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**EXPLORING CASTLE ISLAND BARITE DEPOSIT
 BY DIAMOND DRILLING**

**A
 Compilation
 by**

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Compliments of
E. H. Germain
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DIAMOND DRILLING

INTRODUCTION

During the late summer and fall of 1931 the Castle Island Barite Deposit was explored by diamond drilling. In the following pages is recorded a general description of the deposit, summary of the results of drilling, description of the camp and equipment, terms of the contract, log of the diamond drill holes, record of assays, sketches showing location of holes and cross sections, and a table showing the cost of the operation.

GENERAL

The Castle Island Barite Deposit is located on one of a group of small islands situated about six miles from the mouth of Duncan Canal, a shallow estuary extending northwesterly from the southeast shore of Kupreanof Island, Southeastern Alaska. The property is accessible to Petersburg, Alaska, 25 miles north, by small boat via Wrangell Narrows. Petersburg is 126 miles south of Juneau.

The country in the vicinity of the property is of low relief, with few hills of any consequence, and is thickly timbered. A large part of Duncan Canal is tidal flat, dry at low tide.

The small island on which the barite is exposed is roughly oval shaped in plan, with its long axis running northwest - southeast. It is tied to a larger island on the west by a narrow neck of land which is submerged at high tide. The barite island is characterized

by two rounded knobs rising abruptly from the shore to a height of 50 or 60 feet, the larger occupying the north and central portions of the island, and the smaller at the southern tip. The barite island has an area of approximately one acre, and is patented land owned by the Alaska Juneau Gold Mining Company.

Practically the entire surface of the island is barite. Close to the western shore line the contact between the barite and a schist country rock can be traced, striking in a northwesterly direction, and dipping 50° to 60° to the northeast. The barite is dark gray in color, and an even, medium grained texture, soft and blocky. Small streaks and patches of sulphide minerals are visible in places. Occasional thin bands of calcite can be noticed. Apparently sulphide minerals are disseminated throughout the whole deposit, and may account in part for its color. In places a gradation into schist is evident, and in others small inclusions of schist can be seen in the barite. Such gradations have been designated "impure barite" in the diamond drill logs to distinguish them from the typical barite and the schist. Analyses of the barite samples are quite regular, the following being typical:

ASSAYS

Gold	\$ 0.20 per ton
Silver	1.20 oz. per ton
Copper	.05 per cent
Lead	.60 per cent
Zinc	1.80 per cent

Typical Quantitative analyses are:

Barium Sulphate	89.60 %
Silica	4.50 %
Lime	.04 %
Copper Sulphide	.08 %
Lead Sulphide	.69 %
Zinc Sulphide	2.68 %
Iron Sulphide	.75 %
Iron Oxide	.80 %
Alumina, Magnesia, Strontium, Manganese Oxide, each a trace.	

THE DEPOSIT

The deposit is well described by E. F. Burchard in U. S. G. S. Bulletin 592 while some additional information is contained in Notes on Castle Island Barite gathered in 1922 by J. A. Williams. The general geology is touched upon in U. S. G. S. Bulletin 800 which describes the Duncan anticlinorium in which the Castle Islands are centrally situated. Duncan Canal itself is eroded along a closely fold anticline. The rocks in general are Devonian volcanics interbedded with slate and cherty limestones.

RESULTS OF DRILL HOLES

The drill holes show 80 to 100 feet right angle thickness of a good grade of barite ($89\% \text{BaSO}_4$) extending for 300 feet in length. The depth is about 150 feet at 35 degree slope. The north limit along the strike has been found but it is quite likely that the deposit takes somewhat to the southeast and extends southerly beyond the tip of the island. Some inclusions of impure barite are recorded but are unimportant down to a depth of 40 feet below high tide. Few holes cored well due to the broken nature of the barite. The sludge was caught

however and assayed, thus completing the record of the hole. The cores are stored in the Alaska Juneau core room at Juneau.

The foot and hanging walls of the barite deposit are volcanics generally altered to a granular schist; the hanging wall cannot be seen on the surface but as shown in Hole No. 11 it is about the same as the footwall. For ten or twenty feet back from the main body of the barite these rocks contain some barite and limestone and are gray in color. In the attached cross section the wall rocks have been sketched in with a constant dip, however they are probably quite crumpled which would account for the variable nature of the wall rocks as shown by logs of the drill holes.

TONNAGES

The deposit contains about 60,000 tons of barite above the high tide line. Below the high tide line to a depth of 40 feet there is about 160,000 tons. The barite above the tide line could be mined quite cheaply, while the 160,000 tons below tide line could be mined by deep hole drilling but probably not profitably. Underground mining of course is too costly to be considered.

CAMP AND EQUIPMENT

Inasmuch as the time required to complete the prospecting of the deposit would amount to only a month or two with a small crew of men, it was not thought practical to erect a substantial camp on shore, and the wet climate makes a tent camp unsatisfactory. A large scow

with a house on deck, which the company owns, was remodeled into living quarters for six men, and towed to the island. It was anchored on the beach in as much shelter as the island afforded, and served admirably as quarters for the crew.

The crew consisted of a foreman to direct the drilling, and a cook, both employed by the Alaska Juneau; two diamond drill runners, and two helpers furnished by the diamond drill contractor. One of the runners also set the bits and served as the contractor's representative on the job. Board was supplied by the Alaska Juneau, and charged to the men at the rate of \$1.50 per day per man.

With the exception of the provisions and other supplies taken from Juneau on the initial trip of the party, all food stuffs were purchased in Petersburg as needed. Other supplies were sent from Juneau when requisitioned. Practically all the equipment needed for the operation was provided for on the initial trip. A 26 foot flat bottomed river boat powered with an 8 H.P. outboard motor served as transportation from the camp to Petersburg. Communication between the camp and Juneau was maintained by mail and telegraph from Petersburg. The property was visited on occasion from Juneau by aeroplane.

Prospecting was done entirely by diamond drilling under contract by Lynch Brothers of Seattle. A gasoline powered drill was used producing a 7/8" diameter core. Core recovery was poor, due to the soft blocky nature of the barite, together with the small diameter of the core. Sludges were saved, and served as the basis for the assays

of the holes. Average core recovery for all holes was 25.2%.

The terms of the contract under which the drilling was done were as follows:

1. The contractor furnished a complete diamond drill with all its necessary equipment, and a crew, and did the drilling as directed by a representative of the Alaska Juneau.

2. The contract price was \$2.50 a foot for the first 1000 feet in any one hole. In the event the amount of drilling done at this location exceeded 2000 feet, the price of drilling done over and above 2000 feet was to be \$2.00 per foot.

3. In the event the contract was terminated before a total of 2000 feet was drilled, a penalty of 50 cents per foot was to be paid by the Alaska Juneau for the undrilled portion of the 2000 feet. This was to be the sole compensation to the contractor for any excess expense incurred by the termination of the contract. (Although less than 2000 feet were drilled on the barite deposit, the penalty mentioned in this clause was not paid because the contract was extended to the Alaska Juneau mine, where an extensive drilling program is under way.)

4. Board and sleeping accommodations were furnished by the Alaska Juneau at a rate not to exceed \$1.50 per day per man.

The party left Juneau August 20, 1931 and returned on October 23, 1931, making a total of 64 days worked on the project.

LOCATION OF DRILL HOLES

All holes were collared at approximate low tide line. The drill was set up on a platform built out from the shore, and high enough to be above high tide mark. Timber was cut as needed from the nearby islands. Eleven holes in all, total 1538 feet, were drilled in the following sequence:

Hole #1. Setup #1. At south end of island on the eastern shore line, about 140 feet south of the neck of land to the main island, and about 110 feet east of the schist-barite contact. Direction was southwesterly at right angles to the strike of the contact, and across the dip. Pitch 45° . Total depth 134 feet.

Hole #2. Same setup and direction as Hole #1, but at 70° pitch. Total depth 123 feet.

Hole #3. Setup #2. At north end of island on the eastern shore line, about 70 feet north of the neck of land to the main island. Direction southwesterly, at right angles to the strike of the schist-barite contact, and across the dip. Pitch 45° . Total depth 62 feet.

Hole #4. Same setup and direction as Hole #3, but at 70° pitch. Total depth 38 feet.

Hole #5. Same setup as holes #3 and #4, but direction northwesterly, parallel to strike. Pitch 45° . Depth 20 feet.

Hole #6. Near center of island on east shore line, about midway between setups #1 and #2; Direction southwesterly at right angles to strike of contact. Pitch 80° . Total depth 145 feet.

Hole #7. Same setup as holes #1 and #2. Direction southeasterly parallel to strike. Pitch 45° . Total depth 106 feet.

Hole #8. At south end of island on western shore line, about 160 feet south of neck of land to main island, and near schist-barite contact. Direction northeasterly at right angles to strike, and with the dip. Pitch 15° . Total depth 171 feet, at which point hole broke into Duncan Canal.

Hole #9. Same setup and direction as Hole #8, but at 30° pitch. Total depth 150 feet. (The setup for Hole #9 was destroyed by a storm before the hole was completed but later a new hole was started near the setup and drilled to completion, 150 feet as given above.)

Hole #10. At north end of island, 40 feet north of neck of land to main island, on western shore line, and near the schist-barite contact. Direction northeasterly, at right angles to the strike, and with the dip. Pitch 15° . Depth 222 feet, at which point the hole broke into Duncan Canal.

Hole #11. Same setup and direction as Hole #10, but at 30° pitch. Total depth 240 feet. Hole #11 completed the drilling program.

CASTLE ISLAND BARITE DEPOSIT

D. D. HOLE NO. 1

Location: South end of barite exposure, on eastern shore line, about 140 feet south of center line of neck to main island.

Direction: Southwesterly at 45° pitch.

Total depth: 145 feet - Actual hole 134 feet - Average core recovery 26.2%

Footage	Ft. of Hole	Ft. of Core	% Core Recovery	Remarks
0 - 11	-	-	-	Distance from drilling platform to collar of hole.
11 - 16	5	5.0	100.	Standpipe - Sample #1
16 - 22	6	1.7	28.3	Barite, Gray. Iron stain, somewhat weathered
22 - 24	2	0.8	40.0	" " " " " "
24 - 28	4	2.9	72.5	Barite, gray - Minute seams of pyrite, several very small patches of calcite Good core
28 - 32	4	2.8	70.0	Barite, gray
32 - 43	11	3.9	35.4	Barite, gray, broken
43 - 50	7	0.6	8.5	" "
50 - 54	4	0.6	15.0	" "
54 - 56	2	1.0	50.0	" "
56 - 63	7	0.8	11.4	Barite, dk.gray, 0.5', Schist & gouge 0.3'
63 - 75	12	1.4	11.7	Barite, " Streaks of sulphide minerals Impure
75 - 84	9	1.4	15.6	Barite, gray, Impure
84 - 95	11	1.0	9.1	Dk. gray impure barite grades to dark volcanic rock
95 - 104	9	3.0	33.3	Dark volcanic rock

CASTLE ISLAND BARIITE DEPOSIT

D. D. HOLE NO. 1 (continued)

Footage	Ft. of Hole	Ft. of Core	% Core Recovery	Remarks
104 - 112	8	0.8	10.0	Dark volcanic rock
112 - 118	6	2.3	38.3	" " "
118 - 125	7	1.2	17.1	" " "
125 - 131	6	1.1	18.3	" " " graphitic
131 - 137	6	0.6	10.0	Volcanic tuff
137 - 140	3	1.5	50.0	" "
140 - 145	5	0.7	14.0	" "
Total depth				

ASSAYS OF D. D. CORE SAMPLES

Hole #1				
Footage	Au	Ag. Oz.	BaSO ₄	Fe.
0 - 56	tr.	.90	91.1	1.1
63 - 95	tr.	1.20	78.6	4.7

CASTLE ISLAND BARITE DEPOSIT

D. D. HOLE NO. 2

Location: South end of Barite exposure, on eastern shore line, about 140 feet south of center line of neck to main island, same setup as Hole No. 1.

Direction: Southwesterly at 70° pitch

Total depth: 133 feet, actual hole 123 feet, Avg. core recovery 25.3%

Footage	Ft. of Hole	Ft. of Core	% Core Recovery	Remarks
0 - 10	-	-	-	Distance from drilling platform to collar of hole
10 - 21	11	11	100	Barite, sample No. 2
21 - 32	11	0.9	8.2	Barite, gray, broken
32 - 37	5	0.3	6.0	" " "
37 - 41	4	1.8	45.0	Barite, gray, minute seams of pyrite
41 - 48	7	0.3	4.3	Barite, gray
48 - 54	6	0.2	3.3	Black volcanic rock
54 - 57	3	1.1	36.7	Barite, drk. gray, impure
57 - 64	7	1.6	22.9	Barite, gray
64 - 65	1	0.7	70.0	" "
65 - 71	6	0.6	10.0	" "
71 - 78	7	3.7	52.8	Barite, gray for 1.3' - Pure white, with calcite patches 0.3' then drk. gray barite with numerous small seams pyrite.
78 - 85	7	2.3	32.8	Dk. gray barite, twisted, with schist in folds, calcite in last 0.5'
85 - 91	6	2.3	38.3	Dk. gray barite, calcite and pyrite seams.
91 - 96	5	1.4	28.0	Schist, gray
96 - 101	5	1.9	38.0	"

CASTLE ISLAND BARITE DEPOSIT

D. D. HOLE NO. 2 Cont'd.

Footage	Ft. of Hole	Ft. of Core	% Core Recovery	Remarks
101 - 104	3	1.6	53.3	Schist, much calcite
104 - 107	3	2.2	73.3	Schist, much calcite, pyrite
107 - 111	4	0.6	15.0	" Black slaty rock
111 - 118	7	1.1	15.7	" much calcite
118 - 122	4	0.7	17.5	Dark Volcanic "
122 - 127	5	0.7	14.0	" " "
127 - 133	6	1.2	20.0	" " "
Total Depth				

ASSAY OF D. D. HOLE SLUDGE SAMPLES

HOLE NO. 2

Footage	Gold %	Silver oz.	Barite %	Lime %	Lead %	Zinc %	Iron %
10 - 20	nil	0.50	90.4	4.6	0.3	0.3	2.2

ASSAY OF CORE SAMPLES Hole No. 2

0 - 91	tr.	2.10	91.8	-	-	-	2.3
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CASTLE ISLAND BARITE DEPOSIT

D. D. HOLE NO. 3

Location: North end of barite exposure, on east shore line about 70 feet north of center line of neck to main island.

Direction: Southwesterly at 45° pitch

Total depth: 75 feet, actual hole 62 feet, Average core recovery 16.5%.

Footage	Ft. of Hole	Ft. of Core	% Core Recovery	Remarks
0 - 12	-	-	-	Distance from drilling platform to collar of hole.
12 - 16	4	4	100.0	Stand pipe, Sample #3, Barite
16 - 21	5	0.8	16.0	Barite, gray, leached
21 - 25	4	0.4	10.0	" " Calcite
25 - 31½	6½	0.2	30.7	Bl. slaty rock
31½ - 38½	7	0.6	8.6	Much calcite
38½ - 44	5½	0.2	36.4	Oouge
44 - 75	31	4.0	12.9	Black slaty rock with calcite

Total depth

ASSAY OF D. D. CORE SAMPLES

HOLE NO. 3

Footage	Au.	Ag.	Barite	Fe
16 - 21	tr.	.40 oz.	89.6 %	1.3 %

CASTLE ISLAND BARITE DEPOSIT

D. D. HOLE NO. 4

Location: North end of Barite exposure, on east shore line, about 70 feet north of center line of neck to main island, same setup as hole No. 3.

Direction: Southwesterly at 70° pitch.

Total depth: 48 feet, actual hole 38 feet.

Average core recovery 23.0 %.

Footage	Ft. of Hole	Ft. of Core	% Core Recovery	Remarks
0 - 10	-	-	-	Distance from drilling platform to collar of hole
10 - 15	5	5	100	Standpipe, sample No. 4.
15 - 16	1	1	100	Andesite
16 - 20	4	1.3	32.5	Dark green blocky volcanic, Gouge 1.1 to 1.3
20 - 48	28	1.4	5.0	Gray schist and slate, small patch of quartz at 0.7', Pyrite near end
				20 - 31 Gray schist
				31 - 45 Black slaty rock

Total depth

CASTLE ISLAND BARITE DEPOSIT

ASSAY OF D. D. HOLE NO. 4 SLUDGE SAMPLES

Footage	Gold \$	Silver Oz.	Barite \$	Lime %	Lead %	Zinc %	Iron %
31 - 37	Nil	Nil	1.0	11.2	-	-	6.6
37 - 42	Nil	Nil	0.6	4.6	-	-	6.7
42 - 45	Nil	Nil	1.2	4.8	-	-	6.8
45 - 48	Nil	Nil	4.6	7.5	-	-	7.8

No core samples assayed

CASTLE ISLAND BARITE DEPOSIT

D. D. HOLE NO. 5

Location: North end of Barite exposure on east shore line, about 70 feet north of center line of neck to main island. Same setup as Holes No. 3 and 4.

Direction: Northwesterly at 45° Pitch

Total depth: 35 feet, actual hole 20 feet

Average core recovery 41.5 %

Footage	Ft. of Hole	Ft. of Core	% Core Recovery	Remarks
0 - 15	-	-	-	Distance from drilling platform to collar of hole
15 - 20	5	5.0	100.	Gray schist, standpipe
20 - 24	4	0.5	12.5	Schist, much calcite
24 - 30	6	1.4	23.3	" "
30 - 35	5	1.4	28.0	" " qts.

Total depth

CASTLE ISLAND BARITE DEPOSIT

ASSAY OF D. D. HOLE NO. 5 SLUDGE SAMPLES

Footage	Gold %	Silver Oz.	Barite %	Lime %	Lead %	Zinc %	Iron %
20 - 24	Nil	0.50	10.0	4.5	tr.	0.4	3.1
24 - 30	Nil	1.50	10.4	3.4	0.2	2.2	3.4

No core samples assayed

CASTLE ISLAND BARITE DEPOSIT

D. D. HOLE NO. 6

Location: Near center of Barite exposure, on east shore line, at high tide level, about 40 feet south of center line of neck to main island.

Direction: Southwesterly at 80° pitch

Total Depth: 150 feet, actual hole, 145 feet.

Average core recovery 15.5%

Footage	Ft. of Hole	Ft. of Core	% Core Recovery	Remarks
0 - 5	-	-	-	Distance from drilling platform to collar of hole.
5 - 14	9	9.0	100.	Barite, standpipe, Sample #5
14 - 15	1	0.5	50.0	Barite, Dk. Gray, Small seams of pyrite
15 - 20	5	0.5	10.0	Barite, Dk. Gray
20 - 26	6	1.2	20.0	" " Pyrite
26 - 31	5	0.9	18.0	Barite, Dk. Gray
31 - 41	10	0.7	7.0	" " "
41 - 45	4	0.4	10.0	White Barite, 0.2' - Gray Barite 0.2'
45 - 46	1	0.3	30.0	Barite, Gray
46 - 51	5	0.3	6.0	White and gray barite mixed
51 - 57	6	0.7	11.7	Barite, Schist and pyrite
57 - 64	7	0.7	10.0	Impure barite, soft leached
64 - 70	6	0.3	5.0	Barite, mixed with schist 0.2 - gouge 0.1
70 - 75	5	0.5	10.0	Barite and schist, gouge last 0.1'
75 - 87	12	0.2	1.7	Dk. gray barite
87 - 95	8	0.2	2.5	" " "

CASTLE ISLAND BARITE DEPOSIT

D. D. HOLE NO. 6 Cont'd.

Footage	Ft. of Hole	Ft. of Core	% Core Recovery	Remarks
95 - 101	6	0.4	6.7	Dk. Gray barite Small amt. of calcite
101 - 102	1	0.1	10.0	Schist (Dark gray)
102 - 105	3	0.4	13.3	"
105 - 109	4	0.2	5.0	Schist
109 - 112	3	0.5	16.7	Vol. rock and qtz. with fine pyrite
112 - 115	3	0.4	13.3	" " " " " "
115 - 120	5	0.5	10.0	Vol. rock, impure barite last 0.2'.
120 - 125	5	0.5	10.0	Dark impure barite
125 - 130	5	0.7	14.0	" " "
130 - 136	6	0.6	10.0	Bl. slaty rock to 0.4', soft calcareous gouge 0.2'
136 - 144	8	0.5	6.3	Soft calcareous material 0.2' White barite (?) 0.3'
144 - 147	3	0.2	6.7	Gray schist, calcite
147 - 150	3	1.1	36.7	" " "

Total depth

CASTLE ISLAND BARITE DEPOSIT

ASSAYS OF D. D. HOLE NO. 6 SLUDGE SAMPLES

Footage	Gold \$	Silver Og.	Barite %	Lime %	Lead %	Zinc %	Iron %
20 - 26	tr	1.00	86.4	-	-	-	1.8
26 - 31	tr	1.00	88.8	-	-	-	1.6
31 - 41	tr	1.00	90.0	-	-	-	1.5
41 - 45	tr	1.10	90.8	-	-	-	1.5
45 - 51	tr	1.00	91.4	-	-	-	1.6
51 - 57	tr	1.10	92.0	-	-	-	1.5
57 - 64	tr	.90	90.6	1.4	0.6	2.0	1.3
64 - 70	tr	1.10	90.0	1.6	0.6	1.7	1.5
70 - 75	tr	1.20	89.6	1.6	0.6	1.8	1.6
75 - 87	tr	1.20	90.0	2.0	0.7	1.7	1.6
87 - 95	tr	1.30	89.0	1.8	0.8	2.0	1.8
95 - 101	tr	1.30	86.8	2.0	0.7	2.0	2.0

ASSAY OF CORE SAMPLES

0 - 51	tr	1.00	91.4	-	-	-	1.4
51 - 101	tr	1.70	87.8	-	-	-	1.7

CASTLE ISLAND BARITE DEPOSIT

D. D. HOLE NO. 7

Location: South end of Barite exposure on eastern shore, line, about 140 feet south of center line of neck to main island. Same setup as Holes No. 1 and 2.

Direction: Southeasterly at 45° pitch

Total depth: 117 feet, actual hole 106 feet.

Average core recovery 15.2%

Footage	Ft. of Hole	Ft. of Core	% Core Recovery	Remarks
0 - 11	-	-	-	Distance from drilling platform to collar of hole
11 - 15	4	0	00	Standpipe, Barite
15 - 20	5	1.5	30.0	Barite, gray, broken
20 - 24	4	1.0	25.0	Barite, gray, broken, Banded structure
24 - 28	4	0.9	22.5	Barite, gray, broken, " "
28 - 31	3	1.0	33.3	" " " " "
31 - 33	2	0.9	45.0	" " " " "
33 - 39	6	0.4	6.7	" " " " "
39 - 45	6	1.4	23.3	" " " " "
45 - 48	3	0.5	16.7	" " " " "
48 - 51	3	0.2	6.7	" " " " "
51 - 55	4	0.6	15.0	" " " " "
55 - 60	5	0.3	6.0	" " " " "
60 - 65	5	0.3	6.0	" " " " "
65 - 75	10	0.7	7.0	" " " " Small band of schist at 75' - calcite.

CASTLE ISLAND BARITE DEPOSIT

D. D. HOLE NO. 7 Cont'd.

Footage	Ft. of Hole	Ft. of Core	% Core Recovery	Remarks
75 - 78	3	0.3	10.0	Dk. gray impure barite, small amount of black schist and calcite.
78 - 84	6	1.0	16.7	Dk. gray impure barite, small calcite seams, finer grained than gray barite. Banded structure.
84 - 90	6	1.1	18.3	Dk. Gray impure barite, calcite seams
90 - 96	6	0.9	15.0	Dk. Gray impure barite.
96 - 100	4	0.4	10.0	" " " "
100- 107	7	0.7	10.0	" " " "
107 - 114	7	0.8	11.4	Dk. Gray Impure Barite, calcite seams
114 - 117	3	1.2	40.0	Schist

Total depth

CASTLE ISLAND BARITE DEPOSIT

ASSAYS OF D. D. HOLE NO. 7 SLUDGE SAMPLES

Footage	Gold \$	Silver Oz.	Barite %	Line %	Lead %	Zinc %	Iron %
14 - 20	tr	.60	87.4	-	-	-	1.3
20 - 24	tr	.70	88.2	-	-	-	1.2
24 - 27	tr	.70	89.6	1.3	0.4	0.7	1.5
33 - 39	tr	.80	89.2	-	-	-	1.1
39 - 45	tr	1.00	89.8	-	-	-	1.2
45 - 50	tr	1.10	89.4	1.6	0.9	1.6	1.5
50 - 55	tr	1.20	88.2	-	-	-	1.5
55 - 60	tr	1.20	90.2	1.4	1.0	1.8	1.7
60 - 65	tr	1.50	89.6	1.6	0.9	2.0	1.8
65 - 69	tr	1.30	86.2	3.4	0.8	1.8	2.2
95 - 106	tr	1.10	86.0	4.0	1.2	1.3	2.7
101 - 114	tr	1.10	52.2	-	-	-	5.6
114 - 117	tr	1.10	46.4	-	-	-	4.6

ASSAY OF CORE SAMPLES

0 - 75	tr	1.20	92.4	-	-	-	1.3
75 - 114	tr	1.30	73.0	-	-	-	3.3

CASTLE ISLAND BARITE DEPOSIT

D. D. HOLE NO. 8

Location: South end of Barite exposure on western shore line, about 160 feet south of center line of neck to main island, and near contact of schist and barite.

Direction: Easterly in direction of Dip, at 15° Pitch

Total depth: 176 feet, actual hole 171 feet.

Average core recovery: 37.8%

Footage	Ft. of Hole	Ft. of Core	% Core Recovery	Remarks
0 - 5	-	-	-	Distance from drilling platform to collar of hole
5 - 20	15	15	100.	Standpipe, barite, Sample #6
20 - 22	2	1.6	80.0	Gray barite, small calcite seams
22 - 25	3	1.3	43.3	" "
25 - 31	6	2.3	38.3	" " seams iron stained
31 - 36	5	2.5	50.0	" "
36 - 40	4	2.0	50.0	" " Leached calcite seams, iron stains
40 - 42	2	1.5	75.0	" "
42 - 47	5	3.9	78.0	" "
47 - 53	6	2.6	43.3	" "
53 - 59	6	1.9	31.7	" " (Good core)
59 - 65	6	3.1	51.7	" "
65 - 69	4	1.9	47.5	" "
69 - 75	6	1.2	20.0	" "
75 - 80	5	1.0	20.0	" "
80 - 84	4	1.2	30.0	" "

CASTLE ISLAND BARITE DEPOSIT

D. D. HOLE NO. 8 Cont'd.

Footage	Ft. of Hole	Ft. of Core	% Core Recovery	Remarks
84 - 90	6	1.0	16.7	Gray barite
90 - 96	6	0.9	15.0	" "
96 - 102	6	1.8	30.0	" " Broken
102 - 107	5	1.1	22.0	Gray Barite, broken
107 - 110	3	1.6	53.3	" " "
110 - 116	6	1.4	23.3	" " " Gauge at 116'
116 - 122	6	3.3	55.0	" "
122 - 126	4	1.3	32.5	" " Seams iron stained
126 - 132	6	2.6	43.3	" "
132 - 138	6	0.5	8.3	" " Broken
138 - 141	3	1.5	50.0	Gauge at 138', small band of schist Leached barite
141 - 147	6	1.8	30.0	Broken and leached barite
147 - 153	6	1.5	25.0	" " " "
153 - 162	9	1.1	12.2	" " " "
162 - 176	14	0.2	1.4	" " " " Hole broke into Duncan Canal.

Total depth

CASTLE ISLAND BARITE DEPOSIT

ASSAYS OF D. D. HOLE NO. 8 SLUDGE SAMPLES

Footage	Gold g	Silver Oz.	Barite %	Lime %	Lead %	Zinc %	Iron %
35 - 40	tr	1.10	91.6	-	-	-	1.9
40 - 45	tr	1.20	87.4	-	-	-	2.0
45 - 50	tr	1.20	87.4	-	-	-	2.4
50 - 55	tr	1.10	86.6	-	-	-	2.1
55 - 60	tr	1.00	89.0	-	-	-	1.9
60 - 65	tr	1.20	88.2	-	-	-	1.8
65 - 70	tr	1.40	87.0	-	-	-	1.8
70 - 75	tr	1.20	87.8	-	-	-	1.8
75 - 80	tr	1.00	87.8	-	-	-	1.9
80 - 85	tr	1.50	87.4	-	-	-	2.4
85 - 90	tr	2.00	86.8	-	-	-	1.8
90 - 95	tr	1.40	87.6	-	-	-	1.8

ASSAY OF CORE SAMPLES

0 - 176	tr	1.10	85.4	-	-	-	1.2
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CASTLE ISLAND BARITE DEPOSIT

D. D. HOLE NO. 9

Location: South end of Barite exposure, on Western shore line, about 160 feet south of center line of neck to main island, and near contact of schist and barite. Same setup as No. 8.

Direction: Easterly, in direction of dip. at 30° pitch.

Total depth: 150 feet, Actual hole 150 feet

Average core recovery: 30.6 %

Footage	Pt. of Hole	Ft. of Core	% Core Recovery	Remarks
0 - 10	10	10.0	100.	Standpipe, barite, Sample #10
10 - 12	2	1.4	70.0	Gray barite, broken
12 - 15	3	1.6	53.3	" " "
15 - 17	2	0.8	40.0	" " "
17 - 19	2	1.5	75.0	" " Sulphide streaks
19 - 21	2	1.2	60.0	" " " "
21 - 27	6	0.9	15.0	" " " "
27 - 29	2	1.1	55.0	" " "
29 - 31	2	1.3	65.0	" " Sulphide streaks
31 - 33	2	1.0	50.0	" " "
33 - 39	6	0.6	10.0	" " "
39 - 45	6	1.1	18.3	" " Sulphide streaks
45 - 47	2	1.3	65.0	" " " "
47 - 50	3	0.7	23.3	" " "
50 - 52	2	1.2	60.0	" " "
52 - 55	3	1.5	50.0	" " Sulphide streaks

CASTLE ISLAND BARITE DEPOSIT

D. L. HOLE NO. 9 Cont'd.

Footage	Ft. of Hole	Ft. of Core	Recovery	Remarks
55 - 59	4	0.9	22.5	Gray Barite Sulphide streaks
59 - 65	6	0.9	15.0	" " " "
65 - 70	5	1.0	20.0	" " " "
70 - 72	2	1.0	50.0	" " Impure
72 - 76	4	0.8	20.0	" " Gouge? at 76'
76 - 80	4	1.7	42.5	" " Sulphide streaks
80 - 86	6	1.5	25.0	" " " " Leached
86 - 92	6	1.0	16.7	" " " " "
92 - 99	7	0.7	10.0	" " " " "
99 - 105	6	0.7	11.7	Dark Gray Impure barite
105 - 110	5	1.0	20.0	" " " " calcite streaks) Dark
110 - 115	5	0.2	4.0	" " " " gouge) dense
115 - 118	3	0.2	6.7	" " " " ") volcanic
118 - 124	6	1.0	16.7	Schist, Calcite
124 - 130	6	0.6	10.0	" and impure barite intermixed
130 - 135	5	2.0	40.0	" and dense impure barite, calcite
135 - 138	3	2.0	66.7	" and impure barite
138 - 142	4	0.5	12.5	Volcanic tuffs
142 - 147	5	0.5	10.0	" "
147 - 150	3	0.5	16.7	Dark Impure barite

Total depth

CASTLE ISLAND BARITE DEPOSIT

ASSAYS OF D. D. HOLE NO. 9 SLUDGE SAMPLES

Footage	Gold %	Silver Oz.	Barite %	Lime %	Lead %	Zinc %	Iron %
20 - 30	tr	1.20	87.2	-	-	-	1.8
25	tr	1.20	86.8	-	-	-	2.1
30 - 40	tr	1.40	89.0	-	-	-	2.0
40 - 50	tr	1.40	89.4	-	-	-	1.9
50 - 60	tr	1.80	89.0	-	-	-	2.0
60 - 70	tr	1.60	88.6	-	-	-	1.8
70 - 80	tr	1.40	87.8	-	-	-	1.8
80 - 90	tr	1.00	90.0	-	-	-	1.9
90 - 100	tr	1.00	89.8	-	-	-	1.9
100 - 110	tr	1.70	89.0	-	-	-	1.9
110 - 120	tr	1.00	16.0	-	-	-	8.3
120 - 130	tr	1.00	33.2	-	-	-	5.8
130 - 140	tr	.80	43.4	-	-	-	5.6
140 - 150	tr	.70	50.8	-	-	-	5.1

ASSAYS OF CORE SAMPLES

0 - 99	tr	1.30	88.0	-	-	-	1.2
99 - 150	tr	1.20	82.6	-	-	-	3.7

CASTLE ISLAND BARITE DEPOSIT

D. D. HOLE NO. 10

Location: North end of Barite exposure on Western shore line, about 40 feet north of center line of neck to main island, and near contact of schist and barite.

Direction: Easterly in direction of dip, at 15° pitch.

Total depth: 226 feet, actual hole 222 feet.

Average core recovery: 25.6%

Footage	Ft. of Hole	Ft. of Core	% Core Recovery	Remarks
0 - 4	-	-	-	Distance from drilling platform to collar of hole
4 - 9	5	2.0	40.0	Standpipe, schist, and barite, Sample #8
9 - 18	9	3.4	37.8	Schist and barite intermixed, Calcite and sulphide seams, Gauge? at 18'.
18 - 24	6	0.5	8.3	Schist and Barite
24 - 29	5	-	-	Core Chopped
29 - 35	6	2.0	33.3	Impure barite, sulphide seams
35 - 37	2	0.3	15.0	" " " "
37 - 51	14	2.6	18.5	Gray Barite
51 - 54	3	0.4	13.3	" " Gauge? at 54' (black)
54 - 58	4	1.3	32.5	Black Schist, calcite seams
58 - 64	6	1.1	18.3	Gray Barite
64 - 70	6	1.3	21.7	" "
70 - 76	6	1.6	26.7	" "
76 - 82	6	2.2	36.7	" "
82 - 88	6	2.1	35.0	" "

GASTLE ISLAND BARITE DEPOSIT

D. D. HOLE NO. 10 Cont'd.

Footage	Pt. of Hole	Pt. of Core	% Core Recovery	Remarks
88 - 94	6	4.7	78.3	Gray Barite
94 - 100	6	4.2	70.0	" "
100 - 107	7	1.2	17.1	" "
107 - 114	7	2.0	28.6	" "
114 - 121	7	3.8	54.3	" "
121 - 127	6	2.0	33.3	" "
127 - 133	6	1.0	16.7	" "
133 - 138	5	2.5	50.0	" "
138 - 143	5	0.7	14.0	" "
143 - 147	4	1.1	27.5	" "
147 - 155	8	0.8	10.0	" "
155 - 161	6	1.3	21.7	" "
161 - 167	6	0.7	11.7	" "
167 - 173	6	0.9	15.0	" "
173 - 179	6	0.5	8.3	" "
179 - 185	6	1.0	16.7	" "
185 - 191	6	0.4	6.7	Schist
191 - 198	7	1.5	21.4	" to impure barite
198 - 204	6	1.6	26.7	Impure barite
204 - 210	6	1.6	26.7	" " black gouge at 210'
210 - 215	5	1.4	28.0	Bl. vol. slaty
215 - 221	6	0.7	11.7	"
221 - 226	5	0.3	6.0	Impure Barite, hole broke into Duncan Canal
Total depth				

CASTLE ISLAND BARITE DEPOSIT

ASSAYS OF D. D. HOLE NO. 10

SLUDGE SAMPLES

Footage	Gold ¢	Silver Oz.	Barite %	Line %	Lead %	Zinc %	Iron %
0 - 25	tr	.70	5.0	-	-	-	12.5
25 - 35	tr	.60	18.6	-	-	-	10.2
35 - 44	tr	1.40	83.0	-	-	-	2.6
44 - 58	tr	1.40	85.2	-	-	-	2.6
58 - 70	tr	1.00	89.2	-	-	-	1.4
70 - 82	tr	.90	89.4	-	-	-	1.5
82 - 94	tr	.70	89.4	-	-	-	1.6
94 - 107	tr	.90	86.8	-	-	-	2.1
107 - 120	tr	1.30	86.0	-	-	-	2.0
120 - 133	tr	1.50	84.8	-	-	-	2.7
133 - 143	tr	1.30	89.2	-	-	-	1.9
143 - 155	tr	1.10	90.0	-	-	-	1.7
155 - 176	tr	1.10	88.8	-	-	-	2.0

ASSAY OF CORE SAMPLES

29 - 37	tr	1.20	76.6	-	-	-	3.3
37 - 54	tr	1.10	91.0	-	-	-	1.6
58 - 185	tr	1.10	91.0	-	-	-	1.6
198 - 226	tr	1.20	76.6	-	-	-	3.3

CASTLE ISLAND BARITE DEPOSIT

D. D. HOLE NO. 11

Location: North end of Barite exposure on Western shore line, about 40 feet north of center line of neck to main island, and near contact of schist and barite. Same setup as No. 10.

Direction: Easterly in direction of Dip, at 30° Pitch

Total Depth: 240 feet, Actual hole 240 feet

Avg. core recovery: 20.3%

Footage	Pt. of Hole	Pt. of Core	% Core Recovery	Remarks
0 - 9	-	-	-	Distance of drilling platform to collar of hole
9 - 15	6	2.3	38.3	Schist, qtz. bands
15 - 19	4	2.1	52.5	" Calcite bands
19 - 22	3	1.1	36.7	"
22 - 28	6	1.7	28.3	"
28 - 30	2	1.4	70.0	"
30 - 34	4	2.1	52.5	" qtz. bands
34 - 37	3	1.1	36.7	"
37 - 43	6	1.2	20.0	" gouge? at 43'
43 - 48	5	0.6	12.0	"
48 - 55	7	1.3	18.6	"
55 - 60	5	-	-	Core chopped
60 - 65	5	0.3	6.0	Schist
65 - 70	5	1.2	24.0	" black gouge at 70'
70 - 75	5	0.2	4.0	" gouge?
75 - 80	5	0.4	8.0	" Black volcanics and impure barite

CASTLE ISLAND BARITE DEPOSIT

D. D. HOLE NO. 11 Cont'd.

Footage	Ft. of Hole	Ft. of Core	% Core Recovery	Remarks
80 - 85	5	0.4	8.0	Schist granular volcanic rock
85 - 87	2	1.4	70.0	" gouge at 86'
87 - 90	3	0.7	23.3	Schist, andesitic
90 - 94	4	0.4	10.0	Dark Blocky vol.
94 - 96	2	1.5	75.0	Schist, leached, gray
96 - 98	2	1.5	75.0	" "
98 - 101	3	0.7	23.3	Black slaty rock
101 - 103	2	1.2	60.0	Schist, andesite
103 - 109	6	1.1	18.3	" black barite
109 - 111	2	1.6	80.0	Impure barite to Bl. schist
111 - 114	3	1.7	56.7	Andesite
114 - 118	4	0.4	10.0	Schist, calcite
118 - 121	3	1.3	43.3	Impure barite
121 - 124	3	0.7	23.3	Gray Barite, sulphide streaks
124 - 126	2	0.9	45.0	" " " "
126 - 132	6	1.3	21.7	" " " "
132 - 138	6	0.5	8.3	" " " "
138 - 145	7	0.4	5.7	" "
145 - 147	2	0.5	25.0	" "
147 - 154	7	0.8	11.4	" "
154 - 160	6	0.3	5.0	" "
160 - 163	3	0.8	26.7	" "

D. L. HOLE NO. 11 Cont'd.

Footage	Ft. of Hole	Ft. of Core	% Core Recovery	Remarks
163 - 169	6	0.5	8.3	Gray Barite
169 - 175	6	0.7	11.7	" "
175 - 181	6	1.0	16.7	" " calcite seams
181 - 184	3	1.1	36.7	" "
184 - 186	2	0.9	45.0	Schist, calcite, impure barite
186 - 193	7	1.1	15.7	Schist, Calcite, Leached, Impure Barite
193 - 200	7	0.5	7.1	" " " " "
200 - 205	5	1.3	26.0	Impure Barite
205 - 209	4	1.5	37.5	Dk. Gray Barite, white bands
209 - 215	6	0.5	8.3	" " " Calcite streaks
215 - 216	1	0.4	40.0	" " "
216 - 222	6	0.7	11.7	Dark Gray Barite
222 - 229	7	0.7	10.0	Gray Schist, leached
229 - 234	5	-	-	Core Chopped
234 - 237	3	0.1	33.3	Schist
237 - 240	3	0.6	20.0	Schist, Gray

Total Depth

CASTLE ISLAND BARITE DEPOSIT

ASSAYS OF D. D. HOLE NO. 11

SLUDGE SAMPLES

Footage	Gold %	Silver Oz.	Barite %	Lead %	Zinc %	Iron %
9 - 15	tr	.50	2.4	-	-	6.0
15 - 20	tr	.40	4.0	-	-	4.1
25 - 35	tr	.50	14.8	-	-	3.2
35 - 45	tr	.50	13.0	-	-	4.6
45 - 55	tr	.30	5.4	-	-	4.1
55 - 65	tr	.30	6.4	-	-	2.9
65 - 75	tr	.50	36.0	-	-	5.3
75 - 85	tr	.30	68.4	-	-	3.2
85 - 95	tr	.30	21.0	-	-	6.7
95 - 105	tr	.30	38.0	-	-	7.2
105 - 115	tr	.50	66.4	-	-	4.1
115 - 125	tr	.70	72.8	-	-	2.9
125 - 135	tr	.90	84.6	-	-	2.1
135 - 145	tr	1.00	83.8	-	-	2.0
145 - 155	tr	1.30	84.8	-	-	2.0
155 - 165	tr	1.40	86.8	-	-	1.9
165 - 175	tr	1.40	84.6	-	-	1.7
175 - 185	tr	2.00	85.8	-	-	1.8
185 - 195	tr	1.70	83.2	-	-	2.3
195 - 205	tr	1.50	86.8	-	-	2.0
205 - 215	tr	1.70	82.6	-	-	2.8
225 - 235	tr	1.10	26.4	-	-	4.8

CASTLE ISLAND BARITE DEPOSIT

ASSAY OF CORE SAMPLES

HOLE NO. 11

Footage	Gold \$	Silver Oz.	Barite %	Line %	Lead %	Zinc %	Iron %
109 - 121	tr	1.50	91.6	-	-	-	1.7
121 - 184	tr	1.40	86.4	-	-	-	1.4
184 - 205	tr	1.50	91.6	-	-	-	1.7
205 - 222	tr	1.40	86.4	-	-	-	1.4

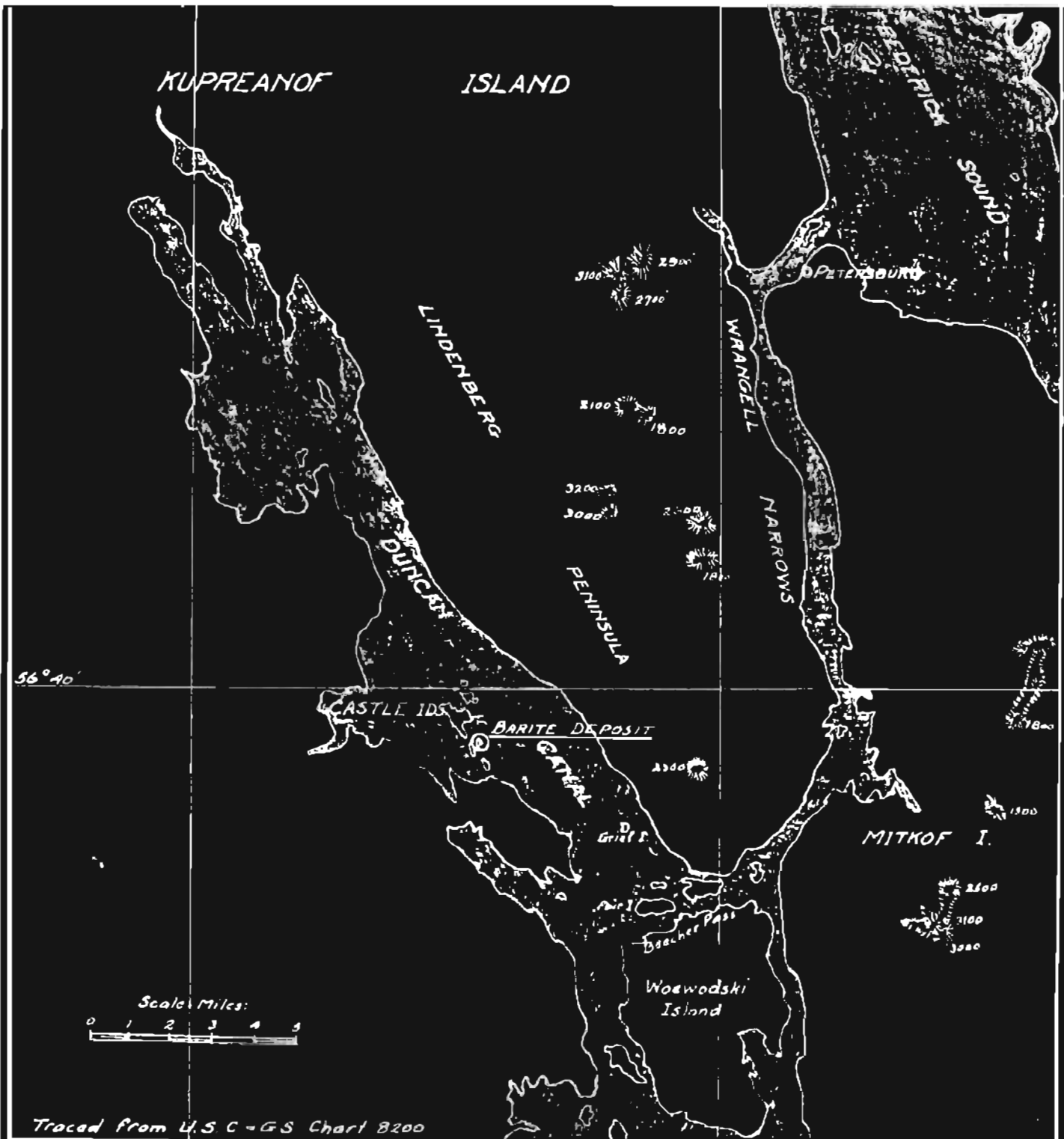
CASTLE ISLAND BARYTE DEPOSIT

Cost of Prospecting by Diamond Drilling

Note: Adjusted for returned goods.

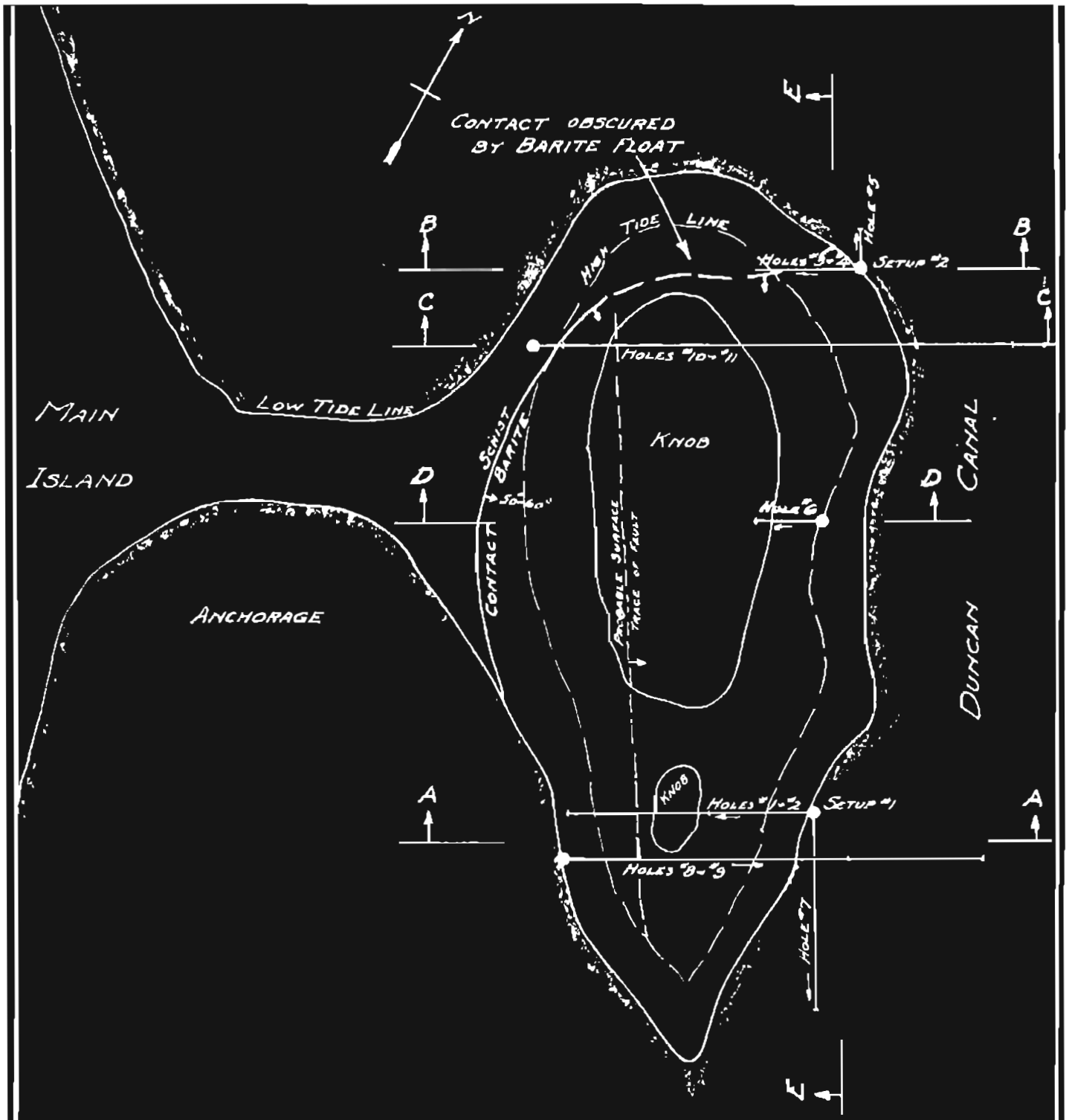
			<u>Cost per Ft. Hole Drilled</u>
1. <u>DIAMOND DRILLING</u>			
Ft. of hole drilled	1538		
Contract price (@ \$2.50 per foot)		\$ 3845.00	\$ <u>2.50</u>
2. <u>LABOR (Other than Diamond Drill Crew)</u>			
Direct:			
Foreman	78 shifts @ 7.00	546.00	0.36
Cook	64 shifts @ 3.33	212.96	0.14
Labor Insurance	(@ \$3.00 per \$100.00)	22.77	<u>0.01</u>
Total Direct Labor	142 shifts	<u>781.73</u>	0.51
Indirect:			
Carpenter Shop		99.79	0.06
Machine Shop		5.15	-
Assay Office		<u>51.18</u>	<u>0.03</u>
Total Indirect Labor		156.12	0.10
Total Labor		937.85	0.61
3. <u>BOARD</u>			
No. of Meals served	1026		
Cooks Labor		212.96	0.14
Provisions used		<u>367.56</u>	<u>0.24</u>
Total cost Board		580.52	0.38
Cost per meal served	0.57		
Amount charged crew for board @ 1.50 per day		467.00	0.30
Cost of board above charge to crew		<u>113.52</u>	<u>0.07</u>
Loss per meal	0.11		
4. <u>SUPPLIES</u>			
Lumber		203.27	0.13
Gas and Oil		153.20	0.10
Coal (for cooking and heat)		58.50	0.04
Repairs & Parts for outboard motor		81.30	0.05
Miscellaneous supplies (Includes \$60.00 for cook stove)		<u>208.48</u>	<u>0.14</u>
Total supplies		704.55	0.46
5. <u>TRANSPORTATION</u>			
Towing service for scow and crew		416.15	0.27
Aeroplane		270.00	0.18
Telegrams		3.60	-
Freight on Core to Juneau		<u>11.25</u>	<u>0.01</u>
Total transportation		701.00	0.46

6. <u>RECAPITULATION</u>		<u>Cost per Ft. Hole Drilled</u>
1. Diamond Drilling	\$ 3845.00	2.50
2. Labor	937.85	0.61
3. Provisions	367.56	0.24
4. Supplies	704.55	0.46
5. Transportation	701.00	0.46
	<hr/>	<hr/>
GRAND TOTAL	6555.96	4.26
Less board charged	467.00	0.30
	<hr/>	<hr/>
TOTAL COST	\$ 6088.96	\$ 3.96

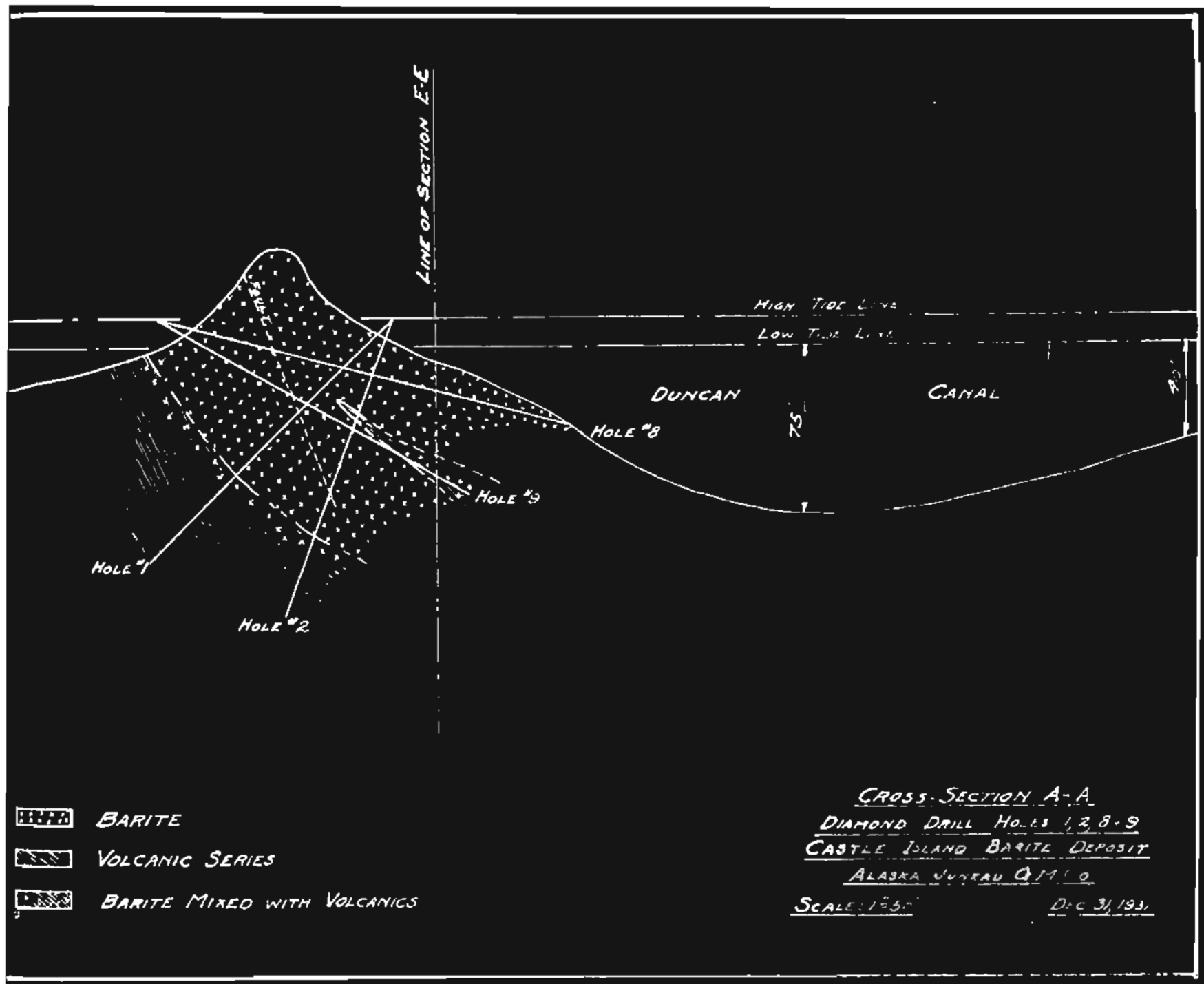


VICINITY MAP
CASTLE ISLAND BARITE DEPOSIT
ALASKA JUNEAU GOLD MINING CO.

DEC. 26, 1931



PLAN
CASTLE ISLAND BARITE DEPOSIT
SHOWING LOCATION OF DIAMOND DRILL HOLES
ALASKA JUNEAU GOLD MINING Co.
SCALE: 1=50 DEC. 26, 1931



BARITE

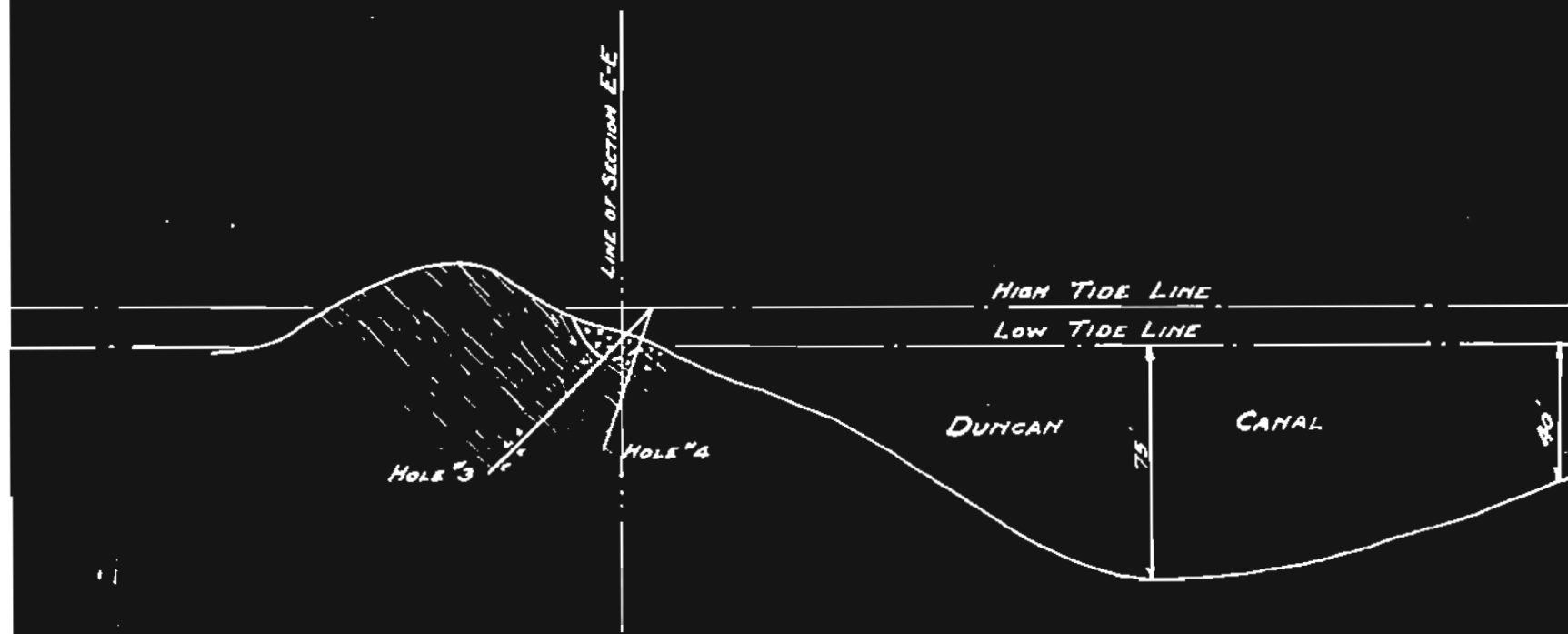


VOLCANIC SERIES



BARITE MIXED WITH VOLCANICS

CROSS-SECTION A-A
 DIAMOND DRILL HOLES 1, 2, 8-9
 CASTLE ISLAND BARITE DEPOSIT
 ALASKA BUREAU GEO.
 SCALE: 1"=50' DEC 31, 1931



BARITE



VOLCANIC SERIES

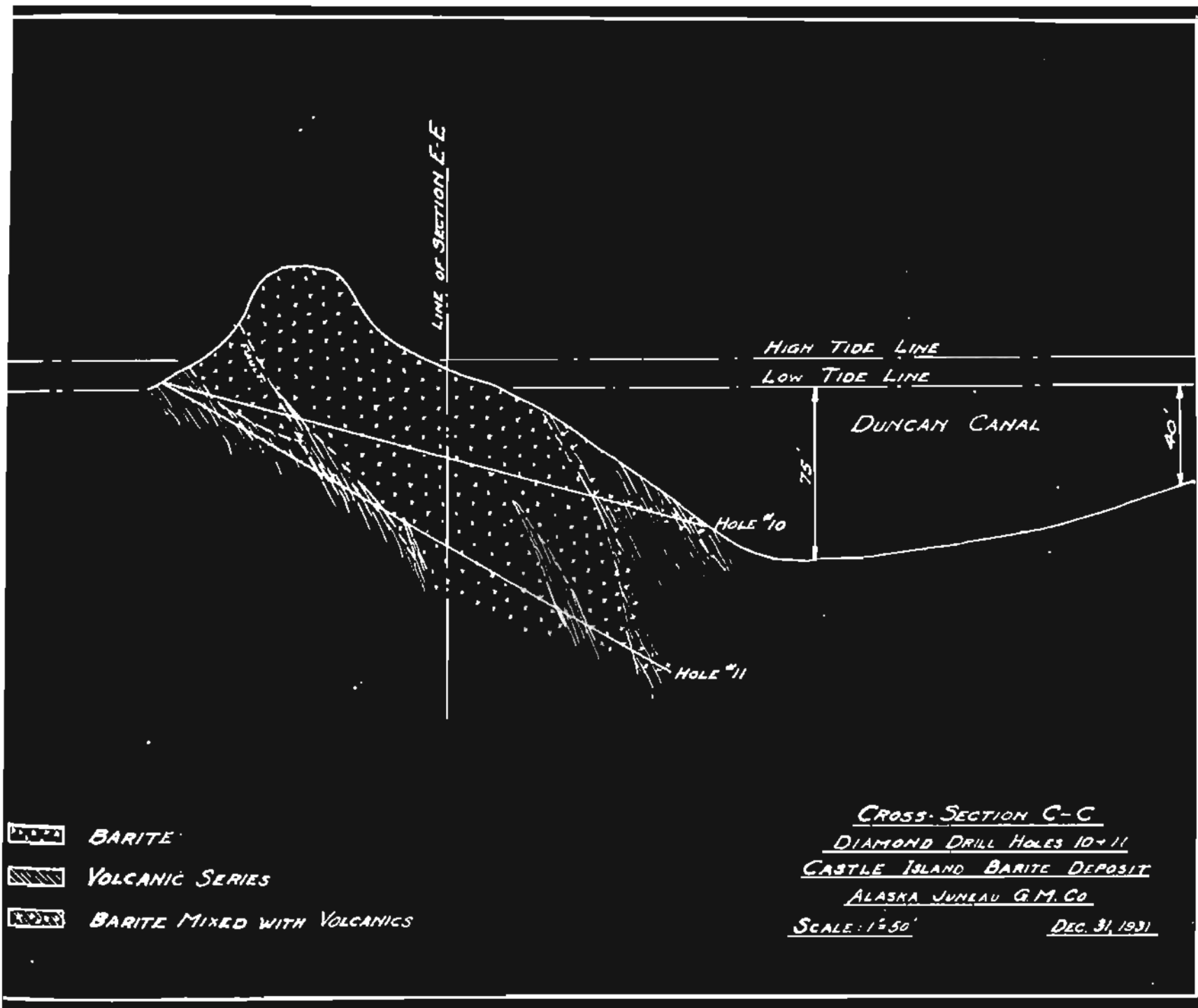


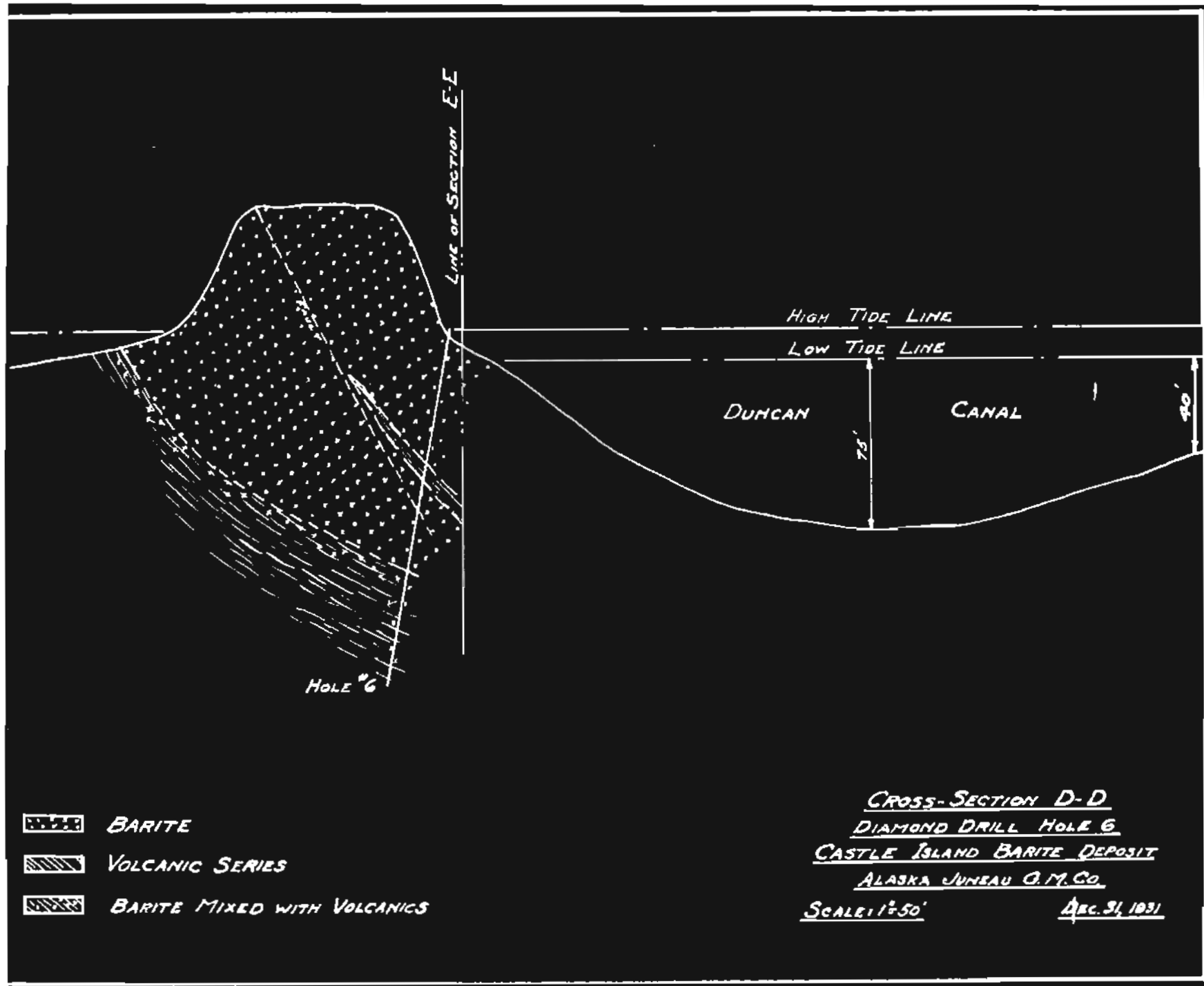
BARITE MIXED WITH VOLCANICS

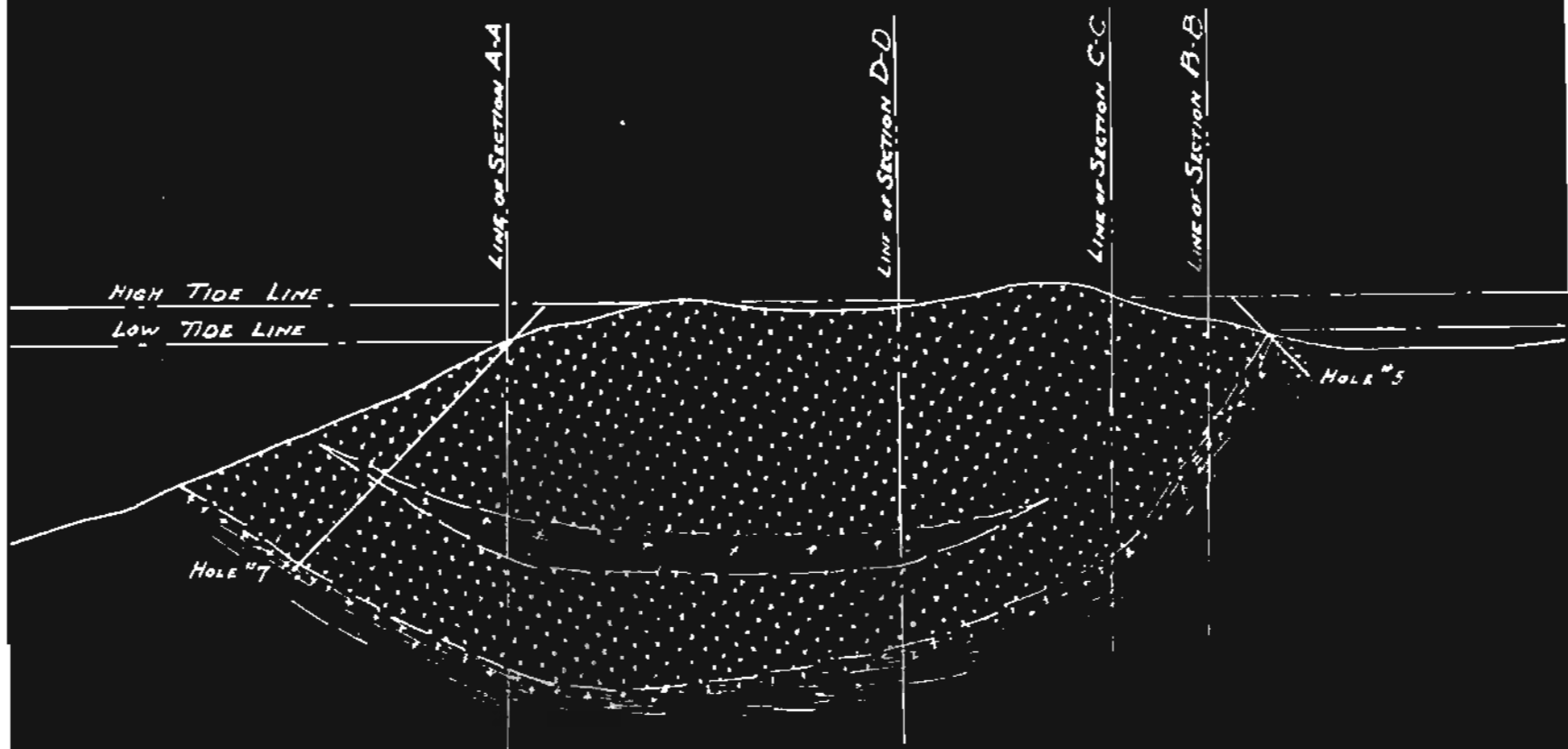
CROSS-SECTION B-B
DIAMOND DRILL HOLES 3-4
CASTLE ISLAND BARITE DEPOSIT
ALASKA JUNEAU G.M. CO




SCALE: 1"=50'

DEC. 31, 1931







-  BARITE
-  VOLCANIC SERIES
-  BARITE MIXED WITH VOLCANICS

LONGITUDINAL SECTION E-E
DIAMOND DRILL HOLES 5+7
CASTLE ISLAND BARITE DEPOSIT
ALASKA JUNEA. G.M.C.O.
SCALE 1"=50' DEC. 31, 1931