

H12321

NOAA Form 76-35A

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

**DESCRIPTIVE REPORT**

Type of Survey: Basic Hydrographic Survey

Registry Number: H12321

**LOCALITY**

State: Maryland

General Locality: Chesapeake Bay

Sub-locality: 4 nautical miles North of Point No Point

**2011**

CHIEF OF PARTY  
LTjg Megan Guberski

LIBRARY & ARCHIVES

Date:

**HYDROGRAPHIC TITLE SHEET**

**H12321**

**INSTRUCTIONS:** The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

State: **Maryland**

General Locality: **Chesapeake Bay**

Sub-Locality: **4 nautical miles North of Point No Point**

Scale: **10000**

Dates of Survey: **03/28/2011 to 05/18/2011**

Instructions Dated: **05/16/2011**

Project Number: **OPR-E349-BH-11**

Field Unit: **NOAA R/V Bay Hydro II**

Chief of Party: **LTjg Megan Guberski**

Soundings by: **Multibeam Echo Sounder Singlebeam Echo Sounder**

Imagery by: **Side Scan Sonar**

Verification by: **Pacific Hydrographic Branch**

Soundings Acquired in: **meters at Mean lower low water**

H-Cell Compilation Units: ***feet at Mean lower low water***

**Remarks:**

Needs Field work end date- NMT 06142011

*All times are UTC. UTM Zone 18N. The purpose of this survey is to provide contemporary surveys to update National Ocean Service (NOS) nautical charts. All separates are filed with the hydrographic data. Revisions and end notes in red were generated during office processing. The processing branch concurs with all information and recommendations in the DR unless otherwise noted. Page numbering may be interrupted or non-sequential.*

## Descriptive Report to Accompany Survey H12321

Project: OPR-E349-BH-11

Locality: Chesapeake Bay

Sublocality: 4 nautical miles North of Point No Point

Scale: 1:10000

March 2011 - May 2011

**NOAA R/V *Bay Hydro II***

Chief of Party: LTjg Megan Guberski

### A. Area Surveyed

Sheet H12321 is a three square nautical mile area positioned four nautical miles north of Point No Point, Maryland. The sheet extends from the four meter contour, out to 2.25 nautical miles offshore.

#### A.1 Survey Limits

Data was acquired within the following survey limits:

<b>Northeast Limit</b>	<b>Southwest Limit</b>
38.2214472222 N	38.2039861111 N
76.3337583333 W	76.3586194444 W

*Table 1: Survey Limits*

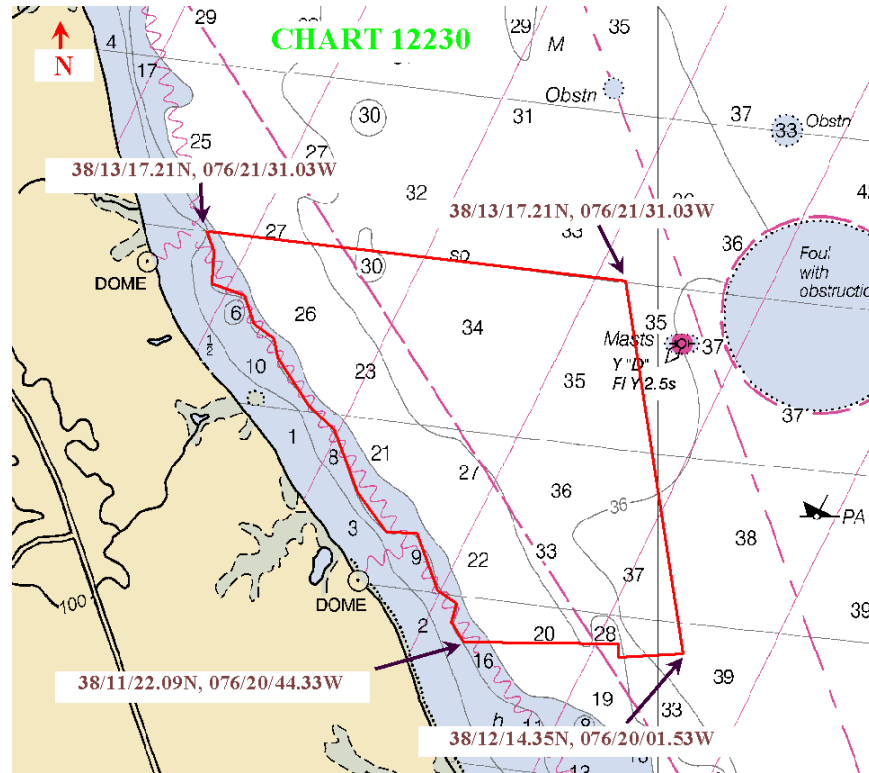


Figure 1: H12321 Area Surveyed Outline

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

## A.2 Survey Purpose

This project responds to multiple requests from the Maryland Port Administration, Association of Maryland Pilots, U.S. Army Corps of Engineers, and the U.S. Coast Guard. This modern hydrographic survey is necessary due to the growth of international bulk and container ship traffic in the Chesapeake Bay. It is the intent of this survey to supersede all bathymetry, sea floor features, and bottom characteristics within the assigned survey area as defined by these instructions for updating of NOAA charts 12231, 12233, 12261 and 12264.

## A.3 Survey Quality

The entire survey is adequate to supersede previous data.

As per the letter instruction, OPR-E349-BH-11, H12321 was conducted using 200% Side Scan Sonar coverage with concurrent Vertical Beam Echosounder coverage. The hydrographer recommends that all affected charts be updated to reflect the current bathymetric data acquired over the survey area.

***Survey H12321 is adequate to supersede charted soundings.***

## A.4 Survey Coverage

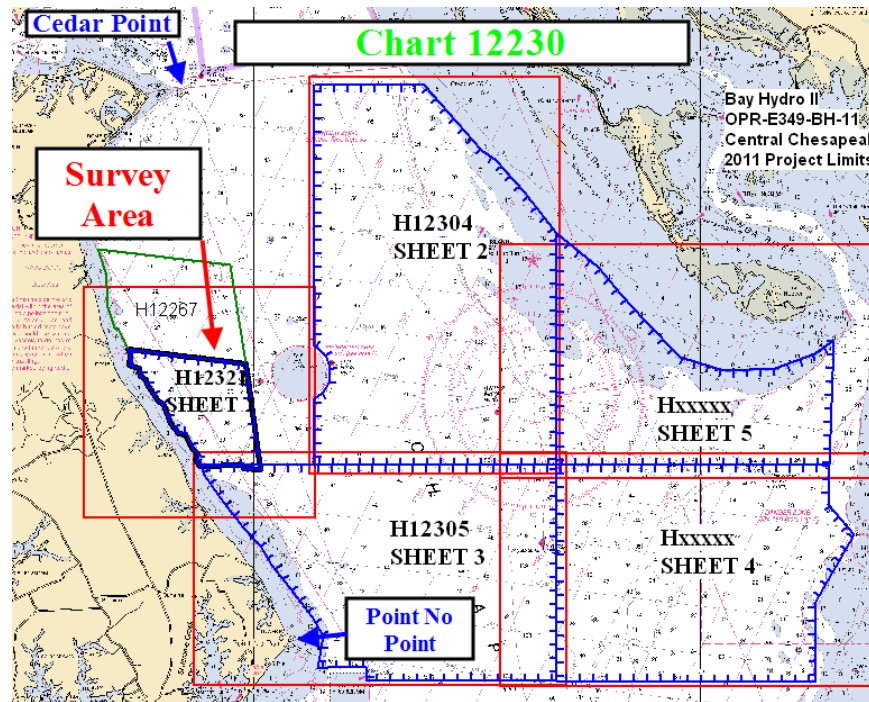


Figure 3: Survey Position Within Project Area

12ft contour not acquired due to vessel safety concerns.

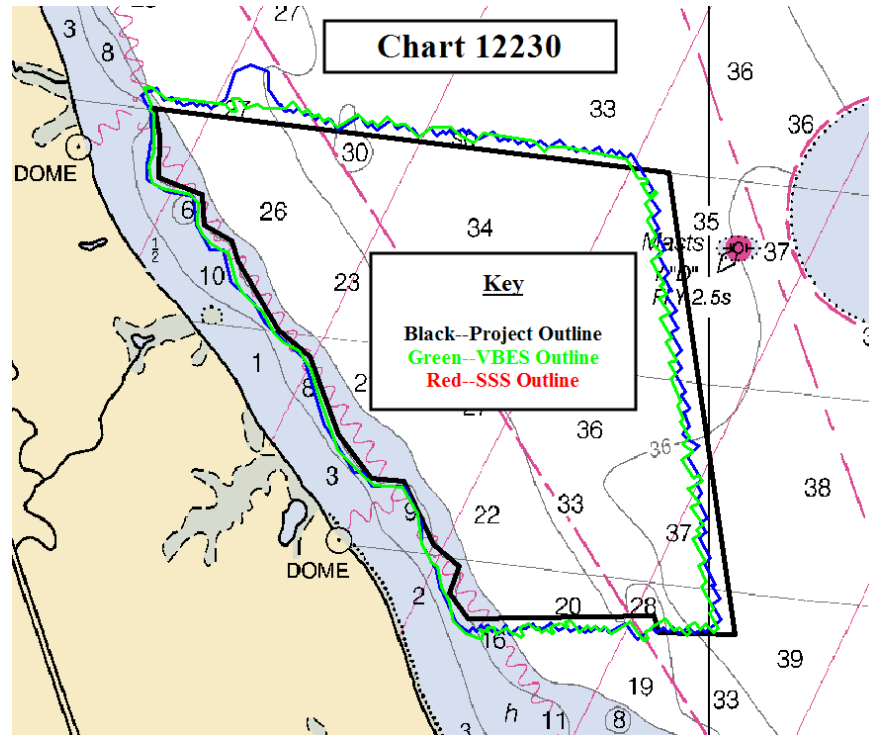


Figure 4: SSS and VBES Coverage Outline

## A.5 Survey Statistics

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

	<b>HULL ID</b>	<b><i>S5401</i></b>	<b><i>Total</i></b>
<b>LNM</b>	<b>SBES Mainscheme</b>	132.06	132.06
	<b>MBES Mainscheme</b>	0	0
	<b>Lidar Mainscheme</b>	0	0
	<b>SSS Mainscheme</b>	123.88	123.88
	<b>SBES/MBES Combo Mainscheme</b>	0	0
	<b>SBES/SSS Combo Mainscheme</b>	123.88	123.88
	<b>MBES/SSS Combo Mainscheme</b>	0	0
	<b>SBES/MBES Combo Crosslines</b>	11.01	11.01
	<b>Lidar Crosslines</b>	0	0
	<b>Number of Bottom Samples</b>		4
<b>Number of DPs</b>		1	
<b>Number of Items Items Investigated by Dive Ops</b>		0	
<b>Total Number of SNM</b>		3.0	

*Table 2: Hydrographic Survey Statistics*

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

<b><i>Survey Dates</i></b>
03/28/2011
03/30/2011
04/06/2011
04/07/2011
04/12/2011
04/18/2011
04/19/2011
05/26/2011
05/10/2011
05/11/2011
05/18/2011

*Table 3: Dates of Hydrography*

R/V BAY HYDRO II was the sole vessel assigned to this sheet.





*Figure 2: R/V BAY HYDRO II*

## **A.6 Shoreline**

No shoreline was acquired.

## **A.7 Bottom Samples**

The BAY HYDRO II sampled four sites in the survey area; one coordinated with a project instruction suggested area, while the other three areas were considered to be more representative of the survey area as a whole. See Appendix V for Bottom Sample document

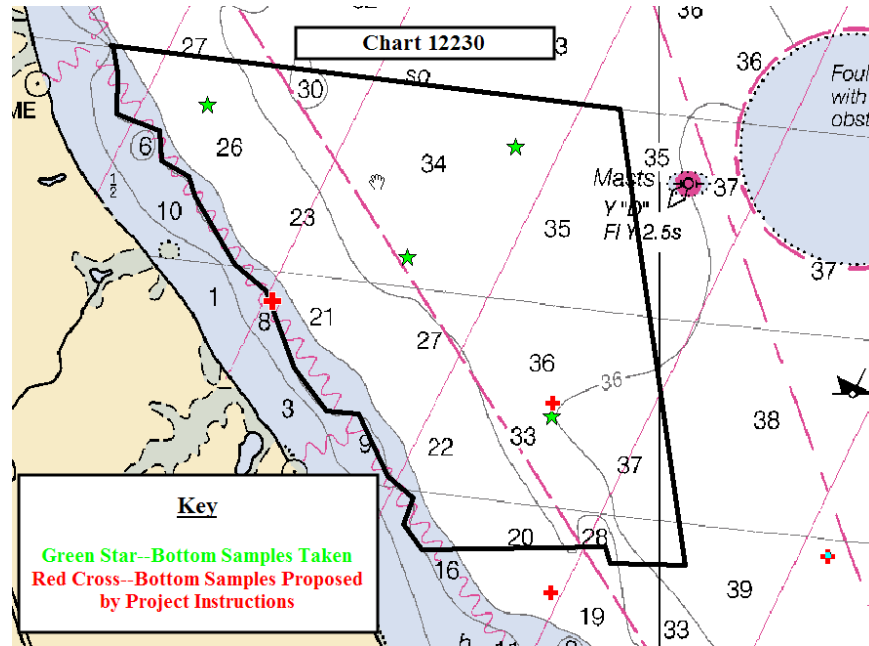


Figure 6: H12321 Bottom Sampling Sites

*All bottom samples are included in HCell H12321.*

## B. Data Acquisition and Processing

### B.1 Equipment and Vessels

Refer to the Data Acquisition and Processing Report (DAPR) for a complete description of data acquisition and processing systems, survey vessels, quality control procedures and data processing methods. Additional information to supplement sounding and survey data, and any deviations from the DAPR are discussed in the following sections.

#### B.1.1 Vessels

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

<b>Hull ID</b>	<i>S5401</i>
<b>LOA</b>	17.3 meters
<b>Draft</b>	1.8 meters

Table 4: Vessels Used

The R/V Bay Hydro II collected all Multibeam data, Side Scan data, Vertical Beam data, and Sound Velocity data for survey H12321.

## B.1.2 Equipment

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

<b>Manufacturer</b>	<b>Model</b>	<b>Type</b>
RESON	SeaBat 7125	MBES
KLEIN	5000	SSS
ODOM	CV200	SBES
Applanix	V4	Vessel Attitude System
ODOM	Digi-bar Pro	Sound Speed System
Sea-Bird	19+	Sound Speed System

*Table 5: Major Systems Used*

Vessel configurations, equipment operation, and data acquisition and processing were consistent with specifications described in the DAPR.

## B.2 Quality Control

### B.2.1 Crosslines

The R/V Bay Hydro II collected 11.01 linear nautical miles (lnm) of Vertical Beam Echosounder (VBES) crosslines, equating to 8.3% of mainschem VBES data. Crosslines were compared to mainschem through the creation of 32 checkpoints, placed on areas of overlap between mainschem and crosslines. Pydro points were found to be within IHO Special Order specifications. Refer to Separates II, to review the checkpoint report.

### B.2.2 Uncertainty

<b>Hull ID</b>	<b>Measured - CTD</b>	<b>Measured - MVP</b>	<b>Surface</b>
S5401	2	n/a	0.2

*Table 6: Survey Specific Sound Speed TPU Values*

Uncertainty values remained within the IHO Order #1 values. The CARIS MBES CUBE surface depths ranged from 3.58-11.61m with an acceptable total vertical uncertainty of 0.502-0.522m. The CARIS VBES Uncertainty surface depths ranged from 3.06-11.75m with an acceptable total vertical uncertainty of 0.502-0.523m. The IHO Uncertainty Calculator v2.6 was used to determine the acceptable vertical uncertainty values.

### B.2.3 Junctions

The following junctions were made with this survey:

Registry Number	Scale	Year	Field Unit	Relative Location
H12267	1:10000	2011	NOAA R/V BAY HYDRO II	N
H11598	1:10000	2009	NOAA R/V BAY HYDRO II	E

Table 7: Junctioning Surveys

#### H12267

The maximum depth difference between H12321 and junction survey H12267 was 2.1 feet. The average depth was 0.246 and the mode was 0.. These values were determined from the results of two difference surfaces between the junctions and the current survey surface within Caris BathyDatabase 3.2

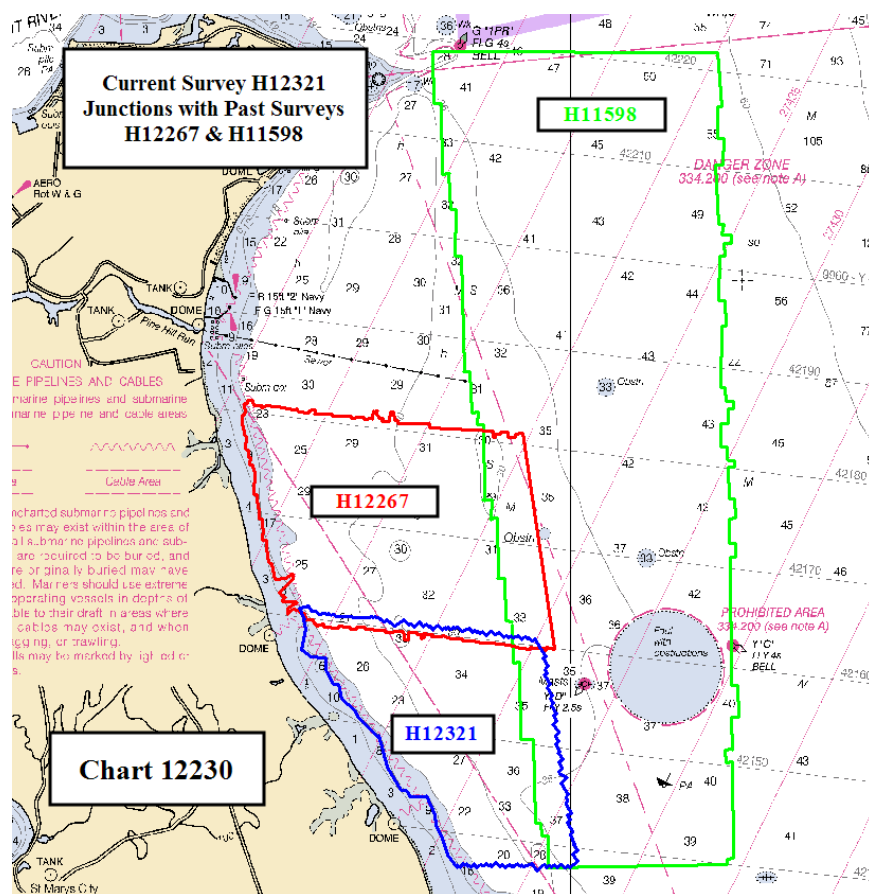


Figure 5: H12321 coverage in comparison to junctions

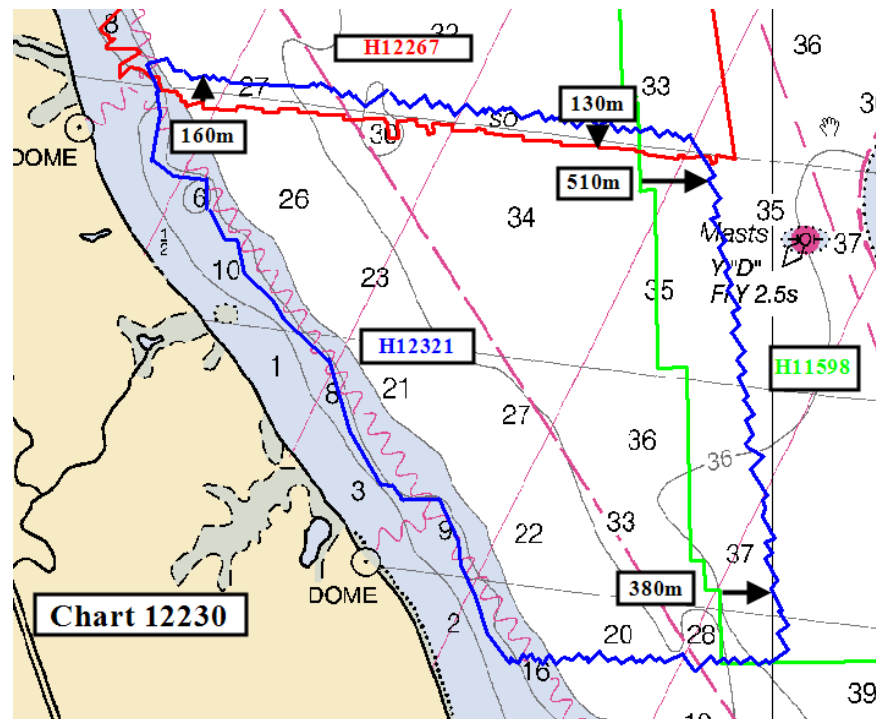


Figure 6: Overlap distance of H12312 and junctions

*A common junction was made with survey H11598 which was compiled at AHB. A junction will be made with survey H12267 during it's compilation at PHB.*

#### H11598

The maximum difference between H12321 and H11598 is 1.3 feet. The average was -0.599 and the mode was -0.6. These values were determined from the results of two difference surfaces between the junctions and the current survey surface Caris BathyDatabase 3.2

#### B.2.4 Sonar QC Checks

Sonar system quality control checks were conducted as detailed in the quality control section of the DAPR.

#### B.2.5 Equipment Effectiveness

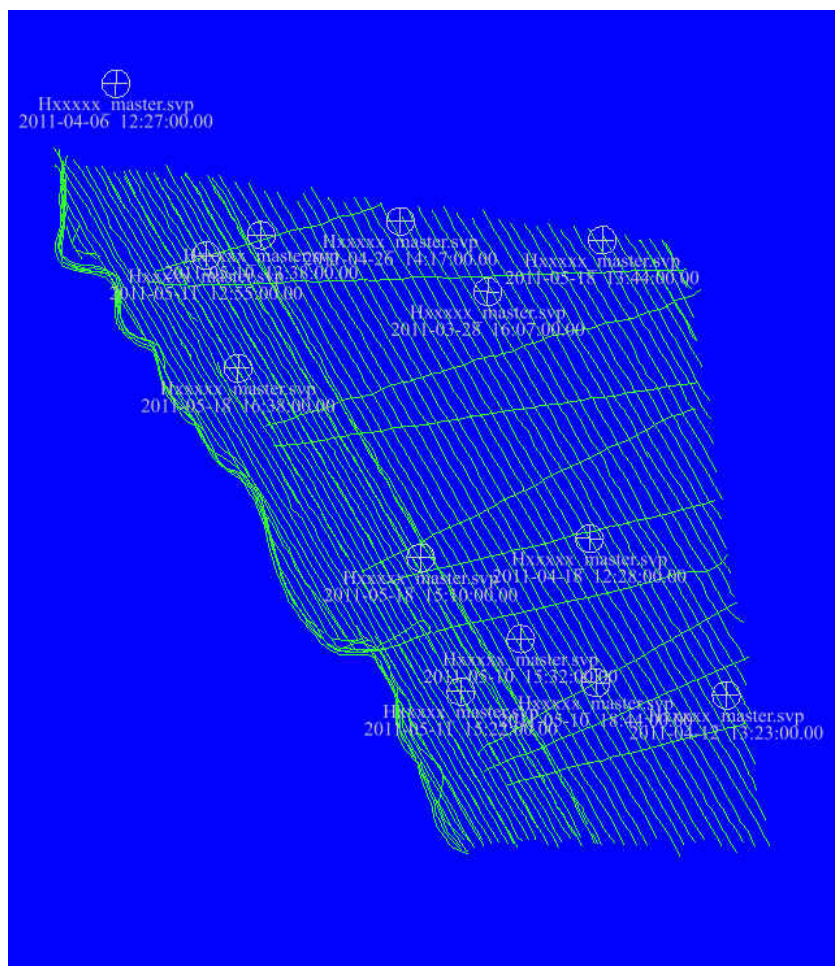
#### B.2.6 Factors Affecting Soundings

##### B.2.6.1

## B.2.7 Sound Speed Methods

Sound Speed Cast Frequency: Casts were acquired as per specifications, see NOAA's Hydrographic Surveys Specifications and Deliverables 5.2.3.3, May 2011.

The casts acquired for H12321 satisfactorily represented sound speed for the main water mass within the survey area. There is one cast that is 507m north of the northeast survey boundary.



*Figure 7: Cast Locations*

## B.2.8 Coverage Equipment and Methods

All Equipment and survey methods were used as detailed in the DAPR.

## B.3 Echo Sounding Corrections

### B.3.1 Corrections to Echo Soundings

All Data reductions procedures conform to those detailed in the DAPR.

### B.3.2 Calibrations

All sounding systems were calibrated as detailed in the DAPR.

## B.4 Backscatter

Backscatter was not collected for this survey.

## B.5 Data Processing

### B.5.1 Software Updates

There were no software configuration changes after the DAPR was submitted.

The following Feature Object Catalog was used:

### B.5.2 Surfaces

The following CARIS surfaces were submitted to the Processing Branch:

Surface Name	Surface Type	Resolution	Depth Range	Surface Parameter	Purpose
H12321_SSS100_1m	SSS Mosaic	1 meters	3.06 meters - 11.75 meters	NOAA_1m	100% SSS
H12321_SSS200_1m	SSS Mosaic	1 meters	3.06 meters - 11.75 meters	NOAA_1m	200% SSS
H12321_VB_4m_MLLW_1of1	BASE Uncertainty	4 meters	3.06 meters - 11.75 meters	NOAA_4m	SBES Set Line Spacing
H12321_MB_50cm_MLLW_1of1	CUBE	0.5 meters	3.58 meters - 11.61 meters	NOAA_0.5m	Object Detection

*Table 8: CARIS Surfaces*

H12267\_SSS100\_1m and SSS200\_1m mosaic and geotiff were generated.

The uncertainty depth of the vbes and mbes surfaces were well within the IHO acceptable values. 95% of the nodes had 5 or more soundings, see Appendix V for density charts produced by the Sounding Density pydro script.

## C. Vertical and Horizontal Control

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

### C.1 Vertical Control

The vertical datum for this project is Mean lower low water.

#### Standard Vertical Control Methods Used:

TCARI

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

Station Name	Station ID
Lewisetta, MD	8635750
Solomons Island, MD	8577330
Bishops Head, MD	8571421

Table 9: NWLON Tide Stations

File Name	Status
8571421.tid	Verified Observed
8635750.tid	Verified Observed
8777330.tid	Verified Observed

Table 10: Water Level Files (.tid)

File Name	Status
H12321.tc	Final

Table 11: Tide Correctors (.zdf or .tc)



A request for final approved tides was sent to N/OPS1 on 05/19/2011. The final tide note was received on 06/21/2011.

Verified tidal correctors were applied to all VBES and MBES data. NOTE: As of 24 Aug, 2011, the TCARI tide MACRO could not change the "Tide Applied" flag in CARIS HIPS. Accordingly, extended line query in CARIS HIPS shows "observed" tide applied for all VBES and MBES data. This does not indicate verified tides were not applied.

**The Tide Note is attached.**

## C.2 Horizontal Control

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

U.S. Coast Guard GPS (DGPS) was the sole method of positioning during this survey.

The following DGPS Stations were used for horizontal control:

DGPS Stations
U.S. Coast Guard Beacon at Annapolis, MD (301 khz)

*Table 12: USCG DGPS Stations*

## D. Results and Recommendations

### D.1 Chart Comparison

#### D.1.1 Raster Charts

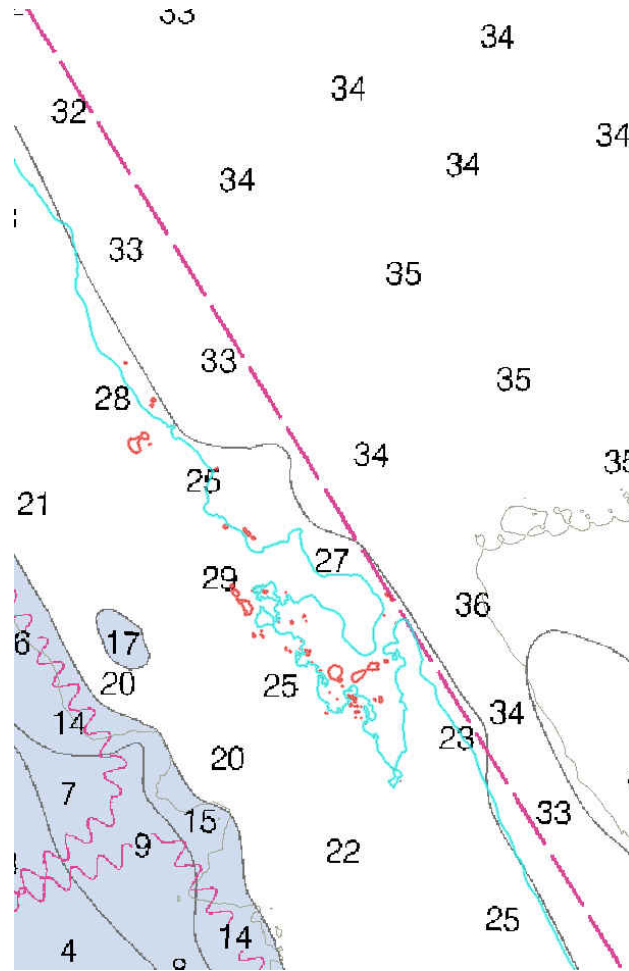
The following are the largest scale raster charts, which cover the survey area:

Chart	Scale	Edition	Edition Date	LNM Date	NM Date
12230	1:80000	64	03/2009	07/30/2011	07/30/2011
12233	1:40000	37	01/2007	07/30/2011	07/30/2011

*Table 13: Largest Scale Raster Charts*

12230

Chart Scale sounding depths disagree more than a meter compared to current acquired data.



*Figure 8: 30 ft Contour shifts maximum 330m shoreward*

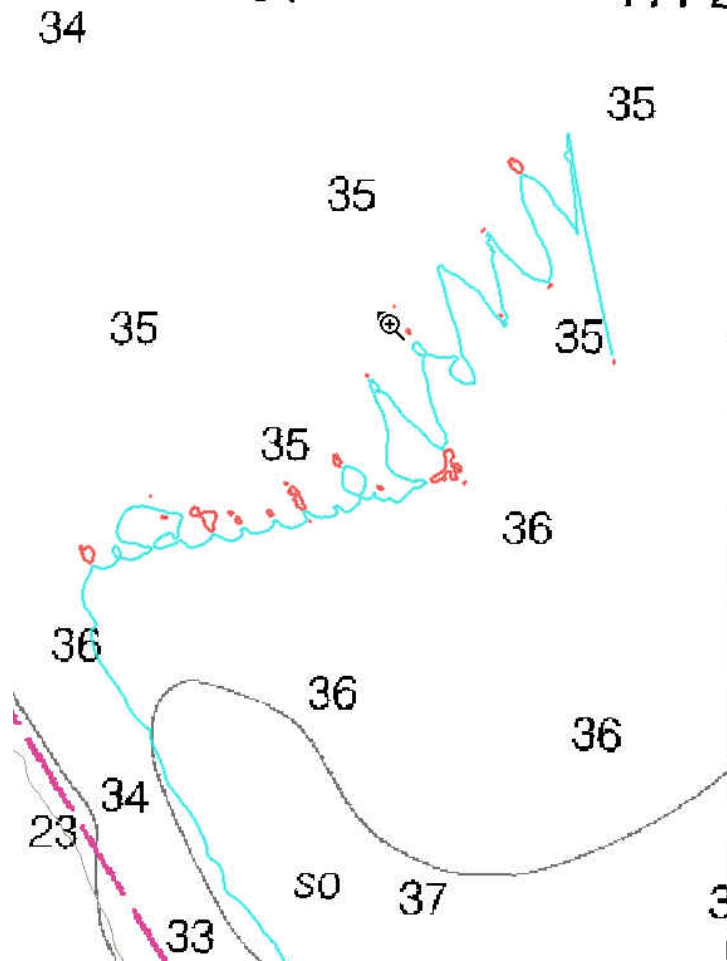


Figure 9: 36 ft Contour Shifts 1500m northward

12233

Chart Scale sounding depths disagree more than a meter compared to current acquired data.

### D.1.2 Electronic Navigational Charts

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

ENC	Scale	Edition	Update Application Date	Issue Date	Preliminary?
US5VA22M	1:40000	17	06/16/2011	06/16/2011	NO

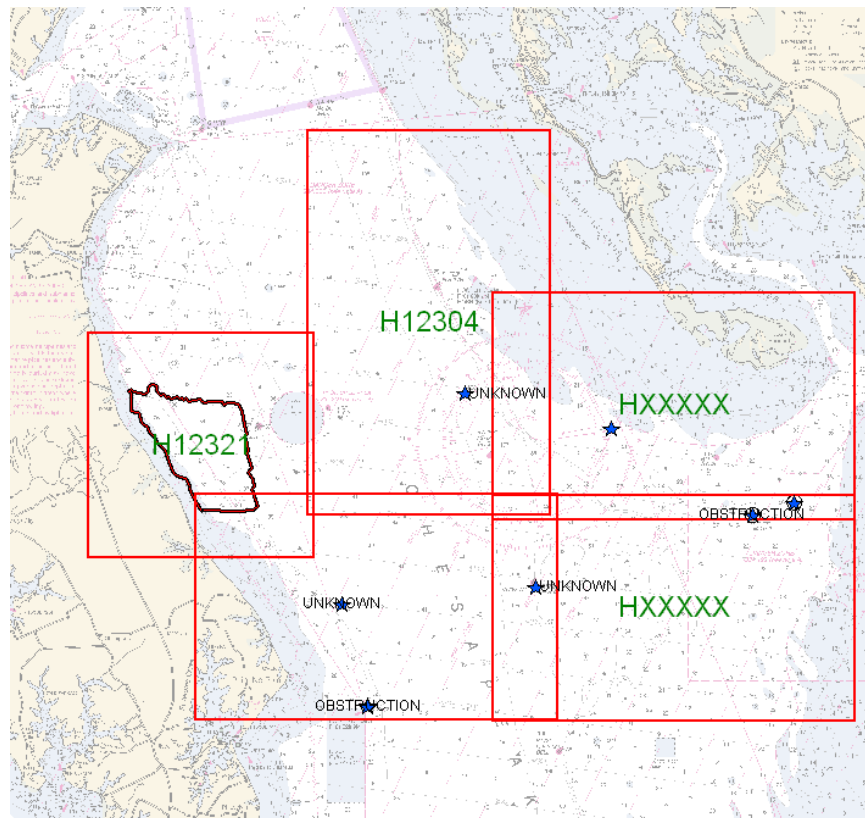
Table 14: Largest Scale ENC's

US5VA22M

There are several sounding discrepancies (not exceeding a foot) between RNC 12233 and ENC US5VA22M.

### D.1.3 AWOIS Items

There are 3 AWOIS items assigned for information only and 5 for full investigation in project OPR-E349-BH-11. All AWOIS items are outside the limits of H12321 and will not be addressed.



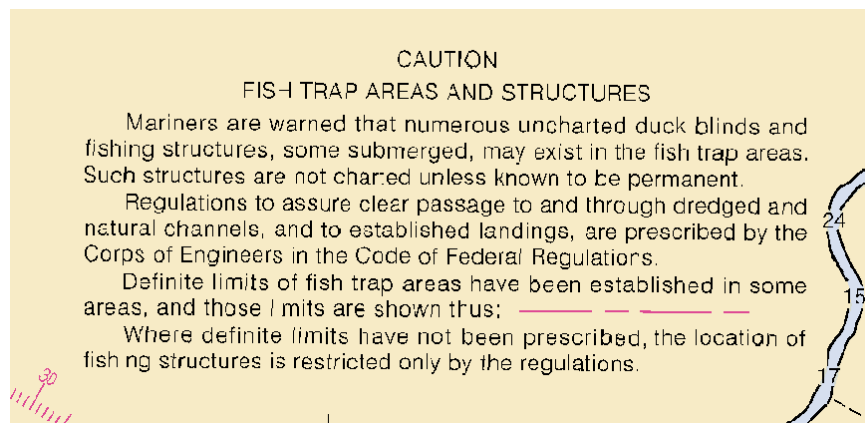
*Figure 10: AWOIS items for OPR-E349-BH-11*

### D.1.4 Charted Features

The survey area that is H12321 is positioned, almost in its entirety, within a charted Fish Trap Area. This area is denoted on Chart 12230 and all other applicable charts by a pink dashed line, with alternating short and long dashes, and extends landward to the shoreline.

The chart also currently contains a note, stating the hazards of Fish Traps to mariners (See Figure 11 : Fish Trap Chart Note). Currently there is one Fish Trap within the survey limits (See Figure : Fish Trap Structure). Due to vessel safety concerns, investigation of the fish trap was postponed until NSD Ops

provided resolution and guidance on how to address all current and future uncharted fish traps within project OPR-E349-BH-2011. Correspondence with the processing branch, AHB and NSD Ops resulted with the ruling for BH2 not to investigate these features. The MCD Production Team was requested to remove the currently charted "Fish Trap Areas & Structures" note from Chesapeake Bay charts, replace the currently charted note with the two notes shown in the Nautical Chart Manual, Section 4.12, page 608; bottom of the page. These changes should be verified during branch compilation. For records of discussion with AHB and NSD Ops see the deliverable Project Correspondence folder or Appendix V of this report.



*Figure 11: Fish Trap Chart Note and Symbol*

*See attached correspondence. The charted note which is recommended for removal remains on the latest edition of the charts.*

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

Refer to submitted H12321\_Feature\_Report Appendix II.

*One uncharted pile was found and is included in the HCell. The Survey Feature Report is filed with the hydrographic records. Note: the survey feature report does not include all features from H12321. Additional features were added, some removed, and some modified in CARIS Notebook after the feature report was generated from Pydro. All features included in the compilation of H12321 have come directly from CARIS Notebook, which is the official features deliverable for this survey.*

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

No Danger to Navigation Reports were submitted for this survey.

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

There are no shoal or hazardous features in this survey area.

### **D.1.8 Channels**

There are no US Army Corp of Engineers federally marked channels in this survey area.

## **D.2 Additional Results**

### **D.2.1 Shoreline**

Shoreline was investigated in accordance with the Project Instructions and the HSSD.

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

Prior surveys H07093 and H07094 were identified overlapping priors via MAPINFO project instruction tab files but not necessary for current data comparison. NGDG holds their bathymetry information and their Descriptive Report.

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

There are no aids to navigation in survey H12321.

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

There are no overhead features within survey H12321.

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

There are submarine cables that run along the shoreline within the 18ft contour. They are not visible in the acquired bathymetric data or associated imagery.

*Charted submarine cables have been noted for retention in the HCell.*

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

No ferry routes or terminals exists within the bounds of this survey area.

### **D.2.7 Platforms**

There are no platforms or rigs within the bounds of this survey area.

**D.2.8 Significant Features**

There are no significant features within the bounds of this survey area.

**D.2.9 Construction and Dredging**




There is currently no construction or dredging occurring within the bounds of this survey area.

## E Approval Sheet

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

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

The survey data meets or exceeds requirements as set forth in the NOS Hydrographic Surveys and Specifications Deliverables Manual, Field Procedures Manual, Standing and Letter Instructions, and all HSD Technical Directives. These data are adequate to supersede charted data in their common areas. This survey is complete and no additional work is required with the exception of deficiencies noted in the Descriptive Report.

Approver Name	Approver Title	Approval Date	Signature
LTJg Megan R. Guberski	Commanding Officer	08/25/2011	 Digitally signed by LTJG Megan R. Guberski Date: 2011.09.01 13:00:20 -04'00'
Robert Mowery	Senior Survey Technician	08/25/2011	 Digitally signed by Robert Mowery DN: cn=Robert Mowery, o=Bay Hydro II, email=robert.mowery@noaa.gov, c=US Date: 2011.08.25 14:33:55 -04'00'
Nicole Trenholm	Assistant Survey Technician	08/25/2011	 Digitally signed by Nicole Trenholm Date: 2011.08.25 14:26:27 -04'00'



## F. Table of Acronyms

<b>Acronym</b>	<b>Definition</b>
<b>AFF</b>	Assigned Features File
<b>AHB</b>	Atlantic Hydrographic Branch
<b>AST</b>	Assistant Survey Technician
<b>ATON</b>	Aid to Navigation
<b>AWOIS</b>	Automated Wreck and Obstruction Information System
<b>BAG</b>	Bathymetric Attributed Grid
<b>BASE</b>	Bathymetry Associated with Statistical Error
<b>CO</b>	Commanding Officer
<b>CO-OPS</b>	Center for Operational Products and Services
<b>CORS</b>	Continually Operating Reference Station
<b>CTD</b>	Conductivity Temperature Depth
<b>CEF</b>	Chart Evaluation File
<b>CSF</b>	Composite Source File
<b>CST</b>	Chief Survey Technician
<b>CUBE</b>	Combined Uncertainty and Bathymetry Estimator
<b>DAPR</b>	Data Acquisition and Processing Report
<b>DGPS</b>	Differential Global Positioning System
<b>DP</b>	Discrete Position
<b>DR</b>	Descriptive Report
<b>DTON</b>	Danger to Navigation
<b>ENC</b>	Electronic Navigational Chart
<b>ERS</b>	Ellipsoidal Referenced Survey
<b>ERZT</b>	Ellipsoidally Referenced Zoned Tides
<b>FOO</b>	Field Operations Officer
<b>FPM</b>	Field Procedures Manual
<b>GAMS</b>	GPS Azimuth Measurement Subsystem
<b>GC</b>	Geographic Cell
<b>GPS</b>	Global Positioning System
<b>HIPS</b>	Hydrographic Information Processing System
<b>HSD</b>	Hydrographic Surveys Division
<b>HSSDM</b>	Hydrographic Survey Specifications and Deliverables Manual

<b>Acronym</b>	<b>Definition</b>
<b>HSTP</b>	Hydrographic Systems Technology Programs
<b>HSX</b>	Hypack Hysweep File Format
<b>HTD</b>	Hydrographic Surveys Technical Directive
<b>HVCR</b>	Horizontal and Vertical Control Report
<b>HVF</b>	HIPS Vessel File
<b>IHO</b>	International Hydrographic Organization
<b>IMU</b>	Inertial Motion Unit
<b>ITRF</b>	International Terrestrial Reference Frame
<b>LNM</b>	Local Notice to Mariners
<b>LNM</b>	Linear Nautical Miles
<b>MCD</b>	Marine Chart Division
<b>MHW</b>	Mean High Water
<b>MLLW</b>	Mean Lower Low Water
<b>NAD 83</b>	North American Datum of 1983
<b>NAIP</b>	National Agriculture and Imagery Program
<b>NALL</b>	Navigable Area Limit Line
<b>NM</b>	Notice to Mariners
<b>NMEA</b>	National Marine Electronics Association
<b>NOAA</b>	National Oceanic and Atmospheric Administration
<b>NOS</b>	National Ocean Service
<b>NRT</b>	Navigation Response Team
<b>NSD</b>	Navigation Services Division
<b>OCS</b>	Office of Coast Survey
<b>OMAO</b>	Office of Marine and Aviation Operations (NOAA)
<b>OPS</b>	Operations Branch
<b>MBES</b>	Multibeam Echosounder
<b>NWLON</b>	National Water Level Observation Network
<b>PDBS</b>	Phase Differencing Bathymetric Sonar
<b>PHB</b>	Pacific Hydrographic Branch
<b>POS/MV</b>	Position and Orientation System for Marine Vessels
<b>PPK</b>	Post Processed Kinematic
<b>PPP</b>	Precise Point Positioning
<b>PPS</b>	Pulse per second

<b>Acronym</b>	<b>Definition</b>
<b>PRF</b>	Project Reference File
<b>PS</b>	Physical Scientist
<b>PST</b>	Physical Science Technician
<b>RNC</b>	Raster Navigational Chart
<b>RTK</b>	Real Time Kinematic
<b>SBES</b>	Singlebeam Echosounder
<b>SBET</b>	Smooth Best Estimate and Trajectory
<b>SNM</b>	Square Nautical Miles
<b>SSS</b>	Side Scan Sonar
<b>ST</b>	Survey Technician
<b>SVP</b>	Sound Velocity Profiler
<b>TCARI</b>	Tidal Constituent And Residual Interpolation
<b>TPU</b>	Total Propagated Error
<b>TPU</b>	Topside Processing Unit
<b>USACE</b>	United States Army Corps of Engineers
<b>USCG</b>	United States Coast Guard
<b>UTM</b>	Universal Transverse Mercator
<b>XO</b>	Executive Officer
<b>ZDA</b>	Global Positioning System timing message
<b>ZDF</b>	Zone Definition File



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

**TIDE NOTE FOR HYDROGRAPHIC SURVEY**

**DATE :** June 20, 2011

**HYDROGRAPHIC BRANCH:** Atlantic  
**HYDROGRAPHIC PROJECT:** OPR-E349-BH-2011  
**HYDROGRAPHIC SHEET:** H12321

**LOCALITY:** Central Chesapeake Bay, MD  
**TIME PERIOD:** March 28 - May 18, 2011

**TIDE STATION USED:** Solomons Island, MD 857-7330  
Lat. 38° 19.0' N Long. 76° 27.1' W  
**PLANE OF REFERENCE (MEAN LOWER LOW WATER):** 0.000 meters  
**HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE:** 0.404 meters

**TIDE STATION USED:** Bishops Head, MD 857-1421  
Lat. 38° 13.2' N Long. 76° 02.3' W  
**PLANE OF REFERENCE (MEAN LOWER LOW WATER):** 0.000 meters  
**HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE:** 0.570 meters

**Tide STATION USED:** Lewisetta, VA 863-5750  
Lat. 37° 59.7' Long. 76° 27.9' W  
**PLANE OF REFERENCE (MEAN LOWER LOW WATER):** 0.000 meters  
**HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE:** 0.415 meters

**REMARKS: RECOMMENDED GRID**

Please use the TCARI grid "H12321.tc" as the final grid for project OPR-E349-BH-2011, during the time period between March 28 - May 18, 2011.

**Refer to attachments for grid 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).

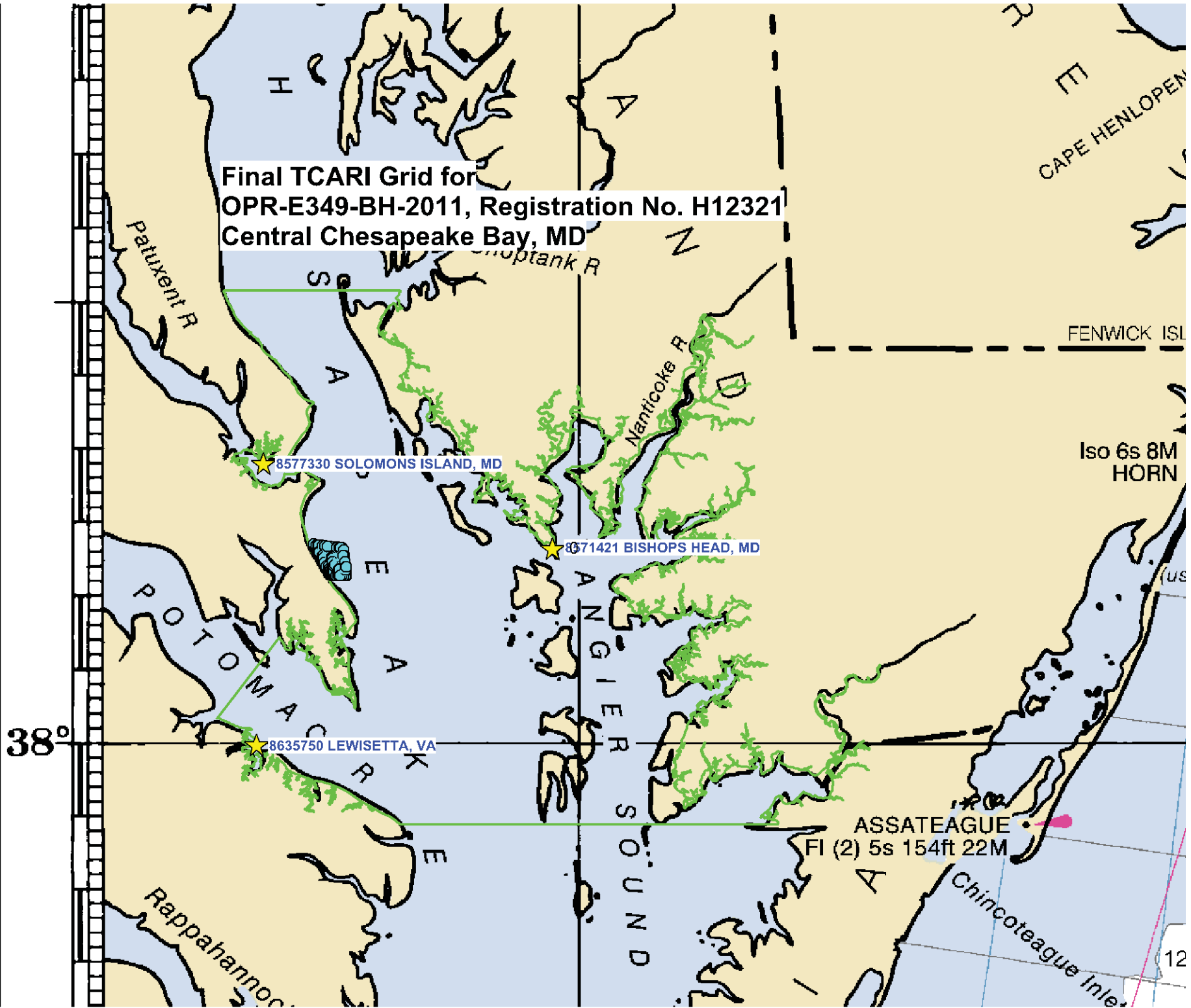
**Gerald  
Hovis**

Digitally signed by Gerald Hovis  
DN: cn=Gerald Hovis, o=Center for  
Operational Oceanographic  
Products and Services, ou=NOAA/  
NOS/CO-OPS/OD/PSB,  
email=gerald.hovis@noaa.gov, c=US  
Date: 2011.06.21 13:42:47 -04'00'

CHIEF, PRODUCTS AND SERVICES BRANCH



Final TCARI Grid for  
OPR-E349-BH-2011, Registration No. H12321  
Central Chesapeake Bay, MD



From View message header detail CDR Rick Brennan <Richard.T.Brennan@noaa.gov>  
Sent Thursday, April 14, 2011 11:00 am  
To Nicole.Trenholm@noaa.gov  
Cc Sarah.Mrozek@noaa.gov , 'Gene Parker' <Castle.E.Parker@noaa.gov>  
Subject Re: Addressing Pound Net sites in the Ches. Bay

Nikki,

How to chart them depends on the status of the piles use to construct them. If the piles are still baring, then we need to chart each pile (or as many as the largest scale chart will allow - favoring the offshore-most of these piles. If these piles are submerged, and many usually are, then we have charted them as obstruction areas, with the attribute "snag/stump" for the CATOBS. We tried to position these with our 8125 on the RUDE and it worked pretty well - also served as a good calibration check if you ran the line in two directions (say one east and one west) - the piles from each line should be coincident. If you see two piles where you know there to be only one - then you may have an alignment problem.

Rick

From View message header detail Gene Parker <Castle.E.Parker@noaa.gov>  
Sent Thursday, April 14, 2011 12:33 pm  
To Nicole Trenholm <Nicole.Trenholm@noaa.gov>  
Subject [Fwd: Re: Addressing Pound Net sites in the Ches. Bay]  
Attachments  
vCard(Castle\_E\_Parker) 1K

Hey Nikki,

One can also use the SS mosaic to delineate foul areas similar to using and referencing the bathy grid. The 50cm grid or the SS mosaic can be used to delineate those areas where numerous piles or subm piles exist. My first choice to delineate the foul areas would be the 50cm bathy grid. You could also do a higher grid resolution in the areas such as 20cm or 25cm in order to draw the polygon.

The baring or exposed piles are also important; if they are within a foul area, then you're covered, but what if they are stand alone.... you would need a DP or use a bathy data point, or you could use the SS imagery, and get a elevation of the baring pile.

gene

On 4/13/2011 3:14 PM, Nicole.Trenholm@noaa.gov wrote:

> Greetings from Solomons!

>

> The BH2's current project is OPR-E349-BH-11. A few pound net sites have been sited and considering the link below and personal encounters,

>

> <http://www.dnr.state.md.us/fisheries/commercial/poundnetsites.html>

>

> there will be several more pound net sites to address within our assigned project area. The structures are considered temporary in nature, are poorly marked, uncharted, and are not identified via chart notes/tables indicating their presence. They can extend into navigable areas.

>

> How do we ensure mariner's safety from getting tangled up in pound net site areas if access to their locations are outdated, they are not addressed on nautical charts, and MD DNR provides printed pound net maps to the public only upon request? How have NOAA field parties addressed pound net sites in the past? Eventually, many of these sites will become ruins and will ultimately have to be addressed. How does OCS represent pound net sites on nautical charts? Does MCD add fish weir/trap symbols, text, or maintain chart tables of current registered pound net sites?

>

> We would appreciate some guidance on how to address these features. Recent submitted survey H11918 and nearly complete survey H12267 contains pound nets sites. We were able to support their location with geo-referenced orthoimagery and DPs with our Trimble and laser rangefinder equipment. Acquiring supportive imagery or bathymetry was deemed unsafe and the offshore end of the structure inhibited us from acquiring complete 4m coverage. Your guidance on how we should properly address these sites would be greatly appreciated. We would like to ensure that our efforts are effective.

>

> Best Regards,

>

> Nikki Trenholm

Fish Havens (i.e., artificial fishing reefs)	Fish Traps (i.e., fishing structures)	Fish Trap Areas	
<b>Associated Labels</b>			
<p>9.</p>	<p style="text-align: center;"><b><u>FISH HAVENS</u></b></p> <p style="text-align: center;"><b><u>Black 7 pt. Swiss Light Italic</u></b></p> <p>a. auth min depth <math>\leq</math> 11 fms</p> <p>Example: <i>Obstn Fish Haven (auth min depth 33 ft)</i></p> <hr style="border-top: 1px dashed black;"/> <p>b. auth min depth &gt; 11 fms</p> <p>Example: <i>Fish Haven (auth min 72 ft)</i></p> <p style="text-align: center;"><b><u>OBSTRUCTIONS</u></b></p> <p style="text-align: center;"><b><u>Black 7 pt. Swiss Light Italic</u></b></p> <p>a. auth min depth <math>\leq</math> 11 fms</p> <p>Example: <i>Obstn (rep 33 ft)</i></p> <hr style="border-top: 1px dashed black;"/> <p>b. auth min depth &gt; 11 fms</p> <p>Example: <i>Obstn (rep 72 ft)</i></p>	<p style="text-align: center;"><b><u>Black 6 pt. Swiss Light Vertical</u></b></p> <p style="text-align: center;">Example: Fish trap</p>	<p>No label is charted with the symbol. The symbol is identified in the Fish Trap Areas note.</p>
<b>Associated Notes</b>			
<p>10.</p>	<p style="text-align: center;">None</p>	<p style="text-align: center;">FISHING AND HUNTING STRUCTURES</p> <p>Uncharted fish and wildlife harvesting devices and structures such as fish traps, pound nets, crab traps, and duck blinds, some submerged, may exist in the area of this chart, particularly in the near shore area. Mariners should proceed with caution.</p>	<p style="text-align: center;">FISH TRAP AREAS</p> <p>Boundary lines of fish trap areas are shown thus: <span style="color: purple;">-----</span></p> <p>Submerged piling may exist in these areas.</p>

New notes to replace currently charted note on Chesapeake Bay charts.

**ADDED DECEMBER 21, 2007**




## CAUTION

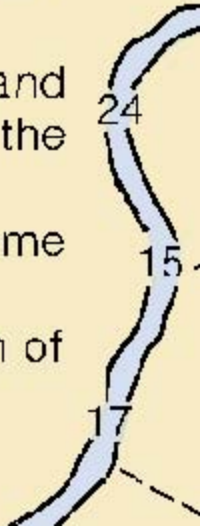
### FISH TRAP AREAS AND STRUCTURES

Mariners are warned that numerous uncharted duck blinds and fishing structures, some submerged, may exist in the fish trap areas. Such structures are not charted unless known to be permanent.

Regulations to assure clear passage to and through dredged and natural channels, and to established landings, are prescribed by the Corps of Engineers in the Code of Federal Regulations.

Definite limits of fish trap areas have been established in some areas, and those limits are shown thus: 

Where definite limits have not been prescribed, the location of fishing structures is restricted only by the regulations.



From View message header detail "ocs.ndb" <OCS.NDB@noaa.gov>  
Sent Friday, May 6, 2011 2:42 pm  
To Nicole.Trenholm@noaa.gov  
Cc James.M.Crocker@noaa.gov , Kyle.Ward@noaa.gov , CDR Rick Brennan  
<Richard.T.Brennan@noaa.gov> , Gene Parker <Castle.E.Parker@noaa.gov> ,  
John.Whiddon@noaa.gov , Tara Wallace <Tara.Wallace@noaa.gov> , Robert Heeley  
<Robert.Heeley@noaa.gov> , Doug Baird <Doug.Baird@noaa.gov>  
Subject Re: Fwd: Re: More Addressing of Pound Net sites in the Ches. Bay  
Attachments  
Currently Charted Fishing Trap Areas & Structures Note.pdf 4.3MB Fish Trap  
Notes per NCM Vol. 1.pdf

Nikki,

Good afternoon. Regarding the fish pound nets in the Chesapeake Bay, Matt Lawrence of the MD DNR informed me that the nets are temporary structures. There is no guarantee that a registered site will be used continuously and MD DNR does not know which nets will be installed in any given registered location.

Individual fish pound nets will not be charted. Instead, Nautical Data Branch will compose a document in which we recommend the following charting action to the MCD Production Team:

1. Remove the currently charted "Fish Trap Areas & Structures" note from Chesapeake Bay charts.
2. Replace the currently charted note with the two notes shown in the Nautical Chart Manual, Section 4.12, page 608; bottom of the page. See the attached documents.

If you have any additional questions or comments, please contact us via [ocs.ndb@noaa.gov](mailto:ocs.ndb@noaa.gov).

Regards,

Lance Roddy  
Cartographer  
Nautical Data Branch  
301-713-2737 ext. 126

----- Original Message -----

From "lance.rodny" <Lance.Roddy@noaa.gov>  
Date Mon, 18 Apr 2011 13:26:47 -0400

To Nicole.Trenholm@noaa.gov  
Cc James.M.Crocker@noaa.gov, Kyle.Ward@noaa.gov, CDR Rick Brennan  
<Richard.T.Brennan@noaa.gov>, Gene Parker <Castle.E.Parker@noaa.gov>,  
John.Whiddon@noaa.gov, Tara Wallace <Tara.Wallace@noaa.gov>  
Subject Re: Fwd: Re: More Addressing of Pound Net sites in the Ches. Bay

Nikki,

Good afternoon. MD DNR does not provide NDB the locations for pound nets. A caution note that addresses Fish Trap Areas and Structures is currently shown on certain Chesapeake Bay charts. For an example, see chart 12272 kapp 622, vicinity 39° 02' 47.3" N, 76° 06' 31.6" W. NDB will research and forward this issue to higher authority in MCD for resolution.

Regards,

Lance Roddy

Cartographer

Nautical Data Branch

Marine Chart Division

301-713-2737 ext. 126

On 4/18/2011 11:09 AM, Nicole.Trenholm@noaa.gov wrote:  
Greetings,

My name is Nikki Trenholm and I am a survey tech aboard the R/V Bay Hydro II. Your understanding of NDB's role in outside agency source data management may bring clarification to the following questions.

Does MD DNR provide NDB with source data in regards to registered pound net sites within the Chesapeake Bay? If so, how does MCD inform the mariner of these site locations on nautical charts? There are hundreds of these temporary uncharted structures in navigable areas throughout the bay. How should the field teams properly address these sites and how can AHB ensure that these features are being properly addressed by the field teams. I had inquired to AHB's CDR Rick Brennan and Gene Parker for guidance on this matter. Please see the forwarded attached email chain including details and images of these structures and AHB advice.

Consequently, AHB and I were unsure if there was an existing relationship and source data exchange between MD DNR to MCD/NDB. Is there an existing charting solution addressing this matter? How would MCD prefer field teams to investigate these features and what charting recommendations would be expected after proper identification? Clarification to this matter would be greatly appreciated, as it is of utmost importance that the Bay Hydro II's efforts to address all pound net sites within project areas and the subsequent charting recommendations are in accordance with OCS's best practices and expectations.

The following site <http://www.dnr.state.md.us/fisheries/commercial/poundnetsites.html> exhibits MD DNR's pound net sites outdated locations.

# PHB Compilation Log

## General Survey Info

Survey Number	H12321	Field Unit	Bay Hydro	State	Maryland	UTM Zone	18N
Project Date	OPR-E349-BH-11	Project Name (Locality)	Central Chesapeake Bay				
Start Date	03/28/2011	Sublocality	Chesapeake Bay				
End Date	05/18/2011	Survey Scale	1:10,000	Compilation Scale	1:40,000		

### Affected Raster Charts

Chart	KAPP	Scale	Edition	Date	NTM Date
12233	570	1:40,000	37th	01/01/2007	03/03/2012
12230	567	1:80,000	65th	01/01/2011	03/03/2011



### Affected Electronic Charts

ENC	Scale
US5VA22M	1:40,000



### Spatial Reference

Horizontal Datum	WGS84
Coordinate System	LLDG
Sounding Datum	MLLW
Vertical Datum	MHW

### Junction Surveys

Survey Number	Survey Date	Location Relative to Current Survey
H12267	01/01/2010	N
H11598	01/01/2008	E



## Processing Info

SAR Reviewer	Grant Froelich	HCell Compiler	Kurt Brown	HCell Reviewer	Pete Holmberg
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### Source Surfaces

Resolution	File Name
4m	H12321_MBVB_4m_MLLW_Combined



### Supporting Documents

Name	Version
Specs and Deleverables	April 2011
HCell Specs	6.1

# PHB Compilation Log

<b>Select Software Used</b>	CARIS Hips	
<b>Software</b>	<b>Version, Hot Fix</b>	<b>Used For</b>
CARIS HIPS	7.1 HF3	SAR Review. Inspection of Combined BASE Surfaces.
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 HF5	Final compilation of the HCell, correct geometry and build topology, apply final attributes, export the HCell, and QA.
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 SP2	Generate plots of CARIS Session files used for QC.
HydroService, dKart Inspector	6.0	Validation check of the base cell file.
Fugawi View ENC	1.0.0.3	Independent inspection of final HCells using COTS viewer.

Reset Table

## Product Info

<b>Deleverables</b>	
Survey Scale HCell	H12321_CS.000
HCell Report for MCD	H12321_SS.000
Feature Listing	H12321_HR.pdf
Descriptive Report	H12321_FL.txt
Survey Outline	H12321_DR.pdf
Chart Scale HCell	H12321_Outline.gml and .xsd

**Horizontal and Vertical Units**

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.

Depth Units (DUNI)	Feet
Positional Units (PUNI)	Feet
Height Units (HUNI)	Meters

<b>Radius Setting</b>		
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
2	-4.7	10
3	10	20
3.5	20	50
4	50	100

**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	Charted NOAA Rounded
12	3.6576	3.886	12.75
18	5.4864	5.715	18.75
30	9.3762	9.144	30.75
36	18.516	18.288	60.75

Add Contour

Remove Contour

# PHB Compilation Log

## Additional Info

### Contact Information

Inquiries regarding this HCell content or construction should be directed to:

HCell Compiler

Kurt Brown

Phone Number

206-526-6839

Email

kurt.brown@noaa.gov

### Compilation Comments

APPROVAL SHEET  
H12321

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.