H12414

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:	H12414

LOCALITY

State:	New York
General Locality:	Long Island Sound
Sub-locality:	Northport Basin to Nissequogue R., NY

2012

CHIEF OF PARTY
CDR Lawrence T. Krepp

LIBRARY & ARCHIVES

Date:

NOAA FORM 77-28 (11-72)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTRY NUMBER:
HYDROGRAPHIC TITLE SHEET		**H12414**

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:	**Long Island Sound**
Sub-Locality:	**Northport Basin to Nissequogue R., NY**
Scale:	**10000**
Dates of Survey:	**07/26/2012 to 08/22/2012**
Instructions Dated:	**05/08/2012**
Project Number:	**OPR-B340-TJ-12**
Field Unit:	**NOAA Ship *Thomas Jefferson***
Chief of Party:	**CDR Lawrence T. Krepp**
Soundings by:	**Multibeam Echo Sounder**
Imagery by:	**Multibeam Echo Sounder Backscatter**
Verification by:	**Atlantic Hydrographic Branch**
Soundings Acquired in:	**meters at Mean Lower Low Water**

Remarks:

The purpose of this survey is to provide contemporary surveys to update National Ocean Service (NOS) nautical charts. All separates are filed with the hydrographic data. Any revisions to the Descriptive Report (DR) generated during office processing are shown in bold red italic text. The processing branch maintains the DR as a field unit product, therefore, all information and recommendations within the body of the DR are considered preliminary unless otherwise noted. The final disposition of surveyed features is represented in the OCS nautical chart update products. All pertinent records for this survey, including the DR, are archived at the National Geophysical Data Center (NGDC) and can be retrieved via http://www.ngdc.noaa.gov/.

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Descriptive Report to Accompany Survey H12414

Project: OPR-B340-TJ-12

Locality: Long Island Sound

Sublocality: Northport Basin to Nissequogue R., NY

Scale: 1:10000

July 2012 - August 2012

NOAA Ship *Thomas Jefferson*

Chief of Party: CDR Lawrence T. Krepp

A. Area Surveyed

The Sheet area extends from Northport Basin to Nissequogue R., NY.

A.1 Survey Limits

Data was acquired within the following survey limits:

Northeast Limit	Southwest Limit
40.9727694444 N 73.2128277778 W	40.9273583333 N 73.34175 W

Table 1: Survey Limits

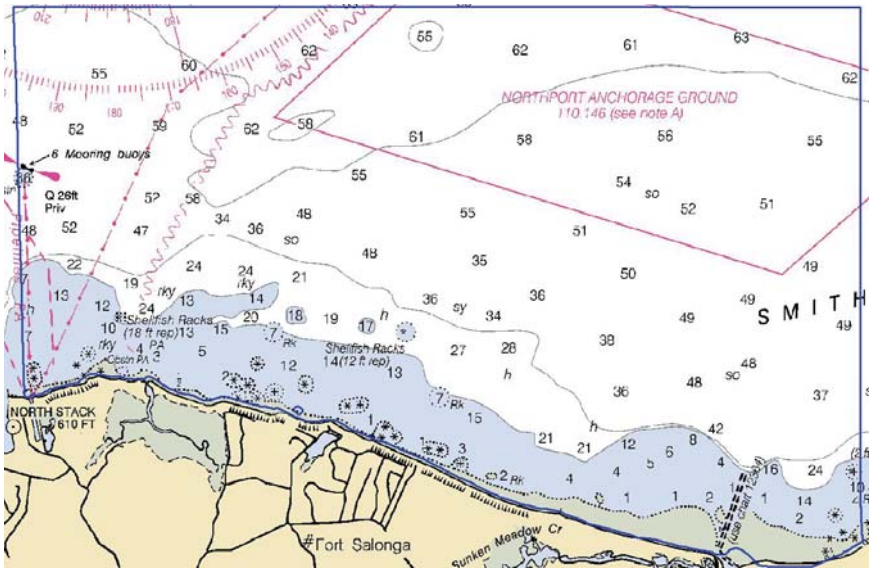


Figure 1: H12414 Survey Limits

Survey Limits were acquired in accordance with the requirements in the Project Instructions and the HSSD.

A.2 Survey Purpose

This project is being conducted in support of NOAA's Office of Coast Survey to provide contemporary hydrographic data in order to update nautical charting products and reduce the survey backlog within the area. In addition, data from this project will support the Long Island Sound Seafloor Mapping initiative for the States Connecticut and New York. This project also responds to the Coast Guard proposal to establish six anchorage grounds in Long Island Sound to increase safety for vessels through enhanced voyage planning and also by clearly indicating the location of anchorage grounds for ships proceeding to ports in New York. The USCG is requesting that NOAA confirm that their underwater surveys of Long Island Sound did not detect and wrecks at all in the locations being proposed for the anchorage areas. Data acquired for this project will be used by partners for species and habitat identification, infrastructure projects, ocean mapping, coastal hazards, and geology. Partners include the US Environmental Protection Agency, Connecticut Department of Environmental Protection, the University of Connecticut Marine Science Department, New York Department of Environmental Quality, and other organizations.

A.3 Survey Quality

The entire survey is adequate to supersede previous data.

This Hydrographic survey was completed as specified by Hydrographic Survey Project Instructions OPR-B340-TJ-12 Long Island Sound, NY dated 24 April 2012. No additional work is needed to complete this survey. It is recommended this survey receive normal processing priority.

A.4 Survey Coverage

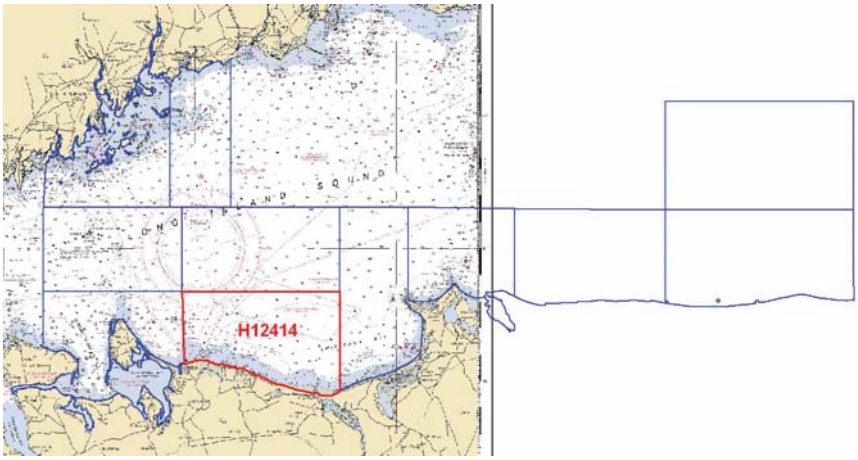


Figure 2: H12414 Within the project area

Survey Coverage was in accordance with the requirements in the Project Instructions and the HSSD.

A.5 Survey Statistics

The following table lists the mainscheme and crossline acquisition mileage for this survey:

	HULL ID	*S222*	*3101*	*3102*	*Total*
LNM	**SBES Mainscheme**	0	0	0	0
	MBES Mainscheme	476.71	210.45	302.18	989.34
	Lidar Mainscheme	0	0	0	0
	SSS Mainscheme	0	0	0	0
	SBES/MBES Combo Mainscheme	0	0	0	0
	SBES/SSS Combo Mainscheme	0	0	0	0
	MBES/SSS Combo Mainscheme	0	0	0	0
	SBES/MBES Combo Crosslines	16.76	0	22.96	39.72
	Lidar Crosslines	0	0	0	0
Number of Bottom Samples					0
Number of DPs					10
Number of Items Items Investigated by Dive Ops					0
Total Number of SNM					17.1

Table 2: Hydrographic Survey Statistics

The following table lists the specific dates of data acquisition for this survey:

Survey Dates
07/26/2012
07/27/2012
07/28/2012
07/29/2012
07/30/2012
07/31/2012
08/01/2012
08/02/2012
08/07/2012
08/08/2012
08/09/2012
08/10/2012
08/11/2012
08/21/2012
08/22/2012

Table 3: Dates of Hydrography

A.6 Shoreline

Shoreline was investigated in accordance with the Project Instructions and the HSSD.

A.7 Bottom Samples

An updated bottom samples .000 file dated 24 May 2012 was provided. There are no bottom samples in that updated file for this survey. This deviates from the Project Instructions which have a requirement for bottom samples.

B. Data Acquisition and Processing

B.1 Equipment and Vessels

Refer to the 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 discussed in the following sections.

B.1.1 Vessels

The following vessels were used for data acquisition during this survey:

Hull ID	***S222***	***3101***	***3102***
LOA	208 feet	31 feet	31 feet
Draft	4.6 meters	5 feet	5 feet

Table 4: Vessels Used

Data were acquired by NOAA Ship Thomas Jefferson and Hydrographic Survey Launches 3101 and 3102. NOAA Ship Thomas Jefferson acquired Reson 7125 multibeam echosounder soundings and sound velocity profiles. Launch 3101 acquired Reson 7125 multibeam echosounder soundings and sound velocity profiles. Launch 3102 acquired Reson 7125 multibeam echosounder soundings and sound velocity profiles.

B.1.2 Equipment

The following major systems were used for data acquisition during this survey:

Manufacturer	Model	Type
Applanix	POS/MV v4	Positioning and Attitude System
Seabird	Seacat19+	Conductivity, Temperature and Depth Sensor
Brook Ocean Technology	MVP 100	Sound Speed System
Reson	7125 SV1	MBES
Reson	7125 ROV	MBES

Table 5: Major Systems Used

B.2 Quality Control

B.2.1 Crosslines

AS per the HSSD 2012, section 5.2.4.3 the quality control check was done using the standard deviation layer of the survey's combined surface. Areas of unusually high standard deviation were investigated and

resolved in processing, except where caused by areas of high bathymetric relief or features. This value does not exceed 0.36 meters.

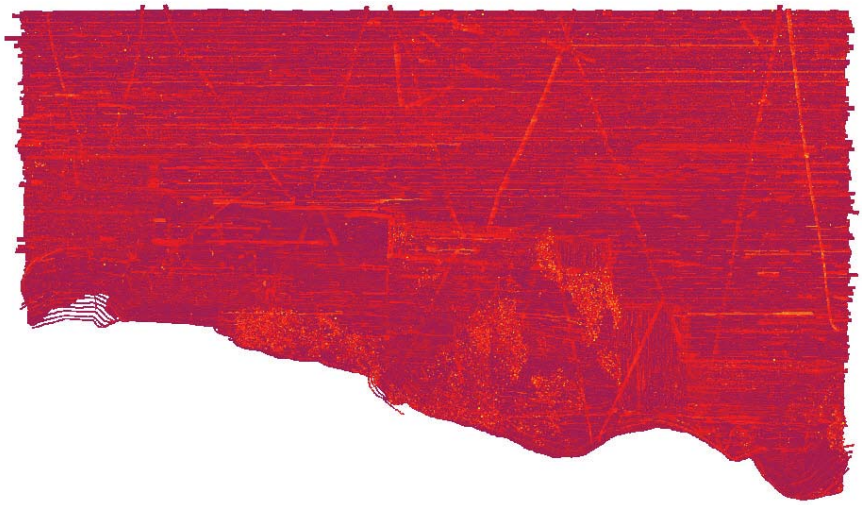


Figure 3: XL Std Dev

B.2.2 Uncertainty

The following survey specific parameters were used for this survey:

Measured	Zoning
0meters	0meters
0.102meters	0meters

Table 6: Survey Specific Tide TPU Values

Hull ID	Measured - CTD	Measured - MVP	Surface
S222	N/Ameters/second	1meters/second	0.2meters/second
3101	4meters/second	N/Ameters/second	0.2meters/second
3012	4meters/second	N/Ameters/second	0.2meters/second

Table 7: Survey Specific Sound Speed TPU Values

The first set of tide uncertainty values are used on lines that have TCARI tides applied. The second set are applied to lines that have GPS tides applied.

NOAA National Ocean Service (NOS), Center for Operational Oceanographic Products and Services (COOPS) provides tide uncertainty values for NOAA hydrographic surveys. The CO-OPS provided value is a combination of uncertainty from the tide measurement at the tide stations and the uncertainty of zoning.

The combined uncertainty value is provided to the field units at the 95% confidence interval, or 2-sigma standard deviations. CARIS HIPS processing software calculates uncertainty values at 1-sigma standard deviation, therefore, the standard practice aboard NOAA Ship Thomas Jefferson is to divide the CO-OPS provided values by 1.96 and to enter the value into the zoning uncertainty field when calculating Total Propagated Uncertainty (TPU).

TPU is calculated and written to each line's HDCS file (CARIS processed data format). When surfaces are created, an uncertainty child layer is created. This child layer represents the amount of uncertainty for individual nodes in the surface based on a combination of a priori values from equipment vendors, values determined from environmental observation in the field, and from automated empirical analysis of data in real-time. Once all investigated features have been reviewed and least depths have been designated, surfaces are finalized. In finalization, the standard deviation for each node in the surface is multiplied by 1.96 to provide the 95% (2-sigma) confidence value for the node. This 2-sigma standard deviation is compared to the computed Total Vertical Uncertainty (TVU) for each node. The larger of the two values is retained as the finalized Uncertainty for each node. Uncertainty is reported in meters.

IHO has established allowable TVU values for each order of survey. This survey meets IHO Order I TVU requirements in 98% of nodes in the final surface. Statistical distribution of nodes that meet or exceed the IHO TVU requirements (Zero and Positive values indicate that IHO Order 1 requirements were met, IHOness). See H:\Surveys\H12414\Descriptive Report\Separates\IV_Crossline_Comparisons\IHOness \H12414_MB_50cm_MLLW_Final_IHOness.txt

A Compliance Review for Density was performed This confirms that 95% of the nodes in the finalized surfaces are populated with at least 5 soundings. The surface was created and finalized, the total number of nodes in the density were queried. A filter on the density layer was set to 0 minimum and 4 maximum. The number of nodes in that query were used to compute the required percentile. 9.99% had 5 or more soundings which met the HSSD requirement.

B.2.3 Junctions

The following junctions were made with this survey:

Registry Number	Scale	Year	Field Unit	Relative Location
H12488	1:10000	2012	NOAA Ship THOMAS JEFFERSON	E
H12415	1:10000	2012	NOAA Ship THOMAS JEFFERSON	N
H12413	1:10000	2012	Atlantic Hydrographic Party	W

Table 8: Junctioning Surveys

H12488

Processing of H12488 had not been completed at the time of this DR being written. A difference surface was generated within CARIS BathyDataBASE using the preliminary fieldsheets. The mean difference was 8.9cm with a standard deviation of 8.9cm.

H12415

A difference surface was generated within CARIS BathyDataBASE. The mean difference was 2.6cm with a standard deviation of 5.7cm.

H12413

Processing of H12413 had not completed at the time of this DR being written. A difference surface was generated within CARIS BathyDataBASE using the preliminary fieldsheets The mean difference was 0.9cm with a standard deviation of 6.7cm.

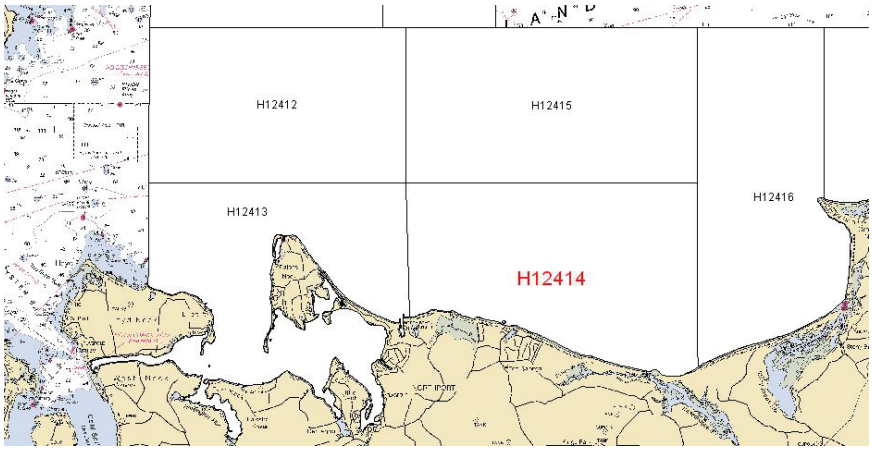


Figure 4: H12414 Junctions

B.2.4 Sonar QC Checks

Sonar system quality control checks were conducted as detailed in the quality control section of the DAPR.

B.2.5 Equipment Effectiveness

B.2.5.1None Exist

There were no conditions or deficiencies that affected equipment operational effectiveness.

B.2.6 Factors Affecting Soundings

B.2.6.1 None Exist

There were no other factors that affected corrections to soundings.

B.2.7 Sound Speed Methods

Sound Speed Cast Frequency: MVP casts were taken by the ship approximately every thirty minutes. CTDs were taken once a week for comparison. 3101 and 3102 took CTDs about every four hours.

No Zoning was required.

B.2.8 Coverage Equipment and Methods

All Equipment and survey methods were used as detailed in the DAPR.

B.3 Echo Sounding Corrections

B.3.1 Corrections to Echo Soundings

All data reduction procedures conform to those detailed in the DAPR.

B.3.2 Calibrations

All sounding systems were calibrated as detailed in the DAPR.

B.4 Backscatter

Backscatter was logged as a 7k file and submitted to the IOCM processing center and/or directly to NGDC, and is not included with the data submitted to the Branch.

B.5 Data Processing

B.5.1 Software Updates

There were no software configuration changes after the DAPR was submitted.

The following Feature Object Catalog was used: NOAA Profile Field.xml v 5.2

There were no software configuration changes after the DAPR was submitted.

B.5.2 Surfaces

The following CARIS surfaces were submitted to the Processing Branch:

Surface Name	Surface Type	Resolution	Depth Range	Surface Parameter	Purpose
H12414_MB_50cm_MLLW_Final	CUBE	0.5 meters	1.08 meters - 21.73 meters	NOAA_0.5m	Object Detection

Table 9: CARIS Surfaces

B.5.3 Tide Problems

This survey was initially processed as an ellipsoidally reference survey (ERS). However, there were several days that had abnormalities in the smoothed best estimate of trajectory (SBET) in the vertical component. Attempts were made to resolve these abnormalities in the SBETs, however based on the amount of time spent investigating possible solutions and the lack or sufficient results, the entire survey was reverted to TCARI tidal data. There were still several lines that had tidal issues using TCARI. These lines were then investigated further and GPS tides were applied to these lines to determine whether or not the SBET reduced data was "better" (meaning that the lines with tidal busts were brought closer to surrounding lines). Where the SBET resolved TCARI issues, GPS tide was utilized.

The following lines had GPS tides as the final tidal reducer (when sorted by line name):

3101: DN 211: Lines 000_1826-000_2005, 000_2014, 000_2021, 000_2031, 000_2041, 000_2043, 000A2007, 000A2042
DN 213: Lines 000_1806-000_1947
DN 214: Lines 214_1324-214_1439, 214_1449-214_1459,214_1519, 214_1538-214_1606, 214_1609-214_1615, 214_1656-214_1823, 214_1900, 214_1933, 214_1937, 214_1946, 214_2000, 214_2010-214B1708

3102: DN213: Lines 213_1249, 213_1526-213_1542
DN 234: Line 151_1420

S222: DN212: Line 901_1838
DN 213: Lines 408_1433, 409_1608, 410_1741
DN 214: Lines 414_1256, 148_1851, 419_1402, 420_1529

DN 215: Lines 424_1337, 432_1402, 436_1655
DN 220: Lines 437_1254-437_1315, 438_1401-452_2112
DN 221: Lines 446_1343-448_1634, 453_1421
DN 223: Line 390_2128
DN 224: Lines 300_1921-303_1822, 309_1738-320_1820, 323_1602, 369_1964-371_1324, 374_1838-376_1951, 381_1232
DN 234: Lines 105_1737, 117_1426, 124_1432, 126_2222, 129_1444, 129_1455, 131_1532, 136_1515-138_1348, 144_2159-146_1832, 149_2012-146_1832, 149_2012-152_2212, 154_2231-166_2057, 169_2243, 172_2049, 177_1830

C. Vertical and Horizontal Control

Additional information discussing the vertical or horizontal control for this survey can be found in the accompanying HVCR.

C.1 Vertical Control

The vertical datum for this project is Mean Lower Low Water.

Standard Vertical Control Methods Used:

TCARI

The following National Water Level Observation Network (NWLON) stations served as datum control for this survey:

Station Name	Station ID
New Haven, CT	8465705
Bridgeport, CT	8467150
Kings Point, NY	8516945

Table 10: NWLON Tide Stations

File Name	Status
8465705.tid	Final Approved
8467150.tid	Final Approved
8516945.tid	Final Approved

Table 11: Water Level Files (.tid)

File Name	Status
B340TJ2012_REV.tc	Final

Table 12: Tide Correctors (.zdf or .tc)

A request for final approved tides was sent to N/OPS1 on 08/24/2012. The final tide note was received on 09/24/2012.

Preliminary zoning is accepted as final.

Non-Standard Vertical Control Methods Used:

VDatum

Ellipsoid to Chart Datum Separation File:

2012_B340_VDatum_Ellip_MLLW.txt

C.2 Horizontal Control

The horizontal datum for this project is North American Datum of 1983 (NAD83).

The following PPK methods were used for horizontal control:

Smart Base

The following CORS Stations were used for horizontal control:

HVCR Site ID	Base Station ID
CTDA	CTDA
NYRH	NYRH
NYCI	NYCI
NYQN	NYQN
MOR6	MOR6
NYVH	NYVH
ZNY1	ZNY1
CTGU	CTGU
NJI2	NJI2
URIL	URIL
COVX	COVX
LAMT	LAMT

Table 13: CORS Base Stations

The following DGPS Stations were used for horizontal control:

DGPS Stations
Acushnet, MA
Moriches, NY

Table 14: USCG DGPS Stations

D. Results and Recommendations

D.1 Chart Comparison

D.1.1 Raster Charts

The following are the largest scale raster charts, which cover the survey area:

Chart	Scale	Edition	Edition Date	LNM Date	NM Date
12363	1:80000	41	02/2010	02/20/2010	02/09/2010
12365	1:20000	26	03/2001	08/14/2012	06/29/2012

Table 15: Largest Scale Raster Charts

12363

In general the soundings agree within two feet. There are several rocky areas that are not currently charted as such and the difference between charted depths and soundings vary by up to 8 ft.

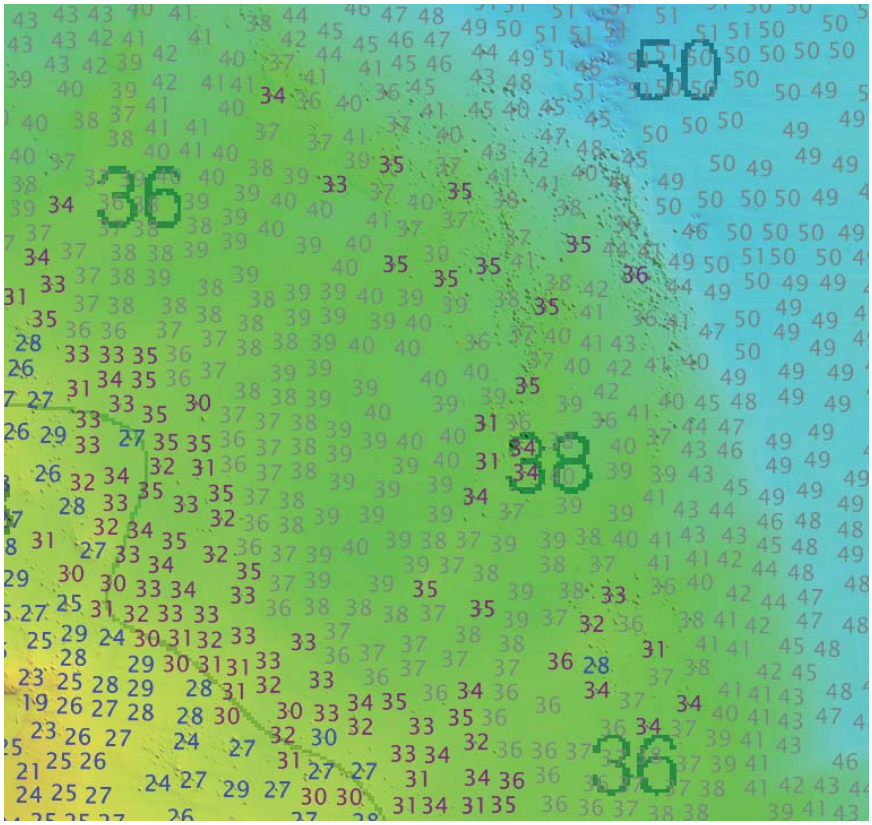


Figure 7: Rocky Areas

12365

In general the soundings agree within 1 foot. The biggest area of change is in the shallows where it has gotten 3 or 4 feet deeper.

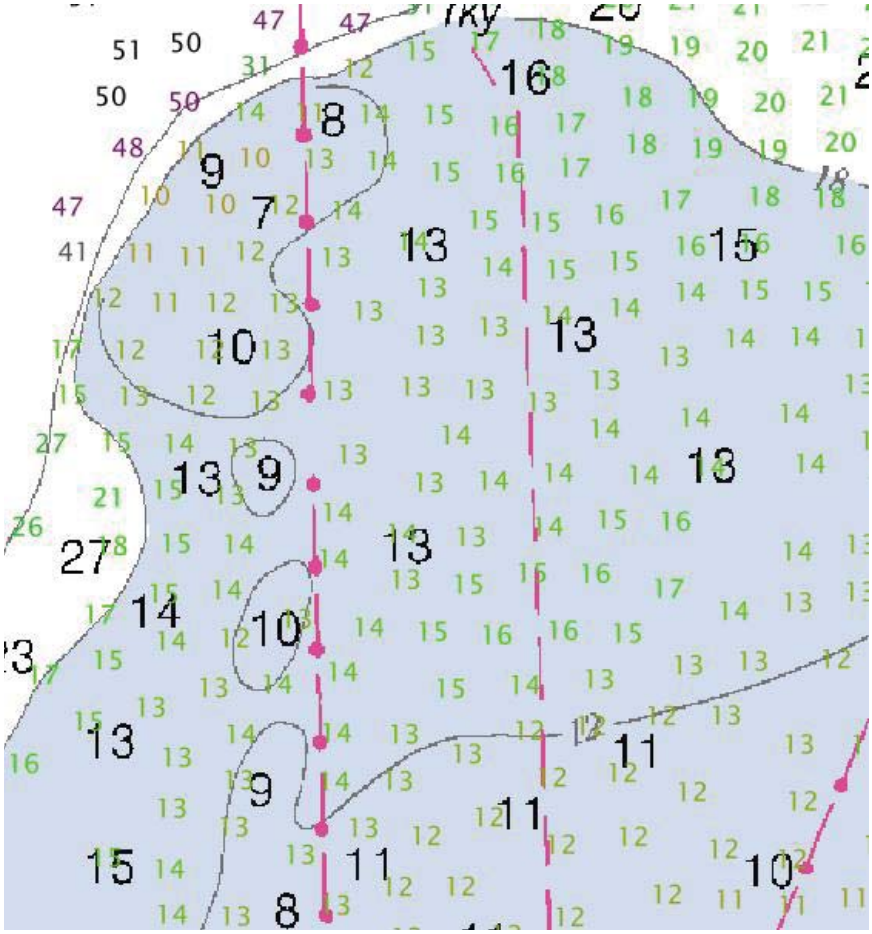


Figure 8: H12414 12365 Chart Comparison

D.1.2 Electronic Navigational Charts

The following are the largest scale ENCs, which cover the survey area:

ENC	Scale	Edition	Update Application Date	Issue Date	Preliminary?
US4NY13M	1:80000	4	04/25/2005	04/25/2005	NO
US5NY14M	1:20000	3	08/11/2005	08/11/2005	NO

Table 16: Largest Scale ENCs

US4NY13M

This ENC and raster 12363 have the same data. See chart comparison for 12363.

US5NY14M

In general the soundings agree within 0.6 meters. The biggest area of change is in the shallows where it has gotten 1 meter or more deeper.

D.1.3 AWOIS Items

Number of AWOIS Items Addressed: 4
Number of AWOIS Items Not Addressed: 0

Consult the H12414_FFF.hob for information about the AWOIS items in the survey area.

D.1.4 Charted Features

One "Shellfish Racks PA" and one "Shellfish Racks rep" were investigated as AWOIS items. No evidence for either was found. See the H12414_FFF for more information.

D.1.5 Uncharted Features

Consult the H12414_FFF.hob for information about the uncharted features in the survey area.

D.1.6 Dangers to Navigation

The follwing DTON reports were submitted to the processing branch:

DTON Report Name	Date Submitted
H12414_DTON_1	2012-08-08
H12414_DTON_2	2012-09-27
H12414_DTON_3	2012-09-27

Table 17: DTON Reports

Danger to Navigation Reports are included in Appendix I of this report and in the H12414_FFF.

D.1.7 Shoal and Hazardous Features

Rocky Areas were identified where numerous rocks were found. Selected shoal rocks were flagged in those rocky areas to portray the range of soundings. Isolated rocks between Rocky area were also flagged. Some shoals exist on the south western side. The charted 17 foot shoal is 2-3 feet deeper. The charted 18 foot shoal is 1 foot deeper. The charted 14 foot shoal has moved to the northwest about 18 meters.

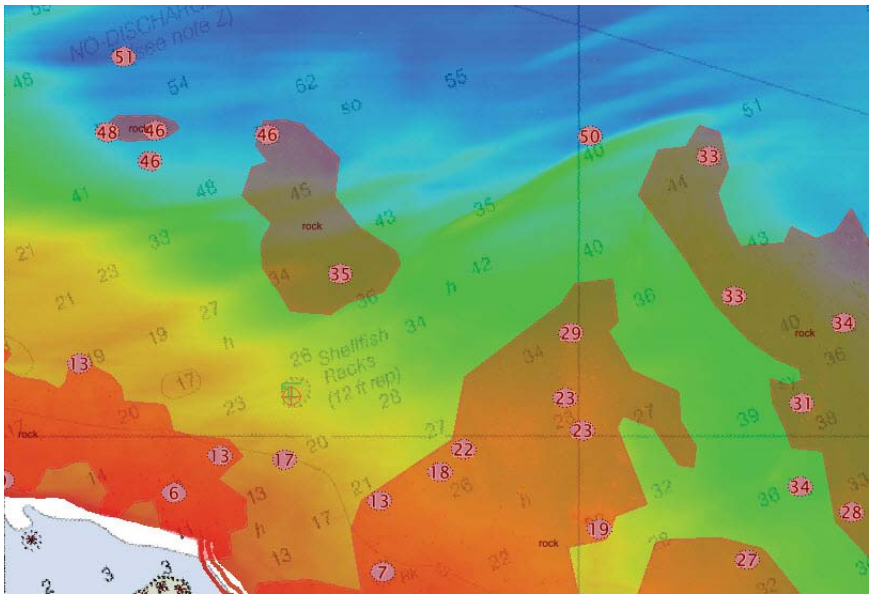


Figure 9: Rocky Areas

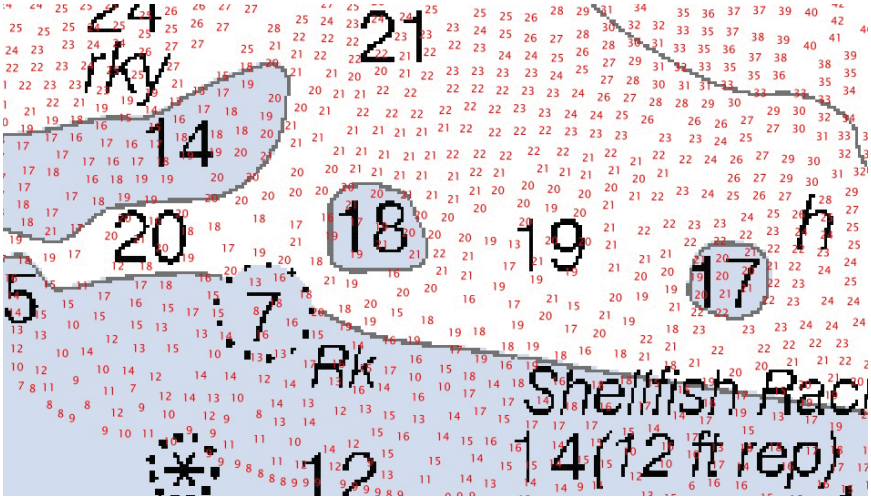


Figure 10: H12414 Shoals

D.1.8 Channels

In the southeast there is a channel that was not investigated due to it being beyond the 12 foot curve limit and having depths less than that.

D.2 Additional Results

D.2.1 Shoreline

Shoreline was not assigned in the Hydrographic Survey Project Instructions or Statement of Work.

D.2.2 Prior Surveys

Results of prior surveys are represented by charted features and soundings as discussed in chart comparisons above.

D.2.3 Aids to Navigation

Aids to navigation (ATONs) exist for this survey, but were not investigated. They are located near the channel that was not investigated.

D.2.4 Overhead Features

Overhead features do not exist for this survey.

D.2.5 Submarine Features

Two charted pipelines, one cable, and part of a cable area are present in the survey area. The charted pipelines are present in the survey data. Parts of the charted cable are present in the deeper area. The rest is assumed to be properly buried. No cables are seen in the charted cable area covered and are assumed to be properly buried.

D.2.6 Ferry Routes and Terminals

No ferry routes or terminals exist for this survey.

D.2.7 Platforms

One charted platform is present in the survey area. Consult the H12414_FFF.hob for information about the charted platform in the survey area.

D.2.8 Significant Features

No significant features exist for this survey.

D.2 Construction and Dredging

There is no present or planned construction or dredging within the survey limits.

E. Approval Sheet

As Chief of Party, Field operations for this hydrographic survey were conducted under my direct supervision, with frequent personal checks of progress and adequacy. I have reviewed the attached survey data and reports.

All field sheets, this Descriptive Report, and all accompanying records and data are approved. All records are forwarded for final review and processing to the Processing Branch.

The survey data meets or exceeds requirements as set forth in the NOS Hydrographic Surveys and Specifications Deliverables Manual, Field Procedures Manual, Standing and Letter Instructions, and all HSD Technical Directives. These data are adequate to supersede charted data in their common areas. This survey is complete and no additional work is required with the exception of deficiencies noted in the Descriptive Report.

Approver Name	Approver Title	Approval Date	Signature
CDR Lawrence T. Krepp	Commanding Officer	09/28/2012	
LT William Winner	Field Operations Officer	09/28/2012	
ST Kimberly Glomb	Sheet Manager	09/28/2012	

F. Table of Acronyms

Acronym	Definition
AFF	Assigned Features File
AHB	Atlantic Hydrographic Branch
AST	Assistant Survey Technician
ATON	Aid to Navigation
AWOIS	Automated Wreck and Obstruction Information System
BAG	Bathymetric Attributed Grid
BASE	Bathymetry Associated with Statistical Error
CO	Commanding Officer
CO-OPS	Center for Operational Products and Services
CORS	Continually Operating Reference Staiton
CTD	Conductivity Temperature Depth
CEF	Chart Evaluation File
CSF	Composite Source File
CST	Chief Survey Technician
CUBE	Combined Uncertainty and Bathymetry Estimator
DAPR	Data Acquisition and Processing Report
DGPS	Differential Global Positioning System
DP	Detached Position
DR	Descriptive Report
DTON	Danger to Navigation
ENC	Electronic Navigational Chart
ERS	Ellipsoidal Referenced Survey
ERZT	Ellipsoidally Referenced Zoned Tides
FOO	Field Operations Officer
FPM	Field Procedures Manual
GAMS	GPS Azimuth Measurement Subsystem
GC	Geographic Cell
GPS	Global Positioning System
HIPS	Hydrographic Information Processing System
HSD	Hydrographic Surveys Division
HSSDM	Hydrographic Survey Specifications and Deliverables Manual

Acronym	Definition
HSTP	Hydrographic Systems Technology Programs
HSX	Hypack Hysweep File Format
HTD	Hydrographic Surveys Technical Directive
HVCR	Horizontal and Vertical Control Report
HVF	HIPS Vessel File
IHO	International Hydrographic Organization
IMU	Inertial Motion Unit
ITRF	International Terrestrial Reference Frame
LNM	Local Notice to Mariners
LNM	Linear Nautical Miles
MCD	Marine Chart Division
MHW	Mean High Water
MLLW	Mean Lower Low Water
NAD 83	North American Datum of 1983
NAIP	National Agriculture and Imagery Program
NALL	Navigable Area Limit Line
NM	Notice to Mariners
NMEA	National Marine Electronics Association
NOAA	National Oceanic and Atmospheric Administration
NOS	National Ocean Service
NRT	Navigation Response Team
NSD	Navigation Services Division
OCS	Office of Coast Survey
OMAO	Office of Marine and Aviation Operations (NOAA)
OPS	Operations Branch
MBES	Multibeam Echosounder
NWLON	National Water Level Observation Network
PDBS	Phase Differencing Bathymetric Sonar
PHB	Pacific Hydrographic Branch
POS/MV	Position and Orientation System for Marine Vessels
PPK	Post Processed Kinematic
PPP	Precise Point Positioning
PPS	Pulse per second

Acronym	Definition
PRF	Project Reference File
PS	Physical Scientist
PST	Physical Science Technician
RNC	Raster Navigational Chart
RTK	Real Time Kinematic
SBES	Singlebeam Echosounder
SBET	Smooth Best Estimate and Trajectory
SNM	Square Nautical Miles
SSS	Side Scan Sonar
ST	Survey Technician
SVP	Sound Velocity Profiler
TCARI	Tidal Constituent And Residual Interpolation
TPU	Total Porpagated Error
TPU	Topside Processing Unit
USACE	United States Army Corps of Engineers
USCG	United Stated Coast Guard
UTM	Universal Transverse Mercator
XO	Exectutive Officer
ZDA	Global Positiong System timing message
ZDF	Zone Definition File

APPENDIX I

TIDES AND WATER LEVELS

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
Office of Marine and Aviation Operations,
Marine Operation Center-Atlantic,
NOAA Ship *Thomas Jefferson*
Norfolk, Virginia 23510

21 September 2012

MEMORANDUM TO: Jeffrey Ferguson
Chief, Hydrographic Surveys Division

FROM: Lawrence T. Krepp, CDR/NOAA
Commanding Officer

SUBJECT: H12414 Interim Deliverables

As per the project instructions for OPR-B340-TJ-12, NOAA Ship *Thomas Jefferson* was tasked with providing a recommendation on the vertical transformation technique to be used for each sheet. This recommendation is based upon an analysis of crossline data processed with TCARI tidal zoning and VDatum ERS. This analysis was performed using Pydro's Post Acquisition Tools.

Crossline Analysis
Crosslines from H12414 were parallel processed with one set of depths reduced to MLLW via TCARI tidal zoning and the other set reduced via VDatum ERS. Pydro's Post Acquisition Tool "Compare Time Series Data" yielded the following results:

File-wise Statistics

H12414_S222_Verified_Tides_Reprocess_TJ_S222_RESON7125_STBD_MiddlePD.txt |
H:\Surveys\H12414\Descriptive Report\Separates\IV_Crossline_Comparisons
- (minus)
H12414_S222_GPS_Tides_Reprocess_TJ_S222_RESON7125_STBD_MiddlePD.txt |
H:\Surveys\H12414\Descriptive Report\Separates\IV_Crossline_Comparisons
=====
N,mean,stdev = 84201,-0.007,0.096

H12414_3102_Verified_Tides_TJ_3102_Reson7125_400KHZ_MiddlePD.txt |
H:\Surveys\H12414\Descriptive Report\Separates\IV_Crossline_Comparisons
- (minus)
H12414_3102_GPS_Tides_TJ_3102_Reson7125_400KHZ_MiddlePD.txt |
H:\Surveys\H12414\Descriptive Report\Separates\IV_Crossline_Comparisons
=====
N,mean,stdev = 136409,-0.021,0.035

Sensor-wise Statistics

MiddlePD: N,mean,stdev = 220610,-0.016,0.066

Discussion
Results of the analysis showed that the mean difference between ERS and TCARI tidal corrections was 1.6cm with a standard deviation of 6.6cm.

Recommendation
Our recommendation is to utilize ERS VDatum for tidal corrections for this survey. The results of the analysis show that there are only minor differences between sounding data reduced to MLLW using TCARI and ERS VDatum. This difference is less than the uncertainty of the VDatum model (10.2cm).

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : October 10, 2012

HYDROGRAPHIC BRANCH: Atlantic
HYDROGRAPHIC PROJECT: OPR-B340-TJ-2012
HYDROGRAPHIC SHEET: H12414

LOCALITY: Northport Basin to Nissequogue River, NY
TIME PERIOD: July 26 - August 22, 2012

TIDE STATION USED: New Haven, CT 846-5705
Lat.41° 17.0' N Long. 72° 54.5' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.946 meters

TIDE STATION USED: Bridgeport, CT 846-7150
Lat. 41° 10.4' N Long. 73° 10.9' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.129 meters

Tide STATION USED: Kings Point, NY 851-6945
Lat. 40° 48.6' Long. 73° 45.9' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.268 meters

REMARKS: RECOMMENDED GRID

Please use the TCARI grid "B340TJ2012_Rev.tc" as the final grid for project OPR-B340-TJ-2012, Registry No. H12414, during the time period between July 26 and August 22, 2012.

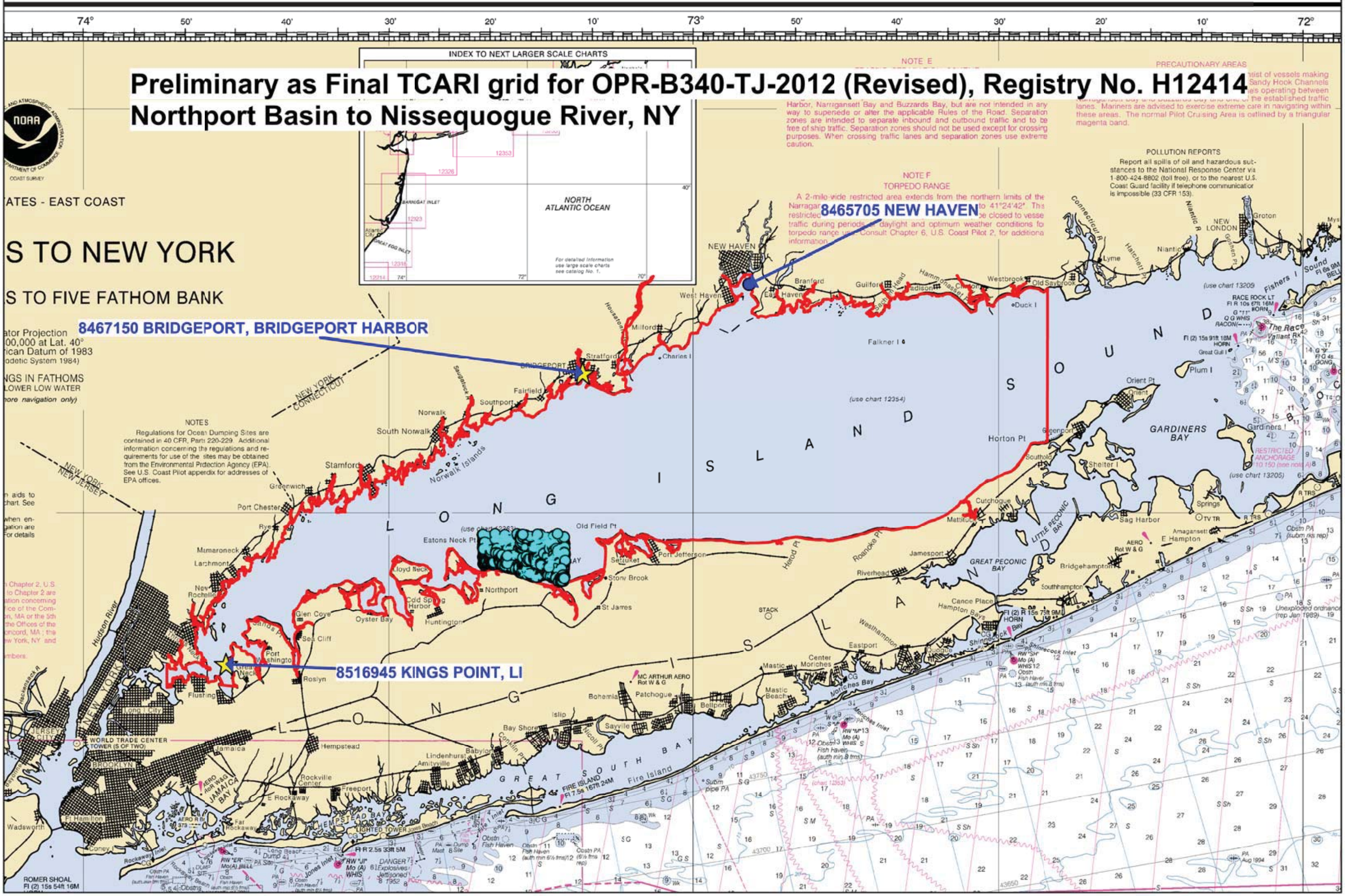
Refer to attachments for grid information.

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).

HOVIS.GERALD.THOMAS.1365860250

Digitally signed by HOVIS.GERALD.THOMAS.1365860250
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=OTHER, cn=HOVIS.GERALD.THOMAS.1365860250
Date: 2012.10.11 08:35:18 -04'00'

CHIEF, PRODUCTS AND SERVICES BRANCH


Preliminary as Final TCARI grid for OPR-B340-TJ-2012 (Revised), Registry No. H12414
Northport Basin to Nissequogue River, NY
8465705 NEW HAVEN
8467150 BRIDGEPORT, BRIDGEPORT HARBOR
8516945 KINGS POINT, LI
INDEX TO NEXT LARGER SCALE CHARTS
NORTH ATLANTIC OCEAN
S TO NEW YORK
S TO FIVE FATHOM BANK
ATES - EAST COAST
NOTE E
NOTE F
TORPEDO RANGE
PRECAUTIONARY AREAS
POLLUTION REPORTS
Report all spills of oil and hazardous substances to the National Response Center via 1-800-424-8802 (toll free), or to the nearest U.S. Coast Guard facility if telephone communication is impossible (33 CFR 153).
NOTES
Regulations for Ocean Dumping Sites are contained in 40 CFR, Parts 220-229. Additional information concerning the regulations and requirements for use of the sites may be obtained from the Environmental Protection Agency (EPA). See U.S. Coast Pilot appendix for addresses of EPA offices.
LONG ISLAND SOUND
LONG ISLAND
GREAT SOUTH BAY
GARDINERS BAY
GREAT PECONIC BAY
Formerly C&GS 1108, 1st Ed., May 1913

APPENDIX II

SUPPLEMENTAL SURVEY RECORDS AND CORRESPONDENCE

Subject: Re: Crossline comparison
From: Chris van Westendorp <Christiaan.VanWestendorp@noaa.gov>
Date: Thu, 10 Sep 2009 13:00:35 -0400
To: "mark.blankenship" <Mark.Blankenship@noaa.gov>
CC: LCDR Rick Brennan <Richard.T.Brennan@noaa.gov>, Castle Parker <Castle.E.Parker@noaa.gov>, Edward Owens <Edward.Owens@noaa.gov>, LT Jasper Schaer <jasper.schaer@noaa.gov>, CDR Shep Smith <Shep.Smith@noaa.gov>, Daniel Wright <Daniel.Wright@noaa.gov>

Mark,

Per 5.1.4.3 of the HSSD, AHB authorizes TJ to use the Standard Deviation layer to conduct surface difference comparison and analysis on future survey submissions of multibeam data. This meets the crossline comparison requirement laid out in HSSD.

Please let me know if you have any questions or need for further clarification.

R/
LCDR Chris van Westendorp, NOAA

mark.blankenship wrote:

> Chris,
> You mentioned in the meeting today that AHB was not going to require the multiple CUBE surface comparison, instead allowing us to use a single surface standard deviation layer to do our checks with. Is there any memo coming out for that?
> Mark

LCDR Chris van Westendorp <christiaan.vanwestendorp@noaa.gov>
Atlantic Hydrographic Branch
NOAA OCS

Subject: Re: Bottom Sample submission
From: Gene Parker <Castle.E.Parker@noaa.gov>
Date: Mon, 31 Jan 2011 11:47:48 -0500
To: "ops.thomas.jefferson" <OPS.Thomas.Jefferson@noaa.gov>

Good day Mark,
Submit both. HSSD specifies both in two areas of the document. First one needs to comply with HSSD; if the TJ wants to make the Hob file, then they have gone beyond the minimum requirements. If the TJ doesn't do it, then AHB would have to as long as the BS is within the Pydro PSS. Reference HSSD Section 8.2 S57 Feature File, paragraph 6:

> The S-57 feature file contains all the attributed information on specific objects that cannot be portrayed in a simple depth grid. Features to include in the S-57 feature file include; wrecks, obstructions, shoreline, rocks, islets, oil platforms, nature of seabed (bottom samples) and all other objects that may need to be compiled to a navigational product and require additional information that cannot be included in the BAG.

The Pydro PSS is in lieu of the S57 format file.

We could make the hob from the table, but since the TJ has done this, submit both the Hob file and the table contained in DR Appendix 5. Place the Hob file in the PSS directory which has contained all features in NOAA PSS format as in the past. If the TJ is going to submit the hob file, the source would be the table, so HSSD specifies delivery of both. If the TJ only submitted the table, AHB would have to generate the feature objects. If the TJ creates the hob file, then submit it.
gene

ops.thomas.jefferson wrote:

> Gene,
> We will be submitting .HOB files for the bottom samples in addition to the summary table found in the supplemental survey records and correspondence section of the DR. It is my understanding that the table is only used to create the .HOB anyways. A recommendation will need to be made that either the table either be omitted or be used in place of the .hob file. Only the summary table is mention in the HSSD april 2010 version. If there are any other issues with this idea please let us know.
> Mark

Castle Eugene Parker <castle.e.parker@noaa.gov>
Physical Scientist - Hydrographic Team Lead
Atlantic Hydrographic Branch
NOAA Office of Coast Survey

Marilyn Schluter - NOAA Federal <marilyn.l.schluter@noaa.gov>

NOAA Hydrographic Surveys H12414, H12417, H12431

2 messages

Marilyn Schluter - NOAA Federal <marilyn.l.schluter@noaa.gov> Mon, May 20, 2013 at 2:39 PM
To: Christina Rieth <crieth@mail.nysed.gov>, ruth.pierpont@oprhp.state.ny.us
Cc: Bruce Terrell - NOAA Federal <bruce.terrell@noaa.gov>, Marc Moser - NOAA Federal <Marc.S.Moser@noaa.gov>, Michael Davidson - NOAA Federal <Michael.Davidson@noaa.gov>, Frank Cantelas - NOAA Federal <frank.cantelas@noaa.gov>, Abigail Higgins - NOAA Federal <Abigail.Higgins@noaa.gov>, Castle Parker - NOAA Federal <Castle.E.Parker@noaa.gov>, Marilyn Schluter - NOAA Federal <marilyn.l.schluter@noaa.gov>, Brian.Jordan@boemre.gov, Lawrence Krepp - NOAA Federal <Lawrence.T.Krepp@noaa.gov>

Dear Madam,

The National Oceanic and Atmospheric Administration's Office of Coast Survey (OCS) may have previously contacted you regarding hydrographic surveys in **Long Island Sound and Block Island Sound, NY**. These surveys have been completed. The complete Descriptive Reports for these surveys are available for your review on NOAA's public ftp web site. Please provide any comments regarding these surveys (please reference the survey numbers **H12414, H12417, H12431**) within 30 days to:

LT Abigail Higgins

Chief, Atlantic Hydrographic Branch

Work: 757-441-6746 Ext.200

Fax: 757-441-6601

E-Mail: Abigail.Higgins@noaa.gov

439 W. York St.

Norfolk, VA 23510

If we have not received a response in 30 days, we will assume that these surveys do not include any data of sufficient historical significance (for instance, an historic shipwreck whose location should not be made public knowledge) to warrant special data handling, and will forward this data for our standard nautical charting process.

You will need to have Winzip compression utility installed on your computer to access these files. The following link

http://www.winzip.com/downwz.htm will take you to the Winzip free evaluation site where you can register for Winzip and access the files.

To access this information follow this link ftp://205.156.4.84/4SHPO to NOAA's public ftp web site and select the aforementioned surveys (**H12414, H12417, H12431**).

The "Key" for these surveys (i.e. to remove the encryption from the .zip files) is: **B340_NY_4617**

Regards,

Marilyn Schlüter, Data Manager

NOAA/Atlantic Hydrographic Branch

757-441-6746 Ext.113

439 W. York St.

Norfolk, VA 23510

Christina Rieth <CRIETH@mail.nysed.gov> Sun, May 26, 2013 at 11:49 AM
To: Marilyn Schluter - NOAA Federal <marilyn.l.schluter@noaa.gov>

Thank you for requesting the comments of New York State Archaeologist's Office. We have no recorded historic resources in this area and have no concerns regarding the current work.

Sincerely,

Christina Rieth
New York State Museum

_____
Christina B. Rieth, Ph.D.
State Archaeologist and Director,

Cultural Resource Survey Program
New York State Museum
Cultural Education Center 3122
Albany, New York 12230
Phone: (518)402-5975, Fax: (518)486-2149
Email: crieth@mail.nysed.gov
http://www.nysm.nysed.gov/research_collections/

>>> Marilyn Schluter - NOAA Federal <marilyn.l.schluter@noaa.gov> 5/20/2013 2:39 PM >>>
[Quoted text hidden]

Subject: Fwd: Updated Proposed Bottom Samples OPR-B340-TJ-12
From: William Winner <William.Winner@noaa.gov>
Date: 9/27/2012 12:49 PM
To: Anthony Klemm <anthony.r.klemm@noaa.gov>, Andrew Clos <Andrew.Clos@noaa.gov>, Kimberly Glomb <Kimberly.Glomb@noaa.gov>, Lindsey Norman <lindsey.l.norman@noaa.gov>, Matt Vanhoy <Matt.Vanhoy@noaa.gov>, Matthew Weiss <Matthew.K.Weiss@noaa.gov>, Allison Stone <Allison.C.Stone@noaa.gov>, Peter Lewit <Peter.Lewit@noaa.gov>, Charles Wisotzkey <Charles.J.WisotZkey@noaa.gov>

All, the forwarded message from AHB references the updated locations of bottom samples for OPR-B340-TJ-12. Please include this email in the Supplemental Survey Correspondence folder and ensure that when writing your XML DR, you discuss this in the Bottom Samples section of Area Surveyed. We did deviate from the Project Instructions for most surveys.

FOO

---------- Forwarded message ----------
From: **Megan Greenaway** <megan.greenaway@noaa.gov>
Date: Thu, May 24, 2012 at 2:05 PM
Subject: Updated Proposed Bottom Samples OPR-B340-TJ-12
To: _OMAO MOA OPS Thomas Jefferson <ops.thomas.jefferson@noaa.gov>, William Winner <william.winner@noaa.gov>
Cc: Marc Moser <marc.s.moser@noaa.gov>, Corey Allen <corey.allen@noaa.gov>

Mike and Bill,
Please see attached updated proposed bottom sample locations for OPR-B340-TJ-12. I made a mistake with the original PRF bottom samples in that many of the proposed samples were in areas with recent prior surveys (1970 and earlier). The current guidelines state that if recent prior surveys exist, the field unit does not need to acquire bottom samples unless directed by HSD OPS.

Let me know if you have any other questions.
Megan

--
William Winner, LT/NOAA
Operations Officer
NOAA Ship *THOMAS JEFFERSON*
Marine Operations Center- Atlantic
439 W York St.
Norfolk, VA 23510

Ship's Cell: (757) 647-0187
Personal Cell: (765) 760-0767

Attachments:

OPR-B340-TJ-12_Updated_Bottom_Samples_May24.zip 6.3 KB

APPENDIX III

SURVEY FEATURES REPORT

AWOIS - four
Dangers to Navigation - five
Maritime Boundary - none
Wrecks - two

H12414 AWOIS

Registry Number: H12414
State: New York
Locality: Long Island Sound
Sub-locality: Northport Basin to Nissequogue River
Project Number: OPR-B340-TJ-12
Survey Date: 07/26/2012 - 08/22/2012

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
12365	27th	09/01/2012	1:20,000 (12365_1)	USCG LNM: 10/8/2013 (11/12/2013) CHS NTM: None (10/25/2013) NGA NTM: 5/10/1997 (11/30/2013)
12364	38th	07/01/2008	1:40,000 (12364_21) 1:40,000 (12364_20)	[L]NTM: ?
12363	40th	06/01/2005	1:80,000 (12363_1)	[L]NTM: ?
12353	18th	11/01/2003	1:80,000 (12353_1)	[L]NTM: ?
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 #11382	Obstruction	13.98 m	40° 57' 15.2" N	073° 20' 32.0" W	11382
1.2	AWOIS #11824	GP	5.40 m	40° 56' 10.1" N	073° 19' 39.8" W	11824
1.3	OBSTRUCTION	AWOIS	[no data]	[no data]	[no data]	---
1.4	OBSTRUCTION	AWOIS	[no data]	[no data]	[no data]	---

1 - AWOIS

1.1) AWOIS #11382

Primary Feature for AWOIS Item #11382

Search Position:	40° 57' 15.4" N, 073° 20' 31.2" W
Historical Depth:	[None]
Search Radius:	0
Search Technique:	MB, SSS
Technique Notes:	[None]

History Notes:

HISTORY

NOTE: AWOIS POSITION IS THAT OF THE UNLOADING FACILITIES.

NM27/66--USN; CONSTRUCTION OF OFFSHORE UNLOADING FACILITIES WILL BE IN PROGRESS UNTILL THE END OF SEPTEMBER IN THE VICINITY OF 40°57'16" N., 73°20'32" W.

CL1000/66--C DRAWING PLANS OF THE OFFSHORE UNLOADING FACILITIES AND THE PIPE LEADING OUT TO IT. 24" WELDED STEEL PIPE LINE CONCRETE JACKETED AND 4" WELDED STEEL PIPE LINE CONCRETE JACKETED TO BE BURIED IN A TRENCH APPROXIMATELY 5' BELOW THE NATURAL BOTTOM.

SCALED POSITION: UNDERGROUND PIPE EXTENENDS FROM LAT 40-57-08.29N, LONG 073-20-30.66W TO LAT 40-55-38.39N, LONG 073-20-27.02W (NAD 83).

S00002/02--S-B600-RU--Obstruction looks like some sort of twisted metal. Obstruction very close to mooring buoy "C"; Chart 45ft Obstn in Lat. 40°57'15.35", Long. 73°20'31.84" (RES 9/20/07).

Survey Summary

Survey Position:	40° 57' 15.2" N, 073° 20' 32.0" W
Least Depth:	13.98 m (= 45.87 ft = 7.645 fm = 7 fm 3.87 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-235.00:00:00.000 (08/22/2012)
Dataset:	H12414_AWOIS.000
FOID:	0_ 0001163710 00001(FFFE0011C1BE0001)
Charts Affected:	12365_1, 12364_20, 12363_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

OBSTRN/remrks: AWOIS #11382 found with Reson 7125 object detection multibeam. Soundings are corrected to MLLW with VDatum solution.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12414_AWOIS.000	0_ 0001163710 00001	0.00	000.0	Primary
AWOIS_EXPORT	AWOIS # 11382	19.72	257.0	Secondary (grouped)

Hydrographer Recommendations

Update position and depth.

Cartographically-Rounded Depth (Affected Charts):

46ft (12365_1, 12364_20, 12363_1)

7 ½fm (12300_1, 13006_1, 13003_1)

14.0m (5161_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes:

NINFOM - Chart obstruction

QUASOU - 6:least depth known

SORDAT - 20120822

SORIND - US,US,graph,H12414

TECSOU - 3:found by multi-beam

VALSOU - 13.981 m

WATLEV - 3:always under water/submerged

Office Notes

concur

COMPILE: Chart AWOIS 11382, a 45.9ft obstruction, at survey position.

Feature Images

Figure 1.1.1

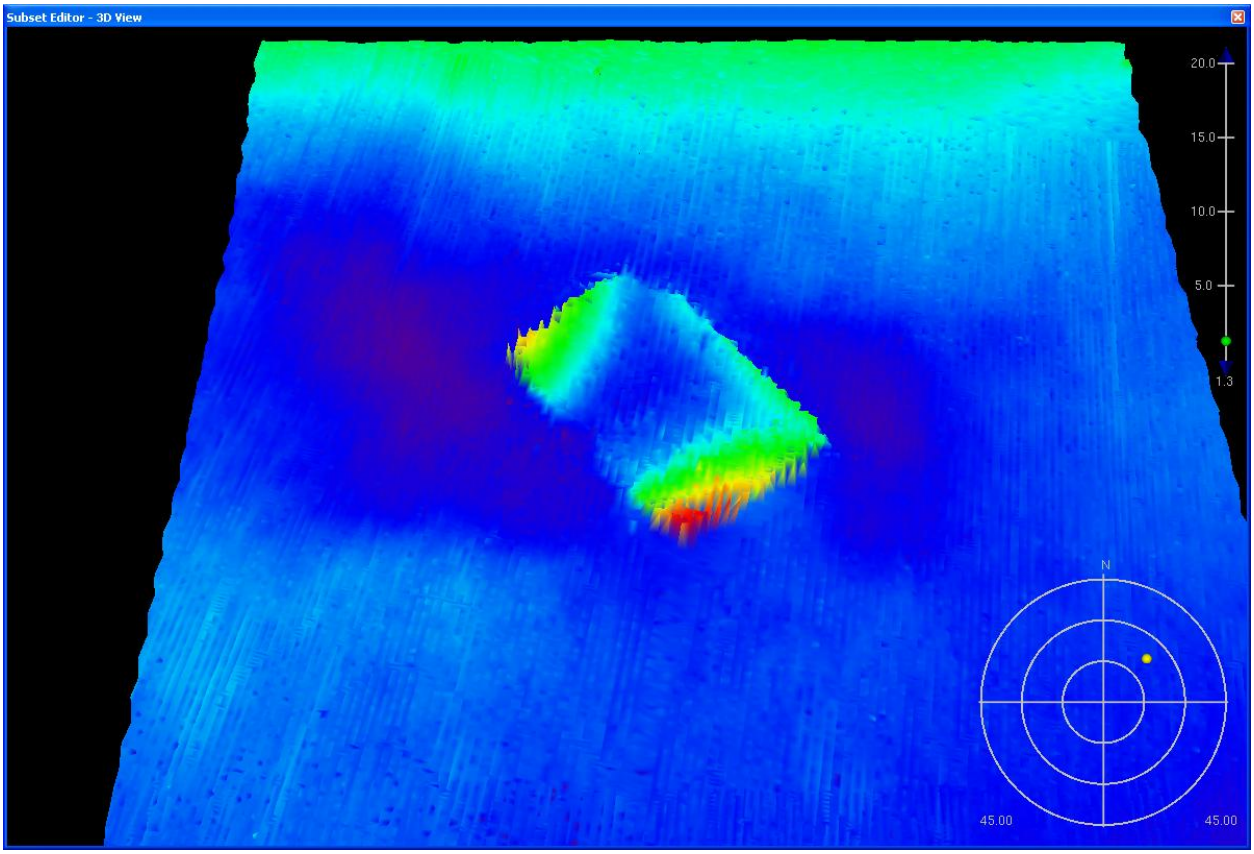


Figure 1.1.2

1.2) AWOIS #11824

Primary Feature for AWOIS Item #11824

Search Position: 40° 56' 12.0" N, 073° 19' 38.0" W

Historical Depth: [None]

Search Radius: 500

Search Technique: SD, S2, SWMB, DI

Technique Notes: [None]

History Notes:

HISTORY

LNM19/98 (5/12/98)-- NEW YORK-LONG ISLAND SOUND-WESTERN PART; ADD SYMBOL FOR SHELLFISH CULTIVATION AND LABEL "SHELLFISH RACKS (18 FTREP)" PA IN LAT. 40-56-12.0N, LONG. 73-19-38.03W.(ENT. 4/10/03, SJV)

Survey Summary

Survey Position: 40° 56' 10.1" N, 073° 19' 39.8" W

Least Depth: 5.40 m (= 17.72 ft = 2.953 fm = 2 fm 5.72 ft)

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2012-235.00:00:00.000 (08/22/2012)

Dataset: H12414_AWOIS.000

FOID: 0_ 0001163709 00001(FFFE0011C1BD0001)

Charts Affected: 12364_20, 12363_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

MARCUL/remrks: Part of the radius of AWOIS #11824 was covered with Reson7125 object detection multibeam. Using the dimensions of a shellfish rack from AWOIS #11823 nothing matching that desciption was found in the potion of the AWOIS circle that was covered. The AWOIS circle is covered up to the 4 meter curve.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12414_AWOIS.000	0_ 0001163709 00001	0.00	000.0	Primary
AWOIS_EXPORT	AWOIS # 11824	68.00	322.6	Secondary (grouped)

Hydrographer Recommendations

Retain as charted.

Cartographically-Rounded Depth (Affected Charts):

17ft (12364_20, 12363_1)

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

5.4m (5161_1)

S-57 Data

Geo object 1:	Marine farm/culture (MARCUL)
Attributes:	CATMFA - 2:oyster/mussels
	EXPSOU - 2:shoaler than range of depth of the surrounding depth area
	INFORM - Shellfish racks
	NINFOM - Retain marine culture
	QUASOU - 1:depth known
	SORDAT - 20120822
	SORIND - US,US,graph,H12414
	VALSOU - 5.400 m
	WATLEV - 3:always under water/submerged

Office Notes

SAR: AWOIS 11824 search area was incomplete. Charted feature is not considered as disproved although no evidence of shellfish racks were observed within the survey data. Survey depths include a 18ft sounding located on the western perimeter; the reported depth has been confirmed. The Survey depths (shoal bias selection) within the perimeter limits range between 19ft to 23ft.

COMPILE: Retain AWOIS 11824, a 17.7ft marine culture feature, as charted.

1.3) AWOIS #11823 - OBSTRUCTION

No Primary Survey Feature for this AWOIS Item

Search Position: 40° 56' 06.0" N, 073° 16' 60.0" W

Historical Depth: [None]

Search Radius: 500

Search Technique: MB, S2, SD

Technique Notes: Search not required inshore of the 4 meter curve for disproval.

History Notes:

CL454/92-- APPLICATION (PERMIT NO. 15888) ISSUED 10/10/90; TO PLACE 75 SHELLFISH CULTURE RACKS AND/OR TRAYS IN AN AREA OF APPROX. 5 ACRES ON THE BOTTOM OF LONG ISLAND SOUND IN APPROX. 21 FEET OF WATER AT MEAN LOW TIDE. THE RACKS WILL CONSIST OF TWO DIFFERENT SIZES; 10 FEET BY 10 FEET AND 8 FEET TALL, AND 6 FEET BY 6 FEET, AND 6 FEET TALL. EACH RACK WILL HAVE ITS OWN HARNESS AND RETRIEVING ROPE WITH A BUOY MARKER LESS THAN 1 FOOT IN DIAMETER AND WILL HAVE THE CAPACITY TO HOLD 3 TRAYS, EACH TRAY 6 FEET BY 6 FEET AND 6 INCHES TALL. LOCATED AT LAT. 40-56-06N, LONG. 73-17-00W. CHARTED AS "SHELLFISH RACKS (12 FT REP)". PERMITEE IS JAMES E. FOX, 160 HIGHLAND DRIVE, KINGS PARK, NY 11754 TEL. 516-361-7995. NOS FOLLOW-UP REQUEST DATED 5/10/91 RE. COMPLETION DATE RESULTED IN REPLY THAT PROJECT WAS ON GOING AND HAD STARTED IN 7/1/91. ATTEMPT TO CONTACT PERMITEE AT TEL. NO. ABOVE BY N/CS31 UNSUCCESSFUL (OUT OF SERVICE). (ENT 4/9/03, SJV)

LNM4/91 (1/23/91)-- NEW YORK AND CONNECTICUT-LONG ISLAND SOUND-PORT JEFFERSON; CALLAHAN'S BEACH AQUACULTURE BUOY "F", YELLOW SPHERE (PRIV. MNTD.) LOACATED IN LAT. 40-56-06.3N, LONG. 73-16-58.4W. SYMBOL FOR SUBMERGED CRIB IN APPROX. LAT. 40-56-06.0N, LONG. 73-17-00.0W.

Survey Summary

Charts Affected: 12364_21, 12363_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

[None]

Feature Correlation

Source	Feature	Range	Azimuth	Status
AWOIS_EXPORT	AWOIS # 11823	0.00	000.0	Primary
H12414_AWOIS.000	0_ 0001163711 00001	9.81	213.9	Secondary (grouped)

Hydrographer Recommendations

[None]

S-57 Data

[None]

Office Notes

SAR: AWOIS search area covered with object detect MB. No evidence of shellfish racks were observed. Considered as disproved.

COMPILE: Delete AWOIS 11823 from charted position.

1.4) AWOIS #14973 - OBSTRUCTION

No Primary Survey Feature for this AWOIS Item

Search Position: 40° 55' 07.1" N, 073° 12' 51.8" W
Historical Depth: [None]
Search Radius: 200
Search Technique: [None]
Technique Notes: [None]

History Notes:

[None]

Survey Summary

Charts Affected: 12364_21, 12353_1, 12363_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

[None]

Feature Correlation

Source	Feature	Range	Azimuth	Status
AWOIS_EXPORT	AWOIS # 14973	0.00	000.0	Primary
H12414_AWOIS.000	0_ 0001163712 00001	19.52	283.5	Secondary (grouped)

Hydrographer Recommendations

[None]

S-57 Data

[None]

Office Notes

SAR: Concur. AWOIS 14973 search radius was completed with object detect MB. Feature considered as disproved.

COMPILE: Delete AWOIS 14973.

H12414 DtoNs

Registry Number: H12414
State: New York
Locality: Long Island Sound
Sub-locality: Northport Basin to Nissequogue River
Project Number: OPR-B340-TJ-12
Survey Date: 07/26/2012 - 08/22/2012

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
12364	38th	07/01/2008	1:40,000 (12364_21) 1:40,000 (12364_20)	[L]NTM: ?
12363	40th	06/01/2005	1:80,000 (12363_1)	[L]NTM: ?
12353	18th	11/01/2003	1:80,000 (12353_1)	[L]NTM: ?
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 1 Dangerous Rock	Rock	2.37 m	40° 56' 05.8" N	073° 18' 12.9" W	---
1.2	DTON 2 Dangerous Rock	Rock	2.17 m	40° 55' 38.4" N	073° 16' 40.8" W	---
1.3	DTON 5 Dangerous Rock	Rock	7.07 m	40° 56' 06.0" N	073° 16' 02.6" W	---
1.4	DTON 3 Dangerous Rock	Rock	10.12 m	40° 56' 44.3" N	073° 15' 32.6" W	---
1.5	DTON 4 Dangerous Rock	Rock	8.55 m	40° 55' 47.9" N	073° 15' 02.8" W	---

1 - DtoN

1.1) DTON 1 Dangerous Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position:	40° 56' 05.8" N, 073° 18' 12.9" W
Least Depth:	2.37 m (= 7.77 ft = 1.294 fm = 1 fm 1.77 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-235.00:00:00.000 (08/22/2012)
Dataset:	H12414_DtoNs.000
FOID:	0_ 0001163719 00001(FFFE0011C1C70001)
Charts Affected:	12364_20, 12364_21, 12363_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

UWTROC/remrks: Dangerous rock found with Reson 7125 object detection multibeam. Soundings are corrected to MLLW with verified tides and preliminary zoning.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12414_DtoNs.000	0_ 0001163719 00001	0.00	000.0	Primary

Hydrographer Recommendations

Chart dangerous rock.

Cartographically-Rounded Depth (Affected Charts):

8ft (12364_20, 12364_21, 12363_1)

1 ¼fm (12300_1, 13006_1, 13003_1)

2.4m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	NINFOM - Chart rock
	QUASOU - 6:least depth known
	SORDAT - 20120822

SORIND - US,US,graph,H12414

TECSOU - 3:found by multi-beam

VALSOU - 2.367 m

WATLEV - 3:always under water/submerged

Office Notes

Concur

COMPILE: Chart DtoN, a 7.8ft rock at survey position. DtoN has not been applied to ENC US4NY13M.

Feature Images

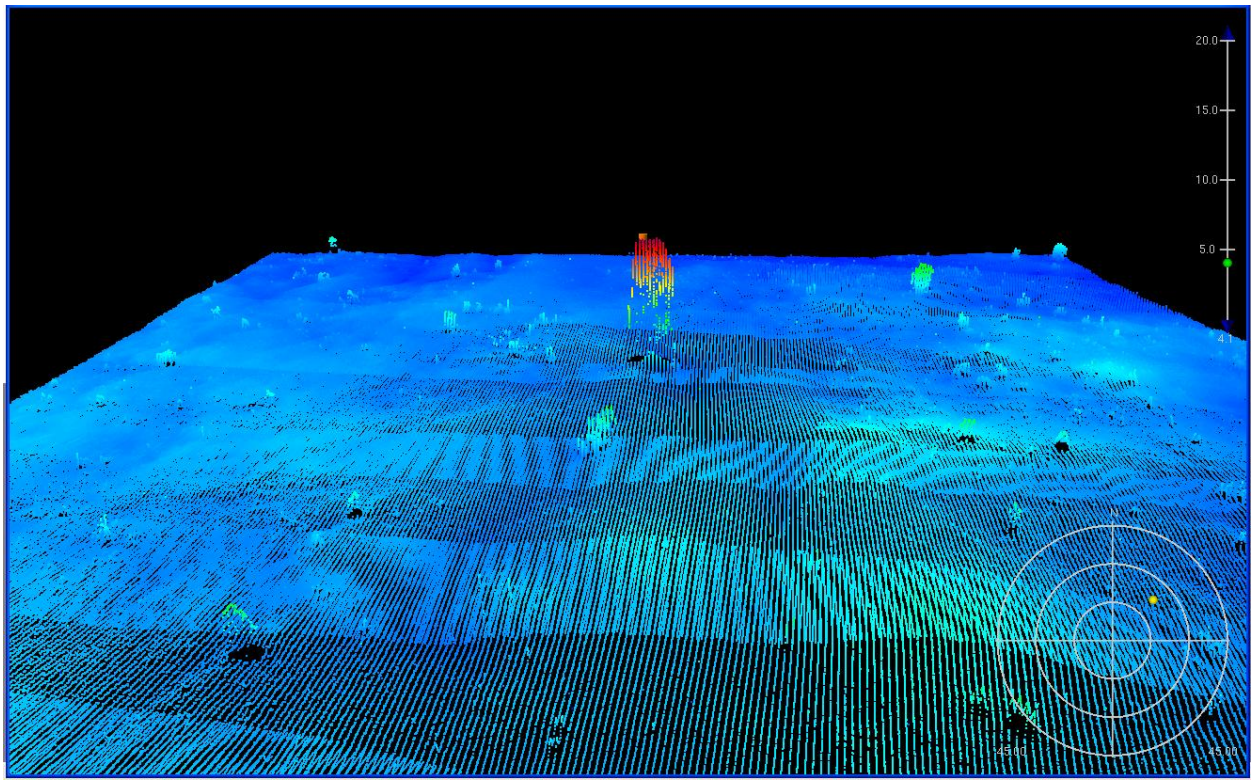


Figure 1.1.1

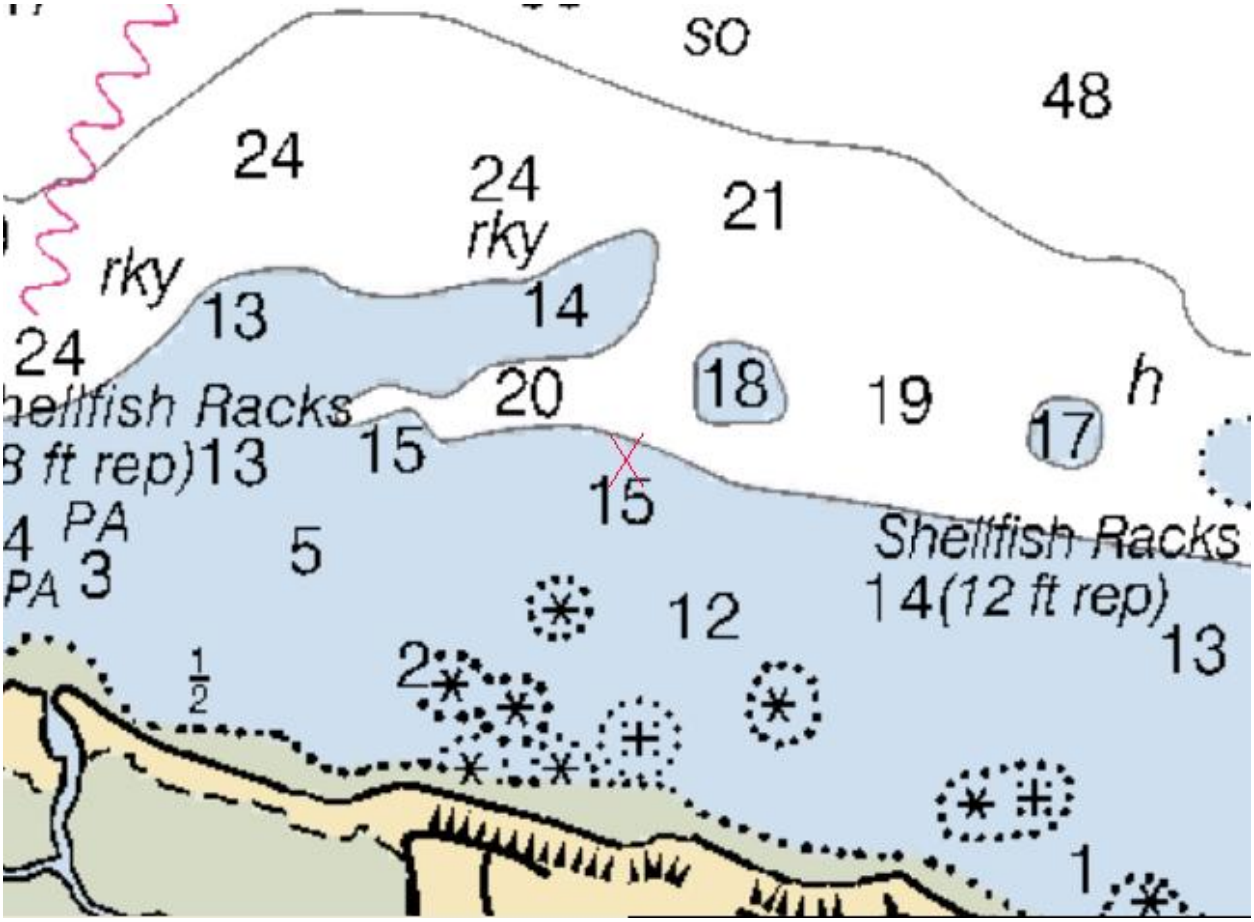

SO
48
24
24
rky
21
rky
13
14
24
20
18
19
h
17
Shellfish Racks
(8 ft rep)13
15
15
PA
4
PA
3
5
Shellfish Racks
14(12 ft rep)
12
13
2
1
1
2

Figure 1.1.2

1.2) DTON 2 Dangerous Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position:	40° 55' 38.4" N, 073° 16' 40.8" W
Least Depth:	2.17 m (= 7.10 ft = 1.184 fm = 1 fm 1.10 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-235.00:00:00.000 (08/22/2012)
Dataset:	H12414_DtoNs.000
FOID:	0_ 0001163720 00001(FFFE0011C1C80001)
Charts Affected:	12364_21, 12363_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

UWTROC/remrks: Dangerous rock found with Reson 7125 object detection multibeam. Soundings are corrected to MLLW with verified tides and preliminary zoning.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12414_DtoNs.000	0_ 0001163720 00001	0.00	000.0	Primary

Hydrographer Recommendations

Chart dangerous rock.

Cartographically-Rounded Depth (Affected Charts):

7ft (12364_21, 12363_1)

1fm (12300_1, 13006_1, 13003_1)

2.2m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	NINFOM - Chart rock
	QUASOU - 6:least depth known
	SORDAT - 20120822

SORIND - US,US,graph,H12414

TECSOU - 3:found by multi-beam

VALSOU - 2.165 m

WATLEV - 3:always under water/submerged

Office Notes

Concur

COMPILE: Chart DtoN, a 7.1ft rock, at survey position.

Feature Images

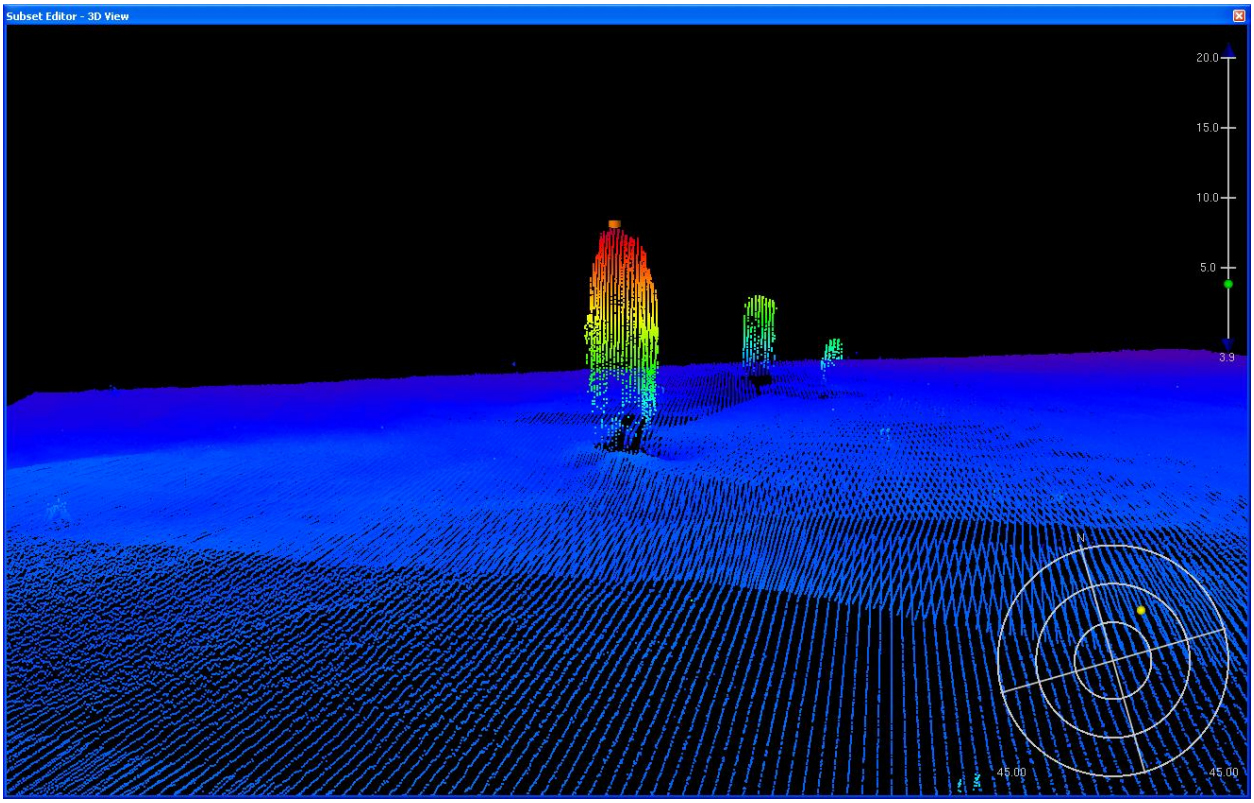


Figure 1.2.1

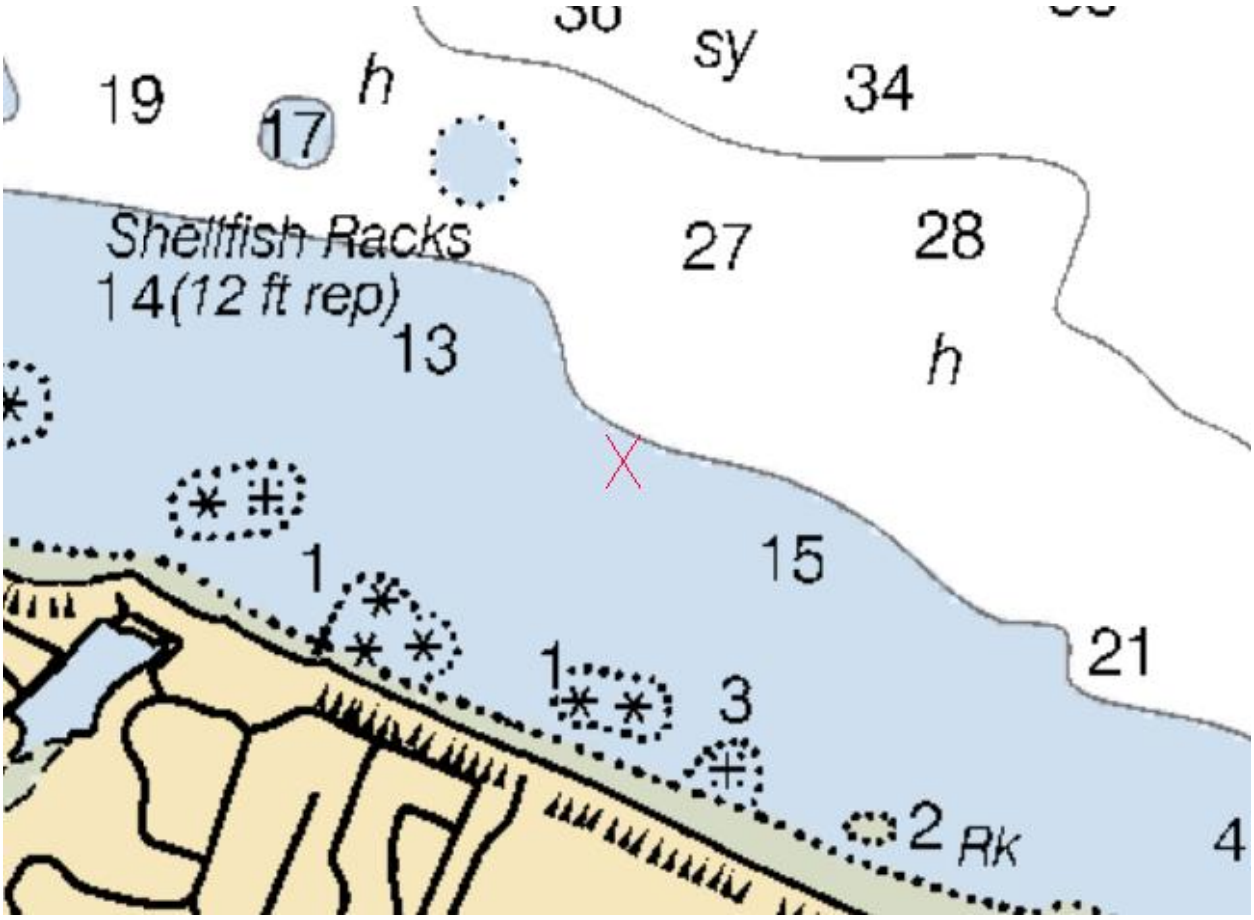

sy
19
17
h
34
Shellfish Racks
14(12 ft rep)
27
28
13
h
15
1
1
3
21
2 RK
4

Figure 1.2.2

1.3) DTON 5 Dangerous Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position: 40° 56' 06.0" N, 073° 16' 02.6" W

Least Depth: 7.07 m (= 23.19 ft = 3.865 fm = 3 fm 5.19 ft)

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2012-235.00:00:00.000 (08/22/2012)

Dataset: H12414_DtoNs.000

FOID: 0_ 0001163721 00001(FFFE0011C1C90001)

Charts Affected: 12364_21, 12363_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

UWTROC/remrks: Dangerous rock found with Reson 7125 object detection multibeam. Soundings are corrected to MLLW with VDatum solution.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12414_DtoNs.000	0_ 0001163721 00001	0.00	000.0	Primary

Hydrographer Recommendations

Chart dangerous rock.

Cartographically-Rounded Depth (Affected Charts):

23ft (12364_21, 12363_1)

3 ¾fm (12300_1, 13006_1, 13003_1)

7.1m (5161_1)

S-57 Data

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

Attributes: NINFOM - Chart representative sounding within RKY seabed area

QUASOU - 6:least depth known

SORDAT - 20120822

SORIND - US,US,graph,H12414

TECSOU - 3:found by multi-beam

VALSOU - 7.069 m

WATLEV - 3:always under water/submerged

Office Notes

Concur

COMPILE: Chart rock as a 23.2ft sounding.

Feature Images

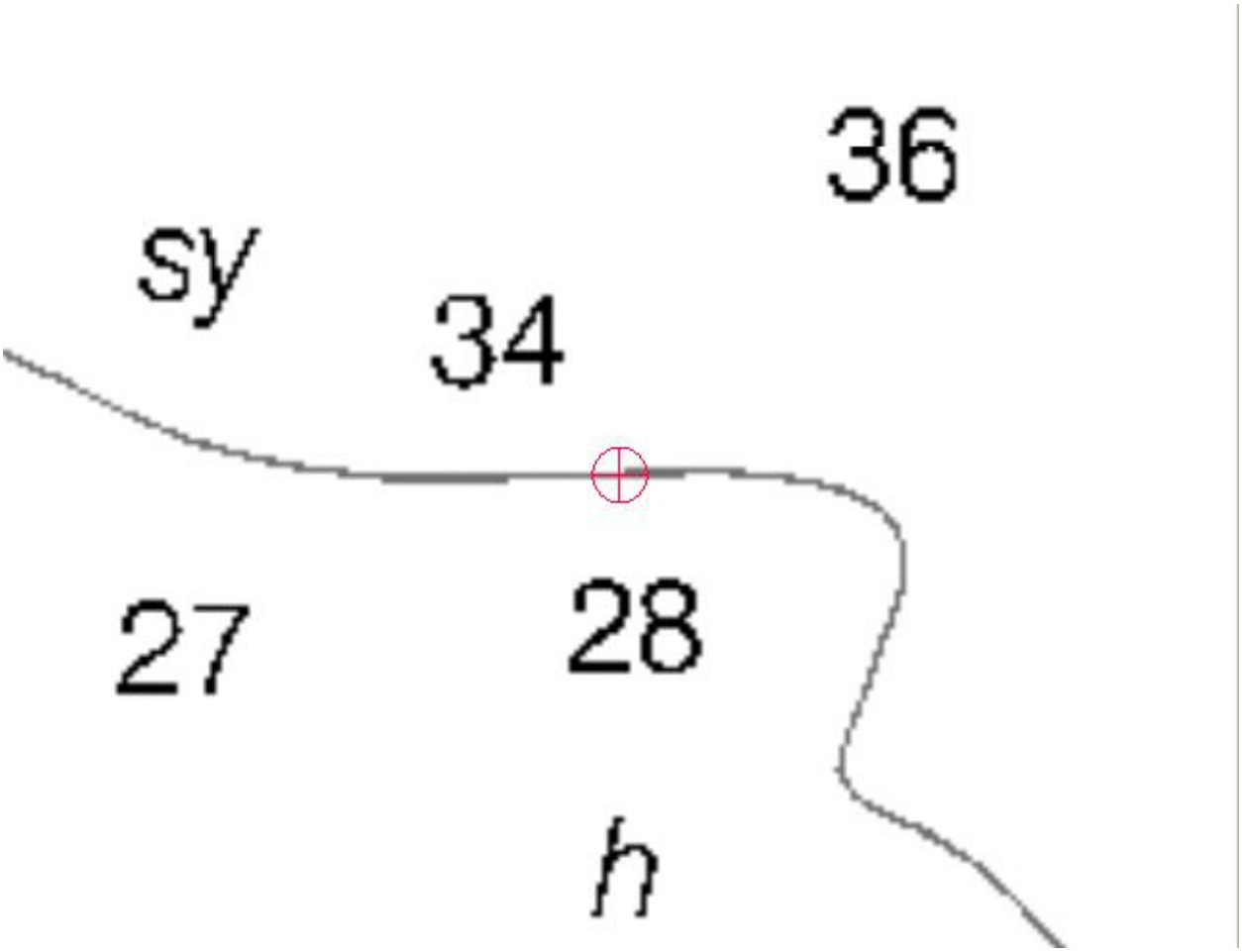


Figure 1.3.1

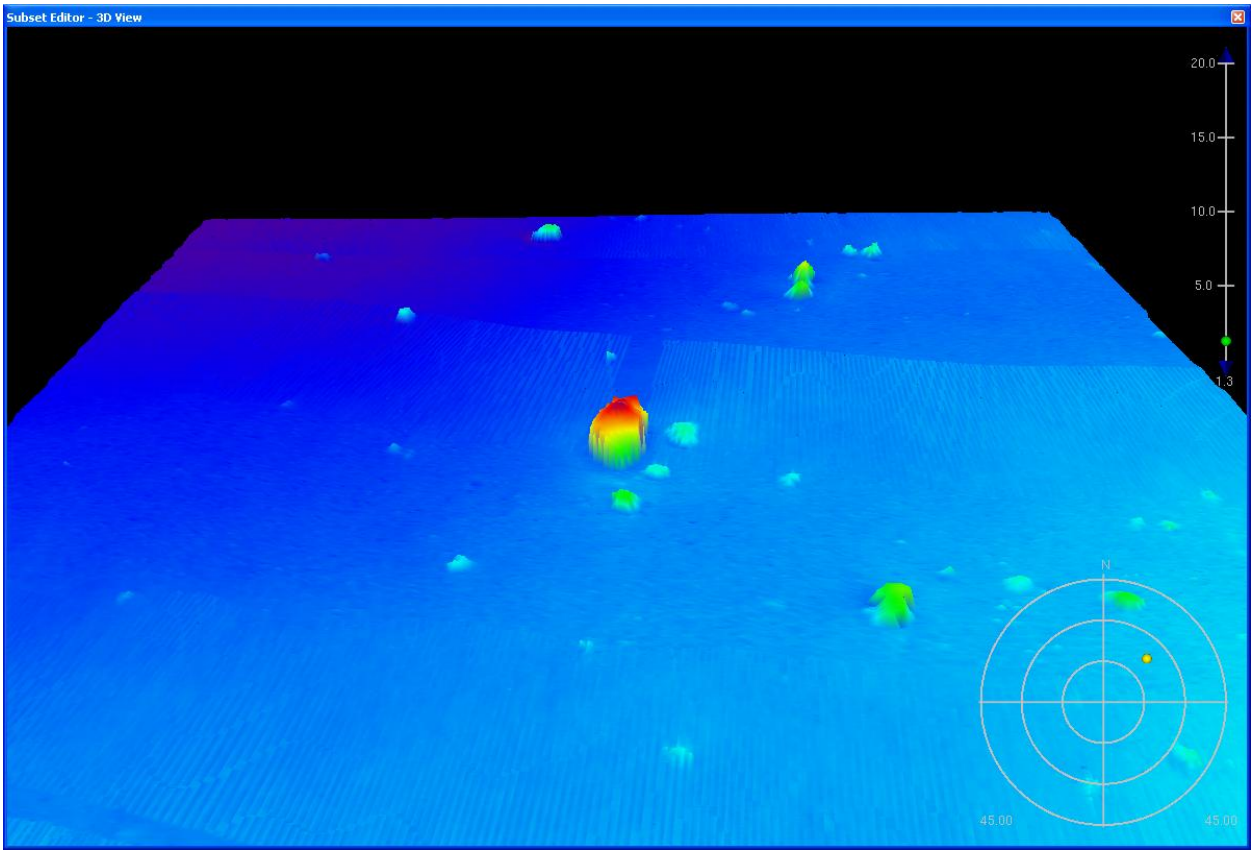


Figure 1.3.2

1.4) DTON 3 Dangerous Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position:	40° 56' 44.3" N, 073° 15' 32.6" W
Least Depth:	10.12 m (= 33.20 ft = 5.533 fm = 5 fm 3.20 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-235.00:00:00.000 (08/22/2012)
Dataset:	H12414_DtoNs.000
FOID:	0_ 0001163722 00001(FFFE0011C1CA0001)
Charts Affected:	12364_21, 12363_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

UWTROC/remrks: Dangerous rock found with Reson 7125 object detection multibeam. Soundings are corrected to MLLW with VDatum solution.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12414_DtoNs.000	0_ 0001163722 00001	0.00	000.0	Primary

Hydrographer Recommendations

Chart dangerous rock.

Cartographically-Rounded Depth (Affected Charts):

33ft (12364_21, 12363_1)

5 ½fm (12300_1, 13006_1, 13003_1)

10.1m (5161_1)

S-57 Data

Geo object 1:	Underwater rock / awash rock (UWTROC)
Attributes:	NINFOM - Chart rock
	QUASOU - 6:least depth known
	SORDAT - 20120822

SORIND - US,US,graph,H12414

TECSOU - 3:found by multi-beam

VALSOU - 10.119 m

WATLEV - 3:always under water/submerged

Office Notes

Concur

COMPILE: Chart DtoN, a 33.2ft rock, at survey position.

Feature Images

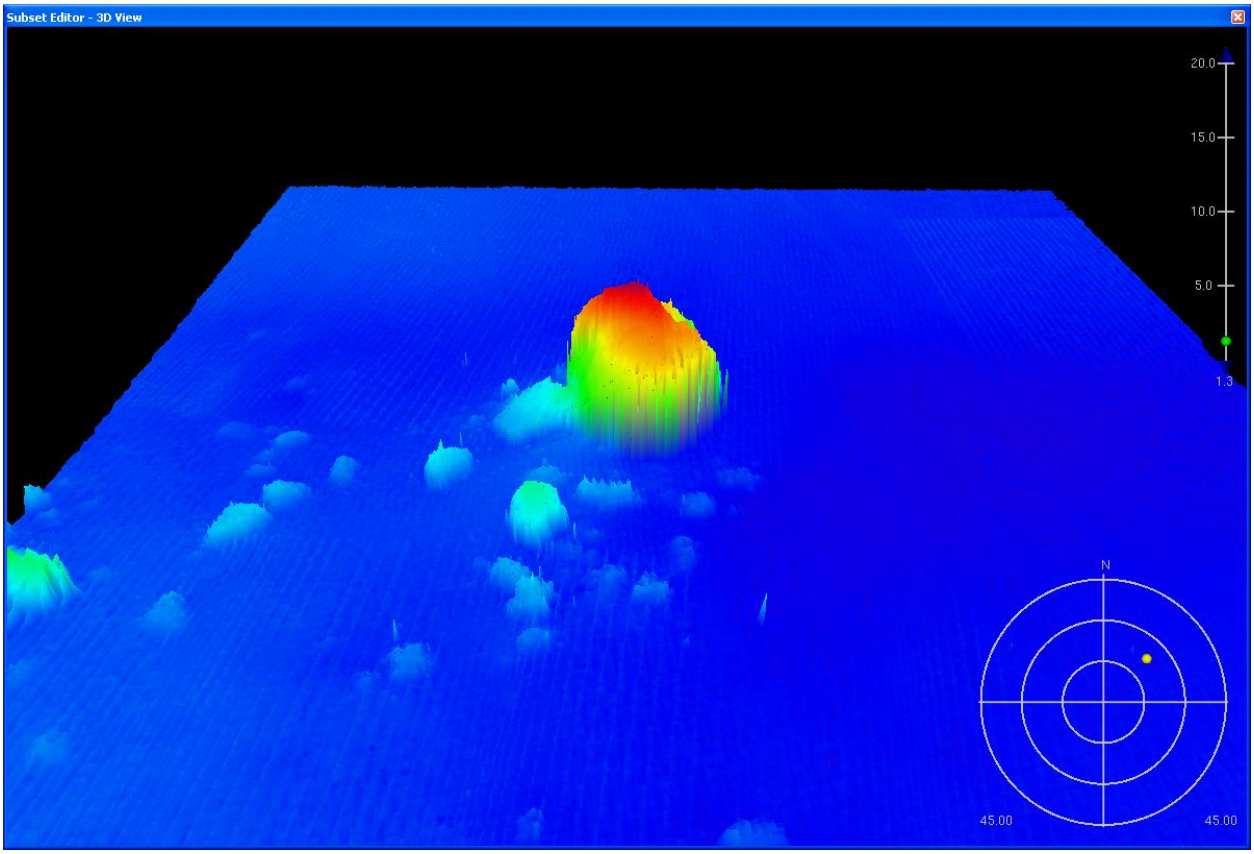


Figure 1.4.1

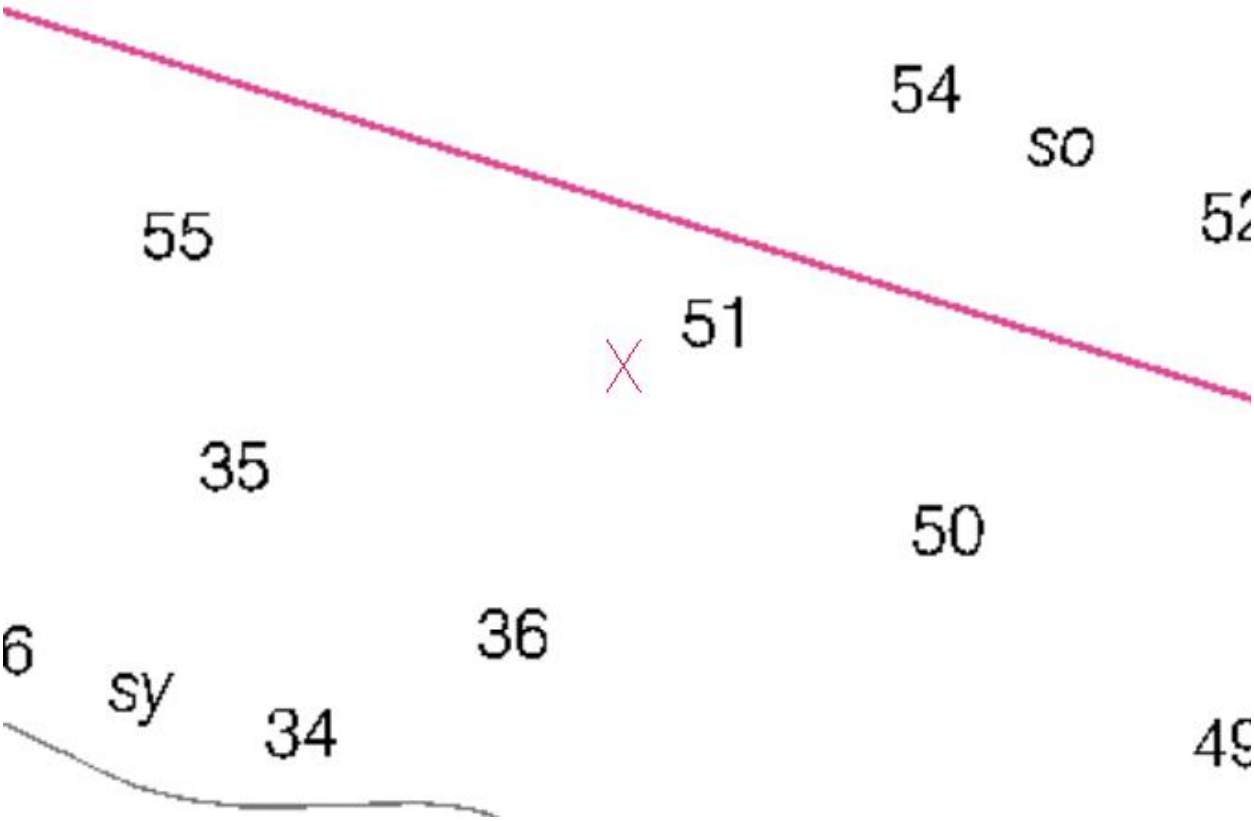


Figure 1.4.2

1.5) DTON 4 Dangerous Rock

DANGER TO NAVIGATION

Survey Summary

Survey Position: 40° 55' 47.9" N, 073° 15' 02.8" W

Least Depth: 8.55 m (= 28.06 ft = 4.677 fm = 4 fm 4.06 ft)

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2012-235.00:00:00.000 (08/22/2012)

Dataset: H12414_DtoNs.000

FOID: 0_ 0001163718 00001(FFFE0011C1C60001)

Charts Affected: 12364_21, 12353_1, 12363_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

UWTROC/remrks: Dangerous Rock found with Reson 7125 object detection multibeam. Soundings are corrected to MLLW with VDatum solution.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12414_DtoNs.000	0_ 0001163718 00001	0.00	000.0	Primary

Hydrographer Recommendations

Chart dangerous rock.

Cartographically-Rounded Depth (Affected Charts):

28ft (12364_21, 12353_1, 12363_1)

4 ½fm (12300_1, 13006_1, 13003_1)

8.6m (5161_1)

S-57 Data

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

Attributes: NINFOM - Chart representative sounding within RKY seabed area

QUASOU - 6:least depth known

SORDAT - 20120822

SORIND - US,US,graph,H12414

TECSOU - 3:found by multi-beam

VALSOU - 8.553 m

WATLEV - 3:always under water/submerged

Office Notes

Concur

COMPILE: Chart 28.1ft rock as sounding.

Feature Images

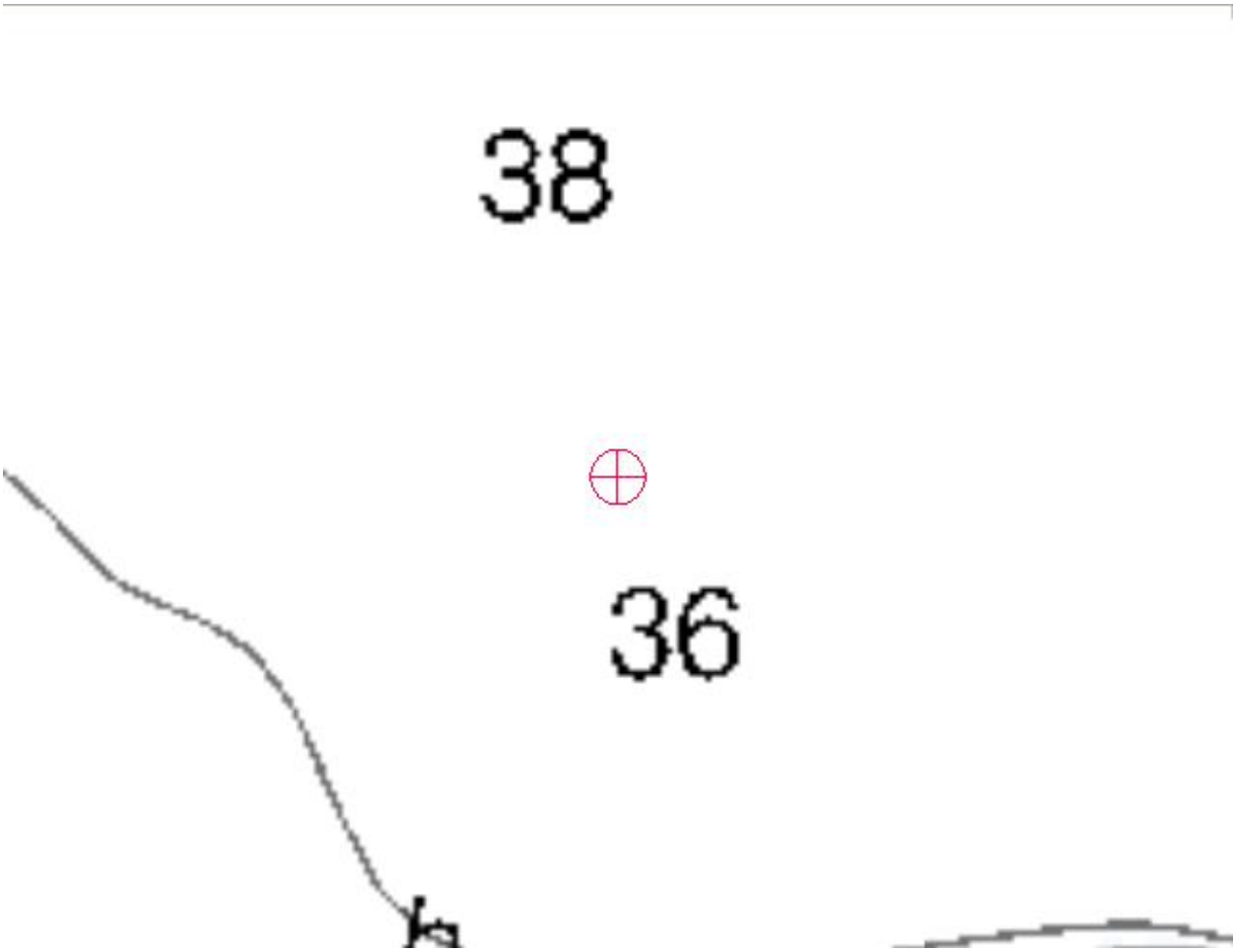


Figure 1.5.1

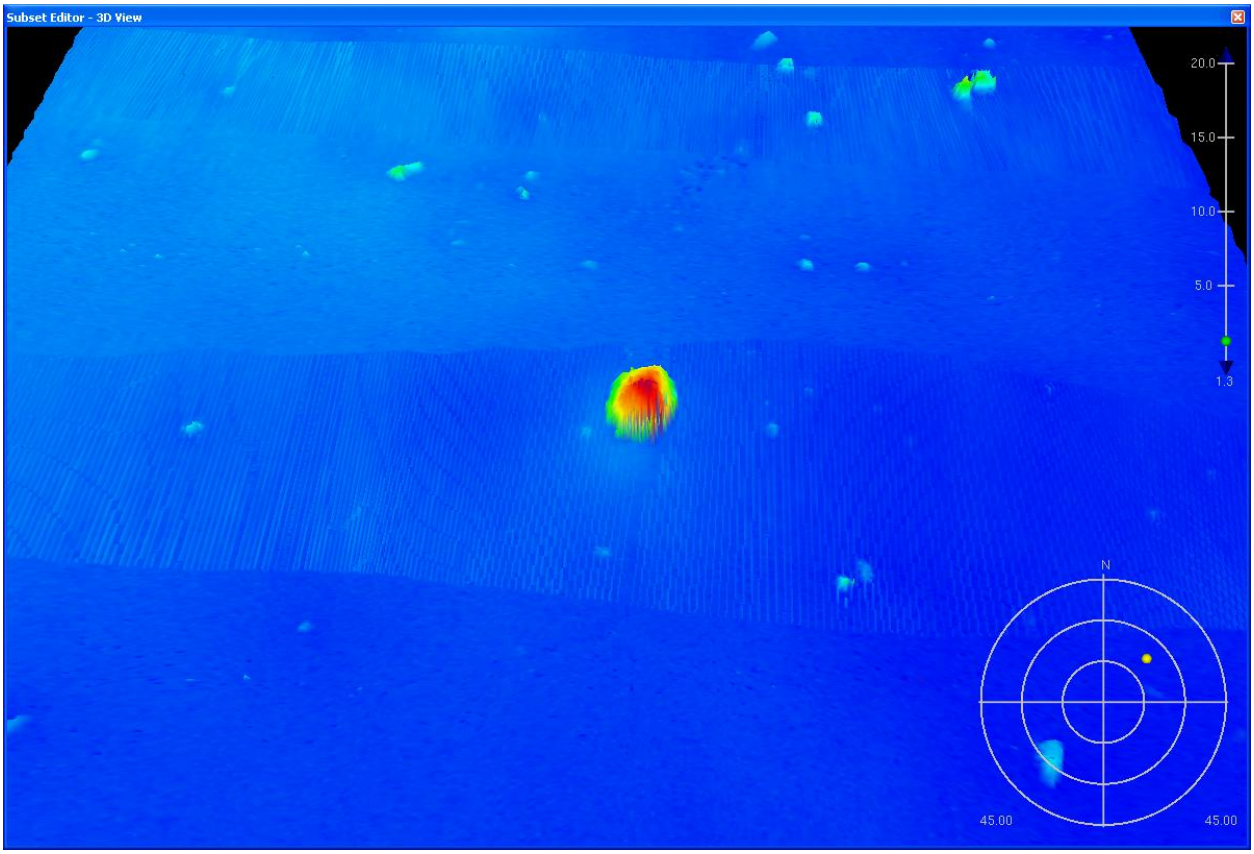


Figure 1.5.2

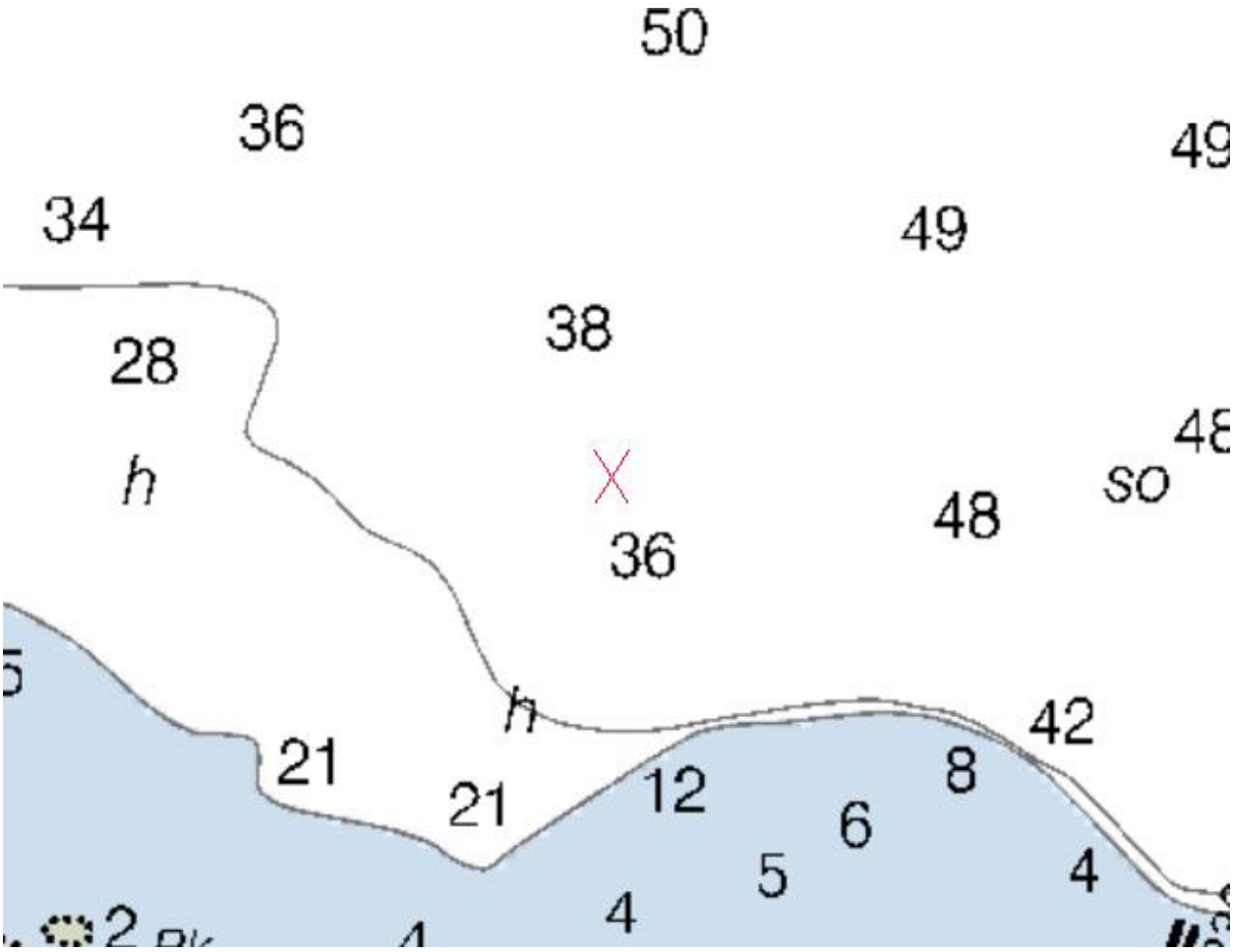


Figure 1.5.3

H12414 Wrecks

Registry Number: H12414
State: New York
Locality: Long Island Sound
Sub-locality: Northport Basin to Nissequogue River
Project Number: OPR-B340-TJ-12
Survey Date: 07/26/2012 - 08/22/2012

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
12364	38th	07/01/2008	1:40,000 (12364_21)	[L]NTM: ?
12363	40th	06/01/2005	1:80,000 (12363_1)	[L]NTM: ?
12353	18th	11/01/2003	1:80,000 (12353_1)	[L]NTM: ?
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	UnCharted Wreck	Wreck	16.95 m	40° 58' 10.2" N	073° 16' 53.1" W	---
1.2	H12414_Wreck	Wreck	13.58 m	40° 55' 46.0" N	073° 13' 04.9" W	---

1 - Wrecks

1.1) UnCharted Wreck

Survey Summary

Survey Position:	40° 58' 10.2" N, 073° 16' 53.1" W
Least Depth:	16.95 m (= 55.62 ft = 9.269 fm = 9 fm 1.62 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-235.00:00:00.000 (08/22/2012)
Dataset:	H12414_Wrecks.000
FOID:	0_ 0001163708 00001(FFFE0011C1BC0001)
Charts Affected:	12364_21, 12363_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: Uncharted wreck found with Reson 7125 object detection multibeam. Soundings are corrected to MLLW with VDatum solution.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12414_Wrecks.000	0_ 0001163708 00001	0.00	000.0	Primary

Hydrographer Recommendations

Chart underwater wreck.

Cartographically-Rounded Depth (Affected Charts):

55ft (12364_21, 12363_1)

9 ¼fm (12300_1, 13006_1, 13003_1)

17.0m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	NINFOM - Chart wreck
	QUASOU - 6:least depth known
	SORDAT - 20120822
	SORIND - US,US,graph,H12414

TECSOU - 3:found by multi-beam

VALSOU - 16.952 m

WATLEV - 3:always under water/submerged

Office Notes

Concur

COMPILE: Chart 55.6ft wreck at survey position.

Feature Images

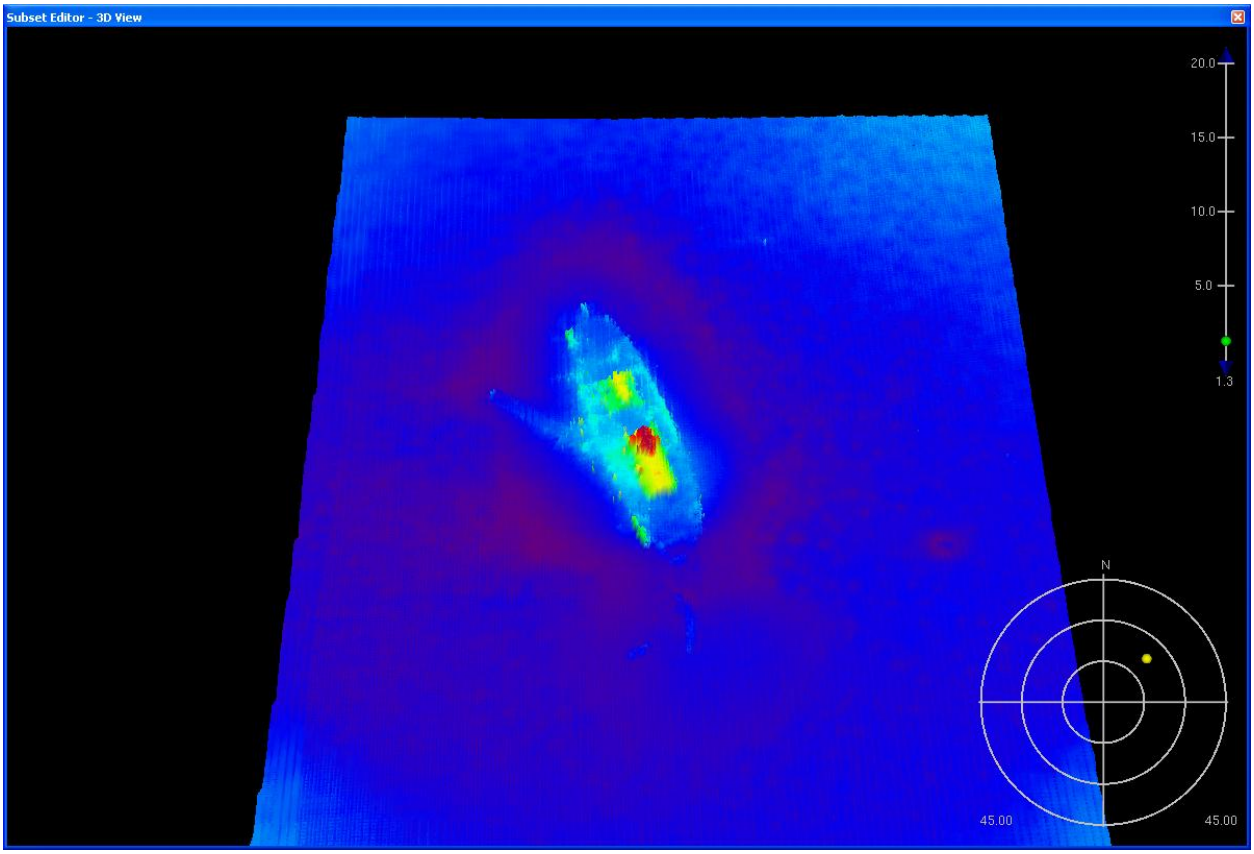


Figure 1.1.1

1.2) H12414_Wreck

Survey Summary

Survey Position:	40° 55' 46.0" N, 073° 13' 04.9" W
Least Depth:	13.58 m (= 44.54 ft = 7.424 fm = 7 fm 2.54 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2012-235.00:00:00.000 (08/22/2012)
Dataset:	H12414_Wrecks.000
FOID:	0_ 0001163707 00001(FFFE0011C1BB0001)
Charts Affected:	12364_21, 12353_1, 12363_1, 12300_1, 13006_1, 5161_1, 13003_1

Remarks:

WRECKS/remrks: Uncharted wreck found.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12414_Wrecks.000	0_ 0001163707 00001	0.00	000.0	Primary

Hydrographer Recommendations

Add New Wreck

Cartographically-Rounded Depth (Affected Charts):

44ft (12364_21, 12353_1, 12363_1)

7 ¼fm (12300_1, 13006_1, 13003_1)

13.6m (5161_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	EXPSOU - 2:shoaler than range of depth of the surrounding depth area
	NINFOM - Chart wreck
	QUASOU - 6:least depth known
	SORDAT - 20120822
	SORIND - US,US,graph,H12414

TECSOU - 3:found by multi-beam

VALSOU - 13.577 m

WATLEV - 3:always under water/submerged

Office Notes

Concur

COMPILE: Chart 44.5ft wreck at survey position.

Feature Images

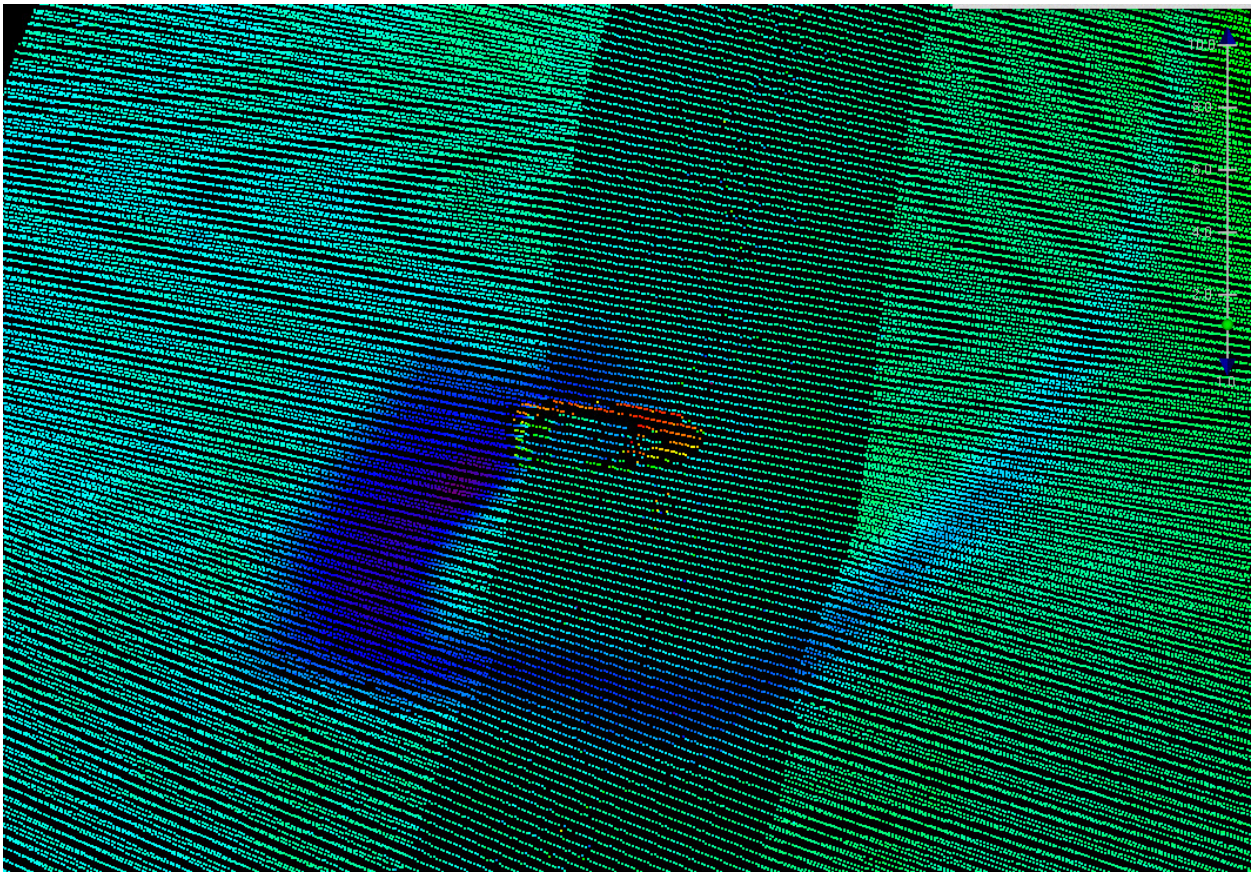


Figure 1.2.1

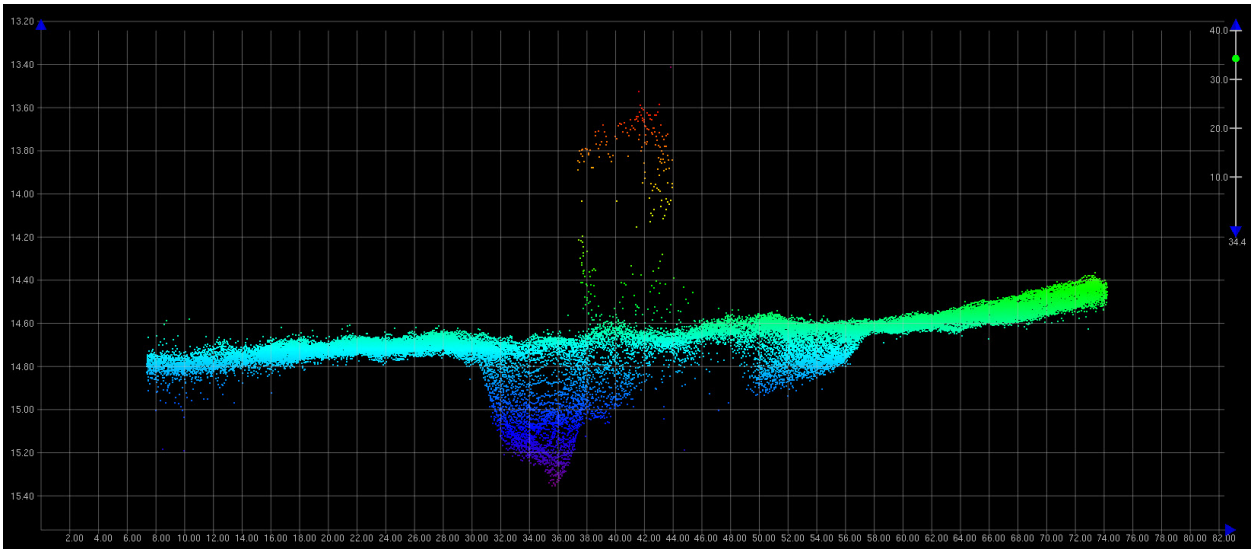


Figure 1.2.2

APPROVAL PAGE

H12414

Data meet or exceed current specifications as certified by the OCS survey acceptance review process. Descriptive Report and survey data except where noted are adequate to supersede prior surveys and nautical charts in the common area.

The following products will be sent to NGDC for archive

- H12414_DR.pdf
- Collection of depth varied resolution BAGS
- Processed survey data and records
- H12414_GeoImage.pdf

The survey evaluation and verification has been conducted according current OCS Specifications, and the survey has been approved for dissemination and usage of updating NOAA's suite of nautical charts.

Approved: Digitally signed by HIGGINS.ABIGAIL.SARAH.1267671750
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=NOAA, cn=HIGGINS.ABIGAIL.SARAH.1267671750
Date: 2014.02.28 17:20:24 -05'00'

LCDR Abigail Higgins, NOAA
Chief, Atlantic Hydrographic Branch