

H12599

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

**DESCRIPTIVE REPORT**

Type of Survey: Basic Hydrographic Survey

Registry Number: H12599

**LOCALITY**

State(s): New Jersey

General Locality: New Jersey Coast and Vicinity, NJ

Sub-locality: Vicinity of Corson Inlet

**2013**

CHIEF OF PARTY  
Jonathan L. Dasler, PE, PLS, CH

LIBRARY & ARCHIVES

Date:

**HYDROGRAPHIC TITLE SHEET**

**H12599**

**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(s): **New Jersey**

General Locality: **New Jersey Coast and Vicinity, NJ**

Sub-Locality: **Vicinity of Corson Inlet**

Scale: **40000**

Dates of Survey: **01/30/2014 to 05/07/2014**

Instructions Dated: **06/27/2013**

Project Number: **OPR-C308-KR-13**

Field Unit: **David Evans & Associates, Inc.**

Chief of Party: **Jonathan L. Dasler, PE, PLS, CH**

Soundings by: **ODOM CV-100 and RESON 8101**

Imagery by: **EdgeTech 4200-HF**

Verification by: **Atlantic Hydrographic Branch**

Soundings Acquired in: **meters at Mean Lower Low Water**

**Remarks:**

NAD83, UTM Zone 18, Meters, Times are UTC. The purpose of this contract is to provide NOAA with modern, accurate hydrographic survey data with which to update nautical charts of the assigned area.

*The purpose of this survey is to provide contemporary surveys to update National Ocean Service (NOS) nautical charts. All separates are filed with the hydrographic data. Any revisions to the Descriptive Report (DR) generated during office processing are shown in bold red italic text. The processing branch maintains the DR as a field unit product, therefore, all information and recommendations within the body of the DR are considered preliminary unless otherwise noted. The final disposition of surveyed features is represented in the OCS nautical chart update products. All pertinent records for this survey, including the DR, are archived at the National Geophysical Data Center (NGDC) and can be retrieved via <http://www.ngdc.noaa.gov/>.*

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## Descriptive Report to Accompany Survey H12599

Project: OPR-C308-KR-13

Locality: New Jersey Coast and Vicinity, NJ

Sublocality: Vicinity of Corson Inlet

Scale: 1:40000

January 2014 - May 2014

**David Evans & Associates, Inc.**

Chief of Party: Jonathan L. Dasler, PE, PLS, CH

### A. Area Surveyed

David Evans and Associates, Inc. (DEA) conducted hydrographic survey operations in the vicinity of Corson Inlet, New Jersey. Survey H12599 was conducted in accordance with the Statement of Work (June 20, 2013) and Hydrographic Survey Project Instructions (June 27, 2013).

The Hydrographic Survey Project Instructions reference the 2012 Hydrographic Surveys Specifications and Deliverables (HSSD) as the technical requirements for this project. To better align with the Hydrographic Surveys Division (HSD) advancements in standards, project OPR-C308-KR-13 surveys were performed using the 2013 HSSD. This modification was approved by HSD staff.

#### A.1 Survey Limits

Data were acquired within the following survey limits:

Northwest Limit	Southeast Limit
39° 16" 38.42' N 74° 43" 35.62' W	39° 5" 12.42' N 74° 32" 42.53' W

*Table 1: Survey Limits*

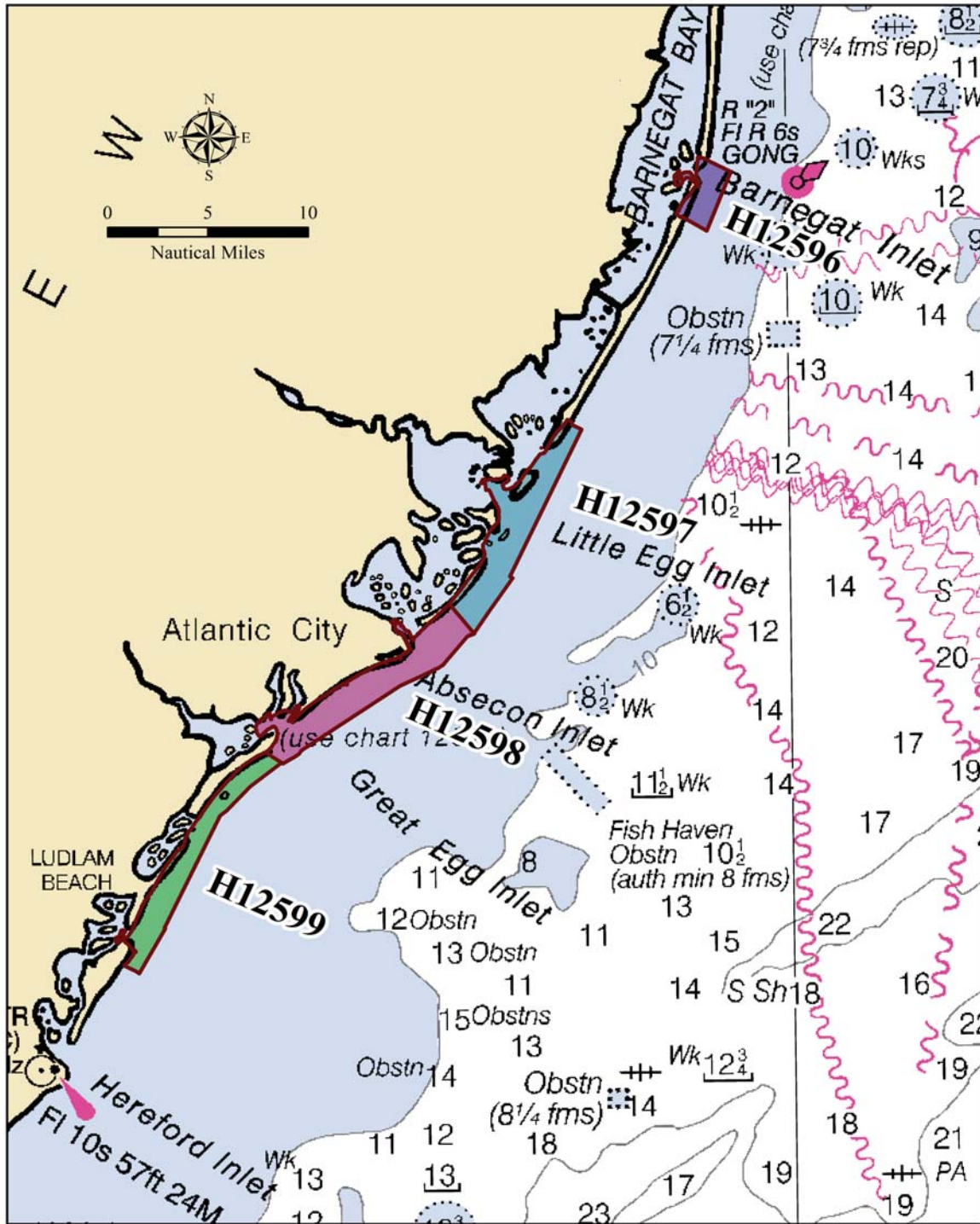


Figure 1: OPR-C308-KR-13 Assigned Survey Areas

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

## **A.2 Survey Purpose**

The purpose of this survey is to provide National Oceanic Atmospheric Administration (NOAA) with modern, accurate hydrographic survey data with which to update nautical charts of the assigned area.

## **A.3 Survey Quality**

The entire survey is adequate to supersede previous data.



### A.4 Survey Coverage

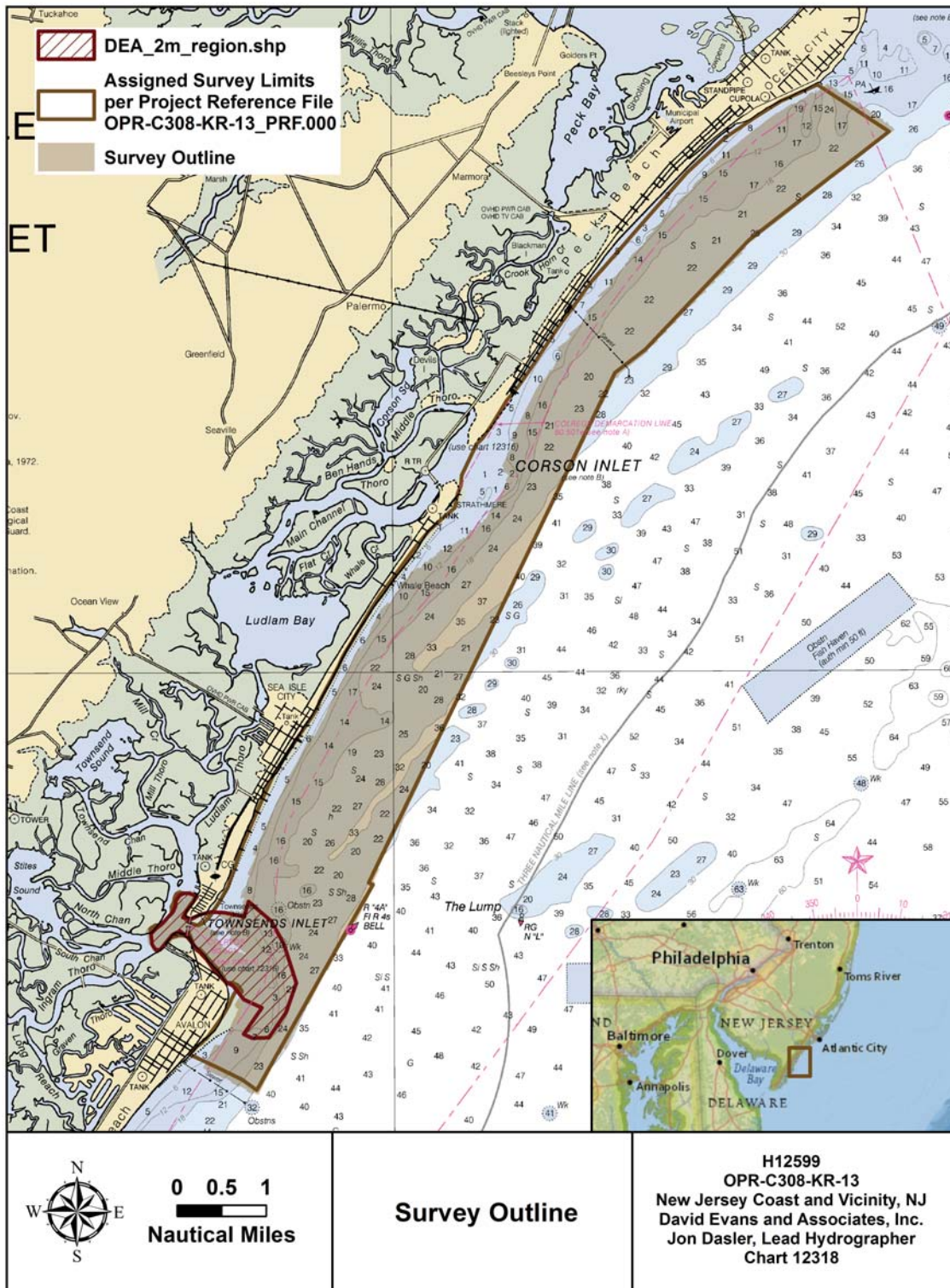


Figure 2: H12599 Survey Outline

The survey consisted of 200% side scan sonar coverage with concurrent single beam in all waters 4 meters and deeper; and 100% side scan sonar coverage with concurrent single beam in depths between 2 meters and 4 meters in waters inside the polygon DEA\_2m\_region.shp provided by HSD staff. For survey H12599, this polygon encompassed Corson and Townsends Inlet and their approaches. The survey polygon depicted in the Project Reference File (PRF) OPR-C308-KR-13\_PRF.000, which was included with the Hydrographic Survey Project Instructions (June 27, 2013), was used to define the limits for each survey. The survey was conducted over 80-meter set line spacing for each 100% coverage (50-meter side scan sonar range) with additional lines added to fill holidays created when effective range was reduced in shallow waters. Significant side scan sonar contacts were developed with multibeam sonar to meet Object Detection coverage requirements for multibeam surveys. The coverage area totaled 13.2 square nautical miles using a combination of side scan, single beam and multibeam survey methods.

The M\_COVR area included in the H12599 Final Feature File (FFF) has been revised since it was submitted in the final survey outline.

## A.5 Survey Statistics

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

	<b>HULL ID</b>	<i>R/V Chinook</i>	<i>Total</i>
<b>LNM</b>	<b>SBES Mainscheme</b>	0	0.0
	<b>MBES Mainscheme</b>	0	0.0
	<b>Lidar Mainscheme</b>	0	0.0
	<b>SSS Mainscheme</b>	0	0.0
	<b>SBES/MBES Combo Mainscheme</b>	0	0.0
	<b>SBES/SSS Combo Mainscheme</b>	0	0.0
	<b>MBES/SSS Combo Mainscheme</b>	686.3	686.3
	<b>SBES/MBES Combo Crosslines</b>	58.3	58.3
	<b>Lidar Crosslines</b>	0	0.0
<b>Number of Bottom Samples</b>			14
<b>Number AWOIS Items Investigated</b>			0
<b>Number Maritime Boundary Points Investigated</b>			0
<b>Number of DPs</b>			0
<b>Number of Items Items Investigated by Dive Ops</b>			0
<b>Total Number of SNM</b>			13.2

Table 2: Hydrographic Survey Statistics

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

<b>Survey Dates</b>	<b>Julian Day Number</b>
01/30/2014	30

<b>Survey Dates</b>	<b>Julian Day Number</b>
02/11/2014	42
02/12/2014	43
02/16/2014	47
02/17/2014	48
02/18/2014	49
02/24/2014	55
02/25/2014	56
02/26/2014	57
02/28/2014	59
03/01/2014	60
03/02/2014	61
03/04/2014	63
03/05/2014	64
03/09/2014	68
03/10/2014	69
03/23/2014	82
03/24/2014	83
03/25/2014	84
03/27/2014	86
04/02/2014	92
04/06/2014	96
04/19/2014	109
04/22/2014	112
04/25/2014	115
05/07/2014	127

*Table 3: Dates of Hydrography*

## B. Data Acquisition and Processing

### B.1 Equipment and Vessels

The OPR-C308-KR-13 Data Acquisition and Processing Report (DAPR) submitted under a separate cover, details equipment and vessel information as well as data acquisition and processing procedures used during this survey. There were no vessel or equipment configurations used during data acquisition that deviated from those described in the DAPR.

#### B.1.1 Vessels

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

Hull ID	<i>R/V Chinook</i>
LOA	28 feet
Draft	2 feet

Table 4: Vessels Used



Figure 3: R/V Chinook

## 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>
ODOM	CV 100	SBES
RESON	8101	MBES
Edgetech	4200-HF	SSS
AML	SV Plus V2	Primary Sound Speed Profiler
Sea-Bird	SEACAT SBE-19 CTD Profiler	Secondary Sound Speed Profiler
AML	SV Plus V2	Secondary Sound Speed Profiler
Applanix	POS/MV 320 v4	Positioning & Attitude

*Table 5: Major Systems Used*

## B.2 Quality Control

### B.2.1 Crosslines

Crosslines, acquired for this survey, totalled 8.3% of mainscheme acquisition.

Single beam crosslines were run in a direction perpendicular to main scheme lines across the entire surveyed area, providing a good representation for analysis of consistency. All crosslines were used for crossline comparisons.

Crossline analysis was performed using the CARIS Hydrographic Information Processing System (HIPS) Quality Control (QC) Report tool, which compares crossline data to a gridded surface and reports results. Crosslines were compared to a 4-meter CUBE surface encompassing mainscheme data for the entire survey area. The QC Report tabular output is included in Separate II Digital Data. The results of the analysis meet the requirements as stated in the 2013 HSSD.

Additional crossline analysis was performed by computing a 4-meter CUBE surface from the crossline data. The surface was then differenced from a 4-meter CUBE surface comprised of all mainscheme, fill, and investigation data. The resultant difference surface was exported using the Base Surface to American Standard Code for Information Interchange (ASCII) function and statistics were compiled on the ASCII

data. The crossline analysis included 6173 node comparisons with an average difference of 0.02 meters and standard deviation of 0.082 meters. Maximum deviations appear in areas adjacent to steep slopes where resolving depth differences using a 4-meter CUBE surface can be problematic.

### B.2.2 Uncertainty

The following survey specific parameters were used for this survey:

<b>Measured</b>	<b>Zoning</b>
0 meters	0.097 meters

*Table 6: Survey Specific Tide TPU Values*

<b>Hull ID</b>	<b>Measured - CTD</b>	<b>Measured - MVP</b>	<b>Surface</b>
R/V Chinook	2.000 meters/second	n/a meters/second	0.500 meters/second

*Table 7: Survey Specific Sound Speed TPU Values*

Additional discussion of these parameters is included in the DAPR.

During surface finalization in HIPS, the "greater of the two" option was selected, where the calculated uncertainty from total propagated uncertainty (TPU) is compared to the standard deviation of the soundings influencing the node, and where the greater value is assigned as the final uncertainty of the node. The uncertainty of the finalized surfaces increased for nodes where the standard deviation of the node was greater than the total propagated uncertainty. The resulting calculated uncertainty values of all nodes in the finalized 4-meter single beam surface range from 0.235 meters to 0.596 meters with a standard deviation of 0.007 meters.

The uncertainty values of all nodes in the finalized 1 meter Complete Coverage multibeam surface range from 0.223 meters to 0.913 meters with a standard deviation of 0.040 meters.

The uncertainty values of all nodes in the finalized 50-centimeter Object Detection multibeam surfaces range from 0.223 meters to 1.622 meters with a standard deviation of 0.066 meters.

To determine if surface grid nodes met International Hydrographic Organization (IHO) Order 1 specification, a ratio of the final node uncertainty to the allowable uncertainty at that depth was determined. As a percentage, this value represents the amount of error budget utilized by the uncertainty value at each node. Values greater than 100% indicate nodes exceeding the allowable IHO uncertainty.

For the 4-meter single beam surface the allowable uncertainty utilized ranges from 46% to 112%. The mean allowable uncertainty for the surface is 47% with a standard deviation of 0.014. In total 25 nodes out of 486,336 fail to meet specification.

For the 1 meter Complete Coverage multibeam surface the allowable uncertainty utilized ranges from 42% to 182%. The mean allowable uncertainty for the surface is 46% with a standard deviation of 0.077. In total 741 nodes out of 118,657 fail to meet specification.

For the 50-centimeter Object Detection multibeam surface the allowable uncertainty utilized ranges from 42% to 320%. The mean allowable uncertainty for the surface is 47% with a standard deviation of 0.128. In total 3,542 nodes out of 276,733 fail to meet specification.

Nodes that were reported out of specification were coincident with areas of high depth standard deviation such as steep terrain, areas of overlap where the bottom had significantly changed, or over features with steep or vertical side slopes. All uncertainty values were within allowable specification prior to surface finalization when standard deviation was incorporated into the solution when it was greater than the node uncertainty.

### B.2.3 Junctions

Survey H12599 junctions with H12598 and H12687 from project OPR-C308-KR-13 also performed by David Evans and Associates, Inc.

The 4-meter finalized H12599 surface was compared to the junction surveys by generating difference surfaces with CARIS Bathy DataBASE.

The following junctions were made with this survey:

Registry Number	Scale	Year	Field Unit	Relative Location
H12598	1:40000	2013	David Evans and Associates, Inc.	N
H12687	1:20000	2013	David Evans and Associates, Inc.	S

*Table 8: Junctioning Surveys*

#### H12598

In total, 640 overlapping nodes were compared with differences ranging from -0.142 meters (H12599 shoaler than H12598) to 0.099 meters (H12599 deeper than H12598). The mean difference was 0.02 meters with a standard deviation of 0.039 meters

#### H12687

At the time of writing, junction analysis with survey H12687 had not been completed. Junction analysis between H12599 and H12687 will be discussed in the H12687 Descriptive Report.



#### **B.2.4 Sonar QC Checks**

Quality control is discussed in detail in Section B of the DAPR. Results from weekly position checks and weekly multibeam and single beam bar checks are included in Separate I Acquisition and Processing Logs. The weekly sound speed checks can be found in Separate II Sound Speed Data Summary of this report.

Sounding data were reviewed at multiple levels of data processing including: CARIS HIPS conversion, single beam editing, subset editing, and analysis of anomalies revealed in CUBE surfaces. Submerged significant features identified during survey operations were noted in the acquisition logs, saved to Isis cursor log files, and then displayed during HIPS editing to act as a check during feature compilation. In addition to the field interpretation of side scan contacts, two independent post-processing reviews of the side scan data were conducted, and all significant contacts or potentially significant contacts tracked in a custom database.

#### **B.2.5 Equipment Effectiveness**

There were no conditions or deficiencies that affected equipment operational effectiveness.

#### **B.2.6 Factors Affecting Soundings**

There were no other factors that affected corrections to soundings.

#### **B.2.7 Sound Speed Methods**

Sound Speed Cast Frequency: Approximately 90-minute intervals.

An AML Oceanographic SV Plus V2 was the primary instrument used to acquire sound speed readings during the survey. Sound speed readings were measured at approximately 90-minute intervals during survey single beam operations and at each investigation site during multibeam acquisition. Additional discussion of sound speed methods can be found in the DAPR.

#### **B.2.8 Coverage Equipment and Methods**

Survey speeds were maintained to meet or exceed along track coverage requirements throughout the survey.

Where 200% side scan coverage was required, demonstration of 200% coverage was achieved by producing two separate 100% 1 meter resolution mosaics. Mosaics were thoroughly reviewed for holidays and areas of poor quality coverage due to biomass, vessel wakes, or other factors. A fill plan was created in order to acquire side scan data where holidays and significant poor quality coverage existed.

Significant side scan sonar contacts were developed with multibeam sonar to obtain a least depth of the contact using multibeam Object Detection coverage requirements.

## B.2.9 Density

The requirement that 95% of all Complete Coverage and Object Detection surface nodes must be populated with at least five soundings was verified by exporting the density child layer of each CUBE surface to an ASCII text file and compiling statistics on the density values. More than 99% of all the CUBE surface nodes of the 1 meter Complete Coverage multibeam surface contained five or more soundings. One of the 12 individual investigation surfaces, which use Object Detection requirements failed to meet the sounding density requirement. The investigation surface which failed to meet density requirements did so because the surface footprint extended beyond the location of the investigated feature where variables such as swath width and depth impacted the node density. All nodes over features exceed density requirements and least depths of all features have been determined with designated soundings from reliable data.

## B.3 Echo Sounding Corrections

### B.3.1 Corrections to Echo Soundings

Data reduction procedures for survey H12599 are detailed in the DAPR. The multibeam and single beam summary processing logs are included Separate I Acquisition and Processing Logs of this report.

### B.3.2 Calibrations

The following calibrations were conducted after the initial system calibration discussed in the DAPR:

Calibration Type	Date	Reason
MBES	2014-03-11	Routine calibration test
MBES	2014-03-14	Routine calibration test
MBES	2014-03-24	Routine calibration test
MBES	2014-04-02	Routine calibration test
MBES	2014-04-19	Routine calibration test
MBES	2014-05-07	Routine calibration test
MBES	2014-05-08	Project close out test

*Table 9: Calibrations not discussed in the DAPR.*

The H12599 survey was still active at time of DAPR submission. Additional routine calibration tests not reported in the DAPR were performed on March 11, 2014 (DN070), March 14, 2014 (DN073), March 24, 2014 (DN083), April 2, 2014 (DN092), April 19, 2014 (109), May 7, 2014 (127) and May 08, 2014 (DN128). A revision to DAPR Appendix II, which includes these additional calibration tests and results from

new weekly bar checks, was submitted with the H12597 survey deliverables. A copy of this revision has also been included with the H12599 deliverables.

## B.4 Backscatter

Multibeam backscatter was logged during side scan contact investigations in Hypack 81X format and is included with the H12599 digital deliverables. Data were processed periodically in CARIS HIPS to evaluate backscatter quality but the processed data is not included with the deliverables.

## 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: 5.3.2

### B.5.2 Surfaces

The following surfaces and/or BAGs were submitted to the Processing Branch:

Surface Name	Surface Type	Resolution	Depth Range	Surface Parameter	Purpose
H12599_SB_4m_MLLW	CUBE	4.0 meters	0.21 meters - 20.24 meters	NOAA_4m	Set Line Spacing Coverage
H12599_SB_4m_MLLW_Final	CUBE	4.0 meters	0.21 meters - 20.24 meters	NOAA_4m	Set Line Spacing Coverage
H12599_MB_1m_MLLW	CUBE	1.0 meters	0.65 meters - 21.11 meters	NOAA_1m	Complete Multibeam Coverage
H12599_MB_1m_MLLW_Final	CUBE	1.0 meters	0.65 meters - 21.11 meters	NOAA_1m	Complete Multibeam Coverage
H12599_MB_50cm_MLLW_combined	CUBE	0.5 meters	0.61 meters - 17.95 meters	NOAA_0.5m	Object Detection Coverage
H12599_MB_50cm_MLLW_combined_Final	CUBE	0.5 meters	0.61 meters - 17.95 meters	NOAA_0.5m	Object Detection Coverage
H12599_100Percent	Mosaic	1.0 meters	-	N/A	First 100-percent coverage

Surface Name	Surface Type	Resolution	Depth Range	Surface Parameter	Purpose
H12599_200Percent	Mosaic	1.0 meters	-	N/A	Second 100-percent coverage

*Table 10: Submitted Surfaces*

Bathymetric grids were created relative to Mean Lower Low Water (MLLW) in CUBE format using Set Line Spacing, Complete Coverage and Object Detection resolution requirements as described in the National Ocean Surveys (NOS) HSSD (April 2013).

A 1 meter resolution surface using the Complete Multibeam Coverage requirement was created for all multibeam data. This surface was created as a repository for ancillary multibeam data acquired in support of the survey, or multibeam data acquired during investigations that do not fall within the individual field sheets which surround significant features.

The 50-centimeter combined surface includes investigation data at Object Detection resolution over significant features. In addition, field sheets and surfaces were submitted for all significant individual investigations. The name of the investigation field sheets correspond to the primary side scan sonar contact name. Least depths for all significant contact investigations were added to the final surface with a designated sounding. Additional designated soundings were added to depth surfaces as necessary in order to accurately represent the seafloor in accordance with the NOS HSSD. A bug in HIPS 7.1.1 Service Pack 1 Hotfix 1 caused incorrect survey line names to be listed in the combined surface metadata.

## C. Vertical and Horizontal Control

A complete description of the horizontal and vertical control for survey H12599 can be found in the OPR-C308-KR-13 Horizontal and Vertical Control Report (HVCR), submitted under a separate cover. A summary of horizontal and vertical control for this survey follows.

### C.1 Vertical Control

The vertical datum for this project is Mean Lower Low Water.

#### Standard Vertical Control Methods Used:

Discrete Zoning

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

Station Name	Station ID
Atlantic City, NJ	8534720

Table 11: NWLON Tide Stations

File Name	Status
8534720.tid	Verified Observed

Table 12: Water Level Files (.tid)

File Name	Status
C308KR2013CORP_rev.zdf	Final

Table 13: Tide Correctors (.zdf or .tc)

## C.2 Horizontal Control

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

The projection used for this project is NAD83 UTM Zone 18 North.

During survey operations, some Differential Global Positioning System (DGPS) outages from the primary beacon (286 kHz) occurred. The system was set up to automatically switch to the secondary beacon (293 kHz) when the primary signal was lost.

The following DGPS Stations were used for horizontal control:

DGPS Stations
Sandy Hook, NJ (286 kHz)
Moriches, NY (293 kHz)

Table 14: USCG DGPS Stations

## D. Results and Recommendations

### D.1 Chart Comparison

The majority of the chart comparison was performed by comparing H12599 depths to a digital surface generated from electronic navigational charts (ENCs) covering the survey area. A 50-meter product surface was then generated from a triangular irregular network (TIN) created from the soundings, depth contours, and depth features for each ENC scale. An additional 50-meter HIPS product surface of the entire survey area was generated from the finalized Multibeam Echo Sounder (MBES) and Single Beam Echo Sounder (SBES) CUBE surfaces. The chart comparison was conducted by creating and reviewing the resultant difference surface. The chart comparison also included a review of all assigned charted features within the survey area.

The raster chart comparison was performed by comparing the raster navigational charts (RNCs) covering the survey area to the corresponding ENCs which were subsequently compared to H12599 using difference surface techniques.

The electronic and raster versions of the relevant charts used during the comparison were reviewed to ensure that all US Coast Guard (USCG) Local Notice to Mariners (LNM) issued during survey acquisition, impacting the survey area, were applied and addressed by this survey.

#### 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
12316	1:40000	35	10/2012	05/20/2014	05/31/2014
12316	1:40000	35	10/2012	05/20/2014	05/31/2014
12318	1:80000	45	04/2010	05/20/2014	05/31/2014

*Table 15: Largest Scale Raster Charts*

#### 12316

Small Craft Route Chart 12316\_1 was compared to US5NJ20M within the H12599 survey area. No differences were observed between the charts during the comparison.

#### 12316

Small Craft Route Chart 12316\_4 was compared to US5NJ20M within the H12599 survey area.

Differences in the placement of the 12-foot and 18-foot contours were observed between 12316\_4 and US5NJ20M south of Great Egg Harbor Inlet. It appears that these inconsistencies result from tying updated contours associated with H12597 DtoN 5 (junction survey to the north) to existing charted contours outside of the DtoN update area. Charted differences determined by comparing surveyed depths to a digital surface of US5NJ20M are discussed in Section D.1.2.

### 12318

Coastal Chart 12318\_1 was compared to US4NJ22M within the H12599 survey area. Several minor differences in the placement of soundings were observed during this comparison. Charted differences determined by comparing surveyed depths to a digital surface of US4NJ22M are discussed in Section D.1.2

### **D.1.2 Electronic Navigational Charts**

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

<b>ENC</b>	<b>Scale</b>	<b>Edition</b>	<b>Update Application Date</b>	<b>Issue Date</b>	<b>Preliminary?</b>
US5NJ20M	1:40000	14	12/27/2013	04/16/2014	NO
US5NJ24M	1:40000	11	12/27/2013	04/25/2014	NO
US4NJ22M	1:80000	14	01/10/2013	04/03/2013	NO

*Table 16: Largest Scale ENC's*

### US5NJ20M

In general, depths are between 1 foot shoaler to 2 feet deeper than charted. Shoaling of up to 8 feet is apparent when comparing the H12599 surveyed depths to US5NJ20M in the vicinity of Ocean City.

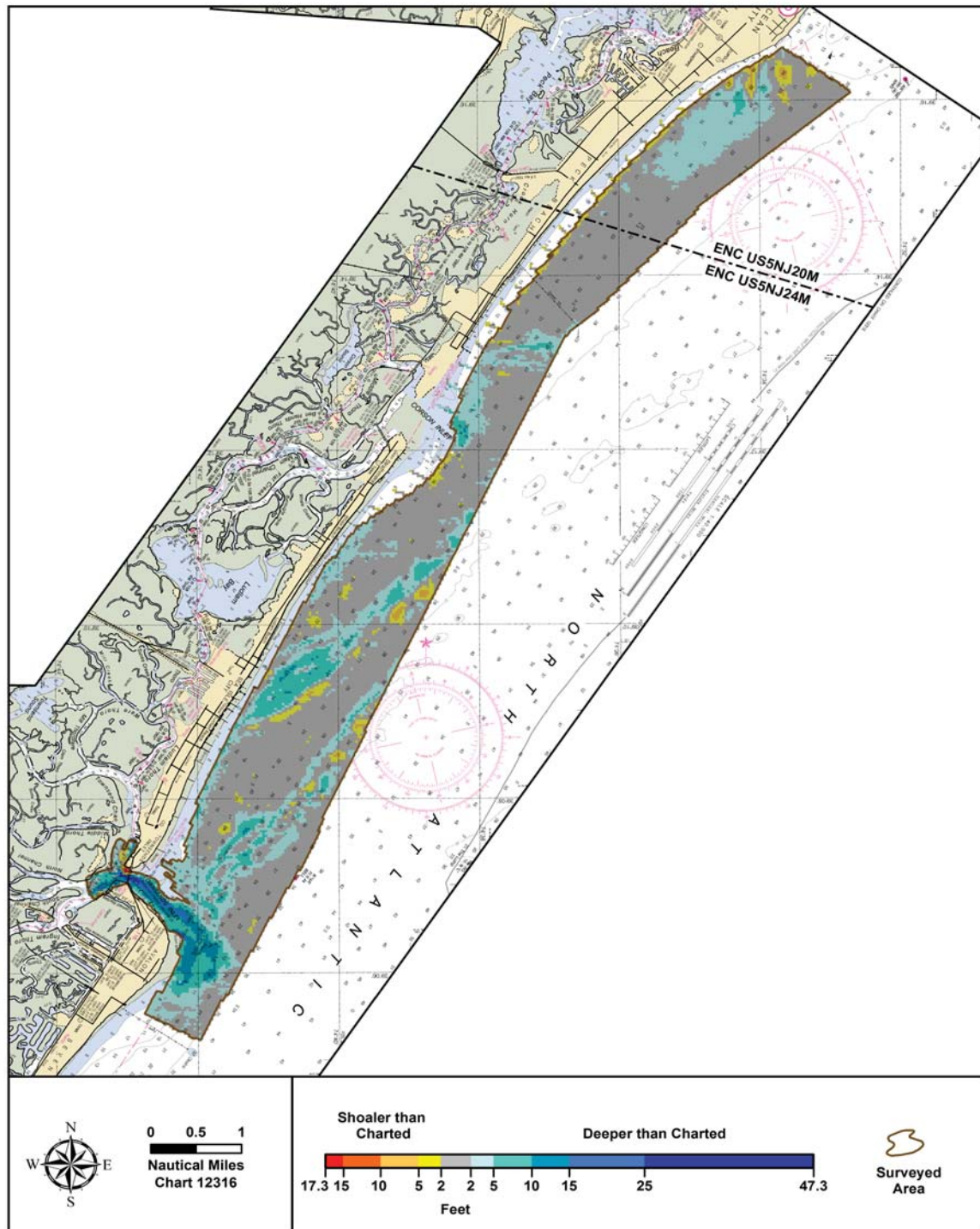


Figure 4: Depth Difference between H12599 and charts US5NJ20M and US5NJ24M  
 US5NJ24M

In general, depths are between 1 foot shoaler to 2 feet deeper than charted, though considerable change has occurred within the survey area since it was last surveyed. The largest differences, including the maximum deviation of 47 feet deeper, occurred in the vicinity of Townsends Inlet where charted intertidal areas are



no longer present. Dangers to Navigation 1 and 2 address major changes in the inner coastal waterway in Townsends Inlet.

US4NJ22M

CChart comparison with US4NJ22M shows similar results to the comparison with US5NJ20M and US5NJ24M.

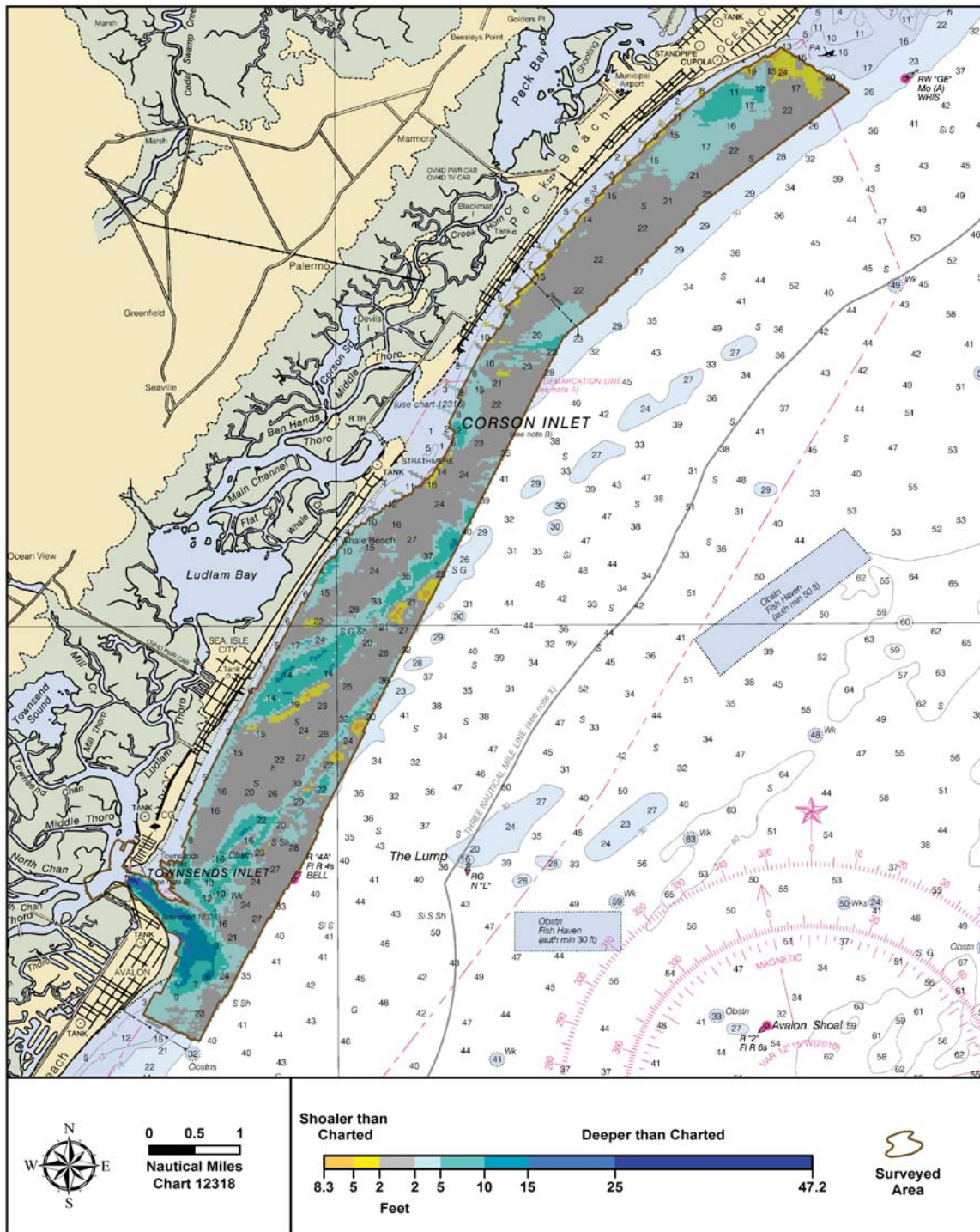


Figure 5: Depth Difference between H12599 and chart US4NJ22M

**D.1.3 AWOIS Items**

No AWOIS items were assigned for investigation within the survey H12599 area.

#### **D.1.4 Maritime Boundary Points**

No Maritime Boundary Points were assigned for this survey.

#### **D.1.5 Charted Features**

The survey area does not contain any charted features labeled as Position Approximate (PA), Position Doubtful (PD), or Existence Doubtful (ED). Shoaling (Rep 1978) is charted at the entrance to Townsends Inlet. Surveyed soundings in this area are deeper than currently charted.

Charted features assigned in the CSF are portrayed in the H12599 FFF as surveyed and denoted with the Assignment Flag of 'Assigned'.

#### **D.1.6 Uncharted Features**

All uncharted features are portrayed in the FFF as surveyed and attributed with the description of 'New'.

#### **D.1.7 Dangers to Navigation**

Two (2) DtoNs were reported for this survey using preliminary survey data.

H12599 DtoN 1 was a nonstandard submission in .000 format containing preliminary SBES soundings which depicted shoaling in the vicinity of Townsends Inlet. AHB staff used this submission to generate soundings, chart interval depth contours, and a bounding polygon which were sent to the Nautical Data Branch (NDB). The shoaling and significant changes depicted in DtoN 1 were not fully addressed by the subsequent chart update (LNM 18/14, 5th District / RNC posted 5/1/2014). This update induced the addition of two soundings from DtoN 1 and removal of one charted sounding. It is recommended that this area be updated with current bathymetry.

H12599 DtoN 2 includes four obstructions found in the area impacted by the H12599 DtoN 1 chart update. Two of these obstructions have been added to the charts.

#### **D.1.8 Shoal and Hazardous Features**

As previously mentioned, H12599 DtoN 1 was submitted to address significant shoaling and change in the vicinity of Townsends Inlet.

Charted shoaling (Rep 1978) at the entrance of Townsends Inlet was not observed in the survey data. Surveyed soundings are deeper than charted in this area. .

Most of H12599 survey area is contained in a charted caution area for fish traps and structures. Fish traps were not noted in the bathymetric data.

### **D.1.9 Channels**

The H12599 survey area encompasses the approaches to Corson Inlet, and Townsends Inlet. As noted on the charts, buoys are not charted within the inlets because they are frequently relocated or removed when shoaling prohibits navigation with the inlet.

### **D.1.10 Bottom Samples**

Fourteen (14) bottom samples were acquired on January 30, 2014 (DN 030) and May 07, 2014 (DN 127). The final sampling plan followed suggested sample locations included in the PRF provided by the Hydrographic Surveys Division.

## **D.2 Additional Results**

### **D.2.1 Shoreline**

A limited shoreline investigation was assigned in the OPR-C308-KR-13 Hydrographic Survey Project Instructions. None of the assigned shoreline features included in the CSF are charted within the H12599 survey area.

In some instances baring features shoreward of the inshore limit were captured in the side scan data. HSD and AHB staff provided guidance on how to handle these features during data processing and reporting. If contacts were created on these features they have been classified as insignificant in the Side Scan Sonar Contact File and denoted with the comment, "Target is a baring feature outside the limits of survey and will be further resolved by forthcoming RSD imagery". This includes the ends of several charted groins and jetties, which extend into the H12599 survey area. Side scan contacts depicting the submerged end point at the base of these features are included in the Side Scan Sonar Contact File.

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

No comparisons with prior surveys were conducted.

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

Several public aids to navigation are charted within the H12599 survey area. Notes on the charts covering the area indicate that additional aids to navigation located within inlets are frequently moved and therefore not included on the charts. All charted aids to navigation were found to be serving their intended purpose.

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

H12599 contains one overhead bridge in Townsends Inlet. There are no cables or other structures which would impact overhead clearance in the survey area.

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

The termini of several charted groins and jetties extend into the H12599 survey area. It is recommended that all charted groins and jetties be retained as charted.

A linear submerged feature believed to be a 45 meter long section of pipeline was visible laying on the seafloor within Townsends Inlet. This feature is included in the FFF with description 'New'.

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

There were no ferry routes or terminals within the survey area.

#### **D.2.7 Platforms**

No platforms were charted or located within the H12599 survey area.

#### **D.2.8 Significant Features**

A water turbulence feature denoting the location of breakers observed during survey operations has been included in the FFF.

Sediment migration is apparent when comparing data acquired over multiple days in the vicinity of Townsends Inlet. As noted on the charts, areas adjacent to inlets are subject to frequent change.

#### **D.2.9 Construction and Dredging**

No construction or dredging activities were observed during survey operations.

#### **D.2.10 New Survey Recommendation**

No new surveys or further investigations are recommended for this area.

**D.2.11 New Inset Recommendation**

No new insets are recommended for this 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, Statement of Work, and Hydrographic Survey Project Instructions. 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.

Report Name	Report Date Sent
Data Acquisition and Processing Report	2014-03-21

Approver Name	Approver Title	Approval Date	Signature
Jonathan L. Dasler, PE, PLS, CH	NSPS/THSOA Certified Hydrographer, Chief of Party	08/27/2014	 <small>Digitally signed by Jon Dasler DN: cn=Jon Dasler, o=David Evans and Associates, Inc., ou=Marine Services Division, email=jld@deainc.com, c=US Date: 2014.08.27 12:00:02 -07'00'</small>
Jason Creech, CH	NSPS/THSOA Certified Hydrographer, Lead Hydrographer	08/27/2014	 <small>Digitally signed by Jason Creech DN: cn=Jason Creech, o=David Evans and Associates, Inc., ou=Marine Services Division, email=jasc@deainc.com, c=US Date: 2014.08.27 12:00:24 -07'00'</small>

APPENDIX I  
TIDE NOTE AND GRAPHICS



**APPENDIX I**  
**TIDES AND WATER LEVELS**

**Project: OPR-C308-KR-13 Registry No: H12599**

**Contractor Name: David Evans and Associates, Inc.**

**Date: May 07, 2014**

**Sheet Number: 4**

**Inclusive Dates: February 11 - May 07, 2014**

**Time (UTC)**

<b>Day Number</b>	<b>Date</b>	<b>Start Time</b>	<b>End Time</b>
42	02/11/2014	11:51:55	13:53:56
43	02/12/2014	12:04:40	20:57:16
47	02/16/2014	13:05:26	21:50:42
48	02/17/2014	11:59:18	21:01:43
49	02/18/2014	12:12:55	22:13:02
55	02/24/2014	11:50:40	18:40:44
56	02/25/2014	11:59:12	22:12:52
57	02/26/2014	13:05:25	21:58:54
59	02/28/2014	11:40:12	22:29:22
60	03/01/2014	13:23:36	21:50:57
61	03/02/2014	12:20:57	22:16:03
63	03/04/2014	12:07:04	22:30:34
64	03/05/2014	12:59:01	22:06:49
68	03/09/2014	11:43:21	21:51:32
69	03/10/2014	11:46:44	22:12:18
82	03/23/2014	11:13:53	14:35:43
83	03/24/2014	14:47:21	21:43:33
84	03/25/2014	11:31:05	12:40:23
86	03/27/2014	11:25:22	11:29:06
92	04/02/2014	14:58:59	16:07:03
96	04/06/2014	14:07:39	15:39:29
109	04/19/2014	12:13:57	13:26:27
112	04/22/2014	18:40:40	19:02:35
115	04/25/2014	17:10:08	18:23:53
127	05/07/2014	17:14:29	19:46:50

**H12599**

**FINAL TIDE NOTE and FINAL TIDE ZONING CHART**

**DATE:** May 07, 2014

**PROCESSING BRANCH:** Atlantic Hydrographic Branch

**HYDROGRAPHIC PROJECT:** OPR-C308-KR-13

**HYDROGRAPHIC SHEET:** H12599

**LOCALITY** New Jersey Coast and Vicinity, New Jersey

**SUB-LOCALITY:** Vicinity of Corson Inlet

**TIME PERIOD:**

February	11,12,16,17,18,24,25,26,28
March	1,2,4,5,9,10,23,24,25,27
April	2,6,19,22,25
May	7

**TIDE STATIONS USED:** 8534720, Atlantic City, NJ  
Lat. 39° 21.3' N, Lon. 74° 25.1' W

**PLANE OF REFERENCE (MEAN LOWER LOW WATER):** 0.000 meters

**HEIGHT OF MEAN HIGH WATER (8534720) ABOVE PLANE OF REFERENCE:** 1.276 meters<sup>1</sup>

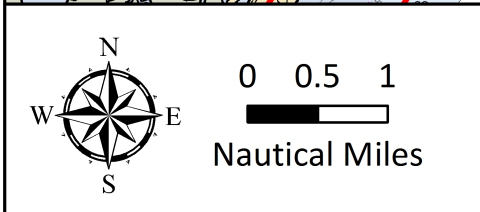
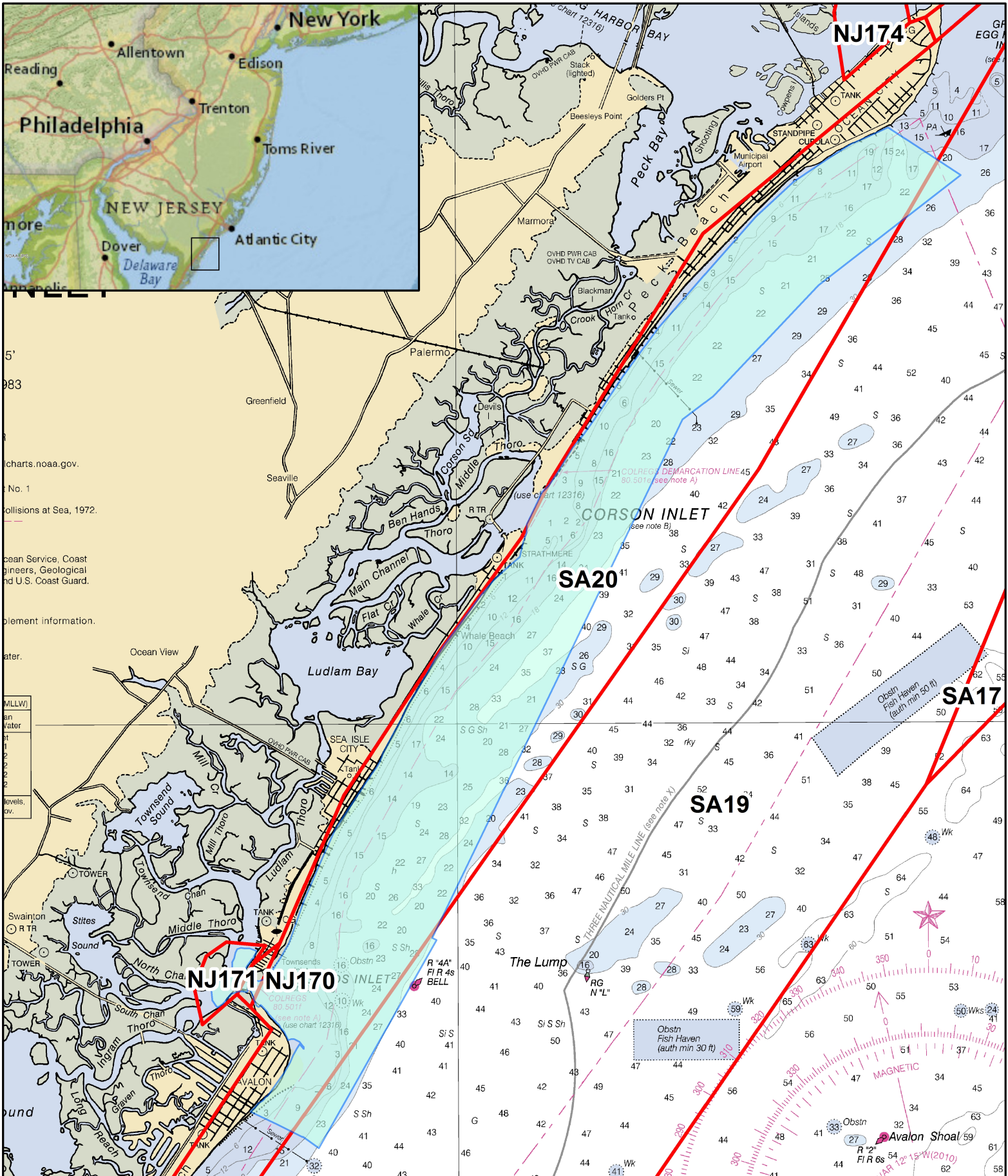
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<sup>1</sup> MLLW 1.511m Mean Lower-Low Water  
MHW 2.787m Mean High Water

**FINAL TIDE ZONING  
H12599  
OPR-C308-KR-13**

<b>Zone</b>	<b>Time Corrector (Mins)</b>	<b>Range Ratio</b>	<b>Reference Station</b>
NJ170	24	0.98	8534720
NJ171	36	0.97	8534720
SA19	0	1.01	8534720
SA20	6	1.02	8534720

**NOTE:** Final soundings were reduced to chart datum using a revised version of the zoning scheme that was provided with the Final Project Instructions. David Evans and Associates, Inc. revised the zoning by moving the western extents of zone SA18 shoreward so that the zoning scheme would fully encompass the project area. This modification does not effect zoning for this survey.



**H12599**  
**Final Tide Zoning**

**OPR-C308-KR-13**  
**New Jersey Coast and Vicinity, NJ**  
**David Evans and Associates, Inc.**  
**Jon Dasler, Lead Hydrographer**  
**Chart 12318**

APPENDIX II

SUPPLEMENTAL SURVEY RECORDS  
AND CORRESPONDENCE

**OPR-C308-KR-13**  
**PROJECT CORRESPONDENCE**

## Jason Creech

---

**From:** Corey Allen - NOAA Federal [corey.allen@noaa.gov]  
**Sent:** Thursday, October 31, 2013 11:05 AM  
**To:** Jason Creech  
**Subject:** Re: Tide File

Jason,

For H12598 & H12599, please use 0.19m 95%. I spoke with CO-OPS re: 853-3615 and 853-4319, are not required for sheets H12598-99 and may be removed provided they've met all other requirements (e.g. duration, obs, etc). Please let me know if you have any additional questions.

Cheers, Corey

On Wed, Oct 30, 2013 at 1:12 PM, Jason Creech <[Jasc@deainc.com](mailto:Jasc@deainc.com)> wrote:

Hey Corey

We recently started H12598 and are in need of a tide uncertainty value for TPU computation.

Were you able to get a value specific to this area? In the interim we are using 0.19m at the 95% confidence level.

Thanks,

Jason

---

**From:** Corey Allen - NOAA Federal [mailto:[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)]  
**Sent:** Monday, July 22, 2013 11:42 AM

**To:** Jason Creech  
**Cc:** Lori Knell - NOAA Federal  
**Subject:** Re: Tide File

Standby.....let's see if we can get you something better than .19 since it's so close to AC which is being used as datum control. Also, there seems to be some confusion regarding the station number for townsend over in CO-OPS.....we may need you to get a new station number afterall even if tied into the historic BM network.



Corey

On Mon, Jul 22, 2013 at 2:13 PM, Jason Creech <[Jasc@deainc.com](mailto:Jasc@deainc.com)> wrote:

Thanks Corey

One last thing... The Tides project Instructions provide the following info for Tide Component Error Estimation

### **1.3.3. Tide Component Error Estimation**

The estimated tidal error contribution to the total survey error budget in the vicinity of Barnegat Inlet, Great Bay and Townsend are 0.24m, 0.19m and 0.19m, respectively, at the 95% confidence level. It includes the estimated gauge measurement error, tidal datum computation error, and tidal zoning error. It should be noted that the tidal error component can be significantly greater than stated if a substantial meteorological event or condition should occur during time of hydrography.

We have never had the zoning uncertainly provided in this manner so I want to make sure we are correctly interpreting. Is the intent to apply the provided uncertainties to all lines/zones for the corresponding survey sheet?

Barnegat Inlet 0.24m to H12596

Great Bay 0.19m to H12597

Townsend 0.19m H12599

If this is the case what should be used for H12598 which is adjacent to the primary gauge 8534720?

Jason

---

**From:** Corey Allen - NOAA Federal [mailto:[corey.allen@noaa.gov](mailto:corey.allen@noaa.gov)]  
**Sent:** Monday, July 22, 2013 10:18 AM  
**To:** Jason Creech  
**Cc:** Lori Knell - NOAA Federal  
**Subject:** Re: Tide File

Sorry Jason, I guess Lori and I thought the other had sent it. See attached.

On Mon, Jul 22, 2013 at 12:57 PM, Jason Creech <[Jasc@deainc.com](mailto:Jasc@deainc.com)> wrote:

Hi Lori

I'm unable to find record of final zoning files for the C308 project including the HIPS zdf. Did you previously send these? If not I'd like to request copies of the files.

Thanks

Jason

---

**From:** Lori Knell - NOAA Federal [mailto:[lori.knell@noaa.gov](mailto:lori.knell@noaa.gov)]  
**Sent:** Friday, May 31, 2013 6:04 AM  
**To:** Jason Creech  
**Cc:** Corey Allen - NOAA Federal  
**Subject:** Tide File

Jason,

Please see the attached tide info.

Let me know if you have any questions.

Thanks,  
Lori

--

Lori Powdrell

Physical Scientist

Hydrographic Surveys Division

[lori.knell@noaa.gov](mailto:lori.knell@noaa.gov)

[301-713-2700](tel:301-713-2700) x103

--

J. Corey Allen

Operations Branch Team Lead  
Hydrographic Surveys Division

Office of Coast Survey, NOAA

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--

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--

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301.717.7271 (Cell)

## Jason Creech

---

**From:** Corey Allen - NOAA Federal <corey.allen@noaa.gov>  
**Sent:** Friday, November 08, 2013 12:35 PM  
**To:** Jason Creech; Jon Dasler  
**Cc:** Mark Lathrop - NOAA Federal; Michael Gonsalves - NOAA Federal  
**Subject:** J348 / C308 Follow Up

Jason / Jon,

I was able to get in touch with Gene and further discuss the outstanding items from our call.

1. *Should the mosaic be clipped inshore of the inshore limit to exclude unresolved features?* Creating targets for features outside the limits is not required, but if you so desired to create targets for these features and provide remarks Gene recommends the following statement, "Target is a baring features outside the limits of survey to be further resolved by forthcoming RSD imagery". Regardless of whether these features are remarked or not, please leave all available SSS data in the mosaic. AHB is aware of the sheet limits as per PRF and will not provide any negative feedback for unresolved features outside the limits of survey.

2. *How to address SSS holidays that occurred in depths outside the limits of required coverage obtained in order to fully resolve AWOIS #14960?* As per your call, these holidays only exist as a function of the minimum altitude requirement and should that requirement be relaxed, usable data exists to fill all holidays. Therefore we are waiving the minimum altitude requirement for data acquired to resolve AWOIS #14960 in the interest of fully resolving the item radius for disproval. Please discuss in the DR the departure from this minimum altitude specification.

Please let me know if you have any additional questions.

--

J. Corey Allen  
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[Corey.Allen@noaa.gov](mailto:Corey.Allen@noaa.gov)  
301.713.2777 x119 (Office)  
301.717.7271 (Cell)

## Shyla Allen

---

**From:** Jason Creech  
**Sent:** Friday, November 08, 2013 10:47 AM  
**To:** Corey Allen - NOAA Federal  
**Cc:** Jon Dasler (Jld@deainc.com)  
**Subject:** RE: OPR-C308-KR-13 NALL  
**Attachments:** NALL ex 1.jpg; NALL ex 2.jpg; NALL ex 3.jpg

Corey

Here are a few graphics for our call.

Jason

**From:** Corey Allen - NOAA Federal [<mailto:corey.allen@noaa.gov>]  
**Sent:** Friday, November 08, 2013 10:05 AM  
**To:** Jason Creech  
**Subject:** Re: OPR-C308-KR-13 NALL

Jason,  
I can do a call anytime after 1400EST. Whatever works best for you guys.

On Fri, Nov 8, 2013 at 12:00 PM, Jason Creech <[Jasc@deainc.com](mailto:Jasc@deainc.com)> wrote:

Hey Corey

Can you give me a call to discuss NALL line questions for our survey? We want to make sure we are meeting our inshore coverage requirements without overly burdening our survey crew and AHB staff with uncharted baring shoreline features that are inshore of the NALL line. I know we discussed this issue with tie in to RSD surveys during survey planning and want to make sure we are on track.

I'll be out of the office starting tomorrow until Dec 9<sup>th</sup> so Jon Dasler also wants to take part in this conversation.

Thanks,

Jason

Jason Creech

Nautical Charting Program Manager

David Evans and Associates, Inc. | Marine Services Division

2801 SE Columbia Way, Ste. 130 | Vancouver, WA 98661

[jasc@deainc.com](mailto:jasc@deainc.com) | Office: [804.516.7829](tel:804.516.7829) | Cell: [804.516.7829](tel:804.516.7829) | Fax: [360.314.3250](tel:360.314.3250)

--

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301.717.7271 (Cell)



"WR2"

Q(1)R 1s3M

COALNE from ENC

PRF Survey Area

COALNE 32m buffer / NALL (0.8mm @ 1:40k)





— COALNE from ENC

PRF Survey Area

COALNE 32m buffer / NALL (0.8mm @ 1:40k)

COALNE from ENC

PRF Survey Area

COALNE 32m buffer / NALL (0.8mm @ 1:40k)

Uncharted shoreline features outside of NALL but inside of 2 m surveyed contour

## Shyla Allen

---

**From:** Jon Dasler  
**Sent:** Thursday, November 14, 2013 11:03 AM  
**To:** 'Corey Allen - NOAA Federal'  
**Cc:** Mark Lathrop - NOAA Federal; Jason Creech  
**Subject:** RE: Change in CO-OPS Reporting of Verified Tides at Atlantic City

Corey,

Thanks for the prompt response. We will reapply tides from 8534720 Atlantic City for all of OPR-C308-KR-13. Was the TJ reporting there difference of 0.0102m at Atlantic City or another CO-OPS gauge? Our observed difference for Atlantic City is 0.012m. TJ most likely has a typo when reporting the difference of 0.0102m as CO-OPS does not report tides out to that precision. We captured this discrepancy during our quality review process. That said, we would respectfully request CO-OPS to notify those on the Hydro Hot List when they make adjustments to verified data.

Respectfully,

Jon

**Jon Dasler, P.E., P.L.S., C.H.**  
**Vice President, Director of Marine Services**

**David Evans and Associates, Inc. | Marine Services Division**  
2801 SE Columbia Way, Ste. 130 | Vancouver, WA 98661  
[jld@deainc.com](mailto:jld@deainc.com) | Office: 360.314.3202 | Cell: 503.799.0168 | Fax: 360.314.3250

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---

**From:** Corey Allen - NOAA Federal [mailto:corey.allen@noaa.gov]  
**Sent:** Thursday, November 14, 2013 10:19 AM  
**To:** Jon Dasler  
**Cc:** Mark Lathrop - NOAA Federal; Jason Creech  
**Subject:** Re: Change in CO-OPS Reporting of Verified Tides

Jon,

Here's a copy of a response from CO-OPS to the TJ, they noticed the same shift in the data.

----- Forwarded message -----  
**From:** Lijuan Huang - NOAA Affiliate <[lijuan.huang@noaa.gov](mailto:lijuan.huang@noaa.gov)>  
**Date:** Tue, Nov 12, 2013 at 12:39 PM  
**Subject:** Re: Final Tide Note for OPR-D332-TJ-2013, H12571  
**To:** Megan Guberski - NOAA Federal <[megan.guberski@noaa.gov](mailto:megan.guberski@noaa.gov)>

Yes. The 2013 levels indicate that a new corrector needs to be applied to the data between May, 2013 until now. The new corrector will cause

about 0.0102 m shift for 6-min data, which is not an issue for hydrographic survey. The new verified data should be available by COB today.

Thanks,  
Lijuan  
> Operations Officer, NOAA Ship \*Thomas Jefferson\*

It looks like the data will be corrected back to May.....please let me know if you don't see the corrected data and/or if using the corrected data creates an undue burden on products (eg bags, etc) already far along in your processing pipeline. I'm back in the office today and tomorrow if you would like to call to discuss.

Cheers, Corey

On Wed, Nov 13, 2013 at 5:46 PM, Jon Dasler <[Jld@deainc.com](mailto:Jld@deainc.com)> wrote:

Corey,

We noticed a consistent 1.2 cm offset in the reporting of verified tides by CO-OPS when comparing a file we downloaded in September to a file we downloaded in November. Attached are the original downloaded files and an Excel file comparing the two. We have not yet discussed this with CO-OPS but I suspect CO-OPS did some maintenance and adjusted the data. We have seen this in the past at SW Pass, LA. The issue came up when AHB was reviewing the data a year after the survey and tide values changed by 7cm at some point after submission of our survey. We are considering using the September verified tides for already completed H12596 and discuss this in the DR. For the remainder of the surveys we will reapply the new verified tides if we can confirm these are valid. Although the change is minor, it will raise some flags at AHB when they compare applied tides to CO-OPS historic data, which no longer reflects the values we applied in September. Can you call me at your earliest convenience to discuss this and if you want to contact CO-OPS about this or we give them a call for an explanation in our DR?

Regards,

Jon

**Jon Dasler, P.E., P.L.S., C.H.**  
**Vice President, Director of Marine Services**

**David Evans and Associates, Inc. | Marine Services Division**  
2801 SE Columbia Way, Ste. 130 | Vancouver, WA 98661  
[jld@deainc.com](mailto:jld@deainc.com) | Office: [360.314.3202](tel:360.314.3202) | Cell: [503.799.0168](tel:503.799.0168) | Fax: [360.314.3250](tel:360.314.3250)

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--  
J. Corey Allen  
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301.717.7271 (Cell)

## Shyla Allen

---

**From:** Corey Allen - NOAA Federal [corey.allen@noaa.gov]  
**Sent:** Thursday, November 14, 2013 10:19 AM  
**To:** Jon Dasler  
**Cc:** Mark Lathrop - NOAA Federal; Jason Creech  
**Subject:** Re: Change in CO-OPS Reporting of Verified Tides

Jon,

Here's a copy of a response from CO-OPS to the TJ, they noticed the same shift in the data.

----- Forwarded message -----

**From:** Lijuan Huang - NOAA Affiliate <[lijuan.huang@noaa.gov](mailto:lijuan.huang@noaa.gov)>  
**Date:** Tue, Nov 12, 2013 at 12:39 PM  
**Subject:** Re: Final Tide Note for OPR-D332-TJ-2013, H12571  
**To:** Megan Guberski - NOAA Federal <[megan.guberski@noaa.gov](mailto:megan.guberski@noaa.gov)>

Yes. The 2013 levels indicate that a new corrector needs to be applied to the data between May, 2013 until now. The new corrector will cause about 0.0102 m shift for 6-min data, which is not an issue for hydrographic survey. The new verified data should be available by COB today.

Thanks,  
Lijuan  
> Operations Officer, NOAA Ship \*Thomas Jefferson\*

It looks like the data will be corrected back to May.....please let me know if you don't see the corrected data and/or if using the corrected data creates an undue burden on products (eg bags, etc) already far along in your processing pipeline. I'm back in the office today and tomorrow if you would like to call to discuss.

Cheers, Corey

On Wed, Nov 13, 2013 at 5:46 PM, Jon Dasler <[Jld@deainc.com](mailto:Jld@deainc.com)> wrote:

Corey,

We noticed a consistent 1.2 cm offset in the reporting of verified tides by CO-OPS when comparing a file we downloaded in September to a file we downloaded in November. Attached are the original downloaded files and an Excel file comparing the two. We have not yet discussed this with CO-OPS but I suspect CO-OPS did some maintenance and adjusted the data. We have seen this in the past at SW Pass, LA. The issue came up when AHB was reviewing the data a year after the survey and tide values changed by 7cm at some point after submission of our survey. We are considering using the September verified tides for already completed H12596 and discuss this in the DR. For the remainder of the surveys we will reapply the new verified tides if we can confirm these are valid. Although the change is minor, it will raise some flags at AHB when they compare applied tides to CO-OPS historic data, which no longer reflects the values we applied in September. Can you call me at your earliest convenience to discuss this and if you want to contact CO-OPS about this or we give them a call for an explanation in our DR?

Regards,

Jon

**Jon Dasler, P.E., P.L.S., C.H.**  
**Vice President, Director of Marine Services**

**David Evans and Associates, Inc. | Marine Services Division**  
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## Jason Creech

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**From:** Lori Powdrell - NOAA Federal <lori.powdrell@noaa.gov>  
**Sent:** Tuesday, January 28, 2014 8:05 AM  
**To:** Jason Creech  
**Cc:** Jon Dasler  
**Subject:** Re: OPR-C308-KR-13 Effective Range waiver request

Jason,

I spoke to Corey and Mike about this request and after discussing it, the waiver is approved. You are approved to have the discretion to extend the SSS coverage out to full range in shallow areas where it is operationally difficult to navigate or weather limits access. You are also approved to reduce the need to fill holidays where you already have side scan data capable of object detection.

Please include this email in the DR.

If you have any questions feel free to call me.

Thanks.  
Lori

On Fri, Jan 24, 2014 at 12:12 PM, Jason Creech <[Jasc@deainc.com](mailto:Jasc@deainc.com)> wrote:

Hi Lori

Jon and I discussed this issue a bit more after I sent my original email. We'd like to ask for a waiver to have the discretion to use the full SSS range (no effective range reduction based on towfish height at 50 meter range scale) when operating in shallow water.

We would still reduce the effective range based on towfish height requirements when evaluating our preliminary coverage. We'd like to have the discretion to extend the SSS coverage out to full range in shallow areas where it is operationally difficult to navigate or weather limits access. This waiver would reduce the need to fill holidays where we already have side scan data capable of object detection and shallow conditions make return to these areas extremely difficult.

Let me know if you have any questions or need any clarification on our request.

Thanks,



Jason

**From:** Lori Powdrell - NOAA Federal [mailto:[lori.powdrell@noaa.gov](mailto:lori.powdrell@noaa.gov)]  
**Sent:** Friday, January 24, 2014 8:32 AM  
**To:** Jason Creech; Jon Dasler

**Subject:** Re: OPR-C308-KR-13 Effective Range waiver request

Jason,

I was out of the office yesterday. I am working from work several days a week now while I get back into the swing of things. You can call my cell if you need ([301-466-3990](tel:301-466-3990)).

I sent your original request to Corey and Mike and they spoke to AHB (Gene). We agreed to approve the waiver but now I see your later email. This looks like a new request. Is this in addition to the original request? If so can you clarify the differences, if any, in this request. Let me know what your preferred path forward is.

Thanks,  
Lori

On Thu, Jan 23, 2014 at 7:39 PM, Jason Creech <[Jasc@deainc.com](mailto:Jasc@deainc.com)> wrote:

Hi Lori,

Jon and I are available either Monday 2/3 or Friday 2/7 and will take whichever day is most convenient. We are hoping to get a chance to

1. Meet with you (C308 status and inquire about the 2014 survey plan)
2. see Jeff

3. have the opportunity to meet LDCR Gonsalves and discuss the effective range issue with him and Corey
4. meet with Lucy to follow up on the future of XML reports and lessons learned through our first delivery. If Lucy is available we'd like our XML App developer to sit in if we can fit all of this in. Our developer's schedule is full that week so he may not be able to attend.

We could also do some of this on Tuesday (after meeting with you on Monday) or Thursday (before meeting with you on Friday).

Let me know what you think.

Thanks,

Jason

**From:** Lori Powdrell - NOAA Federal [mailto:[lori.powdrell@noaa.gov](mailto:lori.powdrell@noaa.gov)]

**Sent:** Thursday, January 23, 2014 9:35 AM

**To:** Jason Creech

**Cc:** Jon Dasler

**Subject:** Re: OPR-C308-KR-13 Effective Range waiver request

Jason,

I just wanted to let you know I am going to discuss this with Corey and Mike G. They have both been in meetings most of the morning. I will get back to you as soon as possible.

As far as visiting, I am teleworking Tues, Wed and Thur the first week in Feb. I could meet you on Monday or Friday, if either of those days work for you.

Thanks,  
Lori

On Wed, Jan 22, 2014 at 2:49 PM, Jason Creech <[Jasc@deainc.com](mailto:Jasc@deainc.com)> wrote:

Hi Lori

We have started the OPR-C308-KR-13 New Jersey project back up after standing down from mid-December to mid-January. Thus far we have only completed one survey sheet (H12596) as weather has severely limited our productivity. We currently have two surveys open (H12597 and H12598) and all that remains on H12597 is running our fill and investigation plan.

Our side scan fill plan for H12597 currently includes many side scan coverage holidays where we reduced our effective range when the towfish height was below 8% of the range (HSSD 6.1.2.3). These holidays are usually long and narrow slivers ranging from 1 to 10 meters in width. Many of these are right at the 4m inshore limit in the offshore sections or at the transition between the 4m (200 percent SSS) and 2m (100 percent) coverage requirements on the edge of shoals. These areas were difficult to survey during the first pass and even harder to return to now given the poor weather conditions.

We have taken a look at the data that was removed due to the reduction in effective range in these areas and feel that it is more than capable of detecting significant contacts.

That said we would like to request a waiver to use data beyond the effective range requirements when running 50 meter side scan sonar in areas with a 4 meter inshore limit. We would continue to reduce the effective range in the shallow sections of the survey within the 2 meter inshore limit as well for offshore areas where we are running with a 75 meter range.

I have attached several images which highlight this issue.

### **Reduced Effective Range No Fill Polygon.jpg**

This image shows our current SSS coverage mosaic with long sliver holidays caused by reducing the SSS effective range. The original towfish range setting was 50m.

### **Waterfall.jpg**

This is an example of 50m range scale side scan sonar data from the project where we are able to identify small sand ripples out to full range. The green lines indicate where we would need to clip the data based on the HSSD towfish height requirement.

### **Full Swath.jpg**

This image is the same view as Reduced Effective Range No Fill Polygon.jpg but the full SSS range has been included in the mosaic. This would be the end result of our waiver request. As a result there are no coverage holidays to fill.

Feel free to give me a call if you want to discuss. If you are available Jon and I are interested in visiting sometime in the next few weeks to meet with you to discuss 2014 survey planning. Possibly some time during the first week of February? The waiver request could also be a topic of conversation. Ultimately we are looking for a creative way to stay productive during less than ideal survey conditions while collecting quality data that meets object detection requirements.

We look forward to hearing from you on this issue.

Jason

Jason Creech

Nautical Charting Program Manager

David Evans and Associates, Inc. | Marine Services Division

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APPROVAL PAGE

H12599

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

- H12599\_DR.pdf
- Collection of depth varied resolution BAGS
- Processed survey data and records
- H12599\_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: \_\_\_\_\_

**Lieutenant Commander Matthew Jaskoski, NOAA**  
Chief, Atlantic Hydrographic Branch