

**H13265**

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

**DESCRIPTIVE REPORT**

Type of Survey: Navigable Area

Registry Number: H13265

**LOCALITY**

State(s): Louisiana

General Locality: Chandeleur Islands, Louisiana

Sub-locality: 27 NM East of North Islands

**2019**

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

LIBRARY & ARCHIVES

Date:

**HYDROGRAPHIC TITLE SHEET**

**H13265**

**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): **Louisiana**

General Locality: **Chandeleur Islands, Louisiana**

Sub-Locality: **27 NM East of North Islands**

Scale: **40000**

Dates of Survey: **07/23/2019 to 11/23/2019**

Instructions Dated: **06/19/2019**

Project Number: **OPR-J311-KR-19**

Field Unit: **David Evans and Associates, Inc.**

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

Soundings by: **Multibeam Echo Sounder**

Imagery by: **Multibeam Echo Sounder Backscatter & Side Scan Sonar**

Verification by: **Atlantic 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.*

# Table of Contents

<b>A. Area Surveyed</b> .....	1
A.1 Survey Limits.....	1
A.2 Survey Purpose.....	2
A.3 Survey Quality.....	3
A.4 Survey Coverage.....	3
A.6 Survey Statistics.....	5
<b>B. Data Acquisition and Processing</b> .....	6
B.1 Equipment and Vessels.....	6
B.1.1 Vessels.....	6
B.1.2 Equipment.....	7
B.2 Quality Control.....	8
B.2.1 Crosslines.....	8
B.2.2 Uncertainty.....	9
B.2.3 Junctions.....	11
B.2.4 Sonar QC Checks.....	15
B.2.5 Equipment Effectiveness.....	16
B.2.6 Factors Affecting Soundings.....	16
B.2.7 Sound Speed Methods.....	16
B.2.8 Coverage Equipment and Methods.....	16
B.2.9 Density.....	17
B.3 Echo Sounding Corrections.....	18
B.3.1 Corrections to Echo Soundings.....	18
B.3.2 Calibrations.....	18
B.4 Backscatter.....	18
B.5 Data Processing.....	18
B.5.1 Primary Data Processing Software.....	18
B.5.2 Surfaces.....	19
B.5.3 Designated Soundings.....	19
B.5.4 CARIS HDCS Navigation Sources.....	19
<b>C. Vertical and Horizontal Control</b> .....	20
C.1 Vertical Control.....	20
C.2 Horizontal Control.....	20
<b>D. Results and Recommendations</b> .....	21
D.1 Chart Comparison.....	21
D.1.1 Electronic Navigational Charts.....	22
D.1.2 Shoal and Hazardous Features.....	22
D.1.3 Charted Features.....	22
D.1.4 Uncharted Features.....	22
D.1.5 Channels.....	22
D.2 Additional Results.....	23
D.2.1 Aids to Navigation.....	23
D.2.2 Maritime Boundary Points.....	23
D.2.3 Bottom Samples.....	23

D.2.4 Overhead Features.....	23
D.2.5 Submarine Features.....	23
D.2.6 Platforms.....	23
D.2.7 Ferry Routes and Terminals.....	24
D.2.8 Abnormal Seafloor or Environmental Conditions.....	24
D.2.9 Construction and Dredging.....	24
D.2.10 New Survey Recommendations.....	24
D.2.11 ENC Scale Recommendations.....	24
<b>E. Approval Sheet.....</b>	<b>25</b>
<b>F. Table of Acronyms.....</b>	<b>26</b>

## List of Tables

Table 1: Survey Limits.....	1
Table 2: Survey Coverage.....	3
Table 3: Hydrographic Survey Statistics.....	5
Table 4: Dates of Hydrography.....	6
Table 5: Vessels Used.....	6
Table 6: Major Systems Used.....	7
Table 7: Survey Specific Tide TPU Values.....	9
Table 8: Survey Specific Sound Speed TPU Values.....	10
Table 9: Junctioning Surveys.....	13
Table 10: Primary bathymetric data processing software.....	18
Table 11: Primary imagery data processing software.....	19
Table 12: Submitted Surfaces.....	19
Table 13: ERS method and SEP file.....	20
Table 14: USCG DGPS Stations.....	21
Table 15: Largest Scale ENCs.....	22

## List of Figures

Figure 1: OPR-J311-KR-19 Assigned Survey Areas.....	2
Figure 2: H13265 Survey Outline.....	4
Figure 3: S/V Blake.....	7
Figure 4: H13265 Crossline Difference.....	9
Figure 5: Node TVU statistics - 2m finalized.....	11
Figure 6: Survey junctions with registry number H13265.....	12
Figure 7: Distribution summary plot of survey H13265 2-meter vs H12469 4-meter.....	14
Figure 8: Distribution summary plot of survey H13265 2-meter vs H12466 4-meter.....	15
Figure 9: Node density statistics - 2m finalized.....	17

## Descriptive Report to Accompany Survey H13265

Project: OPR-J311-KR-19

Locality: Chandeleur Islands, Louisiana

Sublocality: 27 NM East of North Islands

Scale: 1:40000

July 2019 - November 2019

**David Evans and Associates, Inc.**

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

### A. Area Surveyed

David Evans and Associates, Inc. (DEA) conducted a hydrographic survey of the assigned area in the Chandeleur Islands. Survey H13265 was conducted in accordance with the May 21, 2019 Statement of Work and Hydrographic Survey Project Instructions June 19, 2019.

The Hydrographic Survey Project Instructions reference the National Ocean Service (NOS) Hydrographic Surveys Specifications and Deliverables Manual (HSSD) (March 2019) as the technical requirements for this project.

#### A.1 Survey Limits

Data were acquired within the following survey limits:

Northwest Limit	Southeast Limit
29° 58' 52.04" N 88° 25' 30.24" W	29° 48' 12.53" N 88° 19' 5.66" W

*Table 1: Survey Limits*

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

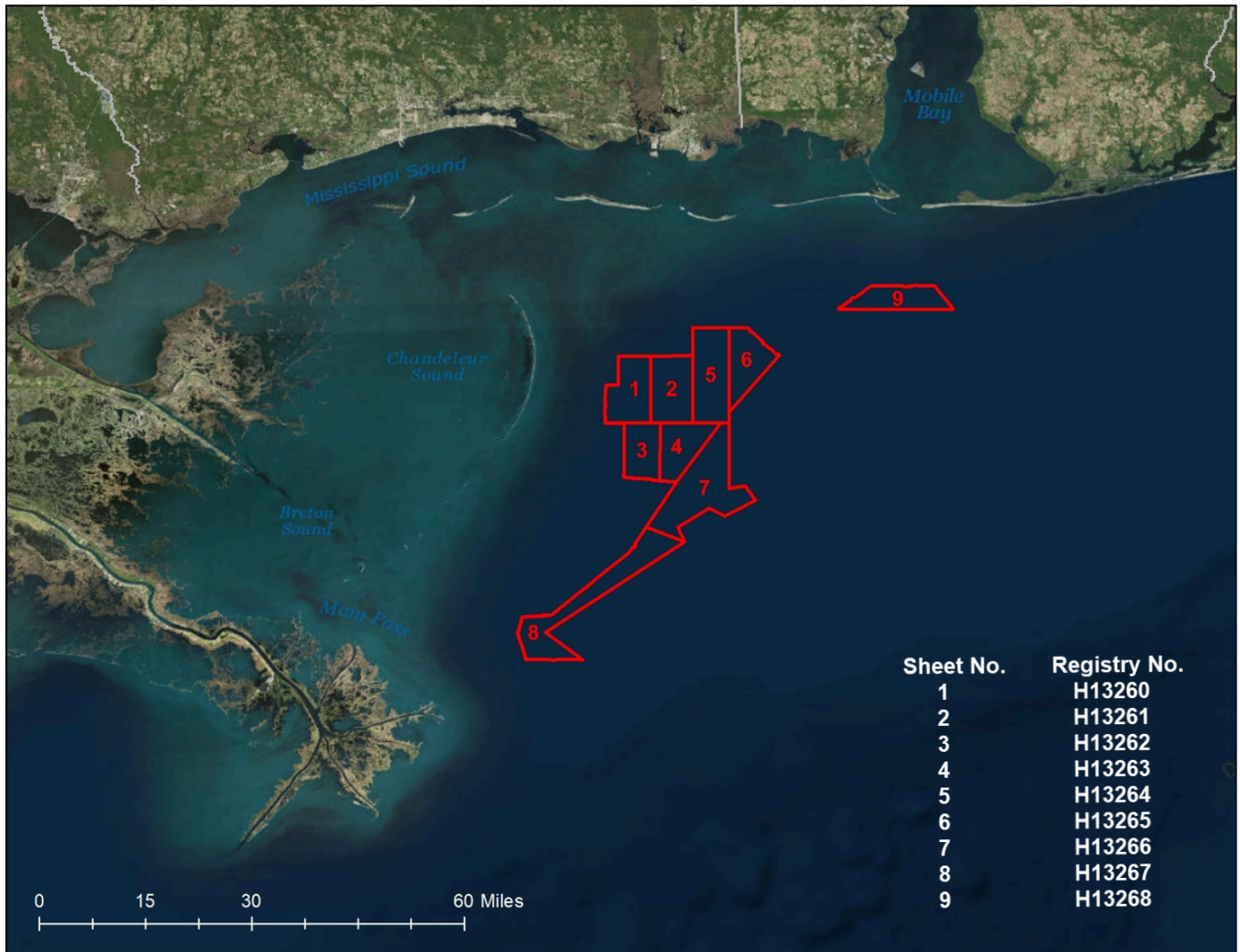


Figure 1: OPR-J311-KR-19 Assigned Survey Areas

## A.2 Survey Purpose

The project's survey purpose for all surveys, which was defined in the Project Instructions, is "The Chandeleur Islands is an active oil and gas exploration area, as well as a popular fishing grounds and includes the Breton National Wildlife Refuge.\*1 The Chandeleur Islands were also severely impacted by recent hurricanes like Dennis and Katrina, which resulted in major erosion of the islands. Erosion, sea level rise, and sediment influx from the Mississippi River have endangered the future of these islands.\*2

This area also supports a wide variety of vessel traffic and commercial and sport fishing traffic near the Mississippi Entrance Channel and includes a major portion of the safety fairway. Due to the high traffic, this project has been planned as one of a multi-year approach to update charts in this area. Before this project, this area was last surveyed by the Office of Coast Survey in 1922 and 1940. This survey will allow vessel traffic safe passage to offshore Gulf of Mexico.

The purpose of this project is to provide contemporary surveys to update National Ocean Service (NOS) nautical charting products, this project will address numerous approximately charted hazards, reducing the risk to navigation. Survey data from this project is intended to supersede all prior survey data in the common area.”

\*1 Breton National Wildlife Refuge. Wikipedia. Retrieved 27 February 2019

\*2 Moore, Laura J.; Patch, Kiki; List, Jeffery H.; Williams, S. Jeffress (2014). “The potential for sea-level-rise-induced barrier island loss: Insights from the Chandeleur Islands, Louisiana, USA”. *Marine Geology*. 355: 244-259. doi:10.1016/j.margeo.2014.05.022. ISSN 0025-3227

### 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:

Water Depth	Coverage Required
All waters in survey area	Complete Coverage Option B (Refer to HSSD Section 5.2.2.3)

*Table 2: Survey Coverage*

Multibeam echosounder (MBES) data with time series backscatter was collected concurrently with side scan sonar (SSS) data to obtain complete coverage in all waters in the survey area. This coverage type follows Option B of the Complete Coverage requirement specified in Section 5.2.2 of the 2019 HSSD.

Surveyed contacts and features were developed at complete coverage resolution as required by the coverage classification. Complete coverage multibeam was also obtained within the search radii for all feature disapprovals. Survey coverage was obtained within the survey area depicted in the Project Reference File (PRF) OPR-J311-KR-19\_PRF\_FINAL.000. Figure 2 depicts the survey outline that was obtained for H13265.

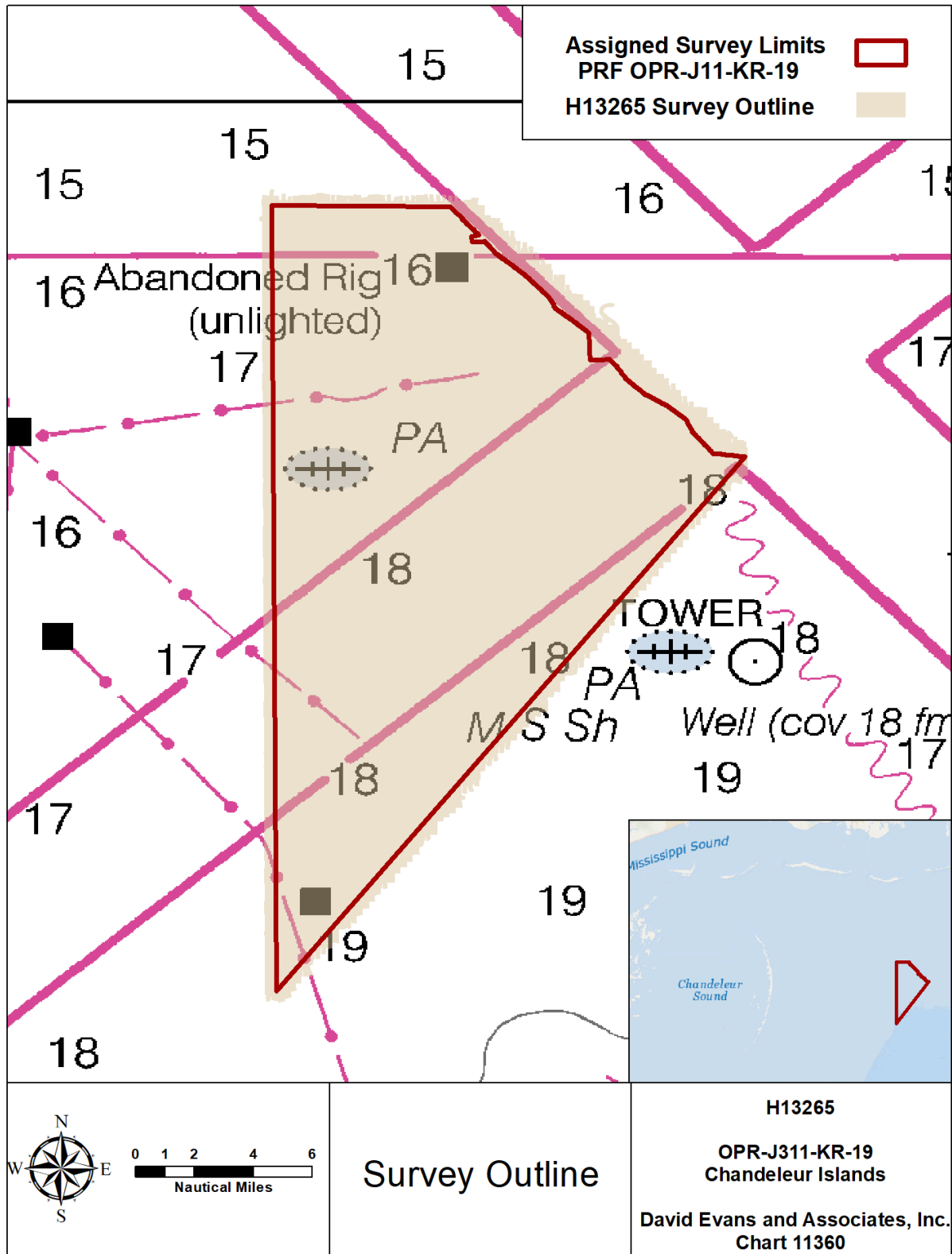


Figure 2: H13265 Survey Outline



## A.6 Survey Statistics

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

	<b>HULL ID</b>	<i>S/V Blake</i>	<i>Total</i>
<b>LNM</b>	<b>SBES Mainscheme</b>	0	0
	<b>MBES Mainscheme</b>	51.72	51.72
	<b>Lidar Mainscheme</b>	0	0
	<b>SSS Mainscheme</b>	0	0
	<b>SBES/SSS Mainscheme</b>	0	0
	<b>MBES/SSS Mainscheme</b>	488.44	488.44
	<b>SBES/MBES Crosslines</b>	22.77	22.77
	<b>Lidar Crosslines</b>	0	0
<b>Number of Bottom Samples</b>			3
<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>			34.58

*Table 3: Hydrographic Survey Statistics*

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

<b>Survey Dates</b>	<b>Day of the Year</b>
07/23/2019	204
07/25/2019	206
07/26/2019	207
07/28/2019	209
07/29/2019	210
07/30/2019	211
07/31/2019	212
08/01/2019	213
08/02/2019	214
11/19/2019	323
11/20/2019	324
11/23/2019	327

*Table 4: Dates of Hydrography*

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

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

The OPR-J311-KR-19 Data Acquisition and Processing Report (DAPR), submitted previously with survey H13260, details equipment and vessel information as well as data acquisition and processing procedures. There were no vessel or equipment configurations used during data acquisition that deviated from those described in the DAPR.

#### **B.1.1 Vessels**

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

<b>Hull ID</b>	<i>S/V Blake</i>
<b>LOA</b>	82 feet
<b>Draft</b>	4.5 feet

*Table 5: Vessels Used*



*Figure 3: S/V Blake*

### **B.1.2 Equipment**

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

<b>Manufacturer</b>	<b>Model</b>	<b>Type</b>
Teledyne RESON	SeaBat 7101	MBES
EdgeTech	4200	SSS
Applanix	POS MV 320 v5	Positioning and Attitude System
AML Oceanographic	MVP30-350	Sound Speed System
AML Oceanographic	BaseX2	Sound Speed System
AML Oceanographic	Micro SV-Xchange	Sound Speed System
Trimble	SPS851	Positioning System
Trimble	RTX	Positioning System

*Table 6: Major Systems Used*

## **B.2 Quality Control**

### **B.2.1 Crosslines**

Multibeam crosslines were run across the entire survey area to provide a varied spatial and temporal distribution for analysis of internal consistency within the survey data.

Crossline analysis was performed using the CARIS Hydrographic Information Processing System (HIPS) Quality Control (QC) Report tool, which compares crossline data to a gridded surface and reports results by beam number. Crosslines were compared to a 2-meter CUBE surface encompassing mainscheme, fill, and investigation data for the entire survey area. The QC Report tabular output and plots are included in Separate II Crossline Comparison.

DEA performed an additional crossline analysis using the NOAA Pydro Compare Grids tool to analyze the differences between gridded mainscheme depths and gridded crossline depths. Input grids were 2-meter resolution CUBE surfaces of mainscheme and crossline depths. Results from the crossline to mainscheme difference analysis are depicted in Figure 4, units are represented in meters.

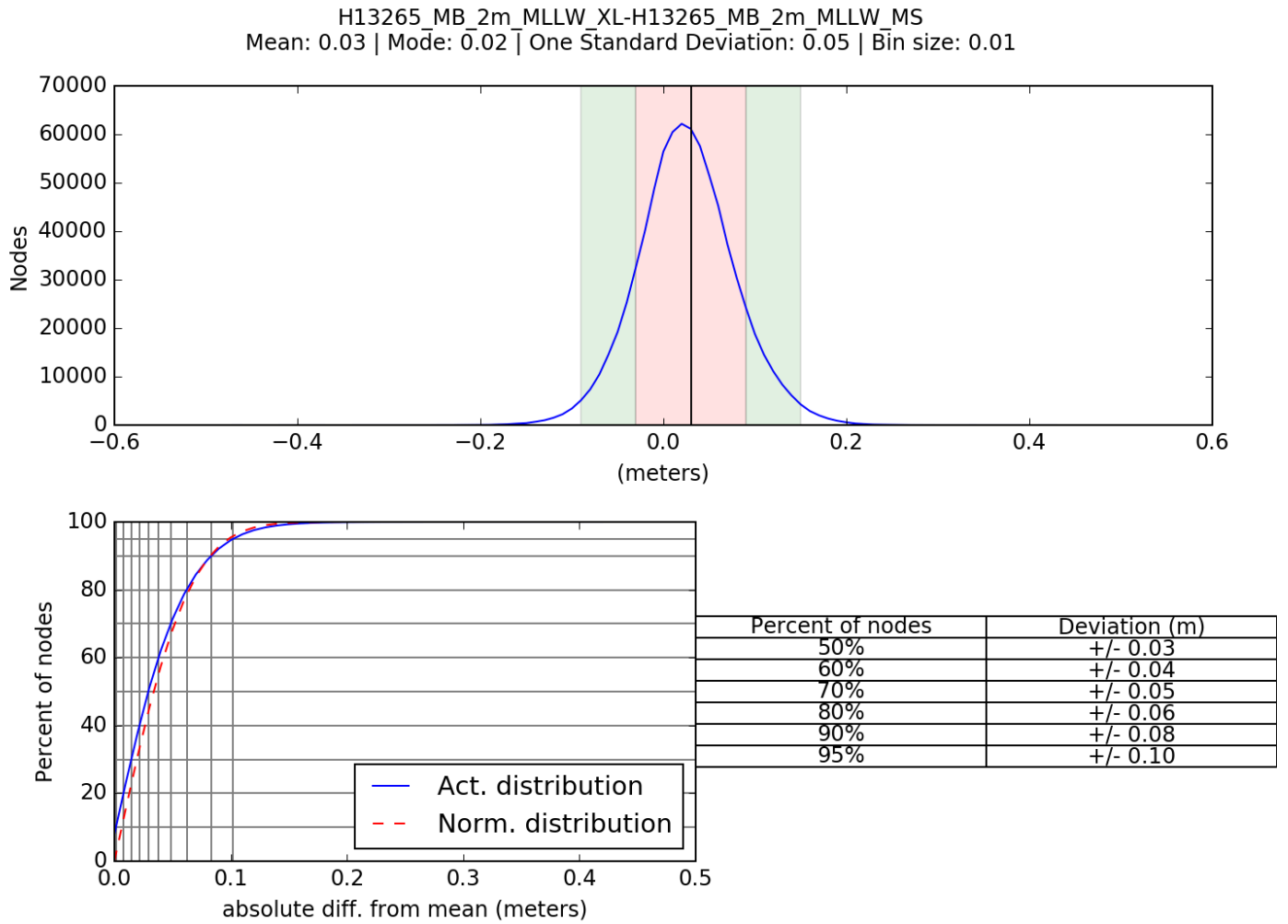


Figure 4: H13265 Crossline Difference

**B.2.2 Uncertainty**

The following survey specific parameters were used for this survey:

Method	Measured	Zoning
ERS via VDATUM	0.05 meters	0.168 meters

Table 7: Survey Specific Tide TPU Values.

<b>Hull ID</b>	<b>Measured - CTD</b>	<b>Measured - MVP</b>	<b>Surface</b>
S/V Blake	n/a meters/second	1.0 meters/second	0.5 meters/second

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

Additional discussion of these parameters is included in the DAPR.

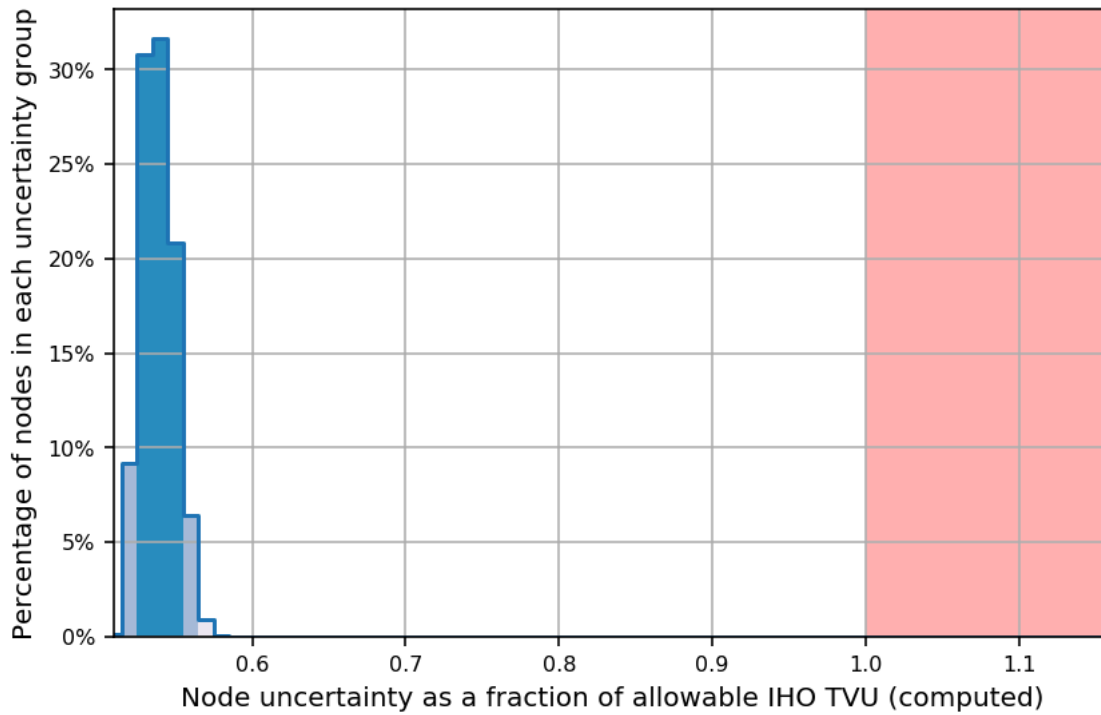
During surface finalization in HIPS, the "Greater of the two values" option was selected, where the calculated uncertainty from Total Propagated Uncertainty (TPU) is compared to the standard deviation of the soundings influencing the node, and where the greater value is assigned as the final uncertainty of the node. The uncertainty of the finalized surfaces increased for nodes, where the standard deviation of the node was greater than the TPU. To determine if the 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 total vertical uncertainty (TVU) at each node. Values greater than 100% indicate nodes exceeding the allowable IHO uncertainty. The resulting calculated TVU values of all nodes in the submitted finalized surfaces are shown in Figure 5.

## Uncertainty Standards

Grid source: H13265\_MB\_2m\_MLLW\_Final

99.5+% pass (22,272,219 of 22,272,223 nodes), min=0.51, mode=0.54, max=1.16

Percentiles: 2.5%=0.52, Q1=0.53, median=0.54, Q3=0.55, 97.5%=0.56



*Figure 5: Node TVU statistics - 2m finalized*

### B.2.3 Junctions

Survey H13265 junctions with current survey H13264. Prior surveys H12469, and H12466 were specified as junctions in the Project Instructions for survey H13265. Figure 6 depicts H13265 and the junctioning surveys.

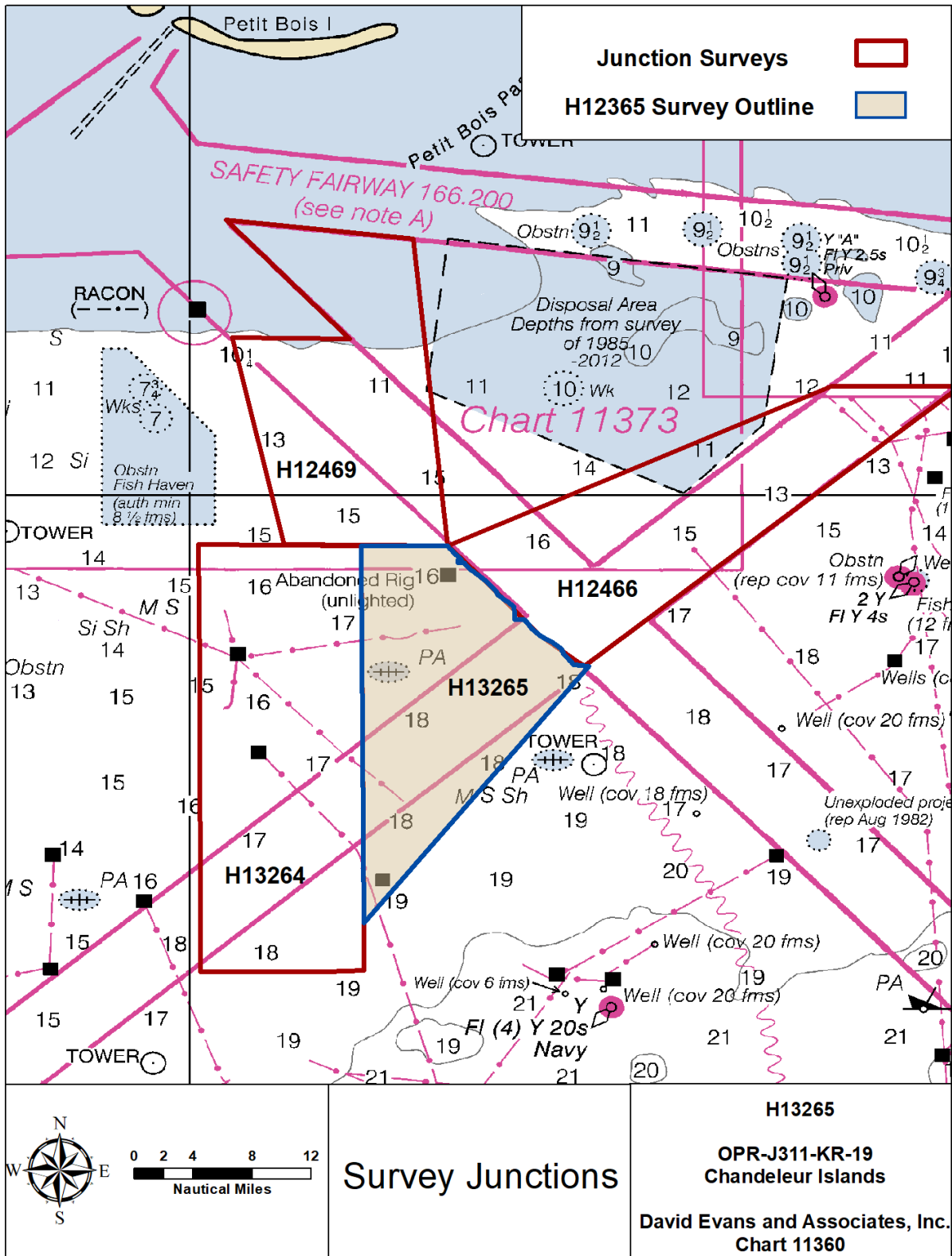


Figure 6: Survey junctions with registry number H13265



The following junctions were made with this survey:

Registry Number	Scale	Year	Field Unit	Relative Location
H13264	1:40000	2019	David Evans & Associates, Inc.	W
H12469	1:10000	2012	David Evans & Associates, Inc.	N
H12466	1:10000	2012	David Evans & Associates, Inc.	NE

*Table 9: Junctioning Surveys*

#### H13264

At the time of writing, data from survey H13264 was still being processed. The Descriptive Report for H13264 will include the junction analysis with H13265.

#### H12469

The mean difference between H13265 and H12469 survey depths is 28 centimeters (H13265 deeper than H12469), shown in Figure 7. Major differences are representative of surveys impacted by subsidence over a 7 year period and the use of varying tidal application methods.

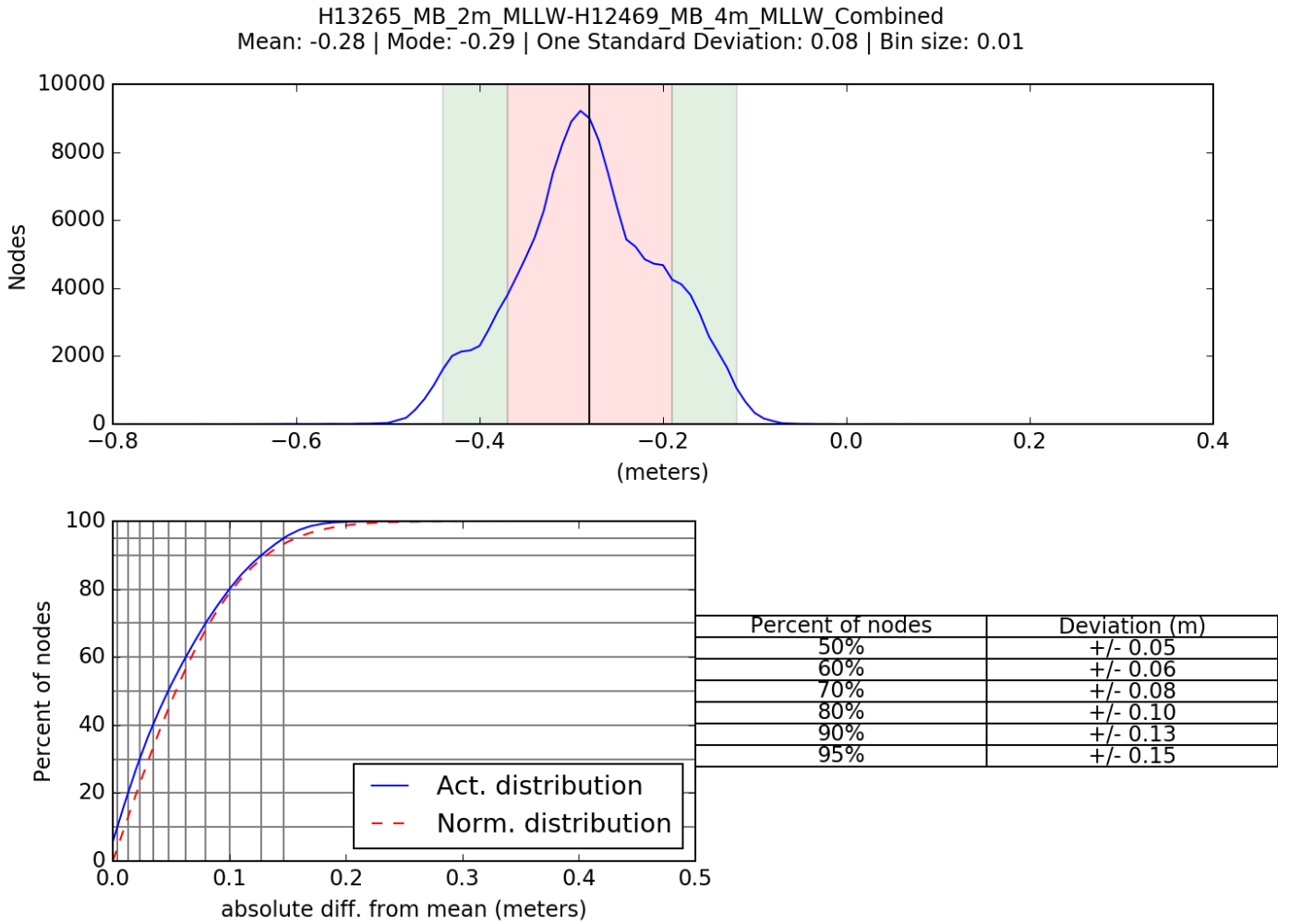


Figure 7: Distribution summary plot of survey H13265 2-meter vs H12469 4-meter

H12466

The mean difference between H13265 and H12466 survey depths is 27 centimeters (H13265 deeper than H12466), shown in Figure 8. Major differences are representative of surveys impacted by subsidence over a 7 year period and the use of varying tidal application methods.

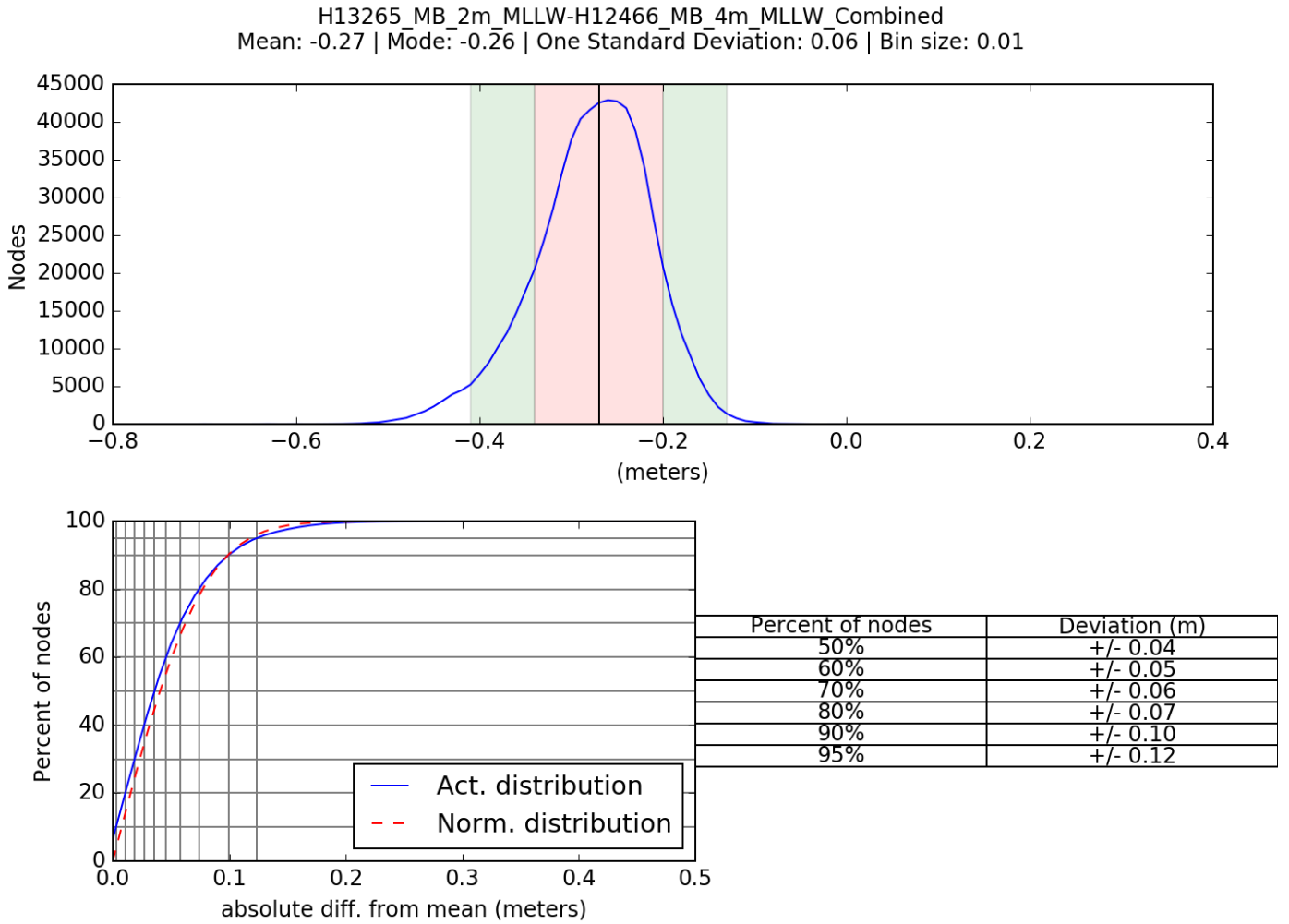


Figure 8: Distribution summary plot of survey H13265 2-meter vs H12466 4-meter

### B.2.4 Sonar QC Checks

Quality control is discussed in detail in Section B of the DAPR. Results from weekly position checks and weekly multibeam bar checks are included in Separate I Acquisition and Processing Logs of this report. Sound speed checks can be found in Separate II Sound Speed Data Summary of this report.

Multibeam data were reviewed at multiple levels of data processing including: CARIS HIPS conversion, subset editing, and analysis of anomalies revealed in CUBE surfaces.

### **B.2.5 Equipment Effectiveness**

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

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

There were no other factors that affected corrections to soundings.

### **B.2.7 Sound Speed Methods**

Sound Speed Cast Frequency: Approximately 20 minute intervals

An AML Oceanographic Moving Vessel Profiler (MVP) was the primary instrument used to acquire sound speed readings during multibeam operations. Additional discussion of sound speed methods can be found in the DAPR.

For H13265 survey operations, casts were distributed both temporally and spatially based on observed changes in sound speed profiles. Sound speed readings were applied in CARIS using the nearest in distance within a one to two-hour interval based on consistent profiles observed throughout the survey. All sound speed measurements were made within 500 meters of the survey limits.

During survey operations on July 23, 2019 (DN204), a few MVP casts on one survey line were not recorded. MVP casts on adjacent lines accurately portrayed the sound speed profile with no discernable change. Sound speed profiles from adjacent lines were applied in CARIS using the closest within distance at a two-hour interval for the following line:

2019BL2041310\_XL

The deviation from one hour to two hours between casts had no discernable impact on data quality as casts were relatively consistent.

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

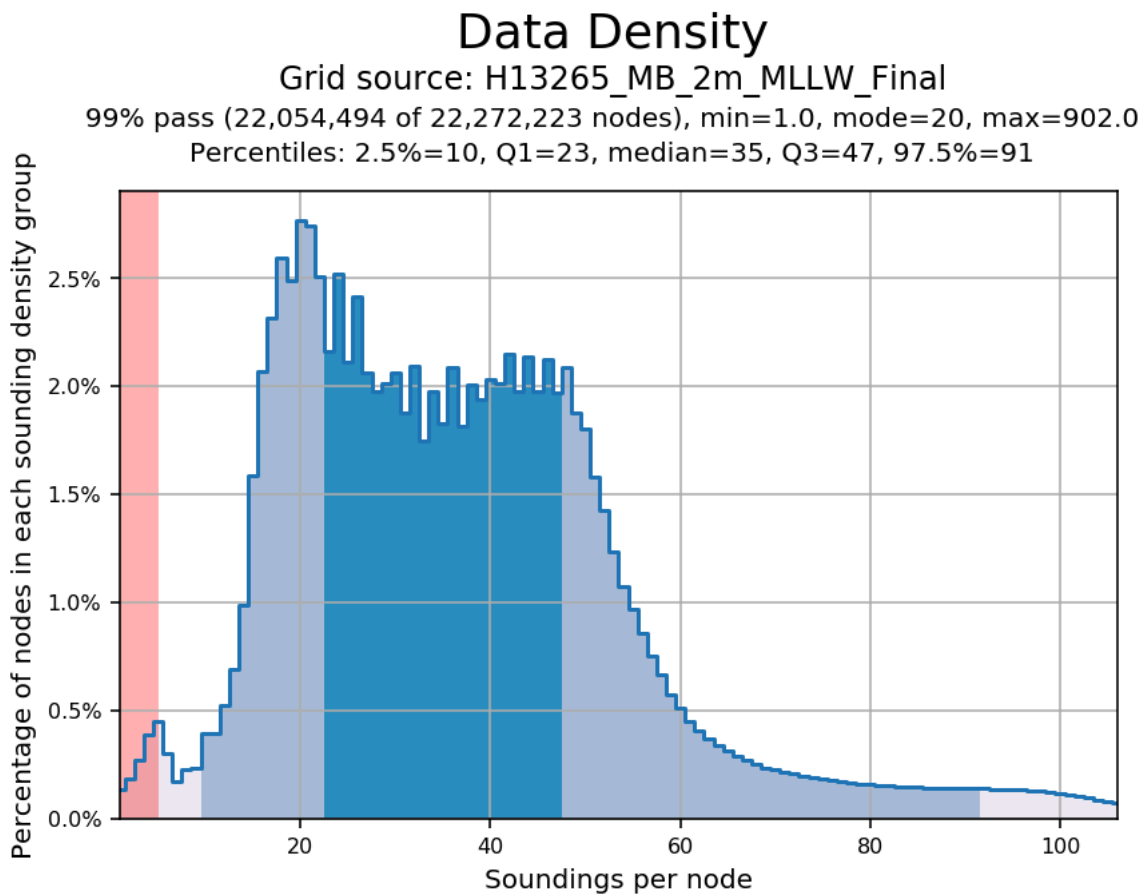
Survey speeds were maintained to meet or exceed along-track sounding density requirements and side scan sonar ensonification requirements.

Multibeam data and side scan mosaics were thoroughly reviewed for holidays and areas of poor-quality coverage due to biomass, vessel wakes, or other factors. Side scan sonar contacts were developed with multibeam sonar to obtain a least depth of the contact using Complete Coverage requirements.

Complete coverage multibeam was acquired inside the disapproval radii for assigned charted features and over all new features. Additional discussion of coverage methods can be found in the DAPR.

**B.2.9 Density**

The sounding density requirement of 95% of all nodes, populated with at least five soundings per node, was verified by analyzing the density layer of each finalized surface. Individual surface results are stated in Figure 9.



*Figure 9: Node density statistics - 2m finalized*

## B.3 Echo Sounding Corrections

### B.3.1 Corrections to Echo Soundings

Data reduction procedures for survey H13265 are detailed in the DAPR. Summary multibeam and side scan sonar processing logs are included in Separate I of this report.

### B.3.2 Calibrations

All sounding systems were calibrated as detailed in the DAPR.

## B.4 Backscatter

Multibeam backscatter was logged in Hypack 7k format and included with the H13265 digital deliverables. Data were processed periodically in CARIS HIPS to evaluate backscatter quality, but the processed data is not included with the deliverables. For data management purposes, the names of multibeam crosslines have been appended with the suffix XL. This change was made to HIPS files only. The original file names of raw data files (Hypack HSX and 7k) have been retained.

## B.5 Data Processing

### B.5.1 Primary Data Processing Software

The following software program was the primary program used for bathymetric data processing:

<b>Manufacturer</b>	<b>Name</b>	<b>Version</b>
CARIS	HIPS/SIPS	10.4.5

*Table 10: Primary bathymetric data processing software*

The following software program was the primary program used for imagery data processing:

<b>Manufacturer</b>	<b>Name</b>	<b>Version</b>
Chesapeake Technology, Inc.	SonarWiz	7.04.01

*Table 11: Primary imagery data processing software*

The following Feature Object Catalog was used: NOAA Profile Version 5.7.

A detailed listing of all data processing software is included in the OPR-J311-KR-19 DAPR.

### **B.5.2 Surfaces**

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

<b>Surface Name</b>	<b>Surface Type</b>	<b>Resolution</b>	<b>Depth Range</b>	<b>Surface Parameter</b>	<b>Purpose</b>
H13265_MB_2m_MLLW	CARIS Raster Surface (CUBE)	2 meters	29.431 meters - 36.056 meters	NOAA_2m	Complete MBES
H13265_MB_2m_MLLW_Final	CARIS Raster Surface (CUBE)	2 meters	29.431 meters - 36.056 meters	NOAA_2m	Finalized Complete MBES
H13265_SSSAB_1m_600kHz_1of1	SSS Mosaic	1 meters	0 meters - 0 meters	N/A	100% SSS

*Table 12: Submitted Surfaces*

Bathymetric grids were created relative to Mean Lower Low Water (MLLW) in CUBE format using Complete Coverage resolution requirements as specified in the HSSD.

### **B.5.3 Designated Soundings**

There are no soundings designated in bathymetric data to facilitate feature management for inclusion in the H13265 Final Feature File (FFF) or to override the gridded surface model.

### **B.5.4 CARIS HDCS Navigation Sources**

During processing of HDCS lines, navigation information was imported from SBET.out files while importing motion and associated RMS values. This navigation source, Applanix.SBET, is automatically

applied at merge when it exists. However, when a CARIS project file is rebuilt, CARIS will report that the navigation source is the HDCSNav. This is a display issue only and does not change the navigation source.

Additionally, when a line is renamed, such as with the suffix \_XL, the HDCSNav source disappears from the metadata display. Again, this appears to be a display issue only and does not change any navigation sources. All HDCS lines were processed using the SBET.out files and the navigation source is Applanix.SBET for this survey. Additional processing information is detailed in the DAPR.

## C. Vertical and Horizontal Control

A summary of the horizontal and vertical control for survey H13265 follows.

### C.1 Vertical Control

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

#### ERS Datum Transformation

The following ellipsoid-to-chart vertical datum transformation was used:

Method	Ellipsoid to Chart Datum Separation File
ERS via VDATUM	OPR-J311-KR-19_VDatum2_xyNAD83- MLLW_geoid12b.csar

*Table 13: ERS method and SEP file*

The separation model listed in Table 13 was provided with the Project Instructions and used for sounding correction within the assigned survey area. Realtime navigation for all MBES survey lines were overwritten with post-processed navigation solutions in SBET format. Post-processed solutions were generated using Applanix POSpac MMS using the Trimble CenterPoint RTX option which relies on precise satellite orbit and timing information to create centimeter level positioning and elevation without the use of traditional local base stations. Information on survey control is detailed in the DAPR.

### C.2 Horizontal Control

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.

### DGPS

The following DGPS Stations were used for horizontal control:

<b>DGPS Stations</b>
English Turn, LA (293 kHz)

*Table 14: USCG DGPS Stations*

Real-time positioning for side scan sonar operations was provided by differential GPS using corrections received from the US Coast Guard National Differential GPS (NDGPS) coverage network from differential beacons at English Turn, LA (293 kHz).

### WAAS

The Federal Aviation Administration Wide Area Augmentation System (FAA WAAS) was enabled to be active if the English Turn station experienced periods of down time.

## **D. Results and Recommendations**

### **D.1 Chart Comparison**

The chart comparison was performed by comparing H13265 survey depths to a digital surface generated from electronic navigational charts (ENCs) covering the survey area. A 50-meter product surface was generated from a triangular irregular network (TIN) created from the ENC's soundings, depth contours, and depth features. The 50-meter HIPS product surface of the entire survey area was generated from the 2-meter CUBE surface. The chart comparison was conducted by creating and reviewing a difference surface using the ENC surface and survey surface as inputs. The chart comparison also included a review of all assigned charted features within the survey area. The results of the comparison are detailed below. The relevant charts used during the comparison were reviewed to check that all US Coast Guard (USCG) Local Notice to Mariners (LNMs) issued during survey acquisition, and impacting the survey area, were applied and addressed by this survey.

### D.1.1 Electronic Navigational Charts

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

ENC	Scale	Edition	Update Application Date	Issue Date
US3GC04M	1:250000	63	08/01/2019	11/19/2019
US3GC05M	1:350000	48	02/19/2019	12/20/2019
US4MS12M	1:80000	40	12/12/2019	01/14/2020

*Table 15: Largest Scale ENC's*

### D.1.2 Shoal and Hazardous Features

No Dangers to Navigation (Dtons) were submitted for this survey.

### D.1.3 Charted Features

This survey contains one assigned charted wreck labeled Position Approximate (PA).

The charted wreck (PA) with depth unknown was disproved inside an assigned disproval radius with 100% MBES coverage. The charted wreck has been included in the FFF with a description of 'Delete'.

### D.1.4 Uncharted Features

No uncharted features were submitted for this survey.

### D.1.5 Channels

There are no precautionary areas, traffic separation schemes, or pilot boarding areas within the survey limits.

The Mississippi River-Gulf Outlet Channel to Mobile Ship Channel Safety Fairway (33 CFR 166.200) crosses the survey area. No new obstructions or dangers were located within the safety fairway in the survey area. The hydrographer recommends encoding the name of this and other safety fairways in the ENC's. Safety fairway names are included in the Code of Federal Regulations.

## **D.2 Additional Results**

### **D.2.1 Aids to Navigation**

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

### **D.2.2 Maritime Boundary Points**

No Maritime Boundary Points were assigned for this survey.

### **D.2.3 Bottom Samples**

Three bottom samples were acquired on August 1, 2019 (DN213) and August 2, 2019 (DN214). The bottom sampling plan followed suggested sample locations included in the Project Reference File (PRF) provided. Minor adjustments were made to the recommended sampling locations in order to sample the varying bottom types observed in the side scan data. This modification was approved by the Contracting Officer's Representative (COR). Correspondence is included in Appendix II Supplemental Survey Records & Correspondence of this report.

### **D.2.4 Overhead Features**

No overhead features exist for this survey.

### **D.2.5 Submarine Features**

There are three assigned submerged pipelines in the survey extents for H13265. These features were carefully reviewed for any portion of pipeline that was exposed or posed a risk to navigation. One extent of assigned pipeline was partially observed in MBES and SSS in charted position. The pipeline is included in the FFF with a description of 'Retain' due to the inability of the field unit to determine if pipelines are buried.

A pipeline report included in Appendix II, was submitted to the BSEE on February 10, 2020, reporting the sections of exposed or unburied pipeline visible in the MBES data. The reports indicate the positions of the start and end points of sections of what appear to be exposed pipelines based on interpretation of multibeam data. Due to the inability to accurately depict the location and orientation of all exposed pipelines with a single line segment, these features have been included in the FFF should further action be required after survey submittal. It is not the hydrographer's intention that these pipeline features be used as source information for charting without further validation of origin.

### **D.2.6 Platforms**

Two platforms are charted within the survey area.

The Nobel Energy 115-3 platform in the southern extents of the survey was not observed visually, and was disproved inside an assigned disproval radius with 100% MBES coverage.

The abandoned rig (unlighted) platform in the northern extents of the survey was not observed visually, and was disproved inside an assigned disproval radius with 100% MBES coverage.

Both platforms were disproved according to the HSSD (2019) and are included in the FFF with a description of 'Delete'. The hydrographer recommends removing these two platforms from the charts.

#### **D.2.7 Ferry Routes and Terminals**

No ferry routes or terminals exist for this survey.

#### **D.2.8 Abnormal Seafloor 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 Recommendations**

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

#### **D.2.11 ENC Scale Recommendations**

No new insets are recommended for this area.

## E. Approval Sheet

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

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

The survey data meets or exceeds requirements as set forth in the NOS Hydrographic Surveys and Specifications Deliverables, 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.

Report Name	Report Date Sent
Data Acquisition and Processing Report	2020-01-24

Approver Name	Approver Title	Approval Date	Signature
Jonathan L. Dasler, PE, PLS, CH	NSPS/THSOA Certified Hydrographer, Chief of Party	03/17/2020	 Digitally signed by Jon L. Dasler 2020.03.17 14:04:21 -07'00' 2020.006.20034
Jason Creech, CH	NSPS/THSOA Certified Hydrographer, Charting Manager / Project Manager	03/17/2020	 Digitally signed by Jason Creech Date: 2020.03.17 14:07:32 -07'00'
Callan McGriff, EIT	IHO Cat-A Hydrographer, Lead Hydrographer	03/17/2020	 Digitally signed by Callan McGriff Date: 2020.03.17 14:08:14 -07'00'
Steven Loy	IHO Cat-A Hydrographer, Lead Hydrographer	03/17/2020	 Digitally signed by Steven Loy Date: 2020.03.17 14:09:18 -07'00'

## 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>	Continuously 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>ERTDM</b>	Ellipsoidally Referenced Tidal Datum Model
<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>Acronym</b>	<b>Definition</b>
<b>HSSD</b>	Hydrographic Survey Specifications and Deliverables
<b>HSTB</b>	Hydrographic Systems Technology Branch
<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>MBAB</b>	Multibeam Echosounder Acoustic Backscatter
<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>NALL</b>	Navigable Area Limit Line
<b>NTM</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>Acronym</b>	<b>Definition</b>
<b>PRF</b>	Project Reference File
<b>PS</b>	Physical Scientist
<b>RNC</b>	Raster Navigational Chart
<b>RTK</b>	Real Time Kinematic
<b>RTX</b>	Real Time Extended
<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>SSSAB</b>	Side Scan Sonar Acoustic Backscatter
<b>ST</b>	Survey Technician
<b>SVP</b>	Sound Velocity Profiler
<b>TCARI</b>	Tidal Constituent And Residual Interpolation
<b>TPU</b>	Total Propagated Uncertainty
<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>ZDF</b>	Zone Definition File



## Jason Creech

---

**From:** Jason Creech  
**Sent:** Friday, December 13, 2019 12:52 PM  
**To:** 'survey.outlines@noaa.gov'  
**Cc:** Kathryn Pridgen - NOAA Federal  
**Subject:** OPR-J311-KR-19 Survey Outlines  
**Attachments:** H13261\_survey\_outline.000; H13263\_survey\_outline.000; H13265\_survey\_outline.000

Good Afternoon

I have attached the survey outlines for H13261, H13263, and H13265 (OPR-J311-KR-19).

Please let me know if you have any feedback or questions on these outlines.

Thanks,  
Jason

**Jason Creech, CH** | Vice President, Nautical Charting Program Manager  
**David Evans and Associates, Inc.**

## Jason Creech

---

**From:** Jason Creech  
**Sent:** Monday, February 10, 2020 3:01 PM  
**To:** 'pipelines@bsee.gov'  
**Cc:** Angie Gobert (angie.gobert@bsee.gov); 'Pelous, Steven A'; 'Diphicyl, Forna N'; Christina Fandel - NOAA Federal; 'Tim Osborn (Tim.Osborn@noaa.gov)'  
**Subject:** Gulf of Mexico Unburied Pipelines H13265  
**Attachments:** H13265\_Exposed\_Pipelines\_for\_BSEE.xlsx; H13265\_Pipeline\_images.zip

Good afternoon

While performing hydrographic surveys of the Gulf of Mexico for NOAA Office of Coast Survey, David Evans and Associates, Inc. has discovered what appears to be a segment of unburied pipeline. Attached is a spreadsheet containing the locations of the start and end points of the segment and a zip file containing a screen shot from side scan sonar data as well as an overview map of the exposure. All coordinates are relative to NAD83(2011) and listed in degrees minutes seconds (DMS).

Please let me know if you have any questions or require additional information. Christy Fandel, the NOAA Project Manager for this survey, and Tim Osborn, the NOAA Central Gulf Coast Regional Navigation Manager have been copied on this email.

H13265\_Pipeline\_01 is a segment of exposed pipeline approximately 239 feet in length with starting coordinates 29 57 51.828N, 88 22 51.939W and ending at 29 57 49.929N, 88 22 52.422W. The exposed segment has a bearing of 193 degrees and was identified in acoustic data acquired on July 28, 2019 (DN 209). The pipeline is near an abandoned rig but not in the vicinity of a charted pipeline and appears to be unburied with no discernable height above the surrounding seafloor. The exposed pipeline is not significantly shoaler than nearby charted soundings.

**Jason Creech, CH** | Vice President, Nautical Charting Program Manager

**David Evans and Associates, Inc.**

2801 SE Columbia Way, Suite 130 | Vancouver, WA, 98661 | [www.deainc.com](http://www.deainc.com)

t: 804.806.4440 | c: 804.516.7829 | [jasc@deainc.com](mailto:jasc@deainc.com)

[ENERGY](#) | [LAND DEVELOPMENT](#) | [MARINE SERVICES](#) | [SURVEYING AND GEOMATICS](#) | [TRANSPORTATION](#) | [WATER AND ENVIRONMENT](#)

## Jason Creech

---

**From:** NODC.DataOfficer@noaa.gov  
**Sent:** Monday, February 3, 2020 9:27 AM  
**To:** Jason Creech  
**Subject:** [Send2NCEI] data submission confirmation for Reference ID: ODMBMT

Dear Jason Creech,

Thank you for submitting your data collection, titled "SOUND VELOCITY collected from S/V Blake in Gulf of Mexico from 2019-06-14 to 2020-01-16", to the NOAA National Centers for Environmental Information (NCEI). Your submission package has been assigned Reference ID: ODMBMT. After reviewing your data and metadata, NCEI will update you about the archival status of your submission package.

You will be notified if NCEI creates an archival information package (accession) of your data, including the unique identifier for that archival information package (the NCEI Accession number). When your data are archived, NCEI keeps an exact copy of the data and metadata you sent and will develop necessary tracking and discovery metadata. In addition, NCEI may create additional versions to ensure your data are preserved for long-term access.

Upon completion of these archival ingest actions, NCEI will publish your data online (including a copy of your original files). You will receive another email once your submission package (Reference ID: ODMBMT) is published for global access. In addition, NCEI may include all or part of your data into one or more product databases, such as the World Ocean Database.

If you have any questions about NCEI archival processes, please contact [NODC.DataOfficer@noaa.gov](mailto:NODC.DataOfficer@noaa.gov). Also, if at any time you wish to update your submission package, please send an e-mail to [NODC.DataOfficer@noaa.gov](mailto:NODC.DataOfficer@noaa.gov) with your request. Please remember to include your submission package Reference ID.

Thank you again for choosing to archive your data with the National Centers for Environmental Information (NCEI).

NCEI Data Officer Team  
NOAA National Centers for Environmental Information NOAA/NESDIS  
1315 East-West Highway  
Silver Spring, MD 20910  
USA



OPR-J311-KR-19  
Marine Mammal Trained Observers

David Evans and Associates, Inc.  
2801 SE Columbia Way, Suite 130  
Vancouver, WA 98661  
Phone: 360-314-3200  
Fax: 360-314-3250

**Inclusive Dates:** 5/21/2019 - 2/15/2020  
**General Locality:** Chandeleur Islands

H Number	Sub Locality	Priority
H13260	12 NM East of North Islands	1
H13261	19 NM East of North Islands	2
H13262	19 NM East of Freemason Islands	3
H13263	25 NM East of Freemason Islands	4
H13264	23 NM East of North Islands	5
H13265	27 NM East of North Islands	6
H13266	27 NM ESE of Freemason Islands	7
H13267	24 NM East of Brenton Islands	8
H13268	12 NM South of Mobile Point	9

Observer	Position	Training Video <sup>1</sup> Date
Alexandra Juneau	Survey Crew	6/7/2019
Andrew Beets	Survey Crew	7/12/2019
Callan McGriff	Survey Crew	6/15/2019
Daniel Prince	Survey Crew	6/7/2019
David Moehl	Survey Crew	6/7/2019
Erin Haphey	Survey Crew	7/8/2019
Jason Dorfman	Survey Crew	6/6/2019
Laura Rajnak	Survey Crew	6/7/2019
Matthew Chatterton	Survey Crew	6/20/2019
Rachel Hausmann	Survey Crew	6/12/2019
Sam Werner	Survey Crew	6/6/2019
Steven Loy	Survey Crew	3/13/2019
Tyler Ball	Survey Crew	9/11/2019
George Hopkins	Vessel Crew	6/22/2019
Harry Stutzke	Vessel Crew	6/13/2019
Jarrold Leckich	Vessel Crew	6/22/2019
Jason Privett	Vessel Crew	9/10/2019
Jerry David Keith	Vessel Crew	6/13/2019
Jonathan Jones	Vessel Crew	9/11/2019
Joseph Ziz	Vessel Crew	7/15/2019
Ryan Willis	Vessel Crew	6/13/2019
Timothy Kennedy	Vessel Crew	6/13/2019

<sup>1</sup> Marine Species Awareness Training Video: <https://www.youtube.com/watch?v=KKo3r1yVBBA>

## Jason Creech

---

**From:** Jason Creech  
**Sent:** Friday, January 31, 2020 3:15 PM  
**To:** 'pop.information@noaa.gov'; 'ocs.ecc@noaa.gov'  
**Cc:** Christina Fandel - NOAA Federal  
**Subject:** OPR-J311-KR-19 Marine Mammal Observation Logs  
**Attachments:** OPR-J311-KR-19\_Marine\_Mammal\_Logs.zip

Good afternoon

I have attached a zip file containing Marine Mammal Observation Logs from hydrographic survey project OPR-J311-KR-19. This project was performed by David Evans and Associates, Inc. under contract to NOAA Office of Coast Survey.

Please let me know if you have any questions about this submittal.

Thanks,  
Jason

**Jason Creech, CH** | Vice President, Nautical Charting Program Manager  
**David Evans and Associates, Inc.**

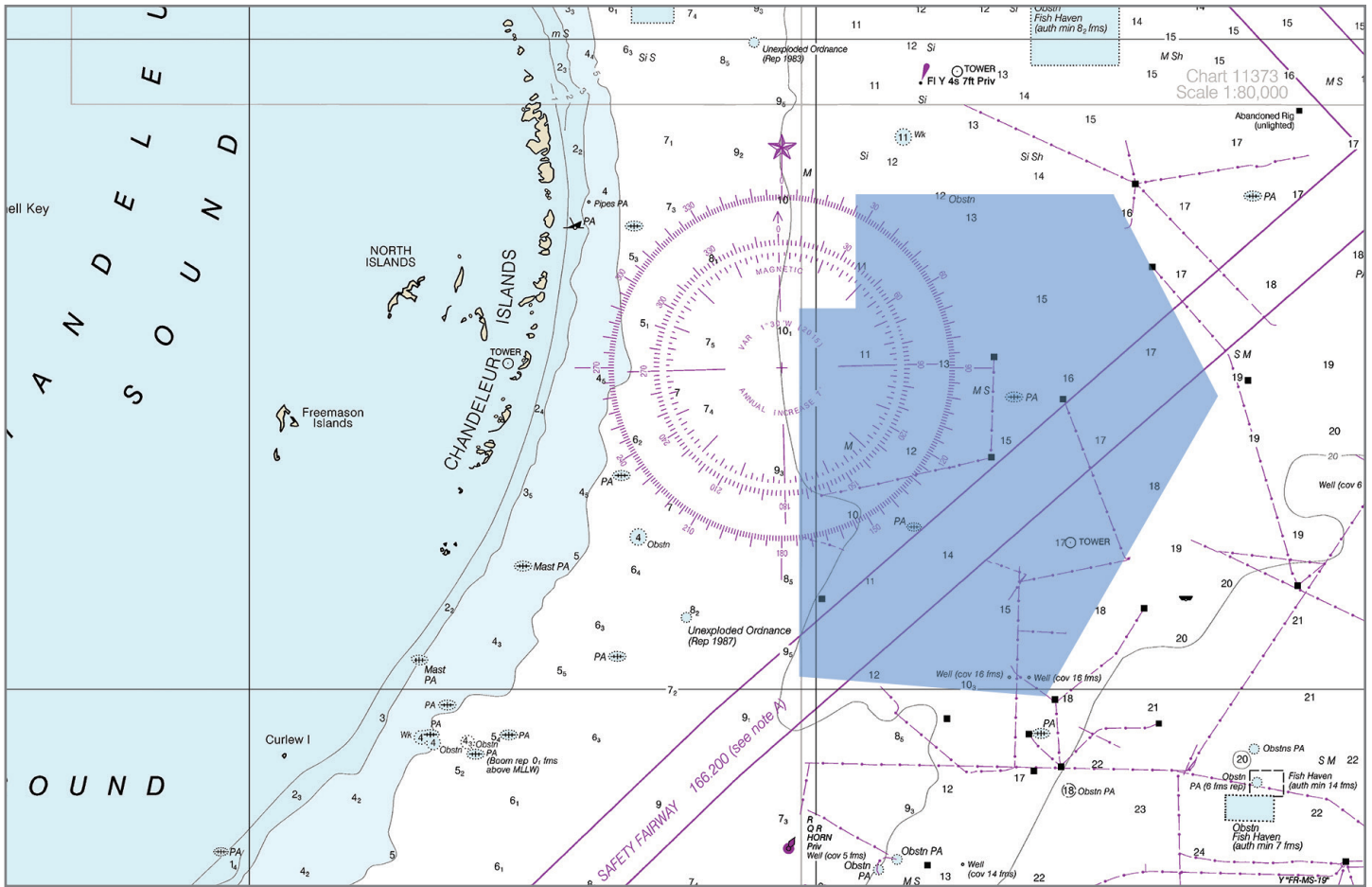
2801 SE Columbia Way, Suite 130 | Vancouver, WA, 98661 | [www.deainc.com](http://www.deainc.com)  
t: 804.806.4440 | c: 804.516.7829 | [jasc@deainc.com](mailto:jasc@deainc.com)

[ENERGY](#) | [LAND DEVELOPMENT](#) | [MARINE SERVICES](#) | [SURVEYING AND GEOMATICS](#) | [TRANSPORTATION](#) | [WATER AND ENVIRONMENT](#)

# Coast Pilot Investigation Items for OPR-J311-KR-19 Chandeleur Islands Offshore

(All paragraphs are referenced to the 46th edition of Coast Pilot 5 (02 December 2018))

## Survey Limits for OPR-J311-KR-19



The area for survey OPR-J311-KR-19 is outlined in blue above. There are no paragraphs included in U.S. Coast Pilot 5 that describe this area and thus, there are no investigation items to be listed.

Should you come across any type of new information that you feel would benefit the users of the Coast Pilot, please submit this and don't hesitate to suggest items for inclusion. If you have any questions about the items in this report or anything in Coast Pilot, please contact:  
**Richard.Powell@noaa.gov** or **coast.pilot@noaa.gov**.

**There were no assigned Coast Pilot investigation items for this survey. A Coast Pilot Report was not submitted for OPR-J311-KR-19.**

**Paragraphs Affected**  
 None

APPROVAL PAGE

H13265

The survey data meet or exceed the current requirements of the Office of Coast Survey hydrographic data review process and may be used to update NOAA products. The following survey products will be archived at the National Centers for Environmental Information:

- Descriptive Report
- Collection of Bathymetric Attributed Grids (BAGs)
- Collection of acoustic backscatter mosaics
- Bottom samples
- Geospatial PDF of survey products

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

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