H12353

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: H12353

LOCALITY

State: Mississippi

General Locality: Approaches to Mississippi Sound

Sub-locality: SE of Ship Island Harbor

2011

LEAD HYDROGRAPHER: JONATHAN L. DASLER

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DATE

NOAA FORM 77-28 (11-72) U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTRY NUMBER:
HYDROGRAPHIC TITLE SHEET	**H12353**

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:	**Mississippi**		
General Locality:	**Approaches to the Mississippi Sound**		
Sub-Locality:	**SE of Ship Island Harbor**		
Scale:	**1:20,000**	Date of Survey:	**07/12/2011 to 10/18/2011**
Instructions Dated:	**22 June, 2011**	Project Number:	**OPR-J348-KR-11**
Vessel:	***R/V Westerly and R/V Chinook***		
Chief of Party:	**Jonathan L. Dasler, Lead Hydrographer**		
Surveyed by:	**David Evans and Associates, Inc. Personnel**		
Soundings by:	**RESON 7125-SV2 Multibeam Echo Sounder**		
Imagery by:	**Edgetech 4200-HFL Side Scan Sonar**		
Verification by:	**Atlantic Hydrographic Branch Personnel**		
Soundings Acquired in:	**Meters at MLLW**		

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 Rednotes 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/.

Remarks:

1) All Times are in UTC.

2) This is a Navigable Area Hydrographic Survey.

3) Projection is NAD83, UTM Zone 18.

Descriptive Report to Accompany Hydrographic Survey H12353
Project OPR-J348-KR-11 Approaches to Mississippi Sound, Mississippi
SE of Ship Island Harbor
Scale 1:20,000
July 2011 – November 2011
David Evans and Associates, Inc.
Lead Hydrographer: Jonathan L. Dasler

A. AREA SURVEYED

David Evans and Associates, Inc. (DEA) conducted hydrographic survey operations in the Approaches to Mississippi Sound, MS. The survey area extends from the southern edge of Ship Island to 5.6 nm south of Ship Island.

Survey H12353 was conducted in accordance with the *Statement of Work* (June 23, 2011) and *Hydrographic Survey Project Instructions* (June 22, 2011) for OPR-J348-KR-11. On December 13, 2011, DEA was directed to use Ellipsoidal Referenced Survey (ERS) methods for the reduction of survey data to chart datum via a signed memo from the Chief, Hydrographic Surveys Division (HSD). Approval of these methods was granted based on recommendations included with DEA's interim deliverables (submitted November 1, 2011) for the ERS/VDatum components of OPR-J348-KR-11, specified in the *Hydrographic Survey Project Instructions* (June 22, 2011). A copy of this memo is included in *OPR-J348-KR-11 Project Correspondence* of each survey's *Descriptive Report*.

The survey (Figure 1) consisted of 200% side scan sonar coverage with concurrent multibeam in waters 18 feet and deeper. The survey polygon *OPR-J348-11_Sheets_Feb_region.shp* which was included with the *Hydrographic Survey Project Instructions* (June 22, 2011) 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 meters and 75 meters side scan sonar ranges, respectively). Automated Wreck and Obstruction Information System (AWOIS) items and significant side scan contact investigations were acquired to meet object detection coverage requirements for multibeam surveys. The coverage area totaled 31.0 square nautical miles using a combination of side scan and multibeam to chart H12353.

Parts of the OPR-J348-KR-11 survey area, including H12353, fell within the Gulf Islands National Seashore. Scientific Research and Collecting Permit GUIS-2011-SCI-0055 was issued by the National Park Service (NPS) on July 5, 2011 which permitted bathymetric data collection and bottom sampling in the waters managed by the NPS. The permit also allowed for tide gauge installation on Ship Island and GPS base station installation on Ship and Horn Islands. A copy of the Scientific Research and Collecting Permit is included in the *OPR-J348-KR-11 Project Correspondence*.

Ten (10) bottom samples were acquired on July 12, 2011 (Day Number 193). Predetermined sample locations were included in the file *BottomSamples_point.shp* provided by Hydrographic Surveys Division (HSD). Eight (8) AWOIS items were assigned to this survey. Of the eight assigned items three items were assigned as full investigation and five items were assigned as information only.

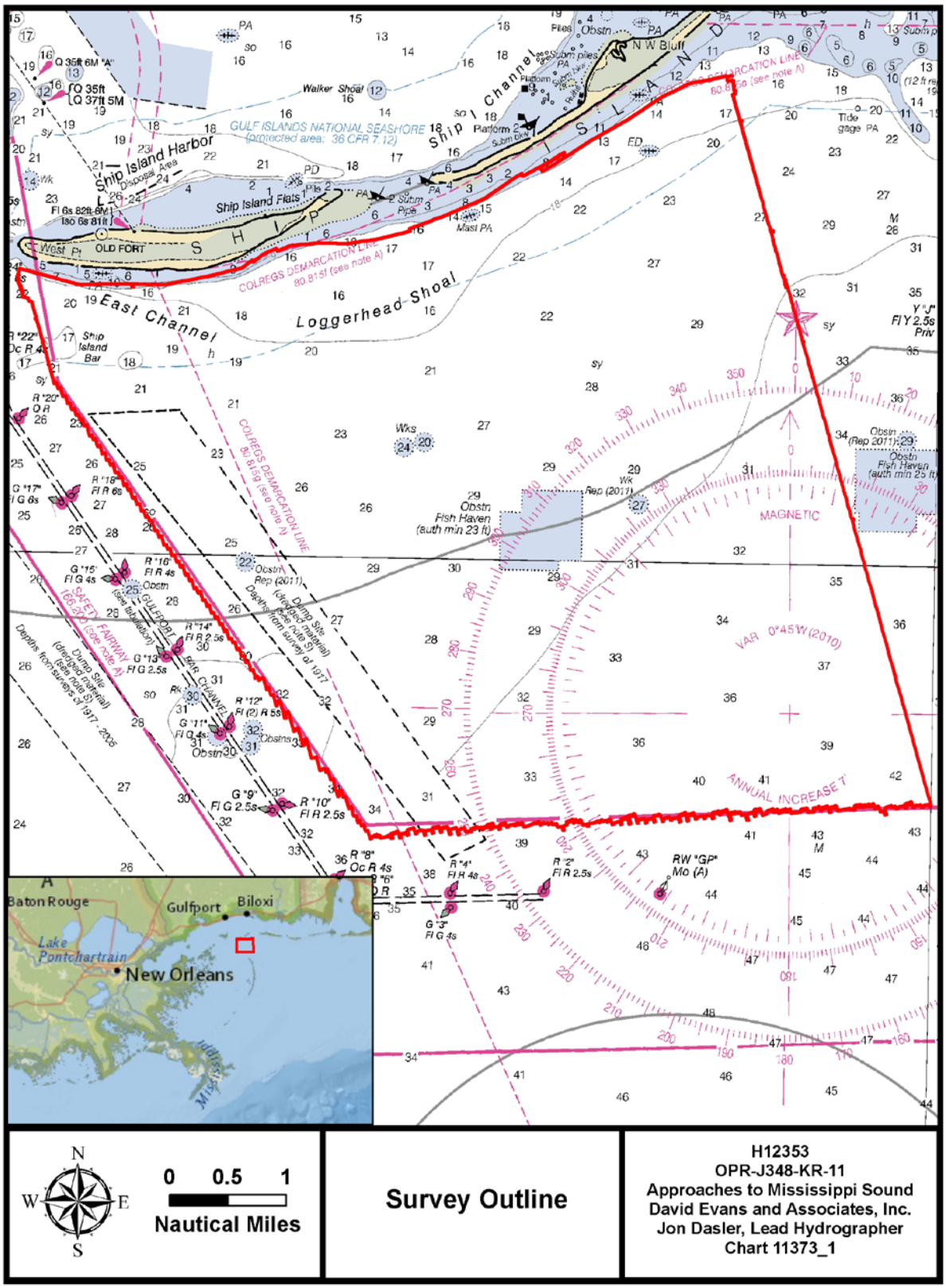


Figure 1. H12353 Survey Area

Data acquisition was conducted from July 12, 2011 (DN 193) to October 18, 2011 (DN 291). Table 1 lists specific dates of acquisition of survey data. In addition, dates of patch test data acquisition used to determine system biases in support of the survey are also shown and included in the digital deliverable, though survey data was not necessarily collected on those days.

Table 1. H12353 Days of Acquisition

Dates of Acquisition	
Month	**Dates**
July	12, 15-17, 19- 20, 22-31
August	1-7, 17, 19- 20
September	13- 15, 30
October	18
Dates of Patch Test Acquisition	
July	13, 17
August	14- 15, 26
September	7- 8, 15, 20
November	11

Detailed survey statistics of H12353 are provided in Table 2.

Table 2. H12353 Survey Statistics

Survey Statistics	Research Vessel (R/V) *Chinook*	Research Vessel (R/V) *Westerly*	Combination MBES/SSS main scheme
MBES/SSS main scheme (nm)	560.60	770.22	1330.82
Crosslines (MBES nm)	21.70	122.55	144.25
Number of Item Investigations that required additional survey effort	0	0	0
Total number of square nautical miles	-	-	31.0

B. DATA ACQUISITION AND PROCESSING

B1. Equipment

Equipment and vessels used for data acquisition and survey operations during this survey are listed below in Tables 3 and 4.

Table 3. R/V *Westerly* Equipment and Vessel Specifications

R/V *Westerly*	
	
IMO Number	1AR38CATK011
Official Number (O/N)	1231991
Builder	Armstrong Marine
Design	Catamaran
Year Built	2011
Weight	13 gross tons, 10 net tons
Length Overall	38’
Beam	16.5’
Draft, Maximum	4.6’
Cruising Speed	26 knots
Max Survey Speed	9 knots
Primary Echosounder	RESON 7125-SV2
Side Scan Sonar	Edgetech 4200-HFL
Sound Velocity Equipment	Reson AML Micro X Brooke Ocean MVP-30 with AML Smart SVP+ (Primary) Sea-Bird SEACAT SBE-19 CTD Profiler
Positioning & Attitude	Applanix POS/MV 320 v4

Table 4. R/V *Chinook* Equipment and Vessel Specification

R/V *Chinook*	
	
IMO Number	IAR28CATJ607
Official Number (O/N)	AK-8018-AG
Builder	Armstrong Marine
Design	Catamaran
Year Built	2007
Length Overall	28’
Beam	10.5’
Draft, Maximum	2’
Cruising Speed	27 knots
Max Survey Speed	9 knots
Primary Multibeam Echosounder	Reson 7125-SV2
Primary Single Beam Echosounder	ODOM CV 100
Side Scan Sonar	Edgetech 4200-HFL
Sound Velocity Equipment	Reson AML Micro X AML SVPlus V2 (Primary) Sea-Bird SEACAT SB-19 CTD Profiler
Positioning & Attitude	Applanix POS/MV 320 v4

There were no vessel or equipment configurations used during data acquisition that deviated from those described in the OPR-J348-KR-11 *Data Acquisition and Processing Report* (DAPR), submitted under separate cover.

B2. Quality Control

Survey data show good internal consistency. On average weekly bar checks agreed better than 0.02 meters, with a maximum uncertainty of 0.04 meters at 95%, as shown in Appendix II of the DAPR. Results from both crossline analysis and final CUBE surface uncertainty both indicate good internal consistency of the multibeam data. A sheet wide surface comparison of multibeam data between both survey vessels, which is inclusive of water level reduction, showed a mean difference between data collected by each vessel of 0.01 meters with an uncertainty of 0.10 meters at 95%.

B2.a Crosslines

A total of 144.2 nautical miles of crosslines, or 10.9% of all survey lines, were run for analysis of survey accuracy. 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 HIPS QC Report tool, which compares crossline data to a gridded surface and reports results by beam number. Crosslines from both vessels were compared to a 1 meter CUBE surface encompassing mainscheme data for the entire survey area. The QC Report tabular outputs and plots are included in Separate II *Digital Data*. The results of the analysis meet the requirements as stated in the 2011 National Ocean Service (NOS) Hydrographic Surveys Specifications and Deliverables (HSSD).

Additional crossline analysis was performed by computing a 1 meter CUBE surface from the crossline data from both survey vessels. The surface was then differenced from a 1 meter CUBE surface comprised of all main scheme, fill, and investigation data. The resultant difference surfaces were exported using the Base Surface to ASCII function and statistics were compiled on the ASCII data. The crossline analysis included over 2,371,119 node comparisons and an average difference of 0.00 meters across all depths between the crossline surface and the main scheme surface, with 0.04 meters of uncertainty at 95% confidence.

B2.b Uncertainty

During HIPS processing, the "greater of the two" option was selected, where the calculated uncertainty from total propagated uncertainty (TPU) is compared to the standard deviation (StdDev) 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 surface increased for nodes where the StdDev of the node was greater than the total propagated uncertainty. The resulting calculated uncertainty values of all nodes in the finalized surface range from 0.33 meters to 0.75 meters.

To determine if surface grid nodes met 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 over 100% fail to meet specification.

As shown in Table 5, both uncertainty and the allowable error utilized have low average values and a tight StdDev. The maximum values, however, are outliers that fail to meet specification. For the 1 meter CUBE surface, 17 nodes out of 50,114,772 failed to meet specification.

Table 5. CUBE Uncertainty

CUBE Finalized Uncertainty Statistics						
	Uncertainty (m)			Allowable error utilized		
	Average	StdDev	Maximum	Average	StdDev	Maximum
1m CUBE	0.33	0.001	0.75	65%	0.7%	146%

The 17 nodes which failed to meet specification were carefully reviewed in CARIS HIPS. The nodes were located on the vertical side of two steep features and had a high value for standard deviation. Reviewing the underlying data in subset showed good agreement between survey lines with no anomalies. The high standard deviation, which resulted in the nodes being reported as out of specification, is considered an artifact of gridding data over the steeply sloping feature. As a result, all nodes are considered within specification and no area within the survey exceeds International Hydrographic Organization (IHO) Order 1 specifications for depth accuracy.

B2.c Junctions

Survey H12353 junctions with OPR-J348-KR-11 surveys H12354 and H12355 to the east and prior NOAA surveys H11513, H11514, and H11545 to the south and west. At the time of writing, junction analysis with surveys H12354 and H12355 had not been completed. Junction analysis between these surveys will be discussed in their respective Descriptive Reports.

Bathymetric Attributed Grids (BAG) for surveys H11513, H11514 and H11545 were downloaded from NOAA's Nation Geophysical Data Center. The 1-meter finalized H12353 surface was compared to the prior surveys using the same methodology to generate statistics. All junctions agreed well, with a mean difference of 10 centimeters or less. Statistics of the junction comparison are listed below in Table 6. A qualitative review of the junction showed no anomalous areas. The maximum differences occur at the southern end of the charted dumping ground where mounds from dumping activity evident in the current survey are being compared to single beam lines run on prior survey H11545. It should be noted that H11513, H11514 and H11545 were compiled using traditional discrete tidal zoning while H12353 was compiled using ERS methods.

Table 6. Results of Junction Analysis of prior NOAA Surveys with H12353

Survey Junction Sheet	Junction Direction	Number of Nodes Compared	Minimum Depth Difference (m)	Maximum Depth Difference (m)	Mean Depth Difference of Nodes (m)	Standard Deviation of Nodes (m)
H11513	West	382110	-0.47	0.47	-0.10	0.10
H11514	South, West	251771	-0.75	0.39	0.08	0.06
H11545	South	184623	-0.42	0.70	0.05	0.10

B2.d Sonar System Quality Checks

Quality control is discussed in detail in Section B of the DAPR. The results from the positioning system comparison and bar-to-multibeam comparison are included in Separate I *Processing Logs.* The sound velocity profile (SVP) sensor weekly evaluation table can be found in Separate II *Sound Speed Data* of this report. Multibeam data were reviewed at multiple levels of data processing including: CARIS Hydrographic Information Processing System (HIPS) conversion, subset editing, and analysis of anomalies revealed in combined uncertainty and bathymetry estimator (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.

B2.e Unusual Conditions or Data Degradation

Occasional loss of bottom tracking was observed in the multibeam sonar onboard the R/V *Westerly*, possibly due to sheet cavitation sporadically blanking the sonar's transmit array. The resulting erroneous depths were manually removed during multibeam data processing. This error seldom resulted in a CUBE surface node of low density, and in no instance left a full swath three node holiday

Survey lines 2011WE2091648 and 2011WE211236 required additional processing to reduce GPS Tide anomalies that extended beyond the end of the survey lines. Alternate GPS Tide processing procedures were implemented for these two survey lines and are detailed in Section B4 of the DAPR. Specifically, navigation data was loaded with an additional time buffer, a 60-second moving average was applied to the GPS Height solution, and the GPS Tide was computed from the smoothed GPS Height without applying dynamic heave. The resulting extended GPS Tide solution included data on either side of the deviation, which was rejected and interpolated through.

B2.f Object Detection and Coverage Requirements

Survey speeds were maintained to meet or exceed object detection requirements throughout the survey.

Demonstration of 200% side scan sonar 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 for holidays and poor quality coverage areas in water depths greater than 18 feet.

Multibeam data were acquired in conjunction with side scan sonar collection. A fill plan was created for all holidays greater than three nodes long that extended across the entire multibeam track line.

The sounding density requirement of 95% of all nodes, populated with at least five soundings per node, 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 98.8% of all final CUBE surface nodes contained five or more soundings. Density statistics of individual item investigation surfaces using Complete Coverage requirements were reviewed and all surpassed the 95% requirement.

B3. Corrections to Echo Soundings

Data reduction procedures for survey H12353 are detailed in the DAPR. For detailed information pertaining to applied filters, refer to the multibeam processing logs in Separate I *Processing Logs.*

B3.a Deviations from DAPR

There were no deviations from the OPR-J348-KR-11 DAPR.

B3.b Additional Calibration Tests

No additional calibration tests were conducted beyond those discussed in the OPR-J348-KR-11 DAPR.

B4. Data Processing (Data Representation)

B4.a Multibeam

Bathymetric grids were created relative to Mean Lower Low Water (MLLW) in CUBE format using complete coverage and object detection resolutions described in the NOS HSSD (April 2011).

Since the entire survey was contained within a single depth range as defined in the NOS HSSDM (April 2011), no depth thresholds were applied during surface finalization.

Duplicate bathymetric grids relative to the North American Datum of 1983 (NAD83) (CORS96) were generated by subtracting the VDatum derived separation model used during tide correction from the bathymetric grids.

Table 7 lists the CUBE surfaces submitted with this survey. The surface named *"_INV,"* is a combined surface comprised of all investigation data at object detection resolution. In addition a field sheet and surface was submitted for each of the 14 significant individual investigations. The name of each individual investigation field sheet corresponds to the primary side scan sonar contact name.

Table 7. H12353 Multibeam Surfaces

Surface Name	Resolution
H12353_1m_MLLW_1of2	1.0m
H12353_50cm_MLLW_INV_2of2	0.5m
H12353_1m_NAD83CORS96_1of2	1.0m
H12353_50cm_NAD83CORS96_INV_2of2	0.5m

B4.b Side Scan

Side scan sonar mosaics were created for each 100% coverage at 1 meter resolution. Mosaics submitted with this survey are listed in Table 8.

Table 8. H12353 Side Scan Mosaics

Mosaic Name	Resolution
H12353_SSS_100	1.0m
H12353_SSS_200	1.0m

C. HORIZONTAL AND VERTICAL CONTROL

A complete description of the horizontal and vertical control for survey H12353 can be found under the OPR-J348-KR-11 *Horizontal and Vertical Control Report*, submitted under separate cover. A complete description of Global Positioning System (GPS) post-processing methodology for survey H12353 can be found in the DAPR. A summary of horizontal and vertical control for this survey follows.

Real-time differential GPS navigation logged during acquisition was overwritten with a post-processed navigation solution, created from Applanix POSPac MMS using the SingleBase option. A GPS base station with a dual frequency (L1/L2) receiver was established on Ship Island, Mississippi to enable post-processing using Single Base solutions. The base station was strategically located near the project site in order to meet the 20-kilometer maximum baseline length for single base post-processing defined in the NOS HSSD (April 2011). NAD83 (CORS96) coordinates of the base station are included in the OPR-J348-KR-11 *Horizontal and Vertical Control Report*.

C1. Vertical Control

The vertical datum for this project is Mean Lower-Low Water (MLLW). Soundings were reduced to MLLW using post-processed GPS derived water levels. The VDatum derived separation model, *MS_Sound.bin*, was used to reduce NAD83 ellipsoid heights to MLLW as described in the DAPR. The separation model has been included in the digital deliverables.

Traditional discrete tidal zoning from water level stations was not used for sounding reduction in this survey, though zoning provided by the Center for Operational Oceanographic Products and Services (CO-OPS) and verified water level files for the survey have been included with the digital deliverables.

C2. Horizontal Control

The horizontal datum for this project is NAD83 projected in UTM Zone 16. All of the real-time navigation data were collected in Differential GPS (DGPS) mode. DGPS corrections were received from the U.S. Coast Guard (USCG) beacon at English Turn, Louisiana (293 kHz) or from the secondary beacon at Eglin, Florida (295 kHz). During survey operations, some DGPS outages from the primary beacon occurred. The system was set up to automatically switch to the secondary beacon when the primary signal was lost. Real-time navigation data were overwritten by post-processed Smoothed Best Estimate of Trajectory (SBET) data referenced to NAD83 (CORS96) (2002).

D. RESULTS AND RECOMMENDATIONS

D1. Chart Comparison

D1.a Survey Agreement with Chart

During the course of data acquisition and processing, H12353 was compared to the largest scale raster navigation chart (RNC) and electronic navigation charts (ENC). Table 9 lists the charts and edition dates used for the chart comparison. The results of these comparisons are throughout this section.

Table 9. Charts Compared to H12353

Chart	Scale	Edition	Edition Date	Issue Date	Latest LNM	LNM Clear Date
11372	1:40,000	34	01/01/2010	---	39/11	10/01/2011
11373	1:80,000	49	09/01/2010	---	39/11	10/08/2011
US5MS11M	---	39	11/22/2010	12/14/2011	---	12/06/2011
US4MS12M	---	19	07/27/2011	10/06/2011	---	12/20/2011

The latest electronic and raster versions of the relevant charts were reviewed to ensure that all USCG Local Notice to Mariners (LNM) issued during survey acquisition, impacting the survey area, were applied and addressed by this survey. A 50-meter product surface was generated from ENCs of the largest scale charts covering the entire project area using the sounding layer, contour layer, and depth features. An additional, a 50-meter HIPS product surface of the entire survey area was generated from the finalized 1m CUBE surface. The chart comparison was conducted by creating and reviewing the resultant difference surface.

Contours and soundings generated from combined HIPS product surface were used to aid in the chart comparison. The product surfaces, contours, and soundings were created solely for the chart comparison and have not been submitted as a final deliverable.

Surveyed H12353 depths are generally deeper than charted depths within 2 feet to 5 feet throughout the entire survey area (Figure 2). Areas within the charted fish haven are deeper than charted by 5 feet to 10 feet with the exception of an obstruction within the fish haven that is 1-foot shoaler than the authorized minimum, submitted as *Danger to Navigation 1.3*. Surveyed depths at the west end of Ship Island indicate shoaling by 5 feet to 10 feet (Figure 3). Further eastward a small area of deepening by 5 feet to 10 feet is also present. Deepening and shoaling are likely due to shifting sands from barrier island migration. Shoreward shifts in the 18-foot and 30-foot contours are noteworthy discrepancies between charted depths (11373) and surveyed H12353 depths.

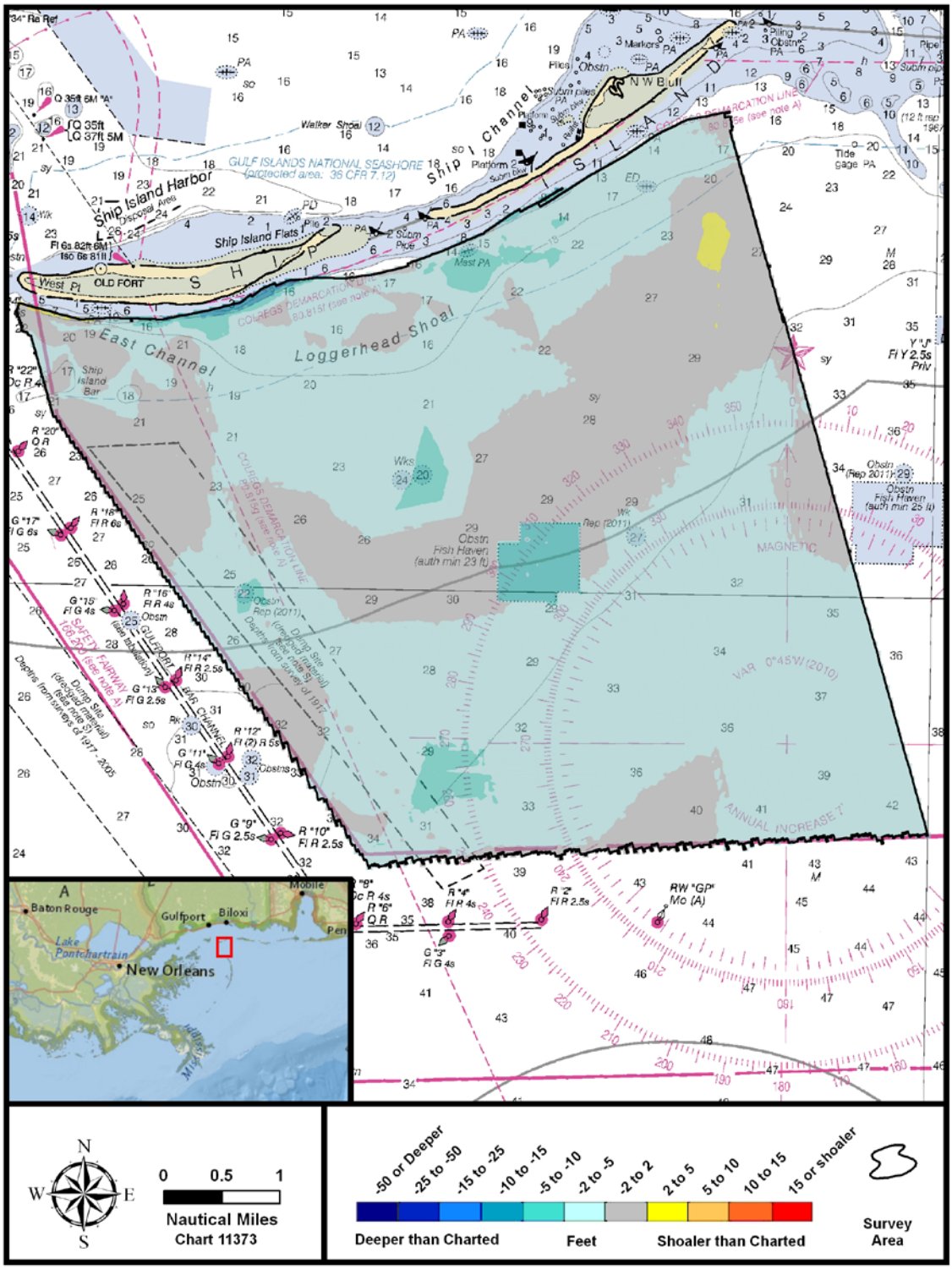


Figure 2. Depth Difference Between H12353 and Combined ENCs

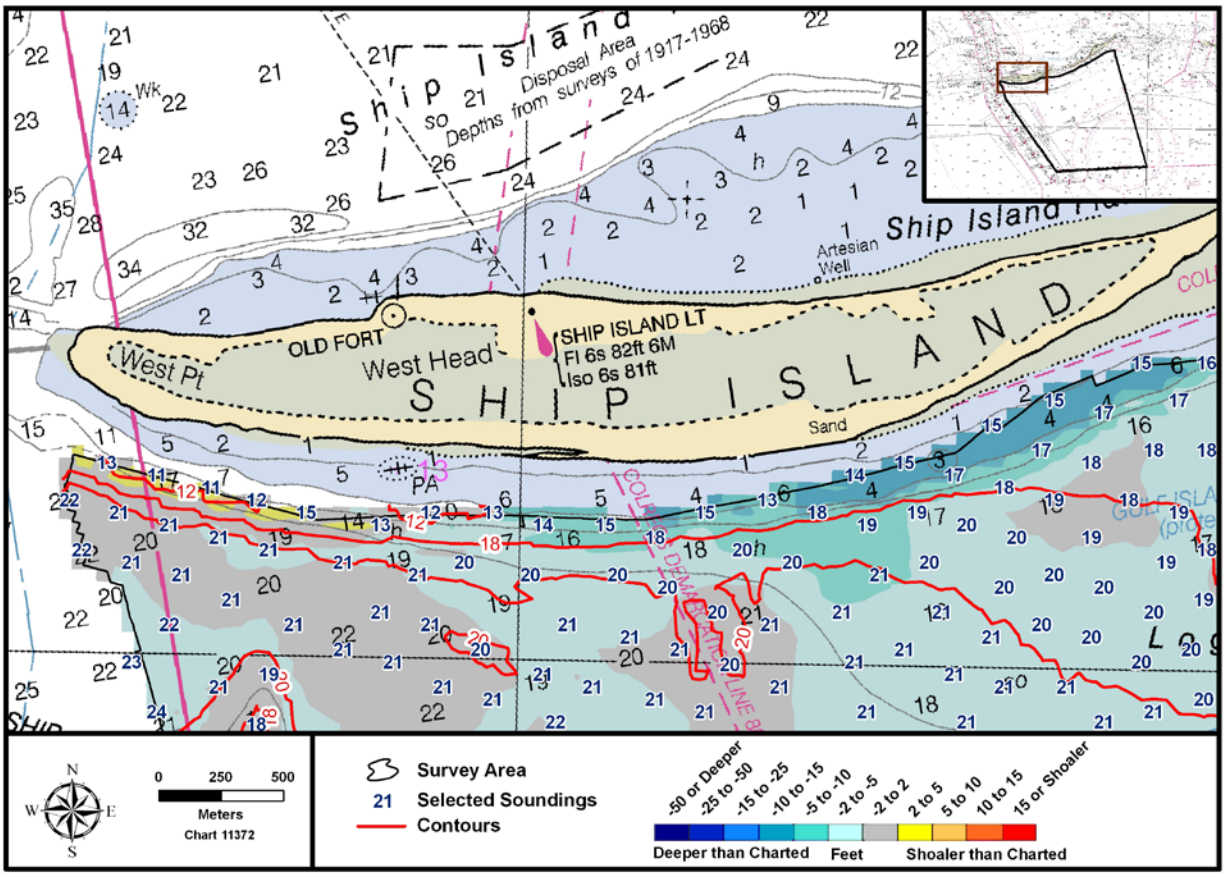


Figure 3. Shoaling and Deepening Near Ship Island

D1.b Comparison to Significant Shoals

The H12353 survey area contains three significant charted shoals which are portrayed on the chart by the 18-foot contour. These charted shoals include Loggerhead Shoal, Ship Island Bar and an isolated 18-foot sounding. Each shoal has retreated slightly due to erosion and natural migration along the full length of Ship Island.

D1.c Comparison to Charted Features

Three (3) AWOIS items were assigned for full investigation within survey H12353. Five (5) AWOIS items were assigned for information only. A complete description of these investigations is available in Appendix II *Survey Feature Report*.

H12353 survey area contains a charted (RNC 11373 and ENC US4MS12M) Dump Site which is incorrectly depicted as “Unsurveyed” on the small scale ENC chart US2GC14M. .

The charted *Obstrn Fish Haven (auth min 23ft*) contains three (3) wrecks identified as information only AWOIS items 8715, 8716 and 7254. Each wreck is significant and deeper than the authorized minimum least depth. Contact 212-191511-S falls on a barge with a least depth

shoaler than the authorized minimum depth. This wreck was submitted as DtoN 3. Additional information is available in Appendix I *Danger to Navigation Reports.*

All charted features are listed by field charting action in Appendix II *Survey Feature Report* and included in the S-57 feature file. Charted features that were included in the assigned feature file that are outside of the survey coverage were not addressed by the survey and have been omitted from the final feature file.

D1.d Comparison of Soundings in Designated Anchorages and Along Channels

H12353 survey area does not contain any anchorage areas, maintained navigation channels or channel lines.

D1.e New Submerged Features

New submerged features are listed in tabular format in Appendix II *Survey Feature Report* and in the S-57 feature file.

D1.f Dangers to Navigation (DtoN)

Three (3) DtoNs were located during survey H12353 and have been submitted to AHB. All DtoNs were reviewed by AHB. The DtoNs are included in the S-57 feature file and should be charted as depicted in the file. The charting status of all DtoNs at time of Descriptive Report submission is included in Table 10. DtoN reports and related correspondence are located in Appendix I *Danger to Navigation Reports*.

Table 10. H12353 DtoN Charting Status

DtoN	Feature	Applied to Raster Chart	Applied to ENC	AHB Submitted to MCD
1	Obstruction	Yes	Yes	Yes
2	Wreck	Yes	Yes	Yes
3	Obstruction	No	No	Yes

D2. Additional Results

D2.a Shoreline Investigations

Shoreline investigation was not required for OPR-J348-KR-11.

D2.b Comparison with Prior Surveys

No comparison with prior survey was conducted.

D2.c Aids to Navigation (AtoN)

No Aids to Navigation (AtoNs) were charted within the H12353 survey area.

D2.d Overhead Clearance

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

D2.e Cables, Pipelines and Offshore Structures

There were no charted or observed drilling structures, production platforms, or well heads within the survey area. There were also no charted submarine cables or pipelines.

D2.f Environmental Conditions Impacting the Quality of the Survey

From September 1 through 4, 2011 (DN244 to DN247) Tropical Storm Lee impacted the survey area. When comparing survey data collected following the tropical storm to data collected before the storm, differences in depth of up to 35 centimeters were observed in one confined area near the western edge of the survey sheet. An example of overlap between pre- and post-storm data, as represented in the CUBE surface, is shown in Figure 4. Sounding data from survey lines before and after the tropical storm are shown in Figure 5. Where differences between pre- and post-storm data exist, post-storm data is deeper than pre-storm data. In some areas, mounds observed in the area appeared to move spatially, though no significant change in least depth was observed. The region of apparent post-storm erosion was confined and appeared to coincide with a low-reflectance sediment boundary observed in the side scan mosaic within the charted Dump Site.

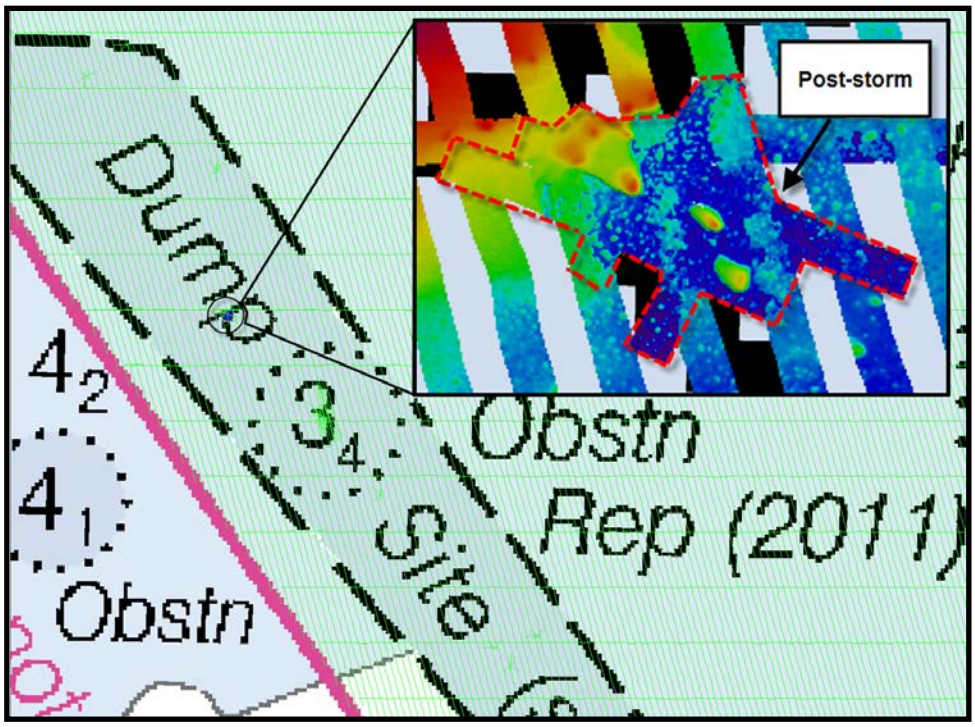


Figure 4. Sediment Migration Area

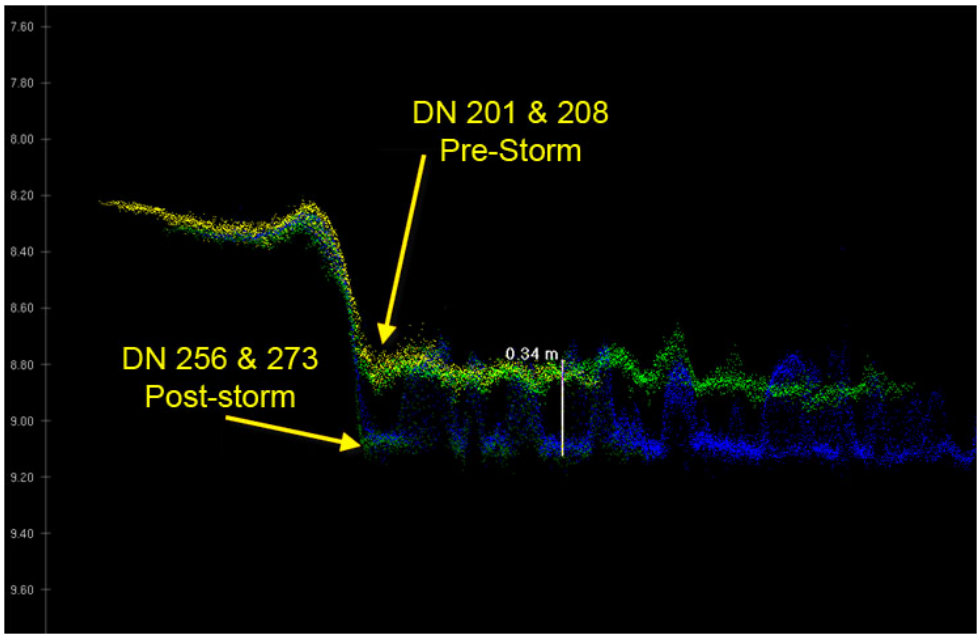


Figure 5. Example of sediment migration

D2.g Construction Projects

No active construction projects were observed in H12353 survey area. However, it should be noted the Mobile District U.S. Army Corps of Engineers is in the process of reconstructing Ship Island. During survey operations, dredges were placing fill and extending the west end of Ship Island around Fort Massachusetts outside of the H12353. In 2012 through 2014, the Mobile District intends to fill Camille Cut and reconnect East Ship Island with West Ship Island. This effort will impact depths charted from this survey south of Camille Cut and a portion of the fill material used for this project will be obtained within H12353 survey area.

D2.h Bottom Characteristics

Ten (10) bottom samples were acquired within the survey H12353 limits per the locations indicated in the *BottomSamples_point.shp* file provided by NOAA. Results are in Appendix V *Supplemental Survey Records and Correspondence.*

E. LETTER OF APPROVAL

The letter of approval for this report and accompanying data follows on the next page.

F. SUPPLEMENTAL REPORTS

Listed below are supplemental reports submitted separately that contain additional information relevant to this survey:

Title	Submittal Date
OPR-J348-KR-11 Data Acquisition and Processing Report	February 21, 2012
OPR-J348-KR-11 Horizontal and Vertical Control Report	TBD

DAVID EVANS
AND ASSOCIATES INC.

LETTER OF APPROVAL

OPR-J348-KR-11
REGISTRY NO. H12353

This report and the accompanying data are respectfully submitted.

Field operations contributing to the accomplishment of survey H12353 were conducted under my direct supervision with frequent personal checks of progress and adequacy. This report and associated data have been closely reviewed and are considered complete and adequate as per the OPR-J348-KR-11 *Statement of Work Statement* (June 2011) and *Hydrographic Survey Project Instructions* dated June 22, 2011.

Digitally signed by Jon Dasler
DN: cn=Jon Dasler, email=jld@deainc.com, o=David Evans and Associates, Inc., c=US
Date: 2012.02.21 14:47:47 -08'00'

Jonathan L. Dasler, PE (OR), PLS (OR, CA)
ACSM/THSOA Certified Hydrographer
Chief of Party

Digitally signed by Jason Creech
DN: cn=Jason Creech, o=David Evans and Associates, Inc., ou, email=jasc@deainc.com, c=US
Date: 2012.02.21 14:48:39 -08'00'

Jason Creech
Lead Hydrographer

David Evans and Associates, Inc.
November 2011

2801 SE Columbia Way, Ste. 130, Vancouver, WA 98661 Telephone: 360.314.3200 Facsimile: 360.314.3250

APPENDIX I

TIDES AND WATER LEVELS

Project: OPR-J348-KR-11 Registry No: H12353
Contractor Name: David Evans and Associates, Inc.
Date: November 2011
Sheet Number: 1
Inclusive Dates: July 15, 2011- September 30, 2011

Time (UTC)

Day Number	Date	Start Time	End Time
196	07/15/2011	17:44:11	23:24:16
197	07/16/2011	13:10:10	21:36:33
198	07/17/2011	15:11:00	19:13:46
200	07/19/2011	13:40:23	22:57:53
201	07/20/2011	13:34:31	15:24:53
203	07/22/2011	14:36:51	22:39:42
204	07/23/2011	14:08:10	23:02:33
205	07/24/2011	13:18:15	19:41:43
206	07/25/2011	14:49:41	18:02:39
207	07/26/2011	11:31:03	21:05:01
208	07/27/2011	12:39:29	21:59:16
209	07/28/2011	13:25:51	20:58:17
210	07/29/2011	13:16:59	22:56:46
211	07/30/2011	13:12:36	22:01:54
212	07/31/2011	11:50:44	20:54:41
213	08/01/2011	11:33:59	19:38:36
214	08/02/2011	11:58:54	21:39:00
215	08/03/2011	11:55:36	21:40:26
216	08/04/2011	11:43:44	21:24:27
217	08/05/2011	11:41:37	20:53:32
218	08/06/2011	12:18:38	20:42:09
219	08/07/2011	11:51:39	20:53:06
229	08/17/2011	13:59:51	15:27:42
231	08/19/2011	11:57:05	14:35:00
232	08/20/2011	15:52:25	18:22:07
256	09/13/2011	11:55:31	13:54:03
257	09/14/2011	14:27:48	21:27:33
273	09/30/2011	11:51:35	16:12:08

H12353

FINAL TIDE NOTE and FINAL TIDE ZONING CHART

DATE: November 12, 2011

HYDROGRAPHIC BRANCH: Atlantic

HYDROGRAPHIC PROJECT: OPR-J348-KR-11

HYDROGRAPHIC SHEET: H12353

LOCALITY Approaches to Mississippi Sound, Mississippi

SUB-LOCALITY: SE of Ship Island Harbor

TIME PERIOD:

July	15-17, 19, 20, 22-31
August	1-7, 17, 19, 20
September	13, 14, 30

TIDE STATIONS USED: 8741533, Pascagoula NOAA Lab, MS
Lat. 30° 22.0 N, Lon. 88° 33.7' W

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

HEIGHT OF MEAN HIGH WATER (8741533) ABOVE PLANE OF REFERENCE: 0.439 meters [1]

---

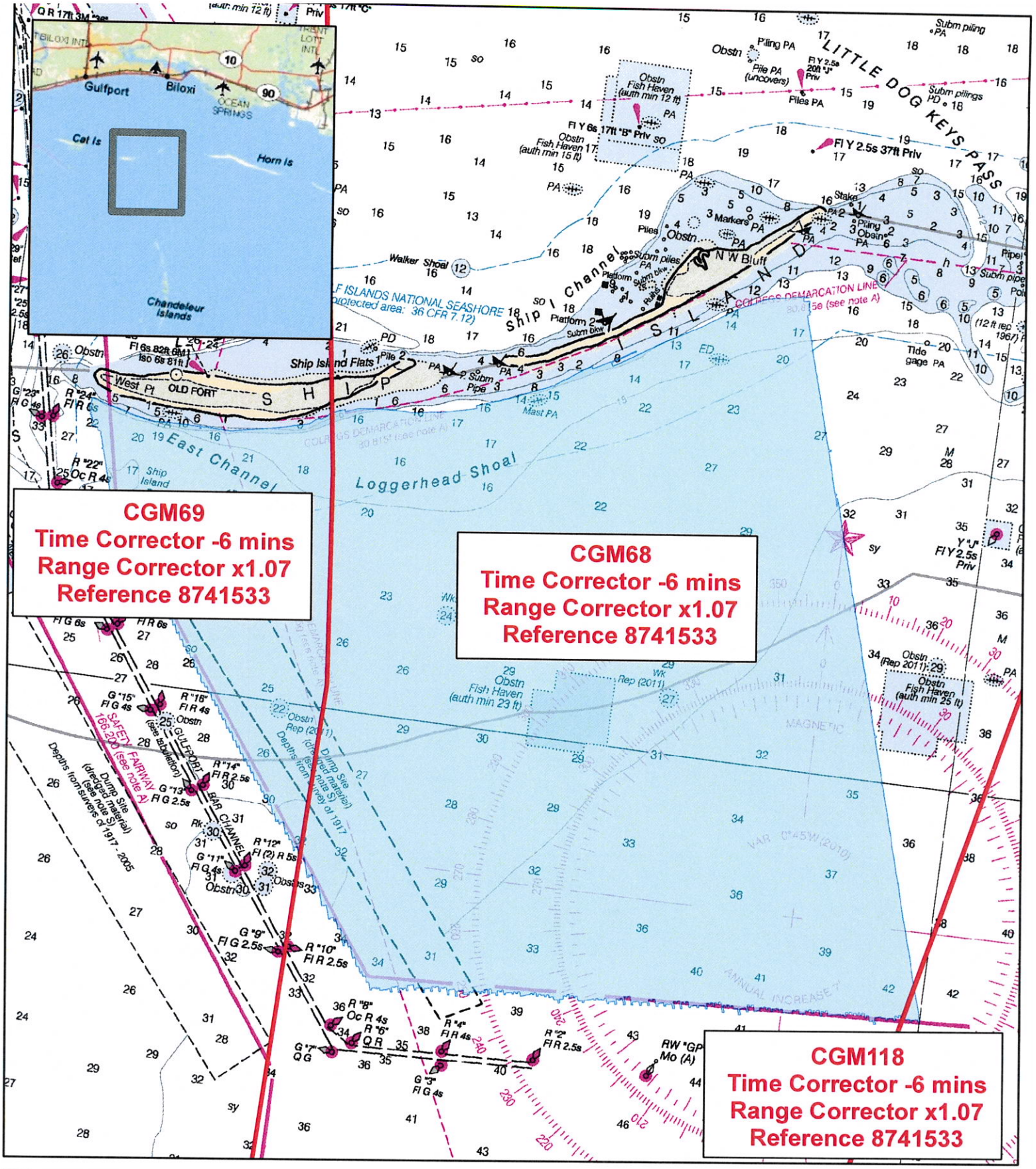
[1] MLLW 6.672m Mean Lower-Low Water
MHW 7.111m Mean High Water

http://tidesandcurrents.noaa.gov/data_menu.shtml?unit=0&format=Apply+Change&stn=8741533+Pascagoula+Noaa+Lab%2C+MS&type=Datums

FINAL TIDE ZONING
H12353
OPR-J348-KR-11

Zone	Time Corrector (Mins)	Range Ratio	Reference Station
CGM69	-6	1.07	8741533
CGM68	-6	1.07	8741533
CGM118	-6	1.07	8741533

NOTE: Final soundings were reduced to chart datum using Global Positioning System (GPS) water levels acquired directly at the vessel. The preliminary version of the zoning scheme provided with the project instructions was revised by David Evans and Associates, Inc. during analysis of ellipsoidally referenced survey transformation techniques for OPR-J348-KR-11. The revised tide zoning parameters referenced in this document are provided for information only.



H12353
Final Tide Zoning
Reference Only

OPR-J348-KR-11
Approaches to Mississippi Sound, MS
David Evans and Associates, Inc.
Jon Dasler, Lead Hydrographer
Chart 11373_1

APPENDIX II

SUPPLEMENTAL SURVEY RECORDS AND CORRESPONDENCE

(No supplemental Correspondence)

APPENDIX III

SURVEY FEATURES REPORT

DToNs - three
AWOIS - four
Wrecks - see DToNs and AWOIS
Maritime Boundaries - none

H12353_DTONs

Registry Number: H12353

State: Mississippi

Locality: Approaches to the Mississippi Sound

Sub-locality: SE of Ship Island Harbor

Project Number: OPR-J348-KR-11

Survey Date: 07/12/2011 to 10/18/2011

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
11373	47th	10/01/2008	1:80,000 (11373_1)	[L]NTM: ?
11366	11th	01/01/2008	1:250,000 (11366_1)	[L]NTM: ?
11360	43rd	11/01/2008	1:456,394 (11360_1)	[L]NTM: ?
1115A	43rd	11/01/2008	1:456,394 (1115A_1)	[L]NTM: ?
11006	32nd	08/01/2005	1:875,000 (11006_1)	[L]NTM: ?
411	52nd	09/01/2007	1:2,160,000 (411_1)	[L]NTM: ?

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

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	DTON #1.1 - Charted dangerous obstruction least depth 22 feet Rep (2011)	Obstruction	6.79 m	30° 09' 56.6" N	088° 56' 49.6" W	---
1.2	DTON #3.1 - Charted dangerous sunken Wreck least depth 22 feet	Wreck	6.83 m	30° 10' 27.0" N	088° 54' 00.9" W	---
1.3	DTON #2.1 - Charted dangerous sunken wreck least depth 27 feet Rep (2011)	Wreck	8.33 m	30° 10' 29.5" N	088° 52' 56.5" W	---

1.1) DTON #1.1 - Charted dangerous obstruction least depth 22 feet Rep (2011)

DANGER TO NAVIGATION

Survey Summary

Survey Position:	30° 09' 56.6" N, 088° 56' 49.6" W
Least Depth:	6.79 m (= 22.29 ft = 3.716 fm = 3 fm 4.29 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2011-291.00:00:00.000 (10/18/2011)
Dataset:	H12353_DTON_2.000
FOID:	US 0001544237 00001(02260017902D0001)
Charts Affected:	11373_1, 11366_1, 1115A_1, 11360_1, 11006_1, 411_1

Remarks:

OBSTRN/remrks: Depth was acquired with a Reson 7125 shallow water multibeam sonar. Depth is corrected using verified water levels from Pascagoula, MS (874-1533).Position is referenced from the USCG DGPS beacon at English Turn, LA and is on NAD83.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12353_DTON_2.000	US 0001544237 00001	0.00	000.0	Primary

Hydrographer Recommendations

FS 209-181143-P. DtoN #1.1 is an obstruction rising approximately 1.8 meters above the natural bottom in a charted dumping ground.

Cartographically-Rounded Depth (Affected Charts):

22ft (11373_1)

3 ¾fm (1115A_1, 11360_1, 11006_1, 411_1)

3fm 4ft (11366_1)

S-57 Data

Geo object 1:	Obstruction (OBSTRN)
Attributes:	CATOBS - 1:snag / stump
	EXPSOU - 2:shoaler than range of depth of the surrounding depth area

NINFOM - Add Obstructions

QUASOU - 6:least depth known

SORDAT - 20111018

SORIND - US,US,graph,H12353

TECSOU - 3:found by multi-beam

VALSOU - 6.795 m

WATLEV - 3:always under water/submerged

Office Notes

DtoN #1 - SAR: feature is real and verified with sss 200% and swmb as existing as documented, Obstn present in charted dumping grounds.

COMPILATION: Concur. Delete charted dangerous obstruction least depth 22 feet Rep (2011). Add dangerous obstruction least depth 22 feet in present survey position. Add label obstructions to include the 26 foot obstruction to the northwest.

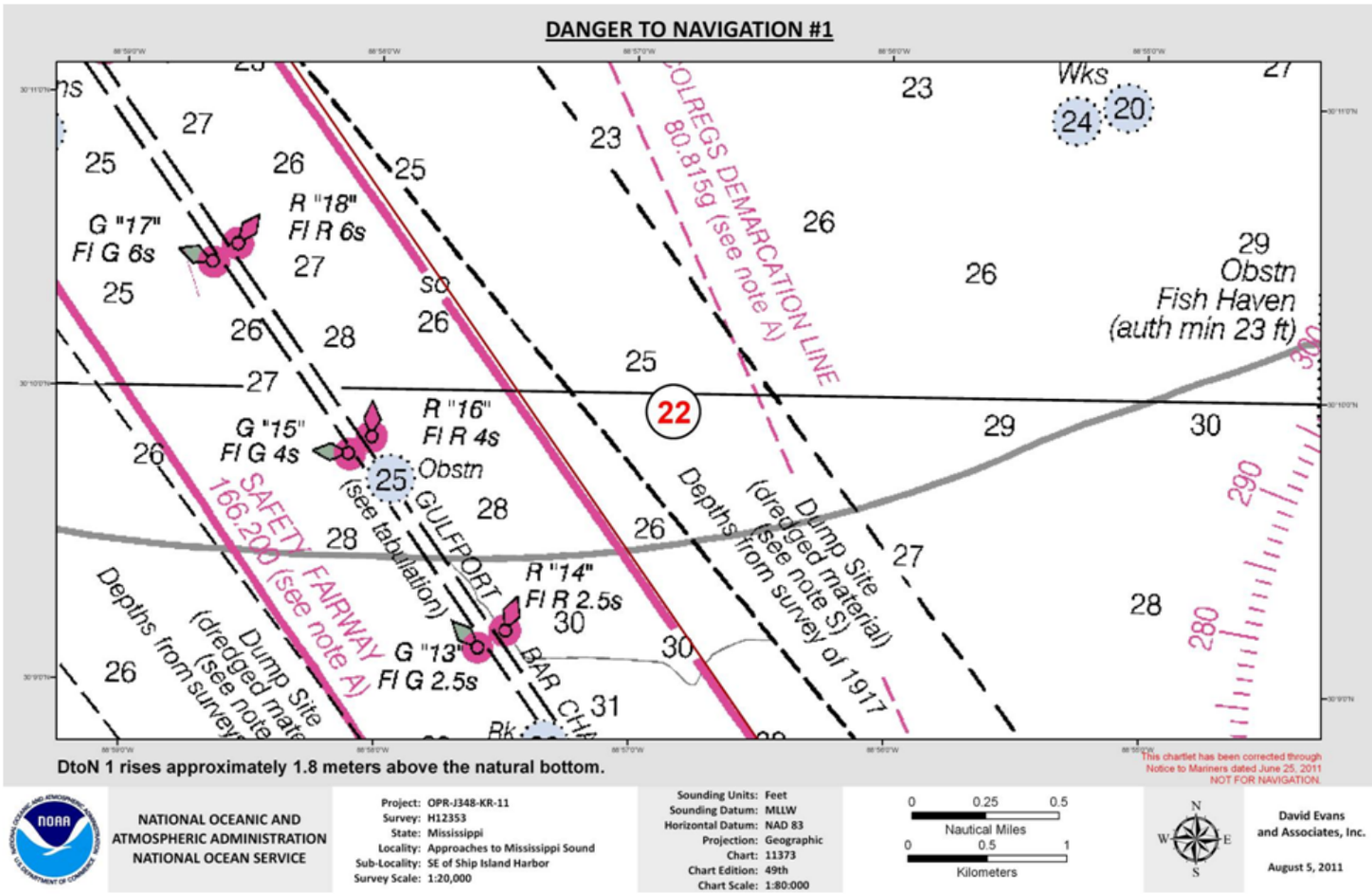

DANGER TO NAVIGATION #1
COLREGS DEMARCATION LINE
80.815g (see note A)
R "18"
Fl R 6s
G "17"
Fl G 6s
R "16"
Fl R 4s
G "15"
Fl G 4s
25 Obstn
(see tabulation)
GULFPORT
SAFETY FAIRWAY
166.200 (see note A)
R "14"
Fl R 2.5s
G "13"
Fl G 2.5s
BAR CH
Dump Site
(dredged material)
(see note S)
Depths from survey of 1917
Wks
24
20
22
29
Obstn
Fish Haven
(auth min 23 ft)
DtoN 1 rises approximately 1.8 meters above the natural bottom.
This chartlet has been corrected through
Notice to Mariners dated June 25, 2011
NOT FOR NAVIGATION
NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
Project: OPR-J348-KR-11
Survey: H12353
State: Mississippi
Locality: Approaches to Mississippi Sound
Sub-Locality: SE of Ship Island Harbor
Survey Scale: 1:20,000
Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83
Projection: Geographic
Chart: 11373
Chart Edition: 49th
Chart Scale: 1:80:000
0 0.25 0.5
Nautical Miles
0 0.5 1
Kilometers
N
W E
S
David Evans
and Associates, Inc.
August 5, 2011

Figure 1.1.1

Feature Images

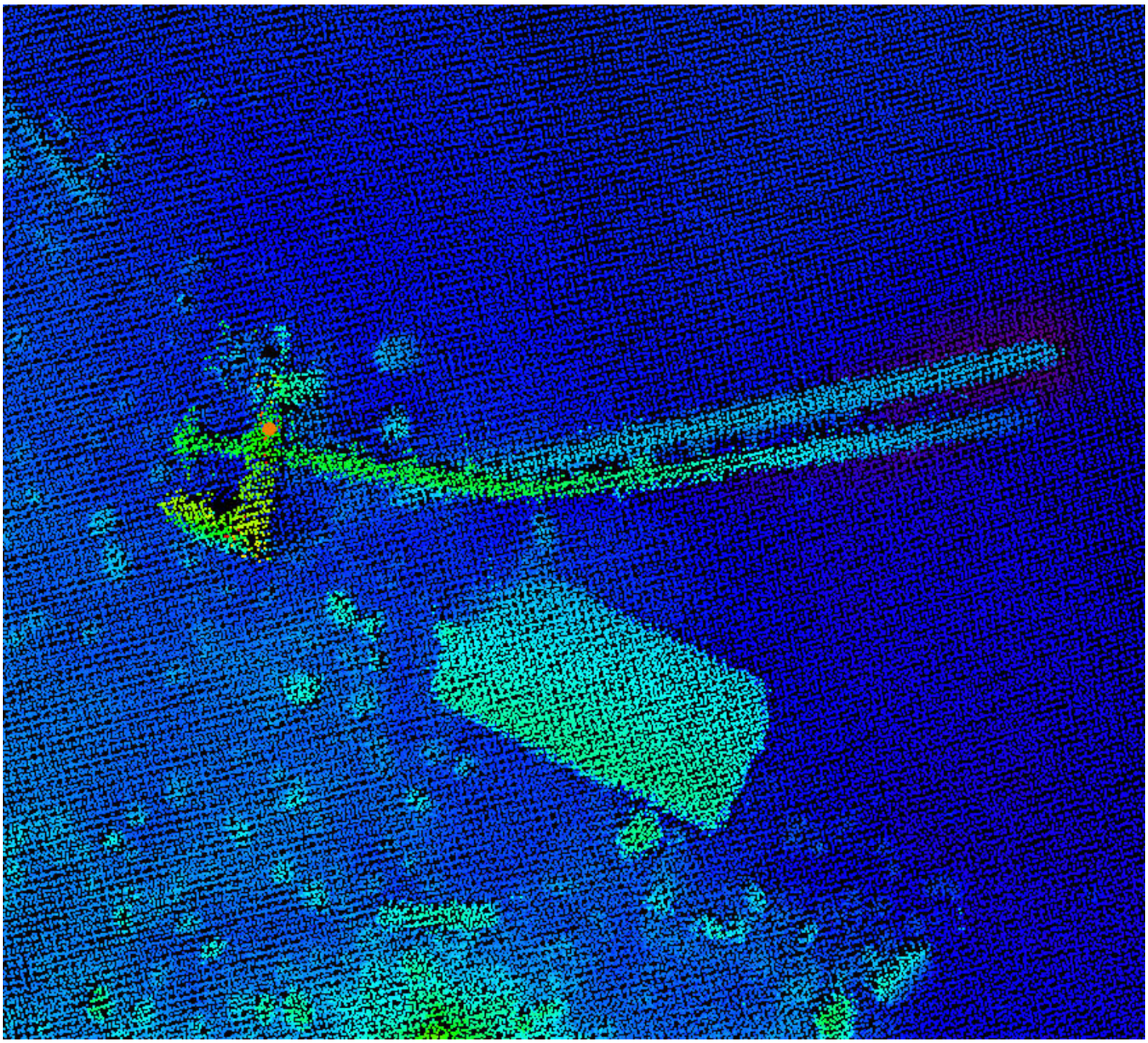


Figure 1.1.2

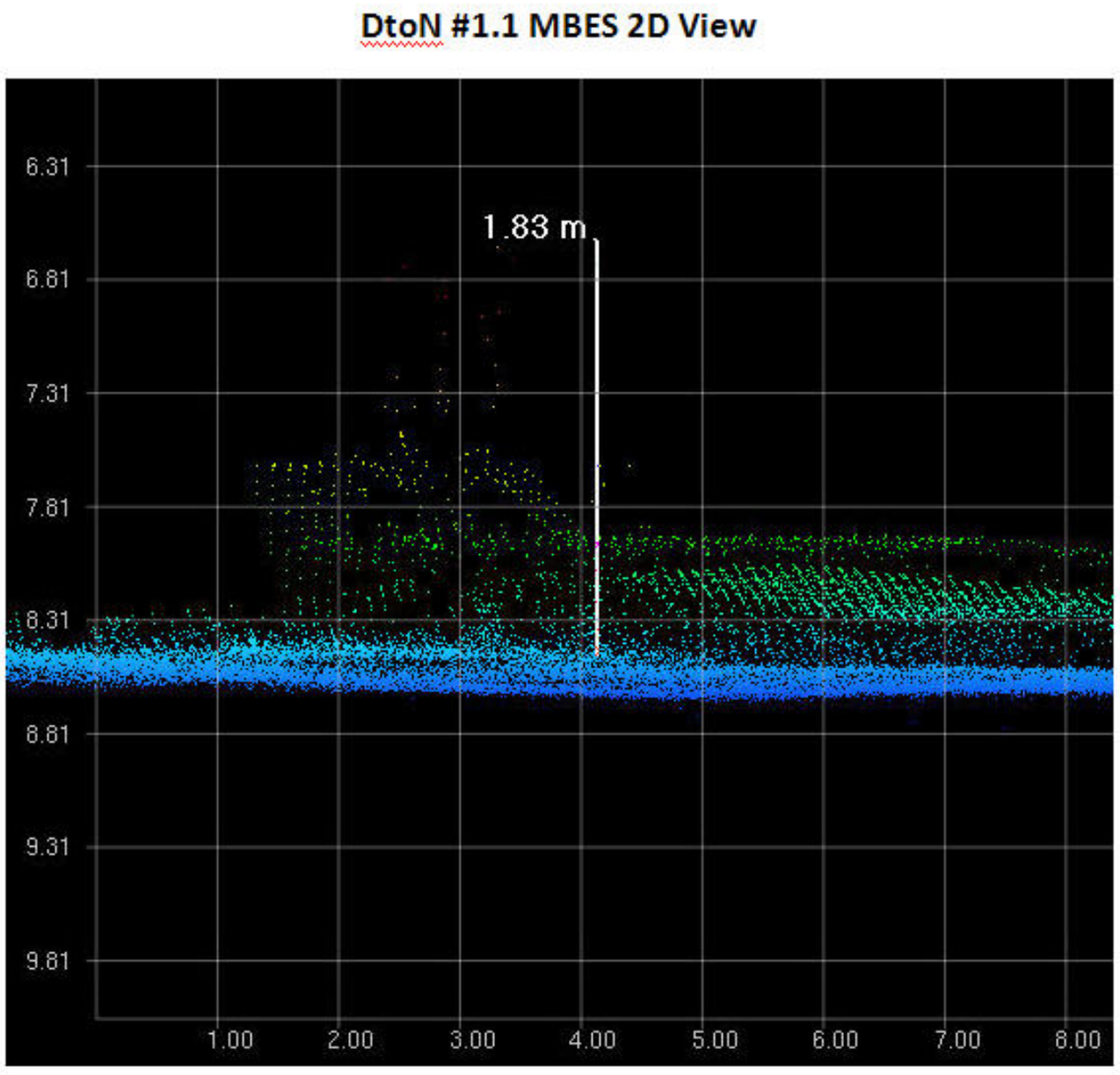

DtoN #1.1 MBES 2D View
1.83 m
6.31
6.81
7.31
7.81
8.31
8.81
9.31
9.81
1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00

Figure 1.1.3

DtoN #1.1 MBES 3D View

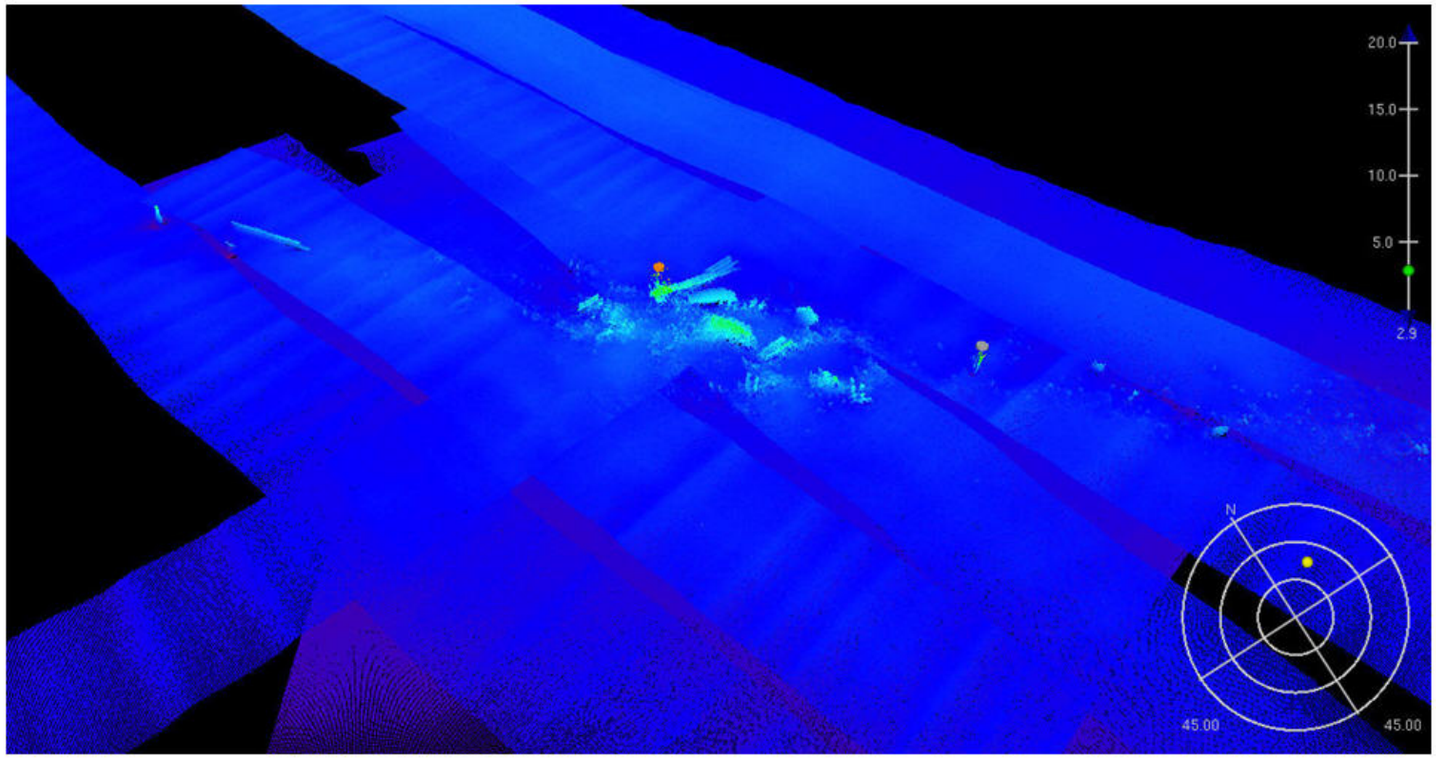


Figure 1.1.4

DtoN #1.1 Side Scan Sonar View

209-181143-P

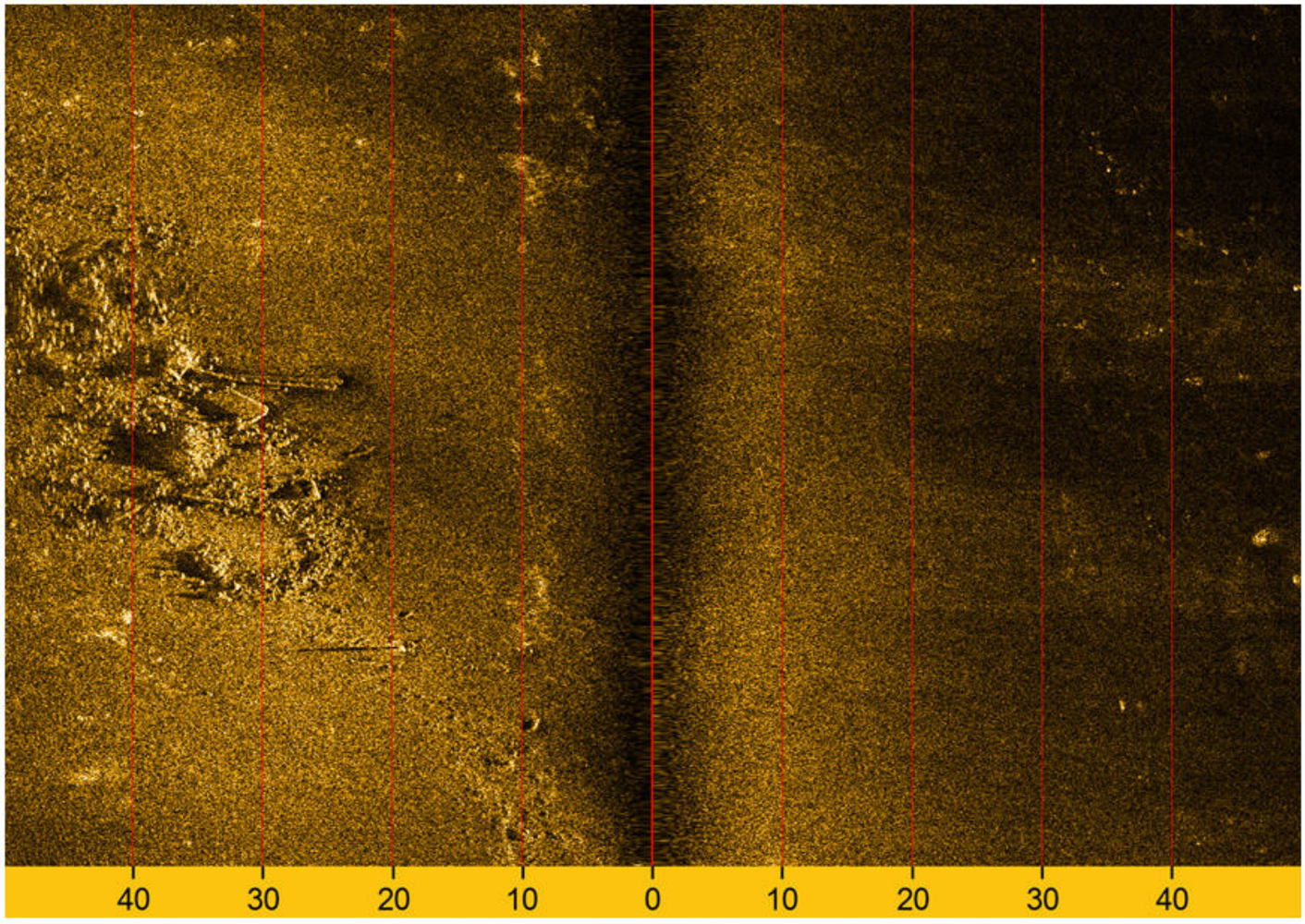


Figure 1.1.5

1.2) DTON #3.1 - Charted dangerous sunken Wreck least depth 22 feet

DANGER TO NAVIGATION

Survey Summary

Survey Position:	30° 10' 27.0" N, 088° 54' 00.9" W
Least Depth:	6.83 m (= 22.39 ft = 3.732 fm = 3 fm 4.39 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2011-291.00:00:00.000 (10/18/2011)
Dataset:	H12353_DTON_2.000
FOID:	US 0001544201 00001(0226001790090001)
Charts Affected:	11373_1, 11366_1, 1115A_1, 11360_1, 11006_1, 411_1

Remarks:

WRECKS/remrks: Depth was acquired with a Reson 7125 shallow water multibeam sonar. Depth is corrected using post-processed GPS water levels and should be considered preliminary. Position is referenced from post-processed navigation and is on NAD83; depth adjusted to MLLW chart datum.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12353_DTON_2.000	US 0001544201 00001	0.00	000.0	Primary

Hydrographer Recommendations

FS 212-191511-S. DtoN #3.1. DEA CF #3 Fish Haven. Object rising approximately 2.6m above the natural bottom in a charted fish haven. DtoN 3.1 is a barge with approximate dimensions of 72m x 15m, rising approximately 2.4m above the natural bottom. The wreck is located within a charted fish haven but the wreck's least depth is shoaler than charted fish haven least depth.

Cartographically-Rounded Depth (Affected Charts):

22ft (11373_1)

3 ¾fm (1115A_1, 11360_1, 11006_1, 411_1)

3fm 4ft (11366_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 Wreck

QUASOU - 6:least depth known

SORDAT - 20111018

SORIND - US,US,graph,H12353

TECSOU - 3:found by multi-beam

VALSOU - 6.825 m

WATLEV - 3:always under water/submerged

Office Notes

DtoN #3.1, SAR: feature is real and verified with sss 200% and swmb as documented by the field, Wk located in Fish Haven.

COMPILATION: Concur. Delete charted 22 foot dangerous sunken wreck. Add dangerous sunken wreck, least depth 22 feet in the present survey position inside the limits of Obstruction Fish Haven.

Feature Images

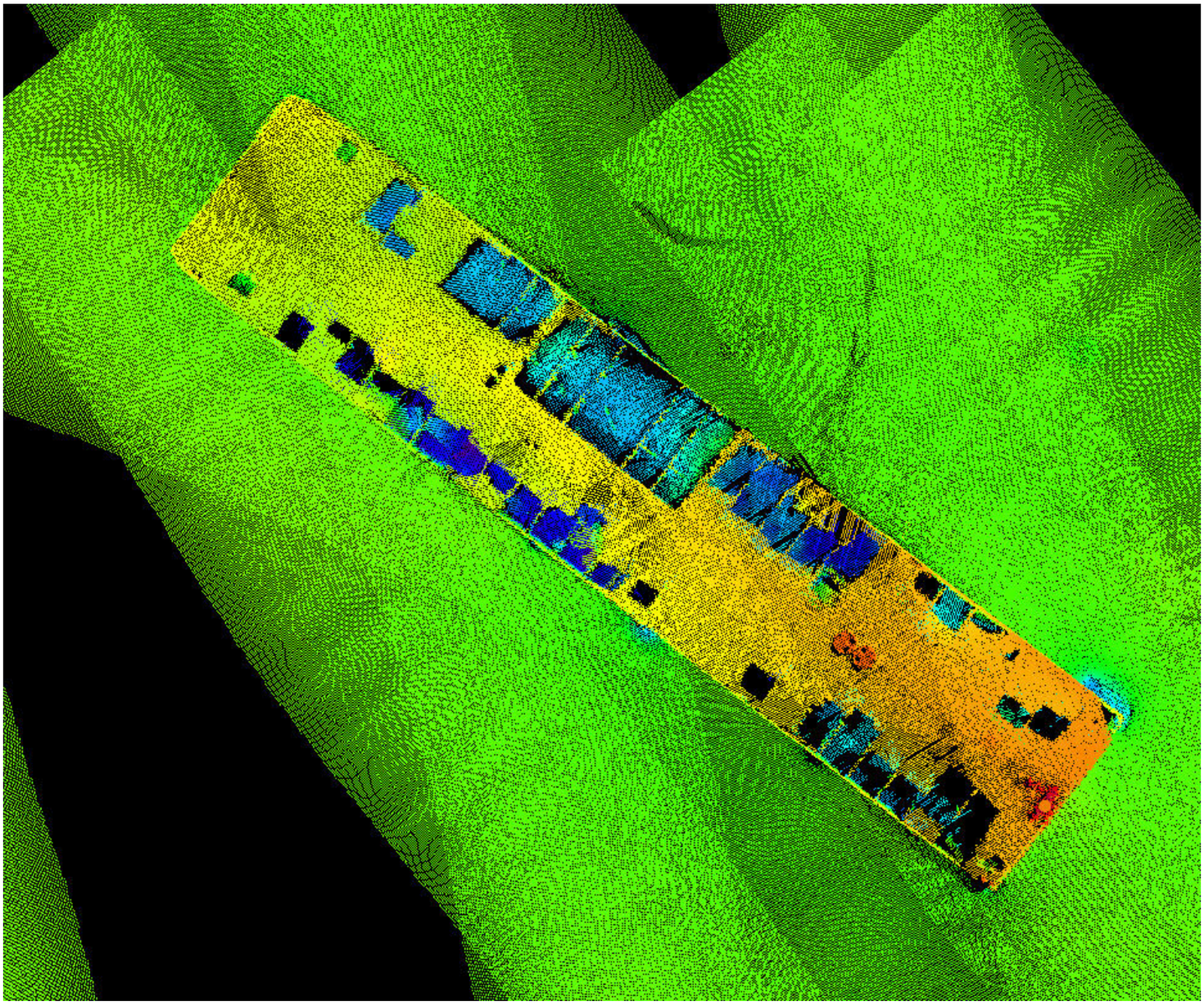


Figure 1.2.1

DtoN #3.1 MBES 2D View

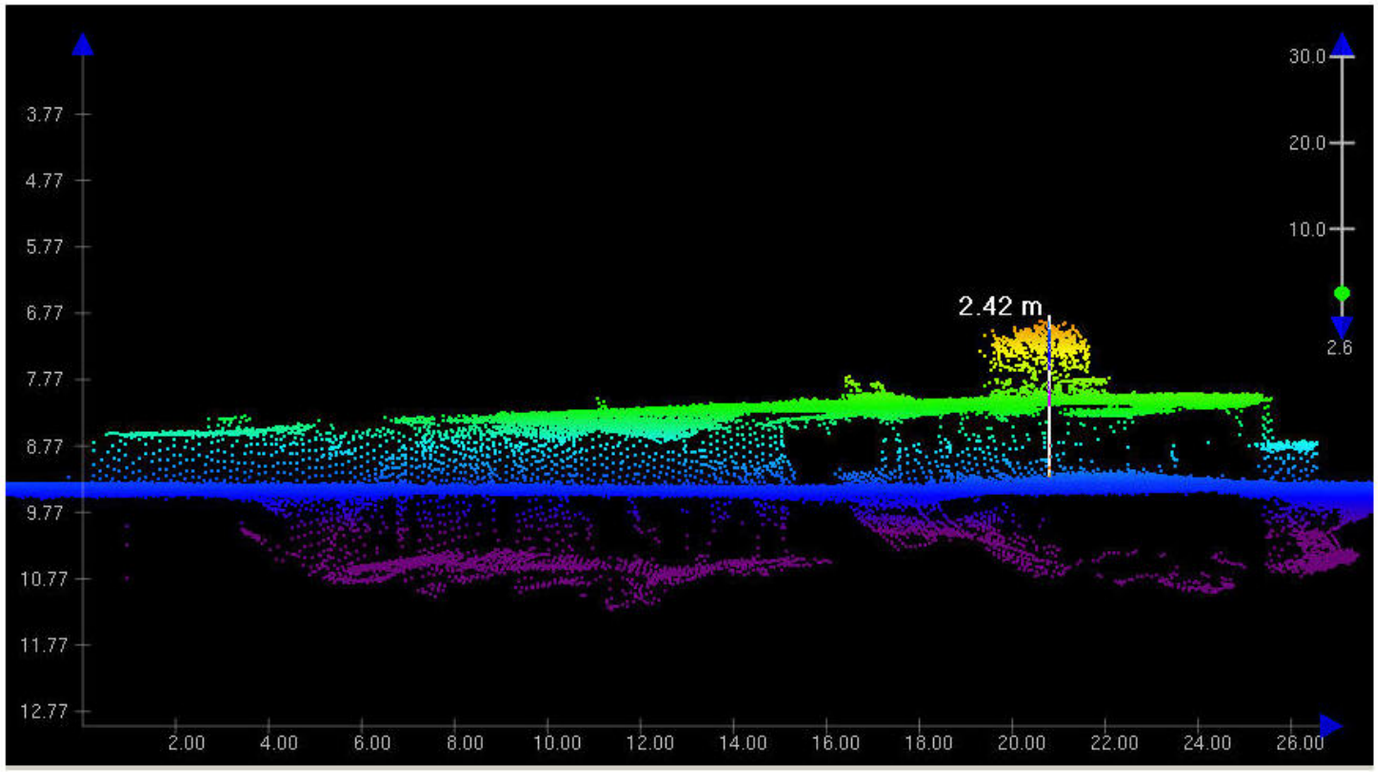


Figure 1.2.2

DtoN #3.1 MBES 3D View

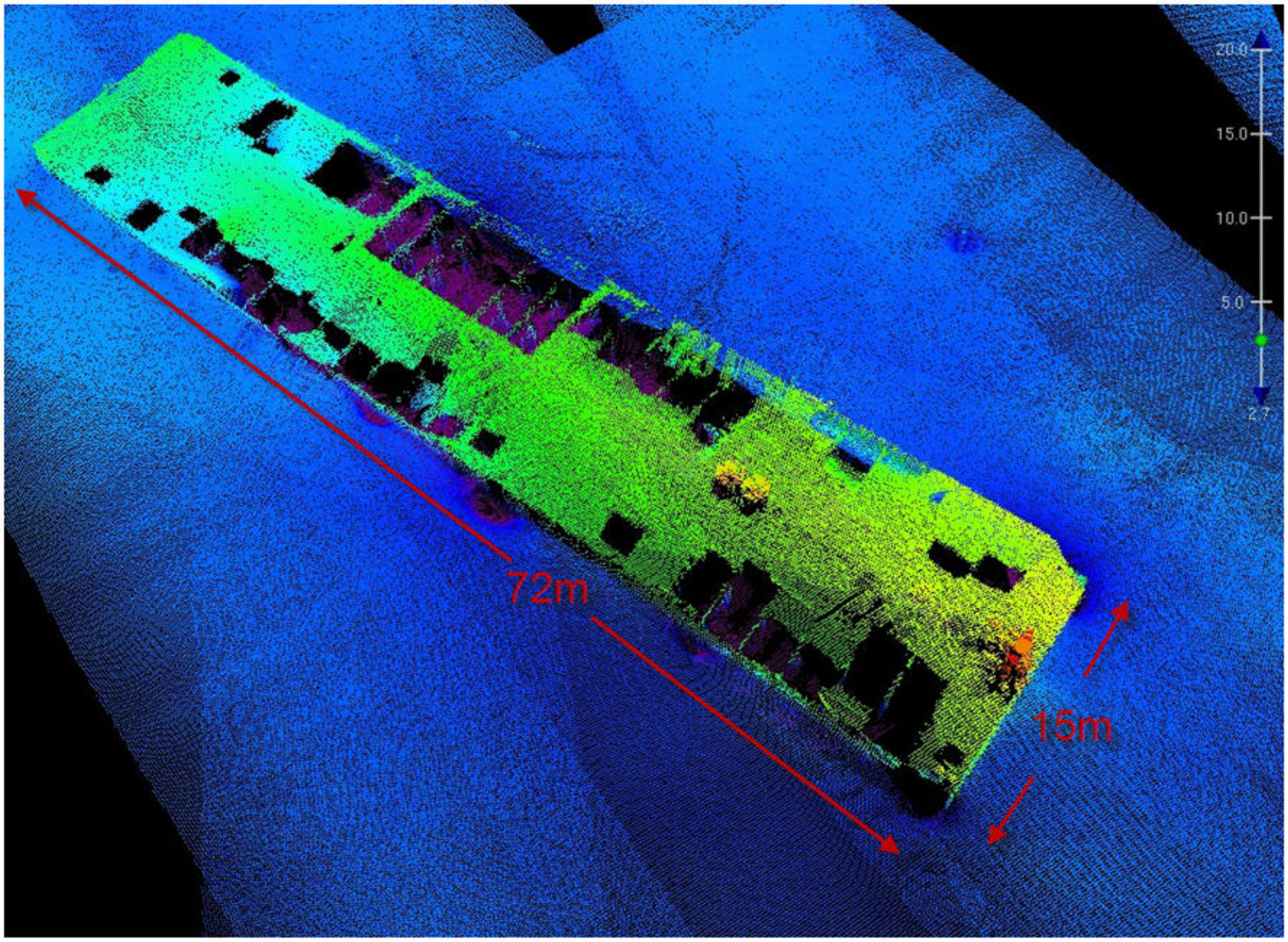


Figure 1.2.3

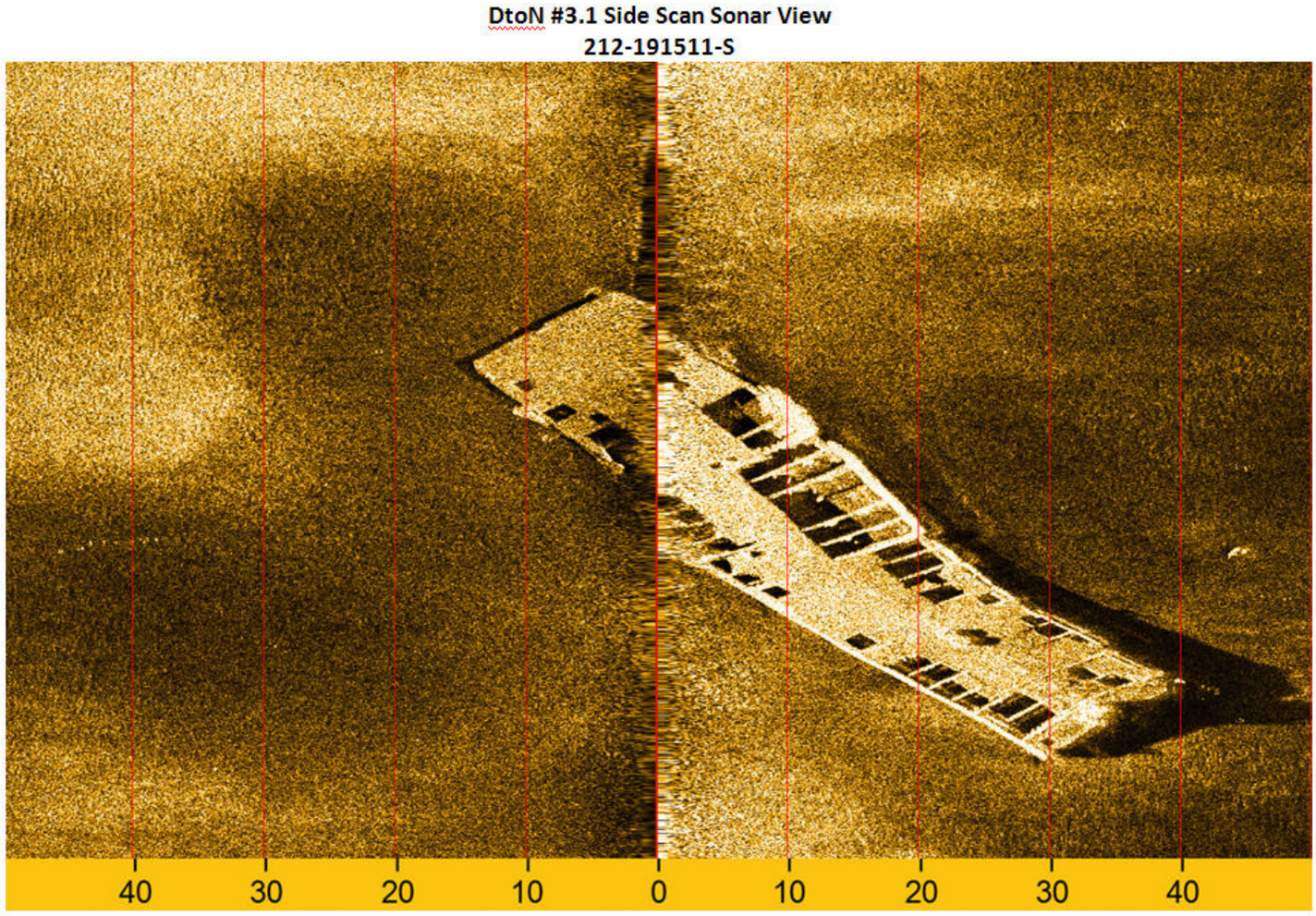

DtoN #3.1 Side Scan Sonar View
212-191511-S
40
30
20
10
0
10
20
30
40

Figure 1.2.4

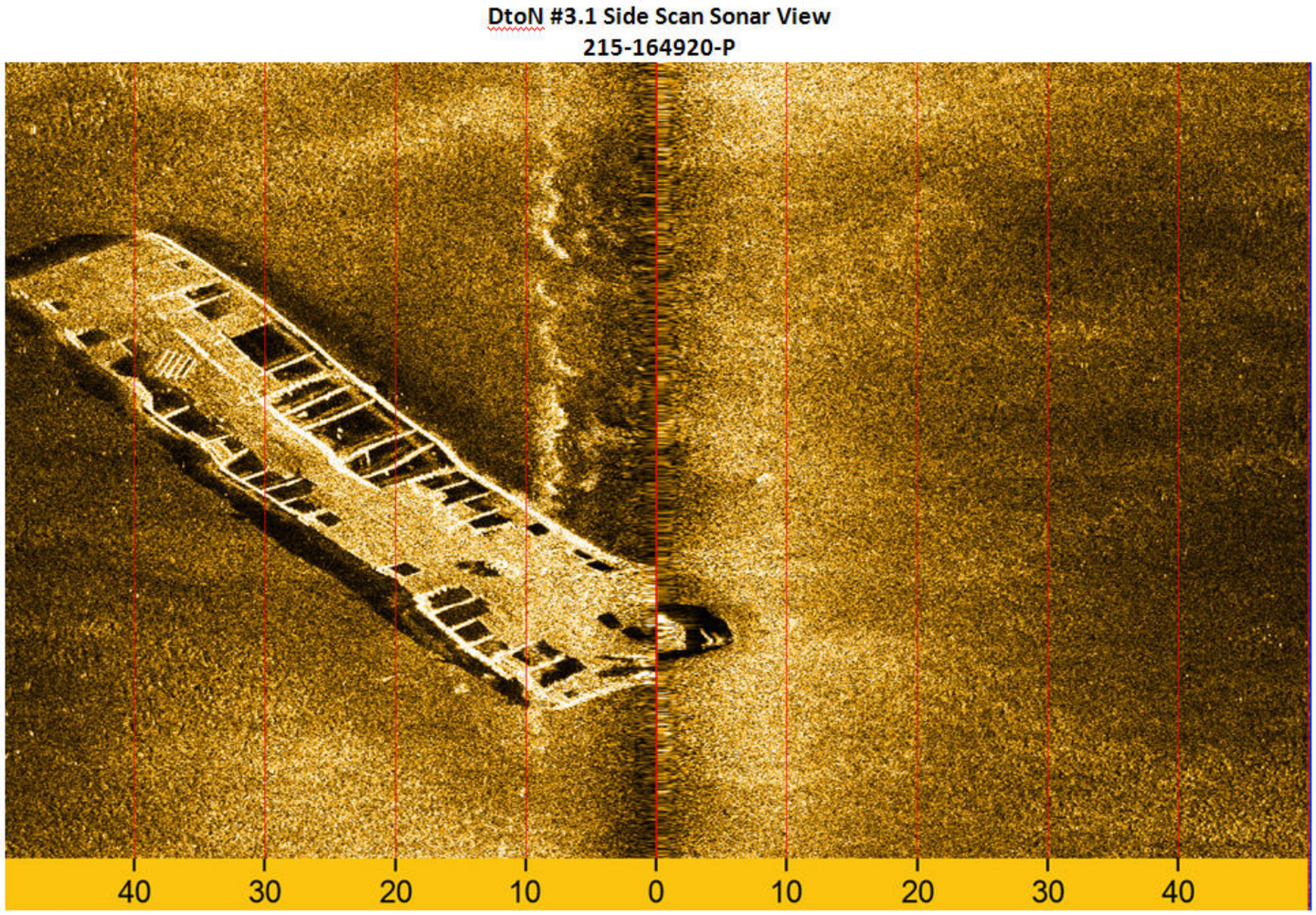

DtoN #3.1 Side Scan Sonar View
215-164920-P
40
30
20
10
0
10
20
30
40

Figure 1.2.5

1.3) DTON #2.1 - Charted dangerous sunken wreck least depth 27 feet Rep (2011)

DANGER TO NAVIGATION

Survey Summary

Survey Position:	30° 10' 29.5" N, 088° 52' 56.5" W
Least Depth:	8.33 m (= 27.32 ft = 4.553 fm = 4 fm 3.32 ft)
TPU (±1.96σ):	**THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp:	2011-291.00:00:00.000 (10/18/2011)
Dataset:	H12353_DTON_2.000
FOID:	US 0001544240 00001(0226001790300001)
Charts Affected:	11373_1, 11366_1, 1115A_1, 11360_1, 11006_1, 411_1

Remarks:

WRECKS/remrks: Depth was acquired with a Reson 7125 shallow water multibeam sonar. Depth is corrected using verified water levels from Pascagoula, MS (874-1533). Position is referenced from the USCG DGPS beacon at

English Turn, LA and is on NAD 83.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12353_DTON_2.000	US 0001544240 00001	0.00	000.0	Primary

Hydrographer Recommendations

FS 217-143139-P. DtoN 2.1 is a wreck with approximate dimensions of 9 m x 29 m which rises approximately 1.3 meters above the natural bottom.

Cartographically-Rounded Depth (Affected Charts):

27ft (11373_1)

4 ½fm (1115A_1, 11360_1, 11006_1, 411_1)

4fm 3ft (11366_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 Wreck

QUASOU - 6:least depth known

SORDAT - 20111018

SORIND - US,US,graph,H12353

TECSOU - 3:found by multi-beam

VALSOU - 8.326 m

WATLEV - 3:always under water/submerged

Office Notes

DtoN #2.1, SAR: feature is real and verified with sss 200% and swmb as existing as documented.

COMPILATION: Concur. Delete charted dangerous sunken wreck least depth 27 feet Rep (2011). Add dangerous sunken wreck, least depth 27 feet in present survey position.

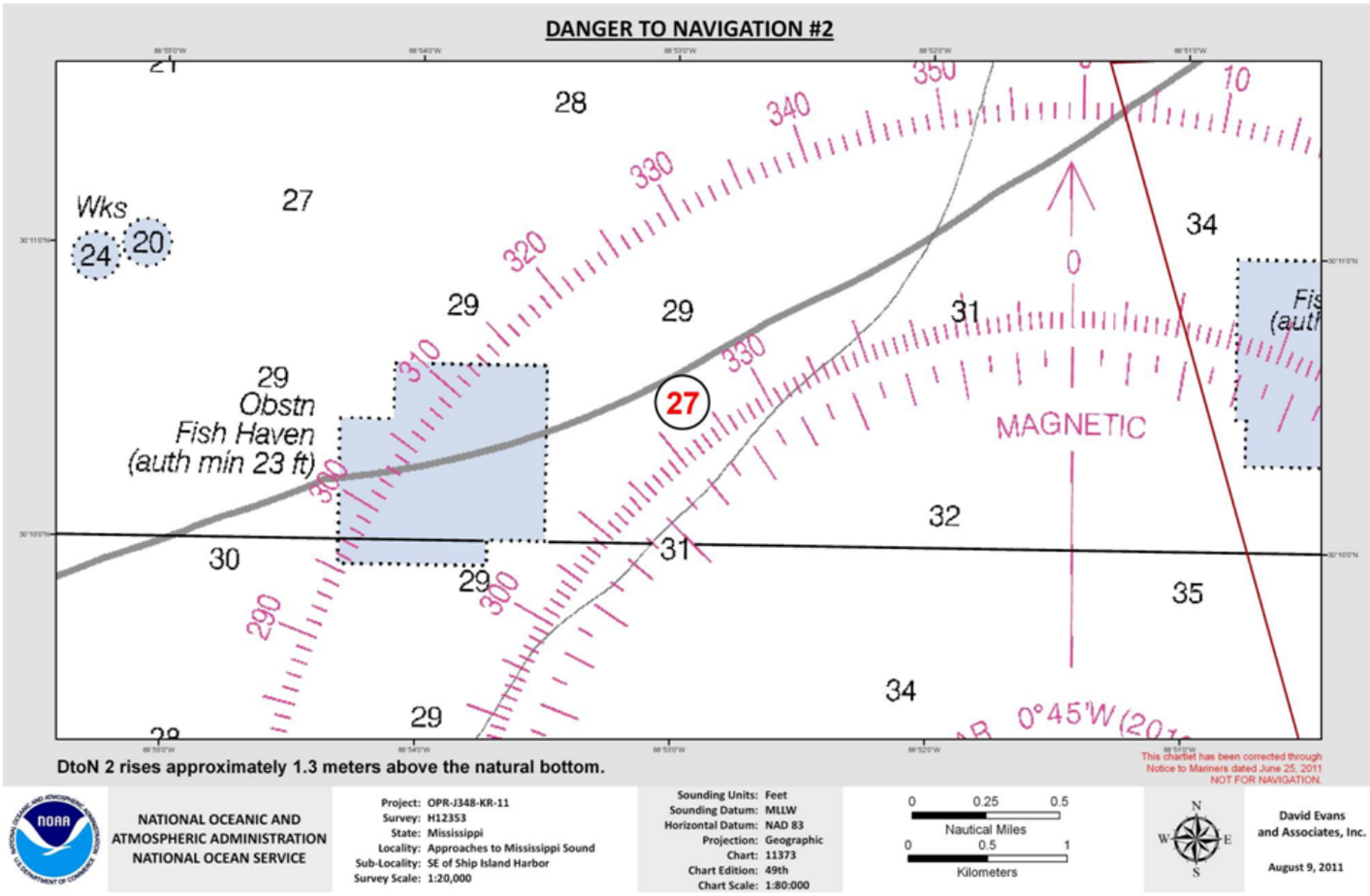

DANGER TO NAVIGATION #2
Wks
24
20
27
28
29
Obstn
Fish Haven
(auth min 23 ft)
MAGNETIC
30
31
32
34
35
DtoN 2 rises approximately 1.3 meters above the natural bottom.
This chartlet has been corrected through Notice to Mariners dated June 25, 2011
NOT FOR NAVIGATION
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE
Project: OPR-J348-KR-11
Survey: H12353
State: Mississippi
Locality: Approaches to Mississippi Sound
Sub-Locality: SE of Ship Island Harbor
Survey Scale: 1:20,000
Sounding Units: Feet
Sounding Datum: MLLW
Horizontal Datum: NAD 83
Projection: Geographic
Chart: 11373
Chart Edition: 49th
Chart Scale: 1:80:000
Nautical Miles
Kilometers
David Evans and Associates, Inc.
August 9, 2011

Figure 1.3.1

Feature Images

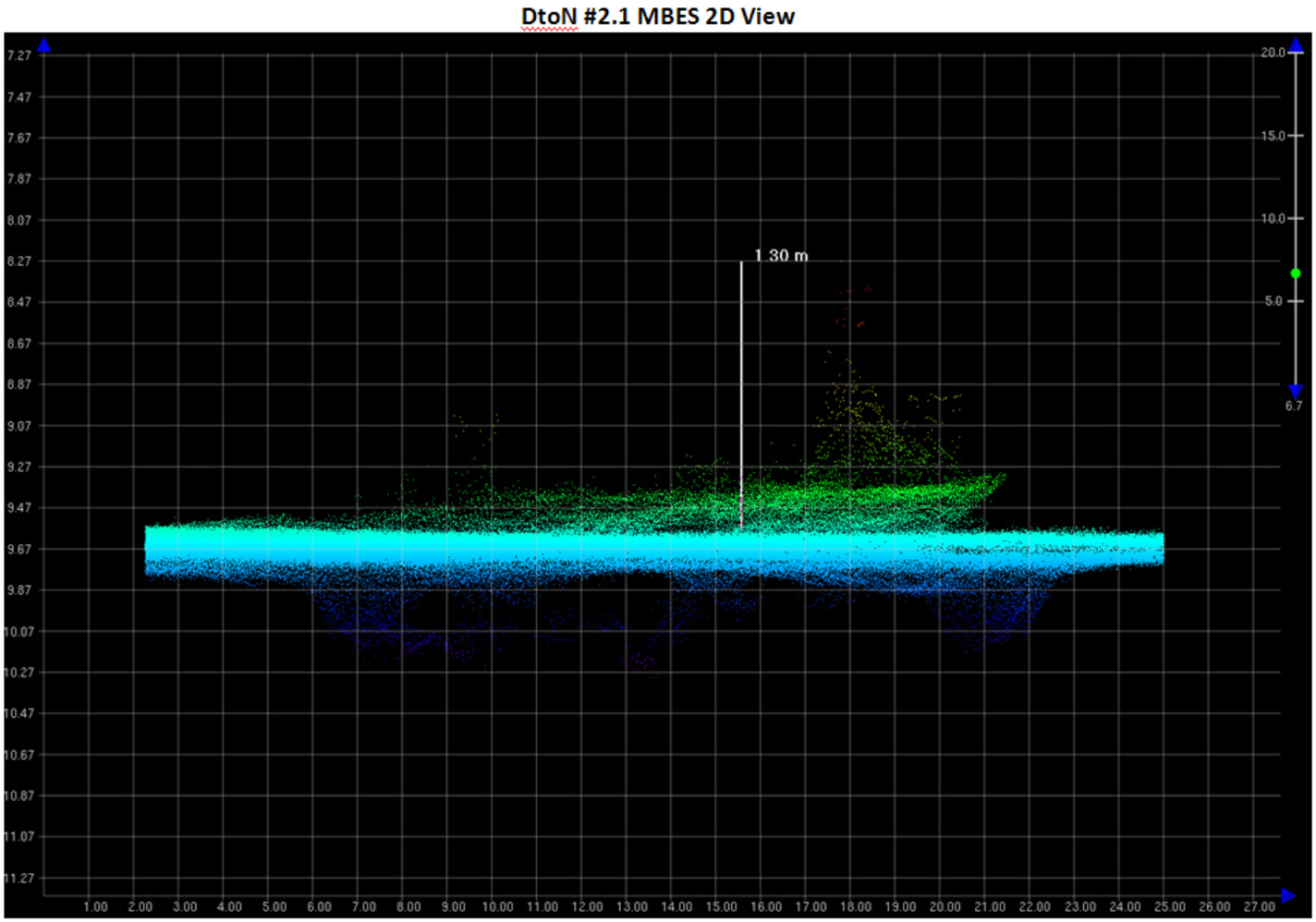


Figure 1.3.2

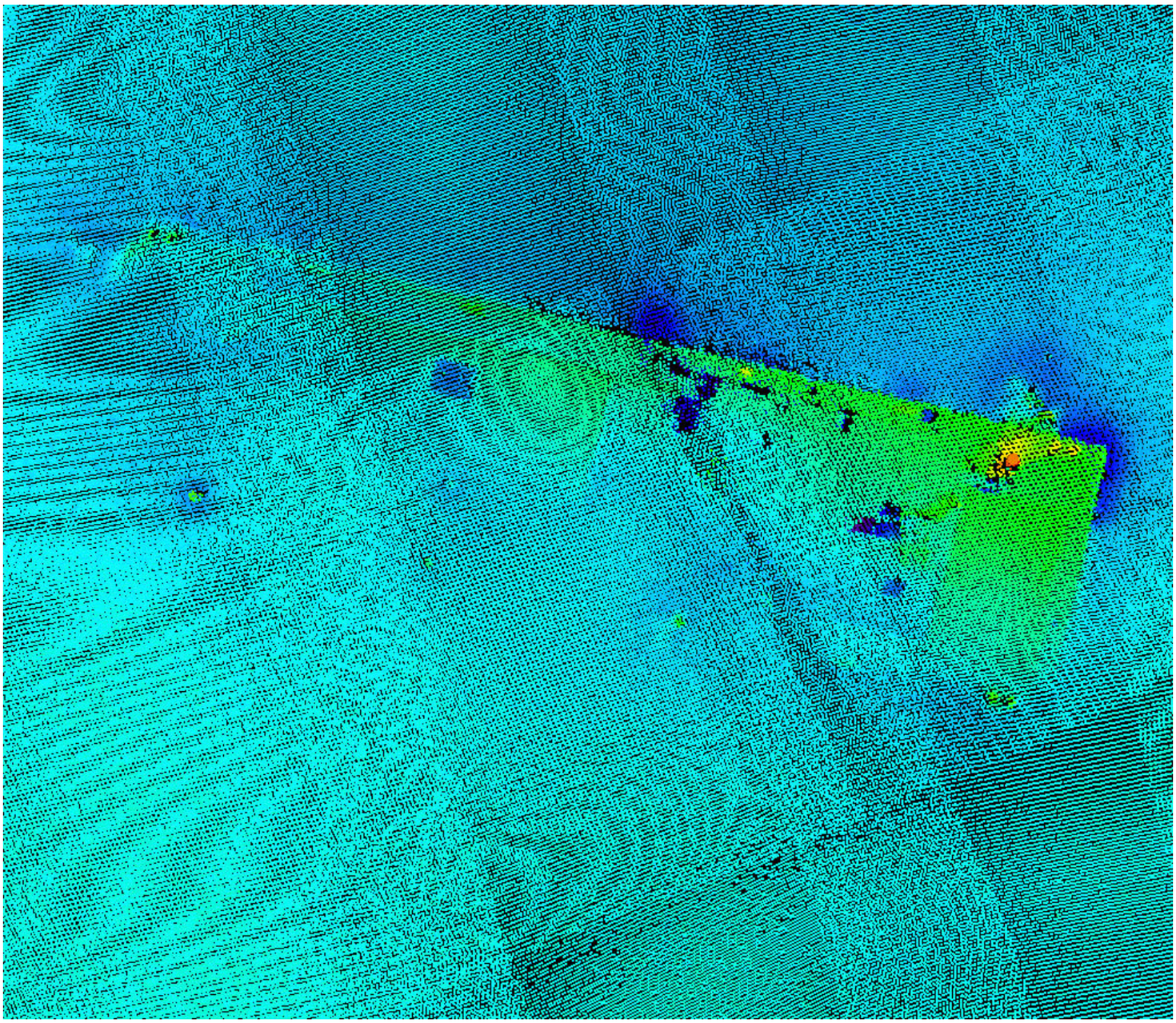


Figure 1.3.3

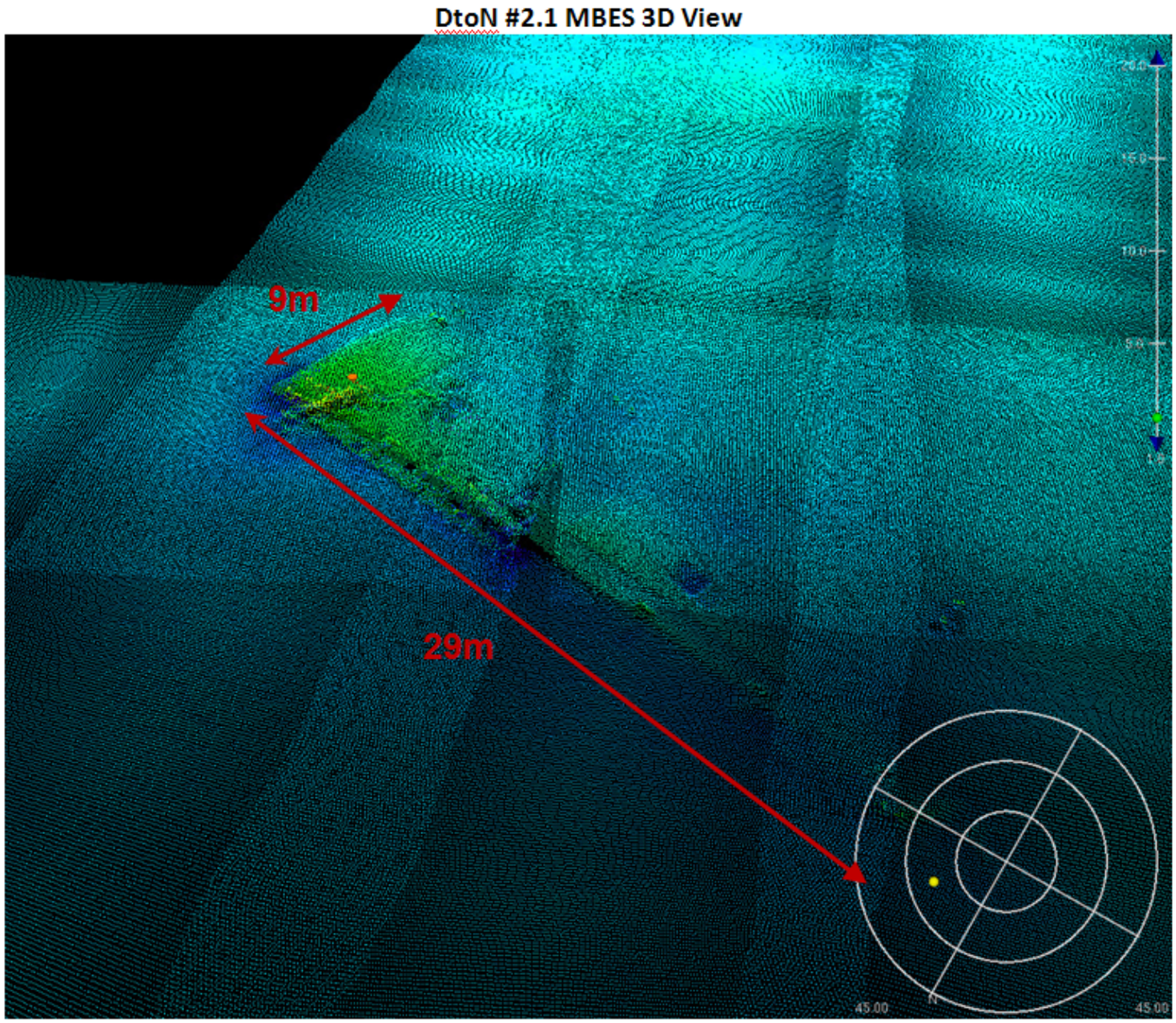


Figure 1.3.4

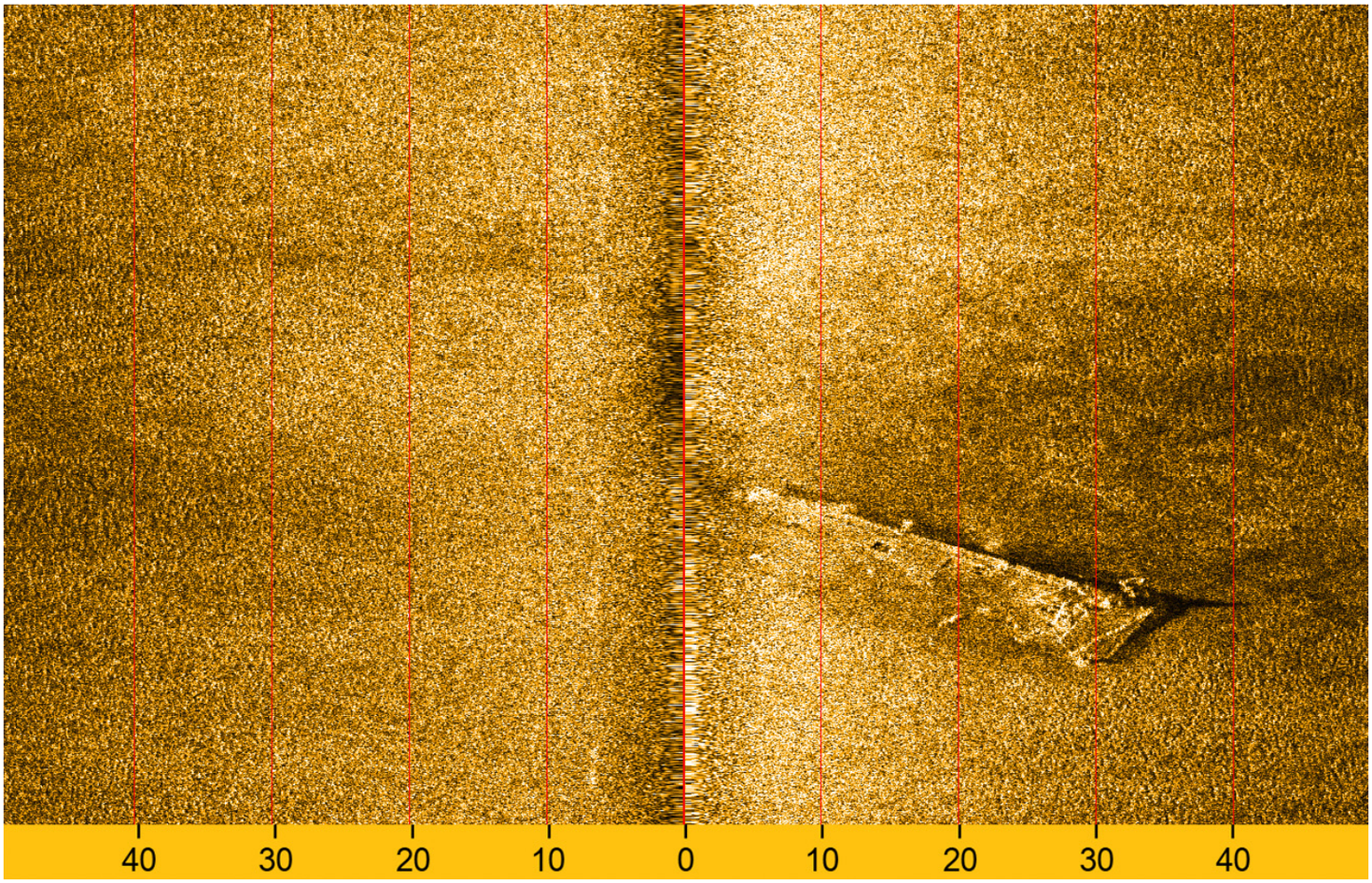


Figure 1.3.5

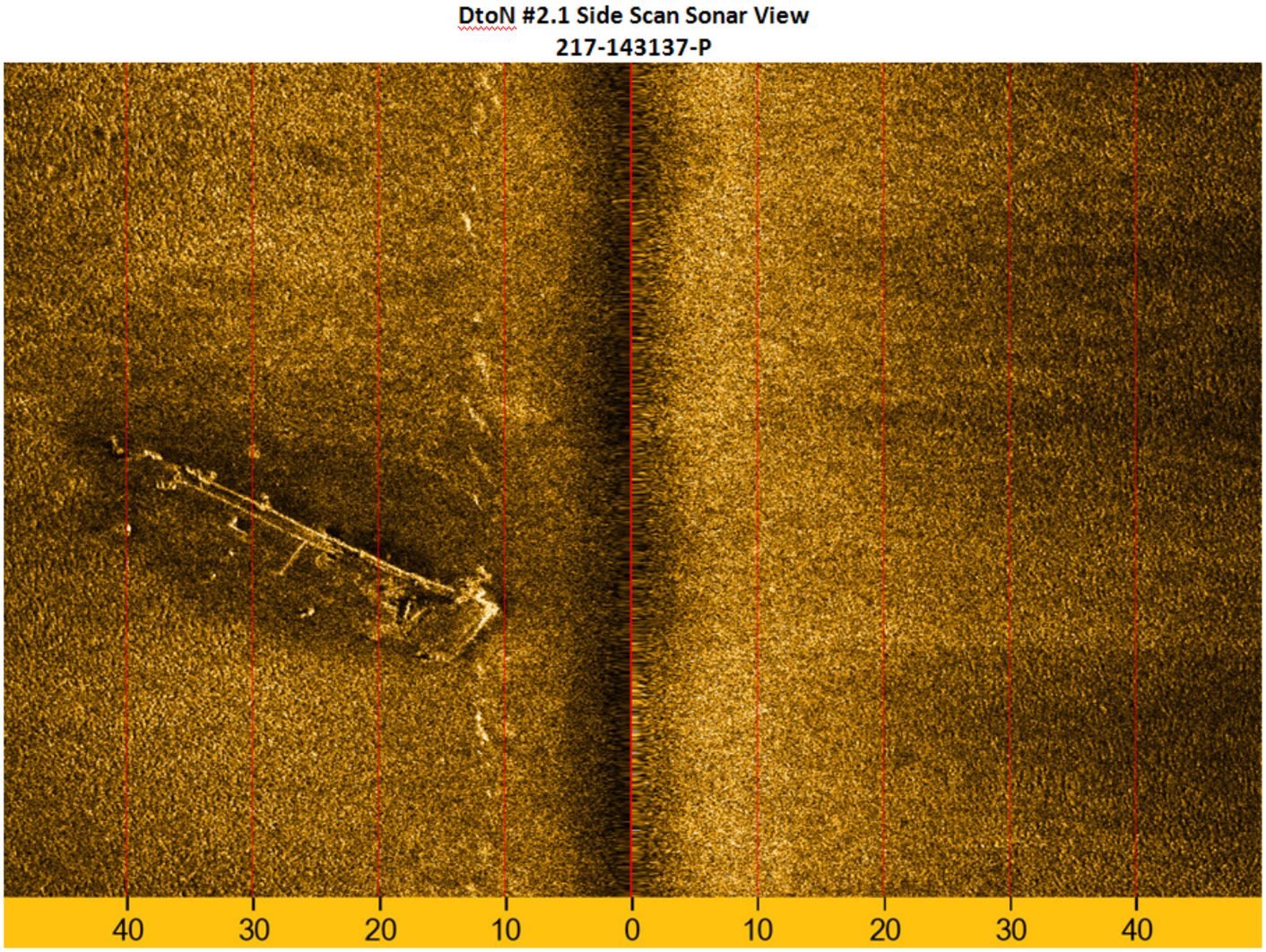

DtoN #2.1 Side Scan Sonar View
217-143137-P
40
30
20
10
0
10
20
30
40

Figure 1.3.6

H12353_AWOIS ITEMS

Registry Number: H12353

State: Mississippi

Locality: Approaches to the Mississippi Sound

Sub-locality: SE of Ship Island Harbor

Project Number: OPR-J348-KR-11

Survey Date: 07/12/2011 to 10/18/2011

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
11372	33rd	06/01/2007	1:40,000 (11372_1)	[L]NTM: ?
11373	47th	10/01/2008	1:80,000 (11373_1)	[L]NTM: ?
11366	11th	01/01/2008	1:250,000 (11366_1)	[L]NTM: ?
11360	43rd	11/01/2008	1:456,394 (11360_1)	[L]NTM: ?
1115A	43rd	11/01/2008	1:456,394 (1115A_1)	[L]NTM: ?
11006	32nd	08/01/2005	1:875,000 (11006_1)	[L]NTM: ?
411	52nd	09/01/2007	1:2,160,000 (411_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 #8713 - Charted dangerous sunken wreck least depth 24 feet	AWOIS	[no data]	[no data]	[no data]	---
1.2	AWOIS #14884 - Charted dangerous sunken Wreck depth unknown, Mast PA.	AWOIS	[no data]	[no data]	[no data]	---
1.3	AWOIS #14891 - Charted dangerous sunken Wreck depth unknown, ED	AWOIS	[no data]	[no data]	[no data]	---
1.4	AWOIS #7069 - Charted dangerous sunken wreck least depth 20 feet	Wreck	7.79 m	30° 10' 56.1" N	088° 55' 04.1" W	7069

1.1) AWOIS #8713 - AWOIS #8713 - Charted dangerous sunken wreck least depth 24 feet

No Primary Survey Feature for this AWOIS Item

Search Position: 30° 10' 56.5" N, 088° 55' 14.1" W
Historical Depth: 7.28 m
Search Radius: 200
Search Technique: MB,S2
Technique Notes: [None]

History Notes:

HISTORY
FE-335/89-- OPR-J433-RU; 30-FOOT WOODEN WRECK LOCATED WHILE ì
SEARCHING FOR AWOIS NO. 7069. DIVER LD OF 23.9 FEET ON ENGINE ì
BLOCK IN LAT. 30-10-56.51N, LONG. 88-55-14.08W. LORAN-C RATES ì
(7980 CHAIN): W = 12214.6; X = 29416.8; Y = 47064.1; Z = 64057.8. ì
EVALUATOR RECOMMENDS CHARTING WRECK AS SURVEYED. (ENT. 7/1/93, ì
SJV)

Survey Summary

Charts Affected: 11373_1, 11366_1, 1115A_1, 11360_1, 11006_1, 411_1

Remarks:

DEA CF #6. AWOIS 8713 was disproved by 200% side scan coverage.

Feature Correlation

Source	Feature	Range	Azimuth	Status
AWOIS_EXPORT	AWOIS # 8713	0.00	000.0	Primary

Hydrographer Recommendations

Remove the charted 24-foot Wreck.

S-57 Data

[None]

Office Notes

SAR Note: concur with field unit feature is not present, verified with 200% sss as documented by the survey.

COMPILATION: Concur. No indication of wreck found during present survey operations. Consider item disproved. Delete dangerous sunken wreck least depth 24 feet. Delete Wks notation.

1.2) AWOIS #14884 - AWOIS #14884 - Charted dangerous sunken Wreck depth unknown, Mast PA.

No Primary Survey Feature for this AWOIS Item

Search Position: 30° 12' 55.7" N, 088° 54' 38.7" W
Historical Depth: [None]
Search Radius: 200
Search Technique: S2,MB,VI
Technique Notes: Investigate item only within limits of survey.

History Notes:

CL 1157/78--USPS FOUND WRECK AT 30°12'55/88°54'40 IN JULY 1978. ADDED SUBMERGED WRECK, DANGER CURVE, MAST, PA.

Survey Summary

Charts Affected: 11372_1, 11373_1, 11366_1, 1115A_1, 11360_1, 11006_1, 411_1

Remarks:

DEA CF #10. AWOIS #14884 was disproved by 200% side scan coverage.

Feature Correlation

Source	Feature	Range	Azimuth	Status
AWOIS_EXPORT	AWOIS # 14884	0.00	000.0	Primary

Hydrographer Recommendations

Remove charted Wreck Mast PA

S-57 Data

[None]

Office Notes

SAR Note: concur with field unit feature is not present, verified with 200% sss as documented by the survey.

COMPILATION: Concur. No indication of wreck found during present survey operations. Consider item disproved. Delete dangerous sunken wreck depth unknown, Mast PA.

1.3) AWOIS #14891 - AWOIS #14891 - Charted dangerous sunken Wreck depth unknown, ED

No Primary Survey Feature for this AWOIS Item

Search Position: 30° 13' 30.2" N, 088° 52' 52.7" W
Historical Depth: [None]
Search Radius: 500
Search Technique: MB,S2
Technique Notes: Investigate item only within the limits of the survey.

History Notes:

LNM41-85--F/V KINGFISHER, Wreck ED, Sunk, Could not locate

Survey Summary

Charts Affected: 11372_1, 11373_1, 11366_1, 1115A_1, 11360_1, 11006_1, 411_1

Remarks:

DEA CF #11. AWOIS #14891 was disproved by 200% side scan coverage.

Feature Correlation

Source	Feature	Range	Azimuth	Status
AWOIS_EXPORT	AWOIS # 14891	0.00	000.0	Primary

Hydrographer Recommendations

Remove the charted Wreck ED.

S-57 Data

[None]

Office Notes

SAR Note: concur with field unit feature is not present, verified with 200% sss as documented by the survey

COMPILATION: Concur. No indication of wreck found during present survey operations. Consider item disproved. Delete dangerous sunken wreck depth unknown, ED.

1.4) AWOIS #7069 - Charted dangerous sunken wreck least depth 20 feet

Primary Feature for AWOIS Item #7069

Search Position: 30° 10' 48.7" N, 088° 55' 06.1" W
Historical Depth: [None]
Search Radius: 500
Search Technique: MB,S2
Technique Notes: [None]

History Notes:

HISTORY
LNM49/84-- 68 FOOT F/V SWEET DADDY REPORTED SUNK APPROXIMATELY ì
2 MILES SOUTHEAST OF SHIP ISLAND IN APPROXIMATE POS. LAT. ì
30-10-48N, LONG. 88-55-06W. (ENT. 1/17/89, SJV)
FE-335/89-- OPR-J433-RU; CONTACT AS DESCRIBED NOT CONSIDERED ì
ITEM SOUGHT BY THE EVALUATOR (SEE AWOIS NO. 8713). ADDITIONAL ì
WORK RECOMMENDED TO COMPLETE REQUIRED INVESTIGATION OF AWOIS NO. ì
7069. (UP 7/1/93, SJV)

Survey Summary

Survey Position: 30° 10' 56.1" N, 088° 55' 04.1" W
Least Depth: 7.79 m (= 25.56 ft = 4.260 fm = 4 fm 1.56 ft)
TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp: 2011-291.00:00:00.000 (10/18/2011)
Dataset: H12353_AWOIS.000
FOID: US 0001544245 00001(0226001790350001)
Charts Affected: 11373_1, 11366_1, 1115A_1, 11360_1, 11006_1, 411_1

Remarks:

WRECKS/remrks: FS 211-193335-S. DEA CF #7. AWOIS 7069. Object seen rising approximately 0.7m above the natural bottom.

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12353_AWOIS.000	US 0001544245 00001	0.00	000.0	Primary

AWOIS_EXPORT	AWOIS # 7069	235.41	013.5	Secondary (grouped)

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

25ft (11373_1)

4 ¼fm (1115A_1, 11360_1, 11006_1, 411_1)

4fm 1ft (11366_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 Wreck

QUASOU - 6:least depth known

SORDAT - 20111018

SORIND - US,US,graph,H12353

TECSOU - 3:found by multi-beam

VALSOU - 7.791 m

WATLEV - 3:always under water/submerged

Office Notes

AWOIS 7069, SAR: feature is real and verified with sss 200% and swmb as existing as documented.

COMPILATION: Concur. Delete dangerous sunken wreck least depth 20 feet. Add dangerous sunken wreck least depth 25 feet in present survey position.

Feature Images

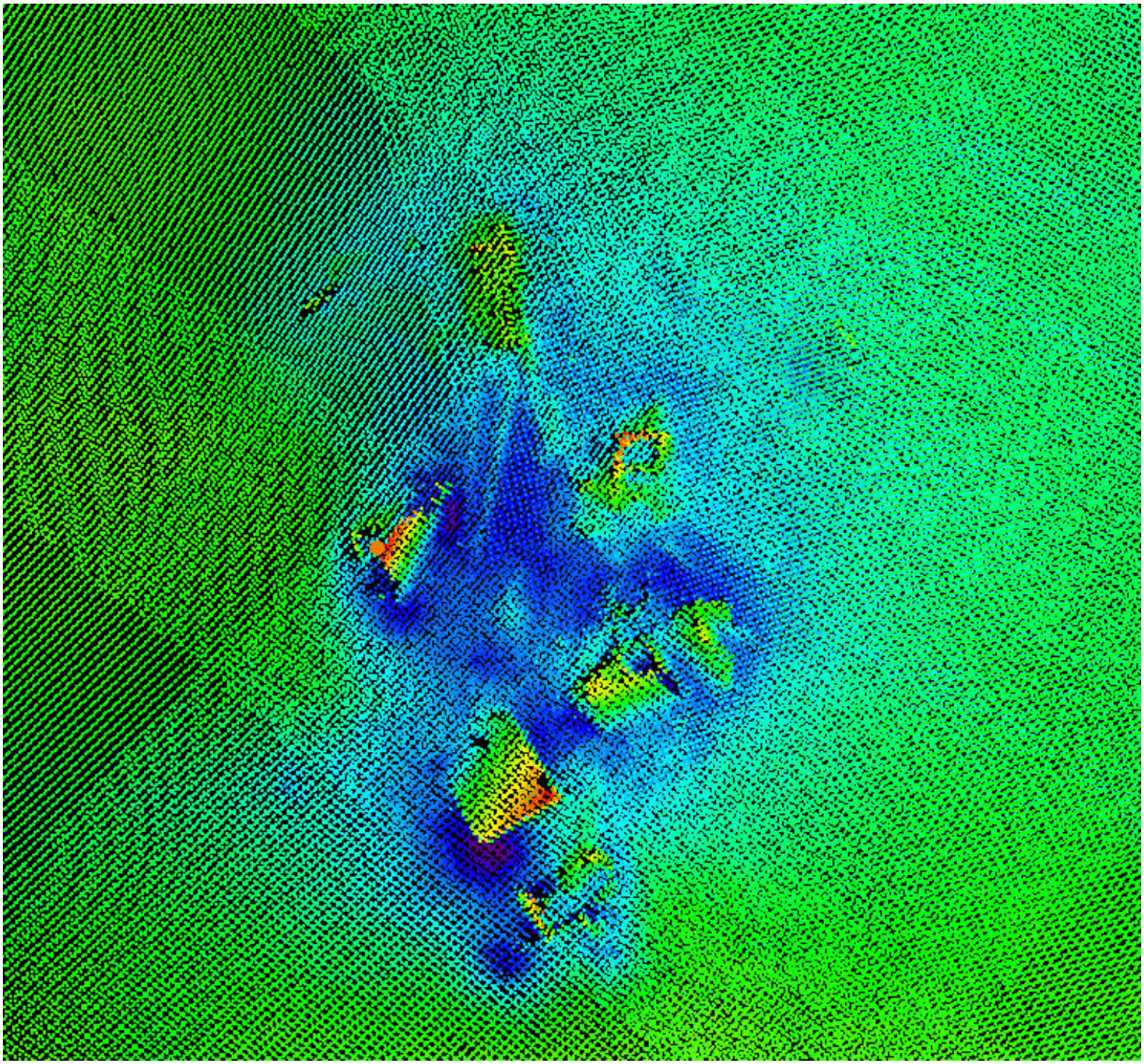


Figure 1.4.1

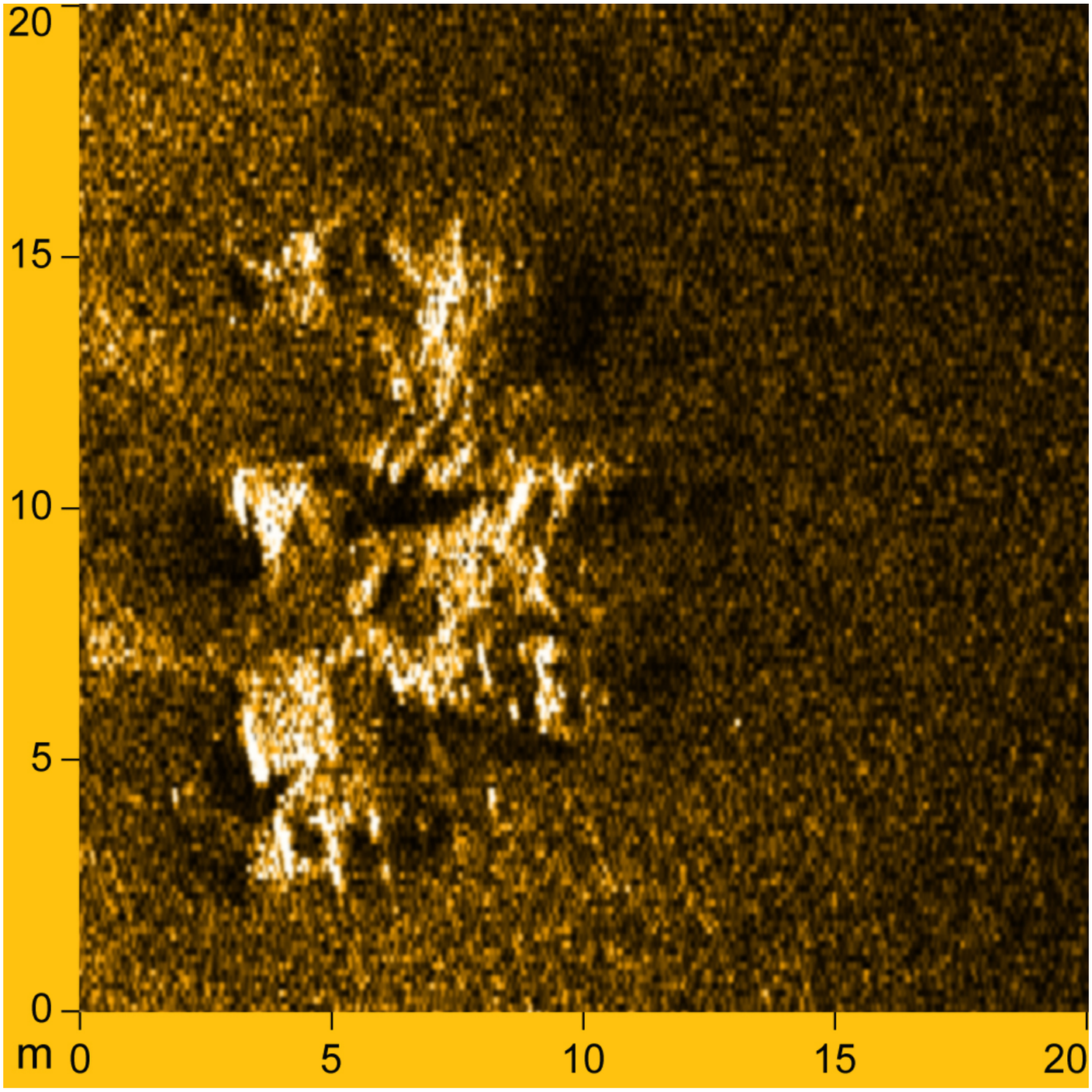


Figure 1.4.2

APPROVAL PAGE

H12353

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

- H12353_DR.pdf
- Collection of depth varied resolution BAGS
- Processed survey data and records
- H12353_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.

Digitally signed by HIGGINS.ABIGAIL.SARAH.1267671750
DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=NOAA, cn=HIGGINS.ABIGAIL.SARAH.1267671750
Date: 2013.02.28 14:27:48 -05'00'

Approved: _____

LT Abigail Higgins
Chief, Atlantic Hydrographic Branch