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Department of Commerce and Labor

COAST AND GEODETIC SURVEY

*H. Wittmann*  
Superintendent.

State: *Alaska*

DESCRIPTIVE REPORT.

*H.* Sheet No. 3020

LOCALITY:

*Controller Bay -  
Okelee Channel*

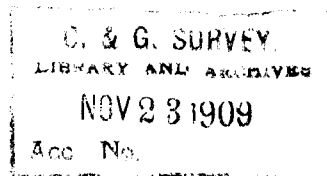
1909

CHIEF OF PARTY:

*H. C. Denson*

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Department of Commerce and Labor  
Coast and Geodetic Survey  
O. H. Tittmann, Superintendent

Descriptive Report  
to accompany  
Hydrographic Sheet of  
Okalee Channel  
Controller Bay, Alaska,  
Season 1909  
Paul C. Whitney, Assistant  
Hydrographer  
H. C. Denson, Assistant  
Chief of Party  
U. S. C. & G. S. S. Patterson  
Field Sheet "D"

## Descriptive Report to Accompany Hydrographic Sheet

This sheet includes the water area of Controller Bay, Alaska, lying to the north of Okalee Spit. The aim of the survey was to develop as far as possible Okalee Channel, from where the survey of 1903 stopped to its head, and run lines far apart on the extensive flats to show the lack of water on them. The head of the Channel was not fully developed as it carries only 2 and 3 feet at low water and cannot be used excepting at high tide. The flats on the north side of the Channel were developed by running a diagonal system across them and those on the south side by running lines going and coming from work. The development was extensive enough to define the low water mark, although this is very uncertain in most places, as a change in the depth of the water of two or three inches will cover or uncover many square miles of shoals. The signals on this sheet depend upon triangulation executed this year, *by the re-occupation of the signals in the scheme of 1903.*

The chief characteristic of this Bay is the absence of any deep water excepting in what is known as Okalee Channel and a small channel leading around the end of Okalee Spit. The rest of the area consists of extensive sandy shoals, all bare at the lowest waters. Along the eastern shore of the Bay these flats are of soft mud and at the mouth of the Edwards's River are quicksand. They are broken up by winding channels and sloughs. These result from the flow of water from the numerous small streams. None are navigable, excepting at high water and then only for small boats.

Okalee Channel is the most important channel in the Bay and extends from the limits of the survey on Chart 8513<sup>Ed. of 1906</sup> in a generally Easterly direction to the head of the Bay, where it becomes the mouth of the Okalee River. It is deep and comparatively wide at the western end of the survey and for a distance of two miles increases in depth, but becomes narrower. At this point it bends slightly to the northward and begins to shoal up rapidly and soon becomes too shallow for large vessels. About three miles from its head the channel is divided by a shoal reaching out from the main land in the shape of a huge tongue. The northern fork carries little water and soon loses itself on the mud flats; the southern one continues to the mouth of the Okalee River. At low water it is practically impossible for even a launch to reach the river, owing to the shoal depths, but at high water this may be done and launches, according to local reports, have gone a mile or more up the river and anchored over tides in holes carrying four to six feet. To be safely navigated by vessels this channel must be extensively buoyed from its mouth at Wingham Island up to the point that deep water navigation ends. The flats on both sides of the channel cover a little after low water and there is nothing to indicate the location of the channel. There are no good ranges, the only channel range being the southern end of Kanak Island and the southern slope of the range of hills to the northward of Cape Suckling.

The channel is entirely free from the ocean swell, Okalee Spit acting as a breakwater to the southward and the "middle-grounds" to the southward of Kanak Island breaking the sea from that direction.

The channel is kept opened by the tide and has all the characteristics of such a channel. Its sides are steep, soundings shoaling rapidly on a south and north line and near the edge.

The bottom is almost uniformly of hard grey sand. Anchorages may be found anywhere in the channel, where the depths are suitable, with excellent holding bottom. *South of A Pine anchorage may be found in 6 fathoms, distant 1/2 mile. There is no range on this anchorage.*

The tidal currents are strong, running out with an ebb tide and in with a flood tide. The estimated velocity of the current at spring tides is from 2.0 to 2.5 knots. It runs fair with the channel excepting along the sides where it spills off the shoals into the main current. The current runs out about 1/2 hour after low water at Kayak Island. There are small tide rips in the channel when the wind is blowing against the current. In the heavy Easterly gales the local chop in the Bay is too heavy for small launches to be safely navigated, but would not affect a ship.

A small channel leads around the western end of Okalee Spit and is caused by the tide which runs up into this part of the Bay through the entrance between the Spit and Kayak Island. This channel is unimportant and loses itself in the flats between Okalee Channel and the Spit. There is no deep water between the entrance south of the Spit and Okalee Channel.

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STATISTICS SHEET No. D

Date, 1909.	Letter.	Vol.	Posi- tions.	Sound- ings.	Miles statute.	Vessels
June 22	d	1	64	305	7	Alpha.
June 23	e	1	73	383	7	"
June 24	f	1	147	576	12	"
June 25	g	1	55	197	3.75	"
June 25	g	2	68	339	8	"
June 30	i	3	110	675	11.75	"
July 1	j	3	102	611	10	"
July 2	k	3	82	489	9	"
July 5	l	4	150	638	13	"
July 19	u	5	30	186	2.5	"
July 20	v	5	131	632	12.5	"
July 21	w	5	121	492	12.5	"
Aug. 19	i	6	102	910	20.25	"
Aug. 20	k	6	147	950	21	"
Sept. 7	q	7	130	982	23.75	"
Sept. 10	r	7	36	240	6	"
Sept. 10	r	8	15	97	2.5	"
Sept. 21	w	9	41	323	9	"
Aug. 3	c	1	130	749	20	Reynard
Aug. 4	d	1	122	641	20	"
Aug. 7	e	1	58	272	8.5	"
Aug. 7	e	2	58	278	8.5	"
Aug. 11	f	2	191	1178	24	"
Aug. 13	g	2	55	210	8.75	"
Aug. 13	g	3	114	718	12	"
Aug. 14	h	3	72	494	12	"
Aug. 17	i	3	84	585	13.25	"
Aug. 17	i	4	60	416	6.75	"
Total . . . . .			2548	14566	325.25	

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Department of Commerce and Labor  
Coast and Geodetic Survey  
O. H. Tittmann, Superintendent

Hydrographic Survey of  
Okalee Channel  
Controller Bay, Alaska  
by Paul C. Whitney  
H. C. Denson, Chief of Party,  
Steamer Patterson  
June 22 to Sept. 21, 1909.

Scale  $\frac{1}{10000}$ .

Field Sheet D.

*Plotted and checked by H. C. Denson*  
*W. C. Bell*  
*1-4-10*  
*Soundings are in feet.*

Hyd Sheet No 3020

Apr 23 1909

The channel is well developed from the western limit of the survey to the shoal water at the mouth of Okatee River.

In the channel angles should have been taken at shorter intervals especially when there was a strong current.

Many of the angles are weak. Signals should have been built on the shoal area near the channel.

Position numbers which should have been in blue are inked in black

No boat sheet was sent to the office.

A. L. Sinner



Verification of No. 24, Sheet 3070 -

Many of the boat positions on the Sheet are weak - due to distant signals and poor combinations for three-point determinations and considerable distortion of the projection through irregular shrinkage -

Gas-pipe tripods should have been erected on the shoal flats and used alone or in combination with distant shore signals -

On account of uncertain positions, current and leadman's errors, the plotted depths are not entirely free from apparent inconsistencies.

The bar ridges near head of channel were not fully developed; however, they are of minor importance probably.

The channel as developed gives evidence of permanence in depth and position - doubtless changing only as the shore-line encroaches; a very slow process at this time, seemingly -

1-4-10

J. G. C.