H12435

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

DESCRIPTIVE REPORT

Type of Survey Hydrographic Multibeam & 200% Sidescan

Project No. OPR-K354-KR-12

Registry No. H12435

LOCALITY

State Louisiana

General Locality Gulf of Mexico

Sub-locality 32 NM S of Atchafalaya Bay

2012

CHIEF OF PARTY Tara Levy

LIBRARY & ARCHIVES

DATE: ____

NOAA FORM 77-28 (11-72)	U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTRY No:
	HYDROGRAPHIC TITLE SHEET	H12435
INSTRUCTIONS: The Hydrogr forwarded to the Office	aphic Sheet should be accompanied by this form, filled in as completely as po-	ssible when the sheet is
State:	Louisiana	
General Locality:	Gulf of Mexico	
Locality:	32 NM S of Atchafalaya Bay	
Scale:	1:40,000	
Date of Survey:	05/24/2012 to 11/29/2012	
Instructions Dated:	April 2012	
Project Number:	OPR-K354-KR-12	
Vessels:	R/V Sea Scout	
Chiefs of Party:	Tara Levy	
Surveyed by:	C&C Technologies Personnel	
Soundings by echosounder:	Simrad EM3002 Multibeam Echo sounder	
Verification by:	Atlantic Hydrographic Branch	
Soundings in:	Feet: X Fathoms: Meters: at MLW:	MLLW: X

Remarks:

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 Geophysical Data Center (NGDC) and can be retrieved via http://www.ngdc.noaa.gov/.

TABLE OF CONTENTS

A.	Area Surve	eyed	1
	A.1. Surv	vey Limits	1
	A.2. Surv	vey Purpose	1
	A.3. Surv	vey Quality	1
	A.4. Surv	vey Coverage	2
		vey Statistics	
		reline	
		om Samples	
B.		puisition and Processing	
2.		ipment and Vessels	
	_	Vessels	
	B.1.2.	Equipment	
		lity Control	
	B.2.1.	Crosslines	
	B.2.2.	Uncertainty	
	B.2.3.	Junctions	
	B.2.4.	Sonar QC Checks	
	B.2.5.	Equipment Effectiveness	
	B.2.6.	Factors Affecting Soundings	
	B.2.7.	Sound Speed Methods.	
	B.2.8.	Coverage Equipment and Methods	
	B.2.9.	Density	
		o Sounding Corrections	
	B.3.1.	Corrections to Echo Soundings	
	B.3.2.	Calibrations	
		kscatter	
		a Processing	
	B.5.1.	Software updates	
	B.5.2.	Surfaces	
C.		and Horizontal Control	
C.		tical Control	
		izontal Control	
D	0.2. 1101	nd Recommendations	
υ.		rt Comparison	
	D.1.1.	Raster Charts	
	D.1.1. D.1.2.	Electronic Navigational Charts	
	D.1.2. D.1.3.	Local Notice to Mariners	
	D.1.3. D.1.4.	AWOIS Items	
	D.1.4. D.1.5.	Charted Features	
	D.1.5. D.1.6.	Uncharted Features	
	D.1.0. D.1.7.		
	D.1.7. D.1.8.	Dangers to Navigation	
	D.1.8. D.1.9.	Channels	
		litional Results	
	D.2. Add D.2.1.	Shoreline	
		Prior Surveys	
	IJ.∠.∠.	F1101 QUI VCVS	. тэ

D.2.3.	Aids to Navigation	15
D.2.4.	Overhead Features	
D.2.5.	Submarine Features.	
D.2.6.	Ferry Routes and Terminals	
D.2.7.	Platforms	
D.2.8.	Significant Features	
D.2.9.	Construction and Dredging	
	Sheet	
	Acronyms	
	· · · ,	-
	LIST OF FIGURES	
Figure 1. H1243:	5 survey coverage.	2
	ram shows that the majority of depth difference values between the	
crosslines a	nd mainlines for H12435 are between -0.2 and 0.2 m.	5
	ons with survey H12435.	
Figure 4. The ch	arted depths and selected soundings within H12435	13
	LIST OF TABLES	
Table 1: Survey	limits	1
Table 2: Hydrog	raphic Survey Statistics	3
	f Hydrography	
	Used	
•	Systems Used	
Table 6: Statistic	cal information about the crossline/mainline difference surface	5
	specific tide TPU values	
	specific sound speed TPU values	
	Survey Junctions	
	ical information about the density child layer of the H12435_2m ba	
surface		9
	surfaces	
	tations	
	Level Files (.tid).	
	Correctors (.zdf)	
	edition of raster nautical chart (RNC) 11356	
	edition of electronic nautical chart (ENC) US4LA25M	
_	tal DtoN submission information	
	ed DtoN information after final evaluation of data	
Table 19: Platfo	orm documentation within survey area	15



Descriptive Report to Accompany Survey H12435

Project: OPR-K354-KR-12 Locality: Gulf of Mexico Sub locality: 32 NM S of Atchafalaya Bay Scale: 1:40000 May 24th, 2012 – November 29th, 2012

R/V *Sea Scout* Chief of Party: Tara Levy

A. Area Surveyed

The survey is located 32 NM S of Atchafalaya Bay.

A.1. Survey Limits

Data was acquired within the following survey limits:

Northeast Limit	Southwest Limit
28.879 N	28.818 N
91.322 W	91.429 W

Table 1: Survey limits.

A.2.Survey Purpose

The purpose of this survey is to provide accurate hydrographic data in order to update existing NOS nautical charts. Charted hydrography originates with 1934-36 surveys, and unreliable charted depths have been reported. In addition, this area is a high commercial traffic area with a high concentration of oil & gas platforms and associated pipelines. The survey covers 19.66 square nautical miles of critical survey area as designated in the NOAA Hydrographic Survey Priorities, 2011 edition.

A.3. Survey Quality

The entire survey is adequate to supersede previous data.



A.4. Survey Coverage

Two hundred percent (200%) side scan sonar (SSS) coverage and concurrent set line spacing multibeam echo sounder (MBES) data were acquired in accordance with the coverage requirements as stated in the Project Instructions for this survey. Object detection coverage was obtained over significant features. Figure 1 shows the survey area in relation to the Louisiana coastline.

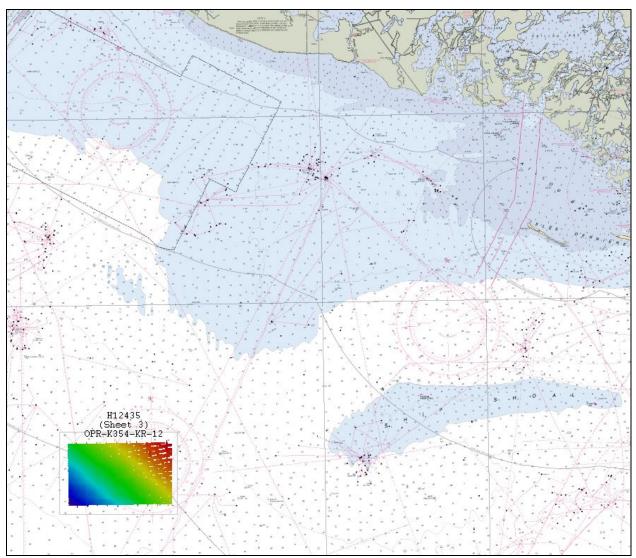


Figure 1. H12435 survey coverage.



A.5. Survey Statistics

The following table lists the mainscheme and crossline acquisition mileage for this survey as well as pertinent survey information:

	Hull ID	AAP34141H011
	SBES Mainscheme (only)	0.00
	MBES Mainscheme (only)	0.00
	SSS Mainscheme (only)	0.00
LNM	SBES/MBES Combo Mainscheme	0.00
LNWI	SBES/SSS Combo Mainscheme	0.00
	MBES/SSS Combo Mainscheme	386.54
	SBES/MBES Combo Crosslines	34.42 (no singlebeam)
	Lidar Crosslines	0.00
Number of Bottom Samples		4
Number of Items Investigated		2
Number of Items Investigated by Dive OPs		0.00
Total Number of SNM		19.66

Table 2: Hydrographic Survey Statistics.

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

Survey Dates
May 24 - May 30
June 2, 3
July 14
November 29

Table 3: Dates of Hydrography.

A.6. Shoreline

No shoreline exists within the limits of H12435.

A.7. Bottom Samples

Four (4) bottom samples were collected within the limits of H12435.



B. Data Acquisition and Processing

Refer to the OPR-K354-KR-12 Data Acquisition and Processing Report (DAPR) for additional information regarding survey systems as well as operational, processing and quality control procedures. Additional and supplemental information is included in this descriptive report.

B.1. Equipment and Vessels

B.1.1. Vessels

C & C Technologies' R/V Sea Scout was used as the platform for data acquisition during this survey.

Hull ID	AAP34141H011
LOA	40.84 m
Draft	1.98 m

Table 4: Vessels Used.

B.1.2. Equipment

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

Manufacturer Model		Type
Kongsberg EM3002		MBES (port and starboard)
Klein 5000 V2		SSS (primary and back-up)
CodaOctopus	F180	Attitude and Positioning System
CNAV	3050	Positioning System (primary and secondary)
YSI Electronics 600R-BCR-C-T		Sound Speed System (at transducer)
Sea-Bird Electronics, Inc SBE 19 and SBE 19 Plus		CTD

Table 5: Major Systems Used.

A C-Nav 3050 was used as the primary positioning system for mainline data collection in H12435. The CodaOctopus F180 was used as the primary positioning system for collection of investigation data.

B.2. Quality Control

B.2.1. Crosslines

Crosslines were run perpendicular to the mainscheme lines so that quality control statistics could be generated after completion of the mainscheme survey lines. The total crossline miles were 34.4 nm and the total main line miles were 386.54 nm. The crosslines comprise 8.9 percent of the total line miles, compliant with set line spacing crossline requirements of Section 5.2.4.3 of the HSSD (2012). Rerun line miles are not included in these totals.



During data acquisition, each main line was compared to all crosslines for which there was overlapping data using C & C's proprietary Hydromap software. The graphs generated from the comparison show the mean difference, RMS difference, and confidence interval for each beam. Refer to the DAPR for additional information and Separates II: Digital Data for graphical documentation.

The Surface Difference tool in CARIS HIPS was also used to evaluate crossline and mainscheme line agreement. Separate 2-m BASE surfaces of the mainscheme lines and crosslines were generated and a difference surface was computed. The mainline surface was Surface 1 and the crossline surface was Surface 2. The surface difference BASE surface is submitted in the Separates II\Digital Data folder.

Statistical information, (Table 6) was generated using the Compute Statistics tool in CARIS HIPS. The associated histogram is shown in Figure 2. The majority of the depth differences between the mainlines and crosslines are within -0.2 and 0.2 m. The mainline and crossline depth difference values do not differ by more than the maximum allowable TVU (total vertical uncertainty) for the depth range of the survey (10.84 - 18.09 m), which ranges from ± 0.519 to ± 0.552 m.

Bin Size	0.01 m
Minimum	-0.43 m
Maximum	0.49 m
Mean	0.02 m
Standard Deviation	0.08 m

Table 6: Statistical information about the crossline/mainline difference surface.

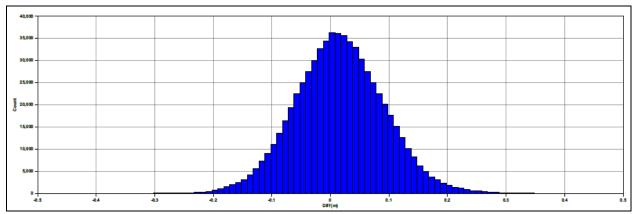


Figure 2: Histogram shows that the majority of depth difference values between the crosslines and mainlines for H12435 are between -0.2 and 0.2 m.

Statistical crossline information was also generated by comparing each of the crosslines to the depth layer of the 2-m BASE surface of the mainscheme survey lines using the CARIS QC report utility. Greater than 99% of crossline soundings were considered to meet IHO Order 1a standards. Crossline comparisons generated with the CARIS QC report utility are shown in the Separates II\Digital Data folder.



B.2.2. Uncertainty

CARIS HIPS was used to compute the Total Propagated Uncertainty (TPU) for each sounding. The following parameters were used for this survey:

Measured	Zoning
0.076 m	0.102 m

Table 7: Survey specific tide TPU values.

Measured	Surface
2.00 m/s	0.8 m/s

Table 8: Survey specific sound speed TPU values.

The uncertainty surface of H12435_2m has values that range from 0.49 m to 0.54 m. Uncertainty does not vary by more than the maximum allowable TVU (total vertical uncertainty) for water depths of 10.84 - 18.09 m, which ranges from ± 0.519 to ± 0.552 m.

Uncertainty of all components of the sounding measurement are included in the CARIS vessel file and detailed in the DAPR.

B.2.3. Junctions

This survey has junctions with one (1) contemporary survey and two (2) prior surveys. Details of these surveys are shown in Table 9 and Figure 3. Although continuous multibeam coverage is not obtained within a survey or between surveys due to the set-line spacing multibeam survey operations, the CARIS difference tool was used to ensure general agreement of depths where overlap of survey data occurred. Difference surfaces were generated with H12435 as Surface 1 and the adjoining survey as Surface 2. A summary of each junction analysis follows.

Registry Number	Scale	Year	Field Unit	Relative Location
H12334	40000	2011	C&C Technologies	Е
H12335	40000	2011	C&C Technologies	Е
H12436	40000	2012	C&C Technologies	N

Table 9: H12345 Survey Junctions.



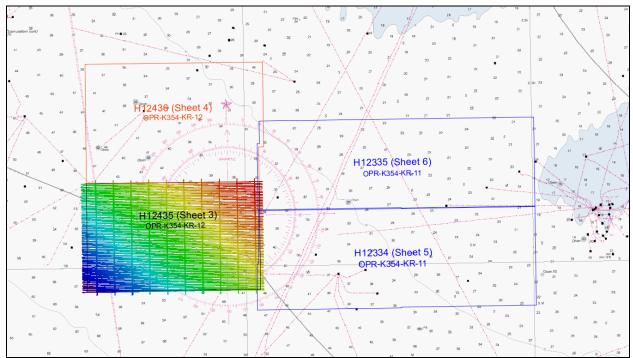


Figure 3. Junctions with survey H12435.

H12334 (Sheet 5 of OPR-K354-KR-11)

The northwest margin of survey H12334 borders the southeast margin of survey H12435 (Figure 3). The depth difference values between H12435 and H12334 range from -0.69 to 0.10 m with the majority of difference values between -0.4 and -0.2 m. The difference surface was exported in ASCII format and imported into Excel for calculation purposes. 533 out of 149017 difference values were found to be -0.5 m or greater. Therefore, only 0.36% of depth difference values are -0.5 m or greater. Depth data from H12435 is consistently shoaler than that of H12334.

H12335 (Sheet 6 of OPR-K354-KR-11)

The southwest margin of survey H12335 borders the northeast margin of survey H12435 (Figure 3). The depth difference values between H12435 and H12335 range from -0.54 to 0.14 m with the majority of difference values between -0.4 and 0.0 m. There are only three (3) small areas where the difference values are greater than -0.5 m. In general, the depth values of H12435 were shallower than those of H12335.



H12436 (Sheet 4 of OPR-K354-KR-12)

The southern margin of survey H12436 borders the northern margin of survey H12435 (Figure 3). Crossline data from each survey overlaps mainline data from the adjacent survey. The depth difference values between H12436 and H12435 range from -0.44 to 0.38 m with the majority of difference values between -0.2 and 0.2 m.

B.2.4. Sonar QC Checks

An Odom Echotrac MKIII single beam echosounder was continuously operated and monitored during the survey as an independent check on the multibeam bottom-detect. In addition, lead line comparisons were conducted when possible as an independent check on the multibeam bottom-detect. The lead line logs are included in Separate I – Data Acquisition and Processing Logs.

B.2.5. Equipment Effectiveness

Equipment generally performed as expected.

B.2.6. Factors Affecting Soundings

No observable factors affected the soundings in survey H12435.

B.2.7. Sound Speed Methods

Sea-Bird Electronics SBE19 CTDs were used for water column speed of sound measurements. Casts were conducted at least twice daily and more often as needed. The multibeam data was corrected for the water column sound speed in real-time using the SIS control software. An Endeco YSI sonde was used to be able to calculate the sound speed at the transducer. The sound speed logs are included in Separates I – Data Acquisition and Processing Logs. The sound speed data and confidence checks are located in Separates II – Digital Data.

B.2.8. Coverage Equipment and Methods

For management purposes the survey area was divided into two subareas (labeled 1 and 2) with separate line-plans in order to conduct efficient survey operations. The main survey lines were oriented east to west throughout both subareas. Two hundred percent (200%) side scan sonar (SSS) coverage was acquired with a Klein 5000 V2 towfish. Concurrent set line spacing multibeam echo sounder (MBES) data were acquired with dual Kongsberg EM3002 echo sounders. Additional high-resolution multibeam developments (object detection coverage) were conducted over potentially significant features. The side scan sonar was operated with a range of 100 m per channel and a line spacing of 90 m for the entirety of the survey; coverage was acquired in accordance with the requirements stated in the Project Instructions for this survey.



B.2.9. Density

According to section 5.2.2.3 of the HSSD (2012) for set line spacing coverage, at least 95% of all nodes on the surface will be populated with at least 3 soundings. The Compute Statistics tool in CARIS HIPS/SIPS was used to generate statistics about the Density child layer of the H12435_2m BASE surface (Table 10).

Bin Size	2
Total count	11,398,903
Minimum	1
Maximum	32,602
Mean	419.02
Standard Deviation	231.68

Table 10: Statistical information about the density child layer of the H12435_2m base surface.

A bin size of 2 was used and the data exported in ASCII format to determine the number of surface nodes that contain less than three soundings. 62,175 nodes are populated by less than 3 soundings. The total count of nodes within the surface is 11,398,903. Therefore, greater than 99% of nodes contain 3 soundings or more. Those that do not contain 3 or more soundings are concentrated on the outer edges of the swath where there is no data overlap due to the set line spacing operations of the survey.

B.3. Echo Sounding Corrections

B.3.1. Corrections to Echo Soundings

All corrections to echo sounding (instrument corrections, static and dynamic draft, speed of sound, and attitude corrections) follow the procedures outlined in the DAPR.

B.3.2. Calibrations

Prior to initiating survey operations, a standard patch test was performed to determine correctors for pitch, roll, and heading of the MBES transducers. A second patch test was performed on June 9, 2012 as a check on quality of the first calibration. Refer to the Data Acquisition and Processing Report and the Patch Test Report for additional information.

B.4. Backscatter

Backscatter was logged within each raw EM3002 file; this data was not processed.



B.5. Data Processing

B.5.1. Software updates

Software updates are outlined in the DAPR. No further software updates occurred after the submission of the DAPR.

The following Feature Object Catalog was used: NOAA Extended Attribute Files V5_2.

B.5.2. Surfaces

The following CARIS surfaces were submitted:

Surface Name	Surface Type	Resolution	Depth Range (m)	Purpose
H12435_2m	Uncertainty	2 m	10.84 - 18.09	Set Line Spacing/ Object Detection
H12435_2m_Final	Uncertainty	2 m	10.84 - 18.09	Set Line Spacing/ Object Detection
H12435_Investigations_50cm	Uncertainty	0.5 m	11.22 - 15.62	Object Detection
H12435_Investigations_50cm_Final	Uncertainty	0.5 m	11.12 - 15.62	Object Detection
H12435_Crosslines_2m	Uncertainty	2 m	10.89 - 17.81	Quality Control/Crossline Comparison
H12435_Mainlines_2m	Uncertainty	2 m	10.84 - 18.09	Quality Control/Crossline Comparison

Table 11: Caris surfaces.

Although the line plan for survey H12435 was set up for data collection as two separate subareas, these subareas were combined into one CARIS project for the entire sheet for processing and analysis. One BASE surface was generated at a scale of 1:40000 with a resolution of 2 meters, in accordance with section 5.2.2.3 of the HSSD (2012), which states that a 2-m BASE surface will be created for 0-20 m water depths. One BASE surface was created for all investigations at a scale of 1:40000 and a resolution of 0.5 m, compliant with Object Detection Coverage in water depths of 0-20 m. All BASE surfaces were created based upon the IHO Order 1a standards.

After initial data cleaning, the surfaces were reviewed a second time for fliers using a combination of viewing the data in 3D as well as using the standard deviation child layer of the BASE surfaces. The maximum standard deviation is 0.27 m which corresponds to a large drag feature in the northeastern portion of the survey area. The shallowest point of this feature has been submitted as a DtoN. See section D.1.7. Dangers to Navigation for more information.



C. Vertical and Horizontal Control

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

C.1. Vertical Control

The vertical datum for this survey is Mean Lower Low Water (MLLW). The operating National Water Level Observation Network (NWLON) station at Grand Isle, LA served as datum control for the short-term Texas Oil Platform, LA gauge. The operating water level station at Port Fourchon, LA also provides water level reducers for this survey. The Texas Oil Platform gauge was established and maintained throughout the survey by C & C Technologies' personnel.

Preliminary zoning was supplied by CO-OPS and revised by JOA Surveys, LCC. The geometry of the zoning was not changed but the zoning factors were modified to make them relative to the Texas Oil Platform gauge instead of Port Fourchon.

Station Name	Station ID
Port Fourchon	8762075
Grand Isle (NWLON)	8761724
Texas Gas Platform (Subordinate)	8763535

Table 12: Tide Stations.

File Name	Status
8763535.tid	Verified (Final smoothed)

Table 13: Water Level Files (.tid).

File Name	Status
K354KR2012_JOA_20130118.zdf	Final

Table 14: Tide Correctors (.zdf).

A request for final verified tides was sent to JOA on 12/24/2012. The final tides were received on 01/18/2013. JOA has maintained the CO-OPS preliminary zoning geometry, only having changed the tidal zoning factors.

C.2. Horizontal Control

The horizontal datum for this project is North American Datum of 1983 (NAD83). Fieldsheets are referenced to Universal Transverse Mercator (UTM) zone 15 N, meters.

All position data were acquired using one (1) of two (2) C-Nav 3050 receivers or using an F180 positioning/inertial motion unit with a DGPS correction provided by one (1) of two (2) C-Nav 3050 receivers.



D. Results and Recommendations

D.1. Chart Comparison

The RNC (Table 15) and ENC (Table 16) described below are the latest editions of the largest scale charts covering the project area. These differ from the charts described in the Project Instructions by one edition.

D.1.1. Raster Charts

Chart Number	Scale	Edition Number	Edition Date	LNM Date	NM Date
11356	80000	39	06/2012	3/19/2013	3/30/2013

Table 15: Latest edition of raster nautical chart (RNC) 11356.

Surveyed water depths range from 35 to 59 feet and there is a general increase in depth from the northeast to the southwest.

A shoal biased selected sounding layer was generated in CARIS with a single-defined radius of 150 m (distance on the ground). Surveyed water depths generally agree with charted depths within 1-2 feet.

Figure 4 shows the charted depths and selected soundings within the survey area. For display purposes, the selected soundings in the figure were generated at a radius of 300 m. Although there are no charted contours passing through the area, Figure 4 shows the water depths gradually increasing from the northeast corner to the southwest corner of the survey area.



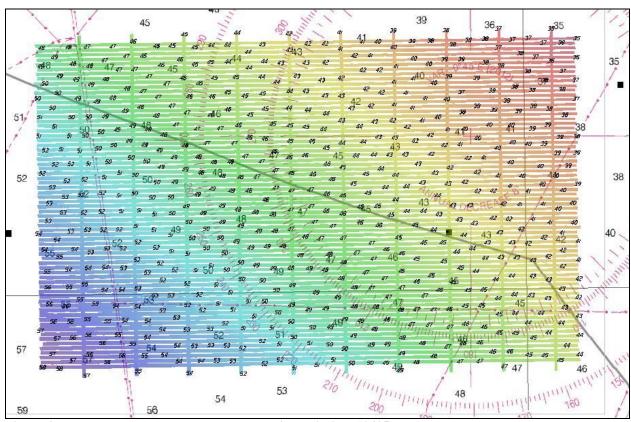


Figure 4. The charted depths and selected soundings within H12435.

D.1.2. Electronic Navigational Charts

ENC Name	Scale	Edition	Update Application Date	Issue Date	Preliminary
US4LA25M	80000	16	8/24/2012	3/18/2013	No

Table 16: Latest edition of electronic nautical chart (ENC) US4LA25M.

ENC US4LA25M depths generally match those of RNC 11356, although some ENC US4LA25M depths in the northeast quadrant of the survey area are 1 foot shallower than those of RNC 11356.

The comparisons made between surveyed depths and charted depths on the RNC are generally the same for the ENC.

D.1.3. Local Notice to Mariners

No Local Notice to Mariners were issued during the survey period in this area. The last LNM reviewed was LNM 46/12 on 12/3/2012.

D.1.4. AWOIS Items

No AWOIS items exist for this survey.



D.1.5. Charted Features

At the time the Project Instructions for this survey were assigned, there was one (1) charted platform within the survey area, which corresponds to the item assigned in the provided CSF file. This platform remains present in the latest nautical chart used for chart comparisons for this survey.

D.1.6. Uncharted Features

One (1) uncharted feature was found during survey operations; refer to section D.1.7 for additional information.

D.1.7. Dangers to Navigation

One (1) significant feature was observed during survey operations and was submitted as a Danger to Navigation (DtoN). This feature is inferred to be a large drag scour with associated sediment mound. The original DtoN information from the DtoN verification material provided by NOAA is presented in Table 17. This feature was submitted as a DtoN with the feature object type as sounding from the investigation data. Updated DtoN information is shown in Table 18, after final review of the data, which includes finalized tides.

The data suggests that the feature is comprised of sediment, which may erode over time. Although the investigation data may be representative of a sediment mound in the process of erosion, the final least depth was chosen as the shallowest point to be conservative. The final least depth recorded is from mainline 3081-1 which was found to have the shallowest least depth of 11.073 meters.

Item#	Feature	Latitude (N)	Longitude (W)	Depth (ft)	Depth (m)
DtoN1	SHOAL	28-52-02.9	91-20-43.9	36	11.15

Table 17: Original DtoN submission information

Item	Feature	Latitude N	Longitude W	Depth (ft)	Depth (m)	DpTPU (m)	HzTPU (m)	Comments
DtoN1	Sounding	28-52-02.90	91-20-43.92	36.329	11.073	0.487	0.678	Least depth from mainline 3081-1 instead of investigation data

Table 18: Updated DtoN information after final evaluation of data.

D.1.8. Shoal and Hazardous Features

There was one (1) shoal feature that was submitted as a DtoN. Refer to section D.1.7 Dangers to Navigation for details.



D.1.9. Channels

No channels exist within the boundaries of survey H12435.

D.2. Additional Results

D.2.1. Shoreline

There is no shoreline within the boundaries of survey H12435.

D.2.2. Prior Surveys

Refer to Section B.2.4 for information on survey junctions and Section D.1 for comparison to nautical charts.

D.2.3. Aids to Navigation

No Aids to Navigations are currently charted within the survey limits and none were found during survey operations.

D.2.4. Overhead Features

There are no overhead features within the limits of H12435.

D.2.5. Submarine Features

Several submarine pipelines are charted within the survey area. No pipelines were observed in the multibeam or side scan sonar data.

D.2.6. Ferry Routes and Terminals

No ferry routes or terminals exist in the survey area and none were observed during survey operations.

D.2.7. Platforms

During survey operations, one (1) charted platform was observed in the charted location (Table 19). Position is determined from the layback corrected Primary SSS contact.

Platform Name	Latitude (N)	Longitude (W)	Comments	Additional Comments		
SGY-EI166A	28-50-36.54	91-20-54.81	Observed in charted location	Retain on charts		

Table 19: Platform documentation within survey area.



D.2.8. Significant Features

One (1) drag feature and associated sediment mound was observed in the northeast portion of the survey area. Refer to section D.1.7 Dangers to Navigation for details.

D.2.9. Construction and Dredging

No dredging or construction was observed within the boundaries of survey H12435 during survey operations.



E. Approval Sheet

LETTER OF APPROVAL

REGISTRY NUMBER H12435

This report is respectfully submitted.

Field operations contributing to the accomplishment of the survey H12435 were conducted under my direct supervision with frequent personal checks of progress and adequacy. This report and CARIS project have been closely reviewed and are considered complete and adequate as per the Statement of Work.

This report is accompanied by the Data Acquisition and Processing Report for project OPR-K354-KR-12.

Tara Levy Chief of Party C & C Technologies March 2013

Yan Kaly



F. Table of Acronyms

ATON	Aid to Navigation
AWOIS	Automated Wreck and Obstruction Information System
C/I	Cable in
C/O	Cable out
CSF	Composite Source File
CTD	Conductivity Temperature Depth
DTON	Danger to Navigation
ENC	Electronic Navigational Chart
EOL	End of line
GPS	Global Positioning System
HM	Harmonic mean
HSSDM	Hydrographic Survey Specifications and Deliverables Manual (2012)
HVF	HIPS Vessel File
LL	Lead line
MB	Multibeam
MLLW	Mean Lower Low Water
P/L	Pipeline
P/F	Platform
RR	Re-run
SB	Singlebeam
SOL	Start of line
SS	Ship Shoal (block name)
SSS	Side scan sonar
SSP	Sound Speed Profile
SWMB	Shallow Water Multibeam
TPU	Total Propagated Uncertainty
WD	Water depth
WOW	Wait on weather
Wpt	Waypoint
ZDF	Tide Zone Definition File

APPENDIX I TIDES AND WATER LEVELS



Field Tide Note

TIDE STATION - SITE REPORT														
	(FOD Form 03/31/00)	NOAA -	Nation	al Ocean	Servio	e - Cent	er for O	perationa	il Coeano	raphio P	roduots	and Ser	vices	
	Station Na	me:		Texas (Gas Pla	tform,	Caillo	a Bay, L	A	Statio	on Nun	nber:	8	76-3535
STATION		10" 29.2"		Long:		68' 35.			st. / Long. By			Y		
INFO	Facility Name Address			iatform, (er oontac				Time?	Meridian	0	w	GMT	Offset	+8
	City	n/a	oo uwii	er contac	A DOION			8	tate	Louis	ilana	Z	p	n/a
	Date's of Vis	it			018/201									
INSPECT	Established	-		Leader	Jim V			Field Office Approval:						
INSPECT	Inspected Repaired	-	-	mber mber		Chappi le Hawk			COV	Date OPS Approx	al:			_
	Removed	x		mber	Amy		III		-	Date				
	TYPE: Full		Cursory		Emer									
	Owner Contact		Gas Ti r Faulk	ransmiss	ion, LL	C			tate/Zip Phone			Y 4230	Fax	
	Address		Frederic						Phone	337 66	2 8386	Cell I		
OWNER	Address							10	mail	dexte	r.faulkó	bwomi	o.com	
	Comments													
	#1 Contact Name	Tara L							tact Name	Valerie i				
	#1 Address #1Cell Work			#1 Office		99790	10880		ddress Il Work		Kallicte 24448	8aloom #2Work		3372810880
CONTACT	Email			ohnoLoo		90120	10000		mail	valerie.h				
CONTACT	Comments	Tara Le	vy's ext	tension for	or#1 Of									Valerie
	Shelter type													
	Date Installed		/26/201					Combo	n/			catica		n/a
SHELTER	Comments	Gauges	ceoure	ed to an a	iluminur	n frame	which	was lag b	olted Into	dook top	. This i	s an exp	osed ci	ruoture.
	Purpose	Dia	Longth	Material	Intake	Туре	Top Hat	Copper	Parallel Plates	# Brackets	Sump Pumped	Valve Turns	Heater Setting	Date Installed
	Aquatrak	3"	6 m	Alum.	Ba	ffle	STD	Yes	No	4				4/25/2012
WELL		\vdash					\vdash	-		_		\vdash		
SUMP	Comments	from the solar pa wooded	main panels. 1 Suppo	platform. The Aqua rt beams	An alu trak sou Thes	minum unding v e brack	frame w wells are ets prov	as fabrio mounte ide the m	ated to ho d using a nain suppo	use the d steel sup ort for the	ata logg port bra well.	ers, bat oket fixe	teries, a d to the	
	Date Installed	4/25/2		DAA I			22+		U S/N	n	_		Phone	n/a
	H-522+OS Ver Power Supply S/N	3.0	13	Battery Digital I		Seale	ed Gel		Ver D1	8	8	Cellula	y Date	Apr-12
	Modem S/N			Analog 1					Ver A1			Ph dwo		
	H-522+ Display S/N	437	9	Analog 2					Ver A2			AC (No
Primary DCP	OOES radio S/N	na		Sat Ph Sat Ve					tadio Type	n	a	Solar	(Y/N)	Yes
	DCP Comments	Installed	i new b	ta Logge	r 4379 v	ras rein	ctalled	uda i			12	18/2012		1/2012: ogger 4379
	Module Comments													
Primary	GOES ID #	90705		GOES C			45		nit Time	00:4			it Inter	1 hour
GOES	Antenna 5/N Cable Length	n/s 6 r		Date In Cable			/2012 B A/U	-	inuth sit Power	18 n	in O	Hew fro Magne	en Horz	68 0
	Solar Panel #1	60		Date In			/2010		Panel #2	50		Date In		8/28/2010
	Back-up Panel #1	n/s		Date In			/2010	Back-up	Panel #2	n	la	Date In		n/a
Solar Panels	Ellev from Horz OOES & Solar Panel		anels ar		ed on to	p of alu	m ıminum		on Horz Tame, and	the GOE		Cable na le mo		4 m on the top
	Comments													

Page 1 of 3 3/21/2013



Primary Aquatrak	Date Installed			2042-4312	Matched Tube 5			
	Sensor Offset	4/25/2012 -0.106	Aquatrak S/N SNS	-0.105	DAT 10.13		982 atrak Coet S/N	120437
	Select Ottale		T from install lev		19.15	128 Aqu	ama Corrain	120487
Sensor					at demobilization (managed 45 450	on this date.	
(Gauge 1)	Comments	12 10/2012. DA	a remaine ere ec	ano within one	at demodrización (iribacarba 10.10.	zo trille date)	
(congo i)								
	Sound tube le	ngth (level pt to copy	per tube and)	4.629m	Copper Tub		0.	28
Primary		SNS from above		-0.105	T1-T2 Sep			
Aquatrak	Aquat	trak value during ded	k test	N/A	T1-T2 Cabi			
Sounding	Difference	e (less than 4/- 0.06s	n passes)	N/A	Sounding Tube 6	leaned (Y/N)	Yes Number	r of Bails 4
		12/18/2012: St	ation removed, p	rimary counding	g tube removed an			
Tube (Gauge		test not perfor	med at removal.			_		_
1)	Comments	-						
	D . D . O . I				41 - 101 51	11 0.15		
	Delta Dual Orific	on(m)				nary and Lower Orific		
	Model		Date Installed		Model		Date Installed	
PARO-	NI SN		Range		TI S/N		Range	
SCIENTIFIC	Vest Value		Flow	Feed	Vent Value		Flow	Feed
DIGIQUARTZ	Tide Staff Installed	I(YN)	Staff Value of Orif	Soe Zero	RS-232 Speed			•
		No Paros at thi	is tide station for	2012				
SENSOR								
	Comments							
			******				B.1	p=-
	Date Installed	4/25/2012	9210/Xpt Dk	70688	RTU S/N		Primary (Y/N)	No
	Dark OS Ver		Xprt display 5/N		Analog I/O S/N		A1 PIC Ver	
	Modem S/N	n/a	Power Supply 5/N		Digital I/O S/N		DI PIC Ver	
	SatLink S/N	n/a	Sat Version	n/a	SatLink Type	n/a	Power Source	Battery
		100	Battery Date	Apr-12	Battery Type	Sealed Gel	Batt Amp-hr	Dunny
9210 XIIte		4/26/2012: 8210 Data logger was installed to be used as secondary logger. No GOE					_	
Backup DCP								
	7/31/2012: New Installation of back-up battery for secondary tide gauge 12/18/2012: Data logger was removed from tide station during demobilization							
		logger was ren	noved from tide	station during o	emobilization			
	Module Comments							
	Module Comments							
Backup	Date Installed	4/25/2012	Aquatrak S/N	2245-4455	Matched Tube 5	/N 17	749	
	Sensor Offset	-0.1064	SNS	-0.106	DAT 9.81	96 A	atrak Cont S/N	120218
Aquatrak	Owner China		T from Install le			- risp	and Contact	08/02/2012:
Sensor		04/26/2012. DA	A I from install let					
							Mar-	
(Gauge 2)	Comments			urrioan Isaao w		(measured at 9.8	8186m).	12/18/2012:
(Gauge 2)		DAT from dem	obilization levell	urrioan Isaao w ng Is 9.8185m.	thin 6mm tolerance		- ioung.	12/18/2012:
(Gauge 2)		DAT from dem ngth (level pt to cop)	obilization levell	urrioan isaao w ng is 9.8186m. 4.32m	thin 8mm tolerance Copper Tub	e Length	.82	12/18/2012: 6m
(Gauge 2)		DAT from dem	obilization levell	urrioan Isaao w ng Is 9.8185m. 4.32m -0.105	thin Smm tolerance Copper Tub T1-T2 Sep	e Length saration	.82 n	12/18/2012: 26m Va
Backup	Sound tube le	DAT from dem ngth (level pt to copp SNS from above trak value during ded	obilization levell pertube and) k test	urrioan isaao w ng is 9.8186m. 4.32m	Copper Tub T1-T2 Sep T1-T2 Cubi	e Length surstice e Length	.62 n	12/18/2012: 26m Va
Backup Aquatrak	Sound tube le	DAT from dem ngth (level pt to copy SNS from above	obilization levell pertube and) k test	urrioan Isaao w ng Is 9.8185m. 4.32m -0.105	thin Smm tolerance Copper Tub T1-T2 Sep	e Length surstice e Length	.82 n	12/18/2012: 26m Va
Backup Aquatrak Sounding	Sound tube le	DAT from dem ngth (level pt to copy SNS from above trak value during ded e (less than +/- 0.05s	obilization levell pertube and) k test n passes)	urrioan icaao w ng ic 9.8186m. 4.82m -0.105 N/A N/A	Copper Tub T1-T2 Sep T1-T2 Cabl Sounding Tube 6	e Length suration is Length Cleaned (Y/N)	.82 n n Yes Number	12/18/2012: 26m Va Va r of Italia 4
Backup Aquatrak	Sound tabe le Aqua Difference	DAT from dem night (level pt to copp SNS from above trak value during ded e (less than +/- 0.05s 04/25/12: New	pertube and) k test n passes) sounding tube w	urrioan icaao w ng ic 9.8185m. 4.82m -0.105 N/A N/A ac inctalled. Th	Copper Tub T1-T2 Sep T1-T2 Cabl Sounding Tube 6 e new Aquatrak sou	e Leigh enstice e Leigh Cleaned (Y/N) anding tube has 3	.62 n Yes Number 3 PVC tubes plu	12/18/2012: 26m Va Va r of Balls 4
Backup Aquatrak Sounding	Sound tube le	DAT from dem night (level pt to copy SNS from above trak value during ded e (less than +/- 0.05e 04/25/12: New oopper antifou	obilization levell pertabe and) k test n passes) sounding tube w lant tube. PVC or	urrioan isaao wing is 9.8185m. 4.32m -0.105 N/A N/A vas installed. The poovering the	Copper Tub T1-T2 Sep T1-T2 Cabl Sounding Tub Go e new Aquatrak sonor di	e Length seration le Length Cleaned (Y/N) anding tube has 3 id not fit properly	Number Yes Number PVC tubes plus y over the sense	12/18/2012: 26m Va Va r of Balk 4 s the trimmed or so wooden
Backup Aquatrak Sounding Tube (Gauge	Sound tabe le Aqua Difference	DAT from dem nigh (level pt to copy SNS from above trak value during ded e (less than +/- 0.05e 04/25/12: New oopper antifou mounting blook	oblization leveli per tube end) k text n passes) counding tube w lant tube. PVC o ks were inserted	urrioan isaao wi ng is 9.8186m. 4.32m -0.105 N/A N/A as installed. The ap covering the and tape was a	Copper Tub T1-T2 Sep T1-T2 Cab Sounding Tube Ge e new Aquatrak sou Aquatrak sonoor di sed to oover openii	e Length seration le Length Cleaned (Y/N) anding tube has 3 id not fit properly	Number Yes Number PVC tubes plus y over the sense	12/18/2012: 26m Va Va r of Balls 4
Backup Aquatrak Sounding Tube (Gauge	Sound tube le Aqua Difference Comments	DAT from dem nigh (level pt to copy SNS from above that value during ded (less than +/-0.05s 04/25/12: News copper antifour mounting blood counding tube	per tabe end) k text n passes) sounding tube w lant tube. PVC o ks were inserted removed from ti	urrioan isaao wing is 9.8186m. 4.32m -0.105 N/A N/A as installed. The ap covering the land tape was it ide station durit	Copper Tuh T1-12 Sap T1-12 Cab Sounding Tube (e new Aquatrak sensor di seed to cover openiling demobilitzation	e Length service le Length Cleaned (Y/N) undling tube has 3 id not fit properly	Yes Number 3 PVC tubes plu y over the sense	12/18/2012: 26m Va Va r of Balk 4 is the trimmed or so wooden 012: Back-up
Backup Aquatrak Sounding Tube (Gauge	Sound tube le Aque Defference Comments Date of Levels	DAT from demingth (level pt to copy SNS from above that value during dea (less than +/- 0.05s 04/25/12: New coopper antiflou mounting blook sounding tube 12/18/2012	per tabe end) k test a passes) sounding tube w slant tube. PVC o- ks were inserted removed from ti	urrioan isaac wing is 9.8185m. 4.32m0.105 N/A N/A as installed. The povering the land tape was a ide station duritional 6	Copper Tub T1-T2 Sep T1-T2 Sep T1-T2 Sep T1-T2 Country T1-T2 Country Sounding Tube 0 e new Aquatrak son Aquatrak sensor di seed to oover opening demobilization # EMA Racever	e Length anation is Length Cleaned (Y/N) andling tube has 3 id not fit properly ngs.	Number 3 PVC tubes play y over the sense 12/18/20	12/18/2012: 25m Va Va r of Balk 4 s the trimmed or so wooden 012: Baok-up
Backup Aquatrak Sounding Tube (Gauge	Sound tabe le Aquat Difference Comments Date of Levels Primary IIM	DAT from demingth (level pt to copy SNS from above risk value during ded (less than W-0.05s 04/25/12: New copper antifou mounting blook counding tube 12/18/2012 Designation	per table end) k test s passes) counding tube w sant tube. PVC o ks were inserted removed from ti	urrioan icaao wing ic 9.8185m. 4.32m -0.105 N/A N/A as installed. The powering the and tape was did estation durited. 578 3535 A	Copper Tuh T1-T2 Sep T1-T2 Ceh Sounding Tuhet e new Aquatrak son Aquatrak soncord issed to cover opening demobilitzation ag demobilitzation # BMs Recover	e Length survive Length Cleaned (Y/N) andling tube has 3 id not fit properly nge. d 5 if Elevation above Sta	Name Number PVC Number PVC tubes plu y over the sense 12/18/20 # HMs Establition Detum	12/18/2012: 156m Va Va 10f Bulb 4 10 the trimmed or so wooden 112: Back-up
Backup Aquatrak Sounding Tube (Gauge	Sound tube le Aquat Difference Comments Date of Levels Primary BM Datum Offset (D	DAT from dem nigh (level pt to copy SNS from above max value during the copy of the copy output to copy output	obilization leveli per tabe end) it text in passer) counding tube we fant tube. PVC o- kis were inserted removed from ti # BMs Conne- 8	urrican isaac wing is 9.8185m. 4.32m -0.105 N/A N/A as installed. The powering the land tape was a dectation duritical 6 78 3635 A	Copper Tub T1-T2 Sep T1-T2 Sep T1-T2 California Tube Co e new Aquatrak son Aquatrak sensor di sed to cover openila g demobilitzation # EMM Recover PEM Levels type (Optical / Bac	e Leight artice a Leigh Leised (YN) inding tube has 3 d not fit properly ngs. d 6 d 6 d Elevation above Sta	Pec Number of Nu	12/18/2012: 156m Va Va Va vol balle 4 so the trimmed or so wooden 012: Baok-up
Backup Aquatrak Sounding Tube (Gauge	Sound tabe le Aquat Difference Comments Date of Levels Primary IIM	DAT from dem nigh (level pt to copy SNS from above max value during the copy of the copy output to copy output	cobilization leveli per table end) is test opensely counding tube w is test end of the per co- kits were incerted removed from ti # BIMs Connec 8 n/a 10.1336	urrican isaac wing is 9.8185m. 4.32m -0.105 N/A N/A as installed. The powering the land tape was a dectation duritical 6 78 3635 A	Copper Tuh T1-T2 Sep T1-T2 Ceh Sounding Tuhet e new Aquatrak son Aquatrak soncord issed to cover opening demobilitzation ag demobilitzation # BMs Recover	e Leight artice a Leigh Leised (YN) inding tube has 3 d not fit properly ngs. d 6 d 6 d Elevation above Sta	Name Number PVC Number PVC tubes plu y over the sense 12/18/20 # HMs Establition Detum	12/18/2012: 156m Va Va Va vol Buile 4 5 the trimmed or so wooden 012: Baok-up
Backup Aquatrak Sounding Tube (Gauge	Sound tube le Aquat Difference Comments Date of Levels Primary BM Datum Offset (D	DAT from dem night (level pt to copy in the part of th	obilization leveli per tabe end) it text in passer) counding tube we fant tube. PVC o- kis were inserted removed from ti # BMs Conne- 8	urrican licaso wing is 9.8185m. 4.32m -0.105 N/A N/A ras installed. The apo overing the and tape was is de station durit and 578 3535 A	Copper Tub T1-T2 Sep T1-T2 Sep T1-T2 California Tube Co e new Aquatrak son Aquatrak sensor di sed to cover openila g demobilitzation # EMM Recover PEM Levels type (Optical / Bac	e Langth santion le Langth Cleaned (Y/N) anding tube has 3 d not fit properly ngc. ad 6 f Uteration shows Na oode (Mixed) (N) Yes	Pec Number of Nu	12/18/2012: 256m Va Va Va Va Tof Bala: 4 to the trimmed 012: Baok-up 10.000 10.000 tioal
Backup Aquatrak Sounding Tube (Gauge 2)	Sound table let Aquat Difference Comments Date of Levels Dates Offset (DA	DAT from dem ngth (level pt to ong) mgth (level pt to ong) to SNS from show msk value during ded (less than +/- 0.05s of 04/25/12: New oopper antifou mounting bloo sounding tube 12/18/2012 Designation AT) in 11-522- To from Abstract + +/- 0.0050m)	obilization leveli per tabe end) k text passes passes saunding tube w sant tube. PVC o kc were inserted removed from ti # IBMs Connex 8 n/a 10.1336 n/a	urrican isaac wing is 8.8186m. 4.32m -0.105 N/A vas installed. This poorering the and tape was a did station durit and 5.78 3636 A	Copper Tub T1-T2 Sep T1-T2 Sep T1-T2 Con T1-T3 Code Sounding Tube 6 e new Aquatrak son Aquatrak sensor di sed to oover openil ag demobilization # IBMs Racever # IBMs Racever Lavels type (Optical / Ban reals agree with history (1)	e Length sanction to Langth leased (YNN) leased (YNN) leased (YNN) defined (YNN) and in the has 3 d not fit properly ngs. d 6 d Elevation shove Na code (Mosel) (No) No	,83 n n Yes Number B PVC fubee plu y over the cenece 12/18/2(# IllMs Istabli tion Datum Opp Staff Consoded Orifice(s) Consect	12/18/2012: 15m Va Va Va va of Balls 4 so the trimmed or so wooden 112: Baok-up 10.000 10.000 ttotal (YYN) Yes odd (YN) N/A
Backup Aquatrak Sounding Tube (Gauge	Sound table let Aquat Difference Comments Date of Levels Dates Offset (DA	DAT from dem agh (level pt to copy should pt to copy to show that who during ded (less that 41-0.05e 04/25/12: New coopper artiflou mounting blood counding tube 12/18/2012 Designation AT) in H-522+ (1) the Abstract 34/1-0.005(m) 04/25/2012: Level	obilization leveli per tabe end) it test passes) counding tube w sant tube, PVC o- kc were inserted removed from ti # IBMs Cosses 8 n/a 10.1335 n/a veiling was conditing we conditing	urrican licaso wing is 9.8186m. 4.32m -0.105 N/A N/A as installed. This poovering the land tape was aide station duritional 6 78 3636 A	Copper Tub T1-172 Sep	e Leight seration le Leight Cleaned (YN) midling fube has 3 d not fit properly ngs. ad 6 6 M Elevation above Sta code / Mixed) (N) Yes No pauge was found	PVC Number of Nu	12/18/2012: 156m Va Va Va Va 10 their 4 to the trimmed or so wooden 112: Baok-up 10.000 10.000 10.000 10.000 10.000 10.000 10.000 10.000 10.000 10.000
Backup Aquatrak Sounding Tube (Gauge 2)	Sound table let Aquat Difference Comments Date of Levels Dates Offset (DA	DAT from dem ngth (level pt to ong) sixt from show mak value during ded (fear thas +4-0.05a volume for the show oopper antiforumounting bloo sounding the soundin	obilization leveli primb end) k test passes) counding tube w iant tube. PVC o ke were incerted removed from to #BMs Conse. 8 10.1336 n/a veiling was condi- se 8.3186m. The v	urrican licaso wing is 8.8185m. 4.32m -0.105 N/A N/A as installed. This overling the and tape was is de tation durit and 578 3535 A Lican control of the con	Copper Tub T1-T2 Sep T1-T2 Sep T1-T2 California Fire Tall Tube Fire Tall Tube Fire Tub	e Leight seration le Leight Cleaned (YN) midling fube has 3 d not fit properly ngs. ad 6 6 M Elevation above Sta code / Mixed) (N) Yes No pauge was found	Yes Number 12/18/24 # BMs Established Datum Opt Staff Connected Option of the beload on of the beload of the belo	12/18/2012: 15m Vs Vs Vs Is the trimmed or so wooden 0/12: Baok-up 10.000 10.000 10.000 Vec In while the DAT Is primary and
Backup Aquatrak Sounding Tube (Gauge 2)	Sound tabe is Aquat Difference Comments Date of Levels Primary IIM Dates Offset (DA Diff (Change if :	DAT from dem mgh (level pt to ong) 5NS from above msk valve during date (less than 14-0.05 on 04/25/12: New oopper antiforomounting blood sounding tube 12/18/2012 Designation AT) in 16-522+ T) from Abstract 14/16/2012: Le was found to be secondary transcendent of the secondar	obilization leveli per table end) it test passes counding tube w isnt tube. PVC o iks were increased removed from ti # BMs Conse # 10.1335 n/a velling was condi- e 9.8185m. The v oscluoers were os	urrican licaso wing is 9.8185m. 4.32m -0.105 N/A N/A as installed. This poovering the and tape was a decistation during the control of the co	Copper Tub T1-T2 Sep T1-T2 Sep T1-T2 Cash Sounding Tube (e new Aquatrak son Aquatrak sensor di seed to over opening demobilization # IBMs Receven PIP Levels type (Optical / Ibar votes type (Optical / Ibar vote	e Leight maratice is Leight Scheed (YN) moding fube has 3 d not fit properly nge. d 6 6 6 6 6 6 6 7 6 7 7 7 7	.83 n n New Number PVC tubes pluy y over the censor 12/18/2(# IIIMs Established Censor Options Octions Connection to be 10.1335er e location of the 12/18/2012. 1 12/18/2012.	12/18/2012: 15m Va Va Va Va To of Balls 4 Is the trimmed or so wooden 10:0000 10:0000 10:0000 10:0000 10:0000 10:0000 10:0000 10:0000
Backup Aquatrak Sounding Tube (Gauge 2)	Sound table let Aquat Difference Comments Date of Levels Dates Offset (DA	DAT from demings (level pt to ong) in the pt to ong) in the pt to ong the pt to ong the pt to ong the pt to one pt t	obilization leveli per tabe end) i text passes) counding tube w (ant tube, PVC or ice were incerted removed from ti # BMs Conses 8 10.1336 n/a 10.1336 welling was conduce 9.5185m. The in scalable remobilization ar	urrican licaso wing is 9.8186m. 4.32m -0.105 N/A vision installed. This powering the land tape was ide station during the land tape was ide station during the land tape with the land tape will be land tape with the land tape will be land tape with the land tape will be land to the land tape will be land to the land tape land to the land tape land to the land tape	Copper Tub T1-T2 Sep T1-T2 Sep T1-T2 Call T1-T3 Call T1-T3 Call Sounding Tube (e new Aquatrak son Aquatrak sensor di seed to sover openila g demobilization # Iffile Receiver # Iffile Receiver # Iffile Receiver Levels type (Optical / Ban rook agree with history (AT for the primary yeard from previous) the primary gauge with	e Length seration is Length is Length leased (Y/N) mading tube has 3 d not fit properly nge. sid 6 Illeration above fits ode / Mixed) No pauge was found rears because the rac found to be 1	.83 PVC tubes plu y over the sensor 12/18/2/ # If Ma Enable Staff Connected Orthouty Connected Location of the 10,1323 while the	12/18/2012: 15m Va Va Va Va To of Balls 4 Is the trimmed or so wooden 10:0000 10:0000 10:0000 10:0000 10:0000 10:0000 10:0000 10:0000
Backup Aquatrak Sounding Tube (Gauge 2)	Sound tabe is Aquat Difference Comments Date of Levels Primary IIM Dates Offset (DA Diff (Change if :	DAT from demings (level pt to ong) in the pt to ong) in the pt to ong the pt to ong the pt to ong the pt to one pt t	obilization leveli per tabe end) i text passes) counding tube w (ant tube, PVC or ice were incerted removed from ti # BMs Conses 8 10.1336 n/a 10.1336 welling was conduce 9.5185m. The in scalable remobilization ar	urrican licaso wing is 9.8186m. 4.32m -0.105 N/A vision installed. This powering the land tape was ide station during the land tape was ide station during the land tape with the land tape will be land tape with the land tape will be land tape with the land tape will be land to the land tape will be land to the land tape land to the land tape land to the land tape	Copper Tub T1-T2 Sep T1-T2 Sep T1-T2 Cash Sounding Tube (e new Aquatrak son Aquatrak sensor di seed to over opening demobilization # IBMs Receven PIP Levels type (Optical / Ibar votes type (Optical / Ibar vote	e Length seration is Length is Length liseased (Y/N) meding tube has 3 d not fit properly nge. sid 6 Illeration above fits sode / Mixedy No yes pauge was found to be 1 sec found to be 1	.83 PVC tubes plu y over the sensor 12/18/2/ # If Ma Enable Staff Connected Orthout) Connected Control(s) Connected to be 10.138/2012. It	12/18/2012: 15m Va Va Va Va To of Balls 4 Is the trimmed or so wooden 10:0000 10:0000 10:0000 10:0000 10:0000 10:0000 10:0000 10:0000
Backup Aquatrak Sounding Tube (Gauge 2)	Sound tabe is Aquat Difference Comments Date of Levels Primary IIM Dates Offset (DA Diff (Change if :	DAT from demings (level pt to ong) in the pt to ong) in the pt to ong the pt to ong the pt to ong the pt to one pt t	obilization leveli per tabe end) i text passes) counding tube w (ant tube, PVC or ice were incerted removed from ti # BMs Conses 8 10.1336 n/a 10.1336 welling was conduce 9.5185m. The in scalable remobilization ar	urrican licaso wing is 9.8186m. 4.32m -0.105 N/A vision installed. This powering the land tape was ide station during the land tape was ide station during the land tape with the land tape will be land tape with the land tape will be land tape with the land tape will be land to the land tape will be land to the land tape land to the land tape land to the land tape	Copper Tub T1-T2 Sep T1-T2 Sep T1-T2 Call T1-T3 Call T1-T3 Call Sounding Tube (e new Aquatrak son Aquatrak sensor di seed to sover openila g demobilization # Iffile Receiver # Iffile Receiver # Iffile Receiver Levels type (Optical / Ban rook agree with history (AT for the primary yeard from previous) the primary gauge with	e Length seration is Length is Length liseased (Y/N) meding tube has 3 d not fit properly nge. sid 6 Illeration above fits sode / Mixedy No yes pauge was found to be 1 sec found to be 1	.83 PVC tubes plu y over the sensor 12/18/2/ # If Ma Enable Staff Connected Orthout) Connected Control(s) Connected to be 10.138/2012. It	12/18/2012: 15m Va Va Va Va To of Balls 4 Is the trimmed or so wooden 10:0000 10:0000 10:0000 10:0000 10:0000 10:0000 10:0000 10:0000
Backup Aquatrak Sounding Tube (Gauge 2)	Sound tabe le Aquat Difference Comments Date of Levele Primary BM Dates of the (I) Dates of the (I) Dates of the (I) Comments Comments	DAT from dem ngh (level pt to ong) in the pt to ong to one of the pt to ong to one of the pt to one of the p	obilization leveli per tabe end) i test passes) counding tube w (sant tube, PVC or ice were incerted removed from ti # BMs Conses 8 n/a 10.1336 n/a veiling was conduce 9.8186m. The v edemobilization ar age was found to	urrican licaso wing is 9.8186m. 4.32m 4.32m -0.105 N/A N/A N/A N/A Ass installed. The powering the and tape was a destation during the state of the	Copper Tab T1-17 Seb T1-17 Cab Sounding Tube (e new Aquatrak coo. Aquatrak seen or di sed to cover openil g demobilization # BMs Recover # BM	e Length saration is Length is Length lisead (Y/N) moding tube has 3 d not fit properly nge. df Elevation above 8ta oder Missel) No paquaye was form rears because th rac found to be 1 ismm tolerance.	PVC tubes plu over the senso 12/18/24 # BMs Bash for Dense Opp Staff Consecte 12/18/24 # BMs Bash for Dense is be 10.333 # Boat 12/18/20/22 # BMs Bash for Dense	12/18/2012: 15m Va Va Va In the trimmed or so wooden on 12: Baok-up 10.000 10.000 tioal (VYN) Yes wid (VYN) Yes or while the DAT or the DAT for the
Backup Aquatrak Sounding Tube (Gauge 2)	Sound tabe is Aquat Difference Comments Date of Levels Primary IIM Dates Offset (DA Diff (Change if :	DAT from dem ngth (level pt to ong) mgth (level pt to ong) SNS from above mak value during ded (feat that H- 0.05e 0.0426/12: New vioopper antiflou mounting bloo sounding the to sound to be sounding the to sound to be soondary transponded at a coondary gas.	cobilization leveli printh and) k unt passe) counding tube w lant tube. PVC o ks were incerted removed from ti #BMs Conse. 8 n/a 10.1336 n/a veiling was condi- ce 9.3186m. The noducers were o demobilization ar- age was found to	urrican licaso wing is 9.8186m. 4.32m -0.195 N/A N/A N/A N/A N/A sis installed. The apoovering the and tape was a detailed durit stall of the control of the	Copper Tub T1-17 Cab T1-17 Cab Sounding Tube (e new Aquatrak con- Aquatrak con- g Elma Racover # Elma Racover	e Length seration is Length is Length liseased (Y/N) meding tube has 3 d not fit properly nge. sid 6 Illeration above fits sode / Mixedy No yes pauge was found to be 1 sec found to be 1	yes Number 3 PVC fubes plu y over the sensor 12/18/20 PVS 18/18/20 PVS	12/18/2012: 156m Va Va 10 the trimmed or co wooden 10:0000 10:00
Backup Aquatrak Sounding Tube (Gauge 2)	Sound tabe in Aquat Difference Comments Date of Levels Date of Levels Dates Office (DA Dates Office (DA Doff (Dangs if) Comments GPS accompilate	DAT from dem night (invel) is to only it to	obilization leveli proble end) it best passes) counding tube w sant tube. PVC o ske were inserted removed from ti # IBMs Conse 8 n/a 10.1335 n/a veiling was condu- e 9.8185m. The u seducers were os- seducers os-	urrican Isaac wing is 9.8185m. 4.32m -0.105 N/A N/A as installed. This poovering the and tape was a ide station during the stat	Copper Tub T1-T2 Sep T1-T2 Sep T1-T2 Cash Sounding Tube (e new Aquatrak son Aquatrak son or di seed to over opening g demobilization # IBMs Receven PBU Levels type (Optical / Ibar volume to the primary (ent from previous) the primary gauge with values are within taking met to the primary (ent from previous) the primary gauge with values are within Motors	e Length seration is Length leased (YN) leased (YN) anding tube has 3 d not fit properly ngs. d 6 d Bession show Na ode / Mosel) (N) Yes (N) Yes (N) No pauge was found to be 1 6 mm tolerance. 8783635 A	Jesus Number of	12/18/2012: 15m Va Va Va To of Bulls 4 5 the trimmed or so wooden 10:2 Baok-up 10:000 tical 10:000 Yes 10:000 Very or of bulls 10:000 tical 10:000 To of Value 10:0000 To of Value 10:000 To of Value 10:000 To of Value 10:0000 To of Value 10:00000 To of Value 10:0000 To of Value 10:00000 To of Value 10:
Backup Aquatrak Sounding Tube (Gauge 2)	Sound tabe le Aquat Difference Comments Date of Levele Primary BM Dates of the (I) Dates of the (I) Dates of the (I) Comments Comments	DAT from dem ngm (level pt to ong pt level pt to ong pt level pt to ong pt level pt	cobilization leveli printh and) k unt passe) counding tube w lant tube. PVC o ks were incerted removed from ti #BMs Conse. 8 n/a 10.1336 n/a veiling was condi- ce 9.3186m. The noducers were o demobilization ar- age was found to	urrican licaso wing is 9.8186m. 4.32m -0.195 N/A N/A N/A N/A N/A sis installed. The apoovering the and tape was a detailed durit stall of the control of the	Copper Tub T1-17 Cab T1-17 Cab Sounding Tube (e new Aquatrak con- Aquatrak con- g Elma Racover # Elma Racover	e Length saration is Length is Length lisead (Y/N) moding tube has 3 d not fit properly nge. df Elevation above 8ta oder Missel) No paquaye was form rears because th rac found to be 1 ismm tolerance.	yes Number 3 PVC fubes plu y over the sensor 12/18/20 PVS 18/18/20 PVS	12/18/2012: 15m Va Va rof Italia 4 to the trimmed or so wooden 10:000 tloal 10:000 tloal (YYS) Yes of (YYS) N/A n while the DAT or primary and Leveling was DAT for the
Backup Aquatrak Sounding Tube (Gauge 2)	Sound tabe is Aquat Difference Comments Date of Levels Princey IIM. Datum Offset (DA Diff (Change if) Comments Offset (DA Comments OFFseconoplish Session Number 001	DAT from dem night (invel) pt to only	obilization leveli proble end) it best passes) counding tube w sant tube. PVC o ske were inserted removed from ti # IBMs Conse 8 n/a 10.1335 n/a veiling was condu- e 9.8185m. The u seducers were os- seducers os-	urrican Isaac wing is 9.8185m. 4.32m -0.105 N/A N/A as installed. This poovering the and tape was a ide station during the stat	Copper Tub T1-172 Sep	e Leight maratice is Leight Cleand (Y/N) moding fube has 3 d not fit properly ngs. d d f d	Jesus Number of	12/18/2012: 15m Va Va Vol 10 the trimmed or so wooden 10.000 10
Backup Aquatrak Sounding Tube (Gauge 2)	Sound tabe le Aquat Difference Comments Date of Levele Primary BM Dates Offset (DA Diff (Change if : Comments Comments GPS accompilable Session Number	DAT from dem ngm (level pt to ong pt level pt to ong pt level pt to ong pt level pt	obilization leveli per tabe end) t test passes) counding tube w (sant tube, PVC or to were inserted fremoved from ti # BMs Conne 8 n/a 10.1335 n/a veiling was condu e 9.8186m. The inseducers were or tempositization at age was found to	urrican licaso wing is 9.8186m. 4.32m 4.32m -0.105 N/A N/A N/A Sincitalled. The powering the land tape was a decistation during the land tape was a decistation during the land the Davidect and	Copper Tub T1-12 Cab Sounding Tube (e new Aquatrak cac Aquatrak seensor di seed to cover openil ag demobilization # BIM Recover # BIM Recove	e Length seration is Length leaned (Y/N) meding tube has 3 d not fit properly nge. sid 6 d literation above fits ode / Mixed) No yes No sauge was found to be 1 smm tolerance. 8769535 A Percent Obe Used	.823 PVC tubes plu over the sense 12/18/24 # HMs Establ tion Detam Opp Staff Connected Orthout) Connecte 12/18/29/12: 1 0.1323 while the	12/18/2012: 66m Va Va of Bulk 4 to the trimmed or so wooden 112: Baok-up 10.000 ttoal (VPN) Yes ad (VPS) N/A while the DAT primary and Leveling was b DAT for the
Backup Aquatrak Sounding Tube (Gauge 2)	Sound tabe is Aquat Difference Comments Date of Levels Princey IIM. Datum Offset (DA Diff (Change if) Comments Offset (DA Comments OFFseconoplish Session Number 001	DAT from dem night (invel) pt to only	is bet a passed of the passed	urrican licaso wing is 9.8186m. 4.32m -0.105 N/A N/A N/A Assinctalled. The apoovering the and tape was a decided for a 3535 A L. L	Copper Tub T1-172 Sep	e Leight maratice is Leight Cleand (Y/N) moding fube has 3 d not fit properly ngs. d d f d	yec Numbers PVC bubes plu y over the sensor 12/18/20 # BMs Established Datus Option 10,1338m to be 10,1338m	12/18/2012: 15m Va Va Vol 10 the trimmed or so wooden 10.000 10
Backup Aquatrak Sounding Tube (Gauge 2)	Sound tabe is Aquat Difference Comments Date of Levels Princey IIM. Datum Offset (DA Diff (Change if) Comments Offset (DA Comments OFFseconoplish Session Number 001	DAT from dem night (invel) pt to only	is bet a passed of the passed	urrican licaso wing is 9.8186m. 4.32m -0.105 N/A N/A N/A Assinctalled. The apoovering the and tape was a decided for a 3535 A L. L	Copper Tub T1-17 Cab Sounding Tube (e new Aquastrak cou- Aquastrak seems of dised to cover opening demobilization # BIME Recover # BIME REC	e Length seration is Length leased (Y/N) midling tube has 3 d not fit properly nge. st 6 Elevation above its code (Mixel) No yes stound to be 1 smm tolerance. 8769635 A Percent Che Llaed 98.00%	yec Numbers PVC bubes plu y over the sensor 12/18/20 # BMs Established Datus Option 10,1338m to be 10,1338m	12/18/2012: 15m Va Va Vol 10 the trimmed or so wooden 10.000 10
Backup Aquatrak Sounding Tube (Gauge 2)	Sound tabe is Aquat Difference Comments Date of Levels Princey IIM. Datum Offset (DA Diff (Change if) Comments Offset (DA Comments OFFseconoplish Session Number 001	DAT from dem neght (investigation) 5NS from above mak value during date (inst than 14-0.05 on the value) 5NS from above mak value during date (inst than 14-0.05 on the value) 5NS from above 12/18/2012 Designation (AT) in 16-5224 of the value of value of the value of value of the value of value of the va	is text parameter of the control of	urrican licaso wing ic 9.8186m. 4.32m -0.105 N/A N/A N/A Assinctalled. The and tage was a decreased and the purchased an	Copper Tub T1-172 Cab T1-172 Cab Sounding Tube to e new Aquadrak sono Aquadrak sono go demobilization # EMA Raceser Pure to the transport of the transport go demobilization # EMA Raceser Pure transport of the transport go demobilization # EMA Raceser # E	e Length arratice is Length Cleand (Y/N) inclined (yec Numbers PVC bubes plu y over the sensor 12/18/20 # BMs Established Datus Option 10,1338m to be 10,1338m	12/18/2012: 15m Va Va of Italia 4 to the trimmed or so wooden 10.000 tioal 10.000 tioal (YYN) Yes of (YN) N/A n while the DAT e primary and Leveling was DAT for the 10.000 1
Backup Aquatrak Sounding Tube (Gauge 2)	Sound tabe is Aquat Difference Comments Date of Levels Princey IIM. Datum Offset (DA Diff (Change if) Comments Offset (DA Comments OFFseconoplish Session Number 001	DAT from dem ngh (ired pt to ong) to make the pt to ong) SNS from above risk value during ded (feet that +1-0.0% on 4/25/12: New copper antifour mounting blood mounting blood counding tube 12/18/2012 Designation AT) in II-322- T) from Abstract + V-0.0060m) 04/25/2012- Let was found to be secondary transpondunted at a ceoondary transpondunted at a ceoondary transpondunted at A/25/2012 12/18/2012 12/18/2012 12/18/2012	obilization leveli per table end) it test passes) counding tube with the person of the end) it test counding tube with the person of the end	urrican Isaac wing is 9.8185m. 4.32m -0.105 N/A Ass installed. The powering the and tape was a ide station during the station d	Copper Tub T1-T2 Sep T1-T2 Sep T1-T2 Cash Sounding Tube (e new Aquatrak son Aquatrak son Aquatrak son or di seed to over opening demobilization # IBMs Receve PBU Levels type (Optical / Ibar revise agree with history (AT for the primary (end from previous) the primary gauge with values are within Meters ARP Height 1.688 Average of Sen d during installation	e Length seration is Length leased (YN) leased (YN) noding fube has 3 d not fit properly nge. d 6 d 6 d Bereton shove the code (Moxel) (No) No pauge was found to be 1 semm toterance. 8783636 A Percent Ohe Used 98.00%	Jesus Number of	12/18/2012: 15m Va Va Va Va Va Va Va Va Va V
Backup Aquatrak Sounding Tube (Gauge 2)	Sound tabe is Aquat Difference Comments Date of Levels Princey IIM. Datum Offset (DA Diff (Change if) Comments Offset (DA Comments OFFseconoplish Session Number 001	DAT from dem ngh (level pt to ong) to the pt t	obilization leveli printe and) i test passes) counding tube w fant tube. PVC or for were incerted in the and or i	urrican licaso wing is 9.8186m. 4.32m 4.32m -0.195 N/A N/A Si installed. The and tape was tide station durit state 6.78 3535 A Duuoted and the Duvoted and the Duvoted and the Dat for the 8.8188m. Bits Session Length 4h 4h	Copper Tub T1-17 Cab Sounding Tube (e new Aquastrak con- sounding Tube (e new Aquastrak con- sounding Tube (e new Aquastrak con- g Emiliary (e new Aquastrak con- pen (e new Aquastrak c	e Length seration is Length leased (Y/N) midling tube has 3 d not fit properly nge. st 6 S Hillewater above tits code (Mixed) No yes stound to be 1 serat because the rac found to be 1 serat because the rac fo	PVC tubes plu p over the cence 12/18/2/ # IIMs Established Detain Staff Connected Orthogia Connected 12/18/2012: 1 0.1323 while the 12/18/2012: 1 0.1323 while the 12/13/2012: 1 0.1323 while the 12/13/2012: 1 0.1323 while the	12/18/2012: 15m Va Va Va Va Va Va Va Va Va V
Backup Aquatrak Sounding Tube (Gauge 2)	Sound tabe in Aquat Difference Comments Date of Levels Dates of Levels Dates Office (DA Dates Office (DA Doff (DAT from dem ngh (level pt to ong) to the pt t	obilization leveli printe and) i test passes) counding tube w fant tube. PVC or for were incerted in the and or i	urrican licaso wing is 9.8186m. 4.32m 4.32m -0.195 N/A N/A Si installed. The and tape was tide station durit state 6.78 3535 A Duuoted and the Duvoted and the Duvoted and the Dat for the 8.8188m. Bits Session Length 4h 4h	Copper Tub T1-T2 Sep T1-T2 Sep T1-T2 Cash Sounding Tube (e new Aquatrak son Aquatrak son Aquatrak son or di seed to over opening demobilization # IBMs Receve PBU Levels type (Optical / Ibar revise agree with history (AT for the primary (end from previous) the primary gauge with values are within Meters ARP Height 1.688 Average of Sen d during installation	e Length seration is Length leased (Y/N) midling tube has 3 d not fit properly nge. st 6 S Hillewater above tits code (Mixed) No yes stound to be 1 serat because the rac found to be 1 serat because the rac fo	PVC tubes plu p over the cence 12/18/2/ # IIMs Established Detain Staff Connected Orthogia Connected 12/18/2012: 1 0.1323 while the 12/18/2012: 1 0.1323 while the 12/13/2012: 1 0.1323 while the 12/13/2012: 1 0.1323 while the	12/18/2012: 15m Va Va Va Va Va Va Va Va Va V
Backup Aquatrak Sounding Tube (Gauge 2)	Sound tabe is Aquat Difference Comments Date of Levels Princey IIM. Datum Offset (DA Diff (Change if) Comments Offset (DA Comments OFFseconoplish Session Number 001	DAT from dem ngh (level pt to ong) to the pt t	obilization leveli printe and) i test passes) counding tube w fant tube. PVC or for were incerted in the and or i	urrican licaso wing is 9.8186m. 4.32m 4.32m -0.195 N/A N/A Si installed. The and tape was tide station durit state 6.78 3535 A Duuoted and the Duvoted and the Duvoted and the Dat for the 8.8188m. Bits Session Length 4h 4h	Copper Tub T1-17 Cab Sounding Tube (e new Aquastrak con- sounding Tube (e new Aquastrak con- sounding Tube (e new Aquastrak con- g Emiliary (e new Aquastrak con- pen (e new Aquastrak c	e Length seration is Length leased (Y/N) midling tube has 3 d not fit properly nge. st 6 S Hillewater above tits code (Mixed) No yes stound to be 1 serat because the rac found to be 1 serat because the rac fo	PVC tubes plu p over the cence 12/18/2/ # IIMs Established Detain Staff Connected Orthogia Connected 12/18/2012: 1 0.1323 while the 12/18/2012: 1 0.1323 while the 12/13/2012: 1 0.1323 while the 12/13/2012: 1 0.1323 while the	12/18/2012: 15m Va Va Va Va Va Va Va Va Va V
Backup Aquatrak Sounding Tube (Gauge 2)	Sound tabe in Aquat Difference Comments Date of Levels Dates of Levels Dates Office (DA Dates Office (DA Doff (DAT from dem ngh (level pt to ong) to the pt t	obilization leveli printe and) i test passes) counding tube w fant tube. PVC or for were incerted in the and or i	urrican licaso wing is 9.8186m. 4.32m 4.32m -0.195 N/A N/A Si installed. The and tape was tide station durit state 6.78 3535 A Duuoted and the Duvoted and the Duvoted and the Dat for the 8.8188m. Bits Session Length 4h 4h	Copper Tub T1-17 Cab Sounding Tube (e new Aquastrak con- sounding Tube (e new Aquastrak con- sounding Tube (e new Aquastrak con- g Emiliary (e new Aquastrak con- pen (e new Aquastrak c	e Length seration is Length leased (Y/N) midling tube has 3 d not fit properly nge. st 6 S Hillewater above tits code (Mixed) No yes stound to be 1 serat because the rac found to be 1 serat because the rac fo	PVC tubes plu p over the cence 12/18/2/ # IIMs Established Detain Staff Connected Orthogia Connected 12/18/2012: 1 0.1323 while the 12/18/2012: 1 0.1323 while the 12/13/2012: 1 0.1323 while the 12/13/2012: 1 0.1323 while the	12/18/2012: 15m Va Va Va Va Va Va Va Va Va V
Backup Aquatrak Sounding Tube (Gauge 2)	Sound tabe in Aquat Difference Comments Date of Levels Dates of Levels Dates Office (DA Dates Office (DA Doff (DAT from dem ngh (level pt to ong) to the pt t	obilization leveli printe and) i test passes) counding tube w fant tube. PVC or for were incerted in the and or i	urrican licaso wing is 9.8186m. 4.32m 4.32m -0.195 N/A N/A Si installed. The and tape was tide station durit state 6.78 3535 A Duuoted and the Duvoted and the Duvoted and the Dat for the 8.8188m. Bits Session Length 4h 4h	Copper Tub T1-17 Cab Sounding Tube (e new Aquastrak con- sounding Tube (e new Aquastrak con- sounding Tube (e new Aquastrak con- g Emiliary (e new Aquastrak con- pen (e new Aquastrak c	e Length seration is Length leased (Y/N) midling tube has 3 d not fit properly nge. st 6 S Hillewater above tits code (Mixed) No yes stound to be 1 serat because the rac found to be 1 serat because the rac fo	PVC tubes plu p over the cence 12/18/2/ # IIMs Established Detain Staff Connected Orthogia Connected 12/18/2012: 1 0.1323 while the 12/18/2012: 1 0.1323 while the 12/13/2012: 1 0.1323 while the 12/13/2012: 1 0.1323 while the	12/18/2012: 15m Va Va Va Va Va Va Va Va Va V

Page 2 of 3 3/21/2013

Appendices to Accompany Descriptive Report of Hydrographic Survey H12435



	Dive this year (Y	(/N) Last Dive Date	Marine growth (Low/Med/High)	Dive Time (hrs)
DIVE INFO	Comments	no diving required		
STATION HISTORY (Significant highlight: from inspections)	05/26/2010 - Ins 06/24/2010 - Ins 12/08/2010 - Six 06/09/2011 - Tic 09/16/2011 - Tic 01/27/2012 - Tic 07/23/2012 - GP 08/26/2012 - Tic 09/02/2012 - Tic	de station visit and six month leveling prior de station visit to replace Data Logger and de station visit to dismantle tide gauge installation of tide station with primary an 'S antenna replaced	Aquatrak, re-start primary gauge. d back-up Aquatrak gauges : (batteries, cables, Waterlogger, Sutron, Aquatra)	controllers removed)
STATION NOTES (Pre-vialt notifications, Items stored in shelter, etc)	at low tide. Brin	g bug spray. Stay in Houma, LA. Hot	n the back side of main structure, the water is els, hardware stores, and restaurants availab raphic survey contract OPR-K354-KR-2011.	
WORK REQUESTS (For next annual inspection)				

Page 3 of 3 3/21/2013



Final Tide Note

FINAL TIDE NOTE and FINAL TIDE ZONING CHART

DATE: March 26th, 2013

HYDROGRAPHIC PROJECT: OPR-K354-KR-12

HYDROGRAHPIC SHEET: H12435

LOCALITY: 32 NM S of Atchafalaya Bay

TIME PERIOD: May 24-November 29, 2012

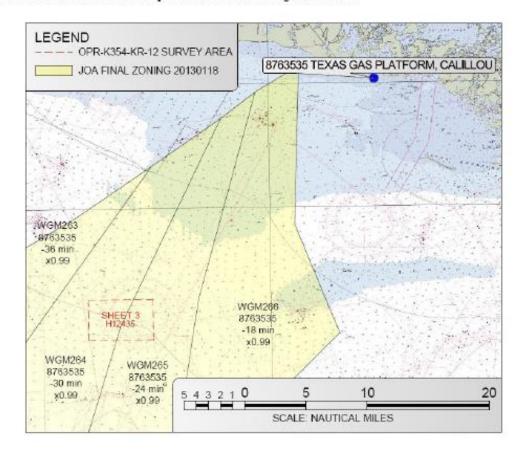
TIDE STATION USED: 876-3535 Texas Oil Platform, Caillou Bay, LA

Lat. 29° 10' 29.2" Lon. 090° 58' 35.2"

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000m HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.6634m

REMARKS: RECOMMENDED ZONING Use zones identified as: WGM 264, WGM 265

Refer to the Vertical Control Report for additional zoning information.





Abstract of Times of Hydrography

Project: OPR-K354-KR-12 Registry No.: H12435 Contractor Name: C & C Technologies, Inc.

Date: March 2013 Sheet Number: 3

Inclusive Dates: May 24th, 2012- November 29th, 2012

Field Work is Complete

Time (UTC)

Day (yy/m/dd)	Julian Day	Start	End	Year
12/5/24	145	850	900	2012
12/5/24	145	2330	2348	2012
12/5/25	146	0230	0308	2012
12/5/25	146	0515	1039	2012
12/5/25	146	1204	1243	2012
12/5/25	146	1303	2352	2012
12/5/26	147	0028	1102	2012
12/5/26	147	1132	1159	2012
12/5/26	147	1214	1629	2012
12/5/26	147	1640	2400	2012
12/5/27	148	0000	0011	2012
12/5/27	148	0025	0834	2012
12/5/27	148	0852	0910	2012
12/5/27	148	0944	1127	2012
12/5/27	148	1207	1706	2012
12/5/27	148	1728	1929	2012
12/5/27	148	2002	2359	2012
12/5/28	149	8000	0323	2012
12/5/28	149	0353	0621	2012
12/5/28	149	0633	1051	2012
12/5/28	149	1112	1630	2012
12/5/28	149	1631	1700	2012
12/5/28	149	1709	2400	2012
12/5/29	150	0000	0257	2012
12/5/29	150	0310	0753	2012
12/5/29	150	0809	1037	2012
12/5/29	150	1105	1145	2012
12/5/29	150	1159	1229	2012
12/5/29	150	1339	1533	2012
12/5/29	150	1548	1822	2012
12/5/29	150	1850	1922	2012
12/5/29	150	1935	2231	2012

Appendices to Accompany Descriptive Report of Hydrographic Survey H12435



Day (yy/m/dd)	Julian Day	Start	End	Year
12/5/29	150	2258	2323	2012
12/5/29	150	2348	2354	2012
12/5/30	151	0016	0255	2012
12/6/02	154	1502	1521	2012
12/6/02	154	1533	1833	2012
12/6/02	154	1908	1929	2012
12/6/02	154	2000	2023	2012
12/6/02	154	2056	2141	2012
12/6/02	154	2201	2400	2012
12/6/03	155	0000	0006	2012
12/6/03	155	0329	0340	2012
12/7/14	196	0004	0014	2012
12/7/14	196	0019	0043	2012
12/11/29	334	0104	0232	2012



CO-OPS Transmittal Letter



January 31st, 2013

Paul Turner

Hydrographic Surveys Division Office of Coast Survey NOAA National Ocean Service

Paul.turner@noaa.gov

8763535 Texas Gas Platform Removal Report Reference:

Paul,

The Removal report for 8763535 Texas Gas Platform has been posted to an FTP site for CO-OPS to download. CO-OPS should confirm it reception within the week. If there is anything else that is needed please let me know.

Sincerely

Tara Levy

taralevy@cctechnol.com

APPENDIX II

SUPPLEMENTAL SURVEY RECORDS AND CORRESPONDENCE

Appendices to Accompany Descriptive Report of Hydrographic Survey H12435



Bottom Samples

The table below summarizes the sediment grab samples collected during survey H12435. Sediment grab sample data are submitted in the CARIS .hob final feature file for this survey.

Sample Name	Date	Latitude (N)	Longitude (W)	Water Depth (m)	Description
H35-Sub1-GS1	09/26/2012	28.85234057	91.40417165	15.56	Well sorted fine gray silt
H35-Sub2-GS1	09/26/2012	28.8662761	91.35809723	13.01	Well sorted fine gray silt
					Well sorted fine gray silt
H35-Sub2-GS2	09/27/2012	28.82626832	91.3661439	15.32	with few shells
H35-Sub2-GS3	09/27/2012	28.83393892	91.3308411	13.69	Well sorted fine gray silt

Appendices to Accompany Descriptive Report of Hydrographic Survey H12435



DtoN Verification

One (1) submerged feature was submitted and accepted as a Danger to Navigation. The most recent edition of RNC 11356 and ENC US4LA25M (Tables 1 and 2) do not yet reflect this submission. The verification DtoN emails and letters received from AHB are included.

Chart Number	Scale	Edition Number	Edition Date	LNM Date	NM Date
11356	80000	39	06/2012	3/19/2013	3/30/2013

Table 1. Latest edition of raster nautical chart (RNC) 11356.

ENC Name	Scale	Edition	Update Application Date	Issue Date	Preliminary
US4LA25M	80000	16	8/24/2012	3/18/2012	No

Table 2. Latest edition of electronic nautical chart (ENC) US4LA25M.



Additional Correspondence

Supplemental DtoN Correspondence

Subject:

H12435 DtoN#1 36ft Sounding: Submission to NDB

From:

Castle Parker <castle.e.parker@noaa.gov>

Date:

8/3/2012 2:50 PM

To:

OCS.NDB@noaa.gov

CC:

Abigail Higgins <abigail.higgins@noaa.gov>, Marc Moser <marc.s.moser@noaa.gov>, Paul Turner <paul.turner@noaa.gov>, Kathleen Jamison <kathleen.jamison@noaa.gov>, Nicole Kuenzel <nicole.kuenzel@cctechnol.com>

Good Day,

Please find attached a zip file for survey H12435 DtoN#1, a 36ft Sounding for submission to Nautical Data Branch / Marine Chart Division (MCD). The contents of the attached WinZip file were generated at Atlantic Hydrographic Branch. The Danger submission was submitted to AHB from contract field unit C&C Technologies, Inc.

The attached zip file contains a DtoN Letter (PDF), a Pydro XML file, and data images. If you have any questions, please direct them back to me, email me or call 757-441-6746 x115.

Thank you for your assistance with this matter,

Gene Parker

Attachments:

H12435 DtoNs#1 36ftSounding.zip 838 KB

Appendices to Accompany Descriptive Report of Hydrographic Survey H12435



Subject:

RE: Potential DTONs

From:

Castle Parker <castle.e.parker@noaa.gov>

Date:

8/2/2012 11:55 AM

To

nicole.kuenzel@cctechnol.com

CC:

Tara Levy <tara.levy@cctechnol.com>, Paul Turner <paul.turner@noaa.gov>

Good Day Nikki,

Thanks for the opportunity to review potential Dangers.

H12435: yes submit as DtoN with feature object type as sounding. The feature is not an obstruction as
it's a sediment pile from the dragging of whatever object it was. The least depth is the shoalest within the
common area in comparison to what's charted.

2. H12434: I'd say no to DtoN submission. Go ahead and create the S57 file for submission to AHB. AHB will not submit to NDB/MCD but will forward to the Nav Manager, Tim Osborn. We will pass this feature to the Navigation Manager Tim Osborn to find the owner and notify of the PIPSOL exposure.

The chart image that you submitted appears to be an outdated chart, or a different chart. In the image below, the geographic location and the charted depth in my image is a 16ft depth, your image has 17ft depth. AHB downloaded the chart 11356 on 06/26/12; NTM updated on 06/30/2012, edition dated 06/01/2012. I don't think that you may be referencing the latest version of the chart. You should check the date of the edition you reference.

I'd say not to submit as a Danger to Nav, but submit an S57 file as if it were a DtoN submission. Do not attribute as a Danger, just a feature object. There is a charted 16 ft depth just to the south; the object with LD of 16ft is in line between the charted 15ft depth and the 16ft depth as portrayed in the image; in line as 16ft between the charted 18ft and 17ft. I think you should develop with MB and add to the survey's feature file.

Thanks. You have the correct perspective with this inquiry! Anytime you need a second opinion, send me an email like this. Good Job!

Gene

Appendices to Accompany Descriptive Report of Hydrographic Survey H12435



----Original Message-----

From: Nicole Kuenzel [mailto:nicole.kuenzel@cctechnol.com]

Sent: Thursday, August 02, 2012 12:17 PM

To: Gene Parker Cc: Tara Levy

Subject: Potential DTONs

Good Morning Gene,

We have two potential DTONs (one from Sheet 2-H12434 and one from Sheet

3-H12435) that we would like your perspective on before we fully submit them. I have attached two word documents highlighting the features and our conclusions thus far, we would appreciate a preliminary review.

If you need any other information, please let me know.

Thank-you,

Nikki

__

Nicole Kuenzel Geoscientist C&C Technologies, Inc. Lafayette, LA email:nicole.kuenzel@cctechnol.com

APPENDIX III

SURVEY FEATURES REPORT

- i. DTONS (1)
- ii. AWOIS (0)
- iii. WRECKS (0)
- iv. Maritime Boundary (0)

H12435 Danger to Navigation

Registry Number: H12435

State: Louisiana

Locality: Gulf of Mexico

Sub-locality: 32 NM S of Atchafalaya Bay

Project Number: OPR-K354-KR-12

Survey Date: 11/29/2012

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
11356	38th	06/01/2008	1:80,000 (11356_1)	[L]NTM: ?
11340	73rd	08/01/2008	1:458,596 (11340_1)	[L]NTM: ?
1116A	73rd	08/01/2008	1:458,596 (1116A_1)	[L]NTM: ?
411	52nd	09/01/2007	1:2,160,000 (411_1)	[L]NTM: ?

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

Features

No.	Name	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item	
1.1	DTON 1: 11.1m Shoal	Shoal	11.07 m	28° 52' 02.9" N	091° 20' 43.9" W		

1.1) DTON 1: 11.1m Shoal

DANGER TO NAVIGATION

Survey Summary

Survey Position: 28° 52′ 02.9″ N, 091° 20′ 43.9″ W

Least Depth: 11.07 m = 36.33 ft = 6.055 fm = 6 fm 0.33 ft**TPU (\pm 1.96\sigma): THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2012-334.00:00:00.000 (11/29/2012)

Dataset: H12435_Pydro_Features.000

FOID: US 0000407141 00001(0226000636650001/1)

Charts Affected: 11356_1, 1116A_1, 11340_1, 411_1

Remarks:

[None]

Feature Correlation

Source	Feature	Range	Azimuth	Status
H12435_Pydro_Features.000	US 0000407141 00001	0.00	000.0	Primary

Hydrographer Recommendations

[None]

Cartographically-Rounded Depth (Affected Charts):

36ft (11356_1)

6fm (1116A_1, 11340_1, 411_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)
Attributes: OBJNAM - DtoN1

QUASOU - 1:depth known

SORDAT - 20121129

SORIND - US, US, graph, H12435

TECSOU - 2,3:found by side scan sonar,found by multi-beam

Office Notes

SAR Note: The Dton is visible in the object detection coverage MBES data and the 200% side scan sonar data. COMPILATION: Concur. Feature determined to be shoal area. Update 36 ft designated sounding with least known depth (11.073 m) at survey position.

Feature Images

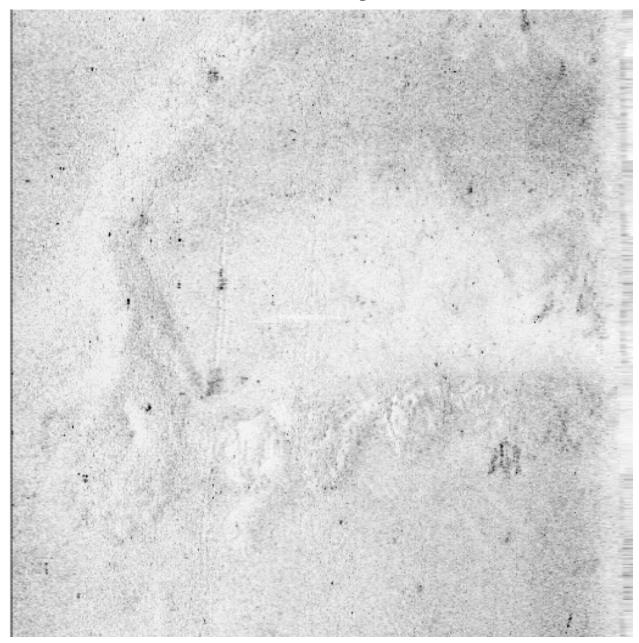


Figure 1.1.1



Figure 1.1.2

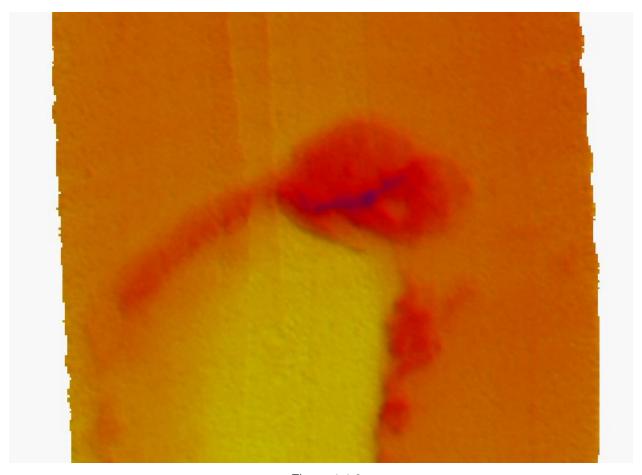


Figure 1.1.3

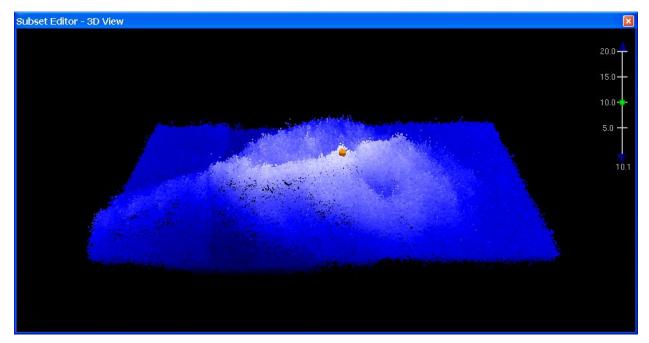


Figure 1.1.4

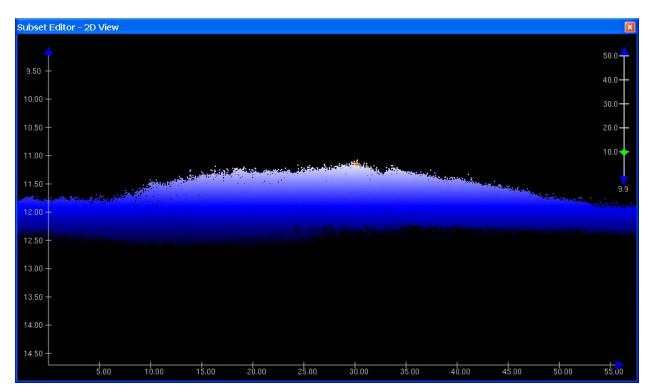


Figure 1.1.5

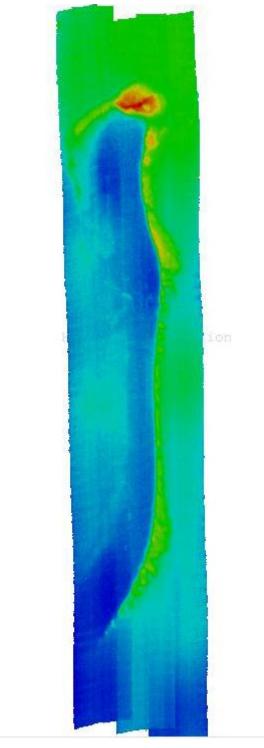


Figure 1.1.6

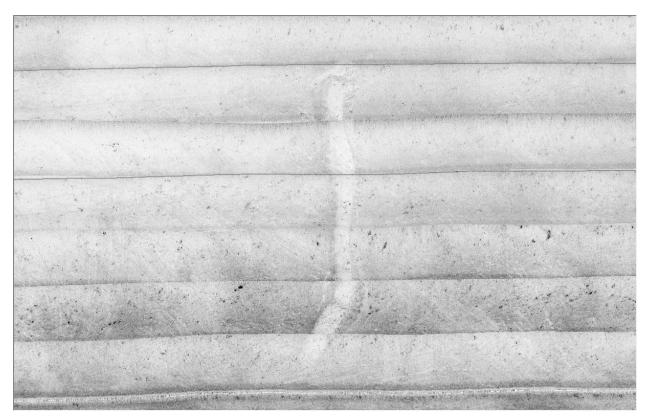


Figure 1.1.7

APPROVAL PAGE

H12435

Data meet or exceed current specifications as certified by the OCS survey acceptance review process. Descriptive Report and survey data except where noted are adequate to supersede prior surveys and nautical charts in the common area.

The following products will be sent to NGDC for archive

- H12435_DR.pdf
- Collection of depth varied resolution BAGS
- Processed survey data and records
- H12435_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.

A 1			
Approved:			

LCDR Abigail Higgins, NOAA

Chief, Atlantic Hydrographic Branch