

H12036

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: H12036

**LOCALITY**

State: New York  
General Locality: Approach to Ambrose Channel  
Sub-locality: South of Rockaway Point, Queens

**2009**

CHIEF OF PARTY  
CDR Shepard M. Smith  
NOAA

LIBRARY & ARCHIVES  
DATE

**HYDROGRAPHIC TITLE SHEET**

**H12036**

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: **Approach to Ambrose Channel**

Sub-Locality: **10 NM east of Sandy Hook Point**

Scale: **1:40,000** Date of Survey: **09/13/09 to 10/20/09**

Instructions Dated: **22 July, 2009** Project Number: **OPR-B310-TJ-09**

Vessel: **NOAA Ship *Thomas Jefferson***

Chief of Party: **CDR Shepard M. Smith , NOAA**

Surveyed by: ***Thomas Jefferson* Personnel**

Soundings by: **Reson 7125 multibeam echo sounder.**

Graphic record scaled by: **N/A**

Graphic record checked by: **N/A**

Protracted by: **N/A** Automated Plot: **N/A**

Verification by: ***Atlantic Hydrographic Branch***

Soundings in: **Meters at MLLW**

***H-Cell Compilation units in: Feet at MLLW***

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

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**Descriptive Report to Accompany Hydrographic Survey H12036**

Project OPR-B310-TJ-09  
 Approach to Ambrose Channel, NY  
 10 NM east of Sandy Hook Point  
 Scale 1:40,000  
 September 13<sup>th</sup> – October 20<sup>th</sup>, 2009  
**NOAA Ship *Thomas Jefferson***

**A. AREA SURVEYED**

This hydrographic survey was completed as specified by Hydrographic Survey Letter Instructions OPR-B310-TJ-09\*, dated 22<sup>nd</sup> July, 2009 and Change01v2 to Final Instructions OPR-B310-TJ-09 NY Harbor dated 8<sup>th</sup> September, 2009\*. *\*Submitted with original field records*

Northern limit	Southern limit	Eastern limit	Western limit
40°31'45"	40°23'46"	-073°44'36"	-073°49'37"

Data acquisition was conducted from September 13<sup>th</sup> – October 20<sup>th</sup>, 2009.

The purpose of the project is to provide accurate depths and object detection in the approaches to New York Harbor to support safe and efficient marine transportation in the region. This project covers approximately 32 square nautical miles of critical survey area as designated in NOAA *Hydrographic Survey Priorities, 2008 edition*.

	Linear Nautical Miles
LNM Single beam mainscheme only	N/A
LNM Multibeam mainscheme only	N/A
LNM Lidar mainscheme only	N/A
LNM Side Scan Sonar mainscheme only	N/A
Lineal nautical miles of any combination of the above techniques (SSS 200%, MBES)	696
LNM Crosslines singlebeam and multibeam combined	37.6
LNM Lidar Crosslines	N/A
LNM development lines non mainscheme	N/A
LNM shoreline/nearshore investigations	N/A
Number of Bottom Samples	9
Number of items investigated that required additional time/effort in the field beyond the above survey operations	N/A
Total number of square nautical miles	29

**Table 1: Hydrographic Survey Statistics**

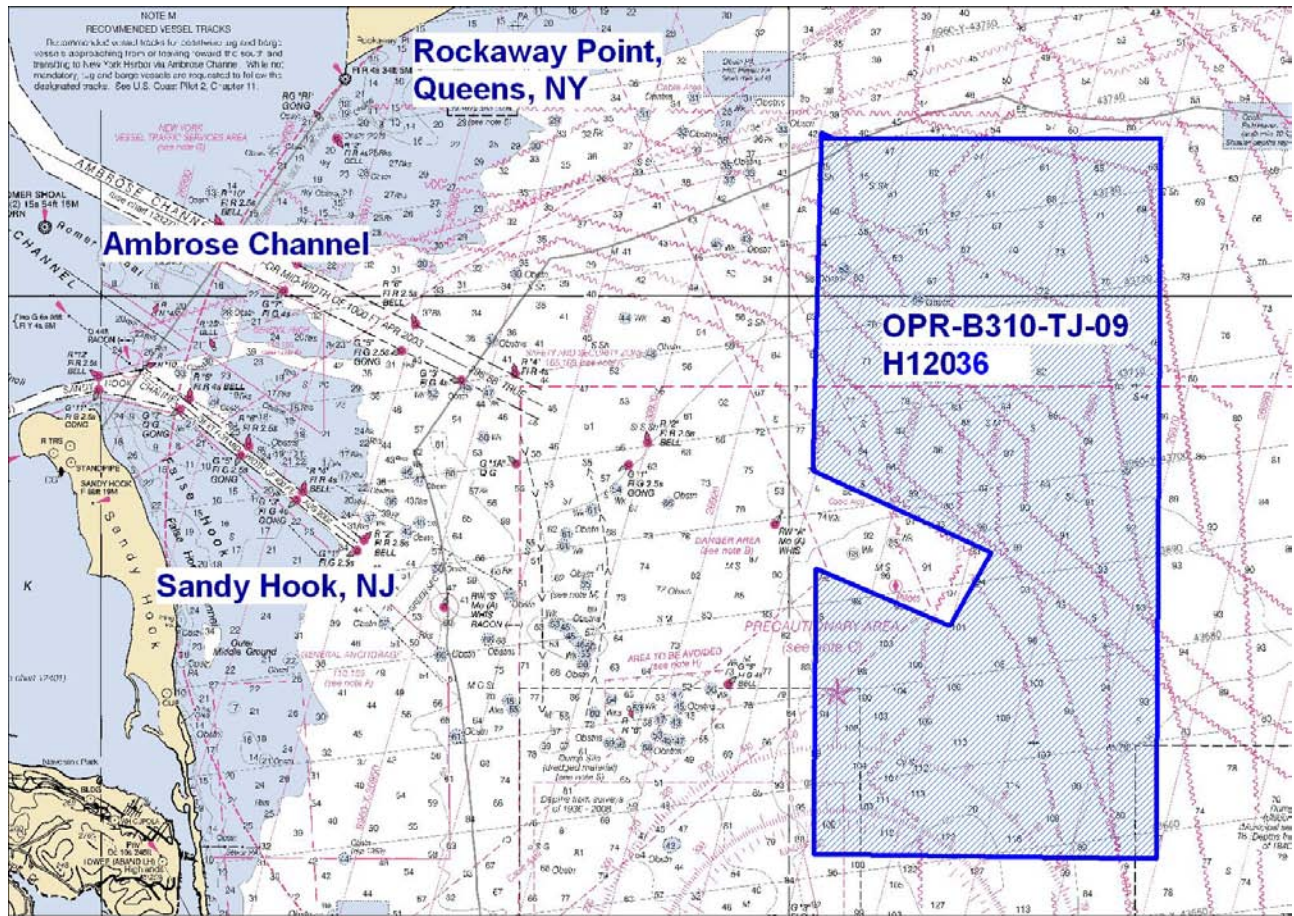


Fig. 1. H12136 Survey Area.

Calendar Date	Julian Day
12-September-09	255
13-September-09	256
14-September-09	257
15-September-09	258
16-September-09	259
21-September-09	264
22-September-09	265
23-September-09	266
7-October-09	280
8-October-09	281
9-October-09	282
19-October-09	292
20-October-09	293

Table 2: SSS/ MBES Acquisition Dates

## B. DATA ACQUISITION AND PROCESSING

Refer to *OPR-B310-TJ-09 Data Acquisition and Processing Report (DAPR)* \*\* for a complete description of data acquisition and processing systems, survey vessels, quality control procedures and data processing methods. Additional information to supplement sounding and survey data, and any deviations from the DAPR\* are included in this descriptive report. **\*\*Submitted with H-Cell Deliverable**

### B 1. EQUIPMENT AND VESSELS

Data were acquired by NOAA Ship *Thomas Jefferson*. NOAA Ship *Thomas Jefferson* acquired Reson 7125 multibeam echo sounder (MBES) soundings, Klein 5000 Side Scan Sonar (SSS) imagery 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*\*\*. **Concur with clarification, vessel configurations vary slightly from specifications described in the submitted DAPR.** **\*\*Submitted with H-Cell Deliverable**

### B 2. QUALITY CONTROL *See also H-Cell Report*

#### B 2.1 System Certification and Calibration

Refer to NOAA Ship *Thomas Jefferson's* *DAPR*\*\* and *Hydrographic Systems Readiness Report (HSRR)* \*\*\* for a complete description of system integration and initial calibration results for equipment and sensors used for this survey. **\*\*Submitted with H-Cell Deliverable \*\*\*HSSR Memo on file with Atlantic Hydrographic Branch**

#### B.2.2 Sounding Coverage

As per the Letter Instructions\*, this survey was conducted using 200% SSS coverage with concurrent MBES bathymetry with object detection MBES development over navigationally significant features. **\*Submitted with original field records**

A line of multibeam data near the north-east corner of the survey (line 211\_1937 from day 292) would not convert properly. As no significant contacts were found in the 200% side scan record in the area of this line the line was removed from the DTM. Another gap in the multi-beam record occurs near the south-eastern corner of the survey area. About 650 meters of the eastern end of line 120\_0003 from day 258 were not logged. Again there were no contacts observed in the side scan record. **Concur.**

#### B 2.3 Crosslines

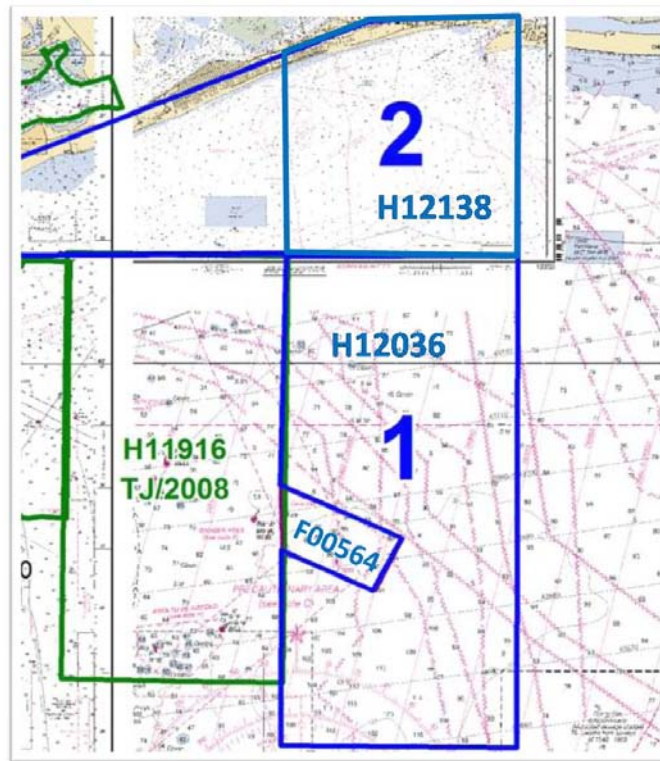
Multibeam echosounder cross-lines totaling 37.6 LNM, approximately 5.3% of the total multibeam hydrography, were acquired during the course of the survey. As per email dated 10 Sept, 2009 from AHB located in the Descriptive Report, Appendix 5\*\*\*, quality control was performed using the standard deviation layer of the survey's CUBE surface. Areas of unusually

high standard deviation were investigated and resolved in processing, except where caused by areas of high bathymetric relief or as described in Section 2.5 Systematic Errors. *Concur with clarification. Office processing defined the cross-line coverage to be 5.4% of the main scheme lines. \*\*\*Appended to this report*

**B 2.4 Junctions and Prior Surveys** *See also H-Cell Report*

The following contemporary surveys junction with H12036, see figure 2.

<b>Registry #</b>	<b>Scale</b>	<b>Date</b>	<b>Field Party</b>	<b>Junction side</b>
H11916	1:10,000	2008	Thomas Jefferson	West
F00561	1:10,000	2008	Thomas Jefferson	West
H12138	1:10,000	2009	Thomas Jefferson	North



**Figure 2: Junction Surveys.**

The soundings that junction between H11916 and H12036 agree within 50cm. The soundings that junction between F00561 and H12036 agree within 30cm. The soundings that junction between H12038 and H12036 agree within 1m. *Concur.*

## B 2.5 Systematic Errors

Near the center of the survey area there are some lines collected during day 282 which have what appears to be a tidal artifact, see figure 4. The applied tide file shows no obvious jumps or missed data. The artifact is also 0.3 meters or less under more than 30 meters depth and is within IHO order 1 standards. *Concur with clarification. The difference in standard deviation was due in part to a tidal offset and in part to an incorrect sound velocity profile.*

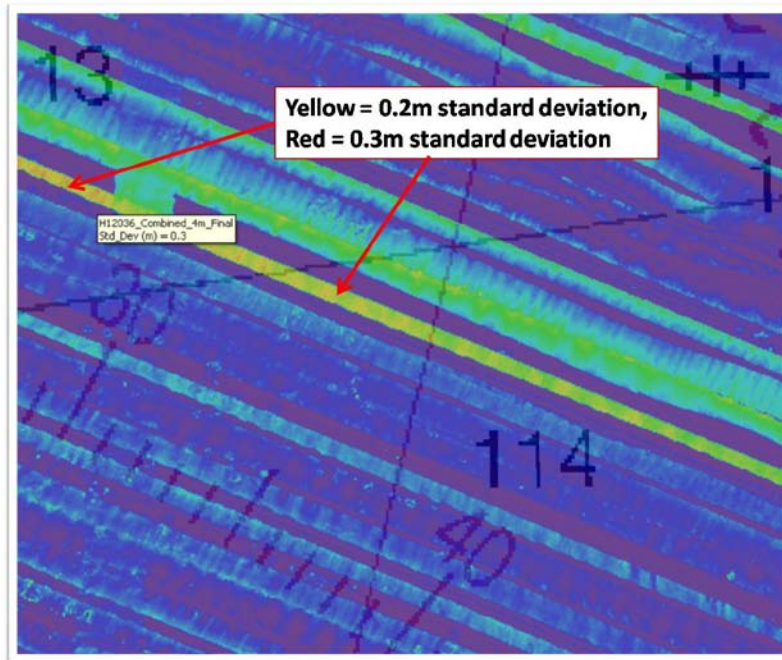
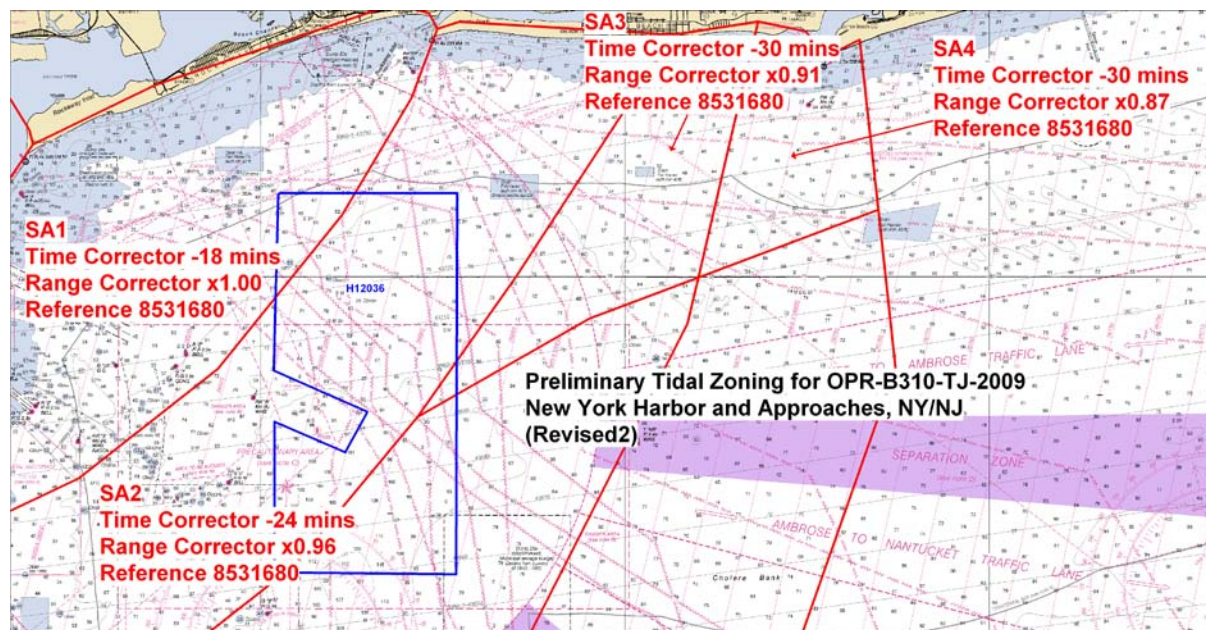


Figure 4: Standard Deviation Artifact.

## B 3. CORRECTIONS TO ECHO SOUNDING

HDCS sounding data were reduced to mean lower-low water (MLLW) using verified water levels from The Battery, NY (8518750), and Sandy Hook, NJ (8531680) using preliminary zoning accepted as final zoning and illustrated in Figure 3.





**Fig 3: Final Tide Zoning**

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

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

Sound velocity corrections for this survey were applied using the ship’s Moving Vessel Profiler (MVP) and Conductivity, Temperature and Depth (CTD) profiler. ***\*Submitted with original field records \*\*Submitted with H-Cell Deliverable***

**B 4. DATA PROCESSING *See also H-Cell Report***

**B 4.1 Total Propagated Error**

For the 2009 field season, Total Propagated Error (TPE) parameters for sound, speed, and tides are calculated separately for each project. The project-specific parameters for OPR-B310-TJ-09, Survey H12036 are as follows:

Project	Vessel	Tide Values Combined Measured & Zoning	Sound Velocity Values		
			CTD	MVP	Surface
H12036	S222	0.09	4	1	0.2

**Table 3: TPE Parameters**

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

**B 4.2 BASE Surfaces and Mosaics**

The following table describes all BASE Surfaces submitted as part of Survey H12036:

<i>Name of Surface</i>	<i>Resolution</i>	<i>Type</i>	<i>Purpose</i>
H12036_NorthWest_CUBE_2m	2m	CUBE	NW DTM
H12036_NorthEast_CUBE_2m	2m	CUBE	NE DTM
H12036_Center_CUBE_2m	2m	CUBE	Center DTM
H12036_South_CUBE_2m	2m	CUBE	Southern DTM
H12036_Combined_4m	4m	Combined	Total DTM
H12036_100%SSS_mosaic	1m	Mosaic	100% SSS Coverage
H12036_200%SSS_mosaic	1m	Mosaic	200% SSS Coverage
Wreck_Mohawk_50cm	0.5m	CUBE	Contact DTM
Barge_50cm	0.5m	CUBE	Contact DTM
Wreck_or_Spoil	1m	CUBE	Contact DTM
Wreck2_50cm	0.5m	CUBE	Contact DTM

**Table 4: BASE Surfaces**

This survey was processed using the Combined Uncertainty and Bathymetry Estimator (CUBE) algorithm. The CUBE configuration was set to NOAA\_0.5m for object detection surfaces and NOAA\_2m for all main scheme surfaces. Refer to the *2009 Data Acquisition and Processing Report\*\**, *2009 Field Procedures Manual*, and *CARIS HIPS and SIPS User Guide* for further discussion. **\*\*Submitted with H-Cell Deliverable**

**B 4.3 Data Cleaning**

The survey data was cleaned using the swath and subset editor tools in CARIS. All areas of the BASE surface that indicated a high standard deviation were examined and cleaned as required such that no residual errors exist in the surface that exceed the IHO order 1 depth accuracy requirements.

**C. HORIZONTAL AND VERTICAL CONTROL *See also H-Cell Report***

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

**C 1.1 Horizontal Control**

The horizontal datum for this project is the North American Datum of 1983 (NAD83). Differential GPS (DGPS) was the sole method of positioning. Differential corrections from U.S.

Coast Guard beacons at Moriches, NY (293 kHz), and Sandy Hook, NJ (286KHz), were used during this survey.

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

## **C 1.2 Vertical Control**

The vertical datum for this project is Mean Lower-Low Water (MLLW). The operating National Water Level Observation Network (NWLON) stations at the Battery, NY (8518750), and Sandy Hook, NJ (8531680) will serve as datum control for H12036. A request for delivery of final approved (verified) tides for this survey was forwarded to N/OPS1 on 13 September 2009 in accordance with the FPM and project letter instructions. ***Concur. CO-Ops final tides were provided on 04 November 2009.***

## **D. RESULTS AND RECOMMENDATIONS**

### **D.1 Chart Comparison *See also H-Cell Report***

#### **D 1.1 Chart 12326 Comparison**

Survey H12036 was compared to Chart 12326, (51<sup>st</sup> Ed., 04/01/2009, 1:80,000), the largest scale chart covering the survey area. Generally soundings agreed with the chart to within 2 feet throughout the survey area. Charted depths were slightly shoal of the current surveyed depths. Exceptions are the wreck at 40<sup>0</sup>25.00' north by 074<sup>0</sup>45.20' west. The least depth on this wreck was found to be almost 10 feet deeper than shown on the chart; this wreck is described in the feature report. Another discrepancy with the chart was found at 40<sup>0</sup>26.00' north by 073<sup>0</sup>46.90' west where the chart reports a depth 6 feet deeper than was currently found over a spoil pile. There is a spoil area reported in the south-west corner of the survey area which is described in note 'N' in the raster chart. As the current DTM and side scan data show that the spoil field extends considerably to the north and east it is recommended that the spoil area be charted to reflect the current data. ***Concur with clarification, final charting recommendations are included in Appendix II of this report and final features are included in the H-Cell Deliverable***

#### **D 1.2 ENC US4NY1AM Comparison**

Soundings are generally comparable with charted depths, with differences in charted and survey soundings 0.2 meters or less. ***Concur***

### **D.2 Additional Results *See also H-Cell Report***

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

Six AWOIS items were investigated for this survey. See the feature report, appendix II\*\*\* for details on these. *Concur. \*\*\*Appended to this report*

#### **D.2.4 Shoreline**

There is no shoreline within the sheet limits of survey H12036. *Concur.*

#### **D.2.5 Charted Features**

#### **D.2.6 Charted Pipelines and Cables**

Several charted cable and pipeline areas cover nearly the entire survey area. No cables or pipelines were observed in this survey so any which do exist are assumed to be properly buried. The hydrographer has no recommendations regarding these. *Concur, recommend to retain cable and pipeline areas as charted.*

#### **D.2.7 Bridges, Ferry Routes, and Overhead Cables**

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

### **D.3 Dangers to Navigation and Shoals**

#### **D 3.1 Dangers to Navigation**

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

#### **D 3.2 Shoals**

There were no significant uncharted shoals discovered during this survey. *Concur.*

#### **D.4 Aids to Navigation**

There are no charted Aids to Navigation (ATON) within the limits of H12136. *Concur.*

#### **D.5 Coast Pilot Information**

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

#### **D.6 Miscellaneous *See also H-Cell Report***

## **Bottom Samples**

Bottom samples were collected in accordance with NOAA Hydrographic Survey Specifications and Deliverables. A complete description of all bottom samples acquired during Survey H12036 are contained in the Pydro PSS\*. A total of nine bottom samples were acquired. A list of all bottom samples acquired during Survey H12036 is also contained in Appendix V\*\*\* of this report. *\*Submitted with original field records \*\*\*Appended to this report*

## **Environmental Conditions and Notes**

No significant environmental conditions occurred during the survey. *Concur*

### **D.8 Adequacy of Survey *See also H-Cell Report***

This survey is considered complete and adequate to supersede charted depths and features within the common area except as noted in this report. *Concur*

## **Summary and Recommendations for Additional Work**

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. *Concur*

**E. APPROVAL**

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


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

The Data Acquisition and Processing Report for OPR-B310-TJ-09 is submitted separately and contains additional information relevant to this survey.

Approved and Forwarded:

 Mark Blankenship  
2009.12.10  
15:52:09 Z

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 Shep Smith  
2009.12.10  
15:53:09 Z


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LT Mark A. Blankenship, NOAA  
Field Operations Officer

CDR Shepard M. Smith, NOAA  
Commanding Officer


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

Survey Managers:

 Megan Guberski  
2009.12.10  
15:50:17 Z

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LTJG Megan R. Guberski, NOAA

 Doug Wood  
2009.12.10  
15:51:36 Z

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SST Douglas A. Wood, NOAA

**Appendix I**  
**Dangers to Navigation**  
**-None reported**

## **Appendix II**

### **Survey Features Report**

#### **1. AWOIS Items**

-seven

#### **2. Uncharted Features**

-two



# H12036 AWOIS

**Registry Number:** H12036  
**State:** New York  
**Locality:** New York Harbor and Approaches, NY  
**Sub-locality:** 10NM East of Sandy Hook Pt.  
**Project Number:** OPR-B310-TJ-09  
**Survey Dates:** 09/13/2009 - 09/14/2009

## Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
12326	51st	04/01/2009	1:80,000 (12326_1)	USCG LNM: 06/23/2009 (07/14/2009) CHS NTM: None (05/29/2009) NGA NTM: 05/10/2003 (07/25/2009)
12300	48th	06/01/2010	1:400,000 (12300_1)	USCG LNM: 06/22/2010 (06/22/2010) CHS NTM: None (05/28/2010) NGA NTM: 05/21/2005 (06/26/2010)
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: ?
14500	27th	10/01/2002	1:1,500,000 (14500_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 Item #4300	Obstruction	16.35 m	40° 30' 17.9" N	073° 49' 12.0" W	4300
1.2	AWOIS Item#1586	Wreck	27.03 m	40° 25' 02.6" N	073° 45' 09.2" W	1586
1.3	AWOIS Item #4299	Obstruction	23.69 m	40° 29' 29.9" N	073° 47' 19.3" W	4299
1.4	AWOIS Item #1583	AWOIS	[no data]	[no data]	[no data]	---
1.5	AWOIS Item #1629	AWOIS	[no data]	[no data]	[no data]	---
1.6	AWOIS Item #12949	AWOIS	[no data]	[no data]	[no data]	---
1.7	AWOIS Item #7797	AWOIS	[no data]	[no data]	[no data]	---

**1 - DR\_AWOIS**

## 1.1) AWOIS Item #4300

### Primary Feature for AWOIS Item #4300

**Search Position:** 40° 30' 17.9" N, 073° 49' 12.1" W  
**Historical Depth:** 16.15 m  
**Search Radius:** 50  
**Search Technique:** s2  
**Technique Notes:** [None]

#### History Notes:

FE215/76WD(FE1/76WD)--HANG 3; DIVERS INVESTIGATED HANG AT LAT 40-30-16.8N, LONG 73-49-14.4W; LEAST DEPTH OF 53 FT TAKEN BY DIVER GAGE; OBSTR COMPRISED OF TWO 6 FT WHEELS CONNECTED TO A SHAFT WHICH LEAD TO MAJOR WRECKAGE; CLEARED BY 49 FT; POSSIBLY A TURBINE WHEEL. (ENTERED MSM 1/86)

H10668/97-- OPR-C399-RU; 200% SIDE SCAN SONAR SEARCH LOCATED AN OBSTRUCTION WITH AN ES LD OF 53 FEET IN LAT. 40-30-17.920N, LONG. 73-49-12.105W. EVALUATOR RECOMMENDS REVISING 49-FOOT WIRE DRAG CLEARED DEPTH TO A 53 OBSTN AS SURVEYED. (UP 12/22/04, SJV)

#### DESCRIPTION

195 LORAN C RATES PROVIDED BY MR. RICHARD TARACKA, GREENWICH, CT. POLICE DEPARTMENT, TEL NO. 203-622-8020; 9960-X 26913.0, 9960-Y 43727.1. (ENTERED MSM 4/90)

### Survey Summary

**Survey Position:** 40° 30' 17.9" N, 073° 49' 12.0" W  
**Least Depth:** 16.35 m (= 53.64 ft = 8.940 fm = 8 fm 5.64 ft)  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh)  $\pm 1.011$  m ; TVU (TPEv)  $\pm 0.310$  m  
**Timestamp:** 2009-256.02:17:15.000 (09/13/2009)  
**Survey Line:** h12036 / tj\_s222\_reson7125\_stbd / 2009-256 / 008\_0215  
**Profile/Beam:** 955/14  
**Charts Affected:** 12326\_1, 12300\_1, 13006\_1, 5161\_1, 13003\_1, 14500\_1

#### Remarks:

Minimum depth on obstruction.

## Feature Correlation

Address	Feature	Range	Azimuth	Status
h12036/tj_s222_reson7125_stbd/2009-256/008_0215	955/14	0.00	000.0	Primary
NewYorkHarborAndApproachesAWOIS	AWOIS # 4300	3.27	091.1	Secondary
h12036/tj_s222_klein5000_sss100/2009-257/167_090914103400	0001	5.96	297.8	Secondary (grouped)
h12036/tj_s222_klein5000_sss100/2009-257/167_090914103400	0001	5.96	297.8	Secondary
h12036/tj_s222_klein5000_sss200/2009-266/224_090923092700	0001	55.30	102.8	Secondary (grouped)

## Hydrographer Recommendations

Revise charted obstruction.

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

53ft (12326\_1)

9fm (12300\_1, 13006\_1, 13003\_1, 14500\_1)

16.4m (5161\_1)

## S-57 Data

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** OBJNAM - AWOIS #4300  
 QUASOU - 6:least depth known  
 SORDAT - 20091020  
 SORIND - US,US,graph,H12036  
 TECSOU - 2,3:found by side scan sonar,found by multi-beam  
 VALSOU - 16.350 m  
 WATLEV - 3:always under water/submerged

## Office Notes

Concur with clarification. Remove currently charted obstruction. Add obstruction at survey depth and position.

### Feature Images

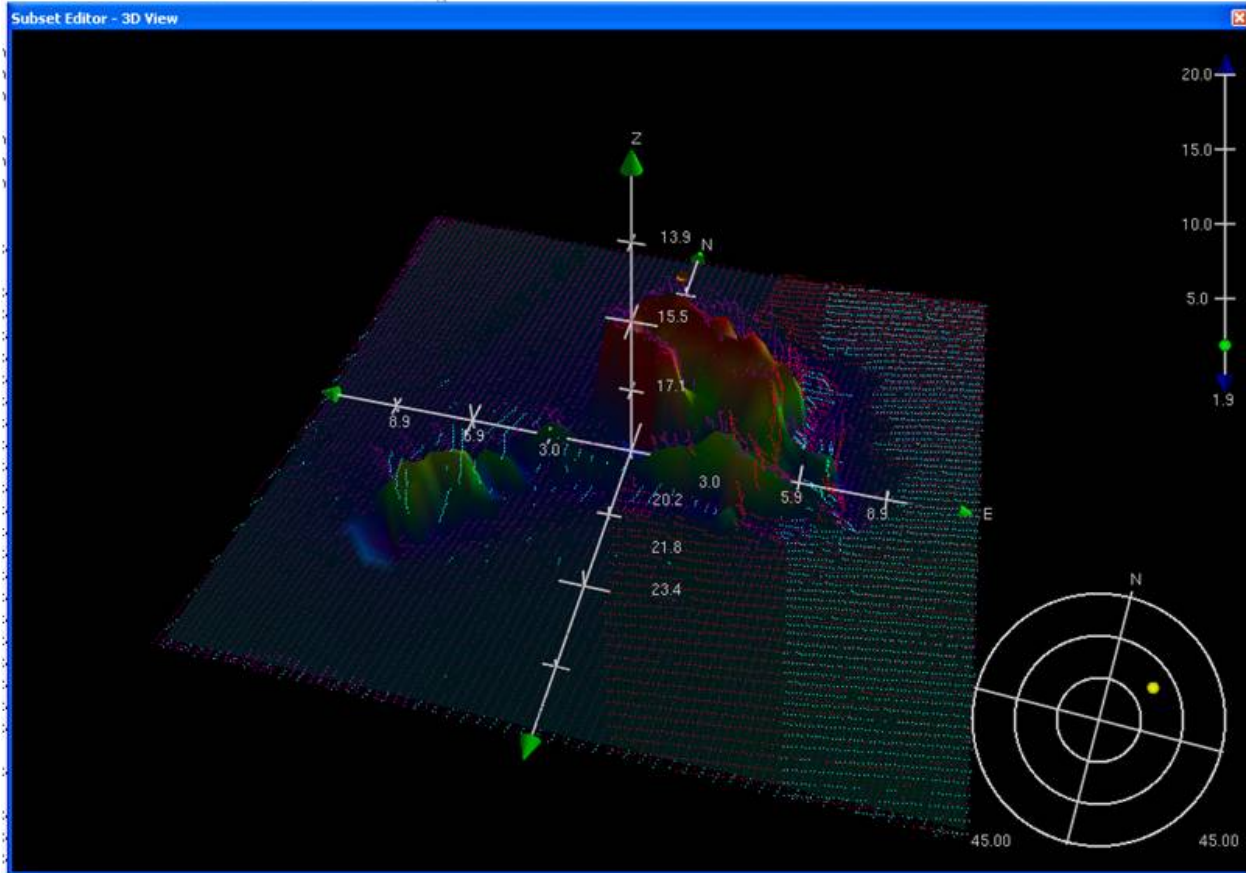
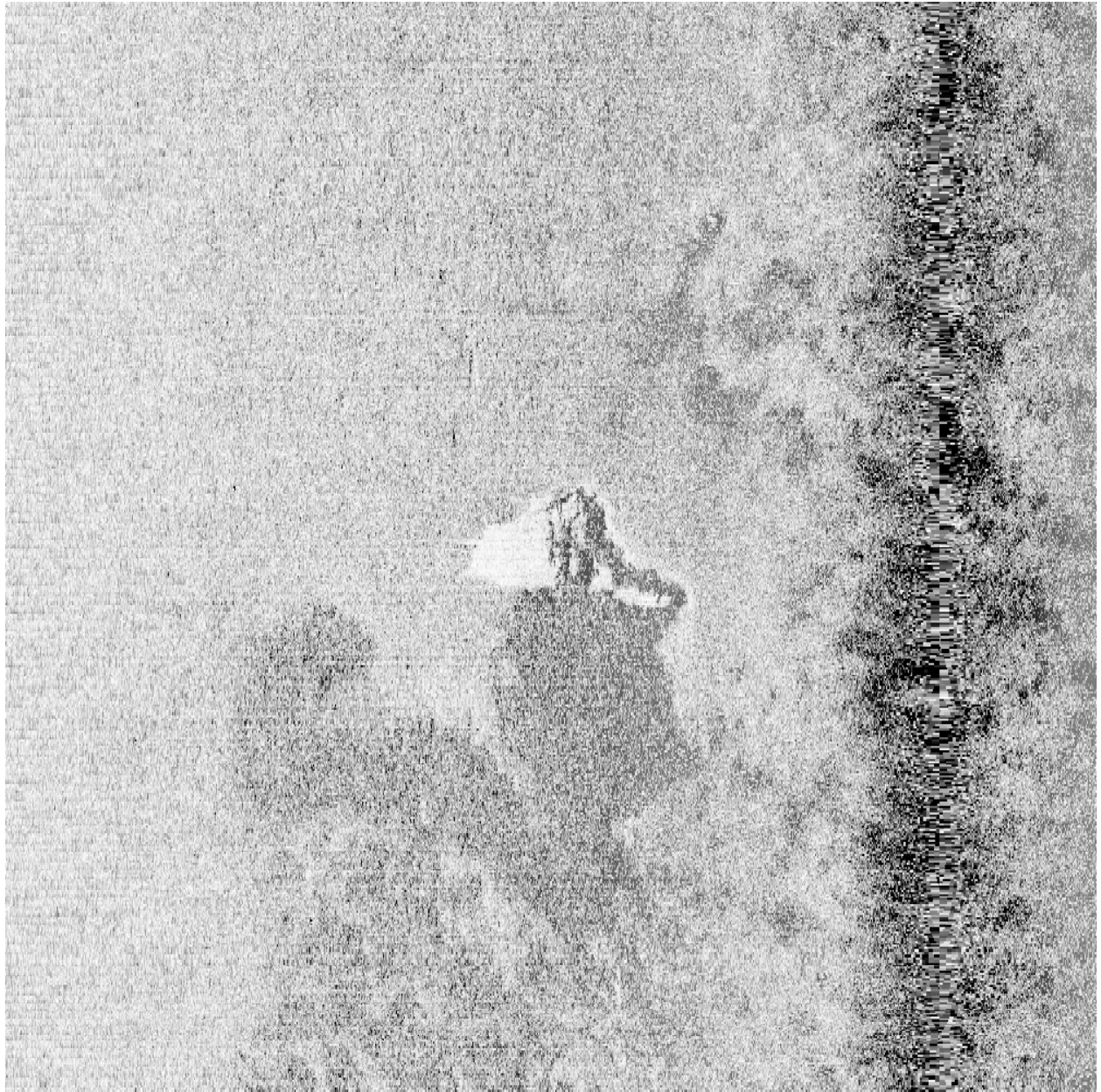


Figure 1.1.1



*Figure 1.1.2*

## 1.2) AWOIS Item#1586

### Primary Feature for AWOIS Item #1586

**Search Position:** 40° 25' 01.5" N, 073° 45' 09.5" W  
**Historical Depth:** 23.77 m  
**Search Radius:** 100  
**Search Technique:** s2  
**Technique Notes:** [None]

#### History Notes:

NM 8/42--PREVIOUSLY REPORTED IN LAT 40-25-12N LONG 73-45-18W  
 FE101/51WD(FE10/51WD)--CS326; ITEM 14; WK LOCATED BY SONAR IN LAT 40-25-06N,  
 LONG 73-45-12W; 71FT SDG OBTAINED ON WK IN 92 FT DEPTHS; CLEARED AT 66 FT; ì  
 SNDG WITH BASKET AND NOTE WRECK". (ENTERED MSM 12/85)  
 FE312SS--OPR-C121-WH-88; ECHO SOUNDER AND SIDE SCAN SONAR ì  
 INVESTIGATION LOCATED WRECK IN LAT 40-25-01.10N, LONG ì  
 73-45-10.99W; DIVER LEAST DEPTH OF 78 FT.; METAL AND WOOD VESSEL, ì  
 IDENTIFIED AS "MOHAWK" BY MR. GENE GEER AT THE AMERICAN LITTORAL ì  
 SOCIETY; LORAN C RATES: 9960-X, 26867.8, 9960-Y, 43670.7; REVENUE ì  
 CUTTER, BUILT IN 1904, 980 TONS, 200 FT. LONG, 32 FT. BEAM, AND ì  
 11 FT. DRAFT; SANK 1917; ADDITIONAL INFORMATION LISTED ì  
 BELOW; WRECK IS 152M SSE OF CHARTED WRECK; EVALUATOR RECOMMENDED ì  
 DELETING CHARTED 66 FT. CLEARED WRECK AND CHARTING THE MOHAWK AT ì  
 SURVEY POSITION WITH LEAST DEPTH OF 78 FT. (UPDATED MSM 10/89)

#### DESCRIPTION

24 NO.307; ESF REPORTED 70 FT. LD ON 7/31/43, SUBSEQUENTLY LOCATED, WD ì  
 CLEARED TO 66 FT. POSSIBLY IN 1950, POS. ACCURACY 1 MILE ì  
 REPORTED THROUGH EASTERN SEA FRONTIER 7/31/43  
 27 NO.196; LD OF 70 FT AT LAT.40-25-12N, LONG.73-45-18W.  
 195 LORAN-C RATES PROVIDED BY MR. RICHARD TARACKA, GREENWICH, ì  
 CT. POLICE DEPT., TEL. NO. 203-622-8020; 9960-X 26867.7, 9960-Y ì  
 43670.7. (ENT MSM 6/90)

## Survey Summary

**Survey Position:** 40° 25' 02.6" N, 073° 45' 09.2" W  
**Least Depth:** 27.03 m (= 88.69 ft = 14.781 fm = 14 fm 4.69 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.002$  m ; **TVU (TPEv)**  $\pm 0.290$  m  
**Timestamp:** 2009-257.13:20:09.163 (09/14/2009)  
**Survey Line:** h12036 / tj\_s222\_reson7125\_stbd / 2009-257 / 126\_1252  
**Profile/Beam:** 10606/240  
**Charts Affected:** 12326\_1, 12300\_1, 13006\_1, 5161\_1, 13003\_1

### Remarks:

Minimum depth on AWOIS item 1586. Appears to be decomposed 65 meter long wreck.

## Feature Correlation

Address	Feature	Range	Azimuth	Status
h12036/tj_s222_reson7125_stbd/2009-257/126_1252	10606/240	0.00	000.0	Primary
h12036/tj_s222_klein5000_sss100/2009-257/126_090914130700	0001	13.55	341.6	Secondary (grouped)
h12036/tj_s222_klein5000_sss100/2009-257/126_090914130700	0001	13.55	341.6	Secondary
h12036/tj_s222_klein5000_sss200/2009-281/260_091008190900	0001	16.44	202.7	Secondary (grouped)
h12036/tj_s222_klein5000_sss200/2009-281/260_091008190900	0001	16.44	202.7	Secondary
h12036/tj_s222_klein5000_sss200/2009-281/259_091008193100	0001	18.28	002.1	Secondary (grouped)
h12036/tj_s222_klein5000_sss200/2009-281/259_091008193100	0001	18.28	002.1	Secondary
h12036/tj_s222_reson7125_stbd/2009-257/126_1252	10617/405	34.83	011.3	Secondary
h12036/tj_s222_reson7125_stbd/2009-257/126_1252	10617/405	34.85	011.3	Secondary (grouped)
NewYorkHarborAndApproachesAWOIS	AWOIS # 1586	35.01	010.4	Secondary

## Hydrographer Recommendations

Revise charted wreck.

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

88ft (12326\_1)

15fm (12300\_1, 13006\_1, 13003\_1)

27m (5161\_1)



## S-57 Data

**Geo object 1:** Wreck (WRECKS)  
**Attributes:** CATWRK - 1:non-dangerous wreck  
OBJNAM - AWOIS #1586  
QUASOU - 6:least depth known  
SORDAT - 20091020  
SORIND - US,US,graph,H12036  
TECSOU - 2,3:found by side scan sonar,found by multi-beam  
VALSOU - 27.032 m  
WATLEV - 3:always under water/submerged

## Office Notes

Concur with clarification. Delete currently charted 78ft wreck. Add wreck at survey depth and position.

### Feature Images

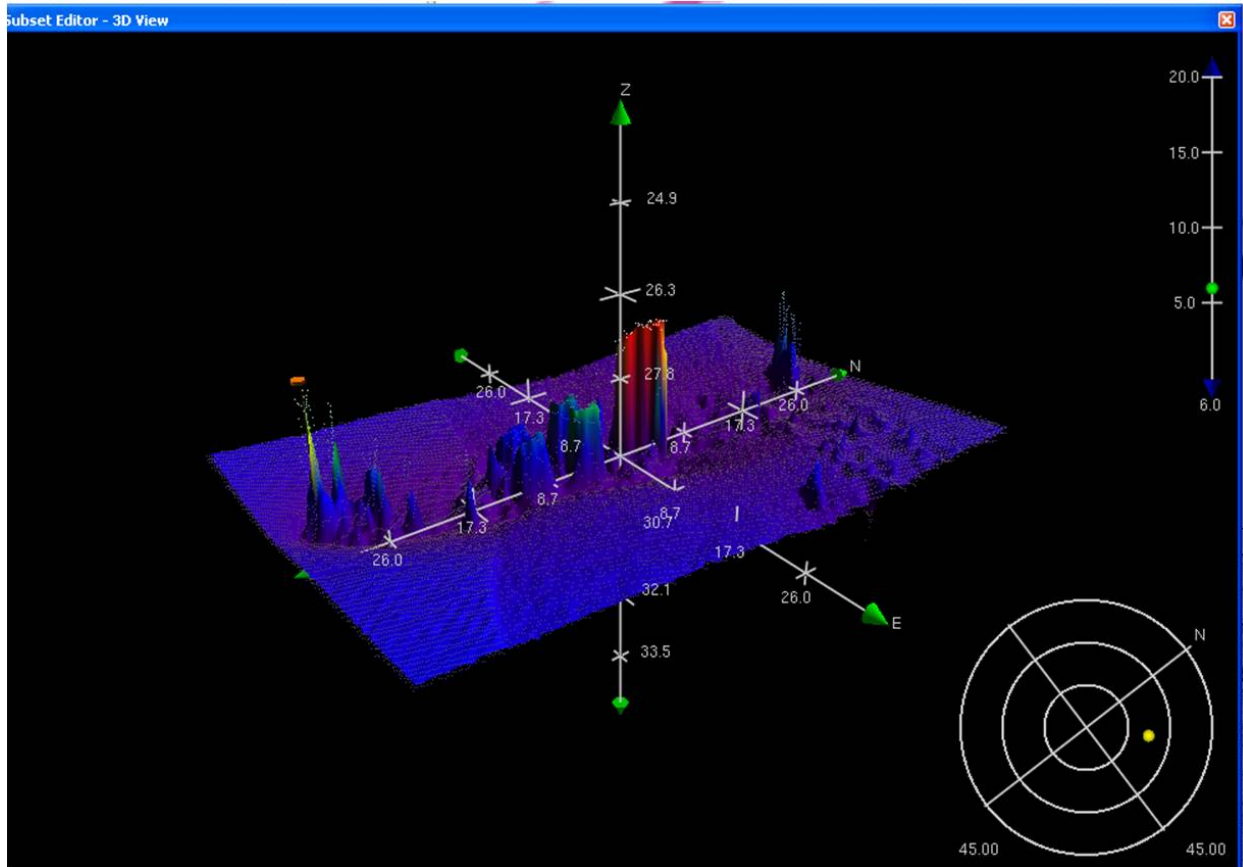
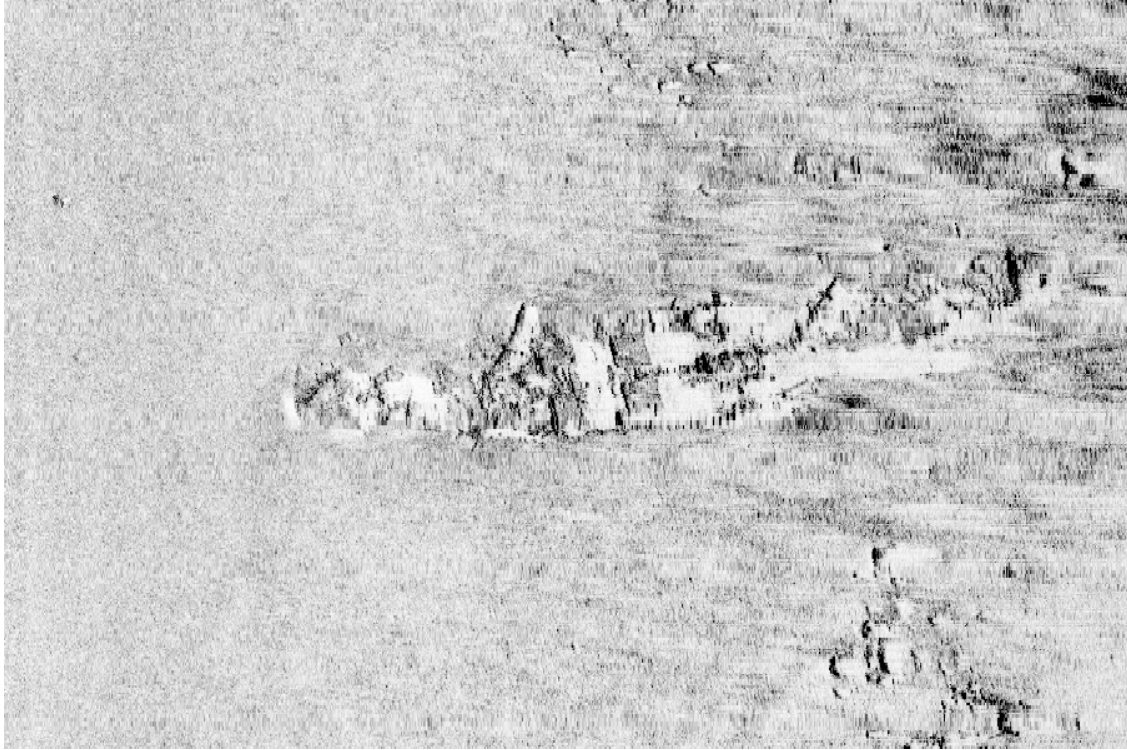


Figure 1.2.1



*Figure 1.2.2*

### 1.3) AWOIS Item #4299

#### Primary Feature for AWOIS Item #4299

**Search Position:** 40° 29' 29.8" N, 073° 47' 19.3" W  
**Historical Depth:** 23.16 m  
**Search Radius:** 50  
**Search Technique:** s2  
**Technique Notes:** [None]

#### History Notes:

FE215/76WD(FE1/76WD)--HANG 1; HUNG AT LAT 40-30-03N, LONG 73-47-20.4W; LEAST DEPTH OF 73 FT; CLEARED BY 75 FT; DIVER INVESTIGATION REVEALED A 10 X 10 X 7 FT METAL CAGE, POSSIBLY THE REMAINS OF A LARGE CONDENSER LOST IN THIS AREA BY COE; CHARTED IN LAT 40-29-33N, LONG 73-47-20.4W THROUGH UNCORRECTED HYDROGRAPHER REPORT; ABOVE POSITION IS CORRECT POSITION FROM VERIFIERS REPORT. (ENTERED MSM 1/86) NOTE: POSITION IN HEADER RECORD ORIGINALLY ENTERED WITH INCORRET LAT. OF 40-30-03N. NOAA RUDE CONDUCTED SURVOPS IN BOTH LOCATIONS IN 1996 (UP 2/5/97, SJV)

H10668/97-- OPR-C399-RU; 200% SIDE SCAN SONAR LOCATED A MAN-MADE OBJECT APPROX. 6 METERS SQUARE WITH A SMALLER PORTION 3 METERS ACROSS RISING OFF THE BOTTOM ABOUT 1.9 METERS (6 FEET). SWMB DEPTH OF 23.1 METERS (76 FEET) IN LAT. 40-29-29.802N, LONG. 73-47-19.308W. EVALUATOR RECOMMENDS REVISING 75-FOOT WIRE DRAG CLEARED DEPTH TO A 76 OBSTN AS SURVEYED. (UP12/22/04, SJV)

#### Survey Summary

**Survey Position:** 40° 29' 29.9" N, 073° 47' 19.3" W  
**Least Depth:** 23.69 m (= 77.73 ft = 12.955 fm = 12 fm 5.73 ft)  
**TPU ( $\pm 1.96\sigma$ ):** THU (TPEh)  $\pm 1.029$  m ; TVU (TPEv)  $\pm 0.371$  m  
**Timestamp:** 2009-257.09:39:15.779 (09/14/2009)  
**Survey Line:** h12036 / tj\_s222\_reson7125\_stbd / 2009-257 / 165\_0927  
**Profile/Beam:** 6684/15  
**Charts Affected:** 12326\_1, 12300\_1, 13006\_1, 5161\_1, 13003\_1

#### Remarks:

1 meter tall obstruction.

## Feature Correlation

Address	Feature	Range	Azimuth	Status
h12036/tj_s222_reson7125_stbd/2009-257/165_0927	6684/15	0.00	000.0	Primary
NewYorkHarborAndApproachesAWOIS	AWOIS # 4299	2.19	027.5	Secondary
h12036/tj_s222_klein5000_sss100/2009-257/165_090914092700	0001	36.83	298.7	Secondary (grouped)
h12036/tj_s222_klein5000_sss100/2009-257/165_090914092700	0001	36.83	298.7	Secondary
h12036/tj_s222_klein5000_sss200/2009-266/222_090923080700	0001	75.23	108.6	Secondary (grouped)

## Hydrographer Recommendations

Revise charted obstruction.

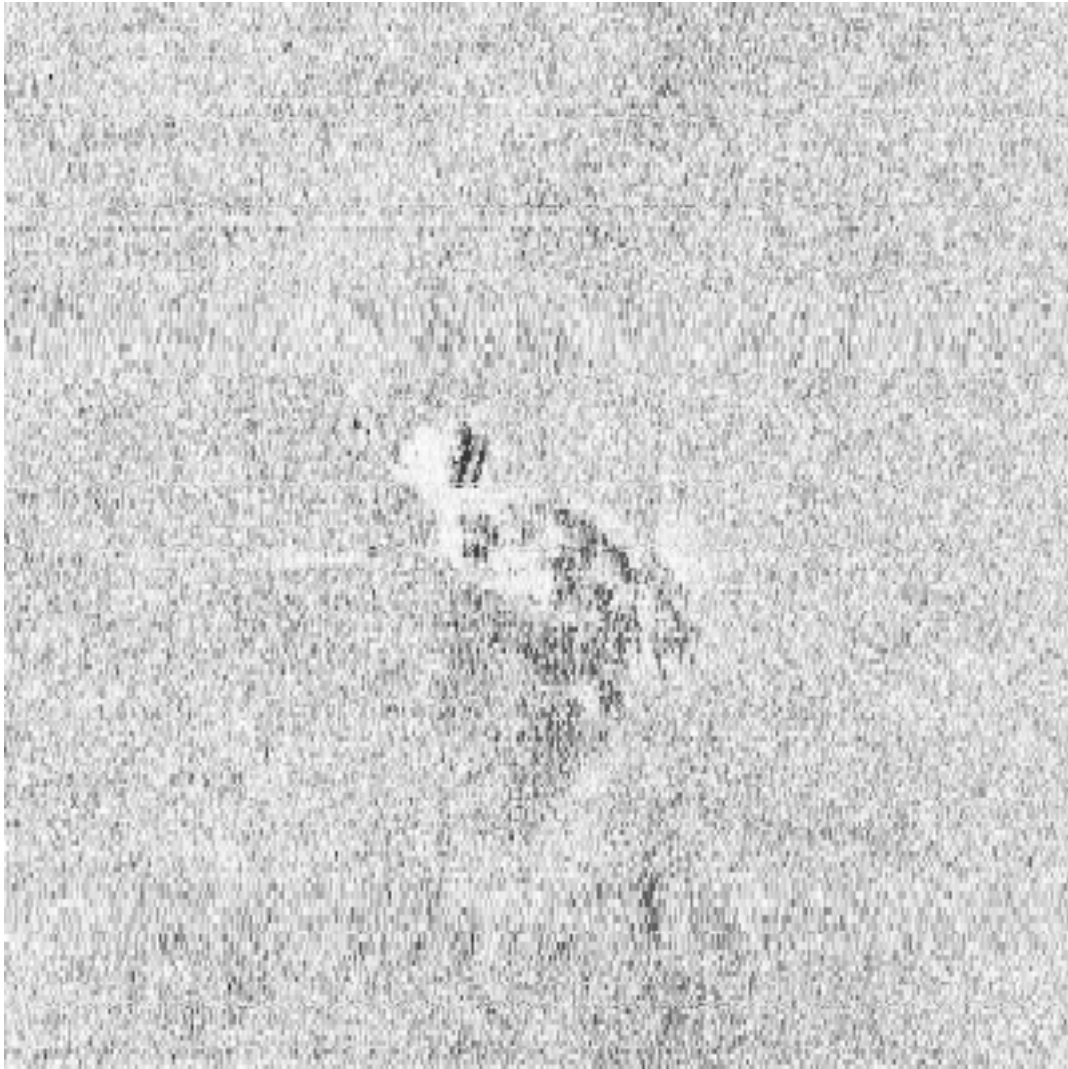
### S-57 Data

**Geo object 1:** Obstruction (OBSTRN)  
**Attributes:** OBJNAM - AWOIS 4299  
 QUASOU - 6:least depth known  
 SORDAT - 20091020  
 SORIND - US,US,graph,H12036  
 TECSOU - 2,3:found by side scan sonar,found by multi-beam  
 VALSOU - 23.693 m  
 WATLEV - 3:always under water/submerged

### Office Notes

Concur with clarification. Delete currently charted obstruction. Add obstruction at survey depth and position.

### Feature Images



*Figure 1.3.1*

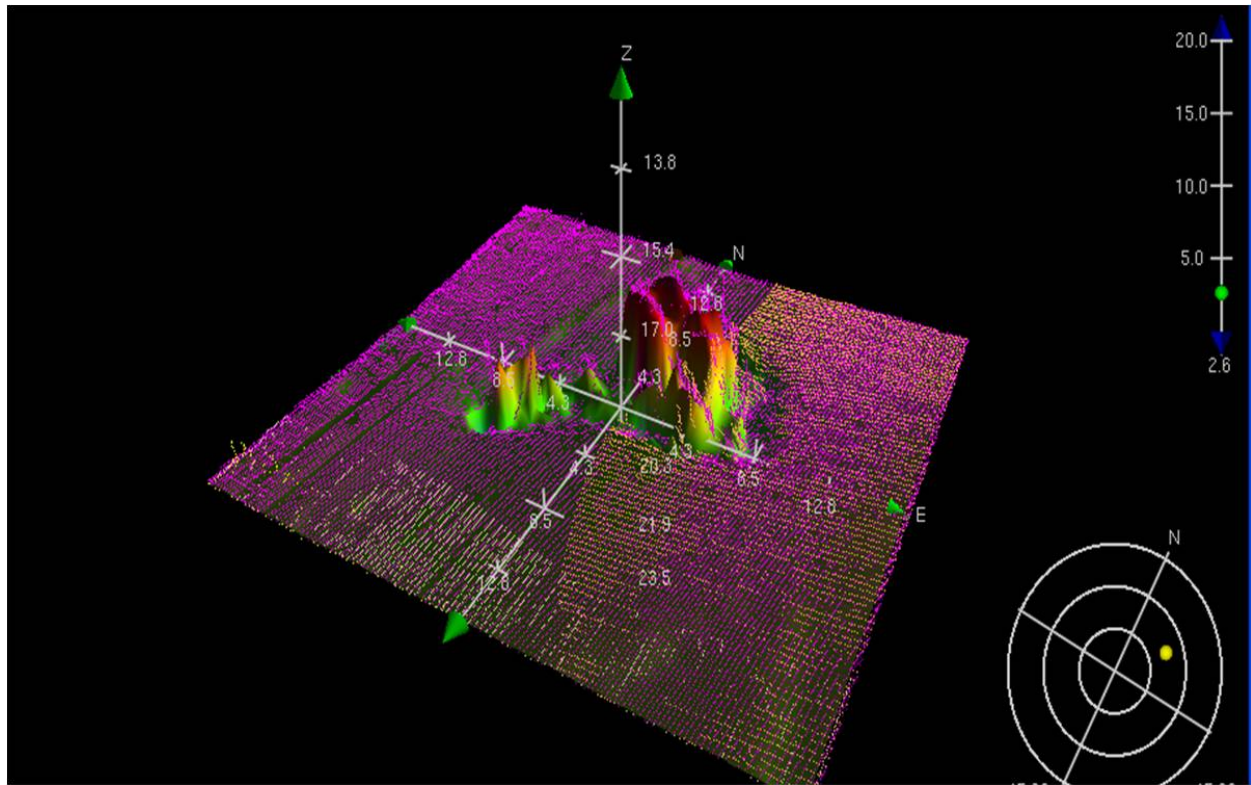


Figure 1.3.2

## 1.4) AWOIS #1583 - AWOIS Item #1583

### No Primary Survey Feature for this AWOIS Item

**Search Position:** 40° 25' 00.4" N, 073° 46' 33.5" W  
**Historical Depth:** [None]  
**Search Radius:** 1500  
**Search Technique:** mb, s2  
**Technique Notes:** [None]

#### History Notes:

NM DATED 12/5/22

#### DESCRIPTION

24 NO.1343; SUNK 1917; POSITION ACCURACY WITHIN 1 MILE

#### SURVEY REQUIREMENTS

NOT DETERMINED

### Survey Summary

**Charts Affected:** 12326\_1, 12300\_1, 13006\_1, 5161\_1, 13003\_1

#### Remarks:

Klein 5000, 200% SSS finds is no sign of wreckage within the AWOIS radius for this item.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
NewYorkHarborAndApproachesAWOIS	AWOIS # 1583	0.00	000.0	Primary

### Hydrographer Recommendations

Remove charted wreck.

### S-57 Data

[None]



## Office Notes

Concur with clarification. Delete charted wreck. Survey H12036 data supports wreck debris approximately 1260m to the northeast of the charted wreck (40-25-23.7274N, 73-45-49.7891W). The AWOIS database history states that the wreck sunk in 1917 and has a position accuracy within 1 mile. The wreck debris falls within this 1mile radius. Chart wreck at survey depth and position.

**1.5) AWOIS #1629 - AWOIS Item #1629**

**No Primary Survey Feature for this AWOIS Item**

**Search Position:** 40° 29' 00.4" N, 073° 44' 58.5" W  
**Historical Depth:** [None]  
**Search Radius:** 0  
**Search Technique:** [None]  
**Technique Notes:** [None]

**History Notes:**

DESCRIPTION

24 NO.304; 485 GT; POSITION ACCURACY 1-3 MILES; REPORTED THROUGH OLD COAST

GUARD RECORDS

27 NO.193; 485 GT.

SURVEY REQUIREMENTS

NOT DETERMINED

**Survey Summary**

**Charts Affected:** 12326\_1, 12300\_1, 13006\_1, 5161\_1, 13003\_1

**Remarks:**

Klein 200%SSS found no significant contact at this location.

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
NewYorkHarborAndApproachesAWOIS	AWOIS # 1629	0.00	000.0	Primary

**Hydrographer Recommendations**

[None]

**S-57 Data**

[None]

## Office Notes

Wreck not currently charted as a wreck PA. H12036 survey data only extends approximately 530m to the east of the charted wreck. AWOIS database identifies this as a barge sunk in 1939 with a position accuracy of 1-3 miles. Delete charted wreck and update AWOIS database unless other information regarding a disproval search radius exists.

## 1.6) AWOIS #12949 - AWOIS Item #12949

### No Primary Survey Feature for this AWOIS Item

**Search Position:** 40° 29' 58.1" N, 073° 48' 07.6" W  
**Historical Depth:** 18.90 m  
**Search Radius:** 50  
**Search Technique:** s2  
**Technique Notes:** [None]

#### History Notes:

H10668/97-- OPR-C399-RU; UNCHARTED OBSTRUCTION LOCATED BY SIDE SCAN SONAR. SWMB LD OF 19.1 METERS (62 FEET) IN LAT. 40-29-58.06N, LONG. 73-48-07.58W. EVALUATOR RECOMMENDS CHARTING A 62 OBSTN AS SURVEYED. (ENT 12/22/04, SJV)

### Survey Summary

**Charts Affected:** 12326\_1, 12300\_1, 13006\_1, 5161\_1, 13003\_1

#### Remarks:

Klein 5000 200% Side Scan SONAR found no obstruction at this location.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
NewYorkHarborAndApproachesAWOIS	AWOIS # 12949	0.00	000.0	Primary

### Hydrographer Recommendations

Remove '62 Obstn'.

### S-57 Data

[None]

### Office Notes

Concur. Delete 62 ft Obstn.

**1.7) AWOIS #7797 - AWOIS Item #7797****No Primary Survey Feature for this AWOIS Item**

**Search Position:** 40° 31' 01.4" N, 073° 44' 57.6" W  
**Historical Depth:** [None]  
**Search Radius:** 0  
**Search Technique:** [None]  
**Technique Notes:** [None]

**History Notes:**

195 LORAN C RATES PROVIDED BY MR. RICHARD TARACKA, GREENWICH, CT. POLICE DEPARTMENT, TEL NO 203-622-8020; IDENTIFIED AS A BARGE; 9960-X 26881.5, 9960-Y 43728.5; LAT 40-31-01.00N, LONG 73-44-59.12W (COMPUTED FROM LORAN RATES). (ENTERED MSM 7/90)

**Survey Summary**

**Charts Affected:** 12326\_1, 12300\_1, 13006\_1, 5161\_1, 13003\_1

**Remarks:**

Klein 5000 200% Side Scan SONAR found no obstruction at this location.

**Feature Correlation**

Address	Feature	Range	Azimuth	Status
NewYorkHarborAndApproachesAWOIS	AWOIS # 7797	0.00	000.0	Primary

**Hydrographer Recommendations**

[None]

**S-57 Data**

[None]

**Office Notes**

Feature fitting the description of a barge was found at survey position of 40-31-32.8954N, 073-45-55.7208W. Office processing determined there was not enough evidence to correlate the two features as the same item.

# H12036 Uncharted

**Registry Number:** H12036  
**State:** New York  
**Locality:** New York Harbor and Approaches, NY  
**Sub-locality:** 10NM East of Sandy Hook Pt.  
**Project Number:** OPR-B310-TJ-09  
**Survey Dates:** 09/14/2009 - 10/09/2009

## Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
12326	51st	04/01/2009	1:80,000 (12326_1)	USCG LNM: 06/23/2009 (07/14/2009) CHS NTM: None (05/29/2009) NGA NTM: 05/10/2003 (07/25/2009)
12300	48th	06/01/2010	1:400,000 (12300_1)	USCG LNM: 06/22/2010 (06/22/2010) CHS NTM: None (05/28/2010) NGA NTM: 05/21/2005 (06/26/2010)
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	95ft Wreck	Wreck	29.14 m	40° 25' 23.7" N	073° 45' 49.8" W	---
1.2	62 ft Barge	Wreck	18.92 m	40° 31' 32.9" N	073° 45' 55.7" W	---

## **1 - DR\_UnCharted**

## 1.1) 95ft Wreck

### Survey Summary

**Survey Position:** 40° 25' 23.7" N, 073° 45' 49.8" W  
**Least Depth:** 29.14 m (= 95.61 ft = 15.934 fm = 15 fm 5.61 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.060$  m ; **TVU (TPEv)**  $\pm 0.470$  m  
**Timestamp:** 2009-257.13:39:47.980 (09/14/2009)  
**Survey Line:** h12036 / tj\_s222\_reson7125\_stbd / 2009-257 / 127\_1331  
**Profile/Beam:** 3056/512  
**Charts Affected:** 12326\_1, 12300\_1, 13006\_1, 5161\_1, 13003\_1

#### Remarks:

Possible 90 meter long decomposed wreck. Tallest contact rises 2m above sea floor.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h12036/tj_s222_reson7125_stbd/2009-257/127_1331	3056/512	0.00	000.0	Primary
h12036/tj_s222_klein5000_sss100/2009-257/127_090914133100	0001	3.80	131.2	Secondary
h12036/tj_s222_klein5000_sss100/2009-257/127_090914133100	0001	3.80	131.2	Secondary
h12036/tj_s222_klein5000_sss200/2009-281/261_091008181500	0002	10.08	073.0	Secondary (grouped)
h12036/tj_s222_klein5000_sss200/2009-281/261_091008181500	0002	10.08	073.0	Secondary

### Hydrographer Recommendations

Revise chart.

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

95ft (12326\_1)

16fm (12300\_1, 13006\_1, 13003\_1)

29m (5161\_1)

### S-57 Data

**Geo object 1:** Wreck (WRECKS)  
**Attributes:** CATWRK - 1:non-dangerous wreck  
 OBJNAM - 95ft Wreck



QUASOU - 6:least depth known

SORDAT - 20091020

SORIND - US,US,graph,H12036

TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 29.141 m

WATLEV - 3:always under water/submerged

## Office Notes

Concur with clarification. Add wreck at survey depth and position. This wreck fits the description of AWOIS #1583.

### Feature Images

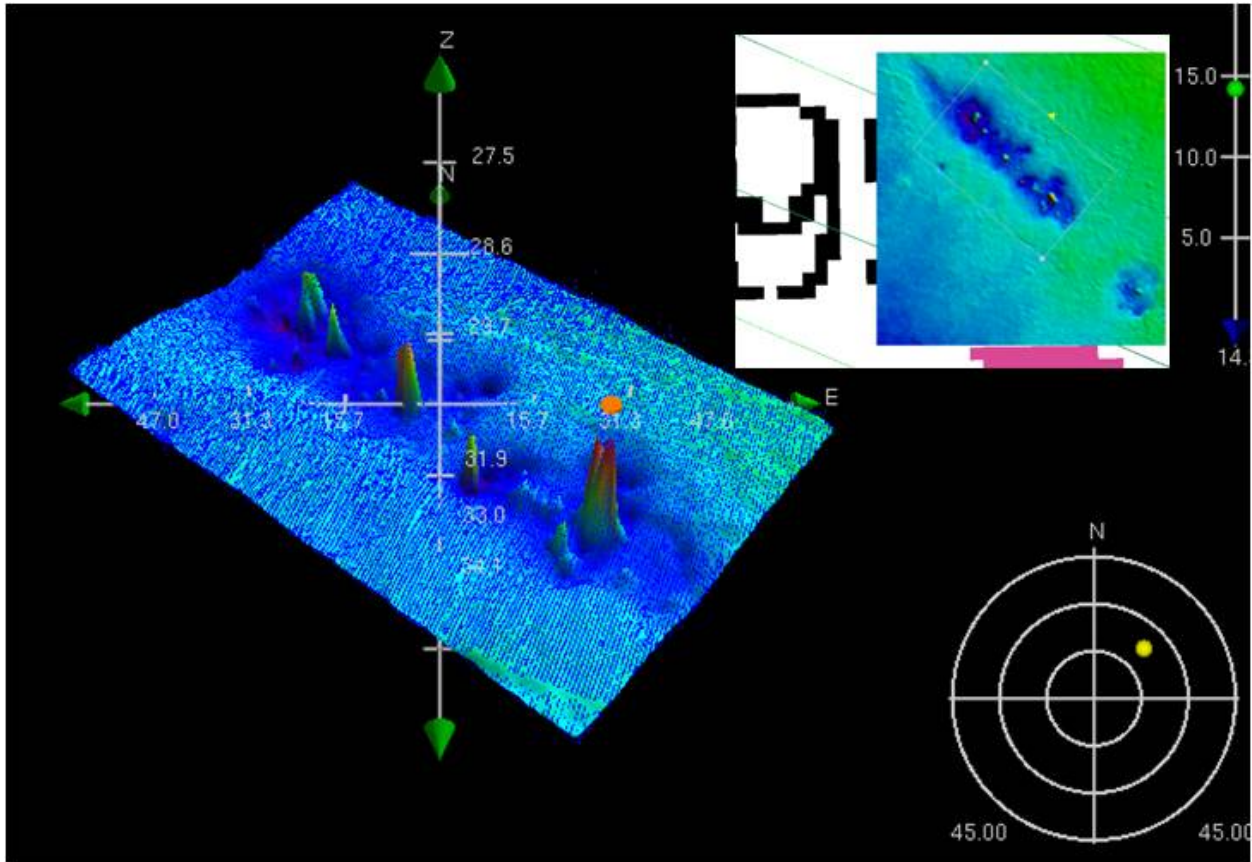


Figure 1.1.1



*Figure 1.1.2*



*Figure 1.1.3*

## 1.2) 62 ft Barge

### Survey Summary

**Survey Position:** 40° 31' 32.9" N, 073° 45' 55.7" W  
**Least Depth:** 18.92 m (= 62.07 ft = 10.346 fm = 10 fm 2.07 ft)  
**TPU ( $\pm 1.96\sigma$ ):** **THU (TPEh)**  $\pm 1.001$  m ; **TVU (TPEv)**  $\pm 0.276$  m  
**Timestamp:** 2009-282.20:06:32.444 (10/09/2009)  
**Survey Line:** h12036 / tj\_s222\_reson7125\_stbd / 2009-282 / 212\_1958  
**Profile/Beam:** 4440/308  
**Charts Affected:** 12326\_1, 12300\_1, 13006\_1, 5161\_1, 13003\_1

#### Remarks:

11 meter barge, Minimum depth is approx 1 meter above the sea bottom. This item appears to fit the description of AWOIS item 7797 which is within 1.6km.

### Feature Correlation

Address	Feature	Range	Azimuth	Status
h12036/tj_s222_reson7125_stbd/2009-282/212_1958	4440/308	0.00	000.0	Primary
h12036/tj_s222_klein5000_sss200/2009-282/212_091009195800	0001	2.22	141.6	Secondary
h12036/tj_s222_klein5000_sss200/2009-282/212_091009195800	0001	2.22	141.6	Secondary

### Hydrographer Recommendations

Add wreck to chart.

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

62ft (12326\_1)

10 ¼fm (12300\_1, 13006\_1, 13003\_1)

18.9m (5161\_1)

### S-57 Data

**Geo object 1:** Wreck (WRECKS)  
**Attributes:** CATWRK - 1:non-dangerous wreck  
 OBJNAM - 62ft Wreck  
 QUASOU - 6:least depth known

SORDAT - 20091020

SORIND - US,US,graph,H12036

TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 18.920 m

WATLEV - 3:always under water/submerged

## **Office Notes**

Do not concur. Wk can not be verified as AWOIS #7797. Chart new 62 ft Wk in survey position.

### Feature Images

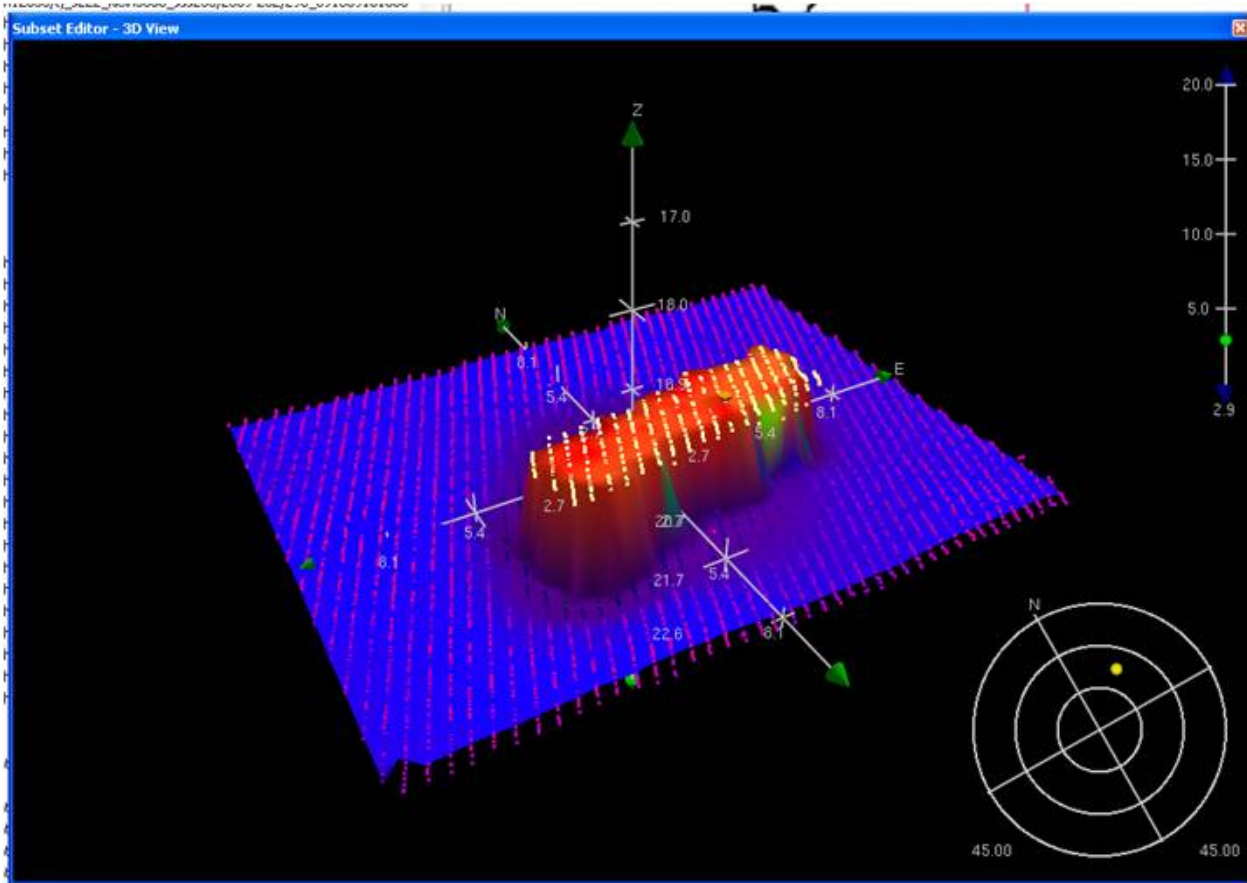
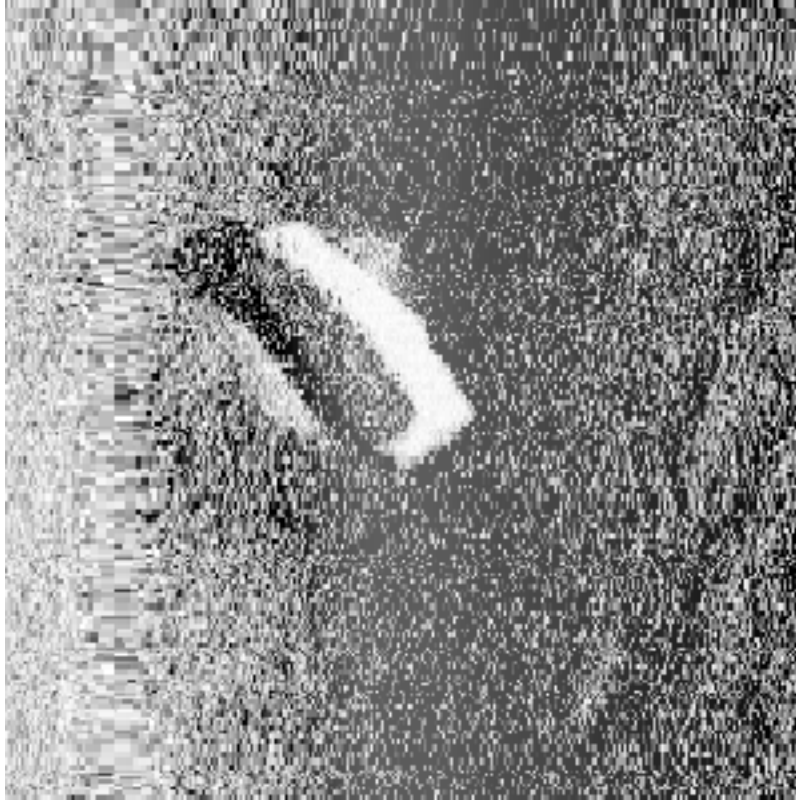


Figure 1.2.1

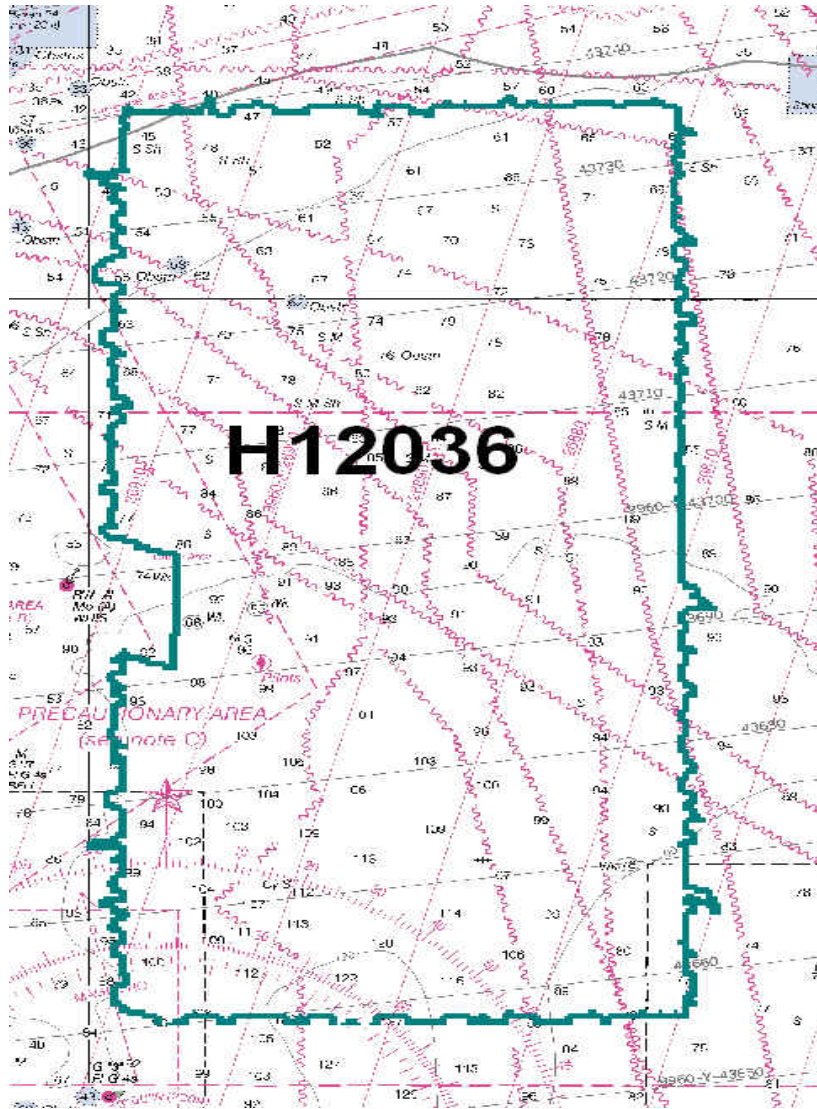


*Figure 1.2.2*



# Appendix III

## Progress Sketch



**Thomas Jefferson**  
**Survey Progress Estimate**

**FY2009 Field Season**

OPS	FIELD											
Project Number and Name	Sheet Identifier	Registry Number	HQ Estimated SNM	Sheet Start Date	Sheet End Date	Smooth Tides Request Date	Smooth Tides Received Date	Cumulative % Complete at the end of September	Cumulative % Complete at the end of October	Cumulative % Complete at the end of November	Cumulative % Complete at the end of December	
OPR-B310, Appr. to New York Hbr	1	H12036	16	9/12/09	10/21/09	10/24/09		50%	100%			
	2	H1170	25	10/26/09					25%			
	3	H12138	13	9/16/09	10/27/09	10/28/09		30%	100%			
	4	F00673	0.2	9/15/09	9/15/09	9/16/09	10/9/09	100%				
	5	H12158	18	10/20/09					60%			

## **Appendix IV**

### **Tides and Water Levels**

**1. Request for Approved Tides**

**2. Final Tide Notes**



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
NOAA Ship THOMAS JEFFERSON (MOA-TJ)  
439 West York St  
Norfolk, VA 23510-1145

October 23, 2009

MEMORANDUM FOR: Chief, Requirements and Development Division, N/OPS1

FROM: CDR Shep Smith, NOAA Ship THOMAS JEFFERSON (MOA-TJ)

SUBJECT: Request for Approved Tides/Water Levels

Please provide the following data:

1. Tide Note
2. Final TCARI grid
3. Final zoning in MapInfo and .MIX format
4. Six Minute Water Level data (Co-ops web site)

Transmit data to the following:

NOAA/NOS/Atlantic Hydrographic Branch  
N/CS33, Building #2  
439 West York Street  
Norfolk, VA 23510  
ATTN: Chief AHB

NOAA Ship Thomas Jefferson S222  
439 West York Street  
Norfolk, VA 23510

These data are required for the processing of the following hydrographic survey:

Project No.: OPR-B310-TJ-09  
Registry No.: H12036  
State: New York  
Locality: New York Harbor and Approaches, NY  
Sublocality: 10NM East of Sandy Hook Pt.

Attachments containing:

- 1) an Abstract of Times of Hydrography,
- 2) digital MID MIF files of the track lines from Pydro

cc: N/CS33



---

Year_DOY	Min Time	Max Time
2009_255	21:14:36	23:58:20
2009_256	00:16:57	19:02:12
2009_257	00:00:29	23:14:13
2009_258	03:21:38	08:59:51
2009_259	01:08:10	19:15:19
2009_264	22:30:56	23:56:42
2009_265	00:00:00	23:45:43
2009_266	01:17:24	12:01:31
2009_280	20:38:10	23:53:21
2009_281	00:04:24	23:58:35
2009_282	00:06:26	21:31:36
2009_292	22:41:48	23:50:14
2009_293	01:46:49	23:56:04



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

**TIDE NOTE FOR HYDROGRAPHIC SURVEY**

**DATE :** November 04, 2009

**HYDROGRAPHIC BRANCH:** Atlantic  
**HYDROGRAPHIC PROJECT:** OPR-B310-TJ-2009  
**HYDROGRAPHIC SHEET:** H12036

**LOCALITY:** 10 NM East of Sandy Hook Pt., NY  
**TIME PERIOD:** September 12 - October 20, 2009

**TIDE STATION USED:** 853-1680 Sandy Hook, NJ  
Lat. 40° 28.0'N Long. 74° 0.6' W

**PLANE OF REFERENCE (MEAN LOWER LOW WATER):** 0.000 meters  
**HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE:** 1.492 meters

**REMARKS: RECOMMENDED ZONING**

Preliminary zoning is accepted as the final zoning for project OPR-B310-TJ-2009, H12036, during the time period between September 12 and October 20.

Please use the zoning file "B310TJ2009CORP\_Rev2" submitted with the project instructions for OPR-B310-TJ-2009. Zones SA1, SA2, SA3 and SA14 are the applicable zones for H12036.

**Refer to attachments for zoning information.**

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

**Peter J. Stone**

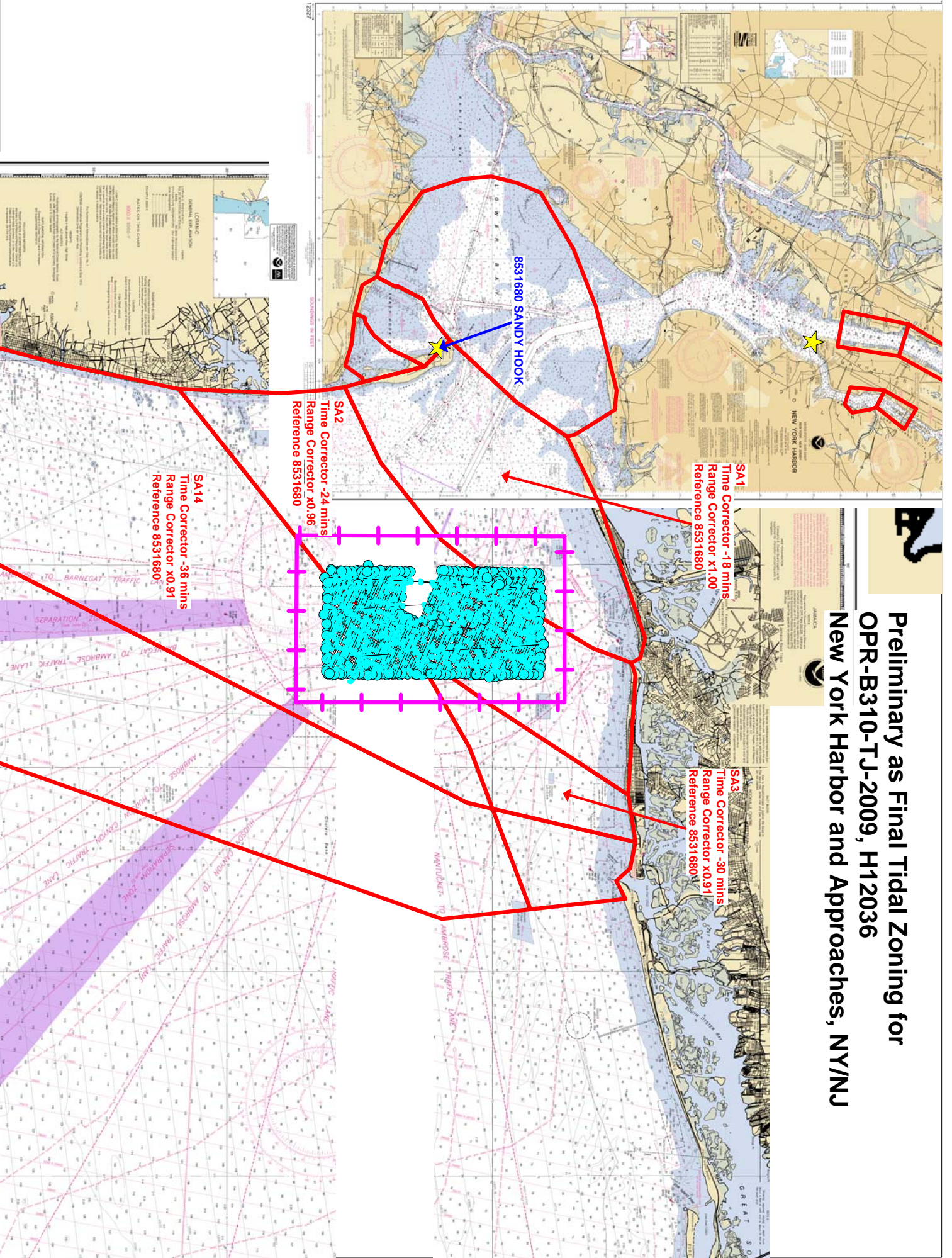
Digitally signed by Peter J. Stone  
DN: cn=Peter J. Stone, o=CO-OPS, ou=NOAA/  
NOS, email=peter.stone@noaa.gov, c=US  
Date: 2009.11.05 17:38:55 -05'00'

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CHIEF, OCEANOGRAPHIC DIVISION



# Preliminary as Final Tidal Zoning for OPR-B310-TJ-2009, H12036 New York Harbor and Approaches, NY/NJ



## **Appendix V**

### **Supplemental Survey Records & 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





**Subject:** [Fwd: Revised Coverage Requirements]  
**From:** "co.thomas.jefferson" <co.thomas.jefferson@noaa.gov>  
**Date:** Mon, 14 Sep 2009 17:17:28 -0400  
**To:** foo.thomas.jefferson@noaa.gov, daniel wright <daniel.wright@noaa.gov>

Please include in DR correspondence as appropriate.

CO

----- Original Message -----

**Subject:** Revised Coverage Requirements  
**Date:** Mon, 14 Sep 2009 17:05:00 -0400  
**From:** james.m.crocker <[James.M.Crocker@noaa.gov](mailto:James.M.Crocker@noaa.gov)>  
**To:** \_NMAO MOA CO Thomas Jefferson <[CO.Thomas.Jefferson@noaa.gov](mailto:CO.Thomas.Jefferson@noaa.gov)>, \_NMAO MOA FOO Thomas Jefferson <[FOO.Thomas.Jefferson@noaa.gov](mailto:FOO.Thomas.Jefferson@noaa.gov)>  
**CC:** Jeffrey Ferguson <[Jeffrey.Ferguson@noaa.gov](mailto:Jeffrey.Ferguson@noaa.gov)>, Jeremy McHugh <[Jeremy.McHugh@noaa.gov](mailto:Jeremy.McHugh@noaa.gov)>, Richard T Brennan <[Richard.T.Brennan@noaa.gov](mailto:Richard.T.Brennan@noaa.gov)>, Kyle Ward <[Kyle.Ward@noaa.gov](mailto:Kyle.Ward@noaa.gov)>, Benjamin K Evans <[Benjamin.K.Evans@noaa.gov](mailto:Benjamin.K.Evans@noaa.gov)>

CDR Smith,

This email is to detail the agreement to relax the multibeam resolution requirements for a survey when collecting multibeam bathymetry concurrent with side scan sonar data, where complete coverage for object detection for the survey is being met by 200% side scan sonar coverage. This agreement supersedes, where applicable, the requirements outlined in the 2009 HSSD and HTD 2009-2 for grid resolution and density.

For all projects assigned in 2009, where the complete coverage requirement for assigned surveys is being met by 200% side scan sonar data acquisition, the following requirements shall be met at a minimum:

- 1 - Grid resolutions shall be 2m for water depths less than 20m, and 4 m for water depths of 20m to 40m.
- 2 - Sounding density requirements are set at a minimum of 2 sounding per node.
- 3 - Grid resolution and density for feature developments used to determine least depth shall meet object detection requirements as defined in 2009 HSSD and HTD 2009-2 and soundings shall be designated where appropriate.

Regards,  
Jim

--  
CDR Shepard Smith, NOAA  
Commanding Officer  
NOAA Ship Thomas Jefferson  
439 West York St  
Norfolk, VA 23510  
757-647-0187

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

## AHB COMPILATION LOG

General Survey Information	
REGISTRY No.	<i>H12036</i>
PROJECT No.	<i>OPR-B310-TJ-09</i>
FIELD UNIT	<i>NOAA SHIP THOMAS JEFFERSON</i>
DATE OF SURVEY	<i>20090913-20091020</i>
LARGEST SCALE CHART	<i>12326, edition 51, April 2009, 1:80,000</i>
SOUNDING UNITS	<i>Feet</i>
COMPILER	<i>Wyllie</i>

Source Grids	File Name
	H:\Compilation\H12036_B310_TJ\AHB_H12036\SAR Final Products\GRIDS
	<i>Barge_50cm_Final.csar</i> <i>H12036_Center_2m_CUBE_AHB_Final.csar</i> <i>H12036_NorthEast_CUBE_2m_AHB_Final.csar</i> <i>H12036_NorthWest_CUBE_2m_AHB_Final.csar</i> <i>H12036_South_2m_CUBE_AHB_Final.csar</i> <i>Wreck2_50cm_Final.csar</i> <i>Wreck_Mohawk_50cm_Final.csar</i> <i>WreckorSpoil_1m_Final.csar</i>
Surfaces	File Name
	H:\Compilation\H12036_B310_TJ\AHB_H12036\COMPILE\Working
<i>Combined</i>	<i>H12036_4m_Combined.csar</i>
<i>Interpolated TIN</i>	<i>\Interpolated TIN\H12036_12m_InterpTIN.csar</i>
<i>Shifted Interpolated TIN</i>	<i>\Shifted Surface\H12036_12m_InterpTIN_Shifted.csar</i>
Final HOBs	File Name
	H:\Compilation\H12036_B310_TJ\AHB_H12036\COMPILE\Working\HOB's
<i>Survey Scale Soundings</i>	<i>H12036_SS_Soundings.hob</i>
<i>Chart Scale Soundings</i>	<i>H12036_CS_Soundings.hob</i>
<i>Contour Layer</i>	<i>H12036_Contours.hob</i>
<i>Feature Layer</i>	<i>H12036_Features.hob</i>
<i>Meta-Objects Layer</i>	<i>H12036_MetaObjects.hob</i>
<i>Blue Notes</i>	<i>H12036_BlueNotes.hob</i>

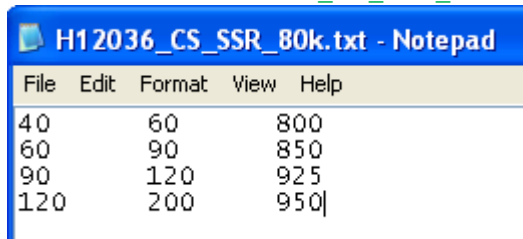
Meta-Objects Attribution	
Acronym	Value
<b>M_COVR</b>	
CATCOV	<i>1 – coverage available</i>
SORDAT	<i>20091020</i>
SORIND	<i>US,US,graph,H12036</i>
<b>M_QUAL</b>	
CATZOC	<i>6 – zone of confidence U (data not assessed)</i>
INFORM	<i>NOAA Ship Thomas Jefferson</i>
POSACC	<i>10.0 m</i>
SORDAT	<i>20091020</i>
SORIND	<i>US,US,graph,H12036</i>
SUREND	<i>20091020</i>
SURSTA	<i>20090913</i>

*Version Updated 09/01/2010*

<b>DEPARE</b>	
	<i>12.938m</i>
DRVALV2	<i>39.043m</i>
SORDAT	<i>20091020</i>
SORIND	<i>US,US,graph,H12036</i>

SPECIFICATIONS:

- I. COMBINED SURFACE:
  - a. Number of ESAR Final Grids: *8*
  - b. Resolution of Combined (m): *4 m*
  
- II. SURVEY SCALE SOUNDINGS (SS):
  - a. Attribute Name: Depth
  - b. Selection criteria: Radius, Shoal bias
  - c. Radius value is: mm at map scale
    - i. Use single-defined radius: *1.00*
  - d. Queried Depth of All Soundings
    - i. Minimum: *12.9380 m*
    - ii. Maximum: *39.0430 m*
  
- III. INTERPOLATED TIN SURFACE:
  - a. Resolution (m): *12 m*
  - b. Interpolation method: Natural Neighbor
  - c. Shift value: *-0.75 ft*
  
- IV. CONTOURS:
  - a. Attribute Name: Depth
  - b. Use a Depth List: *H12036\_depth\_contours.txt*
  - c. Output Options: Create contour lines
    - i. Line Object: DEPCNT
    - ii. Value Attribute: VALDCO
  
- V. FEATURES:
  - a. Number of Chart Features: *2 OBSTRN, 3 WRECKS, 17 SBDARE-1 is a rocky seabed area*
  
- VI. CHART SURVEY SOUNDINGS (CS):
  - a. Number of ENC CS Soundings: *126*
  - b. Attribute Name: Depth
  - c. Selection criteria: Radius, Shoal bias
  - d. Radius value is: Distance on the ground (m)
    - Use radius table file: *H12036\_CS\_SSR\_80k.txt*



- e. Enable Filter: Interpolated != 1
- f. Number Survey CS Soundings: *117*

**ATLANTIC HYDROGRAPHIC BRANCH  
H-CELL REPORT to ACCOMPANY  
SURVEY H12036 (2009)**

This H-Cell Report has been written to supplement and/or clarify the original Descriptive Report (DR) and pass critical compilation information to the cartographers in the Marine Chart Division. Sections in this report refer to the corresponding sections of the Descriptive Report.

**B. DATA ACQUISITION AND PROCESSING**

**B.2 QUALITY CONTROL**

The AHB source depth grids for the survey's nautical chart update were 0.50m, 1m, and 2m resolution BASE surfaces (\*.CSAR), which were combined at 4m resolution. The survey scale soundings were created from the combined surface at a single defined radius of 1mm at the 1:80,000 chart scale. A TIN was created from the survey scale soundings, from which an interpolated surface was generated. The chart scale soundings were selected from the filtered interpolated surface using a sounding spacing range (SSR) file. The chart scale soundings are a subset of the survey scale soundings. The surface model was referenced when selecting the chart scale soundings, to ensure that the selected soundings portray the bathymetry within the common area.

The interpolated TIN surface of 12m resolution was shifted by the NOAA sounding rounding value of -0.75ft. The shifted interpolated TIN was used to generate depth contours in feet (60, 90, 120ft). The depth contours are forwarded to MCD for reference only. The contours were utilized during chart scale sounding selection and quality assurance efforts at AHB. The depth contours are incorporated into the SS H-Cell product as per 2009 H-Cell Specifications.

The compilation products (Final \*.HOB files) for this survey are detailed in the H12036 AHB Compilation Log, contained within this document. The Final HOB files include depth areas (DEPARE), depth contours (DEPCNT), soundings (SOUNDG), meta-objects (M\_COVR, M\_QUAL), cartographic Blue Notes (\$CSYMB), and features (OBSTRN, WRECKS, SBDARE).

As dictated by Hydrographic Technical Directive 2008-8, these Final HOB files were combined into two separate files in S-57 format. Both S-57 files were exported from CARIS Bathy DataBASE in meters and converted from metric units into feet in CARIS HOM ENC 3.3. The final products are two S-57 files, in Lat/Long NAD-83. One S-57 file contains the chart scale soundings, the meta-objects, the Blue Notes, and the features (H12036\_CS.000), and the other S-57 file contains the depth contours and the survey scale soundings (H12036\_SS.000). Finally, quality assurance and topology checks were conducted using CARIS S-57 Composer 2.1 validation tests and DKART Inspector 5.1 validation tests.

H12036 CARIS H-Cell final deliverables include the following products:

H12036_CS.000	1:80,000 Scale	H-Cell with chart scale soundings, meta-objects, blue notes, and features
H12036_SS.000	1:40,000 Scale	H-Cell with survey scale soundings and depth contours

#### **B.2.4 Junctions and Prior Surveys**

Survey H12036 (2009) junctions with survey H11916 (2008) and F00561 (2008) to the west and H12138 (2009) to the north. Most present survey depths compare within 50 centimeters of junctioning survey depths to the west, and within 1 meter of junctioning survey depths to the north. Most present survey depths compare within 1 meter of the charted hydrography to the east and south.

#### **B.4 DATA PROCESSING**

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

CARIS Bathy DataBase version 2.3/HF17  
CARIS Bathy DataBase version 3.0/HF5  
CARIS HIPS and SIPS version 7.0/SP2/HF3  
CARIS S-57 Composer version 2.1/HF4  
CARIS HOM ENC version 3.3/SP3/HF8  
DKART Inspector version 5.1  
HSTP Pydro version 10.9 (r3015)

#### **C. HORIZONTAL AND VERTICAL CONTROL**

The hydrographer makes adequate mention of horizontal and vertical control used for this survey in section C of the DR. The sounding datum for this survey is Mean Lower Low Water (MLLW), and the vertical datum is Mean High Water (MHW). Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD83), UTM projection zone 18 North.

#### **D. RESULTS AND RECOMMENDATIONS**

##### **D.1 CHART COMPARISON**

##### **12326 (51st Edition, April 2009)**

Approaches to New York File Island Light  
to Sea Girt

Corrected through NM 10/09/2010

Corrected through LNM 09/28/2010

Scale 1:80,000

## ENC COMPARISON

## US4NY1AM

Approaches to New York File Island Light  
to Sea Girt

Edition 21

Application Date 05/07/2010

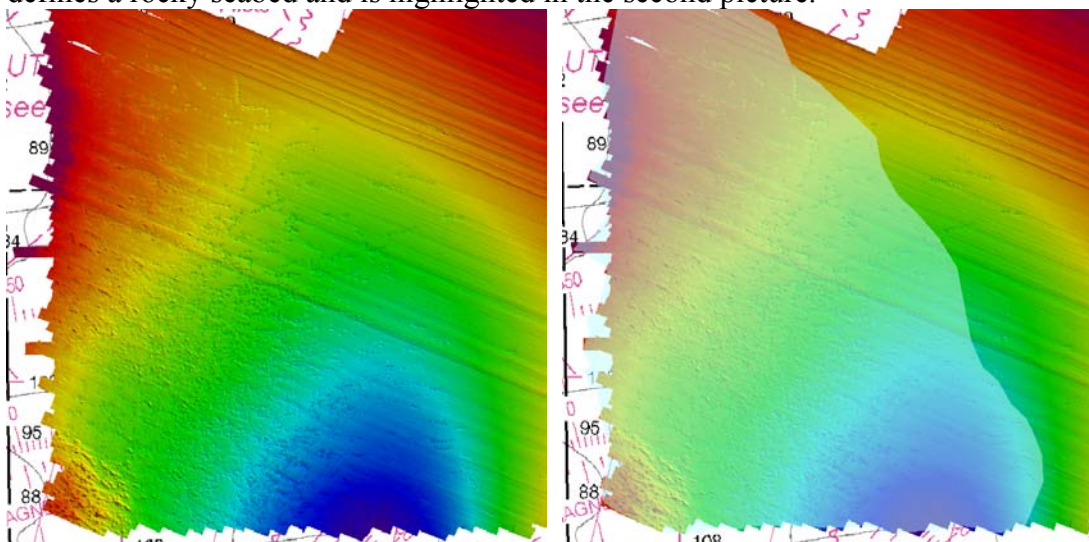
Issue Date 06/28/2010

Chart 12326

### D.2 ADDITIONAL RESULTS

The charted hydrography originates with prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in section D and Appendix I and II of the DR. The hydrographer recommends that any charted features not specifically addressed either in the H-Cell files or the Blue Notes should be retained as charted. The following exception is noted:

The H-Cell deliverable contains a rocky seabed area (SBDARE) feature. This area defines a rocky seabed and is highlighted in the second picture.



### D.6 MISCELLANEOUS

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

### D.8 ADEQUACY OF SURVEY

The present survey is adequate to supersede the charted bathymetry within the common area. Any features not specifically addressed either in the H-Cell files or the Blue Notes should be retained as charted. Refer to section D and Appendix I and II of the DR for further recommendations by the hydrographer.

**APPROVAL SHEET**  
**H12036**

**Initial Approvals:**

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

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

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**Katrina Wyllie**  
Physical Scientist  
Atlantic Hydrographic Branch

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

Approved: \_\_\_\_\_  
**Richard T. Brennan**  
Commander, NOAA  
Chief, Atlantic Hydrographic Branch