U.S. DEPARTMENT OF COMMERCE

NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

NATIONAL OCEAN SERVICE

Horizontal and Veritcal Control Report

Type of Survey	**Hydrographic**
Project	**OPR-R355-KR-20**
Contract No	**1305M220DNCNJ0053**
Task Order No	**TO01**
Time Frame	**May 2020 - September 2020**

State	**Alaska**
General Locality	**North Side Alaska Peninsula**

2020

CHIEF OF PARTY

David R. Neff, C.H.

LIBRARY & ARCHIVES

Date

NOAA FORM 77-28
(11-72)

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

REGISTRY No

H13377
H13378
H13379
H13380

HYDROGRAPHIC TITLE SHEET

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the office.

FIELD No

eTrac Inc.

State	Alaska		
General Locality	North Side Alaska Peninsula		
Sub-Locality	Herendeen Bay		
Scale	1:40,000	**Date of Survey**	June - August 2020
Instructions Dated	May 11, 2020	**Project No.**	OPR-R355-KR-20
Vessel	R/V 505, R/V Rapid, R/V Spectrum		
Chief of Party	David Neff		
Surveyed by	eTrac Inc.		
Soundings by echo sounder	R2 Sonic 2024, R2 Sonic 2022		
Graphic record scaled by	N/A		
Graphic record checked by	N/A	**Automated Plot**	N/A
Verification by	Pacific Hydrographic Branch		
Soundings in	Meters at Mean Lower Low Water		

REMARKS:

NAD 83 (2011), UTM Zone 4

Times are in UTC

The purpose of this contract is to provide NOAA with modern, accurate hydrographic survey data with which to update the nautical charts of the assigned area.

SUBCONSULTANTS:

NOAA FORM 77-28 SUPERSEDES FORM C&GS-537

Contents

A. Vertical Control

Per the project instructions, survey data for OPR-R355-KR-20 were vertically referenced to the ellipsoid. Using VDatum, a vertical separation model was created to transform the ellipsoidally referenced data from ITRF-2014 to MLLW. This separation model was applied in QPS Qinsy on the vessels in real-time to achieve MLLW in the field. Achieving MLLW in the field was extremely efficient for field operations as the NALL was easily identified in realtime. The separation model was carried through the processing pipeline maintaining MLLW throughout all processing efforts.

R/V 505, R/V Rapid, and R/V Spectrum received GNSS satellite corrections on the R2Sonic I2NS over the G2+ carrier signal from the Marinestar Global Correction System maintained by Fugro. The Marinestar system is a global real-time GNSS broadcast system that delivers corrections from a network of base stations around the world via geo-stationary satellites. The Marinestar corrections system was utilized for both vertical and horizontal positioning. It should be noted that the G2+ carrier is a recent upgrade from the G2 carrier used in previous years. Improved accuracy was observed in the real-time solution as a result of this upgrade. Accuracies in the 8-13cm range were observed throughout the project, an improvement over the 13-20cm accuracies observed with the previous G2 string.

For OPR-R355-KR-20, Applanix PosPac MMS was utilized for all survey data to post-process real-time positioning data utilizing Trimble's PP-RTX implementation of Trimble CenterPoint RTX. The Trimble CenterPoint RTX correction service is delivered via internet connection and integrated into Applanix PosPac MMS 8, to aid in post processed trajectories. A Smoothed Best Estimate of Trajectory (SBET) is provided by PosPac MMS and applied to survey data in Qimera 2.2.3.

B. Horizontal Control

Survey data for OPR-R355-KR-20 were collected in NAD83 (2011) horizontal datum, UTM Zone 4N Projection.

Horizontal positioning was achieved using the same equipment and methods as described in the Vertical Control section of this document.

C. Approval Sheet

OPR-R355-KR-20

Registry Nos.
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Horizontal and Vertical Control Report

This report and the accompanying data are respectfully submitted.

Field operations contributing to the accomplishment of OPR-R355-KR-20 were conducted under my direct supervision with frequent personal checks of progress and adequacy. This report and associated data have been closely reviewed and are considered complete and adequate as per the Statement of Work.

David Neff

Digitally signed by David Neff
DN: C=US, E=david@etracinc.com, O=eTrac Inc., CN=David Neff
Date: 2020.10.30 14:31:11-07'00'

David R. Neff | eTrac Inc. | Lead Hydrographer | October 30, 2020

eTrac Inc.
October 2020