

H12299

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: H12299

**LOCALITY**

State: New York

General Locality: Block Island Sound

Sub-locality: Vicinity of Cerberus Shoal

**2011**

CHIEF OF PARTY  
CDR Lawrence Krepp

LIBRARY & ARCHIVES

Date:

**HYDROGRAPHIC TITLE SHEET****H12299**

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: **Block Island Sound**

Sub-Locality: **Vicinity of Cerberus Shoal**

Scale: **20000**

Dates of Survey: **09/12/2011 to 11/15/2011**

Instructions Dated: **06/29/2011**

Project Number: **OPR-B363-TJ-11**

Field Unit: **NOAA Ship *Thomas Jefferson***

Chief of Party: **CDR Lawrence Krepp**

Soundings by: **Multibeam Echo Sounder**

Imagery by:

Verification by: **Atlantic Hydrographic Branch**

Soundings Acquired in: **meters at Mean lower low water**

H-Cell Compilation Units:

## 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 H12299

Project: OPR-B363-TJ-11

Locality: Block Island Sound

Sublocality: Vicinity of Cerberus Shoal

Scale: 1:20000

September 2011 - November 2011

**NOAA Ship *Thomas Jefferson***

Chief of Party: CDR Lawrence Krepp

### A. Area Surveyed

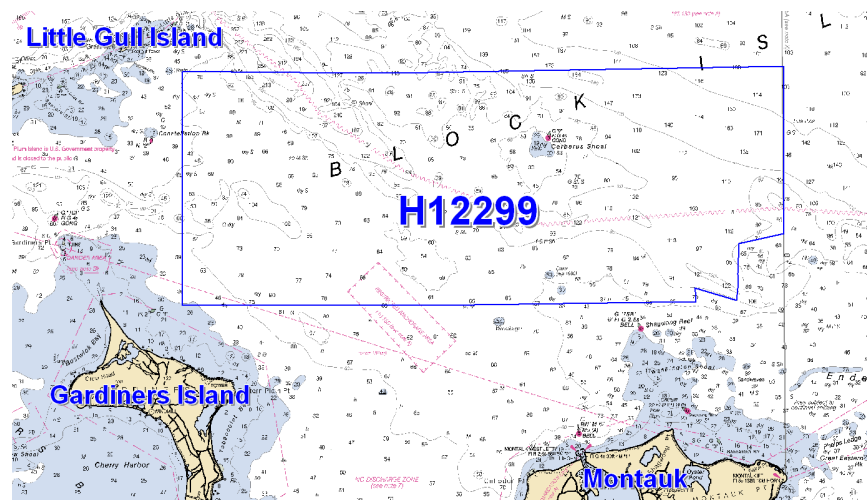
Survey sheet area is in the vicinity of Cerberus Shoal, between Little Gull Island and Montauk NY

#### A.1 Survey Limits

Data was acquired within the following survey limits:

Northeast Limit	Southwest Limit
40.5291666667 N 73.7433333333 W	40.3961111111 N 73.8269444444 W

*Table 1: Survey Limits*



*Figure 1: Survey Limits for H12299*

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

## A.2 Survey Purpose

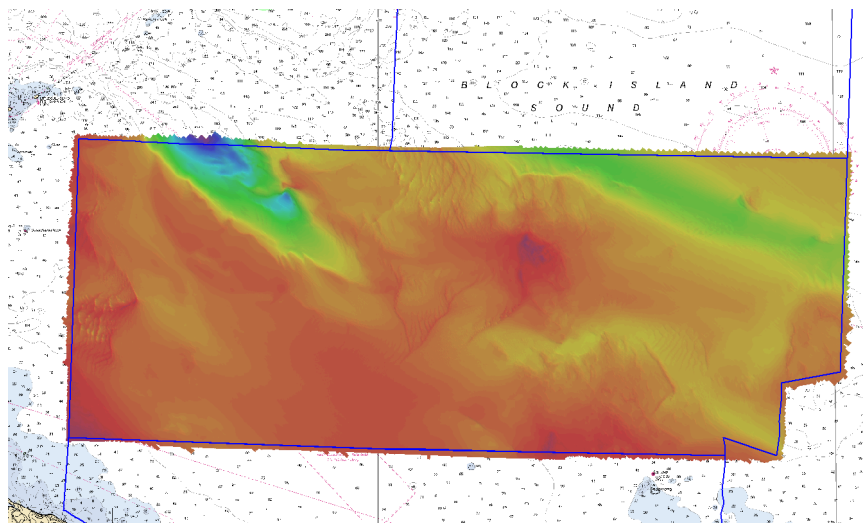
This project is being conducted in support of NOAA's Office of Coast Survey to provide contemporary hydrographic data in order to update the nautical charting products and reduce the survey backlog within the area. In addition, data from this project will support the Long Island Sound Seafloor Mapping Initiative for the States of Connecticut and New York. This project also responds, in part, to the concerns raised by the Northeast Marine Pilots for new hydrographic surveys to support deep draft (60') vessels transiting the areas traffic lanes. This project will cover approximately 228 nm<sup>2</sup> of which 138 nm<sup>2</sup> are critical survey areas as designated in the NOAA Hydrographic Survey Priorities, 2010 edition.

## A.3 Survey Quality

The entire survey is adequate to supersede previous data.

This hydrographic survey was completed as specified by Hydrographic Survey Letter Instructions OPR-B363-TJ-11, dated 29th July, 2011. No additional work is needed to complete this survey. No changes significant to navigation have been noted and it is recommended that this survey receive normal processing priority.

## A.4 Survey Coverage



*Figure 2: H12299 multibeam echosounder survey coverage.*

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:

	<b>HULL ID</b>	<b>S-222</b>	<b>3101</b>	<b>3102</b>	<b>Total</b>
<b>LNM</b>	<b>SBES Mainscheme</b>	0	0	0	0
	<b>MBES Mainscheme</b>	1466.86	96.30	47.04	1610.2
	<b>Lidar Mainscheme</b>	0	0	0	0
	<b>SSS Mainscheme</b>	0	0	0	0
	<b>SBES/MBES Combo Mainscheme</b>	0	0	0	0
	<b>SBES/SSS Combo Mainscheme</b>	0	0	0	0
	<b>MBES/SSS Combo Mainscheme</b>	0	0	0	0
	<b>SBES/MBES Combo Crosslines</b>	53.14	0	0	53.14
	<b>Lidar Crosslines</b>	0	0	0	0
	<b>Number of Bottom Samples</b>				
<b>Number of DPs</b>					0
<b>Number of Items Items Investigated by Dive Ops</b>					0
<b>Total Number of SNM</b>					59.8

*Table 2: Hydrographic Survey Statistics*



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

<b><i>Survey Dates</i></b>
09/12/2011
09/13/2011
09/14/2011
09/15/2011
09/16/2011
09/20/2011
09/21/2011
09/22/2011
09/23/2011
09/25/2012
10/02/2011
10/12/2011
10/14/2011
10/16/2011
10/17/2011
10/18/2011
10/19/2011
10/20/2011
10/23/2011
10/24/2011
10/25/2011
10/27/2011
11/01/2011
11/02/2011
11/06/2011
11/07/2011
11/08/2011
11/09/2011
11/10/2011
11/15/2011

*Table 3: Dates of Hydrography*

## A.6 Shoreline

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

## A.7 Bottom Samples

Sixteen bottom samples were acquired based on the density of existing bottom samples and the variability seen in the MB surface

# 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:

<b>Hull ID</b>	<i>S-222</i>	<i>3101</i>	<i>3102</i>
<b>LOA</b>	210 feet	31 feet	31 feet
<b>Draft</b>	15 feet	3 feet	3 feet

*Table 4: Vessels Used*

## B.1.2 Equipment

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

<b>Manufacturer</b>	<b>Model</b>	<b>Type</b>
Applanix	POSMV	Vessel Attitude System
Seabird	Seacat19+	Sound Speed System
Brooke Ocean	MVP100	Sounds Speed System
Reson	7125 ROV	MBES
Reson	7125 SV1	MBES

*Table 5: Major Systems Used*

Data were acquired by NOAA Ship Thomas Jefferson, launch 3101 and launch 3102. NOAA Ship Thomas Jefferson, launch 3101 and launch 3102 acquired Reson 7125 multibeam echo sounder (MBES) soundings and sound velocity profiles. Sea bed samples were collected by NOAA Ship Thomas Jefferson. Vessel configurations, equipment operation and data acquisition and processing were consistent with specifications described in the DAPR.

## B.2 Quality Control

### B.2.1 Crosslines

Crossline comparison was completed using a difference surface created in CARIS Bathy DataBase. Mainscheme data generally agreed well, with maximum disagreement occurring near the outer beams. Normal differences were within 20cm, with maximums in the outer beams of 50cm. The computed statistics of the difference surface were: mean: 0.05m, stdev: 0.16m. Data was also compared visually using standard deviation surfaces and no large standard deviations were discovered.

### B.2.2 Uncertainty

The following survey specific parameters were used for this survey:

<b>Measured</b>	<b>Zoning</b>
0.102meters	0meters

*Table 6: Survey Specific Tide TPU Values*

Hull ID	Measured - CTD	Measured - MVP	Surface
S222, 3101, 3102	4meters/second	1.0meters/second	0.2meters/second

*Table 7: Survey Specific Sound Speed TPU Values*

CO-OPS provided tide uncertainty values for the TCARI surface and the VDATUM solution as part of the Total Propagated Uncertainty (TPU) calculation performed within CARIS HIPS and SIPS. 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 99.86% of nodes in the final surface. Areas that did not meet IHO Order1 were located in rocky areas with high standard deviation values.

### B.2.3 Junctions

H12299 was compared with H12298 from the same project.

The following junctions were made with this survey:

Registry Number	Scale	Year	Field Unit	Relative Location
H12298	1:10000	2011	NOAA Ship THOMAS JEFFERSON	N

*Table 8: Junctioning Surveys*

### H12298

The junction with H12298 was compared using a difference surface in CARIS Bathy DataBase. The surveys had a mean difference of 0.1m and a standard deviation of 0.2m

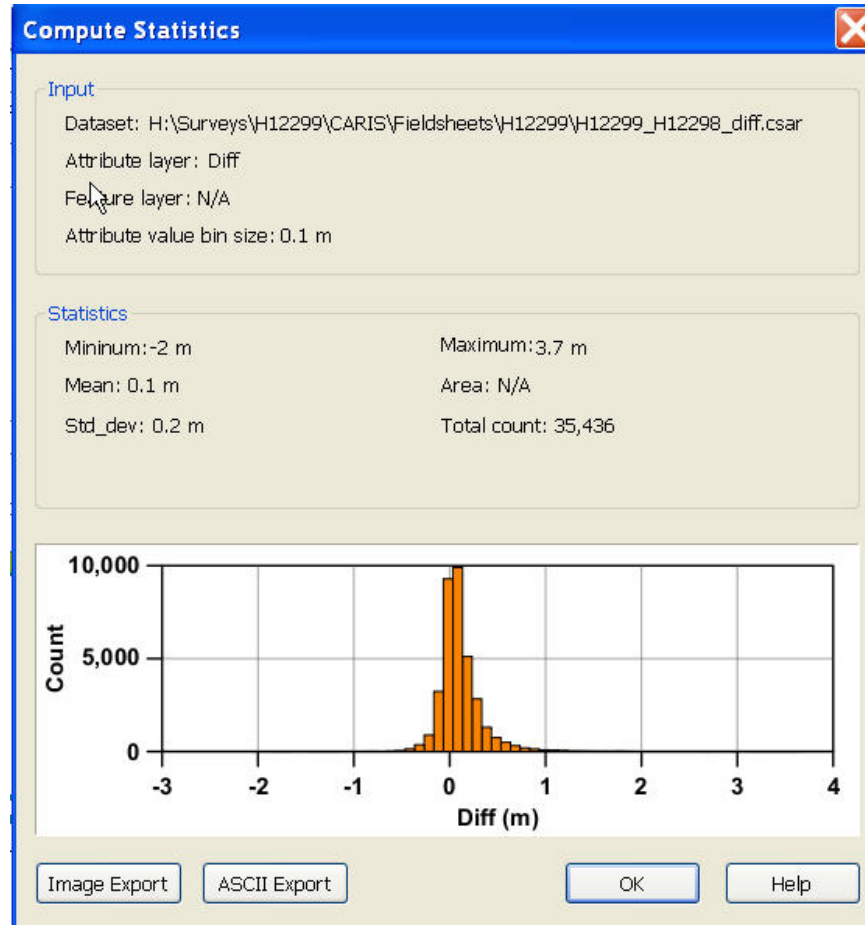


Figure 3: Summary of the H12299 and H12298 difference surface

## 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.2.5.1 None 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: On survey launch 3101 and 3102, sound speed data was collected with a CTD approximately every two hours. The ship used a Moving Vessel Profiler with casts occurring approximately every 20 minutes. Sound speed profiles are analyzed for data quality, concatenated and then applied to the bathymetry using the "nearest in distance within time - 2 hours" mode in Caris HIPS and SIPS.

No abnormal sound velocity issues were present in the data.

## B.2.8 Coverage Equipment and Methods

99.47% of nodes in H12299 met the density requirements (Figure 4).

The finalized surface has 2541159 nodes with 107550371 soundings.

### Object Detection Coverage

**99.47% | PASS**

Nodes with 5 or more soundings **99.47%** (2527567/2541159).

Sounding count average is **42.32** soundings per node.

Sounding count mode is **23** soundings per node.

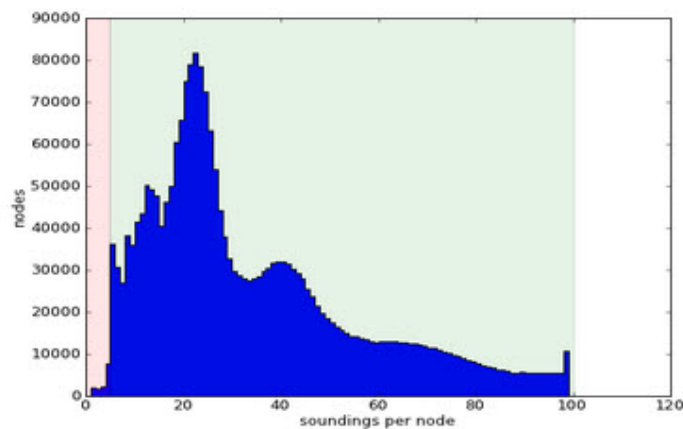


Figure 4: H12299 8m Combined Surface Density Analysis

## B.2.9 Systematic Errors

All of the lines listed as DN284 were acquired on October 12, 2011 which is actually DN285. No data was logged for this project on October 11th or 13th. To reduce the possibility of corrupting or misnaming files it was decided to leave the entire day's files as DN284 which include sound velocity, true heave and HDCS line data.

## B.3 Echo Sounding Corrections

### B.3.1 Corrections to Echo Soundings

HDCS sounding data were reduced to mean lower low (MLLW) primarily with a VDATUM solution. Twenty percent of lines were processed to TCARI when issues with ERS processing did not allow for an SBET solution. See the Vertical and Horizontal Control Section for more information.

### B.3.2 Calibrations

All sounding systems were calibrated as detailed in the DAPR.

## B.4 Backscatter

Backscatter was logged as an s7k file and submitted to the IOCM processing center and directly to NGDC, and is not included with the data submitted to AHB.

## B.5 Data Processing

### B.5.1 Software Updates

The following software updates occurred after the submission of the DAPR:

Manufacturer	Name	Version	Service Pack	Hotfix	Installation Date	Use
Caris	HIPS/SIPS	7.1	2	2	08/24/2012	Processing
Caris	Bathy DataBASE	3.2	2	7	07/26/2012	Processing

*Table 9: Software Updates*

The following Feature Object Catalog was used: NOAAProfileField.xml

### B.5.2 Surfaces

The following CARIS surfaces were submitted to the Processing Branch:

Surface Name	Surface Type	Resolution	Depth Range	Surface Parameter	Purpose
H12299_MB_50cm_MLLW_1of5_Final	CUBE	0.5 meters	0 meters - 20 meters	NOAA_0.5m	Object Detection
H12299_MB_1m_MLLW_2of5_Final	CUBE	1 meters	19 meters - 30 meters	NOAA_1m	Object Detection
H12299_MB_2m_MLLW_3of5_Final	CUBE	2 meters	28 meters - 40 meters	NOAA_2m	Complete MBES
H12299_MB_4m_MLLW_4of5_Final	CUBE	4 meters	36 meters - 80 meters	NOAA_4m	Complete MBES
H12299_MB_8m_MLLW_5of5_Final	CUBE	8 meters	72 meters - 160 meters	NOAA_8m	Complete MBES
H12299_MB_8m_MLLW_Combined	CUBE	8 meters	0 meters - 160 meters	N/A	Complete MBES

*Table 10: CARIS Surfaces*

See Appendix V for the email that discusses why the 1m resolution ODMB grid was extended to a depth of 30m instead of 20m.

## C. Vertical and Horizontal Control

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

### 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:

<b>Station Name</b>	<b>Station ID</b>
Newport, RI	8452660
New London, CT	8461490
Montauk, NY	8510560

*Table 11: NWLON Tide Stations*

The following subordinate water level stations were established for this survey:

<b>Station Name</b>	<b>Station ID</b>
Orient Harbor	8511671

*Table 12: Subordinate Tide Stations*

<b>File Name</b>	<b>Status</b>
H:\Surveys\H12299\CARIS \Tide\Verified\8452660.tid	Verified Observed
H:\Surveys\H12299\CARIS \Tide\Verified\8461490.tid	Verified Observed
H:\Surveys\H12299\CARIS \Tide\Verified\8510560.tid	Verified Observed
H:\Surveys\H12299\CARIS \Tide\Verified\8511671.tid	Verified Observed

*Table 13: Water Level Files (.tid)*

<b>File Name</b>	<b>Status</b>
H:\Surveys\H12299\CARIS \Tide\B363TJ2011_final.tc	Final

*Table 14: Tide Correctors (.zdf or .tc)*

A request for final approved tides was sent to N/OPS1 on 11/22/2011. The final tide note was received on 01/06/2012.

Non-Standard Vertical Control Methods Used:

VDatum

Ellipsoid to Chart Datum Separation File:

H:\Surveys\H12299\CARIS\SBET\H12299\_SBET.txt

Crosslines with and without SBETs applied were compared using Pydro's Time Series Comparison tool. Stats were: N,mean,stdev = 146343, 0.066, 0.049. See Appendix V for the interim deliverable memo and resulting VDATUM approval memo.

The majority, 80%, of H12299 was processed to the ellipsoid and used the OPs provided VDATUM separation model to reduce data to MLLW. Of the lines that were processed to VDATUM, the following had errors in the HIPS RMS error data application:

Launch 3101: DN 289 Lines 800\_1324, 801\_1341, DN 287 Lines 800\_1902, 804\_1939

S-222: DN 306 Line 492\_2157, DN 293 Line 344\_1618, DN 256 Lines 392\_1303, 907\_0400, DN 257 Line 372\_0231, DN 259 Line 486\_0745 and DN 284 Line 531\_1941.

The remaining 20% of lines from H12299 did not have GPS tides applied and instead were processed with TCARI tides:

Launch 3101: DN 287 Time 1350-1654, DN 298 Time 1514-2002, DN 312 Time 1226-1350, 2004-2013

Launch 3102: DN 313, DN 314 Time 1749-2007

S-222: DN 258 Time 1338-2254, DN 264 Time 0635-1012, DN 266 Line 504\_0036, DN 287 Time 1807-1908, DN 290 Line 412\_1518, DN 292 Line 450\_2047, DN 296 Time 1433-2029, DN 314 Time 1638-2006

## **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:

<b>HVCR Site ID</b>	<b>Base Station ID</b>
XMTS	XMTS
MOR5	MOR5
NCDU	NCDU
ACU5	ACU5
ACU6	ACU6
NYRH	NYRH
CTMA	CTMA
CTGU	CTGU
CTGR	CTGR
URIL	URIL

*Table 15: CORS Base Stations*

The following DGPS Stations were used for horizontal control:

<b>DGPS Stations</b>
Sandy Hook, NJ (286kHz)
Moriches, NY (293 kHz)

*Table 16: 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
13209	1:40000	26	08/2011	09/11/2012	09/01/2012
13212	1:20000	39	06/2010	09/11/2012	09/01/2012

*Table 17: Largest Scale Raster Charts*

#### 13209

The survey generally agreed well with charted depths, with certain areas of discrepancy occurring where sand waves have shifted over time. See ENC US5MA22M Discussion Below.

#### 13212

The survey generally agreed well with charted depths, with certain areas of discrepancy occurring where sand waves have shifted over time. See ENC US5CN42M Discussion Below.

#### 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?
US5MA22M	1:40000	20	07/13/2012	09/06/2012	NO
US5CN42M	1:20000	7	06/25/2012	08/24/2012	NO

*Table 18: Largest Scale ENCs*

#### US5MA22M

The survey generally agreed well with charted depths, with certain areas of discrepancy occurring where sand waves have shifted over time:

The charted 90ft contour in the southeast corner of H12299 sheet limits has migrated as much as 1020m to the west due to shifting sand waves (Figure 5).

There is a charted 89ft sounding located at 41-10-07.49N, 71-51-21.76W that seems to be erroneous. It is only on the ENC, not on the raster chart 13209. H12299 data disproves this charted ENC depth and contours (Figure 6).

The charted 120ft contour in the northeast corner of H12299 has migrated about 640 meters to the south (Figure 7).

A new 60ft contour exists in the center of the southern limits of H12299 along with some 60ft contour migration to its north (Figure 8).

The charted 30ft contour located in the southwest corner of H12299 sheet limits has migrated almost 300m to the north (Figure 9).

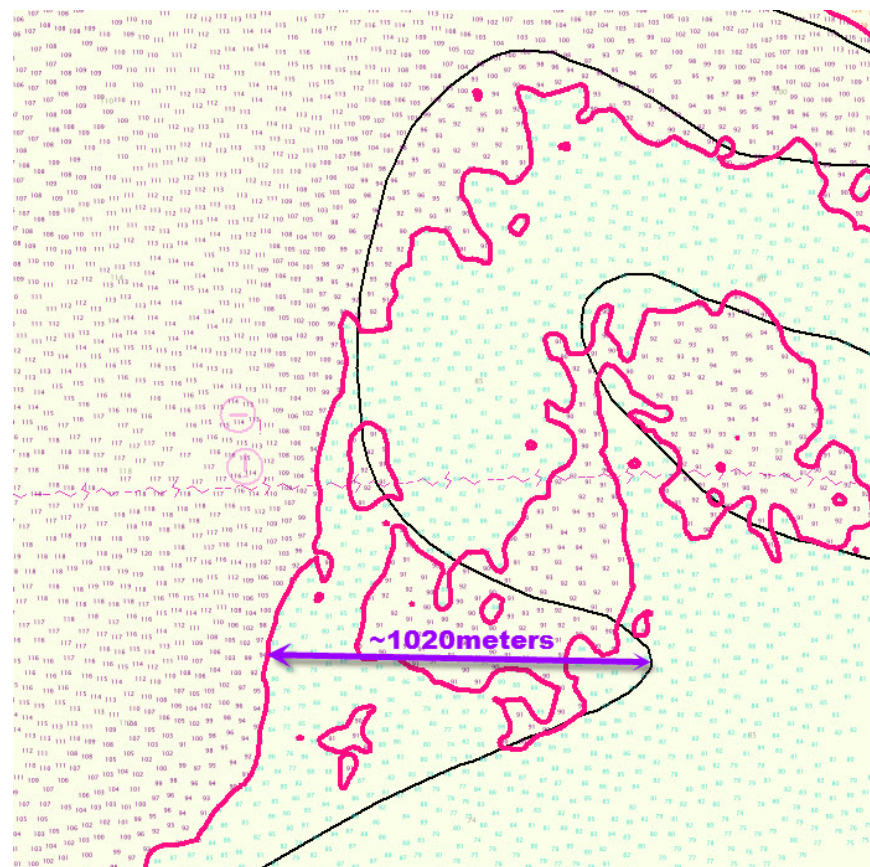


Figure 5: ENC US5MA22M Charted 90ft Contour (black) shown with H12299 Survey Contours (Pink)

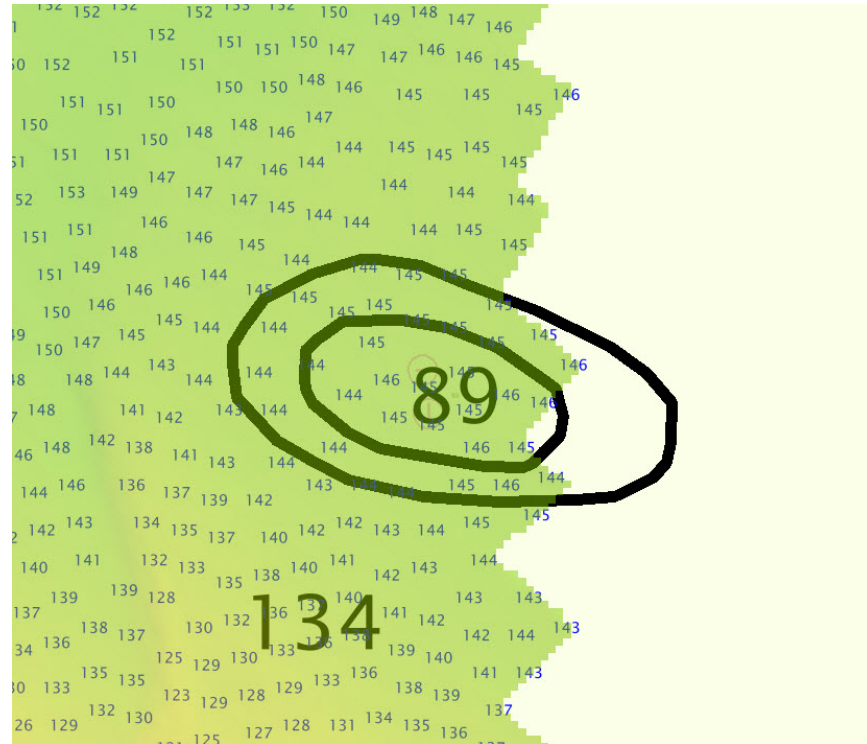


Figure 6: ENC US5MA22M Charted 89ft Sounding disproved by H12299 survey data

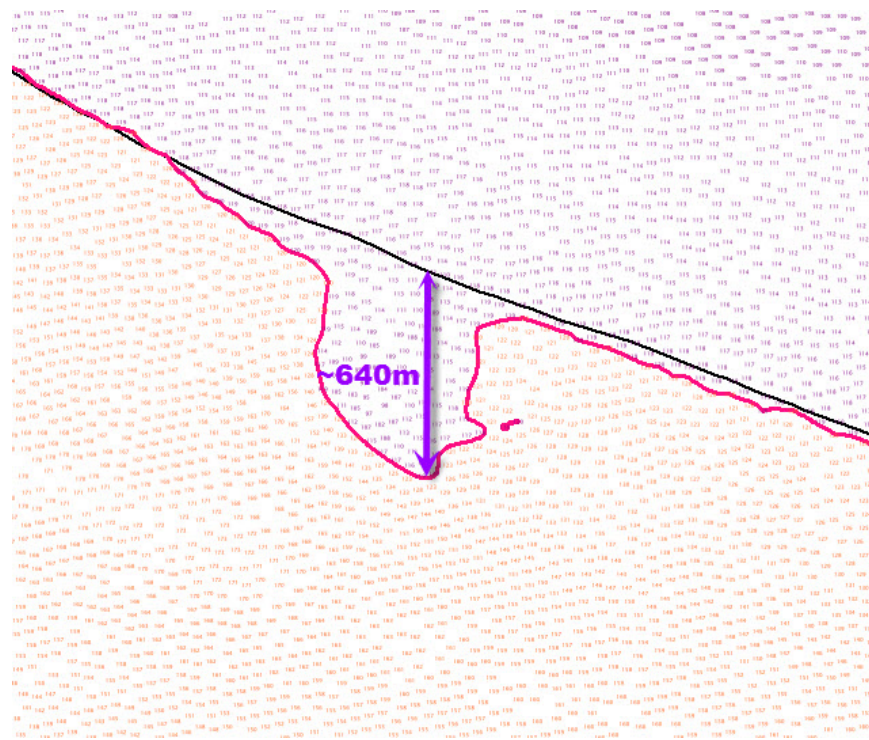


Figure 7: ENC US5MA22M Charted 120ft Contour (black) shown with H12299 Survey contour (pink)



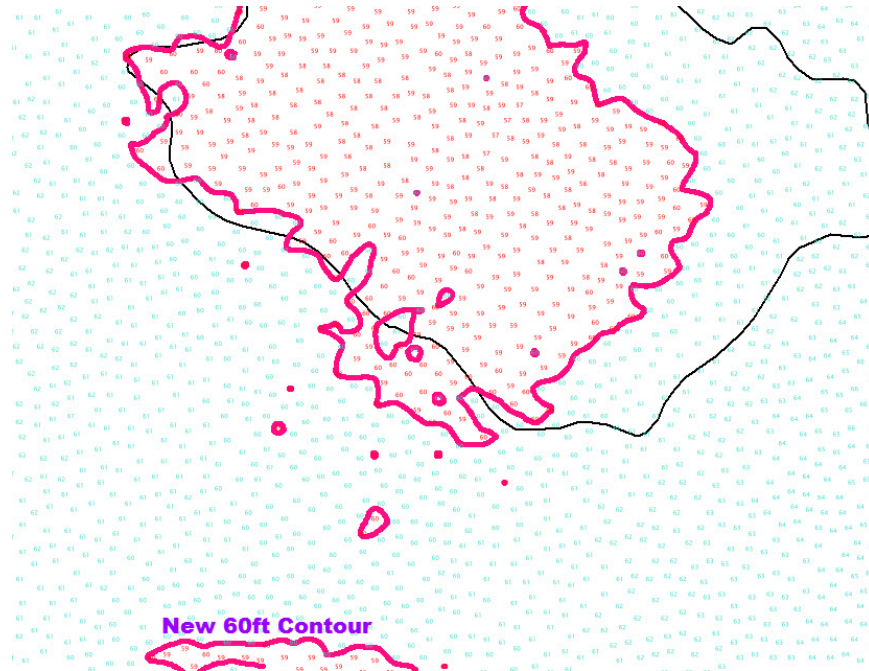


Figure 8: ENC US5MA22M Charted 60ft contour (black) shown with H12299 survey contour (pink)

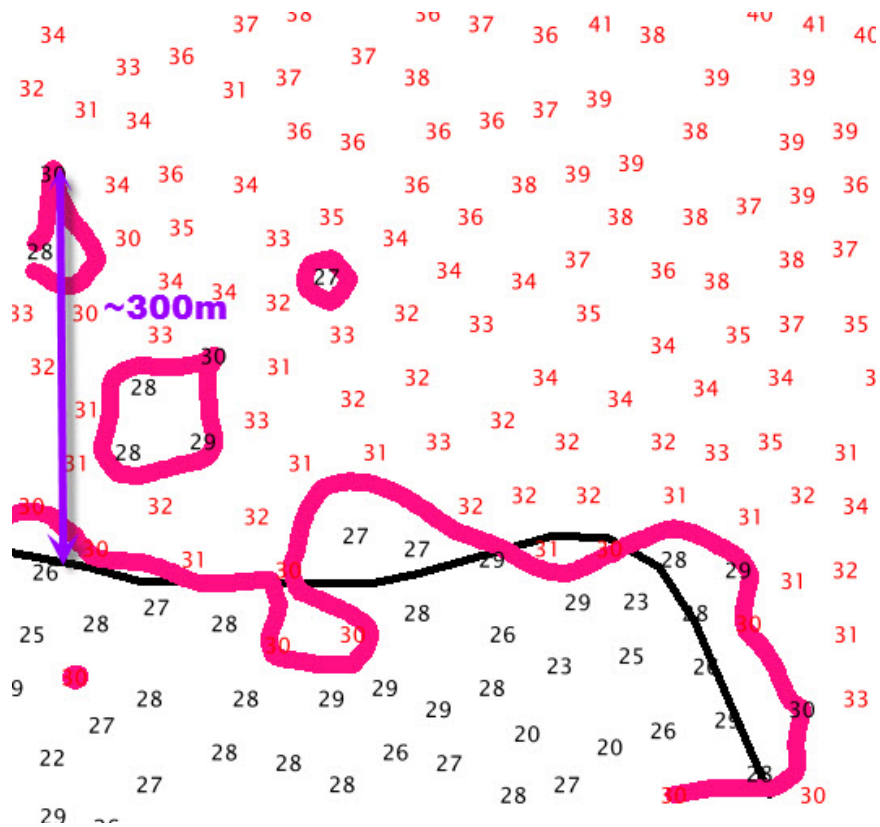


Figure 9: ENC US5MA22M Charted 30ft Contour (black) shown with H12299 survey contour (pink)  
US5CN42M

The survey generally agreed well with charted depths, with certain areas of discrepancy occurring where sand waves have shifted over time:

The charted 60ft contour and bullet contour in the northwest corner of sheet H12299 has shifted about 500m to the east due to sand wave migration (Figure 10).

The charted 60ft contour in the northwest corner of sheet H12299 has shifted about 170m to the east and two new 60ft bullet contours are present (Figure 11).

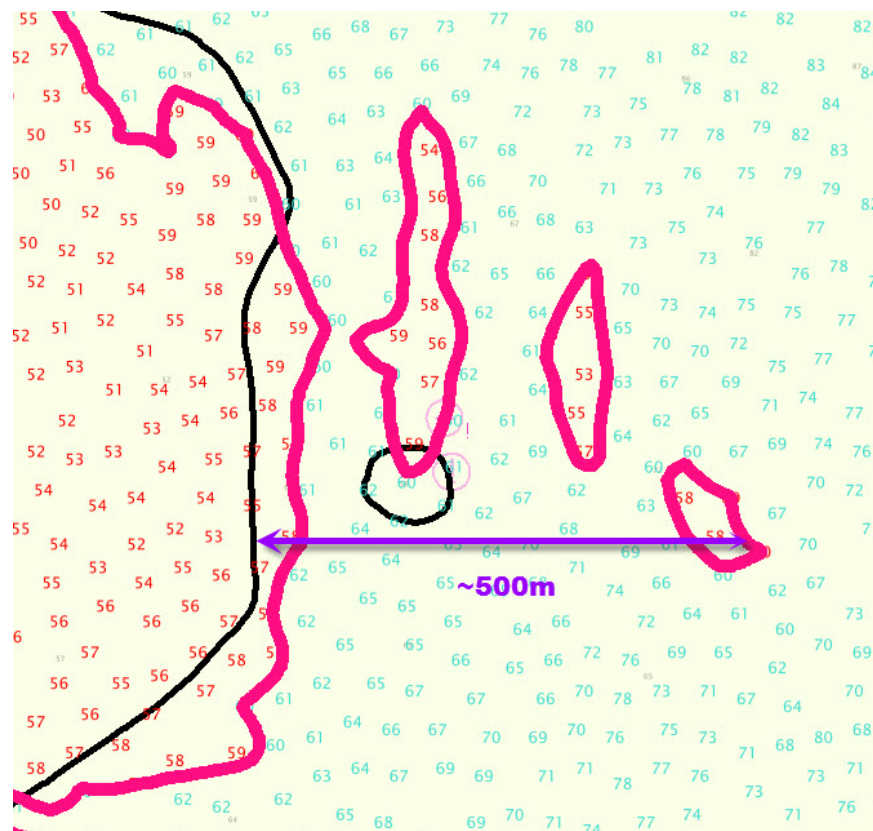


Figure 10: US5CN42M Charted 60ft Contour (black) shown with H12299 survey contours (pink)



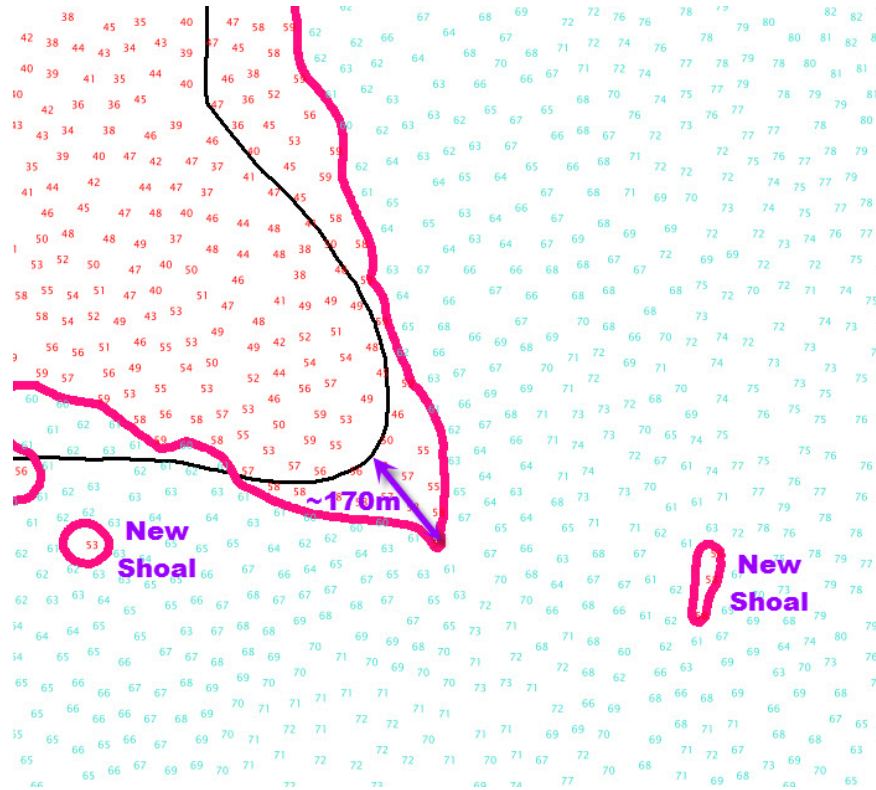


Figure 11: US5CN42M Charted 60ft Contour (black) shown with H12299 survey contours (pink)

### D.1.3 AWOIS Items

Number of AWOIS Items Addressed: 2

Number of AWOIS Items Not Addressed: 0

AWOIS item #7412, a charted 35 foot sounding, was disproved but depths as shallow as 34 feet do exist approximately 180 meters SSW of the charted 35 foot depth (see figure 12).

AWOIS item #7410 had conflicting information in the AWOIS database existing both as a shoal and an obstruction. The instructions for investigation were to determine if AWOIS 7410 was an obstruction or a shoal and to find the least depth. It was determined that AWOIS 7410 is a shoal, though the charted 63ft sounding has been disproved by current survey data. It is recommended to update the AWOIS database and update the chart with current survey sounding data (see figure 13).

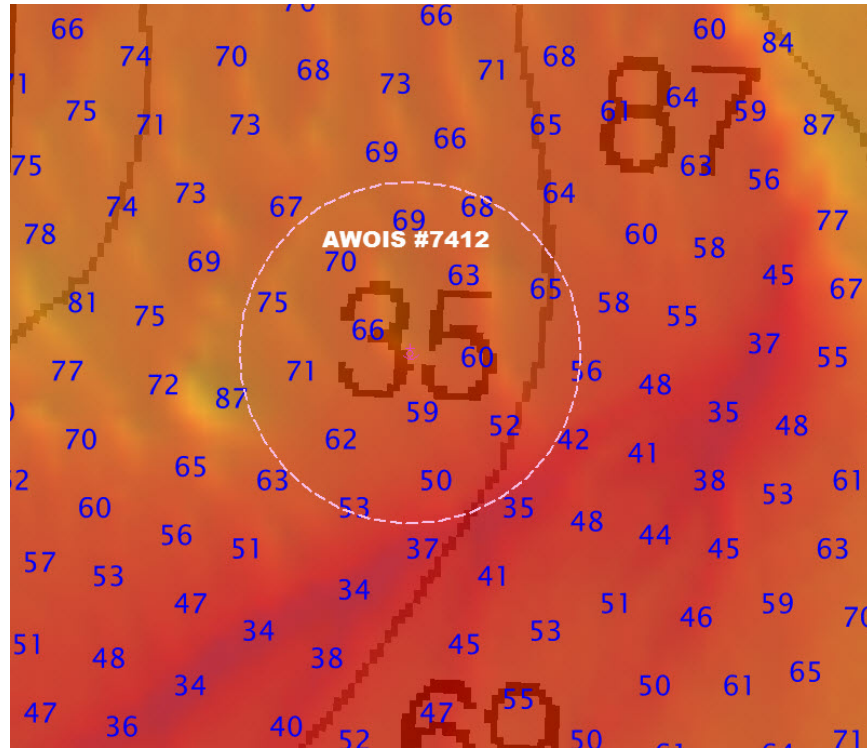


Figure 12: AWOIS 7412: Charted 35 ft sounding disproved by survey H12299

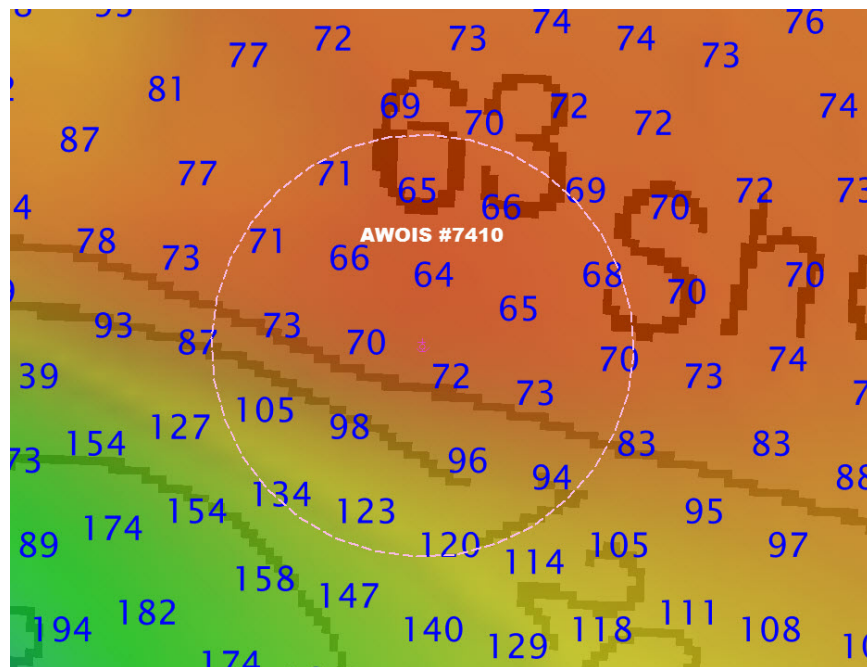
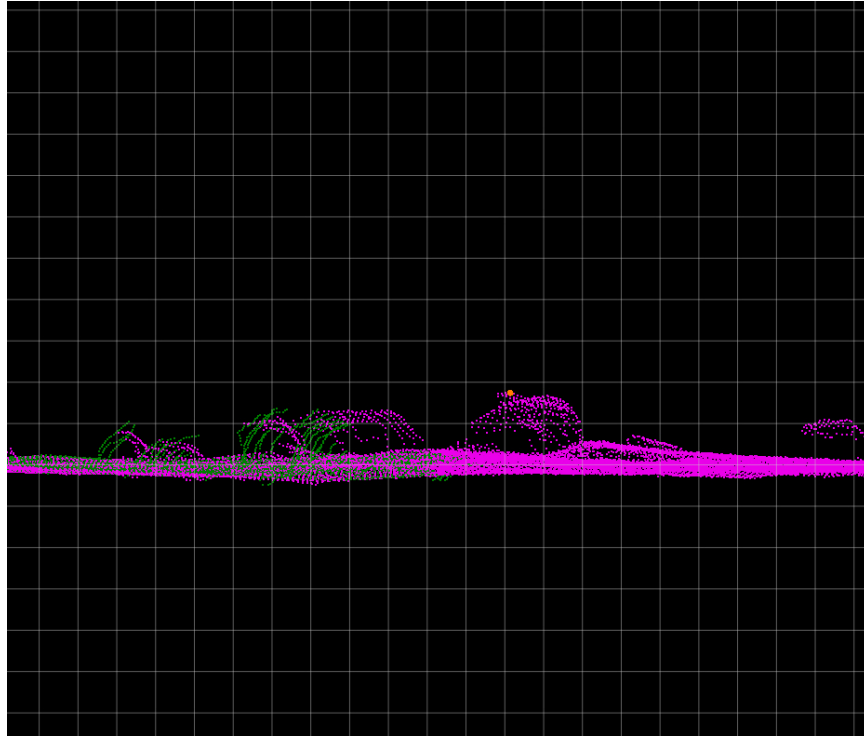


Figure 13: AWOIS 7410: Charted 63 ft sounding disproved by survey H12299

#### D.1.4 Charted Features

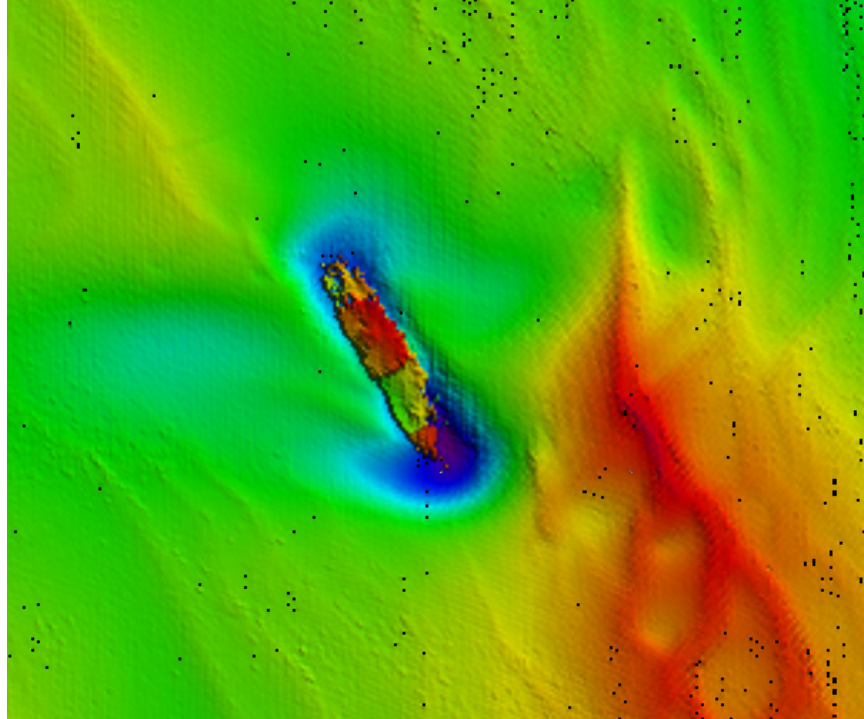
A reported 53 ft obstruction at 41-07.96'N, 071-57.06'W has been found to be a 56ft underwater rock. The hydrographer recommends updating the charted obstruction with a 56ft UWTROC (Figure 14).



*Figure 14: 56ft Rock*

#### D.1.5 Uncharted Features

A wreck was discovered by this survey at location 41-11.49'N, 071-57.46'W. The 33 meter long wreck with a least depth of 123ft is laying keel down (Figure 15).



*Figure 15: Wreck discovered by H12299*

### **D.1.6 Dangers to Navigation**

The following DTON reports were submitted to the processing branch:

<b>DTON Report Name</b>	<b>Date Submitted</b>
H12299 DtoN Report	2012-09-19

*Table 19: DTON Reports*

Danger to Navigation Report is included in Appendix I of this report.

### **D.1.7 Shoal and Hazardous Features**

A 17ft shoal area was found in the vicinity of Cerberus Shoal. Charted least depths of 19ft should be updated with current survey data (Figure 16).

Several shoal rocks and shifted sand waves throughout survey H12299 are not represented on the chart. These rocks and shoals were not considered DtoNs due to local vessel traffic considerations but are included in the final feature file. See submitted H12299\_FFF.000 for all feature information.

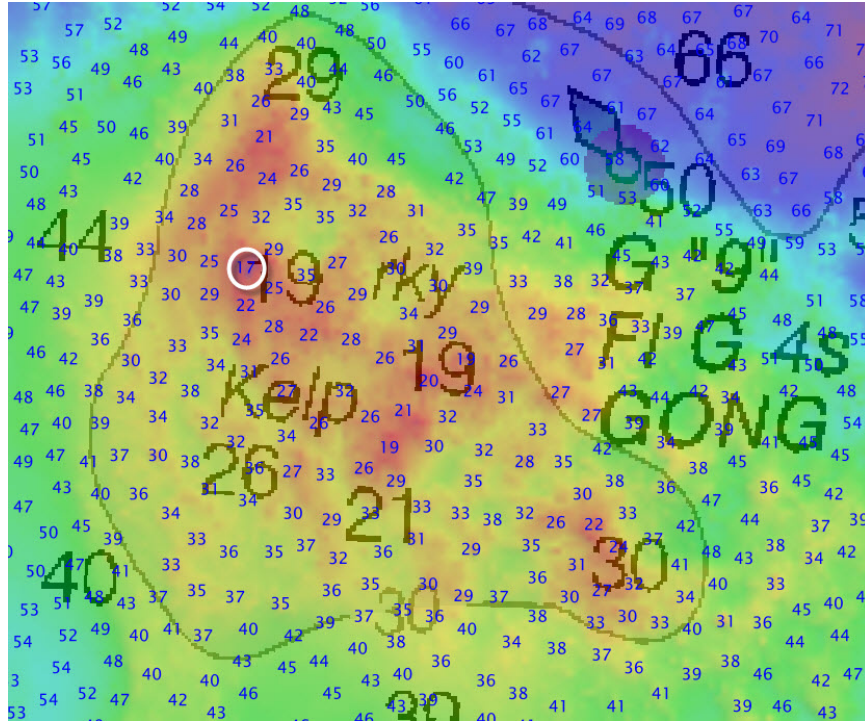


Figure 16: Surveyed 17ft soundings near charted 19ft soundings.

### D.1.8 Channels

No USACE maintained channels exist within the limits of H12299

## D.2 Additional Results

### D.2.1 Shoreline

There were no shoreline verification requirements for H12299

### 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

One ATON exists within the extents of the sheet at position 41-10-27.5N, 71-57-03.9W. The navigational aid was found to be accurately charted in both description and position.

**D.2.4 Overhead Features**

There are no bridges or overhead cable crossings within the limits of H12299

**D.2.5 Submarine Features**

A submarine cable runs across H12299 limits. No cables were observed in this survey so any which do exist are assumed to be properly buried. The hydrographer has no recommendations regarding these.

**D.2.6 Ferry Routes and Terminals**

There are no ferry routes within the limits of H12299

**D.2.7 Platforms**

There are no platforms within the limits of H12299

**D.2.8 Significant Features**

Part of a restricted anchorage area is included in the sheet limits. No significant obstructions were found and it is recommended to retain the anchorage area but update included depths as per survey results.

**D.2 Construction and Dredging**

No construction or dredging was observed within the limits of H12299




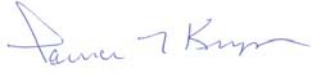

## E. Approval Sheet

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.

The Data Acquisition and Processing Report for OPR-D304-TJ-11 is submitted separately and contains additional information relevant to this survey.

Approver Name	Approver Title	Approval Date	Signature
LT William Winner, NOAA	Field Operations Officer	10/02/2012	
CDR Lawrence T. Krepp, NOAA	Commanding Officer	10/03/2012	
ENS Andrew Clos, NOAA	Sheet Manager	10/02/2012	 Andrew Clos 2012.10.02 19:04:48 -04'00'

## F. Table of Acronyms

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



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

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


APPENDIX I  
TIDE NOTE AND GRAPHICS



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NATIONAL OCEAN SERVICE  
Office of Coast Survey  
Silver Spring, Maryland 20910-3282

August 27, 2012

MEMORANDUM FOR: CDR Larry Krepp, NOAA  
Commanding Officer, NOAA Ship *Thomas Jefferson*

FROM: Jeffrey Ferguson   
Chief, Hydrographic Surveys Division

SUBJECT: Vertical Datum Transformation Technique,  
OPR-B363-TJ-11, Block Island Sound, NY

Hydrographic survey H12299 is approved for vertical reduction to chart datum, Mean Lower Low Water (MLLW), using the NOAA Vertical Datum Transformation (VDatum) (<http://vdatum.noaa.gov>) derived separation (SEP) model provided on the project CD/DVD.

Approval of VDatum, in lieu of the NOAA Center for Operational Oceanographic Products and Services (CO-OPS) TCARI package as per the Project Instructions, is based on your recommendation and the review of comparison results you included in your memo from August 20, 2012, Subject "H12299 Interim Deliverables".

The results of the data analysis show that ellipsoidally referenced survey (ERS) techniques with VDatum used as the vertical datum reducer to MLLW in this area indicate a better internal consistency of the survey data and produces final sounding values that meet or exceed horizontal and vertical specifications for hydrographic surveys.

The comparison techniques are in line with the procedures that were developed and approved as part of the CSDL Ellipsoidally Referenced Survey (ERS) project. These procedures and deliverables were added to the April 2012 edition of the NOS Hydrographic Surveys Specifications and Deliverables Manual and Field Procedures Manual documents.

You shall include a description of your ERS processing procedures and the comparisons you conducted between ERS and traditional tides in the appropriate Descriptive Report (DR), Horizontal and Vertical Control Report and/or Data Acquisition and Processing Report.

This memo and your memo, shall be included in the supplemental correspondence Appendix of the DR.





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

**TIDE NOTE FOR HYDROGRAPHIC SURVEY**

**DATE :** January 4, 2012

**HYDROGRAPHIC BRANCH:** Atlantic

**HYDROGRAPHIC PROJECT:** OPR-B363-TJ-2011

**HYDROGRAPHIC SHEET:** H12299

**LOCALITY:** Vicinity of Cerberus Shoal, Block Island Sound

**TIME PERIOD:** September 12 - November 15, 2011

**TIDE STATION USED:** Newport, RI 845-2660

Lat. 41° 30.3' N Long. 71° 19.6' W

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

**HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE:** 1.099 meters

**TIDE STATION USED:** New London, CT 846-1490

Lat. 41° 21.7' N Long. 72° 05.4' W

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

**HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE:** 0.838 meters

**Tide STATION USED:** Montauk, NY 851-0560

Lat. 41° 2.9' Long. 71° 57.6' W

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

**HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE:** 0.683 meters

**Tide STATION USED:** Orient, Orient Harbor, NY 851-1671

Lat. 41° 8.2' Long. 72° 18.4' W

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

**HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE:** 0.827 meters

**REMARKS: RECOMMENDED GRID**

Please use the TCARI grid "B363TJ2011\_final.tc" as the final grid for project OPR-B363-TJ-2011, during the time period between September 12 and November 15, 2011.

**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).

**Note 2:** For survey track lines from Nov. 15, in Pydro, go to TIDES>CO-OPS Office Tools>Tide Station Info and turn off residuals at Orient Harbor. TCARI will automatically download water level data at the 3 remaining NWLON stations and generate tide correctors.

**Gerald Hovis**

Digitally signed by Gerald Hovis  
DN: cn=Gerald Hovis, o=Center for Operational Oceanographic Products and Services,  
ou=NOAA/NOS/CO-OPS/OD/PSB, email=gerald.hovis@noaa.gov, c=US  
Date: 2012.01.05 14:30:17 -0500

CHIEF, PRODUCTS AND SERVICES BRANCH

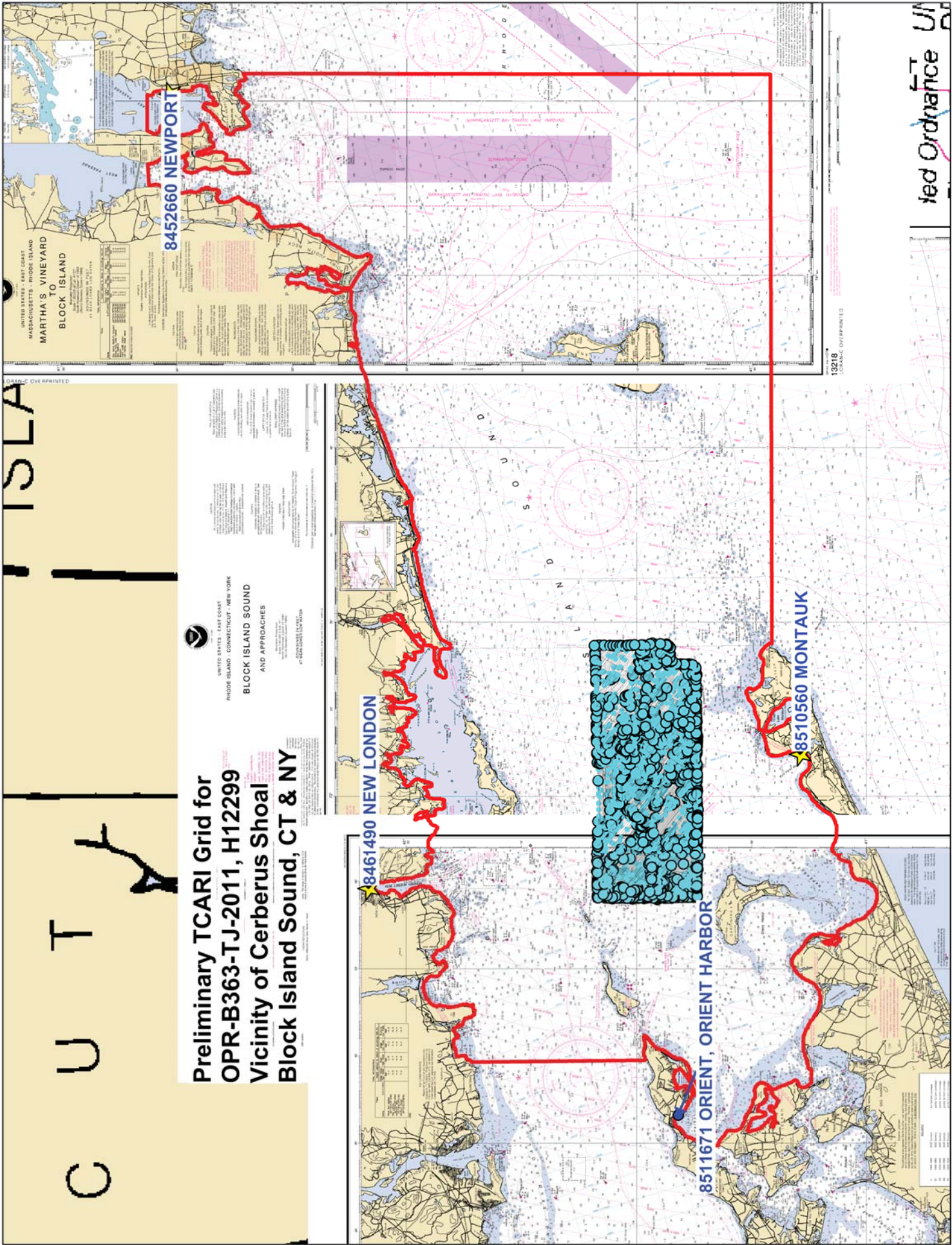




# C U T A I S L A

**Preliminary TCARI Grid for  
OPR-B363-TJ-2011, H12299  
Vicinity of Cerberus Shoal  
Block Island Sound, CT & NY**

UNITED STATES - EAST COAST  
RHODE ISLAND - CONNECTICUT - NEW YORK  
**BLOCK ISLAND SOUND  
AND APPROACHES**  
1:25,000  
NAD 83  
SOUNDINGS  
ENCLOSURE 1  
ENCLOSURE 2  
ENCLOSURE 3  
ENCLOSURE 4  
ENCLOSURE 5  
ENCLOSURE 6  
ENCLOSURE 7  
ENCLOSURE 8  
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ENCLOSURE 100



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](mailto:christiaan.vanwestendorp@noaa.gov)>

Atlantic Hydrographic Branch

NOAA OCS



From <Michael.Davidson@noaa.gov>



Sent Sunday, October 2, 2011 8:53 pm

To nos.coops.oetteam@noaa.gov

Cc co.thomas.jefferson@noaa.gov , chiefst.thomas.jefferson@noaa.gov , Kyle Ward <Kyle.Ward@noaa.gov> , James M Crocker <James.M.Crocker@noaa.gov> , Paul Turner <Paul.Turner@noaa.gov>

Subject Montauk, NY (8510560) data outage

Attachments 8510560\_data\_outage.jpg

5K

OET Team,

It has come to our attention that the station at Montauk, NY (851-0560) is experiencing an interruption in service. From the attached image, it appears that the interruption occurred on September 30th at approximately 1800 GMT. I called and spoke with the CORMS watch stander on duty, Mr Tim Gibson, this evening and he notified me that emails regarding the outage have been sent to the appropriate parties and that we should be hearing something soon.

I wanted to make contact and offer up our boat and personnel to assist in any way possible. Thomas Jefferson is currently surveying on OPR-B363-TJ-11 and one of our active survey sheets is near the Montauk site. We will be departing the area on the afternoon of Oct 4th and will return to the area on Oct 12th. If we can be of assistance with the Montauk station in anyway, please let me know.

Thank you for your time.

V/R,  
Mike

--

LT Michael C. Davidson  
Operations Officer  
NOAA Ship Thomas Jefferson  
ops.thomas.jefferson@noaa.gov  
757-647-0187 (ship's cell)  
808-434-2706 (ship's Iridium)

From <Michael.Davidson@noaa.gov>

Sent Monday, November 21, 2011 9:57 am

To nos.coops.hpt@noaa.gov , nos.coops.oetteam@noaa.gov

Cc corey.allen@noaa.gov , Marc S Moser <Marc.S.Moser@noaa.gov> , ops.thomas.jefferson@noaa.gov , co.thomas.jefferson@noaa.gov , paul.turner@noaa.gov , Loren Evory <Loren.Evory@noaa.gov>

Subject OPR-B363-TJ-11 Removals from HHL

HPT and OET,

NOAA Ship Thomas Jefferson has completed survey operations on project OPR-B363-TJ-11. Survey operations concluded on 15 NOV 2011. The stations listed below may be removed from the HHL at your convenience:

Station Number - Station Name

845-2660 - Newport, RI

846-1490 - New London, CT

851-0560 - Montauk, NY

851-1671 - Orient, Orient Harbor, NY

Closing levels and station removal of the Orient station occurred on 15 NOV 2011 and was performed by ENS Loren Evory (CO-OPS FOD, Chesapeake, VA, and personnel from NOAA Ship Thomas Jefferson.

Thank you for your support during our survey operations on OPR-B363-TJ-11

V/R,

Mike

--

LT Michael C. Davidson

Operations Officer

NOAA Ship Thomas Jefferson

439 W York St

Norfolk, VA 23510

757-647-0187 (ship's cell)

808-434-2706 (ship's Iridium)

301-713-7782 (VOIP)

ops.thomas.jefferson@noaa.gov

From David Wolcott <David.Wolcott@noaa.gov>

Sent Monday, November 21, 2011 3:01 pm

To Michael.Davidson@noaa.gov

Cc NOS.COOPS.HPT@noaa.gov , nos.coops.oetteam@noaa.gov , Corey.Allen@noaa.gov , Marc S Moser <Marc.S.Moser@noaa.gov> , OPS.Thomas.Jefferson@noaa.gov , CO.Thomas.Jefferson@noaa.gov , Paul.Turner@noaa.gov , Loren Evory <Loren.Evory@noaa.gov>

Subject Re: OPR-B363-TJ-11 Removals from HHL

Hi Mike,

thanks for the information. We made the changes to the Hot List.

Thanks,  
David

On 11/21/2011 9:57 AM, Michael.Davidson@noaa.gov wrote:

> HPT and OET,

>

> NOAA Ship Thomas Jefferson has completed survey operations on project OPR-B363-TJ-11. Survey operations concluded on 15 NOV 2011. The stations listed below may be removed from the HHL at your convenience:

>

> Station Number - Station Name

> 845-2660 - Newport, RI

> 846-1490 - New London,CT

> 851-0560 - Montauk, NY

> 851-1671 - Orient Harbor, NY

>

> Closing levels and station removal of the Orient station occurred on 15 NOV 2011 and was performed by ENS Loren Evory (CO-OPS FOD, Chesapeake, VA, and personnel from NOAA Ship Thomas Jefferson.

>

> Thank you for your support during our survey operations on OPR-B363-TJ-11

>

> V/R,

> Mike

>

> --

> LT Michael C. Davidson

> Operations Officer

> NOAA Ship Thomas Jefferson

> 439 W York St

> Norfolk, VA 23510

> 757-647-0187 (ship's cell)

> 808-434-2706 (ship's Iridium)

> 301-713-7782 (VOIP)

> ops.thomas.jefferson@noaa.gov

--

David Wolcott

Oceanographic Division

Center for Operational Oceanographic Products and Services

NOS/ NOAA

p: (301) 713-2890 x 153



Michael Davidson <michael.davidson@noaa.gov>

---

## Final Tide Notes for OPR-B363-TJ-2011, H12298 and H12299

1 message

---

**Cristina Urizar** <Cristina.Urizar@noaa.gov>

Fri, Jan 6, 2012 at 11:02 AM

To: \_OMAO MOA CO Thomas Jefferson <CO.Thomas.Jefferson@noaa.gov>, \_OMAO MOA OPS Thomas Jefferson <OPS.Thomas.Jefferson@noaa.gov>, \_OMAO MOA Tides Thomas Jefferson <Thomas.Jefferson.Tides@noaa.gov>  
Cc: "\_NOS.CO-OPS.HPT" <NOS.COOPS.HPT@noaa.gov>, Corey Allen <Corey.Allen@noaa.gov>, Richard Brennan <Richard.T.Brennan@noaa.gov>

Dear CDR Krepp,

The zipped file "H12298\_H12299.zip" containing the final tide notes for project OPR-B363-TJ-2011, Registry Nos. H12298 and H12299, is attached. The Final TCARI grid, "B363TJ2011\_final.tc," has been posted to the FTP site located at [ftp://tidepool.nos.noaa.gov/pub/outgoing/HPT/Smooth\\_Tides\\_TCARI/B363TJ2011/](ftp://tidepool.nos.noaa.gov/pub/outgoing/HPT/Smooth_Tides_TCARI/B363TJ2011/) and can also be found on the Sharepoint site.

The following files are included in the zipped file (H12298\_H12299.zip) posted on Sharepoint:

B363TJ2011\_final.tc

H12298.pdf

H12299.pdf

SOP#\_3.2.3.11\_K5\_How\_to\_Run\_

TCARI\_for\_Hydrographic\_Survey\_Vessels\_and\_Processing\_Branches.pdf

Tide station data for Newport (845-2660), New London (846-1490), Montauk (851-0560) and Orient, Orient Harbor (851-1671) may be retrieved via the Internet from the CO-OPS SOAP web services at <http://opendap.co-ops.nos.noaa.gov/axis/text.html> . The \*.pdf file has the tide note in Adobe Acrobat format.

Please note that for both H12298 and H12299, surveying was conducted after Orient, Orient Harbor (851-1671) was removed. With regards to H12298, for survey track lines from Nov. 15-16 and with regards to H12299 for survey track lines from Nov. 15, in Pydro, go to TIDES>CO-OPS Office Tools>Tide Station Info and turn off residuals at Orient Harbor. TCARI will automatically download water level data at the 3 remaining NWLON stations and generate tide correctors.

Please call me at [727-209-5954](tel:727-209-5954) if there are any problems retrieving the files.

Thank you,  
Cristina



**H12298\_H12299.zip**

3159K

## B363 Grid size

[Back to messages](#) |

Peter Lewit

1:51 PM

To peter Lewit, Matt VanHoy, ...

Reply ▾

From: **Peter Lewit** (peter.lewit@hotmail.com)

Sent: Wed 2/29/12 1:51 PM

To: peter Lewit (Peter.Lewit@noaa.gov); Matt VanHoy (matt.vanhoy31@gmail.com); Kimberly Glomb (fishcntr2@aol.com); Frankie Daniel (Frankie.A.Daniel@noaa.gov)

Cc: OPS.Thomas.Jefferson@noaa.gov

As per conversation with FOO( from telephone conversation w/Jim Crocker)

the requirement for object detection was 0-20m. For the deep draft vessels (60 feet) it was deemed prudent

by Thomas Jefferson to increase the object detection to 30 meters.

Using the formulas the modified grid sizes for OBDT and coverage should be as follows.

0-20m .5 OBDT

19-30 1.0m OBDT

28-40 2m Cov

36-80m 4m Cov

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[Move to](#) ▾ [Categories](#) ▾ |



Michael Davidson <michael.davidson@noaa.gov>

---

**RE: Survey Submission Structure for passback surveys**

1 message

---

**Castle Parker** <castle.e.parker@noaa.gov>  
To: Michael Davidson <michael.davidson@noaa.gov>

Thu, May 10, 2012 at 3:23 PM

Mike,

I concur. Speaking for AHB, I will accept this deviation from the deliverable specifications. I think that it's important for the directory structure to be consistent at the time of survey submission. Please include this accepted spec deviation in DR Appendix 5.

Thanks for your consideration with this subject and I completely agree with you.

Regards,

Gene

**From:** Michael Davidson [mailto:michael.davidson@noaa.gov]  
**Sent:** Thursday, May 10, 2012 3:01 PM  
**To:** Castle Parker  
**Subject:** Survey Submission Structure for passback surveys

Gene,

TJ has a few surveys that were passed back for additional work. In the next several weeks, we will be submitting surveys from 2009, 2010, 2011, followed soon there after by current surveys from 2012. In an attempt to make things consistent, I would like to submit all the surveys according to the 2012 Specs and Deliverables. Before doing this, I wanted to check with you to see if this would be considered non-compliant with S&D for the prior year surveys.

If AHB agrees with our proposal to submit all surveys in the 2012 Directory Structure, please email back concurrence and I will include this email thread in Appendix V for documentation.

Thank you for your time.

V/R,

Mike

--

LT Michael C. Davidson

## APPENDIX III

### SURVEY FEATURES REPORT

DToNs - one

AWOIS - two

Wrecks - one

Maritime Boundaries - none

# H12299\_DTON Report

**Registry Number:** H12299  
**State:** New York  
**Locality:** Block Island Sound  
**Sub-locality:** Vicinity of Cerberus Shoal  
**Project Number:** OPR-B363-TJ-11  
**Survey Date:** 09/12/2011 to 11/15/2011

## Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
13209	26th	08/01/2011	1:40,000 (13209_1)	USCG LNM: 1/17/2012 (1/24/2012) CHS NTM: None (12/30/2011) NGA NTM: 4/11/1998 (2/4/2012)
13205	38th	02/01/2007	1:80,000 (13205_1)	[L]NTM: ?
12354	42nd	12/01/2006	1:80,000 (12354_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 #01 - 19ft rock	Rock	6.00 m	41° 07' 24.0" N	072° 05' 33.7" W	---



## 1.1) DTON #01 - 19ft rock

### DANGER TO NAVIGATION

#### Survey Summary

**Survey Position:** 41° 07' 24.0" N, 072° 05' 33.7" W  
**Least Depth:** 6.00 m (= 19.70 ft = 3.283 fm = 3 fm 1.70 ft)  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh) [None] ; TVU (TPEv) [None]  
**Timestamp:** 2011-319.00:00:00.000 (11/15/2011)  
**Dataset:** H12299\_DTON.000  
**FOID:** US 0002102332 00001(02260020143C0001)  
**Charts Affected:** 13209\_1, 12354\_1, 13205\_1, 12300\_1, 13006\_1, 5161\_1, 13003\_1

#### Remarks:

UWTROC/remrks: Least depth of rock found with Reson 7125 MB

#### Feature Correlation

Source	Feature	Range	Azimuth	Status
H12299_DTON.000	US 0002102332 00001	0.00	000.0	Primary

#### Hydrographer Recommendations

Add rock

#### Cartographically-Rounded Depth (Affected Charts):

19ft (13209\_1, 12354\_1, 13205\_1)  
 3 ¼fm (12300\_1, 13006\_1, 13003\_1)  
 6.0m (5161\_1)

#### S-57 Data

**Geo object 1:** Underwater rock / awash rock (UWTROC)  
**Attributes:** EXPSOU - 2:shoaler than range of depth of the surrounding depth area  
 NINFOM - Add rock  
 QUASOU - 6:least depth known  
 SORDAT - 20111115

SORIND - US,US,graph,H12299

TECSOU - 3:found by multi-beam

VALSOU - 6.004 m

WATLEV - 3:always under water/submerged

## Office Notes

SAR: DTON #01 located at survey position with object detection multibeam. Feature has been applied to chart as 19ft rock. Recommend to update feature.

COMPILATION: Concur with conditions. Delete charted dangerous rock with least depth of 19 feet from chart. Add dangerous rock, least depth 19.698 feet in the present survey position.

### Feature Images

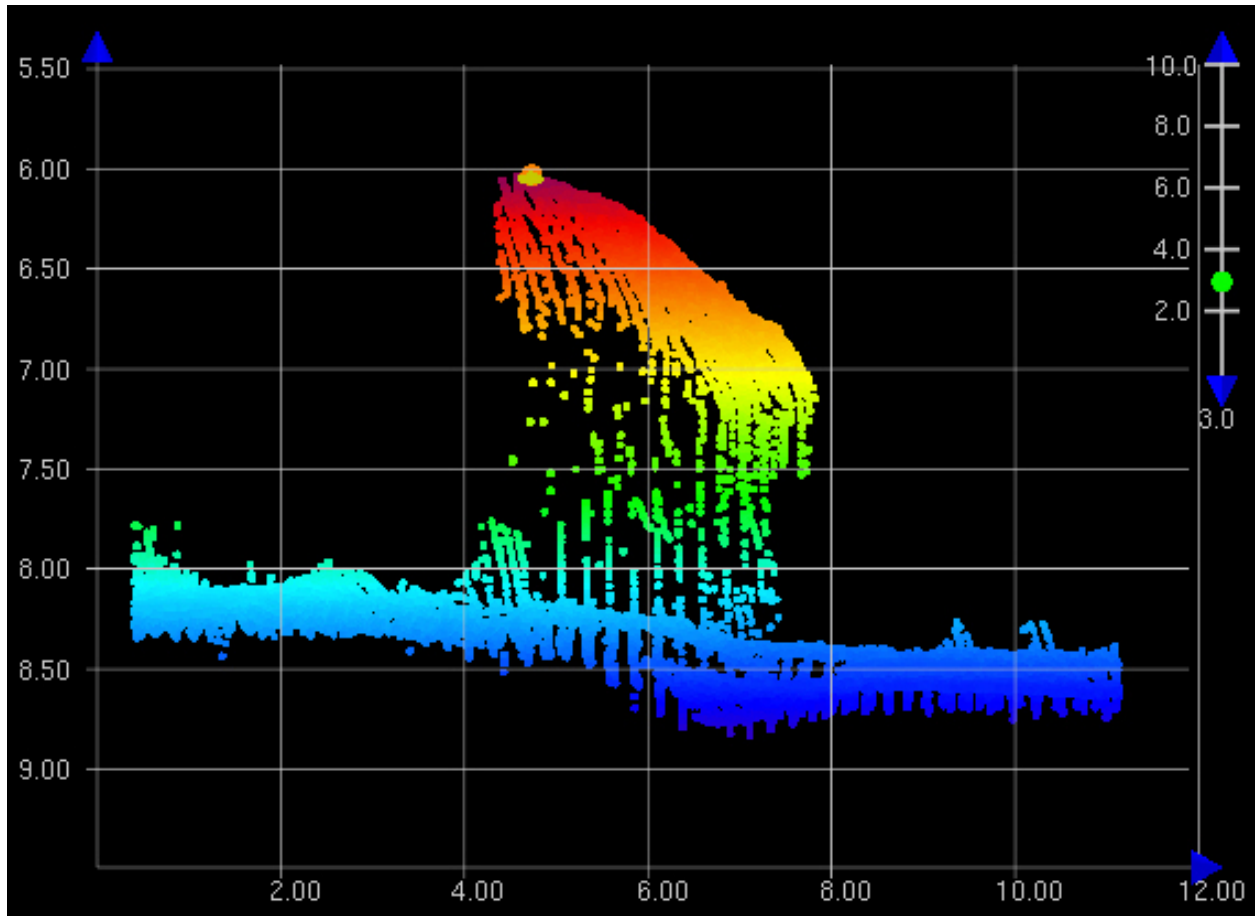


Figure 1.1.1

# H12299\_AWOIS Items

**Registry Number:** H12299  
**State:** New York  
**Locality:** Block Island Sound  
**Sub-locality:** Vicinity of Cerberus Shoal  
**Project Number:** OPR-B363-TJ-11  
**Survey Date:** 9/12/11 - 11/15/11

## Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
13212	38th	11/01/2008	1:20,000 (13212_1)	[L]NTM: ?
13209	26th	08/01/2011	1:40,000 (13209_1)	USCG LNM: 1/17/2012 (1/24/2012) CHS NTM: None (12/30/2011) NGA NTM: 4/11/1998 (2/4/2012)
13205	38th	02/01/2007	1:80,000 (13205_1)	[L]NTM: ?
12354	42nd	12/01/2006	1:80,000 (12354_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 #7410 Charted 63 foot depth and shoal notation	AWOIS	[no data]	[no data]	[no data]	---
1.2	AWOIS #7412 - Charted 35 foot depth	AWOIS	[no data]	[no data]	[no data]	---

## 1.1) AWOIS #7410 Charted 63 foot depth and shoal caution area

### No Primary Survey Feature for this AWOIS Item

**Search Position:** 41° 11' 04.0" N, 072° 01' 43.3" W  
**Historical Depth:** 19.20 m  
**Search Radius:** 100  
**Search Technique:** S2,DI,ES,##  
**Technique Notes:** [None]

#### History Notes:

SURVEY REQUIREMENT COMMENTS

IF ITEM IS AN OBSTRUCTION, IDENTIFY AND DETERMINE LEAST DEPTH. ì

IF ITEM IS A SHOAL, DEVELOP WITH ECHO SOUNDER TO THE FULL EXTENT ì

AND LEAST DEPTH.

#### HISTORY

CL539/61--U.S. HYDROGRAPHIC OFFICE; REPORT FROM COMMANDING ì  
OFFICER OF USS DIABLO CONCERNING A SHOAL SOUNDING RECORDED WHILE ì  
OPERATING IN BLOCK ISLAND SOUND; 63 FT. SOUNDING IN LAT ì  
41-11-10N, LONG 72-02-18W.

CL1038/61--PRELIMINARY FIELD DATA; DANGEROUS SHOAL COVERED BY ì  
64 FT AT MLW DISCOVERED 3.62 NM, 167 DEGREES TRUE FROM RACE ROCK ì  
LIGHTHOUSE; CLEARED BY 61 FT.; PREDICTED TIDES; IN LAT 41-11-05N, ì  
LONG 72-01-47W.

H8709/61--WAHI-20-1-61; 63 FT LEAST DEPTH WAS FOUND IN LAT ì  
41-11-03.6N, LONG 72-01-45W; CLEARED TO 61 FT. (ENTERED MSM 6/89)

### Survey Summary

**Charts Affected:** 13212\_1, 13209\_1, 13205\_1, 12300\_1, 13006\_1, 5161\_1, 13003\_1

#### Remarks:

Least depth found with MBES: 19.45 meters (63.8ft).

AWOIS obstruction is a shoal sounding.

## Feature Correlation

Source	Feature	Range	Azimuth	Status
OPR-B363-TJ-11 AWOIS	AWOIS # 7410	0.00	000.0	Primary

## Hydrographer Recommendations

Charted 64ft sounding and shoal designation.

Update shoal. Update AWOIS database. Chart sounding data as per survey data.

## S-57 Data

**Geo object 1:** Sounding (SOUNDG)  
**Attributes:** QUASOU - 1:depth known  
 SORDAT - 20111020  
 SORIND - US,US,graph,H12299  
 TECSOU - 3:found by multi-beam

## Office Notes

SAR: Charted 63ft shoal is AWOIS #7410, with 100m search radius. Recommend to update AWOIS feature with the 64ft designated sounding located 36m north, or alternative sounding selection.

COMPILATION: Concur with conditions. AWOIS item is the charted 63 foot shoal depth and Shoal notation. Present survey depths are 64-71 feet in the vicinity. Consider the shoal found. The least depth is 64 feet in Lat 41-11-05.0921N, Lon 72-01-43.2635W. Retain caution area and Shoal notation. Update chart with present survey data. Update AWOIS database to reflect present survey findings.

## Feature Images

## 1.2) AWOIS #7412 - Charted 35 foot shoal depth

### No Primary Survey Feature for this AWOIS Item

**Search Position:** 41° 09' 23.5" N, 072° 04' 49.2" W  
**Historical Depth:** 10.67 m  
**Search Radius:** 100  
**Search Technique:** sb, sss, mb  
**Technique Notes:** [None]

#### History Notes:

HISTORY

H4042/18-19--40 FT. SOUNDING FOUND IN LAT 41-09-24N, LONG 72-05-00W.

H6860WD/43--AREA OF 40 FT. SOUNDING WAS DRAGGED WITH AN EFFECTIVE DEPTH OF 35.5 FT.; HUNG UP FOR A BRIEF INTERVAL AND THEN SLIPPED OFF; EVALUATOR RECOMMENDED CHARTING 35 FT. GROUNDING IN LAT 41-09-23.1N, LONG 72-04-50.9W. (ENTERED MSM 6/89)

### Survey Summary

**Charts Affected:** 13212\_1, 13209\_1, 12354\_1, 13205\_1, 12300\_1, 13006\_1, 5161\_1, 13003\_1

#### Remarks:

35ft sounding not present in MBES data at current location.

AWOIS obstruction is a shoal sounding.

### Feature Correlation

Source	Feature	Range	Azimuth	Status
OPR-B363-TJ-11 AWOIS	AWOIS # 7412	0.00	000.0	Primary

### Hydrographer Recommendations

Remove charted 35 ft sounding.

Update shoal. Update AWOIS database. Chart sounding data as per survey data.

## S-57 Data

[None]

## Office Notes

SAR: Charted 35ft sounding is AWOIS #7412, with 100m search radius. Shoal depths in vicinity are associated with shifting sand waves. Recommend to update AWOIS feature with the 34ft designated sounding located 140m south, or 35ft designated sounding 105m southeast, or alternative sounding selection. Defer to AHB compilation team.

COMPILATION: Concur with conditions. AWOIS Item is the charted 35 foot shoal depth. Consider feature found. Shoal depth has migrated to the south and east. To the south the least depth is a 34 foot depth in Lat 41-09-18.945N, Lon 72-04-50.2838W. To the east the least depth is a 35 foot depth in Lat 41-09-22.5389N, Lon 72-04-41.2709W. Update chart with present survey data. Update AWOIS database to reflect present survey findings.

## Feature Images



# H12299\_WRECK Report

**Registry Number:** H12299  
**State:** New York  
**Locality:** Block Island Sound  
**Sub-locality:** Vicinity of Cerberus Shoal  
**Project Number:** OPR-B363-TJ-11  
**Survey Date:** 09/12/2011 to 11/15/2011

## Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
13209	26th	08/01/2011	1:40,000 (13209_1)	USCG LNM: 1/17/2012 (1/24/2012) CHS NTM: None (12/30/2011) NGA NTM: 4/11/1998 (2/4/2012)
13205	38th	02/01/2007	1:80,000 (13205_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	123ft non-dangerous Wreck	Wreck	37.71 m	41° 11' 29.8" N	071° 57' 27.9" W	---

## 1.1) 123ft non-dangerous Wreck

### Survey Summary

**Survey Position:** 41° 11' 29.8" N, 071° 57' 27.9" W  
**Least Depth:** 37.71 m (= 123.73 ft = 20.622 fm = 20 fm 3.73 ft)  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh) [None] ; TVU (TPEv) [None]  
**Timestamp:** 2011-319.00:00:00.000 (11/15/2011)  
**Dataset:** H12299\_Wrecks.000  
**FOID:** US 0002002505 00001(0226001E8E490001)  
**Charts Affected:** 13209\_1, 13205\_1, 12300\_1, 13006\_1, 5161\_1, 13003\_1

#### Remarks:

WRECKS/remrks: 40 meter long wreck laying keel down on sea floor, least depth found with MB

### Feature Correlation

Source	Feature	Range	Azimuth	Status
H12299_Wrecks.000	US 0002002505 00001	0.00	000.0	Primary

### Hydrographer Recommendations

Add wreck

#### Cartographically-Rounded Depth (Affected Charts):

123ft (13209\_1, 13205\_1)

20fm (12300\_1, 13006\_1, 13003\_1)

38m (5161\_1)

### S-57 Data

**Geo object 1:** Wreck (WRECKS)  
**Attributes:** CATWRK - 1:non-dangerous wreck  
 NINFOM - Add Wreck  
 QUASOU - 6:least depth known  
 SORDAT - 20111115  
 SORIND - US,US,graph,H12299  
 TECSOU - 3:found by multi-beam

VALSOU - 37.714 m

WATLEV - 3:always under water/submerged

### **Office Notes**

SAR: Feature located at survey position with object detection multibeam.

COMPILATION: Concur. Add non-dangerous wreck in present survey position.

## Feature Images

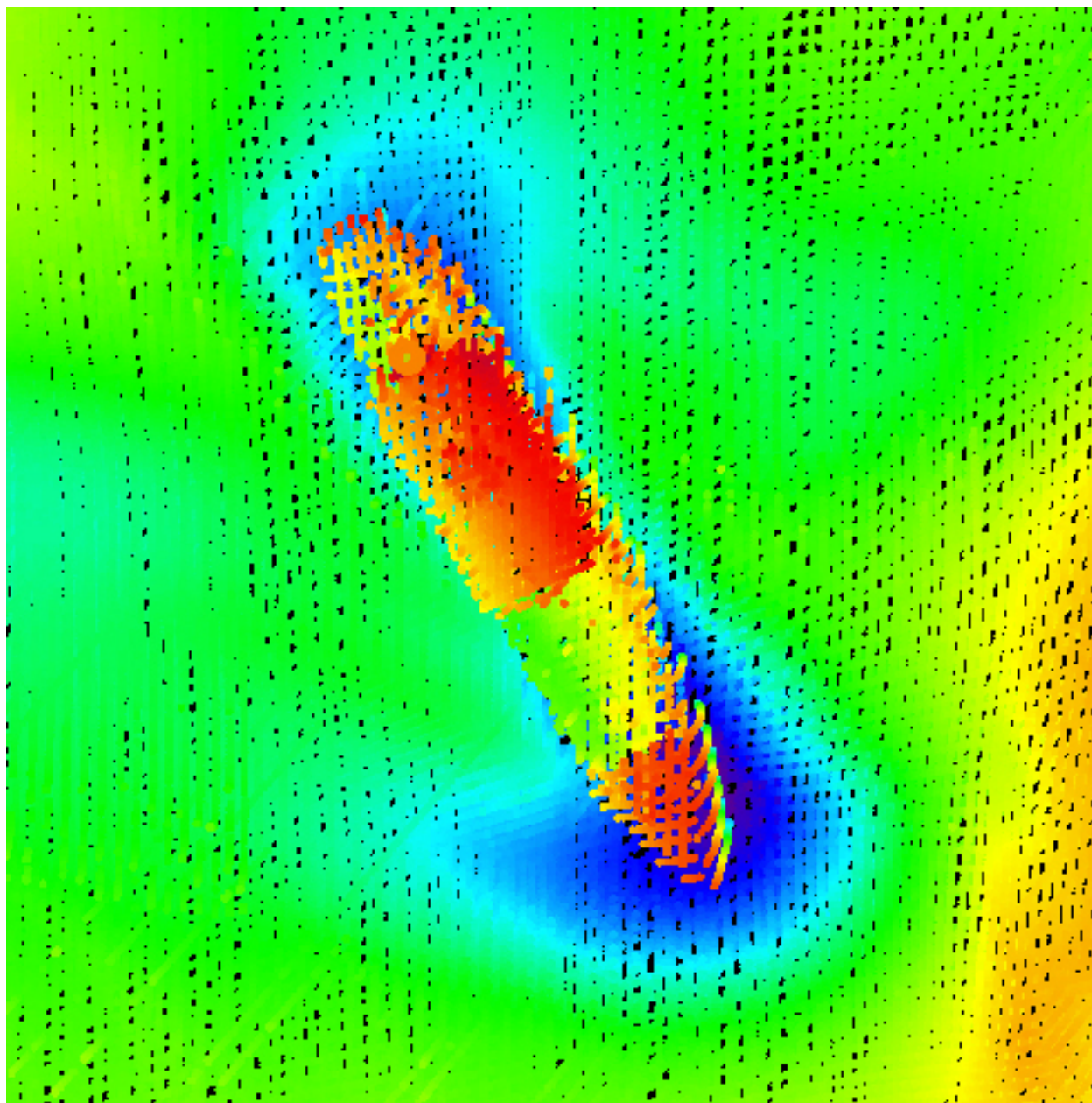


Figure 1.1.1

APPROVAL PAGE

H12299

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

- H12299\_DR.pdf
- Collection of depth varied resolution BAGS
- Processed survey data and records
- H12299\_GeoImage.pdf

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

Approved: \_\_\_\_\_

**LT Abigail Higgins**  
Chief, Atlantic Hydrographic Branch