9875

Criginal

0070

Diag. Cht. No. 1274-2.					
Form 504 U. S. COAST AND GEODETIC SURVEY					
DEPARTMENT OF COMMERCE					
DEPARTMENT OF COMMERCE					
DESCRIPTIVE REPORT					
Type of Survey TOPOGRAPHIC					
Field No. Ph-90 Office No.T-9875					
LOCALITY					
State LOUISIANA					
General locality TIMRALIFR RAY					
Locality PFITCAN PASS					
1 - County					
194					
CHIEF OF PARTY E. H. Kirsch, Chief of Field Party H. C. Applequist, Tampa Photo Office					
LIBRARY & ARCHIVES					
NATE 111N 5 1958					

B-1870-1 (1)

DESCRIPTIVE REPORT - DATA RECORD

T - 9875

Project No. (II): 21200 (Ph=90) Quadrangle Name (IV):

Field Office (II): Houma, Louisiana

Chief of Party: E. H. Kirsch

Photogrammetric Office (III): Tampa Florida

Officer-in-Charge: H. C. Applequist

Instructions dated (II) (III):

5 September 1952

Copy filed in Division of:

Photogrammetry (IV)

25 September 1952(Supplement 1)

30 September 1952(Supplement 2)

Method of Compilation (III): Graphic

Manuscript Scale (III): 1:20,000

Stereoscopic Plotting Instrument Scale (III):

Inapplicable

Scale Factor (III): None

Date received in Washington Office (IV):

OCT 1 9 1956 Date reported to Nautical Chart Branch (IV):

Applied to Chart No.

Date:

Date registered (IV): 5-9-58

Publication Scale (IV):

Publication date (IV):

Geographic Datum (III): N. A. 1927

Vertical Datum (III):

Mean sea level except as follows: Elevations shown as (25) refer to mean high water Elevations shown as $(\underline{\delta})$ refer to sounding datum i.e., mean low water or mean lower low water

Reference Station (III): Camp, 1934

Lat.: 29°11 '00" .481(14.8m) Long.: 90°17'57" .541(1554.7m)

Adjusted Udatik Xiat

Plane Coordinates (IV):

State:

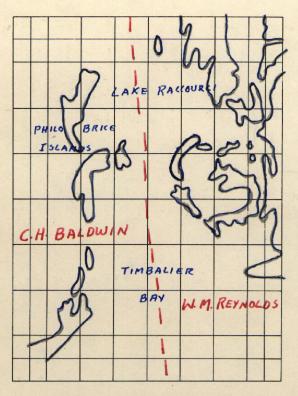
Zone:

Y=

X=

Roman numerals indicate whether the item is to be entered by (II) Field Party, (III) Photogrammetric Office, or (IV) Washington Office.

When entering names of personnel on this record give the surname and initials, not initials only.



Areas contoured by various personnel (Show name within area) (II) (III)

DESCRIPTIVE REPORT - DATA RECORD

Field Inspection by (II): W. M. Reynolds

C. H. Baldwin

Date: February 1953

Planetable contouring by (II): W. M. Reynolds

C. H. Baldwin

Date: February 1953

Completion Surveys by (II):

Date:

Mean High Water Location (III) (State date and method of location):

February 1953 / 956

Air Photo Compilation

Projection and Grids ruled by (IV):

Date:

Projection and Grids checked by (IV):

Date:

Control plotted by (III): R. R. Wagner

Date: 25 October 1954

Control checked by (III): R. J. Pate

Date: 25 October 1954

Radial Plot og Stereosropic

x Control extension by (III): M. M. Slavney

Date: 27 January 1956

•

Planimetry

Date:

Stereoscopic Instrument compilation (III):

Inapplicable

Contours

Date:

Manuscript delineated by (III): W. H. Shearouse

Date: 6 August 1956

Photogrammetric Office Review by (III): J. A. Giles

Date: 30 August 1956

Elevations on Manuscript...

cnecked by (I/) (III):

J. A. Giles

Date: 29 August 1956

DESCRIPTIVE REPORT - DATA RECORD

Camera (kind or source) (III): C&GS 9+lens

Number	Date		PHOTOGRAPHS (I	II) Scale	Sta	ge of Tide
39419	28 Sept	. 1952	11:10	1:20,000	no	tide
39487	29 Sept	. 1952	08:35	1:20,000	11	11
39515	11 11	'n	09:40	1:20,000	11	н
39517	11 11	II	09:41	1:20,000	11	11
56-W-4288 to	1292°	gle-le	ens photog	1:20,000 eraphy: 1956 1:30000		
56-W-4343 to	4347	1	"	1956 1.30000		
56-W-4496 t	6 4500	*	•	,		

Tide (III)

|Ratio of | Mean | Spring inapplicable Ranges Range Range

Date:

Date:

Date:

Date:

Reference Station: **Subordinate Station:** Subordinate Station:

Washington Office Review by (IV):

Final Drafting by (IV):

Drafting verified for reproduction by (IV):

Proof Edit by (IV):

Remarks:

Land Area (Sq. Statute Miles) (III): 19

Shoreline (More than 200 meters to opposite shore) (III): 42

Shoreline (Less than 200 meters to apposite shore) (tit):

Control Leveling - Miles (II): none

Number of Triangulation Stations searched for (II): 5

established.

Number of BMs searched for (II):

Number of Recoverable Photo Stations established (III): 1

Number of Temporary Photo Hydro Stations established (III): none

Identified: 3 Recovered: 3 Recovered: 3 Identified: 3

2 Triangulation Stations - Camp 2, 1953 and Philo 2, 1953 were

SUMMARY TO ACCOMPANY TOPOGRAPHIC MAP T-9875

This topographic survey is one of PH-90 (6090) and covers the northeastern portion of Timbalier Bay off the Louisiana Coast of the Gulf of Mexico.

The majority of the area is shallow water--the balance represents marshy islands with a maximum ground elevation of only 3 feet. Shoreline and shapes of islands are subject to frequent and extensive changes caused by natural elements and to some extent in the exploration and development of oil.

Along with other quadrangles of this project, T9875 was compiled originally by graphic method at the Tampa District Office in 1955 from nine-lens photography of 1952 and 1953 field inspection. In 1957 the manuscript was revised from 1956 single-lens photography by office interpretation only and subsequently scribed at the Tampa District Office to obtain good reproduction medium for final registration copy.

Hydrographic information will be added to the compilation according to U. S. Geological Survey specification and released to that agency for the publication of a standard $7\frac{1}{2}$ minute quadrangle at the scale of 1:24,000. A previous publication of identical area (PELICAN PASS) by the Geological Survey of 1935 at 1:31680 will become obsolete.

A "Cronar" film positive at manuscript scale of 1:20,000 and the Descriptive Report, as well as a print in colors after final printing by G. S. will be registered and filed in the Bureau Archives.

2. AREAL FIELD INSPECTION

The land area is composed of numerous islands and points of the marsh mainland along the eastern side and with a group of marsh islands known as the Philo Brice Islands along the western side. A part of the Casse-tete Island group is located along the southern side of the quadrangle. The remainder of the area is water, composed of parts of Timbalier Bay and Lake Raccourci.

The entire land area is marsh and uninhabited except for seasonal occupation of the many cabins during the winter trapping season.

An oil field is being developed in the Lake Raccourci area by the Humble Oil and Refining Company. The main part of the operations is located around the northerly end of Philo Brice Islands. The drilling is typical of offshore operations. When a well is completed the rig is moved to another location and the well casing with a protective and maintenance platform around it is left above the water. Some of the wells are visible on the photographs and others are not.

Louisiana State Plane Coordinates, South Zone (Lambert), are being furnished for each well. This information is contained in a letter from the Humble Oil and Refining Company to Commander E. H. Kirsch dated 24 April 1953. A copy of this letter is incorporated in this report. It is to be noted that Well State Lease No. 9 was drilling at that date and Well No. 10, same lease, is a location. These two wells should be checked for completion by the field editor as No. 9 may come in as a dry hole and No. 10 may never even be drilled.

Catwalks, tanks, buildings and other structures in the field are adequately covered by the photographs as of the date of field inspection. The field editor should check the area for new tanks, catwalks, etc. constructed since field inspection as additional wells are brought in.

Photography was of recent date and no difficulty was encountered in their interpretation in the field. Field inspection was performed on the following photographs: 39419, 39452, 39514, 39517, and MDA-28-90.

No items were deliberately left for the field editor but the above mentioned oil field will probably have been expanded and new wells will be producing.

HORIZONTAL CONTROL

All horizontal control was searched for and where found was identified.

The following stations were reported lost: DEEP 1934, DEVIL 1934, and TETE 1934. Station TETE 1934 was identified using Reference Marks 1 and 2.

No control of any other agency was recovered and no supplemental control was established.

Stations PHILO 2 1953 and CAMP 2 1953 were established as maintenance work and not as supplemental control.

4. VERTICAL CONTROL

Three Coast and Geodetic Survey tidal bench marks were recovered and identified. They are TIMBALIER BAY TIDAL BENCH MARKS 11, 12 and 13.

No supplemental control were established.

5. CONTOURS AND DRAINAGE

Elevations for the marsh were determined by hand level from the level of the water. The water level was determined by setting a tide staff, which was referenced to the previously mentioned bench marks. The staff was read and recorded at 30 minute intervals and the elevations were reduced from these readings.

All drainage is tidal and self-evident from the photographs.

6. WOODLAND UOVER

There is none.

7. SHORELINE AND ALONGSHORE FEATURES

As the area is almost entirely marsh the shoreline is apparent throughout except along shell deposits in the marsh and a few shell islands.

There is little periodic tide in the area and the low water line is synonymous with the mean high water line.

All shoreline structures are adequately covered by the photographs.

There are no submarine cables in the area.

8. OFFSHORE FEATURES

The only offshore features are the oil wells and tank batteries located in the Lake Raccourci area. These are adequately covered under Paragraph 2 of this report.

9. LANDMARKS AND AIDS

There are no landmarks for nautical charts in the area.

There are no aeronautical aids in the area.

Existing aids to navigation were located by photogrammetric methods. All are listed on Form 567.

10. BOUNDARIES, MONUMENTS AND LINES

See "Special Report, Boundaries, Project Ph-90" for political boundary data and "Special Report, Public Land Lines, Project Ph-90" for land lines data.

11. OTHER CONTROL

Form 524 were submitted for four of the previously listed aids.

Recovery notes were submitted for the following ten 1934 recoverable topographic stations: VIL, PIER, HIGH, LIT, BOR, SAND, PAM, NIB, BRICE, and BIN.

12. OTHER INTERIOR FEATURES

There are no roads in the area.

The only buildings are cabins occupied seasonally by trappers. These should be mapped as Class 1 buildings for their landmark value and have been labeled "cabins" on the photographs.

There are no bridges or cables over navigable waters.

There are no airports or landing fields.

GEOGRAPHIC NAMES

See "Special Report, Geographic Names, Project Ph-90".

HUMBLE OIL & REFINING COMPANY
PRODUCTION DEPARTMENT
LOUISIANA DIVISION
909 S. Jefferson Davis Parkway
Post Office Box 626
New Orleans 7, La

April 24, 1953

United States Coast & Geodetic Survey Post Office Box 573 Houma, Louisiana

Attention: Commander E. H. Kirsch

Dear Sir:

In accordance with your request the following is a tabulation of the Lambert Grid Coordinates of Humble's wells in the Lake Raccourci area:

	<u>Well</u>	No.		Coordinate	98
	· · · · · ·		X		Y
•	State Lse.	• •			
		No.1	2, 315,	439,7	209, 977.6
	State Lse.	1451			,
		No.1	2, 318,	712.1	210, 061.3
•	State Lse.	1452			
		No.1	2, 324,	793.9	202, 121.5
•		No.2	2, 321,	871.2	205, 762.7
	State Lse.	1480			
		No.1	2, 315,	784.7	205, 743.3
	•	No.2	2, 311,	795.3	208, 369.1
		No.3	2, 310,		205, 996.8
		No.4	2, 312,	693.5	203, 059.7
		No.5	2, 311,		203, 050.0
		No.6	2, 316,	612.4	200, 155.3
,		No.7	2, 314,	011.0	204, 373.8
	_	No.8	2, 310,		204, 298.8
	(Drilling)	No.9	2, 310,		201, 700.2
(as staked)	(Location)	No.10	2,314,	921.1	207, 971.8

If there are any other well positions which you would like to have, we will be glad to furnish them to you.

Very truly yours,

HUMBLE OIL & REFINING COMPANY S. S. LANGFORD

By /s/ H. A. Ratchford
H. A. Ratchford

14. SPECIAL REPORTS AND SUPPLEMENTAL DATA

Letter of Transmittal No. 5, Forms 567, to be forwarded to Washington Office at a later date.

Letter of Transmittal No. 6, Forms 567, to be forwarded to Photogrammetric Office at a later date.

Letter of Transmittal No. 7, "Special Report, Public Land Lines, Project Ph-90", forwarded to Washington Office 29 April 1953.

Letter of Transmittal, Public Land Lines data, forwarded to Washington Office 28 January 1953.

Letter of Transmittal No. 8, "Special Report, Geographic Names, Project Ph-90", to be forwarded to Washington Office at a later date.

Letter of Transmittal No. 9, "Special Report, Boundaries, Project Ph-90", forwarded to Washington Office 6 May 1953.

Print of Lake Raccourci Oil Field by Humble Oil & Refining Company. A second up-to-date print of Humble Oil & Refining Company's Lake Raccourci Field to be forwarded when received.

Letter of Transmittal No. 90-29, Data, Quadrangle T-9875(), forwarded to Washington Office MAY 13 1953

Submitted 12 May 1953

William M. Reynolds
Vartographic Survey Aid

Approved & Forwarded MAY 1 3 1953

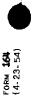
E. H. Kirsch Chief of Party

DESCRIPTIVE REPORT U.S. DEPARTMENT OF COMMERCE

COAST AND GEODETIC SURVEY CONTROL RECORD SCALE OF MAP 1:20,000...

PROJECT NO. Ph-90.

FROM GRID OR PROJECTION LINE FROM GRID OR PROJECTION LINE IN METERS SCALE FACTOR (BACK) FORWARD 10/20/53 (BACK) N.A. 1927 - DATUM 59.4(1.787.9) 1234.3(612.9) (0-201)6-1122 1307.9(539.4) 1568.1(52.9) 14.8(1832.4) 1551,7(66.1) 186.0(31.2) 1580.3(10.6) 1599.1(22.0) FORWARD J. Steinberg DATUM OR PROJECTION LINE IN METERS DISTANCE FROM GRID IN FEET. (BACK) CHECKED BY FORWARD LONGITUDE OR x COORDINATE LATITUDE OR 4-COORDINATE 90 20 58.196 29 11 CL . 928 90 20 58 Oly 29 07 58.985 90 1 7 59 1 85 90 20 hh.9hh 29 11 L2 LBD 29 11 40.091 29 11 00 481 90 1 7 57 51 10/20/53 DATUM N.A. 1927 Ħ SOURCE OF G2386 P.107-L. 4.C. P. 267 P.106 (INDEX) B. Wilson P. 266 P.84 = ÷ PHILO 2, 1953 1 FT. = .3048006 METER CAMP 2, 1953 РНШ**О**), 1934 TETE, 1934 (destroyed) STATION CAMP, 1934 COMPUTED BY:..



MAP T-..9875.

COMPILATION REPORT T-9875

PHOTOGRAMMTERIĆ PLOT REPORT

Submitted with T-9865.

31. DELINEATION

The graphic method was used. Photographs were of good scale and no difficulty was encountered in interpretation.

Field inspection was adequate.

32. CONTROL

Refer to Photogrammetric Plot Report.

A sta. HUMBLE (Humble Oil co.) has been plotted and shown on the map manuscript although it was not recovered and no description is available to this office. was

33. SUPPLEMENTAL DATA

A print of the Humble Cil & Refining Company's map of the Lake Raccourci oil field, listed under item 14, together with Lambert Grid Coordinates furnished by the same company and listed on page 10, were used to plot the oil wells in the Lake Raccourci area.

34. CONTOURS AND DRAINAGE

There is no elevation exceeding 3 feet.

The tidal drainage throughout was readily deline ated.

35. SHORELINE AND ALONGSHORE DETAILS

Refer to Item 7.

Shoreline inspection was adequate. There were no shoal lines indicated by the field inspector nor are they clearly visible on the photographs.

36. OFFSHORE DETAILS

Storage tanks, catwalks, etc. were taken from the photographs. The Field Editor is requested to verify the completeness of these features.

37. LANDMARKS AND AIDS

Reference Item 9.

38. CONTROL FOR FUTURE SURVEYS

Four(4) Forms 524 for recoverable topographic stations are transmitted with this report.

Item 11 states that Form 524 was submitted for four aids. Two of these are surrounded by water and do not require 524's.

Also the "Lost" 1934 recoverable topographic stations are listed under Item II. Only two are recoverable for future surveys. The four stations are listed in paragraph 49.

39. JUNCTIONS

Junctions have been made with T-9865 to the north; T-9883 to the south; T-9876 to the east; and T-9874 to the west.

40. HORIZONTAL AND VERTICAL ACCURACY

No Statement.

41. PUBLIC LAND LINES AND BOUNDARIES

No General Land Office survey is available for land lines.

The Parish Line labelled "indifinite" is shown in accordance with recommendations in the "Special Report, Boundaries" for the project.

46. COMPARISON WITH EXISTING MAPS

Comparison was made with U.S.G.S. Pelican Bass Quadrangle, scale 1:31,680 published in 1935 and Coast and Geodetic Survey planimetric map No.T-5298 dated Dec. 1932, scale 1:20,000. Numerous minor shoreline changes have occured and several marsh islets have disappeared.

47. COMPARISON WITH NAUTICAL CHARTS

Nautical Chart No. 1274, scale 1:80,000, published in 1938 and corrected to 13 August 1956 was used for comparison. Planimetric Map T-5298 appears to be the source of the topography for the nautical chart and the same differences mentioned under 46 occur.

ITEMS TO BE APPLIED TO NAUTICAL CHARTS IMMEDIATELY

None.

ITEMS TO BE CARRIED FORWARD

None.

Approved and Forwarded

William a. Rasure

for H. C. Applequist Chief of Party William M. Theoremse William H. Shearouse Carto Photo Aid. T-9875

Geographic Names

Bayou Blue Bayou Rosa

Case-tete I land China Bayou Coal Tar Bay

Deep Bayou Devils Bay Devils I land

JackdCamp Bay

Lafourche Parish
Lake Raccourci
Landry Bay
Little Lake
Louisiana
Northwest Island,
Pearl Bayou
Pelican Pass
Philo B ice Islands
Pickett Bay
Pierle Bay

Rosa Bay

Shallow Bayou
Southwestern Louisiana Canal (small portion here)

Terrebonne Parish Timbalier Bay

Wrong Name Pass

Names approved 11-28-56 L. Heck

49. NOTES FOR THE HYDROGRAPHER

The following recoverable topographic stations for which Form 524's have been submitted will be of value to the hydrographer:

HIGH (1934) 1953 SOUTHWEST LOUISIANA CANAL LIGHT 1953

VIL (1934) 1953 DEEP BAYOU LIGHT, 1953

DEPARTMENT OF COMMERCE

EODETIC SURVEY U. S. COAST AND

Photogrammetric Review Branch

NONFLOATING AIDS KORTKENIEMEN FOR CHARTS

STRIKE OUT ONE TO BE CHARTED KOCKECKCKRACHARICK

I recommend that the following objects which have (management) been inspected from seaward to determine their value as landmarks be charted on (xintexticism) the charts indicated.

Tamps Florida

The positions given have been checked after listing by William H. Shearchun

	DESCRIPTION			LATITUDE.*	POSITION			METHOD	DATE	.60: TRA	TAAH:	1941
				ATITUDE.	_	•		P.	_			
	DESCRIPTION	•			201	LONGITUDE #		LOCATOR		HO BI	OME CH	CHARTS
		BIGNAL		D.M. WETERS		# D. P. METERS	DATUM	BURVEY No.	LOCATION	2 2 2 0	OHENI HE310	777
	THIRTIES BAT		······································									
LYGHT BE by GU	7-pile dolphin. Privately maintained by Oulf Refining Co.	77	29 07	37.73	90 16	1523	1927	Badie.	Plot ×		×	1050
	7-pile delphin. Frivately seinteined by Ould Refining Co.		29 07	1.967	90 16	19.05	*	•	•	T	į,	1050
	7-pile delphin. Privately maintained by Gulf Refiging Co.	7	1	į	90 15	39.28		=	•	X E	: 8	1050
LIOHT 96 red by	red ber on delichtn				6	3. 13. 13. 13. 13. 13. 13. 13. 13. 13. 1	•		•	×	×	1050
LIONY CLAST	Philo Brice Island, Black triangulor Matted Structure on pile	L	29 11	2.2	06	59.7h	*1	3	5	×	100	1050 127b
1.AI	TAKE RACCOINCE				.,							
LIGHT FOR BOX ON	hand be on othe		29 12		90 16	1133	9	*	æ	×	14	1050
LIGHT FRATERIA	Fried Retaining Co.	Sa .		17.97		06.11 165	*	E	•	× n	(×	1050
LIGHT Pile, we have a fag Go.	Southwest Louistone Const. Pile, white Reflector. Privately saintained by Hunble Oil & Refin- ing Co.		29 JA	37.65	90 15	15.40 116	#	*	te	×	K	1050 1274

aids to navigation, if redetermined, shall be reported on this form. The data should be considered for the charts of the area and not by individual field survey sheets. Information under each column heading should be given. This form shall be prepared in accordance with Hydrographic Manual, pages 800 to 804. Positions of charted landmarks and nonfloating * TABULATE SECONDS AND METERS

PHOTOGRAMMETRIC OFFICE REVIEW

T- 9875

1. Projection and grids J.G. 2. Title J.G. 3. Manuscript numbers J.G. 4. Manuscript size T.G.	
unclassified	
CONTROL STATIONS	
5. Horizontal control stations of third-order or higher accuracy M.M.S. 6. Recoverable horizontal stations of less	
than third-order accuracy (topographic stations)	
9. Plotting of sextant fixes 1.0. Photogrammetric plot report 1.1. Detail points 1.0.	
ALONGSHORE AREAS	
(Nautical Chart Data)	
12. Shoreline J.G. 13. Low-water line XX 14. Rocks, shoals, etc. XX 15. BridgesX X 16. Aids	
to navigation <u>J.G.</u> 17. Landmarks <u>XX</u> 18. Other alongshore physical features <u>J.G.</u> 19. Other along—	•
shore cultural features <u>J.G.</u>	
Shore Cultural leatures	
PHYSICAL FEATURES	-
20. Water features	
instrument contours XX 24. Contours in general XX 25. Spot elevations J.G. 26. Other physical	
features _I_G.	
Idatules	
CULTURAL FEATURES	
27. Roads XX 28. Buildings J.G. 29. Railroads XX 30. Other cultural features J.G.	
BOUNDARIES	
31. Boundary lines J.G. 32. Public land lines XX	
Our boundary lines 52. I dolle land lines	
MISCELLANEOUS	
33. Geographic names J.G. 34. Junctions J.G. 35. Legibility of the manuscript J.G. 36. Discrepancy	
overlay	
40 Justa Lilea william a. Ragure	
Jesse A. Giles Reviewer Supervisor, Review Section or Unit William A. Rast	re
41. Remarks (see attached sheet)	
· · · · · · · · · · · · · · · · · · ·	
FIELD COMPLETION ADDITIONS AND CORRECTIONS TO THE MANUSCRIPT	
42. Additions and corrections furnished by the field completion survey have been applied to the manuscript. The	
manuscript is now complete except as noted under item 43.	
Compiler Supervisor	
43. Remarks: M-2623-12	

REVIEW REPORT OF TOPOGRAPHIC MAP T-9875 December 1957

61. GENERAL STATEMENT

T-9875 is one of the topographic surveys of project PH-90 originally compiled from 1952 photography and 1953 field inspection. Later photography (1956 single-lens) was the source of revisions applied to the manuscript--without benefit of field inspection or field edit.

62. COMPARISON WITH REGISTERED TOPOGRAPHIC SURVEYS

T-5298 1:20,000 1934 T-6066 1:20,000 1934

The land area of subject survey are marsh islands, that are eroding constantly. There are minor shoreline differences throughout and some additional canals since the last survey. T-9875 is to supersede above-listed surveys for nautical charting purposes of common areas.

63. COMPARISON WITH MAPS OF OTHER AGENCIES

PELICAN PASS, LA., 1:31680, 1935, U. S. Geological Survey. See item No. 62 for identical differences.

64. COMPARISON WITH CONTEMPORARY HYDROGRAPHIC SURVEYS

There are no contemporary hydrographic surveys of this area.

65. COMPARISON WITH NAUTICAL CHARTS

With the exception of newly constructed canals on islands surrounding LITTLE LAKE and a dredged channel from DEEP BAYOU to WRONG NAME PASS there are no major differences between subject survey and above-listed nautical charts.

66. ADEQUACY OF RESULTS AND FUTURE SURVEYS

The application of changes to the original compilations as clearly indicated on the 1956 photography appears appropriate in this case. The lack of a field inspection and completion survey do not necessarily indicate deficiencies in accuracy or adequacy.

Approved

Chief, Review and Drafting Section

Photogrammetry Division

Reviewed by

Branch, Charts Division

Chief, Coastal