NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey BASIC HYDROGRAPHIC

Field No.

Registry No. H11529

LOCALITY

State VIRGINIA

General Locality Southern Chesapeake Bay, VA

Sublocality 6 NM west of Hungars Creek

2006

CHIEF OF PARTY

LCDR Lawrence T. Krepp, NOAA

LIBRARY & ARCHIVES

DATE

NOAA FORM 77-28
(11-72)

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

REGISTRY No H11529

HYDROGRAPHIC TITLE SHEET

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.

State VIRGINIA

General Locality SOUTHERN CHESAPEAKE BAY

Sub-Locality 6 NM west of HUNGARS CREEK

Scale 1:10,000 **Date of Survey** AUG 14 - OCT 16, 2006

Instructions dated FEBRUARY 1, 2006 **Project No.** OPR-E350-RU-06

Vessel NOAA SHIP RUDE s590

Chief of party LCDR Lawrence T. Krepp, NOAA

Surveyed by LCDR Krepp, LT DeHart, LT Maddock, ENS Arnold, CST Kitt, ST Stephens

Soundings by echo sounder, hand lead, pole ODOM Echotrac DF3200 MKII VBES / RESON 8125 MBES

Graphic record scaled by RUDE Personnel

Graphic record checked by RUDE Personnel **Automated Plot** N/A

Verification by Atlantic Hydrographic Branch Personnel

Soundings in fathoms feet at MLW MLLW Feet at MLLW

REMARKS: All times are UTC. All soundings corrected with verified tides. Map Projection in UTM 18.

Bold, red, italic, notes were made during office processing.

NOAA FORM 77-28 SUPERSEDES FORM C&GS-537

U.S GOVERNMENT PRINTING OFFICE: 1976-665-661/1222 REGION NO.6

DESCRIPTIVE REPORT

To accompany

HYDROGRAPHIC SURVEY H11529

Scale of Survey: 1:10,000
Year of Survey: 2006
NOAA Ship RUDE
LCDR Lawrence T. Krepp, Commanding Officer

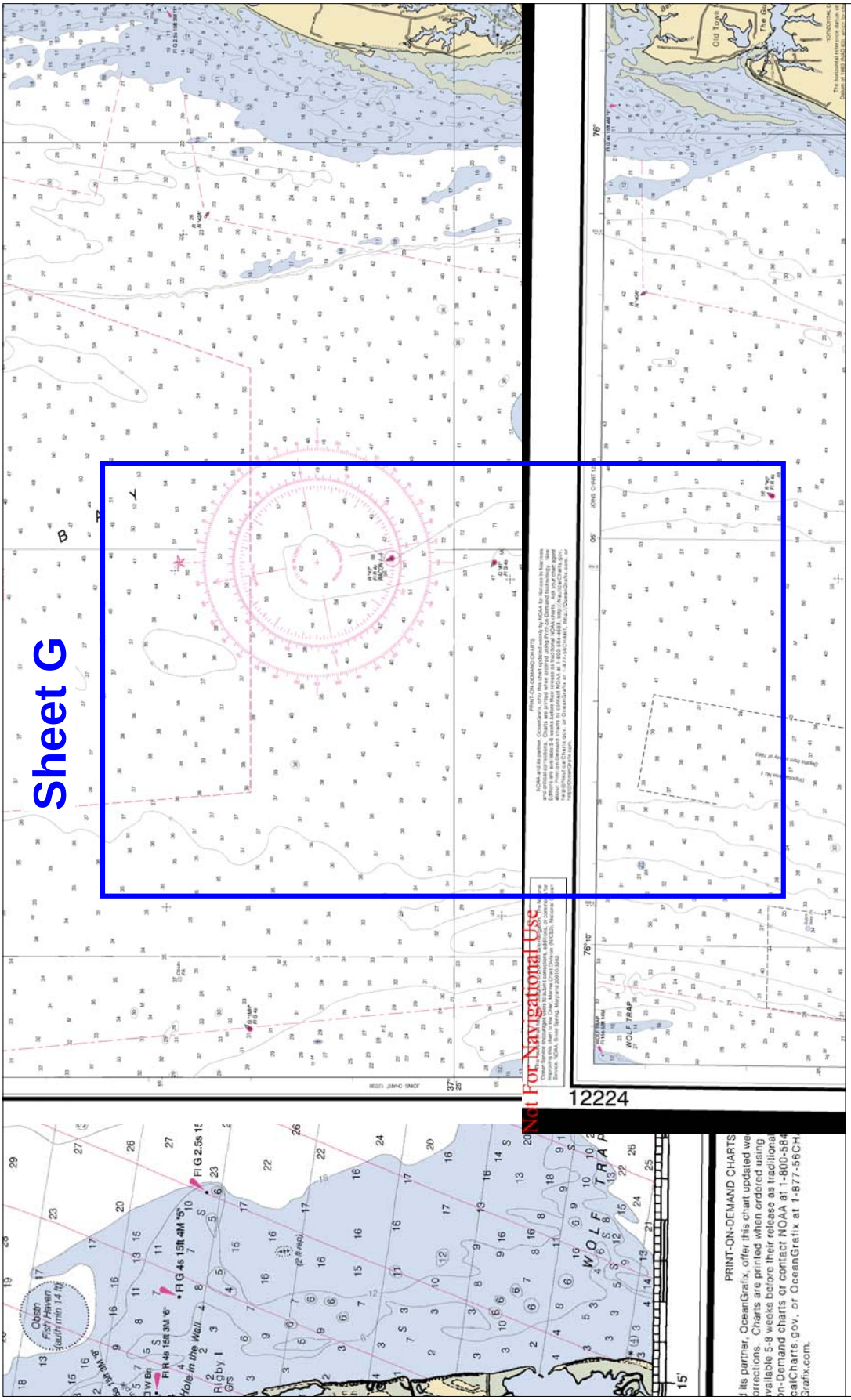
A. AREA SURVEYED

This hydrographic survey was conducted in accordance with Hydrographic Survey Letter of Instructions for project OPR-E350-RU-06 updated July 17, 2006.

This project was conducted to provide side scan sonar and/or multibeam data in support of National Ocean Service (NOS) nautical charts in response to requests from the Maryland Pilots and Virginia Pilots Associations. Survey H11529 was performed in accordance with NOS requirements for side scan sonar and multibeam data acquisition and processing.

Full bottom coverage consisting of 200% side scan sonar and VBES was achieved. Multibeam developments were run on item investigations to provide least depth.

For complete survey limits, please see the chartlet on the following page. Note: Statistics may be found in Appendix III* of this report. ***Data filed with field records.***



This chartlet has been corrected through
Notice to Mariners dated 18/06 (12224) & 07/04 (12225)
NOT FOR NAVIGATION.

NATIONAL OCEANIC AND
ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SERVICE

Project: *OPR-E350-RU-06*
Survey: *H11529*
State: *Virginia*
Locality: *Southern Chesapeake Bay*
Sub-locality: *6 NM west of the Hungars Creek*
Survey Scale: *1:10,000*

Sounding Units: *Feet*
Sounding Datum: *MLLW*
Horizontal Datum: *NAD 83*
Projection: *UTM 18*
Central Meridian: *075° 00 00*
Scale Factor: *0.9996*

NOAA Ship RUDE

Commanding

August 14 to
October 16, 2006

B. DATA ACQUISITION and PROCESSING *See also the Evaluation Report.*

B1. EQUIPMENT

NOAA Ship RUDE (s-590) was the only platform used for this survey. The RUDE is 90 feet in length with a 22-foot beam and 7-foot draft.

Vertical-beam echo sounding data were acquired on RUDE with an Odom Echotrac dual-beam echo sounder (24 and 200 kHz). RUDE vertical-beam data was used in conjunction with Side Scan Sonar to ensonify objects on the bottom not apparent at side scan nadir and also for crossline checks with the mainscheme lines. No vertical-beam data is included while running multibeam developments. All data is included in the final data set.

RUDE acquired all side scan sonar data using a Klein 5500 towfish set to the 100-meter range scale and with high resolution on 75-meter range scale. Side scan sonar data was recorded digitally on RUDE using Triton ISIS software and archived in Extended Triton Format (xtf).
For developments, single frequency (455 kHz) multi-beam data was acquired with a Reson SeaBat 8125 shallow water sonar system. Positioning and attitude for RUDE were determined with an APPLANIX POS/MV and utilizing a Trimble DSM-212L DGPS receiver.

Sound velocity data was acquired using a Sea-Bird SBE 19 SEACAT Conductivity, Temperature and Depth (CTD) Profiler.

No unusual vessel configurations or problems were encountered during this survey. Please refer to the 2006 DAPR* for detailed equipment and vessel configuration.

B2. QUALITY CONTROL *See also the Evaluation Report.*

Side Scan Sonar Quality Control

Daily confidence checks were made by observing the outer ranges of the side scan sonar images. A good check consisted of distinguishing contacts, i.e. buoy blocks, drag scars, or sand waves across the entire range of the side scan trace. Under conditions of questionable data quality due to high refraction or surface noise, these confidence checks were conducted as often as possible. SSS data acquisition was suspended when targets approximately 1 meter in characteristic size could not be resolved to the edge of the range scale in use.

Shallow Water Multibeam Quality Control

There were no major faults with the shallow water multibeam system which affected data integrity in this survey. Please refer to the project's DAPR* for detailed discussion of SWMB system calibrations, patch test, data acquisition, and data processing.

Data filed with original field records.

Crosslines

The total distance of crosslines is 64.7 linear nautical miles which is equal to 8.9% of total mainscheme lines. Crossline to mainscheme line comparison was conducted using MapInfo 8.0 and visually inspecting the resulting sounding plot printout. Comparison is adequate, with the majority of differences being one foot or less.

Junctions ***See also the Evaluation Report.***

Survey H11529 is junctioned to the south by survey H11407 a basic hydrographic survey conducted in the 2005 season by the RUDE. Comparison is excellent as soundings agree to within a foot. No prior surveys were available or provided for comparison.

B3. CORRECTIONS TO ECHO SOUNDINGS

All methods or instruments were implemented as described in the Correction to Echo Sounding section of the DAPR* for this project. A table detailing all sound velocity profiles is located in Separate II. *

C. VERTICAL AND HORIZONTAL CONTROL

VERTICAL CONTROL

The tidal datum for this project is Mean Lower Low Water (MLLW). All soundings are referenced to MLLW. The operating National Water Level Observation Network (NWLON) stations were at Chesapeake Bay Bridge Tunnel, VA (863-8863) and Windmill Point, VA (863-6580). Both stations served as datum control for the survey area. All soundings were reduced to Mean Lower Low Water with verified tides. Opening and closing levels were performed by CO-OPS.

A Request for Smooth Tides letter was sent to N/OPS1 on October 30, 2006 (Appendix IV).* Verified tides from the N/OPS1 CO-OPS website were downloaded and applied to all soundings for this sheet. Tide corrections were applied to the soundings using CARIS HIPS and SIPS v5.4.

Zoning was provided on the project CD. No Changes to zoning, time correctors, or range ratios were made by field personnel.

Approved tides were applied during field processing.

****Data filed with original field records.***

HORIZONTAL CONTROL ***See also the Evaluation Report.***

The horizontal datum used for this survey is the North American Datum of 1983 (NAD 83), projected using UTM zone 18.

Sounding positional control was determined using the Global Positioning System (GPS) corrected by U.S. Coast Guard differential GPS (DGPS) beacon stations. The primary DGPS beacon used for this survey was Driver, VA. When the primary signal was weak or disabled, the secondary DGPS beacon used was Reedy Point, DE. On 17 August 2006, day number (DN) 229, the primary DGPS beacon was down for a scheduled maintenance, secondary DGPS beacon was used for file name 229_1111. No horizontal control stations were established for this survey.

Horizontal dilution of precision (HDOP) was monitored daily. Data was to be re-acquired if the HDOP value exceeded 2.5. The APPLANIX POS/MV positioning system was also used to monitor the accuracy of the ship's position and orientation. Data was to be re-acquired if POS M/V's estimated position accuracy exceeded 4 m. Neither of the cases above occurred. Refer to the 2006 DAPR* for more details regarding RUDE's POS M/V settings and operation.

Data filed with original records.

D. RESULTS AND RECOMMENDATIONS *See also the Evaluation Report.*

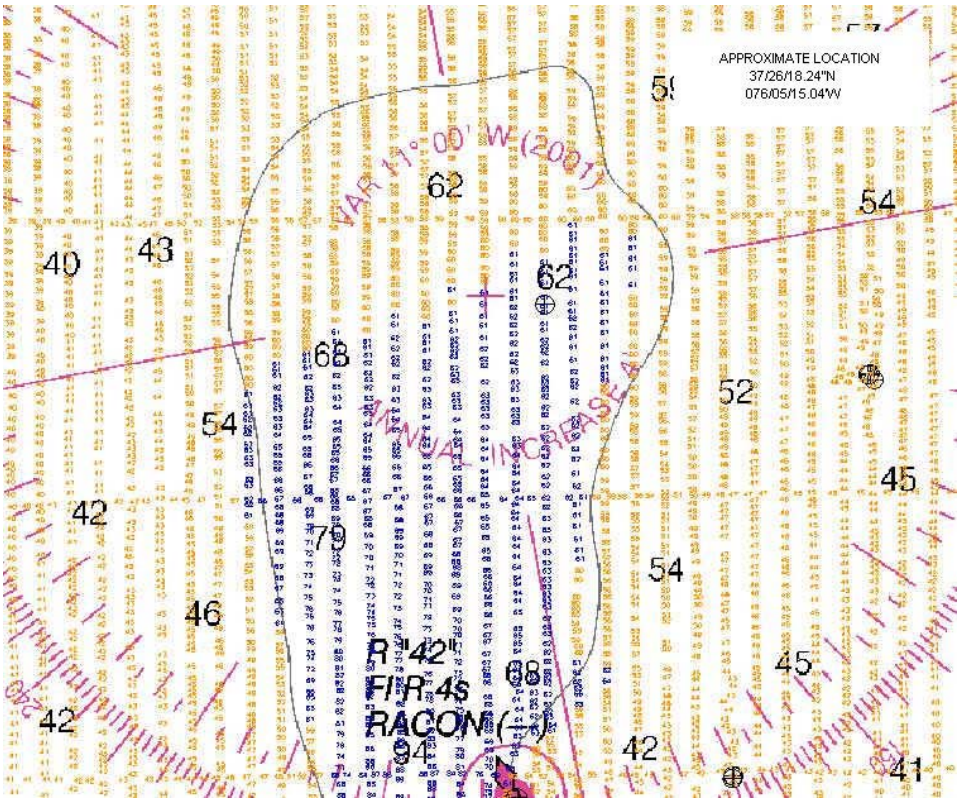
D1. CHART COMPARISON

Charts Affected: All or part of the following NOAA nautical charts are contained within the limits of H11529:

Chart	Edition	Edition Date	NM	LNM	Scale
12221	77th	Mar 2005	22/06	11/06	1:80,000
12224	24th	Feb 2006	18/06	14/06	1:40,000
12225	55th	Aug 2004	07/04	27/04	1:80,000
12226	16th	Nov 2001			1:40,000
12280	6th	Sep 2005	10/05	06/05	1:200,000
13003	48th	Oct 2004	09/04	21/04	1:1,200,000

Current survey soundings and features were compared to charted depths and features on NOAA charts 12224 and 12225 & 12226. Agreement with these charts was adequate with the current soundings within plus or minus 2 feet by visual inspection of soundings overlaid on the chart in the PSS with the following exception:

The current soundings conclude that shoaling has occurred in the deep channel as shown in the following figure. *Concur*



ENC's Affected: The following electronic navigation charts contain items with in the surveyed sounding limits of H11529:

ENC US5VA10M
ENC US5VA14M

Both ENC's were compared with current soundings using CARIS 6.0 field sheet editor. Comparison was adequate with the majority of soundings agreeing to within 2 feet. However; ENC soundings were generally deeper then the current soundings, which agrees to the nautical chart comparison above. The Hydrographer recommends that the current soundings supercede all previous chart editions. ***Concur***

D2. ADDITIONAL RESULTS

Item Investigation

There was one AWOIS items to investigate. No evidence of the AWOIS item was detected by 200% SSS. The hydrographer recommends that current soundings in this area supercede any previously charted soundings. ***See item 3.1 in Appendix II of this report for final charting recommendation.***

One item was deemed a Danger To Navigation (DTON) and submitted on March 8, 2007. No charted features and six uncharted items, including the DTON, are addressed in this Descriptive Report. Please refer to Appendices I and II for all the investigated items to be submitted. ***See item 4.1 in Appendix II of this report for final charting recommendation.***

Bottom Samples

Bottom sediment samples were collected at six (6) locations picked corresponding to charted descriptions. No major discrepancies were found. ***Concur***

General Description of Surveyed Area and Sounding Comparison

H11529 covers approximately 27 square nautical miles. The area is located approximately 6 NM west of Hungars Creek and approximately 4.5 NM east of Garden Ck. The eastern side of the area is the deepest and considered to be the deep channel. This area comprises of three buoys for all the deep draft traffic. Starting from the south the first buoy is R"40" heading north is G"41" and then R"42". The southwest side of the survey area consist of Disposal Area NO 1. The bottom is generally flat composed primarily of mud. ***Concur***

The deep channel

Current soundings show this area to be shallower than previous charts. The hydrographer recommends that current soundings in this area supercede any previously charted soundings. ***Concur***

General Agreement

Except for the regions indicated above, comparison between current soundings and the charted soundings were adequate, generally agreeing within plus or minus 2 feet. ***Concur***

Prior Survey Comparison

No prior survey comparison was conducted.

Danger to Navigation

Registry Number: H11529

State: Virginia

Locality: Chesapeake Bay

Sub-locality: 6NM west of Hungars Creek

Project Number: OPR-E350-RU

Survey Date: 08/30/2006

Charts Affected

Number	Version	Date	Scale
12224	24th Ed.	02/01/2006	1:40000
12221	77th Ed.	05/01/2005	1:80000
12280	6th Ed.	09/01/2005	1:200000
13003	48th Ed.	10/01/2004	1:1200000

Features

No.	Feature Type	Survey Depth	Survey Latitude	Survey Longitude	AWOIS Item
1.1	Sounding	8.61 m	037° 21' 53.611" N	76° 06' 47.379" W	---

1 - Danger To Navigation

1.1) Profile/Beam - 1254/180 from e350_h11529_g / ru_mb_2006 / 2006-242 / 849_0753

DANGER TO NAVIGATION

Survey Summary

Survey Position: 037° 21' 53.611" N, 76° 06' 47.379" W

Least Depth: 8.61 m

Timestamp: 2006-242.07:54:56.926 (08/30/2006)

Survey Line: e350_h11529_g / ru_mb_2006 / 2006-242 / 849_0753

Profile/Beam: 1254/180

Charts Affected: 12224_1, 12221_1, 12280_2, 13003_1

Remarks:

Previously uncharted dangerous obstruction located during H11529 survey operations. Item initially located with 200% SSS. Reson 8125 Multibeam bathymetry development data determined a least depth of 28 feet with surrounding depths of 38 feet, corrected with final water levels. Item appears to be a tall thin towering object.

Feature Correlation

Address	Feature	Range	Azimuth	Status
e350_h11529_g/ru_mb_2006/2006-242/849_0753	1254/180	0.00	000.0	Primary
e350_h11529_g/ru_ss_2006/2006-227/127_2311	0001	10.03	358.1	Secondary

Hydrographer Recommendations

Chart dangerous Obstn, least depth 28ft, based on verified tides at surveyed position.

Cartographically-Rounded Depth (Affected Charts):

28ft (12224_1, 12221_1, 12280_2)

4 ¾fm (13003_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes: QUASOU - 6:least depth known

RECDAT - 20061025

SORDAT - 20060830

TECSOU - 3:found by multi-beam

VALSOU - 8.605 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

See item 4.1 of Appendix II for final charting recommendation.

Feature Images

Figure 1.1.1

E. APPROVAL SHEET

LETTER OF APPROVAL

REGISTRY NO. H11529

Data acquisition, processing, and analysis contributing to the accomplishments of this navigable area survey were conducted under my direct supervision with frequent personal checks of progress and adequacy. All data, field sheets, this Descriptive Report, and accompanying records were reviewed in their entirety and are approved.

This survey is adequate to supersede all prior surveys in common areas and is considered complete and adequate for nautical charting.

Respectfully Submitted:

Caryn M. Arnold
Ensign, NOAA
NOAA Ship RUDE

Reviewed by FOO:

Shawn Maddock
Lieutenant, NOAA
Field Operations Officer
NOAA Ship RUDE

Approved:

Lawrence T. Krepp
I am approving this document
2007.03.16 07:55:21 -04'00'

Lawrence T. Krepp
Lieutenant Commander, NOAA
Commanding Officer
NOAA Ship RUDE

Survey Feature Report

Registry Number: H11529

State: Virginia

Locality: Chesapeake Bay

Sub-locality: 6NM west of Hungars Creek

Project Number: OPR-E350-RU

Survey Dates: 08/30/2006 - 10/16/2006

Charts Affected

Number	Edition	Date	Scale (RNC)	RNC Correction(s)*
12226	17th	12/01/2007	1:40,000 (12226_1)	USCG LNM: 04/29/2008 (05/06/2008) NGA NTM: 02/20/1999 (05/10/2008)
12224	24th	02/01/2006	1:40,000 (12224_1)	USCG LNM: 05/06/2008 (05/06/2008) NGA NTM: 11/23/2002 (05/10/2008)
12225	55th	08/01/2004	1:80,000 (12225_1)	[L]NTM: ?
12221	77th	05/01/2005	1:80,000 (12221_1)	[L]NTM: ?
12280	6th	09/01/2005	1:200,000 (12280_2)	[L]NTM: ?
13003	48th	10/01/2004	1:1,200,000 (13003_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	1184/64 - Revise location of charted 41 Obstn.	Sounding	12.54 m	37° 26' 00.5" N	076° 03' 55.3" W	---
1.2	456/231 - 41 Obstn	Sounding	12.62 m	37° 21' 39.7" N	076° 04' 08.3" W	---
2.1	544/223 - 38 Obstn	Sounding	11.68 m	37° 25' 26.6" N	076° 04' 46.6" W	---
2.2	2414/123 - 36 Obstn	Sounding	10.92 m	37° 24' 04.1" N	076° 07' 34.0" W	---
2.3	648/151 - 41 Obstn	Obstruction	12.49 m	37° 26' 38.2" N	076° 04' 01.5" W	---
2.4	622/4 - 32 Obstn	Obstruction	9.73 m	37° 27' 35.3" N	076° 09' 18.2" W	---
3.1	AWOIS #13352 - DISPROVED	AWOIS	[no data]	[no data]	[no data]	---
4.1	1254/180 - 28 Obstn	Sounding	8.61 m	37° 21' 53.6" N	076° 06' 47.4" W	---

1 - Charted Features

1.1) 1184/64 - Revise location of charted 41 Obstn.

Survey Summary

Survey Position: 37° 26' 00.5" N, 076° 03' 55.3" W

Least Depth: 12.54 m (= 41.13 ft = 6.854 fm = 6 fm 5.13 ft)

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2006-242.06:00:53.494 (08/30/2006)

Survey Line: h11529 / ru_mb_2006 / 2006-242 / 813_0559

Profile/Beam: 1184/64

Charts Affected: 12226_1, 12225_1, 12280_2, 13003_1

Remarks:

Insignificant

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11529/ru_mb_2006/2006-242/813_0559	1184/64	0.00	000.0	Primary
h11529/ru_ss_2006/2006-241/200_0225	0003	4.74	190.9	Secondary
h11529/ru_ss_2006/2006-226/100_1603	0002	10.32	354.3	Secondary

Hydrographer Recommendations

Revise position of charted 41 Obstn to present survey location.

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes: QUASOU - 6:least depth known

SORDAT - 2006

SORIND - US,US,SURVY,H11529

TECSOU - 3:found by multi-beam

VALSOU - 12.535 m

WATLEV - 3:always under water/submerged

Office Notes

Revise location of charted 41 Obstn and danger curve to Latitude 37°26'00.50"N, Longutde 76°03'55.34"W.

Feature Images

Figure 1.1.1

1.2) 456/231 - 41 Obstn

Survey Summary

Survey Position: 37° 21' 39.7" N, 076° 04' 08.3" W

Least Depth: 12.62 m (= 41.42 ft = 6.903 fm = 6 fm 5.42 ft)

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2006-277.17:12:59.216 (10/04/2006)

Survey Line: h11529 / ru_mb_2006 / 2006-277 / 852_1712

Profile/Beam: 456/231

Charts Affected: 12224_1, 12221_1, 12280_2, 13003_1

Remarks:

Confirms with SSS hit.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11529/ru_mb_2006/2006-277/852_1712	456/231	0.00	000.0	Primary
h11529/ru_ss_2006/2006-241/202_0049	0001	13.61	201.4	Secondary

Hydrographer Recommendations

Chart dangerous Obstn, least depth 41ft, based on verified tides at surveyed position.

Cartographically-Rounded Depth (Affected Charts):

41ft (12224_1, 12221_1, 12280_2)

6 ¾fm (13003_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes: QUASOU - 6:least depth known

RECDAT - 20061025

SORDAT - 20061004

TECSOU - 3:found by multi-beam

VALSOU - 12.624 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concur - Add obstruction with a depth of 41 feet in Latitude 37°21'39.74"N, 76°04'08.34"W. Chart 41 Obstn and danger curve.

Feature Images

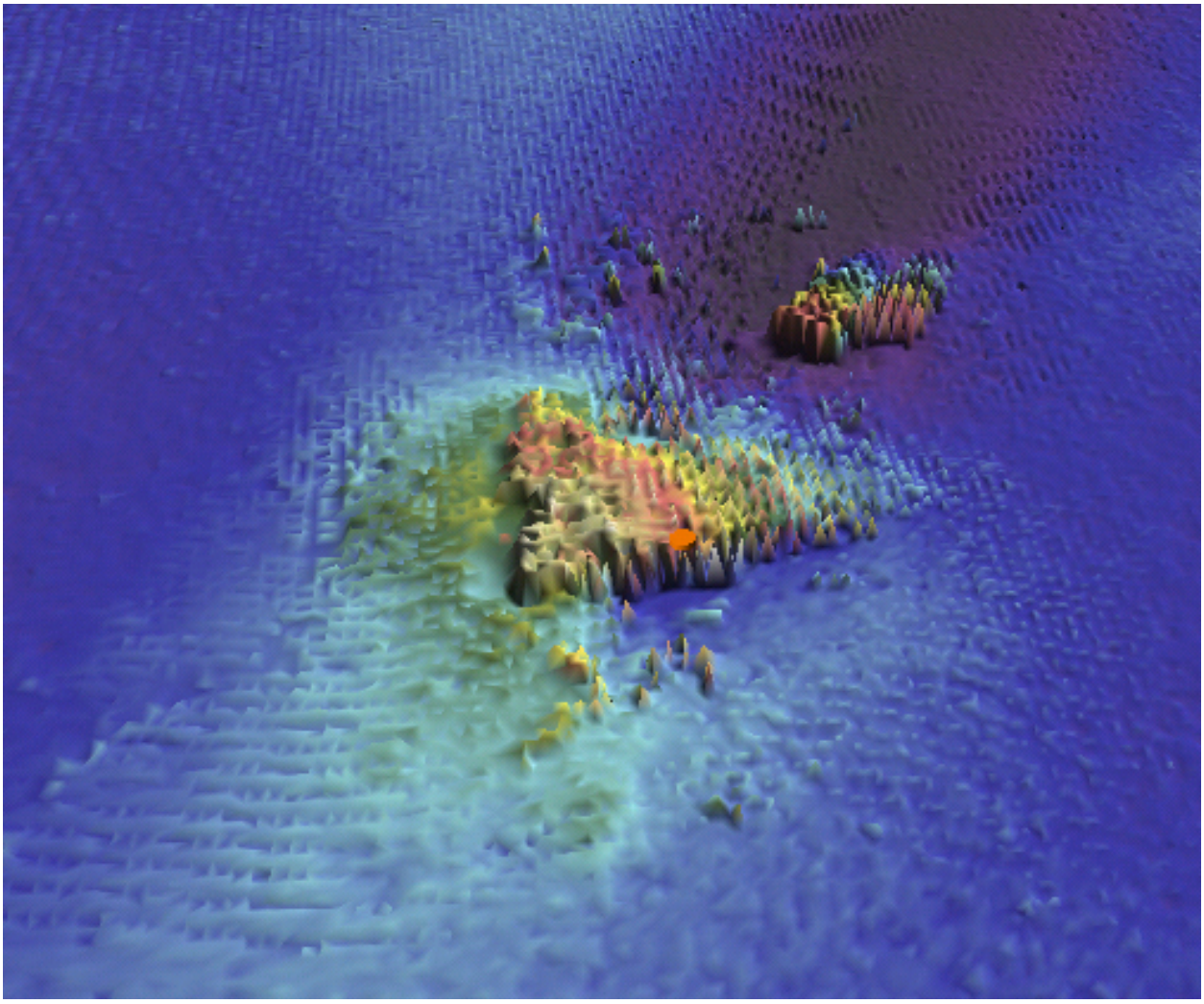


Figure 1.2.1

2 - New Features

2.1) 544/223 - 38 Obstn

Survey Summary

Survey Position: 37° 25' 26.6" N, 076° 04' 46.6" W

Least Depth: 11.68 m (= 38.33 ft = 6.388 fm = 6 fm 2.33 ft)

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2006-242.06:36:32.562 (08/30/2006)

Survey Line: h11529 / ru_mb_2006 / 2006-242 / 828_0635

Profile/Beam: 544/223

Charts Affected: 12226_1, 12225_1, 12280_2, 13003_1

Remarks:

Confirms with SSS hit.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11529/ru_mb_2006/2006-242/828_0635	544/223	0.00	000.0	Primary
h11529/ru_ss_2006/2006-240/207_2030	0002	3.66	014.8	Secondary
h11529/ru_ss_2006/2006-226/108_2307	0001	10.95	003.7	Secondary

Hydrographer Recommendations

Chart dangerous Obstn, least depth 38ft, based on verified tides at surveyed position.

Cartographically-Rounded Depth (Affected Charts):

38ft (12226_1, 12225_1, 12280_2)

6 ¼fm (13003_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes: QUASOU - 6:least depth known

RECDAT - 20061025

SORDAT - 20060830

SORIND - US,US,SURVY,H11529

TECSOU - 3:found by multi-beam

VALSOU - 11.682 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concur - Add obstruction with a depth of 38 feet in Latitude 37°25'26.61"N, Longitude 76°04'46.61"W. Chart 38 Obstn and danger curve.

Feature Images

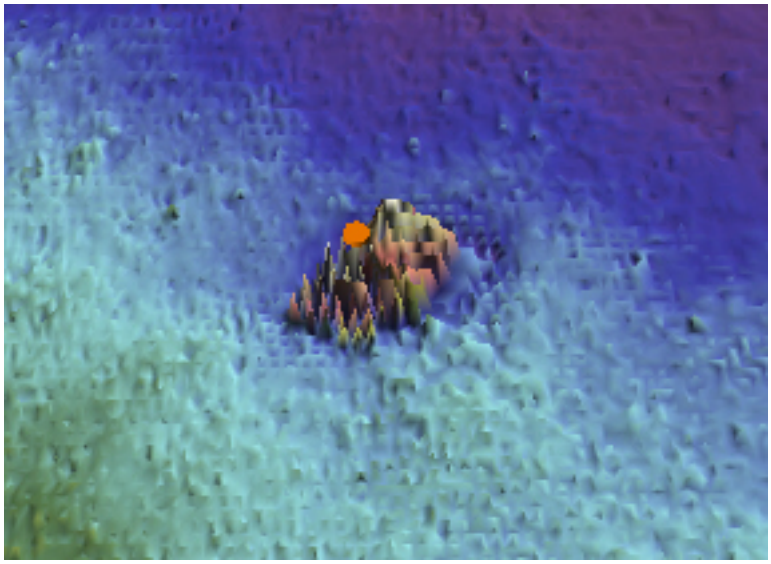


Figure 2.1.1

2.2) 2414/123 - 36 Obstn

Survey Summary

Survey Position: 37° 24' 04.1" N, 076° 07' 34.0" W

Least Depth: 10.92 m (= 35.84 ft = 5.973 fm = 5 fm 5.84 ft)

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2006-242.08:47:51.263 (08/30/2006)

Survey Line: h11529 / ru_mb_2006 / 2006-242 / 841_0844

Profile/Beam: 2414/123

Charts Affected: 12226_1, 12225_1, 12280_2, 13003_1

Remarks:

Confirms with SSS hit.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11529/ru_mb_2006/2006-242/841_0844	2414/123	0.00	000.0	Primary
h11529/ru_ss_2006/2006-241/233_0550	0001	2.91	251.2	Secondary
h11529/ru_ss_2006/2006-241/234_0638	0001	7.39	035.2	Secondary
h11529/ru_ss_2006/2006-228/134_0458	0001	8.34	191.4	Secondary

Hydrographer Recommendations

Chart dangerous Obstn, least depth 36ft, based on verified tides at surveyed position.

Cartographically-Rounded Depth (Affected Charts):

36ft (12226_1, 12225_1, 12280_2)

6fm (13003_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes: QUASOU - 6:least depth known

SORDAT - 20060830

SORIND - US,US,SURVY,H11529

TECSOU - 3:found by multi-beam

VALSOU - 10.923 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Cocncur - Chart an obstruction with a depth of 36 feet in Latitude 37°24'04.11"N, Longitude 76°07'33.97"W. Add a 36 Obstn and danger curve.

Feature Images

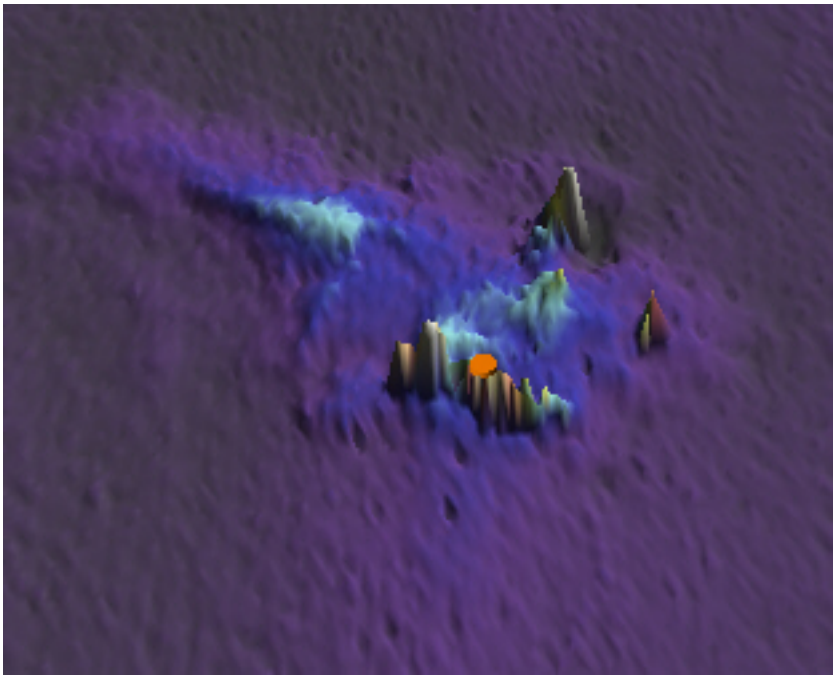


Figure 2.2.1

2.3) 648/151 - 41 Obstn

Survey Summary

Survey Position: 37° 26' 38.2" N, 076° 04' 01.5" W

Least Depth: 12.49 m (= 40.97 ft = 6.828 fm = 6 fm 4.97 ft)

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2006-289.17:17:34.017 (10/16/2006)

Survey Line: h11529 / ru_mb_2006 / 2006-289 / 809_1716

Profile/Beam: 648/151

Charts Affected: 12226_1, 12225_1, 12280_2, 13003_1

Remarks:

Confirms with SSS hit.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11529/ru_mb_2006/2006-289/809_1716	648/151	0.00	000.0	Primary
h11529/ru_ss_2006/2006-226/101_1652	0001	4.39	176.7	Secondary
h11529/ru_ss_2006/2006-241/200_0225	0002	4.55	275.7	Secondary
h11529/ru_ss_2006/2006-241/201_0134	0001	11.45	349.6	Secondary

Hydrographer Recommendations

Chart dangerous Obstn, least depth 41ft, based on verified tides at surveyed position.

Cartographically-Rounded Depth (Affected Charts):

41ft (12226_1, 12225_1, 12280_2)

6 ¾fm (13003_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes: QUASOU - 6:least depth known

RECDAT - 20061018

SORDAT - 20061016

SORIND - US,US,SURVY,H11529

TECSOU - 3:found by multi-beam

VALSOU - 12.487 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concur - Chart an obstruction with a depth of 41 feet in Latitude 37°26'38.24"N, longitude 76°04'01.55"W. Add a 41 Obstn and danger curve. Delete charted 42 Obstn and danger curve.

Feature Images

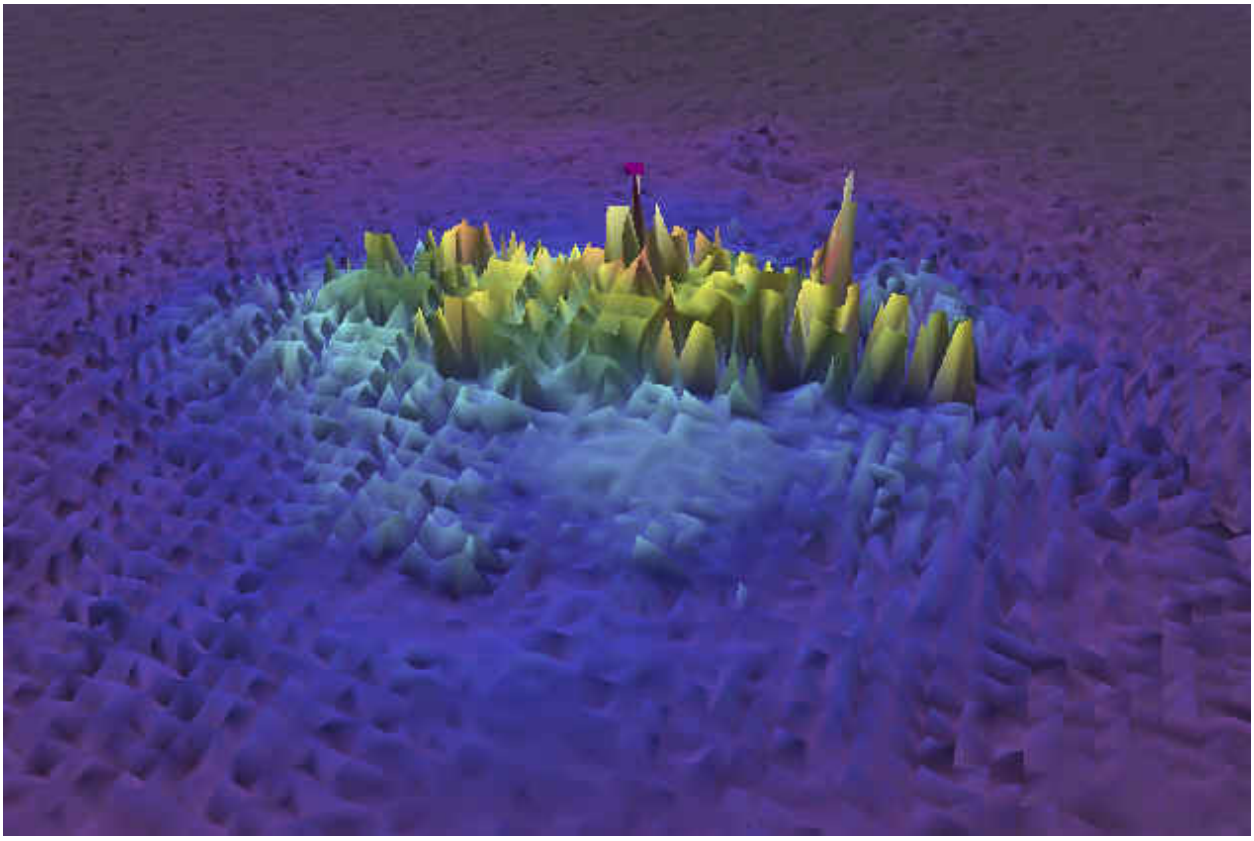


Figure 2.3.1

2.4) 622/4 - 32 Obstn

Survey Summary

Survey Position: 37° 27' 35.3" N, 076° 09' 18.2" W

Least Depth: 9.73 m (= 31.93 ft = 5.322 fm = 5 fm 1.93 ft)

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2006-289.16:24:38.206 (10/16/2006)

Survey Line: h11529 / ru_mb_2006 / 2006-289 / 804_1624

Profile/Beam: 622/4

Charts Affected: 12226_1, 12225_1, 12280_2, 13003_1

Remarks:

Shoalest point in group of contacts.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11529/ru_mb_2006/2006-289/804_1624	622/4	0.00	000.0	Primary
h11529/ru_ss_2006/2006-241/203c2220	0001	16.99	151.7	Secondary
h11529/ru_mb_2006/2006-289/804_1624	516/1	18.66	038.2	Secondary (grouped)
h11529/ru_ss_2006/2006-228/104_1926	0001	28.47	181.7	Secondary
h11529/ru_ss_2006/2006-228/104_1926	0002	30.84	040.2	Secondary

Hydrographer Recommendations

Chart dangerous Obstn, least depth 32ft, based on verified tides at surveyed position.

Cartographically-Rounded Depth (Affected Charts):

32ft (12226_1, 12225_1, 12280_2)

5 ¼fm (13003_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes: QUASOU - 1:depth known

TECSOU - 3:found by multi-beam

VALSOU - 9.733 m

VERDAT - 11:Nearly lowest low water

Office Notes

Concur - Add obstruction with a depth of 32 feet in Latitude 37°27'35.29"N, Longitude 76°09'18.20"W. Chart 32 Obstn and danger curve.

3 - AWOIS Features

3.1) AWOIS #13352 - AWOIS #13352 - DISPROVED

No Primary Survey Feature for this AWOIS Item

Search Position: 37° 23' 05.3" N, 076° 09' 01.8" W

Historical Depth: 8.23 m

Search Radius: 200

Search Technique: S2, MB

Technique Notes: [None]

History Notes:

H07677/48 -- 27-FT WIRE-DRAG CLEARANCE DEPTH IN POSITION: LAT 37-23-04.80 N, LON 076-09-01.78 W (NAD 83). UPDATED JCM 10/11/2005.

Survey Summary

Charts Affected: 12224_1, 12226_1, 12221_1, 12225_1, 12280_2, 13003_1

Remarks:

Entire area covered by 200% SS, no wreakage found.

Feature Correlation

Address	Feature	Range	Azimuth	Status
OPR-E350-RU-06_AWOIS	AWOIS # 13352	0.00	000.0	Primary

Hydrographer Recommendations

Remove from chart and AWOIS database.

S-57 Data

[None]

Office Notes

Concur - Delete charted 27 Wk wire drag clearance and danger curve. Chart present survey depths.

4 - Dangers to Navigation

4.1) 1254/180 - 28 Obstn

DANGER TO NAVIGATION

Survey Summary

Survey Position: 37° 21' 53.6" N, 076° 06' 47.4" W

Least Depth: 8.61 m (= 28.23 ft = 4.705 fm = 4 fm 4.23 ft)

TPU (±1.96σ): **THU (TPEh)** [None] ; **TVU (TPEv)** [None]

Timestamp: 2006-242.07:54:56.926 (08/30/2006)

Survey Line: h11529 / ru_mb_2006 / 2006-242 / 849_0753

Profile/Beam: 1254/180

Charts Affected: 12224_1, 12221_1, 12280_2, 13003_1

Remarks:

Previously uncharted dangerous obstruction located during H11529 survey operations. Item initially located with 200% SSS. Reson 8125 Multibeam bathymetry development data determined a least depth of 28 feet with surrounding depths of 38 feet, corrected with final water levels. Item appears to be a tall thin towering object.

Feature Correlation

Address	Feature	Range	Azimuth	Status
h11529/ru_mb_2006/2006-242/849_0753	1254/180	0.00	000.0	Primary
h11529/ru_ss_2006/2006-227/127_2311	0001	10.03	358.1	Secondary

Hydrographer Recommendations

Chart dangerous Obstn, least depth 28ft, based on verified tides at surveyed position.

Cartographically-Rounded Depth (Affected Charts):

28ft (12224_1, 12221_1, 12280_2)

4 ¾fm (13003_1)

S-57 Data

Geo object 1: Obstruction (OBSTRN)

Attributes: QUASOU - 6:least depth known

RECDAT - 20061025

SORDAT - 20060830

SORIND - US,US, SURVY,H11529

TECSOU - 3:found by multi-beam

VALSOU - 8.605 m

VERDAT - 12:Mean lower low water

WATLEV - 3:always under water/submerged

Office Notes

Concur - Chart an obstruction with a depth of 28 feet in Latitude 37°21'53.61"N, Longitude 76°06'47.38"W. Add 28 Obstn and danger curve. 28 Obstn shown on chart 12224, 24th. Ed., Feb/06.

Feature Images

Figure 4.1.1

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : February 26, 2007

HYDROGRAPHIC BRANCH: Atlantic
HYDROGRAPHIC PROJECT: OPR-E350-RU-2006
HYDROGRAPHIC SHEET: H11529

LOCALITY: 6NM West of Hungars Creek, Chesapeake Bay, VA
TIME PERIOD: August 14 - October 16, 2006

TIDE STATION USED: 863-6580 Windmill Point, VA
Lat. 37° 36.9'N Long. Bold, red, i

PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 0.384 meters

REMARKS: RECOMMENDED ZONING

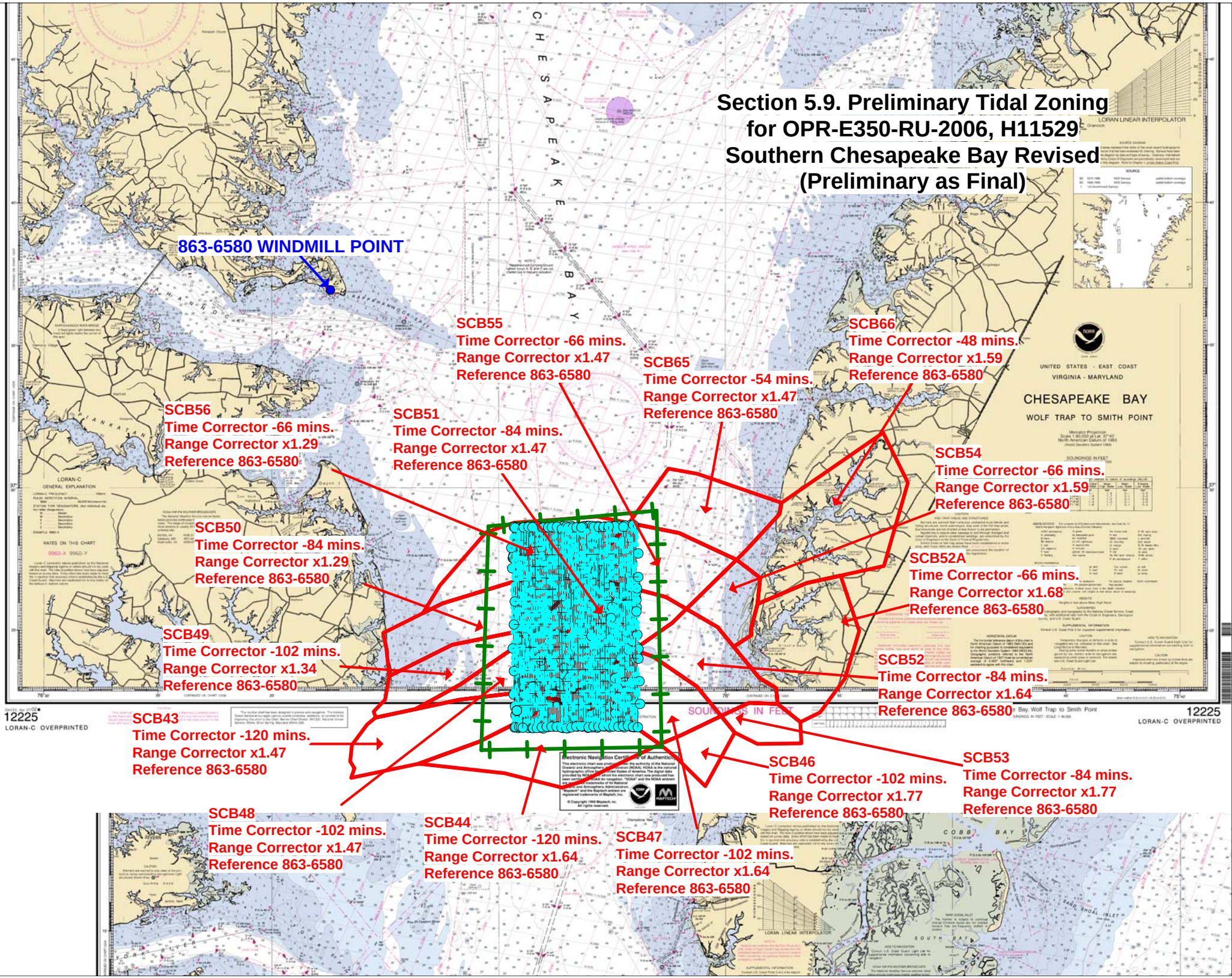
Preliminary zoning is accepted as the final zoning for project OPR-E350-RU-2006, H11529, during the time period between August 14 to October 16, 2006.

Please use the zoning file "E350RU2006CORP_Rev" submitted with the project instructions for OPR-E350-RU-2006. Zones SCB43, SCB44, SCB46, SCB47, SCB48, SCB49, SCB50, SCB51, SCB52, SCB55, SCB56 and SCB65 are the applicable zones for H11529.

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).

_____
CHIEF, PRODUCT AND SERVICES DIVISION


Section 5.9. Preliminary Tidal Zoning
for OPR-E350-RU-2006, H11529
Southern Chesapeake Bay Revised
(Preliminary as Final)
863-6580 WINDMILL POINT
SCB55
Time Corrector -66 mins.
Range Corrector x1.47
Reference 863-6580
SCB65
Time Corrector -54 mins.
Range Corrector x1.47
Reference 863-6580
SCB66
Time Corrector -48 mins.
Range Corrector x1.59
Reference 863-6580
SCB56
Time Corrector -66 mins.
Range Corrector x1.29
Reference 863-6580
SCB51
Time Corrector -84 mins.
Range Corrector x1.47
Reference 863-6580
SCB54
Time Corrector -66 mins.
Range Corrector x1.59
Reference 863-6580
SCB50
Time Corrector -84 mins.
Range Corrector x1.29
Reference 863-6580
SCB52A
Time Corrector -66 mins.
Range Corrector x1.68
Reference 863-6580
SCB49
Time Corrector -102 mins.
Range Corrector x1.34
Reference 863-6580
SCB52
Time Corrector -84 mins.
Range Corrector x1.64
Reference 863-6580
SCB43
Time Corrector -120 mins.
Range Corrector x1.47
Reference 863-6580
SCB46
Time Corrector -102 mins.
Range Corrector x1.77
Reference 863-6580
SCB53
Time Corrector -84 mins.
Range Corrector x1.77
Reference 863-6580
SCB48
Time Corrector -102 mins.
Range Corrector x1.47
Reference 863-6580
SCB44
Time Corrector -120 mins.
Range Corrector x1.64
Reference 863-6580
SCB47
Time Corrector -102 mins.
Range Corrector x1.64
Reference 863-6580
CHESAPEAKE BAY
UNITED STATES - EAST COAST
VIRGINIA - MARYLAND
CHESAPEAKE BAY
WOLF TRAP TO SMITH POINT
12225
LORAN-C OVERPRINTED
SOUNDINGS IN FEET

ATLANTIC HYDROGRAPHIC BRANCH
EVALUATION REPORT to Accompany
Surveys H11529 (2006)

This Evaluation Report has been written to supplement and/or clarify the original Descriptive Report. Sections in this report refer to the corresponding sections of the Descriptive Report.

B. DATA ACQUISITION AND PROCESSING

B.1 DATA PROCESSING

The following software was used to process and review data at the Atlantic Hydrographic Branch (AHB):

CARIS HIPS/SIPS version 6.1
CARIS BASE Manager 2.1
PYDRO, version 7.3
CARIS HOM ENC 3.3
CARIS S-57 Composer 1.0

B.2 QUALITY CONTROL

H-Cells

The AHB source depth grid was generated as a 2m resolution BASE surface. Survey scale soundings were extracted from AHB generated 2m Base surface at a 1:40000 scale using a radius of 1.75m. Soundings were selected for charting by hand using the latest raster charts (12224 and 12226) and smooth contours as background for sounding placement. Soundings were then checked for conflicts, corrected to remove conflicts, and edited to allow for proper sounding compilation placement with respect to existing charted depths outside the survey area. The BASE surface was referenced when selecting the chart scale soundings, to ensure that the selected soundings portrayed the bathymetry within the common area.

Depth curves were digitized by hand from the BASE Editor surface. The contours are included in the final H-Cell product. The curves were utilized during chart scale sounding selection at AHB.

The compilation products and Stand Alone HOB Files (SAHOB) are detailed in the Compilation Process Log of this document. All individual SAHOB files were assembled in BASE Editor during H-Cell compilation.

The completed H-Cell was exported as a Base Cell File (ENC.000) in S-57 format with all values in metric units. The metric equivalent ENC.000 file was then converted to NOAA chart units (ENC_CS.000) with all values measured in feet following NOAA sounding rounding rules.

The H11529 CARIS H-Cell final deliverables include the following products:

US511529_CS.000	1:40,000 Scale	H11529 Selected Soundings (Chart Scale)
US511529_SS.000	1:40,000 Scale	H11529 Selected Soundings (Survey Scale)

B. JUNCTIONS

H11407 (2005) to the south
H11505 (2006) to the northeast
H11530 (2008) to the east

Survey H11407 (2005) junctions with the present survey to the south. Present survey soundings are 1 foot shoaler than survey H11407 (2005).

Survey H11505 (2005) junctions with the present survey to the northeast. Present survey soundings are 1 foot shoaler than survey H11505 (2006).

Survey H11530 (2008) junctions with the present survey to the east. Present survey soundings are +/-1 foot different than survey H11530 (2008).

Present survey depths are in harmony with the charted hydrography. There are no contemporary surveys to the northwest and west. Present survey depths are in harmony with the charted hydrography to the northwest and west.

C. VERTICAL AND HORIZONTAL CONTROL

Final vertical correction processing was completed by the field unit with no additional corrections required by Atlantic Hydrographic Branch personnel. The field unit applied verified water levels in conjunction with the preliminary tidal zoning which was accepted and approved by N/OPSI CO-OPS as the final zoning for H11529. Sounding datum is Mean Lower Low Water (MLLW). Vertical datum is Mean High Water (MHW).

Horizontal control used for this survey during data acquisition is based upon the North American Datum of 1983 (NAD83), UTM projection zone 18. Office ENC processing of this survey required translating the datum to meet S-57 ENC requirements. The horizontal geodetic datum was translated to Latitude and Longitude (LLDG) World Geodetic System-84 (WGS-84) during CARIS Base Manager processing.

D. RESULTS AND RECOMMENDATIONS

Chart Comparison

12224 (24th.Edition, Feb /06
Corrected through NM Feb. 18/06
Corrected through LNM Feb. 14/068
Scale 1:40,000

12226 (15th. Edition, Dec./07
Corrected through NM Dec. 01/07
Corrected through LNM Nov. 20/07
Scale 1:40,000

ENC Comparison

US5VA14M

Chesapeake Bay Cape Charles to Wolf Trap
Edition 8
Update Application Date 2007-05-25
Issue Date 2008-05-06
References: Charts 12224

US5VA10M

Chesapeake Bay Wolf Trap to
Pungoteague Creek
Edition 105
Update Application Date 2008-09-02
Issue Date 2008-09-02
References: Charts 12226

Hydrography

The charted Hydrography originates with prior surveys and requires no further consideration. The hydrographer makes adequate chart comparisons in Section D. of the Descriptive Report.

The charted Disposal Area No. 1, Depths from survey of 1983 in the vicinity of Latitude 37°21'42"N, Longitude 76°07'49”W was surveyed by 200% side scan sonar and siglebeam. It is reccommended that the notation Depths from survey of 1983 be revised to Depths from surveys of 1983-2006.

Adequacy of Survey

The present survey is adequate to supersede the charted bathymetry within the common area. Any features not specifically addressed either in the H-Cell File or the Blue Notes should be retained as charted. Refer to the Descriptive Report for further survey requirements recommended by the hydrographer.

Miscellaneous

Chart compilation was done by Atlantic Hydrographic Branch personnel, in Norfolk, Virginia. Compilation data will be forwarded to Marine Chart Division, Silver Spring, Maryland. See Section D.1. of this report for a list of the Raster Charts and Electronic Navigation Charts (ENC) used for compiling the present survey.

H11529

Norris Wike

Digitally signed by Norris Wike
DN: cn=Norris Wike, c=US, o=NOAA, ou=AHB, email=norris.a.wike@noaa.gov
Reason: I am the author of this document
Date: 2008.10.28 08:10:51 -04'00'

Norris A. Wike
Cartographer
Verification of Data
Evaluation and Analysis Report

AHB PRE-COMPILATION PROCESS H11529

Components	File Names
Contour Layer	H11529_CONTOURS
Survey Scale Soundings	H11529_SS_2M.hob
Chart Scale Soundings	H11529_CS_2M.hob
Feature Layer	H11529_Features.hob
Meta-Objects Layer	H11529_MCOVR.hob H11529_MQUAL.hob
Blue Notes	H11529_BlueNotes.hob

META-OBJECTS:

a. M_COV attributes

Acronym	Value
INFORM	H11529, OPR-E350-RU-06, NOAA
SORDAT	20061016
CATCOV	1-coverage available
SORIND	US,US,SURVY,H11529

b. M_QUAL attributes

Acronym	Value
CATZOC	Zone of confidence B
INFORM	H11529, OPR-E350-RU-06, NOAA
POSACC	10
SORDAT	20061016
SORIND	US,US,SURVY,H11529
SUREND	20061016
SURSTA	20060814

H11529_SB_2M_Final	10 KB	XML Document	10/1/2008 7:28 AM
H11529_SB_2M_Final.hns	630,094 KB	HNS File	10/1/2008 7:28 AM
H11529_50CM_Final.hns	243,571 KB	HNS File	10/1/2008 7:24 AM
H11529_50CM_Final	12 KB	XML Document	10/1/2008 7:24 AM

APPROVAL SHEET
H11529

The completed survey has been inspected with regard to survey coverage, delineation of depth curves, development of critical depths, cartographic symbolization, and verification or disproval of charted data. All revisions and additions made to the H-Cell files during survey processing have been entered in the digital data for this survey. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Norris Wike

Digitally signed by Norris Wike
DN: cn=Norris Wike, c=US, o=NOAA, ou=AHB, email=norris.a.wike@noaa.gov
Reason: I am the author of this document
Date: 2008.10.28 08:11:51 -04'00'

Norris A. Wike
Cartographer,
Atlantic Hydrographic Branch

All final products have undergone a comprehensive review as per the Atlantic Hydrographic Branch Processing Manual and are verified to be accurate and complete except where noted in the Evaluation Report.

I have reviewed the Base Cell files, accompanying data, and reports. This survey and accompanying Marine Chart Division deliverables meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.

Approved:

Shepard Smith
I am approving this document
2008.10.29 17:51:33 -04'00'

Lt. Commander Shepard M. Smith, NOAA
Chief, Atlantic Hydrographic Branch

Digitally signed by Paul Turner
DN: cn=Paul Turner, o=NOAA/NOS/OCS/HSD, ou=Operations Branch, email=Paul.Turner@noaa.gov, c=US
Reason: I have reviewed this document
Location: AWOIS Check
Date: 2008.11.03 13:19:45 -05'00'