

2974

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Acc. No.

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1908

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Department of Commerce and Labor
COAST AND GEODETIC SURVEY

C. H. Tittmann
Superintendent.

State: *Alaska*

DESCRIPTIVE REPORT.

Hydrographic Sheet No 2974

LOCALITY:

Port Graham.

1908.

CHIEF OF PARTY:

H. W. Rhodes.

Hyd. Sheet 2974.
Port Graham
1915

LIBRARY

Place with descriptive report
of hydrographic sheet No. 2974

S.L.R.

Drawing Section.

Positions protracted and soundings plotted by the Field Party. Soundings verified and inked by S. L. R.

This survey was intended for an additional development of the old hydrography in Port Graham wherever it appeared necessary. A few changes on this sheet resulted, but with one exception, they were of no great importance. That one exception was the finding of a $3\frac{1}{4}$ fathom shoal in lat. $59^{\circ}21'1500m.$ + long. $151^{\circ}55'450m.$ nearly in the middle of the southern entrance to Port Graham.

The party made no effort to investigate this shoal, because of the heavy sea, but continued on other lines of soundings for the rest of the day. An examination of this spot should be made this ^{coming} season, in order to determine whether $3\frac{1}{4}$ fathoms is the least depth to be found here.

The work was carefully protracted and plotted. With the exception of a lack of notes under the column in the sounding books headed "Boat's Head by Compass", the records were well kept.

Although the soundings were plotted in fathoms, they ~~had~~ been reduced to feet by the Tidal Division, thus necessitating another reduction before the soundings could be plotted.

S. L. Rosenberg.
Jan. 25, 1917.

Soundings in fathoms.

H. 2974.

Supplemental hydrography Port Graham.--Small amount of work, appears satisfactory, altho additional work should be done to develop the $3\frac{1}{4}$ fm sounding on the line running past the entrance to Port Graham.

Sheet examined in Div. of Hyd'y & Top'y.

DEC 23 1908

Acc. No.

a) Description of shore Line.

The eastern shore line of Cook Inlet in the vicinity of Port Graham rises rather abruptly into mountain ranges, with the higher peaks ranging from 2000 to 3000 feet in elevation, with several peaks to the Southeastward of Cape Bede rising several hundred feet higher. The immediate shore line at the entrance to Port Graham is composed of rather low rocky bluffs, very rough and broken, and with black reefs and detached rocks extending some distance off shore at low water, the general appearance of the entrance at such times being very forbidding.

b) Outlying dangers.

A sunken reef which breaks at times and with rocks awash at the lower tides, extends for 3/4 of a mile in a Westerly direction from Dangerous Cape, and a reef awash at low water lies one mile S.W.'ly from Alexandrovsk Village in English Bay at the South side of the entrance to Port Graham. With wind and sea opposing the tide, heavy rips occur off the entrance to Port Graham, extending indefinitely to the Southward and as far North as Green Cape, some four or five miles distant. Strong tidal currents, both ebb and flood, set across the mouth of the harbor, but there is little current at or inside of Entrance Island. Bird Reef, consisting of a number of large black rocks which cover at the higher tides, and covering an area about 150 meters in diameter, lies at the North side of the outer entrance; there is deep water close to on its Southern side, but a shoal ridge on which a least depth of 5 fathoms was found, extends about 250 meters from it in a S.E.'ly direction.

Entrance Island about 140 feet high and wooded, lies in the middle of the entrance to the inner harbor. Its shore is rough and broken and there are numerous detached rocks and reefs extending from it into the southern channel. A shoal spot, marked in the summer time by kelp, and on which a least depth of 15 feet was found, lies on a line from Bird Reef to Entrance Island and about midway between them. Rocks bare at low water extend 50 meters off the N.W. corner of Entrance Island but there is deep water close to and they may be passed safely at a distance of 100 meters. A rock awash at low water with sunken rocks close to, lies 200 meters S.W.'ly from the point of the main land just North of Entrance Island, and a spit composed of gravel and small boulders covering at high tide, extends 300 meters N.E.'ly from the Easterly point of Entrance Island. A rocky reef making out from the North shore of the harbor at a point about $\frac{3}{4}$ of a mile inside of Entrance Island, extends about $\frac{1}{3}$ of the way across the harbor in a S'ly direction; the least depth found on it was 3 fathoms.

c) Weather.

The prevailing winds in early Summer are E.N.E.'ly with rain but later on fresh S.W.'ly breezes with clear or partly cloudy weather are of frequent occurrence. S.E.gales occur frequently in the Fall, and during the Winter months Northerly gales are said to prevail.

d) Refuge.

Anchorage may be had South of the spit just inside Entrance Island, in 19 fathoms soft bottom, but as considerable swell makes in there at times, it is recommended to anchor further up the harbor. One of the best anchorages is just off the small cove in

the South shore line of the harbor 2 1/2 miles above Entrance Island, in 12 fathoms, mud, or an equally good anchorage may be had 1 mile further East in mid channel in 8 fathoms, mud, with perfect protection from all weather. Temporary anchorage may be had in either of the two bights in the outer harbor, but they are exposed to a heavy swell in S'ly or W'ly weather.

e) Watering Places.

Good water may be obtained from a stream on the South shore of the harbor 3/4 mile inside Entrance Island where a boat can be filled at 3/4 tide.

f) Sailing Directions,

To enter the harbor leave Bird Reef about 1/2 mile on the port hand and steer E.X N. (mag.) heading for the low wooded point of the main land which will be seen just to the Northward of Entrance Island. Round the Northerly point of Entrance Island at a distance of not more than 200 meters from high water mark and then steer E.S.E. 3/4 E. (mag.) in mid channel between Entrance Island and the point of the main land, holding this course until 1/4 mile past Entrance Island in order to clear the spit making off from its easterly point, then proceed as may be desirable, avoiding the three fathom shoal which makes out about 400 meters from a point on the North shore 3/4 mile above Entrance Island. The sunken rocks, 200 meters off the W'ly point of the main land and 450 meters North of the Entrance Island shore, are the worst known dangers and care must be taken to give them a safe berth in passing between them and the Island. On the E.X N. course the 15 foot spot lying midway between Bird Reef and Entrance Island will be left 375 meters on the port hand.

g) Survey Methods.

The positions of the hydrographic signals on the sheet were all determined by triangulation except signals Hang, Tree, Pur, Buf, Doc, Hoe, New, Blue, Bin, North, and Lost, which were located by the topographic survey. No projection was made for the work as a geographical position was not available when it was begun. The triangulation scheme was plotted by intersecting distances and from these stations the hydrographic signals were plotted by intersecting arcs, their distances being taken from the triangle side computations. Since beginning the work the geographical positions of all the triangulation stations have been computed but no projection has been put on the sheet as it is probable all positions will be corrected slightly when a more refined position of "Bede" (a station in the Cook Inlet Triangulation from which a preliminary position was taken) is obtained. A tide station was established on the South side of Entrance Island and tides read during the time of the survey. This station was connected by simultaneous readings with the base station at Seldovia, and the plane of reference established from the height relations between the two stations.

Respectfully submitted,

H. W. Rhodes.

Assistant Commanding "McArthur"

See Sheet No 2974

Feb. 11, 1909

The area within the limits of this survey is well covered with the exception of the southern entrance and several shoal spots which should have been more carefully examined.

The crossings are exceptionally good.

A. L. Summers

Verified: SW 2-26-09
Soundings in fathoms and refer
to mean lower low water

2974 A

C. & G. SURVEY

Form 504

MAR 31 1916

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

Acc. No.

State: _____

11-5613

DESCRIPTIVE REPORT.

Sheet No. 2974a

LOCALITY:

191

CHIEF OF PARTY:

Descriptive Report

Hydrographic Sheet 2974

Port Graham

Kenai Peninsula

Alaska

Str Explorer

R.S. Patton, Chief of Party

1915

DESCRIPTIVE REPORT

to accompany

Hydrographic Sheet 2974

Port Graham

Additional Work

Surveyed under the direction

of

R.S.Patton, Ass't

by

H.t.Kelsh, Ass't

Steamer Explorer

1915

Description of Work.

The north entrance was more closely developed.

The bar running from the north shore at signal Clear was also developed.

Work was done on one 8 1/2 fathom spot in the south entrance; and at the end of the line running out past the entrance one sounding of 3 1/4 fathoms was found nearly in the middle of the entrance. Heavy seas caused a cessation of the work so that this could not be further developed or verified at the time and the season closed before more work could be done.

Respectfully
Harry T. Kellogg
Asst.

Statistics Sheet No. 2974

Port Graham.

Date, 1915	Letter <small>ANGLES</small>	Vol.	Posi- tions,	Sound- ings.	Miles. statute.	Vessels.
September 24.	A <i>265</i>	1	133	292	16	Launch
" 25	B <i>194</i>	1	67	165	7 1/2	"
Total.....	<i>399</i>		200	457	23 1/2	