

The following table summarizes the days in which data were collected that contribute to the final accepted data set.

**Table 1**  
**Abstract of Times of Hydrography**

| <b>Date</b> | <b>Day Number</b> | <b>Min. Time UTC</b> | <b>Max. Time UTC</b> |
|-------------|-------------------|----------------------|----------------------|
| 8/19/2016   | 232               | 13:51:29             | 18:59:38             |
| 8/26/2016   | 239               | 12:06:44             | 18:08:04             |
| 8/28/2016   | 241               | 04:48:30             | 04:57:43             |
| 8/30/2016   | 243               | 11:10:22             | 15:55:46             |
| 8/31/2016   | 244               | 02:06:18             | 09:46:52             |
| 9/08/2016   | 252               | 12:49:55             | 16:13:59             |
| 9/11/2016   | 255               | 21:21:40             | 23:54:02             |
| 9/12/2016   | 256               | 00:22:56             | 22:43:42             |
| 9/14/2016   | 258               | 17:04:50             | 17:56:12             |
| 9/26/2016   | 270               | 16:38:50             | 22:47:06             |
| 9/27/2016   | 271               | 00:22:24             | 09:23:59             |
| 9/30/2016   | 274               | 05:46:07             | 06:01:00             |

Water level data from NOS-NOAA tide station LAWMA, LA (876-4227) was used for vertical control. Predicted tide files were used during preliminary processing. Preliminary tides from the LAWMA, LA station were downloaded and reviewed for data gaps. Verified tides were downloaded and reviewed when available.

The project is located within zones indicated by preliminary tidal zoning included in the project Statement of Work (subsequently modified as described below).

According to the Tides Statement of Work (SOW), as regards the preliminary tidal zoning, “there is insufficient data with which to perform an accurate error estimation”. Accordingly, NOAA CO-OPS recommended deploying a bottom mounted pressure gauge (BMPG) or GPS buoy at the southwest extent of the survey area to gain a “better understanding of tidal propagation and error associated with tidal zoning”.

To this end OSI deployed a pair of BMPGs (primary and backup) near the southwest extent of the survey area. OSI’s tides subcontractor, JOA Surveys, processed the recorded BMPG data, performed an instrument “settling analysis”, and incorporated datum-corrected offshore tide data into an analysis of the CO-OPS provided preliminary zoning. JOA Surveys’ analysis indicated that the preliminary zoning did in fact require adjustment. JOA Surveys’ modification of the preliminary zoning retained the preliminary zone shapes but modified the range ratios and time correctors for each zone.

Time and range corrections were applied to LAWMA, LA (876-4227) verified data according to Table 2 which includes the modified time and range correctors.

**Table 2**  
**Modified Tide Zones Associated with Project OPR-K354-KR-16**

| <b>Zone</b> | <b>Time Correction</b> | <b>Range Correction</b> |
|-------------|------------------------|-------------------------|
| WGM280      | -108                   | 0.85                    |
| WGM281      | -102                   | 0.85                    |
| WGM282      | -90                    | 0.91                    |
| WGM283      | -84                    | 0.97                    |
| WGM410      | -72                    | 1.04                    |
| WGM284      | -60                    | 1.10                    |

The BMPG tide data, analysis, and report were transmitted to CO-OPS via e-mail and FTP link on November 9, 2016. The BMPG analysis and zoning modification report is included with the project deliverables, as well as with this document.

Based on the results of cross line analysis, it appears that the time and range factors as provided in the modified zoning scheme are adequate.