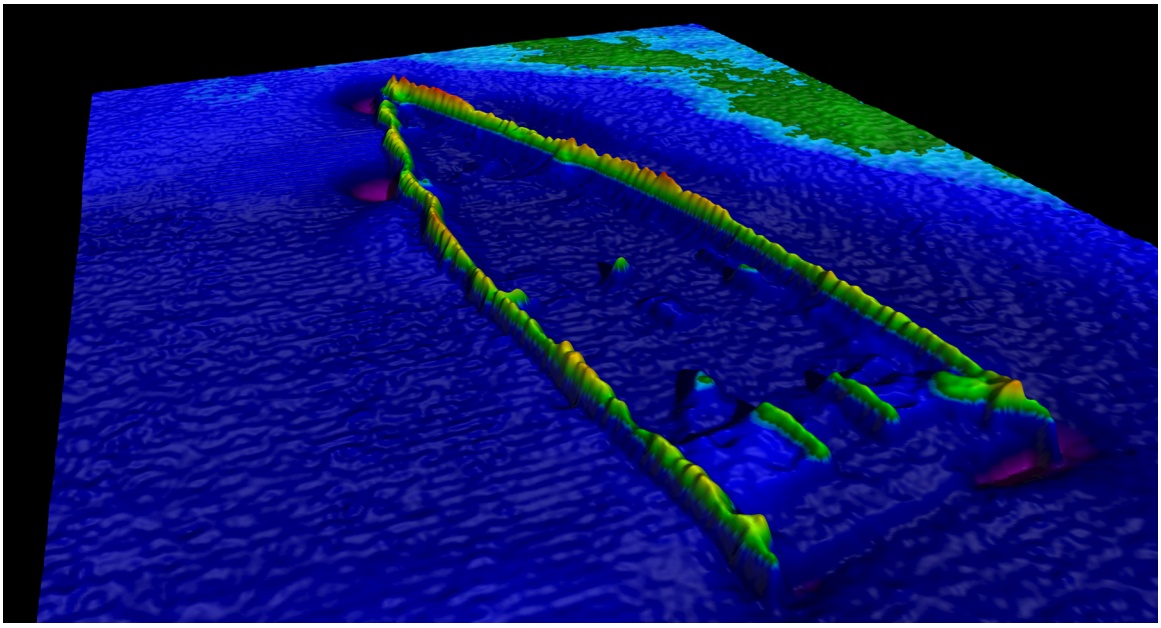
HORIZONTAL AND VERTICAL CONTROL REPORT

OPR-J364-KR-06



H-11545, H-11546, H11547, H-11583, H-11584, H-11602, H-11628

STATE: MISSISSIPPI-ALABAMA

LOCALITY: GULF OF MEXICO

YEAR: 2006

TERRASOND

A. VERTICAL CONTROL

The time meridian for this project was 000° longitude. All measurements were made in Universal Time, Coordinated (UTC). No measurements were made using local time. The local time meridian for the project was 90° west longitude and local time Central Standard Time (CST) was offset from UTC by five hours (CST = UTC - 5 hours). During the part of the year where Daylight Savings Time was observed, Central Daylight time (CDT) was offset from UTC by 6 hours (CDT = UTC - 6 hours).

Tide Correctors

Sounding data was adjusted for tidal influence using zoning provided by NOAA/CO-OPS under the project instructions and verified tides from the National Water Level Observation Network (NWLON) station at Dauphin Island, AL (873-8150/873-8151) (Figures 2-3) and the Pascagoula NOAA Lab, MS water level station (874-1533) (Figure 1). Dauphin Island Hydro gauge (873-8151) was used for verified tides on survey data collected prior to 10/01/2006. As of 10/01/2006, the Dauphin Island NWLON gauge (873-8150) was used in place of Dauphin Island Hydro (873-8151) because of data shifting issues. Verified data from the Dauphin Island and Pascagoula gauges were downloaded from the NOAA internet Hydro Hot list (http://co-ops.nos.noaa.gov/hydro.shtml).

As specified in the Statement of Work for this project, no additional subordinate tide stations were required to provide adequate coverage and no additional tide stations were established by field personnel.

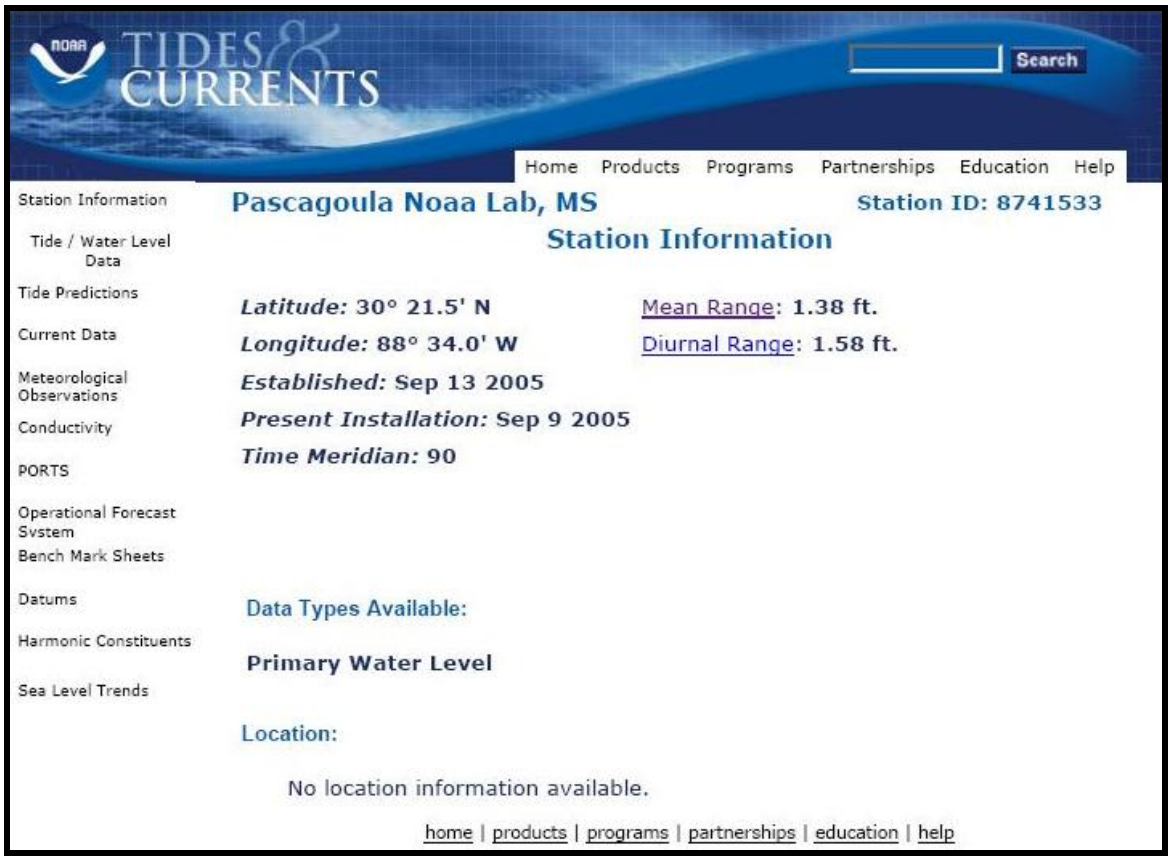


Figure 1- Station Information for the tide gauge Pascagoula NOAA Lab, MS (8741533).

TIDES & CURRENTS

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Station Information
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Sea Level Trends

Dauphin Island, AL — **Station ID: 8735180**

Station Information

Latitude: 30° 15.0' N
Longitude: 88° 4.5' W
Established: Mar 30 1966
Present Installation: Aug 8 1995
NOAA Chart #: 11376
Time Meridian: 90

Mean Range: 1.17 ft.
Diurnal Range: 1.20 ft.

Minimum Water Level: -2.08 ft. below MLLW (01/19/1977)

Maximum Water Level: 3.36 ft. above MHHW (09/02/1985)

Data Types Available:

Primary Water Level
Backup Water Level
Wind
Air Temperature
Water Temperature
Barometric Pressure

Station and Bench Mark Drawing

Click HERE for Drawing
(Not for navigational use)

EPOCH Update Information:

EPOCH Datum Comparison:	Click HERE -	check datum differences between the old epoch (1960-1978) and the new epoch (1983-2001)
Superceded Bench Mark Data Sheet:	Click HERE -	bench mark sheet on the old Tidal Datum Epoch (1960-1978)
Superceded Datums:	Click HERE -	datums on the old Tidal Datum Epoch (1960-1978)
Mean Sea Level Differences List:	Click HERE -	mean sea level differences between the two epochs for all stations.

Mean Sea Level Difference: for 8735180 Dauphin Island, AL	1983-2001	1960-1978	Difference:
	3.44 ft.	3.25 ft.	0.19 ft.

Location:

To reach the tidal bench marks from the Dauphin Island Post Office, proceed 0.3 km (0.2 mi) south on Lockland Street to its intersection with Bienville Boulevard, then 4.0 km (2.5 mi) east on Bienville Boulevard to Fort Gaines at the east end of the island. The bench marks are near Fort

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ata Retrieval - Station Information http://tidesandcurrents.noaa.gov/station_info.shtml?stn=8735180%20D...

Gaines and the Dauphin Island Sea Lab complex. The tide gage is atop a 7.6 m (25 ft) high tower on the SE side of a large fishing pier north of the fort.

Figure 2- Station Information for the tide gauge Dauphin Island NWLON, AL (8735180). Verified tides from this station are used to process data collected after 10/01/2006. Verified tides from Dauphin Island Hydro (8735181) are used to process data collected prior to 10/01/2006.

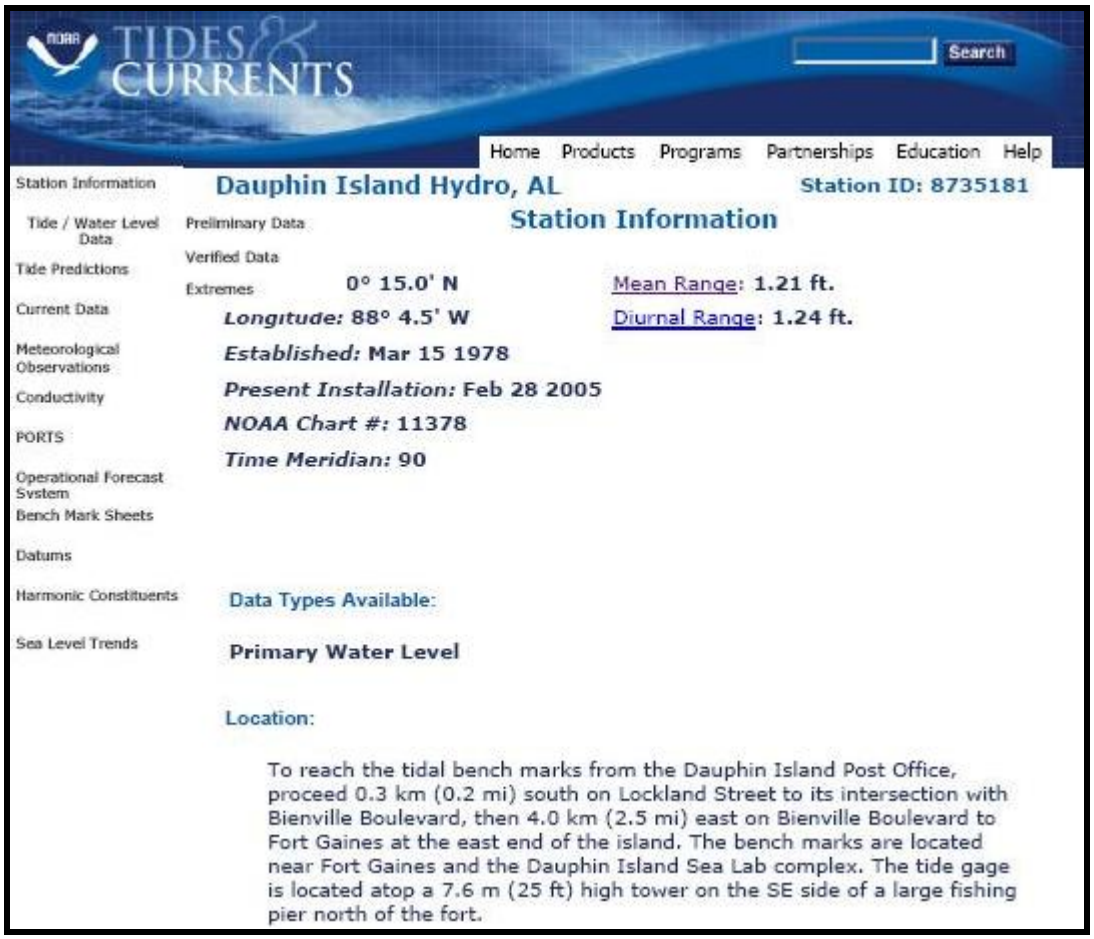

Figure 3- Station Information for the tide gauge Dauphin Island Hydro, AL (8735181). Verified tides from this station are used to process data collected prior to 10/01/2006. Verified tides from Dauphin Island NWLON (8735180) are used to process data collected on and after 10/01/2006.

Tidal Zoning

Final verified tides were applied to the data using tidal zones provided by NOAA. Tide zone and their correctors are shown in Figure 4. The zoning definition files are included as a Digital Deliverable for each sheet.

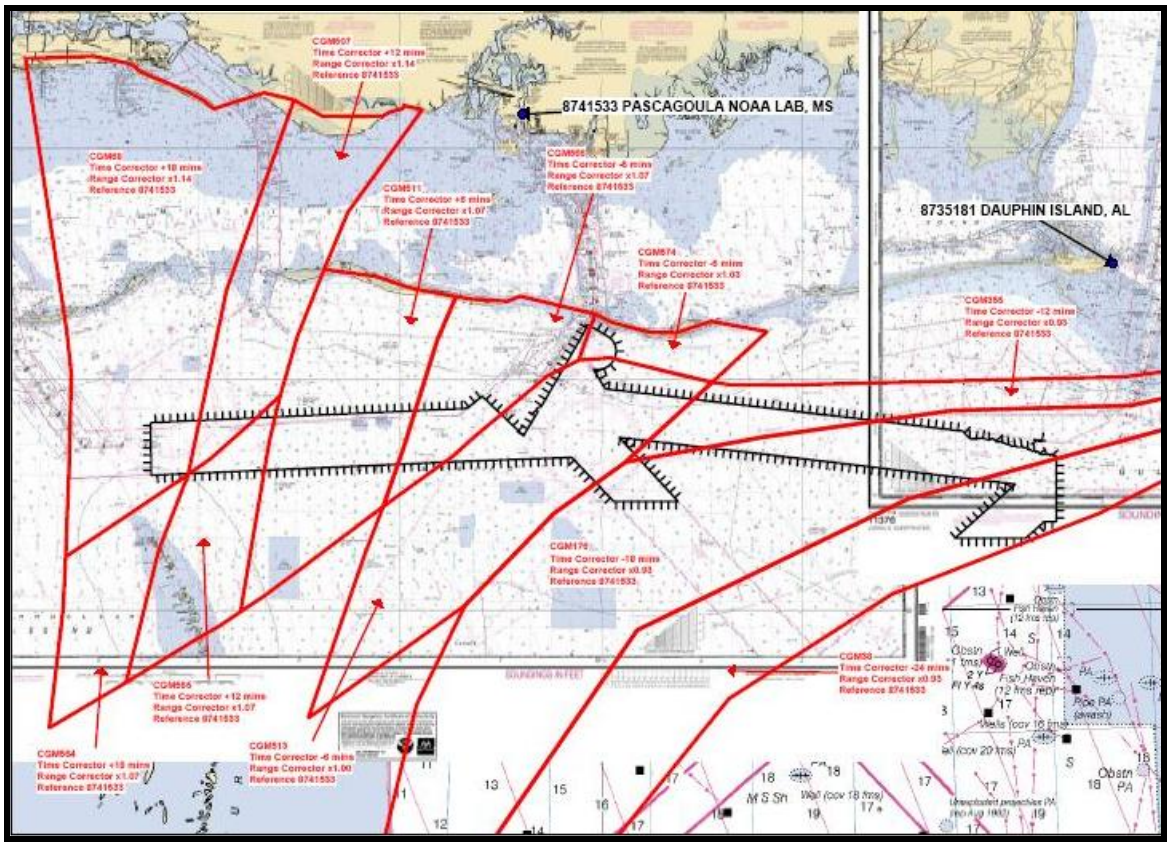

Figure 4- Tidal zones provided by NOAA for Pascagoula NOAA Lab, MS (8741533) and Dauphin Island, AL (8735181/8735180).

B. HORIZONTAL CONTROL

The horizontal control datum used for this survey is the North American Datum of 1983 (NAD 83). The projection used was UTM, Zone 16 North.

Sounding position control was determined using the Global Positioning System (GPS). The United States Coast Guard differential GPS (DGPS) stations *Mobile Point, AL, StaID 26* (Figure 5, Table 1) and *English Turn, LA, StaID 28* (Figure 6, Table 2) were used to provide navigation correctors. The summaries of daily DGPS confidence checks are provided for each sheet, respectively, in Separates I: ACQUISITION AND PROCESSING LOGS.

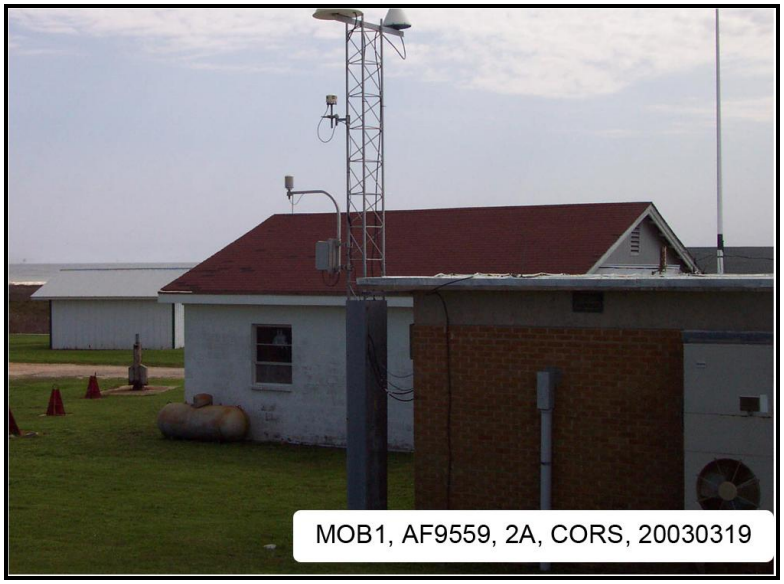

Figure 5 – Continuously Operating Reference Station (CORS) Mobile Point, AL.

Table 1 – DGPS Site Status and Operating Parameters, Mobile Point, AL.

Description	Value
Site Name	MOBILE POINT, AL
Status	Operational
RBn Antenna Location	30-13.7N, 88-1.4W
REFSTA Antenna Location (A)	30-13.65077N, 88-1.44588W
REFSTA Antenna Location (B)	30-13.65101N, 88-1.45433W
REFSTA RTCM SC-104 ID (A)	26
REFSTA RTCM SC-104 ID (B)	27
REFSTA Firmware Version	RD00-1C19
Broadcast Site ID	813
Transmit Frequency (KHz)	300
Transmit Rate (bps)	100
Signal Strength	75uV/m at 170 NM

Figure 6 - Continuously Operating Reference Station (CORS) English Turn, LA

Table 2 - DGPS Site Status and Operating Parameters, English Turn, LA.

Description	Value
Site Name	ENGLISH TURN, LA
Status	Operational
RBn Antenna Location	29-52.7N, 89-56.5W
REFSTA Antenna Location (A)	29-52.73743N, 89-56.50329W
REFSTA Antenna Location (B)	29-52.75074N, 89-56.52474W
REFSTA RTCM SC-104 ID (A)	28
REFSTA RTCM SC-104 ID (B)	29
REFSTA Firmware Version	RD00-1C19
Broadcast Site ID	814
Transmit Frequency (KHz)	293
Transmit Rate (bps)	200
Signal Strength	100uV/m at 170 NM

Project Wide

Vertical and Horizontal Control Report

OPR-J364-KR-06

H11545, H11546, H11547, H11583, H11584, H11602 & H11628

All information contained in this Vertical and Horizontal Report for OPR-J364-KR-06 has been reviewed and approved by me and is hereby respectfully submitted.

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Scott Cholmondeley, Lead Hydrographer
TerraSond Ltd.

Date_____