H12309

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: H12309

LOCALITY

State: Virginia

General Locality: Approaches to Chesapeake Bay

Sub-locality: 29 NM East of Cape Henry

2011

CHIEF OF PARTY
CDR Lawrence T. Krepp
NOAA

LIBRARY & ARCHIVES

DATE

NOAA FORM 77-28 (11-72) U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTRY NUMBER:
HYDROGRAPHIC TITLE SHEET	**H12309**

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:	**Virginia**		
General Locality:	**Approaches to Chesapeake Bay**		
Sub-Locality:	**29 NM East of Cape Henry**		
Scale:	**1:40,000**	Date of Survey:	**04/15/2011 to 05/10/2011**
Instructions Dated:	**6 April, 2011**	Project Number:	**OPR-D304-TJ-11**
Vessel:	**NOAA Ship *Thomas Jefferson***		
Chief of Party:	**CDR Lawrence T. Krepp , 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:			
Soundings in:	**Meters at MLLW**		

Remarks:
1) All Times are in UTC.
2) This is a Navigable Area Hydrographic Survey.
3) Projection is NAD83, UTM Zone 18.

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. Revisions and Red notes were generated during office processing. The processing branch concurs with all information and recommendations in the DR unless otherwise noted. Page numbering may be interrupted or non-sequential. All pertinent records for this survey, including the Descriptive Report, 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 Hydrographic Survey H12309

Project OPR-D304-TJ-11
Approach to Chesapeake Bay, VA
29 NM east of Cape Henery
Scale 1:40,000
April 15th, 2011 – May 10th, 2011
NOAA Ship *Thomas Jefferson*

A. AREA SURVEYED

This hydrographic survey was completed as specified by Hydrographic Survey Project Instructions OPR-D304-TJ-11, dated 23rd March, 2011 and Change1 to Final Instructions OPR-D304-TJ-11 dated 6th April, 2011.

Northern limit	Southern limit	Eastern limit	Western limit
37°00'51"	36°55'17”	-075°18'53”	-075°29'18”

Data acquisition was conducted from April 15th – May 10th, 2011.

The purpose of this project is to provide contemporary surveys to update National Ocean Service (NOS) nautical charting products. The project will address the concerns raised by the Virginia Pilots about the under keel clearance of deep draft coal ships transiting through the area southeast of the deep draft lane sea buoy. The project will also provide data in the area of two potential new shipping access areas, proposed by the Virginia Maritime Association. This project will cover approximately 364 nm² of which 170 nm² are critical survey areas as designated in NOAA Hydrographic Survey Priorities, 2010 edition.

	Linear Nautical Miles
LNM Single beam mainscheme only	N/A
LNM Multibeam mainscheme only	0
LNM Lidar mainscheme only	N/A
LNM Side Scan Sonar mainscheme only	3.9
Lineal nautical miles of any combination of the above techniques (SSS 200%, MBES)	1083.4
LNM Crosslines singlebeam and multibeam combined	85.79
LNM Lidar Crosslines	N/A
LNM development lines non mainscheme	5.143
LNM shoreline/nearshore investigations	N/A
Number of Bottom Samples	5
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	48.5

Table 1: Hydrographic Survey Statistics

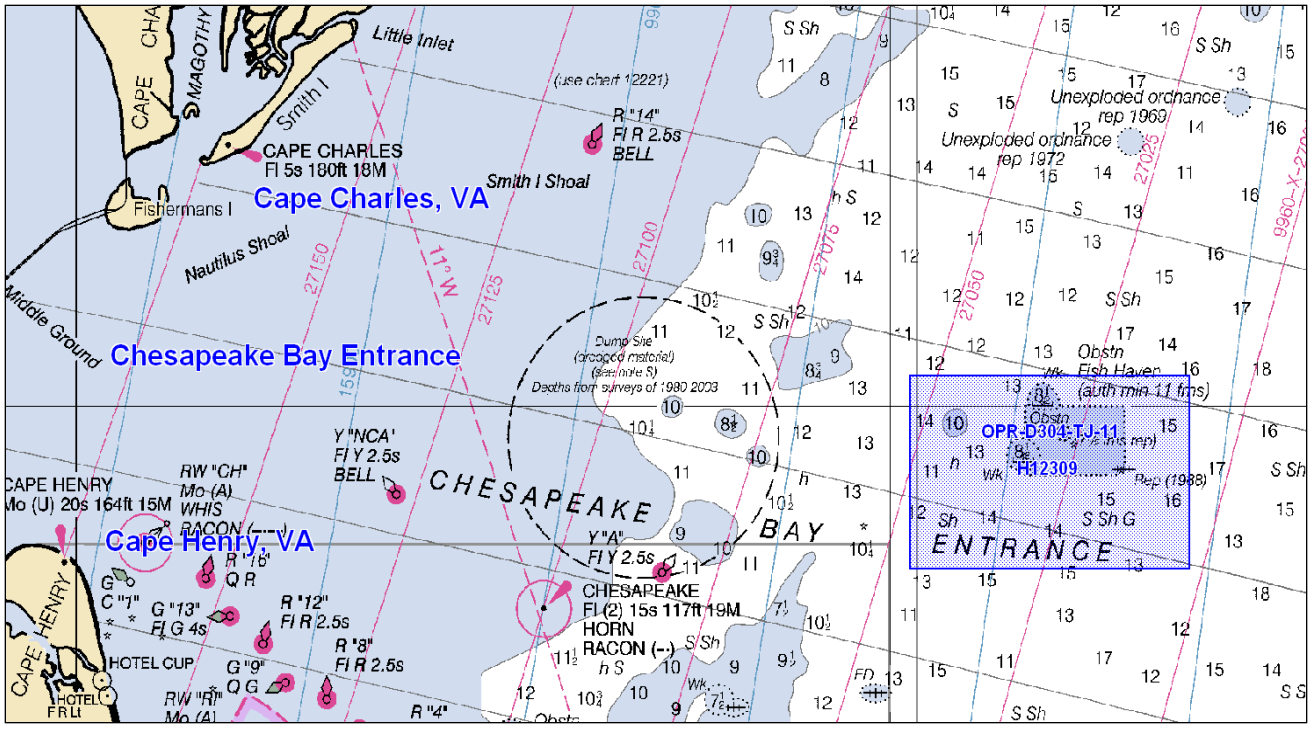


Figure 1: H12309 Survey Area.

Calendar Date	Julian Day
15-April-11	105
16-April-11	106
17-April-11	107
18-April-11	108
19-April-11	109
20-April-11	110
21-April-11	111
27-April-11	117
29-April-11	119
30-April-11	120
10-May-11	130

Table 2: SSS/ MBES Acquisition Dates

B. DATA ACQUISTION AND PROCESSING

Refer to ***OPR-D304-TJ-11 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.

B 1. EQUIPMENT AND VESSELS

NOAA Ship *Thomas Jefferson* acquired Reson 7125 multibeam echo sounder (MBES) soundings, Klein 5000 Side Scan Sonar (SSS) imagery, and sound velocity profiles. Launch *3102* and launch *3101* acquired Reson 7125 SV multibeam echo sounder soundings and sound velocity profiles. Sea bed samples were collected by Hydrographic Survey Launch *3101*. Vessel configurations, equipment operation and data acquisition and processing were consistent with specifications described in the *DAPR*.

B 2. QUALITY CONTROL

B 2.1 System Certification and Calibration

Refer to NOAA Ship *Thomas Jefferson's DAPR* for a complete description of system integration and initial calibration results for equipment and sensors used for this survey.

B.2.2 Sounding Coverage

As per the Project Instructions, this survey was conducted using 200% SSS coverage with concurrent MBES bathymetry with object detection MBES development over navigationally significant features.

There are 6 holidays in the 100% side scan mosaic. Three of the holidays occur along the ends of the sheet and were created when logging began too late, or ended too soon. Three additional holidays are near the middle of the survey area. These are minor holidays that were most likely created by over cleaning navigation data in processing, or by the acquisition software while automatically starting a data file (it is common to automatically break files after 20 minutes to keep file sizes manageable). All holidays in the 100% mosaic are well covered by the 200% mosaic. Coverage requirements were achieved over the holiday in position, 36-59-02.68N, 075-29-10.63W by 100% side scan (from the 200% mosaic) and by full coverage MBES. The holiday in position, 36-59-39.24N, 075-19-00.31W, failed to meet coverage requirements because full coverage MBES data does not cover the entire holiday area. However, the 200% side scan has good geometry over this area and it is unlikely that a navigationally significant feature would go undetected. See figure 2.

There are 5 holidays in the 200% side scan mosaic. Four small holidays occur along the eastern end of the sheet and were created when logging began too late, or ended too soon. The remaining holiday is near the middle of the sheet. This holiday, in position 36-58-03.36N, 075-24-30.20W, meets coverage requirements because the area is covered by 100% side scan and full coverage MBES. See figure 3.

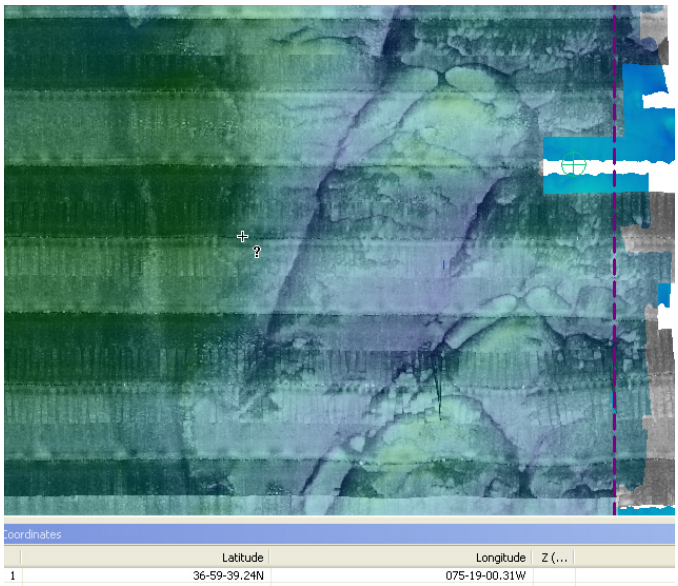


Figure 2: Side scan sonar holiday in 100% mosaic – failed to meet coverage requirements.
In this image, the 100% mosaic set to 30% transparency and overlain on the MBES combined surface.

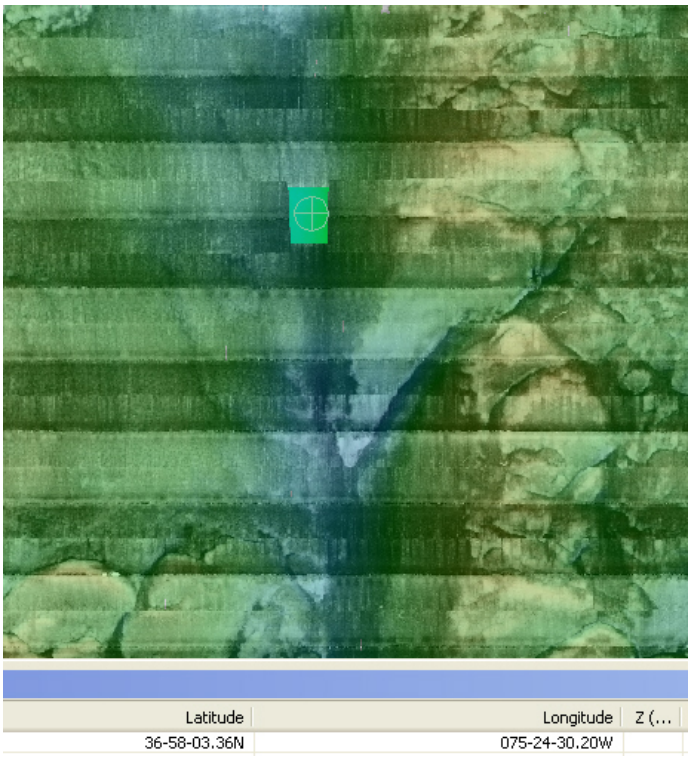


Figure 3: Side scan sonar holiday in 200% mosaic.
200% mosaic set to 30% transparency and overlain on the MBES combined surface.

B 2.3 Crosslines

Multibeam echosounder cross-lines totaling 85.79 LNM, approximately 7.92% 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 surfaces. Areas of unusually high standard deviation (>50cm) were investigated and resolved in processing, except where caused by areas of high bathymetric relief or as described in Section 2.5 Systematic Errors.

B 2.4 Junctions and Prior Surveys

The following contemporary surveys junction with H12309, see figure 4.

Registry #	Scale	Date	Field Party	Junction side
H12201	1:40,000	2010	*Thomas Jefferson*	Southwest
H12308	1:40,000	2011	*Thomas Jefferson*	West

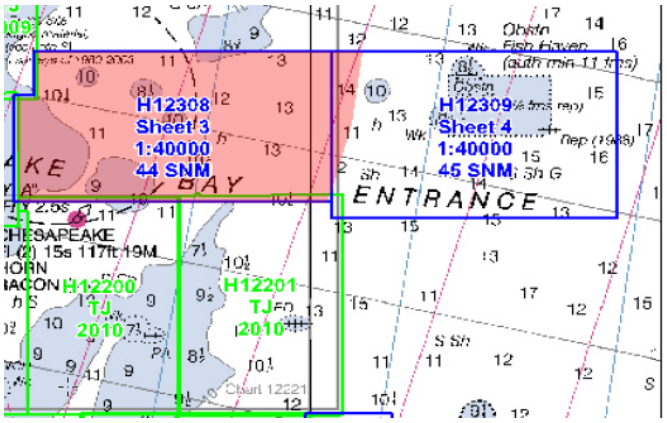


Figure 4: Junction Surveys.

The soundings that junction between H12308 and H12309 generally agree within 10-20cm.

B 2.5 Systematic Errors

Throughout the survey area, high values of standard deviation (20cm – 50cm) were observed along the outer edges of the swaths due to refraction. The Approach to Chesapeake Bay is an area of mixing, where brackish water from tidally influenced rivers empty into the Bay and out into the Atlantic. It is common to see sudden changes in the surface sound speed of several meters/second in this area. The intake for the surface sound velocity sensor (SSVS) is located near centerline of the ship, flush against the hull. When a density layer is present between the water's surface and the intake as is common in this area, laminar flow across the hull frequently brings water of a different density into the SSVS. When this occurs, there is a discrepancy between the sound speed measured at the SSVS and the sound velocity at the transducer face. These discrepancies cause refraction issues that will vary in magnitude based on the differences in sound speed. Refer to Figures 5 and 6, for examples of refraction artifacts in this survey.

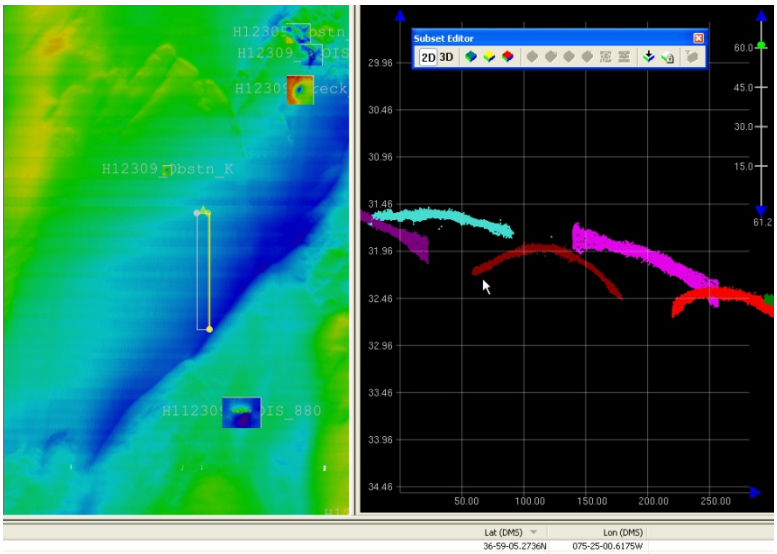


Figure 5: Refraction artifacts – 60x vertical exaggeration in the 2-D subset to illustrate refraction artifacts in the MBES data.

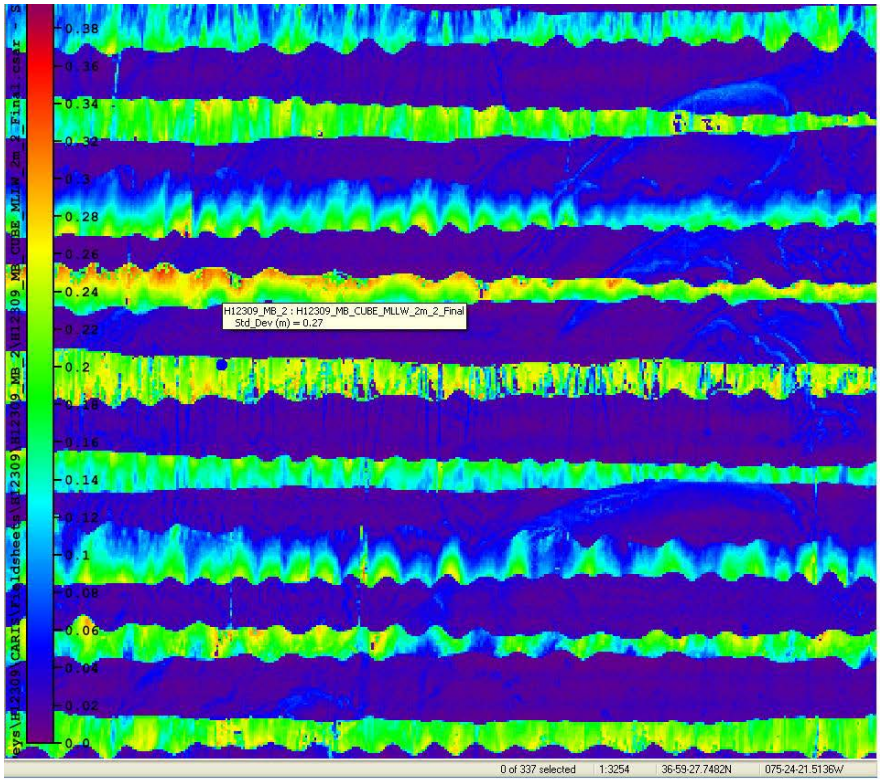


Figure 6: Standard Deviation Layer – Color Range 0cm-40cm with highest standard deviation shown in red. High standard deviation caused primarily by refraction issues.

B 3. CORRECTIONS TO ECHO SOUNDING

HDCS sounding data were reduced to mean lower-low water (MLLW) using verified water levels from Chesapeake Bay Bridge Tunnel, VA (8638863) and Duck, NC (8651370) using preliminary zoning accepted as final zoning and illustrated in Figure 7.

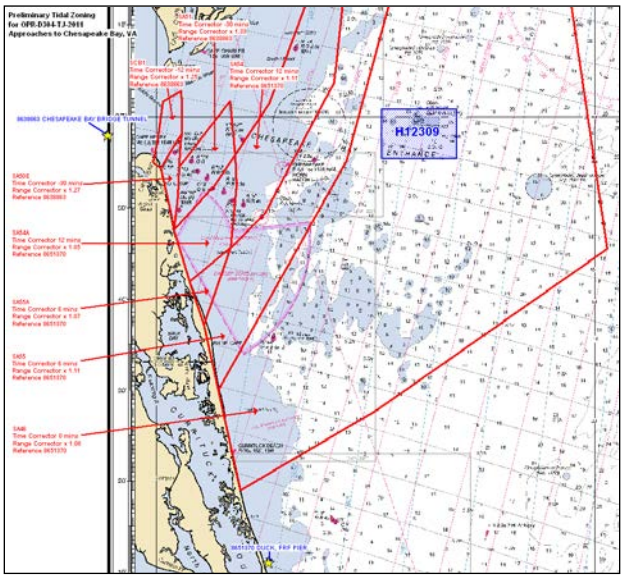


Figure 7: Final Tide Zoning

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 text file detailing all sound velocity casts is located in Separate II of this survey submission.

Sound velocity corrections for this survey were applied using the ship's Moving Vessel Profiler (MVP) and Conductivity, Temperature, and Depth (CTD) profiler.

B 4. DATA PROCESSING

B 4.1 Total Propagated Error

For the 2011 field season, Total Propagated Error (TPE) parameters for sound, speed, and tides are calculated separately for each project. The project-specific parameters for OPR-D304-TJ-11, Survey H12309 are as follows:

Project	Vessel	Tide Values Combined Measured & Zoning	Sound Velocity Values		
			CTD	MVP	Surface
H12309	S222	0.085	4	1	0.2
H12309	3101	0.085	4	NA	0.2
H12309	3102	0.085	4	NA	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 H12309:

Name of Surface	*Resolution*	*Type*	*Purpose*
H12309_MB_CUBE__MLLW_1m_1_Final.csar	***1m***	***CUBE***	***Object Detection***
H12309_MB_CUBE__MLLW_2m_2_Final.csar	***2m***	***CUBE***	***Set Line Spacing Bathymetry***
H12309_MB_CUBE__MLLW_2m_3_Final.csar	***2m***	***CUBE***	***Set Line Spacing Bathymetry***
H12309_MB_CUBE__MLLW_2m_4_Final.csar	***2m***	***CUBE***	***Set Line Spacing Bathymetry***
H12309_MB_CUBE__MLLW_2m_5_Final.csar	***2m***	***CUBE***	***Set Line Spacing Bathymetry***
H12309_AWOIS_14907_50cm_Final.csar	***50cm***	***CUBE***	***Object Detection***
H12309_Wrecks_ABCD_50cm_Final.csar	***50cm***	***CUBE***	***Object Detection***
H12309_AWOIS_14904_50cm_Final.csar	***50cm***	***CUBE***	***Object Detection***
H12309_Wreck_E_50cm_Final.csar	***50cm***	***CUBE***	***Object Detection***
H12309_Wreck_F_50cm_Final.csar	***50cm***	***CUBE***	***Object Detection***
H12309_Wreck_G_50cm_Final.csar	***50cm***	***CUBE***	***Object Detection***
H12309_AWOIS_903_50cm_Final.csar	***50cm***	***CUBE***	***Object Detection***
H12309_Obstn_H_50cm_Final.csar	***50cm***	***CUBE***	***Object Detection***
H12309_Obstns_I_J_50cm_Final.csar	***50cm***	***CUBE***	***Object Detection***
H12309_Obstn_L_50cm_Final.csar	***50cm***	***CUBE***	***Object Detection***
H12309_Obstn_K_50cm_Final.csar	***50cm***	***CUBE***	***Object Detection***
H12309_AWOIS_880_50cm_Final.csar	***50cm***	***CUBE***	***Object Detection***
H12309_100_SSS.csar	***1m***	***Mosaic***	***100% Mosaic***
H12309_200_SSS.csar	***1m***	***Mosaic***	***200% Mosaic***
H12309_Combined_2m.csar	***2m***	***Combined***	***Soundings***

Table 4: BASE Surfaces

This survey was processed using the Combined Uncertainty and Bathymetry Estimator (CUBE) algorithm. The CUBE configuration was set to NOAA _1m for object detection surfaces and NOAA_2m for all main scheme surfaces. Refer to the *2011 Data Acquisition and Processing Report*, *2011 Field Procedures Manual*, and *CARIS HIPS and SIPS User Guide* for further discussion.

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 high standard deviation were examined and cleaned as required

such that nodes in the surface meet the IHO order 1 depth accuracy requirements at the 95% confidence interval or better. H12309 achieved IHO Order 1 specifications for 99.99% of nodes in the combined surface. See Figure 8, for the distribution of "IHOness" values.

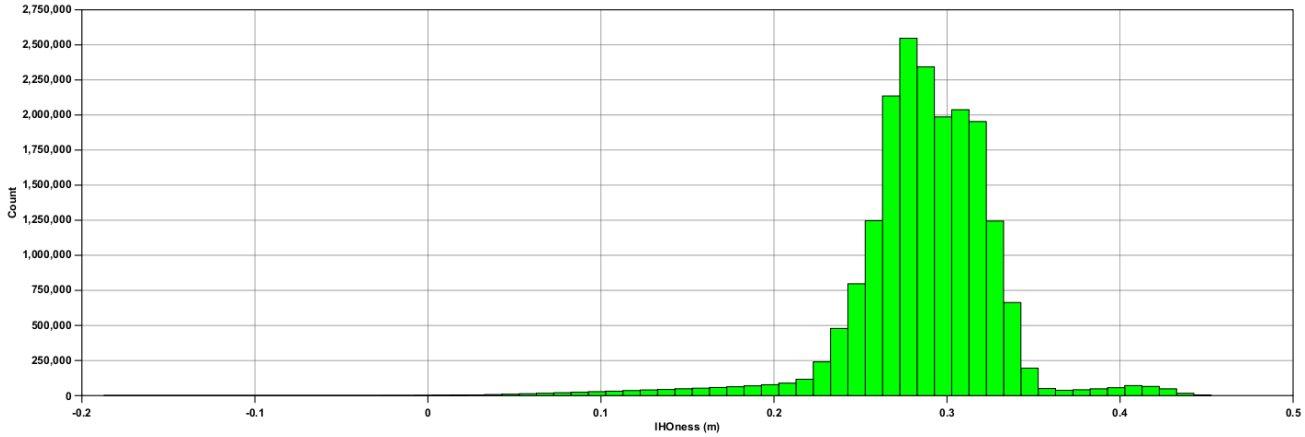


Figure 8: IHOness – Nodes with an "IHOness" value above zero indicate that IHO Order I Total Vertical Uncertainty requirements were met.

C. HORIZONTAL AND VERTICAL CONTROL

As per FPM section 5.2.3.2.3 an 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 beacon at Driver, VA (289 kHz) were used during this survey.

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

C 1.2 Vertical Control

The vertical datum for this project is Mean Lower-Low Water (MLLW). The operating National Water Level Observation Network (NWLON) stations at the Chesapeake Bay Bridge Tunnel, VA (8638863) and Duck, NC (8651370) will serve as datum control for H12309. A request for delivery of final approved (verified) tides for this survey was forwarded to N/OPS1 on 20 May 2011 in accordance with the FPM and Project Instructions. The Final Tide Note is dated May 31, 2011.

D. RESULTS AND RECOMMENDATIONS

D.1 Chart Comparison

Survey ~~H12200~~ ***H12309*** was compared to Charts 12221, (80th Ed., January 2009, 1:80,000), chart 12207 (22nd Ed., October 2009, 1:80,000), and ENCs US4VA12M, and US5VA11M.

D 1.1 Chart 12200_1 Comparison

Generally, soundings compare within one fathom from charted depth. There is some general shoaling to approximately 13fm near the center of the survey area, but this is in close proximity to the fish haven which has a charted authorized minimum depth of 11fm, so the shoaling is not considered to pose a hazard. Additional general shoaling to approximately 9.5 fm is located near the northwest corner of the survey area at the charted 10fm in position 36-59-26.92N, 075-27-35.76W, and shoaling to 10.5fm northward for approximately 1500m.

D 1.2 Chart 12221_1 Comparison

Generally, soundings compare within one foot from charted depth. One area with a charted depth of 77 feet was observed to have shoaled to 75 feet in the vicinity of 36-58-54.21 N, 075-29-14.01W.

D 1.3 ENC US3DE01M Comparison

Generally, soundings compare within one fathom from charted depth. Areas of general shoaling are as described in section D 1.1 of the chart comparison of NOS Chart 12221 .

D 1.4 ENC US4VA12M Comparison

Generally, soundings compare within one foot from charted depth.

D.2 Additional Results

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

Five AWOIS items were investigated for this survey. See the feature report, Appendix II and the *S57 Features* folder for details.

D.2.2 Shoreline

There is no shoreline within the sheet limits of survey H12309. 5 features from the Composite Source File (CSF) that was assigned to OPR-D304-TJ-11are located within the limits of this survey. These items are the same 5 features assigned as AWOIS items. These items were investigated and the results are included Appendix II of this Descriptive Report and in the *S57 Features* folder submitted with this survey.

D.2.3 Charted Features

D.2.4 Charted Pipelines and Cables

There are no charted pipelines or cables within the sheet limits of survey H12309.

D.2.5 Bridges, Ferry Routes, and Overhead Cables

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

D.3 Dangers to Navigation and Shoals

D 3.1 Dangers to Navigation

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

D 3.2 Shoals

There were no significant uncharted shoals discovered during this survey.

D. 4 Aids to Navigation

There are no charted Aids to Navigation (ATON) within the limits of H12309.

D.5 Coast Pilot Information

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

D.6 Miscellaneous

D.6 Bottom Samples

Bottom samples were collected in accordance with NOAA Hydrographic Survey Specifications and Deliverables. A total of four bottom samples were acquired. A complete description of all bottom samples acquired during Survey H12309 is contained in Appendix V of this report and H12309_Bottom_Samples.hob is located in the S57_Features folder of this survey submission.

D.7 Environmental Conditions and Notes

Operations were halted on DN 106 due to foul weather conditions. Heave and roll artifacts were observed in data collected at the end of that day. Lines 147 and 149 were rerun by 3101 on DN 120.

D.8 Adequacy of Survey

This survey is considered complete and adequate to supersede charted depths and features within the common area of the affected charts.

D.9 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.

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-D304-TJ-11 is submitted separately and contains additional information relevant to this survey.

Approved and Forwarded:

Digitally signed by Michael C. Davidson
Date: 2012.06.02 23:17:28 -04'00'

LT Michael Davidson, NOAA
Field Operations Officer

CDR Lawrence T. Krepp, NOAA
Commanding Officer

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

Survey Managers:

Digitally signed by Michael C. Davidson
Date: 2012.06.02 23:17:58 -04'00'

for ERT Intern John R. Kidd

APPENDIX I

TIDES AND WATER LEVEL

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

May 20, 2011

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

FROM: CDR Lawrence T. Krepp, NOAA Ship THOMAS JEFFERSON (MOA-TJ)

SUBJECT: Request for Approved Tides/Water Levels

Please provide the following data:

1. Tide Note
2. Final zoning in MapInfo and .MIX format
3. 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
439 West York Street
Norfolk, VA 23510
ATTN: CDR Lawrence T. Krepp

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

Project No.:	OPR-D304-TJ-11
Registry No.:	H12309
State:	Virginia
Locality:	Approaches to Chesapeake Bay
Sublocality:	29 NM East of Cape Henry

Attachments containing:

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

cc: N/CS33
MOA-TJ

Year_DOY	Min Time	Max Time
2011_105	00:11:05	23:32:12
2011_106	00:36:35	08:29:14
2011_107	15:00:56	23:54:34
2011_108	00:11:08	23:44:02
2011_109	00:21:50	23:54:30
2011_110	00:16:04	23:52:06
2011_111	00:45:55	07:01:06
2011_117	00:26:59	22:51:29
2011_119	15:12:06	23:54:09
2011_120	00:06:20	19:52:06
2011_130	16:08:05	18:15:38

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : May 31, 2011

HYDROGRAPHIC BRANCH: Atlantic
HYDROGRAPHIC PROJECT: OPR-D304-TJ-2011
HYDROGRAPHIC SHEET: H12309

LOCALITY: Approaches to Chesapeake Bay, VA
TIME PERIOD: April 15 - May 10, 2011

TIDE STATION USED: 865-1370 Duck, NC
Lat. 36° 11.0'N Long. 75° 44.8' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.027 meters

REMARKS: RECOMMENDED ZONING

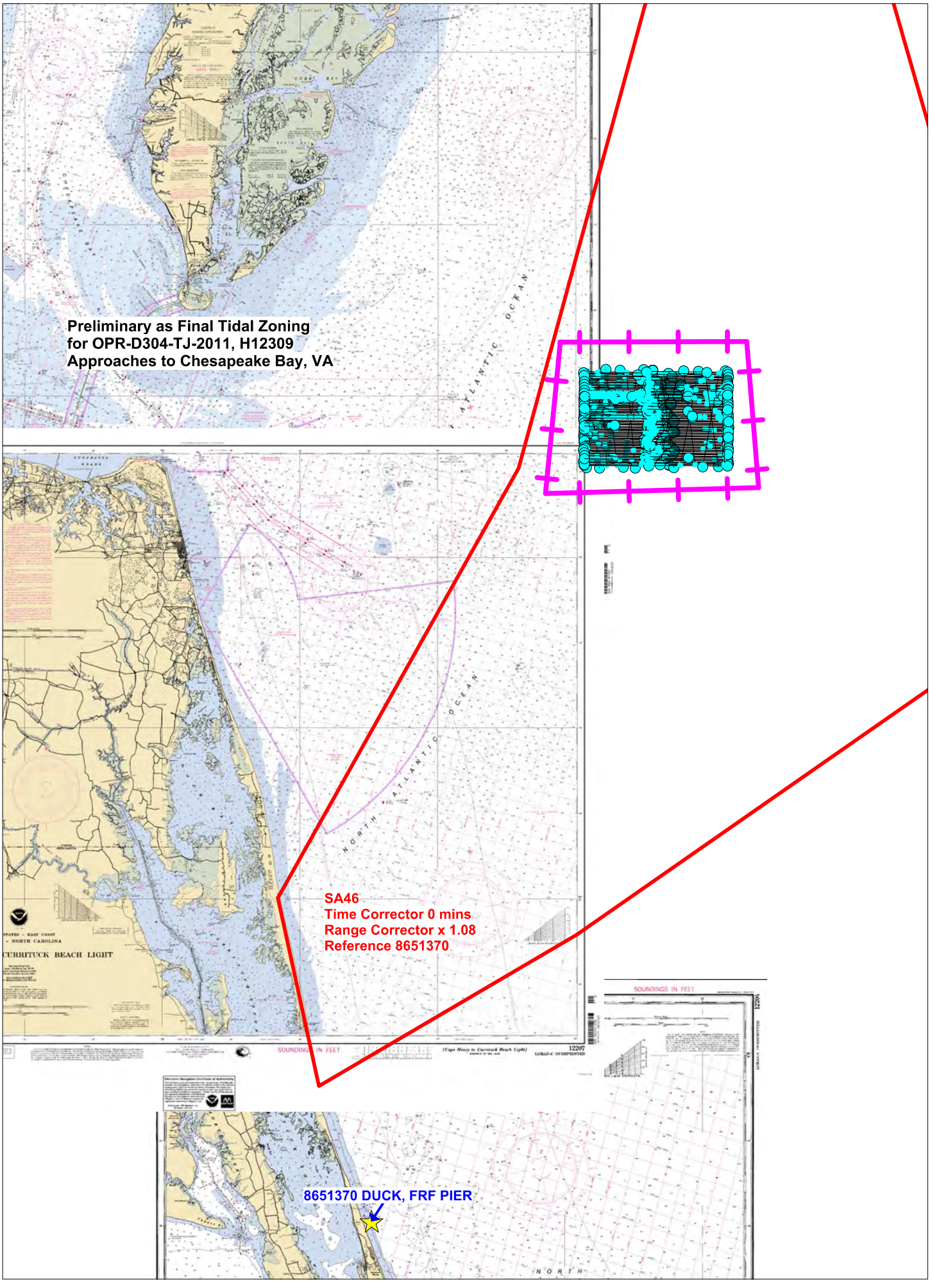
Preliminary zoning is accepted as the final zoning for project OPR-D304-TJ-2011, H12309, during the time period between April 15 to May 10, 2011.

Please use the zoning file "D304TJ2011CORP" submitted with the project instructions for Approaches to Chesapeake Bay, VA. Zone SA46 is the applicable zone for H12309.

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).

_____
CHIEF, PRODUCTS AND SERVICES BRANCH


Preliminary as Final Tidal Zoning
for OPR-D304-TJ-2011, H12309
Approaches to Chesapeake Bay, VA
ATLANTIC OCEAN
NORTH ATLANTIC OCEAN
CURRITUCK BEACH LIGHT
SA46
Time Corrector 0 mins
Range Corrector x 1.08
Reference 8651370
SOUNDINGS IN FEET
8651370 DUCK, FRF PIER
NORTH

APPENDIX II

SUPPLEMENTAL SURVEY RECORDS AND CORRESPONDENCE

From	<Michael.Davidson@noaa.gov>
Sent	Monday, March 28, 2011 8:39 am
To	richard.t.brennan@noaa.gov , sarah.mrozek@noaa.gov
Cc	ops.thomas.jefferson@noaa.gov , co.thomas.jefferson@noaa.gov , chiefst.thomas.jefferson@noaa.gov
Bcc	
Subject	TJ beginning work on OPR-D304-TJ-11
Attachments	Draft_OPR-D304-TJ-11_ApproachesToChesapeakeBay_Instructions-1.pdf 1.2MB

Mid-Atlantic Nav Manager(s),

NOAA Ship Thomas Jefferson will begin survey operations on OPR-D304-TJ-11 on Wednesday evening or Thursday morning. We will begin working on the sheets labeled Sheet 1 and Sheet 7 first. I will be contacting Mr. T.D. Woodward, USACE regarding our survey operations as required in our project instructions (see attached). Please feel free to notify any of our local interests of our survey operations as you see fit.

Let me know if you have any questions or need any further information. Once we receive our final project instruction, I will forward a courtesy copy.

Thank you for your time.

V/R,
Mike

--
LT Michael C. Davidson
Operations Officer
NOAA Ship Thomas Jefferson
439 W York St
Norfolk, VA 23510
michael.davidson@noaa.gov
757-441-6323 ship's landline
757-647-0187 ship's cell

From	CO Thomas Jefferson <CO.Thomas.Jefferson@noaa.gov>
Sent	Sunday, April 17, 2011 0:01 am
To	CO Thomas Jefferson <CO.Thomas.Jefferson@noaa.gov>
Cc	Jeremy McHugh <Jeremy.McHugh@noaa.gov> , Jasper Schaer <jasper.schaer@noaa.gov> , Daniel Wright <Daniel.Wright@noaa.gov> , "james.m.crocker" <James.M.Crocker@noaa.gov> , Mike Brown <Mike.Brown@noaa.gov> , Jeffrey Ferguson <Jeffrey.Ferguson@noaa.gov> , Jerry Mills <Jerry.Mills@noaa.gov> , _NMAO MOA OPS Thomas Jefferson <OPS.Thomas.Jefferson@noaa.gov>
Bcc	
Subject	Re: Tasker: sounding density requirements for SSS surveys

Jeff and Jim,

It appears that the June 2009 BOH recommendation to relax the resolution and density requirements for skunk stripe surveys was never fully implemented into policy in the HSSD.

On our current survey we are having trouble getting 5 soundings per 2m node in the outer beams in 30m of water in heavier weather. In order to meet the specification as it now stands, TJ would have to do one of the following:

1) Turn off the multibeam and use a singlebeam instead.
2) Slow down, reducing our efficiency and increasing our cost by about 30%.
3) Reduce swath coverage from full coverage to a narrow strip of multibeam at a higher density.

If we follow the June 2009 agreement, we don't have to do any of these things. Since it appears from this correspondence to have been your intent to approve this proposal, TJ will continue with the current survey as if it were approved, unless otherwise directed. Specifically:

1) Reduce the resolution requirement to 2m less than 20m of water, and 4m from 20-40m. It is not envisioned that we would do skunk stripe surveys deeper than 40m.
2) Relax the density requirement to 1 sounding per node. We will undoubtedly exceed this handily, but the point is, we don't want ships slowing down or doing extra work to meet an unnecessary density requirement.

3) All features, as noted elsewhere in the S&D, need to be gridded at OD resolutions.

V/R,

Shep

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

On 8/6/2009 6:33 PM, CO Thomas Jefferson wrote:
> Hi Jeremy,
>
> The gist of the June decision on this topic was:
>
> Background: When the "complete" coverage specs were upgraded to 1m
> resolution last winter, the linkage to skunk stripe MB requirements
> meant that these grids got affected as well. Since the object
> detection in SSS surveys is achieved using the SSS, we don't need high
> resolution grids to demonstrate coverage. In fact, singlebeam in the
> same circumstance would be sufficient. So, we can relax the gridding
> spec for grids on 200% SSS surveys to:
>
> 1) Reduce the resolution requirement to 2m less than 20m of water,
> and 4m from 20-40m. It is not envisioned that we would do skunk
> stripe surveys deeper than 40m.
> 2) Relax the density requirement to 1 sounding per node. We will
> undoubtedly exceed this handily, but the point is, we don't want ships
> slowing down or doing extra work to meet an unnecessary density
> requirement.
> 3) All features, as noted elsewhere in the S&D, need to be gridded at
> OD resolutions.
> Shep
>
> CDR Shepard Smith, NOAA
> Commanding Officer
> NOAA Ship Thomas Jefferson
> 439 West York St
> Norfolk, VA 23510

> 757-647-0187
>
>
>
> Jeremy McHugh wrote:
>> Hi Guys,
>> I have been assigned to "review the current specs & deliverables, FPM
>> and HTD to get background information on the current requirements to
>> note where they will need to be updated and generate a draft HTD to
>> better define or remove the density requirement when conduction 200%
>> SSS surveys with concurrent MB or SB".
>>
>> I just finished refreshing my memory about what the Specs have to say
>> on this topic of skunk-stripe MB data being acquired concurrently
>> with SSS imagery. It makes sense to me and I don't yet see a problem
>> with the Specs. Any old HTD's would have been incorporated in the
>> Specs by now, so I did not go rooting through the HTDs. The FPM is
>> silent on this topic.
>>
>> So that I can understand the issue better, what part of the following
>> excert from the Specs is unclear or confusing:
>>
>> 5.1.2.3 Set Line Spacing The hydrographer shall conduct multibeam and
>> single
>> beam operations at the line spacing specified in the Hydrographic
>> Survey Project Instructions
>> or Statement of Work. For example, set line spacing may be employed
>> in the
>> following scenarios: (1) when acquiring multibeam data concurrently
>> with side scan
>> sonar operations (sometimes referred to as “skunk-stripe” coverage,
>> where the side
>> scan swath is wider than the multibeam swath) and (2) when acquiring
>> single beam
>> data in areas that are too shallow for efficient multibeam
>> operations, or otherwise too
>> risky of an area to use multibeam equipment.
>>
>> • For multibeam operations the requirements are the same within the
>> swath, as for
>> Complete Coverage above. Note: that in a “skunk striping” scenario
>> (see above)
>> elements of object detection are also in operation, due to side scan
>> sonar data

>> coverage and any associated contact scanning requirements.
>>
>> It sounds straightforward to me, but I may be missing something. I
>> would appreciate any insight you have into the root of the confusion
>> that led to this issue being put before the board of hydrographers.
>> Thanks,
>> Jeremy
>>
>> james.m.crocker wrote, On 8/6/2009 2:49 PM:
>>> Jeremy,
>>>
>>> At a past BOH meeting the following topic was discussed and action
>>> item assigned.
>>> c) Skunk stripe density requirements, Shep noted that TJ is running
>>> the ship at a reduced speed in
>>> order to meet feature detection multibeam specs, which is not really
>>> necessary when the project calls for
>>> 200% side-scan sonar coverage. There was general agreement that
this
>>> was not needed and will be
>>> clarified in the Project Instructions in the short term and Ops will
>>> review the specs for the longer term
>>> fix.
>>>
>>> ACTION: Ops will draft an HTD and review the specs to resolve the
>>> issue.
>>>
>>> Would you please review the current specs & deliverables, FPM and
>>> HTD to get background information on the current requirementsto note
>>> where they will need to be updated and generate a draft HTD to
>>> better define or remove the density requirement when conduction
200%
>>> SSS surveys with concurrent MB or SB.
>>>
>>> Let me know if you have any questions.
>>>
>>> Jim

Michael Davidson <michael.davidson@noaa.gov>

H12309 Request for Tides

1 message

Michael.Davidson@noaa.gov <Michael.Davidson@noaa.gov> Fri, May 20, 2011 at 10:16 PM
To: Final.Tides@noaa.gov
Cc: CO.Thomas.Jefferson@noaa.gov, OPS.Thomas.Jefferson@noaa.gov, James.M.Crocker@noaa.gov, Richard.T.Brennan@noaa.gov, Lucy.Hick@noaa.gov, John Kidd <John.Kidd@noaa.gov>, Lori Knell <Lori.Knell@noaa.gov>

Attached is the Request for Tides package for OPR-D304-TJ-11 - Approaches to Chesapeake Bay, VA; H12309 - 29 NM East of Cape Henry, VA.

V/R,
Mike

--
LT Michael C. Davidson
Operations Officer
NOAA Ship Thomas Jefferson
439 W York St
Norfolk, VA 23510
757-647-0187 (ship's cell)
808-434-2706 (ship's iridium)

H12309_Request_for_Tides.zip
79K

Cristina Urizar <Cristina.Urizar@noaa.gov> Wednesday, June 1, 2011 9:51 am
CO.Thomas.Jefferson@noaa.gov , OPS.Thomas.Jefferson@noaa.gov , Thomas.Jefferson.Tides@noaa.gov "_NOS.CO-OPS.HPT" <NOS.COOPS.HPT@noaa.gov> , "Kyle.Ward" <Kyle.Ward@noaa.gov> , Rachel.Medley@noaa.gov , Richard.T.Brennan@noaa.gov Final Tide Note for OPR-D304-TJ-2011, Registry No. H12309

DATE: 06/01/2011

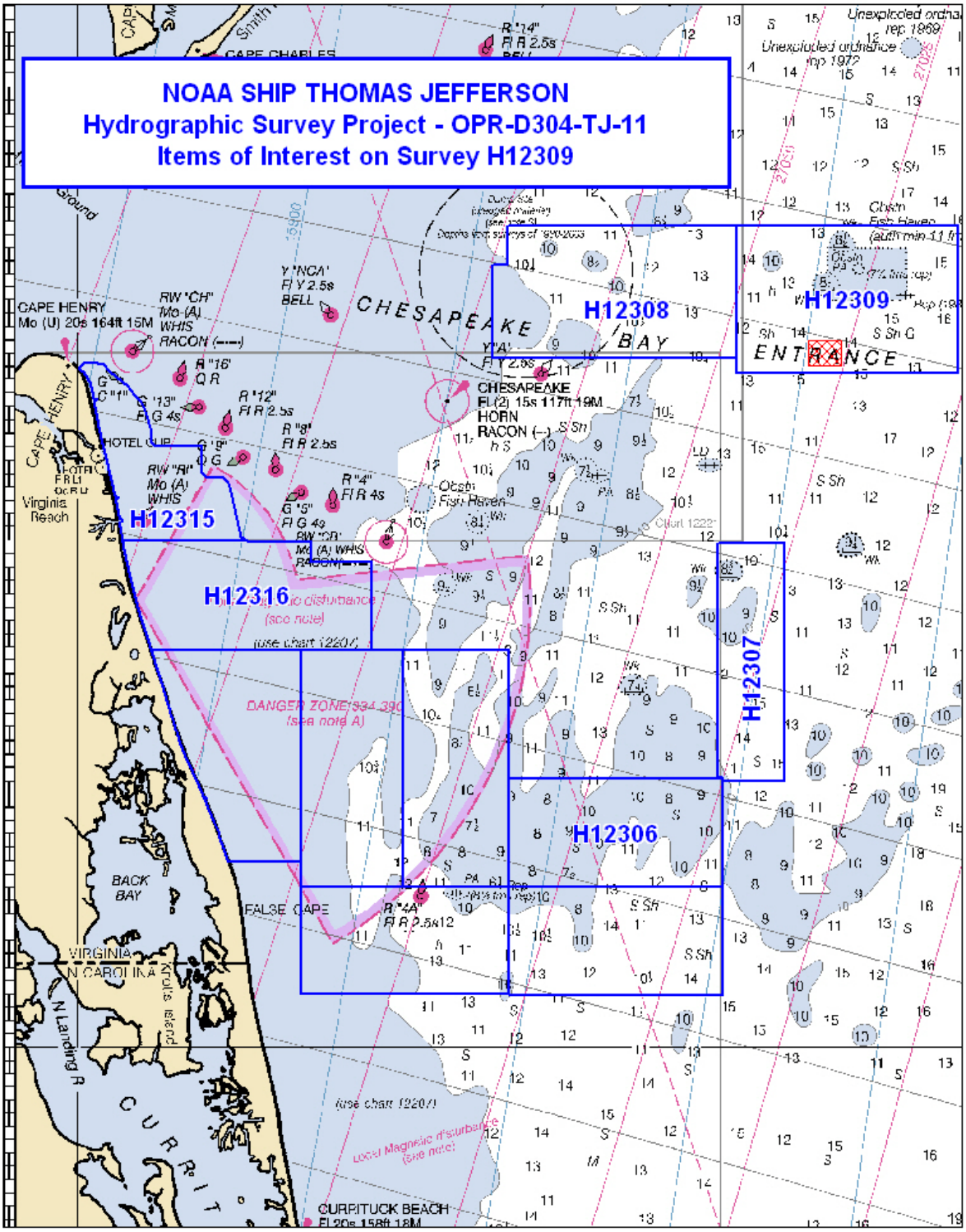
MEMORANDUM FOR:CDR Larry Krepp
Commanding Officer, NOAA
Ship Thomas Jefferson

FROM:Gerald Hovis
Chief, Products and
Services Branch, N/OPS3

SUBJECT:Delivery of Tide Requirements for Hydrographic Surveys

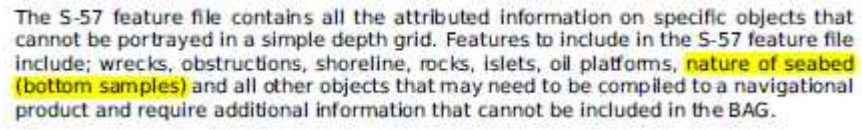
This is notification that the preliminary zoning is accepted as the final zoning for survey project OPR-D304-TJ-2011, registry No. H12309 during the time period between April 5 and May 10, 2011. The accepted reference station for registry No. H12309 is Duck, NC (865-1370).

Included with this memo is the Tide Note in .PDF format, stating the preliminary zoning has been accepted as the final zoning.


NOAA SHIP THOMAS JEFFERSON
Hydrographic Survey Project - OPR-D304-TJ-11
Items of Interest on Survey H12309
H12308
H12309
H12315
H12316
H12307
H12306
CHESAPEAKE BAY
ENTRANCE
CAPE HENRY
Mo (U) 20s 164ft 15M
CHESAPEAKE
FL(2) 15s 117ft 19M
HORN
RACON (--)
DANGER ZONE
(see note A)
FALSE CAPE
BACK BAY
VIRGINIA
N CAROLINA
CURRITUCK BEACH
Fl 20s 158ft 18M
Virginia Beach
N Landing R
Knotts Island
CURRITUCK

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

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


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

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

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

ops.thomas.jefferson wrote:

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

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

U.S. DEPARTMENT OF COMMERCE
(10-95)NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

VESSEL No. 3101	PROJECT NO. OPR –D304 - TJ-11 FIELD NO. N/A SHEET LETTER: "N/A"	YEAR 2011	SURVEY TITLE: OPR-D304-TJ-11	SURVEY NO: H12309	CHECKED BY:	DATE CHECKED:

POSITION NUMBERS	DAY OF THE YEAR	SAMPLE POSITION		DEPTHS (METERS)	TYPE OF SAMPLER	APPROXIMATE PENETRATION (CENTIMETERS)	LENGTH OF CORE	FIELD DESCRIPTION SIZE OR CONSISTENCY COLOR-NOUN (USE STANDARD ABBREVIATIONS)	REMARKS (Unusual conditions ,cohesiveness, dented cutter, stat.no.,type of bottom, relief .i.e slope plain disposition etc.)
		LATITUDE (o ' ") North	LONGITUDE (o ' ") West						
1	120	36/56/22.5925	75/24/56.443	27.1	Mud snaper	5 cm	N/A	fS	N/A
2	120	36/58/25.0862	75/27/36.2520	24.3	Mud snaper	5cm	N/A	fS,brSh	N/A
3	120	36/56/49.7795	75/22/04.8934	28.8	Mud snaper	5cm	N/A	fS,brSh	N/A
4	120	36/55/53.7060	75/19/45.4910	17.23	Mud snaper	N/A	N/A	No Sample	No Sample
5	120	36/58/51.6612	75/20/05.7877	29.1	Mud snaper	5cm	N/A	fS,brSh	N/A

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

Mark,

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

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

R/
LCDR Chris van Westendorp, NOAA

mark.blankenship wrote:

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

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

Michael Davidson <michael.davidson@noaa.gov>

RE: Survey Submission Structure for passback surveys

1 message

Castle Parker <castle.e.parker@noaa.gov> Thu, May 10, 2012 at 3:23 PM
To: Michael Davidson <michael.davidson@noaa.gov>

Mike,

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

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

Regards,

Gene

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

Gene,

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

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

Thank you for your time.

V/R,

Mike

--
LT Michael C. Davidson

APPENDIX III

FEATURES REPORT

(NO DTONS OR MARITIME BOUNDARIES)

H12309_AWOIS Items

Registry Number: H12309

State: Virginia

Locality: Approaches to Chesapeake Bay

Sub-locality: 29 NM East of Cape Henry

Project Number: OPR-D304-TJ-11

Survey Date: 05/10/2011

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
12200	49th	06/01/2007	1:419,706 (12200_1)	[L]NTM: ?
13003	49th	04/01/2007	1:1,200,000 (13003_1)	[L]NTM: ?

* Correction(s) - *source: last correction applied (last correction reviewed--"cleared date")*

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	AWOIS 14905 - Triangle Reef Fish Haven	AWOIS	[no data]	[no data]	[no data]	---
1.2	AWOIS #880-LILLIAN LUCKENBACH-charted dangerous wreck wire drag cleared to 8 fm.	Wreck	19.98 m	36° 58' 33.2" N	075° 24' 47.2" W	880
1.3	AWOIS #903 - John Morgan	Wreck	22.76 m	37° 00' 05.1" N	075° 24' 28.3" W	903
1.4	AWOIS #14907 - Charted Obstruction PA (71/2 fms rep)	Obstruction	27.96 m	36° 59' 00.0" N	075° 22' 60.0" W	14907
1.5	AWOIS #14904 charted non-dangerous wreck, depth unknown, rep (1988)	Wreck	23.89 m	36° 58' 09.7" N	075° 21' 30.4" W	14904

1.1) AWOIS #14905 - AWOIS 14905 - Triangle Reef Fish Haven

No Primary Survey Feature for this AWOIS Item

Search Position: 36° 58' 55.7" N, 075° 23' 14.9" W
Historical Depth: 20.12 m
Search Radius: 0
Search Technique: [None]
Technique Notes: [None]

History Notes:

CL366/71 CL 1844/71 -- PROPOSED ARTIFICIAL REEF NAMED TRIANGLE REEF TO BE CONSTRUCTED OF SMALL VESSELS UP TO 450' LONG. PLANNED CENTER IS 16 MILES - 072 DEGREES TRUE FROM CHESAPEAKE LIGHT STATION. REEF MEASURES APPROXIMATELY 3 MILES (E-W) BY 2 MILES (N-S). PLANNED LEAST DEPTH IS APPROXIMATELY 66 FEET.

Survey Summary

Charts Affected: 12200_1, 13003_1

Remarks:

[None]

Feature Correlation

Source	Feature	Range	Azimuth	Status
AWOIS_EXPORT	AWOIS # 14905	0.00	000.0	Primary

Hydrographer Recommendations

[None]

S-57 Data

[None]

Office Notes

Feature area taken from ENC US3DE01M and verified from wrecks found during survey acqusition using MBES and SSS, but not addressed on its own as an area featue.

COMPILATION: Revise AWOIS 14905 (Fish Haven) limits to include AWOIS #14907 (Charted Obstruction PA (71/2 fms rep).

AWOIS 14907 was found inside the limits of AWOIS 14905, during the present survey, with a least depth of 15 fm which exceeds the min depth of the fish haven.

Revise ENC to include AWOIS 14907 as part of AWOIS 14905.

1.2) US 0001375462 00001 / H12309_AWOIS Items.000

Primary Feature for AWOIS Item #880

Search Position: 36° 58' 34.5" N, 075° 25' 03.7" W
Historical Depth: 15.54 m
Search Radius: 0
Search Technique: [None]
Technique Notes: [None]

History Notes:

HISTORY
CHARTED AS WD CLEAR TO 8.5 FM, SURVEY NOT DETERMINED
DESCRIPTION
24 NO.415; CARGO, 6369 GT; SUNK 3/27/43 BY MARINE CASUALTY; POSITION ACCUR.
1 MILE; REPORTED DEMOLISHED THRU THE SALVAGE SECT, BUR OF SHIPS; WD CLEAR
TO 51 FT ON 8/4/44 REPORTED THRU CGS.
27 NO.729; CARGO, 6389 GT SUNK 3/27/43; WD 8/4/44 AND HAS AN LD OF 44 FT.

Survey Summary

Survey Position: 36° 58' 33.2" N, 075° 24' 47.2" W
Least Depth: 19.98 m (= 65.56 ft = 10.927 fm = 10 fm 5.56 ft)
TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp: 2011-130.00:00:00.000 (05/10/2011)
Dataset: H12309_AWOIS Items.000
FOID: US 0001375462 00001(02260014FCE60001)
Charts Affected: 12200_1, 13003_1

Remarks:

WRECKS/remrks: AWOIS #880. Found by SSS and MBES. This wreck is located within the charted limits of AWOIS #14905 - Triangle Reef fish haven. The least depth of the wreck is less than the authorized minimum depth of the fish haven by approximately 0.125 meters.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12309_AWOIS Items.000	US 0001375462 00001	0.00	000.0	Primary
AWOIS_EXPORT	AWOIS # 880	408.13	096.0	Secondary (grouped)

Hydrographer Recommendations

Delete charted dangerous wreck cleared by wire drag. Update AWOIS database such that AWOIS #880 is combined with AWOIS #14905 - Triangle Reef fish haven.

Cartographically-Rounded Depth (Affected Charts):

10 ¾fm (12200_1, 13003_1)

S-57 Data

Geo object 1:	Wreck (WRECKS)
Attributes:	CATWRK - 2:dangerous wreck
	CONVIS - 2:not visual conspicuous
	NINFOM - Add wreck
	QUASOU - 6:least depth known
	SORDAT - 20110510
	SORIND - US,US,graph,H12309
	TECSOU - 2,3:found by side scan sonar,found by multi-beam
	VALSOU - 19.983 m
	WATLEV - 3:always under water/submerged

Office Notes

SAR: AWOIS #880, 20m wreck, found at survey position using MBES and SSS. Wreck has least depth of 20m (10.9fm) and is just within limits of fish haven (AWOIS 19405) with minimum depth of 11 fm.

COMPILATION: AWOIS #880 charted dangerous wreck wire drag cleared to 8 fm, found at present survey position using MBES and SSS. Present survey wreck has least depth of 10.9 fm and is just within limits of fish haven (AWOIS 19405). Least depth of this wreck isless than fish haven auth min depth.

Delete charted wreck, add wreck, least depth 10.927 fm in present survey location inside limits of fish haven.

Update AWOIS database.

Feature Images

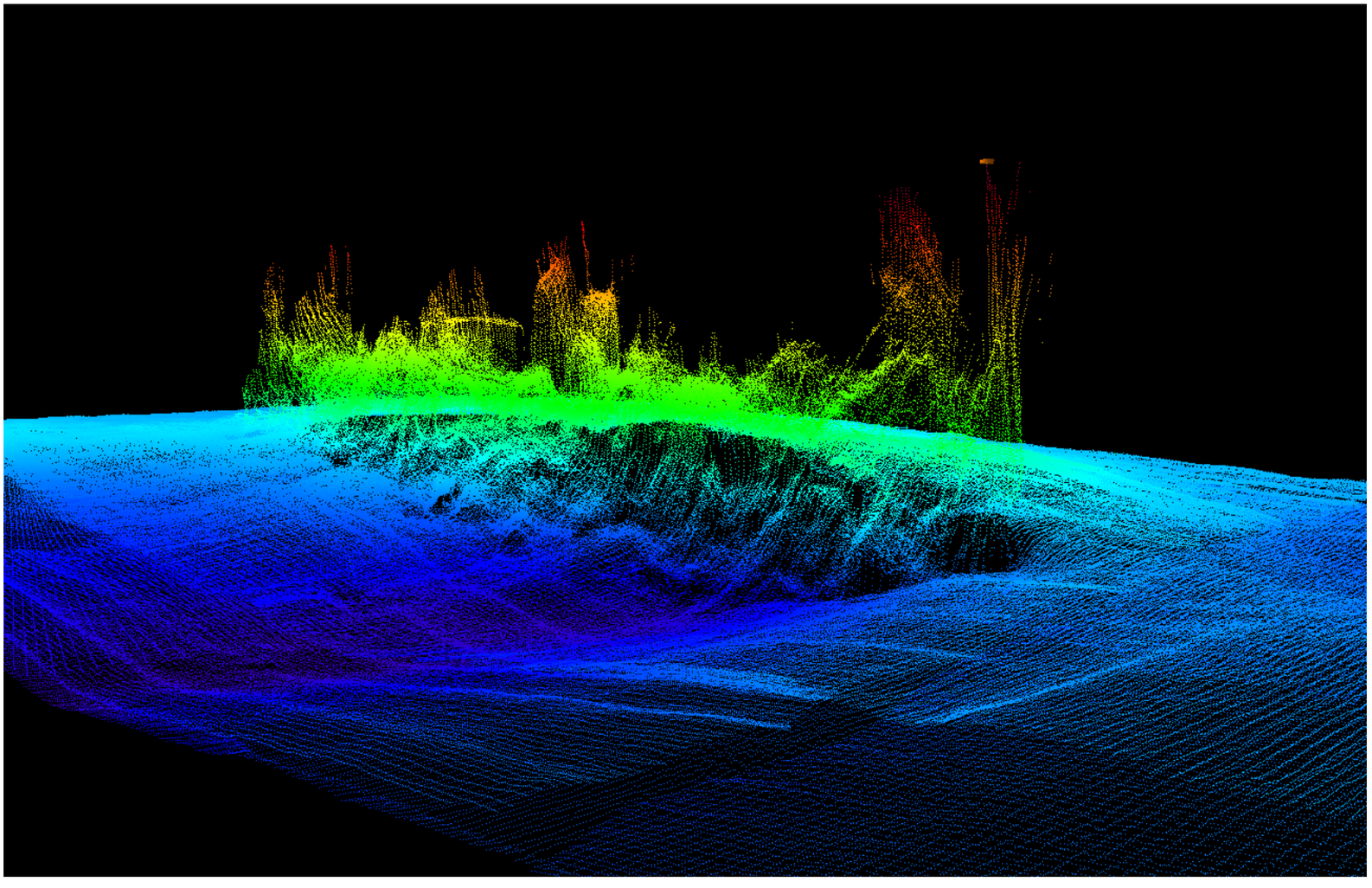


Figure 1.2.1

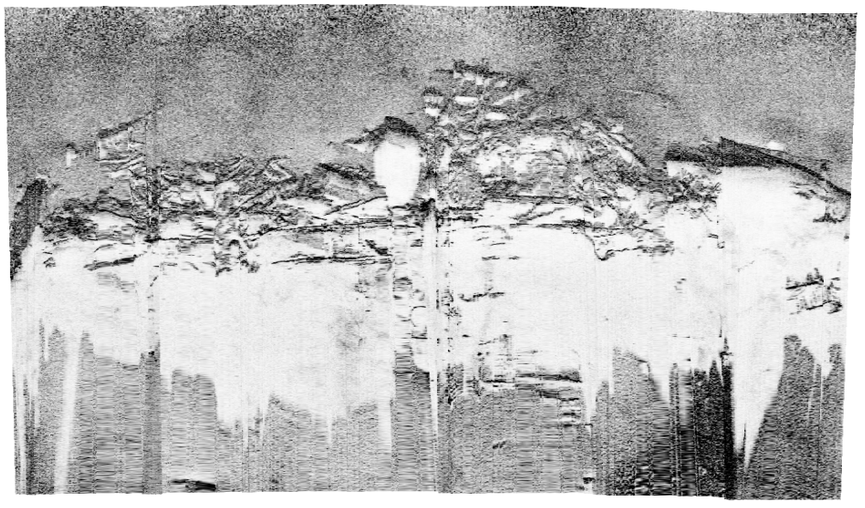


Figure 1.2.2

[Unable to convert image file T:/H12309_D304_TJ/AHB_H12309/COMPILE/Final_Hobs/137_11040001_m.tif to JPEG.]

1.3) US 0001375474 00001 / H12309_AWOIS Items.000

Primary Feature for AWOIS Item #903

Search Position:	37° 00' 05.5" N, 075° 24' 23.7" W
Historical Depth:	[None]
Search Radius:	0
Search Technique:	##
Technique Notes:	[None]

History Notes:

CHARTED AS WD CLEAR TO 8.5 FM, SURVEY NOT DETERMINED

NM22/44--BUOY PREVIUOSLY ESTABLISHED IN 96 FT AT LAT.37-00-05N, LONG.75-24-51W

HAS BEEN DISCONTINUED. THERE IS A DEPTH OF 55 FT OVER THE WRECK.

DESCRIPTION

24 NO.426; CARGO, 7176 GT; SUNK 6/1/43 BY MARINE CASUALTY; REPORTED AT

37-00-05N, 75-24-51W THRU 5TH NAVAL DISTRICT HQ 4/10/44

POSITION ACCURACY 1 MILE; UNKNOWN SOURCE REPORTED DEMOLISHED; WD

CLEARED TO 55 FT BY CGS.

27 NO.748; CARGO 4384 NT, SUNK 6/1/43; WK DISCONTINUED AND CLEARED TO 55 FT

AT MLW BY WD BY U.S.C G.S.

Fieldnote:

Proprietary:

11 4384 NT, WAS SUNK 6/1/43. TORPEDOED BY GERMAN SUB.

20 FTR, 7176 TONS; SANK JUNE 1, 1943; 55 FT OVER WK.

Survey Summary

Survey Position:	37° 00' 05.1" N, 075° 24' 28.3" W
Least Depth:	22.76 m (= 74.66 ft = 12.443 fm = 12 fm 2.66 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2011-130.00:00:00.000 (05/10/2011)
Dataset:	H12309_AWOIS Items.000
FOID:	US 0001375474 00001(02260014FCF20001)
Charts Affected:	12200_1, 13003_1

Remarks:

WRECKS/remrks: AWOIS #903 John Morgan. Found with SSS and MBES. There is a debris field extending several hundred meters to the northwest from the primary structure of the wreck. It is believed that the debris is part of the John Morgan wreck. Wreck lies approximately 100m north of the northern limit of the Triangle Reef fish haven as currently charted. The least depth of this wreck is deeper than the charted authorized minimum depth for the fish haven.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12309_AWOIS Items.000	US 0001375474 00001	0.00	000.0	Primary
AWOIS_EXPORT	AWOIS # 903	115.30	263.9	Secondary (grouped)

Hydrographer Recommendations

Update WRECK. Update AWOIS database with new position and least depth. Delete wiredrag symbol. Additional consideration should be given to extending the northern limit of the fish haven to include the wreckage of John Morgan - AWOIS #903, and then delete the dangerous wreck symbol all together.

Cartographically-Rounded Depth (Affected Charts):

12fm (12200_1, 13003_1)

S-57 Data

Geo object 1: Wreck (WRECKS)

Attributes:

CATWRK - 1:non-dangerous wreck

CONVIS - 2:not visual conspicuous

EXPSOU - 2:shoaler than range of depth of the surrounding depth area

NINFOM - Add Wreck

QUASOU - 6:least depth known

SORDAT - 20110510

SORIND - US,US,graph,H12309

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

VALSOU - 22.756 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: 22.8m wreck (AWOIS 903) found at survey position using SSS and MBES. Debris from wreck extends northwest where a wreck feature is positioned at 37-00-08.6083N, 075-24-31.5842W.

COMPILATION: Concur. Delete charted 8 1/2 fm wire drag cleared wreck. Add non-dangerous wreck, least depth 12.4 fm in present survey location.

Feature Images

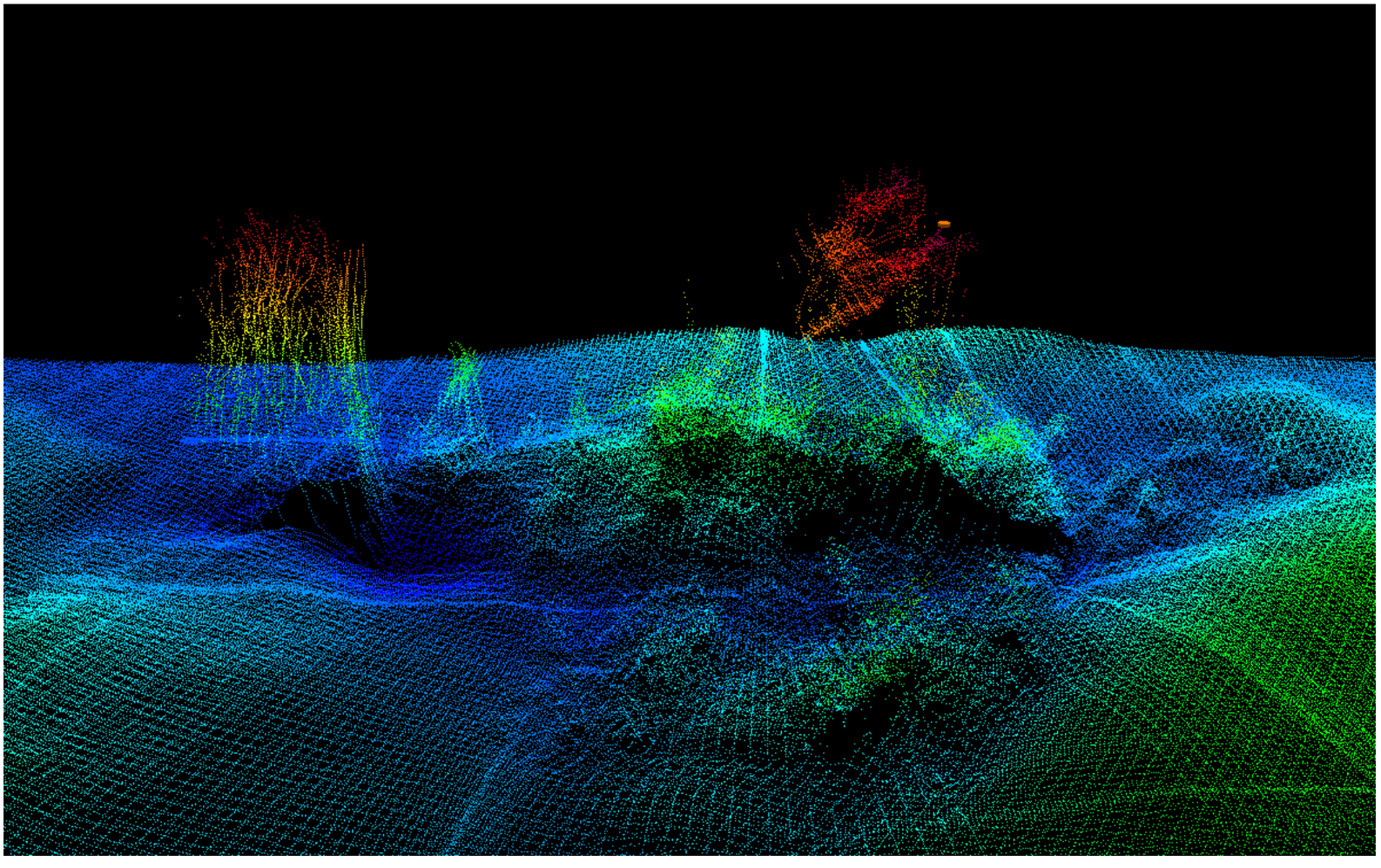


Figure 1.3.1

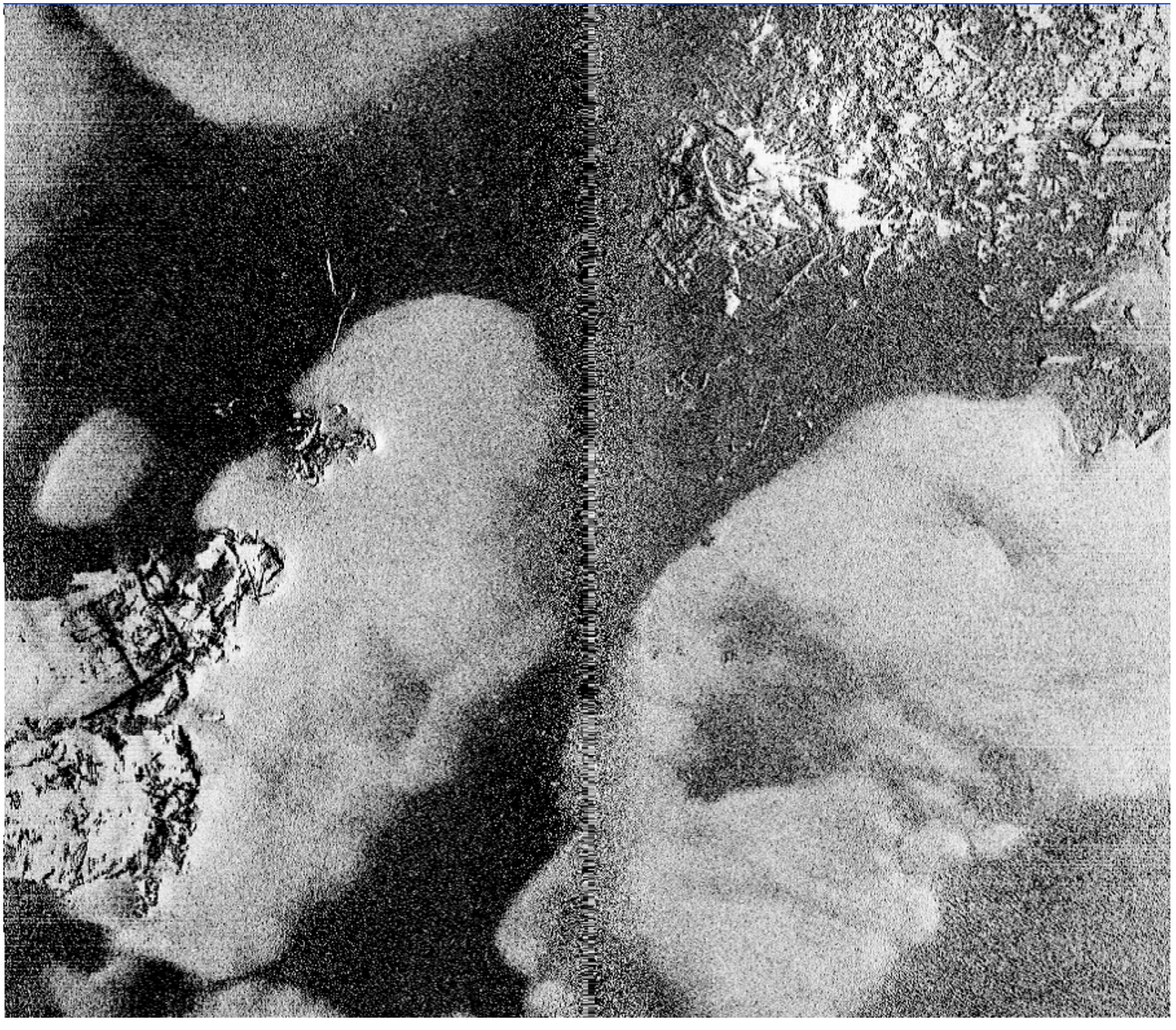


Figure 1.3.2

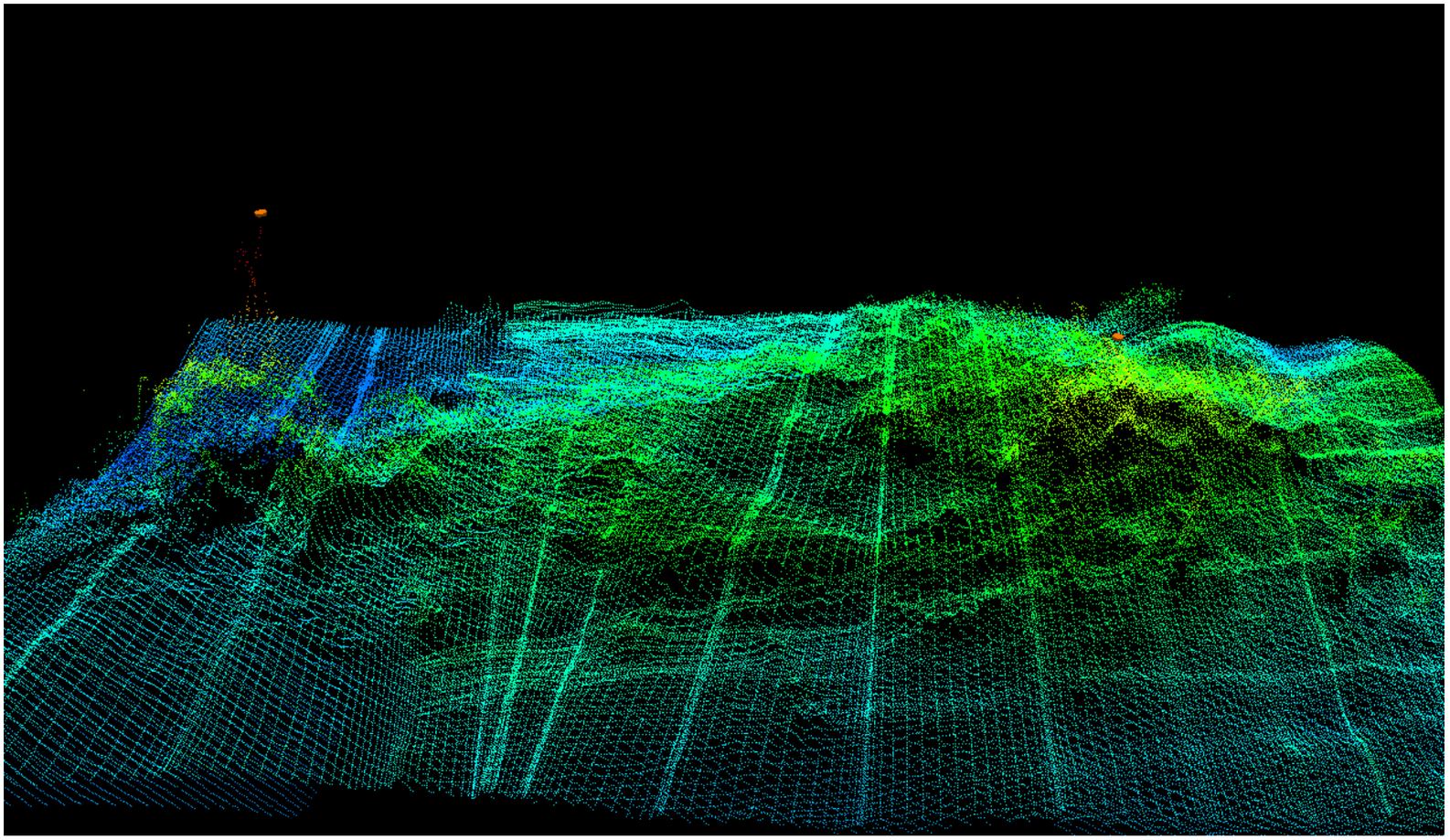


Figure 1.3.3

[Unable to convert image file T:/H12309_D304_TJ/AHB_H12309/COMPILE/Final_Hobs/156_11040001_m.tif to JPEG.]

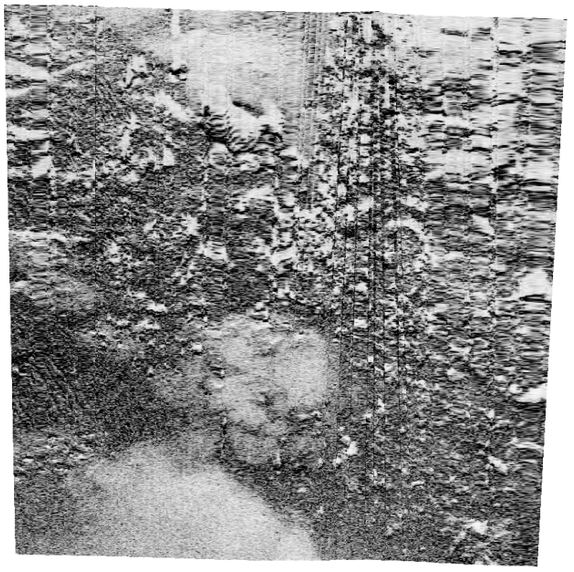


Figure 1.3.4

1.4) US 0001376964 00001 / H12309_AWOIS_2.000

Primary Feature for AWOIS Item #14907

Search Position: 36° 59' 13.3" N, 075° 23' 34.0" W
Historical Depth: 13.72 m
Search Radius: 1000
Search Technique: MBES, SSS
Technique Notes: VERIFY EXISTENCE OF CHARTED OBSTN PA (7 1/2 FMS REP)

History Notes:

UNKNOWN -- OBSTN PA (7 1/2 FMS REP) ADDED TO CHART CIRCA 1959-1961. (LAH 4/4/2011)

Survey Summary

Survey Position: 36° 59' 00.0" N, 075° 22' 60.0" W
Least Depth: 27.96 m (= 91.74 ft = 15.290 fm = 15 fm 1.74 ft)
TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp: 2011-130.00:00:00.000 (05/10/2011)
Dataset: H12309_AWOIS_2.000
FOID: US 0001376964 00001(0226001502C40001)

Charts Affected: 12200_1, 13003_1

Remarks:

OBSTRN/remrks: AWOIS 14907. Found by SSS and MBES. Least depth over this obstruction is deeper than the charted authorized minimum depth of the fish haven in which it is located (Triangle Reef - AWOIS #14905).

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12309_AWOIS_2.000	US 0001376964 00001	0.00	000.0	Primary
AWOIS_EXPORT	AWOIS # 14907	934.14	116.0	Secondary (grouped)

Hydrographer Recommendations

Delete charted Obstn PA and text "(7-1/2 fms Rep)". Update the AWOIS data base to combine the reported obstruction from AWOIS #14907 with AWOIS #14905 - Triangle Reef fish haven.

Cartographically-Rounded Depth (Affected Charts):

15fm (12200_1, 13003_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes:

NINFOM - do not chart - for pydro to link only

QUASOU - 6:least depth known

SORDAT - 20110510

SORIND - US,US,graph,H12309

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

VALSOU - 27.963 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: AWOIS #14907 found by SSS and MBES at survey position. Least depth of 27.9m (15.3 fm) exceeds minumum depth of 11 fm.

COMPILATION: AWOIS 14907 is an Obstruction PA (71/2 fms rep) charted in Latitude 36-59-12.62N, Longitude 075-23-33.02W. This feature was found by the present survey with a least depth of 15 fm in Latitude 36-59-00.04N, Longitude 075-23-00.00W, inside the limits of AWOIS 14905, the fish haven. Since AWOIS 14907 is inside the limits of AWOIS 14905 and the least depth is deeper than the authorized min depth of the fish haven, it is recommended AWOIS 14907 is not charted.

It is further recommended the database for AWOIS 14907 is updated to reflect the present survey findings.

It is further recommended the hole in AWOIS 14905 representing the location of AWOIS 14907 is deleted.

Feature Images

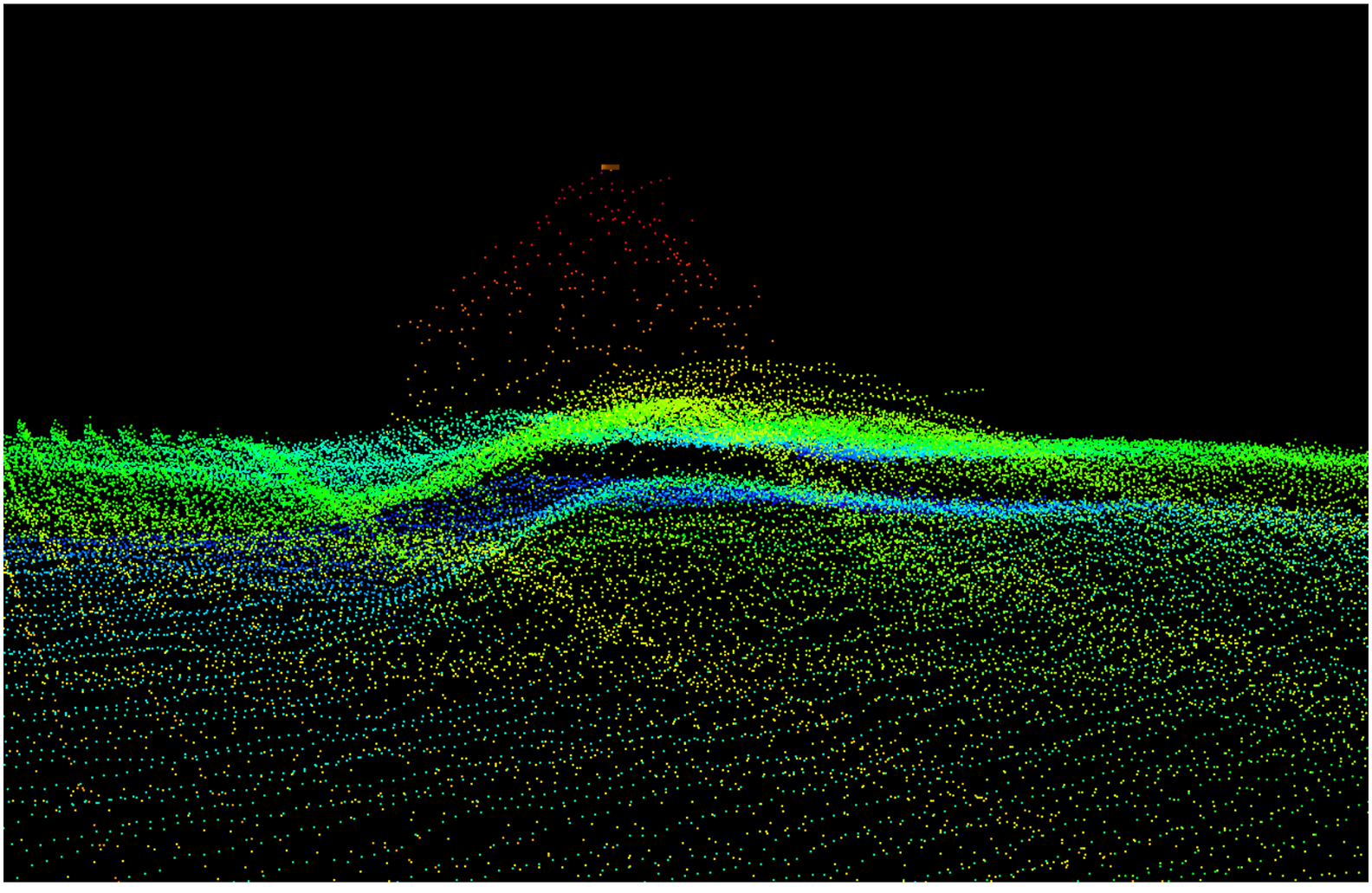


Figure 1.4.1

1.5) US 0000222874 00001 / H12309_AWOIS_2.000

Primary Feature for AWOIS Item #14904

Search Position: 36° 58' 12.0" N, 075° 21' 30.0" W
Historical Depth: [None]
Search Radius: 1000
Search Technique: SWMB, SSS
Technique Notes: VERIFY EXISTENCE OF SUBMERGED WK.

History Notes:

L-527/1988 -- 180 FT STEEL HULLED VESSEL SUNK AT POSITION OBSERVED 06 APR 1988 BY USS HOIST IN 17 FM OF WATER. POSITION TAKEN FROM LORAN 'C'. TD'S USED AT TIME OF OBSERVATION HAD HIGH SNR'S (LAH 4/4/2011)

Survey Summary

Survey Position: 36° 58' 09.7" N, 075° 21' 30.4" W
Least Depth: 23.89 m (= 78.38 ft = 13.063 fm = 13 fm 0.38 ft)
TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp: 2011-130.00:00:00.000 (05/10/2011)
Dataset: H12309_AWOIS_2.000
FOID: US 0000222874 00001(02260003669A0001)

Charts Affected: 12200_1, 13003_1

Remarks:

WRECKS/remrks: AWOIS 14904. Found by SSS and MBES. While this wreck was assigned as a unique AWOIS item, it lies within the charted fish haven "Triangle Reef" - AWOIS #14905. The least depth on this wreck (13.06 fm) is deeper than the charted authorized minimum of 11 fms.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12309_AWOIS_2.000	US 0000222874 00001	0.00	000.0	Primary
AWOIS_EXPORT	AWOIS # 14904	72.90	188.8	Secondary (grouped)

Hydrographer Recommendations

Delete wreck symbol. Delete text "Rep (1988)" in position 36°58'09.670" , -075°21'30.451". Update AWOIS database to append information for AWOIS #14904 into item #14905 Triangle Reef, then remove #14904 from the AWOIS database.

Cartographically-Rounded Depth (Affected Charts):

13fm (12200_1, 13003_1)

S-57 Data

Geo object 1: Wreck (WRECKS)

Attributes:

CATWRK - 1:non-dangerous wreck

NINFOM - do not chart - for pydro to link only

QUASOU - 6:least depth known

SORDAT - 20110510

SORIND - US,US,graph,H12309

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

VALSOU - 23.889 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: AWOIS 14904, 23.9m wreck, was found using MBES and SSS. Wreck is within fish haven (AWOIS 14905) and has a least depth (13.06fm) deeper than minimum depth of fish haven (11fm).

COMPILATION: Concur. AWOIS 14904 is a non-dangerous wreck, depth unknown, rep (1988). This feature was found by the present survey with a least depth of 13 fm inside the limits of AWOIS 14905, the fish haven. Since AWOIS 14904 is now inside the limits of AWOIS 14905 and the least depth is deeper than the authorized min depth of the fish haven, it is recommended AWOIS 14904 is not charted. It is further recommended the database for AWOIS 14904 is updated to reflect the present survey findings.

Feature Images

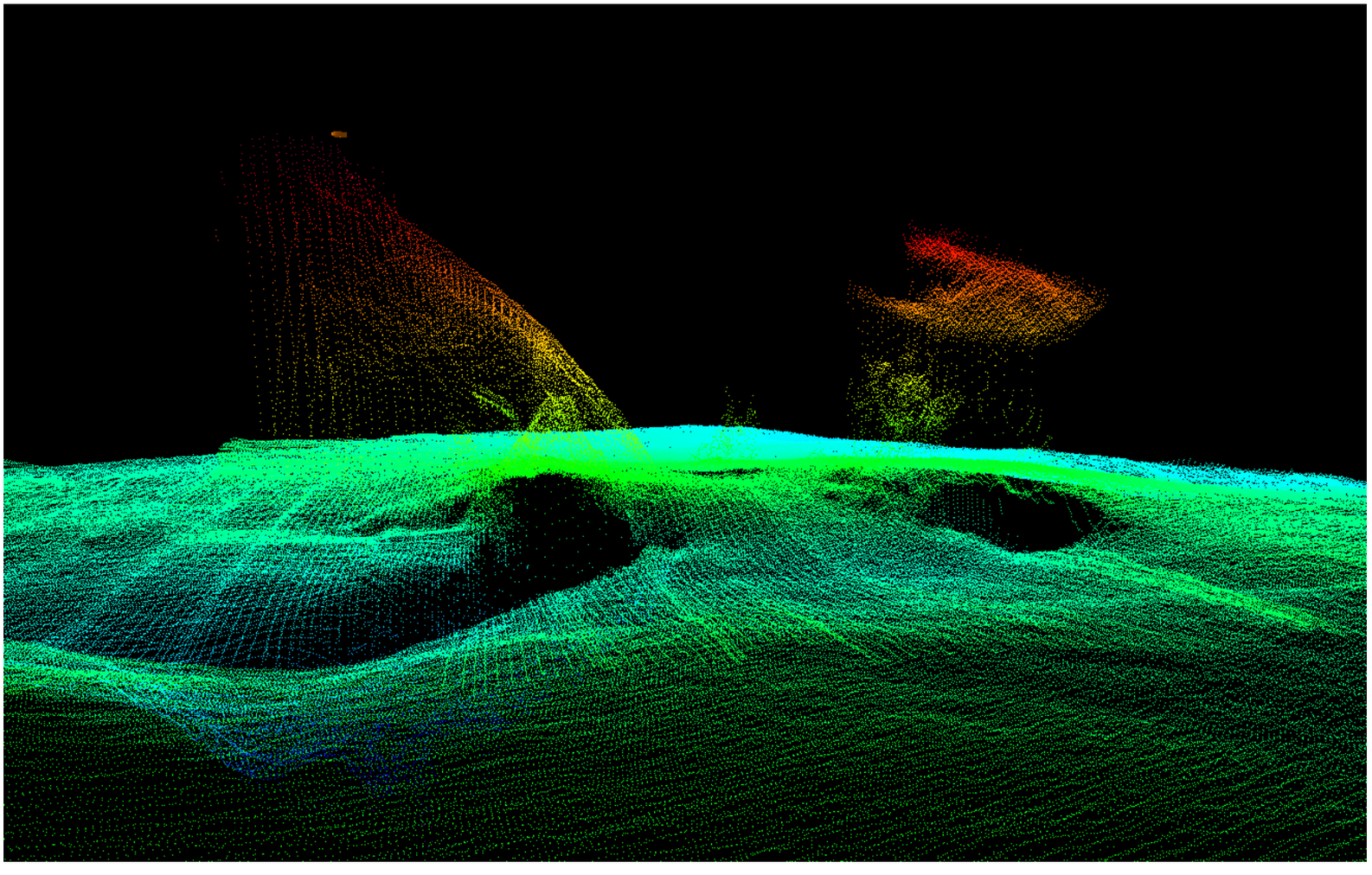


Figure 1.5.1

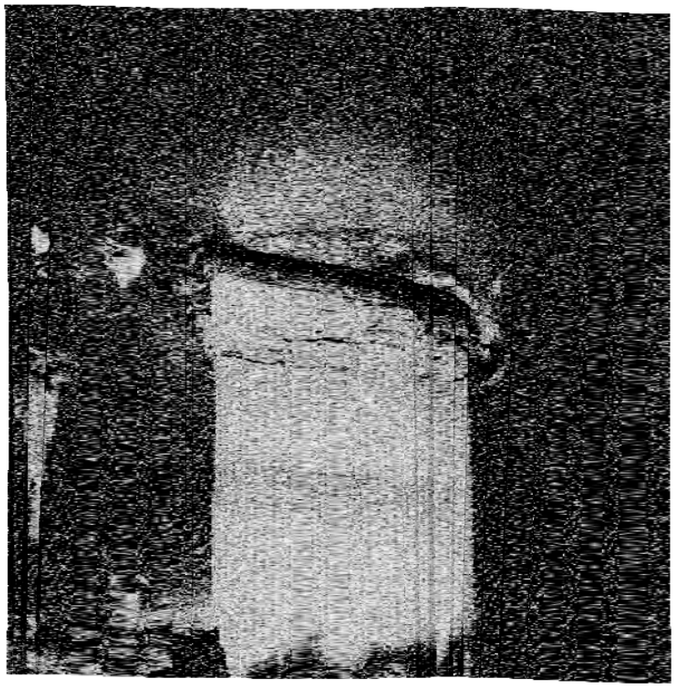


Figure 1.5.2

H12309_Wrecks

Registry Number:

State:

Locality:

Sub-locality:

Project Number:

Survey Date: 05/10/2011

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
12200	49th	06/01/2007	1:419,706 (12200_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	Wreckage	Wreck	26.94 m	36° 58' 01.8" N	075° 23' 00.3" W	---
1.2	Amphibious Landing Craft 2	Wreck	26.35 m	37° 00' 03.1" N	075° 22' 14.9" W	---
1.3	Wreck - least depth for Triangle Reef	Wreck	19.57 m	36° 59' 21.3" N	075° 21' 47.2" W	---

1.1) US 0001375602 00001 / H12309_WRECKS.000

Survey Summary

Survey Position: 36° 58' 01.8" N, 075° 23' 00.3" W

Least Depth: 26.94 m (= 88.39 ft = 14.731 fm = 14 fm 4.39 ft)

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

Timestamp: 2011-130.00:00:00.000 (05/10/2011)

Dataset: H12309_WRECKS.000

FOID: US 0001375602 00001(02260014FD720001)

Charts Affected: 12200_1, 13003_1

Remarks:

WRECKS/remrks: Debris from what appears to be an old wreck found by SSS and MBES. Little bathy relief over the remains of the wreck.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12309_WRECKS.000	US 0001375602 00001	0.00	000.0	Primary

Hydrographer Recommendations

Add non-dangerous wreckage.

Cartographically-Rounded Depth (Affected Charts):

14fm (12200_1, 13003_1)

S-57 Data

Geo object 1: Wreck (WRECKS)

Attributes:

CATWRK - 3:distributed remains of wreck

CONVIS - 2:not visual conspicuous

EXPSOU - 2:shoaler than range of depth of the surrounding depth area

NINFOM - Add wreckage

QUASOU - 6:least depth known

SORDAT - 20110510

SORIND - US,US,graph,H12309

VALSOU - 26.940 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: 26.9m wreck found at survey position using MBES and SSS.

COMPILATION: Concur with conditions. Add non-dangerous wreckage area least depth 14.7 fm in present survey position to encompass uncharted features to south of fish haven.

Feature Images

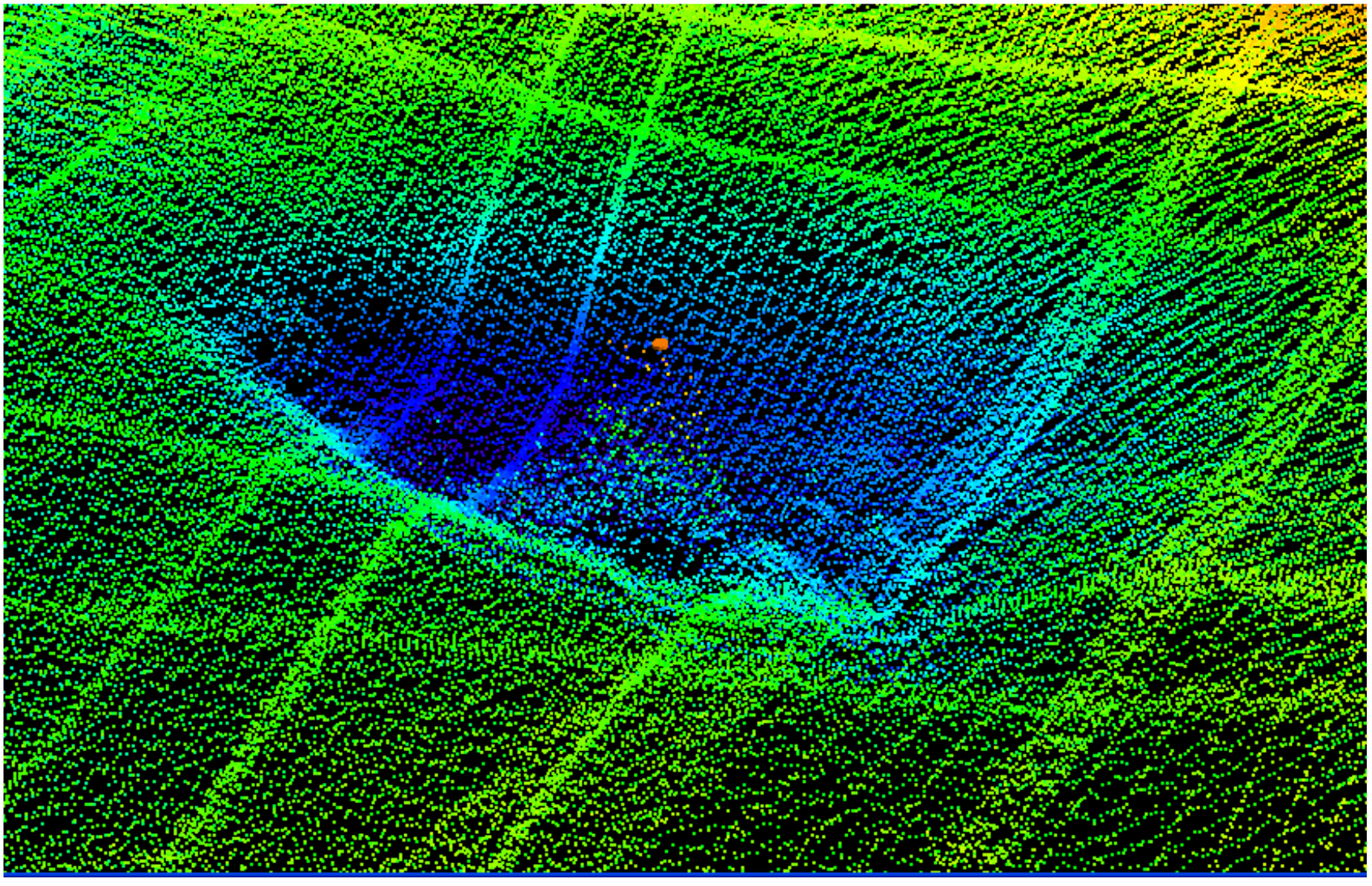


Figure 1.1.1

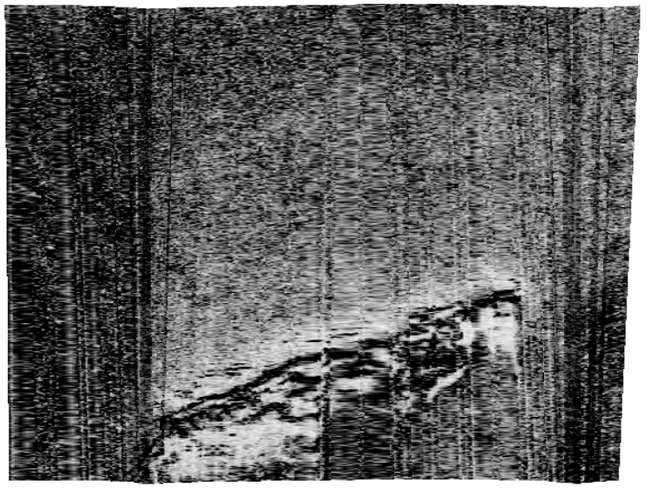


Figure 1.1.2

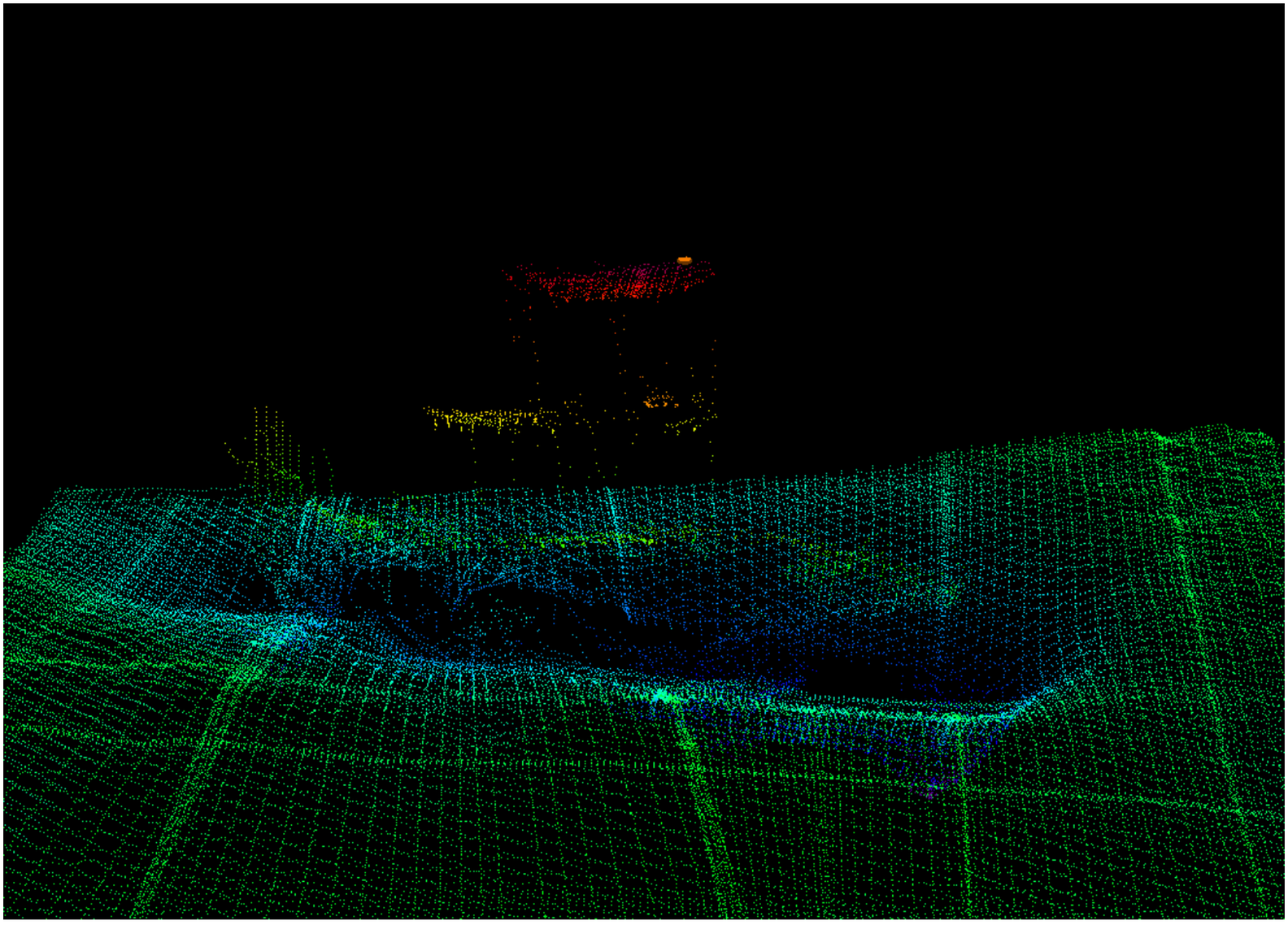


Figure 1.1.3

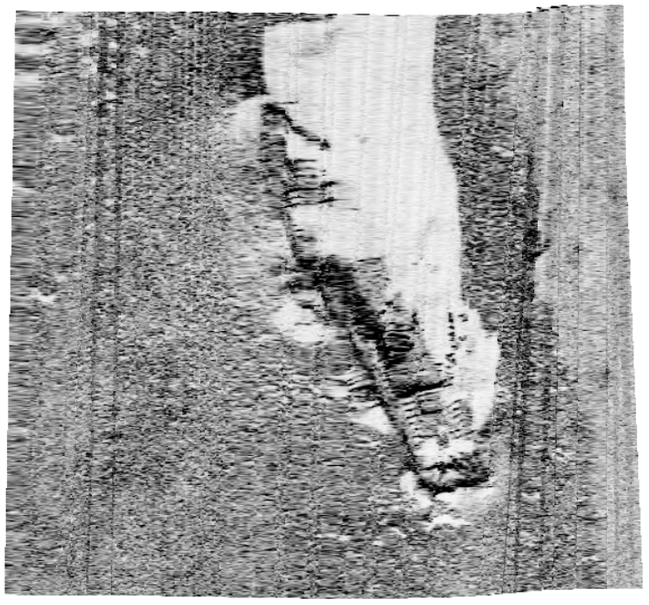


Figure 1.1.4

1.2) US 0001376970 00001 / H12309_WRECKS.000

Survey Summary

Survey Position: 37° 00' 03.1" N, 075° 22' 14.9" W

Least Depth: 26.35 m (= 86.46 ft = 14.410 fm = 14 fm 2.46 ft)

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

Timestamp: 2011-130.00:00:00.000 (05/10/2011)

Dataset: H12309_WRECKS.000

FOID: US 0001376970 00001(0226001502CA0001)

Charts Affected: 12200_1, 13003_1

Remarks:

WRECKS/remrks: Wreck of Amphibious Landing Craft found by SSS and MBES. This feature is located just outside the limits for the Triangle Reef fish haven. The least depth on this feature is deeper than the charted authorized minimum for the fish haven. If the item were an obstruction, the height would be insignificant in this water depth. There is another almost identical wreck located 775m to the west, which is just inside the limits of the fish haven.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12309_WRECKS.000	US 0001376970 00001	0.00	000.0	Primary

Hydrographer Recommendations

This feature should be included as one of the many wrecks comprising AWOIS #14905 Triangle Reef, despite the location being approximately 30m north of the charted limit of the fish haven. Update AWOIS # 14905 Triangle Reef to include the description of this wreck. Recommend no charting action be taken for this particular wreck.

Cartographically-Rounded Depth (Affected Charts):

14fm (12200_1, 13003_1)

S-57 Data

Geo object 1: Wreck (WRECKS)

Attributes: CATWRK - 2:dangerous wreck

CONVIS - 2:not visual conspicuous

EXPSOU - 2:shoaler than range of depth of the surrounding depth area

NINFOM - Add wrecks

QUASOU - 6:least depth known

SORDAT - 20110510

SORIND - US,US,graph,H12309

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

VALSOU - 26.353 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Feature submitted as secondary and no description with a pending new feature 16m to the north. Current feature changed to new and primary by SAR personnel due to least depth. Feature is listed as an OBSTRN, while field unit refers to feature as a WRECK in "remarks" and "recommendations."

COMPILATION: Concur with conditions. Add non-dangerous wrecks with a least depth 14.4 fm in present survey position to encompass uncharted features to north of fish haven.

Feature Images

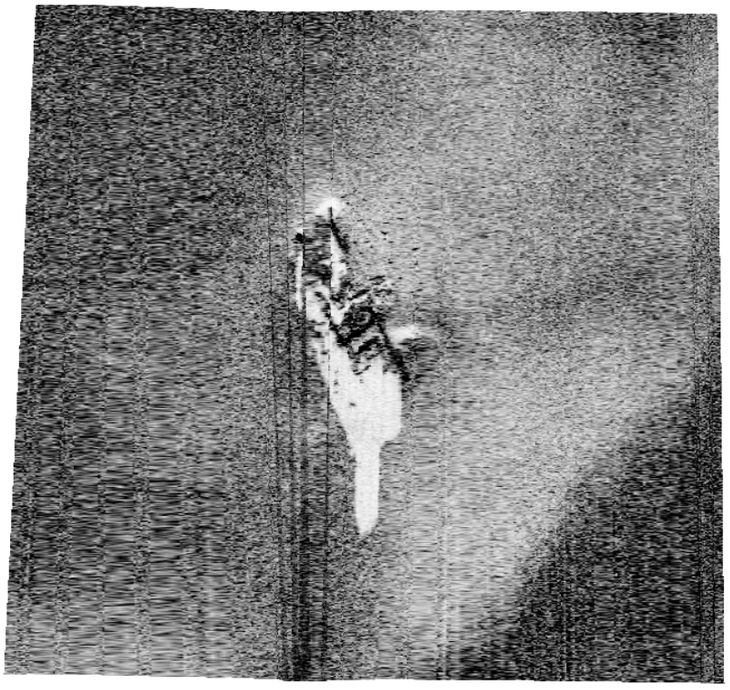


Figure 1.2.1

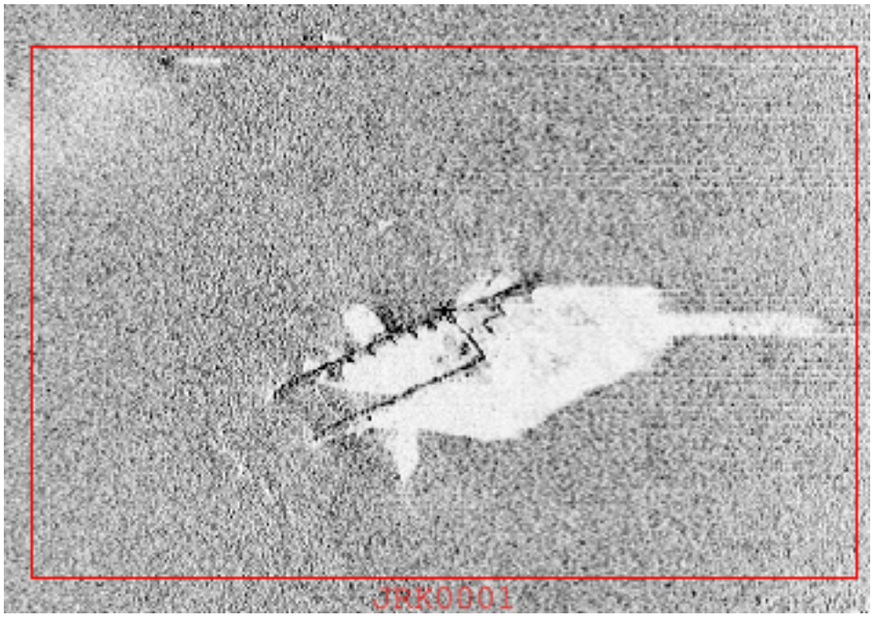


Figure 1.2.2

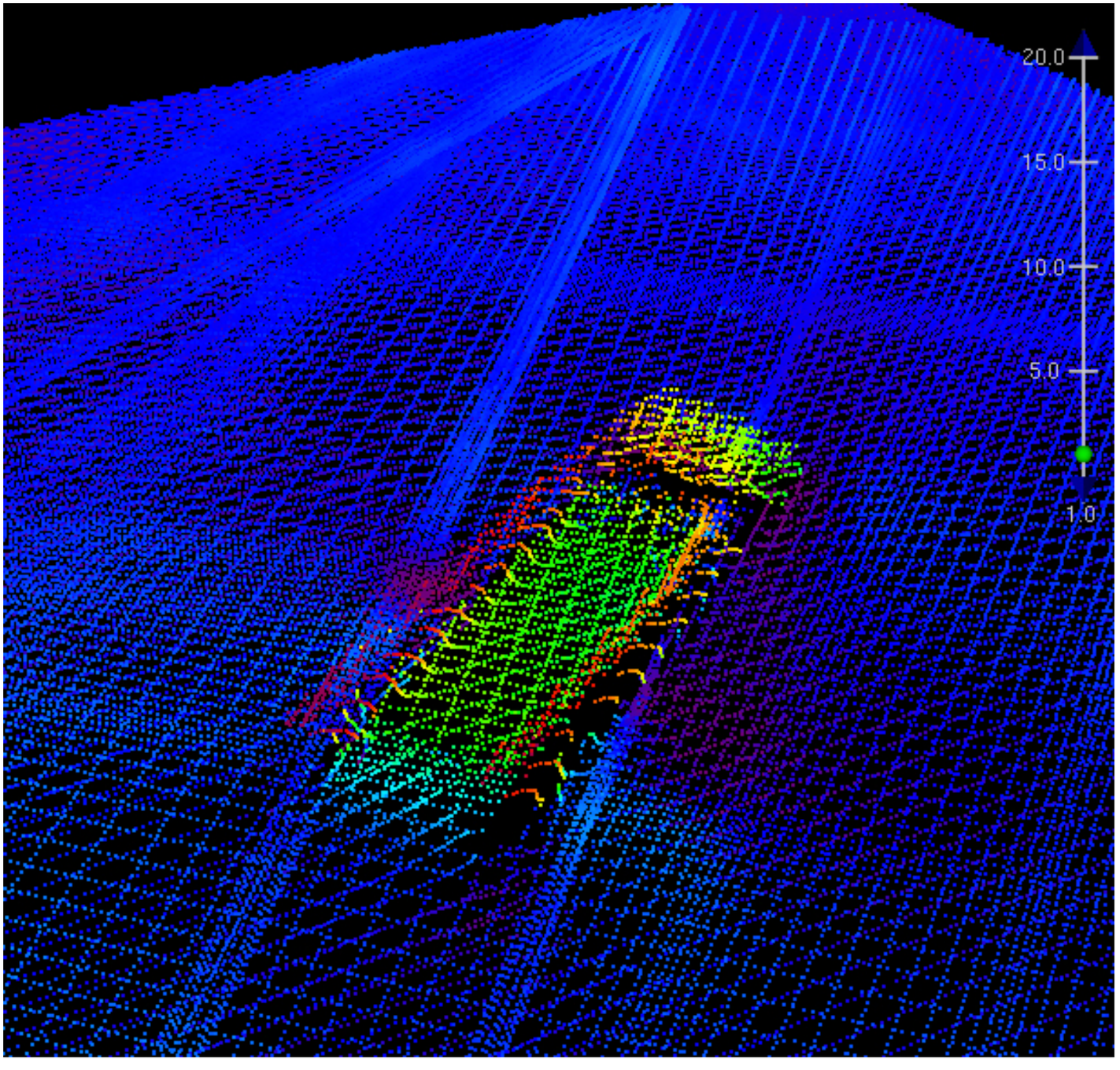


Figure 1.2.3

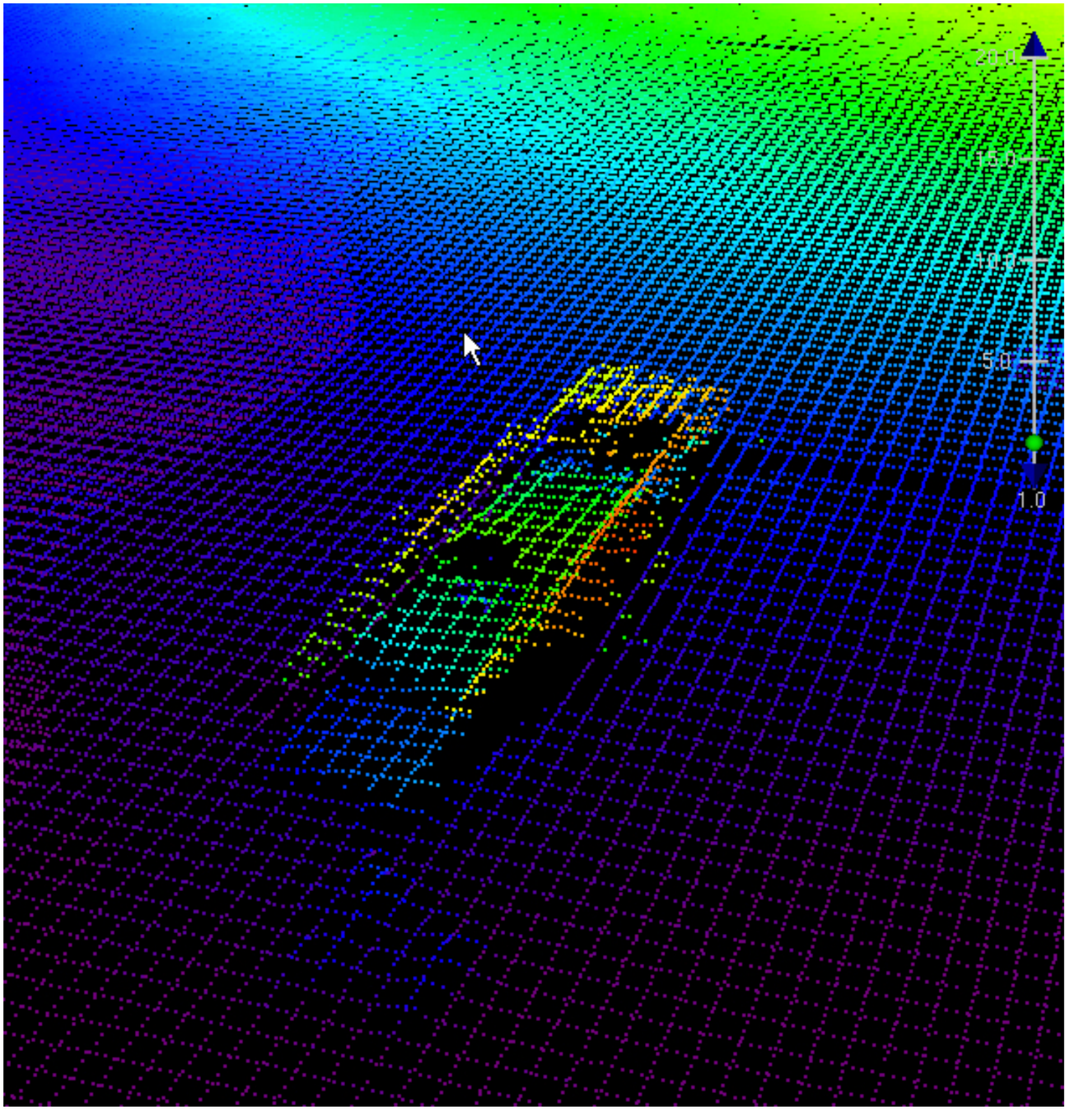


Figure 1.2.4

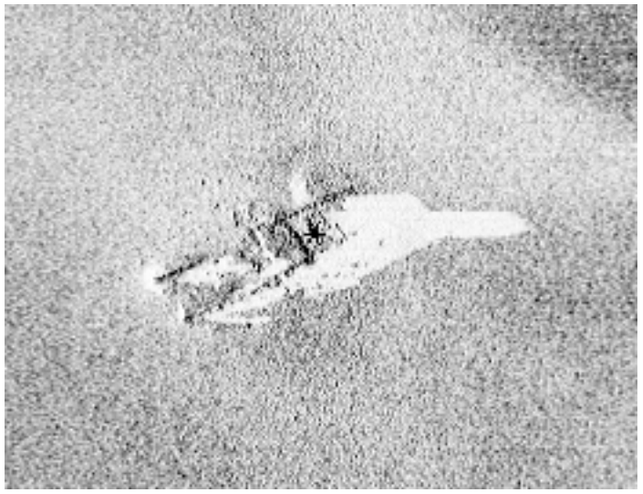


Figure 1.2.5

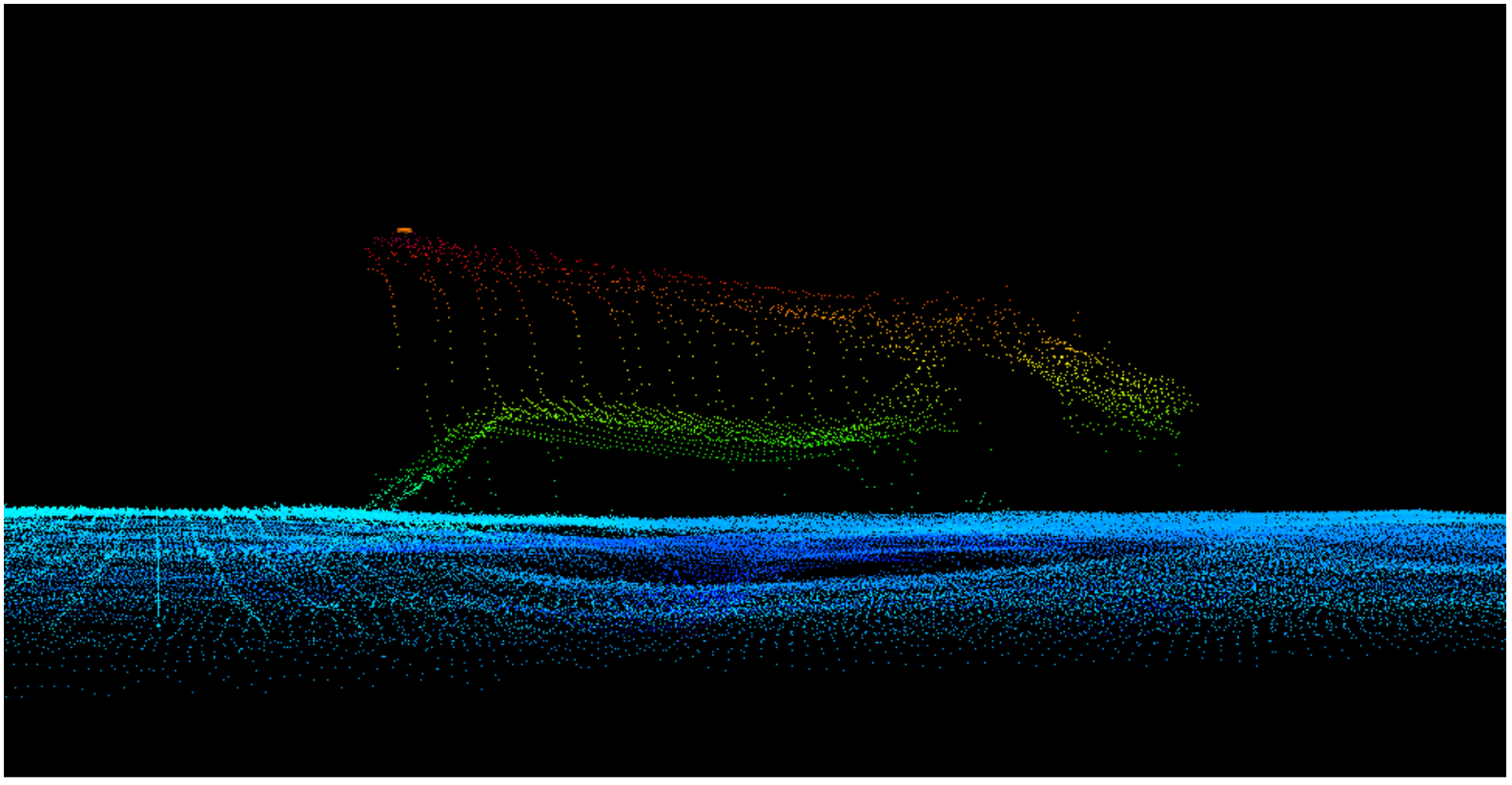


Figure 1.2.6

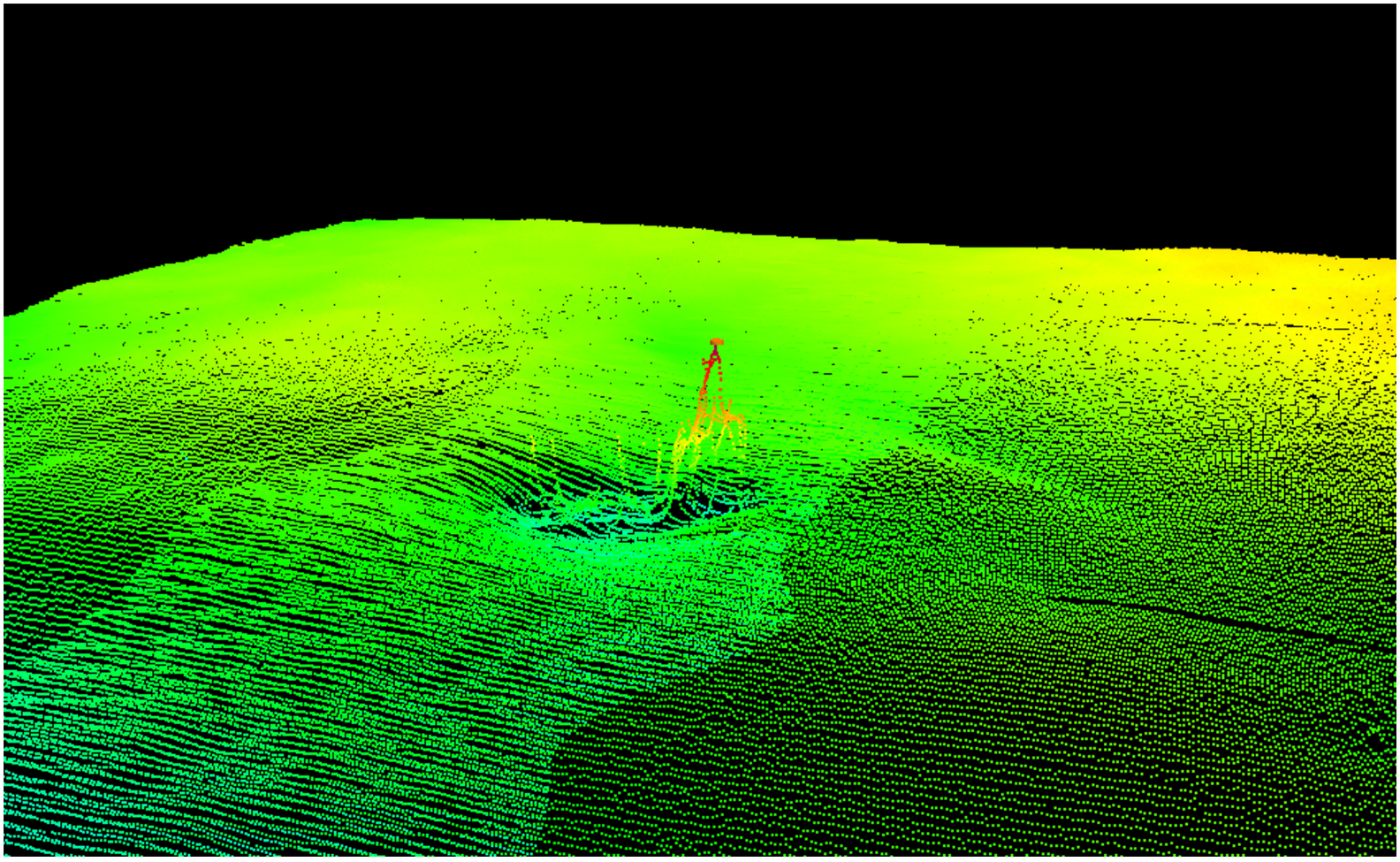


Figure 1.2.7

1.3) US 0001375595 00001 / H12309_WRECKS.000

Survey Summary

Survey Position: 36° 59' 21.3" N, 075° 21' 47.2" W

Least Depth: 19.57 m (= 64.22 ft = 10.703 fm = 10 fm 4.22 ft)

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

Timestamp: 2011-130.00:00:00.000 (05/10/2011)

Dataset: H12309_WRECKS.000

FOID: US 0001375595 00001(02260014FD6B0001)

Charts Affected: 12200_1, 13003_1

Remarks:

WRECKS/remrks: This is one of many wrecks intentionally sunk to create the artificial reef named "Triangle Reef". Wreck found by side scan sonar and depths from MBES bathymetry. This artificial reef was assigned for investigation as AWOIS #14905. The least depth on this wreck is the least depth found in the Triangle Reef fish haven. This wreck has a least depth that is less than the charted authorized minimum depth for the fish haven. This item is submitted as the primary bathy feature for AWOIS #14905. Additional wrecks are included as secondary items to this feature, but are not reported individually.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12309_WRECKS.000	US 0001375595 00001	0.00	000.0	Primary

Hydrographer Recommendations

Chart dangerous wreck with least depth of 10.7 fathoms in position 36°59'21.277" , -075°21'47.227".

Cartographically-Rounded Depth (Affected Charts):

10 ¾fm (12200_1, 13003_1)

S-57 Data

Geo object 1: Wreck (WRECKS)

Attributes:

CATWRK - 2:dangerous wreck

NINFOM - Add wreck

QUASOU - 6:least depth known

SORDAT - 20110510

SORIND - US,US,graph,H12309

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

VALSOU - 19.573 m

WATLEV - 3:always under water/submerged

Office Notes

SAR: Wreck found at survey position using MBES and SSS. Least depth of 19.6m (10.7fm) in fish haven (AWOIS 14905) with minimum depth of 11fm.

COMPILATION: Concur. Add wreck feature least depth 10fm 4ft inside fish haven limits in present survey position. Wreck is shoaler than fish haven min depth of 11 fms.

Feature Images

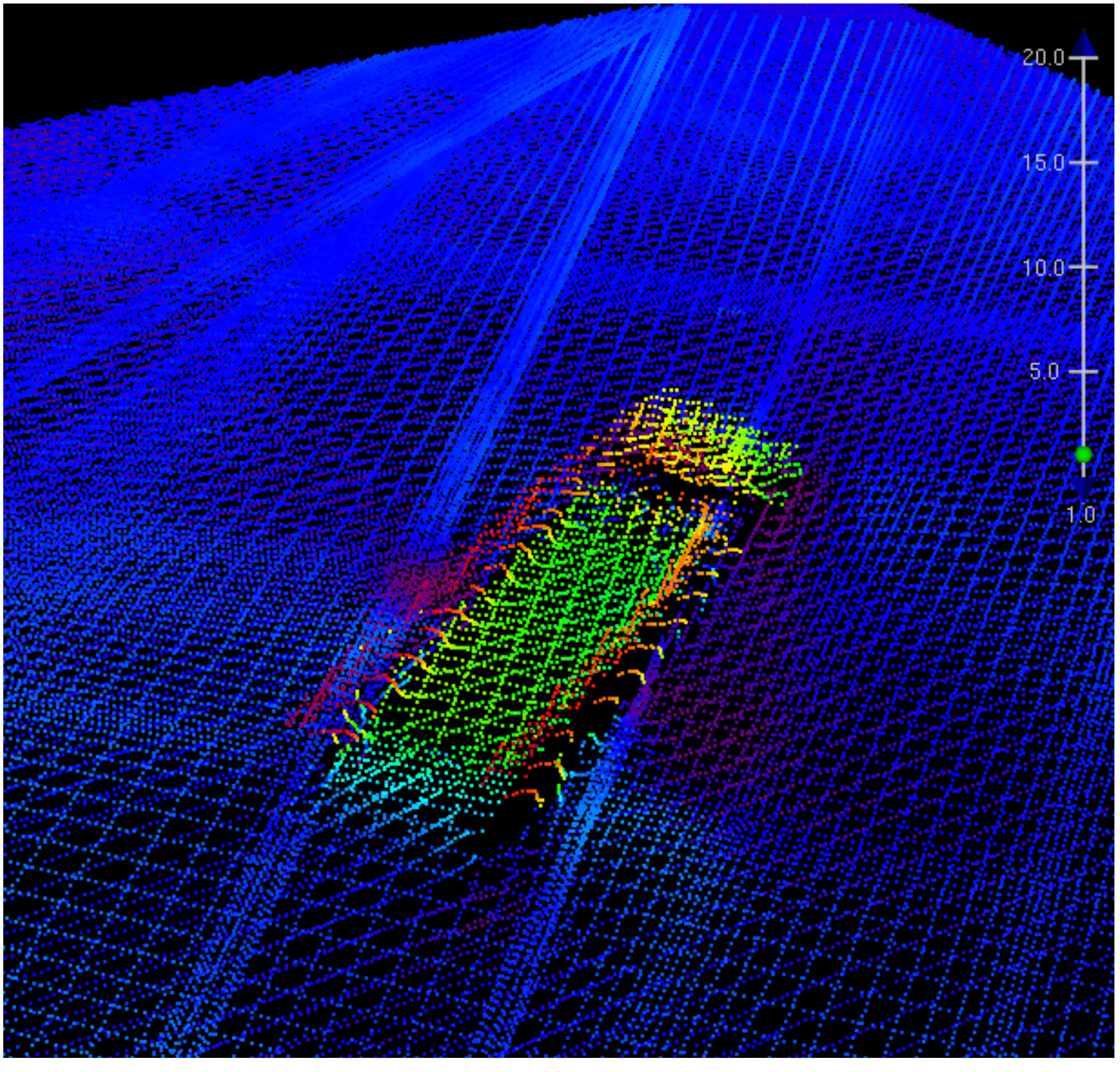


Figure 1.3.1

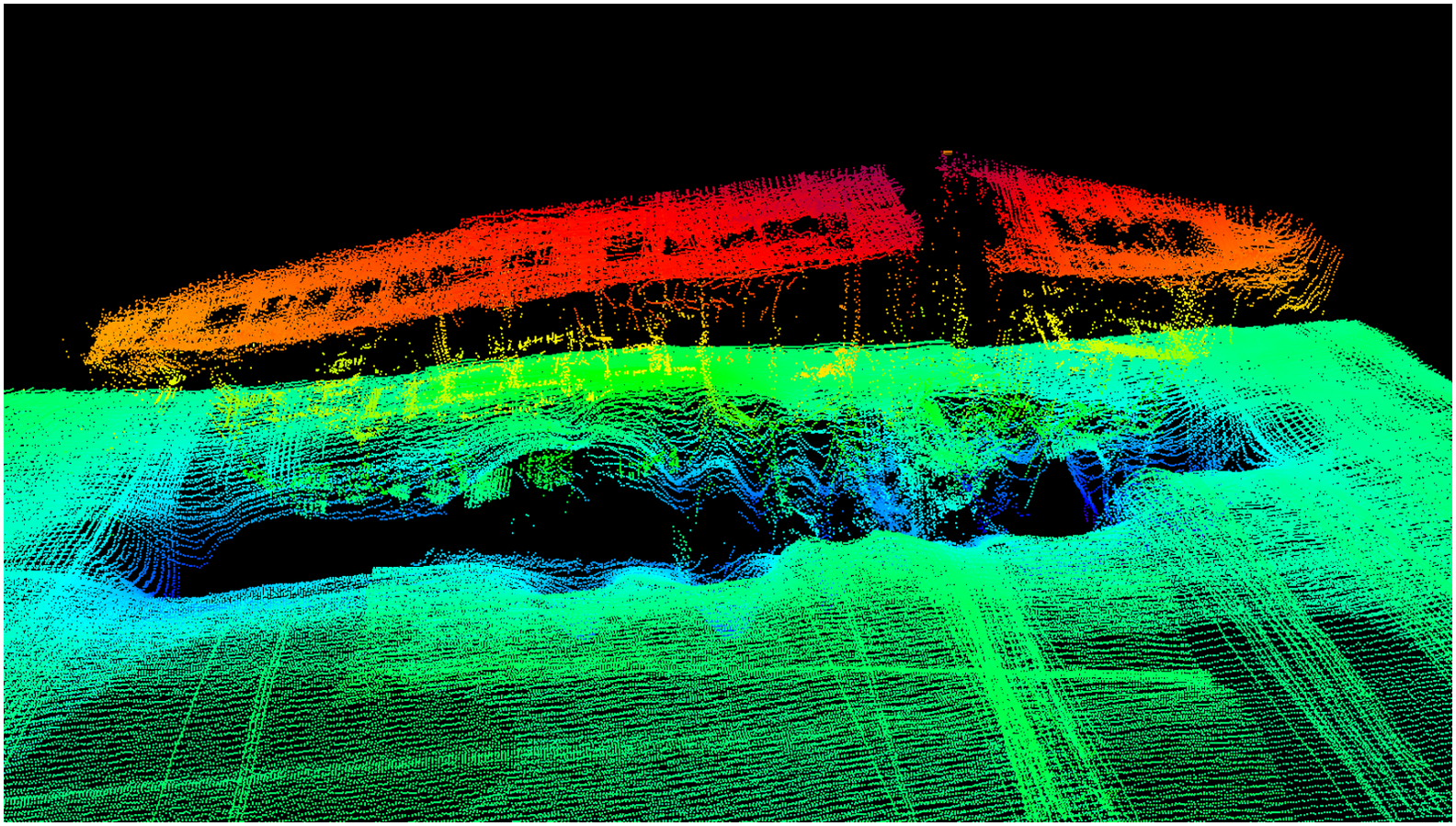


Figure 1.3.2

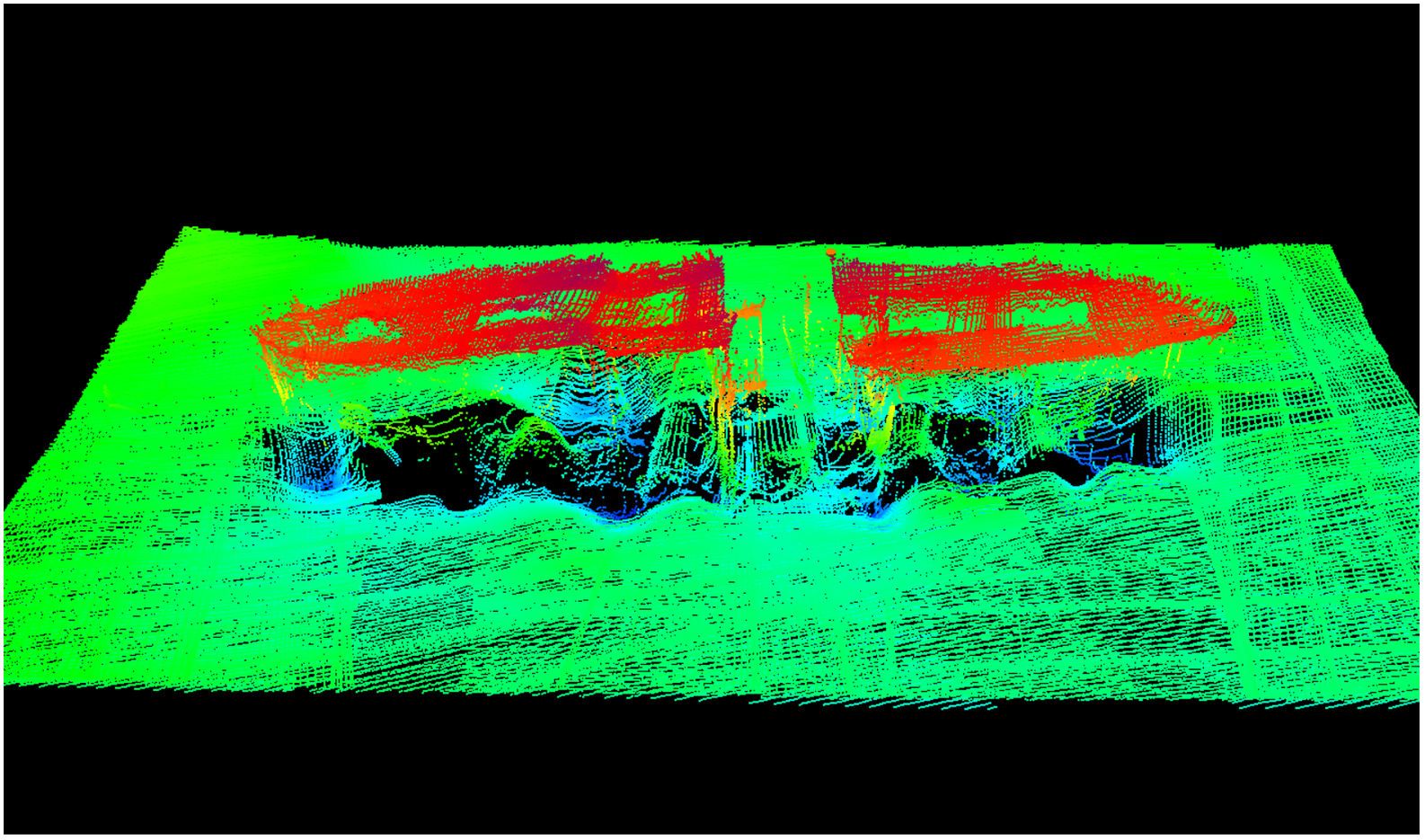


Figure 1.3.3

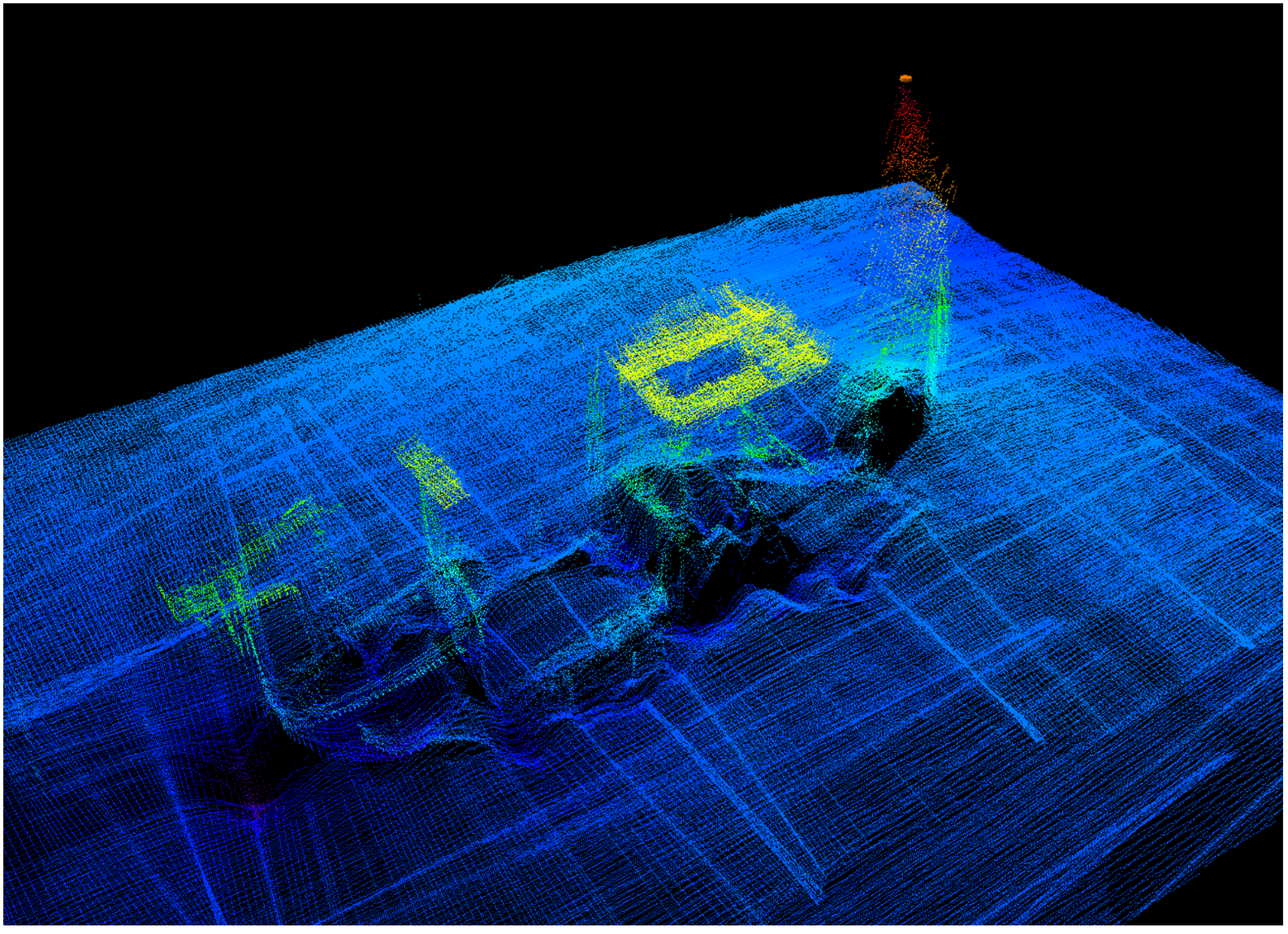


Figure 1.3.4

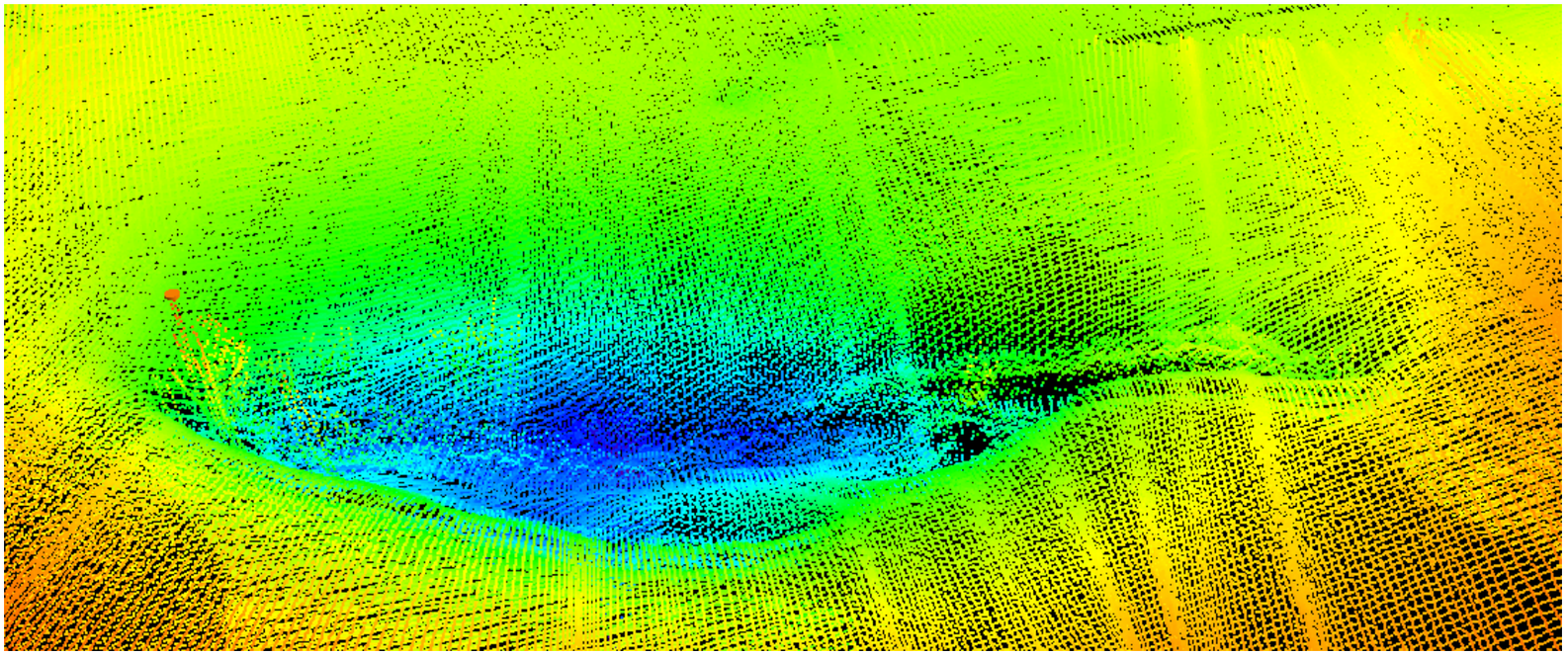


Figure 1.3.5

APPROVAL PAGE

H12309

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

- H12309_DR.pdf
- Collection of depth varied resolution BAGS
- Processed survey data and records
- H12309_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: HIGGINS.ABIGAIL.SARAH.1267671750 2012.12.28 14:40:59 -05'00'

LT Abigail Higgins
Chief, Atlantic Hydrographic Branch