4135

Form 504

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

State: Washington

11—5613

# DESCRIPTIVE REPORT.

Hyd. Sheet No. 4135

LOCALITY:

Lake Washington - - -

North Pt. to Juanita Pt

and Faben and Barnabie

Points to Bryn Mawr

1920

CHIEF OF PARTY:

N. H. Heck

4135

H-4135

WIRE DRAG SHEET NO. 1
LAKE WASHINGTON
SHOWING AREA DRAGGED IN CONNECTION
WITH REMOVAL OF SUBMERGED FORESTS.
1919-1920
WIRE DRAG AND REVISION PARTY
Chief of Party- H. H. Hack, H. and C. S.
Scale 1/10,000

Officers in charge of work W. H. Hack (actual operation).
C. C. Jones " "
B. Brinkenberg. " "

Tide gauges at University Beach, Portage Bay
Leschi Park, Lake Washington
Observations once a day on all days when operations occurred.

STATISTICS OF WIRE DRAG WORK.

Wire Drag and Revision Party. Lakes Washington and Union.

Chief of Party, N.E.Heck, H.& G.E.

| Letter | Date 1919 | Vol. | No. of Miles | No. of angles | No. of soundings | | Length of drag |
|---|---|---|---|---|---|---|---|
| A | Nov. 14 | 1 | ---- | 2 | Traces of Locality | 2 | -- |
| B | " 17 | " | 1.5 | 74 | 3 | 2 | 2000 |
| C | " 18 | " | 2.0 | 125 | 1 | 2 | 2000 |
| D | " 19 | " | 0.5 | 42 | 3 | 3 | 1200 |
| E | " 20 | " | 1.0 | 52 | 2 | 2 | 900 |
| F | " 21 | " | 0.1 | 12 | 2 | 2 | 600 |
| G | " 22 | " | 0.0 | 4 | 2 | 2 | 600 |
| H | " 25 | " | 0.3 | 35 | 7 | 7 | 600 |
| J | " 26 | " | 0.0 | 3 | 3 | 3 | 600 |
| K | " 28 | " | 0.3 | 33 | 5 | 5 | 600 |
| L | Dec. 2 | " | 0.5 | 32 | 5 | 5 | 600 |
| M | " 3 | " | 0.7 | 35 | 3 | 3 | 1200 |
| N | " 5 | " | 0.0 | 3 | 3 | 3 | 600 |
| O | " 6 | " | 0.0 | 1 | 1 | 1 | 600 |
| P | " 8 | " | --- | --- | --- | --- | --- |
| Q | " 9 | " | 0.1 | 10 | 2 | 2 | 600 |
| R | " 15 | " | 0.2 | 43 | 4 | 6 | 600 |
| S | " 16 | " | 3.4 | 98 | 4 | 4 | 2000 |
| T | " 18 | " | 3.3 | 164 | 3 | 4 | 1500 |
| U | " 22 | 2 | 0.3 | 24 | 5 | 4 | 600 |
| V | " 24 | " | 1.2 | 73 | 0 | 5 | 1600 |
| W | " 26 | " | 0.2 | 27 | 5 | 5 | 600 |
| X | " 27 | " | 0.4 | 27 | 3 | 3 | 600 |
| Y | " 28 | " | 1.0 | 42 | 5 | 6 | 1200 |
| Z | " 30 | " | --- | 6 | 6 | 6 | --- |
| a 1 | Jan. 2 | " | 0.5 | 20 | 5 | 4 | 1200 |
| b 1 | " 5 | " | 0.5 | 28 | 9 | 6 | 600 |
| c 1 | " 6 | " | 0.3 | 36 | 4 | 8 | |
| d 1 | " 7 | " | 0.1 | 20 | 4 | 4 | 600 |
| e 1 | " 9 | " | 0.4 | 22 | 7 | 8 | 1200 |
| f 1 | " 12 | " | 4.8 | 137 | | -- | 2000 |
| g 1 | " 13 | " | 0.0 | 5 | 5 | 5 | --- |
| h 1 | " 19 | " | 0.0 | 1 | 5 | 1 | --- |
| j 1 | " 21 | " | 0.3 | 20 | 2 | --- | 600 |
| k 1 | " 22 | " | 0.2 | 28 | 4 | -- | 1200 |
| L 1 | " 23 | 3 | 0.4 | 48 | 5 | -- | 600 |
| m 1 | " 26 | " | 1.2 | 24 | 6 | -- | 1200 |
| n 1 | " 28 | " | 0.1 | 2 | 6 | -- | 600 |
| o 1 | " 29 | " | 0.6 | 2 | 3 | -- | 600 |
| p 1 | " 30 | " | 0.1 | 1 | 1 | -- | 700 |
| q 1 | " 31 | " | 1.7 | 48 | 0 | -- | 2000 |
| r 1 | Feb. 5 | " | 1.0 | 37 | 5 | 1 | 900 |
| s 1 | " 9 | " | -- | -- | 0 | -- | -- |
| t 1 | " 10 | " | | | | | |

| Letter | Date 1919 | Vol. | No. of miles | No. of Angles | No. of Soundings | | Length of drag. |
|---|---|---|---|---|---|---|---|
| u 1 | Feb. 13 | 3 | 0.3 | 12 | 1 | -- | 1200 |
| v 1 | " 16 | " | 1.9 | 78 | 1 | -- | 3200 |
| w 1 | " 17 | " | 1.4 | 104 | 3 | -- | 3200 |
| x 1 | " 19 | " | 1.5 | 44 | 2 | -- | 1500 |
| y 1 | " 24 | " | 4.3 | 160 | 2 | -- | 1200 |
| z 1 | " 26 | " | 0.7 | 36 | 2 | -- | 1200 |
| a 1 | March 12 | 4 | 1.5 | 36 | 2 | -- | 1200 |
| | | Totals. | 41.3 | 1903 | 161 | 122 | |

| | |
|---|---|
| Area sq. miles | 6.0 |
| Miles | 41.3 |
| Angles | 1903 |
| Soundings | 122 |
| trees located | 161 |
| " removed | 192.* |

* Official count of snagboat. In many cases two to three trees were removed where one was located by drag party

DESCRIPTIVE REPORT - HYD. SHEET NO. 1 4
WIRE-DRAG WORK - LAKE WASHINGTON- W. H. Heck, Chief of Party.

Work covered dragging of three indicated submerged forest areas on the chart of Lake Washington. At start little was known as to distribution but work developed relative size of areas.

The plotting indicates that all the area outside of and adjacent to the submerged forests was dragged to 50 feet, the forests themselves were dragged to 30, 25 or 20 as the nature of the possible cooperation of the U. S. A. snagboat SWINOMISH made it possible.

The area of forest off east side of Mercer Island about 600 feet wide by half a mile long from which 85 trees were removed when the Lake was first lowered had by far the most trees. While the sheets only shows four drag strips to cover it 55 attempts were made to drag this area and 149 trees were removed before the 20 foot depth was assured. Eight of these trees had less than 12 feet and two less than 7 feet. It was necessary to continue dragging and rejecting the lines in plotting till the drag actually passed clear as until this occurred there was no assurance that the one or two remaining trees might be dangerously near the surface. This explains the rather unusual proposition of records filled with little apparent result, especially in area covered.

A shoal was developed in this area not previously charted with depths 15 to 24 feet.

West of south end of Mercer Id. a small group of trees was found. Three attempts were necessary to complete this and 4 trees were removed. One had 4 feet in 120 feet of water.

West of Mercer Id. East of Bailey Peninsula the second main group was found. Nine attempts were necessary before this could be dragged over and 36 trees were removed. Four of these trees had less than 12 feet and two less than four. One was in direct path of fast ferry in constant operation. The other though close in shore was struck by the Scandinavia and damage was prevented only by slow speed. All the outlying portion of this areas was dragged over to 30 feet, the inshore part to 20 feet, meeting all local present and future demands.

North end of Lake east side. The trees here were in several small groups. Nine attempts were necessary before this was dragged, and 11 trees were removed. One tree with at least 25 feet on it was not removed owing to inability of snagboat to remain. One tree removed was within 4 feet of the surface in 120 foot of water. This area was dragged to 30 or 40 feet as conditions permitted. This work was done at end of season when snagboat had developed methods for working to unprecedented depths.

Open area.

Ten lines were run adjacent to the forest areas but outside of them in open water, generally to a depth of 50 feet. These included the major part of the area dragged, speaking in terms of sq. miles. In the course of this work three trees outside of areas indibated on the chart were discovered and removed and a log struck by a steamer was located for removal. A tree on the north part of the channel east of Mercer Id. is especially significant of the need for possible future dragging.

Little attempt at hydrographic development was made. A shoal in Juanita Bay was developed on report but was found to be a misinterpretation of result of lowering lake. An eight foot shoal sounding on the former chart really was separated from the shore by somewhat deeper water. On the lowering it became a shoal swash with greater depth inside. The shoal off the north end of Mercer Id. has less depth than charted. Least sounding found was 39 feet but drag set 36 feet caught.

Significance of operation is out of all proportion to indications on sheet as it is a region of intensive development practically part of a large city's water front.

ADDRESS THE SUPERINTENDENT
U. S. COAST AND GEODETIC SURVEY

AND REFER TO No. 41-EMK

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON

June 7, 1920.



Division of Hydrography and Topography:

Division of Charts:

Tidal reductions are approved in
1 volume of sounding records for

HYDROGRAPHIC SHEET 4135

Lake Washington, Washington.
N. H. Heck in 1919-1920.

Plane of reference is
Mean height of spillway for Lake Washington,
which is 25.00 ft. above the U.S.Engineers
datum, corresponding to a reading of

2.9 ft. on the C. & G. S. tide staff at the
foot of Madison St., Seattle, Washington.

Condition of records, satisfactory.

L. P. Shidy

Acting Chief, Section of
Tides and Currents.

Forwarded:

Chief, Div. of Hyd'y and Top'y

DIRECTOR
ADDRESS THE SUPERINTENDENT
U. S. COAST AND GEODETIC SURVEY

AND REFER TO No.

# DEPARTMENT OF COMMERCE

## U. S. COAST AND GEODETIC SURVEY

## WASHINGTON

6

SECTION OF FIELD RECORDS

REPORT ON HYDROGRAPHIC SHEET No. 4135.

Surveyed in 1919-20.

Chief of Party: N. H. Heck.

Protracted by A. M. Weber

Surveyed by N. H. Heck, G. C. Jones and B. Friedenberg.
Verification and area and depth sheet by A. Baer.

1. The records are defective in the following respects:
Writing is carelessly done -- pencil too soft and figures sometimes almost illegible. Most of the computations for distance angles were found to be incorrect.

2. Standard Whatman's paper should have been used instead of the poor quality of paper that is employed.

3. The plan and character of the development fulfills the requirements of the General Instructions and, as far as the work extended, satisfies the specific instructions.

4. With several minor exceptions the field work was completed to the extent prescribed in General Instructions and the office draftsman did not have to do over any part of it.

5. The drag work was extended over only those areas in which dangers have been reported. Capt. Heck suggests in the descriptive report that additional dragging is needed. It is altogether likely that additional submerged trees exist in the areas not dragged.

6. Considering the difficulties under which the field work was carried on the surveying is good, and the field drafting is good.

7. Reviewed by E. P. Ellis, May 13, 1921 and two copies to be sent to Division of Hydrography and Topography.

The drag set at 30 ft. grounded at the north end of Lake near Manitou. The note on chart shows lake clear of obstructions to a depth of 30 ft. As the drag grounded at 30 ft. it is evident that less than 30 ft. of water exists over the obstructions.

A. L. Shalowitz.
Nov. 8, 1922.

Verification Report of Hyd. 4135.

Only the plotting as called for in the records was shown and verified on this sheet. The records in some instances were poorly kept and the figures not as legible as they might have been. However the condition of the records was due to a large extent on the nature of the work.

All the computations for distance angles were found incorrect and were corrected as shown in the records. None of the differences were great enough to affect any of the plotting.

The day ship from 1R & 3R was plotted. This was marked for plotting by the Chief of Party but had been omitted by the draftsman. This was also true from 6X' & 11X". The plotting went no further than 5X' though the remainder of the day was recorded for plotting.

On X' day also two Beacon lights of upright were used, from N-4 the upright was 22 ft. and from 4-F 30 ft. was inverted. As the plotting showed only one effective depth for the entire day and this the shoalest, 22 ft. it was left as plotted.

Respectfully submitted,

Alois Ball,

Draftsman.