9100

Diag. Cht. No. 8554-2

NOAA FORM 76-35A

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

DESCRIPTIVE REPORT
(HYDROGRAPHIC)

Type of Survey ... HYDROGRAPHIC

Field No. ... PF 10-3-68

Office No. ... H-9100

LOCALITY

State ... ALASKA

General Locality ... COOK INLET

Locality ... BRUIN BAY

1968 - 71

CHIEF OF PARTY

CDR. A. C. HOLMES & H. R. LIPPOID, Jr.

LIBRARY & ARCHIVES

DATE ... Nov. 1968 - Dec. 1973

☆U.S. GOVERNMENT PRINTING OFFICE: 1974-763-098

9100

FORM C&GS-537
(8-15-69)

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

REGISTER NO.

H-9100
~~None~~

HYDROGRAPHIC TITLE SHEET

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD NO. PF 10-3-68

State Alaska

General locality Cook Inlet

Locality Bruin Bay

Scale 1:10,000 Date of survey 25 June-22 August 1968

Instructions dated April 3, 1968 Project No. OPR-429

Vessel Ship PATHFINDER launches ML# 4 & ML# 2

Chief of party A. C. Holmes - H.R. Lippold, Jr.

Surveyed by Ship's Personnel

Soundings taken by echo sounder, ~~XXXXXXXXXX~~ DE 723 Raytheon # 552

Graphic record scaled by Ship's Personnel

Graphic record checked by Ship's Personnel

Protracted by ~~Ship's Personnel~~ Automated plot by ~~EDAT~~ PMC-Gerber-Digital Plotter

Soundings penciled by Ship's Personnel

Soundings in fathoms ~~feet~~ at ~~MLW~~ MLLW

show as survey of 1971 also title sheet see also work for 1971

3 Aug - 31 Aug 1971

REMARKS: Sheet is incomplete

Because of tide observation problems and questionable tide correctors the 1968 hydrography was not logged or plotted. Detached positions on rocks, reefs and ledges obtained in 1968 have been retained as field edit material. The inner and outer Bruin Bay areas were resurveyed or originally surveyed in 1971. PH Carstens

36x54

FORM C&GS-537 (8-66)

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

REGISTER NO.

HYDROGRAPHIC TITLE SHEET

H-9100

INSTRUCTIONS - The Hydrographic Sheet should be accompanied by this form, filled in as completely as possible, when the sheet is forwarded to the Office.

FIELD NO.

PF-10-3-68

State ALASKA

General locality ~~Inner Cook Inlet~~ Kamishak Bay

Locality Bruin Bay

Scale 1:10,000 Date of survey 3 August - 31 August 1971

Instructions dated March 26, 1971 Project No. OPR-429

Vessel Ship PATHFINDER's Motor Launches #2 and #4

Chief of party CAPT H. R. Lippold, Jr.

Surveyed by CDR S. C. Miller, LT R. K. Matsushige, LT D. E. Nortrup, ENS C. B. Lawrence, ENS R. A. Zachariason

Soundings taken by echo sounder, ~~hand lead, pole~~ ML#2 - DE 723 Raytheon - #140
ML#4 - DE 723 Raytheon - #551

Graphic record scaled by Ship's Personnel

Graphic record checked by Ship's Personnel

Positions Verified ~~XXXXXXX~~ by Robert Montemayor Automated plot by Gerber PMC-Digital Plotter

Soundings ~~recorded~~ verified by Robert Montemayor

Soundings in fathoms ~~feet~~ at ~~XXXXX~~ MLLW

REMARKS: Except for rock information data obtained in 1968 was not plotted

Chs. 8554

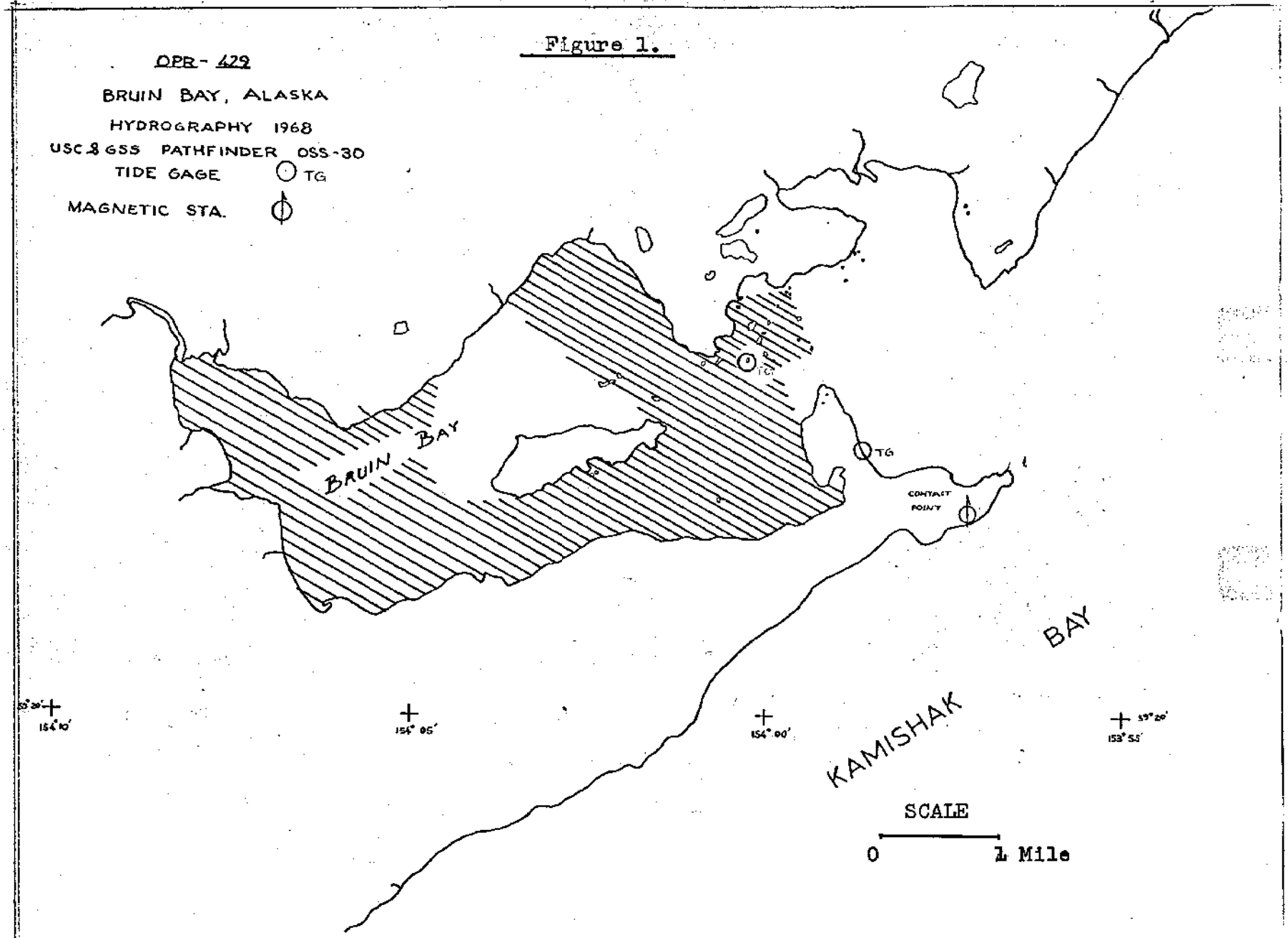
Applied to std 6/12/74 CAB.

8502 No Sdgs
8500 IN AREA

ADP.

USCOMM-DC 57009-P66

Figure 1.


OPR-429
BRUIN BAY, ALASKA
HYDROGRAPHY 1968
USC&GSS PATHFINDER OSS-30
TIDE GAGE TG
MAGNETIC STA.
BRUIN BAY
TG
TG
CONTACT POINT
KAMISHAK BAY
154° 10'
154° 05'
154° 00'
153° 55'
SCALE
0 1 Mile

APPROVAL SHEET

PF 10-3-68 Bruin Bay

OPR 429

The field work on this survey has been inspected and the hydrographic sheet has been examined and approved. Additional field work is required for completion of the sheet.

CAPT A. C. Holmes
Cmdg USC&GSS PATHFINDER

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY H-9100
(FIELD NO. PF 10-3-68)

A. PROJECT

The hydrography and field edit on this survey were done in accordance with project instructions for OPR 429, dated 3 April 1968.

B. AREA SURVEYED

The area of the survey covers Bruin Bay, Cook Inlet, Alaska; between latitudes 59° 20′ 30″ N and 59° 24′ 45″ N, and longitudes 153° 54′ 30″ W and 154° 08′ 30″ W. Bruin Bay is characterized by a large "inner" bay and a small "outer" bay seperated by a narrow throat area with rapid tidal currents. The bay in general is foul, with numerous small islands, pinnacle rocks, reefs, ledges, and hundreds of large boulders. During low water the western half of the inner bay bares.

Work on the sheet began 25 June and ended 22 August; approximately 30 per cent of the hydrography (Figure 1) and 70 per cent of the field edit has been completed. All launch hydrography was done in the inner bay and throat area; most of the reef, ledge, and rock development was done in the throat area and outer bay.

The sheet junctions with prior survey FE No. 3 1947, scale 1:200,000.

C. SOUNDING VESSEL

All launch hydrography was done by ML #4. Position numbers are in brown. Yellow position numbers indicate soundings obtained by foot.

D. SOUNDING EQUIPMENT

The Raytheon DE 723 fathometer No. 552 was used throughout the survey. Soundings taken on foot were obtained by direct measurement. These latter soundings were taken primarily on reefs, ledges, and rocks at low water for shoal development and field edit. All soundings are in fathoms.

E. SMOOTH SHEET

The smooth sheet will be prepared by EDAT, Pacific Marine Center, Seattle, Washington. Ship's Personnel have prepared punched paper tapes for the electronic processing.

F. CONTROL

All hydrography was visual, using photo-hydrographic signals for control. One signal, 005, was incorrectly located on the photographs and later removed from the boat sheet. No hydrography was run using this signal. Photo-hydrographic signals were transferred to the boat sheet from Incomplete Manuscripts T-13274, T-13275, T-13277, and T-13278.

Additional visual control is required before hydrography can be run in area 8 (see overlay attached to boatsheet) due to blockage of signals by islands in that area.

Electronic control can be utilized outside the mouth of the bay east of a line tangent to Contact Point and passing through the raydist shore station on Nordyke Island. West of this line raydist signals are blocked by cliffs.

G. SHORELINE

Shoreline detail was obtained from the manuscripts listed in section F, with the addition of T-13276; transfer was not verified. Definition of low-water line cannot be made until tide reducers from the Bruin Bay gages are received from bureau headquarters, because of extreme deviation from the predicted

Seldovia tides used for initial sounding reduction.

H. CROSSLINES

Approximately 9 per cent crosslines were run, many in areas in which regular hydrography has not yet been completed. This situation was caused by running of reconnaisance lines around the large island in the center of the inner bay. Intersections, where present, are both good and bad, depending on the time relationship between the regular lines and the crosslines. This was to be expected because of the unusual tide conditions in the bay. See Tide Note. Intersection disagreement cannot be clarified until tide reducers using the inner tide gage are redeived from bureau headquarters.

I. JUNCTIONS

There is no contemporary survey of the area.

J. COMPARISON WITH PRIOR SURVEYS

No comparison with prior survey FE No. 3 1947 was made because of: (1) the incomplete nature of the survey, (2) the disparity of scales between prior survey - 1:200,000 - and present survey - 1:10,000 - and (3) lack of Bruin Bay tide reducers to be applied to 1968 field season soundings.

K. COMPARISON WITH CHART

The area surveyed during the 1968 field season has no soundings on chart 8554 (27 November 1967). Comparison with the chart can be made when the east edge of the sheet is completed.

Bruin Bay itself is shown as uncharted. A listing of dangers to navigation found would be impractical due to the large number involved. The bay can be entered through a channel, but should be considered as foul.

L. ADEQUECY OF SURVEY

The survey is incomplete. See Figure 1.

M. AIDS TO NAVIGATION

No floating or fixed aids to navigation exist in the area.

N. STATISTICS

Visual Launch Hydrography.....	77 miles
Launch Positions.....	623
Detached Positions (Hydrography).....	63
Bottom Samples.....	30
Photo-Hydrographic Signals Picked.....	19
Visual Signals Built.....	17
Signals Rejected.....	1
Triangulation Stations Recovered.....	3
Total Area To Be Surveyed On Sheet....	16 square miles
Area Presently Surveyed - By Hydro....	2.5 square miles
- Above MLLW..	2.5 square miles
Tide Gages Installed.....	2
Tide Gages Replaced.....	1
Tide Gages Removed.....	2
Tidal Bench Mark Levels.....	2.3 miles
Tidal Bench Marks Set.....	8
Tidal Bench Marks Removed.....	1
Bench Marks Recovered (Non C&GS).....	1
Shoreline Field Edit.....	12 miles
Reef, Ledge, Rock Field Edit.....	1 square mile

O. MISCELLANEOUS

Position numbers for the survey are:

Bruin Bay East (Outer)	0001-1000	DP's
	1001-4000	Launch Hydro
Bruin Bay West (Inner)	4001-4600	DP's
	4601-7000	Launch Hydro
Spare Numbers	7001-9800	
Bottom Samples	9801-9999	

Numbers used during the 1968 field season were:

Bruin Bay East (Outer)	0001-0070	DP's
Bruin Bay West (Inner)	4001-4048	DP's
	4601-5235	Launch Hydro
Bottom Samples	9801-9830	

Beginning numbers for the 1969 field season are:

Bruin Bay East (Outer)	0071	DP's
	1001	Launch Hydro
Bruin Bay West (Inner)	4049	DP's
	5236	Launch Hydro
Spare Numbers	7001	
Bottom Samples	9831	

To facilitate processing field data, hydrographic operations were separated into Bruin Bay East (Outer) and Bruin Bay West (Inner). This was necessitated by the presence of different tidal datums in the inner and outer bays, requiring separate tide reducers. The line dividing the two bays is shown on the boat sheet overlay, number 9.

P. RECOMMENDATIONS

I. That work in this area be undertaken in the early part of the field season while the weather is most favorable, particularly if a detached party is used.

II. That two tide gages, one in the outer and one in the inner bay, be established in the same location as during the 1968 field season.

III. That tide reducers for the 1969 field season be taken from the Bruin Bay gages, to permit determination of the zero curve and limits of hydrography, to allow meaningful junction with 1968 work, and to allow comparison of 1969 launch hydrography with crosslines.

IV. That a sounding overlay from EDAT, Pacific Marine Center, be obtained for comparisom of junctions with 1969 work and comparisom of 1968 launch hydrography with crosslines.

V. That hydrography in the inner and outer bays be separated at the line drawn on the boat sheet and overlay, in order to facilitate logging-processing of data involving two tidal datums.

VI. That the throat area separating the two tidal datums be surveyed only at high slack water for most accurate soundings and acceptable junctions, in addition to the safety consideration of personnel

and equipment.

VII. That the vitrified scale be attached to Raydist tower sections rather than constructing the tide staff out of lumber, due to high wind and waves in the area.

The following observations are referenced to the boat sheet overlay by number:

1. Launch anchorage area.

2. High points on these reefs and ledges were developed by detached positions taken on foot. Completion of hydrography should require only that sounding lines by launch be run over the areas.

3. These areas are relatively flat ledges with only an occasional small boulder laying on top. Completion of hydrography should probably require only running of launch hydrography lines over the area, possibly some detached positions on the seaward limits, and location of any boulders observed at low water.

4. This detached rock's position and shape make it particularly dangerous to navigation. One detached position was taken on its peak; this feature should be extensively developed.

5. Tide gages were established at these two locations.

6. Location of tidal bench marks.

7. Two rocks, which were never located, bare in this general area at extreme low waters.

8. Additional control is required in this area due to blockage of signals by islands. For the benefit of a possible detached party, fresh water is available along the northern shore.

9. Line used to separate inner and outer bay tidal datums and hydrography.

10. Route in and out of "inner" bay.

Q. REFERENCES TO REPORTS

Season's Report - 1968 - USC&GSS PATHFINDER
Bruin Bay Field Edit Report (Included)
Report On Corrections To Echo Soundings - 1968 -
USC&GSS PATHFINDER

Respectively submitted,

Calvert Iles
LT USESSA

Dave Harrison
LTJG USESSA

Approved by,

for John W. Bricker
James Midgley
LCDR USESSA
Executive Officer
USC&GSS PATHFINDER

TIDE NOTE

Tides at Bruin Bay are an extremely critical factor in the hydrographic operation, its effect complicated by a constriction between an outer and inner portiion of the bay, causing a time and range difference between the two parts. The differences are more extreme at low water since the narrow throat is constricted even further by the uncovering of reefs and ledges. During these periods the difference in water level between the two portions of the bay is apparant even to the eye. The shape of the bay and prevalance of islands, reefs, and ledges preclude the possibility of obtaining anything but an average tide curve, as the tide is graditional throughout the bay at any one time.

A Bubbler tide gage and bench marks were initially installed in the inner bay at the start of the project, on an island at Latitude 59° 22' 32" and Longitude 154° 00' 19". This gage operated satisfactorily (with two exceptions) during the first half of the project; during the last half the recorder malfunctioned and was replaced, shortly after which a storm knocked down the tide staff. A 29 day period of continuous tide marigram was obtained from June 27 through July 26, provided the marigram is corrected for time and scale during two periods in which it jumped the sprocket. A second gage and bench marks were installed halfway through the project in the outer bay at Latitude 59° 21' 55" and Longitude 153° 58' 42". A complete loop of levels was never run between the tide staff and adjacent bench marks. The gage operated satisfactorily over the 26 day period of installation, from July 17 to August 11.

Two "tides" were used during the project. All launch soundings, and detached positions from the "outer" bay, were reduced using predicted Seldovia, Alaska, tides. Use of actual tide reducers from the bubbler gages was not possible because no MLLW datum existed for the area. To approximate the time of MLLW at "inner" Bruin Bay, a correction of a minus 60 minutes was applied to the predicted Seldovia tides and this was used to apply the tide reducers to the soundings obtained by walking (detached positions). Using this 60 minute corrector resulted in a discrepancy of approximately 1.3 fathoms when the

MLLW determined by Rockville (per following memo. Jan 3, 1967)

walked line was compared to soundings obtained in the aame area with the launch. As noted in paragraph G, launch soundings were reduced using predicted tides for Seldovia, Alaska.

Of the 1.3 fathom discrepancy, 0.3 fathoms is attributal to fathometer and initial correction, as determined by bar check. The remaining discrepancy can be attributed to Bruin Bay tidal differences (both time and range) with the Seldovia tides, cummulating in the application of incorrect tide reducers. Tide reducers must be obtained from the Bruin Bay gages before a more definite statement can be made.

The zero fathom curve on the boat sheet is probably near the -1.0 to -1.3 fathom soundings obtained with launch hydrography. This estimate is from visual observation of low water and the resulting area bared. It is recommended that tide reducers for Bruin Bay gages be used for all 1969 field work. This will permit determination of the zero curve, limits of hydrography, comparisom of crosslines, and comparisom with junctions of 1968 work. A copy of of the EDAT sounding overlay for 1968 work should be obtained for junction comparisom.

A line (as drawn on the boat sheet and overlay) was established for separating the two tidal datum planes of the inner and outer bay to simplify logging processing and as the most likely reflection of the actual hydraulics of Bruin Bay. Hydrography in the immediate area of the junction and in the throat area should be done at high slack water to obtain accurate soundings and acceptable junctions.

Hourly heights for times of hydrography were scaled from both bubbler gages, with the exception of the inner gage during periods when the marigram jumped off the sprocket. The marigrams were sent to Rockville, Maryland for processing and for determination of hourly heights during those periods when the marigram was off the sprocket. In addition, hourly heights were requested for the outer bay during the period prior to installation of the outer bay gage.

Bench mark descriptions have been submitted to bureau headquarters and a copy has been requested from them.

Time meridian used was 135W.

GEOGRAPHIC NAME LIST

Bruin Bay
Kamishak Bay
Contact Point

CORRECTORS

Bar checks were taken to a depth of 4 fathoms. With the exception of a small 8 fathom hole, all soundings were shoaler than 4 fathoms, requiring only bar check and initial setting corrections. No temperature and salinity corrections were applied to the 8 fathom hole because (1) fresh water discharge into the small inner bay changes the salinity and possibly temperature factors from those of Kamishak Bay where the corrections were calculated, and (2) the gradational nature of the tides in the inner bay makes any correction of the magnitude which would have been applied to this depth (+0.1 fathom) of a comparatively insignificant nature. Initial fathogram settings were chedked and corrections determined. No stylus arm corrections were required. All corrections were placed on tape for processing at EDAT, Pacific Marine Center, Seattle, Washington.

Day	Time	Initial	Bar	TRA
195	1722	-0.1	+0.3	+0.2
	1724	0.0	+0.3	+0.3
	1734	-0.1	+0.3	+0.2
196	1603	-0.1	+0.3	+0.2
	1633	0.0	+0.3	+0.3
	1637	-0.1	+0.3	+0.2
	1646	0.0	+0.3	+0.3
	1703	-0.1	+0.3	+0.2
	1712	0.0	+0.3	+0.3
	1756	-0.1	+0.3	+0.2
	1836	0.0	+0.3	+0.3
197	1654	-0.1	+0.3	+0.2
	1701	0.0	+0.3	+0.3
	1707	-0.1	+0.3	+0.2
	1859	0.0	+0.3	+0.3
	1905	-0.1	+0.3	+0.2
198	1750	-0.1	+0.3	+0.2
	1817	0.0	+0.3	+0.3
	1820	-0.1	+0.3	+0.2
	1856	0.0	+0.3	+0.3
	1913	-0.1	+0.3	+0.2
	1925	0.0	+0.3	+0.3
	1930	-0.1	+0.3	+0.2
199	0650	-0.1	+0.3	+0.2
	0851	0.0	+0.3	+0.3
	0855	-0.1	+0.3	+0.2

Day	Time	Initial	Bar	TRA
199	0914	0.0	+0.3	+0.3
	0917	-0.1	+0.3	+0.2
	0927	0.0	+0.3	+0.3
	0944	-0.1	+0.3	+0.2
200	0833	-0.1	+0.3	+0.2
	0847	0.0	+0.3	+0.3
	0908	-0.1	+0.3	+0.2
	0933	0.0	+0.3	+0.3
	0940	-0.1	+0.3	+0.2
	0949	0.0	+0.3	+0.3
	0955	-0.1	+0.3	+0.2
	1024	0.0	+0.3	+0.3
	1041	-0.1	+0.3	+0.2
206	1239	-0.1	+0.4	+0.3
	1328	-0.2	+0.4	+0.2
	1333	-0.1	+0.4	+0.3
207	1239	0.0	+0.3	+0.3
	1328	-0.1	+0.3	+0.2
	1332	0.0	+0.3	+0.3
	1403	-0.1	+0.3	+0.2
	1505	0.0	+0.3	+0.3
	1510	-0.1	+0.3	+0.2
	1546	0.0	+0.3	+0.3
208	1341	+0.1	+0.3	+0.4
	1358	0.0	+0.3	+0.3
	1406	-0.1	+0.3	+0.2
	1410	+0.1	+0.3	+0.4
	1415	0.0	+0.3	+0.3
	1442	-0.1	+0.3	+0.2
	1445	0.0	+0.3	+0.3
	1457	-0.1	+0.3	+0.2
	1503	0.0	+0.3	+0.3
	1517	+0.1	+0.3	+0.4
	1622	0.0	+0.3	+0.3
	1628	+0.1	+0.3	+0.4
	1631	0.0	+0.3	+0.3
	1635	-0.1	+0.3	+0.2
	1721	0.0	+0.3	+0.3

LIST OF SIGNALS

Signal Number	Station Origin
001	T-13275
002	T-13275
003	T-13275
004	T-13274
005 (Rejected)	
006	T-13274
007	T-13274
008	T-13274
009	T-13277
010	T-13277
011	T-13277
012	T-13277
013	T-13277
014	T-13277
015	T-13278
016	T-13278
017	T-13278
018 (Number Not Used)	
019	T-13275
020	T-13275
021	T-13275

INCLUSIONS

Form 1 - Parameters For Digital Computing Polyconic Projection
Form 3 - Computer Parameters For Electronically Controlled Survey
Signal Tape Printout - Bruin Bay
~~Field Edit Report For T-13274, T-13275, T-13276, T-13277, and T-13278~~
Oceanographic Log Sheet - M; Bottom Sediment Data
Bruin Bay Tidal Data Memorandum (Only Recently Received)

Form #1

PARAMETERS FOR DIGITAL COMPUTING
POLYCONIC PROJECTION

(1) Project No. OPR-429 (4) Requested by CDR Holmes

(2) H No. _____ (5) Ship or Office PATHFINDER

(3) Field No. "J J" (6) Date Required ASAP

(7) Visual ☒ (8) Electronic ☐ (fill out form #3)

(9) XKN (SP 5) Distance from CMER to East Edge (NYX = 1) or West Edge (NYX = 0). 7,114.05 Meters

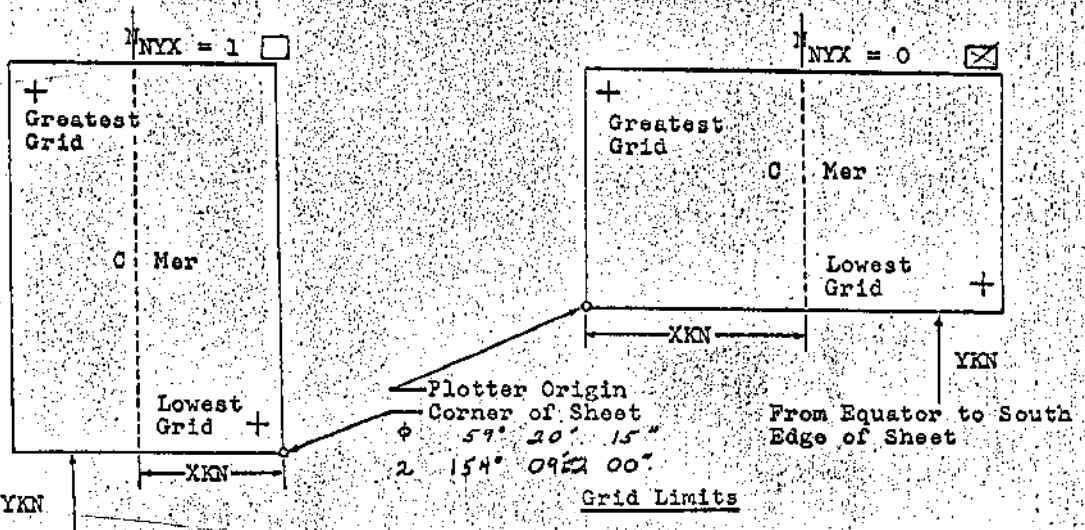
(10) YKN (SP 241) Distance from Equator to South Edge of sheet 6,580,057.938 Meters

(11) Central Meridian 154° 01' 30"

(12) Survey Scale 1:10,000

(13) Size of Sheet (Check one) 36x60 ☒ 42x60 ☐

(14) NYX, Orientation of sheet (Check one)



Grid Limits

(15) Greatest Latitude 59° 35' 30" (Projection Line Interval Page 4 Hydro Manual)

(16) Lowest Latitude 59° 30' 30"

(17) Difference 05 00 (18) 0' 30"

(19) 10 YSN

(20) Greatest Longitude 154° 08' 30"

(21) Lowest Longitude 153° 54' 30" (23) 0' 30"

(22) Difference 14' 00" (24) 28 X 28

CRL

FORM #3

COMPUTER PARAMETERS FOR ELECTRONICALLY CONTROLLED SURVEY
(RANGE-RANGE)

(1) Project No. OPR 429 (2) H. No. ___ (3) Field No. BOAT SHEET JJ

(4) Type of Control: ___ SHORAN, X RAYDIST, ___ HI-FIX, ___ RADAR
Frequency (for conversion of RAYDIST or HI-FIX lanes to Meters) 3300.40 KC

(5) RANGE ONE (R1)
Station Name JUMA 1967
Latitude 59 ° 10 ' 40.26 "
Longitude 154 ° 05 ' 21.72 "

(6) RANGE TWO (R2)
Station Name CROW 1964
Latitude 59 ° 05 ' 04.89 "
Longitude 153 ° 42 ' 20.15 "

(7) Azimuth from R1 to R2 295 ° 06 ' 55.27 "

(8) Baseline Length in meters 24,301.38 M.

(9) Location of survey with respect to Electronic Baseline: CHECK ONE

(To determine: Imagine an observer standing at R1 and looking directly at R2--- If the survey area is to the observer's LEFT then A is negative: If the survey area is to the observer's RIGHT then A is positive.)

X -A ___ +A

(10) If SHORAN corrections are applied by the equation, K(X) + C = D, where X is SHORAN distance and D is true distance, enter the Constants Coefficients of the equation here:

K(R1) _____, C(R1) _____, K(R2) _____, C(R2) _____,

(11) Number of Velocity Tables to be used:

___ None, ___ One, ___ Two, ___ More than Two (For old Surveys logged at WSC only -- if this is the case, supply VEL, IND TAPES)

If two tables are to be used, Boundary defined by:

_____ ° ' "
Latitude ___
Longitude ___

(12) This form applies to all data on this survey- ___
This form applies to part of the data on this survey- ___

Time and Date Limitations: from _____ to _____
Position Number Limitations: from _____ to _____

This is Form #3 Sheet # 1 of 1 Sheet for this ~~survey~~ sheet.

HBM

Signal Tape Printout - Bruin Bay

10-3-68

429 AREA BRUIN BAY, ALASKA

VESSEL LAUNCH NR 4

BAY —

POSITION — TO —

TYPE OF TAPE SIGNAL TAPE

001	59	23	0307	153	56	0879	ABC	243
002	59	23	1629	153	57	0343	ABE	243
003	59	23	0940	153	58	0613	ABG	243
004	59	22	0916	154	00	0887	ABJ	243
006	59	23	0622	154	02	0272	ABO	243
007	59	23	0013	154	03	0570	ABR	243
008	59	22	0891	154	04	0548	ABT	243
009	59	21	1207	154	03	0860	ABW	243
010	59	21	1768	154	03	0460	ACA	243
011	59	20	1660	154	03	0715	ACC	243
012	59	21	1280	154	02	0459	ACE	243
013	59	21	0534	154	02	0027	ACG	243
014	59	22	0098	154	01	0355	ACJ	243
015	59	21	0710	153	59	0642	ACM	243
016	59	22	0537	153	59	0243	ACO	243
017	59	21	1780	153	58	0704	ACR	243
019	59	23	0770	153	56	0258	ACW	✓
020	59	23	1580	153	55	0891	AEA	✓
021	59	24	1700	153	54	0398	AEC	✓

LETTER DESIGNATIONS FOR SIGNALS WERE NOT USED ON BOATSHEETS — ONLY NUMERICAL DESIGNATIONS WERE USED

checks with 1971 operations

FIELD EDIT REPORT
FOR

T-13274, T-13275, T-13276, T-13277,
and T-13278

was not prepared for the above sheets

as field edit on them is incomplete.

David C. Harrison

David C. Harrison
Lt.(jg), USESSA

FORM 733M
(8-23-60)

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

VESSEL: ML # 4 | CRUISE: 10-3-68 Brain Bay | CHECKED BY: D.M. | DATE CHECKED: 11-25-68

SERIAL NO.	DATE	SAMPLE POSITION N LATITUDE	SAMPLE POSITION W LONGITUDE	DEPTH (Fathoms)	WEIGHT OF SAMPLER	APPROX. PENETRATION	LENGTH OF TUBE	LENGTH OF CORE	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, dented cutter, free fall, stat. no., trigger core no., date extruded, disposition, etc.)	OBS. INIT.
9801	7-31-68	59-22-06	154-00-35	3.5		Clam-shell Stopper			Hard bottom-no sample		BAR GCS
9802	"	59-21-41	154-01-10	2.5			"		Hard bottom-no sample		
9803	"	59-21-35	154-01-46	2.5			"		Hard bottom-no sample		
9804	"	59-21-31	154-02-14	2.0			"		Brown, Grey, & Black Gravel - small pebbles		
9805	"	59-21-24	154-02-50	1.9	4		"		Gravel with black ooze with small black pebbles		
9806	"	59-21-18	154-03-38	1.7	4	III	"		Gravel with black ooze with small black pebbles		
9807	"	59-21-26	154-04-09	1.2	2	(?)	"		Gravel - black ooze		
9808	"	59-21-43	154-04-27	3.1	3	IV	"		Fine gray sand and gray pebbles, tunig		
9809	"	59-22-07	154-03-50	2.7	0	II	"		Fine black sand		
9810	"	59-22-16	154-04-05	2.8	9	II	"		Black ooze		
9811	"	59-22-28	154-04-40	2.8		III	"		Fine dark gray sand		
9812	"	59-22-12	154-03-20	2.4		III	"		Fine gray sand - possibility of hard bottom		
9813	"	59-22-10	154-02-43	2.3	15		"		Fine gray sand		
9814	"	59-22-29	154-02-58	2.9	1		"		Hard bottom-no sample		
9815	"	59-22-41	154-03-14	3.2			"		Black ooze		
9816	"	59-22-51	154-02-55	1.3			"		Black ooze		
9817	"	59-22-46	154-02-36	2.2			"		Gray ooze		

Use more than one line per sample if necessary.

USCOMM-DC 26072-P60

FORM 733M
(8-23-60)

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

VESSEL: ML # 4 | CRUISE: 10-3-68 Brain Bay | CHECKED BY: O.M. | DATE CHECKED:

SERIAL NO.	DATE	SAMPLE POSITION N LATITUDE	SAMPLE POSITION W LONGITUDE	DEPTH (Fathoms)	WEIGHT OF SAMPLER	APPROX. PENETRATION	LENGTH OF TUBE	LENGTH OF CORE	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, dented cutter, free fall, stat. no., trigger core no., date extruded, disposition, etc.)	OBS. INIT.
9818	7-31-68	59-22-27	151-01-57	5.0		Clam-shell Snapper	"		Black ooze		
9819	"	59-22-14	151-01-19	3.3			"		Brown stone - brown kelp		
9820	"	59-22-35	151-01-31	4.0			"		Black ooze		
9821	"	59-23-14	151-00-17	2.0			"		Fine gray sand		
9822	"	59-23-09	151-00-00	1.3			"		Black ooze		
9823	8-1-68	59-21-50	151-00-31	2.0			"		Brown kelp, shell Pebbles - multicolored		
9824	"	59-21-51	151-59-50	1.6			"		Gravel & pebbles - multicolored		
9825	"	59-22-05	151-00-00	2.3			"		Gray pebbles & stones - brown kelp		
9826	"	59-22-23	151-00-00	3.2			"		Hard bottom - seaweed		
9827	"	59-22-25	151-00-31	2.8			"		Hard bottom - seaweed		
9828	"	59-22-16	151-00-50	4.1			"		Multicolored pebbles and stones, seaweed		
9829	"	59-22-00	151-01-00	2.0			"		Multicolored gravel, pebbles & stones, seagrass		
9830	"	59-22-22	151-59-35	2.9			"		Multicolored pebbles		
							"				
							"				
							"				
							"				

Use more than one line per sample if necessary.

USCOMM-DC 25972-P60

FORM CD-12 (11-63) (FREE BY L.O. 256-10)

UNITED STATES GOVERNMENT

Memorandum

U.S. DEPARTMENT OF COMMERCE
ENVIRONMENTAL SCIENCE SERVICES ADMINISTRATION
COAST AND GEODETIC SURVEY

TO : Commanding Officer
USC&GSS PATHFINDER

RECEIVED
JAN 10 1969
USCGS PATHFINDER

DATE: January 3, 1969

In reply refer to:
C3312-3-CSSC

FROM : Chief, Tides Section
Oceanography Division

SUBJECT: Bruin Bay tidal data

MLLW at each of the two gage locations is:

East Bruin Bay	7.7 ft. on staff zero
West Bruin Bay	5.8 ft. on staff zero

Inferred hourly heights for both locations are enclosed.

Reference plane for Lyman Anchorage will be furnished in a few days.

Martha A. Winn

Martha A. Winn

Enclosure

DESCRIPTIVE REPORT TO ACCOMPANY
HYDROGRAPHIC SURVEY H-9100
FIELD NO. PF 10-3-68 H-9100

A. PROJECT

The hydrography and field edit of this survey was done in accordance with Project Instructions OPR-429, dated 26 March 1971.

B. AREA SURVEYED

The area surveyed covers Bruin Bay, Cook Inlet, Alaska; between latitudes 59° 20' 30" N and 59° 24' 45" N, and longitudes 153° 54' 30" W and 154° 08' 30" W. Bruin Bay is characterized by a large (6 square nautical miles) outer bay and a smaller (3 snm) inner bay separated by a narrow throat area with shoal water, reefs, and high tidal currents. The bay in general is foul, with numerous small islands, pinnacle rocks, reefs, ledges, and large boulders. During low water, the western half of the inner bay is bare.

Work on the sheet began 3 August 1971 and ended 31 August 1971; All of the hydrography and field edit have been completed.
Soundings obtained in 1968 not charted. H-9072
The sheet junctions with contemporary survey sheet PF 20-1-69, scale 1:20,000.

C. SOUNDING VESSELS

All launch hydrography was done by ML#2 except one day's work by ML#4 on August 31, 1971. ML#2 and ML#4 used the same series of positions numbers. All numbers are brown.

D. SOUNDING EQUIPMENT

The Raytheon DE 723 fathometer No. 140 was used throughout the survey in ML#2 and Raytheon DE 723 No. 551 was used in ML#4. All soundings are in fathoms, with measured depths ranging from 0 to 7.5 fathoms. Leadline comparisons were taken throughout the survey.

E. SMOOTH SHEET

The smooth sheet will be prepared by EDAT, Pacific Marine Center, Seattle, Washington. Ship's personnel have prepared punched paper tapes for the electronic processing.

F. CONTROL

All hydrography was visual, using photo-hydrographic signals for control. One signal, 005, was incorrectly located on the photographs and later removed from the boat sheet. No hydrography was run using this signal. Photo-hydrographic signals were transferred to the boat sheets from incomplete manuscripts T-13274, T-13277, T-13275, and T-13278.

Visual hydrography at the mouth of the outer portion of Bruin Bay juntures with electronic hydrography of sheet Pf 20-1-69. H-9072

G. SHORELINE

The shoreline was transferred from incomplete manuscripts T-13274, T-13275, T-13276, T-13277, and T-13278. All shoreline has been field edited. Refer to the field edit of the T sheets for more detail.

H. CROSSLINES

Approximately 10 per cent crosslines were run except in the far western portion of the inner bay where the narrow character of the channel prevented crosslines from being safely run. Intersections vary from good to poor, some deviating by several tenths of a fathom. This was to be expected because of the unusual tide conditions in the Bay.

I. JUNCTIONS

The depths at the junction with the 1:20,000 sheet PF 20-1-69 are H-9072 in good agreement. There are no other contemporary surveys of the area.

J. COMPARISON WITH PRIOR SURVEYS

During the 1968 field season, Bruin Bay was partially surveyed by the PATHFINDER's personnel, however, due to inadaquate tide data, the work was not sent to the Pacific Marine Center for processing. forwarded at end of 1971 survey

Tide data during the 1968 field season was obtained from a Bubbler Tide Gage located in the inner bay at latitude 59° 22' 32" N and longitude 154° 00' 19" W. This was also the same position used in 1971.

Difficulties in tide gage operation during the 1968 field season included:

a. The recorder malfunctioned approximately halfway through the survey and was replaced.
b. Shortly after the new gage had been installed, the tide staff was knocked down in a storm.
c. There were two periods on the continous marigram record, between the start of the survey and replacement of the gage, requiring correction for time and scale due to the marigram jumping the winding sprocket.
d. A second tide gage and bench marks were installed halfway through the project in the outer bay at latitude 59° 21' 55" N and longitude 153° 58' 42" W; however, a complete loop of levels was never run between the tide staff and adjacent bench marks.

Due to the above inconsistencies in the 1968 survey, comparison with the current 1971 survey was very difficult. The predicted tide correctors used during the 1971 season averaged approximately 0.7 fathoms higher than those used during the 1968 field season. Comparison of actual tides from the Bruin Bay tide gage used in 1968 and the predicted tides used during the 1971 season seem to vary randomly with no apparent common factor between the two sets of values.

Because of the numerous problems encountered during the 1968 Bruin Bay survey, a complete re-survey was undertaken during the 1971 field season which the participants in the survey feel should completely supersede any data obtained during the 1968 work.

1971 Survey incomplete in that numerous rocks located in 1968 were not relocated in 1971. With application of field correctors based on Seldovia Reference Station 1968 data were applied to smooth sheet.

K. COMPARISON WITH CHART

USC&GS Chart 8554, scale 1:20,000, dated 18 April 1970, shows no soundings for Bruin Bay. A listing of dangers to navigation found would be impractical due to the large number involved. The bay can be entered through a narrow channel, but should be considered as foul. Reefs extending southeast from Contact Point and northeast from the point due north of Contact Point converge, to leave a channel only 500 yards wide at MLLW. The inner bay is inaccessable at MLLW due to the large number of rocks and ledges at the narrow portion between the inner and outer bay. In addition to the aforementioned rocks and ledges, there is a large rock in the northern portion of outer Bruin Bay which should be considered dangerous to navigation. It is located at latitude 59° 22' 45" N and longitude 153° 57' 10" W. It bares 0.6 .5 fathoms at MLLW.

L. ADEQUACY OF SURVEY

The survey is considered adequate for charting.

M. AIDS TO NAVIGATION

No floating or fixed aids to navigation exist in the area.

N. STATISTICS

Visual Launch Hydrography (lnm)	115
Launch Positions	1077
Detached Positions	0
Bottom Samples	7
Photo-hydrographic Signals	16
Signals built	14
Triangulation Stations Recovered	2
Total Area Surveyed (snm)	8.5
Shoreline Field Edited (lnm)	24.7

O. MISCELLANEOUS

Position Numbers used for survey:

Launch Hydro	2001 - 2512
	2519 - 2605
	2607 - 3077
Bottom Samples	2513 - 2518
	2606

P. RECOMMENDATIONS

Due to the inconsistencies in tide gage operation during the 1968 field season, it is recommended that the survey be completely superseded by the current 1971 survey of Bruin Bay. — EXCEPT AS NOTED IN SECTION J BY REVIEWER

It is also recommended that, due to reefs which bare at MLLW at the entrance to Bruin Bay and the large number of hazards inside the bay itself, both inner and outer Bruin Bay be designated as foul. CHARTED LOW WATER LINE SHOULD BE REVIEWED

Nineteen lead line comparisons were made during the course of the survey. Of these, the difference between the lead line sounding and the fathometer reading fell between 0.3 and 0.6 fathoms in ~~16~~ 15 comparisons. The other ~~3~~ 4 comparisons were 0.8 (twice) ~~and~~ 1.0, 1.5. These apparently excessive differences can be accounted for considering that the fathometer records the shallowest point within the area covered by the transducer signal while the lead line measures the depth at a discreet point. These inconsistent comparisons were rejected. The average of the good comparisons is 0.46 0.42 fathoms, the value decided upon. Since nearly all the soundings are less than 5 fathoms, velocity corrections are considered to be zero.

Q. REFERENCES

H-9100

Descriptive Report PF 10-3-68 (written in 1968)
Field Edit of all T sheets

Respectfully submitted,

Christopher B. Lawrence

Christopher B. Lawrence
Ens. NOAA

Horizontal Control

Bruin Bay, Kamishak Bay

SIGNAL NAME	LATITUDE ° ' meters	LONGITUDE ° ' meters	ORIGIN OF POSITION photo	triangulation station
001	59 23 0307.0	153 56 0879.0	T-13275	
002	59 23 1629.0	153 57 0343.0	T-13275	
003	59 23 0940.0	153 58 0613.0	T-13275	
004	59 22 0916.0	154 00 0887.0	T-13274	
006	59 23 0622.0	154 02 0272.0	T-13274	
007	59 23 0013.0	154 03 0570.0	T-13274 Extension on 68 BS	
008	59 22 0891.0	154 04 0548.0	T-13274	
009	59 21 1207.0	154 03 0860.0	T-13277	
010	59 21 1768.0	154 03 0460.0	T-13277	
011	59 20 1660.0	154 03 0715.0	T-13277	
012	59 21 1280.0	154 02 0459.0	T-13277	
013	59 21 0534.0	154 02 0027.0	T-13277	
014	59 22 0098.0	154 01 0355.0	T-13277	
015	59 21 0710.0	153 59 0642.0	T-13278	
016	59 22 0537.0	153 59 0243.0	T-13278 Extension on 68 BS	
017	59 21 1780.0	153 58 0704.0	T-13278	
100	59 23 1550.7	153 58 0796.8	T-13275	
101	59 23 0173.0	153 59 0698.7	T-13275	
102	59 22 1523.5	153 59 0482.2	T-13275	
103	59 21 1816.7	153 58 0707.7	T-13278 Extension on 68 BS	
104	59 21 1450.6	153 57 0664.3	T-13278	
Contact 105	59 21 0909.0	153 57 0043.3	T-13278	CONTACT
BAY 106	59 23 0461.4	153 56 0694.9	T-13275	BAY (1913)
KIRSCHNER	59 25 0314.2	153 53 0111.9	T-12330	KIRSCHNER (1967)
200	59 24 0727.4	153 55 0193.6	T-13275	
019				
020				
021				

Bottom Sample Note to Accompany Boatsheet PF 10-3-68

Surface sediment characteristics for Bruin Bay, Alaska are tabulated on the bottom sample data log sheet accompanying this report. The bottom characteristics were determined by representative sampling of the project area, and sample spacing averages less than one-half nautical mile.

Six samples were obtained by PATHFINDER motor launch number 2 using a small ten-pound clam grab sampler, and a seventh was obtained from the launch's anchor when it was hauled in. The samples were briefly described in the field and stored in plastic bags. Processing of the samples is in accordance with the Pacific Marine Center OPORDER.

FORM C&GS-733M
(8-23-60)

OCEANOGRAPHIC LOG SHEET - M
BOTTOM SEDIMENT DATA

U.S. DEPARTMENT OF COMMERCE
COAST AND GEODETIC SURVEY

VESSEL	PROJ. NO.	YEAR		CHECKED BY	DATE CHECKED
PATHFINDER ML # 2	OPR-429	1971	Bruin Bay, Alaska		

SERIAL NO.	DATE	SAMPLE POSITION LATITUDE	SAMPLE POSITION LONGITUDE	DEPTH (Fathoms)	WEIGHT OF SAMPLER	APPROX. PENETRATION	LENGTH OF CORE	COLOR OF SEDIMENT	FIELD DESCRIPTION	REMARKS (Unusual conditions, cohesiveness, dented cutter, stat. no., type of bottom relief i.e., slope, plain, disposition, etc.)
		59°	153°							
2513	12 Aug 71	22.15'	57.10'	1.9	3 lb	1"	grab		hrd, no sample	PF 10-3-68
2514		22.25'	58.20'	1.7					hrd, no sample	
2515		22.95'	58.35'	3.4					crs G	
2516		23.25'	57.80'	1.3					hrd, no sample	
2517		22.80'	56.90'	2.4					hrd, no sample	
2518		22.55'	57.55'	2.0					hrd, no sample	
2605	18 Aug 71	22.57'	58.71'	2.1	on anchor				P	Pebbles attached to boulder brought up with anchor.

(Add more than one line per sample if necessary.

USCOMM-DC 8220-P6

Form #1

PARAMETERS FOR DIGITAL COMPUTING
POLYCONIC PROJECTION

(1) Project No. OPR-429

(2) H No. _____

(3) Field No. "I J" (3026B)

(4) Requested by CDR Holmes

(5) Ship or Office PATHFINDER

(6) Date Required ASAP

(7) Visual ☒

(8) Electronic ☐ (Fill out form #3)

(9) XKN (SP 5) Distance from CMER to East Edge (NYX = 1) or West Edge (NYX = 0). 7,114.05 Meters

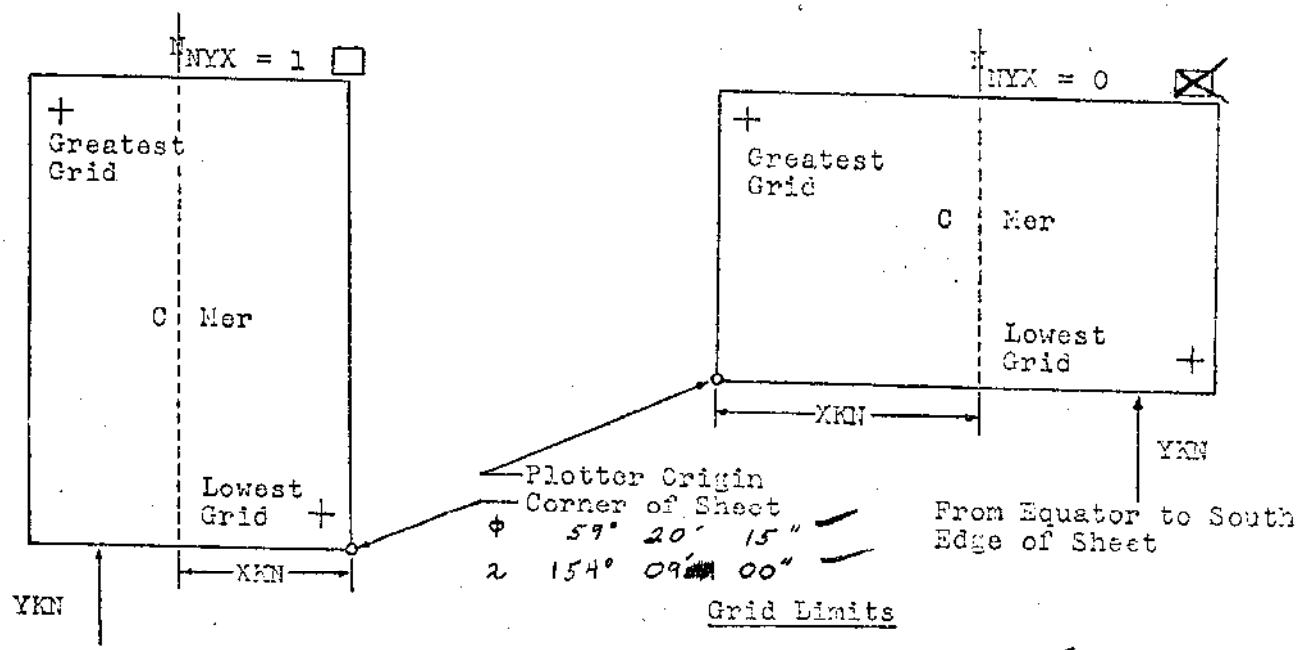
(10) YKN (SP 241) Distance from Equator to South Edge of sheet 6,580,057.838 Meters

(11) Central Meridian 154° 01' 30"

(12) Survey Scale 1: 10,000

(13) Size of Sheet (Check one) 36x60 ☒ 42x60 ☐

(14) NYX, Orientation of sheet (Check one)



Grid Limits

(15) Greatest Latitude 59° 25' 30" (Projection Line Interval Page 4 Hydro Manual)

(16) Lowest Latitude 59° 20' 30"

(17) Difference 05 00

(18) 0' 30"

(19) 10 YSN

(20) Greatest Longitude 154° 08' 30"

(21) Lowest Longitude 153° 54' 30"

(22) Difference 14' 00"

(23) 0' 30"

(24) 28 XSN

BCR

H

Field No. OPR 429 "JJ" - 30068

Date 4/2/68

PARAMETER CARD II

			1	2	3	4	5	6	7	8	9	10
Semi major axis of the earth	6,378,206.4	RDA	6	3	7	8	2	0	6	4	0	7
X Constant- Distance from central meridian to origin of plotter SP 5	7 114.05 meters	XYP	7	1	1	4	0	5	0	0	0	4
Y Constant - Distance from equator to origin of plotter SP 241	6 580 057.838 meters	YKN	6	5	8	0	0	5	7	8	0	7
Central Meridian of Projection	154 01 30.00	CMR	5	5	4	4	4	0	0	0	6	6
Plotter Scale/Survey Scale	*30498.6876 1: 10000	SCA	1	0	4	9	8	6	8	8	0	1
North/south axis of sheet - to correspond to (Y axis - 0) (X axis - 1) of plotter		NYX										0
Feet/Fathom indicator	0 - feet 1 - fathom	FOF										1
H Identification No.		JN						3	0	0	6	8
FCF - 1		YR									6	8

			41	42	43	44	45	46	47	48	49	50
		SCA	1	0	4	9	8	6	8	8	0	1
		NYX										0
		FOF										1
		JN						3	0	0	6	8
		YR									6	8

PARAMETER CARD III

			1	2	3	4	5	6	7	8	9	10
Lowest Lat. Intersection	59 20 30.00	YST	5	9	2	0	3	0	0	0	0	6
Lowest Long. Intersection	153 54 30.00	XST	1	5	3	5	4	3	0	0	0	6
Difference between Grid	30.00	DXY					3	0	0	0		
Interval (Long)		XSN									31	32
Interval (Lat)		YSN									33	34

			11	12	13	14	15	16	17	18	19	20
		XST	5	5	4	0	7	0	0	0	0	6
		DXY	3	0	0	0	0	0	0	0	0	2
		XSN									2	3
		YSN									1	5

Computed QR

Punched

Checked CA

Date

Approval sheet

Registry No. H-9100

This Descriptive Report has been examined and approved.

H.R. Lippold Jr.
Capt. NOAA
NOAA Ship PATHFINDER

APPROVAL SHEET

The smooth sheet has been inspected, is complete, and meets the requirements of the General Instructions for automated surveys and the Hydrographic Manual. (Note: All exceptions are listed in the Verifier's Report)

Examined and approved,

James S. Green
Supervisory Cartographic Technician

Approved and forwarded,

Walter F. Forster, Cdr., NOAA
Chief, Processing Division
Pacific Marine Center

TIDE NOTE

The standard tide gauge at Seldovia served as the reference station for the project. The accuracy of approximation cycle was .0010. Time correction to highs was -2.4 feet and to lows -.1 feet. The range ratio applied to highs was 1.000 and to lows 1.000.

The predicted tides thus corrected were used on boatsheets PF-20-1-69, PF-20-2-69 and PF-10-3-68.
H-9072 H-9073 H-9100

Two Bubbler Tide Gauges were installed to control the survey. One located at Augustine Island, latitude 59° 22.42'N, longitude 153° 34.55'W; and the other in Bruin Bay, latitude 59° 22.32'N and longitude 154° 00.19'W. Operation at both sites was satisfactory.

Tide data from the Augustine Island gauge should be used to control sheets PF-20-1-69 and PF-20-2-69. Tide data from the Bruin Bay tide gauge should be used to control sheet PF-10-3-68.
H-9072 H-9073 H-9100

AS NOTED BY THE VERIFIER THE SURVEY WEST OF long 153° 59' 30" WAS CONTROLLED BY THE BRUIN BAY GAGE WHILE THE SURVEY EAST OF THIS MERIDIAN WAS CONTROLLED BY THE AUGUSTINE ISLAND GAGE.

The reduction of all rock elevations was done using Seldovia tide data corrected for time & range as noted on accompanying tide notes.

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

1/15/73

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Pacific Marine Center

Hourly heights are approved for Tide Tape Printout

Tide Station Used (NOAA form 77-12): Bruin Bay, Alaska

Period: August 3 - August 31, 1971

HYDROGRAPHIC SHEET: H-9100

OPR: 429

Locality: Bruin Bay, Cook Inlet, Alaska

Plane of reference (mean lower low water): 0.4 ft. ~~below MLLW~~
which is feet on tide staff.

Height of Mean High Water above Plane of Reference is 13.9 ft.

Remarks: Hourly Heights have been revised in red and verified as follows.

Day		Hour
August	4	1500
	7	1100-1400
	8	1100-1500
	9	1200-1500
	12	1700
	24	1400

Hourly Heights which were computed from the Seldovia observations have been entered for:

Day		Hour
August	30	0800-1200

~~1968 - 141 West~~

Chief, Tides Branch

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

1/15/73

Processing Division: Pacific Marine Center

Hourly heights are approved for Tide Tape Printout

Tide Station Used (NOAA form 77-12): Augustine Island

Period: June 13 - August 30, 1971

HYDROGRAPHIC SHEET: H-9072

OPR: 429

Locality: Kamishak Bay, Cook Inlet, Alaska

Plane of reference (mean lower low water): 4.2 ft.
which is feet on tide staff.

Height of Mean High Water above Plane of Reference is 13.9 ft.

Remarks: Hourly Heights have been revised in red and verified.

Julian Day	Hour	Julian Day	Hour
190	1300-1400	220	1200
193	1000, 1500	221	0800-0900
195	1200		1200-1400
201	1100-1300	222	0800-1000
	1600		1300-1400
207	0900	223	1500-1600
209	1400-1600	224	1400,1600-1700
215	1300-1600	230	0900-1600
216	0900-1100	235	1300
	1300-1700		
217	0900-1100	242	0900-1500
		231	1000-1600

Chief, Tides Branch

2/12/75

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Pacific Marine Center:

Hourly heights are approved for

Tide Station Used (NOAA Form 77-12): Seldovia

Period: June 25 - August 22, 1968

HYDROGRAPHIC SHEET: H-9100

OPR: 429

Locality: Cook Inlet, SW Alaska

Plane of reference (mean lower low water): 8.5 ft.

Height of Mean High Water above Plane of Reference is 13.5 ft.
(Bruin Bay, West)

Remarks: Apply the following corrections to Seldovia for the tide conditions at Bruin Bay West.

Time Differences

	HW	LW
1.	+06 min.	+36 min.

2. Apply x0.82 Mn ratio.

James R Hubbard
for Chief, Tides Branch

2/18/75

U.S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION
NATIONAL OCEAN SURVEY

TIDE NOTE FOR HYDROGRAPHIC SHEET

Processing Division: Pacific Marine Center:

Hourly heights are approved for

Tide Station Used (NOAA Form 77-12): Seldovia

Period: June 25 - August 1968

HYDROGRAPHIC SHEET: H-9100

OPR: 429

Locality: Cook Inlet, Southwest Alaska

Plane of reference (mean lower low water): 8.5 ft.

Height of Mean High Water above Plane of Reference is 14.0 ft.
(Bruin Bay, East)

Remarks: Correction for Bruin Bay, East:

(1) +18 min. for both high and low waters.

(2) Apply x0.82 Mn ratio.

James R. Hubbard
Chief, Tides Branch

GEOGRAPHIC NAMES

Survey No. H-9100

Name on Survey	On Chart No. A	On previous survey No. B	On U. S. quadrangle Maps C	From local information D	On local Maps E	P. O. Guide or Ma... F	Rand McNally At... G	U. S. Light List. H	K	
BRUIN BAY										1
CONTACT POINT										2
KAMISHAK BAY										3
										4
										5
										6
										7
										8
										9
										10
										11
										12
										13
										14
										15
										16
										17
										18
										19
					Approved by:					20
					Chas. E. Harrington					21
					Staff Geographer					22
					19 July 1974					23
										24
										25
										26
										27

M 234

NOAA FORM 77-27 (9-72) (PRESC. BY HYDROGRAPHIC MANUAL 20-2, 6-94, 7-13)

U. S. DEPARTMENT OF COMMERCE
NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

HYDROGRAPHIC SURVEY STATISTICS

HYDROGRAPHIC SURVEY NO. H-9100

RECORDS ACCOMPANYING SURVEY: To be completed when survey is registered.

RECORD DESCRIPTION	AMOUNT	RECORD DESCRIPTION	AMOUNT
SMOOTH SHEET & PNO	1	BOAT SHEETS (Mylar)	~~X~~ 5
DESCRIPTIVE REPORT	1	OVERLAYS	7

DESCRIPTION	DEPTH RECORDS	HORIZ. CONT. RECORDS	PRINTOUTS	TAPE ROLLS	PUNCHED CARDS	ABSTRACTS/ SOURCE DOCUMENTS
ENVELOPES	~~X~~					
CAHIERS	~~X~~ 1					
VOLUMES	13					
BOXES			1			

T-SHEET PRINTS (List) T-13274, T-13275, T-13276, T-13277, T-13278
[redacted]

SPECIAL REPORTS (List)

OFFICE PROCESSING ACTIVITIES

The following statistics will be submitted with the cartographer's report on the survey

PROCESSING ACTIVITY	AMOUNTS			
	PRE-VERIFICATION	VERIFICATION	REVIEW	TOTALS
POSITIONS ON SHEET				1067
POSITIONS CHECKED		1067	150	1217
POSITIONS REVISED		18	25	43
DEPTH SOUNDINGS REVISED		50	50	100
DEPTH SOUNDINGS ERRONEOUSLY SPACED		----	0	0
SIGNALS ERRONEOUSLY PLOTTED OR TRANSFERRED		----	0	0
	TIME (MANHOURS)			
TOPOGRAPHIC DETAILS		48	100	148
JUNCTIONS		----	24	24
VERIFICATION OF SOUNDINGS FROM GRAPHIC RECORDS		228	10	238
SPECIAL ADJUSTMENTS		80	60	140
ALL OTHER WORK		80	91	171
TOTALS		436	285 42:297	721:733

PRE-VERIFICATION BY	BEGINNING DATE	ENDING DATE
VERIFICATION BY Robert Montemayor	BEGINNING DATE 18 Dec. 1972	ENDING DATE 6 Nov. 1973
REVIEW BY Dennis J. Hill	BEGINNING DATE Sept. 9, 1974	ENDING DATE Aug 7, 1975

Insp. G.K. Myers 40 hrs. 8/5/75
Carlson 16 hr 8/6/75

* U.S. G.P.O. 1972-769-562/439 REG.#6

Reg. No. H-9100

The Computer and Excess Sounding Cards for this survey have not been corrected to reflect the changes made to the Computer Card and Excess Card Printouts at this time of the review.

When the cards have been updated to reflect the final results of the survey the following shall be completed:

CARDS CORRECTED

DATE_____ TIME REQ'D_____ INITIALS_____

REMARKS:

Reg. No. _____

The magnetic tape containing the data for this survey has not been corrected to reflect the changes made during evaluation and review.

When the magnetic tape has been updated to reflect the final results of the survey, the following shall be completed:

MAGNETIC TAPE CORRECTED

DATE_____ TIME REQ'D._____ INITIALS_____

REMARKS:

H-9100 (1968-71)

Information for Future Presurvey Reviews

This area covers most of Bruin Bay. Unusual tidal characteristics require careful consideration to insure adequate generation of local correctors. Adverse weather and sea conditions may hinder survey operations.

The present survey is adequately developed.

Position Index		Bottom Change	Use	Resurvey
Lat.	Long.	Index	Index	Cycle
592	1540	3	0	50 years
592	1541	3	0	50 years

OFFICE OF MARINE SURVEYS AND MAPS

MARINE CHART DIVISION

HYDROGRAPHIC SURVEY REVIEW

REGISTRY NO. H-9100 FIELD NO. PF-10-3-68

Alaska, Kamishak Bay, Bruin Bay

SURVEYED: August 3 through 31, 1971

SCALE: 1:10,000 PROJECT NO.: OPR-429

SOUNDINGS: Raytheon DE-723 Echo Sounder CONTROL: Sextant Fixes on Shore Signals

Chief of Party ..... H. R. Lippold, Jr.
Surveyed by ..... S. C. Miller
..... R. K. Matsushige
..... D. E. Nortrup
..... C. B. Lawrence
..... R. A. Zachariason
Automated Plot by ..... Gerber Digital Plotter (PMC)
Verified and Inked by ..... R. Montemayor
Reviewed by ..... D. J. Hill
..... Date: October 9, 1974
Inspected by ..... G. K. Myers

1. Description of the Area

This survey covers Bruin Bay, which extends about 4½ miles inland. The entire area is strewn with uncovering rocks and reefs which constrict the water passage between the east and west portions of the bay.

In the western part, a large island falls in the center of the bay, and extensive mud and sand flats that uncover at mean lower low water extend offshore. Deepest survey depths of greater than 7 fathoms are found in a narrow trench located north of the island.

The bottom configuration in the eastern portion is characterized by gradual slopes from shore which terminate in depths of greater than 3 fathoms. In this area, rocky ledges intermittent with sand beaches are found alongshore.

The bottom is characterized in the western portion by fine sand and black ooze and in the eastern portion by gravel and hard bottom.

2. Control and Shoreline

The origin of control is adequately covered in Part F of the Descriptive Report.

The shoreline originates with advance photogrammetric manuscripts T-13274 and T-13275, based on 1962 air photography and field edits of 1968 and 1971, T-13277, based on 1967 air photography and field edits of 1968 and 1971, and T-13278, based on 1962 and 1967 air photography and field edits of 1968 and 1971. Extensive revisions to ledge and reef limits from the shoreline manuscripts were made from hydrographic information.

3. Hydrography

A. Depths at crossings are in good agreement.

B. The usual depth curves are adequately delineated except for portions of the low-water line where foul areas precluded its delineation.

C. The development of the bottom configuration and the investigation of least depths are considered adequate.

4. Condition of the Survey

The field work, sounding records, smooth plotting, and Descriptive Report are adequate and conform to the requirements of the Hydrographic Manual, supplemented by the Instruction Manual for Automated Hydrographic Surveys, except for the following:

A. Although 1968 hydrography was rejected during the verification of this survey, because of problems in tide observations, numerous rocks located only in 1968 were brought forward at time of review to supplement the 1971 field work. Reductions to MLLW were entered and computed during review.

B. On sections of several lines, the TRA correction was increased by 0.2 fathoms to reflect hand lead comparisons and provide agreement in junctions.

C. In order to provide agreement in junctional areas, the tide correctors for Bruin Bay gage were used only in the western portion of the bay instead of the entire bay, and tide correctors from Augustine Island were used in the eastern portion. Although this provided an apparent solution to the problem, our knowledge of the tidal conditions is still imperfect, and some residual error may still be present in the survey.

5. Junctions

An adequate junction was effected with H-9072 (1969-74) 1:20,000, on the east.

6. Comparison with Prior Surveys

There are no prior surveys in this area.

7. Comparison with Chart 8554, 13th Edition, May 25, 1974

A. Hydrography

The charted hydrography originates with the boat sheet of the present survey. Minor differences are noted between the present survey and charted depths.

Attention is directed to the following:

(1) A 3-fathom sounding in latitude 59°22.5', longitude 154°58.5', was plotted erroneously from the boat sheet of the present survey and should be deleted from the chart.

(2) The zero-fathom curve, ledges, and reefs, should be revised in accordance with the present survey.

(3) The bare rocks charted in the vicinity latitude 59°22.5', longitude 154°00.2', from reconnaissance information on Bp 29081 are discredited by the present survey and should be disregarded.

The present survey is adequate to supersede the charted information in the common area.

B. Aids to Navigation

There are no charted aids to navigation within the limits of the survey.

8. Compliance with Instructions

The survey adequately complies with the Project Instructions.

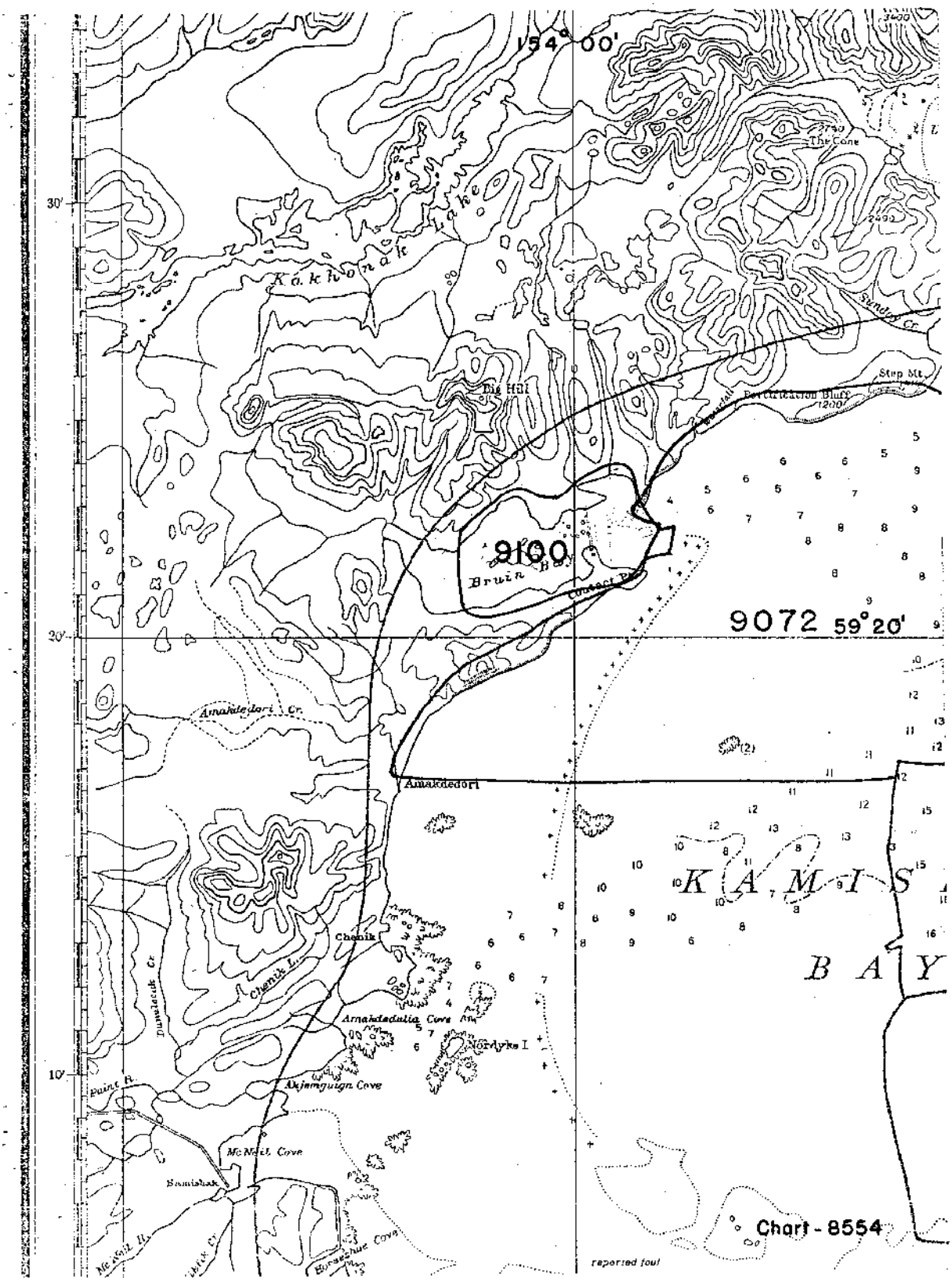
9. Additional Field Work

This is a good basic survey, and no additional field work is recommended.

Examined and Approved:

R H Houston
Chief
Marine Chart Division

Robert C. Munson
Associate Director
Office of Marine Surveys
and Maps


154° 00'
30'
20'
10'
59°20'
The Cone
Kakhonak Lake
Big Hill
Step Mt.
Fortification Bluff
1200'
Sundog Cr.
9100
Bruin Bay
9072
Amakdedori Cr.
Amakdedori
Chenik
Chenik L.
Dumplecock Cr.
Amakdedulia Cove
Ayakulik I.
Akiemguign Cove
Point R.
McNeil Cove
Iliamna
McNeil R.
Hungry Cove
K A M I S
B A Y
Chart - 8554
reported foul

FORM C&GS-8352
(3-25-63)

NAUTICAL CHART DIVISION

RECORD OF APPLICATION TO CHARTS

FILE WITH DESCRIPTIVE REPORT OF SURVEY NO. H-9100

INSTRUCTIONS

A basic hydrographic or topographic survey supersedes all information of like nature on the uncorrected chart.
1. Letter all information.
2. In "Remarks" column cross out words that do not apply.
3. Give reasons for deviations, if any, from recommendations made under "Comparison with Charts" in the Review.

CHART	DATE	CARTOGRAPHER	REMARKS
8554	6/19/74	M. D. Kanis	~~Full Part Before~~ After Verification ~~Review Inspection Signed~~ Via
			Drawing No. Examined for Notices to Mariners before
8502	2/21/75	C. S. Forbes	~~Full~~ Part ~~Before~~ After Verification Review Inspection Signed Via
			Drawing No. Examined for critical corrections only - none appd
8554	11/12/75	M. D. Kanis	~~Full~~ Part ~~Before~~ After Verification Review ~~Inspection Signed~~ Via
			Drawing No. Consider ~~Fully~~ Partly Applied
8554			Full Part Before After Verification Review Inspection Signed Via
			Drawing No. Consider Fully APPD
8502			Full Part Before After Verification Review Inspection Signed Via
			Drawing No. SMALL SCALE N/A
16640	5/24/78	KANIS	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing ~~No.~~ Did Proof #18
16648	3/9/79	D.A. Clements	Full ~~Part Before~~ After Verification Review Inspection Signed Via
			Drawing No. /
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.
			Full Part Before After Verification Review Inspection Signed Via
			Drawing No.

FORM C&GS-8352 SUPERSEDES ALL EDITIONS OF FORM C&GS-975.