

H12962

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

**DESCRIPTIVE REPORT**

Type of Survey: Navigable Area

Registry Number: H12962

**LOCALITY**

State(s): Georgia  
South Carolina

General Locality: Approaches to Savannah

Sub-locality: South Savannah

**2017**

CHIEF OF PARTY  
Christiaan van Westendorp, CDR/NOAA

**LIBRARY & ARCHIVES**

Date:

U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION		REGISTRY NUMBER:
<b>HYDROGRAPHIC TITLE SHEET</b>		<b>H12962</b>
INSTRUCTIONS: The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.		
State(s):	<b>Georgia and South Carolina</b>	
General Locality:	<b>Approaches to Savannah</b>	
Sub-Locality:	<b>South Savannah</b>	
Scale:	<b>20000</b>	
Dates of Survey:	<b>08/26/2017 to 11/04/2017</b>	
Instructions Dated:	<b>03/24/2017</b>	
Project Number:	<b>OPR-G329-TJ-17</b>	
Field Unit:	<b>NOAA Ship <i>Thomas Jefferson</i></b>	
Chief of Party:	<b>Christiaan van Westendorp, CDR/NOAA</b>	
Soundings by:	<b>Multibeam Echo Sounder</b>	
Imagery by:	<b>Side Scan Sonar and Multibeam Echo Sounder Backscatter</b>	
Verification by:	<b>Atlantic Hydrographic Branch</b>	
Soundings Acquired in:	<b>meters at Mean Lower Low Water</b>	
Remarks: <i>Any revisions to the Descriptive Report (DR) applied during office processing are shown in red italic text. The DR is maintained as a field unit product, therefore all information and recommendations within this report are considered preliminary unless otherwise noted. The final disposition of survey data is represented in the NOAA nautical chart products. All pertinent records for this survey are archived at the National Centers for Environmental Information (NCEI) and can be retrieved via <a href="https://www.ncei.noaa.gov/">https://www.ncei.noaa.gov/</a>. Products created during office processing were generated in NAD83 UTM 17N, MLLW. All references to other horizontal or vertical datums in this report are applicable to the processed hydrographic data provided by the field unit.</i>		

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## Descriptive Report to Accompany Survey H12962

Project: OPR-G329-TJ-17

Locality: Approaches to Savannah

Sublocality: South Savannah

Scale: 1:20000

August 2017 - November 2017

**NOAA Ship *Thomas Jefferson***

Chief of Party: Christiaan van Westendorp, CDR/NOAA

### A. Area Surveyed

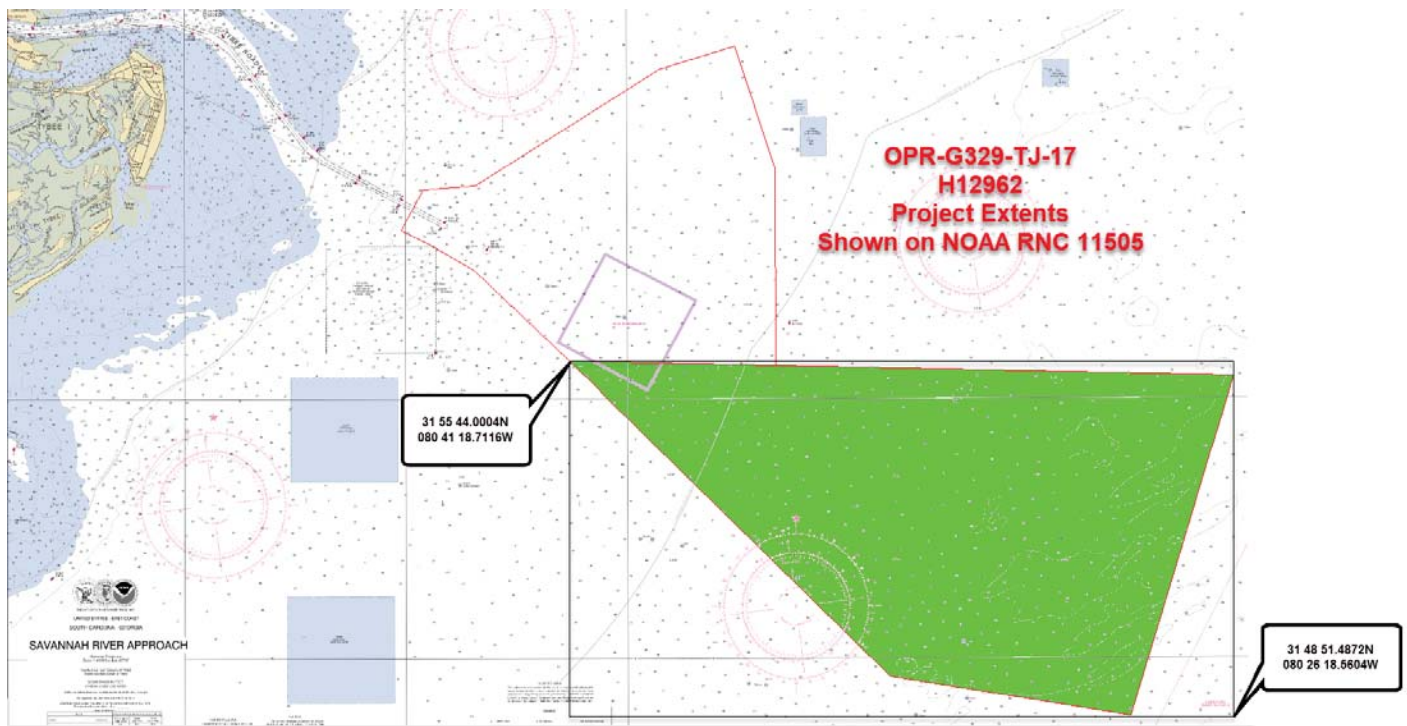
This hydrographic survey was completed using the coverage requirements specified by hydrographic survey project instructions OPR-G329-TJ-17, signed 24 March 2017. This survey extends approximately 9 to 22 nautical miles southeast of Tybee Island Light in the approaches to Savannah, Georgia.

#### A.1 Survey Limits

Data were acquired within the following survey limits (Table 1 and Figure 1):

Northwest Limit	Southeast Limit
31° 55' 44" N 80° 41' 18.71" W	31° 48' 51.49" N 80° 26' 18.56" W

*Table 1: Survey Limits*



*Figure 1: H12962 Survey Extents*

Survey limits were acquired in accordance with the requirements in the Project Instructions and the Hydrographic Survey Specifications and Deliverables 2017 (HSSD).

## A.2 Survey Purpose

This survey will update the chart to meet the needs of larger ships transiting into Savannah Harbor. The Savannah Harbor Expansion Project (SHEP) is being deepened to prepare for Neo-Panamax vessels, whose increased capacity is expected net more than \$174 million in annual benefits to the nation.<sup>1</sup> Larger ships generate more business for US companies, but it also means that the ships will be passing closer to the seafloor. The Approaches to Savannah survey will provide the data to reduce risk to the transport of those goods.

In addition to supporting the SHEP, Approaches to Savannah will address concerns of migrating shoals and improving the positional accuracy of other dangers to navigation. The Port of Savannah handled 10.3% of all U.S. containerized exports in 2015. The total economic impact of Georgia's deepwater ports is \$84.1 billion, and support more than 369,000 jobs providing approximately \$20.4 billion in personal income annually.<sup>2</sup> This survey will support the navigational safety of commercial and recreational ship traffic at the mouth of the Savannah River.

<sup>1</sup>US Army Corps of Engineers

<sup>2</sup>"Double-Digit Growth for US Ports". Port Technology. February 27, 2017



### A.3 Survey Quality

The entire survey is adequate to supersede previous data.

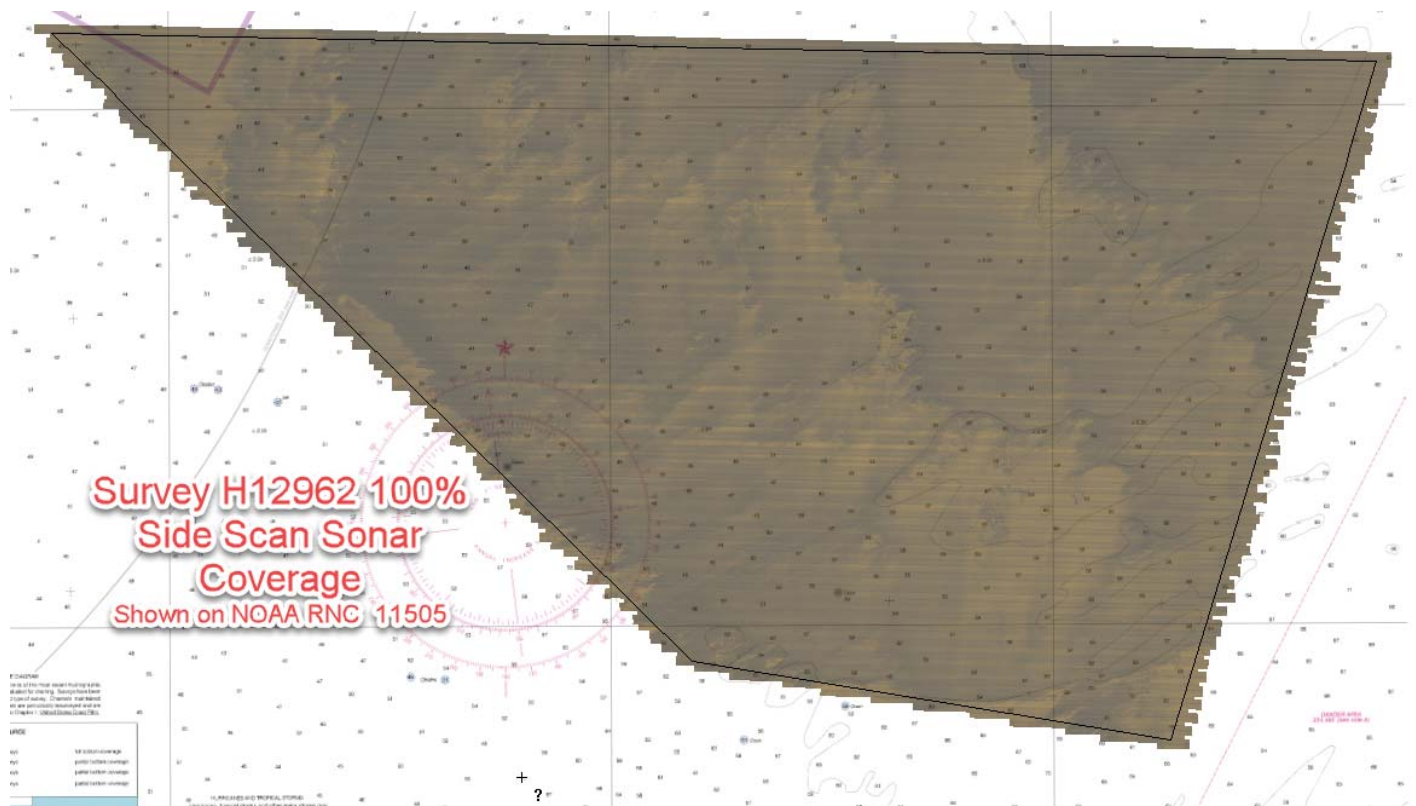
### A.4 Survey Coverage

The following table lists the coverage requirements for this survey as assigned in the project instructions (Table 2):

Water Depth	Coverage Required
All waters in the survey area	Object detection: 200% side scan sonar (SSS) coverage with concurrent multibeam bathymetry (MBES) collection with object detection multibeam (ODMBES) developments of contacts and features. Ref. HSSD sec. 5.2.2.2

*Table 2: Survey Coverage Requirements*

Survey coverage was in accordance with the requirements listed above and in the HSSD (Figures 2-4).



*Figure 2: H12962 100% Side Scan Coverage Mosaic*





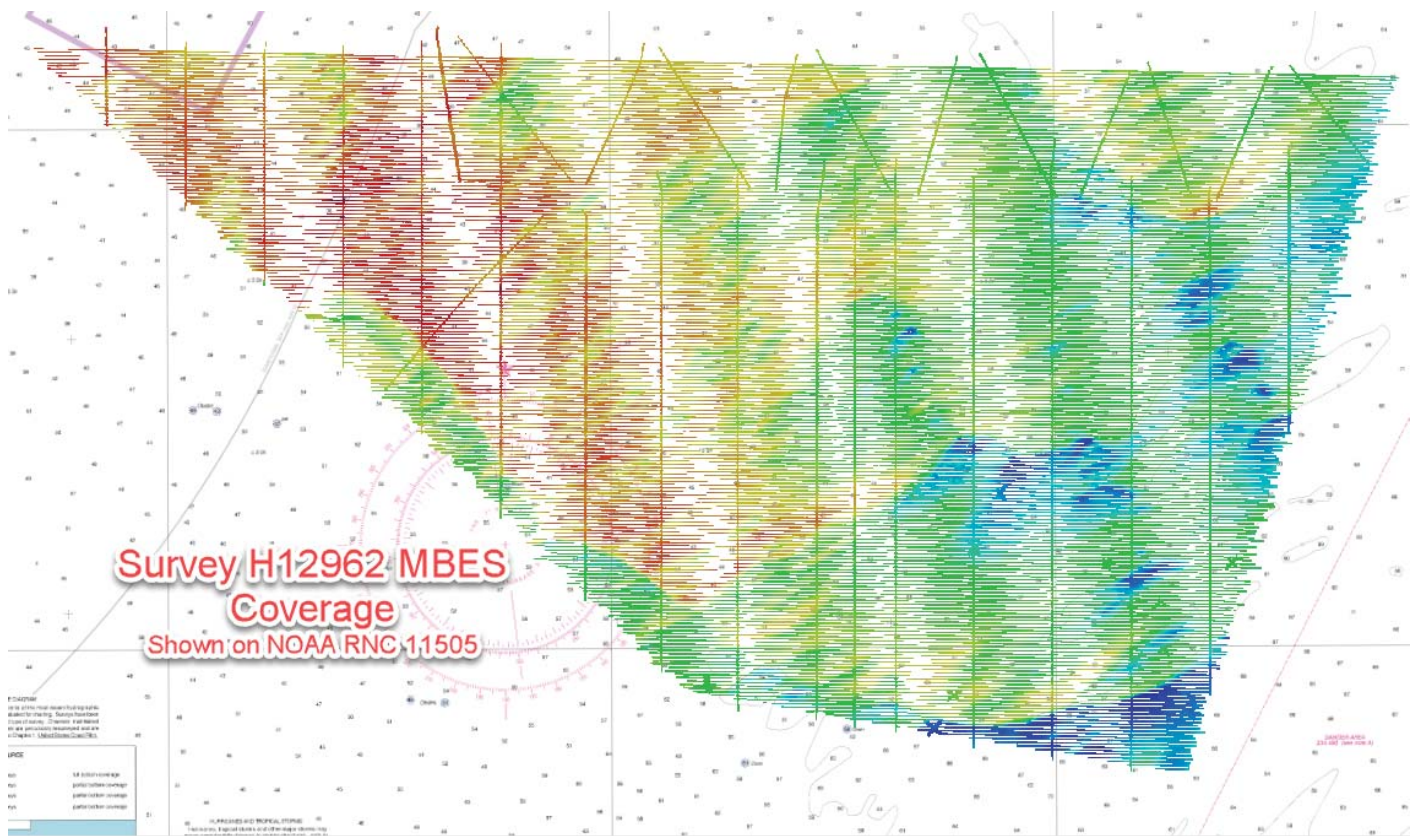


Figure 4: H12962 Multibeam coverage

## A.5 Survey Statistics

The following table lists the mainscheme and crossline acquisition mileage for this survey (Table 3):

	<b>HULL ID</b>	<i>S222</i>	<i>Total</i>
<b>LNM</b>	<b>SBES Mainscheme</b>	0	0
	<b>MBES Mainscheme</b>	7.41	7.41
	<b>Lidar Mainscheme</b>	0	0
	<b>SSS Mainscheme</b>	0.59	0.59
	<b>SBES/SSS Mainscheme</b>	0	0
	<b>MBES/SSS Mainscheme</b>	1756.97	1756.97
	<b>SBES/MBES Crosslines</b>	90.77	90.77
	<b>Lidar Crosslines</b>	0	0
<b>Number of Bottom Samples</b>			0
<b>Number Maritime Boundary Points Investigated</b>			0
<b>Number of DPs</b>			0
<b>Number of Items Investigated by Dive Ops</b>			0
<b>Total SNM</b>			54

*Table 3: Hydrographic Survey Statistics*

The following table lists the specific dates of data acquisition for this survey (Table 4):

<b>Survey Dates</b>	<b>Day of the Year</b>
08/26/2017	238
08/29/2017	241

<b>Survey Dates</b>	<b>Day of the Year</b>
08/30/2017	242
08/31/2017	243
09/14/2017	257
09/15/2017	258
09/16/2017	259
10/19/2017	292
10/20/2017	293
10/21/2017	294
10/22/2017	295
10/23/2017	296
10/24/2017	297
10/25/2017	298
10/31/2017	304
11/01/2017	305
11/02/2017	306
11/03/2017	307
11/04/2017	308

*Table 4: Dates of Hydrography*

## **B. Data Acquisition and Processing**

### **B.1 Equipment and Vessels**

Refer to the Data Acquisition and Processing Report (DAPR) for a complete description of data acquisition and processing systems, survey vessels, quality control procedures and data processing methods. Additional information to supplement sounding and survey data, and any deviations from the DAPR are discussed in the following sections.

### B.1.1 Vessels

The following vessels were used for data acquisition during this survey (Table 5):

<b>Hull ID</b>	<b>S222</b>
<b>LOA</b>	208 feet
<b>Draft</b>	15 meters

*Table 5: Vessels Used*

NOAA Ship *Thomas Jefferson* (S222) acquired the following data: ODMBES, backscatter data, SSS imagery, sound velocity profiles, surface sound velocity readings, and position and attitude data. Refer to Table 6 for specific manufacturer and model information pertaining to the primary acquisition systems used.

### B.1.2 Equipment

The following major systems were used for data acquisition during this survey (Table 6):

<b>Manufacturer</b>	<b>Model</b>	<b>Type</b>
Applanix	POS MV 320 v5	Positioning and Attitude System
Kongsberg Maritime	EM 2040 and EM 710	MBES
Klein Marine Systems	5000	SSS
Sea-Bird Scientific	SBE 19plus	Conductivity, Temperature, and Depth Sensor
Brooke Ocean Technology	Micro-CTD	Conductivity, Temperature, and Depth Sensor
Valeport	Thru-Hull SVS	Sound Speed System

*Table 6: Major Systems Used*

Kongsberg EM 710 MBES data was collected concurrently with the EM2040 MBES data between the dates of 2017-10-19 and 2017-11-04. EM710 raw data will be submitted, but will not be included in the final bathymetric grids. Collection of this data predominantly allowed for a multi-spectral backscatter project to be completed. EM710 backscatter is submitted with the final project.

## B.2 Quality Control

### B.2.1 Crosslines

A total of 1756.97 linear nautical miles (LNM) of SSS data with concurrent ODMBES were acquired within the sheet limits of survey H12962 with a total of 90.77 miles of multibeam crosslines. Crosslines acquired for this survey totaled 5.14% of mainscheme acquisition. A 50cm resolution surface was created for both the mainscheme MBES data and MBES crossline data respectively. Differencing the surfaces produced a mean difference of 0.06m with a standard deviation of 0.13m (Figure 5). Survey H12962 complies with section 5.2.4.3 of the HSSD.

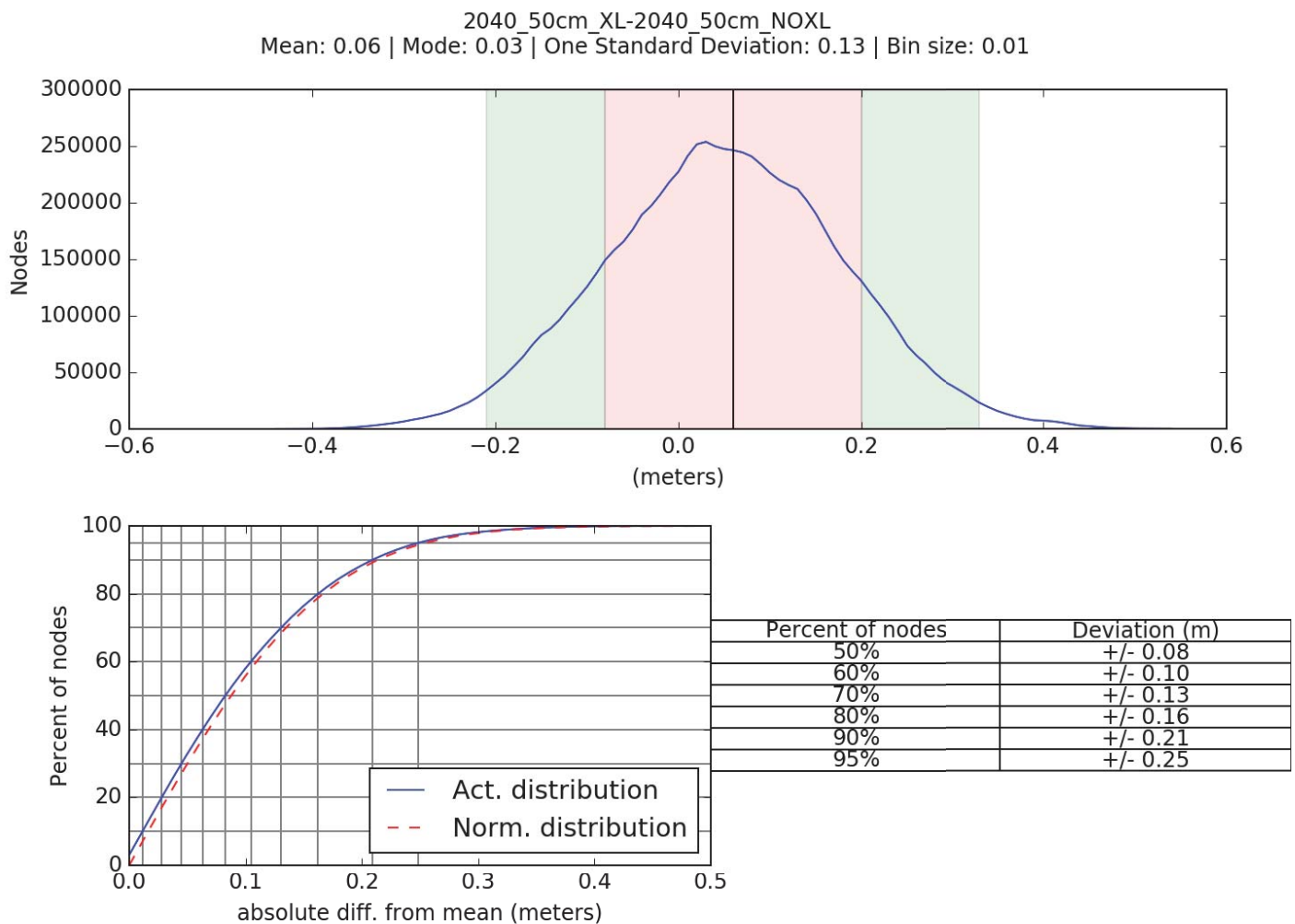


Figure 5: H12962 Crossline Comparison

### B.2.2 Uncertainty

The following survey specific parameters were used for this survey (Tables 7 and 8) :

Method	Measured	Zoning
ERS via VDATUM	0.11 meters	0.157 meters

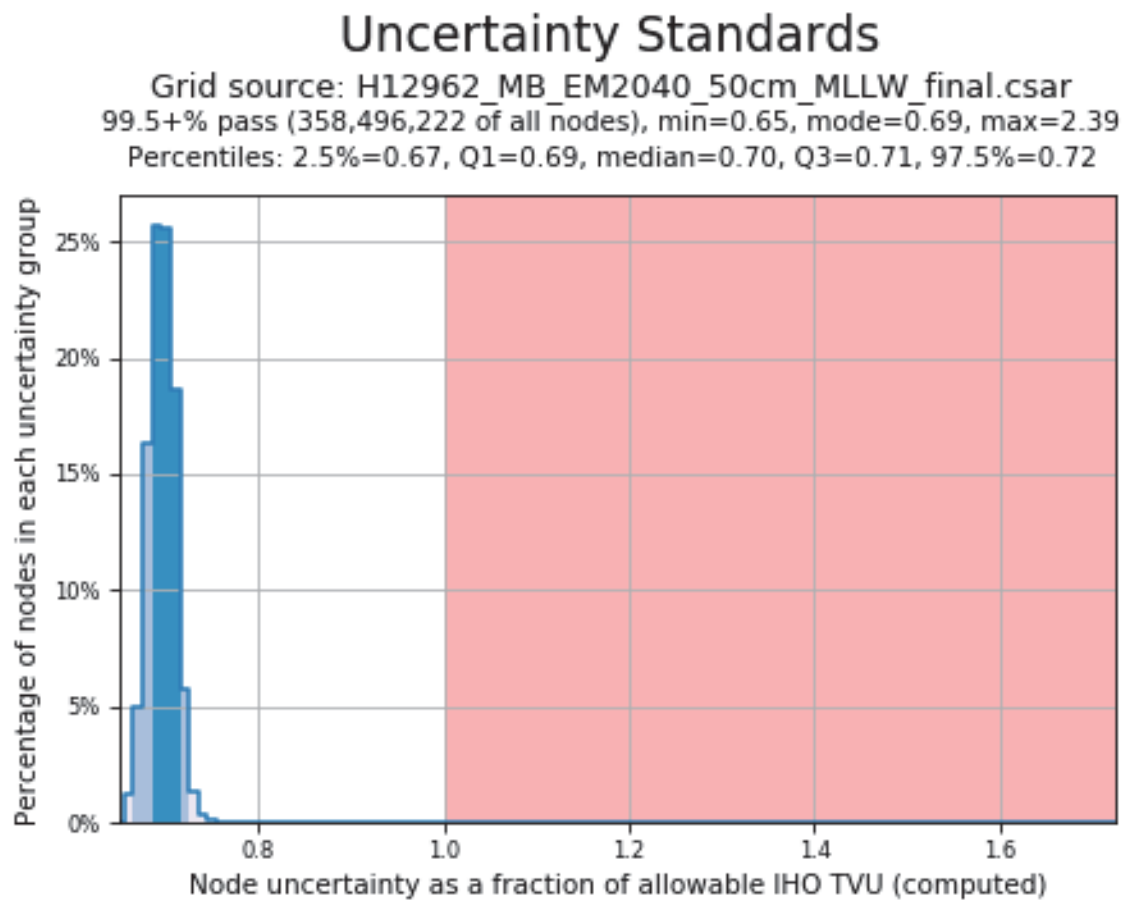
*Table 7: Survey Specific Tide TPU Values.*

Hull ID	Measured - CTD	Measured - MVP	Surface
S222	0 meters/second	1.0 meters/second	0.50 meters/second

*Table 8: Survey Specific Sound Speed TPU Values.*

For the surface H12962\_MB\_50cm\_MLLW\_Final 358,497,692 nodes were evaluated and 358,496,222 (99.5%) were within acceptable IHO order one uncertainty standards (Figure 6). 1,471 nodes failed. These failures were examined in post processing and showed no indication of systematic errors. Most, if not all, of these failures were due to blowouts in the multibeam from weather and interference with the EM710. Refer to the DAPR for ship specific uncertainty calculation standards and procedures.





*Figure 6: IHO Order 1 Uncertainty Standards*

### B.2.3 Junctions

Two contemporary junction surveys exist adjacent to survey H12962: H12961 (*Thomas Jefferson* 2017) and H12960 (*Thomas Jefferson* 2016) (Figure 7 and Table 9).

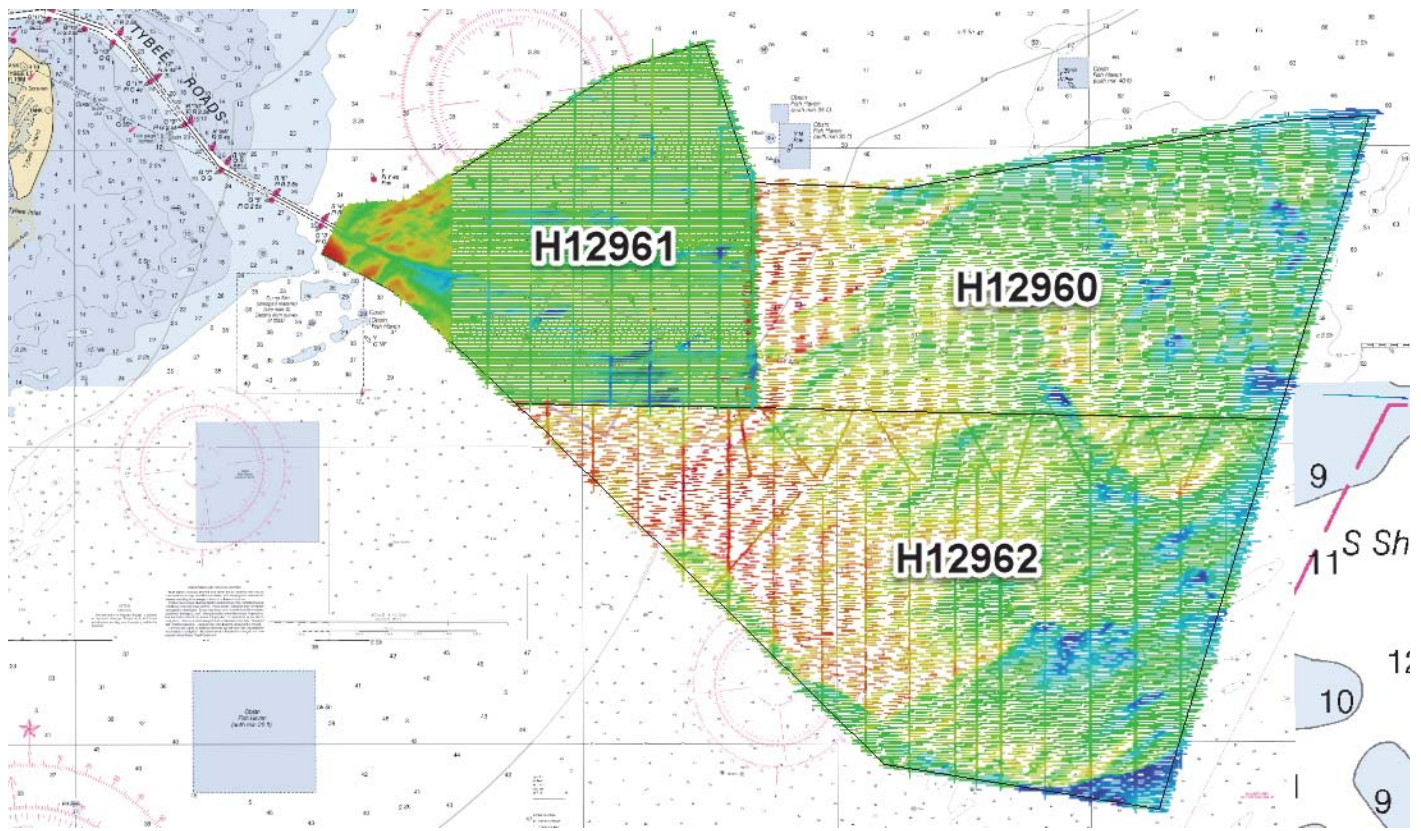


Figure 7: Overview of Junction Surveys

The following junctions were made with this survey (Table 9):

Registry Number	Scale	Year	Field Unit	Relative Location
H12960	1:20000	2016	NOAA Ship <i>THOMAS JEFFERSON</i>	N
H12961	1:20000	2017	NOAA Ship <i>THOMAS JEFFERSON</i>	NW

Table 9: Junctioning Surveys

### H12960

The mean difference between survey H12962 and H12960 was 0.14m, with a standard deviation of 0.12m (Figure 8).

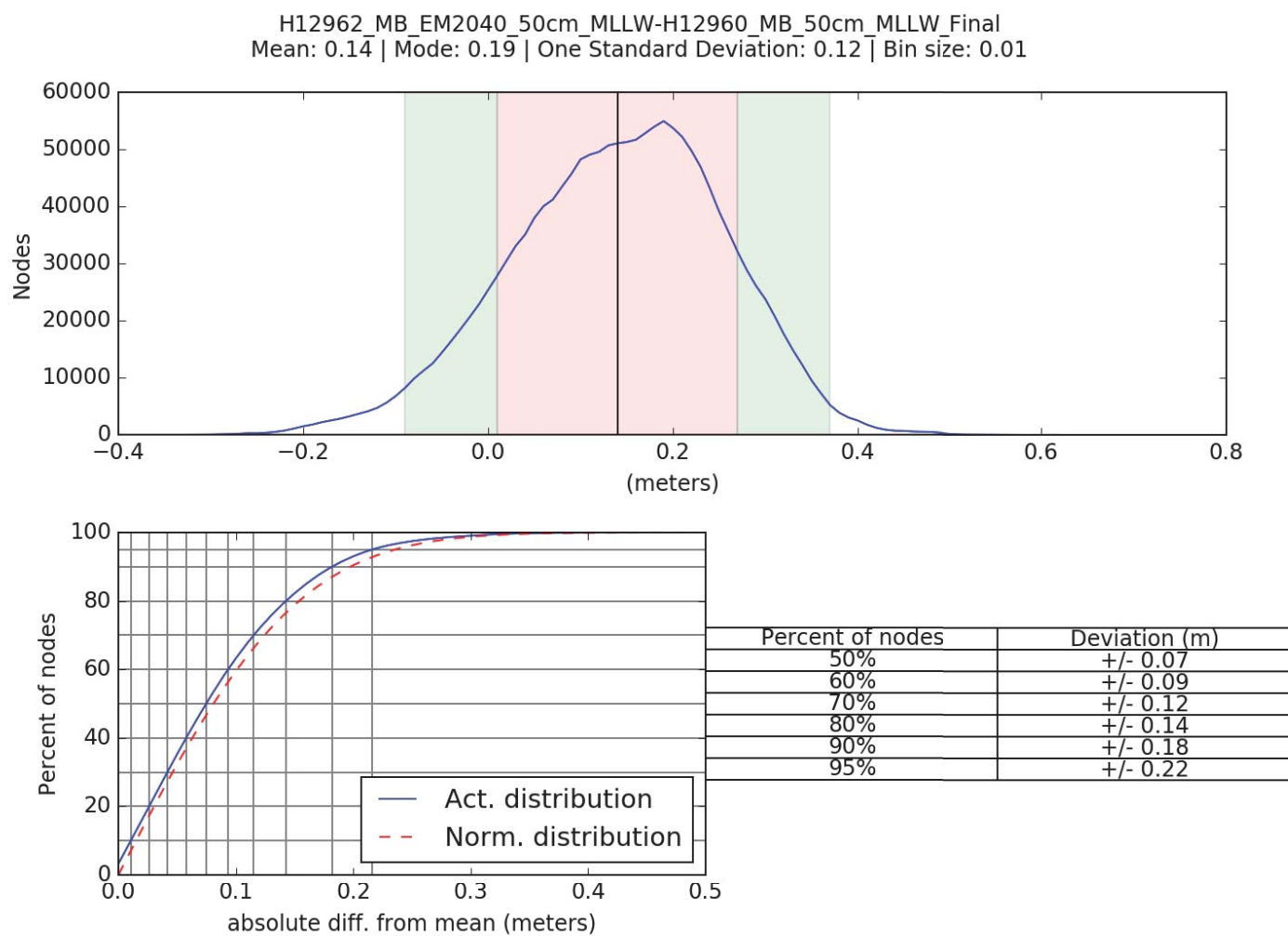


Figure 8: H12962 and H12960 comparison

### H12961

The mean difference between survey H12962 and H12961 was 0.27m, with a standard deviation of 0.12m (Figure 9).

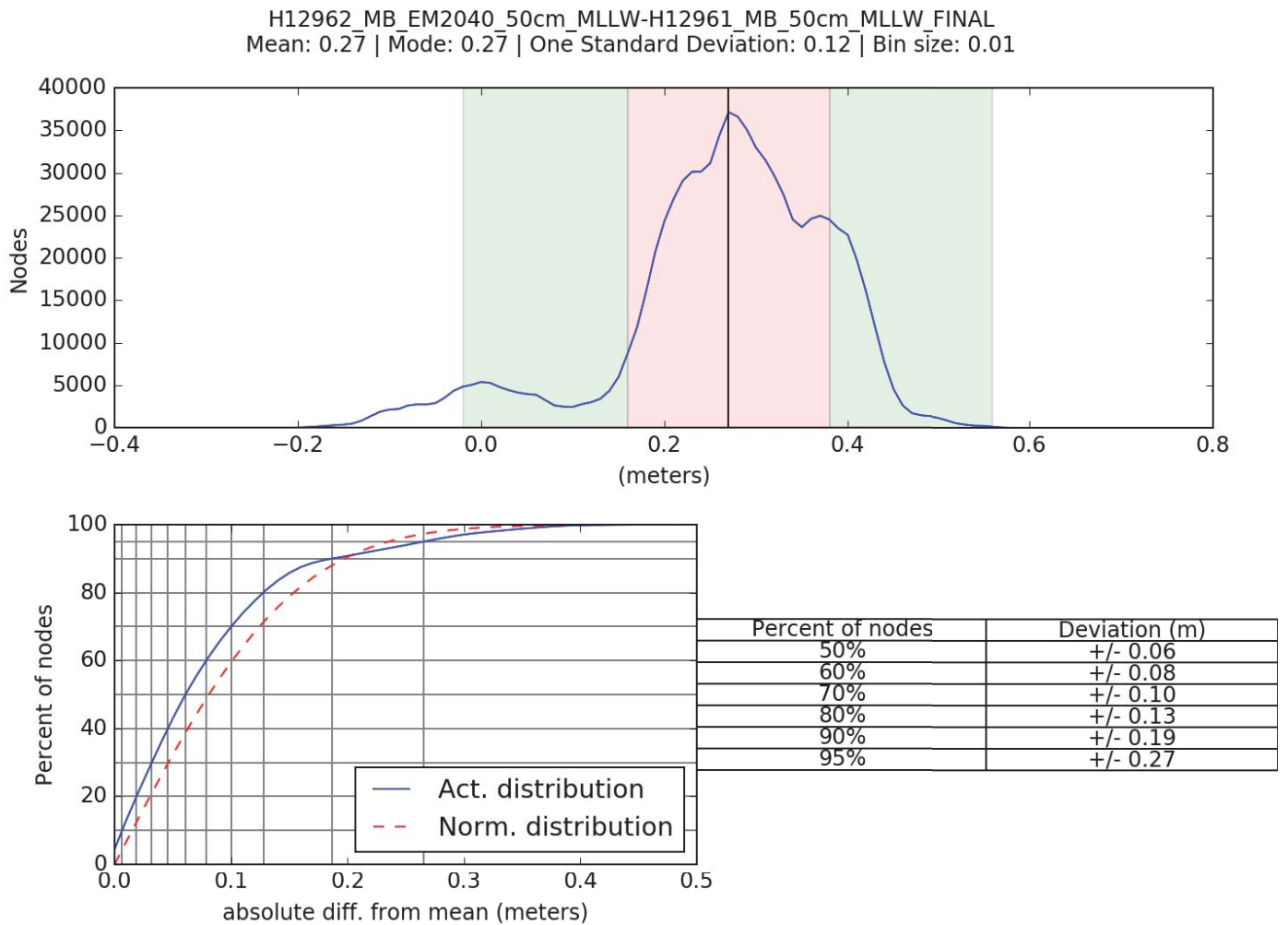


Figure 9: H12962 and H12961 comparison

#### B.2.4 Sonar QC Checks

Sonar system quality control checks were conducted as detailed in the quality control section of the DAPR.

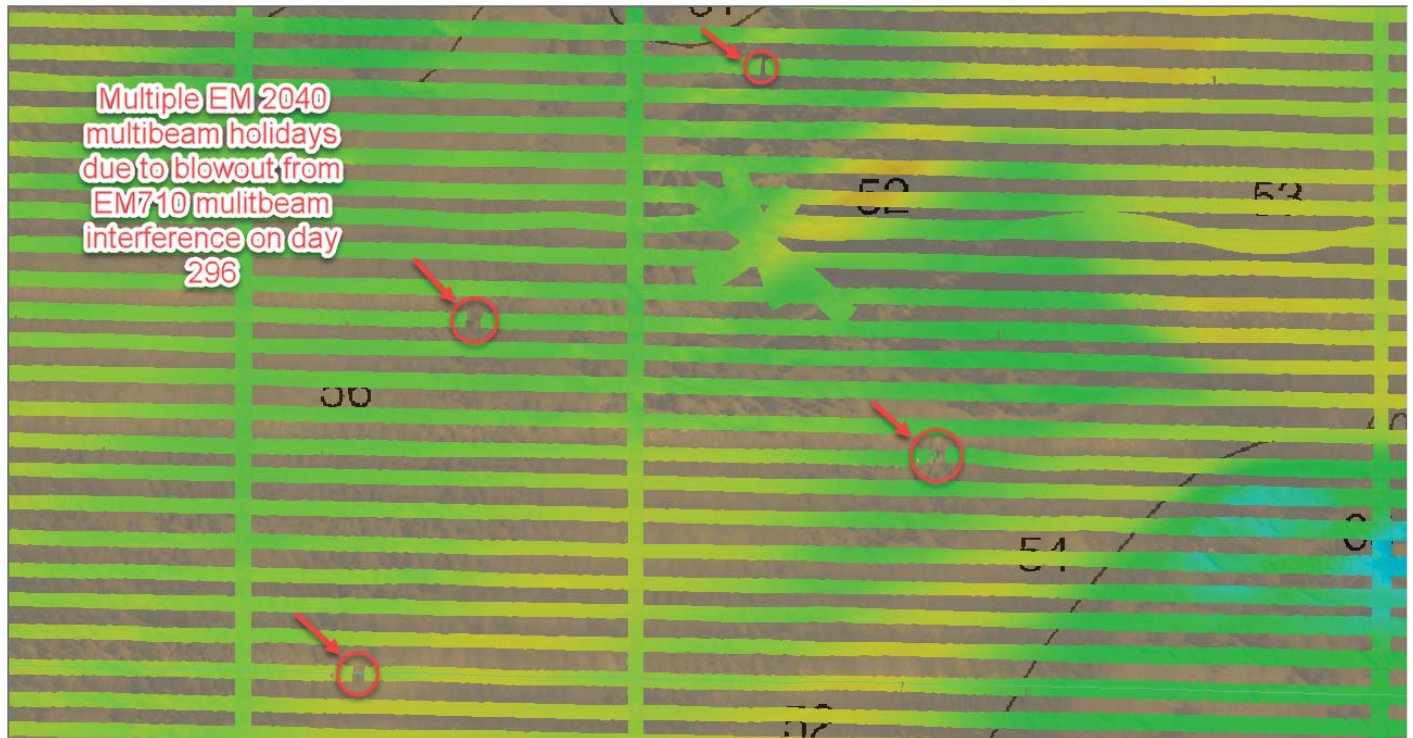
#### B.2.5 Equipment Effectiveness

##### MBES blowouts

On day 296, EM710 and EM2040 data were acquired concurrently in an attempt to deliver a multi spectral backscatter survey. During this period, multiple blowouts occurred in EM2040 data due to interference with the EM710. NOAA Ship *Thomas Jefferson* also



experienced degraded weather conditions during this time. The larger holidays were covered during survey wrap up, however smaller holidays were not. Remaining holidays were covered with 200% side scan data with no significant features found in these areas. (Figure 10).

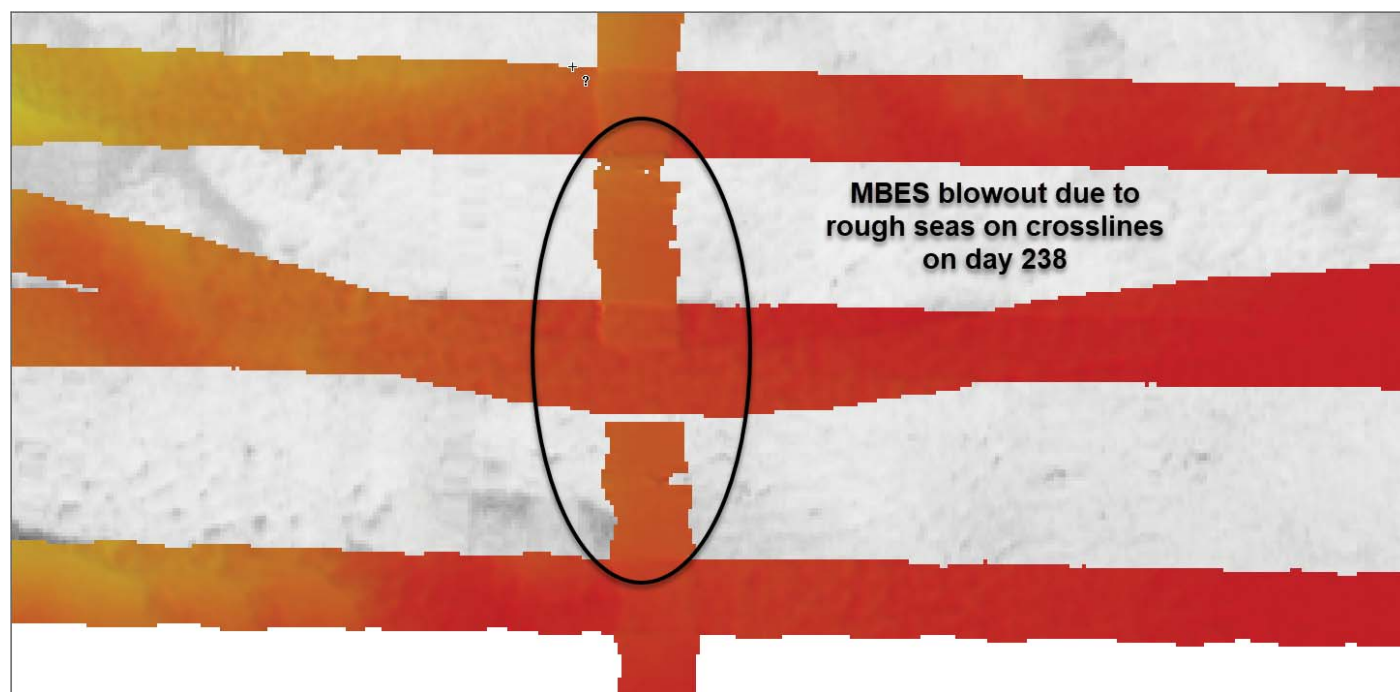


*Figure 10: MBES blowouts in EM 2040 data, shown with SSS coverage.*

### **B.2.6 Factors Affecting Soundings**

#### Sea-State impacted data

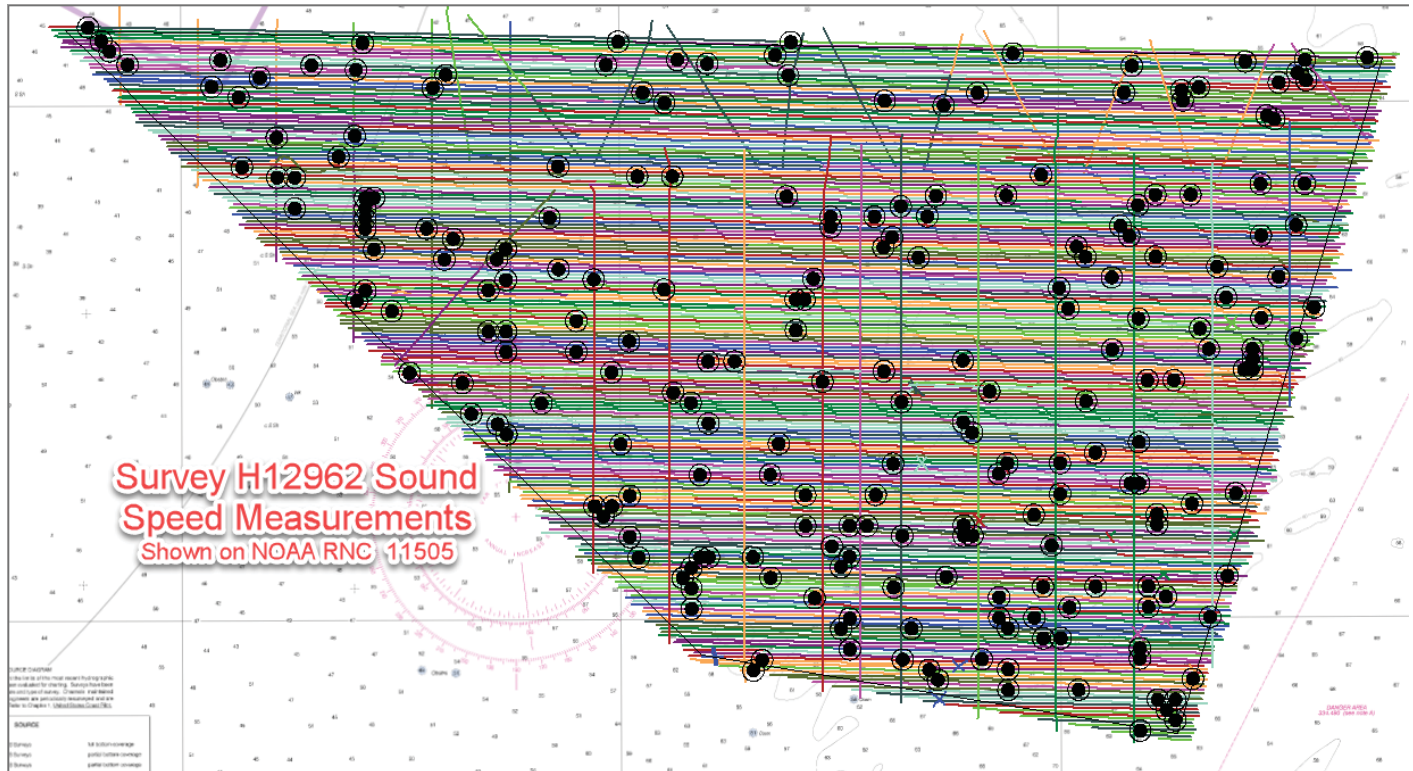
On day 238, S222 experienced rough seas leading to several MBES blowouts. The lines run on this day were crosslines. These blowouts left several gaps in the final bathymetric grid (Figure 11). However, these gaps were covered by 200% SSS coverage as well as partially covered with MBES coverage during mainscheme data collection, and no significant features were found in these areas.



*Figure 11: Sea State affected soundings with 100% SSS to prove coverage*

### B.2.7 Sound Speed Methods

Sound speed casts were conducted approximately every 20-40 minutes using a Moving Vessel Profiler (MVP) equipped with a micro-CTD sensor (Figure 12). Cast were acquired more frequently in areas of more dynamic fluctuations in surface sound speed. *Sound speed casts were conducted every 30-120 minutes.*



*Figure 12: Distribution of MVP casts throughout H12962*

### **B.2.8 Coverage Equipment and Methods**

Refer to the DAPR and sections A.4 and B.1.2. of this report for survey equipment and methods used to meet coverage requirements for this project.

## **B.3 Echo Sounding Corrections**

### **B.3.1 Corrections to Echo Soundings**

All data reduction procedures conform to those detailed in the DAPR, with the following exception: Due to data being acquired during SSS acquisition that could not be processed by Caris in its original format, 7 SSS lines were processed differently than the documented processing method in the DAPR. This method is outlined in Appendix II of the DR: SDFtoXTF SSS processing procedure.pdf. Lines processed with this method on day 242 and 243 are denoted with a line number suffix `_BF0_V14_1` in the Caris HIPS file.

### **B.3.2 Calibrations**

All sounding systems were calibrated as detailed in the DAPR.



## B.4 Backscatter

Raw Backscatter was logged as part of the .all file from the Kongsberg EM2040 system. All backscatter data were processed using Fledermaus FMGT software. From day 292 through day 307, data were collected from the Kongsberg EM710 system as well to create a multispectral backscatter mosaic. Backscatter geotiffs have been submitted to the Processing Branch.

## B.5 Data Processing

### B.5.1 Primary Data Processing Software

The following software program was the primary program used for bathymetric data processing (Table 10):

Manufacturer	Name	Version
Caris	HIPS/SIPS	10.3.1

*Table 10: Primary bathymetric data processing software*

The following software programs were the primary programs used for imagery data processing (Table 11 and 12):

Manufacturer	Name	Version
Caris	HIPS/SIPS	10.3.1

*Table 11: Primary imagery data processing software*

Manufacturer	Name	Version
QPS	Fledermaus Geocoder Tool (FMGT)	7.7.6

*Table 12: Primary imagery data processing software*

The following Feature Object Catalog was used: NOAA Profile V\_5\_6.

### B.5.2 Surfaces

The following surfaces and/or BAGs were submitted to the Processing Branch (Table 13):

Surface Name	Surface Type	Resolution	Depth Range	Surface Parameter	Purpose
H12962_SSS_100	SSS Mosaic	1 meter	N/A	N/A	100% SSS
H12962_SSS_200	SSS Mosaic	1 meter	N/A	N/A	200% SSS
H12962_MB_50cm_MLLW_Final	CARIS Raster Surface (CUBE)	0.5 meters	11.6 meters - 23.5 meters	NOAA_0.5m	Object Detection
H12962_MB_50cm_MLLW	CARIS Raster Surface (CUBE)	0.5 meters	11.6 meters - 23.5 meters	NOAA_0.5m	Object Detection

*Table 13: Submitted Surfaces*

The submitted multibeam 50cm surface for survey H12962 meets density requirements for ODMBES as described in section 5.2.2.2 of the HSSD 2017 (Figure 13). For further discussion, see section A.4 of this report.

Pydro QC Tools Flier Finder was used to scan the finalized multibeam surface for potential false surface nodes. When fliers greater than 50cm are identified, a total of 2 nodes are flagged (Figure 14). Both features are seen in both MBES and SSS data and were developed as such. Least depths found in MBES data and shadow heights in SSS data for these features measured below 1m and are deemed navigationally insignificant by the Hydrographer (Figures 15-18). See the final feature file submitted with this report for further details.

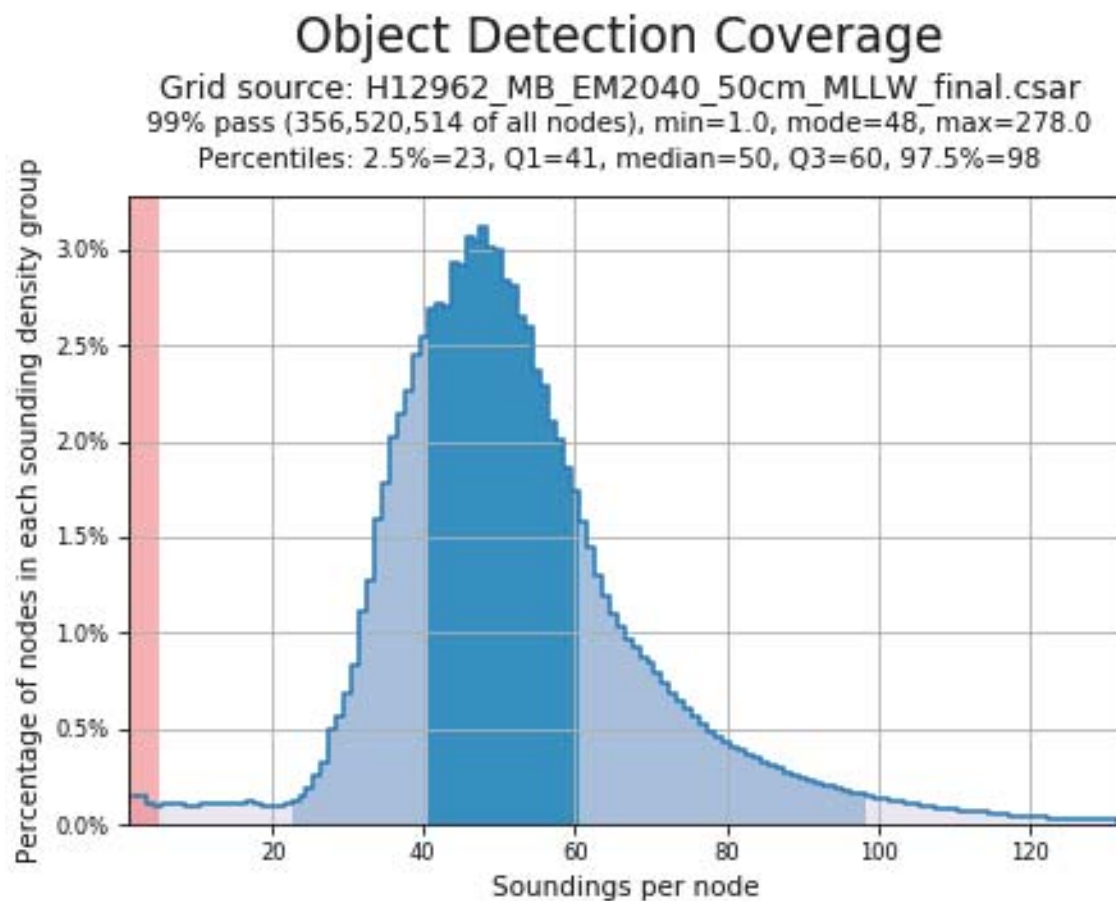
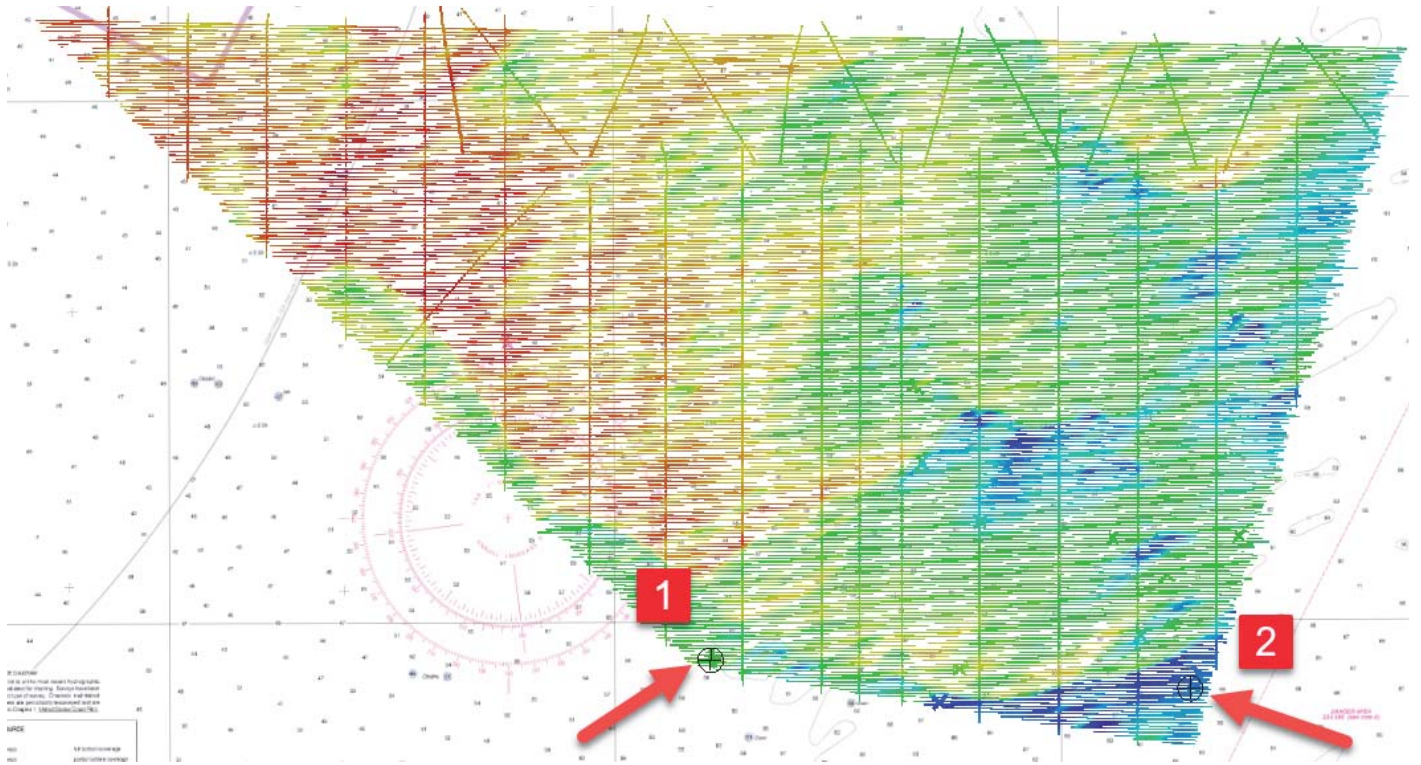


Figure 13: Survey H12962 Object Detection Density Statistics



*Figure 14: Location of nodes flagged as fliers greater than 50cm*

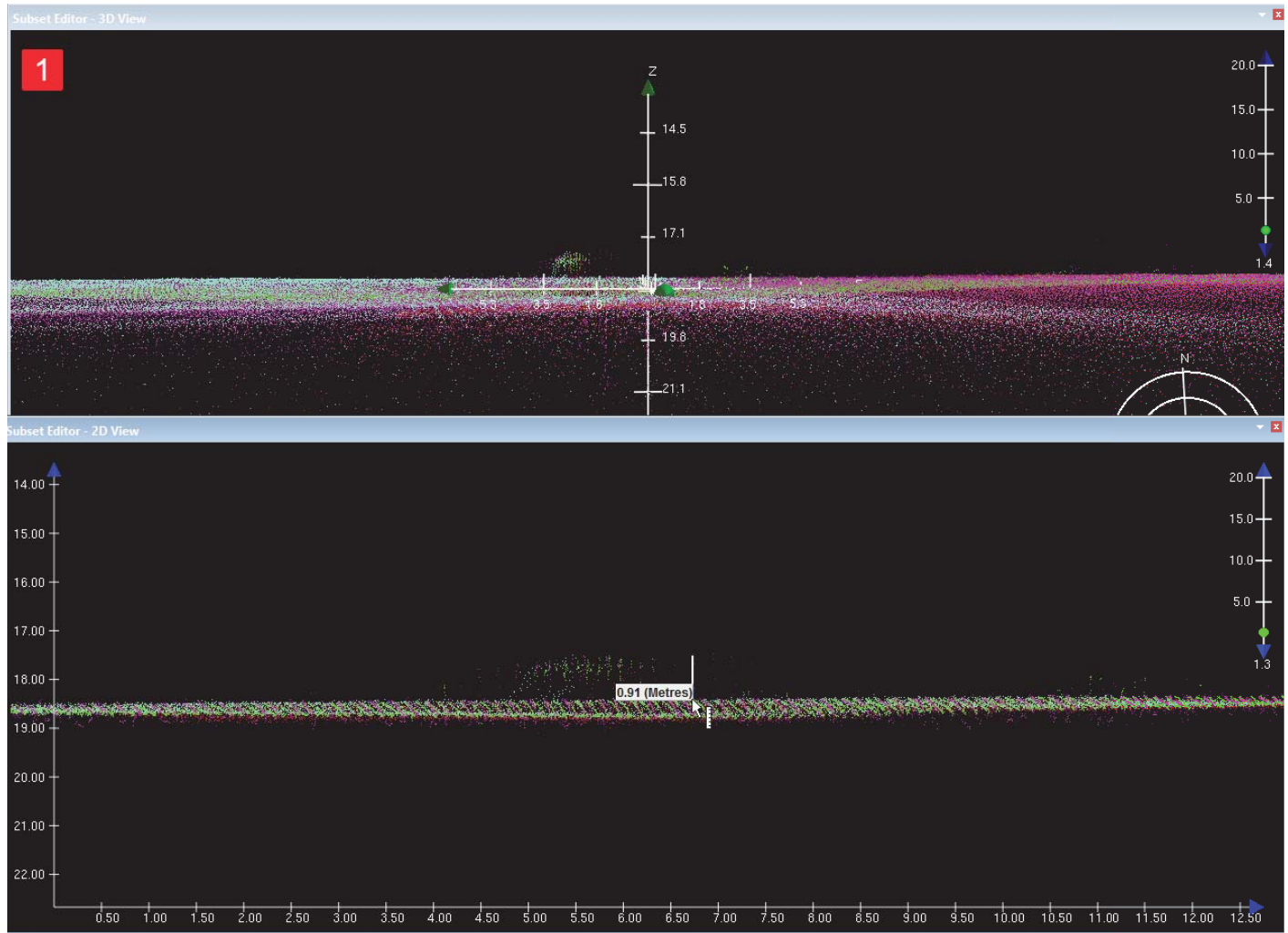
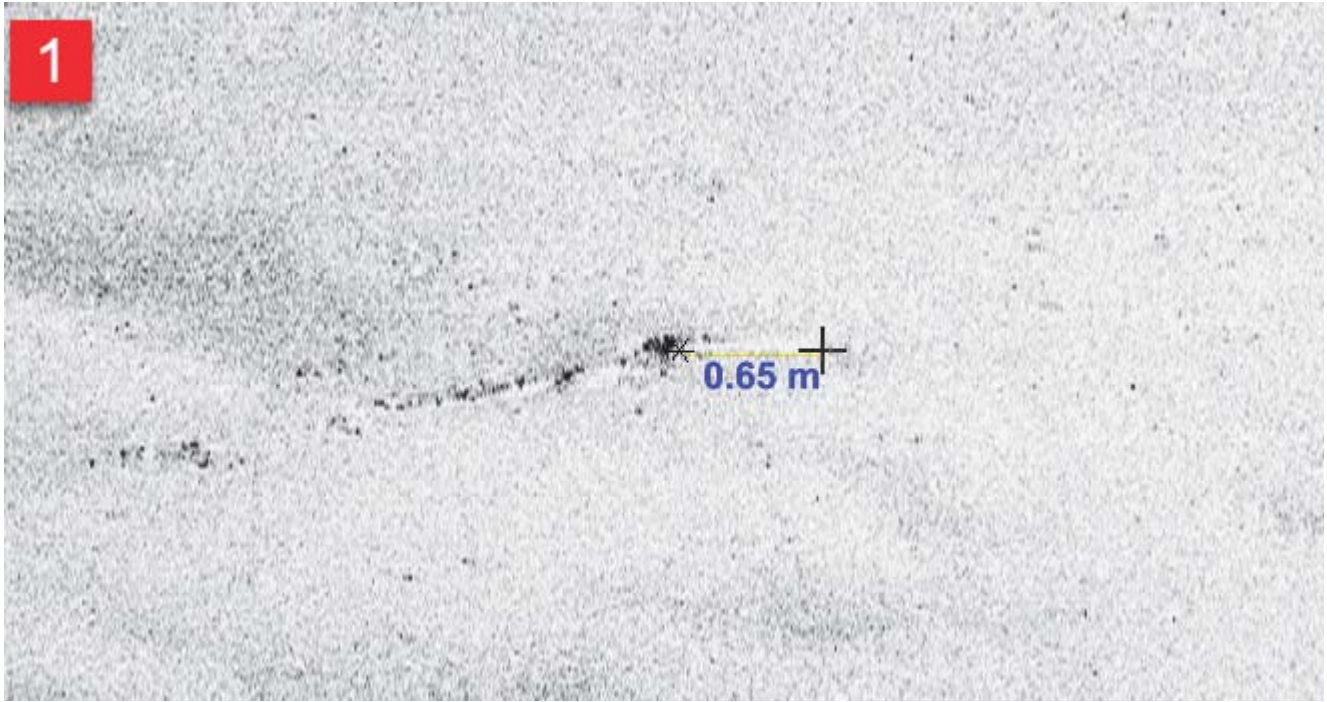


Figure 15: 2D and 3D view of feature in the southwest corner of H12962



*Figure 16: SSS shadow height measured of feature in the southwest corner of H12962*



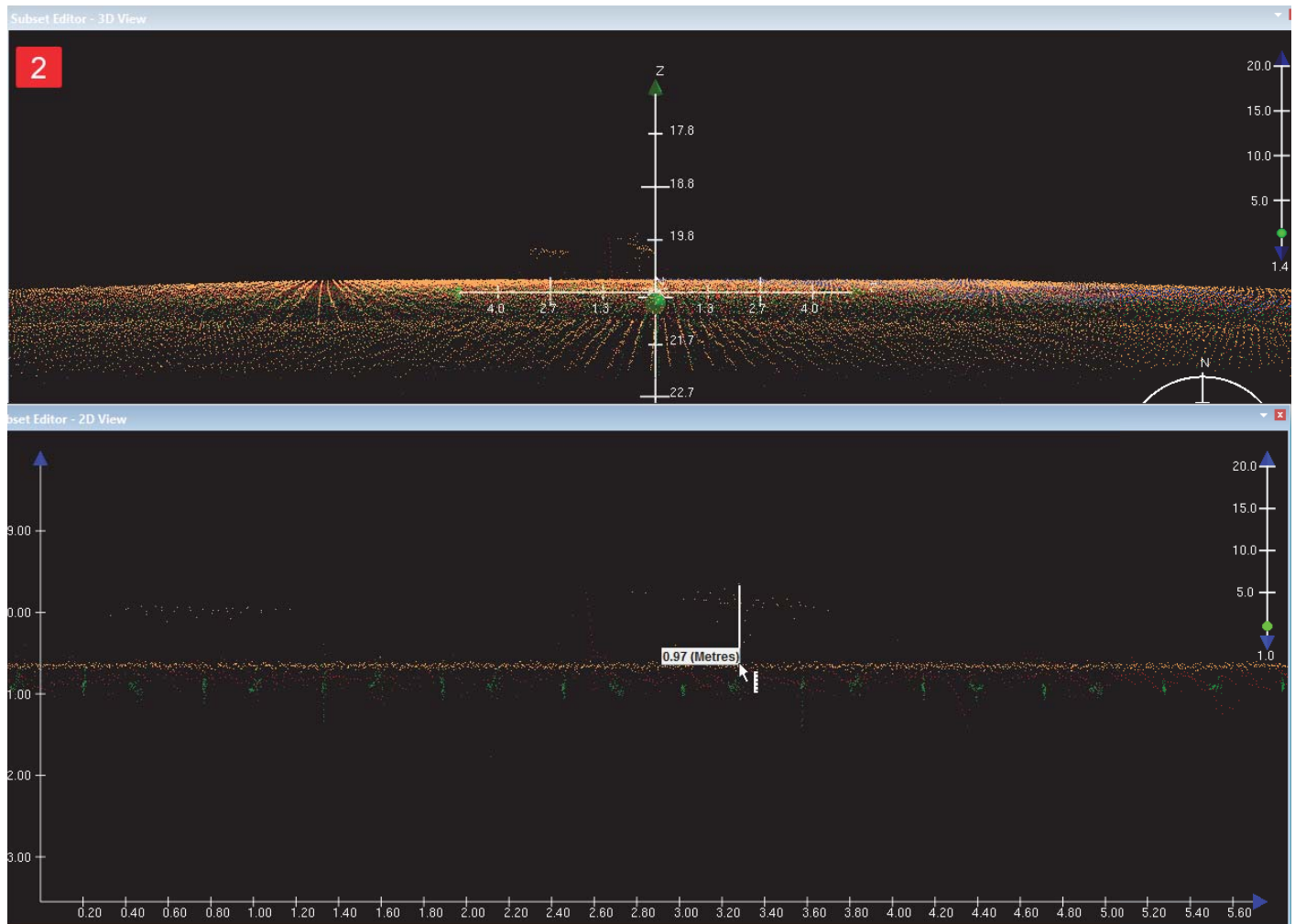


Figure 17: 2D and 3D view of feature in the southeast corner of H12962





*Figure 18: SSS shadow height measured of feature in the southeast corner of H12962*

## C. Vertical and Horizontal Control

Additional information discussing the vertical or horizontal control for this survey can be found in the accompanying HVCR.

### C.1 Vertical Control

The vertical datum for this project is Mean Lower Low Water.

#### ERS Methods Used:

ERS via VDATUM

#### Ellipsoid to Chart Datum Separation File:

VDATUM\_AREA\_xyWGS84-MLLW\_geoid12b.csar

Sounding elevations relative to the ellipsoid were collected through real time precise point positioning (RT3P) via Fugro Marinestar services and a post-processed precise point positioning (5P) solution was applied to soundings in post-processing, as detailed in the DAPR.

## C.2 Horizontal Control

The horizontal datum for this project is World Geodetic System 1984 (WGS84).

The projection used for this project is Universal Transverse Mercator (UTM) 17N.

NOAA Ship *Thomas Jefferson* positioning correctors were created using 5P methods in POSPac MMS 8.1 and applied to data in Caris 10.3.

## C.3 Additional Horizontal or Vertical Control Issues

### C.3.1 Failure of SBETs

Due to an IMU failure that did not allow for the creation of a smooth best estimated trajectory (SBET), a 5P solution was not used on line 0223 on day 307. RT3P solution was used for this line. The data with RT3P solution was examined and no significant differences were found when compared to the data with 5P solution.

## D. Results and Recommendations

### D.1 Chart Comparison

A chart comparison was conducted between survey H12962 soundings and previously charted ENC soundings using both Chart Review and DtoN Scanner tools embedded within Pydro QC Tools v.2.2.4.

#### D.1.1 Electronic Navigational Charts

The following are the largest scale ENCs, which cover the survey area (Table 14):

ENC	Scale	Edition	Update Application Date	Issue Date	Preliminary?
US5GA20M	1:40000	2	10/24/2017	10/24/2017	NO

*Table 14: Largest Scale ENCs*

US5GA20M

A shoal sounding comparison reveals that soundings from Survey H12962 generally agree with charted depths. By visual inspection of flagged soundings, the Hydrographer noted eight significant areas (Figures 19-26). Of note, the shoal identified in Figure 21 was reported as a Danger to Navigation (Dton) and is further discussed in D.1.5 of this report.

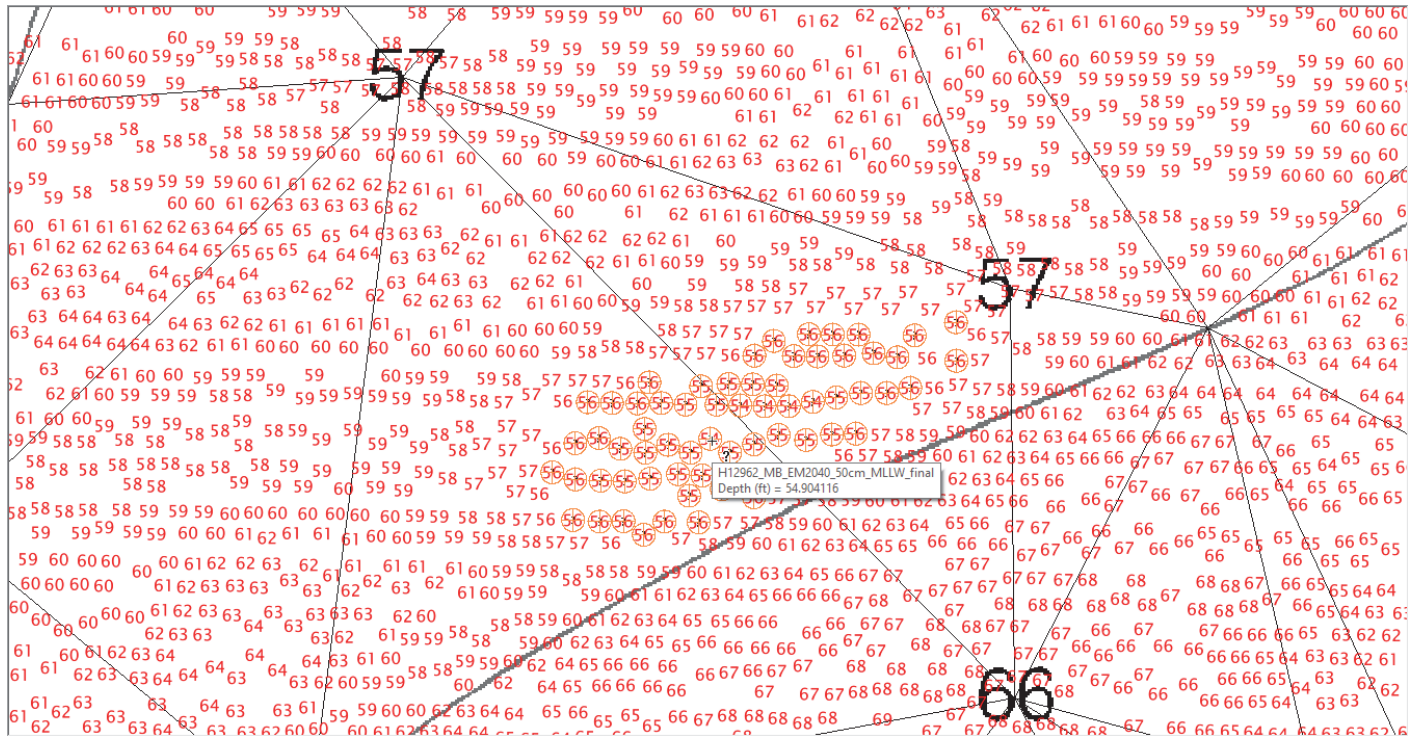


Figure 19: Shoaling in the vicinity of 31.893599N 080.474313W



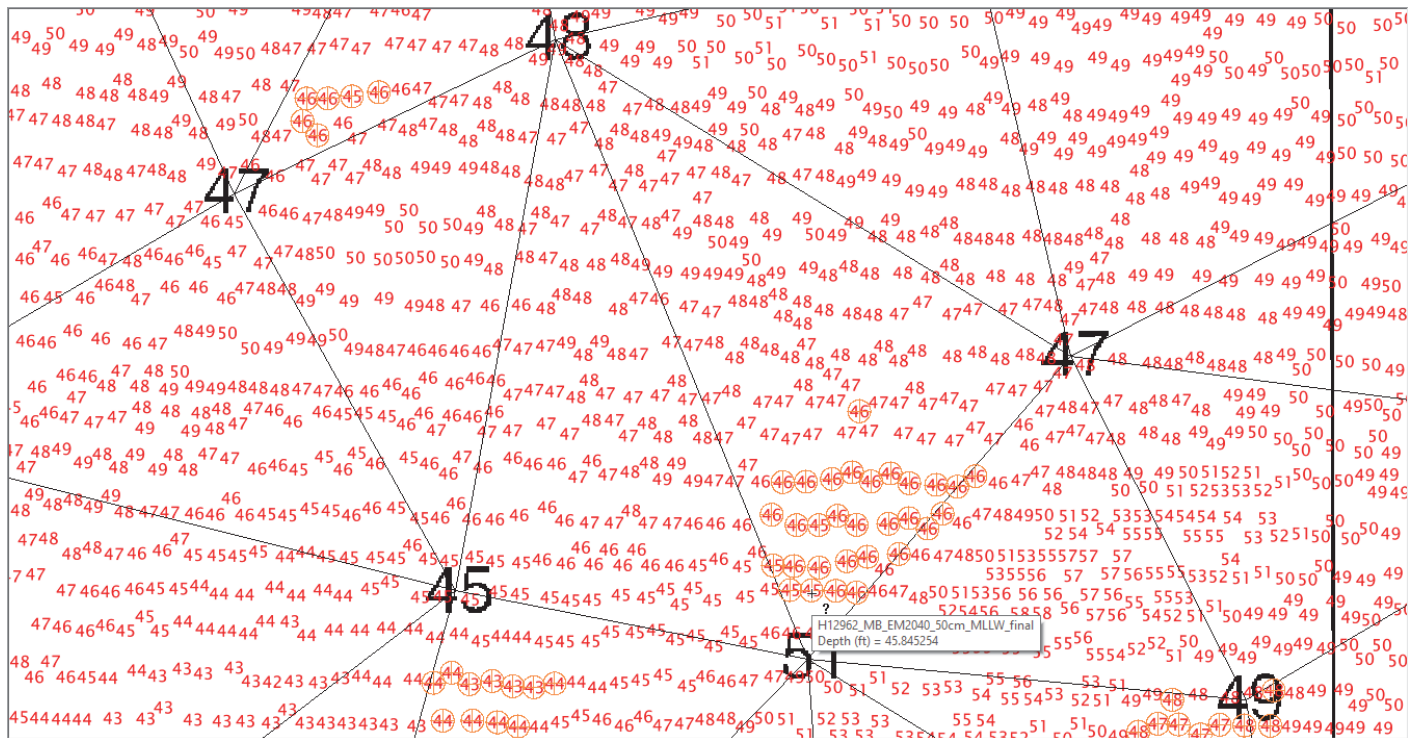


Figure 20: Shoaling in the vicinity of 31.905419N 080.591280W

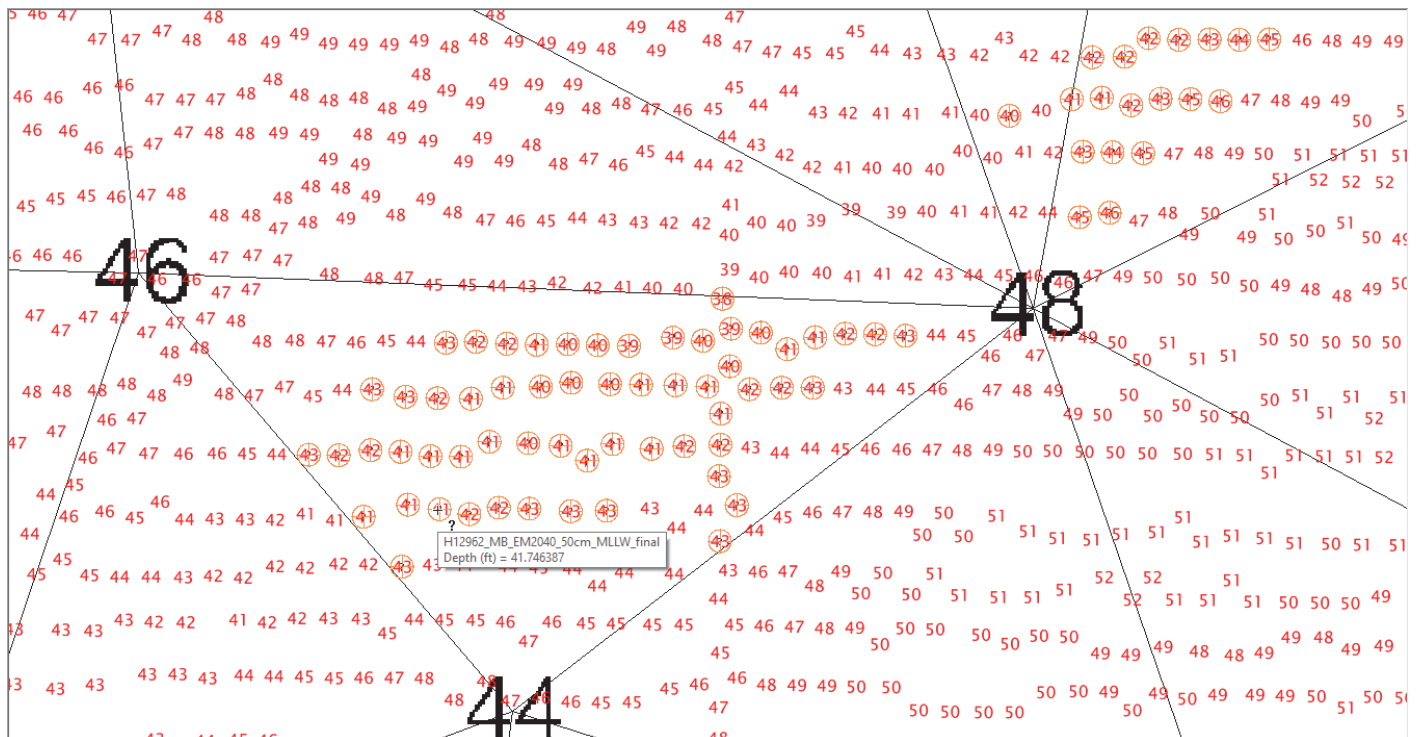


Figure 21: Shoaling in the vicinity of 31.888901N 080.607436W

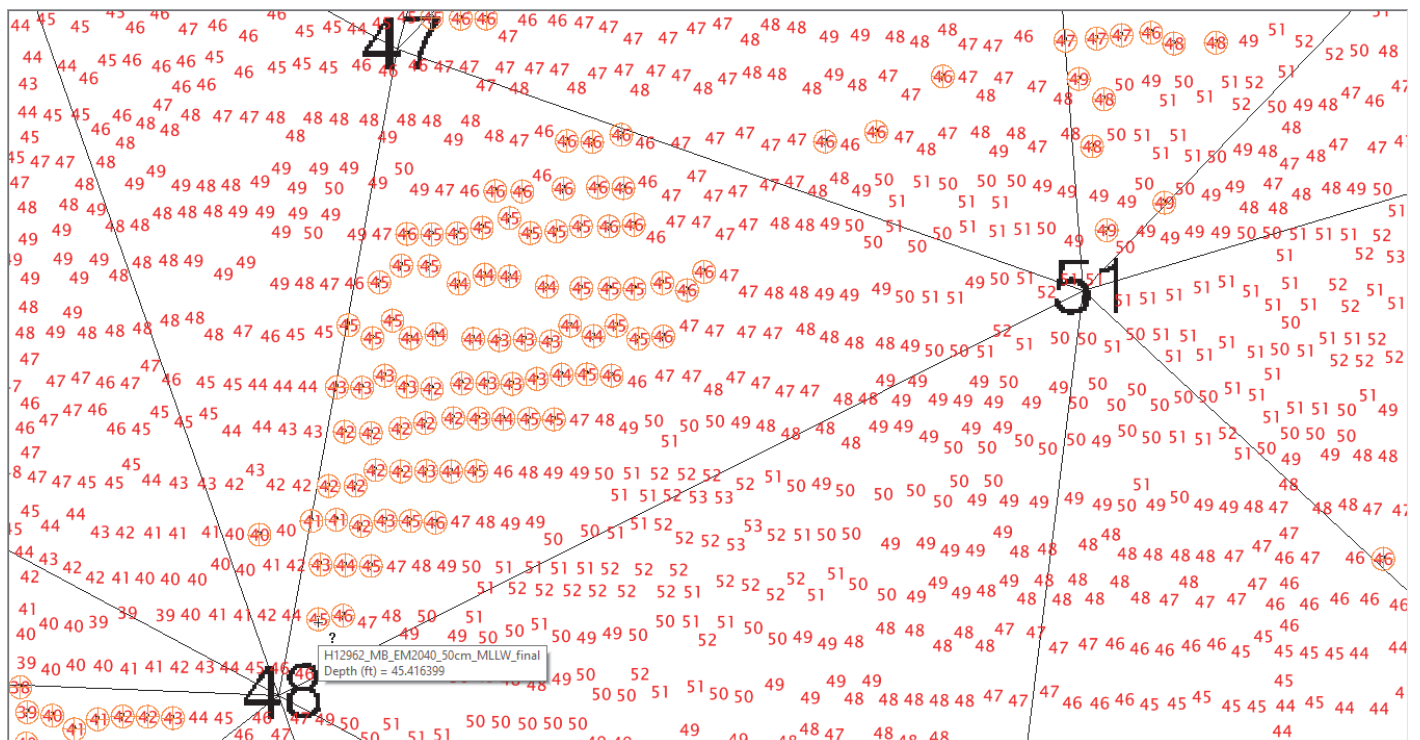


Figure 22: Shoaling in the vicinity of 31.891473N 080.600309W

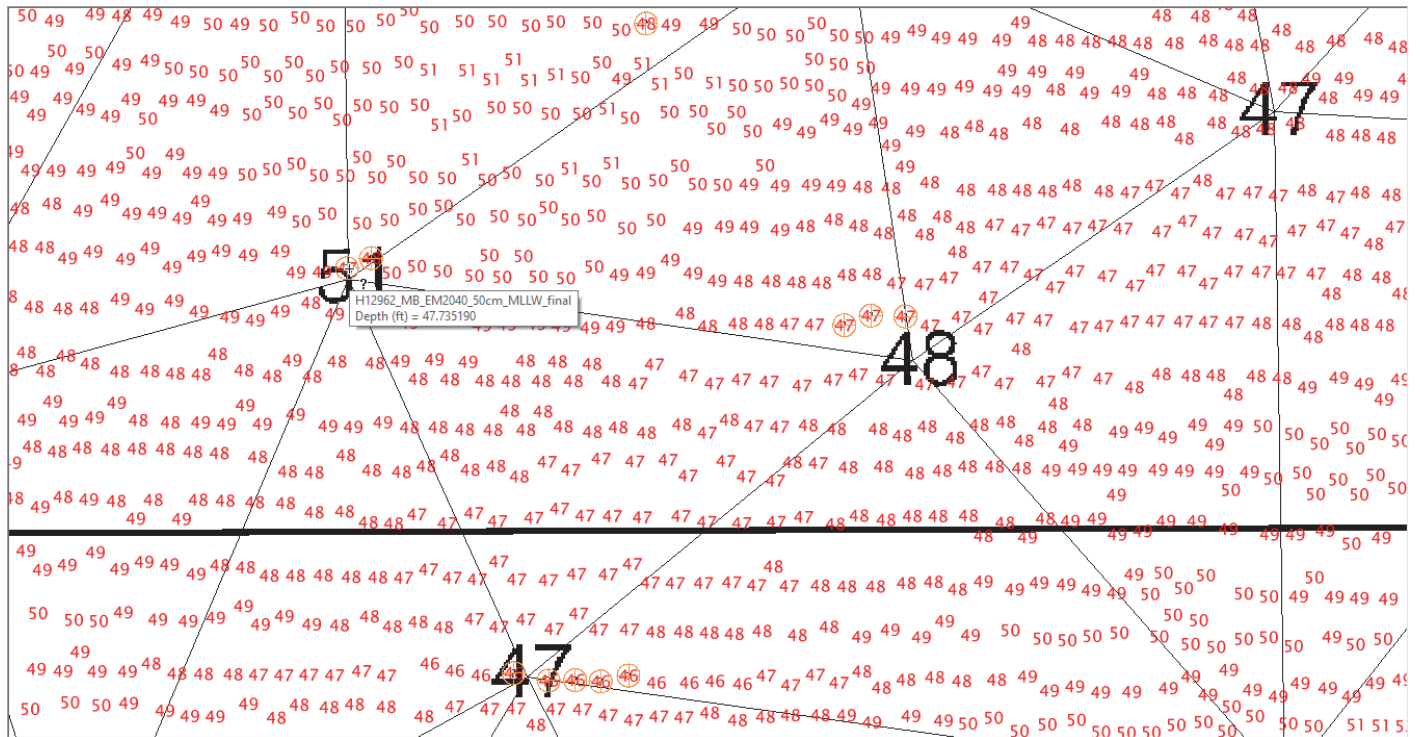


Figure 23: Shoaling in the vicinity of 31.919528N 080.574568W



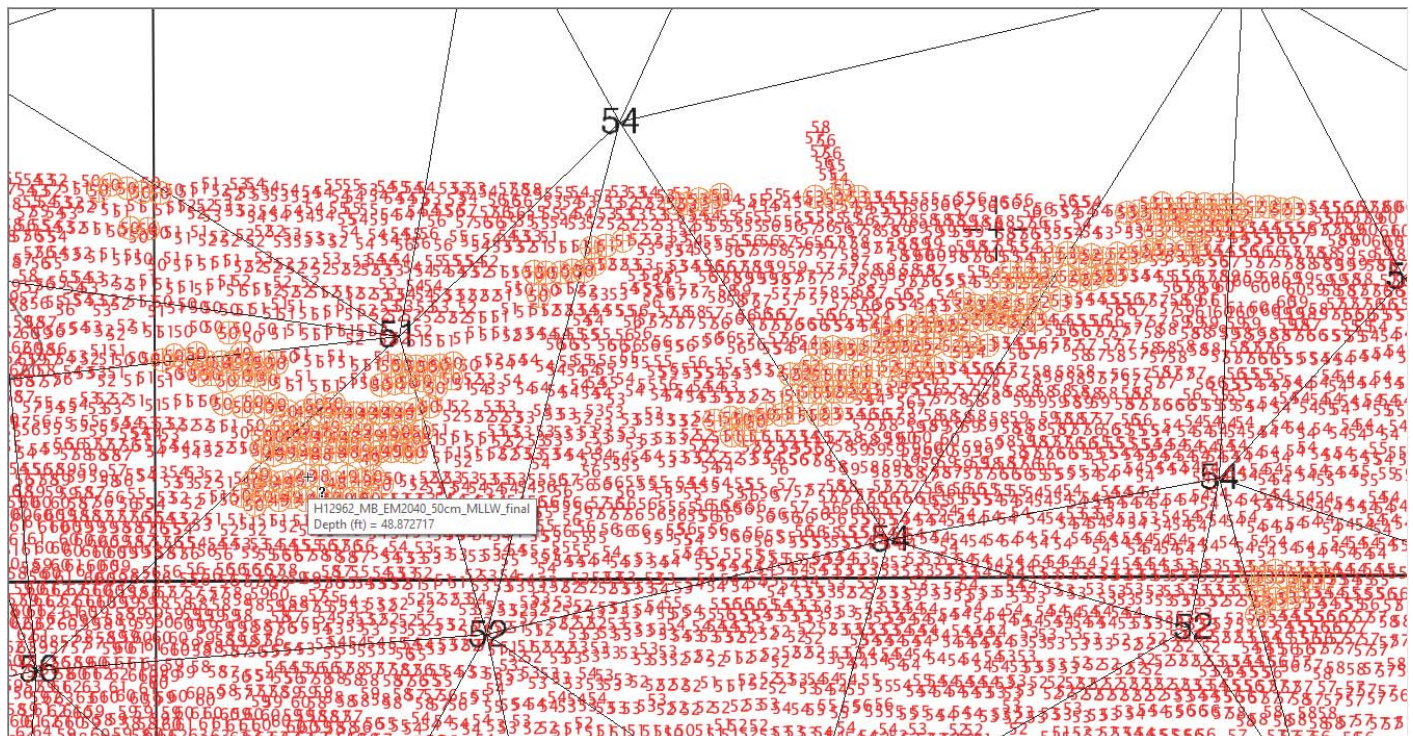


Figure 24: Shoaling in the vicinity of 31.919023N 080.495646W

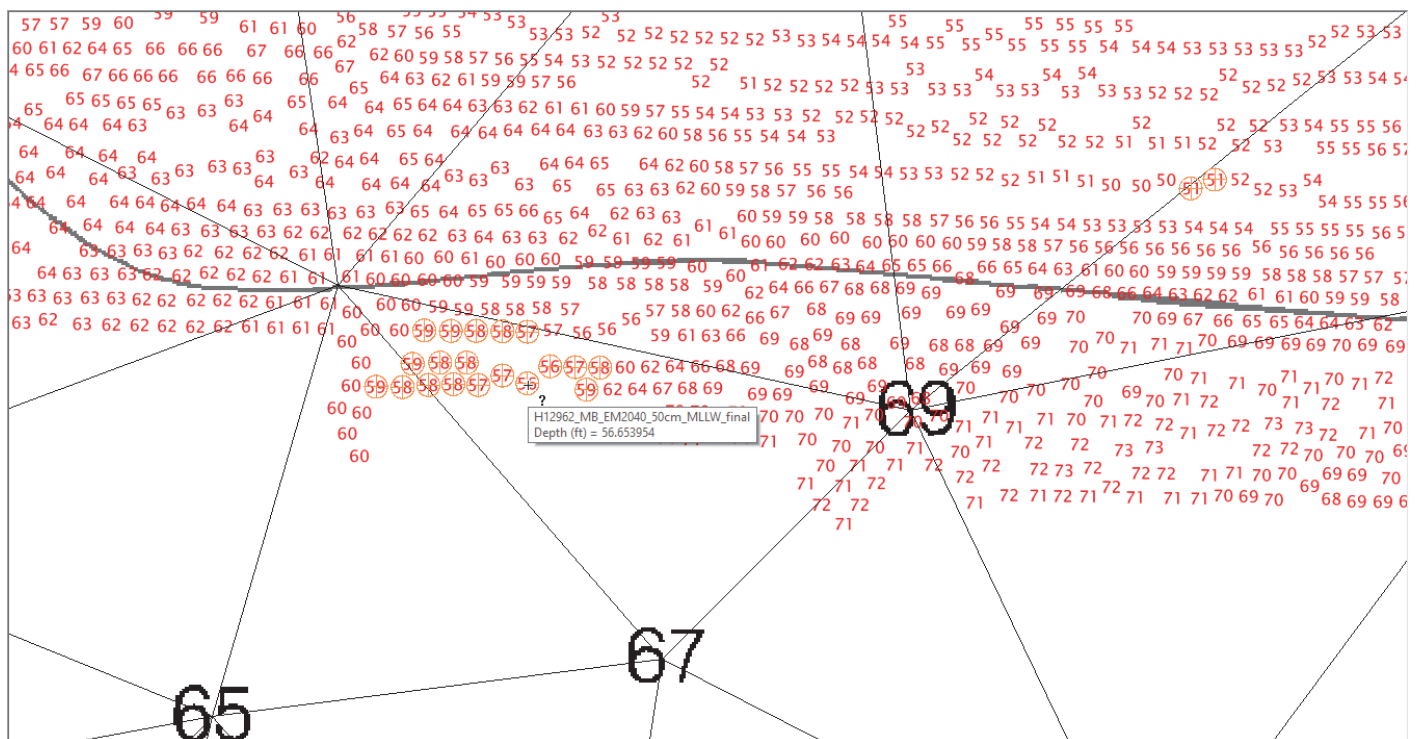


Figure 25: Shoaling in the vicinity of 31.820439N 080.527919W

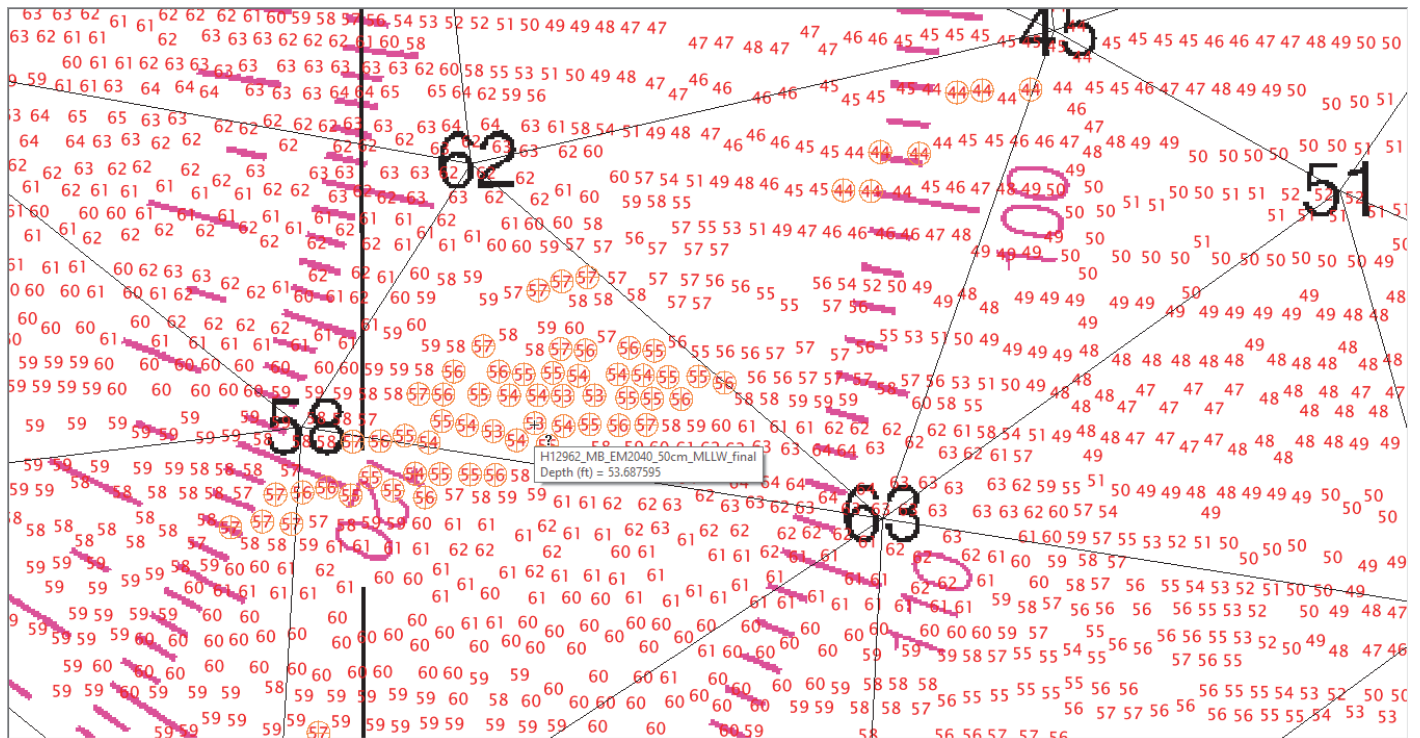


Figure 26: Shoaling in the vicinity of 31.843495N 080.591132W

### D.1.2 Maritime Boundary Points

No Maritime Boundary Points were assigned for this survey.

### D.1.3 Charted Features

There were two charted obstructions assigned for investigation within the sheet limits of H12962 (Figures 27-29). Both charted obstructions were covered with 200% SSS coverage with concurrent ODMBS. For a full discussion, refer to the final feature file submitted with this report.



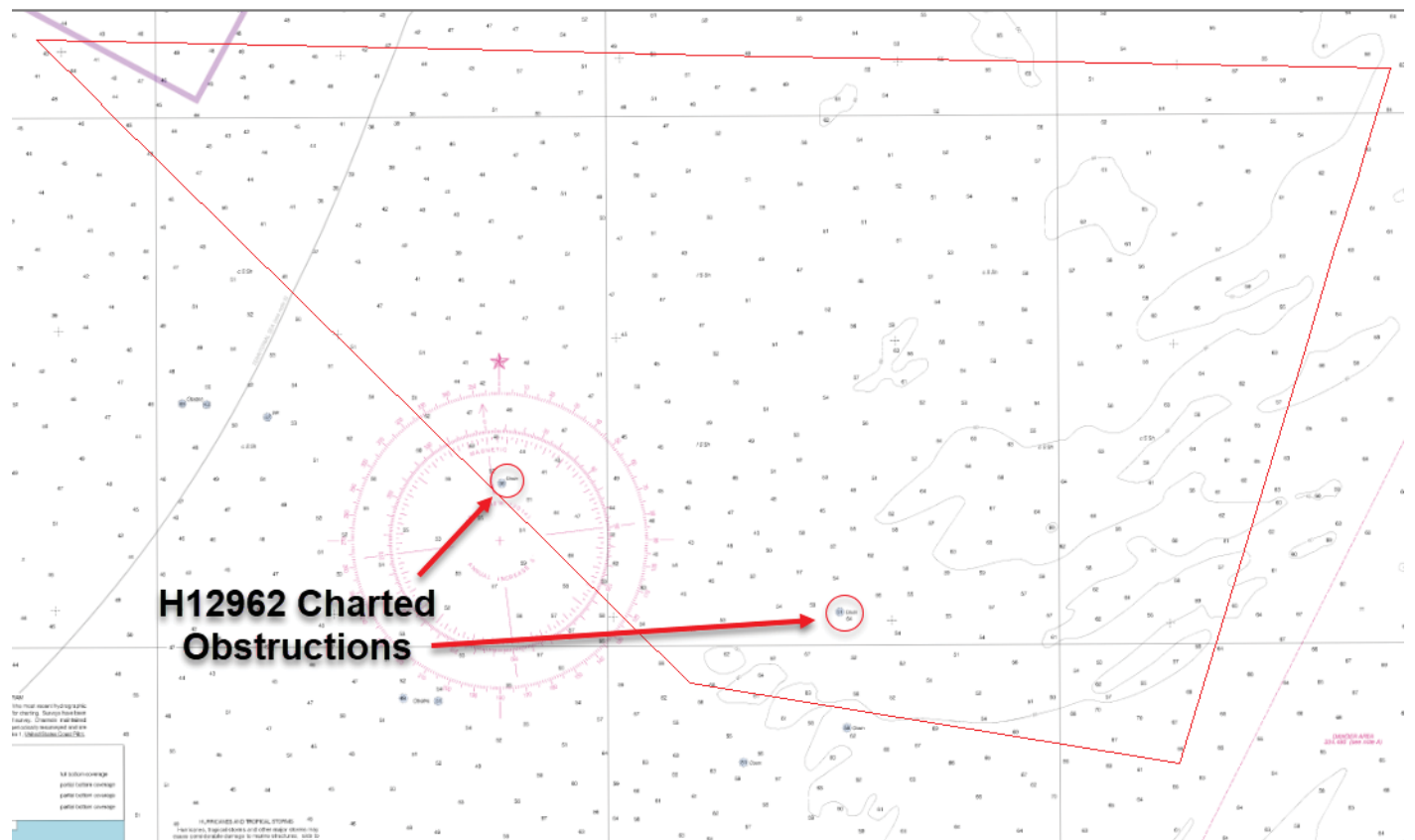
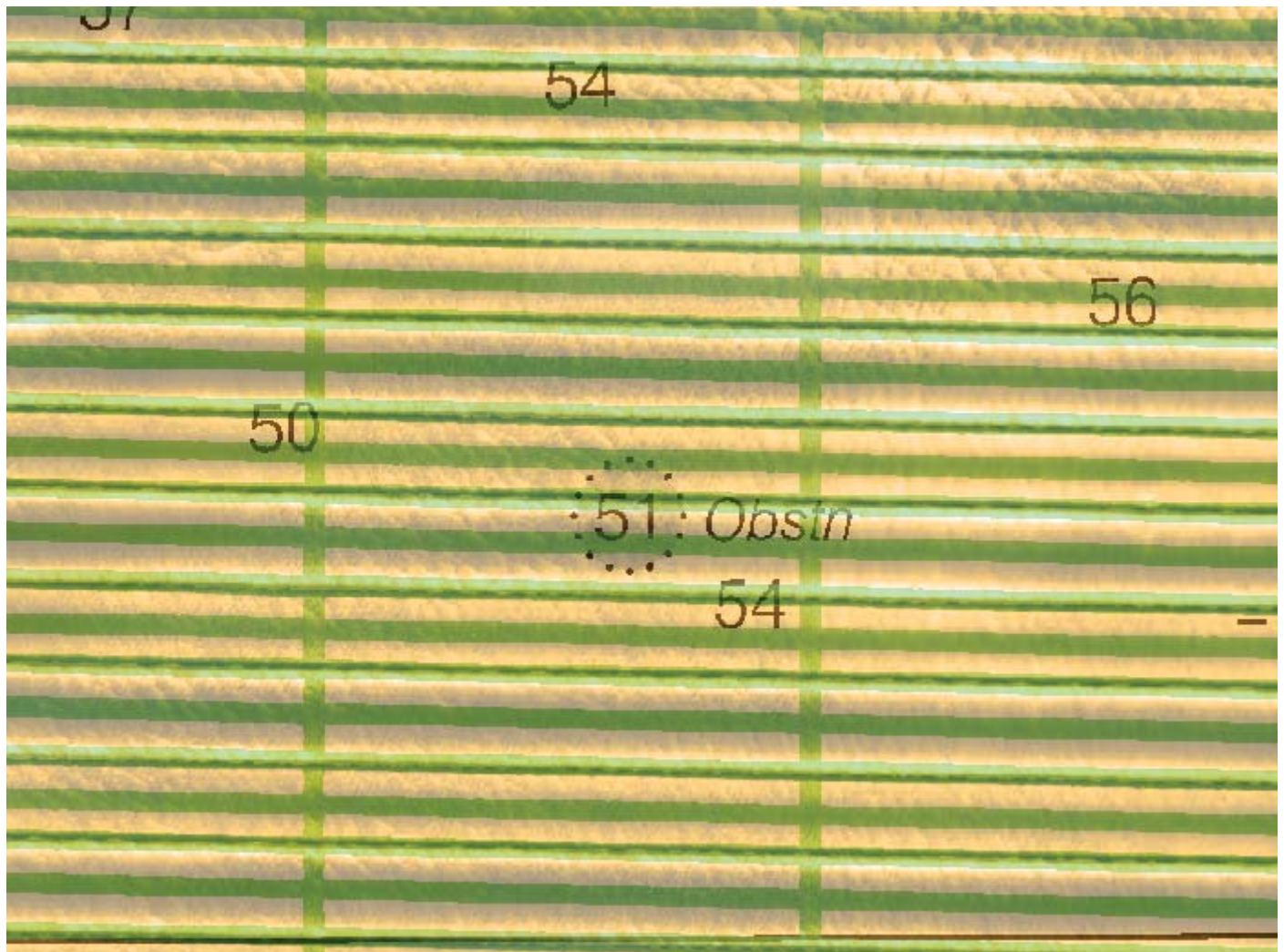


Figure 27: H12962 Charted Obstructions





*Figure 29: Charted Obstruction 2 of 2*

#### **D.1.4 Uncharted Features**

No uncharted features exist for this survey.

#### **D.1.5 Shoal and Hazardous Features**

A surveyed sounding of 38 feet in the vicinity of a charted 48 foot sounding was located. The sounding in question is located at 31.890749N 080.604098W (Figure 30). For further information, refer to Appendix II of the descriptive report submitted with this survey.

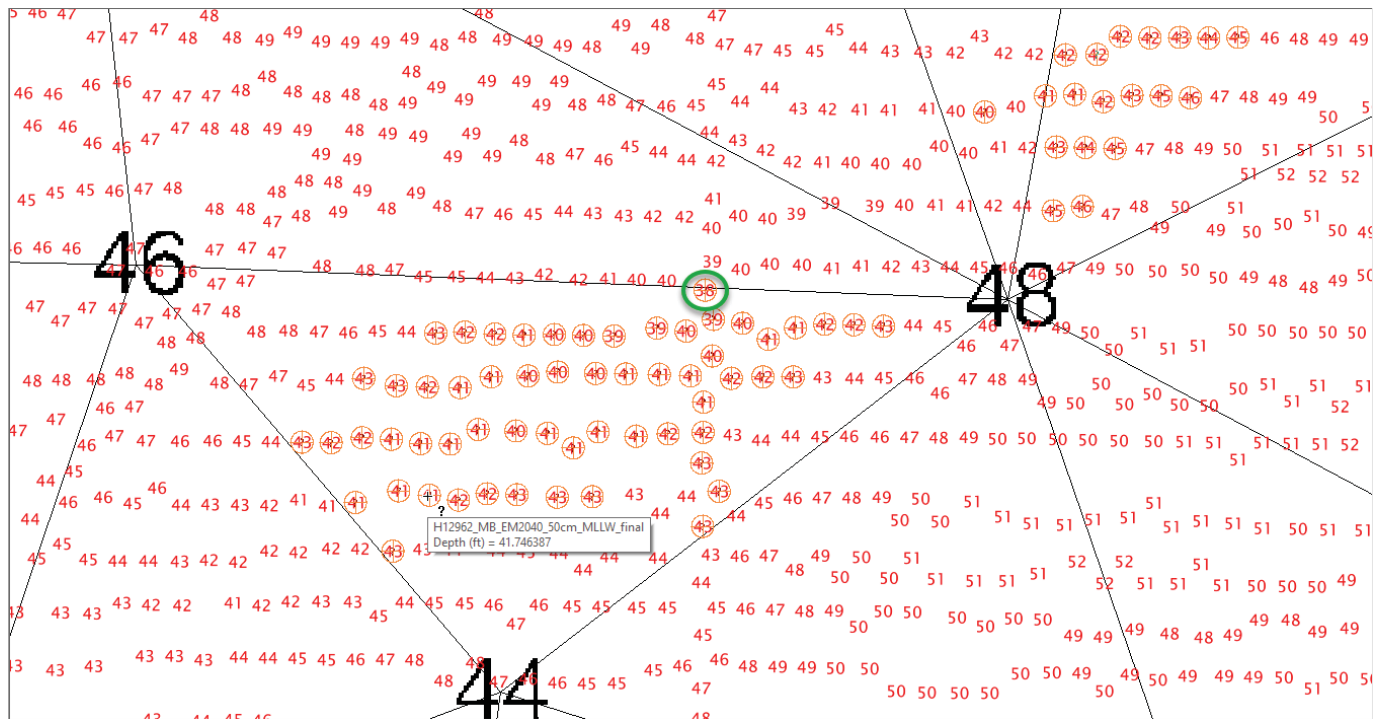


Figure 30: Potentially hazardous surveyed depth indicated by the green circle

### D.1.6 Channels

A portion of a pilot boarding area exists within the survey limits of H12962 in the vicinity of 31.918840 N 80.658845 W.

### D.1.7 Bottom Samples

No bottom samples were required for this survey.

## D.2 Additional Results

### D.2.1 Shoreline

Shoreline was not assigned for this survey.

### D.2.2 Prior Surveys

No prior survey comparisons exist for this survey.



**D.2.3 Aids to Navigation**

No Aids to navigation (ATONs) exist for this survey.

**D.2.4 Overhead Features**

No overhead features exist for this survey.

**D.2.5 Submarine Features**

No submarine features exist for this survey.

**D.2.6 Platforms**

No platforms exist for this survey.

**D.2.7 Ferry Routes and Terminals**

No ferry routes or terminals exist for this survey.

**D.2.8 Abnormal Seafloor and/or Environmental Conditions**

No abnormal seafloor and/or environmental conditions exist for this survey.

**D.2.9 Construction and Dredging**

No present or planned construction or dredging exist within the survey limits.

**D.2.10 New Survey Recommendation**

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

**D.2.11 Inset Recommendation**

No new insets are recommended for this area.

## E. Approval Sheet

As Chief of Party, field operations for this hydrographic survey were conducted under my direct supervision, with frequent personal checks of progress and adequacy. I have reviewed the attached survey data and reports.

All field sheets, this Descriptive Report, and all accompanying records and data are approved. All records are forwarded for final review and processing to the Processing Branch.

The survey data meets or exceeds requirements as set forth in the NOS Hydrographic Surveys and Specifications Deliverables, Field Procedures Manual, Letter Instructions, and all HSD Technical Directives. These data are adequate to supersede charted data in their common areas. This survey is complete and no additional work is required with the exception of deficiencies noted in the Descriptive Report.

Approver Name	Approver Title	Approval Date	Signature
CDR Christiaan van Westendorp, NOAA	Chief of Party	01/26/2018	 VAN WESTENDORP.CHRISTIAAN.HENRY.1012828175 c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=NOAA, cn=VAN WESTENDORP.CHRISTIAAN.HENRY.1012828175 2018.01.26 10:56:01 -05'00'
LT Anthony Klemm, NOAA	Field Operations Officer	01/26/2018	KLEMM.ANTHONY .ROSS.1392701601  Digitally signed by KLEMM.ANTHONY.ROSS.1392701601 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=NOAA, cn=KLEMM.ANTHONY.ROSS.1392701601 Date: 2018.01.26 10:59:31 -05'00'
Tracy McMillan	Sheet Manager	01/26/2018	MCMILLAN.TRACY.RENE.15 18148644  Digitally signed by MCMILLAN.TRACY.RENE.1518148644 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=OTHER, cn=MCMILLAN.TRACY.RENE.1518148644 Date: 2018.01.26 11:01:46 -05'00'
Joshua Hiteshew	Sheet Manager	01/26/2018	HITESHEW.JOSHUA.TAY LOR.1537939652  Digitally signed by HITESHEW.JOSHUA.TAYLOR.1537939652 DN: c=US, o=U.S. Government, ou=DoD, ou=PKI, ou=OTHER, cn=HITESHEW.JOSHUA.TAYLOR.1537939652 Date: 2018.01.26 16:03:22



## F. Table of Acronyms

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

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

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



Joshua Hiteshew - NOAA Federal &lt;joshua.hiteshew@noaa.gov&gt;

**Fwd: Final Tide Notes for OPR-G329-TJ-2017, Registry Nos. H12962 and H12963**

1 message

**Anthony Klemm - NOAA Federal** <anthony.r.klemm@noaa.gov>

Mon, Dec 4, 2017 at 4:00 PM

To: Allison Stone &lt;allison.c.stone@noaa.gov&gt;, Joshua Hiteshew - NOAA Federal &lt;joshua.hiteshew@noaa.gov&gt;, Tracy McMillan - NOAA Federal &lt;tracy.mcmillan@noaa.gov&gt;

LT Anthony Klemm, NOAA  
Field Operations Officer  
NOAA Ship *Thomas Jefferson*  
439 W York Street  
Norfolk, VA 23510  
[757-647-0187](tel:757-647-0187)

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----- Forwarded message -----

From: **Cristina Urizar - NOAA Federal** <cristina.urizar@noaa.gov>

Date: Mon, Dec 4, 2017 at 3:09 PM

Subject: Final Tide Notes for OPR-G329-TJ-2017, Registry Nos. H12962 and H12963

To: \_OMAO MOA CO Thomas Jefferson &lt;co.thomas.jefferson@noaa.gov&gt;, \_OMAO MOA OPS Thomas Jefferson &lt;ops.thomas.jefferson@noaa.gov&gt;, \_OMAO MOA Tides Thomas Jefferson &lt;thomas.jefferson.tides@noaa.gov&gt;

Cc: "\_NOS.CO-OPS.HPT" &lt;nos.coops.hpt@noaa.gov&gt;, Jerry Hovis &lt;gerald.hovis@noaa.gov&gt;, Corey Allen &lt;corey.allen@noaa.gov&gt;, Janice Eisenberg - NOAA Federal &lt;janice.eisenberg@noaa.gov&gt;, Castle E Parker &lt;Castle.E.Parker@noaa.gov&gt;, Starla Robinson - NOAA Federal &lt;Starla.Robinson@noaa.gov&gt;, AHB Chief - NOAA Service Account &lt;ahb.chief@noaa.gov&gt;



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

DATE: 12/04/2017

MEMORANDUM FOR: CDR Christiaan Van Westendorp  
Commanding Officer, NOAA Ship THOMAS JEFFERSONFROM: 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-G329-TJ-2017, Registry Nos. H12962 and H12963 during the time period between August 26 and November 7, 2017. The accepted reference station for Registry Nos. H12962 and H12963 is Fort Pulaski, GA (867-0870).

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

--

Cristina Urizar  
Oceanographer


National Oceanic and Atmospheric Administration  
NOS/CO-OPS/Oceanographic Division  
263 13th Avenue South, Rm. 302  
St Petersburg, Florida 33701  
Office: [727-209-5954](tel:727-209-5954)  
Cell: [301-325-6793](tel:301-325-6793)

<http://tidesandcurrents.noaa.gov>

---

**2 attachments**

 **H12962.pdf**  
485K

 **H12963.pdf**  
594K



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

**PROVISIONAL TIDE NOTE FOR HYDROGRAPHIC SURVEY**

**DATE :** December 4, 2017

**HYDROGRAPHIC BRANCH:** Atlantic

**HYDROGRAPHIC PROJECT:** OPR-G329-TJ-2017

**HYDROGRAPHIC SHEET:** H12962

**LOCALITY:** South Savannah, Approaches to Savannah, GA

**TIME PERIOD:** August 26 - November 4, 2017

**TIDE STATION USED:** 8670870 Fort Pulaski, GA

Lat. 32° 2.2'N Long. 80° 54.1' W

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

**HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE:** 2.173 meters

**REMARKS: RECOMMENDED ZONING** Preliminary zoning is accepted as the final zoning for project OPR-G329-TJ-2017, H12962, during the time period between August 26 and November 4, 2017.

Please use the zoning file G329TJ2017CORP submitted with the project instructions for OPR-G329-TJ-2017. Zones SA169, SA172A, SA172B, SA172C and SA190 are the applicable zones for H12962.

**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).

**Note 2:** Annual leveling for Fort Pulaski, GA (8670870) was not completed in FY17. A review of the verified leveling records from October 2005 - 2015 shows the tide station benchmark network to be stable within an allowable 0.009 m tolerance. This Tide Note may be used as final stability verification for survey OPR-G329-TJ-2017, H12962. CO-OPS will immediately provide a revised Tide Note should subsequent leveling records indicate any benchmark network stability movement beyond the allowable 0.009 m tolerance.

**HOVIS.GERALD.THOMAS.JR.1365860250** Digitally signed by  
HOVIS.GERALD.THOMAS.JR.1365860250  
Date: 2017.12.04 14:55:10 -05'00'

CHIEF, PRODUCTS AND SERVICES BRANCH





# Preliminary as Final Tidal Zoning for OPR-G329-TJ-2017, H12962 South Savannah, Approaches to Savannah, GA

CHARLESTON LIGHT

TO

CAPE CANAVAS  
Reference 8670870

SOUNDINGS IN FATHOMS  
AT MEAN LOWER LOW WATER

8670870 FORT PULASKI, GA

(World Geodetic System 1984)

(For offshore navigation only)

For Symbols and Abbreviations see Chart No. 1

HEIGHT  
Heights in feet above

AUTHORITY  
Hydrography and topography by the  
Survey, with additional data from the  
Imagery and Mapping Agency.

HORIZONTAL

The horizontal reference data  
American Datum of 1983 (NA  
purposes is considered accurate  
System 1984 (WGS 84). Geoids  
the North American Datum of  
version to NAD 83 for plotting.

CAUTION

Temporary changes or data  
navigation are not indicated on  
notice to Mariners.

RADAR REFLECTOR

Radar reflectors have been placed  
floating aids to navigation. Individual radar  
reflector identification on these aids has been  
omitted from this chart.

WARNING

The gradient marker will be  
any single aid to navigation  
floating aid. See U.S. Coast  
and U.S. Coast Pilot for details.

NOTE

Shows Port and Starboard  
(transmit) wave 15 LER wave

GEORGIA

NOTE

NORTHERN RIGHT WHALE CRITICAL HABITAT  
proceedatory area 50 CFR 226.13(c)(2)(2)(C) and  
note A.1. It is illegal to approach any right whale  
within 500 yards (half mile) of any.

0 10  
nautical miles



Anthony Klemm - NOAA Federal <anthony.r.klemm@noaa.gov>

---

## Reopening Savannah OPR-G329-TJ-17

3 messages

---

**Starla Robinson - NOAA Federal** <starla.robinson@noaa.gov>

Tue, Oct 10, 2017 at 9:53 AM

To: \_OMAO MOA OPS Thomas Jefferson <OPS.Thomas.Jefferson@noaa.gov>

Cc: Corey Allen - NOAA Federal <corey.allen@noaa.gov>, Briana Welton - NOAA Federal <briana.welton@noaa.gov>, \_OMAO MOA CO Thomas Jefferson <co.thomas.jefferson@noaa.gov>, Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>

*NOAA Ship Thomas Jefferson,*

Please proceed with reopening Project OPR-G329-TJ-17 for acquisition, including completing the rest of survey H12962. We will likely ask that you close out the 2017 field season with this project. Additional sheets will be opened to the eastern side of the project if needed.

Thank you,  
Starla Robinson

--

*Starla D. Robinson, Physical Scientist*

*NOS - OCS - Hydrographic Survey Division - Operations Branch*

*National Oceanic Atmospheric Administration*

*Office: **240-533-0034** (Updated 6/13/17)*

*Cell: 360-689-1431*

*Website: [HSD Planned Hydrographic Surveys](#)*

---

**Anthony Klemm - NOAA Federal** <anthony.r.klemm@noaa.gov>

Tue, Oct 10, 2017 at 9:57 AM

To: Starla Robinson - NOAA Federal <starla.robinson@noaa.gov>

Cc: \_OMAO MOA OPS Thomas Jefferson <OPS.Thomas.Jefferson@noaa.gov>, Corey Allen - NOAA Federal <corey.allen@noaa.gov>, Briana Welton - NOAA Federal <briana.welton@noaa.gov>, \_OMAO MOA CO Thomas Jefferson <co.thomas.jefferson@noaa.gov>, Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>

Hi Starla,

Understood. We will keep you up to date on our progress.

Best regards,  
Anthony

LT Anthony Klemm, NOAA  
Field Operations Officer  
NOAA Ship *Thomas Jefferson*  
439 W York Street  
Norfolk, VA 23510  
[757-647-0187](tel:757-647-0187)

Learn about NOAA nautical charts - [www.nauticalcharts.noaa.gov](http://www.nauticalcharts.noaa.gov)

[Quoted text hidden]

---

**Starla Robinson - NOAA Federal** <starla.robinson@noaa.gov>

Tue, Oct 10, 2017 at 10:49 AM

To: Anthony Klemm - NOAA Federal <anthony.r.klemm@noaa.gov>

Cc: \_OMAO MOA OPS Thomas Jefferson <OPS.Thomas.Jefferson@noaa.gov>, Corey Allen - NOAA Federal <corey.allen@noaa.gov>, Briana Welton - NOAA Federal <briana.welton@noaa.gov>, \_OMAO MOA CO Thomas Jefferson <co.thomas.jefferson@noaa.gov>, Kathryn Pridgen - NOAA Federal <kathryn.pridgen@noaa.gov>

Thanks Anthony,

FYI: I have reviewed the environmental compliance for this area, and it is good for the duration of the survey.

Fair Seas,  
Starla

[Quoted text hidden]





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## DTON Report for H12962; OPR-G329-TJ-17 Approaches to Savannah, GA

---

**OCS NDB - NOAA Service Account** <ocs.ndb@noaa.gov>

Fri, Jan 26, 2018 at 3:10 PM

To: Anthony Klemm - NOAA Federal <anthony.r.klemm@noaa.gov>

Cc: Starla Robinson - NOAA Federal <starla.robinson@noaa.gov>, Corey personal cell Allen <corey.allen@noaa.gov>, Briana Welton - NOAA Federal <Briana.Hillstrom@noaa.gov>, Kyle Ward - NOAA Federal <kyle.ward@noaa.gov>, \_OMAO MOA OPS Thomas Jefferson <ops.thomas.jefferson@noaa.gov>, \_OMAO MOA ChiefST Thomas Jefferson <chiefst.thomas.jefferson@noaa.gov>, \_OMAO MOA CO Thomas Jefferson <co.thomas.jefferson@noaa.gov>, Tracy McMillan - NOAA Federal <tracy.mcmillan@noaa.gov>, Joshua Hiteshew - NOAA Federal <joshua.hiteshew@noaa.gov>, \_NOS OCS PBA Branch <ocs.pba@noaa.gov>, \_NOS OCS PBB Branch <ocs.pbb@noaa.gov>, \_NOS OCS PBC Branch <ocs.pbc@noaa.gov>, \_NOS OCS PBD Branch <ocs.pbd@noaa.gov>, \_NOS OCS PBE Branch <ocs.pbe@noaa.gov>, \_NOS OCS PBG Branch <ocs.pbg@noaa.gov>, Castle E Parker <Castle.E.Parker@noaa.gov>, Charles Porter - NOAA Federal <charles.porter@noaa.gov>, James M Crocker <James.M.Crocker@noaa.gov>, Ken Forster <Ken.Forster@noaa.gov>, Kevin Jett - NOAA Federal <kevin.jett@noaa.gov>, Matt Kroll <Matt.Kroll@noaa.gov>, Michael Gaeta <Michael.Gaeta@noaa.gov>, Nautical Data Branch <OCS.NDB@noaa.gov>, NSD Coast Pilot <coast.pilot@noaa.gov>, PHB Chief <PHB.Chief@noaa.gov>, Tara Wallace <Tara.Wallace@noaa.gov>, Chris Libeau <Chris.Libeau@noaa.gov>

DD-29177 has been registered by the Nautical Data Branch and directed to Products Branch B for processing.

The DtoN reported is a shoal located approximately 4.5 NM southeast of the center of the Pilot Boarding Area in the Approaches to Savannah in the Atlantic Ocean.

The following charts are affected:

11505 kapp 2900

11480 kapp 376

The following ENCs are affected:

US5GA20M

US3GA10M

References:

H12962

OPR-G329-TJ-17

This information was discovered and submitted by the crew of the NOAA Ship *Thomas Jefferson*.

Nautical Data Branch/Marine Chart Division/  
Office of Coast Survey/National Ocean Service/  
Contact: [ocs.ndb@noaa.gov](mailto:ocs.ndb@noaa.gov)



[Quoted text hidden]

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**H12962\_DTON\_Report.zip**

264K



Anthony Klemm - NOAA Federal <anthony.r.klemm@noaa.gov>

---

## HSSD waiver request for H12962; G329-TJ-17

4 messages

---

**Anthony Klemm - NOAA Federal** <anthony.r.klemm@noaa.gov> Wed, Jan 24, 2018 at 1:10 PM

To: Starla Robinson - NOAA Federal <starla.robinson@noaa.gov>

Cc: \_OMAO MOA OPS Thomas Jefferson <ops.thomas.jefferson@noaa.gov>, \_OMAO MOA ChiefST Thomas Jefferson <chiefst.thomas.jefferson@noaa.gov>, Tracy McMillan - NOAA Federal <tracy.mcmillan@noaa.gov>, Joshua Hiteshew - NOAA Federal <joshua.hiteshew@noaa.gov>

Hi Starla,

Please see the attached memo as our formal request to submit a single, 50cm MBES surface for H12962, in spite of depth ranging from 11m - 23m.

Please let me know if you have any questions. We would be happy to supply you with more information upon request.

Best regards,  
Anthony

LT Anthony Klemm, NOAA  
Field Operations Officer  
NOAA Ship *Thomas Jefferson*  
439 W York Street  
Norfolk, VA 23510  
[757-647-0187](tel:757-647-0187)

Learn about NOAA nautical charts - [www.nauticalcharts.noaa.gov](http://www.nauticalcharts.noaa.gov)



**OPR-G329-TJ-17 Waiver request - single resolution surface.pdf**  
139K

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**Anthony Klemm - NOAA Federal** <anthony.r.klemm@noaa.gov>

Tue, Jan 30, 2018 at 8:23 AM

To: Starla Robinson - NOAA Federal <starla.robinson@noaa.gov>

LT Anthony Klemm, NOAA  
Field Operations Officer  
NOAA Ship *Thomas Jefferson*  
439 W York Street  
Norfolk, VA 23510  
[757-647-0187](tel:757-647-0187)

Learn about NOAA nautical charts - [www.nauticalcharts.noaa.gov](http://www.nauticalcharts.noaa.gov)

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**OPR-G329-TJ-17 Waiver request - single resolution surface.pdf**  
139K

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**Starla Robinson - NOAA Federal** <starla.robinson@noaa.gov>

Tue, Jan 30, 2018 at 9:11 AM

To: Corey Allen - NOAA Federal <corey.allen@noaa.gov>, \_OMAO MOA OPS Thomas Jefferson

<ops.thomas.jefferson@noaa.gov>, \_OMAO MOA ChiefST Thomas Jefferson <chiefst.thomas.jefferson@noaa.gov>

Cc: Tracy McMillan - NOAA Federal <tracy.mcmillan@noaa.gov>, Joshua Hiteshew - NOAA Federal

<joshua.hiteshew@noaa.gov>, Anthony Klemm - NOAA Federal <anthony.r.klemm@noaa.gov>

I have signed the single resolution waiver as granted on the behalf of Corey Allen, HSD Operations Branch Chief.



Thank you,  
Starla Robinson

[Quoted text hidden]

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*Starla D. Robinson, Physical Scientist*

*NOS - OCS - Hydrographic Survey Division - Operations Branch*

*National Oceanic Atmospheric Administration*

*Office: **240-533-0034** (Updated 6/13/17)*

*Cell: 360-689-1431*

*Website: [HSD Planned Hydrographic Surveys](#)*



**OPR-G329-TJ-17 Waiver request - single resolution surface - signed.pdf**

196K

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**Anthony Klemm - NOAA Federal** <anthony.r.klemm@noaa.gov>

Tue, Jan 30, 2018 at 9:20 AM

To: Starla Robinson - NOAA Federal <starla.robinson@noaa.gov>

Cc: Corey Allen - NOAA Federal <corey.allen@noaa.gov>, \_OMAO MOA OPS Thomas Jefferson

<ops.thomas.jefferson@noaa.gov>, \_OMAO MOA ChiefST Thomas Jefferson <chiefst.thomas.jefferson@noaa.gov>, Tracy

McMillan - NOAA Federal <tracy.mcmillan@noaa.gov>, Joshua Hiteshew - NOAA Federal <joshua.hiteshew@noaa.gov>

Thank you Starla.

[Quoted text hidden]

<OPR-G329-TJ-17 Waiver request - single resolution surface - signed.pdf>



MEMORANDUM FOR: Starla Robinson  
Project Manager, OPR-G329-TJ-17  
Hydrographic Surveys Division Operations Branch

FROM: Commander Chris van Westendorp, NOAA  
Commanding Officer, NOAA Ship *Thomas Jefferson*

SUBJECT: Waiver request – Submission of single resolution depth surface

*Thomas Jefferson* requests a waiver of the HSSD 2017 Section 5.2.2.3: Object detection multibeam surface grid-resolution thresholds requirement. *Thomas Jefferson* requests approval to submit a single 50cm resolution CUBE multibeam surface for H12962, in spite of depths ranging from 11m – 23m.

The grid nodes with a depth greater than 20m have an average ping density of 33 pings/node, which is sufficient to meet minimum required sounding density requirements at the 50cm grid size.

Waiver is:	Granted	Denied
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cc: Chief, HSD OPS  
OPS, *Thomas Jefferson*  
HCST, *Thomas Jefferson*





Anthony Klemm - NOAA Federal <anthony.r.klemm@noaa.gov>

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## Coast Pilot Review

1 message

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**Joshua Hiteshew - NOAA Federal** <joshua.hiteshew@noaa.gov>

Wed, Jan 31, 2018 at 8:09 AM

To: OCS NDB - NOAA Service Account <ocs.ndb@noaa.gov>, \_NOS OCS NSD Coast Pilot <coast.pilot@noaa.gov>

Cc: Starla Robinson - NOAA Federal <Starla.Robinson@noaa.gov>, \_OMAO MOA ChiefST Thomas Jefferson <chiefst.thomas.jefferson@noaa.gov>, \_OMAO MOA OPS Thomas Jefferson <ops.thomas.jefferson@noaa.gov>, Anthony Klemm - NOAA Federal <anthony.r.klemm@noaa.gov>

To whom it may concern,

Attached is the Coast Pilot review for project OPR-G329-TJ-17.

V/r,

Josh

--

HST Joshua Hiteshew, NOAA  
NOAA ship Thomas Jefferson  
439 W York St, Norfolk, VA 23510



**OPR-G329-TJ-17\_Coast Pilot Review Report.pdf**

464K



Anthony Klemm - NOAA Federal <anthony.r.klemm@noaa.gov>

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## Fwd: Thomas Jefferson 2017 NODC Files

2 messages

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**Tracy McMillan - NOAA Federal** <tracy.mcmillan@noaa.gov> Tue, Jan 23, 2018 at 12:46 PM  
To: Anthony Klemm - NOAA Federal <anthony.r.klemm@noaa.gov>, Allison Stone - NOAA Federal  
<allison.c.stone@noaa.gov>, "ChiefST.Thomas Jefferson - NOAA Service Account" <chiefst.thomas.jefferson@noaa.gov>

I apologize for not sending this Friday. I didn't see your email until I had already left for the day. H12961 and H12962 didn't have any issues to correct so I assume they were added to the database already. I will work on the issues found with the other sheets from the season after our content review. Again, I'm sorry for the delay.

Tracy

----- Forwarded message -----

From: **Tracy McMillan - NOAA Federal** <tracy.mcmillan@noaa.gov>  
Date: Tue, Jan 2, 2018 at 8:29 AM  
Subject: Thomas Jefferson 2017 NODC Files  
To: "NODC.Submissions" <nodc.submissions@noaa.gov>  
Cc: Sam Greenaway <Samuel.Greenaway@noaa.gov>

Attached are all the NODC files from the Thomas Jefferson for the 2017 Field season.

Please let me know if there are any issues.

Thank you,

Tracy McMillan  
[tracy.mcmillan@noaa.gov](mailto:tracy.mcmillan@noaa.gov)

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 **NODC\_2017.zip**  
4039K

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**Anthony Klemm - NOAA Federal** <anthony.r.klemm@noaa.gov>  
To: Tracy McMillan - NOAA Federal <tracy.mcmillan@noaa.gov>

Tue, Jan 23, 2018 at 12:59 PM

Tracy,

Perfect. Thanks for forwarding this on.

Best,  
Anthony

LT Anthony Klemm, NOAA  
Field Operations Officer  
NOAA Ship *Thomas Jefferson*  
439 W York Street  
Norfolk, VA 23510  
[757-647-0187](tel:757-647-0187)

Learn about NOAA nautical charts - [www.nauticalcharts.noaa.gov](http://www.nauticalcharts.noaa.gov)


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UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
Office of Marine and Aviation Operations  
NOAA Ship *Thomas Jefferson* (S222)  
439 West York St, Norfolk, VA 23510

6/22/2017

MEMORANDUM FOR: Starla Robinson  
Project Manager, OPR-G329-TJ-17  
Hydrographic Surveys Division Operations Branch

FROM: Commander Chris van Westendorp, NOAA   
Commanding Officer, NOAA Ship *Thomas Jefferson*

SUBJECT: Waiver request – WGS84 Datum

VAN  
WESTENDORP.CHRISTIAAN.HENRY.1012828175  
c-25, no-15, Government, ou-DOD, ou-PR,  
ou-NOAA, cc-VAN  
WESTENDORP.CHRISTIAAN.HENRY.1012828175  
2017.06.22 16:51:49 -0400

*Thomas Jefferson* requests a waiver of the HSSD 2017 Section 2.2 Horizontal Datum requirement to acquire survey data for project OPR-G329-TJ-17 in WGS84 rather than NAD83.

Justification

Retaining the current procedure and configurations will reduce the possibility of errors.

Decision



Waiver is: Granted

Denied

cc: Chief, HSD OPS  
OPS, *Thomas Jefferson*  
HCST, *Thomas Jefferson*





## APPROVAL PAGE

H12962

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 NCEI for archive

- Descriptive Report
- Data Acquisition and Processing Report
- Collection of Bathymetric Attributed Grids (BAGs)
- Processed survey data and records
- Geospatial PDF of survey products
- Collection of backscatter mosaics

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

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

**Commander Meghan McGovern, NOAA**  
Chief, Atlantic Hydrographic Branch