (TPEv)** ±0.390 m

Timestamp: 2008-275.19:26:57.213 (10/01/2008)

Survey Line: h11446 / tj_3102_reson8101 / 2008-275 / 602_1920

Profile/Beam: 4360/14

Charts Affected: 12358_1, 13209_1, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Rocky area near shore, slightly shoal of charted soundings. Not navigationally significant.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11446/tj_3102_reson8101/2008-275/602_1920	4360/14	0.00	000.0	Primary
h11446/tj_3102_reson8101/2008-275/602_1920	4392/35	13.57	122.7	Secondary (grouped)
h11446/tj_3101_reson8125/2008-278/669_1701	1610/56	50.02	009.3	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/603_1911	291/9	56.98	141.3	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/626_1849	5/94	58.10	182.6	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/603_1911	539/4	59.48	223.0	Secondary (grouped)
h11446/tj_3101_reson8125/2008-275/670_1924	1567/188	65.05	062.2	Secondary (grouped)
h11446/tj_3101_reson8125/2008-275/669_1933	2110/228	81.79	096.5	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/600_1930	671/82	82.26	289.7	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/597_2009	317/8	82.81	316.2	Secondary (grouped)
h11446/tj_3101_reson8125/2008-278/669_1701	1097/29	88.17	101.1	Secondary (grouped)
h11446/tj_3101_reson8125/2008-278/899_1751	447/151	88.69	063.3	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/617_1832	2441/48	92.48	207.4	Secondary (grouped)
h11446/tj_3101_reson8125/2008-275/635_1632	22120/2	95.11	037.0	Secondary (grouped)
h11446/tj_3102_reson8101/2008-279/863_1317	339/92	97.87	259.6	Secondary (grouped)
h11446/tj_3101_reson8125/2008-267/479_2025	2692/14	98.97	198.0	Secondary (grouped)
h11446/tj_3101_reson8125/2008-267/479_2025	2796/67	100.89	170.9	Secondary (grouped)
h11446/tj_3101_reson8125/2008-275/635_1632	22571/221	102.76	081.7	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/599_1952	503/25	110.31	288.8	Secondary (grouped)

h11446/tj_3101_reson8125/2008-267/479_2025	2742/172	110.80	183.5	Secondary (grouped)
h11446/tj_3101_reson8125/2008-275/635_1632	22635/1	114.88	084.1	Secondary (grouped)
h11446/tj_3101_reson8125/2008-278/670_1705	2394/170	115.93	099.2	Secondary (grouped)
h11446/tj_3101_reson8125/2008-275/669_1931	205/234	120.96	120.6	Secondary (grouped)
h11446/tj_3101_reson8125/2008-267/479_2025	2936/156	134.12	144.6	Secondary (grouped)
h11446/tj_3101_reson8125/2008-267/480_2031	998/113	140.21	164.1	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/598_2001	3984/93	146.43	287.7	Secondary (grouped)
h11446/tj_3101_reson8125/2008-267/480_2031	947/66	150.78	157.7	Secondary (grouped)
h11446/tj_3102_klein5000_sss100/2008-282/002_1609	0001	155.29	086.5	Secondary (grouped)
h11446/tj_3102_klein5000_sss100/2008-282/002_1609	0002	155.52	097.0	Secondary (grouped)
h11446/tj_3101_reson8125/2008-278/899_1751	26/219	157.54	096.7	Secondary (grouped)

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

15ft (12358_1, 13209_1, 12354_1)

2 ½fm (12300_1, 13006_1, 13003_1)

4.6m (5161_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes:

QUASOU - 6:least depth known

STATUS - 1:permanent

TECSOU - 3:found by multi-beam

VALSOU - 4.632 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concur. Chart a Rk with a depth of 15 ft. in Latitude 41°09'32.596"N, Longitude 72°16'28.441"W.

1.8) 885/88 - Chart 15 ft Rock

Survey Summary

Survey Position:	41° 09' 22.6" N, 072° 17' 48.8" W
Least Depth:	4.68 m (= 15.35 ft = 2.558 fm = 2 fm 3.35 ft)
TPU (±1.96σ):	**THU (TPEh)** ±0.982 m ; **TVU (TPEv)** ±0.390 m
Timestamp:	2008-278.18:02:44.023 (10/04/2008)
Survey Line:	h11446 / tj_3102_reson8101 / 2008-278 / 577_1801
Profile/Beam:	885/88
Charts Affected:	12358_1, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

15' sounding located outside the 18' contour. Recommend adjusting contour.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11446/tj_3102_reson8101/2008-278/577_1801	885/88	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

15ft (12358_1, 12354_1)

2 ½fm (12300_1, 13006_1, 13003_1)

4.7m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	QUASOU - 6:least depth known
	STATUS - 1:permanent
	TECSOU - 3:found by multi-beam
	VALSOU - 4.678 m
	VERDAT - 12:Mean lower low water
	WATLEV - 3:always under water/submerged

Office Notes

Do not concur. Chart a Rk with a depth of 15 ft. in Latitude 41°09'22.611"N, Longitude 72°17'48.836"W.

1.9) 1661/20 - add 88 Wk

Survey Summary

Survey Position:	41° 10' 05.8" N, 072° 14' 37.3" W
Least Depth:	26.91 m (= 88.30 ft = 14.717 fm = 14 fm 4.30 ft)
TPU (±1.96σ):	**THU (TPEh)** ±1.015 m ; **TVU (TPEv)** ±0.442 m
Timestamp:	2008-278.12:59:25.168 (10/04/2008)
Survey Line:	h11446 / tj_3101_reson8125 / 2008-278 / 516_1253
Profile/Beam:	1661/20
Charts Affected:	12358_1, 13209_1, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Identified during office compilation, add an 88 Wk.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11446/tj_3101_reson8125/2008-278/516_1253	1661/20	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

88ft (12358_1, 13209_1, 12354_1, 13205_1)

14fm (12300_1, 13006_1, 13003_1)

27m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 1:non-dangerous wreck
	QUASOU - 6:least depth known
	STATUS - 1:permanent
	TECSOU - 3:found by multi-beam
	VALSOU - 26.915 m
	VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Chart a Wk with a depth of 88 ft. in Latitude 41°10'05.829"N, Longitude 72°14'37.287"W.

2 - AWOIS Features

2.1) AWOIS #7087, delete Obstn PA and chart 41 Wk

Primary Feature for AWOIS Item #7087

Search Position: 41° 09' 50.3" N, 072° 14' 48.3" W

Historical Depth: [None]

Search Radius: 300

Search Technique: S2,MB

Technique Notes: Search not required in less than 4 meters water depth

History Notes:

CL677/77--COE; MV SEA BOOTS REPORTED STRIKING A SUBMERGED OBJECT APPROXIMATELY 1 MILE, 270 DEGREES WEST OF ORIENT LIGHT IN PA LAT 41-09-50N, LONG 72-14-50W; CHARTED AS OBSTR REP 1976. (ENTERED MSM 2/89)

Survey Summary

Survey Position: 41° 09' 50.7" N, 072° 14' 52.7" W

Least Depth: 12.61 m (= 41.36 ft = 6.893 fm = 6 fm 5.36 ft)

TPU (±1.96σ): **THU (TPEh)** ±0.984 m ; **TVU (TPEv)** ±0.393 m

Timestamp: 2008-278.18:26:22.763 (10/04/2008)

Survey Line: h11446 / tj_3101_reson8125 / 2008-278 / 501_1819

Profile/Beam: 3690/185

Charts Affected: 12358_1, 13209_1, 12354_1, 13205_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Rock significanly shoal of charted soundings.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11446/tj_3101_reson8125/2008-278/501_1819	3690/185	0.00	000.0	Primary
h11446/tj_3101_reson8125/2008-278/496_1502	2852/239	12.90	221.8	Secondary (grouped)
h11446/tj_3101_reson8125/2008-278/501_1819	3600/212	29.64	257.4	Secondary (grouped)
h11446/tj_3101_reson8125/2008-278/496_1502	2930/156	44.15	230.1	Secondary (grouped)
AWOIS_B370-TJ-08	AWOIS # 7087	102.67	276.4	Secondary (grouped)

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

41ft (12358_1, 13209_1, 12354_1, 13205_1)

6 ¾fm (12300_1, 13006_1, 13003_1)

12.6m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 3:distributed remains of wreck
	INFORM - AWOIS #7087
	QUASOU - 6:least depth known
	STATUS - 1:permanent
	TECSOU - 3:found by multi-beam
	VALSOU - 12.606 m
	VERDAT - 12:Mean lower low water
	WATLEV - 3:always under water/submerged

Office Notes

Do not concur, multibeam investigation reveals this to be AWOIS #7087. Chart a Wk with a depth of 41 ft. in Latitude 41°09'50.722"N, Longitude 72°14'52.652"W.

2.2) AWOIS #6944 - 13 Rk (reported) - disproved

No Primary Survey Feature for this AWOIS Item

Search Position: 41° 09' 38.4" N, 072° 16' 20.3" W

Historical Depth: [None]

Search Radius: 250

Search Technique: S2,MB

Technique Notes: [None]

History Notes:

CL843/49--USN HYDROGRAPHIC OFFICE; A REPORT WAS RECEIVED THAT A DIVER DISCOVERED A PINNACLE ROCK BEARING 060 DEGREES, 550 YARDS FROM THE NEAREST TIP OF MULFORD POINT; PA LAT 41-09-38N, LONG 72-16-22W; ROCK WAS REPORTED TO BE 5 FT. ACROSS AT THE BOTTOM, THREE FT. AT THE TOP, AND RISING 12 - 15 FT. ABOVE THE HARD SAND BOTTOM; SOUNDINGS AROUND THE ROCK WERE 5 1/4 FMS; BOAT WAS UNABLE TO GET A SOUNDING ON ITS TOP; PINNACLE COULD BE AS LITTLE AS 13 - 16 FT. BELOW THE SURFACE AT MLW. (ENTERED MSM 11/88)

Survey Summary

Charts Affected: 12358_1, 13209_1, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

AWOIS item number 6944 disproved with Object Detection Multibeam and 100% Side Scan Sonar. No pinnicle identified.

Feature Correlation

Address	Feature	Range	Azimuth	Status
AWOIS_B370-TJ-08	AWOIS # 6944	0.00	000.0	Primary

Hydrographer Recommendations

S-57 Data

[None]

Office Notes

Concur. Surveyed least depth in area is 30 ft. SSS and MBES were reviewed and no evidence of 13 Rk (reported) was found. Remove 13 Rk (reported) and chart present survey soundings.

3 - Dangers to Navigation

3.1) DtoN#6 - 5 ft Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position: 41° 09' 37.7" N, 072° 15' 24.4" W

Least Depth: 1.60 m (= 5.26 ft = 0.877 fm = 0 fm 5.26 ft)

TPU (±1.96σ): **THU (TPEh)** ±0.980 m ;**TVU (TPEv)** ±0.389 m

Timestamp: 2008-275.17:45:34.887 (10/01/2008)

Survey Line: h11446 / tj_3102_reson8101 / 2008-275 / 608_1743

Profile/Beam: 895/44

Charts Affected: 12358_1, 13209_1, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Large rock found with Reson 8101 MBES and corrected to MLLW using verified water levels. Minimum sound was resloved to 1.6 meters (5.26 feet) and is on a charted 20 foot sounding. 50 meters offshore of this contact there is another reported DTON.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11446/tj_3102_reson8101/2008-275/608_1743	895/44	0.00	000.0	Primary
h11446/tj_3102_reson8101/2008-275/608_1743	771/9	35.76	261.9	Secondary (grouped)
h11446/tj_3101_reson8125/2008-278/896_1759	647/238	44.26	341.2	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/610_1752	528/63	46.47	115.9	Secondary (grouped)
h11446/tj_3102_reson8101/2008-279/821_1416	225/69	53.82	033.3	Secondary (grouped)
h11446/tj_3102_reson8101/2008-279/819_1416	174/66	55.90	271.9	Secondary (grouped)
h11446/tj_3101_reson8125/2008-275/635_1632	11370/80	65.31	332.3	Secondary (grouped)
h11446/tj_3102_reson8101/2008-279/821_1416	126/14	67.83	043.8	Secondary (grouped)
h11446/tj_3102_klein5000_sss100/2008-282/003_1511	0007	85.37	018.0	Secondary (grouped)
h11446/tj_3102_reson8101/2008-279/823_1419	200/40	87.76	094.6	Secondary (grouped)
h11446/tj_3101_reson8125/2008-275/635_1632	11915/10	98.56	033.9	Secondary (grouped)
h11446/tj_3102_reson8101/2008-275/612_1800	339/9	100.43	096.3	Secondary (grouped)
h11446/tj_3102_reson8101/2008-279/823_1419	97/58	106.18	085.2	Secondary (grouped)
h11446/tj_3102_reson8101/2008-278/472_2035	781/8	106.62	127.2	Secondary (grouped)
h11446/tj_3102_reson8101/2008-278/472_2035	785/8	107.56	126.7	Secondary (grouped)

h11446/tj_3101_reson8125/2008-275/684_2029	3132/82	122.25	029.2	Secondary (grouped)

Hydrographer Recommendations

Cartographically-Rounded Depth (Affected Charts):

5ft (12358_1, 13209_1, 12354_1)

0 ¾fm (12300_1, 13006_1, 13003_1)

1.6m (5161_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes:

QUASOU - 6:least depth known

STATUS - 1:permanent

TECSOU - 3:found by multi-beam

VALSOU - 1.604 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

The 5 ft rock was supposedly submitted to MCD as DtoN #6 by the Thomas Jefferson. At the time of survey review and verification, this feature has not been applied to current edition of chart. Therefore, AHB has resubmitted the feature as a DtoN - 1.6 m sounding found on MBES and verified w/ SSS. Recommend to chart a 5 ft rock at surveyed location.

Concur, DtoN applied to latest raster for chart 13209, 25th Ed., Apr./07, Corrected through NM Apr. 14/07, Corrected through LNM Apr. 3/07. Retain as charted.

3.2) DtoN#3 - 14 ft Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position:	41° 09' 35.5" N, 072° 15' 44.5" W
Least Depth:	4.47 m (= 14.67 ft = 2.445 fm = 2 fm 2.67 ft)
TPU (±1.96σ):	**THU (TPEh)** ±0.981 m ;**TVU (TPEv)** ±0.389 m
Timestamp:	2008-279.14:02:13.855 (10/05/2008)
Survey Line:	h11446 / tj_3102_reson8101 / 2008-279 / 832_1401
Profile/Beam:	98/82
Charts Affected:	12358_1, 13209_1, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

Large rock found with Reson 8101 MBES and corrected to MLLW using verified water levels. Minimum sound was resloved to 4.47 meters (14.67 feet) and is outside of charted 30 foot contour near 53 foot charted sounding.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11446/tj_3102_reson8101/2008-279/832_1401	98/82	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

14ft (12358_1, 13209_1, 12354_1)

2 ½fm (12300_1, 13006_1, 13003_1)

4.5m (5161_1)

S-57 Data

Geo object 1:	Sounding (SOUNDG)
Attributes:	QUASOU - 1:depth known
	STATUS - 1:permanent
	TECSOU - 3:found by multi-beam

VERDAT - 12:Mean lower low water

Office Notes

The 14 ft rock was supposedly submitted to MCD as DtoN #3 by the Thomas Jefferson. At the time of survey review and verification, this feature has not been applied to current edition of chart. Therefore, AHB has resubmitted the feature as a DtoN - 4.47 m sounding found on MBES and verified w/ SSS. Recommend to chart a 14 ft rock at surveyed location.

Do not concur, shoaler rocks are nearby. Delete the dangerous 14 Rk and chart a 14 ft. sounding in Latitude 41°09'35.452"N, Longitude 72°15'44.460"W.

3.3) DtoN#2 - 39 ft Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position: 41° 09' 44.0" N, 072° 15' 27.7" W

Least Depth: 11.93 m (= 39.14 ft = 6.524 fm = 6 fm 3.14 ft)

TPU (±1.96σ): **THU (TPEh)** ±0.982 m ;**TVU (TPEv)** ±0.391 m

Timestamp: 2008-280.18:52:48.108 (10/06/2008)

Survey Line: h11446 / tj_3101_reson8125 / 2008-280 / 811_1852

Profile/Beam: 67/134

Charts Affected: 12358_1, 13209_1, 12354_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

This sounding was acquired by Reson 8125 and corrected to MLLW using observed water levels. Final water levels and zoning were applied and resolved the soundings to 39.14ft (11.93m).

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11446/tj_3101_reson8125/2008-280/811_1852	67/134	0.00	000.0	Primary
h11446/tj_3101_reson8125/2008-280/811_1852	51/2	26.51	306.4	Secondary (grouped)
h11446/tj_3101_reson8125/2008-278/475_2017	680/239	48.44	258.7	Secondary (grouped)

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

39ft (12358_1, 13209_1, 12354_1)

6 ½fm (12300_1, 13006_1, 13003_1)

11.9m (5161_1)

S-57 Data

Geo object 1: Underwater rock / awash rock (UWTROC)

Attributes: QUASOU - 6:least depth known

STATUS - 1:permanent

TECSOU - 3:found by multi-beam

VALSOU - 11.931 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

The 39 ft rock was supposedly submitted to MCD as DtoN #2 by the Thomas Jefferson. At the time of survey review and verification, this feature has not been applied to current edition of chart. Therefore, AHB has resubmitted the feature as a DtoN. 11.93 m sounding found on MBES and verified w/ SSS. Recommend to chart a 39 ft rock at surveyed location.

Concur, DtoN applied to latest raster for chart 13209, 25th Ed., Apr./07, Corrected through NM Apr. 14/07, Corrected through LNM Apr. 3/07. Retain as charted.

Subject: Re: [Fwd: Tide zoning issues on two TJ's survey projects]
From: Carolyn Lindley <Carolyn.Lindley@noaa.gov>
Date: Mon, 20 Oct 2008 15:18:18 -0400
To: jasper schaer <jasper.schaer@noaa.gov>
CC: NOS.COOPS.HPT@noaa.gov, "james.m.crocker" <James.M.Crocker@noaa.gov>, tod schattgen <Tod.Schattgen@noaa.gov>

Hi Jasper,
The TPE value is the 95% value.
Thanks,
Carolyn

jasper schaer wrote:
> Our data analysis has revealed that we are at IHO-2, if we use the 0.38 TPE value for B370. Is this tpe value, 0.38m, a 1-sigma or 95% value?
>
> thanks-js
>
> jasper schaer wrote:
>
> > Thanks, Craig for your quick response. -js
> >
> > Craig Martin wrote:
> >
> > > Jeremy / Jasper,
> > >
> > > In response to your email on two of TJ's survey projects:
> > >
> > > 1) The error estimate that should be used for the tides portion of the TPE on the B370 project is 0.38 meters.
> > >
> > > 2) Generally, no revision to preliminary tide zones is conducted, unless the mission is drastically beyond the scope of the original project submitted to CO-OPS. Short overages outside of the preliminary zoning is addressed and covered in the Smooth Tide process. We have not received a request for smooth tides for any B370 sheets to date. Once HPT receives these requests we will adjust the zoning and send back to the ship for application.
> > >
> > > 3) Due to total lack of tide information inside Menemsha Pond, CO-OPS is unable to provide reliable tide correctors to meet OCS specs beyond the southern border of Edy's Island. The TCARI grid was adjusted to the point where information could be confidentially extrapolated to meet these standards. This was annotated in the "Notes" section on the Final Tide note for the H-11920 in which the data was collected. In addition, CO-OPS informed HSD of this lack of tide information when the data was collected.
> > >
> > > Regards,
> > > Craig
> > >
> > > Jeremy McHugh wrote:
> > >
> > > > Hi HPT,
> > > > Could you please address each of Jasper's three concerns and copy everyone on the reply. Thanks!
> > > > Jeremy
> > > >
> > > > -------- Original Message --------
> > > > Subject: Tide zoning issues on two TJ's survey projects
> > > > Date: Sat, 27 Sep 2008 16:39:25 -0400
> > > > From: jasper schaer <jasper.schaer@noaa.gov>
> > > > Organization: NOAA-TJ
> > > > To: Smooth.Tides@noaa.gov

CC: Jeremy McHugh <Jeremy.McHugh@noaa.gov>
References: <ae8627f11e4ab567.48db6d84@noaa.gov>
<48DBB8BE.3000703@noaa.gov> <48DBC7AE.9080302@noaa.gov>
<48DBDC75.9000507@noaa.gov> <48DBF32E.10601@noaa.gov>
<ad3413f430b07cf.48dcb168@noaa.gov> <48DD051E.6050609@noaa.gov>
<48DD1459.2010202@noaa.gov>

Tide zoning issues on B370 & B307.

1. We were looking for the error estimates to apply to our TPE on B370. There were none given in the tide letter part of the project instruction because at the time it was being determined. If we apply zero, we run the risk of data dropping out in our grid surfaces. We need error estimate for our discreet zoning for B370 or at the very least a high.

2. TJ 's launches survey to the 4m curve and at times we acquire data outside the preliminary tide zone in getting to the 4 m curve. This is the case for B370. Will need a revision for discreet tide zoning for B370. What do you need from us?

3. Data from survey B307 was collected in Menemsha Pond, an area that was not original planned, hence why the B307's tcari files were revised. When we try to apply the verified WL data to the TCARI file, we encounter a host of problems, see attached.

r-js

--
Jeremy McHugh, Physical Scientist
NOAA's Office of Coast Survey
301-713-2702 x117

Carolyn Lindley <Carolyn.Lindley@noaa.gov>
Oceanographer
NOAA/National Ocean Service
CO-OPS

Subject: Re: for the Appendix V record, OPR-B307, H11920 & H11921
From: "shep.smith" <smith.shepard@gmail.com>
Date: Sat, 26 Jul 2008 14:26:28 -0400
To: jasper schaer <jasper.schaer@noaa.gov>

Sounds like a good approach.

jasper schaer wrote:

> Sir,
>
> Will AHB accept object detection MB coverage, in place of complete MB coverage, in the 4-20 meter survey area of the project, which already been covered by 100% SSS?
>
> V/r-js

Subject: Re: H11821 Deliverables
From: Shepard Smith <Shep.Smith@noaa.gov>
Date: Fri, 30 May 2008 11:56:42 -0400
To: daniel wright <Daniel.Wright@noaa.gov>
CC: megan nadeau <Megan.Nadeau@noaa.gov>, jasper schaer <jasper.schaer@noaa.gov>, Castle E Parker <Castle.E.Parker@noaa.gov>, Wesley Kitt <Wesley.Kitt@noaa.gov>

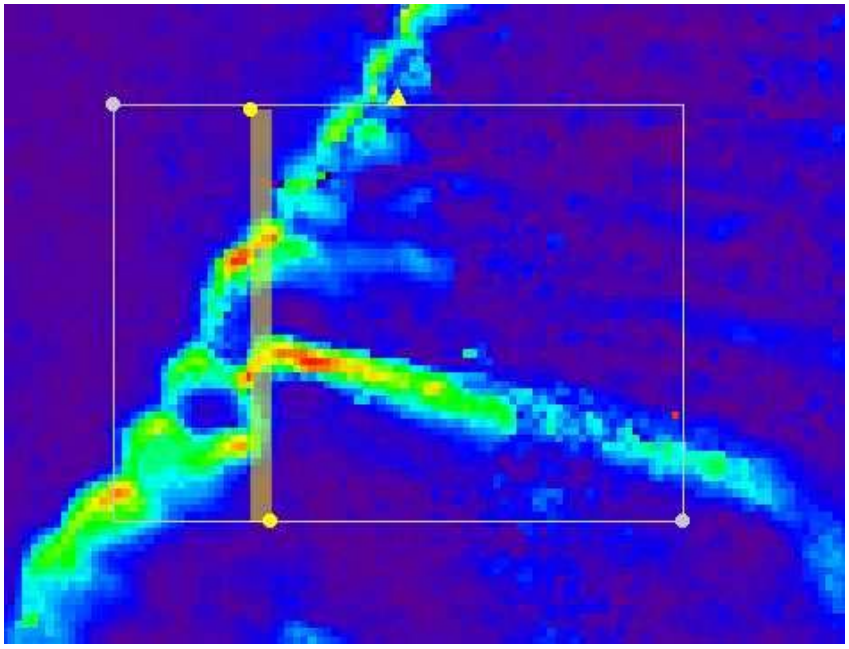
TJ,

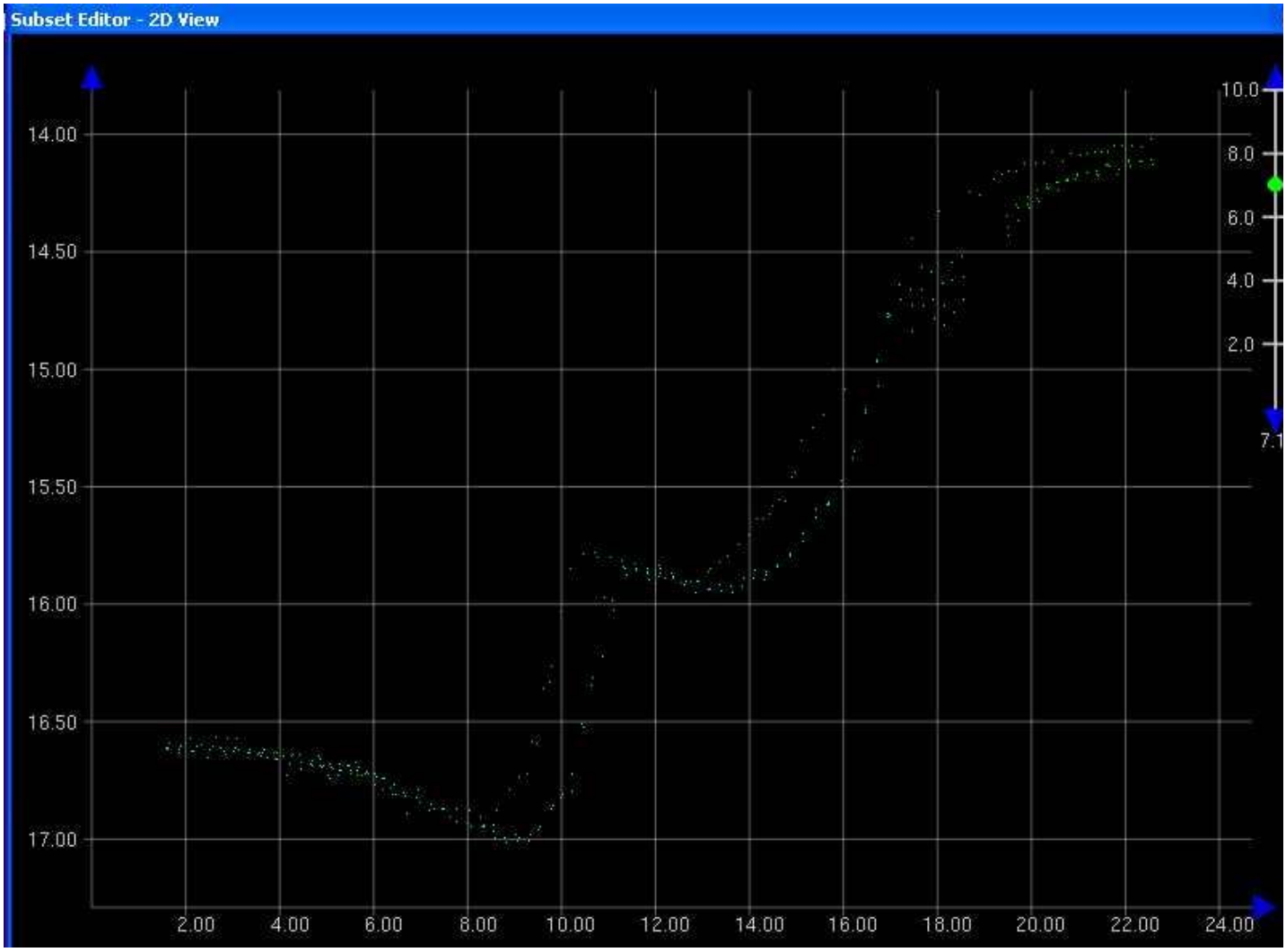
Yes, please.

I envision something along these lines:

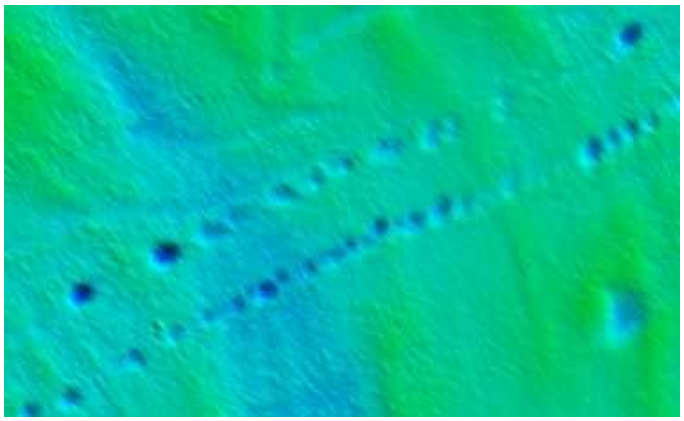
"The standard deviation layer of each grid was examined for areas of unusually high uncertainty that might indicate unresolved systematic errors. The colors in the following screen captures are scaled from 0 to 0.5m *(adjust as appropriate)*. Comments to follow:

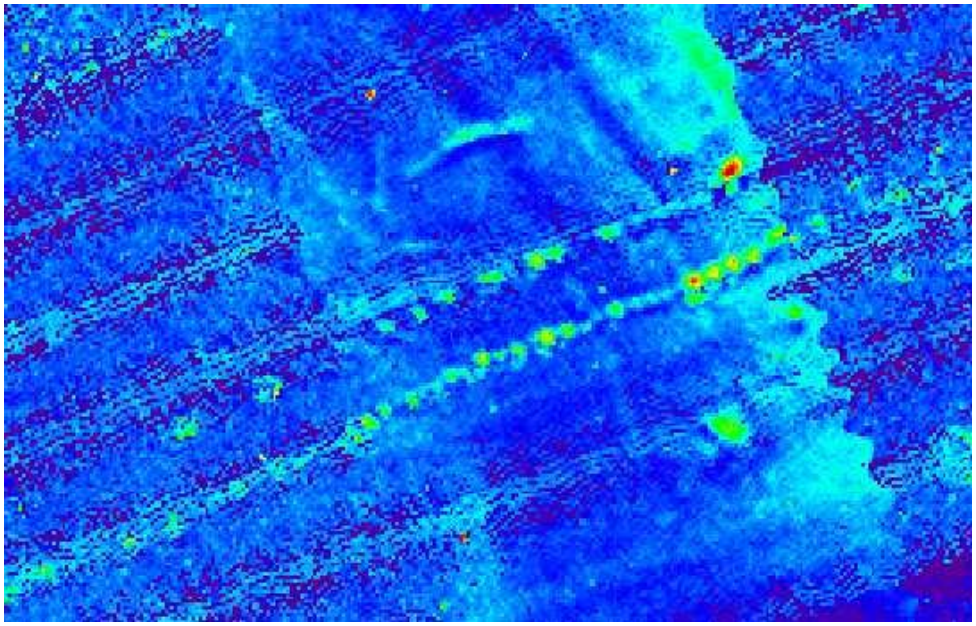
In areas of steep slopes and on the edges of dredged scours, horizontal errors between adjacent lines on the order of 1m caused std deviation of around 0.5m



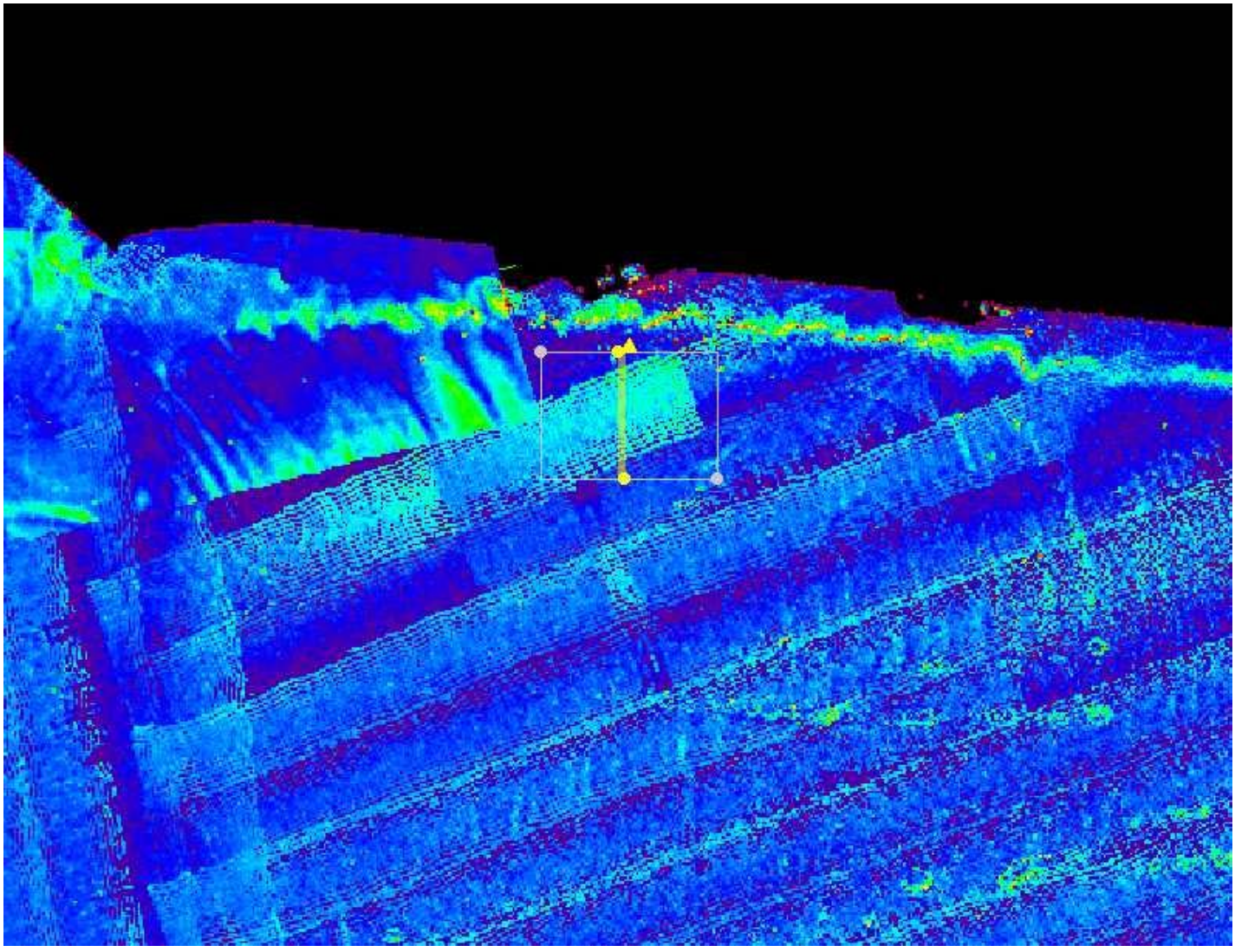


Lines of spudprints show up as lines of high std deviation that happened to coincide with the direction of the mainscheme lines.





Some areas of overlapping mainscheme lines show a std deviation of up to 0.15m, associated with an offset between the lines. We don't fully understand this offset, especially because it is on the same vessel just a few minutes apart.



etc, etc...

daniel wright wrote:

> Hello Shep,
>
> We are preparing our deliverables for H11821, Approaches to Jacksonville, and we would like confirmation/clarification on the following:
>
> 1. In our discussion regarding crossline comparisons, we agreed that an analysis of areas of high standard deviation in the BASE surface would be preferable over Pydro crossline stats, or a crossline to mainscheme surface differencing. Do you still concur?
>
> 2. Section 5.1.2 of the Specs and Deliverables;
>
> "If single beam and multibeam are specified in the Hydrographic Survey Project Instructions or Statement of Work and they both fall in a common
> area, then a separate single beam surface is required."
>
> In 2 of the 5 field sheets we collected both MB and SB for mainscheme bathy. If the soundings will be generated from the combined data, wouldn't this be better submitted as 1 combined surface? Or would you prefer 2 separate surfaces? Currently we have them combined.
>
> Please let us know your thoughts on this.
>
> Br,
> Dan

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : December 1, 2008

HYDROGRAPHIC BRANCH: Atlantic
HYDROGRAPHIC PROJECT: OPR-B370-TJ-2008
HYDROGRAPHIC SHEET: H11446

LOCALITY: Orient Point to Terry Point, Long Island Sound, NY
TIME PERIOD: September 22 - October 7, 2008

TIDE STATION USED: 846-1490 New London, CT
Lat. 41° 21.3'N Long. 72° 5.2' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.839 meters

REMARKS: RECOMMENDED ZONING

Preliminary zoning is accepted as the final zoning for project OPR-B370-TJ-2008, H11446, during the time period between September 22 and October 7, 2008.

Please use the zoning file "B370TJ2008CORP" submitted with the project instructions for B370-TJ-2008. Zones LIS80, LIS81, LIS84, LIS90, LIS91, LIS93, LIS94, LIS95, LIS96, & LIS96A are the applicable zones for H11446.

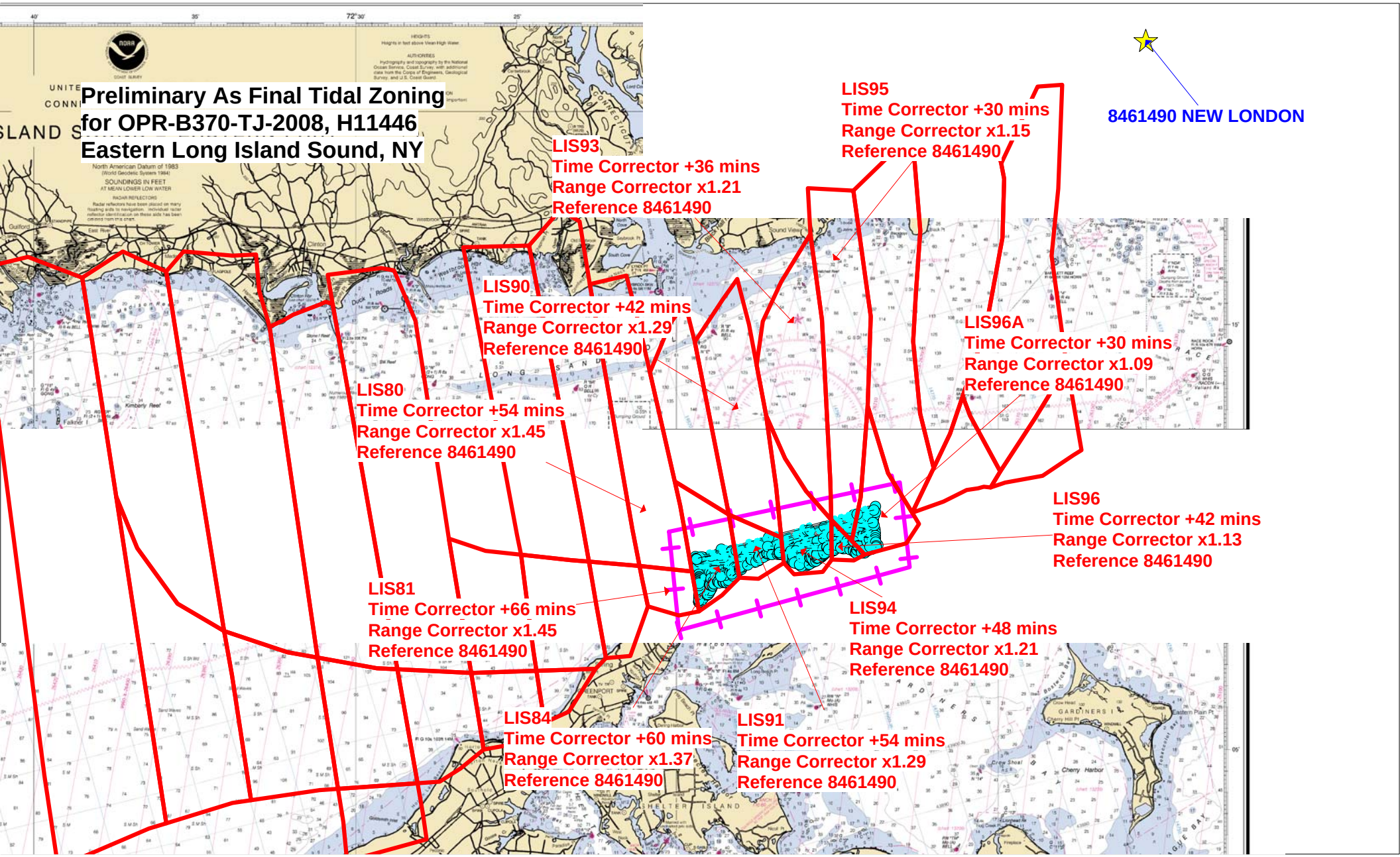
Refer to attachments for zoning information.

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).

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: 2008.12.03 09:41:32 -05'00'

CHIEF, OCEANOGRAPHIC DIVISION


Preliminary As Final Tidal Zoning
for OPR-B370-TJ-2008, H11446
Eastern Long Island Sound, NY
8461490 NEW LONDON
LIS93
Time Corrector +36 mins
Range Corrector x1.21
Reference 8461490
LIS95
Time Corrector +30 mins
Range Corrector x1.15
Reference 8461490
LIS90
Time Corrector +42 mins
Range Corrector x1.29
Reference 8461490
LIS96A
Time Corrector +30 mins
Range Corrector x1.09
Reference 8461490
LIS80
Time Corrector +54 mins
Range Corrector x1.45
Reference 8461490
LIS96
Time Corrector +42 mins
Range Corrector x1.13
Reference 8461490
LIS81
Time Corrector +66 mins
Range Corrector x1.45
Reference 8461490
LIS94
Time Corrector +48 mins
Range Corrector x1.21
Reference 8461490
LIS84
Time Corrector +60 mins
Range Corrector x1.37
Reference 8461490
LIS91
Time Corrector +54 mins
Range Corrector x1.29
Reference 8461490

This Document is for Office Process use only and is intended to supplement, not supersede or replace, information/recommendations in the Descriptive or Evaluation Reports

AHB PRE-COMPILATION LOG

General Survey Information	
REGISTRY No.	***H11446***
PROJECT No.	***OPR-B307-TJ-08***
FIELD UNIT	***THOMAS JEFFERSON***
DATE OF SURVEY	***22 SEP TO 21 OCT, 2008***
LARGEST SCALE CHART	***12358, edition 20, 20080428, 1:40000***
ADDITIONAL CHARTS	***13209, edition 25, 20070401, 1:40000***
SOUNDING UNITS	***feet***
COMPILER	***Wes Dukes***

Source Grids	**File Name** H:\Compilation\HXXXXX_XXXX _XXXX\AHB_HXXXXX\
	E-SAR Final Products\GRIDS*H11446_2m_CUBE_Shallow_East_Final*
	E-SAR Final Products\GRIDS*H11446_2m_CUBE_Shallow_West_Final*
	E-SAR Final Products\GRIDS*H11446_50cm_CUBE_shallow_east_Final*
	E-SAR Final Products\GRIDS*H11446_50cm_CUBE_shallow_west_Final*
Surfaces	**File Name** H:\Compilation\HXXXXX_XXXX-XXXX\AHB_HXXXXX\COMPILE\Working
Combined	***H11446_2m_Combined.hns***
Interpolated TIN	\Interpolated TIN***H11446_6m_InterpTIN.hns***
Shifted Interpolated TIN	\Shifted Surface\ ***H11446_6m_InterpTIN_Shifted.hns***
Product Surface	\Product Surface***H11446_10k_100mrad_4mres.hns***
Final HOBs	**File Name** H:\Compilation\HXXXXX_XXXX-XXXX\AHB_HXXXXX\COMPILE\Final_Hobs\
Survey Scale Soundings	***H11446_SS_Soundings.hob***
Chart Scale Soundings	***H11446_CS_Soundings.hob***
Contour Layer	***H11446_Contours.hob***
Feature Layer	***H11446_Features.hob***
Meta-Objects Layer	***H11446_MetaObjects.hob***
Blue Notes	***H11446_BlueNotes.hob***
ENC Retain Soundings	***H11446_ENC_Retain_Soundings.hob***

Meta-Objects Attribution	
Acronym	**Value**
M_COVR	
CATCOV	***Coverage Available***
SORDAT	***20081021***
SORIND	***US,US,survy,H11446***
M_QUAL	
CATZOC	***U***
INFORM	***H11446,OPR-B307-TJ_08,TJ***
POSACC	***10***
SORDAT	***20081021***
SORIND	***US,US,survy,H11446***
SUREND	***20081021***

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SURSTA	***20080922***
DEPARE	
DRVALV 1	***1.3ft***
DRVALV2	***362.5ft***
SORDAT	***20081021***
SORIND	***US,US,survy,H11446***
M_CSCL	
CSCALE	
SORDAT	
SORIND	

SPECIFICATIONS:

I. COMBINED SURFACE:
   a. Number of ESAR Final Grids: ***4***
   b. Resolution of Combined (m): ***2m***

II. SURVEY SCALE SOUNDINGS (SS):
   a. Radius
   b. Shoal biased
   c. Use Single-Defined Radius (mm at Map Scale): ; Radius Value = 1
   d. Queried Depth of All Soundings
      i. Minimum: ***1.3***
      ii. Maximum: ***360.9***

III. INTERPOLATED TIN SURFACE:
   a. Resolution (m): ***4m***
   b. Linear
   c. Shifted value: *[**-0.229m (feet)**, (≤ 10 fathoms)]*
      [-1.372m (fathoms), (> 10 fathoms)]

IV. CONTOURS:
   a. Use a Depth List: ***H11446_NOAA_depth_curves_list.txt***
   b. Line Object: DEPCNT
   c. Value Attribute: VALDCO

V. FEATURES:
   a. Total Number of Features: ***87***
   b. Number of Insignificant Features: ***63***

VI. CHART SURVEY SOUNDINGS (CS):
   a. Number of ENC CS Soundings: ***62, however, ENC US4NY1GM only contains ~half of the soundings found on the raster.***
   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): ***H11446_SSR.txt***
   e. Filter: Interpolated != 1
   f. Number Survey CS Soundings: ***116***

VII. Notes:

ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT to Accompany
Survey H11446

This Evaluation 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.1 DATA PROCESSING

The following software was used to process and review data at the Atlantic Hydrographic Branch (AHB):

CARIS HIPS/SIPS version 6.1 SP2 hotfix 7
Pydro version 9.4 (r2691)
CARIS BASE Manager 2.1 SP1 hotfix 10
CARIS S-57 Composer 2.0 hotfix 2
dKart Inspector V. 5.0 Build 732 (SP1)

B.2. QUALITY CONTROL

H-Cell

The AHB source depth grid was a 2m resolution combined BASE surface extracted from the field submitted surfaces for survey H11446. Survey scale soundings were extracted from a 5m resolution product surface(1:20,000 scale, 50 m generalization) at 1:40,000 scale using a radius of 1m. Depth curves were created by hand at the depth intervals represented on charts 12358 and 13209. Soundings were selected for charting by hand using the latest raster charts and depth contours used as background for sounding placement. Soundings were then checked for conflicts, corrected to remove conflicts, and edited to allow for proper sounding compilation placement with respect to existing charted depths and junctioning surveys outside the survey area.

The compilation products and Stand Alone HOB Files (SAHOB) are detailed in the Compilation Process Log of this document. All individual SAHOB files were assembled in BASE Editor during H-Cell compilation.

The completed H-Cell was exported as a Base Cell File (ENC.000) in S-57 format with all values in metric units. The metric equivalent ENC.000 file was then converted to NOAA chart units (ENC_CU.000) with all values measured in feet following NOAA sounding rounding rules.

Chart compilation was performed by Atlantic Hydrographic Branch personnel in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland.

The H11446 CARIS H-Cell final deliverables include the following products:

H11446_CS.000	**1:40,000 Scale**	**H11446 H-Cell with Chart Scale Soundings**
H11446_SS.000	**1:10,000 Scale**	**H11446 Survey Scale Soundings**

B.2. Junctions

Survey H11446 junctions with survey H11251of the same project to the West, survey H11445 to the East, and survey H11997 to the North. Present survey soundings compare within 0 to 1 feet with all junctional surveys.

C. VERTICAL AND HORIZONTAL CONTROL

Final vertical correction processing was completed by field personnel. Sounding datum is Mean Lower Low Water (MLLW). Vertical datum is Mean High Water (MHW). Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD83), UTM projection zone 18.

D. RESULTS AND RECOMMENDATIONS

Chart Comparison

12358 (20th Edition, Apr./08)
Corrected through NM Apr. 12/08
Corrected through LNM Apr. 1/08
Scale 1:40,000

13209 (25th Edition, Apr./07)
Corrected through NM Apr. 14/07
Corrected through LNM Apr. 3/07
Scale 1:40,000

ENC Comparison

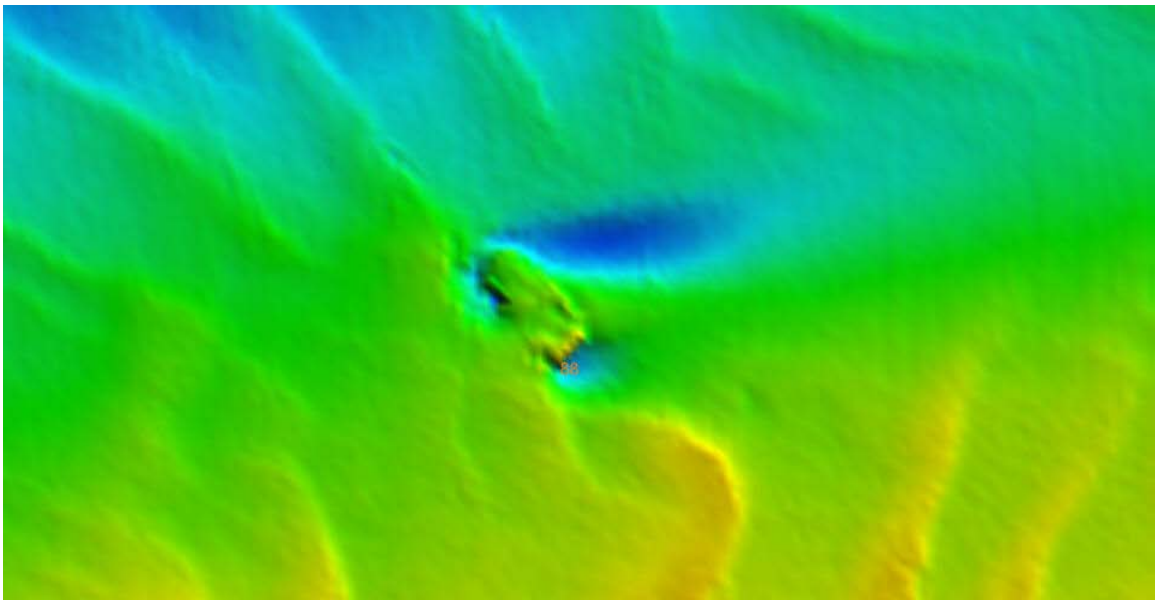
US4NY1GM
Long Island Sound – Eastern Part
Edition 17
Update Application Date 2009-03-19
Issue Date 2009-04-08
References: Chart 12354 (Scale 1:80,000)

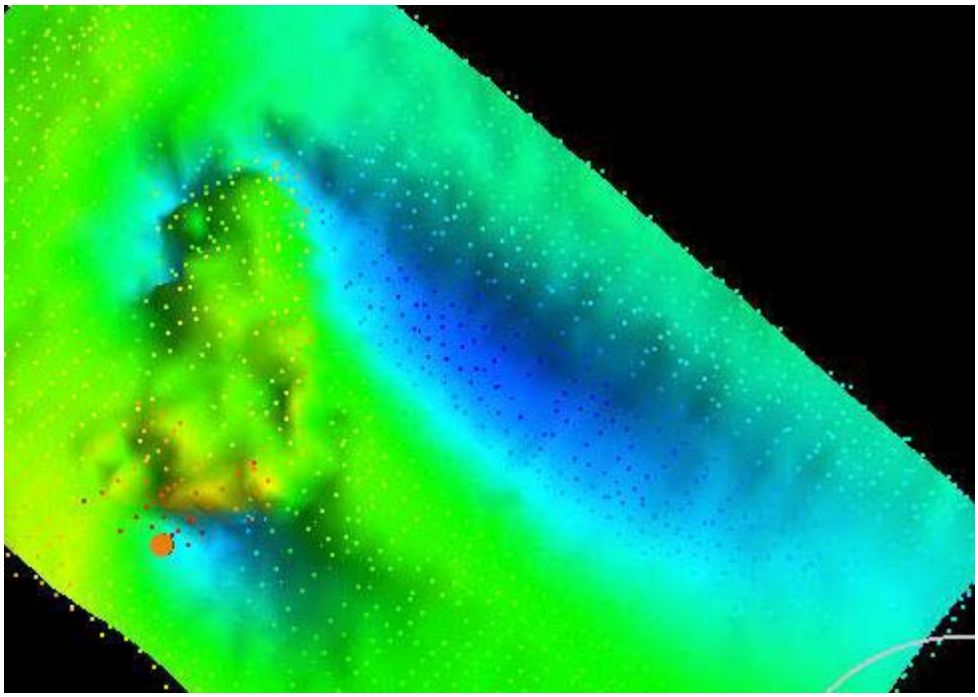
US5MA22M
Block Island Sound and Gardiners Bay,
Montauk Harbor -- Edition 12
Update Application Date 2009-04-22
Issue Date 2009-05-04
References: Chart 13209 (Scale 1:40,000)

Uncharted Features

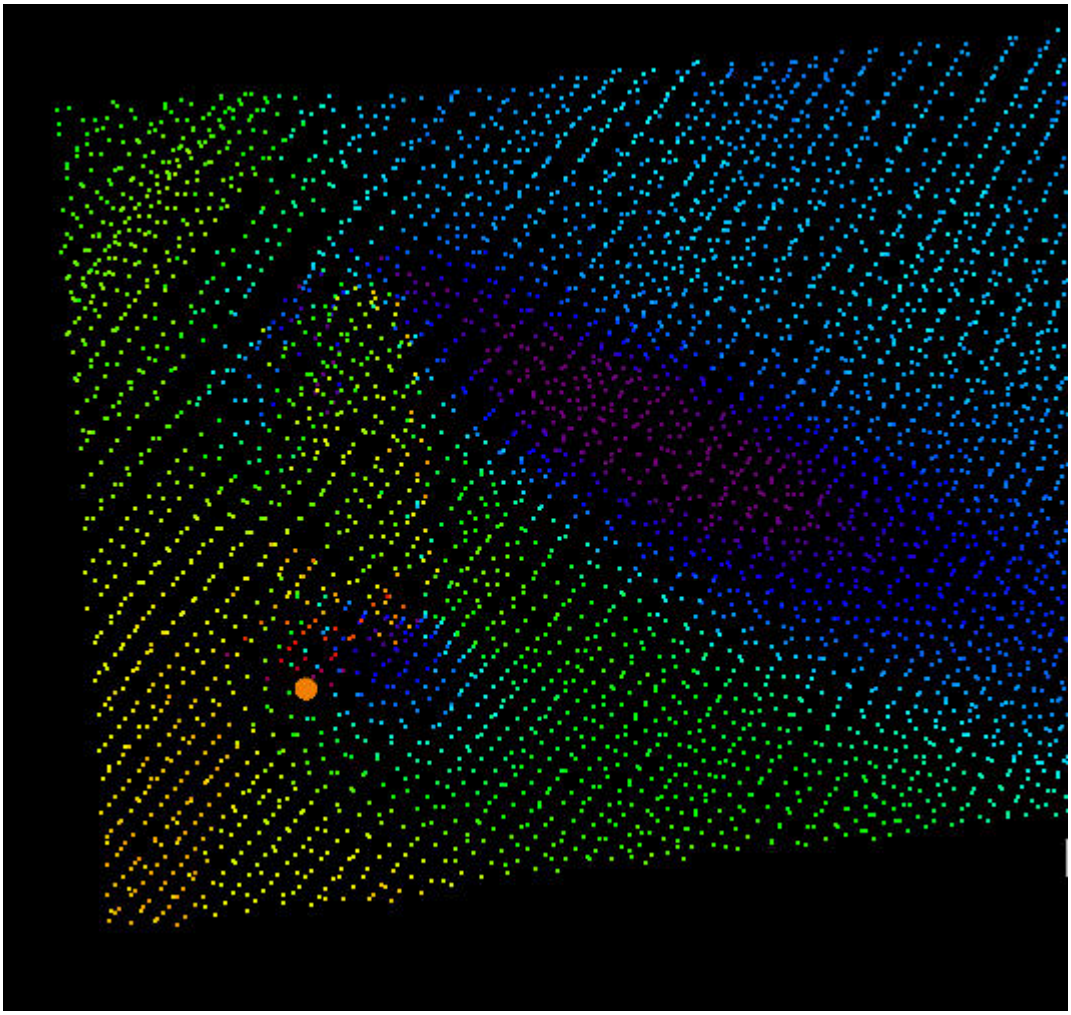
Two new Wrecks were identified during office processing.

1) In the vicinity of Latitude 41°10’05.829”N, Longitude 72°14’37.288W, it is recommended to chart a non-dangerous Wreck with a depth of 88 ft. This is an image of this uncharted Wreck.



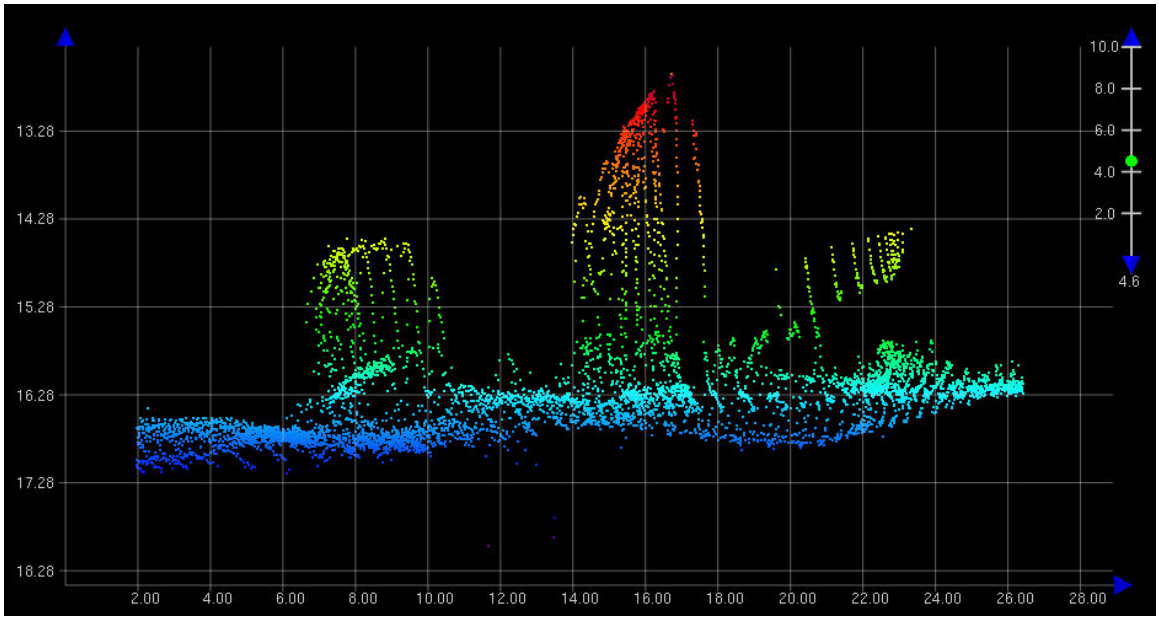


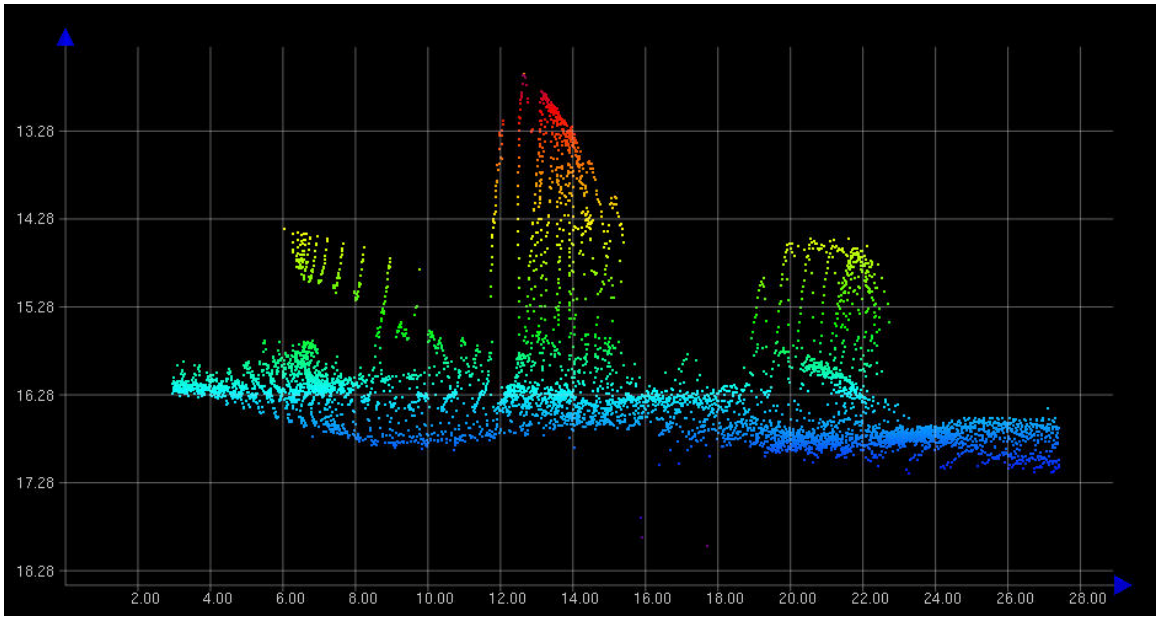
The Wreck is approximately 10 meters long and 4 meters wide (33 ft. by 13 ft.), the approximate size of a typical pleasure craft such as a Boston Whaler.



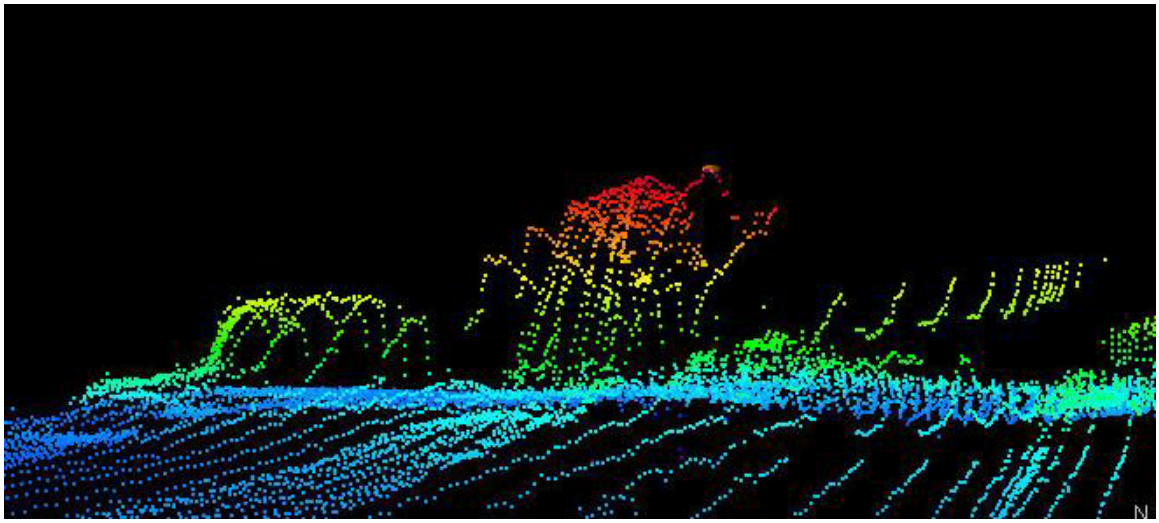
The above image shows the approximate shape of the Wreck, with a distinct bow and vessel shape, discounting the idea this could be a lost shipping container. Thus the recommendation is to chart a non-dangerous Wreck with a depth of 88 ft.

2) In the vicinity of Latitude 41°09’50.722”N, Longitude 72°14’52.652W, it is recommended to chart a dangerous Wreck (remains of a wreck) with a depth of 41 ft. The following are images of this uncharted Wreck.

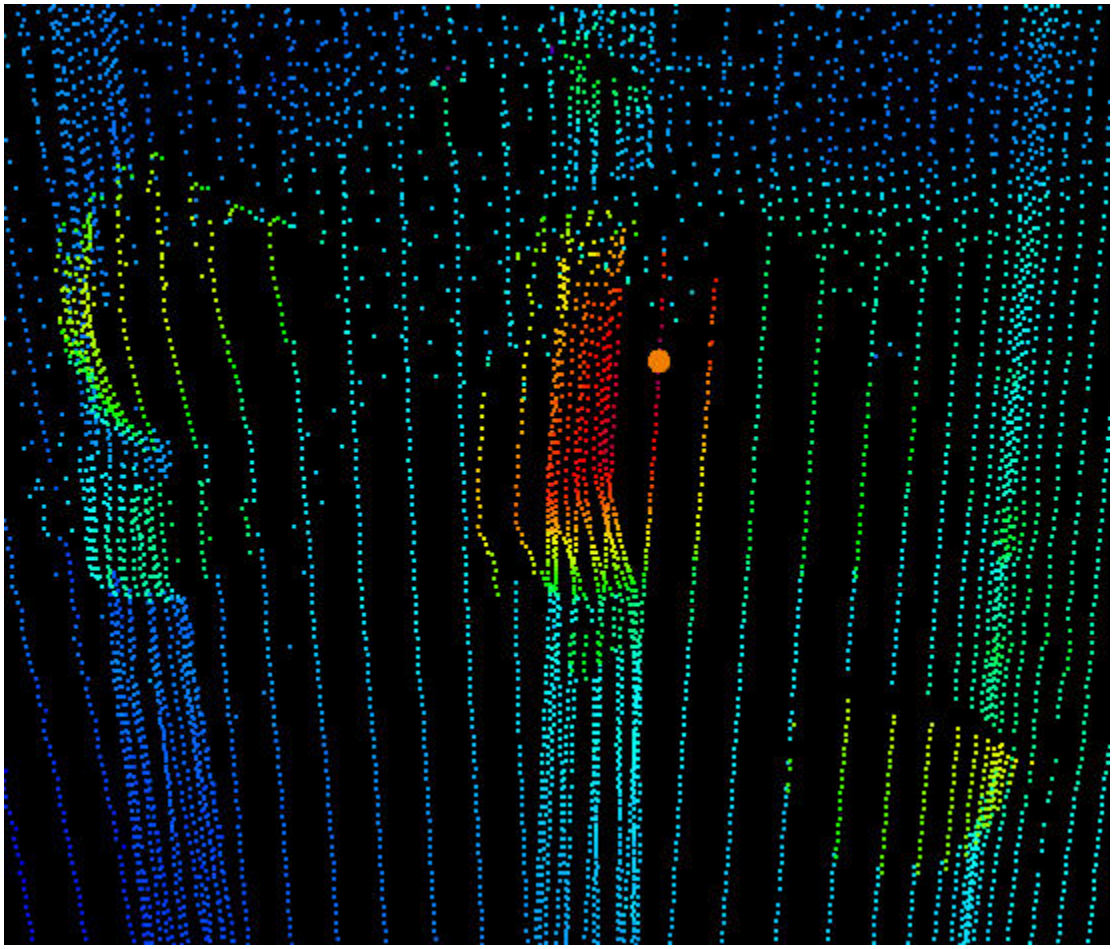




The two images above show the outline of a wreck that appears to have been damaged and is no longer complete and whole.



This image shows the jutting bow of the wreck.



This image also shows the distinct edge of the bow of the wreck that has been separated from the body and stern. Thus the recommendation is to chart a dangerous 41 Wk (remains of a wreck).

Hydrography

The charted hydrography originates with prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in section "D" and Appendices 1 & 2 of the Descriptive Report.

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.

_____

Bryan Chauveau
Physical Scientist
Verification of Data
Evaluation Report

H11446 COMPILATION LOG

Registry No.	H11446
Project No.	OPR-B370-TJ-08
Field Unit	NOAA SHIP THOMAS JEFFERSON
Compilation	Bryan Chauveau
Largest Scale Chart	**12358 (20th Edition, Apr./08)** Corrected through NM Apr. 12/08 Corrected through LNM Apr. 1/08 Scale 1:40,000 **13209 (25th Edition, Apr./07)** Corrected through NM Apr. 14/07 Corrected through LNM Apr. 3/07 Scale 1:40,000 **US4NY1GM** Long Island Sound – Eastern Part Edition 17 Update Application Date 2009-03-19 Issue Date 2009-04-08 References: Chart 12354 (Scale 1:80,000) **US5MA22M** Block Island Sound and Gardiners Bay, Montauk Harbor Edition 12 Update Application Date 2009-04-22 Issue Date 2009-05-04 References: Chart 13209 (Scale 1:40,000)
Chart Scale	1:40,000
Survey Scale	1:10,000
Date Of Survey	20081021

Components	File Names
Contour Layer	H11446_Contours
Survey Scale Soundings	H11446_SS_Soundings.hob
Chart Scale Soundings	H11446_CS_Soundings.hob
Feature Layer	H11446_DepAre.hob H11446_Wrecks.hob H11446_Rocks.hob H11446_Sandwaves.hob H11446_Rocky_Areas.hob
Meta-Objects Layer	H11446_M_Covr.hob H11446_M_Qual.hob
Blue Notes	H11446_BlueNotes.hob

META-OBJECTS:

M_COVR attributes

Acronym	Value
CATCOV	1 – coverage available
SORDAT	20081021
SORIND	US,US,survy,H11446

M_QUAL attributes

Acronym	Value
CATZOC	6
INFORM	H11251,NOAA Ship Thomas Jefferson
POSACC	10
SORDAT	20081021
SORIND	US,US,survy,H11446
SUREND	20081021
SURSTA	20080922

Final Grids Listing –

H11446_2m_CUBE_Shallow_East_Final.hns	31,567 KB	HNS File	6/16/2009 2:23 PM
H11446_2m_CUBE_Shallow_East_Final.xml	11 KB	XML Document	6/16/2009 2:23 PM
H11446_2m_CUBE_Shallow_West_Final.hns	14,923 KB	HNS File	6/16/2009 2:28 PM
H11446_2m_CUBE_Shallow_West_Final.xml	10 KB	XML Document	6/16/2009 2:28 PM
H11446_50cm_CUBE_shallow_east_Final.hns	270,078 KB	HNS File	6/16/2009 2:27 PM
H11446_50cm_CUBE_shallow_east_Final.xml	24 KB	XML Document	6/16/2009 2:27 PM
H11446_50cm_CUBE_shallow_west_Final.hns	418,029 KB	HNS File	6/16/2009 2:34 PM
H11446_50cm_CUBE_shallow_west_Final.xml	18 KB	XML Document	6/16/2009 2:34 PM

APPROVAL SHEET
H11446

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development 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 NOS requirements except where noted in the Evaluation Report.

Wes Dukes
Hydrographic Intern
Atlantic Hydrographic Branch

Digitally signed by Bryan Chauveau
DN: cn=Bryan Chauveau, o=Atlantic Hydrographic Branch, ou=NOAA, email=bryan.chauveau@noaa.gov, c=US
Date: 2009.07.09 12:13:02 -04'00'

Bryan Chauveau
Physical Scientist,
Atlantic Hydrographic Branch

All final products have undergone a comprehensive review as per the Atlantic Hydrographic Branch Processing Manual and are verified to be accurate and complete except where noted in the Evaluation Report.

I have reviewed the Base Cell files, accompanying data, and reports. This survey and accompanying Marine Chart Division deliverables meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.

Approved: 

Digitally signed by Shepard Smith
DN: cn=Shepard Smith, o=NOAA, ou=AHB, email=shep.smith@noaa.gov, c=US
Date: 2009.07.09 13:25:55 -04'00'

Commander Shepard M. Smith, NOAA
Chief, Atlantic Hydrographic Branch

Jeremy McHugh
AWOIS/SURF Check Completed
2009.07.21 12:06:38 -04'00'