

## Ocean Exploration CTD Summary, EX2102\_CTD0009\_20210523

This form contains metadata information summarizing CTD casts completed in support of ocean exploration objectives. All CTD data is archived with the National Centers for Environmental Information. For CTD specific or expedition specific inquiries, please contact [oceanexplorer@noaa.gov](mailto:oceanexplorer@noaa.gov). For assistance with data access, please contact [ncei.info@noaa.gov](mailto:ncei.info@noaa.gov).

**Table 1. General Expedition and CTD information**

<b>Expedition Name</b>	2021 Technology Demonstration
<b>Project ID</b>	EX-21-02
<b>CTD Cast Date (UTC)</b>	May, 23, 2021
<b>CTD Cast Name</b>	EX2102_CTD009_20210523
<b>CTD Number</b>	CTD009
<b>Expedition Coordinator</b>	Michael P. White, NOAA Ocean Exploration/Cherokee Federal
<b>Mapping Lead</b>	Derek Sowers, NOAA Ocean Exploration/Cherokee Federal
<b>Science Lead</b>	Katharine Egan, NOAA Ocean Exploration
<b>Science Lead</b>	Meredith Everett, NOAA Northwest Fisheries Science Center
<b>CTD Operator</b>	Danielle Power, NOAA Ship <i>Okeanos Explorer</i>
<b>General Area Descriptor</b>	U.S. Southeast
<b>Site Name</b>	Blake Plateau West
<b>CTD Purpose</b>	Collect water samples for eDNA analysis



**Figure 1. Map of CTD009 Location (yellow triangle).**

**Table 2a and 2b. CTD Cast Location, Depth, Time and Sensor Data**

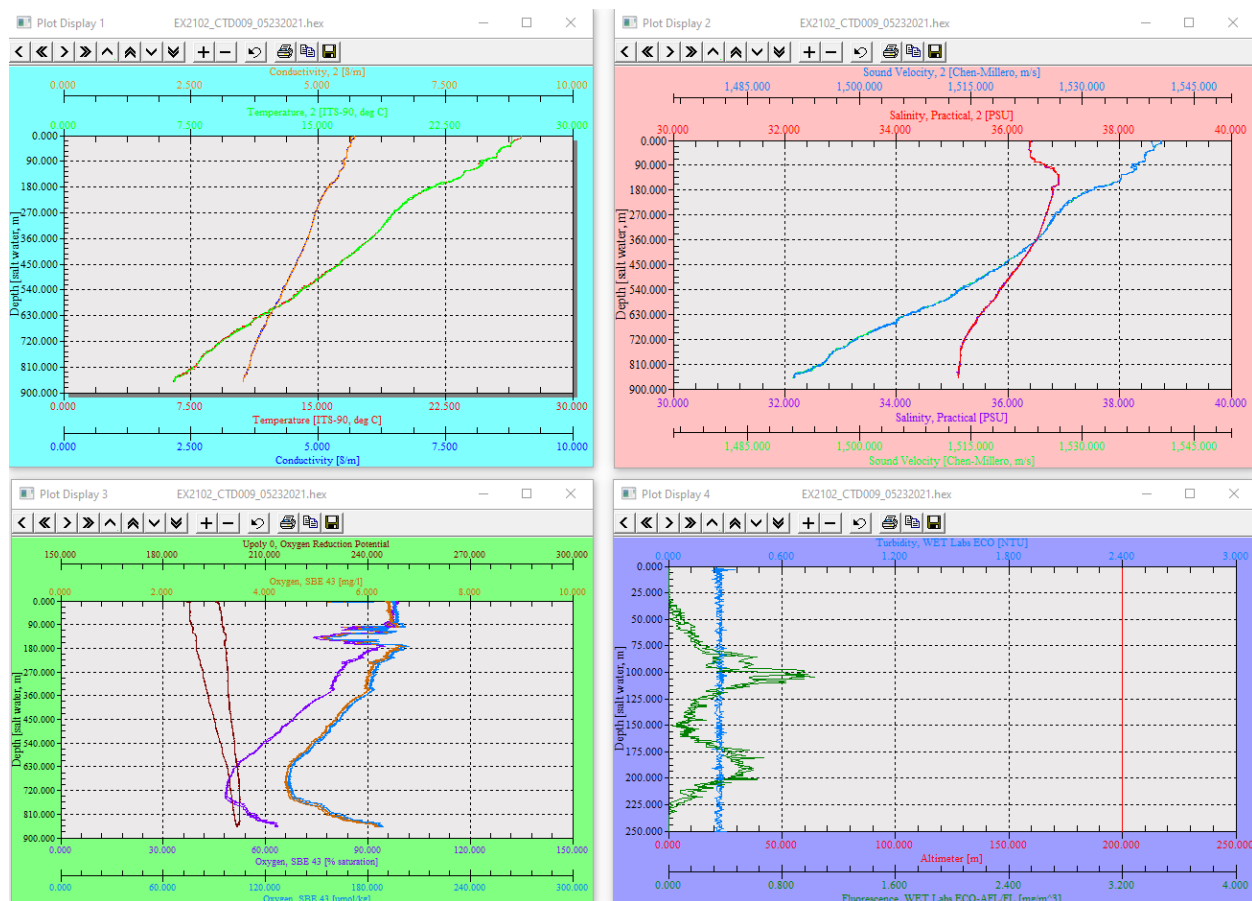
**2a. Locations are the ship's position. Coordinates in World Geographic System 1984.**

<b>Deployment latitude/longitude (decimal degrees)</b>	<b>31.01711°</b>	<b>-77.97306°</b>
<b>Deployment Time (UTC)</b>	<b>15:59:53</b>	
<b>CTD Max Depth (meters)</b>	<b>858.034</b>	
<b>Recovery latitude/longitude (decimal degrees)</b>	<b>31.01711°</b>	<b>-77.97305°</b>
<b>Recovery Time (UTC)</b>	<b>16:54:30</b>	

## 2b. Environmental Sensor Information

Sensors are calibrated yearly or more frequently as required. Calibration information and files are stored with the sensor data.

Data Type	Sensor Name	Collected (Yes/No)	Data Issues/Notes
Depth	SBE-9plus	Yes	
Conductivity 1	SBE-9plus	Yes	
Conductivity 2	SBE-9plus	Yes	
Temperature 1	SBE-9plus	Yes	
Temperature 2	SBE-9plus	Yes	
Dissolved Oxygen	SBE-43	Yes	
Turbidity	ECO-FLNTU	Yes	
Oxygen Reduction Potential	PMEL	Yes	



**Figure 2: Plot of CTD Data.** Conductivity and temperature are in the upper left, salinity is in the upper right, oxygen and oxygen reduction potential are in the lower left, and the turbidity and fluorescence are in the lower right.

### Water Sample Collections

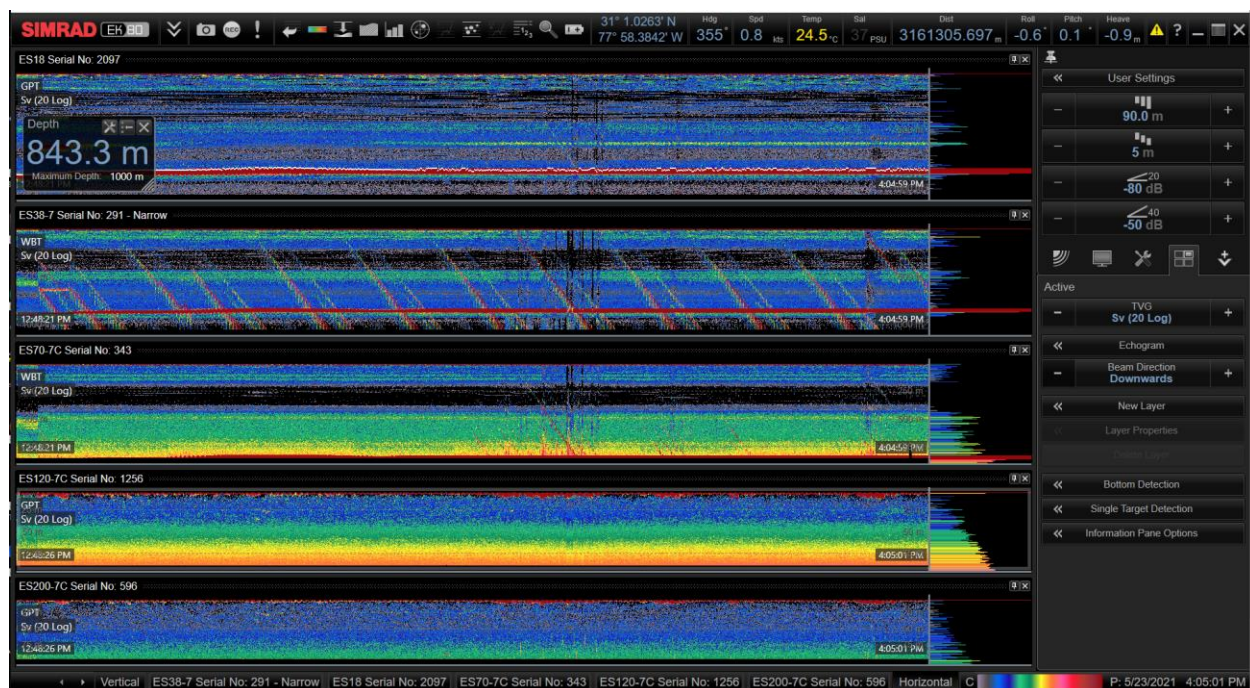
<p><b>Purpose of Water Sample Collection</b></p>	<p>Samples were collected for onshore eDNA analysis</p>
<p><b>Description of processing/analysis at sea</b></p>	<p>2 liters of seawater from each Niskin bottle were filtered through a 0.45 <math>\mu\text{m}</math> filter. Filters were stored in 5 mL Eppendorf tubes containing 3 mL of Longmire's Buffer solution.</p>

<b>Description of at-sea storage</b>	<b>Sample filters were stored in a Longmire's lysis buffer solution</b>
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**Table 3. Niskin Bottles and Depth**

<b>Niskin Bottle Number</b>	<b>Time (UTC)</b>	<b>Depth (meters)</b>	<b>Notes</b>
<b>1</b>	<b>16:19:44</b>	<b>858.207</b>	<b>5m from the bottom. A replicate water sample was taken from within this Niskin.</b>
<b>2</b>	<b>16:21:11</b>	<b>849.525</b>	
<b>3</b>	<b>16:22:20</b>	<b>839.668</b>	
<b>4</b>	<b>16:26:56</b>	<b>699.881</b>	
<b>5</b>	<b>16:30:27</b>	<b>600.709</b>	<b>Below the DSL</b>
<b>6</b>	<b>16:33:40</b>	<b>499.803</b>	<b>Within the DSL. A replicate water sample was taken from within this Niskin.</b>
<b>7</b>	<b>16:37:34</b>	<b>401.297</b>	<b>Above the DSL</b>
<b>8</b>	<b>NA</b>	<b>NA</b>	<b>Niskin did not fire</b>
<b>9</b>	<b>16:44:44</b>	<b>200.246</b>	<b>Chlorophyll max layer #1</b>
<b>10</b>	<b>16:47:32</b>	<b>150.534</b>	
<b>11</b>	<b>16:50:05</b>	<b>102.399</b>	<b>Chlorophyll max layer #2</b>

12	16:54:30	4.071	Surface
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**Figure 3. Screenshot of the EK60 data before deploying the CTD rosette.**

**Notes:** Two chlorophyll maximum layers exhibited in the fluorescence sample, one at 200 m and another at 100 m. eDNA samples were taken in both layers.

Please direct inquiries to:	NOAA Office of Ocean Exploration & Research 1315 East-West Highway, SSMC3 Silver Spring, MD 20910
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