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4039

U. S. Coast and Geodetic Survey.

Register No. 4039² (Additional work)

Form 504
 DEPARTMENT OF COMMERCE
 U. S. COAST AND GEODETIC SURVEY

State: *Virginia*

11-5613

DESCRIPTIVE REPORT.

Hyd. Sheet No. *4636-4039*

LOCALITY:

Chesapeake Bay
Lower Part

1918

CHIEF OF PARTY:

H. Leyboldt.

4038-31

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DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

HYDROGRAPHIC TITLE SHEET

The finished Hydrographic Sheet is to be accompanied by the following title sheet, filled in as completely as possible, when the sheet is forwarded to the Office.

U. S. Coast and Geodetic Survey.

Register No. 4039² (Additional work)

State Virginia

General locality . . Chesapeake Bay

Locality . . Off York River Entrance

Chief of party . . L. A. Potter

Surveyed by L. A. Potter

Date of survey . . July 29, 1919

Scale 1:40,000

Soundings in Feet

Plane of reference Mean Low Water

Protracted by H.P.O & J.W.C. . . Soundings in pencil by J.W.C. F.M.A.

Inked by F.M. Albert Verified by F.M.A.

Records accompanying sheet (check those forwarded):

Des. report, 1 Tide books, Marigrams, 1 Boat sheets,

1 Sounding books, Wire-drag books, Photographs.

Data from other sources affecting sheet

Remarks: **Soundings made in search for 29-foot spot in records of Steamer HYDROGRAPHER, H. Leypoldt Commanding, 1918.**

Descriptive Report to accompany Hydrographic Sheets Nos. 1 & 2,
Lower Part of Chesapeake Bay.

1. Limits.-

The eastern limits is a line joining Cape Henry light with Fishermans island tank, and thence northward to a junction with hyd. sheets Nos. 3658 and 3659, the northerly limit is approximately 37 24' N.; the westerly limit is a line from Wolf Trap to a point about one mile south of Newpoint Comfort, then southerly to a mile west of York Spit Light and in a line joining with Thimble Shoal light, from this point southerly and easterly to Lynnhaven Roads and Cape Henry.

2. Description of the Coast. $\frac{1}{2}$.-

Described in reports of previous surveys.

3. Outlying dangers and islands.-

Nothing new to report on these subjects.

4. Currents.-

The currents are apparently the same as previously known. Several stations were observed for durations of 25 hours and longer, the results were recorded in a current record book.

5. Landmarks.-

There are no new landmarks to report. New marking buoys have been placed to mark shoal off Wolf Trap, locations of same are shown on hyd. sheet and also recorded in sounding records.

6. Inshore dangers, bars, channels, anchorages and change of coast lines.-

There is no ~~known~~ known change to report since previous surveys on any of the above mentioned subjects.

7. Dangers reported or shown on previous surveys.-

- a. The detached 14 foot spot at southeast corner of Tail of the Horseshoe seems to have deepened about a foot.
- b. The north end of shoal, to eastward of Wolf Trap seems to have about a foot less of water than shown on the chart. Thorough developments were made of these two areas to verify the discrepancies; it should be noted, however, that tide reducers for these soundings have not yet been applied.
- c. In the southern part of the 35 foot channel, lying to northward of Middle Ground, soundings to about 33 feet were obtained (tide reducers not applied).
- d. In vicinity within a mile to northward of Cape Henry considerable differences were discovered between soundings from recent survey and the one preceding, which may be due to strong currents.

8. Survey Methods.-

All soundings were taken from the ship by use of hand leads (12 and 15 pds.) positions of sounding lines were determined by sextant angles on natural objects and signals previously located; several buoys located by the ship were also used for signals.

North and south lines were run $1/4$ mile apart and east and west lines run $1/2$ mile apart; shoals channels and critical areas were closely developed. It is believed that the entire area covered is sufficiently developed, with exception of the channel from Cape Henry to Hampton Roads which was being deepened by the U.S. Army Dredges while the survey was in progress; it should also be noted that the dredges were dumping their loads to the southward of the channel and in vicinity off Lynnhaven Roads, which evidently will be cause of discrepancy in soundings as given by recent survey.

Respectfully submitted

Oscar Abstraiter

Mate, U.S. Coast and Geodetic Survey.

Respectfully forwarded,

Christie J. Orr.

Jr. Hyd. & Geod. Engr.,
Commanding Steamer Hydrographer.

Statistics for the Chesapeake Bay.

Day	Date	Miles	Soundings	Positions	Angles
A	Blue June 28	40.0	906	117	234
B	July 1	35.0	593	93	186
C	3	49.0 a	708	135	270
D	9	59.0	1198	167	334
E	10	41.0	1107	147	294
F	11	27.0	409	886	172
A	Green 12	40.0	943	126	252
B	" 15	29.0	517	786	152
G	Blue 15	11.0	239	26	52
C	Green 16	53.0	1122	157	314
D	17	23.0	476	69	138
E	18	19.2	413	50	100
F	22	40.0	701	88	176
G	23	62.0	1110	149	298
H	H 24	67.0	1152	165	330
J	25	58.0	977	142	284
K	26	52.0	1028	141	282
L	29	34.0	667	83	164
M	30	42.0	788	102	204
N	31	25.0	415	65	130
O	Aug 1	67.0	1010	149	298
H	Blue 5	37.0	689	99	198
J	6	17.2	520	58	116
P	Green 8	27.0	480	85	170
Q	12	48.3	7780	120	240
R	13	13.5	262	57	774
S	14	61.00	1135	153	306
T	15	22.0	54	11	22
U	16	48.0	912	129	258
V	20	46.0	885	131	262
W	21	57.0	839	150	300
X	22	29.0	430	72	144
Y	23	44.0	628	129	258
Z	27	18.0	326	59	118
A'	28	48.8	818	119	238
B'	29	55.0	962	145	290
C'	30	29.0	685	99	198
K	Blue Sep. 3	49.0	915	133	266
L	4	52.0	1150	156	312
M	5	51.0	1020	141	282
D'	Green 6	14.0	323	47	94
E'	9	33.5	620	95	190
F'	10	32.7	685	113	226
G'	17	40.2	1036	99	198
H'	18	17.6	378	48	96
J'	19	44.4	965	121	242
K'	20	44.7	840	119	238
L'	23	42.0	902	109	218
M'	24	35.0	790	131	262

4038 : 4039

Day	Date	Miles	Soundings	Positions	Angles
N' Green	Sep. 25	15.8	327	42	84
O'	Oct. 2	35.2	503	95	190
P'	3	20.3	405	48	96
Q'	4	38.5	828	121	242
R'	9	41.4	870	130	260
S'	10	19.5	400	56	112
T'	16	35.0	784	128	256
U'	17	24.0	466	77	154
V'	18	13.7	234	54	108
W'	22	25.3	327	72	144
X'	23	44.0	799	119	238
Y'	24	23.5	565	80	160
Z'	25	14.0	360	59	118
N Blue	30	27.0	559	104	208

Totals	2,512.3	43,792	6,560	13,120
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DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY
WASHINGTON

LIBRARY

Place with descriptive report
of hydrographic sheet No. 4038

Drawing Section. 9

April 11, 1919.

Division of Hydrography and Topography: *Yes*

Division of Charts: *L*

Tidal reductions are approved in
18 volumes of sounding records for

HYDROGRAPHIC SHEET 4038

(11 volumes also contain record for 4039)

Lower Chesapeake Bay, Va.
Harry Leypoldt in 1918

Plane of reference is
Mean low water, reading

- 3.1 ft. on staff at Lynnhaven Roads.
- 3.6 ft. on staff #2 at Thimble Shoal Lighthouse.
- 3.9 ft. on staff #3 at Thimble Shoal Lighthouse.
- 1.1 ft. on staff at Fishermans Island
- 2.7 ft. on staff at Cape Charles City.
- 6.0 ft. on staff #1 at York Spit Lighthouse.
- 2.0 ft. on staff #2 at York Spit Lighthouse.
- 6.6 ft. on staff at Wolf Trap Lighthouse.

R. P. Luce

Chief, Section of Tides
and Currents.

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

LIBRARY

Place with descriptive report
of hydrographic sheet No. 4039

Drawing Section. *A*

April 11, 1919.

Chief, Division of Hydrography and Topography: *Her*

Chief, Division of Charts: *✓*

Tidal reductions are approved in
16 volumes of sounding records for

HYDROGRAPHIC SHEET 4039

(11 volumes also contain record for 4038)

Lower Chesapeake Bay, Va.
Harry Leyboldt in 1918

Plane of reference is
Mean low water, reading

- 6.0 ft. on staff #1 at York Spit Lighthouse
- 2.0 ft. on staff #2 at York Spit Lighthouse
- 6.6 ft. on staff at Welf Trap Lighthouse
- 2.7 ft. on staff at Cape Charles City
- 3.6 ft. on staff #2 at Thimble Shoal Lighthouse
- 3.9 ft. on staff #3 at Thimble Shoal Lighthouse
- 1.1 ft. on staff at Fishermans Island.

R. H. Lee

Chief, Section of Tides
and Currents.

ADDRESS
U S COAST AND GEODETIC SURVEY
WASHINGTON, D. C.

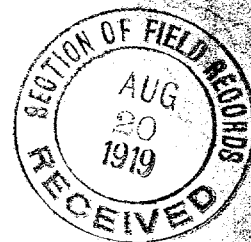
REFER TO NO. 41-MMT

DEPARTMENT OF COMMERCE

U. S. COAST AND GEODETIC SURVEY

WASHINGTON

August 20, 1919.



Division of Hydrography and Topography:

Division of Charts:

Tidal reductions are approved in
1 additional volume of sounding record for

HYDROGRAPHIC SHEET 4039

York River Entrance, Va.

L. A. Potter in 1919

Plane of reference is
Mean low water, reading

Ft.

3.9 on tide staff at Old Point Comfort.

Condition of record very satisfactory.

G. Rude

Chief, Section of
Tides and Currents.

Division of Hydrography and Topography:

Division of Charts:

Tide reducers are approved in one
volume of sounding records for

HYDROGRAPHIC SHEET 4039 ² (~~Additional Work~~)

Locality: Entrance to York River, Va.

Chief of Party: L. A. Potter in 1919

Plane of reference is mean low water, reading
3.9 ft. on tide staff at Old Point Comfort.*

* Allowance made for difference in range of tide at
place of sounding.

For reduction of soundings, condition of records satisfactory
except as checked below:

1. Locality and sublocality of survey omitted.
2. Month and day of month omitted.
3. Time meridian not given at beginning of day's work.
4. Time (whether A.M. or P.M.) not given at beginning of day's work.
5. Soundings (whether in feet or fathoms) not clearly shown in record.
6. Leadline correction entered wrong column.
7. Field reductions entered in "Office" column.
8. Location of tide gauge not given at beginning of each day's work.
9. Leadline corrections not clearly stated.
10. Kind of sounding tube used not stated.
11. Sounding tube No. entered in column of "Soundings" instead of "Remarks".
12. Legibility of record could be improved.
13. Remarks



Chief, Division of Tides and Currents.

Draftsman's Report on Inking and Verifying #4039³ (Add'l. Work)

This survey was made to search for 29' sounding made by H. Leyboldt in 1918 off the Entrance to York River.

The shallowest sounding obtained in 1919 in the immediate vicinity was 32 feet. The general depths obtained in 1919 appear to be a little shallower than in 1918.

Just before the sheet was inked the assistant chief of Field Records Section had the reducers revised by the tide division, since it was evident that the soundings were too shoal. Applying a correction for distance from the gauge made the reducers a little less and the soundings a little more:

As the sheet was five years old the pencilled soundings had become faint and also changed as mentioned in the preceding paragraph therefore they were re-pencilled before being inked.

The field drafting was excellent and the records well-kept.

July 21, 1924.

F. M. Albert, Draftsman
Section of Field Records.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

WASHINGTON

July 17, 1924.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheet No. 4038

Cape Henry to York River, Chesapeake Bay

Surveyed in 1918

Instructions dated June 17, 1918

Chief of Party, H. Leypoldt.

Surveyed by party of Steamer HYDROGRAPHER.

Protracted by E. K. Ellis and C. E. Christopherson.

Soundings plotted by E. K. Ellis.

Verified and inked by S. L. Rosenberg.

1. The records conform to the requirements of the General Instructions.
2. The plan and character of development conform to the requirements of the General Instructions.
- 3.- The plan and extent of development satisfy the specific instructions.
4. The sounding line crossings are adequate except in the deep water north of Cape Henry where there are several poor crossings.
5. The information is sufficient for drawing the usual depth curves.
6. The usual field plotting was done by the field party. Owing to the omission of the office draftsman's report its quality cannot be stated.
7. The junction on the westward with H. 4040 is not satisfactory. Sheet 4038 is uniformly 1 to 2 feet shoaler at its southwest edge than 4040, and at its northwest edge it is 2 to 4 feet shoaler than 4040. A careful study of this condition by this Section and the Division of Tides leads to the conclusion that the differences result from the failure of the tide gauges used to indicate the correct state of the tide throughout the entire area being surveyed. *port* A portable automatic gauge placed in the center of the bay would have assisted materially in correcting the tidal reducers, and it is recommended that one be so placed when work is again done at the mouth of the Chesapeake.

8. No further surveying is required within the area of the sheet.
9. The character and scope of the surveying are excellent.
10. Reviewed by E. P. Ellis, June, 1924.

Report of minor correction to H. 4039.

In reviewing this sheet and the adjoining one ^{#4038}, on the south there was a discrepancy in the same line which fell on both sheets and was investigated by direction of the assistant chief of Field Records Section.

It was found that the work of "A" day which was based on signal "But" was incorrect and it appears that a point about 160 meters N.W. of the correct "But" was used in this incorrect plotting. No other incorrect plotting in subsequent days could be found by investigating several positions in several days.

All the incorrect plotting was changed and correctly inked. Where the change became small (as when the two positions of the signal came in range) no corrections were necessary. The positions changed on "A" day are: 1-11, 24-37, 43-56, 68-80, 98-107.

F. M. Albert, Draftsman,
Section of Field Records

July 23, 1924.

DEPARTMENT OF COMMERCE
U. S. COAST AND GEODETIC SURVEY

WASHINGTON

July 25, 1924.

SECTION OF FIELD RECORDS

Report on Hydrographic Sheets Nos. 4039 and 4039^B

York River to Wolf Trap, Chesapeake Bay

Surveyed in 1918 and 1919

Instructions dated June 17, 1918 and July 1, 1919

Chief of Party, H. Leypoldt.

Surveyed by party of Steamer HYDROGRAPHER.

Protracted by field party.

Soundings plotted by S. Rosenberg.

Verified and inked by E. K. Ellis

Additional work by L. A. Potter in 1919 verified and inked by F. M. Albert

1. The records conform to the requirements of the General Instructions.
2. The plan and character of development conform to the requirements of the General Instructions.
3. The plan and extent of development satisfy the specific instructions except that the split lines called for inside the 36 foot curve were not run.
4. The sounding line crossings are adequate.
5. The information is sufficient for drawing the usual depth curves.
6. Only the protracting was done by the field party.
7. The junctions with adjacent work on the west and south are satisfactory.
8. The additional work plotted on H. 4039a by Potter in 1919 is a development of the immediate vicinity of the 29 foot sounding in Lat. 37° 10' Long. 76° 11'. Nothing shoaler than 32 feet was found in this area and the probability is that the 29 is a leadline error, 35 feet being the probable depth. However, the leadline development is not sufficient to completely disprove the existence of the 29 foot depth and it should be placed on the charts.

9. No further surveying is required within the area of the sheet, except that it would be desirable to pass the drag over the 29 foot spot.
10. The character and scope of the surveying are good.
11. Reviewed by E. P. Ellis, July, 1924.