

**W00662**

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

**DESCRIPTIVE REPORT**

Type of Survey: Basic Hydrographic Survey

Registry Number: W00662

**LOCALITY**

State(s): Virginia

General Locality: Approaches to Chesapeake

Sub-locality: Offshore of Virginia Beach

**2021**

CHIEF OF PARTY  
Grant (GT) Hollett

LIBRARY & ARCHIVES

Date:

**HYDROGRAPHIC TITLE SHEET**

**W00662**

**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): **Virginia**

General Locality: **Approaches to Chesapeake**

Sub-Locality: **Offshore of Virginia Beach**

Scale: **25000**

Dates of Survey: **06/04/2021 to 06/11/2021**

Instructions Dated: **N/A**

Project Number: **ESD-AHB-22**

Field Unit: **Dominion Energy**

Chief of Party: **Grant (GT) Hollett**

Soundings by: **Teledyne RESON SeaBat T50-P (MBES)**

Imagery by: **N/A**

Verification by: **Atlantic Hydrographic Branch**

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

**Remarks:**

*Any revisions to the Descriptive Report (DR) applied during office processing are shown in red italic text. The DR is maintained as a field unit product, therefore all information and recommendations within this report are considered preliminary unless otherwise noted. The final disposition of survey data is represented in the NOAA nautical chart products. All pertinent records for this survey are archived at the National Centers for Environmental Information (NCEI) and can be retrieved via <https://www.ncei.noaa.gov/>. Products created during office processing were generated in NAD83 UTM 18N, MLLW. All references to other horizontal or vertical datums in this report are applicable to the processed hydrographic data provided by the field unit.*

## DESCRIPTIVE REPORT MEMO

September 28, 2022

**MEMORANDUM FOR:** Atlantic Hydrographic Branch

**FROM:** Report prepared by PHB on behalf of field unit  
Grant (GT) Hollett  
Director, Offshore Wind, Dominion Energy

**SUBJECT:** Submission of Survey W00662

Dominion Energy geophysical and geotechnical survey off the coast of Virginia and North Carolina. As part of the development of the Virginia Offshore Technology Advancement Project (VOWTAP), a high-resolution bathymetry and backscatter survey was conducted aboard the M/V Atlantic Endeavor along the Coastal Virginia Offshore Windfarm Pilot Project (CVOW-P) area: Scope 1 Cable Route and Scope 2 Additional Survey Scope.

Only bathymetric data was provided to NOAA by Dominion Energy for charting purposes.

The following information are relevant excerpts from the provided metadata

An Average 50cm XYZ surface was exported directly from Qimera 2.3.1 in NAD83 (2011) UTM18N after completion of the processing details found in the summary. This XYZ was gridded in Global Mapper at the appropriate resolution and exported as final tiled surfaces in XYZ and GeoTIFF formats. The tile scheme used was created at a 2km x 2km scale, with tile names relevant to the lower left corner position.

All soundings were reduced to Mean Lower Low Water using VDatum. The horizontal datum for this project is North American Datum of 1983 (NAD 83). The projection used for this project is Universal Transverse Mercator (UTM) Zone 18.

Navigation Processing Summary and Software: GPS data were processed with a PP-RTX solution using Applanix POSPac MMS 8.5 to a Smoothed Best Estimate Trajectory (SBET) files for pairing with MBES data in Qimera.

Vessel: M/V Atlantic Endeavor, Equipment Type and Model: Dual-head Reson SeaBat T50 MBES, Operating Frequency: 350/380 kHz, Calibration Procedures: MBES Patch Test performed prior to data acquisition.

**Bathymetry Processing:** Application of SVP data from a Valeport SWiFT profiler using “Nearest in Distance within Time: 2 hours” as well application of TU Delft sound speed algorithm (where applicable); application of PP-RTX SBET solution; application of NOAA V-Datum Separation model to reduce heights from native ellipsoid to MLLW; data cleaning using IHO Special Order filters, outer beam filtering, manual cleaning in swath and slice editors; QC using 1m TPU, Density, and Standard Deviation surfaces.

**Process for Export:** Ungridded ASCII files were exported directly from Qimera 2.3.1 once all processing steps mentioned in the summary above were completed. This is done using the Qimera export tool that allows export of ungridded line by line files. Gridded XYZ surfaces for each surface type were exported directly from Qimera 2.3.1.

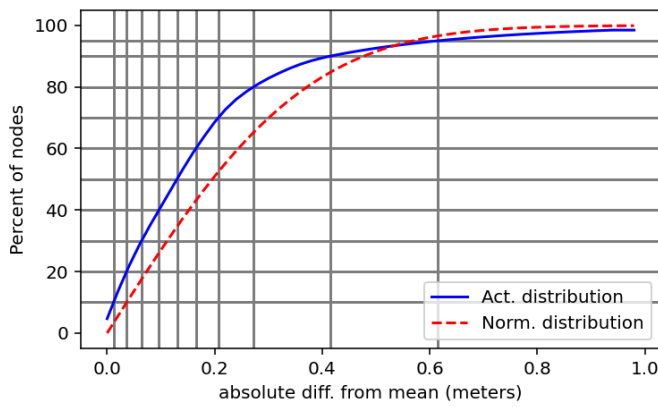
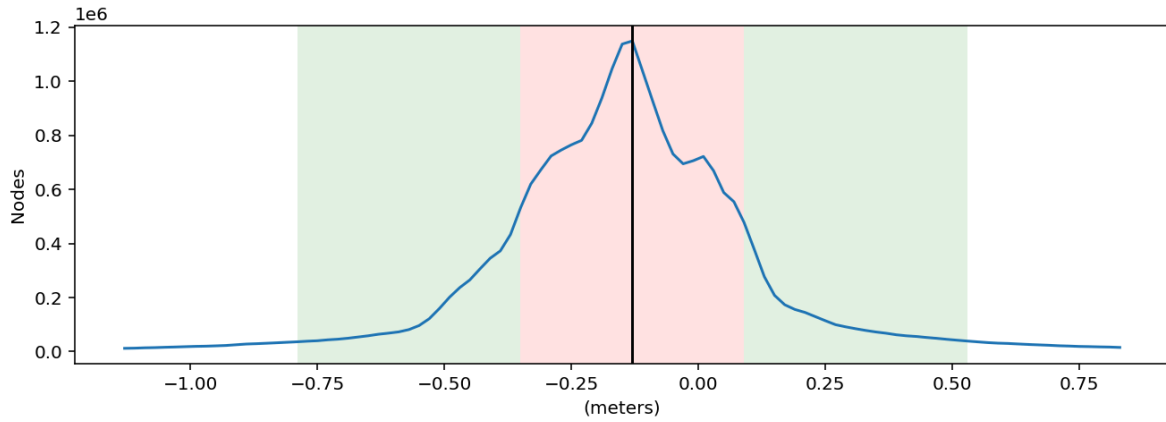
**Positional Uncertainty:** All MBES data meet IHO Special Order for THU and TVU. THU for Special Order is 2m; TVU is depth dependent, with a maximum allowable TVU at 5.9m depth of 25.4cm and at 28.5m depth of 32.9cm, Density Specification: Minimum 5 pings per square meter.

All data were reviewed for DTONs and none were identified in this survey.

Dominion Energy acquired the data outlined in this report. Additional documentation from the data provider may be attached to this report.

A junction comparison was performed during office review. Survey W00662 junctions with H12001 from 2010. The data shows very good agreement with H12001 with exception of areas where the new wind turbines are located. Results of the junction comparison can be seen below.

W00662\_MB\_50cm\_MLLW-H12201\_MB\_2m\_MLLW\_1of2  
 Mean: -0.13 | Mode: -0.13 | One Standard Deviation: 0.29 | Bin size: 0.02



Percent of nodes	Deviation (m)
50%	+/- 0.13
60%	+/- 0.17
70%	+/- 0.21
80%	+/- 0.27
90%	+/- 0.41
95%	+/- 0.61

*Difference between W00662 and H12001.*

This survey does meet charting specifications and is adequate to supersede prior data.