

H110768

NOAA FORM 76-35A	
U.S. DEPARTMENT OF COMMERCE NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION NATIONAL OCEAN SERVICE	
DESCRIPTIVE REPORT	
Type of Survey .....	Hydrographic
Field No. ....	RA-10-22-97
Registry No. ....	H-10768
LOCALITY	
State .....	Alaska
General Locality .....	Southwest Alaska Peninsula
Sublocality .....	Chignik Lagoon
.....	
1997	
CHIEF OF PARTY CAPT Alan D. Anderson, NOAA	
LIBRARY & ARCHIVES	
DATE .....	AUG 17 1998

HYDROGRAPHIC TITLE SHEET

H-10768

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.

RA-10-22-97

State Alaska

General locality Southwest Alaska Peninsula

Locality Chignik Lagoon

Scale 1:10,000 Date of survey August 5-22, 1997

Instructions dated May 15, 1996 \* Project No. OPR-P182-RA

Vessel RA-1(2121), RA-3(2124), RA-5(2125)

Chief of party CAPT Alan D. Anderson, NOAA

Surveyed by CAPT A. Anderson, LT G. Noll, ST S. Baum, ST J. Cheech

Soundings taken by echo sounder, hand lead, pole DSF-6000N, Knudsen 320M

Graphic record scaled by RAINIER Personnel

Graphic record checked by RAINIER Personnel

Evaluation by: I. Almacen  
~~Produced by~~ Automated plot by HP Design Jet 650C

Verification by M. Bigelow, D. Doles, E. Domingo, R. Mayor

Soundings in fathoms ~~feet~~ at MKWX MLLW and tenths

REMARKS: All times are UTC, revisions and marginal notes in black were  
generated during office processing. All separates are filed with  
the hydrographic data, as a result page numbering may be  
interrupted or non-sequential.  
All depths listed in this report are referenced to mean lower  
low water unless otherwise noted.

\* Change 1, dated June 3, 1997

AWCIS / SURF 8/4/98  
incR

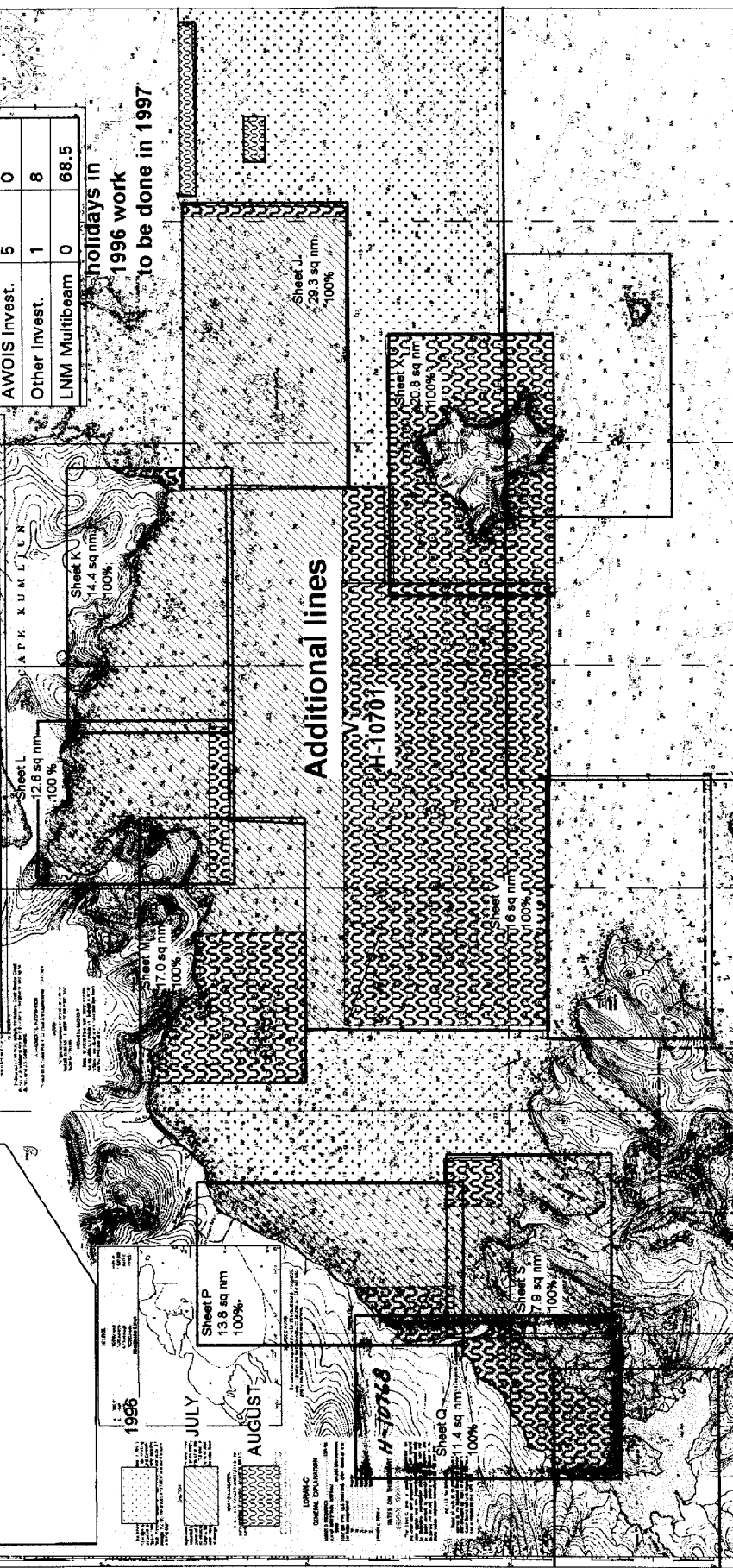
PROGRESS SKETCH  
 OPR-P182-RA-97  
 SOUTHWEST ALASKA PENINSULA  
 JULY-AUGUST 1997  
 CAPT A. D. ANDERSON, NOAA  
 COMMANDING  
 CHART 16566

Sheet	Reg_No	Started	Percent	Completed	Submitted	SON
J	H-10761	7/10	100	8/2		29.3
K	H-10762	7/10	100	8/1		14.4
L	H-10765	7/19	100	8/20		12.6
M	H-10767	7/30	100	8/24		17.0
P	H-10760	7/14	100	8/19		13.8
S	H-10759	7/13	100	8/19		7.9
V	H-10701	7/24	100	8/25		16.0
Q	H-10768	8/5	100	8/22		11.4
X	H-10770	8/15	100	8/26		20.8

Downtime_Type	July	August
Weather - Hr	0	4
Mechanical -Hr	0	2
Electronic -Hr	0	2

Accomplished	July	August
LNM Hydro	2539.	1732.
LNM SSS	20.83	15.85
SQ NM	77.9	224.5
AWOIS Invest.	5	0
Other Invest.	1	8
LNM Multibeam	0	68.5

holidays in  
 1996 work  
 to be done in 1997



1996  
 JULY  
 AUGUST

Sheet P  
 13.8 sq nm  
 100%

Sheet Q  
 11.4 sq nm  
 100%

Sheet R  
 16.8 sq nm  
 100%

Sheet S  
 7.9 sq nm  
 100%

Sheet T  
 14.4 sq nm  
 100%

Sheet U  
 20.8 sq nm  
 100%

Sheet V  
 12.6 sq nm  
 100%

Sheet W  
 17.0 sq nm  
 100%

Sheet X  
 20.8 sq nm  
 100%

Sheet Y  
 29.3 sq nm  
 100%

Sheet Z  
 14.4 sq nm  
 100%

Additional lines

# Descriptive Report to Accompany Hydrographic Survey H-10768

Field Number RA-10-22-97

Scale 1:10,000

August 1997

**NOAA Ship RAINIER**

Chief of Party: Captain Alan D. Anderson, NOAA

## A. PROJECT ✓

This hydrographic survey was completed as specified by Project Instructions OPR-P182-RA dated ~~December 20~~<sup>May 15</sup>, 1996, and change number 1 dated June 3, 1997. Survey H-10768 corresponds to sheet Q as defined in the sheet layout. The purpose of this survey is to provide contemporary surveys for updating National Ocean Service (NOS) nautical charts. The majority of charted hydrography in the 1997 project area is from 1924 lead-line hydrographic surveys. Requests for hydrographic surveys and updated charts in this area have been received from an U.S. Senator, a U.S. Congressman, the United States Coast Guard (USCG), the commercial fishing industry, and NOAA.

## B. AREA SURVEYED (*See EVAL RPT., Sec B*)

The survey area is in the Southwest Alaska Peninsula, southwest of Chignik Bay, <sup>in Chignik Lagoon</sup> The survey limits are from the entrance spit at 56° 20' 30" N, 158° 28' 30" W to the east, to 56° 17' 00" W, east of Chignik Island and 56° 17' 15" W, west of Chignik Island. Data acquisition was conducted from August 5 to Aug 22, 1997 (DN 217-234).

## C. SURVEY VESSELS ✓

Data were acquired by RAINIER survey launches RA-1, RA-4, and RA-5 as noted in the Survey Information Summary included with this report.

## D. AUTOMATED DATA ACQUISITION AND PROCESSING ✓

All data were acquired and processed using the Hydrographic Data Acquisition and Processing System (HDAPS.) The final field sheet was generated using MapInfo (Version 4.1) and MapBasic software developed by N/CS32 and modified by Rainier personnel. A complete listing of software for HDAPS is included in Appendix VI. \*

## E. SONAR EQUIPMENT ✓

Neither Side Scan Sonar or multi-beam echo sounder equipment was used on this survey. ~~CONCAT~~.

## F. SOUNDING EQUIPMENT ✓

The Raytheon DSF-6000N is a dual frequency (100 kHz, 24 kHz), paper trace echo sounder. The Knudsen 320M is a dual frequency, thermal depth sounder using the same transducer frequencies. Serial numbers are included on the headers of the daily Raw Master Printouts. \*No new problems, which affect survey data, were encountered. All soundings were acquired in meters using the High + Low, high frequency digitized setting.

## G. CORRECTIONS TO ECHO SOUNDINGS ✓

One sound velocity cast was used for this survey. Information on the cast is included in the Survey Information Summary report. \*\*The sound velocity cast was acquired with SBE SEACAT Profiler (S/N 219),

\* Filed with the hydrographic data.  
\*\* Attached

calibrated December 16, 1996.

Velocity correctors were computed using the PC programs SEACAT and VELOCITY, version 3.3 (1997), in accordance with Hydrographic Survey Guideline (HSG) No. 69. A printout of the Sound Velocity Corrector Table used in the HDAPS Post Survey program is included in the "Separates to be Included with Survey Data, IV. Sounding Equipment Calibrations and Corrections".\* An additional cast was acquired on DN 230 to confirm the consistency of the water column. Information from this cast was not applied to the survey data. ✓

A static transducer depth was determined using FPM Fig 2.2 for vessels 2121, 2124, and 2125 in the spring of 1997. Settlement and squat correctors were computed in accordance with Hydrographic Manual Section 4.9.4.2., using FPM Fig. 2.3, and are included with project data for OPR-P182-RA. The data for vessels 2121 were collected in Shilshole Bay, Washington in the Spring of 1997; data for vessel 2124 were measured in the same location in Spring of 1996. The data for 2125 was collected near Scull Island, Alaska in March 1997. All offset tables\* contain offsets for the GPS antenna, as well as static draft measurements, and settlement and squat data. Offset tables 1-6 correspond to the last digit of the vessel number. The offset tables are included with project data for OPR-P182-RA.\* The launches are not equipped with heave, roll and pitch sensors. *Concur.* ✓

The Coastal and Estuarine Oceanography Branch (N/OES334) through N/CS31 provided predicted tides for the project on diskette for the Southwest Alaska Peninsula, West End, Sutwik Island, Alaska reference station (945-8665). HDAPS listings of the data used in generating tide corrector tables are included in Appendix V of this report.\* Tidal correctors as provided in the project instructions for H-10768 are in the Survey Information Summary included with this report.

Sand Point, Alaska (945-9450) is the primary control station for datum determination at all subordinate stations. RAINIER personnel installed Sutron 8200 tide gages at Unavikshak Island (945-8762) on July 9, 1997, in Anchorage Bay (945-8917) on July 12, 1997 and in Chignik Lagoon (945-8945) on July 31, 1997. RAINIER personnel removed Sutron 8200 tide gages at Unavikshak Island (945-8762) on August 27, 1997, in Anchorage Bay (945-8917) on August 26, 1997 and in Chignik Lagoon (945-8945) on August 23, 1997.

Refer to the Field Tide Notes and supporting data in Appendix V for individual gage performance and level closure information. The hydrographer recommends final reduction from 945-8945. This information has been forwarded to N/OES212 in accordance with HSG 50 and FPM 4.3. A request for approved tides was forwarded at the completion of the project to N/OES23. *Approved Tide Note dated January 5, 1998 is attached.*

#### H. CONTROL STATIONS (See EVAL RPT., Sec. H)

The horizontal datum for this project is NAD 83. Station ANG was recovered and used as primary hydrographic positioning control for the survey. The <sup>list of</sup> control stations used for this survey <sup>is included in this</sup> report <sup>are listed in</sup> Appendix III. See the OPR-P182-RA-97 Horizontal Control Report for more information.

#### I. HYDROGRAPHIC POSITION CONTROL (See EVAL RPT., Sec. I)

All soundings were positioned using differential GPS. Primary control was the VHF differential reference station at ANG. The US Coast Guard Beacon at KODIAK was used when VHF was not usable. Launch-to-launch DGPS performance checks were performed in accordance with Section 3.4.4 of the FPM. Two observations of position were made from two different DGPS base stations, ANG and KODIAK, while the launches were rafted together with their GPS antennae within 2-3 meters of each other. RAINIER also used SHIPDIM, version 2.2R (April 1996) with a Trimble Centurion P-code receiver and an Ashtech sensor (both differentially-corrected) to monitor the performance of the USCG Beacon. ANG was compared to KODIAK during 8-hour daily comparisons and occasional performance checks. Some outliers were noted, but none indicated systematic or continuous errors in the KODIAK beacon. The SHIPDIM OUTLIER.SUM results are included in the project data for OPR-P182-RA.

\* Filed with the hydrographic data.

## J. SHORELINE (See EVAL RPT., Sec. 5)

(TP-00911)

The shoreline DXF was digitized by N/CS34 in AutoCAD ver.13 and imported into MapInfo for the Final Field Sheet. TP-00911 was transferred by hand to the boat sheets for field comparison.

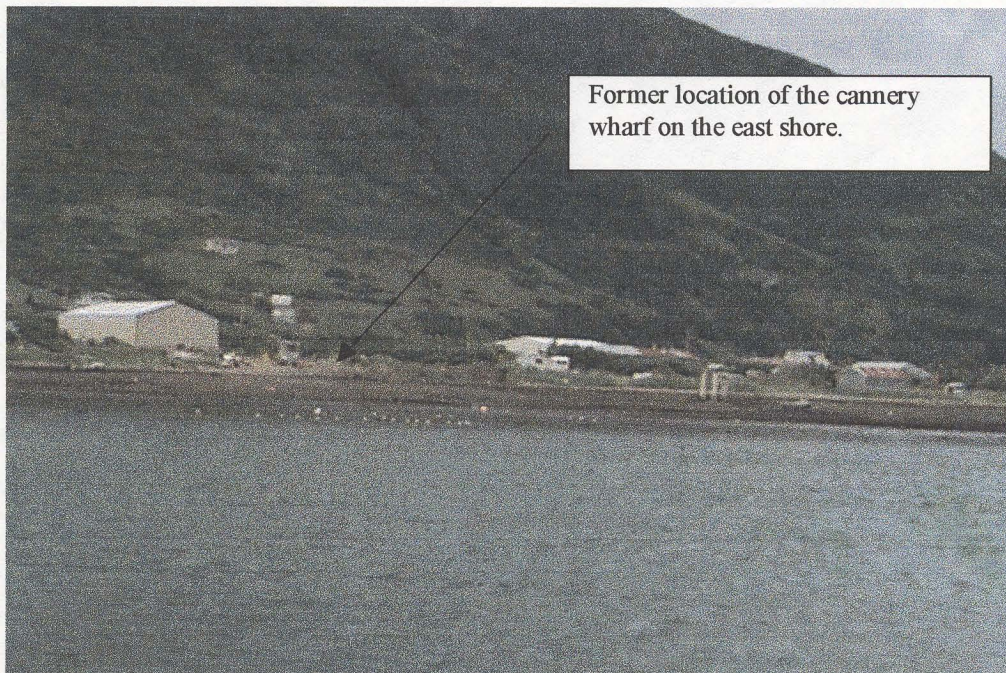
Limited shoreline verification was conducted in accordance with the Project Instructions. For this survey the general limit of safe navigation of a survey launch was confined to the channels of the lagoon. Features shown on the DETACHED POSITION AND BOTTOM SAMPLE layer in the MapInfo workspace inshore of the one-meter curve are the hydrographer's representation of the shoreline while slowly transiting along the shore, and are intended to aid chart compilation. *The hydrographer's field information was verified during office processing and applied to smooth sheet as warranted.*

Located in the detached position folders and portrayed on the Detached Position and Bottom Sample final plot submitted with survey are shoreline notes describing offshore features and the nature of the foreshore. Field cartographic codes were assigned to the detached positions until their heights can be reduced in final processing. Field heights are recorded in meters and decimeters and are corrected to MLLW using predicted tides. Final heights will be corrected to <sup>MLLW and</sup> MHW using final tides.

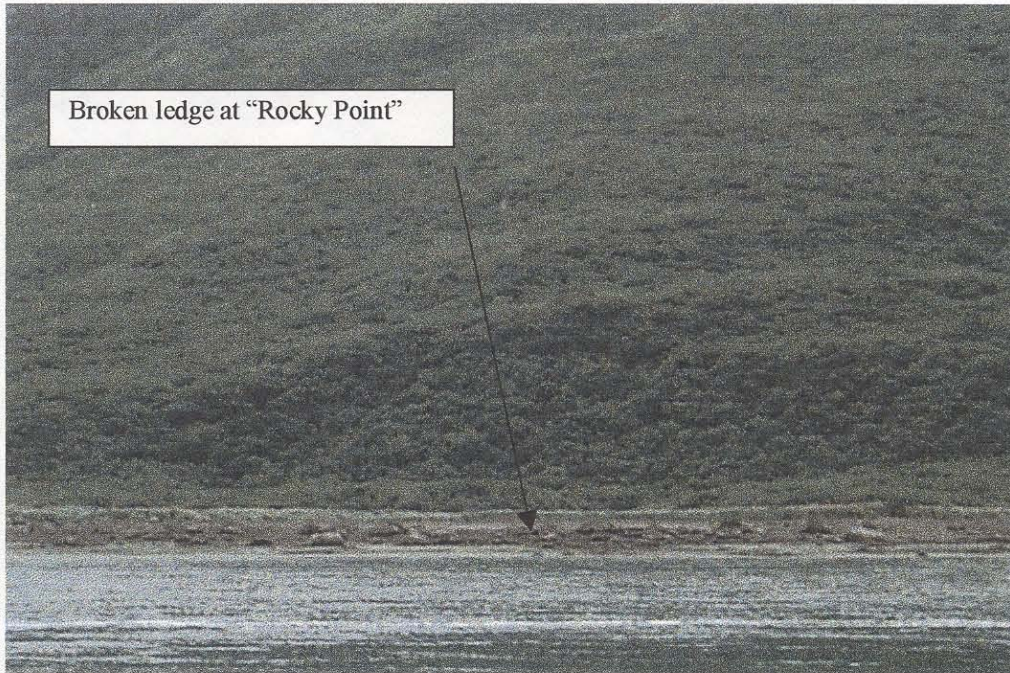
Shoreline manuscript and field features were compared to an enlargement of chart 16566 8<sup>th</sup> Edition, August 3, 1996 BSB version. This raster image was registered in MapInfo, and plotted at survey scale by RAINIER personnel. There was general agreement between the charted shoreline and what the hydrographer found on this survey. There was general agreement between the photogrammetric shoreline and the hydrographer's fieldwork. It is evident that the photography used for the compilation of shoreline features was flown at or near low tide. *Concur.*

In general, the main channels of Chignik Lagoon have not changed course. Outside of the main channels, the bathymetry gives way to gradually sloping eelgrass-covered mudflats. These extensive mud flats go nearly or completely dry at low water. The extensive mud flats, neap tides, and low visibility prevented maneuvering the launch to mid-range features for positioning. The hydrographer recommends positioning these features at or below MLLW with larger-scale photogrammetry. *Concur.*

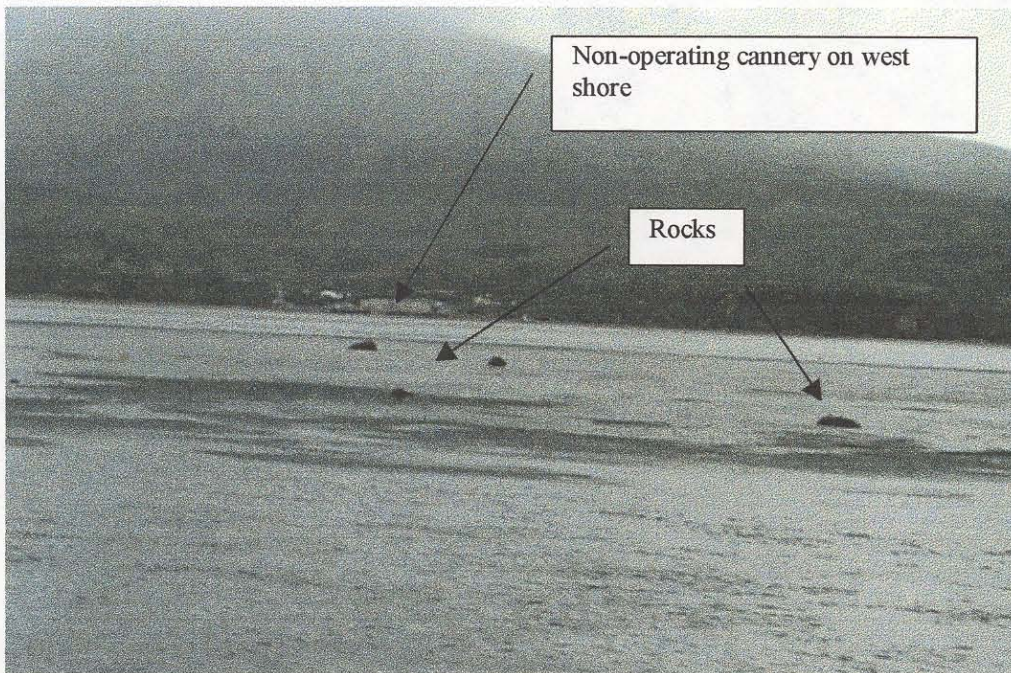
The cannery wharf charted on the east shore at latitude 56° 18' 45"N, longitude 158° 32' 09"W, no longer exists and should be removed from the chart. <sup>Concur</sup> TP-00911 supports this finding. A disapproval DP was not possible for reasons stated above. See photograph below.



A group of seven manuscript rocks and <sup>five</sup> four charted rocks at latitude 56° 17' 24"N, longitude 158° 34' 00"W (geographically known as Rocky Point) is a broken ledge well above the low water line. See photograph below. The area around Rocky Point has been shown as a ledge on the Smooth Sheet.



Numerous rocks were sighted at low water on the mud flat just northeast of Chignik Island. These rocks did not exist on the shoreline manuscript. These features could not be positioned hydrographically, and are only approximately located on the final plots as red crosses. The hydrographer recommends positioning these features at or below MLLW with larger scale photogrammetry. See Photograph below. <sup>conduct</sup> Chart the mud flats area with a note "Numerous scattered rocks bare at low water".



The charted cannery wharf depicted on TP-00911 at latitude 56° 19' 00"N, longitude 158° 35' 30"W, still exists, but could not be reached by a survey launch, even at high water. The cannery is no longer operating. See photo above. *Chart the wharf depicted on TP-00911. Return the charted cannery building and name "Cannery" and add the word "(abandoned)"*

The charted fish trap in the channel west of Chignik Island, at latitude 56° 17' 25"N, longitude 158° 35' 54"W, no longer exists and is not shown on TP-00911. RAINIER survey launches ran hydrography throughout the channel encountering no obstructions. The hydrographer recommends removing it from the chart. *Concur.*

A new rock with a visually estimated depth of -0.6 was positioned at latitude 56° 18' 10.230"N, longitude 158° 33' 53.979"W on DN 230/FIX 50013. A rock, \* (S) has been shown on the smooth sheet at position listed.

#### K. CROSSLINES ✓

Crosslines agreed within one to two meters with mainscheme hydrography. There was a total of 35.1 nautical miles of crosslines, comprising 69.9% of mainscheme hydrography. This high percentage is due to the large amount of channel lines run in the lagoon. The good agreement between XL and MS indicates good predicted tides.

#### L. JUNCTIONS (See EVAL RPT., Sec. L)

This survey junctions with H-10759, 1:10,000, 1996 to the east. Soundings on these surveys were found to be within one to two meters agreement. Final comparisons will be made at the Pacific Hydrographic Branch (PHB) after reduction to final vertical datum.

#### M. COMPARISON WITH PRIOR SURVEYS (See EVAL RPT., Sec. M)

Prior survey H-4389 (1924, 1:20000, unknown datum) was compared with H-10768. The main channels of the lagoon have not changed course. In general soundings from H-10768 have shoaled about one meter. Depths west of longitude 158° 32' 00"W have shoaled anywhere from one to two meters. Deposition of sediment from the Chignik River throughout Chignik Lagoon since the 1924 survey may account for such a uniform phenomenon. Also, this area of the South Alaska Peninsula has experienced numerous earthquakes since the 1924 survey. Modern survey techniques and positioning systems account for other instances where H-10768 revealed shoaler depths than the prior survey.

Final comparisons will be performed at the Pacific Hydrographic Branch (PHB) after final tides have been applied to H-10762.<sup>8</sup>

#### N. ITEM INVESTIGATIONS ✓

No AWOIS items were located within H-10762<sup>8</sup> survey area. *Concur.*

#### O. COMPARISON WITH THE CHART (See EVAL RPT., Sec. O)

This survey was compared in the field to NOS Chart 16566, 1:77,477, 8th Edition, 8/3/96, which is the largest scale chart covering the survey area. In addition, an enlargement of the chart was used to compare features and soundings (converted to meters) on the boat sheet. As mentioned in Section M, soundings in general have shoaled from one to two meters. Please refer to section J for Shoreline comparisons.

The hydrographer recommends that all charted soundings within the survey area be superseded by H-10762.<sup>8</sup> *Concur.*

Non-sounding features are discussed in Section J. Final sounding comparisons will be made at PHB after reduction to final vertical datum.



**Dangers to Navigation** ✓

No dangers to navigation were reported to the 17<sup>th</sup> Coast Guard by the hydrographer. *Concur*

**P. ADEQUACY OF SURVEY** ✓

Survey H-10768 is complete and adequate to supersede prior soundings and features in their common areas. *Concur.*

**Q. AIDS TO NAVIGATION** ✓

There were no aids to navigation within the survey area. *Concur.*

**R. STATISTICS** ✓

This survey contained 4445 selected soundings, additional statistics are listed in the Survey Information Summary included with this report.

**S. MISCELLANEOUS** ✓

Bottom samples were collected and sent to the Smithsonian in accordance with Project Instructions. Four-knot and stronger currents were experienced during flood and ebb tides in the vicinity of Chignik Lagoon tide gage, latitude 56° 19' 26"N, longitude 158° 30' 55"W. No magnetic variations were found during this survey.

**T. RECOMMENDATIONS** ✓

Due to the siltation and concomitant shoaling in an area that is important to the commercial fishing industry, the hydrographer recommends putting a note on Chart 16566 that local knowledge is required to travel south of latitude 56° 19' 00"N. *Concur.*

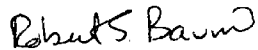


**U. REFERRAL TO REPORTS** ✓

The following supplemental reports contain additional information relevant to this survey:

<u>Title</u>	<u>Date Sent</u>	<u>Office</u>
OPR-P182-RA Horizontal Control Report	November 1997	N/CS34
OPR-P182-RA 1997 Coast Pilot Report	September 1997	N/CS26
Project related data for OPR-P182-RA	Incremental	N/CS34

Respectfully Submitted,



Robert S. Baum  
Senior Survey Technician  
NOAA

Approved and Forwarded,



Alan D. Anderson  
Captain, NOAA  
Commanding Officer

# Survey Information Summary

**Project:**  **Project Name:**

**Instructions Dated:**  **Project Change Info:**

Change #	Dated
1	6/3/97

**Sheet Letter:**  **Registry Number:**

**Sheet Number:**

**Survey Title:**

**Data Acquisition Dates:** **From:**   **To:**

### Vessel Usage Summary

VESNO	MS	SPLITS	DEV	XL	S/L	DP	BS	DIVE
2121	6			8		1		
2124	3			2				
2125	1					1	1	

### Sound Velocity Cast Information

#### Tide Zone Information

Zone #	Time Corr.	Height Corr.
SAP9	000 hr 00 min	X0.9

#### Tide Gage Information

Tide Gage #	Gage Name	Installed	Removed
945-8945	NIK LAGOON-MAIN CHA	7/31/97	8/23/97
945-8917	ANCHORAGE BAY	7/12/97	8/26/97
945-8762	UNAVIKSHAK IS	7/9/97	8/27/97

### Statistics Summary

Type	Total:
BS	9
DP	2
MS	50.2
XL	35.07

Percent XL:	69.9%
SQNM:	5.9



APPROVAL SHEET

for

H-10768

Standard field surveying and processing procedures were followed in producing this examination in accordance with the Hydrographic Manual, Fourth Edition; the Hydrographic Survey Guidelines; and the Field Procedures Manual, as updated for 1994.

The digital data and supporting records have been reviewed by me, are considered complete and adequate for charting purposes, and are approved. All records are forwarded for final review and processing to N/CS34, Pacific Hydrographic Branch.

DATE: December 4, 1997

Approved and Forwarded,



Alan D. Anderson  
Captain, NOAA  
Commanding Officer  
NOAA Ship RAINIER



**U.S. DEPARTMENT OF COMMERCE**  
**National Oceanic and Atmospheric Administration**  
NATIONAL OCEAN SERVICE

**TIDE NOTE FOR HYDROGRAPHIC SURVEY**

DATE: January 5, 1998

HYDROGRAPHIC BRANCH: Pacific  
HYDROGRAPHIC PROJECT: OPR-P182-RA  
HYDROGRAPHIC SHEET: H-10768

LOCALITY: Southwest Alaska Peninsula

TIME PERIOD: Aug 5 - Aug 22, 1997

TIDE STATION USED: 945-8762 Unavikshak Island, AK.  
Lat. 56° 29.5'N Lon. 157° 44.4'W  
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters  
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.519 meters


TIDE STATION USED: 945-8917 Chignik, Anchorage Bay, AK.  
Lat. 56° 17.8'N Lon. 158° 24.0'W  
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters  
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.486 meters

TIDE STATION USED: 945-8945 Chignik Lagoon Main Channel, AK.  
Lat. 56° 19.4'N Lon. 158° 30.9'W  
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters  
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 2.348 meters

REMARKS: RECOMMENDED ZONING  
Use zone(s) identified as: SAP8 & SAP9  
Refer to attachments for zoning information.

Note 1: Provided time series data are tabulated in metric units  
(Meters), relative to MLLW and on Greenwich Mean Time.

Note 2: Use tide data from the appropriate station for each zone  
according to the order in which they are listed in the  
"Tidezone" corrector files. For example, tide station one  
(TS1) would be the first choice for an applicable zone  
followed by TS2, etc. when data are not available. All  
zones within a survey sheet may not have the same order  
of applicable tide stations.

  
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CHIEF, OPERATIONAL ANALYSIS BRANCH

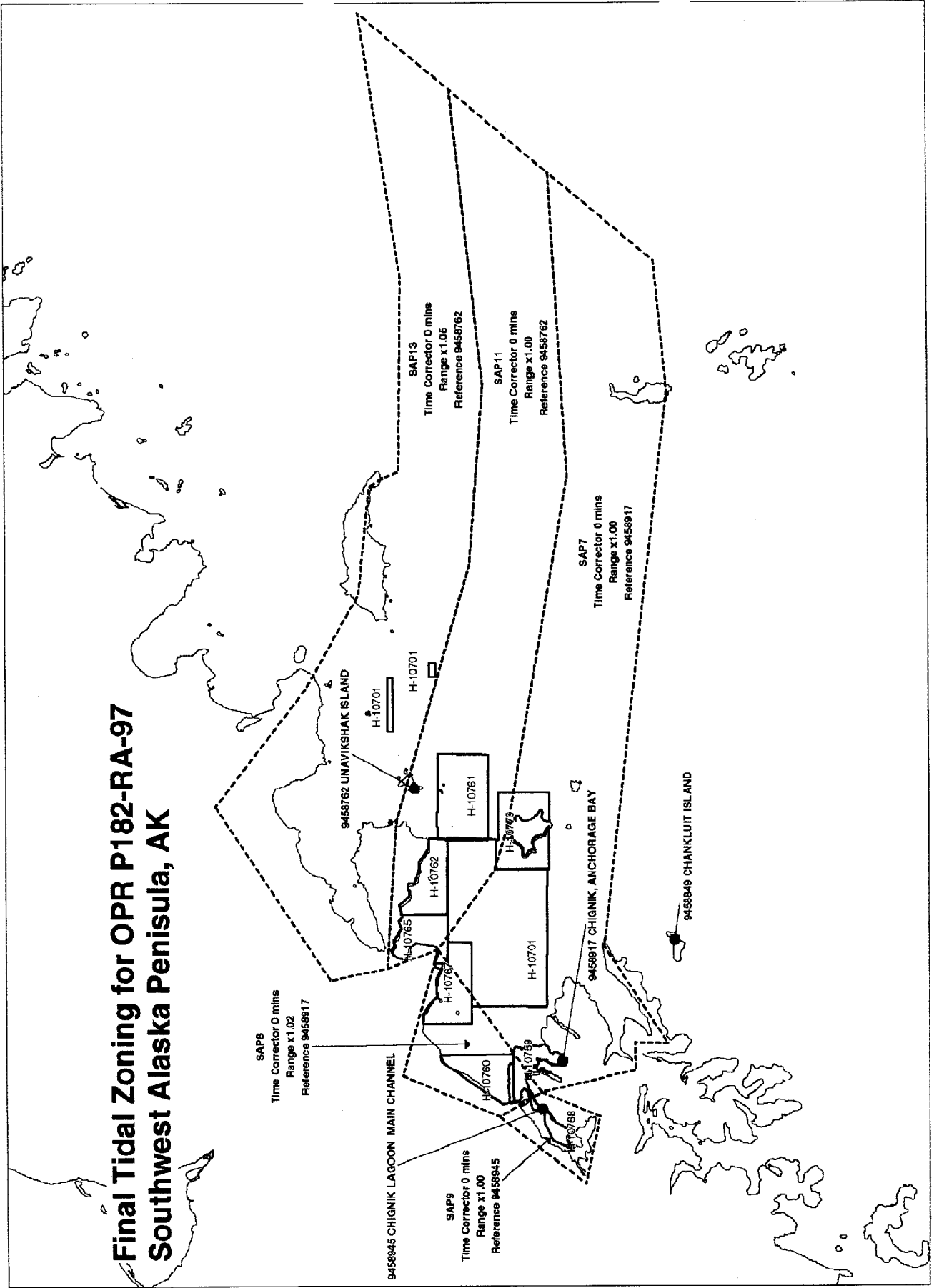


Final tide zone node point locations for OPR P182-RA-97,  
Sheet H-10768.

Format: Longitude in decimal degrees (negative value denotes  
Longitude West),  
Latitude in decimal degrees  
Tide Station (in recommended order of use)  
Average Time Correction (in minutes)  
Range Correction

		Tide Station Order	AVG Time Correction	Range Correction
Zone SAP8				
-158.474563	56.325022	945-8917	0	1.02
-158.130628	56.461475	945-8762	0	1.00
-158.435831	56.508574	945-8849	0	1.08
-158.534417	56.380701			
-158.474563	56.325022			
Zone SAP9				
-158.474563	56.325022	9458945	0	1.00
-158.533537	56.247363			
-158.697254	56.266412			
-158.534417	56.380701			
-158.474563	56.325022			

# Final Tidal Zoning for OPR P182-RA-97 Southwest Alaska Peninsula, AK





GEOGRAPHIC NAMES

H-10768

Name on Survey	<div style="display: flex; justify-content: space-between;"> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">A ON CHART NO. 165566</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">B ON PREVIOUS SURVEY NO.</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">C ON U.S. QUADRANGLE MAPS</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">D FROM LOCAL INFORMATION</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">E ON LOCAL MAPS</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">F P.O. GUIDE OR MAP</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">G RANDOMLY ATLAS</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">H U.S. LIGHT LIST</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg);">K</div> </div>										
	A	B	C	D	E	F	G	H	K		
ALASKA (title)	X									1	
ALASKA PENINSULA	X									2	
BROWNS POINT	X		X							3	
CHIGNIK ISLAND	X		X							4	
CHIGNIK LAGOON	X		X							5	
DIAMOND POINT			X							6	
GREEN POINT	X		X							7	
HUME POINT	X		X							8	
ROCKY POINT	X		X							9	
PACKERS POINT			X							10	
										11	
										12	
										13	
										14	
										15	
										16	
										17	
										18	
										19	
										20	
										21	
										22	
										23	
										24	
										25	

Approved

*Dennis J. Henshaw*  
Chief Cartographer

JAN 15 1998

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

RECORD DESCRIPTION		AMOUNT	RECORD DESCRIPTION		AMOUNT
SMOOTH SHEET		1	SMOOTH OVERLAYS: POS., ARC, EXCESS		NA
DESCRIPTIVE REPORT		1	FIELD SHEETS AND OTHER OVERLAYS		NA
DESCRIP-TION	DEPTH/POS RECORDS	HORIZ. CONT. RECORDS	SONAR-GRAMS	PRINTOUTS	ABSTRACTS/SOURCE DOCUMENTS
ACCORDION FILES	1				
ENVELOPES					
VOLUMES					
CAHIERS					
BOXES					

SHORELINE DATA	
SHORELINE MAPS (List):	TP-00011
PHOTOBATHYMETRIC MAPS (List):	NA
NOTES TO THE HYDROGRAPHER (List):	NA
SPECIAL REPORTS (List):	NA
NAUTICAL CHARTS (List):	16566, 9th Edition, March 7, 1998

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

PROCESSING ACTIVITY	AMOUNTS		
	VERIFICATION	EVALUATION	TOTALS
POSITIONS ON SHEET			
POSITIONS <del>REVISED</del>			
SOUNDINGS <del>REVISED</del> (selected)			4445
CONTROL STATIONS REVISED			
	TIME-HOURS		
	VERIFICATION	EVALUATION	TOTALS
PRE-PROCESSING EXAMINATION			
VERIFICATION OF CONTROL			
VERIFICATION OF POSITIONS			
VERIFICATION OF SOUNDINGS			
VERIFICATION OF JUNCTIONS			
APPLICATION OF PHOTOBATHYMETRY			
SHORELINE APPLICATION-VERIFICATION			
COMPILATION OF SMOOTH SHEET	75.0		75.0
COMPARISON WITH PRIOR SURVEYS AND CHARTS		6.0	6.0
EVALUATION OF SIDE SCAN SONAR RECORDS			
EVALUATION OF WIRE DRAGS AND SWEEPS			
EVALUATION REPORT		9.0	9.0
GEOGRAPHIC NAMES			
OTHER			
*USE OTHER SIDE OF FORM FOR REMARKS	TOTALS	75.0	15.0
			90.0

Pre-processing Examination by <b>M. Bigelow</b>	Beginning Date 1/22/98	Ending Date 1/22/98
Verification of Field Data by <b>M. Bigelow, D. Doles, R. Mayor, E. Domingo</b>	Time (Hours) 75.0	Ending Date 6/9/98
Verification Check by <b>B. Olmstead</b>	Time (Hours) 5.0	Ending Date 6/11/98
Evaluation and Analysis by <b>I. Almacen</b>	Time (Hours) 15.0	Ending Date 6/9/98
Inspection by <b>B. Olmstead</b>	Time (Hours) 6.0	Ending Date 6/17/98

## **EVALUATION REPORT**

**H-10768**

### **A. PROJECT**

The hydrographer's report contains a complete discussion of the Project information.

### **B. AREA SURVEYED**

The survey area is adequately discussed in the hydrographer's report with the following supplemental information.

This survey covers the area of Chignik Lagoon from the northern shore of Chignik Island to Browns Point. Chignik Lagoon is generally shallow but does consist of a navigable channel ranging from 18 feet at Packers Point to over 50 feet at Browns Point. Local knowledge navigating south of Packers Point is advised based on the extensive mud flats caused by constant silting and accompanying shoaling. The main channels of the lagoon consist of sand, gravel and pebbles. The mud flats south of Packers Point go dry at mean lower low water.

The hydrographer has determined during this survey the Navigable Area Limit Line (NALL) in accordance with the Project Instructions and the "limited" shoreline verification rules adopted by the ship during field survey operations. A page size chartlet of the survey area indicating the limits of supersession is included in this report as Attachment A.

### **C. SURVEY VESSELS**

The hydrographer's report contains information relating to survey vessels.

### **D. AUTOMATED DATA ACQUISITION AND PROCESSING**

Survey data were processed using the same Hydrographic Data Acquisition/Processing System (HDAPS) software used by the hydrographer, the Hydrographic Processing System (HPS), AutoCad (Version 12.0), and MicroStation 95.

Digital data for this survey exists in the standard HPS format, that is a database format using the .dbf extension. In addition, the plot is filed both in the MicroStation drawing format, i.e., dgn (extension); and in the more universally recognized graphics transfer format, .dxf (extension). Copies of these files will be retained at PHB until data forwarded to headquarters has been accepted and approved. Data base records forwarded are in the Internal Data Format (IDF) and are in compliance with specifications in existence at the time of survey processing.

The drawing files necessarily contain information which is not part of the HPS data set such as geographic names text, line-type data, and minor symbolization. In addition, those soundings deleted from the drawing for clarity purposes, remain unrevised in the HPS digital files to preserve the integrity of the original hydrographic data set. Cartographic codes used to describe the digital data are those authorized by Hydrographic Survey Guideline No. 35 and No. 75.

The field sheet parameters have been revised to center the hydrography on the office plot. The data is plotted using a Modified Transverse Mercator projection and are depicted on a single 1:10,000 scale sheet.

## **E. SONAR EQUIPMENT**

Side Scan Sonar was not used on survey H-10768.

## **F. SOUNDING EQUIPMENT**

Sounding equipment has been adequately addressed in the hydrographer's report.

## **G. CORRECTIONS TO SOUNDINGS**

The sounding data have been reduced to Mean Lower Low Water (MLLW). The reducers include corrections for an actual tide, dynamic draft, and sound velocity. These reducers have been reviewed and are consistent with present NOS specifications.

Predicted tides were used for the reduction of soundings during field processing. Actual tide reduction is derived from Chignik Anchorage Bay, Alaska, gage 945-8917 and Chignik Lagoon Main Channel, Alaska, gage 945-8945. Tide station at Unavikshak Island was listed on the approved tide note but not used for final sounding reduction. Refer to the approved tide note attached to this report concerning recommended tidal zoning.

## **H. CONTROL STATIONS**

The control stations used during this survey are adequately discussed in the hydrographer's report.

The positions of horizontal control stations used during hydrographic operations are field values based on NAD 83. The geographic positions of all survey data are based on NAD 83. The smooth sheet is annotated with an NAD 27 adjustment tick based on values determined with the NGS program NADCON. Geographic positions based on NAD27 may be plotted on the smooth sheet utilizing the NAD 83 projection by applying the following corrections.

Latitude: -2.813 seconds (-87.007 meters)  
Longitude: 7.331 seconds (126.056 meters)

The year of establishment of control stations originate with the horizontal control records for this survey.

## **I. HYDROGRAPHIC POSITION CONTROL**

Hydrographic position control is adequately discussed in the hydrographer's report.

Differential GPS (DGPS) was used to control this survey. A horizontal dilution of precision (HDOP) not to exceed 3.75 was computed for survey operations. The maximum (HDOP) allowable limit has not been exceeded during this survey and the quality of data obtained is good. The reference site confirmation test and the daily DGPS performance checks conducted in the field were adequate.

NAD 83 is used as the horizontal datum for plotting and position computations.

Information concerning calibrations and system checks can be found in the separates submitted from the field to accompany the hydrographer's report.

## J. SHORELINE

The shoreline manuscript TP-00911 originating from Coastal Mapping Program CM-8309 was compiled on NAD 83. Shoreline for this survey were digitized using AutoCad from a 1:10,000 mylar enlargements of a 1:20,000 scale Class III registered shoreline manuscript. The digitized shoreline file and the survey file were merged during MicroStation processing.

The group of rocks shown on the shoreline map in the vicinity of latitude 56/17/30.0N, longitude 158/33/50.0W, was found to be either the offshore limits or high point of the ledge off Rocky Point. This feature should be charted as depicted on the smooth sheet.

The numerous scattered rocks observed around the mud flats northeast of Chignik Island were not accessible by boat and therefore were not positioned during this survey. It is recommended that this area be charted as shown on the smooth sheet with a note concerning the existence of rocks in the area.

The charted shoreline should be revised based on the latest shoreline map information and the results of the field shoreline verification as depicted on the smooth sheet.

## K. CROSSLINES

Crosslines are discussed in the hydrographer's report.

## L. JUNCTIONS

Survey H-10768 junctions with the following survey.

<u>Survey</u>	<u>Year</u>	<u>Scale</u>	<u>Area</u>
H-10759	1996	1:10,000	Northeast

The junctions with survey H-10759 is complete. A "Joins" note has been added to the smooth sheet.

## M. COMPARISON WITH PRIOR SURVEYS

H-4389 (1924) 1:20,000

This prior survey covers the entire area of survey H-10768. Chignik Lagoon is extensively made up of mud flats which go dry at mean lower low water. However, a central navigable channel for smaller vessels does exist and extends from Browns Point to Chignik Island with smaller channels running laterally southwest of Packers Point. Throughout the present survey area depths are generally 3-6 feet shoaler than depths collected in 1924. These differences are readily evident around the mud flats where prior survey depths range from 1-6 feet. Two distinct areas reveal present shoaling by 6-12 feet and are noted below.

a. The area south of latitude 56/17/00N along longitude 158/34/30W, was not surveyed due to shoaling. The prior survey depths in this area generally range from 3-12 feet.

b. The area approximately 0.5 nautical mile southwest of Packers Point, latitude 56/18/24N, longitude 158/33/30W, was found to contain depths of -0.1 to 3 feet. Depths in 1924 ranged from 4-12 feet.

The rock awash charted at latitude 56/17/40.0N, longitude 158/36/42.0W, originates from prior survey H-4389. This feature was neither investigated nor disproved during survey operations and was brought forward to the present survey.

The two fish traps charted in the vicinity of latitude 56/18/30N, longitude 158/35/25W and latitude 56/17/30N, longitude 158/35/50W, originate from prior survey H-4389. These features were investigated during survey operations and not found. It is recommended that these fish traps be deleted from the chart.

The boat ramp at latitude 56/18/45N, longitude 158/31/51W, originates from prior survey and was not seen during shoreline verification. The evaluator recommends deleting this feature from the chart.

With the exception of the feature mentioned above, H-10768 is adequate to supersede the prior survey within the common area of coverage.

#### **N. ITEM INVESTIGATIONS**

No AWIOS items were assigned to this survey.

#### **O. COMPARISON WITH CHART**

Survey H-10768 was compared with the following chart.

<u>Chart</u>	<u>Edition</u>	<u>Date</u>	<u>Scale</u>	<u>Datum</u>
16566	8th	Aug. 3, 1996	1:77,477	NAD 83
16566	9th	March 7, 1998	1:77,477	NAD 83

##### **a. Hydrography**

Charted hydrography originates with the previously discussed prior survey and miscellaneous sources. The prior survey has been adequately addressed in section M of the hydrographer's report and require no further discussion. The following feature not originating from the prior survey is discussed as follows.

The ledge charted at latitude 56/19/24N, longitude 158/30/55W, was neither verified in the field nor mentioned on the hydrographer's report. This feature should be retained as charted.

Except for the items mentioned above and in section M of this report, survey H-10768 is adequate to supersede charted hydrography within the common area.

##### **b. Dangers to navigation**

No dangers to navigations were found during this survey.

#### **P. ADEQUACY OF SURVEY**

Hydrography contained on survey H-10768 is adequate to:

- a. delineate the bottom configuration, determine least depths, and draw the required depth curves;
- b. reveal there are no significant discrepancies or anomalies requiring further investigation; and

c. show the survey was properly controlled and soundings are correctly plotted.

The hydrographic records and reports received for processing are adequate and conform to the requirements of the Hydrographic Manual, 4th Edition, revised through Change No. 3, the Hydrographic Survey Guidelines, and the Field Procedures Manual, April 1994 Edition with the following exception. The ship's submission of survey data for H-10768 exceeded the required four weeks from completion of field work as specified in the Field Processing Manual. No written explanation from the Chief of Party was received by the Chief of processing section concerning the delay. Survey H-10768 was completed August 22, 1997 and was transmitted for office processing on December 10, 1997.

#### **Q. AIDS TO NAVIGATION**

There were no aids to navigation located within the survey area.

There were no features of landmark value located in the area of this survey.

#### **R. STATISTICS**

Statistics are itemized in the hydrographer's report.

#### **S. MISCELLANEOUS**

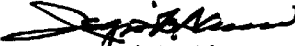
Miscellaneous information is discussed in the hydrographer's report. No additional miscellaneous items were noted during office processing.

#### **T. RECOMMENDATIONS**

This is a good hydrographic survey. No additional work is recommended.

#### **U. REFERRAL TO REPORTS**

Referral to reports is discussed in the hydrographer's report.

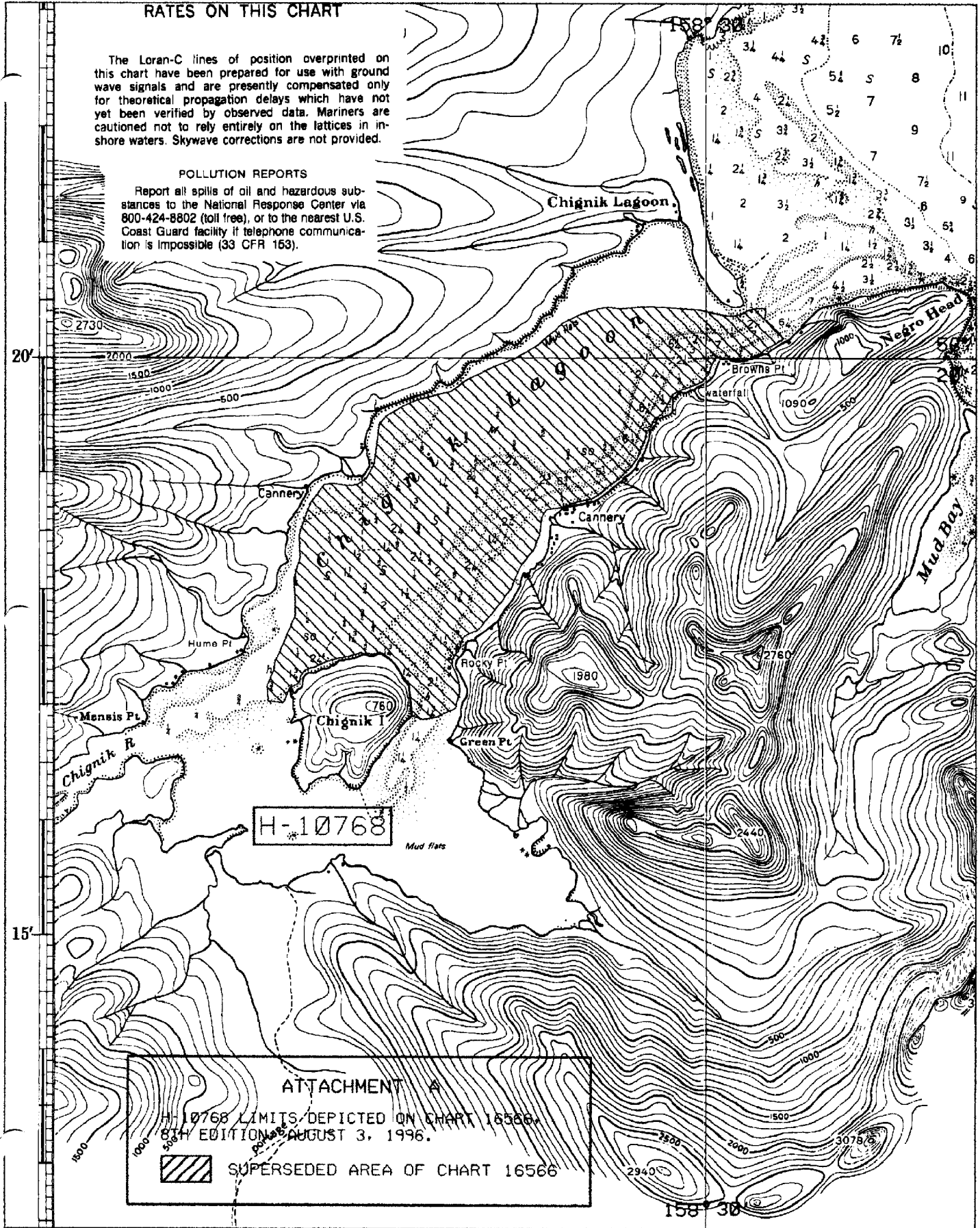
  
Isagani A. Almacén  
Cartographer

**RATES ON THIS CHART**


The Loran-C lines of position overprinted on this chart have been prepared for use with ground wave signals and are presently compensated only for theoretical propagation delays which have not yet been verified by observed data. Mariners are cautioned not to rely entirely on the lattices in in-shore waters. Skywave corrections are not provided.

**POLLUTION REPORTS**

Report all spills of oil and hazardous substances to the National Response Center via 800-424-8802 (toll free), or to the nearest U.S. Coast Guard facility if telephone communication is impossible (33 CFR 153).



H-10768

**ATTACHMENT A**  
H-10768 LIMITS DEPICTED ON CHART 16566,  
8TH EDITION, AUGUST 3, 1996.  
 SUPERSEDED AREA OF CHART 16566



APPROVAL SHEET  
H-10768

Initial Approvals:

The completed survey has been inspected with regard to survey coverage, delineation of the depth curves, development of critical depths, cartographic symbolization, comparison with prior surveys and verification or disproval of charted data. The survey records and digital data comply with NOS requirements except where noted in the Evaluation Report.

Bruce A. Olmstead Date: 6/17/98  
Bruce A. Olmstead  
Senior Cartographer, Cartographic Section  
Pacific Hydrographic Branch

I have reviewed the smooth sheet, accompanying data, and reports. This survey and accompanying digital data meet or exceed NOS requirements and standards for products in support of nautical charting except where noted in the Evaluation Report.

Kathy Timmons Date: 6/29/98  
Kathy Timmons  
Commander, NOAA  
Chief, Pacific Hydrographic Branch

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Final Approval

Approved:

Andrew A. Armstrong III Date: Aug 17, 1998  
Andrew A. Armstrong III  
Captain, NOAA  
Chief, Hydrographic Surveys Division

