

H12154

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey Hydrographic Survey

Field No. N/A

Registry No. H12154

LOCALITY

State South Carolina

General Locality Georgetown

Sublocality Entrance to Winyah Bay

2009-2010

CHIEF OF PARTY

Robert Ramsey Jr.

LIBRARY & ARCHIVES

DATE

U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION HYDROGRAPHIC TITLE SHEET		REGISTRY No H12154
INSTRUCTIONS – The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.		FIELD No: N/A
State <u>South Carolina</u>		
General Locality <u>Georgetown</u>		
Sub-Locality <u>Entrance to Winyah Bay</u>		
Scale <u>1:10,000</u>	Date of Survey <u>11/17/2009 - 03/18/2010</u>	
Instructions dated <u>9/30/2009</u>	Project No. <u>S-G905-NRT2-09</u>	
Vessel <u>NOAA Launch 1210</u>		
Chief of party <u>Robert W. Ramsey Jr.</u>		
Surveyed by <u>Robert Ramsey, Erik Anderson</u>		
Soundings by <u>ODOM Echotrac CV</u>		
SAR by <u>Adam Argento</u>	Compilation by <u>Kurt Brown</u>	
Soundings compiled in <u>Feet</u>		
REMARKS: <u>All times are UTC. UTM Zone 17N</u>		
<u>The purpose of this survey is to provide contemporary surveys to update National Ocean Service (NOS)</u>		
<u>naautical charts. All separates are filed with the hydrographic data. Revisions and end notes in red were</u>		
<u>generated during office processing. The processing branch concurs with all information and recomendations in</u>		
<u>the DR unless otherwise noted. Page numbering may be interrupted or non sequential.</u>		
<u>All pertinent records for this survey, including the Descriptive Report, are archived at the</u>		
<u>National Geophysical Data Center (NGDC) and can be retrieved via http://www.ngdc.noaa.gov/.</u>		

DESCRIPTIVE REPORT

to accompany

S-G905-NRT2-09

HYDROGRAPHIC SURVEY

H12154

Scale of Survey: 1:10,000

Year of Survey: 2009-2010

Navigation Response Team 2 - Launch 1210

Robert W. Ramsey Jr. - Team Leader

A. AREA SURVEYED

This hydrographic survey was conducted in accordance with Port Letter Instructions for project S-G905-NRT2-09, Georgetown, South Carolina. The instructions are dated 30 September 2009.

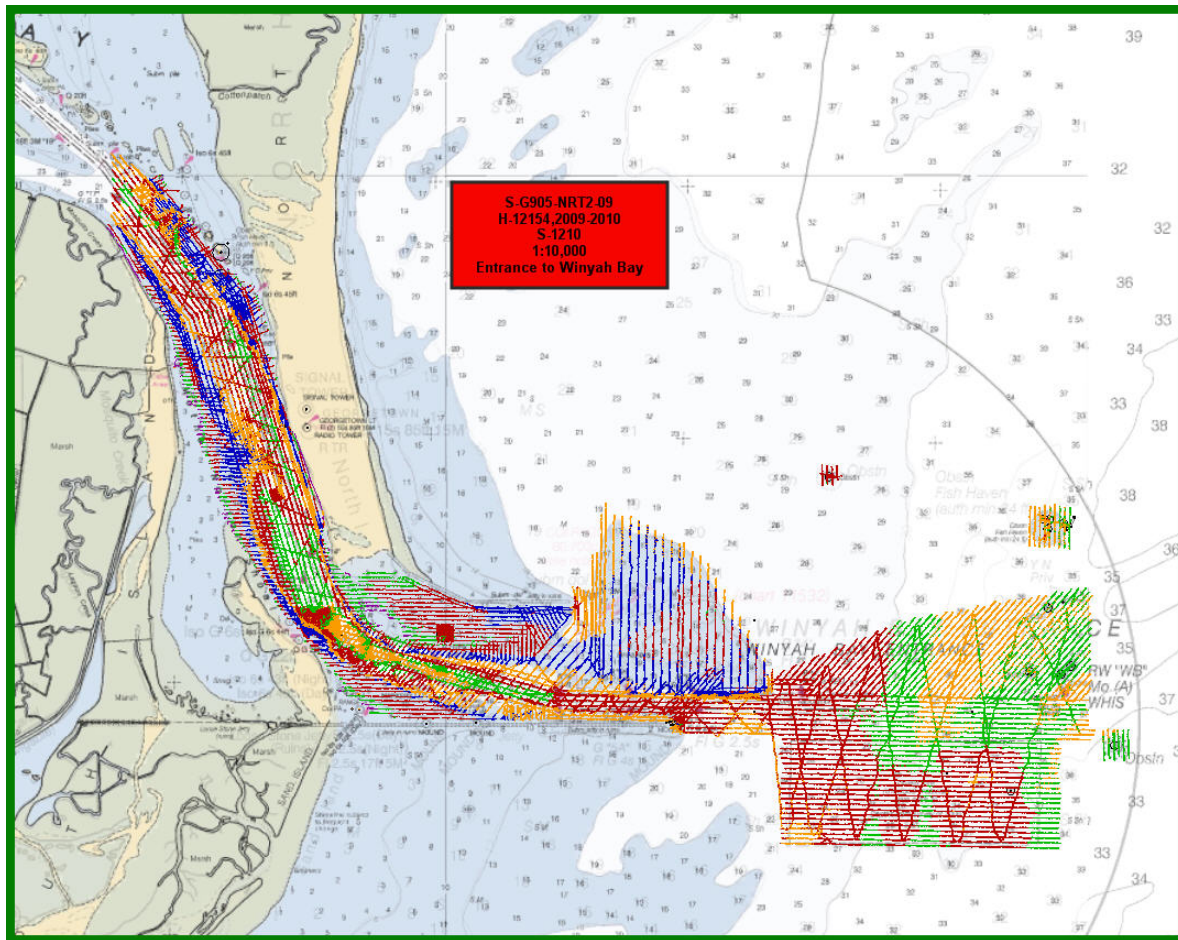
Purpose

This project is a result of requests from the regional Navigation Manager. The last surveys in this area were conducted in 1935. The entrance to Winyah Bay was partly surveyed in 1964 and 2000. Georgetown, SC is #93 on the MTS 175 Ports List. There is no CEF assigned for this project at this time. It is the intent of this survey to supersede all bathymetry, seafloor features, and bottom characteristics within the assigned survey area as defined by these instructions for updating of NOAA charts 11531, 11532, 18534, & 11535.

Special Notes:

- 1) Tidal ebb currents were noted throughout the duration of the survey in the range of 6-7 kts. Less pronounced Flood currents were in the 4-5 kts range.
- 2) Large sand wave in the 2-3m ranged were evident in Range "D" and "C" channel, transecting the channels, notably due north of 33-13.062' N.

Survey limits are displayed graphically in the chartlet on the following below.



S-G905-NRT2-09 / H12154 / Sheet “A”

The following List contains Stats:

VBES only	=	174 LNM
SSS only	=	193 LNM
Combination VBES/SSS	=	321 LNM
X/L=		46 LNM
Development	=	50 LNM
BS	=	7
Features	=	236
Total	=	367 LNM
Dates of Acquisition:		11/17/2009—03/18/2010

B. DATA ACQUISITION AND PROCESSING

B.1. EQUIPMENT

Data was acquired by Navigation Response Team 2 and survey Launch 1210. The vessel was configured as described in the Data Acquisition and Processing Report (DAPR) for this project (2009 & 2010), located in O:\S-G905-NRT2-09\Data_Acquisition_&_Processing_Report\. Major data acquisition systems are summarized below.

NOAA launch 1210, a 30-foot SeaArk with a keel draft of 0.5 meters, was used to collect all survey data. There were no unusual vessel configurations or problems encountered with the vessel.

An ODOM EchotracCV2, Fathometer, was used to collect all echo soundings on this survey. This echo sounder is a dual frequency instrument but is only used in high frequency with a single transducer.

Klein 3000 side scan sonar was used throughout this survey. The side scan sonar equipment was used to investigate AWOIS items.

An Applanix POS MV 320 Ver4 (S/N 2546) was used as the primary navigation station and motion sensor on launch 1210 for all hydrographic data acquisition.

A Trimble DGPS Beacon Receiver was used provide RTCM broadcast correctors to the Applanix POS MV system on launch 1210.

The Instrument used for determining corrections for the speed of sound through the water column was an ODOM Digibar Ser # 98295-020606. A Seabird-Seacat Velocity Profiler, model 19-03, Ser# 198671-1477, used for quality control checks. CTD casts are processed in the Velociwin program supplied by the Hydrographic Systems and Technology Program (HSTP).

B.2. QUALITY CONTROL

Following the most recent Field Procedures Manual and the NOS Hydrographic Surveys Specifications and Deliverables Manual, April 2009 insured the integrity of the survey data for H12154.

Differential GPS (DGPS) was used for all hydrographic data acquired on this survey. DGPS performance checks were conducted in accordance with FPM 3.4 by comparing the DGPS position of the vessel to a high accuracy calibration point monthly.

Echo Sounder Control

Lead line comparisons were conducted and compared to the digital depth and draft. The leadline log comparisons are in O:\S-G905-NRT2-09\H12154\Descriptive Report\Separates\II. Sound_Speed_Data.

Side Scan Sonar Quality Control

Daily confidence checks were conducted by observing side scan imagery in the vicinity of known contacts, such as buoys or sand waves. Side scan data were considered satisfactory if these contacts could be distinguished throughout the entire range of the side scan trace. The confidence checks were performed daily at 100/500 kHz.

Coverage of 200% was obtained wherever possible in the required survey areas and where water depth and/or hazards permitted. Side scan sonar coverage was conducted to the 12-foot depth curve and single beam reduced line spacing was performed in other areas where warranted. The towfish was deployed off the starboard quarter of the vessel, which proved very stable. Significant contacts and shadows were processed with Caris HIPS/SIPS to determine the height off the bottom. The significant contacts were then compared by position, as well as common depth and relationship to channels, and normal vessel traffic, to determine if further investigations were needed. Mosaics were generated for 100% and 200% to insure complete coverage, these may be found in: O:\HDCS Active Project\S-G905-NRT2-09\H12154\Public_Relations_&_Constituent_Products\Field Products\MapInfo Tables.

The system frequencies used were 500 kHz. The recorder was set on one of either 25/50/75 meter range scales. There were no water depths greater than 20 meters.

When operating in shoaler waters (e.g. less than 3 meters deep), a short tow was required for the Klein system. When cable-out was approximately 4 meters or less, minor degradation of the side scan imagery occasionally occurred¹.

Junctions

The survey junctions with the following surveys²:

<i>Junction Area</i>	<i>Survey Compared</i>	<i>Deviation</i>
Northern Junction	H-08794, 1964	3-6 FT
Eastern Junction	H-06710, 1941	1-3 FT
Southern Junction	H-08794, 1964	1-3 FT
Western Junction	H-05815, 1935	5-7 FT

Due to the extreme variances observed, and dates of prior surveys, Survey H-12154, 2009-2010 should supersede all previous surveys within the common area³.

OCS considers a standard junction comparison acceptable if sounding variance is 1 meter or less between the present and junctioning surveys.

B.3. CORRECTIONS TO ECHO SOUNDING

Velocwin SVP cast have been inserted into the final Pydro PSS as suggested in the Field Procedures Manual.

The leadline log comparisons are in O:\S-G905-NRT2-09\H12154\Descriptive Report\Separates\II. Sound_Speed_Data. A copy of the Velocity DQA file is located there as well.

The instruments annual calibration timing resulted in only one SVP instrument available during mid-December. This precluded the normal practice of dual cast zoning comparisons during this period. The primary instrument for SVP cast (Digi-bar Pro) was checked with a post-calibrated SBE 19 upon return, and a good zone comparison was obtained, thus confirming the cast data acquired during the lapse of dual cast.

There are no deviations to be discussed in this section.

B.4. DATA PROCESSING

There was three base surfaces created in Caris for the VBES data set. They were created at 5m resolution, one base was VBES at 5m, one was uncertainty, and one was 95% STD DEV. No BAGs were generated in the field, as per previous directions from OIC AHB⁴.

Caris software update post version 7 hf-6 resulted in the “Navigation Review” flag showing “Navigation Not Reviewed” unless navigation edits were actually made. This is in error, as all navigation was “Reviewed”. This software bug is scheduled for fix in SP-2 by Caris. Another false error flag is generated during SVP applications resulting from “observed depth” 0 depth flags, that when edited in SB editor do not reset this flag. Caris is aware of this bug as well.

18 November 2009, DN: 322 sounding data has no True Heave applied, due to a POS log failure that stopped logging data. There is no readable system flag that shows logging stopped in the active survey windows during acquisition due to the limited screen space. The survey data is deemed acceptable, as the work was conducted in protected waters with no sea state on this day. This was confirmed by both direct observation, and review of random raw Hypack data files, where the raw heave is logged. Discussion with Olivia Hauser confirmed that the data should be accepted (e-mail can be found in Appendices V.)⁵

Line features were created in SIPS for the delineation of ridges, and rock field limits, as well as submerged jetty base limits. These features do not have S-57 attribution applied, and were generated ONLY for field use to conduct hydrographic sounding developments. These features are rejected in the PSS, and have a pending status flag left, so there is no confusion as to their charting significance or downstream usage.

C. VERTICAL AND HORIZONTAL CONTROL

The Instruments used for determining corrections for the speed of sound through the water column were an ODOM Digibar and a Seabird-Seacat Velocity Profiler. SVP casts are downloaded and processed in the Velociwin program supplied by the Hydrographic Systems and Technology Program (HSTP). Corrections were applied to the sounding plot using the Caris HIPS.

Field soundings are corrected by verified tides data from NOAA/CO-OPS, as per

WATER LEVEL INSTRUCTIONS

**S-G905-NRT2-2009 Georgetown, SC
(05/07/2009 LH)**

This is a Discrete Tidal Zoning controlled project.

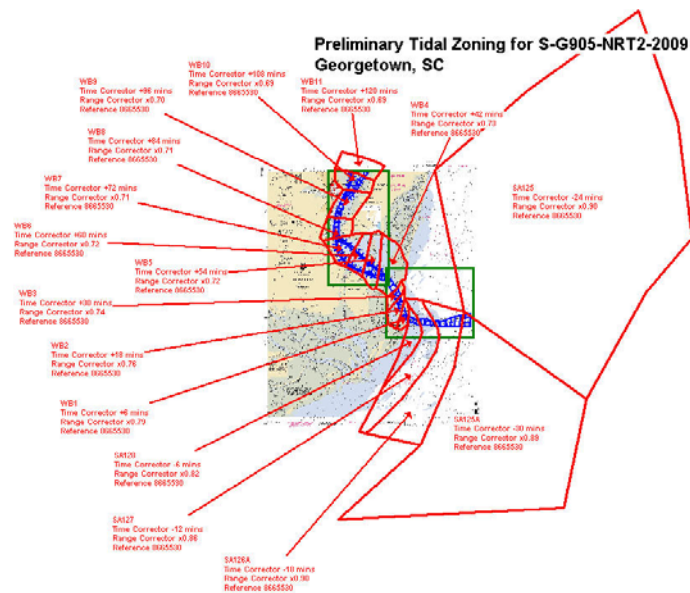
Pertinent water level data were provided via email data transmissions through TIDEBOT, to the Field unit. Water level data requested and used were both 6 min Verified for final data submission. All data had “Verified” tides applied prior to submission.

The operating water level station at Charleston, SC (8665530) provided water level reducers for this project, during all periods of hydrography.

Tide Component Error Estimation

The estimated tidal error contribution to the total survey error budget in the vicinity of Georgetown, SC is 0.23 meters at the 95% confidence level, and includes the estimated gauge measurement error, tidal datum computation error, and tidal zoning error. Based on this analysis, no subordinate station will be required at the survey area. It should be noted that the tidal error component can be significantly greater than stated if a substantial meteorological event or condition should occur during time of hydrography.

For hydrography in this Project, the “G905NRT22009CORP.zdf” supplied in conjunction with the water level data from Section 1.4.1, was used as the discrete tidal zoning file originally. The final file “H12154CORF.zdf” was used after being received from COOPS. A copy of the 8665530.tid file and all *.dat water level files are included with this survey, and can be found in O:\S-G905-NRT2-09\H12154\Caris\Tide folder.



All elevations and survey H12154 are unless otherwise

soundings on based on MLLW specified.

A Request for

Approved Tides

letter was sent to <smooth.tides@noaa.gov> on 24 March 2010. This request was generated by PYDRO and can be found in O:\S-G905-NRT2-09\H12154\Descriptive Report\Appendices\IV. Tide_&_Water_Levels\Request_For_Tides. The smooth tides were approved on April 12, 2010, and all data for H12154 have had smooth tides applied to the PSS, then final merge was applied⁶.

Horizontal Control

The horizontal datum used for this survey is the North American Datum of 1983 (NAD 83), projected using UTM zone 17N. The control reference station used for this survey was the USCG DGPS Beacon Kensington, SC. RTCM correctors were provided by direct link to the POS M/V system from this site.

Horizontal dilution of precision (HDOP) was monitored on Applanix POS MV System daily on the survey platform. Adequate satellite coverage was maintained throughout the survey period. All positioning equipment was operated in a manner consistent with the manufacturer's requirements and as described in the DAPR. There were no equipment malfunctions, which affected the positional quality of the data.

D. RESULTS AND RECOMMENDATIONS

D.1 Chart Comparison

There is no detailed chart comparison being made by the field, as the disparity between this contemporary survey and the prior surveys in the common area, which were conducted in the 1930's and 1940's is too large. This survey data acquired during H-12154 should supersede all charted data and features in the common area⁷.

There are exceptionally strong tidal currents over 6 knots noted in the vicinity of the survey region, predominately on the ebb tide.

The port of Georgetown is a low vessel traffic area. Noted traffic consists of tug and barge, and fishing trawlers, as well as transiting pleasure craft. Some infrequent port calls are made by small freighters (est. 1600GTNS).

Chart 11532 was used for comparison on this survey due to its scale and proximity of its region related to acquisition.

<u>Chart Number</u>	<u>Edition Date</u>	<u>Scale</u>
11532	21 st ED. Jul/06	1:40,000
11531	22 nd ED 04/2006	1:80,000 (Offshore ONLY)

<u>ENC Cell</u>	<u>Edition</u>	<u>Update Application</u>	<u>Issue Date</u>	<u>Corresponding Chart</u>
US5SC32M	1st	02280129	20080129	11532

General Agreement with Charted soundings

In general survey soundings seaward of buoy R”4”, agree within 2 feet. Inshore soundings from this point, do not compare with those acquired during this survey. All charted soundings should be superseded by this survey⁸. Higher sounding density was acquired inside and outside of the survey limits to facilitate better chart adjustments due to the inconsistency and large time gap between the current survey and past surveys.

Special Note:

The following list contains brief descriptions of the seaward only, controlling depth, found by the current survey data, lying in the Buoy Line channels. There was major shoaling evident that required the USCG to re-buoy the “South Island Bend” channel, thus this evaluation addresses the buoyed safe water passage limits, NOT the charted maintained USCOE channel limits (channel edges were avoided). E-mail traffic related to these channel issues can be found in the Appendices\V. SUPPLEMENTAL_Survey_Records_&_CORRESPONDENCE section⁹.

Phone contact with the Georgetown Bar & Harbor Pilots, at 843-527-4136 was made on 11 February 2010. Their policy is that they handle nothing drafting deeper than 21 feet.

Maintained Channel Seaward Least Depths:¹⁰

Entrance Channel	16ft	33°11'36.33"N 079°07'49.834"W
Range “B”	25ft	33°11'32.41" N 079°09'09.93" W
South Island Bend	12ft	33°11'54.52" N 079°10'22.13" W
Range “C”	18ft	33°12'59.76" N 079°11'17.46" W
Range “D”	25ft	33°14'11.31" N 079°11'52.84" W

WINYAH BAY AND GEORGETOWN HARBOR								
TABULATED FROM SURVEYS BY THE CORPS OF ENGINEERS - REPORT OF SEP 2009 AND SURVEYS TO AUG 2009								
CONTROLLING DEPTHS FROM SEAWARD IN FEET AT MEAN LOWER LOW WATER (MLLW)						PROJECT DIMENSIONS		
NAME OF CHANNEL	LEFT OUTSIDE QUARTER	LEFT INSIDE QUARTER	RIGHT INSIDE QUARTER	RIGHT OUTSIDE QUARTER	DATE OF SURVEY	WIDTH (FEET)	LENGTH (MILES)	DEPTH MLLW (FEET)
ENTRANCE CHANNEL	25.0	25.9	24.9	16.5	8-09	600	2.4	27
RANGE B	25.8	28.9	28.1	25.9	8-09	600	1.0	27
SOUTH ISLAND BEND	30.2	A	A	A	8-09	600	1.2	27
RANGE C	18.0	20.6	20.6	25.7	8-09	400	1.7	27
RANGE D	25.8	28.1	28.1	27.9	8-09	400B	1.7	27
RANGE E	23.3	24.3	24.3	23.8	8-09	400B	5.7	27
FRAZIER PT. BEND	21.9	21.6	21.6	22.8	8-09	400B	0.7	27
RABBIT ISLAND CHANNEL	23.4	24.3	24.3	23.6	8-09	400B	2.2	27
SAMPIT RIVER CHANNEL	12.9	13.8	13.8	14.5	8-09	400B		27
STEELMILL CHANNEL	17.7	19.7	19.7	11.4	8-09	VARIES		27
PAPERMILL CHANNEL	18.2	19.6	19.6	22.3	8-09	VARIES		27
BYPASS CHANNEL	—	8.0	8.0	—	8-09	100		12
(A) NO SOUNDINGS BECAUSE OF SEVERE SHOALING. BUOYS MARK THE DEEPER WATER. (B) MAINTAINED 300'								
NOTE - CONSULT THE CORPS OF ENGINEERS FOR CHANGES SUBSEQUENT TO THE ABOVE INFORMATION								

Figure 1 Chart 11532 Chart Tabulation Table

AWOIS Item Investigations

There were 14 AWOIS¹¹ items within the confines of H12154. Detailed point feature information can be found “H12154_DR_Features_RPT.pdf” located in O:\S-G905-NRT2-09\H12154\Descriptive Report\Appendices\II. Survey_Feature_Report*. The updated AWOIS database file is located in O:\S-G905-NRT2-09\H-12154\Descriptive Report\Appendices\V. SUPPLEMENTAL_Survey_Records_&_CORRESPONDENCE.

<u>AWOIS#</u>	<u>Search</u>	<u>Recommendation</u>
11167	SSS	Retain
11166	SSS	Retain
11168	SSS	Retain
11169	SSS	Retain ¹²
11170	SSS	Retain
11171	SSS	Delete
11172	SSS	Modify ¹³
11173	SSS	Retain
11174	SSS	Modify ¹⁴
10188	SSS	Modify
10190	SSS	Modify ¹⁵
14552	SSS	Delete
14551	VIS	Delete
14553	SSS	Modify

The following is a list of charted features that were investigated on H12154 that contain the label PA, ED, PD or Rep, or pier face notes, that were not assigned as AWOIS, and lie within the Survey limits:

The charted Piling PA at 33°14'15.37" N 079°12'19.65" W, does not exist, however a pile was observed in the immediate vicinity, lying flat on the fast water shoreline¹⁶.

The charted Dol PA at 33°11'28.02" N 079°10'49.06" W, exist however is charted in the wrong position. A detached position was acquired, and can be found in the Feature Report submitted with this survey (O:\S-G905-NRT2-09\H-12154\Descriptive Report\Appendices\II. Survey_Feature_Report)¹⁷.

The charted Dol PA at 33°11'37.04" N 079°10'46.84" W, exists however is charted in the wrong position. A detached position was acquired, and can be found in the Feature Report submitted with this survey (O:\S-G905-NRT2-09\H-12154\Descriptive Report\Appendices\II. Survey_Feature_Report)¹⁸.

Dangers to Navigation

There were 4 DTON's within the confines of H12154, submitted by the field¹⁹. These features were sent in advance to MCD in a zip file via e-mail transmission on 01/20/2010, and 03/18/2010 to OCS.NDB@noaa.gov as per FPM 4.4.4. Detailed point feature information can be found in the DTON Reports located in Appendices I. The e-mail receipt of these DTON's, and LNM actions issued, can be found in O:\S-G905-NRT2-09\H-12154\Descriptive Report\Appendices\V. SUPPLEMENTAL_Survey_Records_&_CORRESPONDENCE\ e-mail traffic. Non-critical items were not fast tracked, as they can be addressed during post-process review of this survey by AHB as a normal course of the survey review.

D. 2. ADDITIONAL RESULTS

A baring shoal area was observed in the vicinity of 33°13'03.65" N 079°08'40.38" W. The area was developed from opposite directions to delineate the approximate limits²⁰.

Major Sand waves were evident in all channels, especially RNG C & D channels. These waves were observed to be from 2 to 3 meters in height, and confirmed by side scan sonar imagery.

Notable shoreline erosion was evident in the vicinity of 33°12'55.43" N 079°11'01.05" W. Sounding lines ran over charted shoreline in this area. The sounding lines near shore were run parallel to the shore, as a null line for safety when tying in to normal main scheme soundings²¹.

The charted pile at 33°13'48.51" N 079°11'19.59" W does not exist. Full SSS coverage could not be obtained due to shoreline proximity, and shallow water²².

The Y C Priv buoy, charted at 33°14'24.2" N 079°11'34.8" W, does not exist at this location, however there is a buoy 350m to the NW. This aid was positioned²³.

The four charted markers in the vicinity of 33°14'48.72" N 079°11'57.7" W, exist as charted²⁴.

Aids to Navigation and Other Detached Positions

Navigation Aids serve their intended purpose. There were no ATON Reports generated for survey H12154. The one assigned ATON fell well outside of the survey area by 15-20 LNM, and was not addressed due to location.

Ferry Routes

There is no Ferry route within the confines of H12154.

Submarine Cables and Pipelines

There is one cable area within H12154.

Bridges

There are no bridges within H-12154 limits.

Bottom Samples

There were 7 bottom samples taken on H12154. These samples were acquired and compared to those on the chart. The random samples were in agreement with the chart therefore extensive sampling was not warranted²⁵. The Survey feature report can be found in Appendices II.

Historic Wrecks

There were no historic wrecks confirmed by State Archaeologists on H12154. There was one wreck identified by NRT2 in this survey which was previously un-charted²⁶. These features and information have not been released to the public, and can be found in the feature report located in Appendices II.

Special Notes:

The PSS contained on the drive with the survey data has been redirected to the portable drive. This PSS will open in its entirety with all images directly from the drive. The PSS can be located at: O:\S-G905-NRT2-09\H12154\PSS. The final PSS submitted on the data drive has been verified free of all outdated and stale data.

The MapInfo 10.0 workspace named “H12154.wor” can be found at:

O:\S-G905-NRT2-09\H12154\Public_Relations_&_Constituent_Products\Field Products

This workspace has likewise been redirected too, and will open from the portable drive.

The Coast Pilot Report was sent to OCS.NDB@noaa.gov , on 03/27/2010 as per FPM 5.2.3.2.5

The survey outlines were sent to survey.outlines@noaa.gov on 03/24/2010 as per FPM 5.2.3.3.3

The raw data directory size report was sent via e-mail to hydro.info@noaa.gov and copied to the Chief of the Atlantic Hydrographic Branch on 03/24/2010 as per FPM 5.2.3.3.6²⁷.

The Letter Transmitting data was sent via e-mail to LTDSUBMISSION.AHB@noaa.gov on 04/16/2010 as per FPM 5.2.5

E. APPROVAL SHEET

S-G905-NRT2-09

Charleston, SC

Survey Registry No. H12154

Field operations for this basic hydrographic survey were conducted under my daily supervision with frequent checks of progress and adequacy. All field sheets, this Descriptive Report, and all accompanying records and data are approved.

This survey is adequate to supersede all prior surveys in common areas, and for application to the relevant NOS nautical charts.

Submitted by:

**Robert W
Ramsey Jr**

Digitally signed by Robert
W Ramsey Jr
DN: cn=Robert W Ramsey
Jr, o=USDOC/NOAA/NOS/
NRB, ou=NRT-2,
email=Robert.
Ramsey@NOAA.GOV, c=US
Date: 2010.04.16 16:47:49 Z

**Robert W. Ramsey Jr - Team Leader
Navigation Response Team 2**

Revisions and Corrections Compiled During Processing and Certification

¹ The SSS was adequate for contact detection despite degradation.

² The only contemporary junctioning survey is H12155 which has not been compiled.

³ Do not concur. In areas only covered with 50 meter spaced single-beam lines (no SSS) charted soundings which were shoaler than the surveyed soundings were retained. A caution area was added to this area to indicate changeable depths. In areas covered by single-beam and 200% SSS charted soundings were superseded.

⁴ Concur with clarification. This survey was processed by PHB.

⁵ See attached email correspondence.

⁶ See attached Tide Note dated April 12, 2010

⁷ See endnote 3.

⁸ See endnote 3.

⁹ See attached email correspondence.

¹⁰ The controlling depth table has been updated since the time of the survey with new data from Army Corps of Engineers surveys.

¹¹ All AWOIS items are noted in the HCell. See attached feature report.

¹² AWOIS items 11166-11169 refer to the charted fish haven at 33-12-41N, 79-05-19W. The AWOIS report (Item 11169) recommends expanding the fish haven to the east which will center the obstruction more accurately be centered over the 24 ft. obstruction. The fish haven was bluenoted to be retained as required by the HCell specifications.

¹³ Do not concur. Retain charted 26 ft. depth for AWOIS item 11172.

¹⁴ Concur with clarification. The 25 ft. obstruction for AWOIS item 11174 was deleted and a 25 ft. sounding from the survey added to the HCell.

¹⁵ Do not concur. Retain charted 31 ft. depth for AWOIS item 10190.

¹⁶ The pile was bluenoted to be retained as charted.

¹⁷ The Dol PA was bluenoted to be removed and a new pile at the surveyed position was added to the HCell.

¹⁸ The Dol PA was bluenoted to be removed and a new pile at the surveyed position was added to the HCell.

¹⁹ See attached DTON report. All DTONs have been noted in the HCell. The 8 ft. sounding and the Wreck have been charted. The controlling depth table has been updated to reflect the shoaling in the channel related to DTON reported in that area. The DTON related to Buoy YN has not been applied to the latest chart but is noted in the HCell and a new buoy added in the surveyed position.

²⁰ There are no survey lines surrounding this position. The actual approximate position is 033-12-05N, 079-10-28W (verified by email with NRT2) which shows a gap in the SB coverage. An intertidal area based on the surrounding hydrography was created and is included in the HCell.

²¹ Satellite imagery shows the shoreline has changed throughout the survey area. The chart should be updated with the latest RSD shoreline.

²² Do not concur. The pile was bluenoted to be retained as there was no SSS or SB coverage.

²³ The buoy is included in the HCell at its new position.

²⁴ The markers were bluenoted to be retained.

²⁵ Concur with clarification. One bottom sample did not agree with the charted bottom type and is included in the HCell. Two others were included in areas where there was no charted bottom type.

²⁶ The wreck is included in the HCell.

²⁷ Survey H12154 was originally submitted to AHB. The survey was subsequently transferred to PHB for compilation.

Chart Letter H12154 // Incorrect Charted Channel Limits

Registry Number: H12154
State: South Carolina
Locality: Georgetown, South Carolina
Sub-locality: Entrance to Winyah Bay
Project Number: S-G905-NRT2-09
Survey Date: 12/15/2009

Major channel allignment issues were noted with the "South Island Bend" channel. The USCG ATON buoys mark safewater, however, the charted limit lines present vessel traffic to run aground if following them, instead of the buoys.

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
11532	21st	07/01/2006	1:40,000 (11532_1)	USCG LNM: 08/19/2008 (02/24/2009) NGA NTM: 05/20/2000 (02/28/2009)
11531	22nd	04/01/2006	1:80,000 (11531_1)	USCG LNM: 02/10/2009 (02/24/2009) NGA NTM: 05/20/2000 (02/28/2009)
11535	12th	01/05/2002	1:80,000 (11535_1)	[L]NTM: ?
11520	43rd	10/01/2008	1:432,720 (11520_1)	[L]NTM: ?
11009	38th	12/01/2006	1:1,200,000 (11009_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	939/1 LD= 5ft @ mllw	Shoal	1.69 m	33° 11' 55.4" N	079° 10' 21.4" W	---

1 - Danger To Navigation

1.1) 939/1 LD= 5ft @ mllw**ANGER TO NAVIGATION****Survey Summary**

Survey Position: 33° 11' 55.4" N, 079° 10' 21.4" W
Least Depth: 1.69 m (= 5.53 ft = 0.922 fm = 0 fm 5.53 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.962 m ; **TVU (TPEv)** ± 0.130 m
Timestamp: 2009-349.18:43:57.583 (12/15/2009)
Survey Line: h-12154 / nrt2_1210_sb / 2009-349 / 2009_349sb065_1843
Profile/Beam: 939/1
Charts Affected: 11532_1, 11531_1, 11535_1, 11520_1, 11009_1, 411_1

Remarks:

Shoal sounding encroachments into charted channel limits.

Major channel alignment issues are noted in the "South Island Bend" channel. The USCG ATON Buoys are making safe water, however the charted channel limits are in error.

The charted channel limit lies on the North side lead vessel traffic in to shoal water.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h-12154/nrt2_1210_sb/2009-349/2009_349sb065_1843	939/1	0.00	000.0	Primary
ChartGPs - Digitized	3	602.46	113.4	Secondary (grouped)

Hydrographer Recommendations

Remove the charted channel lines, and readjust to match the charted ATON Buoys.

Cartographically-Rounded Depth (Affected Charts):

5ft (11532_1, 11531_1, 11535_1)

0 $\frac{3}{4}$ fm (11520_1, 11009_1, 411_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)

Attributes: EXPSOU - 2:shoaler than range of depth of the surrounding depth area

QUASOU - 1:depth known

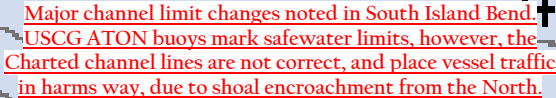
SORDAT - 20091215

SORIND - US,US,Surv, H12154

STATUS - 16:watched

TECSOU - 1,2:found by echo-sounder,found by side scan sonar

VERDAT - 12:Mean lower low water



This Chartlet has been corrected through Notice to Mariners 02/24/2009
NOT FOR NAVIGATION

SURVEYED BY:
NOAA NRT-2 (N/CS53X2)
R.W. RAMSEY JR
LEAD HYDROGRAPHER
DATE :11/17/2009 (DN:321) TO

HORIZONTAL DATUM: NAD83
SOUNDING DATUM : MEAN LOWER L
SOUNDING UNITS: METERS
SURVEY SCALE: 10,000
TIDE QUALITY: VERIFIED

CHARTLET VISIBLE AREA
CENTER LATITUDE: 33/12/3.24 N
CENTER LONGITUDE: 79/10/33.60 W
PLOT SCALE: 1: 9094
1 in = 231 m

SIGNED:
DATE:

H-12154 Final DTON Report

Registry Number: H12154
State: South Carolina
Locality: Georgetown, South Carolina
Sub-locality: Entrance to Winyah Bay
Project Number: S-G905-NRT2-09
Survey Dates: 12/01/2009 - 03/18/2010

Isolated DTONS noted during the course of survey H-12154.

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
11532	21st	07/01/2006	1:40,000 (11532_1)	USCG LNM: 08/19/2008 (02/24/2009) NGA NTM: 05/20/2000 (02/28/2009)
11531	22nd	04/01/2006	1:80,000 (11531_1)	USCG LNM: 02/10/2009 (02/24/2009) NGA NTM: 05/20/2000 (02/28/2009)
11535	12th	01/05/2002	1:80,000 (11535_1)	[L]NTM: ?
11520	43rd	10/01/2008	1:432,720 (11520_1)	[L]NTM: ?
11009	38th	12/01/2006	1:1,200,000 (11009_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	Buoy Y N Priv	GP	[None]	33° 12' 13.0" N	079° 05' 11.6" W	---
1.2	3386/1 Subm WK 22ft	Shoal	6.82 m	33° 12' 06.1" N	079° 10' 59.9" W	---
1.3	631/1 8ft Sounding	Shoal	2.36 m	33° 13' 36.3" N	079° 11' 45.3" W	---

1 - Danger To Navigation

1.1) Buoy Y N Priv

DANGER TO NAVIGATION

Survey Summary

Survey Position: 33° 12' 13.0" N, 079° 05' 11.6" W
Least Depth: [None]
TPU ($\pm 1.96\sigma$): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]
Timestamp: 2010-077.15:24:42 (03/18/2010)
GP Dataset: ChartGPs - Digitized
GP No.: 9
Charts Affected: 11532_1, 11531_1, 11535_1, 11520_1, 11009_1, 411_1

Remarks:

200% SSS coverage disproves this charted buoy.

Feature Correlation

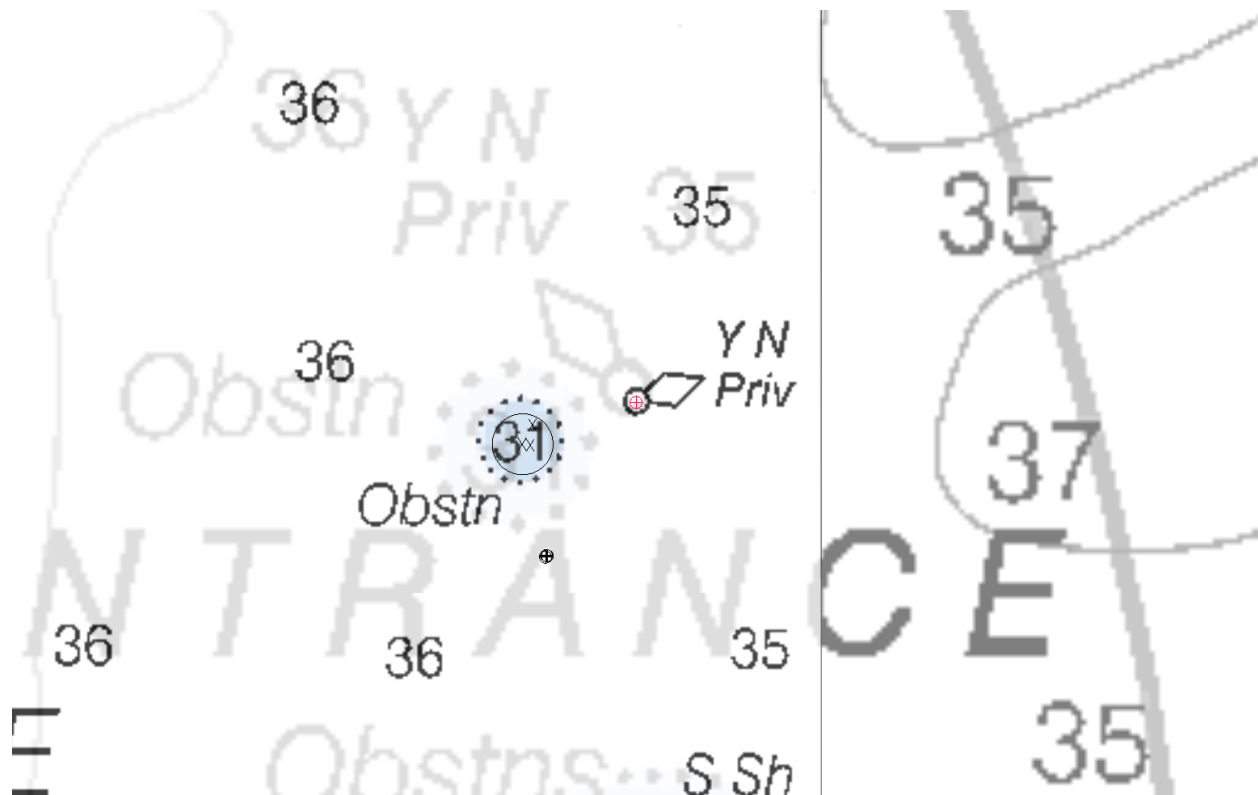
Address	Feature	Range	Azimuth	Status
ChartGPs - Digitized	9	0.00	000.0	Primary

Hydrographer Recommendations

Remove charted YN Buoy.

S-57 Data

[None]

Feature Images*Figure 1.1.1*

1.2) 3386/1 Subm WK 22ft**DANGER TO NAVIGATION****Survey Summary**

Survey Position: 33° 12' 06.1" N, 079° 10' 59.9" W
Least Depth: 6.82 m (= 22.38 ft = 3.729 fm = 3 fm 4.38 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.966 m ; **TVU (TPEv)** ± 0.253 m
Timestamp: 2009-335.18:33:58.884 (12/01/2009)
Survey Line: h-12154 / nrt2_1210_sb / 2009-335 / 2009_335sb070_1831
Profile/Beam: 3386/1
Charts Affected: 11532_1, 11531_1, 11535_1, 11520_1, 11009_1, 411_1

Remarks:

200% SSS located uncharted non-dangerous Subm WK.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h-12154/nrt2_1210_sb/2009-335/2009_335sb070_1831	3386/1	0.00	000.0	Primary
h-12154/nrt2_1210_klein3000hf_100sss/2009-344/sss091210141700	0001	2.25	298.1	Secondary
h-12154/nrt2_1210_klein3000hf_200sss/2009-335/sss091201173200	0001	3.28	055.7	Secondary
h-12154/nrt2_1210_klein3000hf_200sss/2009-344/sss091210143000	0001	6.40	336.9	Secondary

Hydrographer Recommendations

Chart non-dangerous subm WK LD=22ft @ mllw.

Cartographically-Rounded Depth (Affected Charts):

22ft (11532_1, 11531_1, 11535_1)

3 ¾fm (11520_1, 11009_1, 411_1)

S-57 Data

[None]

Feature Images

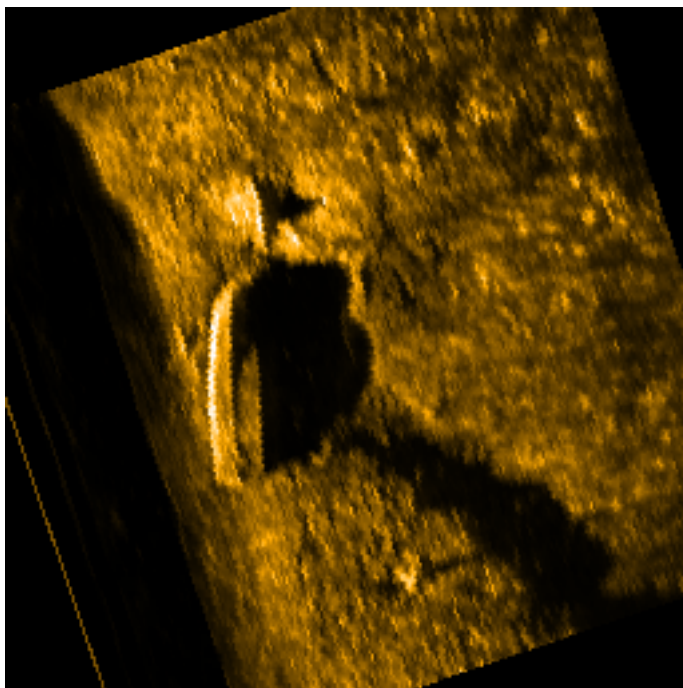


Figure 1.2.1

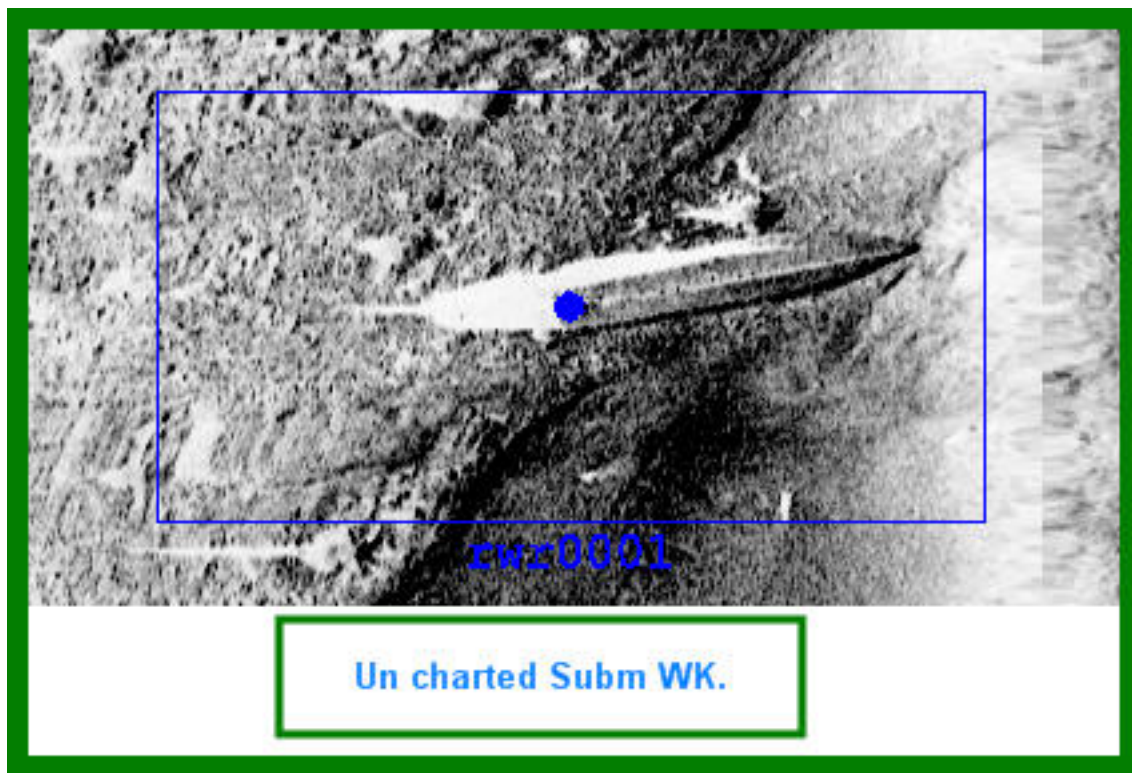
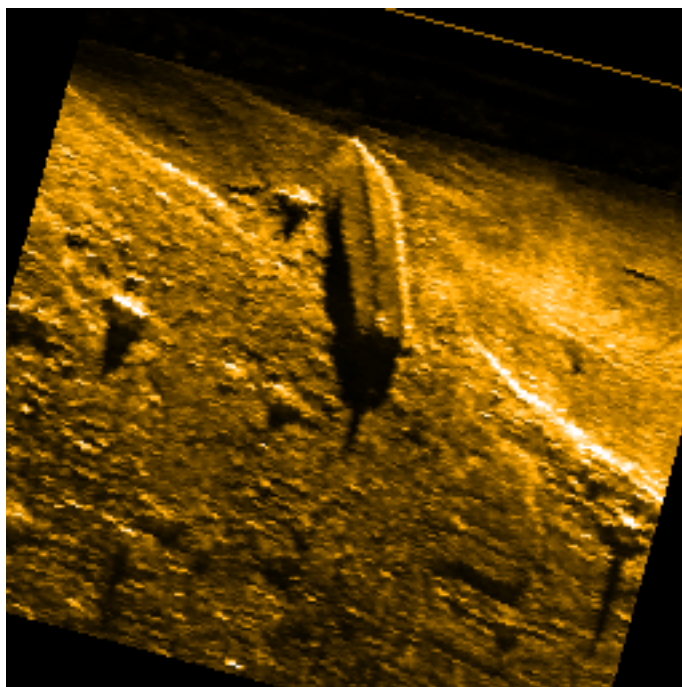


Figure 1.2.2

*Figure 1.2.3**Figure 1.2.4*

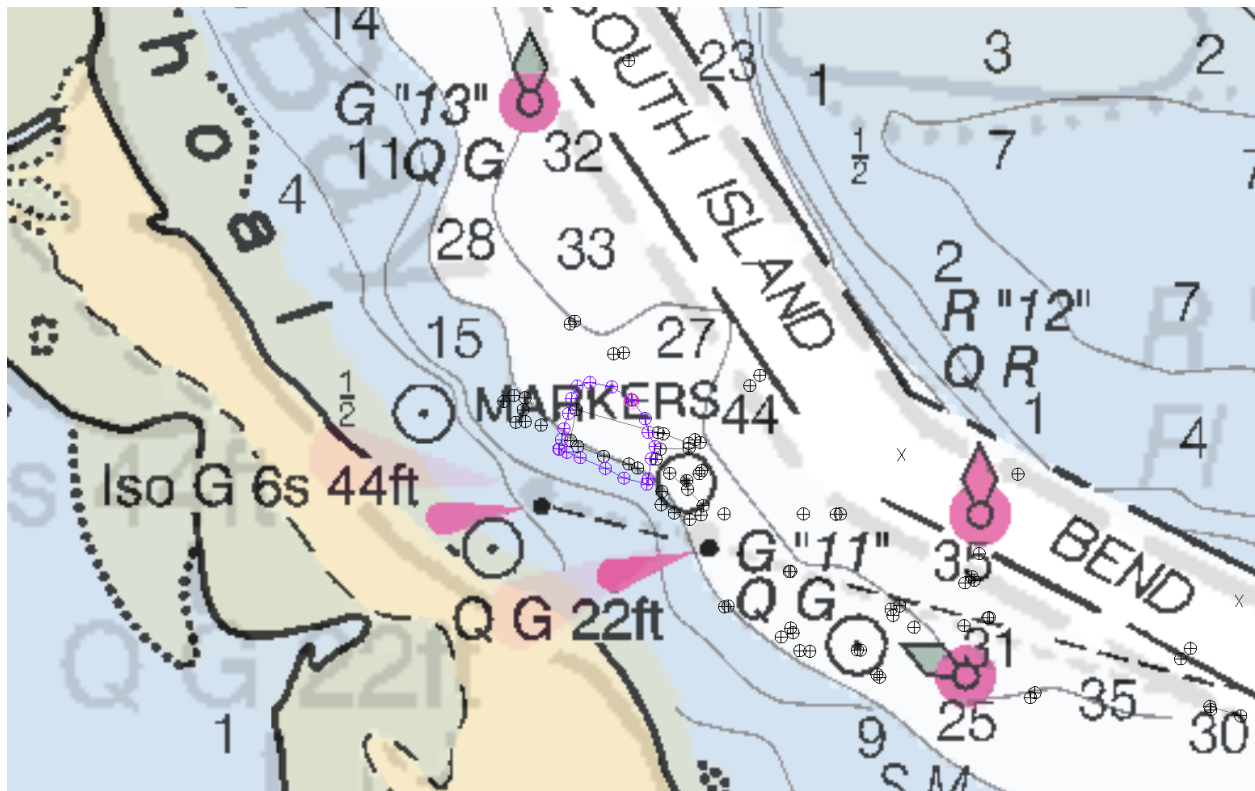


Figure 1.2.5

1.3) 631/1 8ft Sounding

DANGER TO NAVIGATION

Survey Summary

Survey Position: 33° 13' 36.3" N, 079° 11' 45.3" W
Least Depth: 2.36 m (= 7.75 ft = 1.292 fm = 1 fm 1.75 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.964 m ; **TVU (TPEv)** ± 0.252 m
Timestamp: 2010-060.15:08:55.164 (03/01/2010)
Survey Line: h-12154 / nrt2_1210_sb / 2010-060 / 206_1508
Profile/Beam: 631/1
Charts Affected: 11532_1, 11531_1, 11535_1, 11520_1, 11009_1, 411_1

Remarks:

Ridgeline peak at northern end.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h-12154/nrt2_1210_sb/2010-060/206_1508	631/1	0.00	000.0	Primary
h-12154/nrt2_1210_klein3000hf_200sss/2009-341/sss091207152400	0001	21.42	004.9	Secondary

Hydrographer Recommendations

Chart 7ft isolated sounding.

Cartographically-Rounded Depth (Affected Charts):

8ft (11532_1, 11531_1, 11535_1)

1 ¼fm (11520_1, 11009_1, 411_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)
Attributes: EXPSOU - 2:shoaler than range of depth of the surrounding depth area
 QUASOU - 1:depth known
 SORDAT - 20100301
 SORIND - US,US,Survy,H12154

TECSOU - 1,2:found by echo-sounder,found by side scan sonar

VERDAT - 12:Mean lower low water

Feature Images

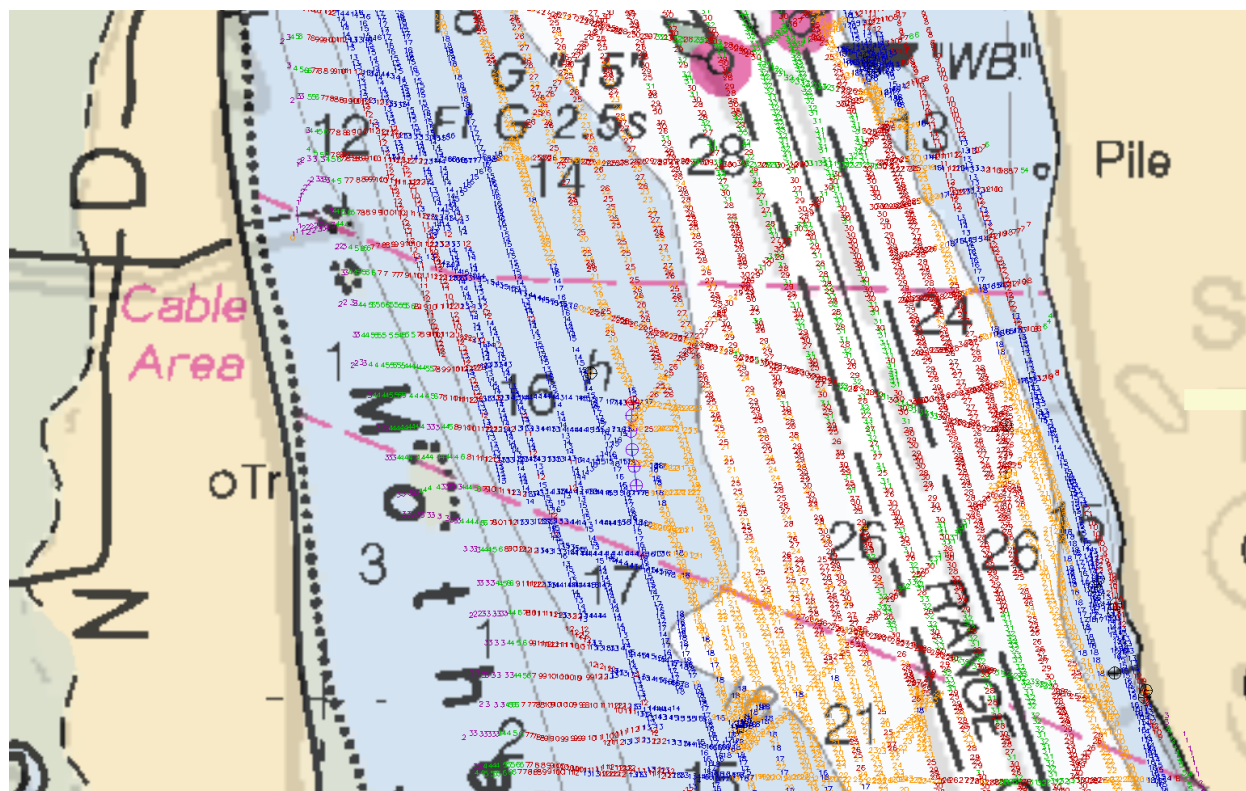


Figure 1.3.1

3 - AWOIS Features

3.1) Profile/Beam - 2/1 from h-12154 / nrt2_1210_dpnonechosounder / 2009-342 / dn_342 dps

Primary Feature for AWOIS Item #14553

Search Position: 33° 14' 30.0" N, 079° 11' 45.0" W

Historical Depth: [None]

Search Radius: 100

Search Technique: S2,ES

Technique Notes: [None]

History Notes:

L1151(75) - 30 ft houseboat beached on east side of island showing damage at stern. Not secured to island and could break loose. Charted as visible wreck. PA: 33-14-30N, 79-11-45W.

L951(86) - reports wreck no longer visible. Charted as subm.(Entered 4/09 KAK)

S-G905-NRT2-09 , H-12154,2009-2010: Visual investigation identified baring debris associated with this feature. This

is not a danger due to proximity to land. There is no charting significance associated with this Item.

Recommend position modification, or removal.RWR

Survey Summary

Survey Position: 33° 14' 30.0" N, 079° 11' 45.9" W

Least Depth: -1.17 m (= -3.83 ft = -0.639 fm = 0 fm 2.17 ft)

TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.960 m ;**TVU (TPEv)** ± 0.251 m

Timestamp: 2009-342.15:18:50.000 (12/08/2009)

DP Dataset: h-12154 / nrt2_1210_dpnonechosounder / 2009-342 / dn_342 dps

Profile/Beam: 2/1

Charts Affected: 11532_1, 11531_1, 11535_1, 11520_1, 11009_1, 411_1

Remarks: Visual investigation identified baring debris associated with this feature. Not a dangerous wreck due to proximity to land.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h-12154/nrt2_1210_dpnonechosounder/2009-342/dn_342 dps	2/1	0.00	000.0	Primary
s-g905-nrt2-09awois	AWOIS # 14553	23.50	260.4	Secondary

Hydrographer Recommendations

Chart new wreck in surveyed position and remove charted wreck.

Cartographically-Rounded Depth (Affected Charts):

-4ft (11532_1, 11531_1, 11535_1)

0 ½fm (11520_1, 11009_1, 411_1)

S-57 Data

Geo object 1: Wreck (WRECKS)

Attributes: CATWRK - 1:non-dangerous wreck
CONVIS - 2:not visual conspicuous
HEIGHT - -1.17 m
QUASOU - 1:depth known
SORDAT - 20091208
SORIND - US,US,Survey,H12154
TECSOU - 1:found by echo-sounder
VALSOU - -1.168 m
VERDAT - 12:Mean lower low water
WATLEV - 1:partly submerged at high water

3.2) Profile/Beam - 218/1 from h-12154 / nrt2_1210_sb / 2009-342 / 2009_342sb019_1820

Primary Feature for AWOIS Item #14552

Search Position: 33° 14' 20.0" N, 079° 11' 45.0" W
Historical Depth: [None]
Search Radius: 100
Search Technique: S2,ES
Technique Notes: [None]

History Notes:

LNM 50/85: 7th CG - Remains of a 100' trawler in 18' of water baring at low tide. PA: 33-14-20N, 79-11-45W.
 (Entered 4/09 KAK)

S-G905-NRT2-09 , H-12154,2009: 200% SSS conducted throughout the search area revealed no contacts of this wrk.

Recommendation: Remove from the charts.RWR

Survey Summary

Survey Position: 33° 14' 18.5" N, 079° 11' 41.8" W
Least Depth: 4.35 m (= 14.26 ft = 2.376 fm = 2 fm 2.26 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.965 m ; **TVU (TPEv)** ± 0.253 m
Timestamp: 2009-342.18:20:27.015 (12/08/2009)
Survey Line: h-12154 / nrt2_1210_sb / 2009-342 / 2009_342sb019_1820
Profile/Beam: 218/1
Charts Affected: 11532_1, 11531_1, 11535_1, 11520_1, 11009_1, 411_1

Remarks:

Small contact , with no charting significance, associated with Awois
 as it falls within the search limits. minor contacts slightly outside
 of search radius were addressed as well, with same comments.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h-12154/nrt2_1210_sb/2009-342/2009_342sb019_1820	218/1	0.00	000.0	Primary
h-12154/nrt2_1210_klein3000hf_200sss/2009-322/sss091118152000	0003	9.74	197.4	Secondary

h-12154/nrt2_1210_klein3000hf_100sss/2009-322/sss091118161500	0002	10.18	220.2	Secondary
h-12154/nrt2_1210_klein3000hf_200sss/2009-322/sss091118152000	0001	42.85	210.4	Secondary
h-12154/nrt2_1210_klein3000hf_100sss/2009-322/sss091118161500	0001	44.86	212.9	Secondary
s-g905-nrt2-09awois	AWOIS # 14552	95.42	119.9	Secondary

Hydrographer Recommendations

Remove the charted visible WRK PA.

Cartographically-Rounded Depth (Affected Charts):

14ft (11532_1, 11531_1, 11535_1)

2 ¼fm (11520_1, 11009_1, 411_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes: QUASOU - 1:depth known

SORDAT - 20091208

SORIND - US,US,Survy,H12154

TECSOU - 1,2:found by echo-sounder,found by side scan sonar

VALSOU - 4.346 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

3.3) Profile/Beam - 1539/1 from h-12154 / nrt2_1210_sb / 2010-054 / 016_1901

Primary Feature for AWOIS Item #11170

Search Position: 33° 11' 16.9" N, 079° 04' 47.6" W
Historical Depth: 8.84 m
Search Radius: 50
Search Technique: S2,ES
Technique Notes: [None]

History Notes:

HISTORY

H10946/00-- OPR-G360-KR; UNCHARTED DANGEROUS SUBMERGED OBSTRUCTION WITH A MB DEPTH OF 29 FEET LOCATED IN LAT. 33-11-16.859N, LONG. 79-04-47.562W. OBJECT ABOUT 3.4 METERS WIDE AND 6.6 METERS LONG WITH A HEIGHT OF ABOUT 1.8 METERS (6 FEET). EVALUATOR RECOMMENDS CHARTING A 29 OBSTN AS SURVEYED. (ENT 12/17/01, SJV)

S-G905-NRT2-09, H12154, 2009-2010: 200% sss operations confirmed existence of 29ft Obstrn.

Recommend: Retain as charted. RWR

Survey Summary

Survey Position: 33° 11' 17.0" N, 079° 04' 47.6" W
Least Depth: 9.03 m (= 29.62 ft = 4.937 fm = 4 fm 5.62 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) ± 1.974 m ;TVU (TPEv) ± 0.256 m
Timestamp: 2010-054.19:02:32.397 (02/23/2010)
Survey Line: h-12154 / nrt2_1210_sb / 2010-054 / 016_1901
Profile/Beam: 1539/1
Charts Affected: 11531_1, 11535_1, 11520_1, 11009_1, 411_1

Remarks:

29 ft least depth confirmed over charted obstruction.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h-12154/nrt2_1210_sb/2010-054/016_1901	1539/1	0.00	000.0	Primary
h-12154/nrt2_1210_klein3000hf_200sss/2010-054/sss100223185200	0001	1.39	251.0	Secondary
h-12154/nrt2_1210_klein3000hf_100sss/2010-054/sss100223184800	0001	1.81	032.5	Secondary

s-g905-nrt2-09awois	AWOIS # 11170	3.18	357.5	Secondary
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Hydrographer Recommendations

Retain as charted.

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes: CATOBS - 1:snag / stump

QUASOU - 1:depth known

SORDAT - 20100223

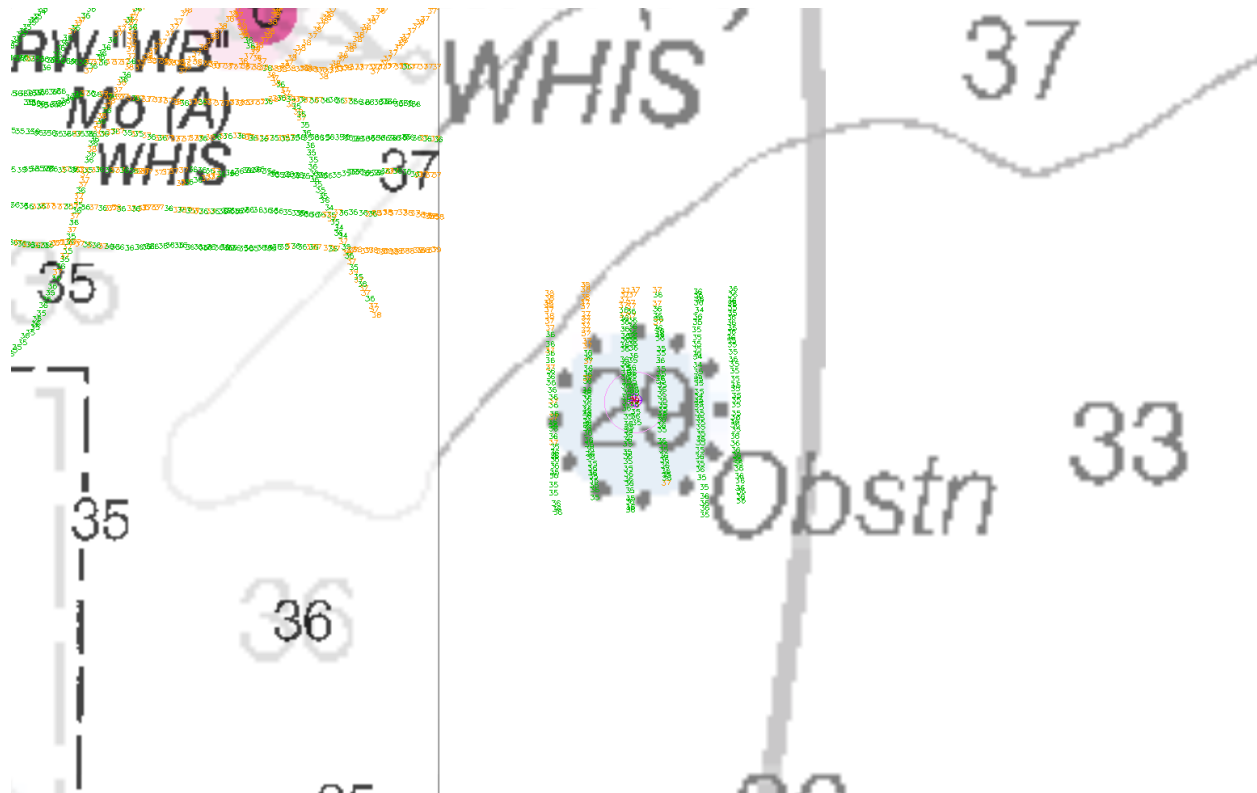
SORIND - US,US,Durvy,H12154

TECSOU - 1,2:found by echo-sounder,found by side scan sonar

VALSOU - 9.029 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Feature Images*Figure 3.3.1*

3.4) Profile/Beam - 9038/1 from h-12154 / nrt2_1210_sb / 2010-054 / 037_1629

Primary Feature for AWOIS Item #11171

Search Position: 33° 12' 10.8" N, 079° 05' 18.8" W
Historical Depth: [None]
Search Radius: 50
Search Technique: S2,ES
Technique Notes: [None]

History Notes:

HISTORY

H10946/00-- OPR-G360-KR; UNCHARTED DANGEROUS SUBMERGED OBSTRUCTION LOCATED BY SIDE SCAN SONAR WITH A MB DEPTH OF 31.26 FEET IN LAT. 33-12-10.806N, LONG. 79-05-18.802W. HEIGHT OF 1.8 METER (6.0 FEET) ABOUT 2.75 METERS LONG, 2.1 METER WIDE, AND 1.8 METER (6 FEET) HIGH. EVALUATOR RECOMMENDS CHARTING A 31 OBSTN AS SURVEYED. (ENT 12/17/01, SJV)

S-G905-NRT2-09, H12154 2009-2010: 200% SSS failed to locate any significant target.

Recommend: Remove from charts..RWR

Survey Summary

Survey Position: 33° 12' 10.8" N, 079° 05' 18.3" W
Least Depth: 10.88 m (= 35.69 ft = 5.949 fm = 5 fm 5.69 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) ± 1.980 m ;TVU (TPEv) ± 0.258 m
Timestamp: 2010-054.16:37:22.708 (02/23/2010)
Survey Line: h-12154 / nrt2_1210_sb / 2010-054 / 037_1629
Profile/Beam: 9038/1
Charts Affected: 11532_1, 11531_1, 11535_1, 11520_1, 11009_1, 411_1

Remarks:

200% SSS failed to located any significant contacts within the search radius. One very small contact was observed, however due to the insignificant height of bottom, it was not picked nor developed.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h-12154/nrt2_1210_sb/2010-054/037_1629	9038/1	0.00	000.0	Primary
s-g905-nrt2-09awois	AWOIS # 11171	13.46	097.7	Secondary

h-12154/nrt2_1210_klein3000hf_100sss/2010-054/sss100223162900	0001	33.35	186.2	Secondary
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Hydrographer Recommendations

Remove from the charts.

Cartographically-Rounded Depth (Affected Charts):

35ft (11532_1, 11531_1, 11535_1)

6fm (11520_1, 11009_1, 411_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes: SORDAT - 20100223

SORIND - US,US,Survy,H12154

VALSOU - 10.879 m

WATLEV - 3:always under water/submerged

3.5) Profile/Beam - 693/1 from h-12154 / nrt2_1210_sb / 2010-054 / 031_1721**Primary Feature for AWOIS Item #10190**

Search Position: 33° 11' 45.8" N, 079° 05' 27.4" W
Historical Depth: [None]
Search Radius: 50
Search Technique: S2,ES
Technique Notes: [None]

History Notes:

LN47/71--CGD7; PROVIDES THE FOLLOWING INFORMATION: AN OBSTRUCTION HAS BEEN REPORTED 100 YARDS, 162 DEGREES FROM THE CHARTED POSITION OF WINYAH BAY LIGHTED BELL BUOY 2WB (LLNR 14). THE OBSTRUCTION HAS ABOUT 20 FEET OF WATER OVER IT AND MAY BE A SUNKEN BUOY. AN ATTEMPT WILL BE MADE TO RAISE IT AS SOON AS PRACTICABLE AND FURTHER INFORMATION WILL BE PUBLISHED WHEN AVAILABLE. (ENTERED 2/5/99 BY MBH)

H10946/00-- OPR-G360-KR; SIDE SCAN SONAR NEGATIVE FOR 20-FOOT OBSTRUCTION. A MB DEPTH OF 31 FEET WAS OBTAINED IN LAT. 33-11-45.769N, LONG. 79-05-27.349W. HYDROGRAPHER STATES THAT THIS TARGET IS PROBABLY AN OLD BUOY, SINKER, AND CHAIN BASED ON SIDE SCAN SONAR IMAGERY EVALUATOR RECOMMENDS DELETING 20-FOOT OBSTRUCTION IN LAT. 33-11-42.8N, LONG. 79-05-13.5W AND CHARTING A 31 OBSTN AS SURVEYED. (UP 12/17/01, SJV)

S-G905-NRT2-09, H12154 2009-2010: Located charted obstrn. Concur that probability is high that this is an old buoy block, with attached ground tackle.

Recommend: Retain. RWR

Survey Summary

Survey Position: 33° 11' 45.7" N, 079° 05' 27.3" W
Least Depth: 9.76 m (= 32.03 ft = 5.339 fm = 5 fm 2.03 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) ± 1.975 m ;TVU (TPEv) ± 0.257 m
Timestamp: 2010-054.17:22:30.215 (02/23/2010)
Survey Line: h-12154 / nrt2_1210_sb / 2010-054 / 031_1721
Profile/Beam: 693/1
Charts Affected: 11532_1, 11531_1, 11535_1, 11520_1, 11009_1, 411_1

Remarks:

200 % SSS located charted obstrn. Least depth over feature is 32 ft @ MLLW

Feature Correlation

Address	Feature	Range	Azimuth	Status
h-12154/nrt2_1210_sb/2010-054/031_1721	693/1	0.00	000.0	Primary
s-g905-nrt2-09awois	AWOIS # 10190	2.59	126.0	Secondary
h-12154/nrt2_1210_klein3000hf_100sss/2010-054/sss100223171600	0001	3.76	217.5	Secondary
h-12154/nrt2_1210_klein3000hf_200sss/2010-054/sss100223170400	0001	6.33	079.9	Secondary
h-12154/nrt2_1210_klein3000hf_200sss/2010-054/sss100223170400	0002	10.67	036.2	Secondary

Hydrographer Recommendations

Modify Least depth value.

Office Notes: Do not concur. Retain charted 31 ft. depth on obstruction

Cartographically-Rounded Depth (Affected Charts):

32ft (11532_1, 11531_1, 11535_1)

5 ¼fm (11520_1, 11009_1, 411_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes: QUASOU - 1:depth known

SORDAT - 20100223

SORIND - US,US,Survy,H12154

TECSOU - 1,2:found by echo-sounder,found by side scan sonar

VALSOU - 9.764 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

3.6) Profile/Beam - 1342/1 from h-12154 / nrt2_1210_sb / 2010-054 / 026_1810

Primary Feature for AWOIS Item #11172

Search Position: 33° 11' 44.8" N, 079° 05' 12.7" W
Historical Depth: 8.11 m
Search Radius: 50
Search Technique: S2,ES
Technique Notes: [None]

History Notes:

HISTORY

H10946/00-- OPR-G360-KR; SIDE SCAN SONAR LOCATED AN UNCHARTED DANGEROUS SUBMERGED OBSTRUCTION WITH A MB DEPTH OF 26.6 FEET IN LAT. 33-11-44.813N, LONG. 79-05-12.724W. MORE THAN 6 METERS LONG AND ABOUT 3 METERS WIDE. APPROX. 2 METERS (6.6 FEET) HIGH. A CHARTED OBSTN, 20 FEET REP (SEE AWOIS NO. 10190) IS APPROX. 70 METERS SSE. EVALUATOR RECOMMENDS CHARTING A 26 OBSTN AS SURVEYED. (ENT 12/18/01, SJV)

S-G905-NRT2-09, H12154, 2009-2010: 200% sss operations located existence of 29ft Obstrn.

Recommend: Remove 26ft and add 29ft obstn. RWR

Survey Summary

Survey Position: 33° 11' 44.7" N, 079° 05' 12.6" W
Least Depth: 8.85 m (= 29.03 ft = 4.839 fm = 4 fm 5.03 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.974 m ; **TVU (TPEv)** ± 0.256 m
Timestamp: 2010-054.18:11:51.825 (02/23/2010)
Survey Line: h-12154 / nrt2_1210_sb / 2010-054 / 026_1810
Profile/Beam: 1342/1
Charts Affected: 11532_1, 11531_1, 11535_1, 11520_1, 11009_1, 411_1

Remarks:

Development over sss contact at Awois location verified obstn.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h-12154/nrt2_1210_sb/2010-054/026_1810	1342/1	0.00	000.0	Primary
h-12154/nrt2_1210_klein3000hf_200sss/2010-054/sss100223180300	0002	5.04	203.3	Secondary

s-g905-nrt2-09awois	AWOIS # 11172	6.18	137.7	Secondary
h-12154/nrt2_1210_klein3000hf_100sss/2010-054/sss100223175600	0001	6.50	194.9	Secondary

Hydrographer Recommendations

Change 26ft Obstrn to 29ft Obstrn.

Office Notes: Do not concur. Retain charted 26 ft. depth on obstruction.

Cartographically-Rounded Depth (Affected Charts):

29ft (11532_1, 11531_1, 11535_1)

4 $\frac{3}{4}$ fm (11520_1, 11009_1, 411_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes: CATOBS - 1:snag / stump

QUASOU - 1:depth known

SORDAT - 20100223

SORIND - US,US,Survy,H12154

TECSOU - 1,2:found by echo-sounder,found by side scan sonar

VALSOU - 8.849 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

3.7) Profile/Beam - 2009/1 from h-12154 / nrt2_1210_sb / 2010-054 / 026_1807

Primary Feature for AWOIS Item #11173

Search Position: 33° 11' 48.0" N, 079° 05' 08.0" W
Historical Depth: 8.87 m
Search Radius: 50
Search Technique: S2,ES
Technique Notes: [None]

History Notes:

HISTORY

H10946/00-- OPR-G360-KR; SIDE SCAN SONAR LOCATED UNCHARTED SUBMERGED OBSTRUCTION WITH A MB DEPTH OF 29.1. OBSTRUCTION IS 3.75 METERS LONG AND 3.0 METERS WIDE. APPROX. 2.0 METERS (6.6 FEET) HIGH. CHARTED OBSTRUCTION (20 FEET REP) APPROX. 215 METERS TO THE SOUTHEAST (SEE AWOIS NO. 10190). EVALUATOR RECOMMENDS CHARTING A 29 OBSTN AS SURVEYED. (ENT 12 18/01, SJV)

S-G905-NRT2-09, H12154 2009-2010: 200% SSS located target.

Recommend: Retain.RWR

Survey Summary

Survey Position: 33° 11' 48.0" N, 079° 05' 07.9" W
Least Depth: 8.81 m (= 28.91 ft = 4.818 fm = 4 fm 4.91 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.974 m ; **TVU (TPEv)** ± 0.256 m
Timestamp: 2010-054.18:09:43.688 (02/23/2010)
Survey Line: h-12154 / nrt2_1210_sb / 2010-054 / 026_1807
Profile/Beam: 2009/1
Charts Affected: 11532_1, 11531_1, 11535_1, 11520_1, 11009_1, 411_1

Remarks:

200% SSS located charted obstrn.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h-12154/nrt2_1210_sb/2010-054/026_1807	2009/1	0.00	000.0	Primary
s-g905-nrt2-09awois	AWOIS # 11173	1.78	068.5	Secondary

h-12154/nrt2_1210_klein3000hf_200sss/2010-054/sss100223180300	0001	5.05	075.1	Secondary
h-12154/nrt2_1210_klein3000hf_100sss/2010-054/sss100223181500	0001	6.34	039.1	Secondary
h-12154/nrt2_1210_klein3000hf_100sss/2010-054/sss100223175600	0002	8.13	223.5	Secondary

Hydrographer Recommendations

Retain as charted

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes: CATOBS - 1:snag / stump

QUASOU - 1:depth known

SORDAT - 20100223

SORIND - US,US,Survey,H12154

TECSOU - 1,2:found by echo-sounder,found by side scan sonar

VALSOU - 8.812 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

3.8) Profile/Beam - 687/1 from h-12154 / nrt2_1210_sb / 2010-054 / 011_1425

Primary Feature for AWOIS Item #11174

Search Position: 33° 13' 02.2" N, 079° 07' 00.9" W
Historical Depth: 7.71 m
Search Radius: 50
Search Technique: S2,ES
Technique Notes: [None]

History Notes:

HISTORY

H10946/00-- OPR-G360-KR; SURVOPS LOCATED TWO UNCHARTED MOUNDS EXTENDING 3-4 FEET OFF THE BOTTOM. EXTEND APPROX. 75 METERS X 40 METERS. EACH MOUND APPROX. 25 METERS IN DIA. MB DEPTH OF 25.3 FEET IN LAT. 33-13-02.152N, LONG. 79-07-00.917W. EVALUATOR RECOMMENDS CHARTING A 25 OBSTN AS SURVEYED. (ENT 12/18/01, SJV)

S-G905-NRT2-09, H12154,2009-2010: Located irregular mounds, though they appear to hold no significant charting purpose.

Recommend removal of Obstrn from the charts and applying the survey depths.RWR

Survey Summary

Survey Position: 33° 13' 02.8" N, 079° 07' 02.0" W
Least Depth: 7.82 m (= 25.65 ft = 4.274 fm = 4 fm 1.65 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.970 m ;**TVU (TPEv)** ± 0.254 m
Timestamp: 2010-054.14:26:23.722 (02/23/2010)
Survey Line: h-12154 / nrt2_1210_sb / 2010-054 / 011_1425
Profile/Beam: 687/1
Charts Affected: 11532_1, 11531_1, 11535_1, 11520_1, 11009_1, 411_1

Remarks:

25ft mound confirmed, associated with Awois 11174.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h-12154/nrt2_1210_sb/2010-054/011_1425	687/1	0.00	000.0	Primary
h-12154/nrt2_1210_klein3000hf_100sss/2010-054/sss100223141800	0001	8.45	126.5	Secondary

h-12154/nrt2_1210_klein3000hf_200sss/2010-054/sss100223141400	0001	23.66	295.4	Secondary
h-12154/nrt2_1210_sb/2010-054/012_1428	1994/1	33.40	316.1	Secondary
s-g905-nrt2-09awois	AWOIS # 11174	34.19	307.9	Secondary
h-12154/nrt2_1210_klein3000hf_200sss/2010-054/sss100223142500	0001	36.57	317.4	Secondary

Hydrographer Recommendations

Modify the charted position of the 25ft sounding.

Office Notes: The 25 ft. obstruction was replaced with a 25 ft. sounding.

Cartographically-Rounded Depth (Affected Charts):

25ft (11532_1, 11531_1, 11535_1)

4 ¼fm (11520_1, 11009_1, 411_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes: CATOBS - 1:snag / stump

QUASOU - 1:depth known

SORDAT - 20100223

SORIND - US,US,Survey,H12154

TECSOU - 1,2:found by echo-sounder,found by side scan sonar

VALSOU - 7.817 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

3.9) Profile/Beam - 2942/1 from h-12154 / nrt2_1210_sb / 2010-054 / 005_1501

Primary Feature for AWOIS Item #11169

Search Position: 33° 12' 41.7" N, 079° 05' 18.9" W
Historical Depth: 7.32 m
Search Radius: 50
Search Technique: S2,ES
Technique Notes: [None]

History Notes:

HISTORY

H10946/00-- OPR-G360-KR; UNCHARTED DANGEROUS SUBMERGED OBSTRUCTION LOCATED BY SIDE SCAN SONAR WITH A MB DEPTH OF 24 FEET IN LAT. 33-12-41.753, LONG. 79-05-18.90W. EVALUATOR RECOMMENDS DELETING 24 OBSTN IN LAT. 33-12-41N, LONG. 79-05-18W AND CHARTING A 24 OBSTN AS SURVEYED. SE ALSO AWOIS NO. 10191 FOR FURTHER INFO. (ENT 12/17/01, SJV)

Currently charted as 400m diameter fish haven centered on pos of AWOIS item 11169 (unkn Obst: 33-12-41.75N, 79-5-18.90W), and which surrounds 3 other AWOIS items (11166-11168: barges) not charted separately. Original Fish Haven entered as AWOIS item 10191 (CL1074/91) was listed in wrong pos and disproved.(KAK 4/09)

S-G905-NRT2-09, H12154,2009-2010: Located numerous Wks and obstn's with the charted Fish Haven limits. Items were noted outside the limits on the eastern side of the limit lines.

Recommend retaining, with expansion of the Eastern limits. RWR

Survey Summary

Survey Position: 33° 12' 40.9" N, 079° 05' 18.7" W
Least Depth: 9.62 m (= 31.57 ft = 5.262 fm = 5 fm 1.57 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) ± 1.975 m ;TVU (TPEv) ± 0.256 m
Timestamp: 2010-054.15:04:17.203 (02/23/2010)
Survey Line: h-12154 / nrt2_1210_sb / 2010-054 / 005_1501
Profile/Beam: 2942/1
Charts Affected: 11532_1, 11531_1, 11535_1, 11520_1, 11009_1, 411_1

Remarks:

P wo gtqw'u'y tgem'u'qecv'f "y kj kp"vj g'H'kuj 'J cxgp"r'ko ku0

Feature Correlation

Address	Feature	Range	Azimuth	Status
h-12154/nrt2_1210_sb/2010-054/005_1501	2942/1	0.00	000.0	Primary
h-12154/nrt2_1210_klein3000hf_200sss/2010-054/sss100223145600	0001	13.14	217.5	Secondary
s-g905-nrt2-09awois	AWOIS # 11169	25.99	168.8	Secondary
h-12154/nrt2_1210_klein3000hf_100sss/2010-054/sss100223150100	0003	40.27	188.6	Secondary

Hydrographer Recommendations

Tgvclp'Hkuj 'J cxgp'y kj 'gur cpukqp'vq'gcuw0'

S-57 Data

Geo object 1: Wreck (WRECKS)

Attributes: CATWRK - 1:non-dangerous wreck
 CONVIS - 2:not visual conspicuous
 QUASOU - 1:depth known
 SORDAT - 20100223
 SORIND - US,US,Survy,H12154
 TECSOU - 1,2:found by echo-sounder,found by side scan sonar
 VALSOU - 9.624 m
 VERDAT - 12:Mean lower low water
 WATLEV - 3:always under water/submerged

3.10) Profile/Beam - 628/1 from h-12154 / nrt2_1210_sb / 2010-049 / 2010_049sb010_1458**Primary Feature for AWOIS Item #14551**

Search Position: 33° 12' 00.6" N, 079° 10' 00.2" W
Historical Depth: 0.00 m
Search Radius: 100
Search Technique: S2,ES
Technique Notes: [None]

History Notes:

LN42/91: 7th CG - Partially submerged wreck, 25' p/c, PA : 33-12-00.3N, 79-10-00.2W. (Entered 4/09 KAK)

S-G905-NRT2-09, H12154,2009-2010: No signs of wreck. Extensive VBES developemnt conducted.

Recommend: Removal. RWR

Survey Summary

Survey Position: 33° 12' 00.2" N, 079° 10' 00.3" W
Least Depth: 2.22 m (= 7.29 ft = 1.214 fm = 1 fm 1.29 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.964 m ;**TVU (TPEv)** ± 0.252 m
Timestamp: 2010-049.14:59:31.743 (02/18/2010)
Survey Line: h-12154 / nrt2_1210_sb / 2010-049 / 2010_049sb010_1458
Profile/Beam: 628/1
Charts Affected: 11532_1, 11531_1, 11535_1, 11520_1, 11009_1, 411_1

Remarks:

Visual search and reduced lines spacing development failed to locate any sign of charted feature. Depths to shallow to SSS.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h-12154/nrt2_1210_sb/2010-049/2010_049sb010_1458	628/1	0.00	000.0	Primary
s-g905-nrt2-09awois	AWOIS # 14551	14.29	195.0	Secondary

Hydrographer Recommendations

Remove charted wreck.

Cartographically-Rounded Depth (Affected Charts):

7ft (11532_1, 11531_1, 11535_1)

1 ¼fm (11520_1, 11009_1, 411_1)

S-57 Data

Geo object 1: Sounding (SOUNDG)

Attributes: EXPSOU - 1:within the range of depth of the surrounding depth area

QUASOU - 1:depth known

SORDAT - 20100223

SORIND - US,US,Survey,H12154

TECSOU - 1:found by echo-sounder

VERDAT - 12:Mean lower low water

3.11) Profile/Beam - 900/1 from h-12154 / nrt2_1210_sb / 2010-068 / 002_1754

Primary Feature for AWOIS Item #11166

Search Position: 33° 12' 45.5" N, 079° 05' 20.6" W
Historical Depth: 7.62 m
Search Radius: 50
Search Technique: S2,ES
Technique Notes: [None]

History Notes:

HISTORY

H10946/00-- OPR-G360-KR; UNCHARTED DANGEROUS SUBMERGED WRECK LOCATED BY SIDE SCAN SONAR WITH A MB DEPTH OF 25 FEET IN LAT. 33-12-45.539N, LONG. 79-05-20.611W. REFERRED TO AS "WEST BARGE" . EVALUATOR RECOMMENDS CHARTING A 25WK AS SURVEYED. SEE AWOIS NO. 10191 FOR FURTHER INFO. (ENT 12/14/01,SJV)

Currently charted as 400m diameter fish haven centered on pos of AWOIS item 11169 (unkn Obst: 33-12-41.75N, 79-5-18.90W), and which surrounds 3 other AWOIS items (11166-11168: barges) not charted separately. Original Fish Haven entered as AWOIS item 10191 (CL1074/91) was listed in wrong pos and disproved.(KAK 4/09)

S-G905-NRT2-09, H12154,2009-2010: 200% sss identified subm wrk within Fish Haven boundry.

Recommendation: None. RWR

Survey Summary

Survey Position: 33° 12' 45.5" N, 079° 05' 20.4" W
Least Depth: 8.38 m (= 27.51 ft = 4.584 fm = 4 fm 3.51 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) ± 1.972 m ;TVU (TPEv) ± 0.255 m
Timestamp: 2010-068.17:54:57.912 (03/09/2010)
Survey Line: h-12154 / nrt2_1210_sb / 2010-068 / 002_1754
Profile/Beam: 900/1
Charts Affected: 11532_1, 11531_1, 11535_1, 11520_1, 11009_1, 411_1

Remarks:

LD on subm wk within charted fish haven.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h-12154/nrt2_1210_sb/2010-068/002_1754	900/1	0.00	000.0	Primary

s-g905-nrt2-09awois	AWOIS # 11166	4.58	113.3	Secondary
h-12154/nrt2_1210_klein3000hf_200sss/2010-054/sss100223145600	0002	6.92	093.6	Secondary
h-12154/nrt2_1210_klein3000hf_100sss/2010-054/sss100223145200	0001	10.06	314.5	Secondary

Hydrographer Recommendations

None, deeper than Fish Haven Minimum Depth

S-57 Data

Geo object 1: Wreck (WRECKS)

Attributes: CATWRK - 1:non-dangerous wreck
CONVIS - 2:not visual conspicuous
QUASOU - 1:depth known
SORDAT - 20100309
SORIND - US,US,Surv, H12154
TECSOU - 1,2:found by echo-sounder,found by side scan sonar
VALSOU - 8.384 m
VERDAT - 12:Mean lower low water
WATLEV - 2:always dry

3.12) Profile/Beam - 704/1 from h-12154 / nrt2_1210_sb / 2010-068 / 002_1754**Primary Feature for AWOIS Item #11167**

Search Position: 33° 12' 45.3" N, 079° 05' 18.1" W
Historical Depth: 8.23 m
Search Radius: 50
Search Technique: S2,ES
Technique Notes: [None]

History Notes:**HISTORY**

H10946/00-- OPR-G360-KR; UNCHARTED DANGEROUS SUBMERGED WRECK LOCATED BY SIDE SCAN SONAR WITH A MB DEPTH OF 27 FEET IN LAT. 33-12-45.276N, LONG. 79-05-18.128W. THIS ITEM REFERRED TO AS "CENTER BARGE". EVALUATOR RECOMMENDS NOT CHARTING DUE TO PROXIMITY OF WRECK WITH SHOALER LD (SEE AWOIS NO. 11166). SEE ALSO AWOIS NO. 10191 FOR FURTHER INFO. (ENT 12/14/01, SJV)

Currently charted as 400m diameter fish haven centered on pos of AWOIS item 11169 (unkn Obst: 33-12-41.75N, 79-5-18.90W), and which surrounds 3 other AWOIS items (11166-11168: barges) not charted separately. Original Fish Haven entered as AWOIS item 10191 (CL1074/91) was listed in wrong pos and disproved.(KAK 4/09)

S-G905-NRT2-09, H12154,2009-2010: 200% sss identified subm wrk within Fish Haven boundry.

Recommendation: None. RWR

Survey Summary

Survey Position: 33° 12' 45.3" N, 079° 05' 19.5" W
Least Depth: 8.03 m (= 26.34 ft = 4.390 fm = 4 fm 2.34 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.972 m ;**TVU (TPEv)** ± 0.255 m
Timestamp: 2010-068.17:54:47.718 (03/09/2010)
Survey Line: h-12154 / nrt2_1210_sb / 2010-068 / 002_1754
Profile/Beam: 704/1
Charts Affected: 11532_1, 11531_1, 11535_1, 11520_1, 11009_1, 411_1

Remarks:

S-G905-NRT2-09, H12154,2009-2010: 200% sss identified subm wrk within Fish Haven boundary.

Recommendation: None. RWR

Feature Correlation

Address	Feature	Range	Azimuth	Status
h-12154/nrt2_1210_sb/2010-068/002_1754	704/1	0.00	000.0	Primary
h-12154/nrt2_1210_klein3000hf_100sss/2010-054/sss100223150100	0004	12.17	271.3	Secondary
h-12154/nrt2_1210_klein3000hf_200sss/2010-054/sss100223145600	0003	29.38	240.1	Secondary
s-g905-nrt2-09awois	AWOIS # 11167	35.92	272.4	Secondary

Hydrographer Recommendations

None, deeper than charted Authorized minimum depth.

S-57 Data

Geo object 1: Wreck (WRECKS)

Attributes: CATWRK - 1:non-dangerous wreck
 CONVIS - 2:not visual conspicuous
 QUASOU - 1:depth known
 SORDAT - 20100309
 SORIND - US,US,Survy,H12154
 TECSOU - 1,2:found by echo-sounder,found by side scan sonar
 VALSOU - 8.029 m
 VERDAT - 12:Mean lower low water
 WATLEV - 3:always under water/submerged

3.13) Profile/Beam - 942/1 from h-12154 / nrt2_1210_sb / 2010-068 / 016_1743**Primary Feature for AWOIS Item #11168**

Search Position: 33° 12' 43.8" N, 079° 05' 11.5" W
Historical Depth: 7.62 m
Search Radius: 50
Search Technique: S2,ES
Technique Notes: [None]

History Notes:**HISTORY**

H10946/00-- OPR-G360-KR; UNCHARTED DANGEROUS SUBMERGED WRECK LOCATED BY SIDE SCAN SONAR WITH A MB DEPTH OF 25 FEET LOCATED IN LAT. 33-12-43.816N, LONG. 79-05-11.458W. REFERRED TO AS "EAST BARGE". EVALUATOR RECOMMENDS CHARTING A 25WK AS SURVEYED. SEE ALSO AWOIS NO. 10191 FOR FURTHER INFO. (ENT 12/17/01, SJV)

Currently charted as 400m diameter fish haven centered on pos of AWOIS item 11169 (unkn Obst: 33-12-41.75N, 79-5-18.90W), and which surrounds 3 other AWOIS items (11166-11168: barges) not charted separately. Original Fish Haven entered as AWOIS item 10191 (CL1074/91) was listed in wrong pos and disproved.(KAK 4/09)

S-G905-NRT2-09, H12154,2009-2010: 200% sss identified subm wrk within Fish Haven boundry.

Recommendation: None. RWR

Survey Summary

Survey Position: 33° 12' 43.7" N, 079° 05' 11.5" W
Least Depth: 7.33 m (= 24.05 ft = 4.008 fm = 4 fm 0.05 ft)
TPU ($\pm 1.96\sigma$): **THU (TPEh)** ± 1.970 m ;**TVU (TPEv)** ± 0.254 m
Timestamp: 2010-068.17:44:37.064 (03/09/2010)
Survey Line: h-12154 / nrt2_1210_sb / 2010-068 / 016_1743
Profile/Beam: 942/1
Charts Affected: 11532_1, 11531_1, 11535_1, 11520_1, 11009_1, 411_1

Remarks:

S-G905-NRT2-09, H12154,2009-2010: 200% sss identified subm wrk within Fish Haven boundary.

Recommendation: None. RWR

Feature Correlation

Address	Feature	Range	Azimuth	Status
h-12154/nrt2_1210_sb/2010-068/016_1743	942/1	0.00	000.0	Primary
s-g905-nrt2-09awois	AWOIS # 11168	2.91	214.3	Secondary
h-12154/nrt2_1210_klein3000hf_100sss/2010-054/sss100223151100	0002	7.44	101.7	Secondary
h-12154/nrt2_1210_klein3000hf_200sss/2010-054/sss100223151500	0001	17.53	093.6	Secondary
h-12154/nrt2_1210_klein3000hf_100sss/2010-054/sss100223151900	0002	60.08	309.2	Secondary (grouped)

Hydrographer Recommendations

None. Lies within Fish Haven at minimum chart authorized depth.

S-57 Data

Geo object 1: Wreck (WRECKS)

Attributes: CATWRK - 1:non-dangerous wreck
 CONVIS - 2:not visual conspicuous
 QUASOU - 1:depth known
 SORDAT - 20100309
 SORIND - US,US,Survy,H12154
 TECSOU - 1,2:found by echo-sounder,found by side scan sonar
 VALSOU - 7.329 m
 VERDAT - 12:Mean lower low water

3.14) Profile/Beam - 55897/1 from h-12154 / nrt2_1210_sb / 2009-321 / 2009_321sb002_1537

Primary Feature for AWOIS Item #10188

Search Position: 33° 10' 59.1" N, 079° 05' 36.1" W
Historical Depth: 6.71 m
Search Radius: 50
Search Technique: S2,ES
Technique Notes: SURVEY BY COMPLETE COVERAGE (200% SSS /OR MULTIBEAM) THE CHARTED LIMITS OF THE DUMP SITE.

History Notes:

HISTORY

THE DUMP SITE SOURCE IS NOT ASCERTAINABLE FROM CHARTING RECORDS AVAILABLE. THE DUMP SITE WAS PLACED ON THE CHART BETWEEN APRIL, 1953 AND NOVEMBER, 1955. (ENTERED 2/99 BY MBH)

H10946/00-- OPR-G360-KR; 3 UNCHARTED SHOAL SOUNDINGS LOCATED IN DUMP SITE:

24 FEET IN LAT. 33-10-53.299N, LONG. 79-06-01.753W

22 FEET IN LAT. 33-10-59.125N, LONG. 79-05-36.055W

23 FEET IN LAT. 33-10-53.499N, LONG. 79-05-44.092W

FULL BOTTOM MULTIBEAM COVERAGE WAS NOT OBTAINED WITHIN THIS ACTIVE DUMPSITE. HYDROGRAPHER AND EVALUATOR RECOMMEND CONTINUED MONITORING OF DEPTHS WITHIN THIS DUMPSITE TO ENSURE THAT FUTURE DUMPING ACTIVITIES DO NOT PRODUCE ANY NEW DANGERS TO NAVIGATION. UP 12/18/01, SJV)

S-G905-NRT2-09, H12154,2009-2010: 200% sss did not identify any significant contacts within the charted Dump area.

Recommend: Apply new survey soundings throughout. RWR

Survey Summary

Survey Position: 33° 11' 05.0" N, 079° 05' 52.0" W
Least Depth: 6.67 m (= 21.89 ft = 3.649 fm = 3 fm 3.89 ft)
TPU ($\pm 1.96\sigma$): THU (TPEh) ± 1.971 m ;TVU (TPEv) ± 0.255 m
Timestamp: 2009-321.16:25:11.137 (11/17/2009)
Survey Line: h-12154 / nrt2_1210_sb / 2009-321 / 2009_321sb002_1537
Profile/Beam: 55897/1
Charts Affected: 11532_1, 11531_1, 11535_1, 11520_1, 11009_1, 411_1

Remarks:

Dump Site developed, with unremarkable results. Shoal soundings validated Awois report.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h-12154/nrt2_1210_sb/2009-321/2009_321sb002_1537	55897/1	0.00	000.0	Primary
s-g905-nrt2-09awois	AWOIS # 10188	450.93	293.6	Secondary (grouped)

Hydrographer Recommendations

chart survey sounding located within the confines of the Dump limits.

S-57 Data

Geo object 1: Sounding (SOUNDG)

Attributes: EXPSOU - 2:shoaler than range of depth of the surrounding depth area

QUASOU - 1:depth known

SORDAT - 20091117

SORIND - US,US,Survey,H12154

TECSOU - 1,2:found by echo-sounder,found by side scan sonar

VERDAT - 12:Mean lower low water



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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : April 12, 2010

HYDROGRAPHIC BRANCH: Atlantic
HYDROGRAPHIC PROJECT: S-G905-NRT2-2009
HYDROGRAPHIC SHEET: H12154

LOCALITY: Entrance to Winyah Bay, Georgetown, SC
TIME PERIOD: April 10, 2009 - March 18, 2010

TIDE STATION USED: 866-5530 Charleston, SC
Lat. 32° 46.9'N Long. 79° 55.5' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.648 meters

REMARKS: RECOMMENDED ZONING

Use zone(s) identified as: SA126, SA126A, SA127, SA127A, SA128, WB1,
WB1A, WB2, WB3 and WB4

Refer to attachments for zoning information.

Note 1: Provided time series data are tabulated in metric units (meters), relative to MLLW and on Greenwich Mean Time on the 1983-2001 National Tidal Datum Epoch (NTDE).

Peter J. Stone
Digitally signed by Peter J. Stone
DN: cn=Peter J. Stone, o=CO-OPS, ou=NOAA/
NOS, email=peter.stone@noaa.gov, c=US
Date: 2010.04.14 14:25:08 -04'00'

CHIEF, OCEANOGRAPHIC DIVISION



GENERAL EXPLANATION

LORAN-C FREQUENCY..... 100kHz.

PULSE REPETITION INTERVAL

9960..... 99,600 Microseconds

7980..... 79,800 Microseconds

STATION TYPE
tion letter design

Final Tidal Zoning for
S-G905-NRT2-2009, H12154
Georgetown, SC

M.....

W..... Secondary

X..... Secondary

Y..... Secondary

Z..... Secondary

EXAMPLE: 9960-X

RATES ON THIS CHART

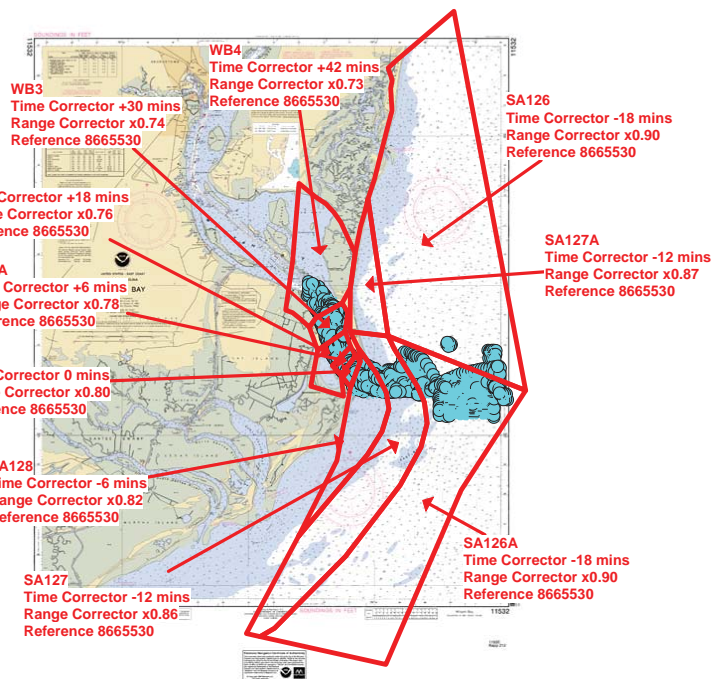
9960-X 9960-Y

7980-Y 7980-Z

Loran-C correction tables published by the National Imagery and Mapping Agency or others should not be used with this chart. The lines of position shown have been adjusted based on survey data. Every effort has been made to meet the ¼ nautical mile accuracy criteria established by the U.S. Coast Guard. Mariners are cautioned not to rely solely on the lattices in inshore waters.

Strawberry
Ldg

Mc Clellanvil



8665530 CHARLESTON



From Olivia.Hauser@noaa.gov
Sent Wednesday, November 18, 2009 7:59 pm
To Robert.Ramsey@noaa.gov
Cc Castle.E.Parker@noaa.gov , Richard.T.Brennan@noaa.gov
Subject Data Submission

Hi Bob,

Thanks for the call. Sorry that happened to you today. I am still trying to see what might have happened to the true heave file. As for the data, I confirmed with Gene Parker, copied above, that you can submit the data without True Heave. It is not worth re-acquiring, especially since it is singlebeam and it was a really calm day. The correction that would be gained from applying true heave is miniscule and not worth the gas and time. Please just document it in the DR and submit it without true heave applied. Thanks.

Olivia

From Chris Libeau <Chris.Libeau@noaa.gov>

Sent Thursday, January 21, 2010 1:53 pm

To "Wolf, Philip M SAC" <Philip.M.Wolf@usace.army.mil>

Cc "Moebs, Norman D SAC" <Norman.D.Moebs@usace.army.mil> , Robert Ramsey <Robert.Ramsey@noaa.gov> , David Elliott <David.Elliott@noaa.gov> , "LCDR Rick Brennan, NOAA" <Richard.T.Brennan@noaa.gov> , "Verdolini, Mike R SAC" <Mike.R.Verdolini@usace.army.mil> , "Foss, Matthew D SAC" <Matthew.D.Foss@usace.army.mil>

Subject Re: Gtown South Island Bend- Realignment

Hi Phil,

Yes it does. Thanks to you and Mike for the answer. I will check with some folks here but I am voting for keeping things the way we have them charted. Thanks for clarifying things. I will let you know if we decide to change things.

Chris

Wolf, Philip M SAC wrote:

> Chris,

>

> The USACE will restore (contingent upon funding) the original channel
> alignment, but for now we plan to show the existing realigned deeper channel
> alignment (buoyed) along with the original historic channel alignment as
> shown on our latest survey. As you know it takes congressional approval to
> change the federal channel. Does this answer your question?

>

>

> -----Original Message-----

> From: Chris Libeau [mailto:Chris.Libeau@noaa.gov]

> Sent: Wednesday, January 20, 2010 3:35 PM

> To: Wolf, Philip M SAC

> Cc: Moebs, Norman D SAC; Robert Ramsey; David Elliott; LCDR Rick Brennan,

> NOAA; Verdolini, Mike R SAC

> Subject: Re:

>

> Hi Phil

> Thanks for the response. To be clear have the actual channel limits changed?
> Should we revise how we are depicting the dashed channel limits in this area?
> On the USACE survey sheet it depicts both the authorized channel limits and
> the maintained channel limits.

> Thanks

> Chris

>

> Wolf, Philip M SAC wrote:

>

>> Chris,

>>

>> The USACE notified you on this change in the South Island Bend back in
>> 2009 and is on our public website. We have no problem on how you have
>> the tabular data (see attached) for chart 11532. We the USACE
>> Charleston District strive to keep the open lines of communication
>> open and I appreciate this coordination. I wish to thank the NRT-2
>> team notifying me. I believe this issue is resolved since Chris is
>> aware of the situation unless anybody has any more comments or questions.

>>

> I'm here to discuss more.

>

>> Rick/Bob/Dave: We send all changes and or Condition surveys to Chris
>> on a regular basis. We are now sending Chris just the xyz files of our
>> surveys so he does not have to deal with Micro station files. The
>> Charleston District is working on an automatic messaging system to
>> notify Chris that there is a change to our surveys. Thank you.

>>

>> -----Original Message-----

>> From: Chris Libeau [mailto:Chris.Libeau@noaa.gov]

>> Sent: Wednesday, January 20, 2010 11:15 AM

>> To: Wolf, Philip M SAC; Moebs, Norman D SAC
>> Subject: Re: FW: Georgetown Harbor
>>
>> Hi guys
>> Hope you are doing well. It seems our old friend South Island Bend,
>> Georgetown Harbor is showing up again. I am receiving information from
>> one of our survey teams pointing out that NOAA has the channel charted
>>
> incorrectly.
>
>> We are showing the channel as USACE does on the surveys we receive from
>>
> you.
>
>> In addition we copy the verbage in the channel condition report so
>> there is no discrepancy in how the two agencies are portraying the
>> data. As far as I can see we are in agreement in how USACE is
>> portraying the information. We do update the hydrography in the area
>> that you do survey and that is marked by the USACE buoys. I am writing
>> to ask if USACE thinks we should change the way we are portraying your
>>
> data?
>
>> Thanks
>> Chris
>>
>> PS
>> the email below is from the last time we discussed this.
>>
>> Wolf, Philip M SAC wrote:
>>
>>
>>> Chris,
>>>
>>> Norm Moebs is our Chief of Navigation. See his response below. Does
>>> this answer your question?
>>>
>>> -----Original Message-----
>>> From: Moebs, Norman D SAC
>>> Sent: Thursday, February 19, 2009 3:24 PM
>>> To: Wolf, Philip M SAC
>>> Cc: Verdolini, Mike R SAC; Wilson, Joe SAC
>>> Subject: RE: Georgetown Harbor
>>>
>>> We will continue to maintain the historical channel location - even
>>> though we may not be maintaining its depth at the moment. When funds
>>> become available we will return depth to the original channel
>>> location. The USCG has done right by moving the buoys to where the
>>> deep water currently is, but we will maintain the original channel
>>> LOCATION
>>>
>>>
>> on our maps.
>>
>>
>>> Norm
>>>
>>>
>>>
>>> -----Original Message-----
>>> From: Chris Libeau [mailto:Chris.Libeau@noaa.gov]
>>> Sent: Wednesday, February 11, 2009 5:06 PM
>>> To: Wolf, Philip M SAC

>>> Subject: Georgetown Harbor
>>>
>>> Hi Phil
>>> A lot of questions seem to be popping up on our end concerning
>>> channels in your area all of a sudden. Hope you dont mind a few more.
>>> I wanted to confirm that the authorized project depths listed on the
>>> Channel Condition Reports for Georgetown Harbor Upper and Lower are
>>> current. We are showing deeper depths on our version. Not sure how
>>> they got there. Want to make sure we have it right.
>>>
>>> Second question concerns the channel in the South Island Bend area.
>>> Seems like you are having some problems with shoaling there. I am
>>> looking at your survey sheet and the channel condition report. We
>>> currently are charting the authorized limits. We dont want to show
>>> both
>>>
>>>
>> sets of limits on our chart.
>>
>>
>>> We want to or think we should remove the authorized limits and go
>>> ahead and chart the limits that you are maintaining as they are
>>> outlined on the survey sheet. If we do that then we are not certain
>>> how to depict the channel condition report.
>>> There will be a disconnect between the two. I say this because the
>>> channel condition report seems to have controlling depths from the
>>> authorized dimensions not the maintained ones. That leaves us trying
>>> to figure out how to convey the sounding information from the
>>> maintained area. We are going to think on it here but are open to
>>> your suggestions since you are a bit closer to the users down there.
>>> Thanks
>>> Chris
>>>
>>>
>>>
>>> -----
>>> ---
>>>
>>> Subject:
>>> Re: South Bend Channel
>>> From:
>>> "Chris Libeau" <Chris.Libeau@noaa.gov>
>>> Date:
>>> Wed, 20 Jan 2010 08:40:43 -0500
>>> To:
>>> "Steve.Soherr" <Steve.Soherr@noaa.gov>
>>>
>>> To:
>>> "Steve.Soherr" <Steve.Soherr@noaa.gov>
>>> CC:
>>> <David.Elliott@noaa.gov>, <Robert.Ramsey@noaa.gov>, "Castle E Parker"
>>> <Castle.E.Parker@noaa.gov>
>>>
>>>
>>> Hi Steve
>>> This comes up very often and I understand why but we are aware of it.
>>> We have touched base with USACE concerning this in the past and this
>>> is the solution we agreed upon. Even though the channel is shoaled
>>> the location of the official channel has not changed. The surveys
>>> show the channel limits as we have them charted. See attached PDF.
>>> Shoaling is accounted for in the channel condition reports that USACE
>>> provides us and the mariner. See attached report. We also address
>>> this on the charted channel tabulation. See below. Cartographers

>>> update the hydrography from the surveys in the area marked by the
>>> buoys. We had thought to remove the channel limits but USACE is not
>>> providing survey data that covers the entire channel in that area so
>>> we have nothing to back fill the hydro with. Unless Phil has stated
>>> he thinks it should be charted differently I think we should leave it
>>> as is. We assume the mariner is paying attention to the USACE channel
>>> condition report and the charted channel tabulation. The chart
>>> reflects what USACE is providing us. Let me know what you think.
>>> Chris
>>>
>>> a
>>>
>>> Steve.Soherr wrote:
>>>
>>>
>>>> Chris,
>>>>
>>>> Dave Elliott forwarded this to me.. Wanted you to see it as you're
>>>> the channel "framework" guru..
>>>>
>>>> I checked DREG for chart 11532 and didn't see any channel framework
>>>> docs, but did find some recent DD's covering the entrance and South
>>>> Bend Range. Unfortunately, the DD's contain only the soundings and
>>>> no associated channel limits..
>>>>
>>>> I've included a screen cap showing the sounding lines from latest DD
>>>> of the area.
>>>>
>>>> It's my understanding that attached dtton report will be submitted
>>>> via the mcd.dton address..
>>>>
>>>> Tks,
>>>>
>>>> Steve
>>>>
>>>> David.Elliott@noaa.gov wrote:
>>>>
>>>>
>>>>> Bob,
>>>>>
>>>>> It looks fine to me, I did speak with Phil Wolf at ACOE in
>>>>> Charleston, he was going to check on the last condition survey for
>>>>> that region in Georgetown. Also ccing Steve Soherr here so he can
>>>>> have a heads up on whats headed that way. Looks to me like this is a
>>>>> realignment that somehow was missed. Good thing your there
>>>>> surveying. Steve, this is preliminary and Bob will be sending this
>>>>> as a official DTON before the weeks end.
>>>>>
>>>>> Cheers, D.
>>>>>
>>>>> ----- Original Message -----
>>>>> From: Robert.Ramsey@noaa.gov
>>>>> Date: Tuesday, January 19, 2010 3:07 pm
>>>>> Subject: South Bend Channel
>>>>> To: gene parker <Castle.E.Parker@noaa.gov>
>>>>> Cc: David Elliott <David.Elliott@noaa.gov>
>>>>>
>>>>>
>>>>>
>>>>>
>>>>>> Gene , Dave,
>>>>>>
>>>>>> Take a look at this, and let me know what I need to change, before

>>>>>> I submit a official DTON.
>>>>>>
>>>>>> Dave I have talked to Phil about it, and it sounds like you may
>>>>>> want to talk to him as well.
>>>>>>
>>>>>> Let me know this week, I want to take care of this before the
>>>>>> weeks end on any DTON submission, prior to FPW.
>>>>>>
>>>>>> Thanks Guys,
>>>>>>
>>>>>> Bob
>>>>>>
>>>>>>
>>>> -----
>>>> ----
>>>>
>>>>
>>>>
>>>>
>>>> -----
>>>> ---
>>>>
>>>>

PHB Compilation Log

General Survey Info

Survey Number	<input type="text" value="H12154"/>	Field Unit	<input type="text" value="NRT2"/>	State	<input type="text" value="SC"/>	UTM Zone	<input type="text" value="17N"/>
Project Number	<input type="text" value="S-G905-NRT2-09"/>	Project Name (Locality)	<input type="text" value="Georgetown"/>				
Start Date	<input type="text" value="11/17/2009"/>	Sublocality	<input type="text" value="Entrance to Winyah Bay"/>				
End Date	<input type="text" value="03/18/2010"/>	Survey Scale	<input type="text" value="10,000"/>	Compilation Scale	<input type="text" value="40,000"/>		

Affected Raster Charts

Chart	KAPP	Scale	Edition	Date	NTM Date
11532	212	1:40,000	21	07/01/2006	09/24/2011
11531	229	1:80,000	22	04/01/2006	09/24/2011

[Add Chart](#)[Remove Chart](#)

Affected Electronic Charts

ENC	Scale
US5SC32M	1:40,000

[Add ENC](#)[Remove ENC](#)

Spatial Reference

Horizontal Datum	<input type="text" value="WGS84"/>
Coordinate System	<input type="text" value="LLDG"/>
Sounding Datum	<input type="text" value="MLLW"/>
Vertical Datum	<input type="text" value="MHW"/>

Junction Surveys

Survey Number	Survey Date	Location Relative to Current Survey
H12155	01/01/2010	N

[Add Survey](#)[Remove Survey](#)

HCell Compiler	<input type="text" value="Kurt Brown"/>	QC Reviewer	<input type="text" value="Martha Herzog"/>	SAR Reviewer	<input type="text" value="Adam Argento"/>
----------------	---	-------------	--	--------------	---

Source Surfaces

Resolution	File Name
5	H12154_5m_SAR_Uncert_0to20m

[Add Surface](#)[Remove Surface](#)

PHB Compilation Log

Processing Info

Supporting Documents		
Name		Version
Specs and Deliverables		April 2011
HCell Specs		6.1
Add Doc	Remove Doc	

Software Used		
Software	Version, HF	Used For
CARIS HIPS	7.0 SP2 HF3	SAR Review. Inspection of Combined BASE Surfaces.
Pydro	11.8	SAR Review. Generation of Features Reports.
CARIS BASE Editor	3.2 HF2	Creation of soundings and bathy-derived features, meta area object, and Blue Notes; Survey evaluation and verification; Initial HCell assembly.
CARIS S-57 Composer	2.2 HF4	Final compilation of the HCell, correct geometry and build topology, apply final attributes, export the HCell, and QA.
CARIS GIS	4.4a	Setting the sounding rounding variable for conversion of the metric HCell to NOAA charting units with NOAA rounding. (For Fathoms and Feet chart units only.)
CARIS HOM	3.3 SP3 HF8	Perform conversion of the metric HCell to NOAA charting units with NOAA rounding. (For Fathom and Feet chart units only)
CARIS Plot Composer	5.1 SP 2	Generate plots of CARIS Session files used for QC.
HydroService, dKart Inspector	5.1	Validation check of the base cell file.
Fugawi View ENC	1.0.0.3	Independent inspection of final HCells using COTS viewer.

Product Info

Deliverables		Horizontal and Vertical Units	
Chart Scale HCell	H12154_CS.000	During creation of the HCell all soundings and features are maintained in metric units with as high precision as possible. Depth units for soundings measured with sonar maintain millimeter precision. Depths on rocks above MLLW and heights on islets above MHW are typically measured with range finder, so precision is less.	
	H12154_SS.000		
	H12154_HR.pdf		
	H12154_FL.txt		
	H12154_DR.pdf		
	H12154_Outline.gml and .xsd		
Survey Scale HCell		Depth Units (DUNI)	Feet
HCell Report for MCD		Height Units (HUNI)	Feet
Feature Listing		Positional Units (PUNI)	Meters
Descriptive Report			
Survey Outline			

PHB Compilation Log

Radius Setting		
A survey-scale sounding (SOUNDG) feature object layer was built from the Combined Surface in CARIS BASE Editor. A shoal-biased selection was made at survey scale using a Radius Table file with values shown below.		
Radius (mm)	Min. Depth (m)	Max Depth (m)
3	-4.7	10
4	10	20
4.5	20	50
5	50	500

Contours			
Depth contours at the intervals on the largest scale chart are included in the SS HCell for MCD raster charting division to use for guidance in creating chart contours. With the exception of the zero contours included in the *_CS file, contours have not been deconflicted against shoreline features, soundings and hydrography.			
Charted Contours	Metric Equivalent	Metric- NOAA Rounded	Chart Contours - NOAA Rounded
6ft	1.8288	2.0574	6.75ft
12	3.6576	3.8862	12.75
18	5.4864	5.715	18.75
30	9.3762	9.144	30.75
Add Contour	Remove Contour		

Additional Info

Contact Information	Compilation Comments
Inquiries regarding this HCell content or construction should be directed to:	
HCell Compiler	
Phone Number	
Email	

APPROVAL SHEET
H12154

Initial Approvals:

The survey evaluation and verification has been conducted according to branch processing procedures and the HCell compiled per the latest OCS HCell Specifications.

The survey and associated records have been inspected with regard to survey coverage, delineation of the depth curves, development of critical depths, S-57 classification and attribution of soundings and features, cartographic characterization, and verification or disproof of charted data within the survey limits. The survey records and digital data comply with OCS requirements except where noted in the Descriptive Report and are adequate to supersede prior surveys and nautical charts in the common area.

I have reviewed the HCell, accompanying data, and reports. This survey and accompanying digital data meet or exceed OCS requirements and standards for products in support of nautical charting except where noted in the Descriptive Report.