H12306

NOAA FORM 76-35A

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

DESCRIPTIVE REPORT

Type of Survey: Navigable Area

Registry Number: H12306

LOCALITY

State: Virginia

General Locality: Approaches to Chesapeake Bay

Sub-locality: 22 NM SE of Rudee Inlet

2011

CHIEF OF PARTY
CDR Lawrence T. Krepp
NOAA

LIBRARY & ARCHIVES

DATE

NOAA FORM 77-28 (11-72) U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION	REGISTRY NUMBER:
HYDROGRAPHIC TITLE SHEET	**H12306**

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:	**Virginia**		
General Locality:	**Approaches to Chesapeake Bay**		
Sub-Locality:	**22 NM SE of Rudee Inlet**		
Scale:	**1:40,000**	Date of Survey:	**03/31/11 to 04/07/11**
Instructions Dated:	**06 April, 2011**	Project Number:	**OPR-D304-TJ-11**
Vessel:	**NOAA Ship *Thomas Jefferson***		
Chief of Party:	**CDR Lawrence T. Krepp, NOAA**		
Surveyed by:	***Thomas Jefferson* Personnel**		
Soundings by:	**Reson 7125 multibeam echo sounder.**		
Graphic record scaled by:	**N/A**		
Graphic record checked by:	**N/A**		
Protracted by:	**N/A**	Automated Plot:	**N/A**
Verification by:	***Atlantic Hydrographic Branch***		
Soundings in:	**Meters at MLLW**		

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 Red notes 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. All pertinent records for this survey, including the Descriptive Report, are archived at the National Geophysical Data Center (NGDC) and can be retrieved via http://www.ngdc.noaa.gov/.

Remarks:
1) All Times are in UTC.
2) This is a Navigable Area Hydrographic Survey.
3) Projection is NAD83, UTM Zone 18N.

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Descriptive Report to Accompany Hydrographic Survey H12306

Project OPR-D304-TJ-11
Approach to Chesapeake Bay, VA
22 NM SE of Rudee Inlet
Scale 1:40,000
March 31st – April 7th, 2011
NOAA Ship *Thomas Jefferson*

A. AREA SURVEYED

This hydrographic survey was completed as specified by Hydrographic Survey Letter Instructions OPR-D304-TJ-11, dated 6th April, 2011.

Northern limit	Southern limit	Eastern limit	Western limit
36°40'06"	36°36'00”	-075°29'54”	-075°39'54”

Data acquisition was conducted from March 31st – April 7th, 2011.

The purpose of this project is to provide contemporary surveys to update National Ocean Service (NOS) nautical charting products. The project will address the concerns raised by the Virginia Pilots about the under keel clearance of deep draft coal ships transiting through the area southeast of the deep draft lane sea buoy. The project will also provide data in the area of two potential new shipping access areas, proposed by the Virginia Maritime Association. This project will cover approximately 364 nm² of which 170 nm² are critical survey areas as designated in NOAA Hydrographic Survey Priorities, 2010 edition.

	Linear Nautical Miles
LNM Single beam mainscheme only	N/A
LNM Multibeam mainscheme only	N/A
LNM Lidar mainscheme only	N/A
LNM Side Scan Sonar mainscheme only	N/A
Lineal nautical miles of any combination of the above techniques (SSS 200%, MBES)	674.60
LNM Crosslines singlebeam and multibeam combined	59.72
LNM Lidar Crosslines	N/A
LNM development lines non mainscheme	23
LNM shoreline/nearshore investigations	N/A
Number of Bottom Samples	7
Number of items investigated that required additional time/effort in the field beyond the above survey operations	N/A
Total number of square nautical miles	33.16

Table 1: Hydrographic Survey Statistics

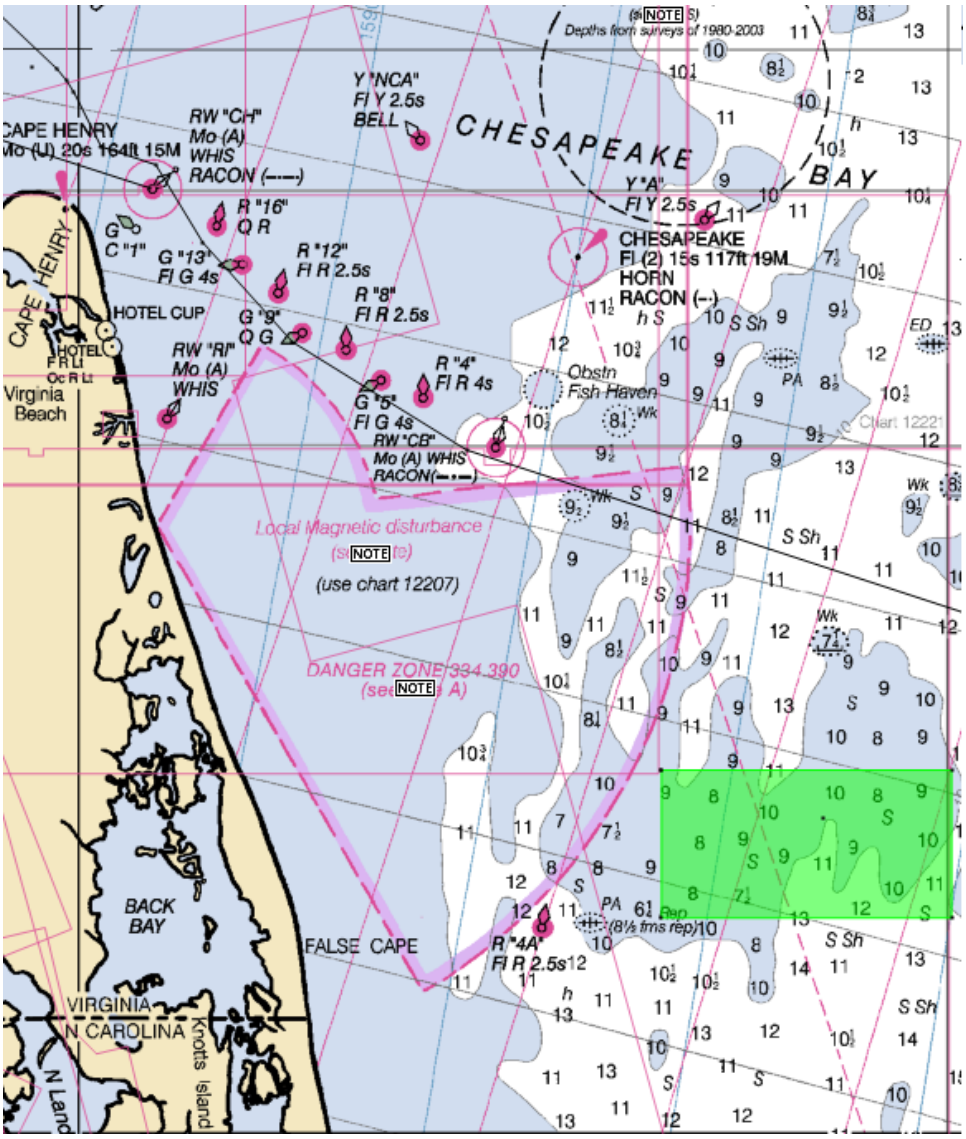


Fig. 1. H12306 Survey Area

Calendar Date	Julian Day
31-March-11	090
01-April-11	091
02-April-11	092
03-April-11	093
04-April-11	094
05-April-11	095
06-April-11	096
07-April-11	097

Table 2: SSS/MBES Acquisition Dates

B. DATA ACQUISTION AND PROCESSING

Refer to ***OPR-D304-TJ-11 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 included in this descriptive report.

B 1. EQUIPMENT AND VESSELS

Data were acquired by NOAA Ship *Thomas Jefferson.* NOAA Ship *Thomas Jefferson* acquired Reson 7125 multibeam echo sounder (MBES) soundings, Klein 5000 Side Scan Sonar (SSS) imagery, and sound velocity profiles. Sea bed samples were collected by NOAA Ship *Thomas Jefferson*. Vessel configurations, equipment operation and data acquisition and processing were consistent with specifications described in the *DAPR*.

B 2. QUALITY CONTROL

B 2.1 System Certification and Calibration

Refer to NOAA Ship *Thomas Jefferson's DAPR* and *Hydrographic Systems Readiness Report (HSRR)* for a complete description of system integration and initial calibration results for equipment and sensors used for this survey.

B.2.2 Sounding Coverage

As per the Letter Instructions, this survey was conducted using 200% SSS coverage with concurrent MBES bathymetry with object detection MBES development over navigationally significant features.

B 2.3 Crosslines

Multibeam cross-lines totaling 59.72 LNM were acquired during the course of the survey. This is approximately 8.85% of the total linear nautical miles of mainscheme multibeam hydrography. As per email dated 10 Sept, 2009 from AHB located in the Descriptive Report, Appendix 5, quality control was performed using the standard deviation layer of the survey's CUBE surface. Areas of unusually high standard deviation were investigated and resolved in processing, except where caused by areas of high bathymetric relief or as described in Section 2.5 Systematic Errors.

B 2.4 Junctions and Prior Surveys

The following contemporary surveys junction with H12306, see figure 2.

Registry #	Scale	Date	Field Party	Junction side
H12202	1:40,000	2010	*Thomas Jefferson*	Northwest
H12203	1:40,000	2010	*Thomas Jefferson*	Northeast
Sheet 7 (H12341)	1:20,000	2011	*Thomas Jefferson*	West
Sheet 11	1:40,000	TBD	TBD	South

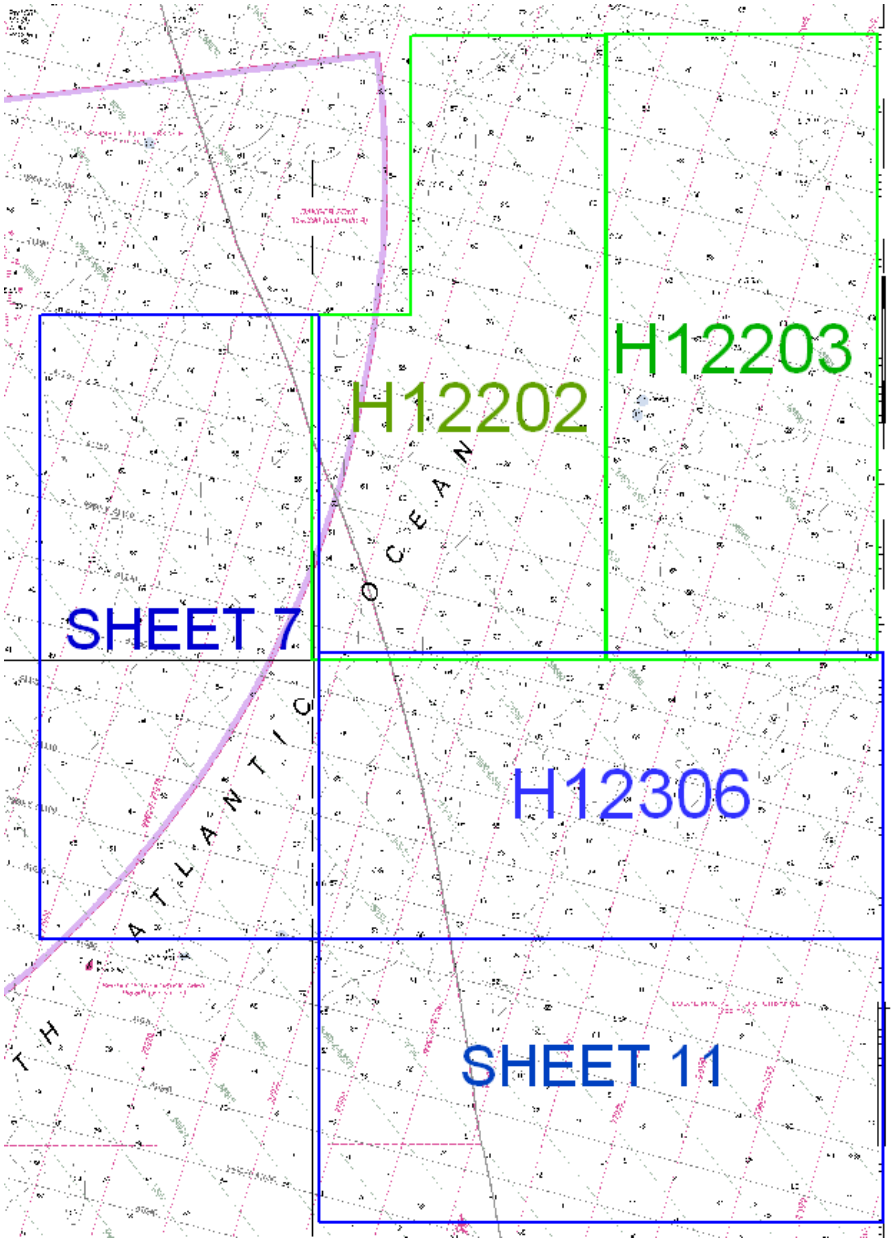


Figure 2: Junction Surveys.

The soundings that junction between H12306 and H12202 agree within 20 cm. The soundings that junction between H12306 and H12203 agree within 30 cm. At the time this Descriptive Report is being written, acquisition on Sheet 7 (H12341) has not yet begun and therefore, no sounding comparison is available. Depth comparisons between junction surveys are done by visual comparisons of survey scale sounding plots of each survey.

B 2.5 Systematic Errors

Crosslines from DN 091 have a high standard deviation when compared to the mainscheme MBES lines. The highest observed difference in depth is approximately 0.61m observed between DN091 and DN095. Analysis of the tides showed that the Duck, NC station experienced large residuals between the predicted and observed tides. On DN 091, at 0440 hrs UTC, the observed tides were 0.58m higher than predicted due to an onshore wind. On DN 095, at 1500 hrs UTC, observed tides were approximately 0.26m lower than predicted due to an offshore wind. The combined residuals between the two days are approximately 0.84m. The localized meteorological effects at the tide station did not affect the survey area in the same manner, and therefore, resulted in the observed tide bust of approximately 0.61m. See figures 3, 4, and 5 below for plots from the Duck, NC tide station. See Fig 6, below for the tide artifact found at the point of highest standard deviation (0.31m) in the survey.

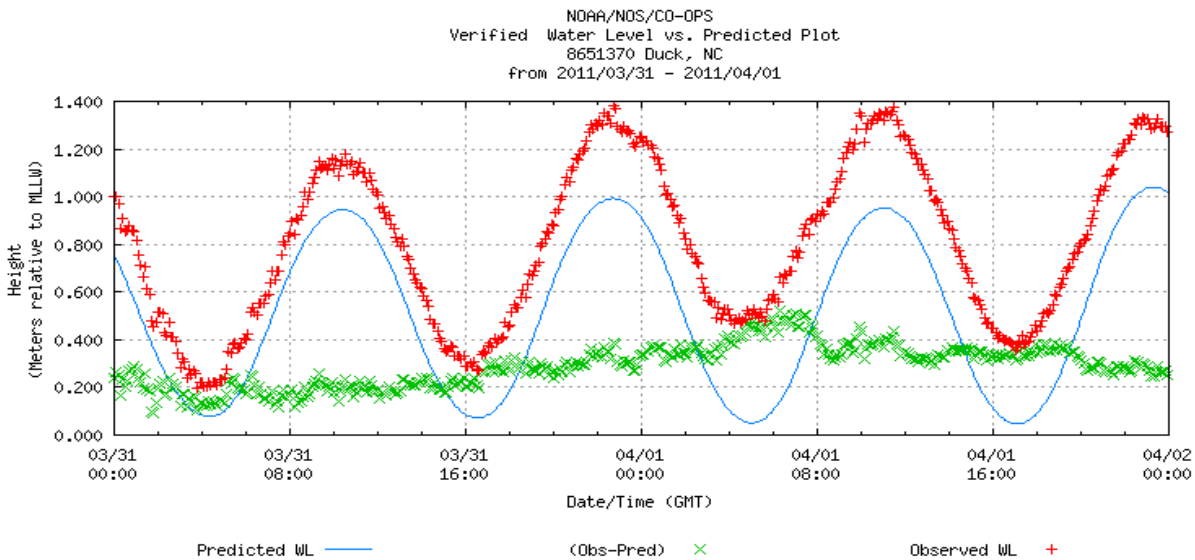


Fig. 3 – Verified vs. Predicted tides for DN091 – note the high residual beginning around 0400 hrs on April 1st, 2011.

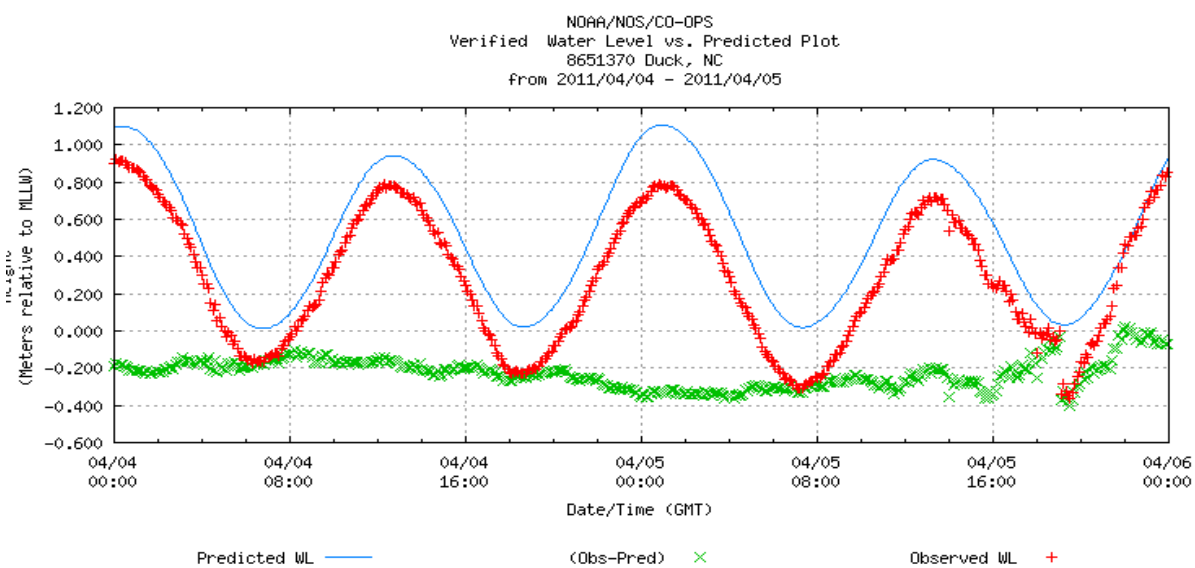


Fig. 4 – Verified vs Predicted tides for DN095 – note the negative residual observed for the period.

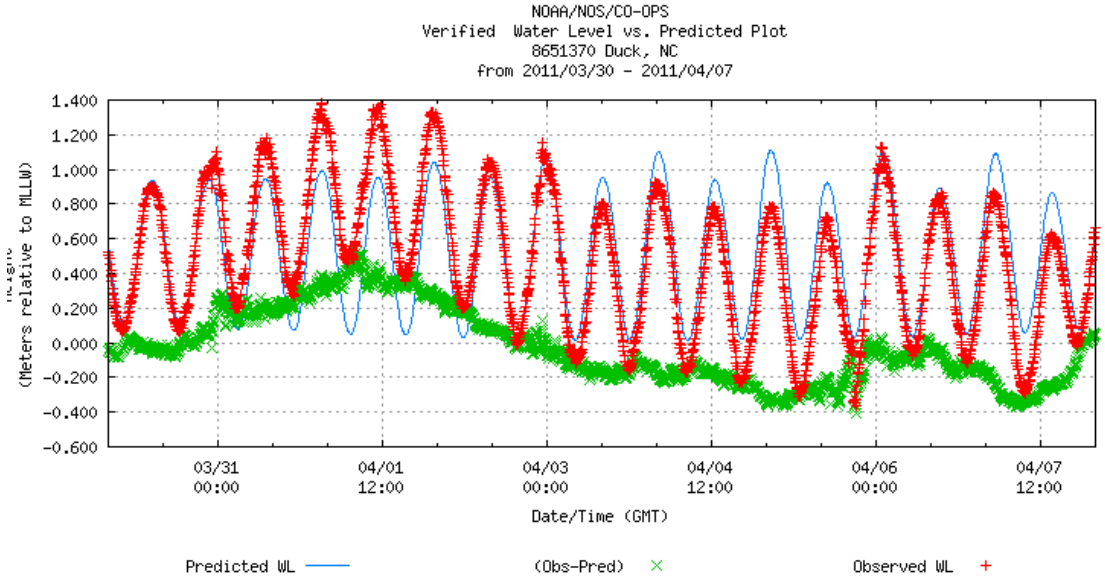


Fig. 5 – Verified vs Predicted tide plot for the Duration of H12306

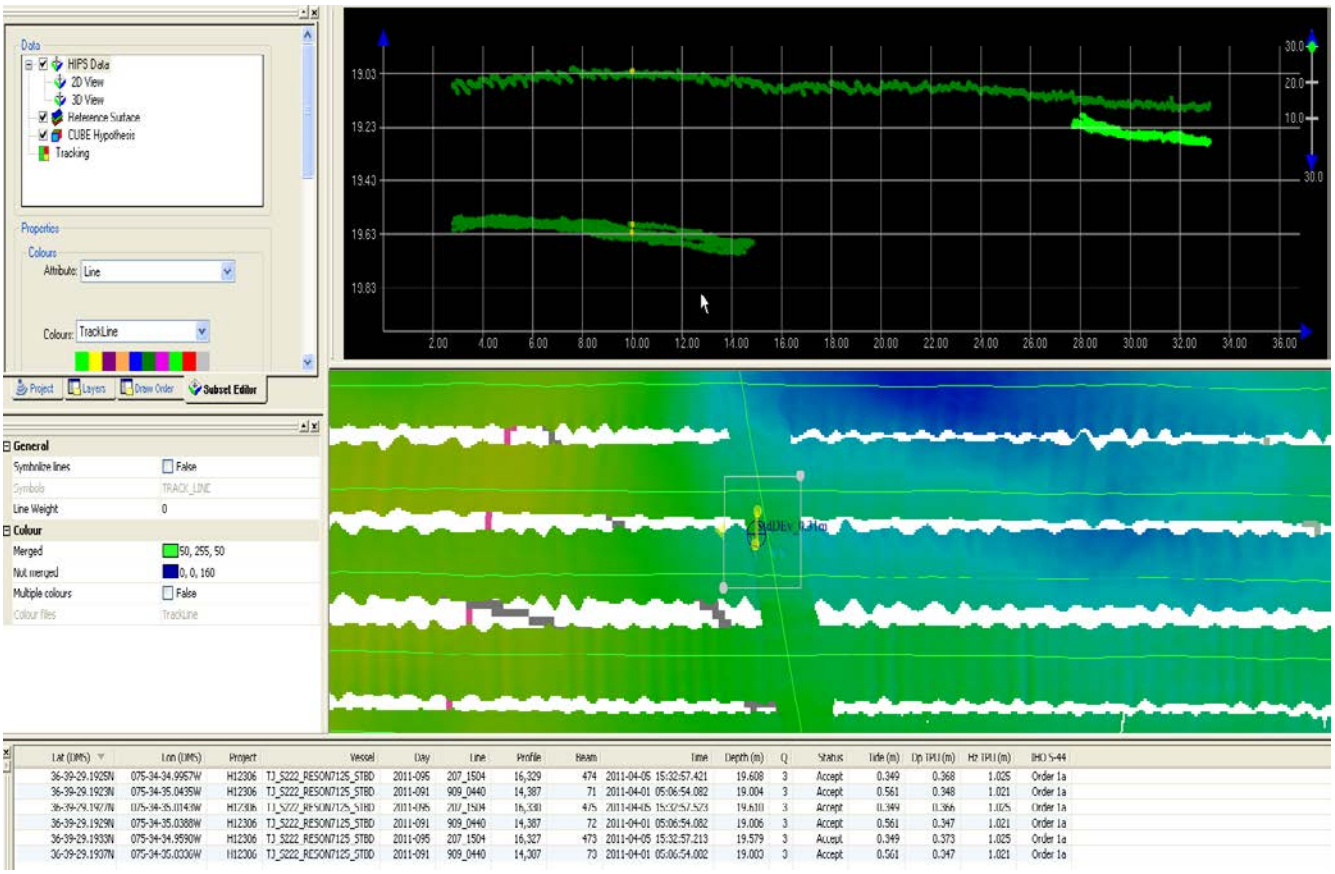


Fig 6 – Tide artifact of 0.61m (DN 091 & DN095) - position where the greatest standard deviation was observed (0.31m). The continuous dark green line across the top is crossline 909_0440 from DN091. The medium green line in the lower left is mainscheme line 207_1504 from DN095. The bright green line in the upper right is mainscheme line 107_1756 from DN091. Positions and other relevant information are indicated in the bottom of the image.

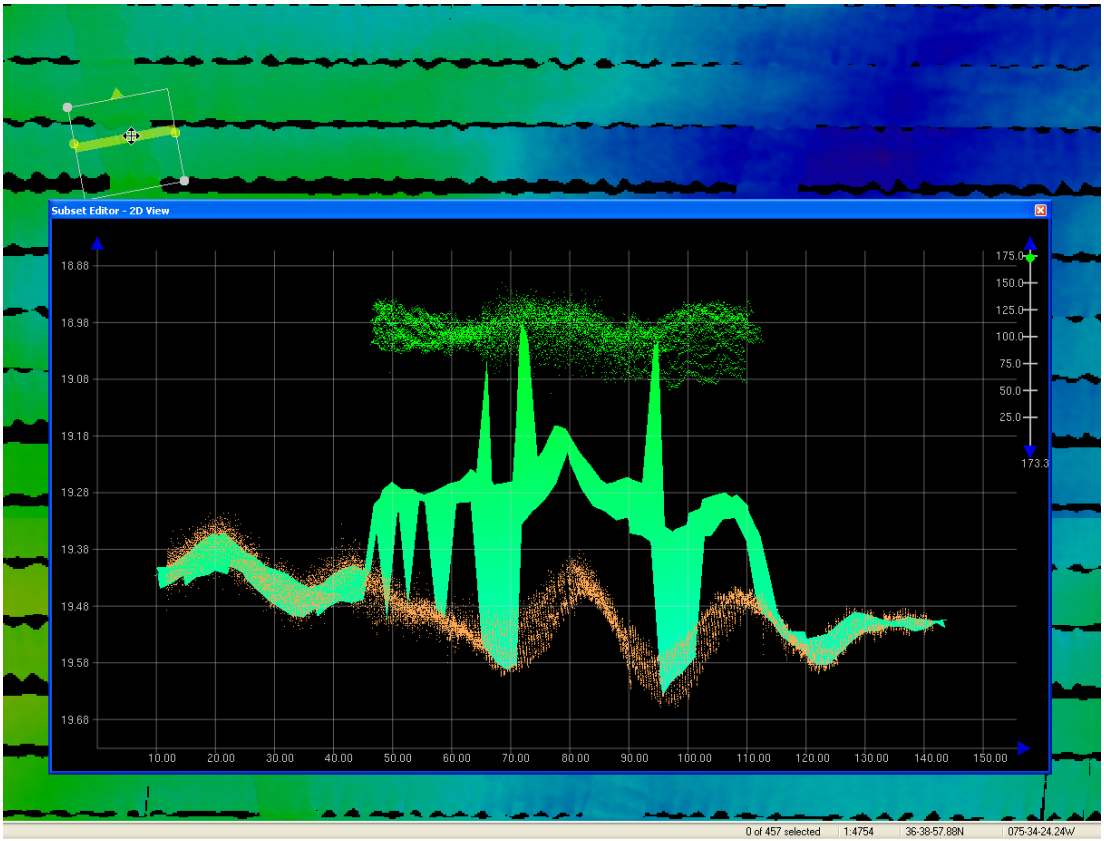


Fig. 7 – Hypothesis tearing of the surface between DN091 and DN095.
Location of curser is shown in lower right corner of image

Despite the large tide artifacts between crosslines on DN 091 and the mainscheme lines on DN095, the standard deviation does not exceed 0.31 m for this survey. Only 20 nodes in this survey exceed the IHO Order 1 limit with none exceeding the limit by more than 0.04m. All 20 nodes that exceeded IHO Order 1 limits were located over the 4 highest areas of standard deviation caused by the tide artifacts between DN091 and DN095. This survey easily meets the requirement for 95% of all nodes to meet the IHO Order 1 spec.

Several attempts were made to process the SBET for DN091 to resolve the tide artifact, but Applanix SmartBase would not run due to large data gaps in the CORS station data. The distance to the nearest CORS station that had a full data set available was beyond the Applanix SingleBase recommended limit. Additional effort was not taken since the survey meets IHO Order 1 as is. Crosslines are retained in the final surfaces. The decision to include or exclude the crosslines from DN091 in the final sounding set is left to the discretion of cartographers at the receiving processing branch.

```
--------------------------------------------------------------------------------
ASBâ„¢ Applanix SmartBase Processor [Dec 13 2010]
Copyright (c) 2006-2010 Applanix Corporation.  All rights reserved.
Date : 10/25/11    Time : 15:00:20
--------------------------------------------------------------------------------
Applanix SmartBase (ASBâ„¢) processing started
--------------------------------------------------------------------------------
        Reference Station Raw Data Analysis
--------------------------------------------------------------------------------

Station_ID | Total_Gap | Max_Gap | Min_Gap | Unrepaired_CS | Simul_unrepaired_CS | REF2Traj_Centre(km) | Data-rate(s)
    ACU6   985651200.0   985651200.0   985651200.0         545                4                695.1              30.0
    NCCI   985651380.0   985651200.0       60.0         474               16               193.0              30.0
    LOY1   985651200.0   985651200.0   985651200.0         439                4                 86.6              30.0
    NCEL   985651620.0   985651200.0       60.0         500               20                 69.9              30.0
    LOY2   985651290.0   985651200.0       90.0         707                8                 60.2              30.0
    LS03   985651200.0   985651200.0   985651200.0        2203                5                 37.3              30.0

--------------------------------------------------------------------------------
              SmartBase Statistics
--------------------------------------------------------------------------------
SmartBase Status: PROC_STATUS_VRS_DATAGAP
Primary Station ID: LS03
Primary Station Data-rate: 30.0 s
Processing rate: 30.0 s
VRS/ASB generation rate: 1.0 s
VRS/ASB Time span:  86244 s (1629 432072 - 1629 518316)
Number of Reference Stations: 6
Percentage of Primary Station Measurement Usage: 98.4%
Average Number of satellites per epoch:  9.0
Total full data gap: 48 s
Total individual satellite data gap: 12936 s
The percentage of precise ephemeris used in VRS generation is: 100.00%
The percentage of broadcast ephemeris used in VRS generation is:   0.00%
--------------------------------------------------------------------------------
Warning: PROC_STATUS_VRS_DATAGAP

Termination status : Warnings
--------------------------------------------------------------------------------
Station             Input Coords
ACU6                Original
NCCI                Original
LOY1                Original
NCEL                Original
LOY2                Original
LS03                Control
```

Fig. 8 – Data Gaps in CORS Station Data

Additionally, true heave would not apply to day 093, lines 137_0436 through 247_1840. Minor heave artifacts of approximately 0.1m were observed with this data as a result of the inability to apply true heave.

B 3. CORRECTIONS TO ECHO SOUNDING

HDCS sounding data were reduced to mean lower-low water (MLLW) using verified water levels from Duck, NC (8651370) using preliminary zoning accepted as final zoning and illustrated in Figure 7.

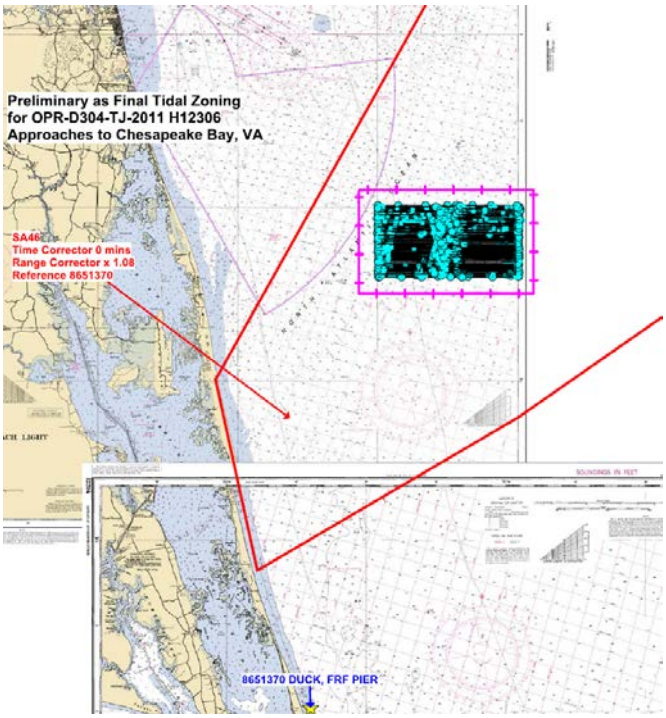


Fig 9: Final Tide Zoning

All other datum reduction procedures conform to those outlined in the DAPR**.**
All methods and instruments used for sound speed correction were as described in the *DAPR*, except that the standard practice for extending casts changed. During this survey casts were extended during processing in Velocipy, but after observing several unlikely sound speed values as a result of extending casts automatically, the standard practice was changed such that casts are no longer extended. During processing in CARIS HIPS, if a cast does not reach the sea floor, the last sound speed value from a cast is used to correct soundings in areas deeper than the applied cast. The DAPR discusses the practice of not extending sound speed casts.

Two tables detailing all sound speed casts are located in Separate II of this Descriptive Report. The first table (SVP_Report_H12306) is a PSS generated report. The second table (H12306_2011_S222_MASTER) is a pdf master file of all CTD and MVP casts.

Sound velocity corrections for this survey were acquired using the ship's Moving Vessel Profiler (MVP) and Conductivity, Temperature and Depth (CTD) profiler. SVP data was applied in Caris® using the nearest in time option.

B 4. DATA PROCESSING

B 4.1 Total Propagated Error

For the 2011 field season, Total Propagated Error (TPE) parameters for sound, speed, and tides are calculated separately for each project. The project-specific parameters for OPR-D304-TJ-11, Survey H12306 are as follows:

Project	Vessel	Tide Values Combined Measured & Zoning	Sound Velocity Values		
			CTD	MVP	Surface
H12306	S222	0.085	4	1	0.2

Table 3: TPE Parameters

These values were calculated for all MBES data following CARIS Merge.

B 4.2 BASE Surfaces and Mosaics

The following table describes all BASE Surfaces submitted as part of Survey H12306:

Name of Surface	***Resolution***	***Type***	***Purpose***
H12306_CUBE_NOAA_2m_A_Final.csar	2m	CUBE	DTM
H12306_CUBE_NOAA_2m_B_Final.csar	2m	CUBE	DTM
H12306_CUBE_NOAA_2m_C_Final.csar	2m	CUBE	DTM
H12306_100_SSS_1m.csar	1m	Mosaic	100% SSS Coverage
H12306_200_SSS_1m.csar	1m	Mosaic	200% SSS Coverage

Table 4: BASE Surfaces

This survey was processed using the Combined Uncertainty and Bathymetry Estimator (CUBE) algorithm. The CUBE configuration was set to NOAA_2m for all main scheme surfaces. No 0.5m object detection surfaces were created because there are no significant features in the survey area which needed object detection developments. Refer to the *2011 Data Acquisition and Processing Report*, *2010 Field Procedures Manual (FPM)*, *2011 Hydrographic Surveys Specifications and Deliverables (HSSD)* and *CARIS HIPS and SIPS User Guide* for further information on CUBE surfaces and appropriate CUBE parameters for specific depth ranges and survey requirements.

B 4.3 Data Cleaning

The survey data were cleaned using the swath and subset editor tools in CARIS. All areas of the BASE surface that indicated a high standard deviation were examined and cleaned as required such that at least 95% of all nodes met the International Hydrographic Office (IHO) Order 1 depth accuracy requirements.

C. HORIZONTAL AND VERTICAL CONTROL

As per Field Procedures Manual (2010) section 5.2.3.2.3 a Horizontal and Vertical Control Report was not filed since horizontal and vertical control stations were not established by the field party for this survey. A summary of horizontal and vertical control for this survey follows.

C 1.1 Horizontal Control

The horizontal datum for this project is the North American Datum of 1983 (NAD83). Differential GPS (DGPS) was the sole method of positioning. Differential corrections from the U.S. Coast Guard beacon at Driver, VA (289 kHz) were used during this survey.

C 1.2 Vertical Control

The vertical datum for this project is Mean Lower-Low Water (MLLW). The operating National Water Level Observation Network (NWLON) stations at Chesapeake Bay Bridge Tunnel, VA (8638863) and Duck, NC (8651370) will serve as datum control for H12306. A request for delivery of final approved (verified) tides for this survey was forwarded to N/OPS1 on 10 April 2011 in accordance with the FPM and project letter instructions. Preliminary zoning was approved as Final zoning on 4 May 2011. Refer to documentation in Appendix IV of this Descriptive Report for further details.

D. RESULTS AND RECOMMENDATIONS

D.1 Chart Comparison

D 1.1 Chart 12207 Comparison

Survey H12306 was compared to Chart 12207, (22nd Ed., October 2009, 1:80,000), the largest scale chart covering the survey area. Generally soundings agreed with the chart to within 3 feet throughout the survey area. One exception is a 70ft charted sounding located at 36° 37' 16" N, 075° 39' 33" W. The depth in this location was found to be 9 feet shoal of the sounding shown on the chart. Another exception is a 54ft sounding between charted 57ft and 64 ft soundings.

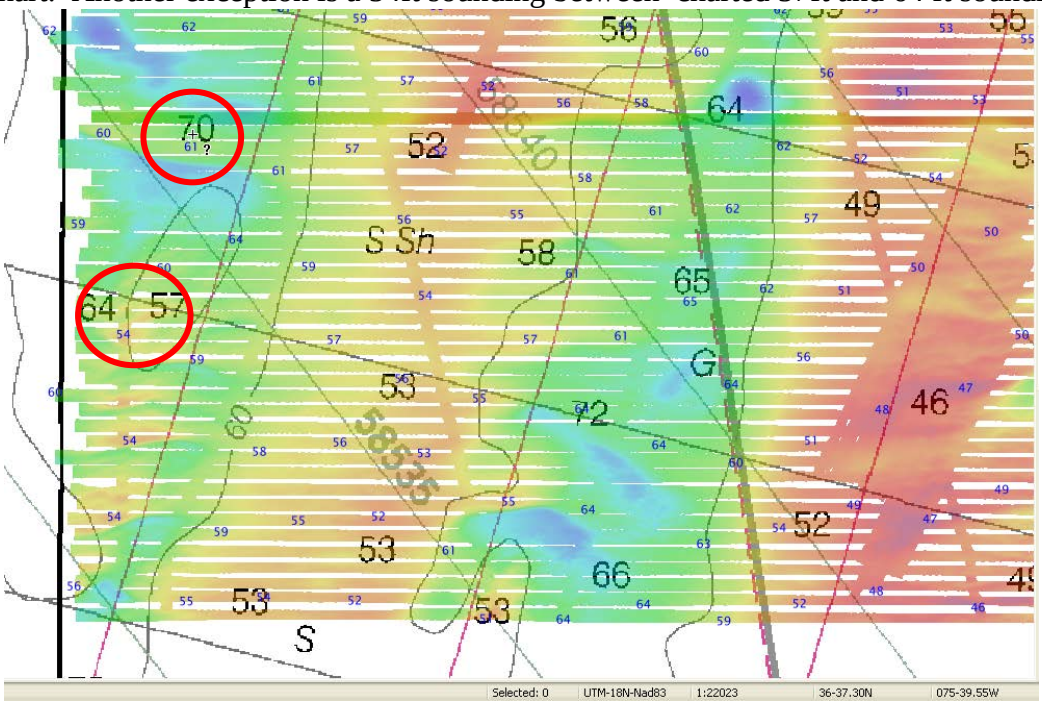


Fig. 10 – Shoaling along the SW corner of the survey. 61 ft over charted 70ft and 54 ft between a charted 64 ft and 57 ft.

Shoals in the east portion of the survey had a slight shift due to apparent shoal migration; see Fig. 10.

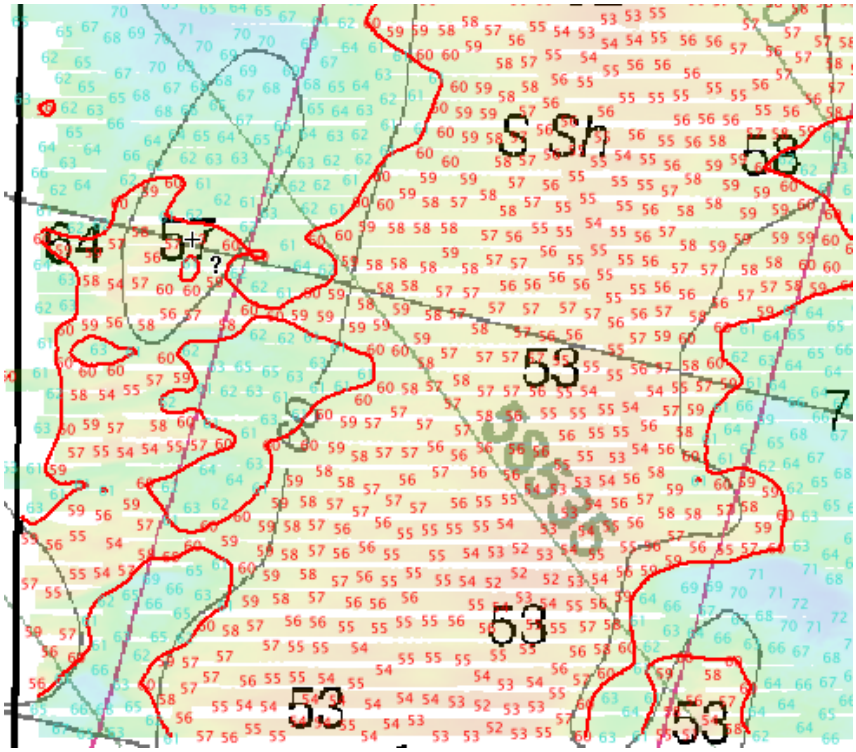


Fig 11 – Shoal Migration- 57ft shoal at
36-36-49N, 75-39-36W has shifted south about 500m.

Depths shallower than charted were also found in the southeast portion of the survey; see Fig11.

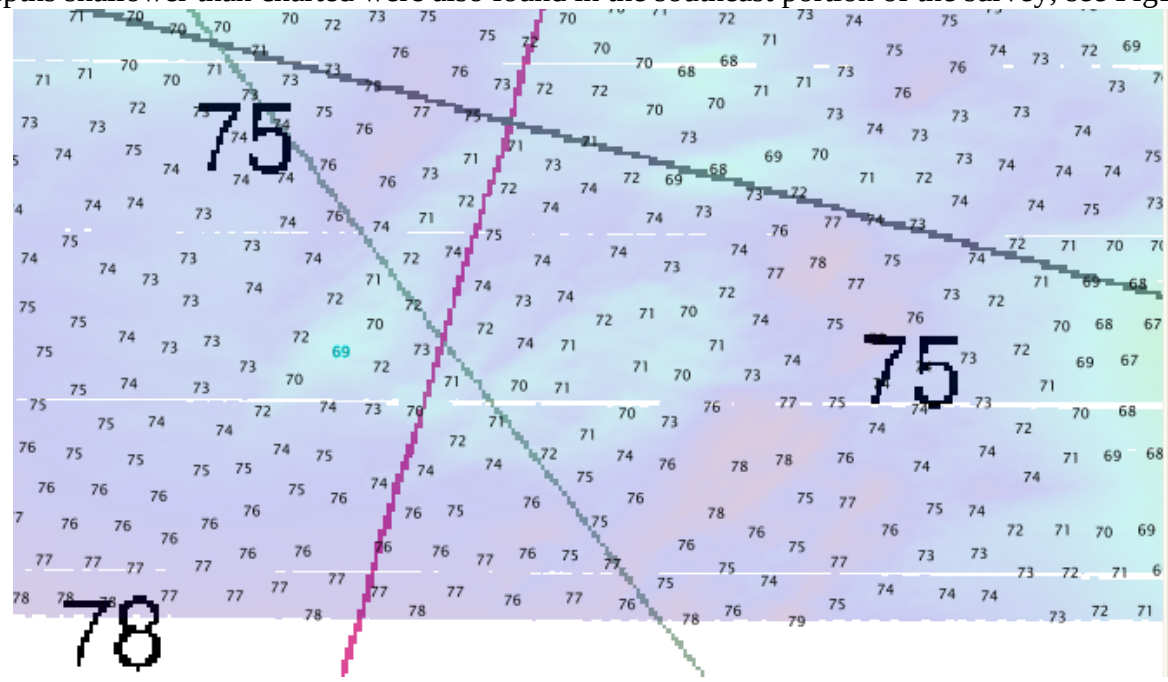


Fig 11- Shoal Depth in the SE Region - the 69ft sounding highlighted in blue is located at 36-36-12.75N 75-33-40.17W

Additional splits should have been run in the south central portion of the survey as shown in Fig. 12 below:

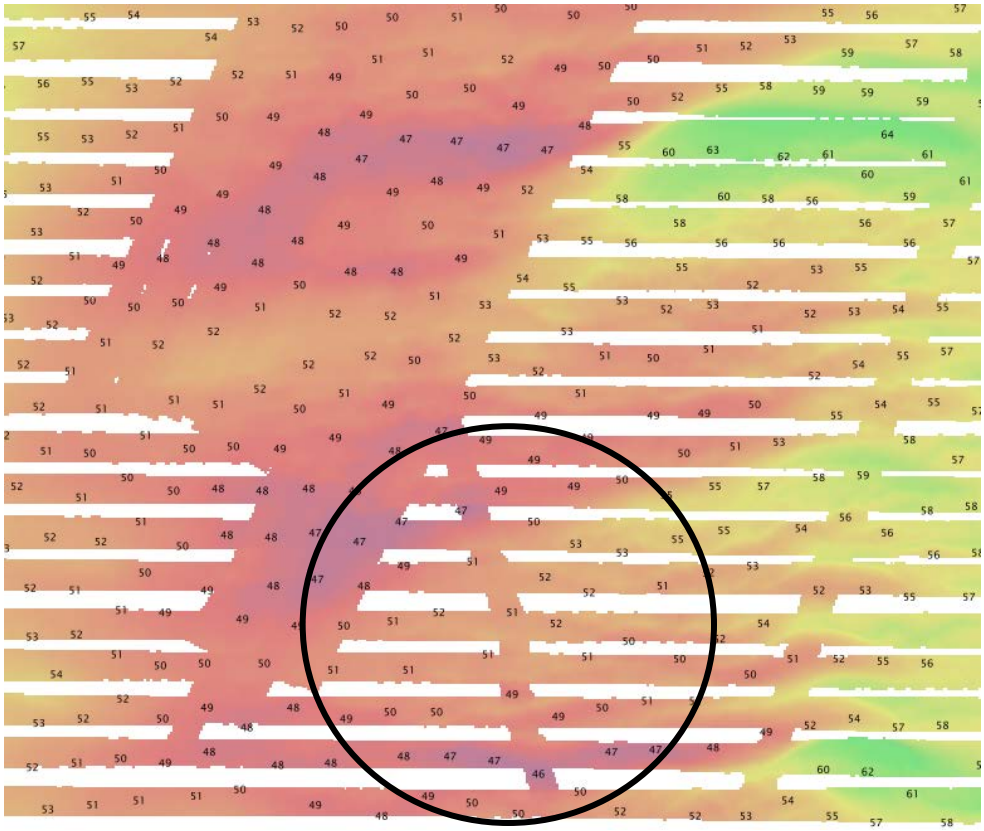


Fig 12: Area Where Further Splits Were Warranted
Center of the oval is at 36-36-01N, 75-36-W

D 1.2 ENC US4NC32M Comparison

Generally soundings agreed with charted depths to within 3 feet throughout the survey area. One exception is a 70ft charted sounding located at 36° 37' 16" N, 075° 39' 33" W. The depth in this location was found to be 9 feet shoal of the sounding shown on the chart. Similar evidence of shoal migration as discussed in the raster chart comparison was observed.

D.2 Additional Results

D.2.1 Automated Wreck and Obstruction Information Service (AWOIS) Items

No AWOIS items were investigated for this survey.

D.2.4 Shoreline

There is no shoreline within the sheet limits of survey H12306.

D.2.5 Charted Features

D.2.6 Charted Pipelines and Cables

No cables or pipelines were observed in this survey. Any pipelines or cables that may exist are assumed to be properly buried. The hydrographer has no recommendations regarding these.

D.2.7 Bridges, Ferry Routes, and Overhead Cables

There are no ferry routes, bridges, or overhead cable crossings within the limits of the survey.

D.3 Dangers to Navigation and Shoals

D 3.1 Dangers to Navigation

No dangers to navigation were found or reported to the NOAA's Office of Coast Survey.

D 3.2 Shoals

There were no significant uncharted shoals discovered during this survey, however, shoal migration is evident as discussed in the chart comparison section.

D.4 Aids to Navigation

There are no charted Aids to Navigation (ATON) within the limits of H12306.

D.5 Coast Pilot Information

The Hydrographer has no recommendations for changes or addenda to the Coast Pilot.

D.6 Bottom Samples

Bottom samples were taken in accordance with section 7.1 of the NOS Hydrographic Survey Specifications and Deliverable, dated April 2010. A total of seven bottom samples were acquired. A list of all bottom samples and a .hob file of all samples acquired during Survey H12306 is also contained in Appendix V of this report.

D.7 Environmental Conditions and Notes

No significant environmental conditions occurred during the survey.

D.8 Adequacy of Survey

This survey is considered complete and adequate to supersede charted depths and features within the survey area outline except as noted in this report.

D.9 Summary and Recommendations for Additional Work

No additional work is needed to complete this survey. No changes significant to navigation have been noted and it is recommended that this survey receive normal processing priority.

E. APPROVAL

As Lead Hydrographer, I have ensured that standard field surveying and processing procedures were followed in producing this examination in accordance with the Office of Coast Survey Hydrographic Surveys Division's *Field Procedures Manual*, and NOS *Hydrographic Surveys Specifications and Deliverables*. 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. All records are forwarded for final review and processing to N/CS33, Atlantic Hydrographic Branch.

The Data Acquisition and Processing Report for OPR-D304-TJ-11 is submitted separately and contains additional information relevant to this survey.

Approved and Forwarded:

Michael C. Davidson
2012.03.29 17:28:40
-04'00'

LT Michael C. Davidson, NOAA
Field Operations Officer

CDR Lawrence T. Krepp, NOAA
Commanding Officer

In addition, the following individual was also responsible for overseeing data acquisition and processing of this survey:

Survey Manager:

LTJG Marina O. Kosenko, NOAA

Appendix I

Tides and Water Levels

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NOAA Ship THOMAS JEFFERSON (MOA-TJ)
439 West York St
Norfolk, VA 23510-1145

April 10, 2011

MEMORANDUM FOR: Chief, Requirements and Development Division, N/OPS1

FROM: CDR Shepard M. Smith, NOAA Ship THOMAS JEFFERSON (MOA-TJ)

SUBJECT: Request for Approved Tides/Water Levels

Please provide the following data:

1. Tide Note
2. Final zoning in MapInfo and .MIX format
3. Six Minute Water Level data (Co-ops web site)

Transmit data to the following:

NOAA/NOS/Atlantic Hydrographic Branch
N/CS33, Building #2
439 West York Street
Norfolk, VA 23510
ATTN: Chief AHB

NOAA Ship Thomas Jefferson
439 W York St
Norfolk, VA 23510
Attn: Operations Officer

These data are required for the processing of the following hydrographic survey:

Project No.:	OPR-D304-TJ-11
Registry No.:	H12306
State:	Virginia
Locality:	Approaches to Cheseapeake Bay, VA
Sublocality:	22 NM Southeast of Rudee Inlet

Attachments containing:

1) an Abstract of Times of Hydrography,
2) digital MID MIF files of the track lines from Pydro

cc: N/CS33
MOA-TJ

Year_DOY	Min Time	Max Time
2011_090	22:24:07	23:56:44
2011_091	00:52:46	23:51:47
2011_092	00:09:29	23:56:17
2011_093	00:14:18	23:58:30
2011_094	00:23:20	23:50:22
2011_095	00:10:07	23:44:58
2011_096	00:14:04	23:49:57
2011_097	00:00:02	09:28:10

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

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE : May 4, 2011

HYDROGRAPHIC BRANCH: Atlantic
HYDROGRAPHIC PROJECT: OPR-D304-TJ-2011
HYDROGRAPHIC SHEET: H12306

LOCALITY: Approaches to Chesapeake Bay, VA
TIME PERIOD: March 31 - April 7, 2011

TIDE STATION USED: 865-1370 Duck, NC
Lat. 36° 11.0'N Long. 75° 44.8' W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 1.027 meters

REMARKS: RECOMMENDED ZONING

Preliminary zoning is accepted as the final zoning for project OPR-D304-TJ-2011, H12306, during the time period between March 31 to April 7, 2011.

Please use the zoning file "D304TJ2011CORP" submitted with the project instructions for Approaches to Chesapeake Bay, VA. Zone SA46 is the applicable zones for H12306.

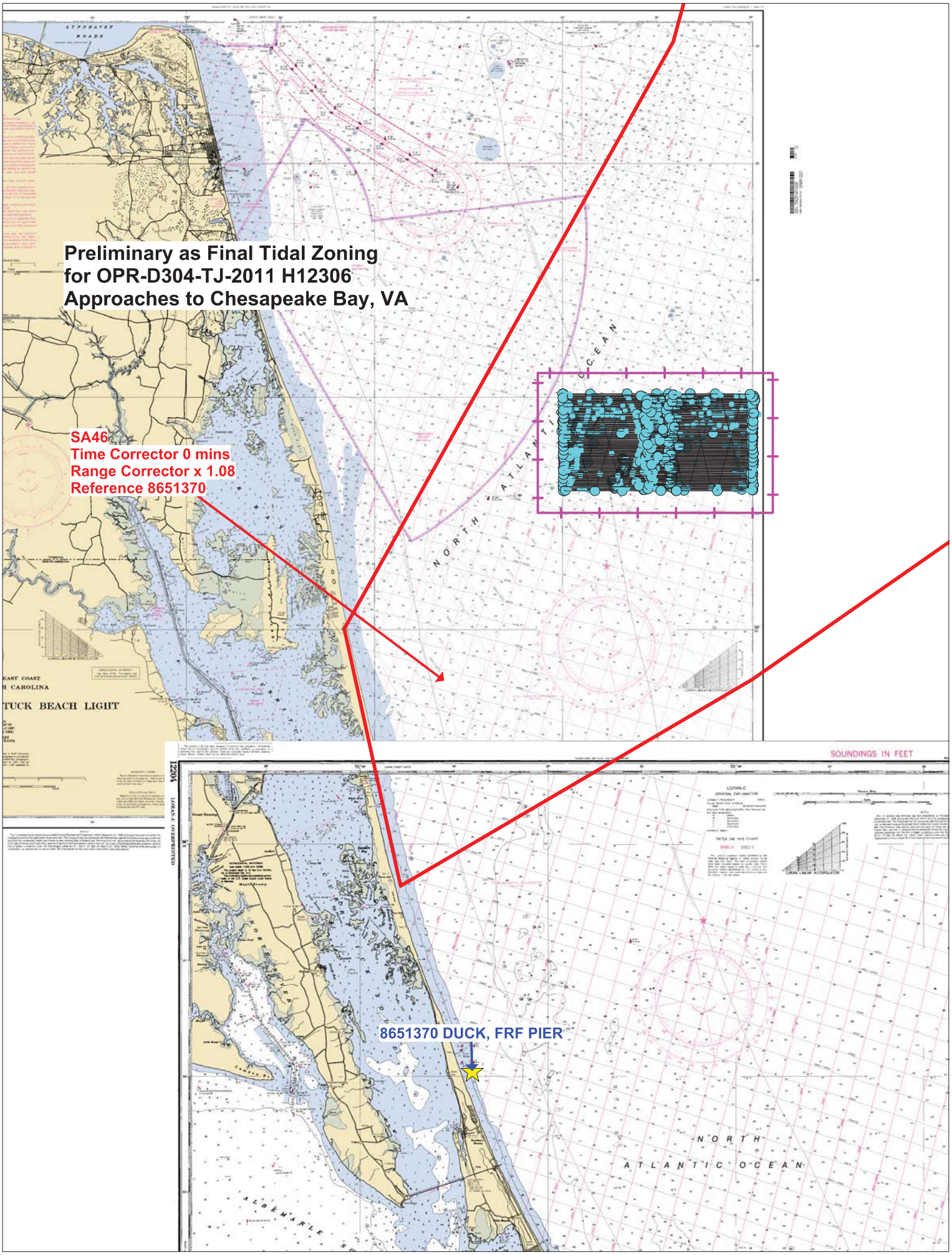
Refer to attachments for zoning information.

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=NOAA/NOS/CO-OPS, ou=Oceanographic Division, email=peter.stone@noaa.gov, c=US
Date: 2011.05.05 07:32:42 -04'00'

CHIEF, OCEANOGRAPHIC DIVISION


Preliminary as Final Tidal Zoning
for OPR-D304-TJ-2011 H12306
Approaches to Chesapeake Bay, VA
SA46
Time Corrector 0 mins
Range Corrector x 1.08
Reference 8651370
NORTH ATLANTIC OCEAN
TUCK BEACH LIGHT
SOUNDINGS IN FEET
8651370 DUCK, FRF PIER
NORTH ATLANTIC OCEAN

Appendix II

Supplemental Survey Records & Correspondence

From	<Michael.Davidson@noaa.gov>
Sent	Monday, March 28, 2011 8:39 am
To	richard.t.brennan@noaa.gov , sarah.mrozek@noaa.gov
Cc	ops.thomas.jefferson@noaa.gov , co.thomas.jefferson@noaa.gov , chiefst.thomas.jefferson@noaa.gov
Bcc	
Subject	TJ beginning work on OPR-D304-TJ-11
Attachments	Draft_OPR-D304-TJ-11_ApproachesToChesapeakeBay_Instructions-1.pdf 1.2MB

Mid-Atlantic Nav Manager(s),

NOAA Ship Thomas Jefferson will begin survey operations on OPR-D304-TJ-11 on Wednesday evening or Thursday morning. We will begin working on the sheets labeled Sheet 1 and Sheet 7 first. I will be contacting Mr. T.D. Woodward, USACE regarding our survey operations as required in our project instructions (see attached). Please feel free to notify any of our local interests of our survey operations as you see fit.

Let me know if you have any questions or need any further information. Once we receive our final project instruction, I will forward a courtesy copy.

Thank you for your time.

V/R,
Mike

--
LT Michael C. Davidson
Operations Officer
NOAA Ship Thomas Jefferson
439 W York St
Norfolk, VA 23510
michael.davidson@noaa.gov
757-441-6323 ship's landline
757-647-0187 ship's cell

From Cristina Urizar <Cristina.Urizar@noaa.gov>

Sent Thursday, May 5, 2011 2:46 pm

To Michael.Davidson@noaa.gov , Norris A Wike <Norris.A.Wike@noaa.gov> , "Kyle.Ward" <Kyle.Ward@noaa.gov> , '_OMAO MOA OPS Thomas Jefferson' <OPS.Thomas.Jefferson@noaa.gov> , James M Crocker <James.M.Crocker@noaa.gov>

Cc "_NOS.CO-OPS.HPT" <NOS.COOPS.HPT@noaa.gov>

Bcc

Subject Final Tide Notes for OPR-D304-TJ-2011, Registry Nos. H12306 and H12307

Attachments Prjt Ins Final Tides.png 39K H12307.pdf 1.7MB H12306.pdf 566K vCard(Cristina_Urizar) 1K

DATE: 05/05/2011

MEMORANDUM FOR: LCDR Rick Brennan

Chief, Atlantic Hydrographic Branch

FROM:Gerald Hovis

Chief, Products and Services Branch, N/OPS3

SUBJECT:Delivery of Tide Requirements for Hydrographic Surveys

This is notification that the preliminary zoning is accepted as the final zoning for survey project OPR-D304-TJ-2011, registry No. H12306 and H12307 during the time period between March 31 and April 14, 2011. The accepted reference station for registry No. H12306 and H12307 is Duck, NC (865-1370).

Included with this memo are Tide Notes in .PDF format, stating the preliminary zoning has been accepted as the final zoning.

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

DATE: 05/05/2011

MEMORANDUM FOR: LCDR Rick Brennan
Chief, Atlantic Hydrographic Branch

FROM: Gerald Hovis
Chief, Products and Services Branch, N/OPS3

SUBJECT: Delivery of Tide Requirements for Hydrographic Surveys

This is notification that the preliminary zoning is accepted as the final zoning for survey project OPR-D304-TJ-2011, registry No. H12306 and H12307 during the time period between March 31 and April 14, 2011. The accepted reference station for registry No. H12306 and H12307 is Duck, NC (865-1370).

Included with this memo are Tide Notes in .PDF format, stating the preliminary zoning has been accepted as the final zoning.

From <Michael.Davidson@noaa.gov>

Sent Tuesday, June 14, 2011 7:45 pm
To survey.outlines@noaa.gov
Cc mark.friese@noaa.gov , ops.thomas.jefferson@noaa.gov
Bcc
Subject Survey Outline H12306
Attachments H12306_Outline.gml 12K H12306_Outline.xsd 5K

Attached is the survey outline for H12306, OPR-D304-TJ-11.

V/R,
Mike

--
LT Michael C. Davidson
Operations Officer
NOAA Ship Thomas Jefferson

From "james.m.crocker" <James.M.Crocker@noaa.gov>

Sent Thursday, May 5, 2011 8:03 am

To Shep Smith <Shep.Smith@noaa.gov>

Cc CO Thomas Jefferson <CO.Thomas.Jefferson@noaa.gov> , _NMAO MOA OPS Thomas Jefferson <OPS.Thomas.Jefferson@noaa.gov> , daniel wright <Daniel.Wright@noaa.gov> , Lawrence T Krepp <Lawrence.T.Krepp@noaa.gov>

Bcc

Subject Re: Request for expected tides delivery date-H12306

Attachments vCard(james_m_crocker) 1K

Shep,

Spoke with CO-OPs on Monday. They stated that there were no issue with the water levels from the controlling gauges that would prevent using preliminary as final. They stated they were just behind and were working to have them issued this week. Hopefully you will see them today or tomorrow.

Jim

On 5/4/2011 10:51 PM, Shep Smith wrote:
> Hi Jim,
>
> As one of my last acts, I am following up on tides for H12306. We
> also requested the tides for H12307 on April 14. Could you please
> check on that one as well?
>
> Thanks,
>
> Shep
>
> On 4/27/2011 4:57 PM, CO Thomas Jefferson wrote:
>> Jim,
>>
>> Would you mind checking with COOPS to see when they expect to deliver
>> tides for H12306 OPR-D304-TJ?
>>
>> We submitted the smooth tides request on April 10.
>>
>> Thanks,
>>
>> Shep
>>

From	Lucy Hick <Lucy.Hick@noaa.gov>
Sent	Wednesday, April 20, 2011 5:25 pm
To	_OMAO MOA OPS Thomas Jefferson <OPS.Thomas.Jefferson@noaa.gov> , _NMAO MOP ChiefST Fairweather <ChiefST.Fairweather@noaa.gov> , _NMAO MOP CO Fairweather <CO.Fairweather@noaa.gov> , _NMAO MOP XO Fairweather <XO.Fairweather@noaa.gov>
Cc	James M Crocker <James.M.Crocker@noaa.gov> , "Kyle.Ward" <Kyle.Ward@noaa.gov> , Lori Knell <Lori.Knell@noaa.gov> , Rachel Medley <Rachel.Medley@noaa.gov>
Bcc	
Subject	Project Manager

All,

I will be leaving HSD OPS to complete a 12 month detail in OCS International Affairs. I begin my detail on Wednesday May 4. However, I will be out of the office all next week to attend the US Hydro Conference in Tampa.

Lori Knell will be taking over as Project Manager for OPR-D304-TJ-11. From this point forward, please copy her on all e-mails on issues related to this project.

For XML DR issues, please contact Rachel Medley (Rachel.Medley@noaa.gov) or e-mail XML.DR@noaa.gov.

Best Regards,
Lucy

P.S. Mike...have you guys decided if you want the old NSD Trimble backpacks? I'd like to either ship them or return them by the end of the week.

--

Lucy Hick
Physical Scientist, Operations Branch
Hydrographic Surveys Division
Office of Coast Survey
National Oceanic& Atmospheric Administration
Lucy.Hick@noaa.gov
301-713-2702 x125 (Office)
301-713-4533 (Fax)

Subject: Re: Bottom Sample submission
From: Gene Parker <Castle.E.Parker@noaa.gov>
Date: Mon, 31 Jan 2011 11:47:48 -0500
To: "ops.thomas.jefferson" <OPS.Thomas.Jefferson@noaa.gov>

Good day Mark,
Submit both. HSSD specifies both in two areas of the document. First one needs to comply with HSSD; if the TJ wants to make the Hob file, then they have gone beyond the minimum requirements. If the TJ doesn't do it, then AHB would have to as long as the BS is within the Pydro PSS. Reference HSSD Section 8.2 S57 Feature File, paragraph 6:

> The S-57 feature file contains all the attributed information on specific objects that cannot be portrayed in a simple depth grid. Features to include in the S-57 feature file include; wrecks, obstructions, shoreline, rocks, islets, oil platforms, nature of seabed (bottom samples) and all other objects that may need to be compiled to a navigational product and require additional information that cannot be included in the BAG.

The Pydro PSS is in lieu of the S57 format file.

We could make the hob from the table, but since the TJ has done this, submit both the Hob file and the table contained in DR Appendix 5. Place the Hob file in the PSS directory which has contained all features in NOAA PSS format as in the past. If the TJ is going to submit the hob file, the source would be the table, so HSSD specifies delivery of both. If the TJ only submitted the table, AHB would have to generate the feature objects. If the TJ creates the hob file, then submit it.
gene

ops.thomas.jefferson wrote:

> Gene,
> We will be submitting .HOB files for the bottom samples in addition to the summary table found in the supplemental survey records and correspondence section of the DR. It is my understanding that the table is only used to create the .HOB anyways. A recommendation will need to be made that either the table either be omitted or be used in place of the .hob file. Only the summary table is mention in the HSSD april 2010 version. If there are any other issues with this idea please let us know.
> Mark

Castle Eugene Parker <castle.e.parker@noaa.gov>
Physical Scientist - Hydrographic Team Lead
Atlantic Hydrographic Branch
NOAA Office of Coast Survey

Subject: Re: Crossline comparison
From: Chris van Westendorp <Christiaan.VanWestendorp@noaa.gov>
Date: Thu, 10 Sep 2009 13:00:35 -0400
To: "mark.blankenship" <Mark.Blankenship@noaa.gov>
CC: LCDR Rick Brennan <Richard.T.Brennan@noaa.gov>, Castle Parker <Castle.E.Parker@noaa.gov>, Edward Owens <Edward.Owens@noaa.gov>, LT Jasper Schaer <jasper.schaer@noaa.gov>, CDR Shep Smith <Shep.Smith@noaa.gov>, Daniel Wright <Daniel.Wright@noaa.gov>

Mark,

Per 5.1.4.3 of the HSSD, AHB authorizes TJ to use the Standard Deviation layer to conduct surface difference comparison and analysis on future survey submissions of multibeam data. This meets the crossline comparison requirement laid out in HSSD.

Please let me know if you have any questions or need for further clarification.

R/
LCDR Chris van Westendorp, NOAA

mark.blankenship wrote:

> Chris,
> You mentioned in the meeting today that AHB was not going to require the multiple CUBE surface comparison, instead allowing us to use a single surface standard deviation layer to do our checks with. Is there any memo coming out for that?
> Mark

LCDR Chris van Westendorp <christiaan.vanwestendorp@noaa.gov>
Atlantic Hydrographic Branch
NOAA OCS

UNITED STATES DEPARTMENT COMMERCE
National Oceanic and Atmospheric Administration
Office of Marine and Aviation Operations
NOAA Ship *Thomas Jefferson* S-222
439 West York Street
Norfolk, VA 23510-1114

17 June 2011

Memorandum For: Coast Pilot Branch and Nautical Data Branch

From: CDR Lawrence T. Krepp, NOAA
Commanding Officer, NOAA Ship *Thomas Jefferson*

Subject: OPR-D304-TJ-11 H12306 Coast Pilot Report

The relevant Coast Pilot sections for this survey have been reviewed, and no additions or corrections have been noted.

U.S. DEPARTMENT OF COMMERCE
(10-95)NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

VESSEL No. S-222	PROJECT NO. - - TJ- FIELD NO. N/A SHEET LETTER: "N/A"	YEAR 2011	SURVEY TITLE: OPR-D304-TJ-11	SURVEY NO: H12306	CHECKED BY:	DATE CHECKED:

POSITION NUMBERS	DAY OF THE YEAR	SAMPLE POSITION LATITUDE (o ' ") North	SAMPLE POSITION LONGITUDE (o ' ") West	DEPTHS (METERS)	TYPE OF SAMPLER	APPROXIMATE PENETRATION (CENTIMETERS)	LENGTH OF CORE	FIELD DESCRIPTION SIZE OR CONSISTENCY COLOR-NOUN (USE STANDARD ABBREVIATIONS)	REMARKS (Unusual conditions ,cohesiveness, dented cutter, stat.no.,type of bottom, relief .i.e slope plain disposition etc.)
1	096	36/37/02.3	075/38/52.8				5 cm	m S / brk Sh	
2	096	36/39/15.3	075/38/15.2				5 cm	m S / brk Sh	
3	096	36/37/07.7	075/35/25.3				5 cm	m S / brk Sh	
4	096	36/38/36.7	075/35/25.6				5 cm	m S / brk Sh	
5	096	36/36/58.4	075/32/48.6				5 cm	fine S / brk Sh	
6	096	36/38/57.6	075/32/07.2				5 cm	m S / brk Sh	
7	096	36/39/49.7	075/33/48.4				5 cm	m S / brk Sh	

Appendix III

Survey Features Report

0 - Dangers to Navigation

0 - AWOIS Features

0 - Wrecks

0 - Maritime Boundary Features

APPROVAL PAGE

H12306

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

The following products will be sent to NGDC for archive

- H12306_DR.pdf
- Collection of depth varied resolution BAGS
- Processed survey data and records
- H12306_GeoImage.pdf

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

Approved: _____

Digitally signed by Abigail Higgins
DN: cn=Abigail Higgins, o=NOAA, ou=Office of Coast Survey, email=abigail.higgins@noaa.gov, c=US
Date: 2012.09.29 16:10:06 -04'00'

LT Abigail Higgins, NOAA
Chief, Atlantic Hydrographic Branch