

F00809

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

DESCRIPTIVE REPORT

Type of Survey: Field Examination

Registry Number: F00809

LOCALITY

State(s): Mississippi

General Locality: Mississippi Sound

Sub-locality: West of West point on Cat Island

2021

CHIEF OF PARTY
LCDR Charles Wisotzkey, NOAA

LIBRARY & ARCHIVES

Date:

HYDROGRAPHIC TITLE SHEET

F00809

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): **Mississippi**

General Locality: **Mississippi Sound**

Sub-Locality: **West of West point on Cat Island**

Scale: **10000**

Dates of Survey: **06/30/2021 to 11/09/2021**

Instructions Dated: **10/14/2021**

Project Number: **S-J908-NRTST-21**

Field Unit: **NOAA Navigation Response Team - Stennis**

Chief of Party: **LCDR Charles Wisotzkey, NOAA**

Soundings by: **Kongsberg Maritime EM 2040C (MBES)**

Imagery by: **EdgeTech 4125 (SSS)**

Verification by: **Pacific Hydrographic Branch**

Soundings Acquired in: **meters at Mean Lower Low Water**

Remarks:

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 <https://www.ncei.noaa.gov/>. Products created during office processing were generated in NAD83 UTM 16N, MLLW. All references to other horizontal or vertical datums in this report are applicable to the processed hydrographic data provided by the field unit.

DESCRIPTIVE REPORT SUMMARY

A. Area Surveyed

This hydrographic survey was acquired in accordance with the requirements defined in the Project Instruction S-J908-NRTNL-21_PI_Change1.

Data were acquired within the following survey limits:

Northwest Limit	Southeast Limit
30° 17' 39.7" N 89° 23' 34.25" W	30° 11' 42.46" N 89° 12' 20.47" W

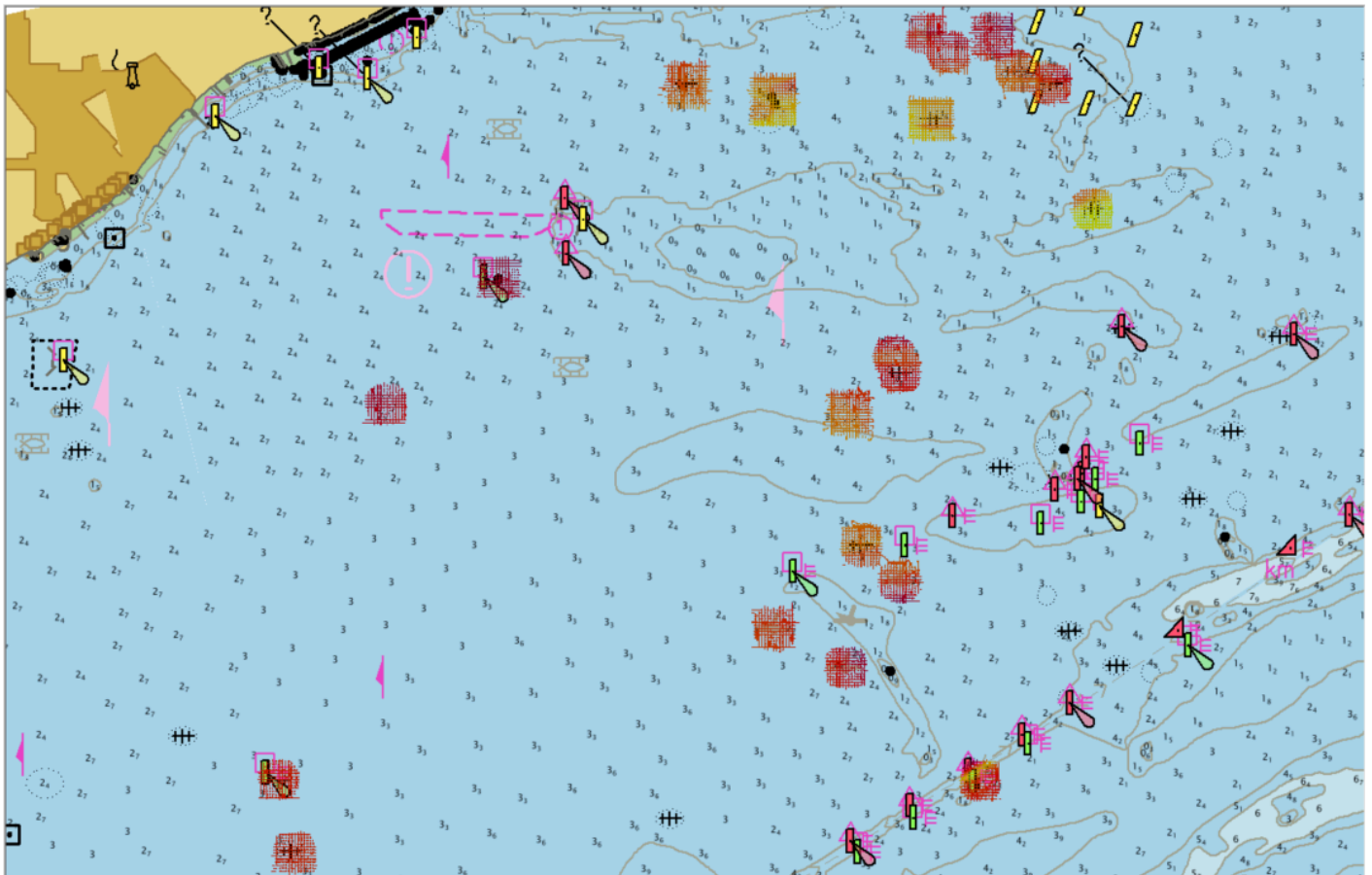


Figure 1: F00809 Survey extents

B. Survey Purpose

NRTST is assigned to investigate 119 charted discrepancy features in the Mississippi Sound by confirming or disproving these assigned features. The results from this investigation will update National Ocean Service nautical charting products, reducing the risk and uncertainty to navigation. Survey data from this project is intended to supersede all prior survey data in the common area.

C. Intended Use of Survey

The entire survey is adequate to supersede previous data.

D. Data Acquisition and Processing

Please reference Data Acquisition and Processing Report (DAPR), S-J908-NRTST-21_DAPR_S3008, 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.

E. Uncertainty

The values used to calculate Total Propagated Uncertainty (TPU) are listed below. Refer to the DAPR for more information regarding uncertainty methods.

Ellipsoidal Referenced Survey (ERS) separation model uncertainty (via VDatum): 0.17 m

Sound speed measured: 4.000 m/s

Sound speed surface: 0.200 m/s

The finalized surface was examined using Pydro QC Tools version 2. The surface complies with all requirements in the 2021 Hydrographic Surveys Specifications and Deliverables (HSSD).

Sound speed casts were taken in accordance with DAPR.

MBES crosslines acquired for this survey totaled 3.28% of mainscheme acquisition. Crosslines were compared to mainscheme lines using Pydro Compare Grids. Data were collected for crosslines over observed features in the collected Mainscheme data. The crossline analysis was performed in accordance with the DAPR and Section 5.2.4.2 of the HSSD. Results yielded a mean difference of 0.01 m with a 0.03 m standard deviation.

Uncertainty Standards - NOAA HSSD

Grid source: F00809_MB_50cm_MLLW_Final

99.5+% pass (11,010,318 of 11,010,370 nodes), min=0.66, mode=0.67, max=626755.06

Percentiles: 2.5%=0.66, Q1=0.67, median=0.67, Q3=0.67, 97.5%=0.67



Figure 2: More than 99.5% of nodes in the finalized surface meet HSSD uncertainty requirements

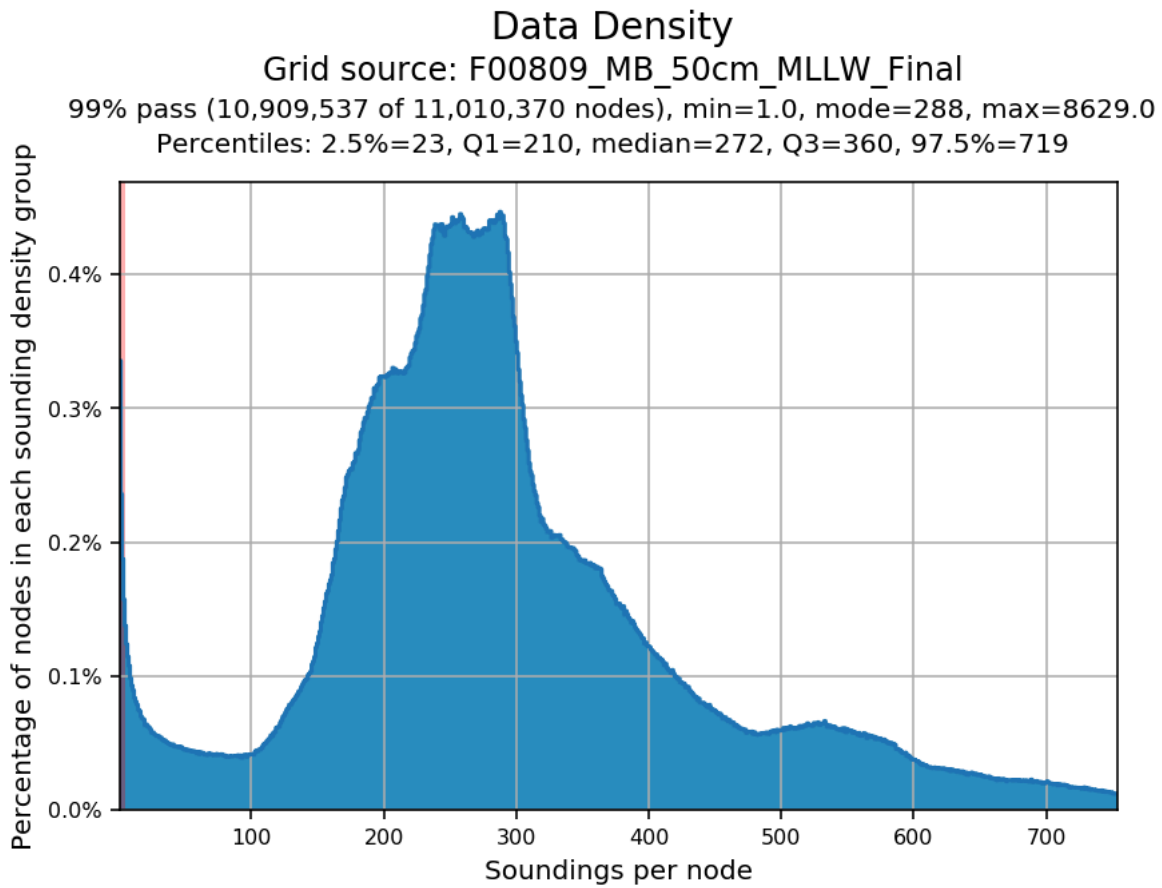


Figure 3: More than 99.5% of nodes in the finalized surface meet HSSD density requirements

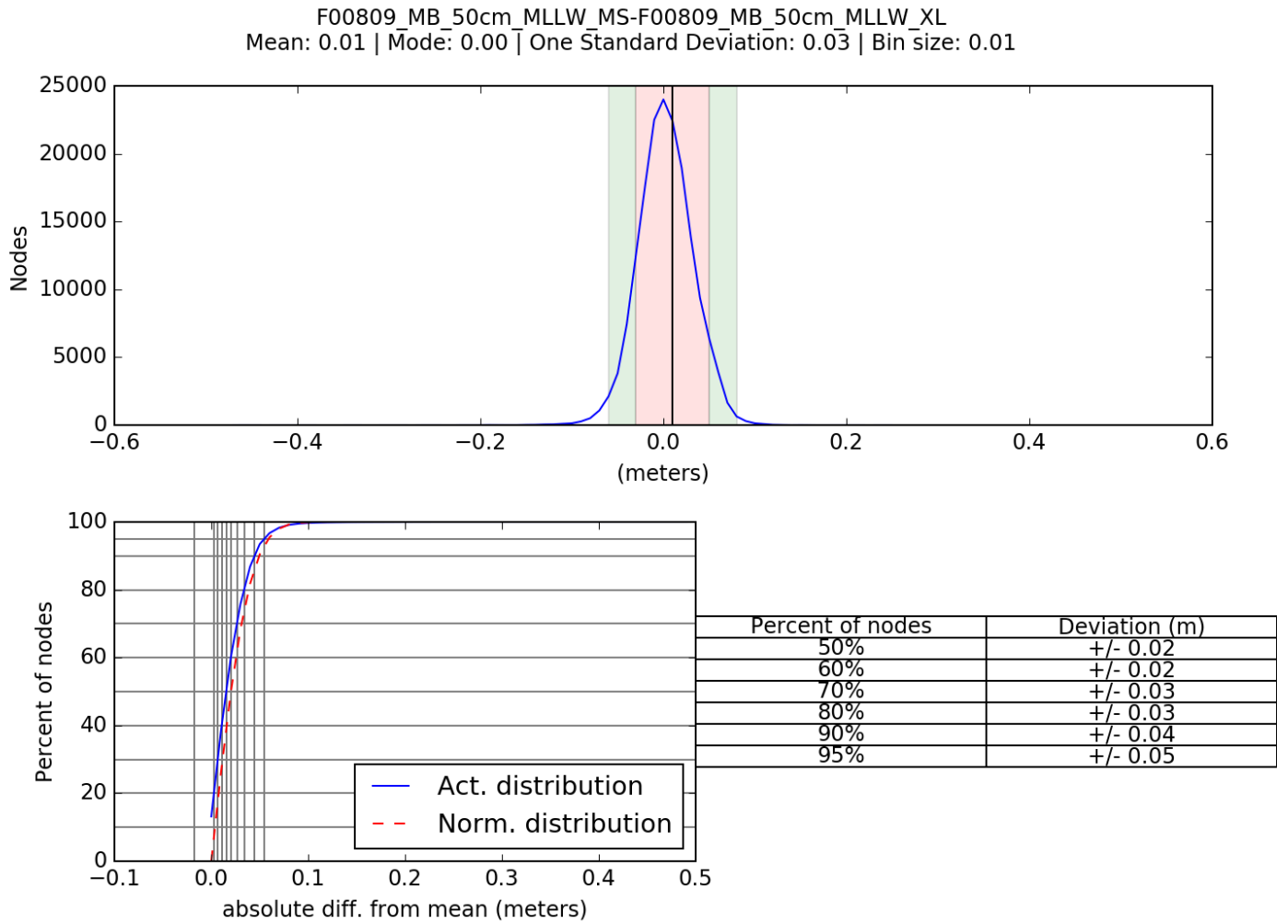


Figure 4: Summary statistics and distribution of crossline-mainscheme difference surface

F. Results and Recommendations

The following are the largest scale ENC's, which cover the survey area:

ENC	Scale	Edition	Update Application Date	Issue Date
US5MS11M	1:40000	60	10/14/2020	04/21/2021
US5LA36M	1:40000	44	12/18/2020	04/21/2021

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

Surface Name	Surface Type	Resolution	Depth Range	Surface Parameter	Purpose
F00809_MB_50cm_MLLW	CARIS Raster Surface (CUBE)	0.5 m	2.43 m - 6.45 m	NOAA_0.5m	MBES Trackline
F00809_MB_50cm_MLLW_Final	CARIS Raster Surface (CUBE)	0.5 m	1.82 m - 6.45 m	NOAA_0.5m	MBES Trackline
F00809_SSSAB_1m_400kHz_1of2	SSS Mosaic	1 m	N/A	N/A	100% SSS
F00809_SSSAB_1m_400kHz_2of2	SSS Mosaic	1 m	N/A	N/A	200% SSS

All surfaces meet HSSD requirements for an object detection survey.

G. Vertical and Horizontal Control

The vertical datum for this project is Mean Lower Low Water. The vertical control method used was VDatum.

All F00809 survey data were reduced to MLLW using VDatum methods. The ellipsoid to chart datum separation file used is S-J908_VDatumLimits_100m_NAD83-MLLW_geoid12b. Refer to the DAPR for a complete description of vertical control procedures.

The horizontal datum for this project is North American Datum of 1983 (NAD 83). The projection used for this project is Universal Transverse Mercator (UTM) Zone 16.

Horizontal and vertical positioning were achieved in accordance with practices outlined in the DAPR. Processing and products for Survey F00809 were conducted and completed in NAD 83 per HSSD specification. Refer to the DAPR for a complete description of horizontal control procedures.

RTX

Precise Positioning-Real Time Extended (PP-RTX) processing methods were used in Applanix POSPac MMS software to produce Smoothed Best Estimate of Trajectory (SBET) files for post-processing horizontal correction.

WAAS

The Wide Area Augmentation System (WAAS) was used for real-time horizontal control during data acquisition.

H. Additional Results

Holidays

Several holidays exist within the 100% and 200% side scan mosaics (see Section 6.1.1 Technique 3 of the HSSD), however multibeam echo sounder coverage were acquired that meets object detection coverage requirements common to the imagery gap that were within the assigned sheet limits of the UCF's.

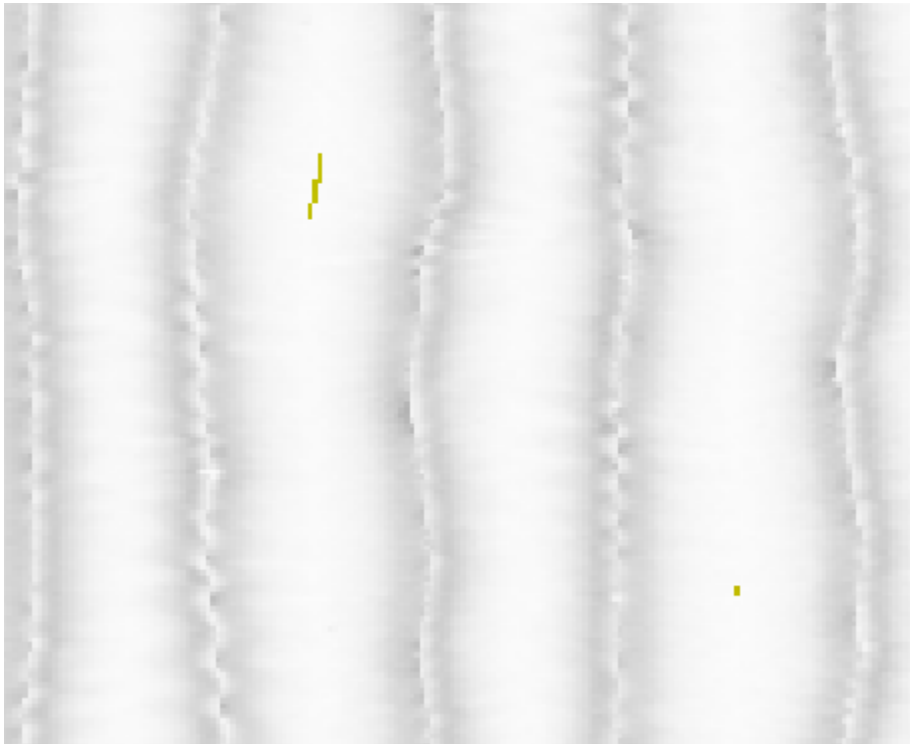


Figure 5: Holiday within F00809_SSSAB_1m_400kHz_1of2 with multibeam echo sounder coverage common to the imagery gap



Figure 6: Holiday within F00809_SSSAB_1m_400kHz_2of2 with multibeam echo sounder coverage common to the imagery gap

Features

64 Features were assigned to F00809 out of the 119 features of project S-J908-NRTST-21. Of those 64 features 22 were investigated. The Final Feature File (FFF) contains 69 features overall. Of the 69 features four features are New, 23 features are set as Delete, 42 are set as Not Addressed.

Reference the FFF for additional information on new features.

I. Approval

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 Survey Summary 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 Specifications and Deliverables, Field Procedures Manual, Standing and 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.

Approver Name	Title	Date	Signature
LCDR Charles Wisotzkey, NOAA	Chief of Party	12/17/2021	WISOTZKEY.CHARLES.JUSTIN.1300819660 Digitally signed by WISOTZKEY.CHARLES.JUSTIN.1300819660 Date: 2021.12.17 11:56:50 -06'00'
Joshua Hiteshew, NOAA	Sheet Manager	12/17/2021	HITESHEW.JOSHUA.TAYLOR.1537939652 Digitally signed by HITESHEW.JOSHUA.TAYLOR.1537939652 Date: 2021.12.17 08:30:20 -06'00'