

H12730

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

**DESCRIPTIVE REPORT**

Type of Survey: Basic Hydrographic Survey

Registry Number: H12730

**LOCALITY**

State(s): Louisiana

General Locality: Gulf of Mexico

Sub-locality: 25 NM SE of Sabine Pass

**2015**

CHIEF OF PARTY  
Paul L. Donaldson

LIBRARY & ARCHIVES

Date:

**HYDROGRAPHIC TITLE SHEET**

**H12730**

**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: **Gulf of Mexico**

Sub-Locality: **25 NM SE of Sabine Pass**

Scale: **40000**

Dates of Survey: **12/01/2015 to 12/15/2015**

Instructions Dated: **04/09/2015**

Project Number: **OPR-K371-KR-15**

Field Unit: **Leidos**

Chief of Party: **Paul L. Donaldson**

Soundings by: **Multibeam Echo Sounder**

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

Verification by: **Atlantic Hydrographic Branch**

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

**Remarks:**

Contract: EA-133C-14-CQ\_0033.

Contractor: Leidos, 221 Third Street, Newport, RI 02840 USA.

Subcontractors: Divemasters, Inc., 15 Pumpshire Road, Toms River, NJ 08753 and OARS, 8705 Shoal Creek Blvd, Suite 109, Austin, TX 78757.

Leidos Doc 16-TR-024.

All times were recorded in UTC.

Data were collected in UTM Zone 15.

*The purpose of this survey is to provide contemporary surveys to update National Ocean Service (NOS) nautical charts. All separates are filed with the hydrographic data. Any revisions to the Descriptive Report (DR) generated during office processing are shown in bold red italic text. The processing branch maintains the DR as a field unit product, therefore, all information and recommendations within the body of the DR are considered preliminary unless otherwise noted. The final disposition of surveyed features is represented in the OCS nautical chart update products. All pertinent records for this survey, including the DR, are archived at the National Centers for Environmental Information (NCEI) and can be retrieved via <https://www.ncei.noaa.gov/>.*

# Table of Contents

A. Area Surveyed.....	1
A.1 Survey Limits.....	1
A.2 Survey Purpose.....	2
A.3 Survey Quality.....	2
A.4 Survey Coverage.....	3
A.5 Survey Statistics.....	4
B. Data Acquisition and Processing.....	6
B.1 Equipment and Vessels.....	6
B.1.1 Vessels.....	6
B.1.2 Equipment.....	7
B.2 Quality Control.....	7
B.2.1 Crosslines.....	7
B.2.2 Uncertainty.....	8
B.2.3 Junctions.....	9
B.2.4 Sonar QC Checks.....	11
B.2.5 Equipment Effectiveness.....	11
B.2.6 Factors Affecting Soundings.....	11
B.2.7 Sound Speed Methods.....	12
B.2.8 Coverage Equipment and Methods.....	13
B.2.9 Coverage Analysis.....	13
B.3 Echo Sounding Corrections.....	14
B.3.1 Corrections to Echo Soundings.....	14
B.3.2 Calibrations.....	14
B.4 Backscatter.....	14
B.5 Data Processing.....	14
B.5.1 Primary Data Processing Software.....	14
B.5.2 Surfaces.....	14
B.5.3 Side Scan Coverage Analysis.....	15
C. Vertical and Horizontal Control.....	16
C.1 Vertical Control.....	16
C.2 Horizontal Control.....	17
D. Results and Recommendations.....	18
D.1 Chart Comparison.....	18
D.1.1 Raster Charts.....	18
D.1.2 Electronic Navigational Charts.....	19
D.1.3 Maritime Boundary Points.....	20
D.1.4 Charted Features.....	20
D.1.5 Uncharted Features.....	20
D.1.6 Dangers to Navigation.....	20
D.1.7 Shoal and Hazardous Features.....	20
D.1.8 Channels.....	20
D.1.9 Bottom Samples.....	20
D.2 Additional Results.....	21

<a href="#">D.2.1 Shoreline</a>	<a href="#">21</a>
<a href="#">D.2.2 Prior Surveys</a>	<a href="#">21</a>
<a href="#">D.2.3 Aids to Navigation</a>	<a href="#">21</a>
<a href="#">D.2.4 Overhead Features</a>	<a href="#">21</a>
<a href="#">D.2.5 Submarine Features</a>	<a href="#">21</a>
<a href="#">D.2.6 Ferry Routes and Terminals</a>	<a href="#">21</a>
<a href="#">D.2.7 Platforms</a>	<a href="#">21</a>
<a href="#">D.2.8 Significant Features</a>	<a href="#">22</a>
<a href="#">D.2.9 Construction and Dredging</a>	<a href="#">22</a>
<a href="#">D.2.10 New Survey Recommendation</a>	<a href="#">22</a>
<a href="#">D.2.11 Designated Soundings</a>	<a href="#">22</a>
<a href="#">D.2.12 Final Feature S-57 File</a>	<a href="#">23</a>
<a href="#">D.2.13 Side Scan Sonar Contacts S-57 File</a>	<a href="#">23</a>
<a href="#">D.2.14 Inset Recommendation</a>	<a href="#">23</a>
<a href="#">E. Approval Sheet</a>	<a href="#">24</a>

## List of Tables

<a href="#">Table 1: Survey Limits</a>	<a href="#">1</a>
<a href="#">Table 2: Hydrographic Survey Statistics</a>	<a href="#">5</a>
<a href="#">Table 3: Dates of Hydrography</a>	<a href="#">6</a>
<a href="#">Table 4: Vessels Used</a>	<a href="#">6</a>
<a href="#">Table 5: Major Systems Used</a>	<a href="#">7</a>
<a href="#">Table 6: Junctioning Surveys</a>	<a href="#">10</a>
<a href="#">Table 7: Submitted Surfaces</a>	<a href="#">15</a>
<a href="#">Table 8: NWLON Tide Stations</a>	<a href="#">16</a>
<a href="#">Table 9: Water Level Files (.tid)</a>	<a href="#">16</a>
<a href="#">Table 10: Tide Correctors (.zdf or .tc)</a>	<a href="#">16</a>
<a href="#">Table 11: USCG DGPS Stations</a>	<a href="#">17</a>
<a href="#">Table 12: Largest Scale Raster Charts</a>	<a href="#">18</a>
<a href="#">Table 13: Largest Scale ENCs</a>	<a href="#">19</a>

## List of Figures

<a href="#">Figure 1: H12730 Survey Bounds</a>	<a href="#">2</a>
<a href="#">Figure 2: Final Bathymetry Coverage for H12730</a>	<a href="#">4</a>
<a href="#">Figure 3: Summary of Crossing Analysis</a>	<a href="#">8</a>
<a href="#">Figure 4: General Locality of H12730 with Contemporary Surveys</a>	<a href="#">10</a>
<a href="#">Figure 5: CUBE Depth Delta Resulting From Local Weather Events</a>	<a href="#">12</a>
<a href="#">Figure 6: List of Designated Soundings set within H12730</a>	<a href="#">22</a>

## Descriptive Report to Accompany Survey H12730

Project: OPR-K371-KR-15

Locality: Gulf of Mexico

Sublocality: 25 NM SE of Sabine Pass

Scale: 1:40000

December 2015 - December 2015

**Leidos**

Chief of Party: Paul L. Donaldson

### A. Area Surveyed

The area surveyed was a section of the Gulf of Mexico SE of Sabine Pass, LA (Figure 1).

#### A.1 Survey Limits

Data were acquired within the following survey limits:

<b>Northwest Limit</b>	<b>Southeast Limit</b>
29° 22' 36.55" N 093° 38' 08.92" W	29° 18' 07.24" N 093° 27' 11.23" W

*Table 1: Survey Limits*

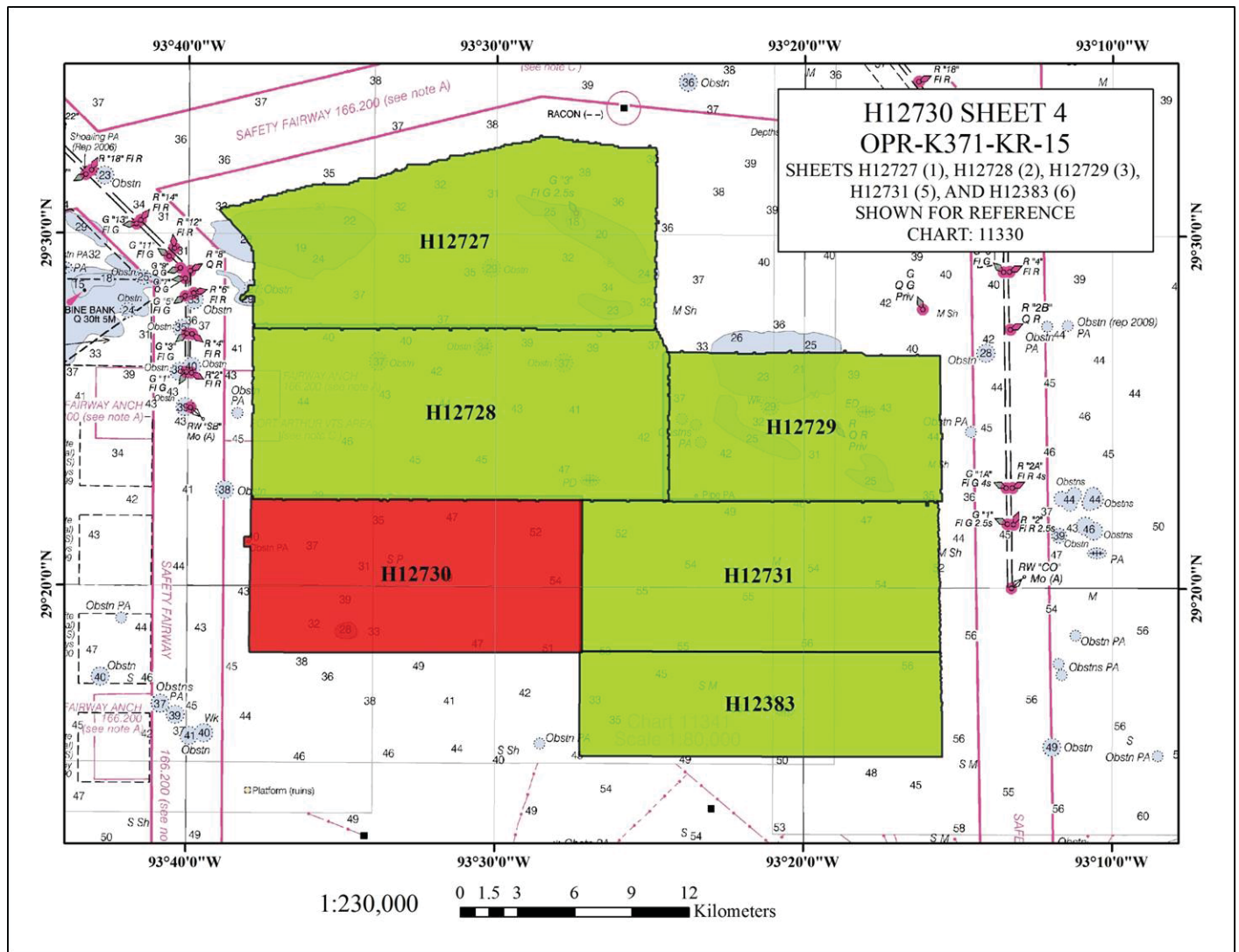


Figure 1: H12730 Survey Bounds

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

## A.2 Survey Purpose

The purpose of this survey is to update existing NOS nautical charts. This project is located in a highly trafficked critical area south of the Louisiana coast as designated in the 2012 NOAA Hydrographic Survey Priorities.

## A.3 Survey Quality

The entire survey is adequate to supersede previous data.

Leidos warrants only that the survey data acquired by Leidos and delivered to NOAA under Contract EA-133C-14-CQ-0033 reflects the state of the sea floor in existence on the day and at the time the survey was conducted.

H12730 was surveyed in accordance with the following documents:

1. Project Instructions, OPR-K371-KR-15, dated 09 April 2015
2. NOS Hydrographic Survey Specifications and Deliverables (HSSD), May 2015
3. OPR-K371-KR-15 Statement of Work, dated 09 January 2015

#### 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.	Either A) Complete MBES with backscatter, OR B) 100% SSS with concurrent set line spacing with MBES with backscatter. Note: Complete MBES is sufficient for both determination of least depth identified with SSS and for disproving a feature - 100% SSS is sufficient to disprove a feature. Refer to Section 6.1.2 of the HSSD to confirm proper SSS acquisition parameters. Gaps in SSS coverage should be treated as gaps in MBES coverage and addressed accordingly.

Leidos chose to achieve the coverage requirement using 100% side scan sonar with concurrent set line spacing multibeam echo-sounder with backscatter. Survey coverage was in accordance with the requirements in the Project Instructions and the HSSD.



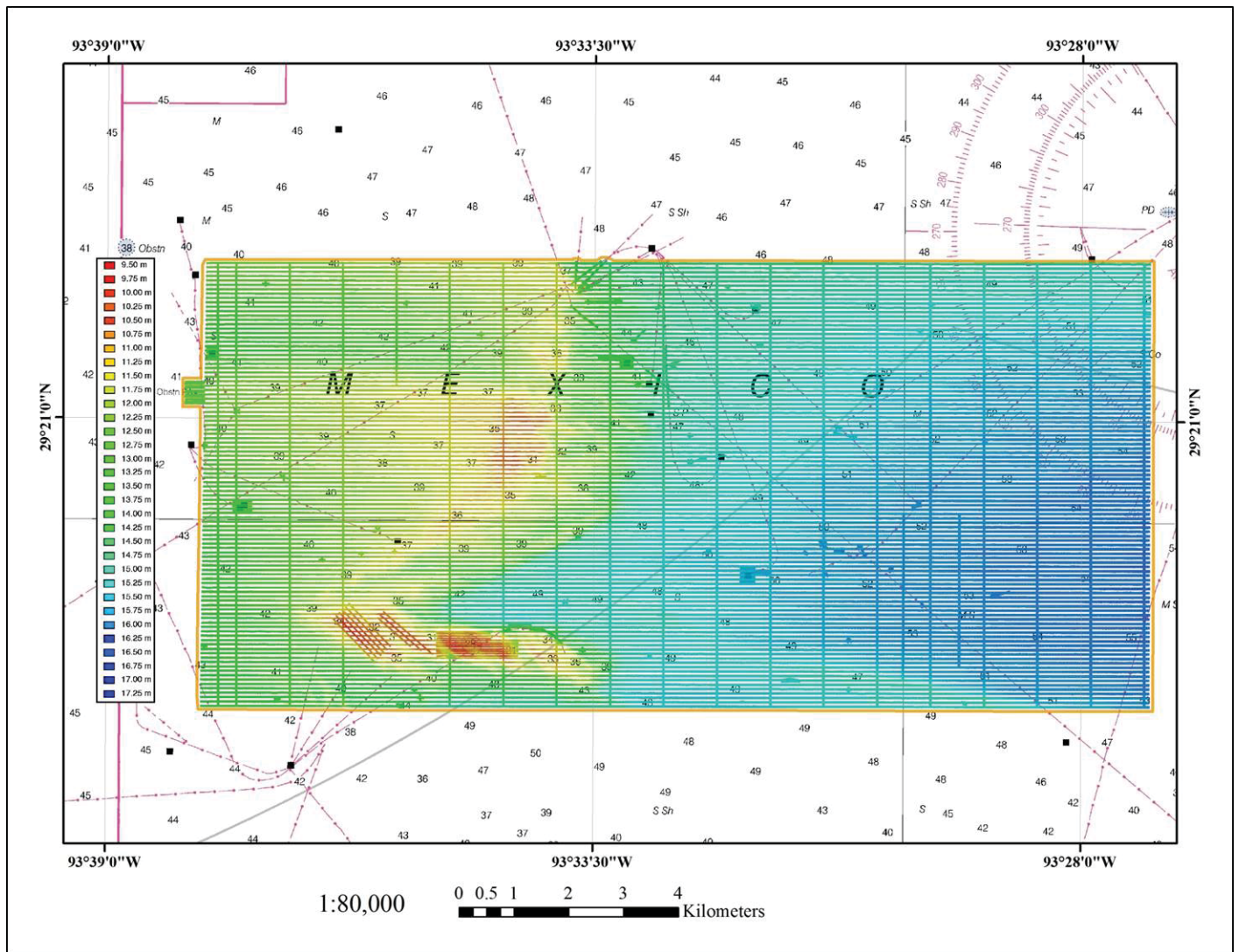


Figure 2: Final Bathymetry Coverage for H12730

### A.5 Survey Statistics

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

	<b>HULL ID</b>	<i>M/V Atlantic Surveyor</i>	<b>Total</b>
<b>LNM</b>	<b>SBES Mainscheme</b>	0	0
	<b>MBES Mainscheme</b>	0	0
	<b>Lidar Mainscheme</b>	0	0
	<b>SSS Mainscheme</b>	0	0
	<b>SBES/SSS Mainscheme</b>	0	0
	<b>MBES/SSS Mainscheme</b>	1048.87	1048.87
	<b>SBES/MBES Crosslines</b>	84.35	84.35
	<b>Lidar Crosslines</b>	0	0
<b>Number of Bottom Samples</b>			7
<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>			41.65

*Table 2: 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>
12/01/2015	335

<b>Survey Dates</b>	<b>Day of the Year</b>
12/02/2015	336
12/03/2015	337
12/04/2015	338
12/05/2015	339
12/06/2015	340
12/07/2015	341
12/08/2015	342
12/10/2015	344
12/15/2015	349

*Table 3: Dates of Hydrography*

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

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

Leidos used their ISS-2000 software on a Windows 7 platform to acquire these survey data. Survey planning and data analysis were conducted using the Leidos SABER software on Red Hat Enterprise 6 Linux platforms. L-3 Klein 3000 side scan data were collected on a Windows 7 platform using L-3 Klein's SonarPro software. Subsequent processing and review of the side scan data, including the generation of coverage mosaics, were accomplished using SABER.

A detailed description of the systems and vessel used to acquire and process these data is included in the Data Acquisition and Processing Report (DAPR) for OPR-K371-KR-15, delivered on 12 February 2016. There were no variations from the equipment configuration described in the DAPR.

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

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

<b>Hull ID</b>	<i>M/V Atlantic Surveyor</i>
<b>LOA</b>	110 feet
<b>Draft</b>	9 feet

*Table 4: Vessels Used*

The M/V Atlantic Surveyor was used to collect multibeam sonar (RESON Seabat 8101 ER), side scan sonar (L-3 Klein 3000), and sound speed data during twenty-four hours per day survey operations.

A detailed description of the vessel used is included in Section A of the DAPR.

### 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>
RESON	Seabat 8101 ER	MBES
L-3 Klein	3000	SSS
Applanix	POS/MV 320	Positioning and Attitude System
Trimble	Probeacon	Positioning System
Brooke Ocean Technology	MVP-30	Sound Speed System

*Table 5: Major Systems Used*

A detailed description of the equipment installed is included in Section A of the DAPR.

## B.2 Quality Control

### B.2.1 Crosslines

Crosslines acquired for this survey totaled 8.04% of mainscheme acquisition.

There were 84.35 linear nautical miles of crosslines and 1048.87 linear nautical miles of mainscheme lines surveyed on H12730. This resulted in crossline mileage of approximately 8.04% of the mainscheme mileage which meets the requirement (Section 5.2.4.3 of the 2015 HSSD) to achieve at least four percent for a complete coverage multibeam survey. H12730 requirements were for complete coverage based on the 2015 HSSD and set line spacing in the 2014 HSSD. Leidos was granted permission from NOAA (correspondence email dated 26 October 2015) to deliver H12730 data to the 2015 HSSD version after survey operations had already commenced; therefore, crossline survey plans were made to the 2014 HSSD requirement of eight percent.

The mainscheme lines were orientated 90°/270° and spaced 80 meters apart. Crosslines were oriented 0°/180° and spaced 975 meters apart. Refer to the “Multibeam Processing Log” section within Separates I for information on the delineation of mainscheme and crossline data files.

In the field, hydrographers conducted daily comparisons of mainscheme to near nadir crossline data to ensure that no systematic errors were introduced, and to identify potential problems with the survey systems. After the application of all correctors and completion of final processing in the office, separate one-meter grids were built. One grid contained the full valid swath ( $\pm 60^\circ$  from nadir) of mainscheme multibeam and the other included only the near nadir swath ( $\pm 5^\circ$  from nadir) crossline data. Difference grids were then generated by subtracting one grid from the other.

The SABER Frequency Distribution Tool was used to analyze the difference grids. All comparisons fell within the requirement defined in Section 5.2.4.3 of the HSSD, which states that at least 95% of the depth difference values are to be within the maximum allowable total vertical uncertainty. Figure 3 summarizes the comparison results. See Separates II for a complete discussion of the analysis and tabular results.

<b>DIFFERENCE GRID</b>	<b>IHO 1A Maximum Allowable Uncertainty (Meters) for the Range of Depths</b>	<b>Percent of Depth Differences Less than IHO Order 1A Maximum</b>
M/V Atlantic Surveyor Multibeam Crossline (Class 1) to Mainscheme	0.516 – 0.545	100

*Figure 3: Summary of Crossing Analysis*

## **B.2.2 Uncertainty**

The Total Propagated Uncertainty (TPU) model that Leidos has adopted had its genesis at the Naval Oceanographic Office (NAVOCEANO), and is based on the work by Rob Hare and others (“Error Budget Analysis for NAVOCEANO Hydrographic Survey Systems, Task 2 FY 01”, 2001, HSRC FY01 Task 2 Final Report). Once the TPU model is applied to the GSF bathymetry data, each beam is attributed with the horizontal uncertainty and the vertical uncertainty at the 95% confidence level. For specific details on the use and application of the SABER Total Propagated Uncertainty model, see Section B.1 in the DAPR.

The vertical and horizontal uncertainty values that were estimated by the TPU model for individual multibeam soundings varied little across the dataset, tending to be most affected by beam angle. During application of horizontal and vertical uncertainties to the GSF files, individual beams where either the horizontal or vertical uncertainty exceeded the maximum allowable IHO S-44 5th Edition Order 1a specifications were flagged as invalid. As a result, all individual soundings used in development of the final CUBE depth surface had modeled vertical and horizontal uncertainty values at or below the allowable IHO S-44 5th Edition, Order 1a uncertainty.

During the creation of the CUBE surface, two separate vertical uncertainty surfaces are calculated by the SABER software. One surface contains the standard deviation of all soundings that are contributing to the CUBE hypothesis (Hyp. StdDev), and the other contains the average of the vertical uncertainty of all

soundings contributing to the CUBE hypothesis (Hyp. AvgTPE). A third vertical uncertainty surface is generated from the larger value of these two uncertainties at each node and is referred to as the Hypothesis Final Uncertainty. For specific details on this process see Section B.2 of the DAPR.

The final one-meter PFM CUBE surface contained final vertical uncertainties that ranged from 0.470 to 1.235 meters. The IHO Order 1a maximum allowable vertical uncertainty was calculated to range between 0.516 to 0.545 meters, based on the minimum CUBE depth (9.792 meters) and maximum CUBE depth (16.723 meters). The SABER Check PFM Uncertainty function was used to highlight all instances in the Hypothesis Final Uncertainty surface where a given node exceeded the IHO Order 1a allowable vertical uncertainty for the CUBE depth at that node. The final one-meter PFM CUBE surface contained 110 individual CUBE nodes with final vertical uncertainties that exceeded IHO Order 1a allowable vertical uncertainty. The nodes that exceed the IHO Order 1a allowable vertical uncertainty for the CUBE depth are primarily located around features where there is a high variability in the depth soundings. There were four nodes where the uncertainty was high resulting from lines that were re-run due to gaps in the CUBE surface.

The SABER Frequency Distribution Tool was used to review the Hypothesis Final Uncertainty surface within the final one-meter PFM grid. The results show that in the final one-meter PFM grid, 99.99% of all nodes had final uncertainties less than or equal to 0.500 meters.

### **B.2.3 Junctions**

An analysis of H12730 junctions with contemporary surveys was performed. Figure 4 shows the general locality of H12730 as it relates to the contemporary sheets for which junction analysis was performed. Table 6 provides details for each contemporary sheet junction analysis performed. See Separates II for a complete discussion of the junction results and tabular listings. Note that analysis of the junction with H12731 was not conducted, as at the time of this delivery, Leidos had not begun data acquisition of H12731.

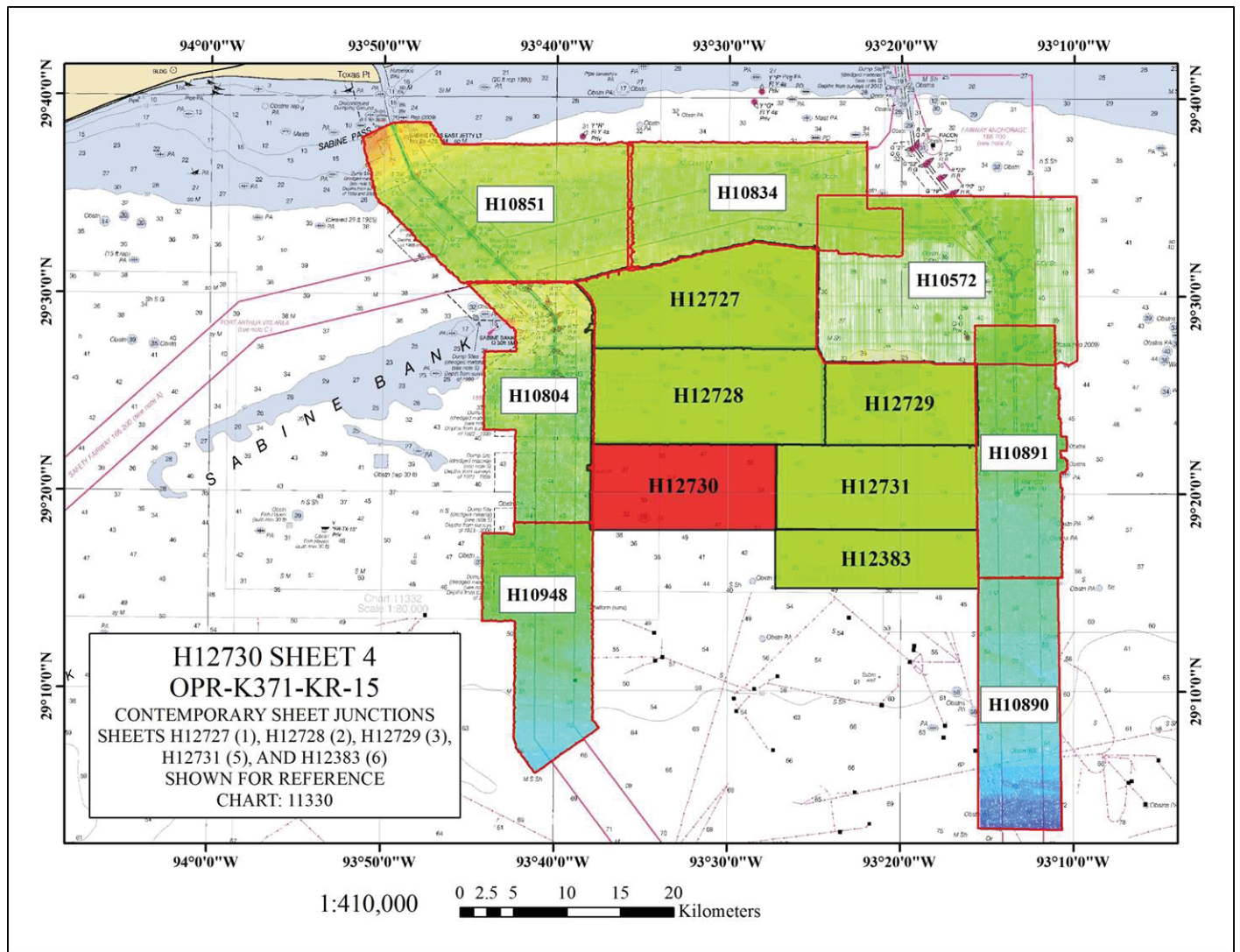


Figure 4: General Locality of H12730 with Contemporary Surveys

The following junctions were made with this survey:

Registry Number	Scale	Year	Field Unit	Relative Location
H10804	1:20000	1999	John E. Chance and Associates	W
H10948	1:20000	2000	Fugro GeoServices, Inc.	SW
H12728	1:40000	2015	Leidos	N

Table 6: Junctioning Surveys

H10804

H12730 junctions with H10804 to the west; 96.86% of the comparisons agreed within  $\pm 0.50$  meters.

H10948

H12730 junctions with H10948 to the southwest; 98.38% of the comparisons agreed within  $\pm 0.65$  meters.

H12728

H12730 junctions with H12728 to the north; 98.42% of the comparisons agreed within  $\pm 0.18$  meters.

**B.2.4 Sonar QC Checks**

Sonar system quality control checks were conducted as detailed in Section A.5, Multibeam Systems and Operations, of the DAPR.

**B.2.5 Equipment Effectiveness**

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

**B.2.6 Factors Affecting Soundings**

During localized weather events, an artifact resulting from a difference in water levels between the survey area and the water level gauge was observed in the multibeam CUBE surface. The artifact generally ranged between 10 to 20 centimeters when present (Figure 5). The occasional vertical offsets observed within H12730 were within the IHO Order 1a allowable vertical and horizontal uncertainty for these water depths.



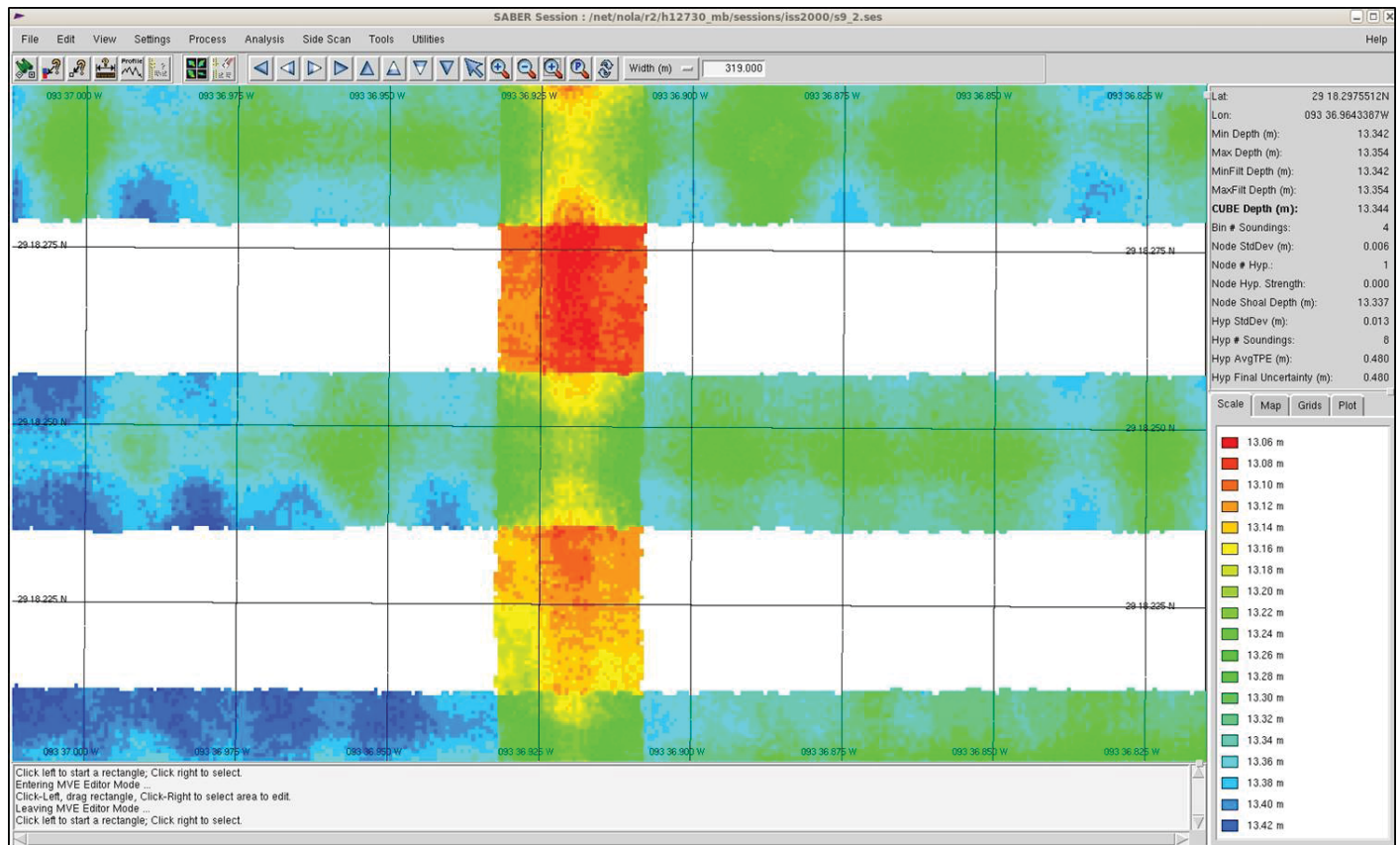


Figure 5: CUBE Depth Delta Resulting From Local Weather Events

## B.2.7 Sound Speed Methods

Sound Speed Cast Frequency: On the M/V Atlantic Surveyor, the MVP-30 was used to collect sound speed profile (SSP) data. SSP data were obtained at intervals frequent enough to meet depth accuracy requirements. Section 5.2.3.3 of the HSSD requires that if the sound speed measured at the sonar head differs by more than two meters/second from the commensurate profile data, then another cast shall be acquired. There were times when the sound speed values exceeded the two meters/second threshold due to the local temporal and tidal variability. During these times, several profiles were acquired and reapplied in an effort to reduce these effects. The product of this effort resulted in the final data bearing no significant artifacts due to sound speed differences.

All sound speed profiles that were applied for online bathymetry data collection were acquired within one kilometer of the bounds of the survey area. Please refer to the DAPR for specific details regarding acquisition (Section A.7) and application (Section C.1.3) of sound speed profiles.

Confidence checks of the sound speed profile casts were conducted by comparing at least two consecutive casts taken with different SVP Smart Sensors. Five sound speed confidence checks were conducted during H12730 and the results can be found in Separates II within the “Comparison Cast Log” section.

Sound speed profiles have been provided in CARIS format (.svp) and are named based on the purpose of the casts. There were four distinct purposes for SSP casts and each concatenated SSP file is located in a separate folder on the delivery drive (H12730/Data/Processed/SVP/CARIS\_SSP). There are four files for the MVP sound speed data. All individual sound speed profile files are also delivered with the H12730 data and are broken out into sub-folders, which correspond to the purpose of each cast.

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

All equipment and survey methods are detailed in the DAPR.

### **B.2.9 Coverage Analysis**

Leidos chose to achieve the coverage requirement using 100% side scan sonar with concurrent set line spacing multibeam echo-sounder with backscatter. To achieve this coverage, the M/V Atlantic Surveyor used a towed L-3 Klein 3000 side scan sonar set to a 50-meter range scale. Mainscheme line spacing was 80 meters, which insured 100% side scan coverage.

Both the Project Instructions and the HSSD stated that 100% side scan was insufficient to disprove a charted feature. Therefore, Leidos reviewed the BSB and ENC charts and completed an additional 100% side scan coverage, and resulting multibeam coverage over common charted objects not found during survey in order to verify disproval. A radius was determined from the Project Instructions, which stated, "In the case of the unassigned offshore oil platforms within the survey area, should the field unit observe that the feature is not visible, then a formal disproval is required. For the purposes of disproval, charted features labeled with a "PA" will have a search radius of 160 meters, a "PD" will have a search radius of 240 meters, and all other features without a position qualifier will have a search radius of 80 meters."

Backscatter data were acquired for all water depths.

The SABER Gapchecker routine was used to flag multibeam data gaps within the CUBE surface. Additionally, the entire surface was visually scanned for holidays at various points during the data processing effort. Additional survey lines were run to fill any holidays that were detected. A final review of the CUBE Depth surface of the one-meter PFM containing all multibeam showed that there were a few areas where a three by three node gap exists. These gaps resulted from one of two reasons, the holiday line data was offset slightly from the original line due to vessel line following or the swath width of the holiday lines were reduced compared to the original line due to water level differences. One instance of a three by three node gap, 29° 21' 20.97"N 093° 35' 44.17"W, exists on a crossline where data were turned off, and additional crossline data were not needed, as the crossline percentage requirement had already been met.

All grids were examined for the number of soundings contributing to the chosen CUBE hypotheses for each node by running SABER's Frequency Distribution Tool on the Hypothesis Number of Soundings (Hyp # Soundings) surface for the one-meter PFM. The Hyp # Soundings surface reports the number of soundings that were used to compute the chosen hypothesis. Analysis of the H12730 final one-meter PFM

grid revealed that 87.59% of all nodes contained five or more soundings; satisfying the requirements for complete coverage surveys, as specified in Section 5.2.2.2 of the HSSD.

## B.3 Echo Sounding Corrections

### B.3.1 Corrections to Echo Soundings

All data reduction procedures conform to those detailed in the DAPR.

### B.3.2 Calibrations

All sounding systems were calibrated as detailed in the DAPR.

## B.4 Backscatter

In accordance with the HSSD and Project Instructions, Leidos collected multibeam backscatter with all GSF data acquired by the RESON Seabat 8101 ER. The multibeam settings used were checked to ensure acceptable quality standards were met and to avoid any acoustic saturation of the backscatter data. The multibeam backscatter data acquired were written to the GSF in real-time by ISS-2000 and are delivered in the final GSF files for this sheet. Backscatter was not processed by Leidos.

## B.5 Data Processing

### B.5.1 Primary Data Processing Software

The following Feature Object Catalog was used: NOAA Extended Attribute File V5-2. The primary data processing software used for both bathymetry and imagery was SABER. There were no software configuration changes after the DAPR was submitted.

### B.5.2 Surfaces

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

Surface Name	Surface Type	Resolution	Depth Range	Surface Parameter	Purpose
H12730_MB_1m_MLLW	BAG	1 meters	9.792 meters -	N/A	Complete Coverage

Surface Name	Surface Type	Resolution	Depth Range	Surface Parameter	Purpose
			16.723 meters		
H12730_ss_1_100_mosaic	SSS Mosaic (.tif;.tfw)	1 meters	0 meters - 0 meters	N/A	100% SSS
H12730_ss_2_100_mosaic	SSS Mosaic (.tif;.tfw)	1 meters	0 meters - 0 meters	N/A	200% SSS Charted Object Disproval

*Table 7: Submitted Surfaces*

A PFM CUBE Depth surface was used to assess and document multibeam survey coverage. The CUBE depth is populated with either the node's chosen hypothesis or the depth of a feature or designated sounding set by the hydrographer, which overrides the chosen hypothesis. The range of CUBE depths in H12730 was from 9.792 meters (32.126 feet, 0.480-meter uncertainty) to 16.723 meters (54.865 feet, 0.480-meter uncertainty). Section 5.2.2.2 of the HSSD requires a one-meter grid resolution for depths ranging from zero meters to 20 meters for Complete Coverage.

The final gridded bathymetry data are delivered as Bathymetric Attributed Grids (BAG). The BAG file was exported from the CUBE PFM grid as detailed in Section B.2.5 of the DAPR.

### **B.5.3 Side Scan Coverage Analysis**

For all details regarding side scan data processing, see Section B.3 of the DAPR. The Project Instructions required 100% side scan coverage with concurrent set line spacing MBES with backscatter. Both the Project Instructions and the HSSD stated that 100% side scan was insufficient to disprove a charted feature. Therefore, 100% side scan coverage was collected and verified for the entire survey area, and an additional 100% coverage was collected over charted objects that were not found to verify disproval. Leidos generated two separate 100% coverage mosaics at one-meter cell size resolution as specified in Section 8.3.1 of the HSSD. The first and second 100% coverage mosaics were independently reviewed using tools in SABER to verify data quality and swath coverage. Both coverage mosaics are determined to be complete and sufficient to meet the requirements contained within the Project Instructions. The mosaics are delivered as TIFF (.tif) images with accompanying world files (.tfw), refer to Table 7.

Side scan sonar contacts were investigated and confirmed using SABER Contact Review. All side scan sonar contacts and accompanying images are delivered in the Side Scan Sonar Contacts S-57 file; for specifics refer to Section D.2.13.

## C. Vertical and Horizontal Control

No vertical or horizontal controls were established, recovered, or occupied during data acquisition for OPR-K371-KR-15, which includes H12730. Therefore, a Horizontal and Vertical Control Report was not required.

### C.1 Vertical Control

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

#### Standard Vertical Control Methods Used:

Discrete Zoning

The following National Water Level Observation Network (NWLON) stations served as datum control for this survey:

Station Name	Station ID
Calcasieu Pass, LA	8768094

Table 8: NWLON Tide Stations

File Name	Status
8768094_verified_09222015_to_12202015.tid	Verified Observed

Table 9: Water Level Files (.tid)

File Name	Status
K371KR2015CORP.zdf	Final

Table 10: Tide Correctors (.zdf or .tc)

No final tide note was provided by the NOAA Center for Operational Oceanographic Products and Services (CO-OPS). Leidos is not required to have a final tide note from CO-OPS for H12730 however, a final tide note has been provided by Leidos in Appendix I.

The Tides Statement of Work specified NOAA tide station 8768094 Calcasieu Pass, LA as the source for water level correctors for OPR-K371-KR-15. A full explanation of the tide zone assessment is detailed in Section C.4 of the DAPR. For H12730, 8768094 Calcasieu Pass, LA was the source of all final verified

water level heights for determining correctors to soundings. All data for H12730 were contained within three tide zones (WGM72, WGM407, and WGM81) which were provided from NOAA.

Leidos did not revise the delivered tide zones for tide station 8768094 Calcasieu Pass, LA as the water level zoning parameters in the file K371KR2015CORP.zdf, provided by National Ocean Service (NOS) were deemed adequate for the application of observed verified water levels. As a result, they were accepted as final and applied to all H12730 bathymetry data.

Leidos was notified on 14 January 2016 that an adjustment to the observed verified tide correctors posted on the CO-OPS website were changed due to an adjustment of the sensor elevation during maintenance of the sensor. This change modified the observed verified correctors from September 2015 through December 2015. Leidos downloaded these changes and applied the updated verified tides to all data within H12730.

## C.2 Horizontal Control

The horizontal datum for this project is North American Datum of 1983 (NAD83).

The projection used for this project is UTM Zone 15, North.

Please refer to the DAPR for details regarding all antenna and transducer offsets.

During survey data acquisition, the ISS-2000 real-time system provided a continuous view of the positioning comparison between the POS/MV and the Trimble DGPS. An alarm was triggered within ISS-2000 if the comparisons were not within an acceptable range. Any soundings with total horizontal uncertainties exceeding the maximum allowable IHO S-44 5th Edition Order 1a specifications were flagged as invalid and therefore were not used in the CUBE Depth calculations.

The following DGPS Stations were used for horizontal control:

<b>DGPS Stations</b>
English Turn, LA (293 kHz)
Angleton, TX (301 kHz)
Aransas Pass, TX (304 kHz)

*Table 11: USCG DGPS Stations*

## D. Results and Recommendations

### D.1 Chart Comparison

The chart comparisons were conducted using the Leidos SABER software to view the BSB raster charts with overlain data for H12730 such as the CUBE gridded surface, selected soundings, contacts, and features. Charting recommendations for depths follow Section 5.1.2 of the HSSD where depths and uncertainties are to be rounded by standard arithmetic rounding (round half up) and accompanying chart depth units are rounded using NOAA cartographic rounding (0.75 round up).

For ENC comparisons, a combination of Jeppesen's dKart Inspector, SevenCs' SeeMyDENC, and CARIS' EasyView were used in conjunction with SABER.

United States Coast Guard (USCG) District 8 Local Notice to Mariners publications were reviewed for changes subsequent to the date of the Hydrographic Survey Project Instructions and before the end of survey (as specified in Section 8.1.4 of the HSSD). The Notice to Mariners reviewed were from week 36/15 (09 September 2015) until week 10/16 (09 March 2016).

H12730 data meet data accuracy standards and bottom coverage requirements. Recommend updating the common areas of all charts using data from this survey. Charting recommendations for all features are provided in the S-57 Final Feature File.

#### D.1.1 Raster Charts

The following are the largest scale raster charts, which cover the survey area:

Chart	Scale	Edition	Edition Date	LNLM Date	NM Date
11341	1:80000	44	03/2013	02/16/2016	02/20/2016

*Table 12: Largest Scale Raster Charts*

#### 11341

Chart 11341 covers the entire H12730 survey area.

CUBE depths within sheet H12730 agreed with the charted depths across most of the survey area and were generally within  $\pm 3$  feet of the charted depths. There were discrete areas where the depths varied as much as 11 feet such as in  $29^{\circ} 20' 43.17''\text{N } 093^{\circ} 33' 31.87''\text{W}$ .

The charted 30-foot depth curve around a 28 foot sounding centered in approximately  $29^{\circ} 18' 47.34''\text{N } 093^{\circ} 34' 52.51''\text{W}$  was found to have depths between 32 to 35 feet.

Additional charted objects such as submarine pipelines and platforms are discussed in the sections below.

All new uncharted features found, and updates to charted features, are documented in the Final Feature File (S-57).

### D.1.2 Electronic Navigational Charts

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

ENC	Scale	Edition	Update Application Date	Issue Date	Preliminary?
US4LA10M	1:80000	10	11/03/2014	01/21/2016	NO
US4TX71M	1:80000	27	02/05/2016	02/05/2016	NO

*Table 13: Largest Scale ENC's*

#### US4LA10M

ENC US4LA10M covers the H12730 survey area, east of 093° 34' 00.63"W.

CUBE depths within sheet H12730 agreed with the charted depths across most of the survey area and were generally within  $\pm 1$  meter of the charted depths. There were discrete areas where the depths varied as much as 3 meters such as in 29° 20' 42.64"N 093° 33' 32.35"W.

Additional charted objects such as submarine pipelines and platforms are discussed in the sections below.

All new uncharted features found, and updates to charted features, are documented in the Final Feature File (S-57).

#### US4TX71M

ENC US4TX71M covers the H12730 survey area, west of 093° 34' 00.63"W.

The charted 9.1-meter depth curve around an 8.5 meter sounding centered in approximately 29° 18' 45.56"N 093° 34' 53.02"W was found to have depths between 9.8 to 10.7 meters.

Additional charted objects such as submarine pipelines and platforms are discussed in the sections below.

All new uncharted features found, and updates to charted features, are documented in the Final Feature File (S-57).



### **D.1.3 Maritime Boundary Points**

No Maritime Boundary Points were assigned for this survey.

### **D.1.4 Charted Features**

One charted obstruction was located just outside the statement of work area in 29° 21' 15.00"N 093° 38' 00.00"W. The charted obstruction was covered with 200% side scan sonar and resulting multibeam over a radius of at least 160 meters. No obstruction was found.

### **D.1.5 Uncharted Features**

See the S-57 Final Feature File (FFF) for all the details and recommendations regarding new uncharted features investigated.

### **D.1.6 Dangers to Navigation**

There were no Danger to Navigation Reports (DTON) submitted for H12730. Per guidance from AHB (via email correspondence 20 January 2016), exposed pipelines should not be submitted as DTONs but as Feature Reports, in S-57 format. Leidos submitted two Feature Reports in S-57 format to AHB, which AHB forwarded to the Office of Coast Surveys Navigation Manager. Feature Report 1 contained a seep located at the junction of two charted pipelines. Feature Report 2 contained 15 sections of exposed pipeline of various lengths. These sections are represented by PIPSOL Features 10, 11, 15, 24-30, 33, and 34 in the S-57 FFF.

### **D.1.7 Shoal and Hazardous Features**

There were no significant shoals or hazardous features within the area covered by H12730.

### **D.1.8 Channels**

There were no channels within the area covered by H12730.

### **D.1.9 Bottom Samples**

In accordance with both the Project Instructions and Section 7.1 of the HSSD, bottom characteristics were obtained for H12730. Bottom characteristics were acquired at the seven locations proposed in the Project Reference File (PRF) by NOAA. Leidos did not modify any bottom sample locations from the locations provided by NOAA. Bottom characteristics collected during H12730 are included in the H12730 S-57 FFF, H12730.FFF.000, within the Seabed Area (SBDARE) object and are classified according to the requirements set forth in Appendix H of the HSSD.

## **D.2 Additional Results**

### **D.2.1 Shoreline**

All features within the Composite Source File (CSF) were resolved. There were no assigned features inshore of the NALL.

### **D.2.2 Prior Surveys**

Junction analysis with prior surveys H10804, H10948, and H12728 (collected in 1999, 2000, and 2015) was conducted, and the results are presented in Section B.2.4 of this Data Report and Separates II.

### **D.2.3 Aids to Navigation**

There were no aids to navigation that fell within the area of H12730.

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

There were no overhead features within the H12730 survey area.

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

Nineteen pipeline (PIPSOL) objects are delivered in the S-57 FFF to represent sections of pipelines found within the bounds of H12730, utilizing both multibeam and side scan data. Additional charted pipelines fall within the survey coverage; however, the multibeam and side scan data do not show evidence of them.

### **D.2.6 Ferry Routes and Terminals**

No ferry routes or terminals exist within the H12730 survey area.

### **D.2.7 Platforms**

Five platforms were found within the bounds of H12730 all of which were charted. In addition, five charted platforms were not found; an area with a radius of at least 80 meters was covered by 200% side scan and resulting multibeam. The latest 11341 raster chart only has four of the five covered platforms remaining on the chart. In addition, three charted platforms on ENC USTX71M were removed from both 11341 and 11332 raster charts prior to survey. These three charted platforms were covered by 100% side scan sonar and resulting multibeam. There was no evidence of the platforms existence in the side scan or multibeam data and no platforms were visible above the waterline. See the S-57 FFF, H12730.FFF.000, Offshore Platform (OFSPLF) objects, for details and charting recommendations on each platform.

### D.2.8 Significant Features

No significant features as defined in Section 8.1.4 of the HSSD exist within the H12730 survey area.

### D.2.9 Construction and Dredging

No construction or dredging exists for the H12730 survey.

### D.2.10 New Survey Recommendation

No new survey recommendations are made for the area surrounding the H12730 survey area.

### D.2.11 Designated Soundings

Designated soundings were used to help better preserve the shallowest sounding relative to the computed depth surface. Separate flags exist in the Generic Sensor Format (version 3.06) for designated soundings and features. All depths flagged as features and designated soundings override the CUBE best estimate of the depth in the final BAG files. Both the designated soundings and features flags as defined within GSF are mapped to the same HDCS flag when ingested into CARIS (PD\_DEPTH\_DESIGNATED\_MASK).

Eleven designated soundings were set for H12730 to preserve the least depth on non-significant objects. The difference between the least depth of these objects and the CUBE depth was more than one-half the maximum allowable total vertical uncertainty at that depth. An individual Correlator Sheet for designated soundings and correlated side scan contacts are presented as JPEG files in the Multimedia folder and are named by the feature numbers (Figure 6).

Feature Number	Correlator Sheet Name	Depth (M)	Latitude	Longitude
1	H12730_Feature_1.jpg	12.299	29° 22' 08.53"N	093° 35' 37.68"W
4	H12730_Feature_4.jpg	14.140	29° 21' 19.46"N	093° 32' 39.96"W
5	H12730_Feature_5.jpg	12.417	29° 21' 03.89"N	093° 37' 31.69"W
6	H12730_Feature_6.jpg	14.713	29° 20' 56.21"N	093° 30' 45.69"W
7	H12730_Feature_7.jpg	12.113	29° 20' 25.09"N	093° 36' 59.72"W
8	H12730_Feature_8.jpg	14.735	29° 18' 20.80"N	093° 30' 36.82"W
12	H12730_Feature_12.jpg	12.742	29° 22' 09.82"N	093° 33' 14.92"W
14	H12730_Feature_14.jpg	12.576	29° 22' 19.74"N	093° 37' 12.94"W
16	H12730_Feature_16.jpg	12.426	29° 19' 36.30"N	093° 36' 33.67"W
17	H12730_Feature_17.jpg	13.606	29° 18' 57.59"N	093° 34' 26.34"W
18	H12730_Feature_18.jpg	14.155	29° 18' 58.62"N	093° 34' 12.58"W

Figure 6: List of Designated Soundings set within H12730

### **D.2.12 Final Feature S-57 File**

Included with H12730 delivery is the S-57 FFF, H12730.FFF.000. Details on how this file was generated and quality controlled can be found in Section B.2.6 of the DAPR. The S-57 FFF delivered for H12730 contains millimeter precision for the value of sounding (VALSOU) attribute. As specified in Section 8.2 of the HSSD, the S-57 FFF is in the WGS84 datum and is unprojected with all depth units in meters. All significant, and recommended for charting, features found in H12730 are included within the S-57 FFF.

In accordance with the HSSD, Leidos addressed all assigned objects within the bounds of H12730 from the provided CSF S-57 file in the S-57 FFF. Additionally, all charted objects, derived from the largest scale ENC, are addressed within the S-57 FFF. Note that positions of the objects from the ENC retain the full extents for that object; and therefore some objects extend beyond the H12730 sheet bounds.

For each feature contained in the FFF (S-57), the Feature Correlator Sheet was exported as an image file (.jpg) and is included in the S-57 FFF under the NOAA Extended Attribute field “images”.

### **D.2.13 Side Scan Sonar Contacts S-57 File**

Included with the H12730 delivery is the Side Scan Sonar Contact S-57 File, H12730.SSCon.000. Details on how this file was generated and quality controlled can be found in Section B.3.5 of the DAPR. As specified in Section 8.2 of the HSSD, the S-57 feature file is in the WGS84 datum and is unprojected with all depth units in meters.

All side scan contacts are retained within the Side Scan Sonar Contact S-57 File. For each contact included in this S-57 file, a JPEG image of the side scan contact is included under the NOAA Extended Attribute field “images”.

### **D.2.14 Inset Recommendation**

No inset recommendations are made for the area covered by the H12730 survey.


## 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 BAG files, 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 Specifications and Deliverables, Project Instructions, and the OPR-K371-KR-15 Statement of Work. 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.

Report Name	Report Date Sent
OPR-K371-KR-15_DAPR.pdf	2016-02-12
OPR-K371-KR-15_Coast Pilot Review Report.pdf	2016-02-12
H12727_DR.pdf	2016-02-12
H12728_DR.pdf	2016-02-26
H12729_DR.pdf	2016-03-24

Approver Name	Approver Title	Approval Date	Signature
Paul L. Donaldson	Chief Hydrographer	03/30/2016	 <p>Digitally signed by Paul L. Donaldson            DN: cn=Paul L. Donaldson,            o=Marine Survey and Engineering Solutions, ou=Leidos,            email=paul.l.donaldson@leidos.com, c=US            Date: 2016.03.25 16:13:25 -0400'</p>

APPENDIX I  
TIDES AND WATER LEVELS

## APPENDIX I. TIDES AND WATER LEVELS

### Field Tide Note

A field tide note was not required for H12730.

### Final Tide Note

Observed verified water levels for the station in Calcasieu Pass, LA (8768094) were downloaded from the [NOAA Tides and Currents](#) web site. Water Level correctors were prepared for each zone using the **SABER Create Water Level Files** software. The **SABER Apply Correctors** software applied the water level data to the multibeam data according to the zone containing the nadir beam of each ping.

Please refer to the H12730 Descriptive Report Section C.1 for details regarding final tides for H12730. The water level zoning correctors applied to all multibeam data for H12730 were based entirely on Calcasieu Pass, LA (8768094).

No final tide note was provided by NOAA Center for Operational Oceanographic Products and Services (CO-OPS), Leidos is not required to have a final tide note from CO-OPS.

The on-line times for acquisition of valid hydrographic data are presented in the Abstract Times of Hydrography, H12730 (Table A-1).

### Abstract Times of Hydrography

**Project:** OPR-K371-KR-15

**Registry No.:** H12730

**Contractor Name:** Leidos

**Date:** 30 March 2016

**Sheet Designation:** 4

**Inclusive Dates:** 01 December 2015 – 15 December 2015

Field work is complete.

Begin Date	Begin Julian Day	Begin Time	End Date	End Julian Day	End Time
12/01/2015	335	10:07:37	12/02/2015	336	15:53:08
12/03/2015	337	00:20:49	12/03/2015	337	12:56:45
12/03/2015	337	20:23:50	12/04/2015	338	04:51:59
12/04/2015	338	15:09:04	12/08/2015	342	23:58:15
12/10/2015	344	02:57:16	12/10/2015	344	23:02:18
12/15/2015	349	15:55:36	12/15/2015	349	22:39:27

*Table A-1: Abstract Times of Hydrography, H12730*

**Transmittal Letter to CO-OPS**

A transmittal letter to CO-OPS was not required for H12730.

**Other Correspondence Relating to Tides**

A copy of correspondence on 14 January 2016 regarding updated verified water level data for station Calcasieu Pass, LA (8768094) can be found in Appendix II (Supplemental Survey Records and Correspondence).



## APPENDIX II

# SUPPLEMENTAL SURVEY RECORDS AND CORRESPONDENCE

## **APPENDIX II. SUPPLEMENTAL SURVEY RECORDS AND CORRESPONDENCE**

This appendix contains copies of email exchanges between Leidos and NOAA concerning various aspects of the survey, data processing, and submittal topics.

In addition, the following two standalone PDF files have been provided in the II\_Supplemental\_Survey\_Records\_&\_Correspondence folder of Descriptive Report Appendices:

- A report to the Office of Coast Surveys Gulf of Mexico Regional Navigation Manager regarding gas seeps.
  - H12730 Gas Seep Report.pdf
- A report to the Office of Coast Surveys Gulf of Mexico Regional Navigation Manager regarding exposed pipelines.
  - H12730 Exposed-Unburied PIPSOL.pdf (note file submitted to OCS was a zip file named H12730 Exposed Pipelines.zip that contained this pdf file).

## **CORRESPONDENCE**

---

---

**From:** Mark Lathrop - NOAA Federal [mark.t.lathrop@noaa.gov]

**Sent:** Thursday, July 30, 2015 1:11 PM

**To:** Evans, Rod E.

**Cc:** Michael Gonsalves - NOAA Federal; Eric Berkowitz - NOAA Federal

**Subject:** Environmental Compliance/Marine Mammal Observers

**Attachments:** Copy of Sea Turtle Observation Log.xls; Form 11US.pdf; ENVIRONMENTAL COMPLIANCE\_\_MarineMammalTrainedObserverLetter\_Leidos.pdf

Rod,

Please see attached for a memo from Captain Berkowitz, which clarifies the 2015 Hydrographic Surveys Specifications and Deliverable (HSSD) environmental compliance requirements.

**Best Regards,**

Mark

---

---

**From:** Mark Lathrop - NOAA Federal [<mailto:mark.t.lathrop@noaa.gov>]  
**Sent:** Tuesday, October 27, 2015 8:53 AM  
**To:** Bernier, Bridget W.  
**Subject:** Re: OPR-K371-KR-15 questions  
**Attachments:** QualityControl.xsd; CorrectionsToEchoSoundings.xsd; DR\_Stylesheet.sps

Bridget,

Attached are a few more files you may need for the DR. For reference, everything you need should be here <http://www.nauticalcharts.noaa.gov/hsd/xmlldr/>

Mark

**From:** Mark Lathrop - NOAA Federal [<mailto:mark.t.lathrop@noaa.gov>]  
**Sent:** Monday, October 26, 2015 4:03 PM  
**To:** Bernier, Bridget W.  
**Subject:** Re: OPR-K371-KR-15 questions  
**Attachments:** OPR-K371-KR-15 Coast Pilot Field Report.pdf; Sea Turtle Observation Log.xls; DR\_Stylesheet.xslt

Bridget,

Please see my responses below in red.

Mark

1. The Project Instructions for Sheets 1 through 4 references the 2014 edition of the HSSD, while the Project Instructions for Sheets 5 and 6 references the 2015 edition of the HSSD.
  - a. Question: May Leidos perform the survey for all six sheets and deliver to the 2015 edition? **Yes.**
2. In the Project Instructions received for Sheets 5 and 6 (Mod 001) the scale for Sheet 6 is listed at "4000".
  - a. Question: Is this Sheet 6 scale supposed to be 40,000? **Yes.**
3. Coast Pilot
  - a. Question: Are the Coast Pilot Investigation Items part of the Coast Pilot Field Report? **Yes.**
4. In the Special Data Handling Requirements, item 2 "Submit all Conductivity, Temperature, and Depth (CTD) data to the National Oceanographic Data Center (NODC) ensuring data are in an appropriate file format as outlined on the NODC website at <http://www.nodc.noaa.gov/access/dataformats.html>."
  - a. Question: Are we only to deliver CTD data or are we to also send data from the MVP? **Only deliver CTD data.**

- b. Question: Where is the data to be submitted? **I'll get back to you on a specific address.**
  - c. Question: When is the data to be submitted by? **Same as survey delivery date.**
  - d. Question: Is the data to be submitted project wide or is it to be separated by sheet? **Submit by sheet.**
  - e. Question: Leidos is anticipating collecting Sheet 5 and Sheet 6 after delivering Sheets 1 through 4, therefore the first sheet being delivered would occur prior to the completion of operations within the project area; should Leidos deliver the CTD data with Sheet 6? **No. Deliver data from each sheet separately.**
  - f. Question: If it happens that during the project a CTD was not used, how are we to document that no CTD data were collected? **There is no need to document this.**
5. There is a difference between the Shoreline and Nearshore Features section between the Award for TO-0001 and the Mod.
- a. The original states: "Verify all features within the composite source file (CSF). All features with attribute asgnmt populated with 'Assigned' shall be addressed even if they are inshore of the NALL. All other submerged or visible cultural features inside the limit of survey shall be verified."
  - b. Whereas the Mod states: "Conduct a limited shoreline verification using the composite source file (CSF). All features with attribute 'asgnmt' populated with 'Assigned' shall be addressed even if they are inshore of the NALL. In the case of the unassigned offshore oil platforms within the survey area, should the field unit observe that the feature is not visible, then a formal disapproval is required. For the purposes of disapproval, charted features labeled with a "PA" will have a search radius of 160 meters, a "PD" will have a search radius of 240 meters, and all other features without a position qualifier will have a search radius of 80 meters."
  - c. Question: Leidos will address any 'Assigned' feature from the CSF. For disapproval, should Leidos follow the guidelines from the Mod Project Instructions? **Yes.**

### Questions from the HSSD:

1. On page 111, it states, "If created, the difference surface shall be include in the final deliverables."

- a. Question: Leidos performs the crossline/main scheme review by reviewing a difference surface that is generated in SABER. Is Leidos to deliver these difference grids? **Yes. Submit the difference surface as you would the rest of the SABER data.**
  - b. Question: The Contractor Data Directory Structure (pg 186) does not identify where the difference surface is to be delivered, should Leidos delivery them under a new folder within "Data/Processed/Bathymetry\_&\_SSS/"? **That should be fine.**
2. On page 118, Coast Pilot Data it states, "A Coast Pilot Field Report will be provided by HSD Operations."
- a. Question: Leidos has not received the Coast Pilot Field Report, can it please be provided? **See attached.**
3. Page 118, it states, "The consolidated Coast Pilot Review Report shall be submitted in a PDF format and shall include answers to the specific questions, updates to the actual paragraph text, and the original Coast Pilot Field Report."
- a. Question: Is Leidos to submit edits in both the Coast Pilot Review Report and to the full Coast Pilot? **Yes.**
  - b. Question: Are we to merge the Leidos edited Coast Pilot Review Report and the original Coast Pilot Field Report that we received from HSD Operations into one PDF or should Leidos deliver as two separate PDF files? **You can merge them.**
  - c. Question: If they are to be delivered as two separate PDF files, what is the file naming convention for delivering the original Coast Pilot Field Report; is it acceptable for Leidos to retain the naming convention as it was delivered to Leidos?
4. Page 118, it states "A Coast Pilot Review Report shall be submitted following the completion of operations within a project area, and no later than at the time of submission of the first Descriptive Report for that project."
- a. Question: Leidos is anticipating collecting Sheet 5 and Sheet 6 after delivering Sheets 1 through 4, therefore the first sheet being delivered would occur prior to the completion of operations within the project area; should Leidos deliver the Coast Pilot with the first delivery? **Yes.**
  - b. Question; Should Leidos identify an edit to the Coast Pilot upon returning to the project area to complete Sheet 5 and Sheet 6 is it acceptable for Leidos to submit a revision with the naming convention similar to page 123 "Revised reports shall be identified by inclusion of a revision number in the name."? **Yes. I don't imagine there will be any changes, though.**

5. Page 118, it states, “If an updated edition of the Coast Pilot was used, this shall be noted.”
  - a. Question: Please clarify the “updated edition”, is this if Leidos downloads the Coast Pilot that is more recent than what was provided to Leidos in the Coast Pilot Review Report? **Yes.**
  
6. Environmental Compliance Requirements, page 119, it states “The marine mammal observation log and associated photographs shall be submitted to [pop.information@noaa.gov](mailto:pop.information@noaa.gov) (with a CC to the HSD Project Manager/COR) at the end of each project.”
  - a. Question: Leidos is anticipating collecting Sheet 5 and Sheet 6 after delivering Sheets 1 to 4, is it acceptable for Leidos to deliver the marine mammal observation log and associated photographs with the delivery of the last sheet? **Yes.**
  - b. Question: Leidos assumes that this is a project-wide deliverable and does not plan on separating the sightings by sheet bounds, is this correct? **Yes.**
  
7. Environmental Compliance Requirements, page 119, it states “Sea turtle sightings shall be recorded for each project and an email including the species (if known), number, size, date, time, coordinates, and sea state shall be sent (with a CC to the HSD Project Manager/COR) to: Larisa Avens on the East Coast ([larisa.avens@noaa.gov](mailto:larisa.avens@noaa.gov)), Jeff Seminoff on the West Coast ([jeffrey.seminoff@noaa.gov](mailto:jeffrey.seminoff@noaa.gov)), or George Balazs in Hawaii and Pacific Islands ([george.balazs@noaa.gov](mailto:george.balazs@noaa.gov)).”
  - a. Question: Is there a specific form that Leidos should fill out should there be any sea turtle sightings? **See attached.**
  - b. Question: A delivery timeline is not listed for the Sea Turtle sightings documentation, is Leidos to assume the same delivery requirements as for the Marine Mammal Observation Log with corresponding photographs? **Yes.**
  
8. On page 128 it states, “Contractors will be provided an XML schema and stylesheet by their COR.”
  - a. Leidos has not received an XML schema and stylesheet that correspond to the Descriptive Report as outlined in the 2015 HSSD, can these files be provided to Leidos? **It should be the same as last year. I've attached it just in case.**
  
9. On page 134, for the Approval Sheet it states, “List all reports and data not included with the survey records or Descriptive Report that have been submitted to the processing office or to another office (e.g., Data Acquisition and Processing Report, Vertical and Horizontal Report, Tides and Water Levels Package, Coast Pilot Report).”
  - a. Question: Should Leidos also include, if applicable, the submission of the Marine Mammal Observation Log and Sea Turtle Sightings? **Yes.**

10. Page 135, Sound Speed Data Summary. "Submit a list that can be imported into a GIS for office verifiers to analyze the distribution and frequency of the SVP casts."

- a. Question: In previous years Leidos has supplied AHB both a tabular file of the sound speed data acquired for each sheet as well as a files that contain concatenated SSP data that have been formatted for use in CARIS, \*.svp files. Is it acceptable for Leidos to deliver only the CARIS \*.svp files? **Yes.**

11. Page 142, NOAA extended attributes, special feature type (sftype), was modified from previous HSSD in that the AWOIS option has been removed.

- a. Question: Has the Feature Object Catalogue been changed, the version that Leidos was last provided with is NOAA Extended Attribute File V5-2? **I don't know of a new version. I'll check and get back to you.**
- b. Question: If the version is now different, can that version please be provided to Leidos.

12. CARIS BASE Surface and/or BAG, page 153, "Non-CARIS users may submit their Navigation Surfaces as a Bathymetric Attributed Grid (BAG)."

- a. Leidos assumes the following, based on previous instruction from AHB:
  - i. To deliver BAG version 1.5.1
  - ii. The BAG is to be compressed
  - iii. The BAG file is not to exceed: 2 GB
- b. Question: Are Leidos' assumptions correct? **Yes.**

13. Contractors Data Delivery Structure, page 186:

- a. Question: Leidos identified that there is no place holder under Project Reports for the Coast Pilot, should Leidos create a folder for the Coast Pilot under Project Reports or will the Coast Pilot only be delivered via email? **You can deliver by email.**
- b. Question: Leidos identified that there is no place holder for either the Marine Mammal Observation Log and photographs or the Sea Turtle Sightings, are these submissions only made via email? **Yes.**

On Mon, Oct 19, 2015 at 1:01 PM, Bernier, Bridget W.  
<[BRIDGET.W.BERNIER@leidos.com](mailto:BRIDGET.W.BERNIER@leidos.com)> wrote:

Greetings,



After review of the HSSD 2015 as well as the OPR-K371-KR-15 Project Instructions for TO-0001 and the TO-0001 modification we have several questions, these are listed below.

**Questions from the Project Instructions:**

1. The Project Instructions for Sheets 1 through 4 references the 2014 edition of the HSSD, while the Project Instructions for Sheets 5 and 6 references the 2015 edition of the HSSD.
  - a. Question: May Leidos perform the survey for all six sheets and deliver to the 2015 edition?
  
2. In the Project Instructions received for Sheets 5 and 6 (Mod 001) the scale for Sheet 6 is listed at "4000".
  - a. Question: Is this Sheet 6 scale supposed to be 40,000?
  
3. Coast Pilot
  - a. Question: Are the Coast Pilot Investigation Items part of the Coast Pilot Field Report?
  
4. In the Special Data Handling Requirements, item 2 "Submit all Conductivity, Temperature, and Depth (CTD) data to the National Oceanographic Data Center (NODC) ensuring data are in an appropriate file format as outlined on the NODC website at <http://www.nodc.noaa.gov/access/dataformats.html>."
  - a. Question: Are we only to deliver CTD data or are we to also send data from the MVP?
  - b. Question: Where is the data to be submitted?
  - c. Question: When is the data to be submitted by?
  - d. Question: Is the data to be submitted project wide or is it to be separated by sheet?
  - e. Question: Leidos is anticipating collecting Sheet 5 and Sheet 6 after delivering Sheets 1 through 4, therefore the first sheet being delivered would occur prior to the completion of operations within the project area; should Leidos deliver the CTD data with Sheet 6?
  - f. Question: If it happens that during the project a CTD was not used, how are we to document that no CTD data were collected?
  
5. There is a difference between the Shoreline and Nearshore Features section between the Award for TO-0001 and the Mod.

- a. The original states: "Verify all features within the composite source file (CSF). All features with attribute asgnmt populated with 'Assigned' shall be addressed even if they are inshore of the NALL. All other submerged or visible cultural features inside the limit of survey shall be verified."
- b. Whereas the Mod states: "Conduct a limited shoreline verification using the composite source file (CSF). All features with attribute 'asgnmt' populated with 'Assigned' shall be addressed even if they are inshore of the NALL. In the case of the unassigned offshore oil platforms within the survey area, should the field unit observe that the feature is not visible, then a formal disapproval is required. For the purposes of disapproval, charted features labeled with a "PA" will have a search radius of 160 meters, a "PD" will have a search radius of 240 meters, and all other features without a position qualifier will have a search radius of 80 meters."
- c. Question: Leidos will address any 'Assigned' feature from the CSF. For disapproval, should Leidos follow the guidelines from the Mod Project Instructions?

### **Questions from the HSSD:**

1. On page 111, it states, "If created, the difference surface shall be include in the final deliverables."
  - a. Question: Leidos performs the crossline/main scheme review by reviewing a difference surface that is generated in SABER. Is Leidos to deliver these difference grids?
  - b. Question: The Contractor Data Directory Structure (pg 186) does not identify where the difference surface is to be delivered, should Leidos delivery them under a new folder within "Data/Processed/Bathymetry\_&\_SSS/"?
2. On page 118, Coast Pilot Data it states, "A Coast Pilot Field Report will be provided by HSD Operations."
  - a. Question: Leidos has not received the Coast Pilot Field Report, can it please be provided?
3. Page 118, it states, "The consolidated Coast Pilot Review Report shall be submitted in a PDF format and shall include answers to the specific questions, updates to the actual paragraph text, and the original Coast Pilot Field Report."
  - a. Question: Is Leidos to submit edits in both the Coast Pilot Review Report and to the full Coast Pilot?

- b. Question: Are we to merge the Leidos edited Coast Pilot Review Report and the original Coast Pilot Field Report that we received from HSD Operations into one PDF or should Leidos deliver as two separate PDF files?
  - c. Question: If they are to be delivered as two separate PDF files, what is the file naming convention for delivering the original Coast Pilot Field Report; is it acceptable for Leidos to retain the naming convention as it was delivered to Leidos?
- 4. Page 118, it states “A Coast Pilot Review Report shall be submitted following the completion of operations within a project area, and no later than at the time of submission of the first Descriptive Report for that project.”
  - a. Question: Leidos is anticipating collecting Sheet 5 and Sheet 6 after delivering Sheets 1 through 4, therefore the first sheet being delivered would occur prior to the completion of operations within the project area; should Leidos deliver the Coast Pilot with the first delivery?
  - b. Question; Should Leidos identify an edit to the Coast Pilot upon returning to the project area to complete Sheet 5 and Sheet 6 is it acceptable for Leidos to submit a revision with the naming convention similar to page 123 “Revised reports shall be identified by inclusion of a revision number in the name.”?
- 5. Page 118, it states, “If an updated edition of the Coast Pilot was used, this shall be noted.”
  - a. Question: Please clarify the “updated edition”, is this if Leidos downloads the Coast Pilot that is more recent than what was provided to Leidos in the Coast Pilot Review Report?
- 6. Environmental Compliance Requirements, page 119, it states “The marine mammal observation log and associated photographs shall be submitted to [pop.information@noaa.gov](mailto:pop.information@noaa.gov) (with a CC to the HSD Project Manager/COR) at the end of each project.”
  - a. Question: Leidos is anticipating collecting Sheet 5 and Sheet 6 after delivering Sheets 1 to 4, is it acceptable for Leidos to deliver the marine mammal observation log and associated photographs with the delivery of the last sheet?
  - b. Question: Leidos assumes that this is a project-wide deliverable and does not plan on separating the sightings by sheet bounds, is this correct?
- 7. Environmental Compliance Requirements, page 119, it states “Sea turtle sightings shall be recorded for each project and an email including the species (if known), number, size, date, time, coordinates, and sea state shall be sent (with a CC to the HSD Project Manager/COR) to: Larisa Avens on the East Coast ([larisa.avens@noaa.gov](mailto:larisa.avens@noaa.gov)), Jeff Seminoff on the West Coast ([jeffrey.seminoff@noaa.gov](mailto:jeffrey.seminoff@noaa.gov)), or George Balazs in Hawaii and Pacific Islands ([george.balazs@noaa.gov](mailto:george.balazs@noaa.gov)).”

- a. Question: Is there a specific form that Leidos should fill out should there be any sea turtle sightings?
  - b. Question: A delivery timeline is not listed for the Sea Turtle sightings documentation, is Leidos to assume the same delivery requirements as for the Marine Mammal Observation Log with corresponding photographs?
8. On page 128 it states, "Contractors will be provided an XML schema and stylesheet by their COR."
  - a. Leidos has not received an XML schema and stylesheet that correspond to the Descriptive Report as outlined in the 2015 HSSD, can these files be provided to Leidos?
9. On page 134, for the Approval Sheet it states, "List all reports and data not included with the survey records or Descriptive Report that have been submitted to the processing office or to another office (e.g., Data Acquisition and Processing Report, Vertical and Horizontal Report, Tides and Water Levels Package, Coast Pilot Report)."
  - a. Question: Should Leidos also include, if applicable, the submission of the Marine Mammal Observation Log and Sea Turtle Sightings?
10. Page 135, Sound Speed Data Summary. "Submit a list that can be imported into a GIS for office verifiers to analyze the distribution and frequency of the SVP casts."
  - a. Question: In previous years Leidos has supplied AHB both a tabular file of the sound speed data acquired for each sheet as well as a files that contain concatenated SSP data that have been formatted for use in CARIS, \*.svp files. Is it acceptable for Leidos to deliver only the CARIS \*.svp files?
11. Page 142, NOAA extended attributes, special feature type (sftype), was modified from previous HSSD in that the AWOIS option has been removed.
  - a. Question: Has the Feature Object Catalogue been changed, the version that Leidos was last provided with is NOAA Extended Attribute File V5-2?
  - b. Question: If the version is now different, can that version please be provided to Leidos.
12. CARIS BASE Surface and/or BAG, page 153, "Non-CARIS users may submit their Navigation Surfaces as a Bathymetric Attributed Grid (BAG)."
  - a. Leidos assumes the following, based on previous instruction from AHB:
    - i. To deliver BAG version 1.5.1
    - ii. The BAG is to be compressed

iii. The BAG file is not to exceed: 2 GB

b. Question: Are Leidos' assumptions correct?

13. Contractors Data Delivery Structure, page 186:

a. Question: Leidos identified that there is no place holder under Project Reports for the Coast Pilot, should Leidos create a folder for the Coast Pilot under Project Reports or will the Coast Pilot only be delivered via email?

b. Question: Leidos identified that there is no place holder for either the Marine Mammal Observation Log and photographs or the Sea Turtle Sightings, are these submissions only made via email?

Please let me know if there are any clarifications needed to what I have listed above.

Thank you,

-Bridget

---

**From:** Evans, Rod E.  
**Sent:** Thursday, November 19, 2015 1:53 PM  
**To:** Quintal, Rebecca T.; Bernier, Bridget W.  
**Cc:** Donaldson, Paul L.  
**Subject:** FW: HTD 2014-04 Revision of Feature Flagging Guidance

**From:** Eric Berkowitz - NOAA Federal [eric.w.berkowitz@noaa.gov]  
**Sent:** Thursday, November 19, 2015 1:50 PM  
**To:** \_NOS OCS HSD; CO.Thomas Jefferson - NOAA Service Account; holly Jablonski - NOAA Federal; CO.Ferdinand Hassler - NOAA Service Account; OPS.Thomas Jefferson - NOAA Service Account; \_OMAO MOP CO Rainier; OPS.Ferdinand Hassler - NOAA Service Account; \_OMAO MOP CO Fairweather; \_OMAO MOP OPS Fairweather; [OPS.Rainier@noaa.gov](mailto:OPS.Rainier@noaa.gov); Thomas Newman; Millar, David FPI; [jld@deainc.com](mailto:jld@deainc.com); Evans, Rod E.; [tara.levy@cctech.us](mailto:tara.levy@cctech.us); George Reynolds; Arthur Wright; David Neff  
**Cc:** Russell Proctor - NOAA Federal  
**Subject:** HTD 2014-04 Revision of Feature Flagging Guidance  
**Attachment:** HTD2015-04\_RevisionOfFeatureFlaggingGuidance.pdf

All,

Attached is HTD 2015-04 - Revision of Feature Flagging Guidance. The directive serves to revise the feature flagging guidance for survey deliverables from field units to the Hydrographic Processing Branches.

Please contact Katrina Wyllie at [katrina.wyllie@noaa.gov](mailto:katrina.wyllie@noaa.gov) if you have any questions or comments concerning this directive.

CAPT Eric W. Berkowitz, NOAA  
Chief, Hydrographic Surveys Division  
1315 East-West Highway, SSMC3 Room 6823  
Silver Spring, MD 20910  
[301-713-2700](tel:301-713-2700) x 124 w  
[301-204-2791](tel:301-204-2791) - c

---

**From:** Mark Lathrop - NOAA Federal [mailto:mark.t.lathrop@noaa.gov]  
**Sent:** Monday, November 30, 2015 2:18 PM  
**To:** Bernier, Bridget W.  
**Cc:** Gene Parker; Matthew Jaskoski - NOAA Federal (matthew.jaskoski@noaa.gov); Evans, Rod E.; Quintal, Rebecca T.; Donaldson, Paul L.  
**Subject:** Re: Follow up on the Coast Pilot Field Report

Bridget,

Sabine Bank is charted on Sheets 1 and 3 of your project. Please report on those areas you surveyed.

Mark

On Mon, Nov 30, 2015 at 1:49 PM, Bernier, Bridget W.  
<[BRIDGET.W.BERNIER@leidos.com](mailto:BRIDGET.W.BERNIER@leidos.com)> wrote:

Mark,

Can you please provide clarification regarding the wording in the Coast Pilot Field Report.

From the Coast Pilot Field Report it states the following:

CP5 - Chapter 9 – Paragraph 530

Please verify the shoal depth range:

**Sabine Bank** is a succession of detached shoal spots parallel with and distant about 17 miles from the mainland. From the vicinity of Calcasieu Pass, the bank extends about 38 miles W to the vicinity of Sabine Pass and has several passages between the detached shoals. Depths on the shoals range from 16 to 30 feet and are subject to change.

Note that Sabine Bank is a large shoal which extends outside of our survey bounds. Can you please confirm that we are only to verify the shoal depth range within the Statement of Work survey bounds.

Thanks,  
-Bridget

---

**Bridget W. Bernier | Leidos**

Asst. Data Processing Manager | Marine Survey and Engineering Solutions  
phone: [401.847.4210](tel:401.847.4210)  
[bridget.w.bernier@leidos.com](mailto:bridget.w.bernier@leidos.com) | [leidos.com](http://leidos.com)

Please consider the environment before printing this email.

---

**From:** Louis Licate - NOAA Affiliate [mailto:louis.licate@noaa.gov]  
**Sent:** Thursday, January 14, 2016 11:59 AM  
**To:** Mark Lathrop - NOAA Federal  
**Cc:** \_NOS.CO-OPS.HTP; Quintal, Rebecca T.; Evans, Rod E.  
**Subject:** Re: difference in tide data for Calcasieu Pass (8768094)

Hello all-

A corrector of 9mm was applied to the data from 9/22/15 15:00 to 11/23/15 15:42.

This corrector was applied in order to correct for a change in sensor elevation from maintenance on the sensor so the difference is correct and new most recent data should be used.

Please let me know if you have any questions or concerns.  
-Lou Licate

On Thu, Jan 14, 2016 at 11:50 AM, Mark Lathrop - NOAA Federal <[mark.t.lathrop@noaa.gov](mailto:mark.t.lathrop@noaa.gov)> wrote:  
Forwarding to CO-OPS.

Mark

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

**From:** Quintal, Rebecca T. <[REBECCA.T.QUINTAL@leidos.com](mailto:REBECCA.T.QUINTAL@leidos.com)>  
**Date:** Thu, Jan 14, 2016 at 11:41 AM  
**Subject:** difference in tide data for Calcasieu Pass (8768094)  
**To:** "[Mark.T.Lathrop@noaa.gov](mailto:Mark.T.Lathrop@noaa.gov)" <[Mark.T.Lathrop@noaa.gov](mailto:Mark.T.Lathrop@noaa.gov)>  
**Cc:** "Evans, Rod E." <[RHODRI.E.EVANS@leidos.com](mailto:RHODRI.E.EVANS@leidos.com)>

Hello Mark,

We have pulled down tide data from the web today that covers the entire span of time that we surveyed (September 23- December 17) plus a little extra on either end.

We noted a difference of 9 millimeters starting at 9/22/2015 3:00:00 PM (see attached file, comparison tab) through the end of what we had previously been able to download from the web (11/22/2015 11:54:00 PM). The new water level data is consistently 9 millimeters larger. Note that prior to 9/22/2015 3:00:00 PM the data match exactly.

We can certainly reapply the tide data to all multibeam data collected on all 4 sheets, but I was hoping to get confirmation that this offset in the water level data is what is expected



before we proceed. Do you know if this is indeed the case? Let me know if you would like me to contact CO-OPs directly.

Thank you!

-Rebecca

---

**Rebecca T. Quintal | Leidos**

Hydrographic Survey & Data Solutions Manager

Marine Survey & Engineering Solutions

office: [401.848.4607](tel:401.848.4607)

mobile: [401.829.6242](tel:401.829.6242)

[rebecca.t.quintal@leidos.com](mailto:rebecca.t.quintal@leidos.com)

---

---

---

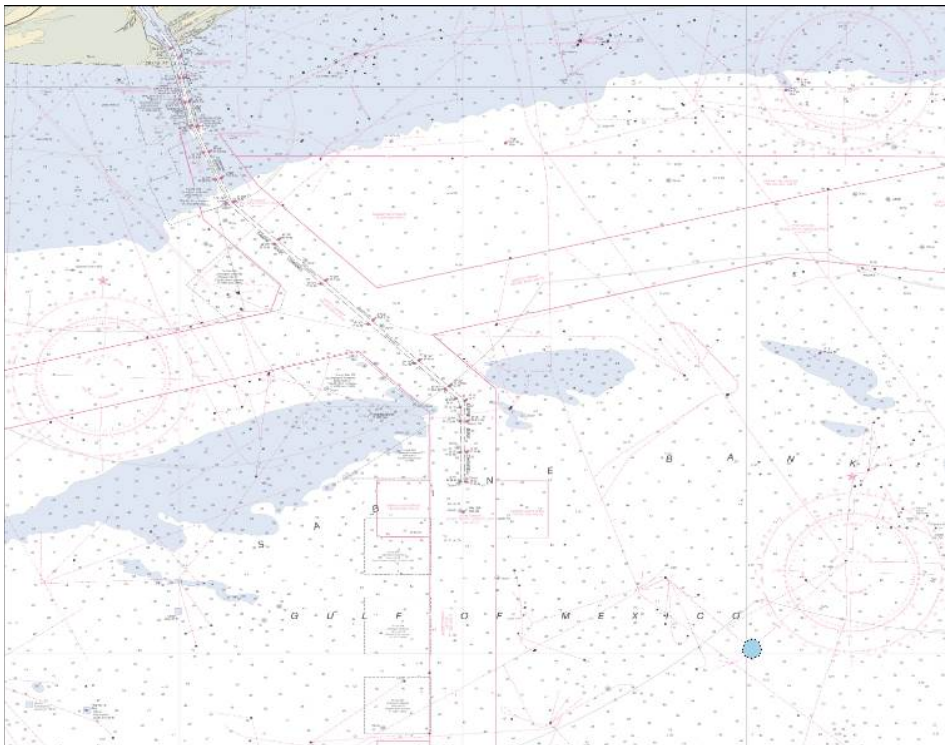
**From:** Castle Parker - NOAA Federal [mailto:castle.e.parker@noaa.gov]  
**Sent:** Tuesday, January 12, 2016 11:16 AM  
**To:** Tim Osborn - NOAA Federal  
**Cc:** Matthew Jaskoski - NOAA Federal; Donaldson, Paul L.; Bernier, Bridget W.; Mark Lathrop - NOAA Federal  
**Subject:** FW: OPR-K371-KR-15 Feature Report for Gas Seeps #01 for H12730  
**Attachment:** H12730 Gas Seep Report.pdf

Good day Tim,

Leidos survey H12730 associated with project OPR-K371-KR-15 observed what appears to be a natural gas seep. The seep is located at the junction of two charted pipelines. AHB is forwarding this information to you in order to notify the owner or other authorities of this environmental situation. The image below is an overall view with the Sabin River in the upper left hand corner of the image. A feature report is attached.

Respond as necessary.  
Regards,  
Gene

*Castle Eugene Parker*  
*NOAA Office of Coast Survey*  
*Atlantic Hydrographic Branch*  
*Hydrographic Team Lead / Physical Scientist*  
[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)  
*office (757) 441-6746 x115*



**From:** Bernier, Bridget W. [mailto:[BRIDGET.W.BERNIER@leidos.com](mailto:BRIDGET.W.BERNIER@leidos.com)]  
**Sent:** Monday, January 11, 2016 1:56 PM  
**To:** Gene Parker  
**Cc:** Matthew Jaskoski - NOAA Federal ([matthew.jaskoski@noaa.gov](mailto:matthew.jaskoski@noaa.gov)); Mark Lathrop - NOAA Federal; Evans, Rod E.; Quintal, Rebecca T.; Donaldson, Paul L.; Bernier, Alex T.; Smith, Deborah M.  
**Subject:** OPR-K371-KR-15 Feature Report for Gas Seeps #01 for H12370

Gene,

Per guidance from AHB, Leidos has generated the attached Feature Report to provide information for AHB to submit to the OCS Navigation Manager and any other appropriate parties. This is a non-chartable feature, originating from a leak at the junction of two charted pipelines.

Please find attached one file for Feature Report 01 for H12370.

The zip file contains the following files:

- One (1) S-57 file (\*.000)
- Image files that are referenced in the S-57 file (\*.jpg)

Please let me know if you have any questions.

Thanks,  
-Bridget

---

**Bridget W. Bernier | Leidos**

Asst. Data Processing Manager | Marine Survey and Engineering Solutions  
phone: 401.847.4210

[bridget.w.bernier@leidos.com](mailto:bridget.w.bernier@leidos.com) | [leidos.com](http://leidos.com)

Please consider the environment before printing this email.

---

---

---

**From:** Castle Parker - NOAA Federal [<mailto:castle.e.parker@noaa.gov>]  
**Sent:** Wednesday, January 20, 2016 2:25 PM  
**To:** Donaldson, Paul L.  
**Cc:** Matthew Jaskoski - NOAA Federal; Mark Lathrop - NOAA Federal; Christina Fandel - NOAA Federal  
**Subject:** RE: DTON's on exposed pipelines

Hey Paul,

Bearing in mind the exposed pipelines do not truly fit the Danger requirements, send me an S57 file that includes the features and the linked images and AHB will create a report and send to Tim Osborn the Nav Manager. I think it's better to submit this information to Tim sooner than later such as when the survey is submitted to AHB.

The submitted image indicates that the most elevated portion of the pipeline rises approximately 3m. Bearing in mind it is located near a charted pipeline, and appears to be offset to the north I don't want to submit a sounding for chart application of which could remain on the chart for some time. Instead, we can follow normal protocol and submit to Tim Osborn as soon as we can, with the intent of notification to the pipeline owner for reburial.

If you want to send all of the exposed pipeline section within an S57 file, AHB will generate the report and submit.

Thanks,  
Gene

*Castle Eugene Parker*  
*NOAA Office of Coast Survey*  
*Atlantic Hydrographic Branch*  
*Hydrographic Team Lead / Physical Scientist*  
[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)  
*office (757) 441-6746 x115*

**From:** Donaldson, Paul L. [<mailto:PAUL.L.DONALDSON@leidos.com>]  
**Sent:** Wednesday, January 20, 2016 2:04 PM  
**To:** [castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)  
**Subject:** DTON's on exposed pipelines

Gene,

In December 2015 we submitted a couple of exposed pipelines as DTON's (DTON\_2 and DTON\_3) within H12727 (See attached DTON\_2\_MVE.jpg for reference). These were not pass to MCD for charting as a danger but were forwarded in the same manner as the feature report we submitted for the gas seep on H12730. We have identified several exposed pipelines and wanted to see if we should submit them as DTON's, as a feature report, or if we should wait until the data are delivered as they will be discussed in our

DR. Attached are two .png images depicting one of the exposed pipelines as an example of the exposed pipelines in question. Please advise.

Thank you,

Paul L. Donaldson CH (NSPS #241)|Leidos  
Survey Operations Coordinator/Chief Hydrographer  
Phone: 401.848.4757  
Mobile: 860.857.8802  
Fax: 401.849.1585  
Email: [paul.l.donaldson@leidos.com](mailto:paul.l.donaldson@leidos.com)

221 Third Street, Building A  
Newport, RI 02840 USA  
Leidos.com

---

---

---

**From:** Quintal, Rebecca T.  
**Sent:** Tuesday, February 02, 2016 10:04 AM  
**To:** Mark.T.Lathrop@noaa.gov  
**Cc:** Rhodri E. Evans  
**Subject:** Follow-up on December meeting

Hello Mark,

Just want to follow up on 2 items from our meeting in December.

1. The last NOAA Extended Attribute File that Leidos received was V5-2. Can you please confirm that this is the correct version that we should be using for our TO-0001 deliveries?
2. Just documenting what we discussed in December regarding delivering difference grids... which was... since the requirement to deliver difference grids is only found in the 2015 HSSD in Section 5.3.4.3 Lidar Crossline (page 110-111), that it is not a requirement for our multibeam surveys for TO-0001.

Thanks Mark!  
-Rebecca

---

**Rebecca T. Quintal | Leidos**  
Hydrographic Survey & Data Solutions Manager  
Marine Survey & Engineering Solutions  
office: 401.848.4607  
mobile: 401.829.6242  
[rebecca.t.quintal@leidos.com](mailto:rebecca.t.quintal@leidos.com)

---

---

---

**From:** Christina Fandel - NOAA Federal [mailto:christina.fandel@noaa.gov]  
**Sent:** Monday, February 08, 2016 4:33 PM  
**To:** Quintal, Rebecca T.  
**Cc:** Castle Parker - NOAA Federal; Mark Lathrop - NOAA Federal; Michael Gonsalves - NOAA Federal  
**Subject:** Re: H12727 XML DR test

Gene, Rebecca,

The XML file for H12727 is valid and I have attached a revised file that is readable in Pydro.

Pydro's inability to open the file and noting that the XML is invalid is related to the header information within the XML file.

In short, the XML file requires the root directory of the reference schema to be identified. Because contractor field units often store their reference schema in a different location than NOAA, the specified local schema path is not recognized by Pydro and the XML file is marked as invalid

Pydro's inability to read this file was related to the descriptive report namespace reference which was specified as <http://www.w3.org/2001/XInclude> whereas Pydro is looking for <http://svn.pydro.noaa.gov/2015/02/DescriptiveReport>.

That being said, the XML file that Leidos submitted was valid and I will work with our software programmer to determine if we can automatically update the schema-location reference and DR namespace reference upon import in Pydro. In the meantime, if this issue arises again, please forward the XML file to me and I can make the necessary changes.

Thank you,

Christy

On Fri, Feb 5, 2016 at 2:23 PM, Quintal, Rebecca T.  
<[REBECCA.T.QUINTAL@leidos.com](mailto:REBECCA.T.QUINTAL@leidos.com)> wrote:

Thanks for looking at this Gene.

Christina, any guidance is greatly appreciated! We are planning to make the H12727 delivery next week.

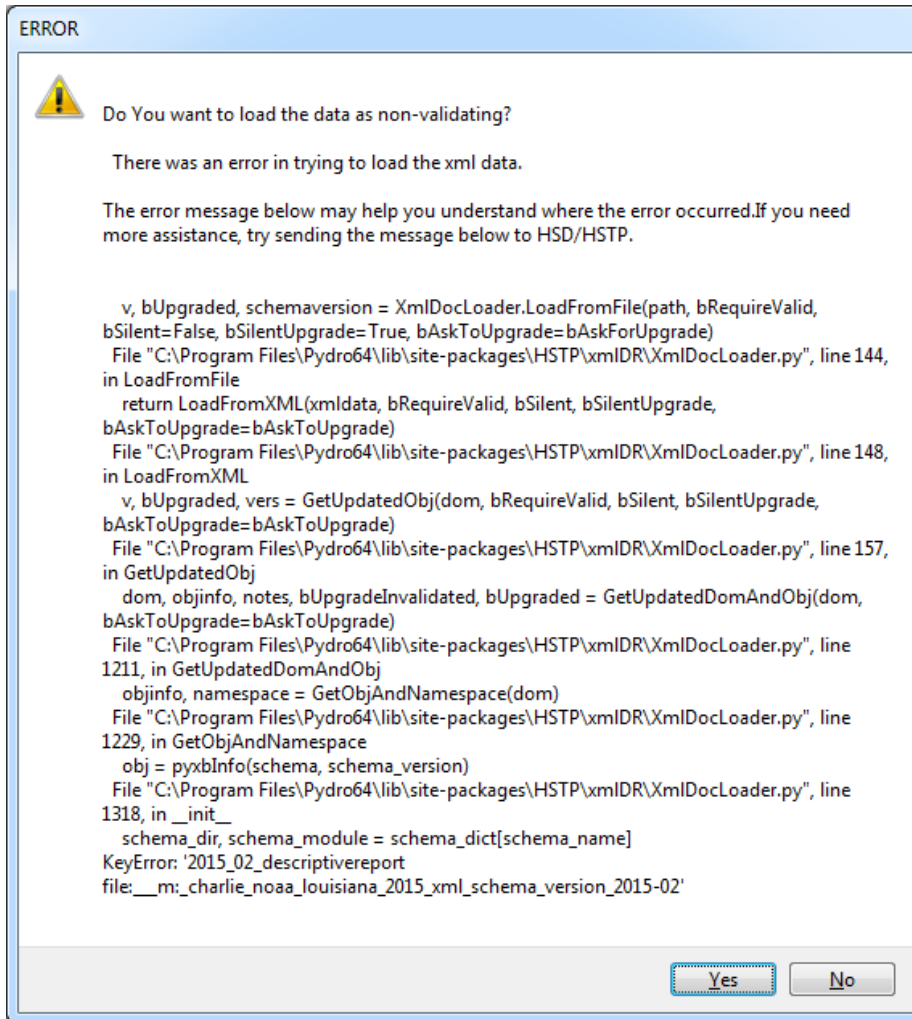
Thanks,

-Rebecca

**From:** Castle Parker - NOAA Federal [mailto:[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)]  
**Sent:** Friday, February 05, 2016 1:26 PM  
**To:** Quintal, Rebecca T.  
**Cc:** Christina Fandel - NOAA Federal  
**Subject:** RE: H12727 XML DR test

Rebecca,

The XML file will not open in Pydro as non-validating. The error message upon opening the test XML file is as follows:



Selected to open the XML file as non-validating. The results were the same as the original error message above. Rebecca I have forwarded your email with the attached to Christy Fandel for review and insight.

To summarize, the submitted XML file will not open.

Sorry.



Gene

Castle Eugene Parker  
NOAA Office of Coast Survey  
Atlantic Hydrographic Branch  
Hydrographic Team Lead / Physical Scientist  
[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)  
office (757) 441-6746 x115

**From:** Quintal, Rebecca T. [mailto:[REBECCA.T.QUINTAL@leidos.com](mailto:REBECCA.T.QUINTAL@leidos.com)]  
**Sent:** Friday, February 05, 2016 12:54 PM  
**To:** Castle Eugene Parker ([castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov))  
**Subject:** H12727 XML DR test

Gene,

Thanks for taking a look at this for us. This XML validates in the XML Spy software we are using. I've also attached the schema and stylesheet that we were provided for our 2015 sheets in case that helps.

Let me know how it looks on your end.

Many thanks!  
-Rebecca

---

**Rebecca T. Quintal | Leidos**  
Hydrographic Survey & Data Solutions Manager  
Marine Survey & Engineering Solutions  
office: [401.848.4607](tel:401.848.4607)  
mobile: [401.829.6242](tel:401.829.6242)  
[rebecca.t.quintal@leidos.com](mailto:rebecca.t.quintal@leidos.com)

---

---

**From:** Donaldson, Paul L.  
**Sent:** Friday, February 12, 2016 10:51 AM  
**To:** 'OCS.NDB@NOAA.GOV'; 'Coast.Pilot@NOAA.GOV'; 'Mark.T.Lathrop@noaa.gov'; 'christina.fandel@noaa.gov'  
**Subject:** OPR-K371-KR-15 Coast Pilot Review Report  
**Attachment:** OPR-K371-KR-15\_Coast Pilot Review Report.pdf

Please find attached the Coast Pilot Review results for Contract: EA133C-14-CQ-0033, Project Number OPR-K371-KR-15, Task Order #01 (Sabine, LA). The one attached .pdf file submitted addresses the specific questions within OPR-K371\_KR-15 Coast Pilot Field Report. Information was updated for the general operations area and ports of call utilized during survey operations for chapters 9 and 10 based on the August 23, 2015 US Coast Pilot 5, , Gulf of Mexico, Puerto Rico and Virgin Islands.

Please contact me if there are any questions or problems with the attached.

Paul L. Donaldson CH (NSPS #241)|Leidos  
Survey Operations Coordinator/Chief Hydrographer  
Phone: 401.848.4757  
Mobile: 860.857.8802  
Fax: 401.849.1585  
Email: [paul.l.donaldson@leidos.com](mailto:paul.l.donaldson@leidos.com)

221 Third Street, Building A  
Newport, RI 02840 USA  
Leidos.com

---

---

---

**From:** Emily Clark - NOAA Federal [<mailto:emily.clark@noaa.gov>]  
**Sent:** Friday, February 26, 2016 6:03 AM  
**To:** Boyles, Robert L.; Mark Lathrop - NOAA Federal  
**Subject:** EA-133C-14-CQ-0033 T-0001 M-0002  
**Attachment:** EA-133C-14-CQ-0033 T-0001 M-0002.pdf

Good Morning,

Attached is a copy of EA-133C-14-CQ-0033 T-0001 M-0002. This modification extends the period of performance through April 30, 2016.

Please review, sign, and return a copy to me at your earliest convenience.

Thanks

--

v/r,

**Emily Clark**

Contracting Officer  
NOAA Eastern Region Acquisition Division  
Norfolk Federal Building  
200 Granby Street, Suite 815  
Norfolk, VA 23510

☎: (757) 441-6875 | ✉: [Emily.Clark@NOAA.gov](mailto:Emily.Clark@NOAA.gov) | 📠: (757) 440-3687

---

---

---

**From:** Castle Parker - NOAA Federal [mailto:castle.e.parker@noaa.gov]  
**Sent:** Thursday, March 03, 2016 9:00 AM  
**To:** Tim Osborn - NOAA Federal  
**Cc:** Matthew Jaskoski - NOAA Federal; Mark Lathrop - NOAA Federal; Christina Fandel - NOAA Federal; Michael Gonsalves - NOAA Federal; Corey Allen - NOAA Federal; Tiffany Squyres - NOAA Federal; Quintal, Rebecca T.; Donaldson, Paul L.  
**Subject:** FW: OPR-K371-KR-15 Feature Report for Exposed Pipelines #02 for H12730  
**Attachment:** H12730 Exposed Pipelines.zip

Good day Tim,

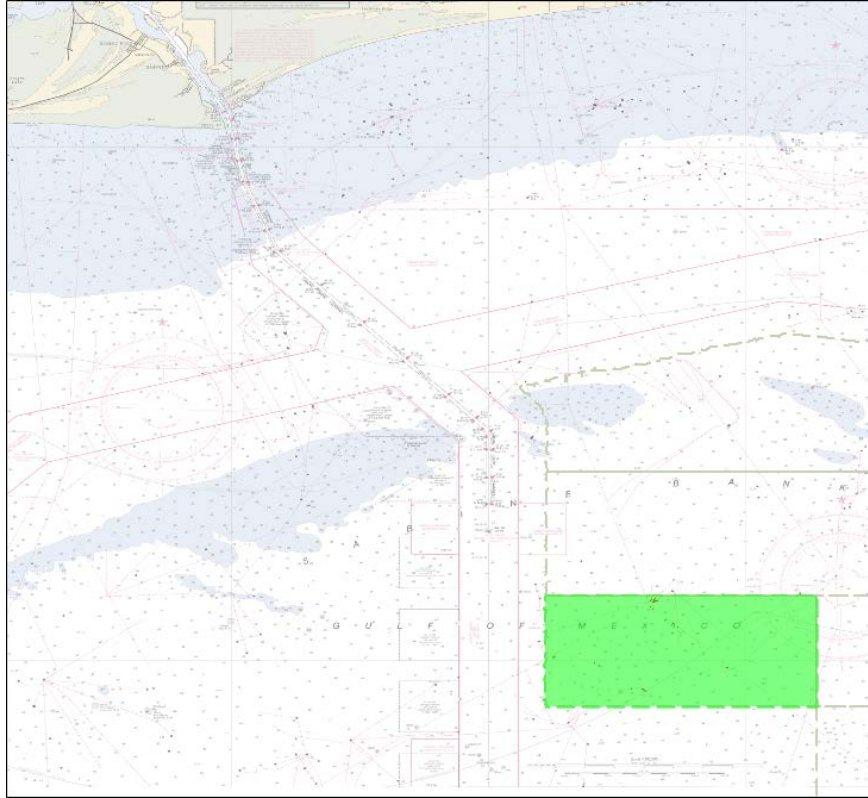
HSD contract field unit Leidos has submitted a group of exposed and unburied pipelines that are located within the limits of survey H12730. Please reference the attached document that details the location of the exposed pipelines and the included data images. The intent of this email is to provide documentation of the survey results and be able to forward to the proper authorities of the exposed pipeline situation.

The image below is an overall view of the survey area and objects noted in the report. The green highlighted area is survey limits for H12730. Also, bear in mind that three point features were imported as Obstructions, as the software used to create this report does not accept PIPSOL point features due to S57 catalog limitations.

Respond as necessary.

Regards,

Gene



*Castle Eugene Parker*

*NOAA Office of Coast Survey*

*Atlantic Hydrographic Branch*

*Hydrographic Team Lead / Physical Scientist*

[castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)

*office (757) 441-6746 x115*

**From:** Donaldson, Paul L. [mailto:[PAUL.L.DONALDSON@leidos.com](mailto:PAUL.L.DONALDSON@leidos.com)]

**Sent:** Friday, January 22, 2016 3:06 PM

**To:** [castle.e.parker@noaa.gov](mailto:castle.e.parker@noaa.gov)

**Cc:** [matthew.jaskoski@noaa.gov](mailto:matthew.jaskoski@noaa.gov); [Mark.T.Lathrop@noaa.gov](mailto:Mark.T.Lathrop@noaa.gov); Quintal, Rebecca T.; Bernier, Alex T.; Bernier, Bridget W.; Smith, Deborah M.; Evans, Rod E.

**Subject:** OPR-K371-KR-15 Feature Report for Exposed Pipelines #02 for H12730

Gene,

Per guidance from AHB, Leidos has generated the attached Feature Report to provide information for AHB to submit to the OCS Navigation Manager and any other appropriate parties.

The Feature Report for H12730 details fourteen separate exposed sections of charted pipelines. These features, with the exception of items 10 and 14, were found to be adequately charted and this report was generated with the intent of notification to the pipeline owner for reburial.

Please find attached one zip file for Feature Report 02 for H12730.

The zip file contains the following files:

- One (1) S-57 file (\*.000)
- 12 Image files that are referenced in the S-57 file (\*.jpg)

Due to file size limitation of your e-mail server, two additional e-mails will follow containing the remaining images referenced in the S-57 file.

Please let me know if you have any questions.

Thank you,

Paul L. Donaldson CH (NSPS #241)|Leidos  
Survey Operations Coordinator/Chief Hydrographer  
Phone: 401.848.4757  
Mobile: 860.857.8802  
Fax: 401.849.1585  
Email: [paul.l.donaldson@leidos.com](mailto:paul.l.donaldson@leidos.com)

221 Third Street, Building A  
Newport, RI 02840 USA  
Leidos.com

---

APPROVAL PAGE

H12730

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

- H12730\_DR.pdf
- Collection of depth varied resolution BAGS
- Processed survey data and records
- H12730\_GeoImage.pdf

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

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

**Lieutenant Commander Briana W. Hillstrom, NOAA**  
Chief, Atlantic Hydrographic Branch