H12596

U.S. Department of Commerce
National Oceanic and Atmospheric Administration
National Ocean Survey

DESCRIPTIVE REPORT

Type of Survey:	Basic Hydrographic Survey
Registry Number:	H12596

LOCALITY

State(s):	New Jersey
General Locality:	New Jersey Coast and Vicinity, NJ
Sub-locality:	Vicinity of Barnegat Inlet

2013

CHIEF OF PARTY
Jonathan L. Dasler, PE, PLS, CH

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Date:

U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTRY NUMBER:
HYDROGRAPHIC TITLE SHEET	**H12596**

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(s):	**New Jersey**
General Locality:	**New Jersey Coast and Vicinity, NJ**
Sub-Locality:	**Vicinity of Barnegat Inlet**
Scale:	**40000**
Dates of Survey:	**07/18/2013 to 10/30/2013**
Instructions Dated:	**07/27/2013**
Project Number:	**OPR-C308-KR-13**
Field Unit:	**David Evans & Associates, Inc.**
Chief of Party:	**Jonathan L. Dasler, PE, PLS, CH**
Soundings by:	**ODOM CV-100 and RESON 8101**
Imagery by:	**EdgeTech 4200-HF and EdgeTech 4200 HFL**
Verification by:	**Atlantic Hydrographic Branch**
Soundings Acquired in:	**meters at Mean Lower Low Water**

Remarks:

NAD83, UTM Zone 18, Meters, Times are UTC. The purpose of this contract is to provide NOAA with modern, accurate hydrographic survey data with which to update nautical charts of the assigned area.

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 H12596

Project: OPR-C308-KR-13

Locality: New Jersey Coast and Vicinity, NJ

Sublocality: Vicinity of Barnegat Inlet

Scale: 1:40000

July 2013 - October 2013

David Evans & Associates, Inc.

Chief of Party: Jonathan L. Dasler, PE, PLS, CH

A. Area Surveyed

David Evans and Associates, Inc. (DEA) conducted hydrographic survey operations in the vicinity of Barnegat Inlet, New Jersey. Survey H12596 was conducted in accordance with the Statement of Work (June 20, 2013) and Hydrographic Survey Project Instructions (June 27, 2013). The Hydrographic Survey Project Instructions reference the 2012 Hydrographic Surveys Specifications and Deliverables (HSSD) as the technical requirements for this project. To better align with the Hydrographic Surveys Division (HSD) advancements in standards, project OPR-C308-KR-13 surveys were performed using the 2013 HSSD. This modification was approved by HSD staff.

A.1 Survey Limits

Data were acquired within the following survey limits:

Northwest Limit	Southeast Limit
39° 47" 0.19" N 74° 7" 13.41" W	39° 43" 4.5" N 74° 3" 22.35" W

Table 1: Survey Limits

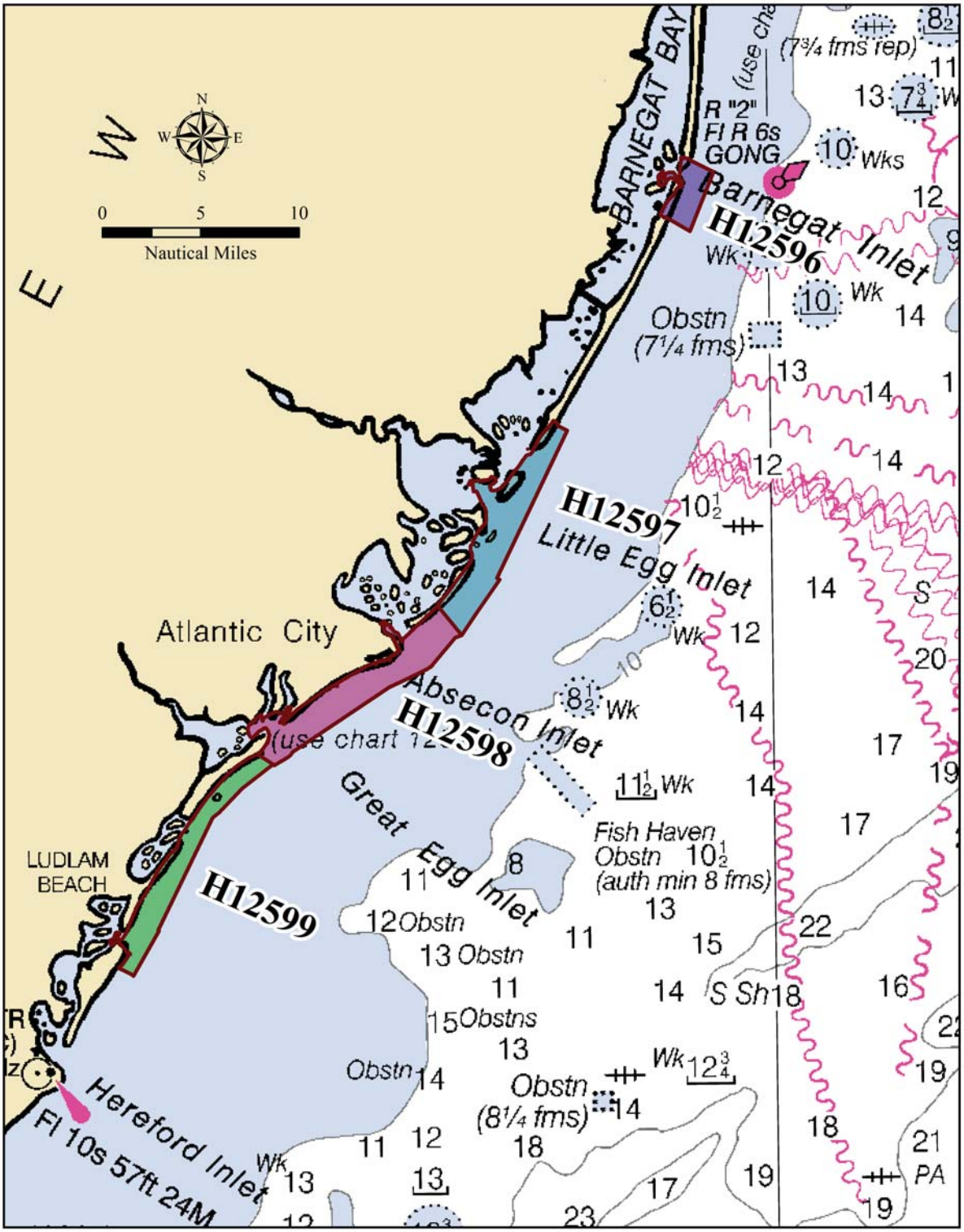


Figure 1: OPR-C308-KR-13 Assigned Survey Areas

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

A.2 Survey Purpose

The purpose of this survey is to provide National Oceanic Atmospheric Administration (NOAA) with modern, accurate hydrographic survey data with which to update nautical charts of the assigned area.

A.3 Survey Quality

The entire survey is adequate to supersede previous data.

A.4 Survey Coverage

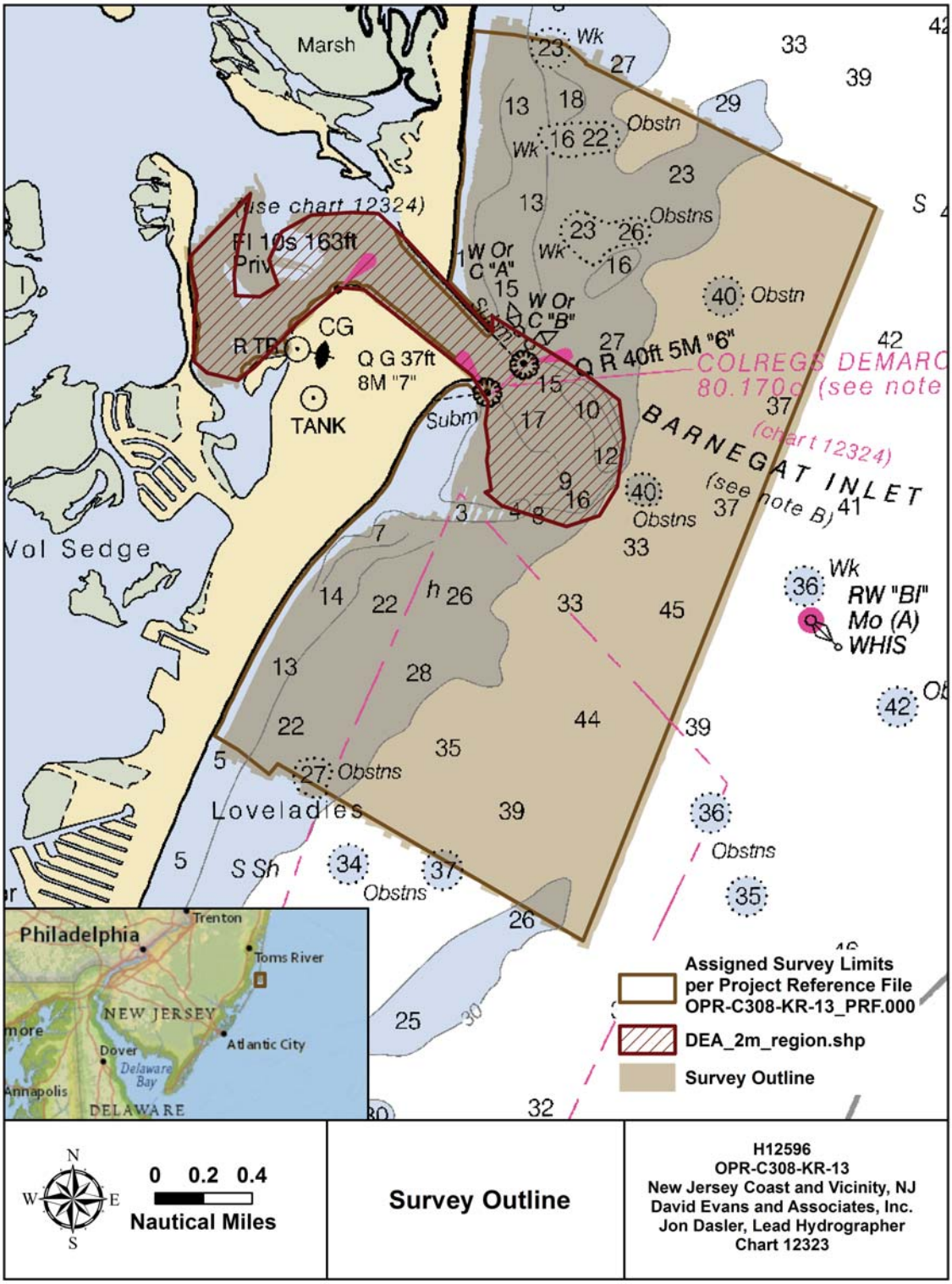


Figure 2: H12596 Survey Outline

The survey consisted of 200% side scan sonar coverage with concurrent single beam in all waters 4 meters and deeper; and 100% side scan sonar coverage with concurrent single beam in depths between 2 meters and 4 meters in waters inside the polygon DEA_2m_region.shp provided by HSD staff. For survey H12596, this polygon encompassed Barnegat Inlet, its approaches, and the channel leading to Barnegat Bay. The survey polygon depicted in the Project Reference File (PRF) OPR-C308-KR-13_PRF.000, which was included with the Hydrographic Survey Project Instructions (June 27, 2013), was used to define the limits for each survey. The survey was conducted over 80-meter and 130-meter set line spacing per 100% coverage (50-meter and 75-meter side scan sonar ranges, respectively) with additional lines spaced to fill holidays created when effective range was reduced in shallow waters. Automated Wreck and Obstruction Information System (AWOIS) items identified by side scan sonar and significant side scan sonar contacts were developed with multibeam sonar to meet Object Detection coverage requirements for multibeam surveys. The coverage area totaled 5.7 square nautical miles using a combination of side scan, single beam and multibeam survey methods.

A.5 Survey Statistics

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

	Vessel	*R/V Chinook*	*Total*
LNM	**SBES Mainscheme**	0	0
	MBES Mainscheme	0	0
	Lidar Mainscheme	0	0
	SSS Mainscheme	0	0
	SBES/MBES Combo Mainscheme	0	0
	SBES/SSS Combo Mainscheme	0	0
	MBES/SSS Combo Mainscheme	257.9	257.9
	SBES/MBES Combo Crosslines	28.3	28.3
	Lidar Crosslines	0	0
Number of Bottom Samples			6
Number AWOIS Items Investigated			3
Number Maritime Boundary Points Investigated			0
Number of DPs			0
Number of Items Items Investigated by Dive Ops			0
Total Number of SNM			5.7

Table 2: Hydrographic Survey Statistics

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

Survey Dates	Julian Day Number
07/18/2013	199
07/20/2013	201
07/21/2013	202
07/22/2013	203
07/23/2013	204
07/24/2013	205
07/26/2013	207
07/27/2013	208
07/28/2013	209
07/29/2013	210
07/30/2013	211
08/01/2013	213
08/13/2013	225
08/15/2013	227
08/16/2013	228
08/17/2013	229
08/18/2013	230
08/21/2013	233
08/22/2013	234
08/23/2013	235
10/28/2013	301
10/29/2013	302
10/30/2013	303

Table 3: Dates of Hydrography

B. Data Acquisition and Processing

B.1 Equipment and Vessels

The OPR-C308-KR-13 Data Acquisition and Processing Report (DAPR) submitted with this survey, details equipment and vessel information as well as data acquisition and processing procedures used during this

survey. There were no vessel or equipment configurations used during data acquisition that deviated from those described in the DAPR.

B.1.1 Vessels

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

Hull ID	***R/V Chinook***
LOA	28 feet
Draft	2 feet

Table 4: Vessels Used

Figure 3: R/V Chinook

B.1.2 Equipment

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

Manufacturer	Model	Type
ODOM	CV 100	SBES
RESON	8101	MBES
Edgetech	4200-HF	SSS
Edgetech	4200-HFL	SSS
AML	SV Pulse V2	Primary Sound Speed Profiler
Sea-Bird	SEACAT SBE-19 CTD Profiler	Secondary Sound Speed Profiler
Applanix	POS/MV 320 v4	Positioning & Attitude

Table 5: Major Systems Used

B.2 Quality Control

B.2.1 Crosslines

Crosslines, acquired for this survey, totalled 11.0% of mainscheme acquisition.

Single beam crosslines were run in a direction perpendicular to main scheme lines across the entire surveyed area, providing a good representation for analysis of consistency. All crosslines were used for crossline comparisons.
Crossline analysis was performed using the CARIS Hydrographic Information Processing System (HIPS) Quality Control (QC) Report tool, which compares crossline data to a gridded surface and reports results. Crosslines were compared to a 4-meter CUBE surface encompassing mainscheme data for the entire survey area. The QC Report tabular output is included in Separate II Digital Data. The results of the analysis meet the requirements as stated in the 2013 HSSD.
Additional crossline analysis was performed by computing a 4-meter CUBE surface from the crossline data. The surface was then differenced from a 4-meter CUBE surface comprised of all mainscheme, fill, and investigation data. The resultant difference surface was exported using the Base Surface to American Standard Code for Information Interchange (ASCII) function and statistics were compiled on the ASCII data. The crossline analysis included 2,892 node comparisons with an mean difference of 0.02 meters and standard deviation of 0.144 meters. Maximum deviations appear in areas where significant bedform movement occurred during the survey and in areas adjacent to steep slopes.

B.2.2 Uncertainty

The following survey specific parameters were used for this survey:

Measured	Zoning
0 meters	0.122 meters

Table 6: Survey Specific Tide TPU Values

Hull ID	Measured - CTD	Measured - MVP	Surface
R/V Chinook	2.000 meters/second	n/a meters/second	0.500 meters/second

Table 7: Survey Specific Sound Speed TPU Values

Additional discussion of these parameters is included in the DAPR.
During surface finalization in HIPS, the "greater of the two" option was selected, where the calculated uncertainty from total propagated uncertainty (TPU) is compared to the standard deviation of the soundings influencing the node, and where the greater value is assigned as the final uncertainty of the node. The uncertainty of the finalized surfaces increased for nodes, where the standard deviation of the node was greater than the total propagated uncertainty.
The resulting calculated uncertainty values of all nodes in the finalized 4-meter single beam surface range from 0.276 meters to 0.730 meters with a standard deviation of 0.017 meters.
The uncertainty values of all nodes in the finalized 1 meter Complete Coverage multibeam surface range from 0.265 meters to 1.124 meters with a standard deviation of 0.043 meters.
The uncertainty values of all nodes in the finalized 50-centimeter Object Detection multibeam surfaces range from 0.265 meters to 2.272 meters with a standard deviation of 0.077 meters.
To determine if surface grid nodes met International Hydrographic Organization (IHO) Order 1 specification, a ratio of the final node uncertainty to the allowable uncertainty at that depth was determined. As a percentage, this value represents the amount of error budget utilized by the uncertainty value at each node. Values greater than 100% indicate nodes exceeding the allowable IHO uncertainty.
For the 4-meter single beam surface the allowable uncertainty utilized ranges from 52% to 138%. The mean allowable uncertainty for the surface is 55% with a standard deviation of 0.033. In total 270 nodes out of 212,744 fail to meet specification.
For the 1 meter Complete Coverage multibeam surface the allowable uncertainty utilized ranges from 48% to 218%. The mean allowable uncertainty for the surface is 54% with a standard deviation of 0.082. In total 3,748 nodes out of 393,281 fail to meet specification.
For the 50-centimeter Object Detection multibeam surface the allowable uncertainty utilized ranges from 48% to 439%. The mean allowable uncertainty for the surface is 56% with a standard deviation of 0.145. In total 13,210 nodes out of 636,250 fail to meet specification.
Nodes that were reported out of specification were coincident with areas of high depth standard deviation such as steep terrain, areas of overlap where the bottom had significantly changed, or over features. All uncertainty values were within allowable specification prior to surface finalization when standard deviation was incorporated into the solution when it was greater than the node uncertainty.

B.2.3 Junctions

There are no contemporary surveys that junction with this survey.

B.2.4 Sonar QC Checks

Quality control is discussed in detail in Section B of the DAPR. Results from weekly position checks and weekly multibeam and single beam bar checks are included in Separate I Acquisition and Processing Logs. The weekly sound speed checks can be found in Separate II Sound Speed Data Summary of this report. Sounding data were reviewed at multiple levels of data processing including: CARIS HIPS conversion, single beam editing, subset editing, and analysis of anomalies revealed in CUBE surfaces. Submerged significant features identified during survey operations were noted in the acquisition logs, saved to Isis cursor log files, and then displayed during HIPS editing to act as a check during feature compilation. In addition to the field interpretation of side scan contacts, two independent post-processing reviews of the side scan data were conducted, and all significant contacts or potentially significant contacts tracked in a custom database.

B.2.5 Equipment Effectiveness

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

B.2.6 Factors Affecting Soundings

There were no other factors that affected corrections to soundings.

B.2.7 Sound Speed Methods

Sound Speed Cast Frequency: Approximately 90-minute intervals.

An AML Oceanographic SV Plus V2 was the primary instrument used to acquire sound speed readings during the survey. Sound speed readings were measured at approximately 90-minute intervals during survey single beam operations and at each investigation site during multibeam acquisition. Additional discussion of sound speed methods can be found in the DAPR.

B.2.8 Coverage Equipment and Methods

Survey speeds were maintained to meet or exceed along track coverage requirements throughout the survey. Where 200% side scan coverage was required, demonstration of 200% coverage was achieved by producing two separate 100% 1 meter resolution mosaics. Mosaics were thoroughly reviewed for holidays and areas of poor quality coverage due to biomass, vessel wakes, or other factors. A fill plan was created in order to acquire side scan data where holidays and significant poor quality coverage existed.

Significant side scan sonar contacts were developed with multibeam sonar to obtain a least depth of the contact using multibeam Object Detection coverage requirements.

B.2.9 Density

The requirement that 95% of all Complete Coverage and Object Detection surface nodes must be populated with at least five soundings was verified by exporting the density child layer of each CUBE surface to an ASCII text file and compiling statistics on the density values. More than 98% of all the CUBE surface nodes of the 1 meter Complete Coverage multibeam surface contained five or more soundings. More than 96% of all the 50-centimeter individual item investigation surfaces using Object Detection requirements contained five or more soundings. Some individual field sheets fail to meet the density requirement for all nodes due to the pattern the investigation plans were run which resulted in a large percentage of edge. Nodes along these edges were only populated with beams from the outer swath which yielded a low node density. All nodes over features exceed density requirements and least depths of all features have been determined with designated soundings from reliable data.

B.3 Echo Sounding Corrections

B.3.1 Corrections to Echo Soundings

Data reduction procedures for survey H12596 are detailed in the DAPR. The multibeam and single beam summary processing logs are included Separate I Acquisition and Processing Logs of this report.

B.3.2 Calibrations

No additional calibration tests were conducted beyond those discussed in the DAPR.

B.4 Backscatter

Multibeam backscatter was logged during side scan contact investigations in Hypack 81X format and is included with the H12596 digital deliverables. Data were processed periodically in CARIS HIPS to evaluate backscatter quality but the processed data is not included with the deliverables.

B.5 Data Processing

B.5.1 Software Updates

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

The following Feature Object Catalog was used: 5.3.2

B.5.2 Surfaces

The following surfaces and/or BAGs were submitted to the Processing Branch:

Surface Name	Surface Type	Resolution	Depth Range	Surface Parameter	Purpose
H12596_SB_4m_MLLW	CUBE	4.0 meters	0 meters - 22 meters	NOAA_4m	Set Line Spacing Coverage
H12596_MB_1m_MLLW	CUBE	1 meters	1 meters - 22 meters	NOAA_1m	Complete Multibeam Coverage
H12596_MB_50cm_MLLW_combined	CUBE	0.5 meters	1 meters - 22 meters	NOAA_0.5m	Object Detection Coverage
H12596_100Percent	Mosaic	1.0 meters	-	N/A	First 100-percent coverage
H12596_200Percent	Mosaic	1.0 meters	-	N/A	Second 100-percent coverage

Table 8: Submitted Surfaces

Bathymetric grids were created relative to Mean Lower Low Water (MLLW) in CUBE format using Set Line Spacing, Complete Coverage and Object Detection resolution requirements as described in the National Ocean Surveys (NOS) HSSD (April 2013).
A 1 meter resolution surface using the Complete Multibeam Coverage requirement was created for all multibeam data. This surface was created as a repository for ancillary multibeam data acquired in support of the survey, or multibeam data acquired during investigations that do not fall within the individual field sheets which surround significant features.
The 50-centimeter combined surface includes investigation data at Object Detection resolution over significant features. In addition, field sheets and surfaces were submitted for all significant individual investigations. The name of the investigation field sheets correspond to the primary side scan sonar contact name. Least depths for all significant contact investigations were added to the final surface with a designated sounding. Additional designated soundings were added to depth surfaces as necessary in order to accurately represent the seafloor in accordance with the NOS HSSD. A bug in HIPS 7.1.1 Service Pack 1 Hotfix 1 caused incorrect survey line names to be listed in the combined surface metadata.

C. Vertical and Horizontal Control

A complete description of the horizontal and vertical control for survey H12596 can be found in the OPR-C308-KR-13 Horizontal and Vertical Control Report (HVCR), submitted under a separate cover. 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:

Discrete Zoning

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

Station Name	Station ID
Atlantic City, NJ	8534720

Table 9: NWLON Tide Stations

File Name	Status
8534720.tid	Verified Observed

Table 10: Water Level Files (.tid)

File Name	Status
C308KR2013CORP_rev.zdf	Final

Table 11: Tide Correctors (.zdf or .tc)

C.2 Horizontal Control

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

The projection used for this project is NAD83 UTM Zone 18 North.

During survey operations, some Differential Global Positioning System (DGPS) outages from the primary beacon (286 kHz) occurred. The system was set up to automatically switch to the secondary beacon (293 kHz) when the primary signal was lost.

The following DGPS Stations were used for horizontal control:

DGPS Stations
Sandy Hook, NJ (286 kHz)
Moriches, NY (293 kHz)

Table 12: USCG DGPS Stations

D. Results and Recommendations

D.1 Chart Comparison

The majority of the chart comparison was performed by comparing H12596 depths to a digital surface generated from electronic navigational charts (ENCs) covering the survey area. A 50-meter product surface was then generated from a triangular irregular network (TIN) created from the soundings, depth contours, and depth features for each ENC scale. An additional 50-meter HIPS product surface of the entire survey area was generated from the finalized Multibeam Echo Sounder (MBES) and SBES CUBE surfaces. The chart comparison was conducted by creating and reviewing the resultant difference surface.
The raster chart comparison was performed by comparing the raster navigational charts (RNCs) covering the survey area to the corresponding ENCs which were subsequently compared to H12596 using difference surface techniques.
The electronic and raster versions of the relevant charts used during the comparison were reviewed to ensure that all US Coast Guard (USCG) Local Notice to Mariners (LNM) issued during survey acquisition, impacting the survey area, were applied and addressed by this survey.

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
12324	1:40000	35	03/2012	01/28/2014	02/08/2014
12323	1:80000	26	12/2012	01/21/2014	02/01/2014

Table 13: Largest Scale Raster Charts

12324

Chart 12324 was compared to US5NJ30M within the H12596 survey area. ENC US5NJ30M includes five soundings that were added as part of the H12596 Danger to Navigation (DtoN) 1 update process, but only four of these soundings were included on Chart 12324. All four of these soundings are missing either the 6-foot or 12-foot depth contours which should surround them. No other differences between the RNC and ENC were observed. Charted differences determined by comparing surveyed depths to a digital surface of US5NJ30M are discussed in Section D.1.2.

12323

Chart 12323 was compared to US4NJ23M within the H12596 survey area. There are two 3-foot soundings that are charted south of Barnegat Inlet South Breakwater Light 7 on US4NJ23M that are not included on chart 12323. No other differences between the RNC and ENC were observed. Charted differences determined by comparing surveyed depths to a digital surface of US4NJ23M are discussed in Section D.1.2.

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?
US5NJ30M	1:20000	17	12/31/2013	01/27/2014	NO
US4NJ23M	1:80000	11	01/22/2013	09/20/2013	NO

Table 14: Largest Scale ENCs

US5NJ30M

Considerable change has occurred within the survey area since it was last charted, specifically in the vicinity of Barnegat Shoal and Barnegat Bay. Shoaling of as much as 18 feet has occurred as Barnegat Shoal has migrated offshore. Areas in the vicinity of the USCG Station in Barnegat Bay are up to 28 feet deeper than charted. Depths seaward of Barnegat Shoal are generally 5 feet shoaler to 5 feet deeper than charted with extremes ranging from 10 feet shoaler or 10 feet deeper than charted. H12596 DtoN 1, which is discussed in Section D.1.7, was submitted to address these discrepancies with the chart in the vicinity of Barnegat Shoal. Sounding and contours are not charted within Barnegat Inlet; therefore it was excluded from the chart comparison.

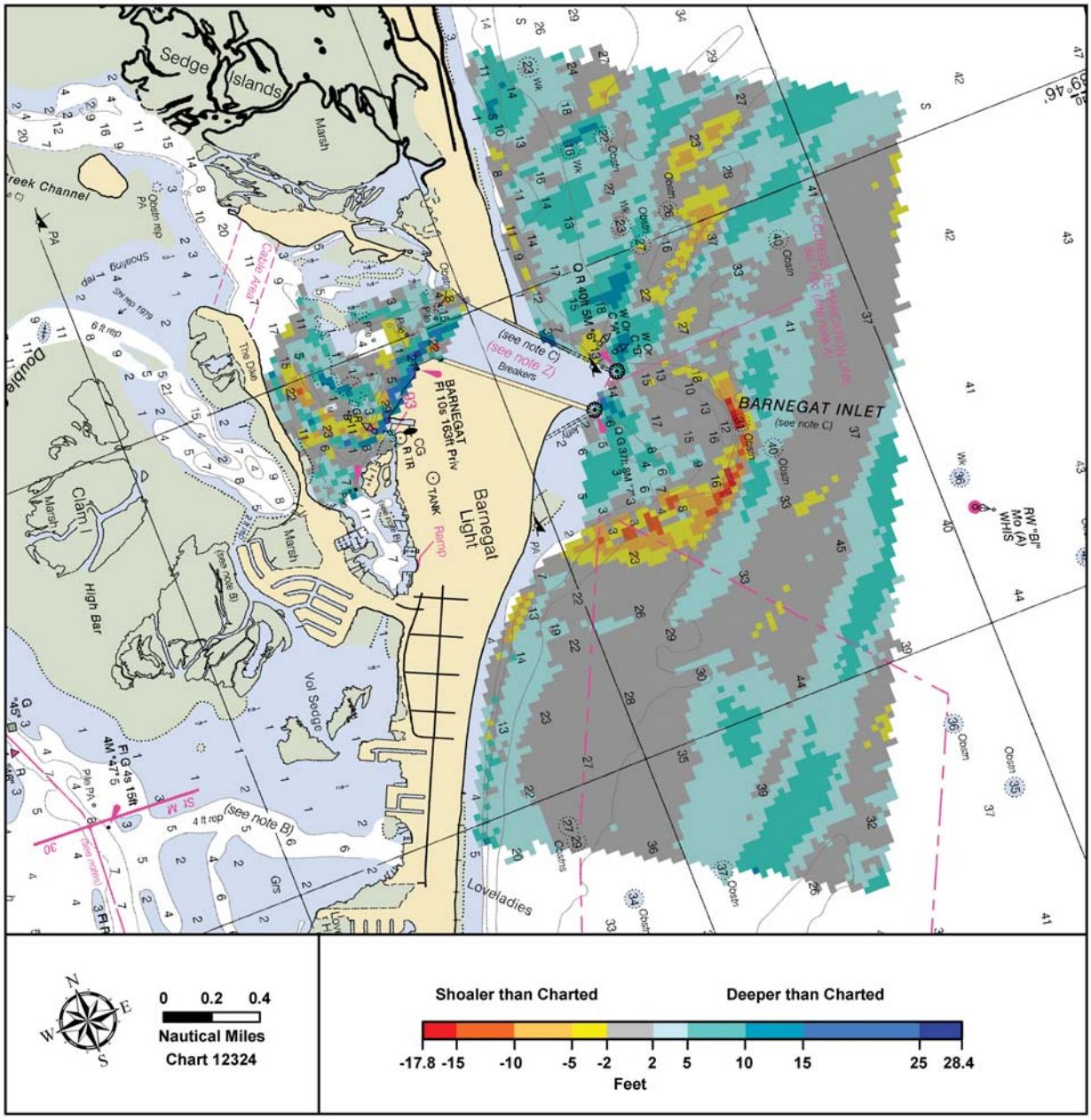


Figure 4: Depth Difference between H12596 and chart US5NJ30M

US4NJ23M

Chart comparison with US4NJ23M shows similar results to the comparison with US5NJ30M with significant changes apparent over the majority of the survey area. Differences of up to 17 feet deeper than charted occur near Barnegat Inlet South Breakwater Light 7 and north of Barnegat Inlet North Jetty Danger Buoy A.

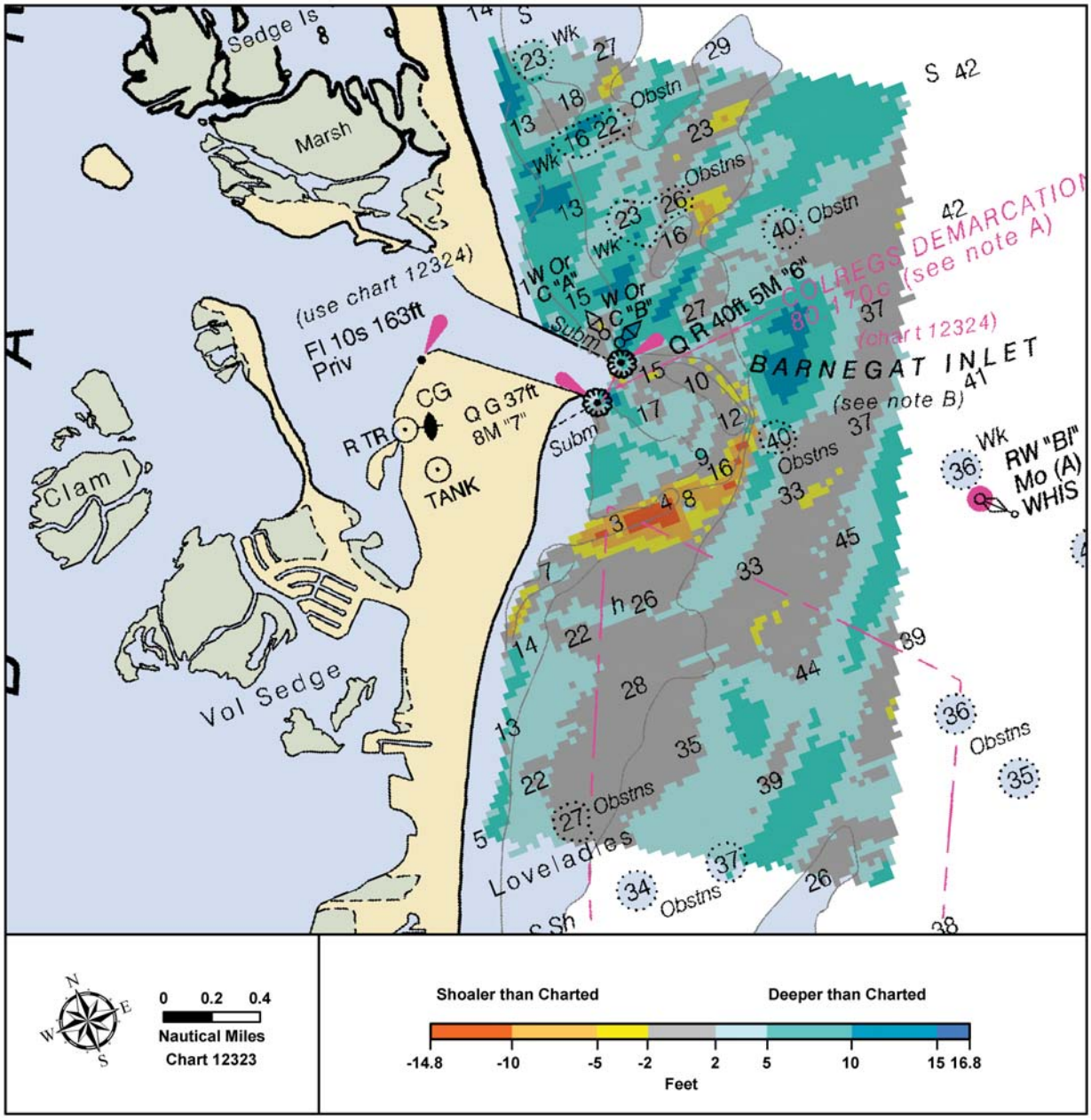


Figure 5: Depth Difference between H12596 and chart US4NJ23M

D.1.3 AWOIS Items

Three (3) AWOIS items were assigned for investigation within the survey H12596 area.
12902
AWOIS Item #12902 is listed in the AWOIS database as a reported 17-foot wreck with a 500-meter search radius and was first charted in 1973. The search radius was surveyed with 200% side scan sonar coverage and followed by multibeam investigations performed on six contacts located within the radius. The multibeam investigations disproved two of the contacts and located two wrecks, one obstruction, and one insignificant contact.

One of the investigated wrecks is believed to be AWOIS Item #12902 and was found to be located approximately 5 meters from a charted 16-foot wreck. The charted wreck as depicted in the Composite Source File (CSF) has been included in the Final Feature File with a description of 'Delete'. A wreck depicting this feature (AWOIS #12902) as surveyed is included in the Final Feature File with a description of 'New'.
A feature depicting the new uncharted obstruction found within the AWOIS #12902 search radius has been included in the Final Feature File with a description of 'New'.
The other surveyed wreck which is believed to be AWOIS #12903 and falls within both the AWOIS #12902 and #12903 search radii is discussed below.
12903
AWOIS Item #12903 is listed in the AWOIS database as a submerged dangerous wreck with a 200-meter search radius. The search radius was surveyed with 200% side scan sonar coverage and followed by one multibeam investigation that was previously mentioned in the AWOIS #12902 discussion. The multibeam investigation located an 11 meter long wreck approximately 6 meters from a charted 22-foot obstruction. According to the Descriptive Report for prior survey H11456 the charted 22-foot obstruction was located during survey H11456 and determined to be AWOIS Item #12903. H11456 also disproved a charted dangerous sunken wreck which was previously charted at the AWOIS database location for #12903. It is the hydrographer's opinion that the charted obstruction and surveyed wreck are one in the same.
The charted obstruction as depicted in the CSF has been included in the Final Feature File with a description of 'Delete'. A wreck depicting AWOIS Item #12903 as surveyed is included in the Final Feature File with a description of 'New'.
12905
AWOIS Item #12905 is listed in the AWOIS database as a submerged dangerous wreck. This item is not currently charted. Two multibeam investigations disproved insignificant side scan sonar contacts within the 200-meter search radius. Survey H12596 has disproved this item with 200% side scan coverage. It is recommended that the AWOIS database be updated with findings from the H12596 survey. A cartographic symbol object representing this uncharted AWOIS item has been included in the Final Feature File with a description of 'Delete'.

D.1.4 Maritime Boundary Points

No Maritime Boundary Points were assigned for this survey.

D.1.5 Charted Features

The survey area does not contain any charted features labeled as Position Doubtful (PD), Existence Doubtful (ED), or Reported. Charted features assigned in the CSF are portrayed in the H12596 File Feature File as surveyed and denoted with the Assignment Flag of 'Assigned'
One assigned wreck Position Approximate (PA) fell shoreward of the inshore limit and was not addressed by the survey. This feature is included in the Final Feature File with the Description 'Not Addressed'.

D.1.6 Uncharted Features

All uncharted features are portrayed in the Final Feature File as surveyed and attributed with the description of 'New'.

D.1.7 Dangers to Navigation

One (1) DtoN was reported for this survey.
H12596 DtoN 1 was originally submitted to the Atlantic Hydrographic Branch (AHB) as a CARIS .hob file containing selected soundings in the vicinity of Barnegat Inlet where significant discrepancies exist between charted and surveys soundings. AHB staff produced a non-standard DtoN submission from this .hob file for the Nautical Data Branch (NDB) that included soundings and contours. The shoaling and significant changes depicted in DtoN 1 were not fully addressed by the subsequent chart update (LNM 39/13, 5th District / RNC posted 9/18/2013). This update induced the addition of five soundings from DtoN 1 and removal of three charted soundings. As previously mentioned in Section 1.1, only four of the five new soundings were added to Chart 12324. DtoN reports for this survey are included in Appendix II - Supplemental Survey Records and Correspondence. The current depiction of DtoN 1 on the charts does not adequately describe this danger to the mariner.

D.1.8 Shoal and Hazardous Features

As previously mentioned, there have been significant changes in the vicinity of Barnegat Inlet and Barnegat Shoal. The application of H12596 DtoN 1 did not fully address these changes.

D.1.9 Channels

Barnegat Inlet is located within the H12596 survey area. As noted on the charts, soundings and buoys are not charted within the inlet due to its shifting nature and the frequent relocation of the buoys.

D.1.10 Bottom Samples

Six (6) bottom samples were acquired on August 18, 2013 (DN 230). The final sampling plan followed suggested sample locations included in the PRF provided by the Hydrographic Surveys Division.

D.2 Additional Results

D.2.1 Shoreline

A limited shoreline investigation was assigned in the OPR-C308-KR-13 Hydrographic Survey Project Instructions. None of the assigned shoreline features included in the CSF are charted within the H12596 survey area. Uncharted shoreline features located during the survey are included in the Final Feature file with the description of 'New'.

In some instances baring features shoreward of the inshore limit were captured in the side scan data. HSD and AHB staff provided guidance on how to handle these features during data processing and reporting. If contacts were created on these features they have been classified as insignificant in the Side Scan Sonar Contact File and denoted with the comment, “Target is a baring feature outside the limits of survey and will be further resolved by forthcoming RSD imagery”.

D.2.2 Prior Surveys

No comparisons with prior surveys were conducted.

D.2.3 Aids to Navigation

Numerous public and private aids to navigation are charted within the H12596 survey area. Notes on the charts covering the area indicate that additional aids to navigation located with the Barnegat Inlet Channel are frequently moved and therefore not included on the charts. Uncharted private aids and private mooring buoys located within the Barnegat Inlet Channel have been included in the Final Feature file with the description of ‘New’. All charted public aids to navigation were found to be serving their intended purpose.

D.2.4 Overhead Features

There were no overhead bridges, cables, or other structures which would impact overhead clearance in the survey area.

D.2.5 Submarine Features

Jetties are charted on the northern and southern sides of Barnegat Inlet. A section of submerged ruined jetty is charted on the northern side of Barnegat Inlet. It is recommended that all charted jetties be retained as charted.

D.2.6 Ferry Routes and Terminals

There were no ferry routes or terminals within the survey area.

D.2.7 Platforms

No platforms were charted or located within the H12596 survey area.

D.2.8 Significant Features

Water turbulence features denoting the location of breakers observed during survey operations in Barnegat Inlet and the vicinity of Barnegat Shoal have been included in the Final Feature File.
Sediment migration is apparent when comparing single beam and multibeam data acquired over multiple days in the vicinity of Barnegat Inlet and Barnegat Shoal. As noted on the charts, sounding data is not included within Barnegat Inlet due to its continually shifting nature.

D.2.9 Construction and Dredging

The U.S. Army Corps of Engineers' Dredge Currituck began dredging Barnegat Inlet on July 23, 2013. The dredge was periodically observed working in the area until August 1, 2013.
No construction activities were observed during survey operations.

D.2.10 New Survey Recommendations

No new surveys or further investigations are recommended for this area.

D.2.11 New Inset Recommendations

No new insets are recommended for this area.

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, Statement of Work, and Hydrographic Survey Project Instructions. 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.

Report Name	Report Date Sent
Data Acquisition and Processing Report	2014-03-21

Approver Name	Approver Title	Approval Date	Signature
Jonathan L. Dasler, PE, PLS, CH	NSPS/THSOA Certified Hydrographer, Chief of Party	03/21/2014	Digitally signed by Jon Dasler DN: cn=Jon Dasler, o=David Evans and Associates, Inc., ou=Marine Services Division, email=jld@deainc.com, c=US Date: 2014.03.21 12:57:49 -07'00'
Jason Creech	Lead Hydrographer	03/21/2014	Digitally signed by Jason Creech DN: cn=Jason Creech, o=David Evans and Associates, Inc., ou=Marine Services Division, email=jasc@deainc.com, c=US Date: 2014.03.21 12:58:16 -07'00'

F. Table of Acronyms

Acronym	Definition
AHB	Atlantic Hydrographic Branch
ASCII	American Standard Code for Information Interchange
AWOIS	Automated Wreck and Obstruction Information System
BAG	Bathymetric Attributed Grid
CH	Certified Hydrographer
CSF	Composite Source File
CTD	Conductivity Temperature Depth
DAPR	Data Acquisition and Processing Report
DEA	David Evans and Associates, Inc.
DGPS	Differential Global Positioning System
DN	Day Number
DtoN	Danger to Navigation
ED	Existence Doubtful
ENC	Electronic Navigational Chart
HIPS	Hydrographic Information Processing System
HSD	Hydrographic Surveys Division
HSSD	Hydrographic Surveys Specifications and Deliverables
HVCR	Horizontal and Vertical Control Report
IHO	International Hydrographic Organization
LNM	Local Notice to Mariners
MBES	Multibeam Echo Sounder
MLLW	Mean Lower Low Water
MVP	Moving Vessel Profiler
NAD83	North American Datum of 1983
NDB	Nautical Data Branch
NOAA	National Oceanic and Atmospheric Administration
NOS	National Ocean Service
NSPS	National Society of Professional Surveyors
NWLON	National Water Level Observation Network
PA	Position Approximate
PD	Position Doubtful

Acronym	Definition
PE	Professional Engineer
PLS	Professional Land Surveyor
PRF	Project Reference File
QC	Quality Control
RNC	Raster Navigational Chart
SBES	Single Beam Echo Sounder
SSS	Side Scan Sonar
THSOA	The Hydrographic Society of America
TIN	Triangular Irregular Network
TPU	Total Propagated Uncertainty
USCG	United Stated Coast Guard

APPENDIX I

TIDES AND WATER LEVELS

Project: OPR-C308-KR-13 Registry No: H12596
Contractor Name: David Evans and Associates, Inc.
Date: October 30, 2013
Sheet Number: 1
Inclusive Dates: July 18, 2013- October 30, 2013

Time (UTC)

Day Number	Date	Start Time	End Time
199	07/18/2013	15:54:10	20:08:31
201	07/20/2013	10:26:38	15:28:07
202	07/21/2013	14:19:13	19:04:35
203	07/22/2013	11:34:59	20:46:50
204	07/23/2013	11:25:35	18:28:36
205	07/24/2013	12:01:27	19:09:35
207	07/26/2013	13:46:53	18:50:49
208	07/27/2013	10:49:54	20:12:44
209	07/28/2013	10:20:39	18:04:48
210	07/29/2013	12:44:58	19:57:46
211	07/30/2013	11:17:11	21:01:11
213	08/01/2013	12:12:10	14:36:49
225	08/13/2013	12:46:28	21:31:00
227	08/15/2013	10:21:56	19:02:13
228	08/16/2013	11:01:14	19:36:10
229	08/17/2013	11:11:10	21:21:03
230	08/18/2013	16:13:59	20:44:10
233	08/21/2013	10:52:59	21:05:23
234	08/22/2013	15:26:19	18:20:24
235	08/23/2013	12:59:31	17:40:31
301	10/28/2013	15:30:10	20:49:08
302	10/29/2013	16:31:20	18:39:23
303	10/30/2013	12:07:09	13:19:14

H12596

FINAL TIDE NOTE and FINAL TIDE ZONING CHART

DATE: October 30, 2013

PROCESSING BRANCH: Atlantic Hydrographic Branch

HYDROGRAPHIC PROJECT: OPR-C308-KR-13

HYDROGRAPHIC SHEET: H12596

LOCALITY New Jersey Coast and Vicinity, New Jersey

SUB-LOCALITY: Vicinity of Barnegat Inlet

TIME PERIOD:	July	18,20-24,26-30
	August	1,13,15-18,21-23
	October	28-30

TIDE STATIONS USED: 8534720, Atlantic City, NJ
Lat. 39° 21.3' N, Lon. 74° 25.1' W

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

HEIGHT OF MEAN HIGH WATER (8534720) ABOVE PLANE OF REFERENCE: 1.276 meters [1]

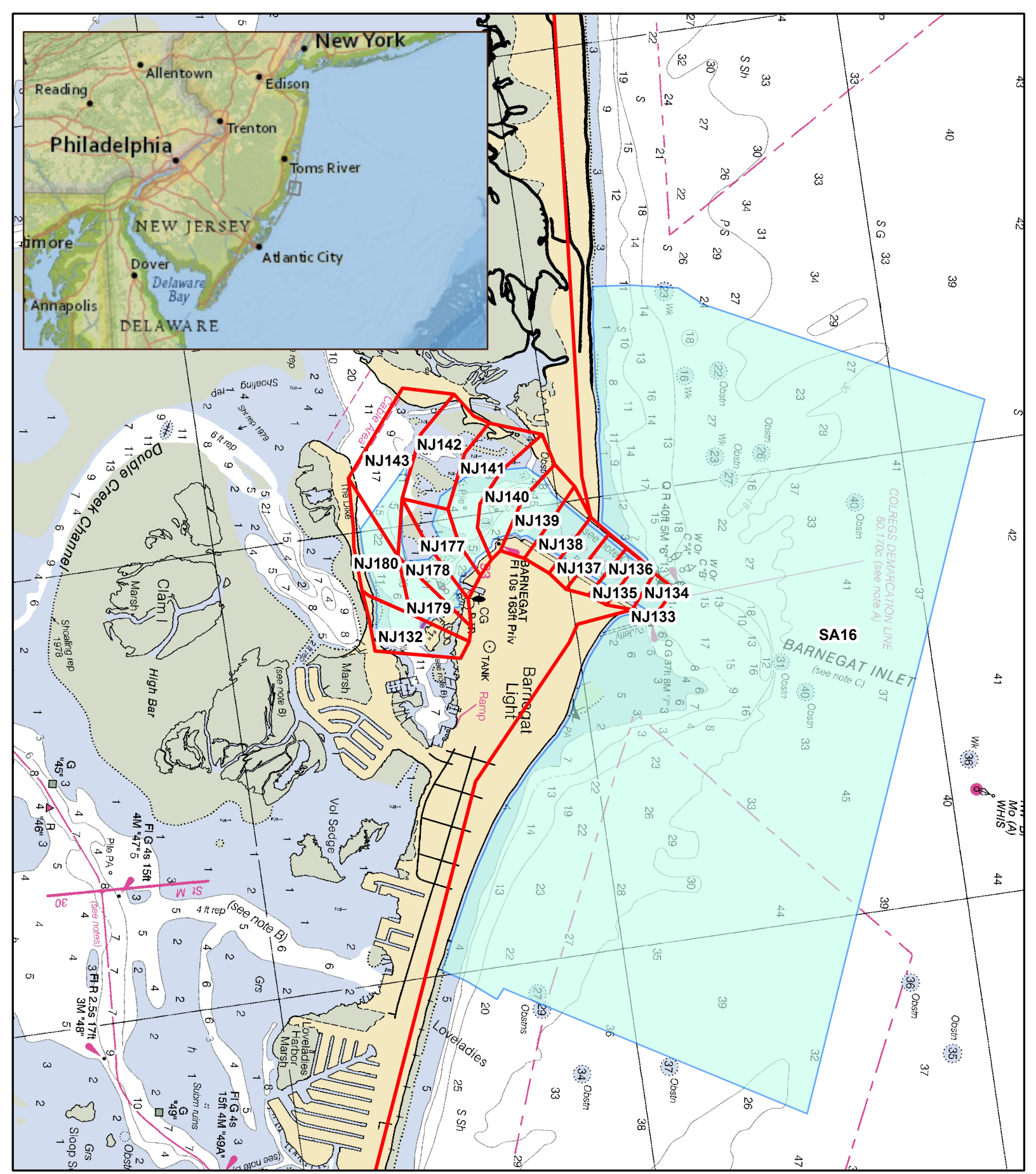
[1] MLLW 1.511m Mean Lower-Low Water
MHW 2.787m Mean High Water

http://tidesandcurrents.noaa.gov/datums.html?units=1&epoch=0&id=8534720&name=Atlantic+City&state=NJ

FINAL TIDE ZONING
H12596
OPR-C308-KR-13

Zone	Time Corrector (Mins)	Range Ratio	Reference Station
NJ132	42	0.42	8534720
NJ133	6	1.01	8534720
NJ134	6	0.97	8534720
NJ135	6	0.92	8534720
NJ136	6	0.87	8534720
NJ137	6	0.82	8534720
NJ138	12	0.77	8534720
NJ139	12	0.72	8534720
NJ140	18	0.67	8534720
NJ141	24	0.62	8534720
NJ142	30	0.57	8534720
NJ143	48	0.52	8534720
NJ177	30	0.57	8534720
NJ178	30	0.52	8534720
NJ179	36	0.47	8534720
NJ180	42	0.47	8534720
SA16	0	1.02	8534720

NOTE: Final soundings were reduced to chart datum using a revised version of the zoning scheme that was provided with the Final Project Instructions. David Evans and Associates, Inc. revised the zoning by moving the western extents of zone SA16 shoreward so that the zoning scheme would fully encompass the project area.



N
W E
S

0 0.3 0.6

Nautical Miles

H12596
Final Tide Zoning

OPR-C308-KR-13
New Jersey Coast and Vicinity, NJ
David Evans and Associates, Inc.
Jon Dasler, Lead Hydrographer
Chart 12324

APPENDIX II

SUPPLEMENTAL SURVEY RECORDS AND CORRESPONDENCE

Jason Creech

From: Jason Creech
Sent: Thursday, August 29, 2013 3:19 PM
To: 'Castle Parker - NOAA Federal'
Cc: Lori Knell - NOAA Federal
Subject: H12596 Barnegat Shoaling
Attachments: Barnegat shoaling.jpg; Barnegat sounding selection.hob

Hi Gene

As discussed yesterday I have included a hob of preliminary selected soundings from our survey. These are selected from the shoal layer of a VBES CUBE surface. I have only included soundings from the shoal at the entrance to Barnegat Inlet back to the western end of our survey area in the channel where there are significant discrepancies with the chart. I have also included an image of these soundings overlaid on the RNC and a transparent difference surface of the preliminary soundings vs the surface created from the ENC (US5NJ30M). This highlights the areas of shoaling which are shown in shades of yellows and reds.

I wanted to start the conversation on how best to submit a danger for these areas. Lori and I briefly discussed last week when she was onsite in NJ and wanted to pass this on to you for guidance.

Thanks,
Jason

Jason Creech
Lead Hydrographer

David Evans and Associates, Inc. | Marine Services Division
2801 SE Columbia Way, Ste. 130 | Vancouver, WA 98661
jasc@deainc.com | Office: 804.516.7829 | Cell: 804.516.7829 | Fax: 360.314.3250

Jason Creech

From: Castle Parker - NOAA Federal [castle.e.parker@noaa.gov]
Sent: Friday, August 30, 2013 12:11 PM
To: OCS NDB - NOAA Service Account
Cc: Abigail Higgins; Marc Moser; Lori Knell - NOAA Federal; Melissa Sampson - NOAA Federal; Jason Creech; Jon Dasler
Subject: H12596 DtoN#1 Submission to NDB
Attachments: H12596_DtoN#1.000

Good Day,

Please find attached S57 format file associated to survey H12596 Danger to Navigation #1 submission to Nautical Data Branch and Marine Chart Division (MCD).

The contents of the attached S57 format file is non-standard for Danger submission. The S57 format file contains soundings, chart interval depth contours, and bounding polygon. The Danger submission does not include the normal DtoN files including the DtoN Letter (PDF), the XML format file, or images. The original submission was submitted to Atlantic Hydrographic Branch (AHB) from contract survey field unit David Evans & Associates on 08/29/2013 for review. Since a DtoN letter is not submitted, the metadata is listed below:

Project: OPR-C308-KR-13
State: New Jersey
Locality: New Jersey Coast and Vicinity
Sub-Locality: Vicinity of Barnegat Inlet
Scale 1:40,000
Field Unit: David Evans and Associates, Inc.
Vertical Datum: Soundings in metric units at MLLW
Horizontal Datum: NAD83
SORDAT:
SORIND: US,US,graph,H12596

H12596 is a post Hurricane Sandy survey and has noted significant change in comparison to the current chart (12324_5) within the common area. This danger submission is preliminary as no data has been provided to AHB for verification. Soundings will be reviewed and verified once the survey data has been submitted.

If you have any questions, please direct them back to me; email me or call 757-441-6746 ext. 115.

Thank you,
Gene Parker

Jason Creech

From: NDB E-Mailbox <ocs.ndb@noaa.gov>
Sent: Wednesday, September 04, 2013 9:53 AM
To: Travis Newman; Tara Wallace; Richard T Brennan; Pramod Singh; OCS NDB; Michael Gaeta; Matt Kroll; Mark Griffin; Kevin Shaw; Ken Forster; Jon Swallow; John Barber; James M Crocker; Gerald Koehl; David Merke; Craig Winn; Castle E Parker; Brent Pounds; Andrew Kampia; Allen Taylor; _NOS OCS NSD Coast Pilot; Castle E Parker; Abigail Higgins; Marc S Moser; Lori Knell; Melissa R Sampson; Jason Creech; Jon Dasler
Subject: Fwd: H12596 DtoN#1 Submission to NDB
Attachments: H12596_DtoN#1.000

L-1655/13 and DD-23634 have been registered by the Nautical Data Branch and directed to PBC for processing.

The DtoN covers a post-Hurricane Sandy area of significant change in the vicinity of Barnegat Inlet, NJ.

The following charts are affected:
12324 kapp 687
12323 kapp 682

The following ENCs are affected:
US5NJ30M
US4NJ23M

References:
H12596
OPR-C308-KR-13

This information was discovered by a NOAA contractor and was submitted by AHB.

-------- Original Message --------
Subject: H12596 DtoN#1 Submission to NDB
Date: Fri, 30 Aug 2013 15:11:13 -0400
From: Castle Parker - NOAA Federal <castle.e.parker@noaa.gov>
To: OCS NDB - NOAA Service Account <ocs.ndb@noaa.gov>
CC: Abigail Higgins <abigail.higgins@noaa.gov>, Marc Moser <marc.s.moser@noaa.gov>, Lori Knell - NOAA Federal <lori.knell@noaa.gov>, Melissa Sampson - NOAA Federal <melissa.r.sampson@noaa.gov>, Jason Creech <Jasc@deainc.com>, Jon Dasler <Jld@deainc.com>

Good Day,

Please find attached S57 format file associated to survey H12596 Danger to Navigation #1 submission to Nautical Data Branch and Marine Chart Division (MCD).

The contents of the attached S57 format file is non-standard for Danger submission. The S57 format file contains soundings, chart interval depth contours, and bounding polygon. The Danger submission does not

include the normal DtoN files including the DtoN Letter (PDF), the XML format file, or images. The original submission was submitted to Atlantic Hydrographic Branch (AHB) from contract survey field unit David Evans & Associates on 08/29/2013 for review. Since a DtoN letter is not submitted, the metadata is listed below:

Project: OPR-C308-KR-13
State: New Jersey
Locality: New Jersey Coast and Vicinity
Sub-Locality: Vicinity of Barnegat Inlet
Scale 1:40,000
Field Unit: David Evans and Associates, Inc.
Vertical Datum: Soundings in metric units at MLLW
Horizontal Datum: NAD83
SORDAT:
SORIND: US,US,graph,H12596

H12596 is a post Hurricane Sandy survey and has noted significant change in comparison to the current chart (12324_5) within the common area. This danger submission is preliminary as no data has been provided to AHB for verification. Soundings will be reviewed and verified once the survey data has been submitted.

If you have any questions, please direct them back to me; email me or call 757-441-6746 ext. 115.

Thank you,
Gene Parker

APPENDIX III

SURVEY FEATURES REPORT

AWOIS – three
Dangers to Navigation (see Appendix II) – one
Maritime Boundary – none
Wrecks (see AWOIS sections) – seven

H12596 Feature Report

Registry Number: H12596
State: New Jersey
Locality: New Jersey Coast and Vicinity
Sub-locality: Vicinity of Barnegat Inlet
Project Number: OPR-C308-KR-13
Survey Dates: 03/01/2006 - 10/30/2013

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
12324	33rd	03/01/2008	1:40,000 (12324_5)	[L]NTM: ?
12323	25th	11/01/2008	1:80,000 (12323_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: ?
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 #12902	Wreck	6.55 m	39° 46' 28.6" N	074° 05' 10.2" W	12902
1.2	AWOIS #12903	Wreck	6.97 m	39° 46' 28.5" N	074° 04' 58.6" W	12903
1.3	AWOIS #12905	Wreck	[None]	39° 44' 30.0" N	074° 04' 36.0" W	12905
2.1	Awash Wreck	Wreck	[None]	39° 45' 36.1" N	074° 05' 29.5" W	---
2.2	4.369m Wreck	Wreck	4.37 m	39° 46' 25.4" N	074° 05' 25.2" W	---
2.3	7.709m Wreck	Wreck	7.71 m	39° 46' 50.5" N	074° 05' 13.5" W	---
2.4	7.643m Wreck	Wreck	7.64 m	39° 46' 06.6" N	074° 05' 01.7" W	---

1 - AWOIS Features

1.1) AWOIS #12902

Feature for AWOIS Item #12902

Search Position:	39° 46' 28.6" N, 074° 05' 10.2" W
Historical Depth:	6.55 m
Search Radius:	500
Search Technique:	Type: UNKNOWN, Itemstatus: ASSIGNED, Searchtype: FULL, Technique: S2 MBES
Technique Notes:	

History Notes:

History

SOURCE UNKNOWN-- WRECK 17 FT REP IN LAT.39-46-31.04N LONG. 079-05-02.83W. FIRST CHARTED ON 15TH ED. 1973(ENT.12/27/04 JRS)

Survey Summary

Survey Position:	39° 46' 28.6" N, 074° 05' 10.2" W
Least Depth:	6.55 m (= 21.48 ft = 3.580 fm = 3 fm 3.48 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2013-303.00:00:00.000 (10/30/2013)
Dataset:	H12596_Feature_Report.000
FOID:	0_ 0003327654 00001(FFFE0032C6A60001)
Charts Affected:	12324_5, 12323_1, 12300_1, 13006_1, 13003_1, 14500_1

Remarks:

WRECKS/remrks: DEA CF #140. AWOIS #12902. Charted wreck rising approximately 2.0m above the natural bottom. New position and depth of charted feature.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12596_Feature_Report.000	0_ 0003327654 00001	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

21ft (12324_5, 12323_1)

3 ½fm (12300_1, 13006_1, 13003_1, 14500_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	NINFOM - Add Wreck
	QUASOU - 6:least depth known
	SORDAT - 20131030
	SORIND - US,US,graph,H12596
	TECSOU - 2,3:found by side scan sonar,found by multi-beam
	VALSOU - 6.547 m
	WATLEV - 3:always under water/submerged

Office Notes

SAR: Wreck verified via object detection multibeam and 200% side scan sonar.

Compile: Chart Wreck.

Feature Images

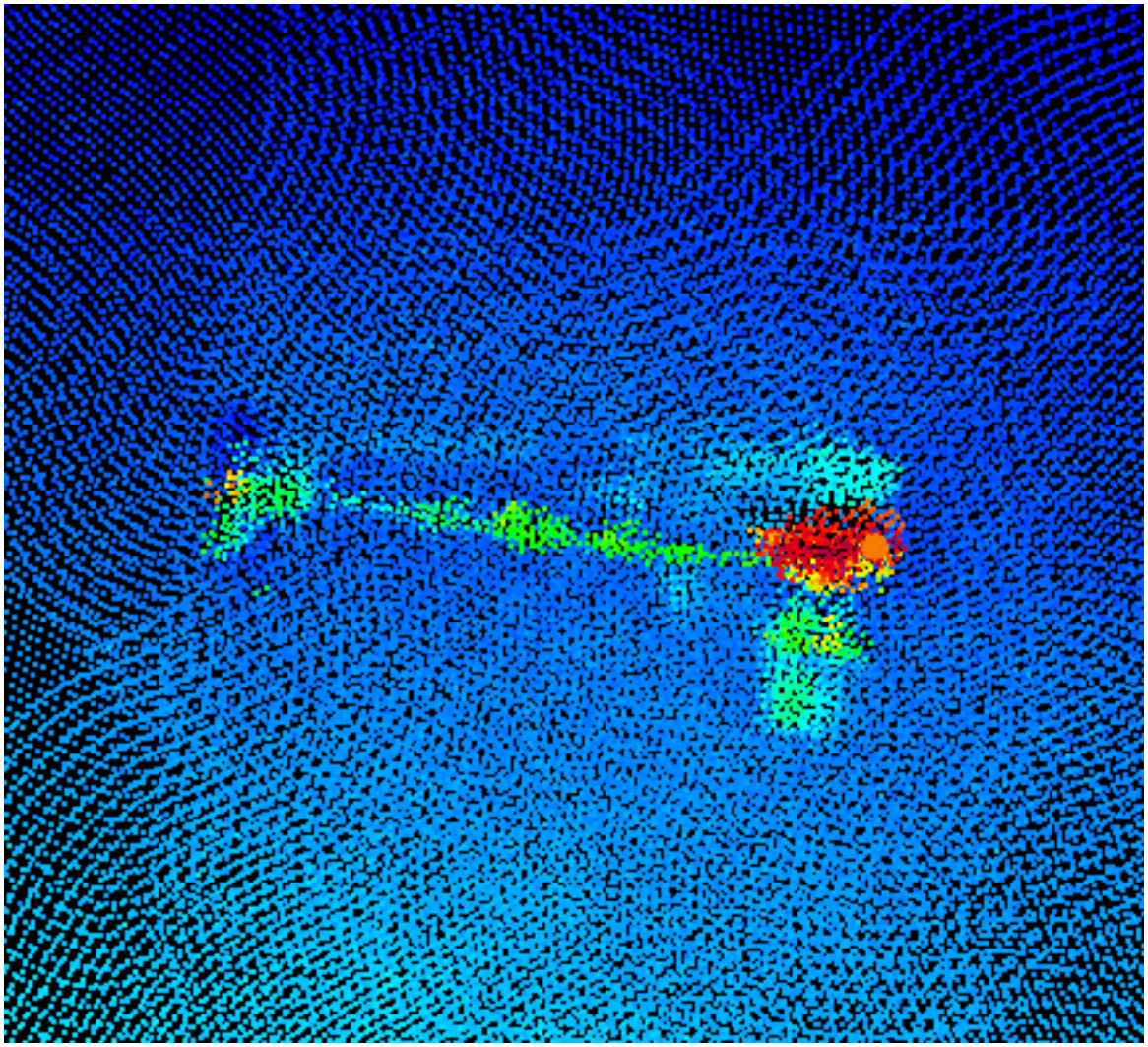


Figure 1.1.1

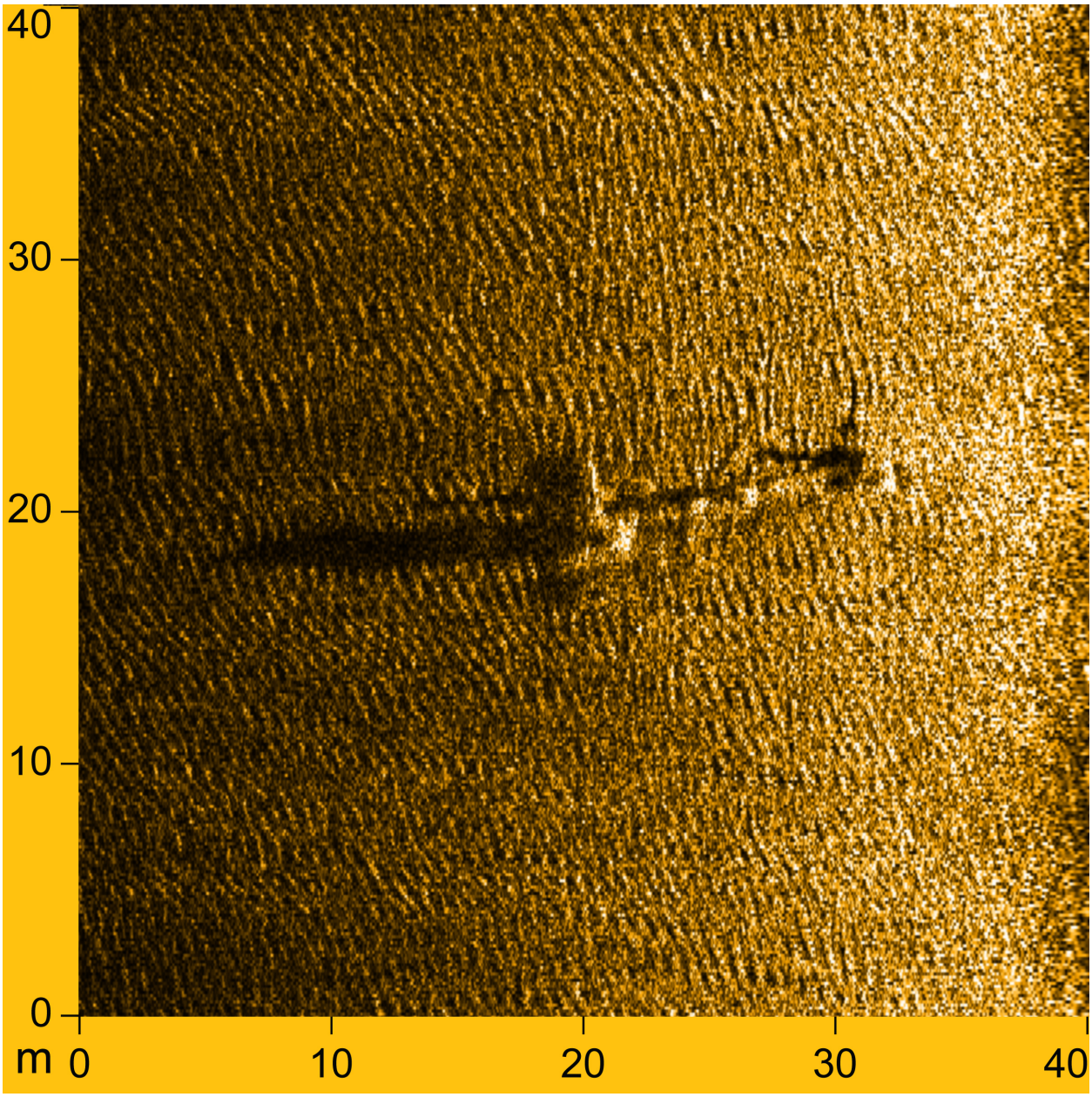


Figure 1.1.2

1.2) AWOIS #12903

Feature for AWOIS Item #12903

Search Position:	39° 46' 28.5" N, 074° 04' 58.6" W
Historical Depth:	6.97 m
Search Radius:	200
Search Technique:	Type: UNKNOWN, Itemstatus: ASSIGNED, Searchtype: FULL, Technique: S2 MBES
Technique Notes:	

History Notes:

History

LNM 46/92 -- ADD SUBMERGED DANGEROUS WRECK IN LAT. 39-46-24N LONG. 074-05-00W. (ENT. 12/27/04 JRS)

Survey Summary

Survey Position:	39° 46' 28.5" N, 074° 04' 58.6" W
Least Depth:	6.97 m (= 22.86 ft = 3.810 fm = 3 fm 4.86 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2013-303.00:00:00.000 (10/30/2013)
Dataset:	H12596_Feature_Report.000
FOID:	0_ 0003327653 00001(FFFE0032C6A50001)
Charts Affected:	12324_5, 12323_1, 12300_1, 13006_1, 13003_1, 14500_1

Remarks:

WRECKS/remrks: DEA CF #45. AWOIS #12903. Wreck rising approximately 2.0m above the natural bottom. The feature is currently charted as an Obstruction.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12596_Feature_Report.000	0_ 0003327653 00001	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

23ft (12324_5, 12323_1)

3 ¾fm (12300_1, 13006_1, 13003_1, 14500_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	NINFOM - Add Wreck
	QUASOU - 6:least depth known
	SORDAT - 20131030
	SORIND - US,US,graph,H12596
	TECSOU - 2,3:found by side scan sonar,found by multi-beam
	VALSOU - 6.967 m
	WATLEV - 3:always under water/submerged

Office Notes

SAR: Wreck verified via object detection multibeam and 200% side scan sonar.

Compile: Chart Wreck.

Feature Images

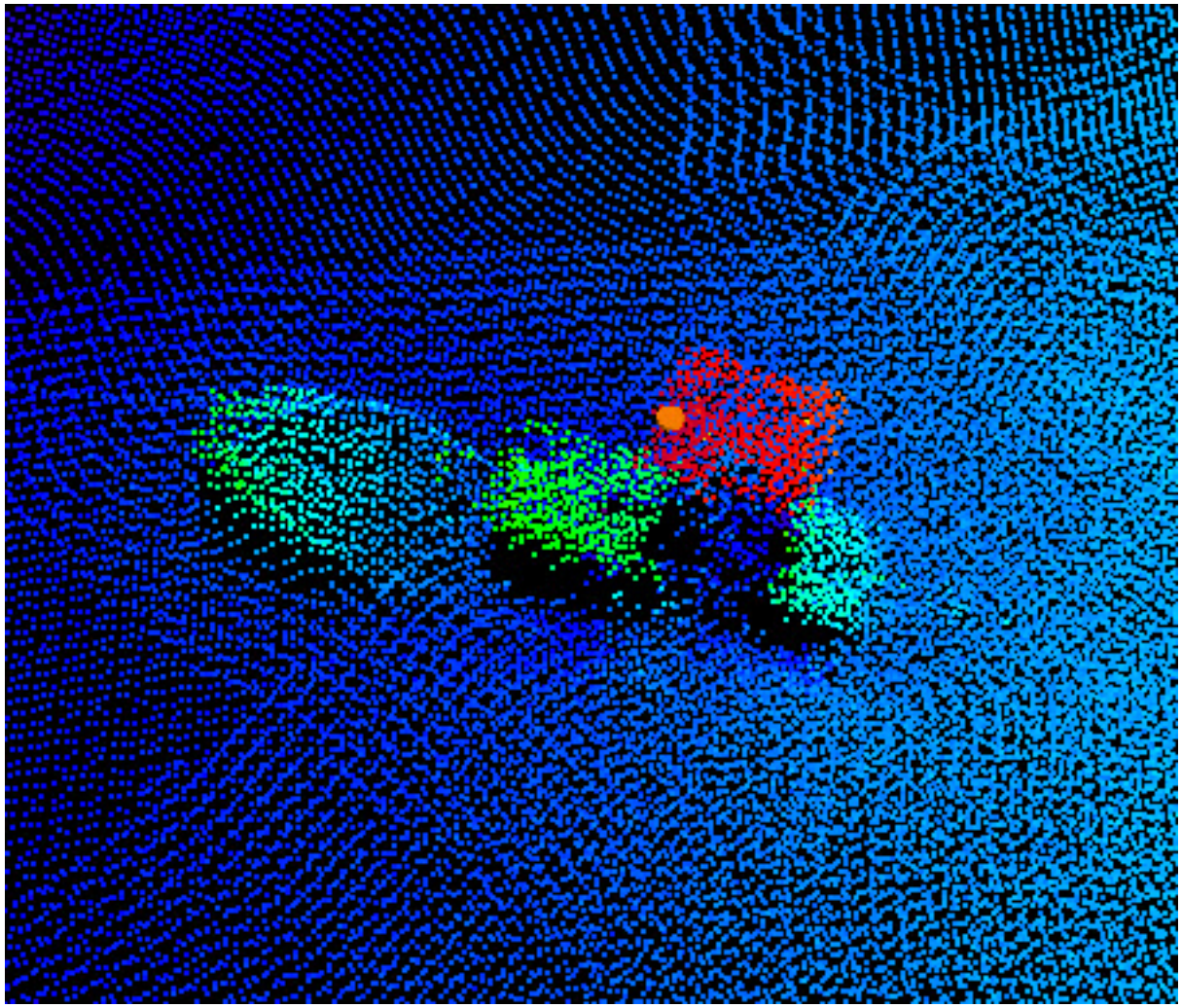


Figure 1.2.1

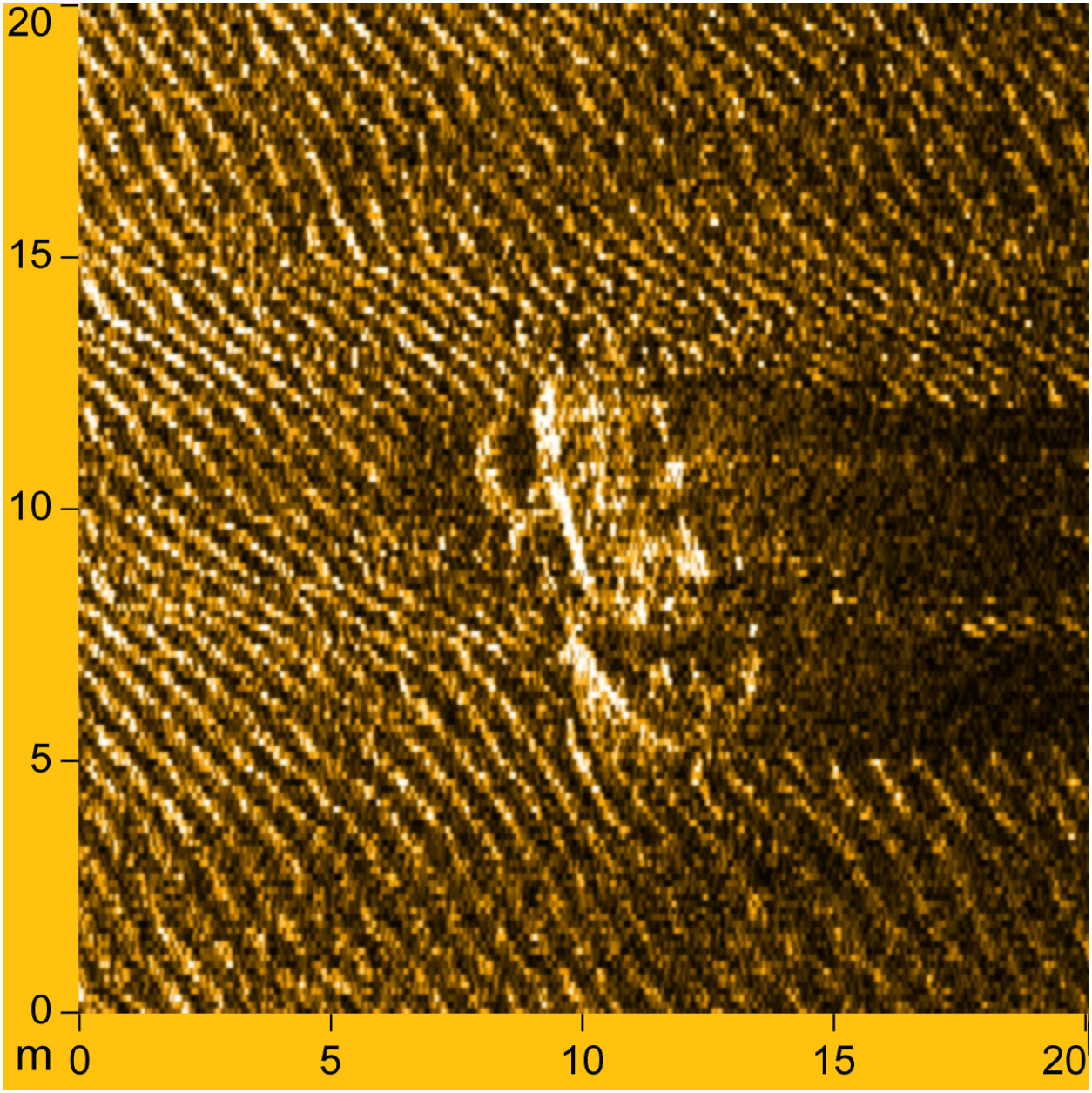


Figure 1.2.2

1.3) AWOIS #12905

Feature for AWOIS Item #12905

Search Position:	39° 44' 30.0" N, 074° 04' 36.0" W
Historical Depth:	[None]
Search Radius:	200
Search Technique:	Type: UNKNOWN, Itemstatus: ASSIGNED, Searchtype: FULL, Technique: S2 MBES
Technique Notes:	

History Notes:

History

LNM 44/92 -- ADD SUBMERGED DANGEROUS WRECK IN LAT. 39-44-30N LONG. 074-04-36W. (ENT. 12/27/04 JRS)

Survey Summary

Survey Position:	39° 44' 30.0" N, 074° 04' 36.0" W
Least Depth:	[None]
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2013-303.00:00:00.000 (10/30/2013)
Dataset:	H12596_Feature_Report.000
FOID:	0_ 0003327659 00001(FFFE0032C6AB0001)
Charts Affected:	12324_5, 12323_1, 12300_1, 13006_1, 13003_1, 14500_1

Remarks:

Uncharted AWOIS Wreck

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12596_Feature_Report.000	0_ 0003327659 00001	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	NINFOM - Wreck AWOIS not found
	SORDAT - 20131030
	SORIND - US,US,graph,H12596

Office Notes

SAR: Uncharted AWOIS Wreck not found.

Compile: Update AWOIS.

2 - Wreck Features

2.1) Awash Wreck

Survey Summary

Survey Position:	39° 45' 36.1" N, 074° 05' 29.5" W
Least Depth:	[None]
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2006-060.00:00:00.000 (03/01/2006)
Dataset:	H12596_Feature_Report.000
FOID:	0_ 0003327657 00001(FFFE0032C6A90001)
Charts Affected:	12324_5, 12323_1, 12300_1, 13006_1, 13003_1, 14500_1

Remarks:

WRECKS/remrks: Observed visually.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12596_Feature_Report.000	0_ 0003327657 00001	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 5:wreck showing any portion of hull or superstructure
	NINFOM - Retain Wreck
	SORDAT - 20060300
	SORIND - US,US,graph,Chart 12324
	WATLEV - 4:covers and uncovers

Office Notes

SAR: Wreck verified visually.

Compile: Retain Wreck.

Feature Images

Figure 2.1.1

Figure 2.1.2

Figure 2.1.3

2.2) 4.369m Wreck

Survey Summary

Survey Position:	39° 46' 25.4" N, 074° 05' 25.2" W
Least Depth:	4.37 m (= 14.33 ft = 2.389 fm = 2 fm 2.33 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2013-303.00:00:00.000 (10/30/2013)
Dataset:	H12596_Feature_Report.000
FOID:	0_ 0003327656 00001(FFFE0032C6A80001)
Charts Affected:	12324_5, 12323_1, 12300_1, 13006_1, 13003_1, 14500_1

Remarks:

WRECKS/remrks: Wreck rising approximately 1.5m above the natural bottom.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12596_Feature_Report.000	0_ 0003327656 00001	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

14ft (12324_5, 12323_1)

2 ¼fm (12300_1, 13006_1, 13003_1, 14500_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	NINFOM - Add Wreck
	QUASOU - 6:least depth known
	SORDAT - 20131030
	SORIND - US,US,graph,H12596
	TECSOU - 2,3:found by side scan sonar,found by multi-beam
	VALSOU - 4.369 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Wreck verified via object detection multibeam and 200% side scan sonar.

Compile: Chart Wreck.

Feature Images

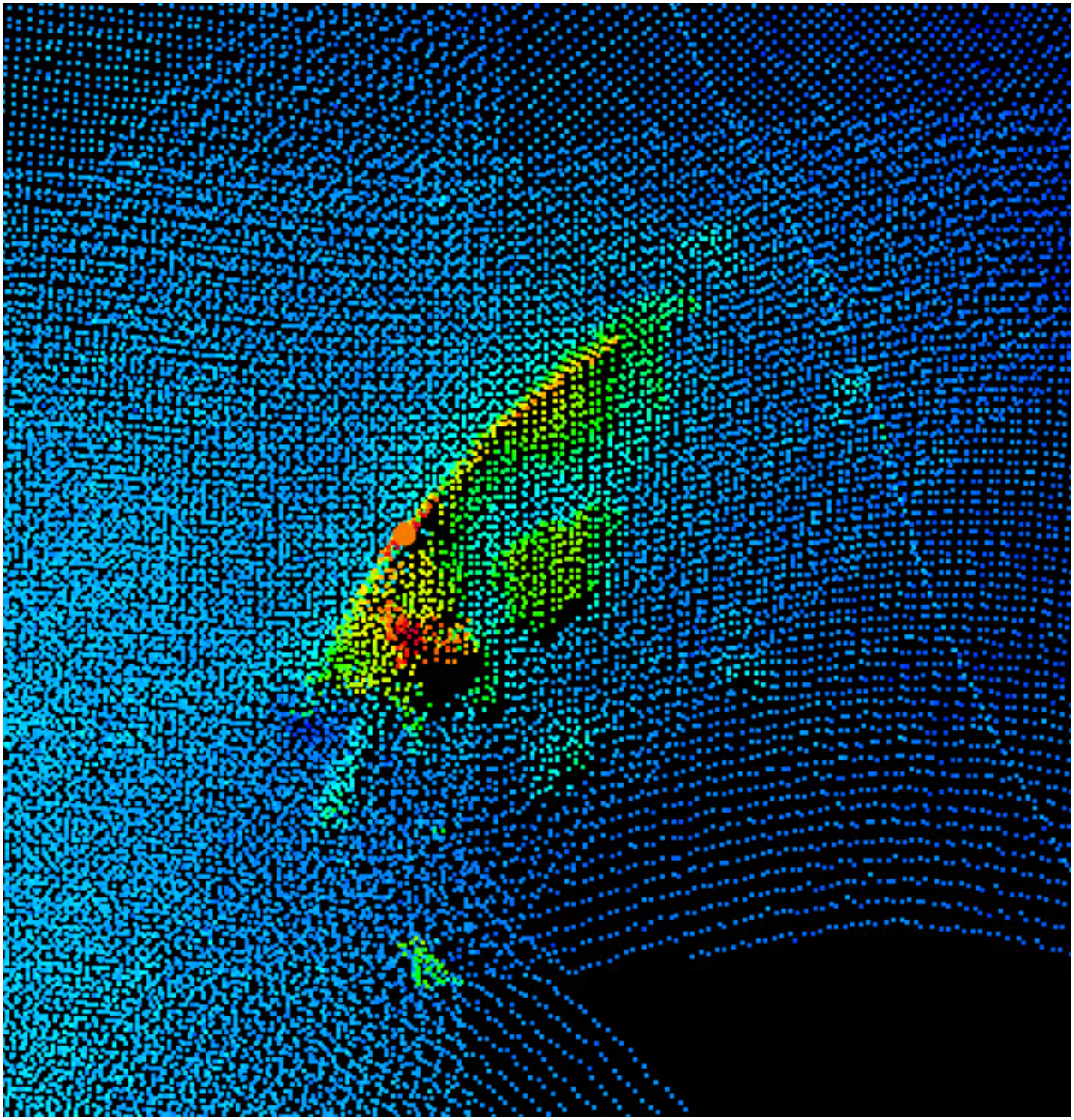


Figure 2.2.1

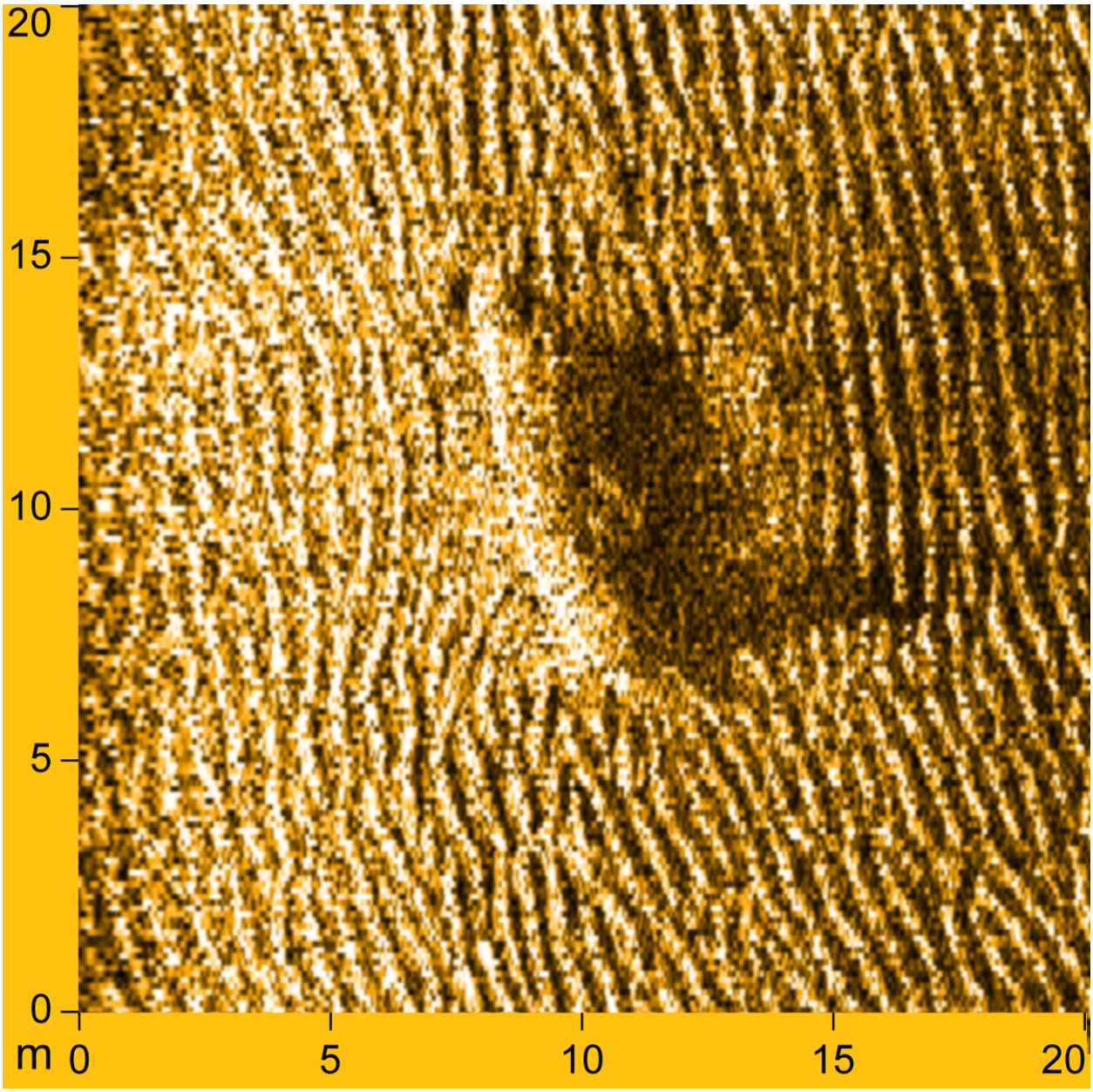


Figure 2.2.2

2.3) 7.709m Wreck

Survey Summary

Survey Position:	39° 46' 50.5" N, 074° 05' 13.5" W
Least Depth:	7.71 m (= 25.29 ft = 4.215 fm = 4 fm 1.29 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2013-303.00:00:00.000 (10/30/2013)
Dataset:	H12596_Feature_Report.000
FOID:	0_ 0003327655 00001(FFFE0032C6A70001)
Charts Affected:	12324_5, 12323_1, 12300_1, 13006_1, 13003_1, 14500_1

Remarks:

WRECKS/remrks: DEA CF #137. Object rising approximately 0.5m above the bottom. New position and depth of charted feature.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12596_Feature_Report.000	0_ 0003327655 00001	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

25ft (12324_5, 12323_1)

4 ¼fm (12300_1, 13006_1, 13003_1, 14500_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 3:distributed remains of wreck
	NINFOM - Add Wreck
	QUASOU - 6:least depth known
	SORDAT - 20131030
	SORIND - US,US,graph,H12596
	TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 7.709 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Wreck verified via object detection multibeam and 200% side scan sonar.

Compile: Chart Wreck.

Feature Images

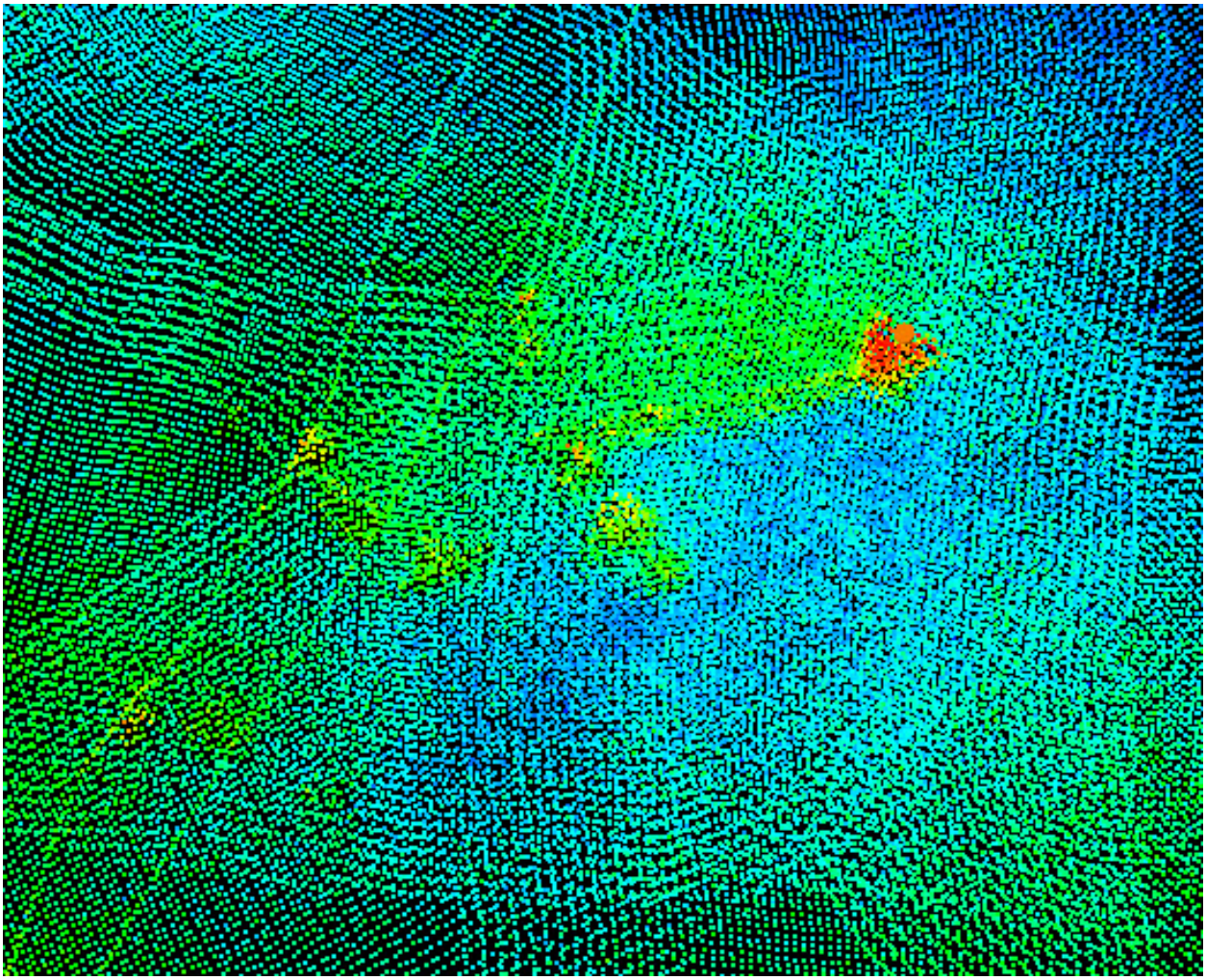


Figure 2.3.1

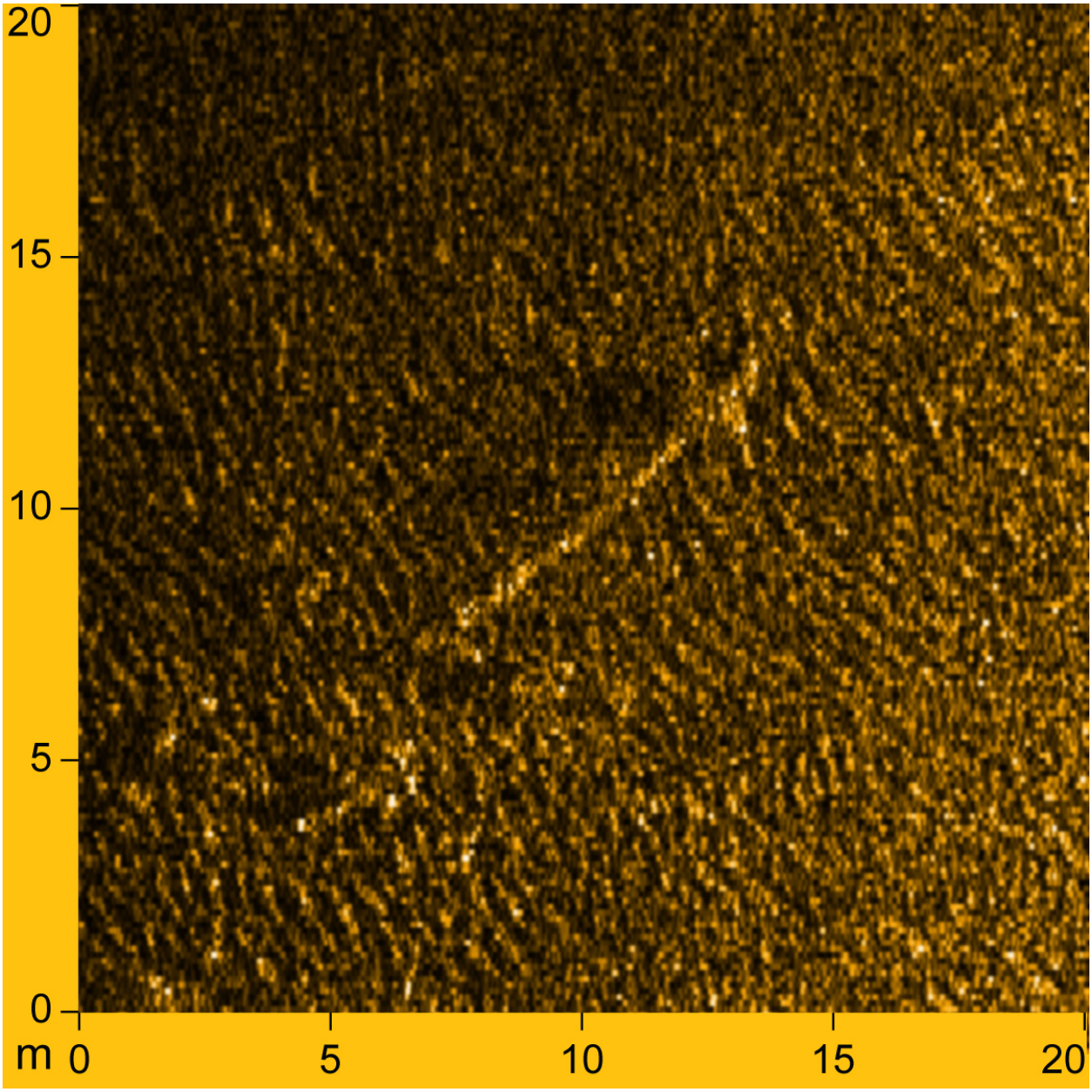


Figure 2.3.2

2.4) 7.643m Wreck

Survey Summary

Survey Position:	39° 46' 06.6" N, 074° 05' 01.7" W
Least Depth:	7.64 m (= 25.08 ft = 4.179 fm = 4 fm 1.08 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2013-303.00:00:00.000 (10/30/2013)
Dataset:	H12596_Feature_Report.000
FOID:	0_ 0003327658 00001(FFFE0032C6AA0001)
Charts Affected:	12324_5, 12323_1, 12300_1, 13006_1, 13003_1, 14500_1

Remarks:

WRECKS/remrks: DEA CF #138. Charted wreck rising approximately 1.0m above the natural bottom. New position and depth of charted feature.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12596_Feature_Report.000	0_ 0003327658 00001	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

25ft (12324_5, 12323_1)

4fm (12300_1, 13006_1, 13003_1, 14500_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 3:distributed remains of wreck
	NINFOM - Add Wreck
	QUASOU - 6:least depth known
	SORDAT - 20131030
	SORIND - US,US,graph,H12596
	TECSOU - 2,3:found by side scan sonar,found by multi-beam

VALSOU - 7.643 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Wreck verified via object detection multibeam and 200% side scan sonar.

Compile: Chart Wreck.

Feature Images

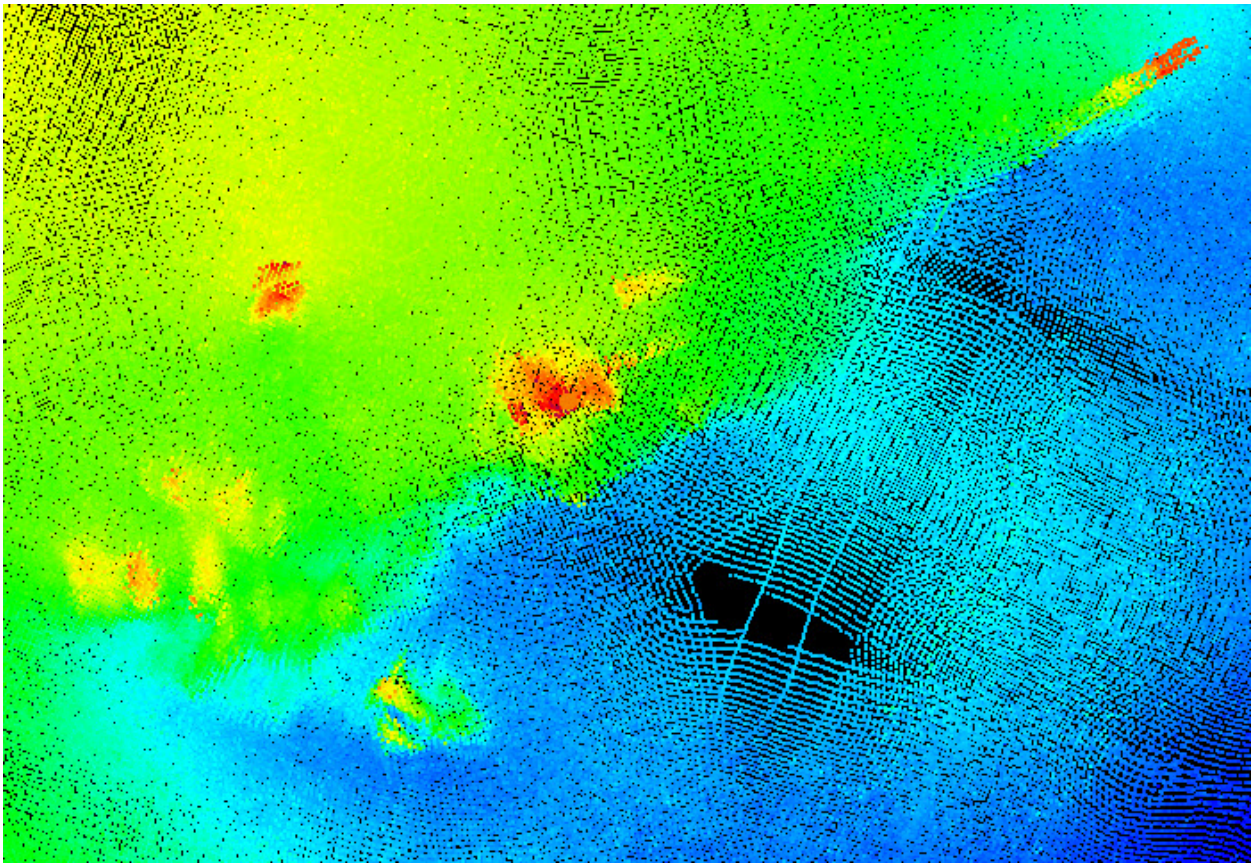


Figure 2.5.1

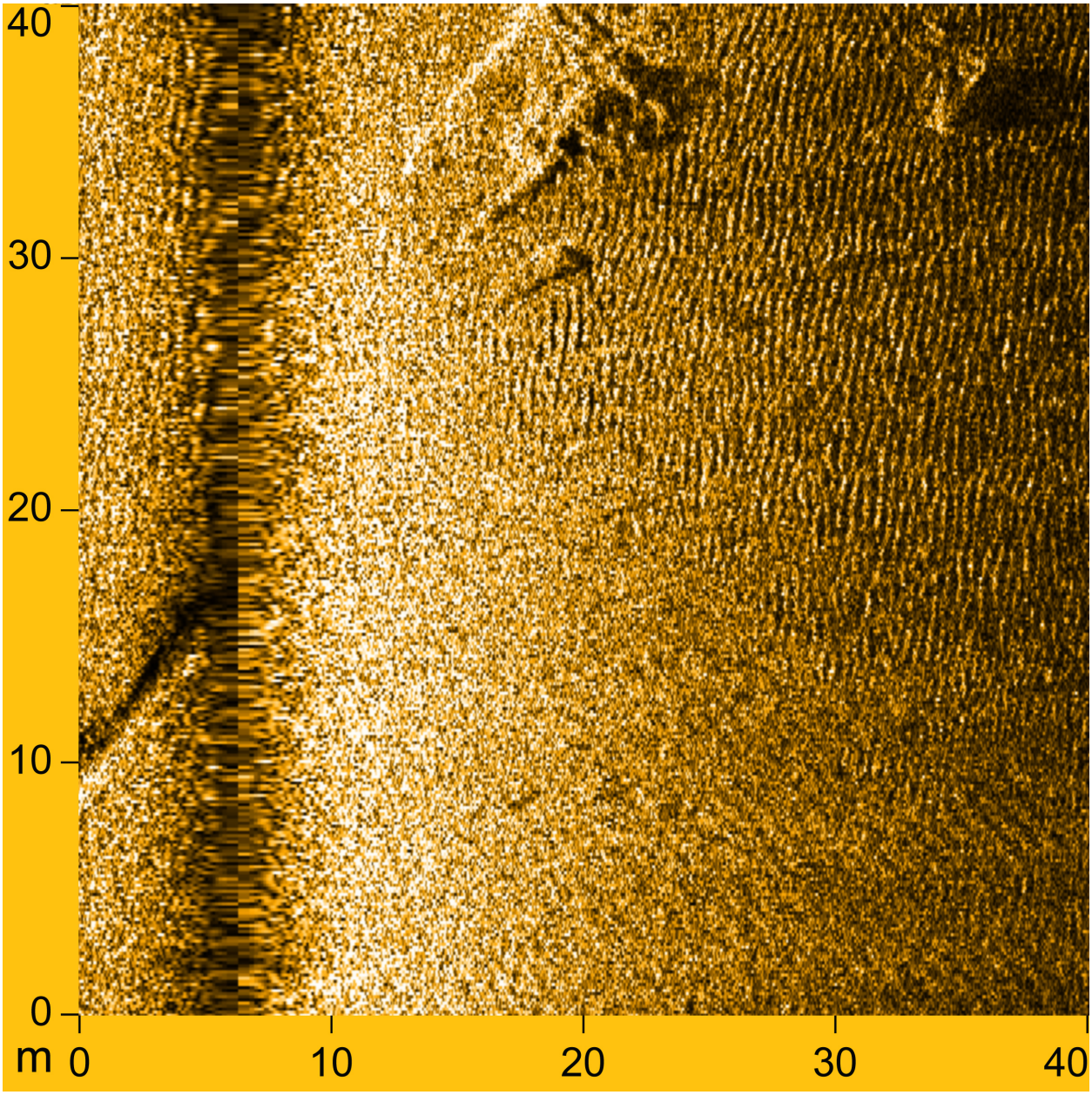


Figure 2.5.2

APPROVAL PAGE

H12596

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

- H12596_DR.pdf
- Collection of depth varied resolution BAGS
- Processed survey data and records
- H12596_GeoImage.pdf

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

Approved: 

Lieutenant Commander Matthew Jaskoski, NOAA
Chief, Atlantic Hydrographic Branch