

DATE: 10/16/84

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

TIDE NOTE FOR HYDROGRAPHIC SHEET

Marine Center: Pacific

OPR: P146

Hydrographic Sheet: H-10135

Locality: Portage Bay and Kanatak Lagoon, Alaska

Time Period: June 5 - July 30, 1984

Tide Station Used: 945 - 8361 = Bird Island, AK

945 - 8365 = Kanatak Lagoon, AK

Plane of Reference (Mean Lower Low Water): 945-8361 = 3.22 ft.

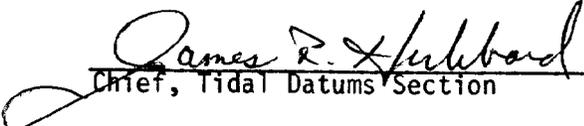
945-8365 = 2.83 ft.

Height of Mean High Water Above Plane of Reference: 945-8361 = 10.9 ft.

945-8365 = 11.0 ft.

Remarks: Recommended Zoning:

- 1) In Kanatak Lagoon Zone Direct on 945-8365
- 2) In Portage Bay Zone Direct on 945-8361

  
Chief, Tidal Datums Section

Field Tide Note  
OPR-P146-FA-84  
Portage and Jute Bays, Alaska

The tide gauge at Kodiak, Alaska (945-7283) served as a reference station for the predicted tides used for correctors on surveys H-10135 and H-10140, as stated in the Project Instructions, OPR-P146-FA-84. The controlling tide gauge was Seldovia, Alaska (945-5500). Leveling and maintenance of these stations are performed by the Pacific Tide Party.

Predicted tide correctors were interpolated aboard FAIRWEATHER, using data from the 1984 West Coast Tide Tables and program AM 500 dated 10 November 1972. Tide correctors for the 1:5000 inset at Kanatak Lagoon on survey H-10135 used the zone correctors for Kanatak Lagoon. All other correctors were calculated using the zone correctors from Wide Bay.

All times of predicted and reported tides are expressed in Universal Coordinated Time (UTC). Predicted tides were acceptable for hydrography with no discrepancies in the data attributable to tide errors.

Three field tide stations were established in support of this project. Wide Bay Tide Station (945-8461) and Bird Island Tide Station (945-8361) operated throughout the duration of surveys H-10135 and H-10140. Kanatak Lagoon Tide Station (945-8365) was maintained during performance of hydrography in Kanatak Lagoon, which is a 1:5000 inset on survey H-10135.

Wide Bay Tide Station

Tide station (945-8461) Wide Bay, Alaska, located at latitude 57°21'54" N, longitude 156°24'07" W, was the primary field tide gauge for project OPR-P146-FA-84. The station was installed on 19 May 1984 (JD 140) and removed on 29 July 1984 (JD 211). Since the tide gauge site was a long distance from the main working area of this project and FAIRWEATHER personnel were unable to check the station for an extended period due to an OCSEAP project, two Fisher and Porter ADR gauges were installed, to insure continuous tidal data. Tide gauge "B", serial number 6402A4596M2, was the primary gauge and gauge "A", serial number 7210A0926M1, was the backup. Both gauges are mounted on a relic drill casing with stainless steel banding. The zero line of gauge "A" was equivalent to 0.01 feet on gauge "B".

Two tide staffs were installed in support of this station. Tide staff "1" is mounted on the seaward-most piling of an abandoned pier. Levels were run to this tide staff. A second tide staff, staff "2", is mounted on the drill casing where the tide gauges were installed. This staff was installed to allow personnel to make tide observations when the pier staff was dry or in the surf zone. A series of simultaneous staff observations was made on 23 May 1984 between the two tide staffs. The zero line of staff "1" is equivalent to 8.32 feet on staff "2". The zero line of staff "1" was also found to be equivalent to 17.4 feet on gauge "B". Both staffs remained in place at the end of the project but the pipe staff has delaminated between the 5 and 7 foot marks and should be replaced if the station is to be reoccupied.

Opening levels were run on 19 May 1984 between staff "1" on the pier and six benchmarks. A closure of three millimeters was obtained over the entire run of approximately 0.6 miles. Closing levels were run on 28 and 29 July 1984. Closure of two millimeters was obtained over the entire run and good agreement between opening and closing levels was observed. Six benchmarks were recovered and none were established at this station in 1984. For additional information see Wide Bay Tide Station Report.

Tide gauge "B" in Wide Bay and the Kanatak Lagoon tide gauge operated without problems during the project. Gauge "A" in Wide Bay, the backup gauge, experienced punch and advance problems between 29 May and 5 June. The gauge was replaced with gauge #7304A1380M7. Because the primary gauge, "B", experienced no problems, no tidal data was missed and no hydrography was lost.

#### Bird Island Tide Station

Bird Island Tide Station (945-8361), located at latitude 57/30/42 N, longitude 156/01/54, operated throughout the period of surveying on sheets H-10135 and H-10140. This station was installed on 3 June 1984 (JD 155) and removed on 14 August (JD 227). A Bristol Bubbler analog tide gauge was installed on the southern half of Bird Island. The gauge, serial number 73A231, had a range of 0 to 30 feet. It was wired to eyebolts set in bedrock. The orifice was bolted to a rock which was set in place by a diver. A freestanding staff was installed. The bottom of the staff was bolted to a boulder and guy wired to other rocks. The zero line of the tide staff was observed to be equivalent to 8.53 feet on the tide gauge. For additional information refer to Tide Station Report #945-8361, Bird Island, AK.

Opening levels were performed on 6 June 1984 from the tide staff to five benchmarks. Closure of three millimeters was obtained over the entire run of approximately 0.1 mile. Closing levels were performed on 1 August 1984 over the same run. Closure of two millimeters was obtained. Hydrographic operations ended on 2 August (JD 215). Five benchmarks were established in 1984. Two benchmarks are considered temporary and consist of eyebolts set in rock outcrops. Levels were run to the top of the eyebolts. Three benchmarks are previously established horizontal control marks. They are standard NOS brass disks, marked BIRD 1983, BIRD RM1 and BIRD RM2.

The gauge at Bird Island malfunctioned on two occasions. On 29 July and again on 1 August the chart drive had to be replaced. On the first occasion, the mainspring broke and the chart drive was replaced. Less than an hour of data was lost. The gears were loose on the replacement chart drive and it broke between 0000 and 0100 UTC on 31 July and 25 hours of data were lost before it was discovered and replaced.

#### Kanatak Lagoon Tide Station

Kanatak Lagoon Tide Station (945-8365), located at latitude 57/31/18 N, longitude 156/02/54 W, reoccupied a historical site operated in 1923. Kanatak Lagoon is a relatively deep body of water, totally enclosed except for a narrow, shallow outlet to Portage Bay. This lagoon was surveyed as a

1:5000 inset on H-10135 and Kanatak Lagoon tide gauge was maintained throughout the survey operations on the inset. This station was installed on 27 June 1984 (JD 179) and removed 2 August (JD 215). A Bristol Bubbler analog tide gauge, serial number 67A10287, with a range of 0 to 20 feet was wired to eyebolts set in bedrock. The orifice was bolted to a rock and placed at the appropriate depth by divers. The tide staff was wired and banded to an abandoned piece of mining equipment. The zero line of the staff was equivalent to 3.93 feet on the tide gauge. For more information see Tide Station Report #945-8365, Kanatak Lagoon Tide Station.

Opening levels were run on 27 June 1984 from the tide gauge to three benchmarks established in 1923. Closure of 0 millimeters was obtained over the entire run of approximately 0.5 miles. Closing levels were run on 30 July and 2 August 1984. Closure to 0 millimeters was observed over the entire run. Three benchmarks were recovered and none were established in 1984.