

OIL SPILL PUBLIC INFO. CENTER



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[Shoreline evaluations, 1991].

Prince William Sound FA-01 to FL-05

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**OILING LENGTHS
TO BE PROVIDED
AT A LATER DATE**

ST/FA-1-A

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/FA-01

SUBDIVISIONS: A (1 OF 1)

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

- 1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
 1B Salmon stream mouth - spawning (7/10 to 8/31)
 No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No bioremediation or other chemical application within 100m of stream. Contact ADF&G Habitat Division prior to treatment for permits.
- 1C Salmon fry nursery area (4/31 to 7/31)
 1D Esther Hatchery release (4/15 to 6/1)
 1E Main Bay Hatchery release (4/20 to 5/10)
 1F Sawmill Bay Hatchery release (4/15 to 6/1)
 1G Cannery Creek Hatchery release (4/21 to 6/1)
 1H Remote release site
 1I Gill net area (6/7 to 8/31)
 1J Purse seine area (7/20 to 9/30)
 1K Purse seine hook-off (7/20 to 9/30)
 1L Set net sites (6/11 to 7/25)
 For Codes 1C through 1L contact ADF&G for specific dates, locations and constraints.
- 2M Herring spawning (4/1 to 6/15)
 Restrict boat traffic to essential minimum. Avoid damage to unopened intertidal and subtidal algae and seagrass. Contact ADF&G for specific dates and locations.
- 3N, 3P Harbor seal and sea lion pupping (5/15 to 7/1)
 3O, 3Q Harbor seal and sea lion molting (8/15 to 9/15)
 Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts.
- 5R Seabird colony (5/1 to 9/1)
 Restrict air traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance. Contact ADF&G and USFWS prior to treatment.
- 5S Shorebird/waterfowl concentration (4/1 to 5/15)
 Restrict all activity to essential minimum, especially air traffic.
- 5T All Bald Eagle nests (3/1 to 6/1)
 Active Bald Eagle nests (3/1 to 9/1)
 Restrict air traffic to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.
- 6U Recreation: Tent sites (6/1 to 9/15)
 6V Anchorages (6/1 to 9/15)
 6W Forest Service cabins (6/1 to 9/15)
 6X Lodge (6/1 to 9/15)
 6Y Special use destination
- 7Z Subsistence area: Salmon harvesting (5/1 to 9/30)
 7HH Finfish harvesting
 7II Deer harvesting (8/15 to 2/28)
 7JJ Invertebrate harvesting
 For Codes 7Z through 7JJ contact ADF&G and Chenega Corporation for specific dates, locations, and constraints.

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / FA 1 SUBDIVISION: A DATE 4/9/90

USCG

NAME GARY OTT

SIGNATURE *[Signature]*

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

ADEC

NAME MICHAEL J. EBEL

SIGNATURE *[Signature]*

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

FA-1-A : Small splatters of interstitial pooled tar were found along (very infrequently) along the bedrock point with about the same number of occurrences for tarballs. B Splashes of cover, coat, and stain were also few and confined to point areas. The high exposure to this area has done a thorough job cleansing it. No treatment recommended.

LAND MANAGER - USDA FOREST SERVICE

NAME DON BREITINGER

SIGNATURE *[Signature]*

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

10/19

REVISION MC 03/21/90

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG Randy Mc Bride USCG NOA A Gary Off SEGMENT ST/ FA-1
 BIO Lewis Stormen LAND REP USFS Don Breitengast SUBDIVISION A
 EXXON Leonard Herbert ADEC Michael Ebel TIME 17:00 to 19:04
 TEAM NO.: 12 TIDE LEVEL: 0.1' to 1.2' DATE 04/09/90
 EST. SUBDIVISION LENGTH: 2779 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: East to west
 SURFACE SEDIMENTS: R 30 % B 30 % C 25 % P 10 % G 4 % S 1 % M 0 % V 0 %
 SLOPE: Lang 5 % Hang 65 % Vert 30 % WAVE EXPOSURE: ☐ Low ☒ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 640 m NO 2139 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	IC	IR	IP	IS	SP	SW	SL	ST	SB	SC	SD	SE	SU	SI	SM	SS
ASPHALT PAVEMENT																
POOLED				X		X							X			
COVER				X		X							X			
COAT				X		X		X					X			
STAIN				X		X							X			
MOUSSE																
PATTIES				X				X					X			
TARBALLS																
FILM																
NO OIL													X		X	X

PAVEMENT: H F S 0 sq. m by 0 crPATTIES / TARBALLS 1 BAGSNEAR SHORE SHEEN? ☒ NO BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED
☒ YES ☐ NOTYPE plastic bottles
#BAGS 1

Photographs:

Roll No. ST-12-7Frames 1

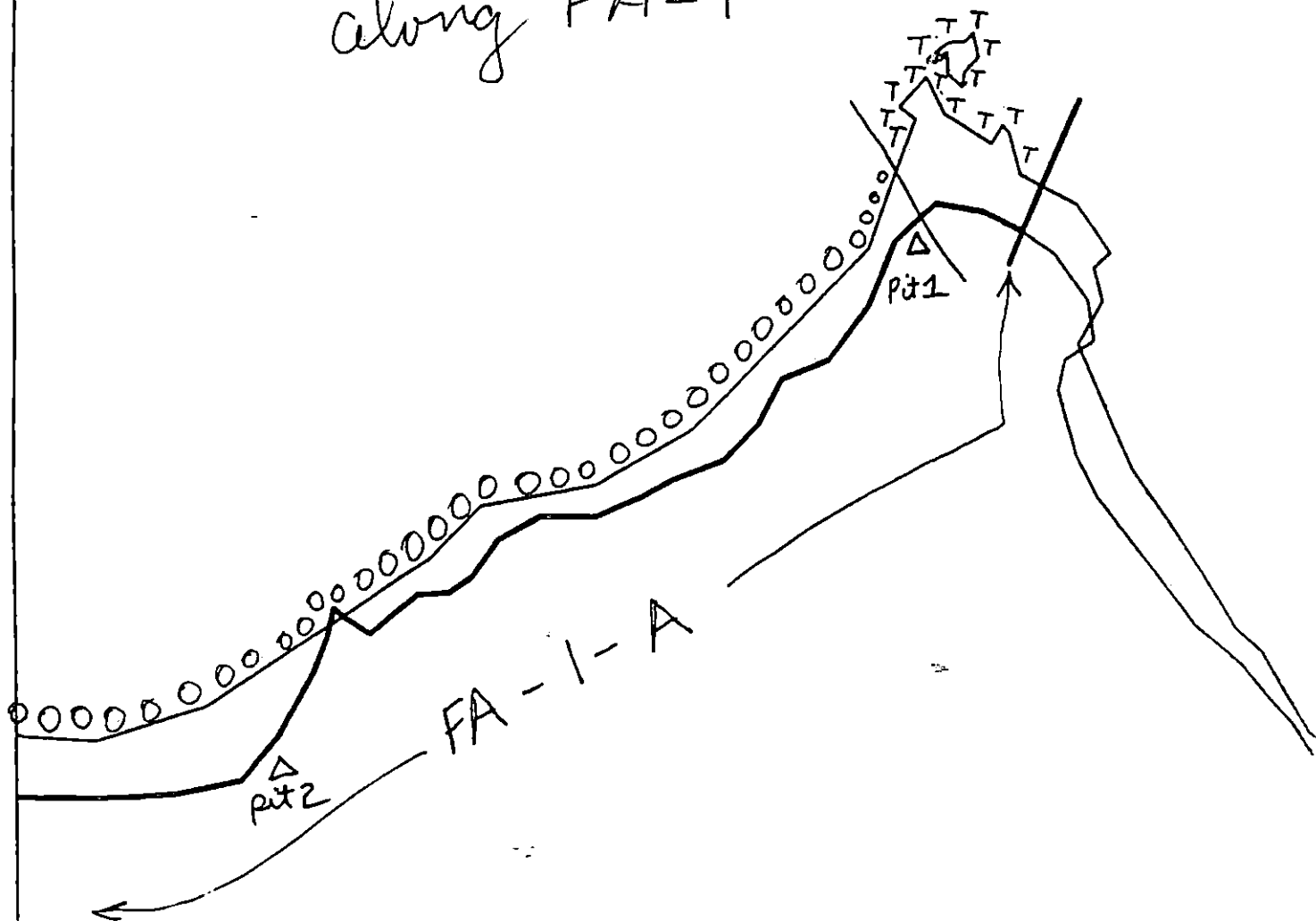
SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (CM-CM)	BELOW		OIL / FILM COLOR								PIT ZONE				A N A	SUBSURFACE SEDIMENTS	
		OP	OR	OL	OF	NO		UO	UC	SO BR	OC FW	OL SL	OS TL	LT BL	SU	UI	MI	LI						
1	20				X		18-20	X			X						X							C, P, G, S
2	23					X	- - -		X								X							C, P, G, S
3	19					X	- - -		X								X							C, P, G
							.																	
							.																	
							.																	

COMMENTS

FA-1-A is characterized by coarser-grained beaches (boulders and cobbles) and high angle slopes ^{interspersed} with some finer grained pocket beaches. Overall, oiling was ~~very~~ non-existent except for some very isolated areas of very light. All the very light oiling was characterized by splashed distributions (see data above). Falls Bay is exposed to moderate wave energy. Waves exposure could be classified as high when winds are from the NE due to the large Knight fetch available across the northern end of Knight Island Passage.

Pit Locations along FA-1-A



← 235A

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

FA-1

ADEC Segment Length: 2634m



Map Key: PWS-235b

Name: Randy McBride

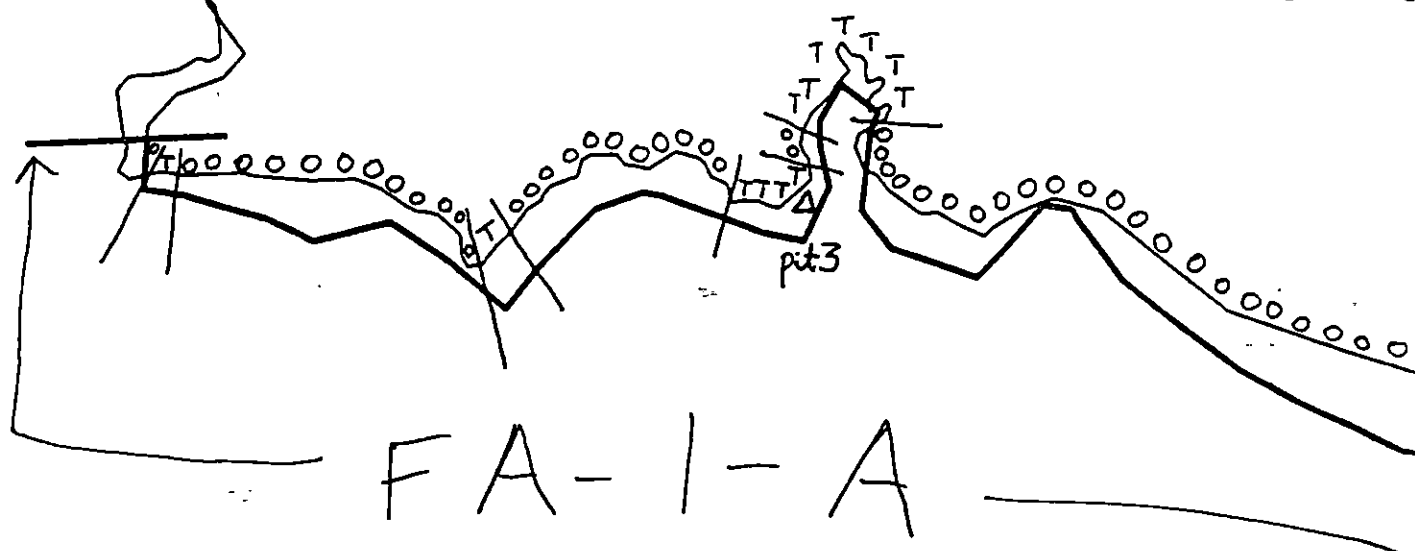
Date: 4/10/90

Data Entered:

(5/19)

Pit locations
along FA-1-A

F



235 B →

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

0000 No Oil

FA-1

ADEC Segment Length: 2634m



Map Key: PWS-235a

Name: Randy McBride

Date: 4/10/90

Data Entered:

(6/19)

SHORELINE ECOLOGICAL SUMMARY (Page 1 of 2)

REVISION: 03/22/90

Segment ST / FA-1 Subdivision A Date (mo / day / yr) 4/9/90Time (24 hr) 1700-1900 Biologist SHARMAN

(A) Substrate type and % of segments:

(1) Bedrock 30 (2) Boulder 30 (3) Cobble 25 (4) Pebble 10 (5) Sand 5 (6) Silt ^{+ granules}(B) Overall % cover of biota (% of segment): Dense Moderate Low X

(C) Density, substrate preference (by number from A, above), & vertical zonation of major taxa: (upper-U; mid-M; low tidal-L); juveniles / adults (X), new settlement (3)

Photographs:

Roll No. ST-12-7Frames 1

BARNACLES

Dense		
1U	1M	1L
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6

Moderate		
1U	1M	1L
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6

Sparse		
1U	1M	1L
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6

Rare		
1U	1M	1L
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6

NOT PRESENT

MYTILUS

Dense		
1U	1M	1L
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6

Moderate		
1U	1M	1L
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6

Sparse		
1U	1M	1L
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6

Rare		
1U	1M	1L
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6

NOT PRESENT

GASTROPODS

Dense		
1U	1M	1L
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6

Moderate		
1U	1M	1L
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6

Sparse		
1U	1M	1L
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6

Rare		
1U	1M	1L
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6

NOT PRESENT

FUCUS

Dense		
1U	1M	1L
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6

Moderate		
1U	1M	1L
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6

Sparse		
1U	1M	1L
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6

Rare		
1U	1M	1L
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6

NOT PRESENT

Wildlife Observations/ General Comments:

5 sea otters, 1 porcupine napping in alderside spruce, star sat on bedrock point at E. end of segment, 2 ravens, 4 crows, 1 murrelet, 1 pair mallards, 10 pairs harlequin ducks, 45 pairs barrow's goldeneyes (x 40 pairs napped at head of bay - W. end of segment) at stream mouth. This is clearly a very high-energy beach, with considerable fetch from the NE. (cont.)

Ecological Considerations:

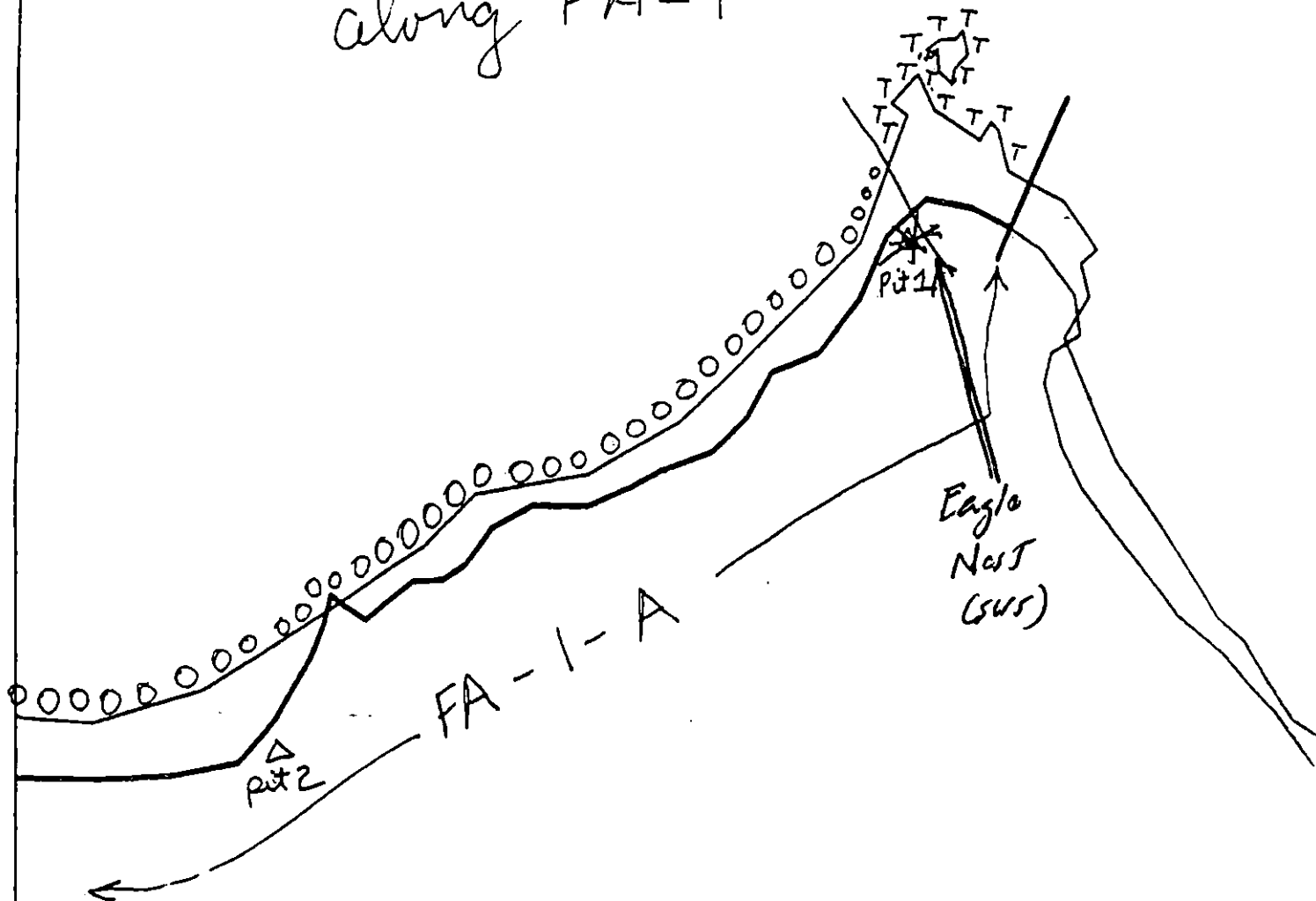
According to the Priority and Windows table, this segment is assigned an environmentally ranked priority of 1, due primarily to use of the area as a Main Bay Hatchery release site (sensitivity code 1E) and the presence of bald eagle nests (sensitivity code 5T, constraint (constraints 1+2, treatment priority 2)

5, treatment priority 2. We did not observe any eagle nests on this survey. There are no particularly critical ecological sensitivities (see above General Comments). (E/A)

General Comments (cont.):

A significant portion of the segment is dominated by bedrock. The E. point, in particular, is very rich and productive intertidally, with dense Fucus commonly, and a chemically diverse LTZ. Much of the remaining E. $\frac{1}{2}$ of the segment is a lag of large boulders atop the continuous bedrock platform, and this intertidal habitat is noticeably desamparated owing to wavewash and chiefly boulder/cobble scouring (boulders are not imbedded in fine sediments). There is absolutely no detectable impact from the very light and discontinuous oiling that this beach apparently received. Boulder undersides harbor barnacle spat, sometimes abundant amphipods, and littorines with egg masses, as well as rare Leptochelone feeding on barnacles. Rhodomeles joins Fucus in the low and mid-intertidal zones (mostly bedrock and stabilized boulder substrata). There is generally fair to good barnacle and Fucus recruitment thus far. This is a normal and healthy intertidal zone, given its physical parameters and environment.

Pit Locations along FA-1-A



Ecology MAP

← 235A

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

OOOO No Oil

FA-1

ADEC Segment Length: 2634m



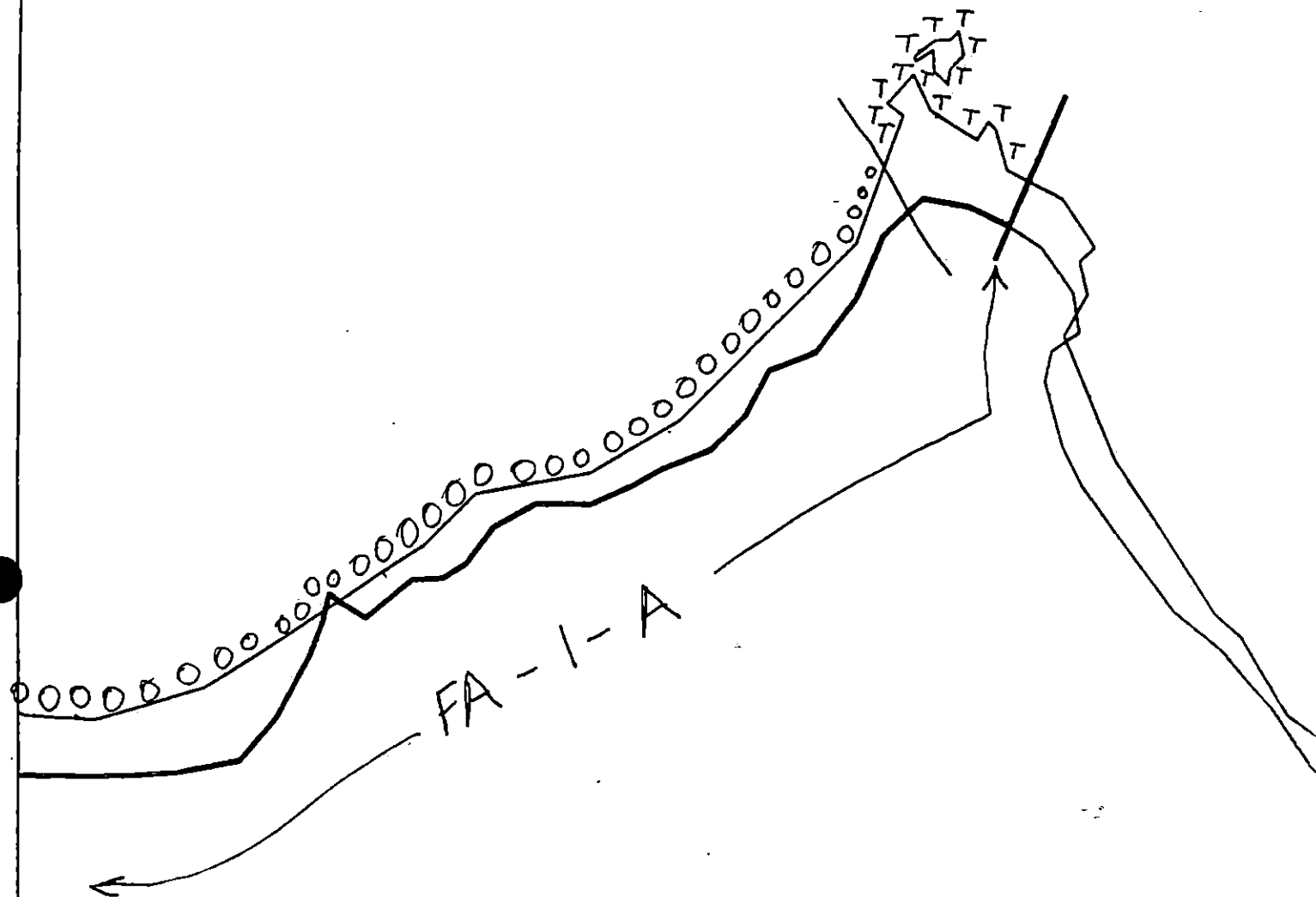
Map Key: PWS-235b

Name: Randy McBride

Date: 4/16/90

Data Entered:

(5/19)



← 235A

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

FA-1

ADEC Segment Length: 2634m



Map Key: PWS-235b

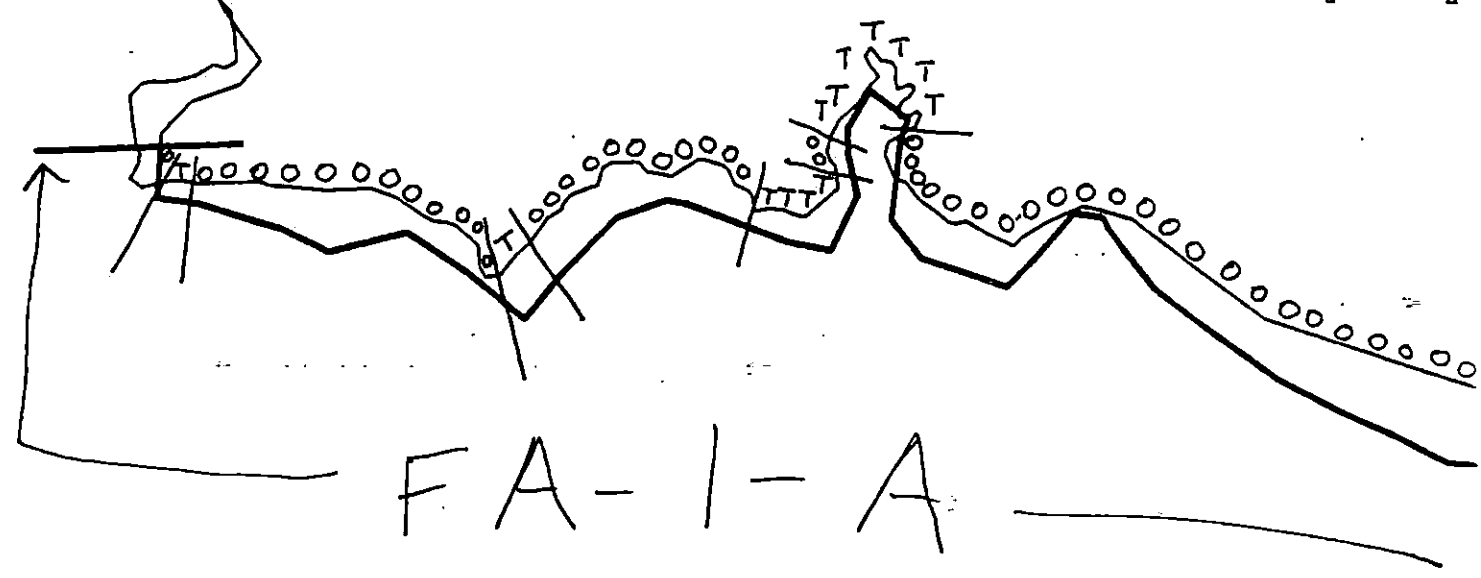
Name: Randy McBride

Date: 4/10/90

Data Entered:

3/19

F#



235 B →

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

0000 No Oil

FA-1

ADEC Segment Length: 2634m

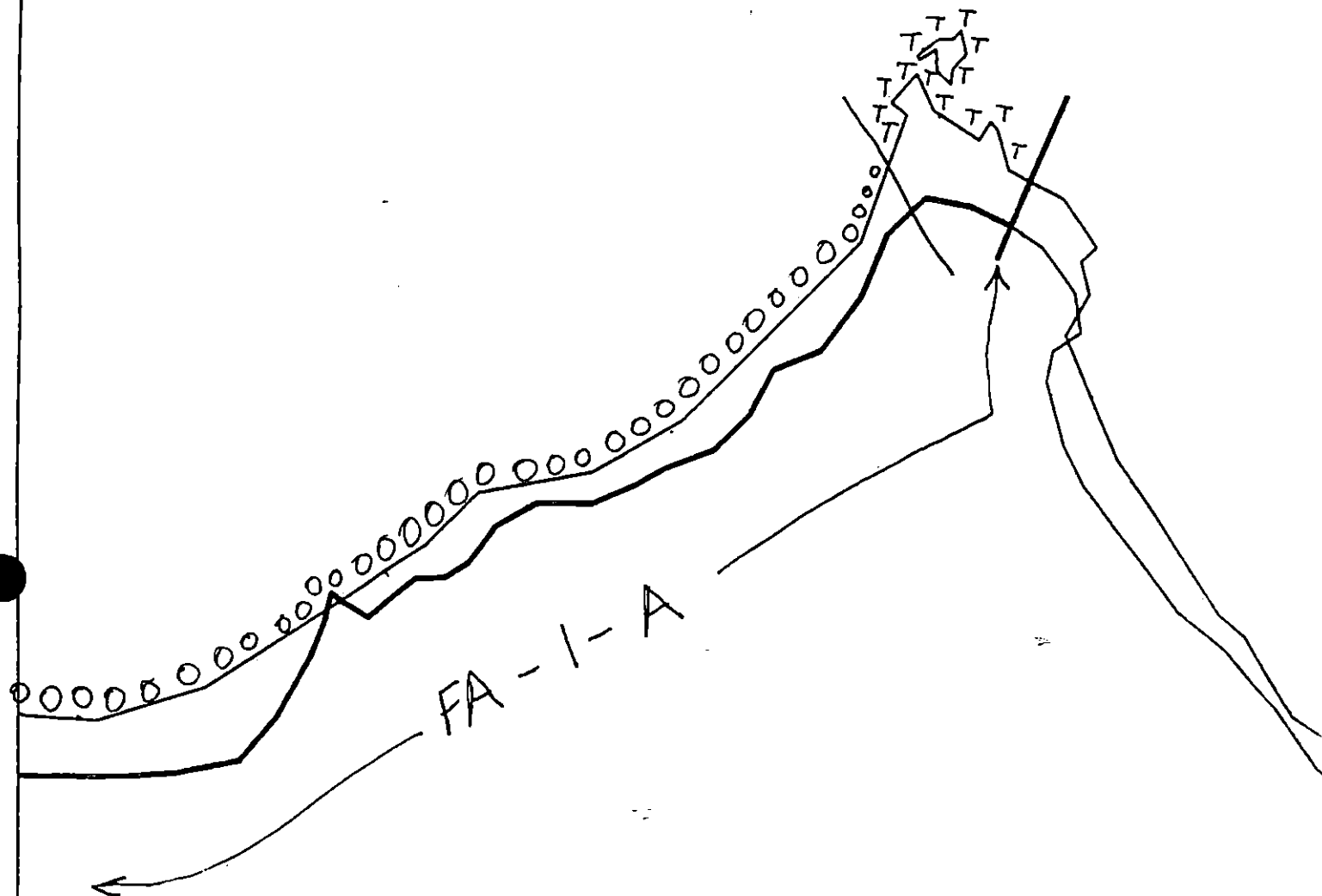


Map Key: PWS-235a

Name: Randy McBride

Date: 4/10/90

Data Entered: 4/19



XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

FA-1

ADEC Segment Length: 2634m



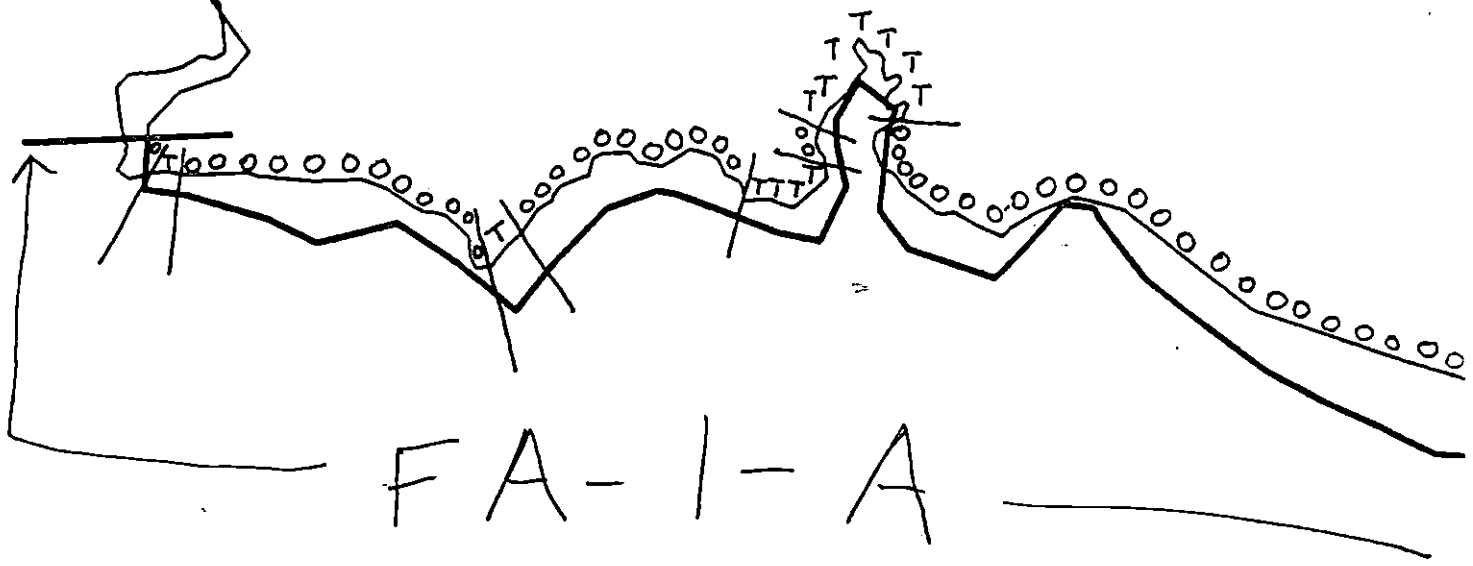
Map Key: PWS-235b .

Name: Randy McBride

Date: 4/10/90

Data Entered: (3/19)

F/



FA-1-A

235 B →

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

FA-1

ADEC Segment Length: 2634m



Map Key: PWS-235a

Name: Randy McBride

Date: 4/10/90

Data Entered: 4/19

SHORELINE EVALUATION

SEGMENT ST/ FA-01 SUBDIVISION A (1 OF 1) DATE 4/9/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1E Main Bay Hatchery release (4/20 to 5/10)
1L Set net sites (6/11 to 7/25)
5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
6U Recreation: Tent sites (6/1 to 9/15)
6V Recreation: Anchorages (6/1 to 9/15)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to uncoiled biota and substrate. Eagle nest in Subdivision A.

ARCHAEOLOGICAL CONSTRAINTS:

If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO SIGNATURE: Charles E. Homan DATE: 4/28/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 404 m: No Oil 2229 m
Subsurface Oil Observed: Yes X No Maximum Depth 20+ cm

RECOMMENDATIONS:

☒ No Treatment Recommended	☐ Snare/Absorbent Booms
☐ Treatment Recommended	☐ Oil Snares (pom poms)
☐ Manual Pickup	☐ Absorbents (pads, rolls, etc)
☐ Bioremediation	☐ Spot Washing: _____ Wands
☐ Tarmat: _____ Breakup	☐ _____ Beach Cleaner
☐ _____ Removal	☐ Other (see comments)

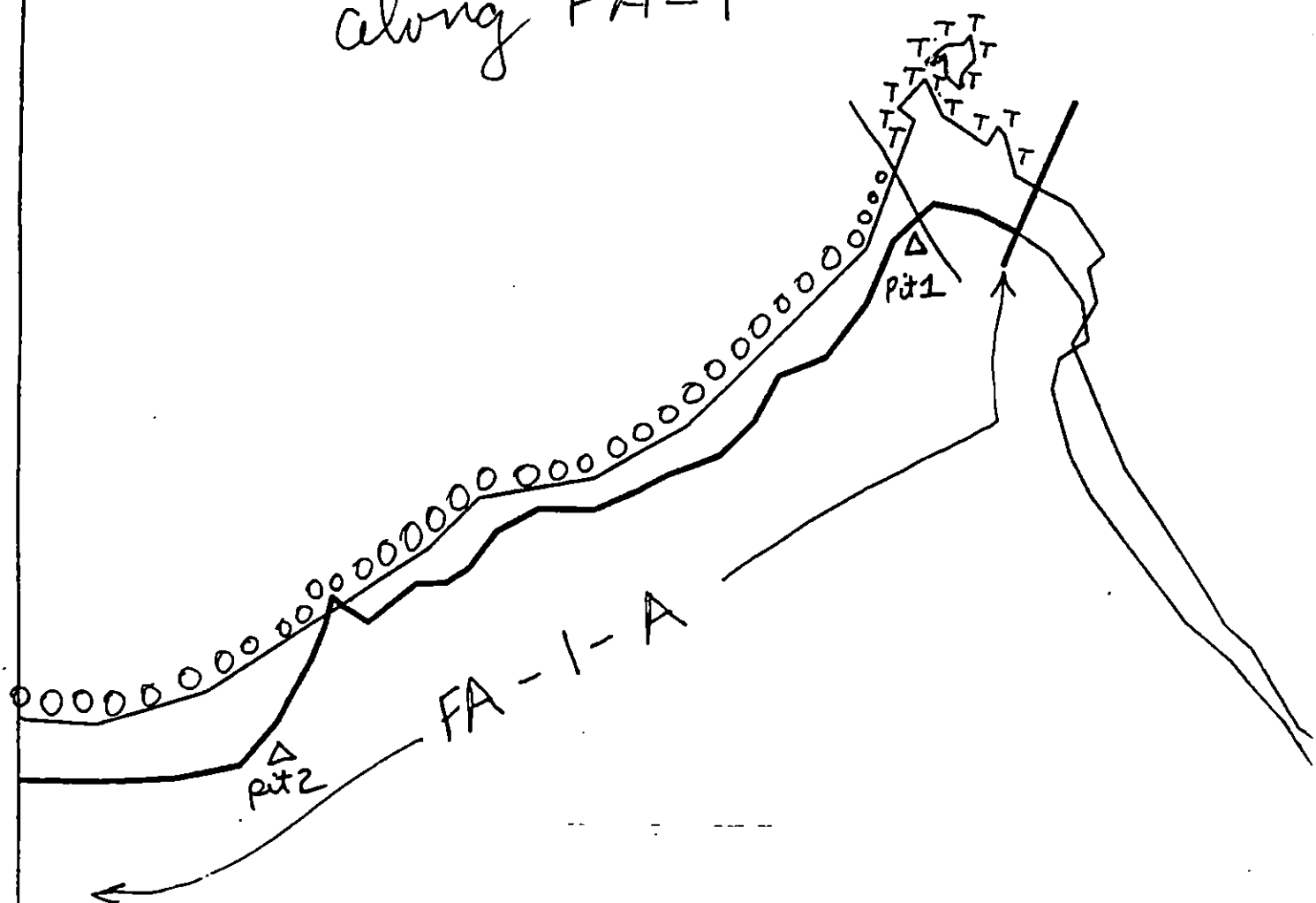
COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: 4/26/90
ADEC JOAN BAUER [Signature]
EXXON AMY TGA [Signature]
NOAA GARY PETRAE [Signature]
USCG KENNETH KEANE [Signature]

FOSC: W L DATE: 5-9-70

Pit Locations along FA-1-A



← 235A

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

FA-1

ADEC Segment Length: 2634m



Map Key: PWS-235b

Name: Randy McBride

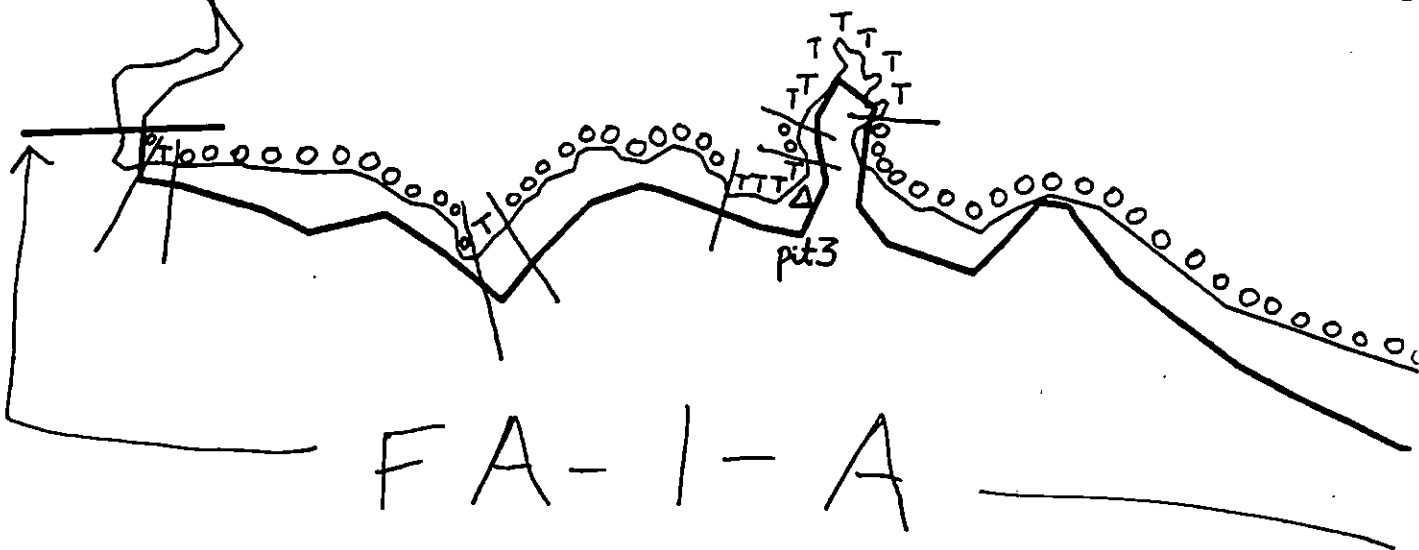
Date: 4/18/90

Data Entered:

(5/19)

Pit locations
along FA-1-A

F



235 B →

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

FA-1

ADEC Segment Length: 2634m



Map Key: PWS-235a

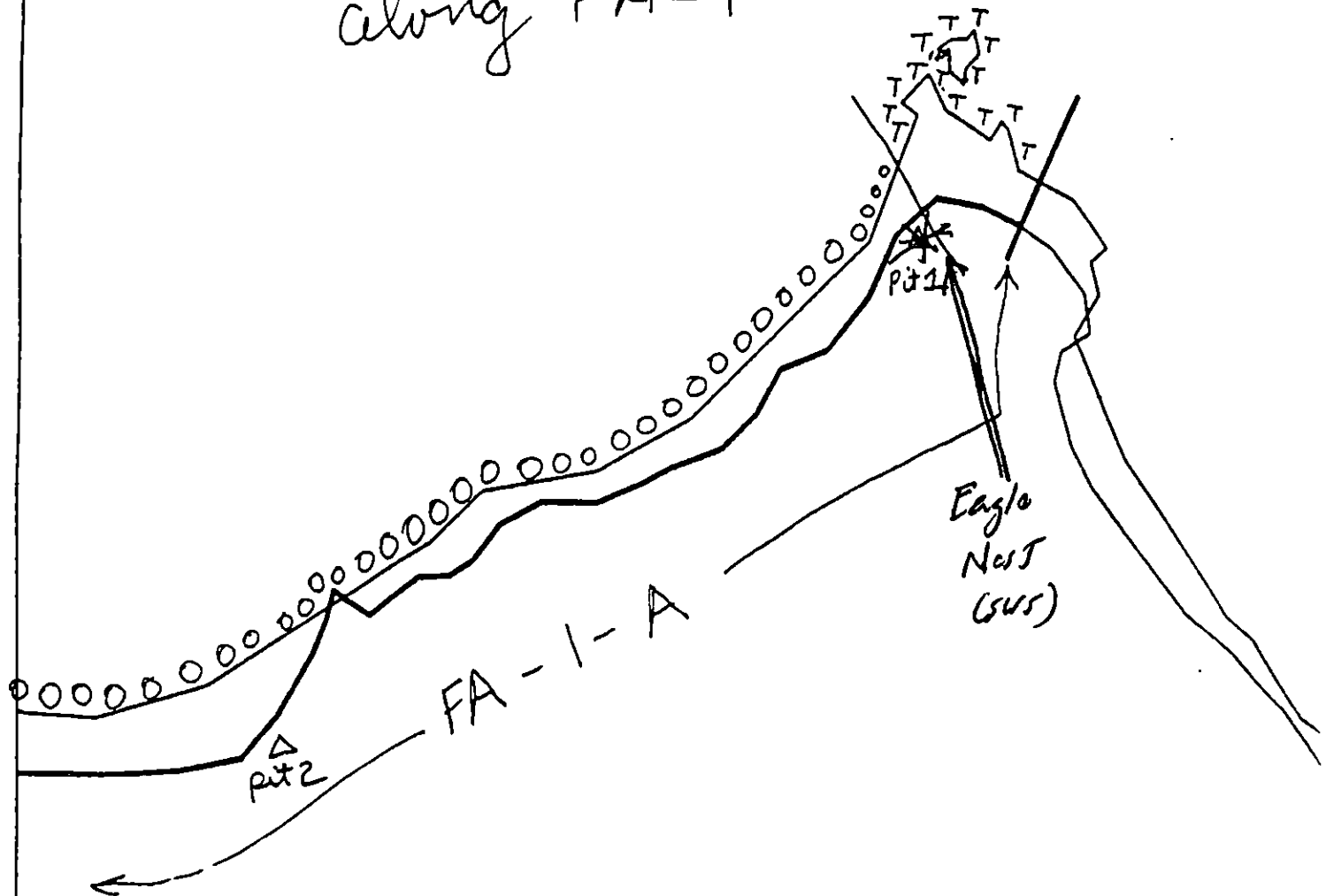
Name: Randy McBride

Date: 4/10/90

Data Entered:

6/19

Pit Locations along FA-1-A



Ecology MAP

← 235A

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

FA-1

ADEC Segment Length: 2634m



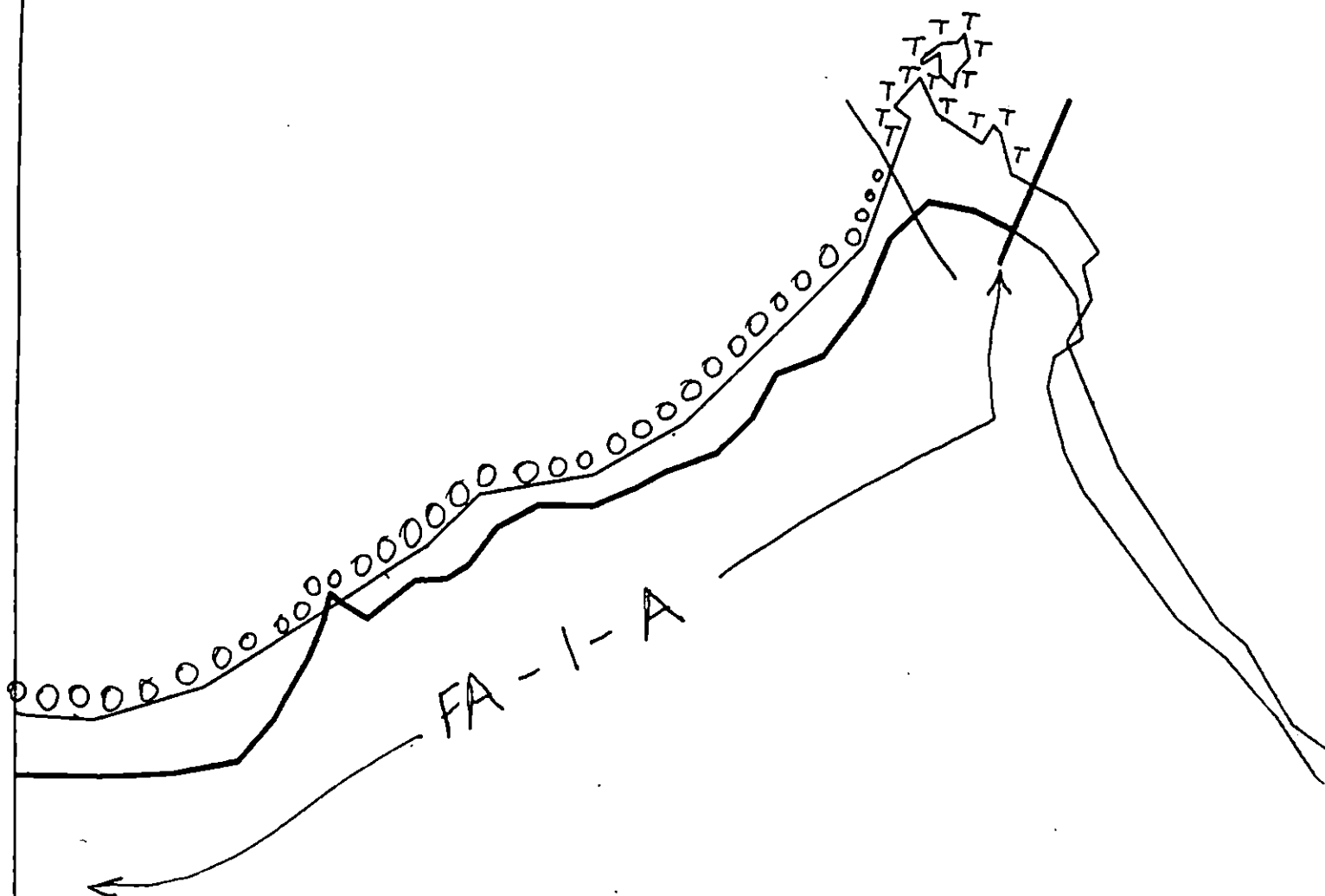
Map Key: PWS-235b .

Name: Randy McBride

Date: 4/16/90

Data Entered:

5/19



XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

FA-1

ADEC Segment Length: 2634m



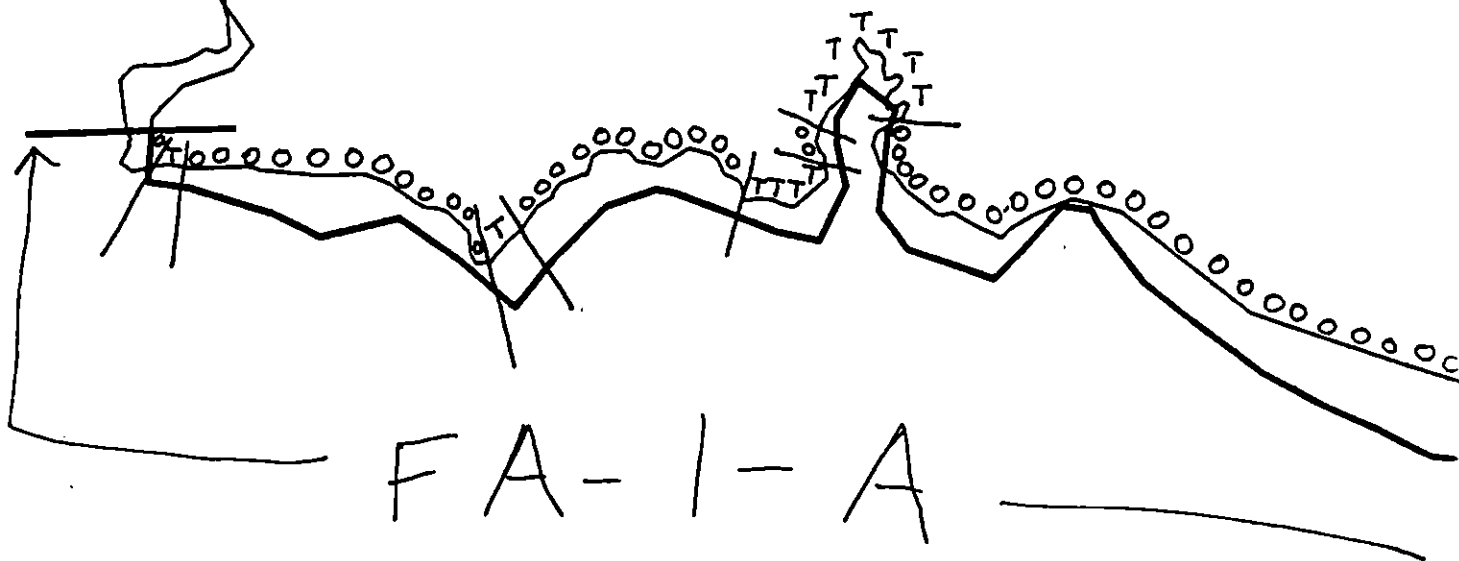
Map Key: PWS-235b

Name: Randy McBride

Date: 4/10/90

Data Entered:

3/19



235 B →

XXXX Wide

//// Medium

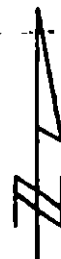
---- Narrow

TTTT Very Light

0000 No Oil

FA-1

ADEC Segment Length: 2634m



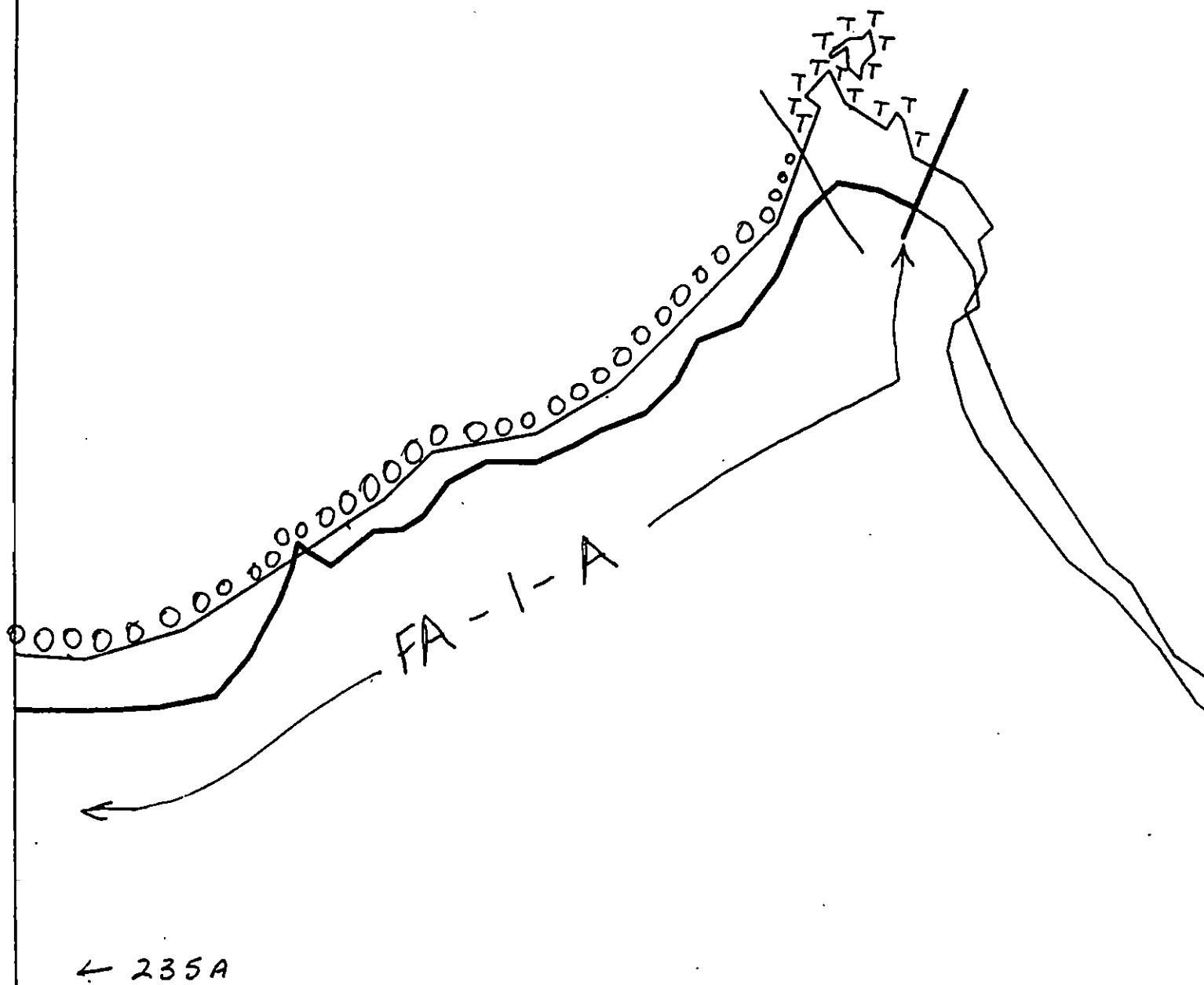
Map Key: PWS-235a

Name: Randy McBride

Date: 4/10/90

Data Entered:

4/19



XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

OOOO No Oil

FA-1

ADEC Segment Length: 2634m



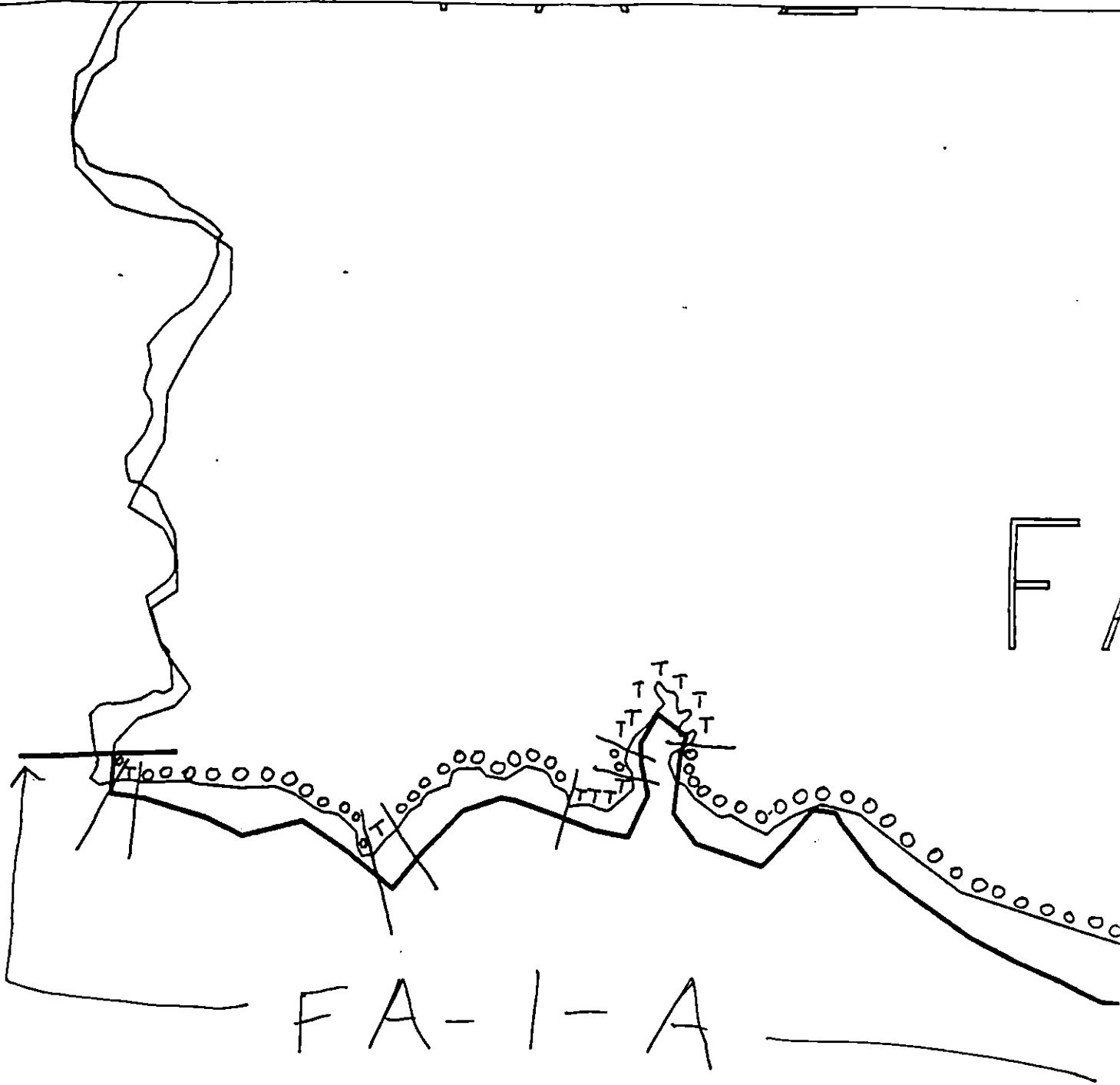
Map Key: PWS-235b

Name: Randy McBride

Date: 4/10/90

Data Entered:

(3/19)



235B →

XXXX Wide
 /// Medium
 --- Narrow
 TTTT Very Light
 OOOO No Oil

FA-1

ADEC Segment Length: 2634m



Map Key: PWS-235a
 Name: Randy McBride
 Date: 4/10/90
 Data Entered: 4/19

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/FA-02

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ FA-02 SUBDIVISION A (1 OF 1) DATE 4/9/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 225-20-15050.

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)

1B Salmon stream mouth - spawning (7/10 to 8/31)

1E Main Bay Hatchery release (4/20 to 5/10)

1L Set net sites (6/11 to 7/25)

9BB Privately developed lands

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unoiled biota and substrate. Eagle nest near border in MA-10.

ARCHAEOLOGICAL CONSTRAINTS:

If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 229 m: Narrow 0 m: V.Light 944 m: No Oil 1406 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 27+ cm

RECOMMENDATIONS:

<u>X</u> No Treatment Recommended	_____ Snare/Absorbent Booms
_____ Treatment Recommended	_____ Oil Snares (pom poms)
_____ Manual Pickup	_____ Absorbents (pads, rolls, etc)
_____ Bioremediation	_____ Spot Washing: _____ Wands
_____ Tarmat: _____ Breakup	_____ Beach Cleaner
_____ Removal	_____ Other (see comments)

COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

- 1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
- 1B Salmon stream mouth - spawning (7/10 to 8/31)
No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No bioremediation or other chemical application within 100m of stream. Contact ADF&G Habitat Division prior to treatment for permits.
- 1C Salmon fry nursery area (4/31 to 7/31)
- 1D Esther Hatchery release (4/15 to 6/1)
- 1E Main Bay Hatchery release (4/20 to 5/10)
- 1F Sawmill Bay Hatchery release (4/15 to 6/1)
- 1G Cannery Creek Hatchery release (4/21 to 6/1)
- 1H Remote release site
- 1I Gill net area (6/7 to 8/31)
- 1J Purse seine area (7/20 to 9/30)
- 1K Purse seine hook-off (7/20 to 9/30)
- 1L Set net sites (6/11 to 7/25)
For Codes 1C through 1L contact ADF&G for specific dates, locations and constraints.
- 2M Herring spawning (4/1 to 6/15)
Restrict boat traffic to essential minimum. Avoid damage to unopened intertidal and subtidal algae and seagrass. Contact ADF&G for specific dates and locations.
- 3N, 3P Harbor seal and sea lion pupping (5/15 to 7/1)
- 3O, 3Q Harbor seal and sea lion molting (8/15 to 9/15)
Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts.
- 5R Seabird colony (5/1 to 9/1)
Restrict air traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance. Contact ADF&G and USFWS prior to treatment.
- 5S Shorebird/waterfowl concentration (4/1 to 5/15)
Restrict all activity to essential minimum, especially air traffic.
- 5T All Bald Eagle nests (3/1 to 6/1)
Active Bald Eagle nests (3/1 to 9/1)
Restrict air traffic to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.
- 6U Recreation: Tent sites (6/1 to 9/15)
- 6V Anchorages (6/1 to 9/15)
- 6W Forest Service cabins (6/1 to 9/15)
- 6X Lodge (6/1 to 9/15)
- 6Y Special use destination
- 7Z Subsistence area: Salmon harvesting (5/1 to 9/30)
- 7HH Finfish harvesting
- 7II Deer harvesting (8/15 to 2/28)
- 7JJ Invertebrate harvesting
For Codes 7Z through 7JJ contact ADF&G and Chenega Corporation for specific dates, locations, and constraints.

FIELD SHORELINE COMMENT SHEET

PAGE 1 of 2

SEGMENT ST / FA2 SUBDIVISION: A DATE 4/10/90

USCG

NAME GARY OTT SIGNATURE _____☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS

VERY SCATTERED OIL OBSERVED, IN COATS, IS STABLE.

ADEC

NAME MICHAEL J. EBEL SIGNATURE Michael J. Ebel☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS

FA-2-A: Scattered asphalt patches were found along the peripheral inflection of the UTZ in a pocket cove (immediately south of Hana Cove village). It was mostly a thin, loose veneer, still shiny - dark black found in a intermittent band composed of scattered deposits, some up to a couple cm thick (most $\approx$ 0.75 cm). We broke up what were visibly the heaviest with one pass and noted the substrate with pits #4, 5, & 6. Of these, #5 showed DBL residual oil 4 cm thick in a lens from 19-23 cm down. The others only film; likely a small pool / lens ^{remnant} ~~remnant~~ under pit #5. We also found scattered ^{coarse, wet, film, and occasional tarballs} (< 1 bag). (cont.)

LAND MANAGER - USDA FOREST SERVICE

NAME DON BREITINGER SIGNATURE Don J. Breitinger 4/10/90☒ NO TREATMENT RECOMMENDED ☐ TREATMENT SUGGESTED
COMMENTS

18/A

FA-2-A (cont.)

My recommendation to this area would be to let the natural flushing of this shoreline finish the clearing and to make no further impact of any kind. Michael J. Ellet 4/10/06
ADEC

(A/A)

SHORELINE OILING SUMMARY

07:17 to 8:45 4/10/90-
REVISION NO. 02/22/90

OG Randy McBride USCG NoAA Gaty Off SEGMENT ST/ FA-2
 BIO Lewis Sharman LAND REP USFS Don Breitinger SUBDIVISION A
 EXXON Leonard Herbst ADEC Michael Ebel TIME 19:05 to 20:30 4/11/90
 TEAM NO.: 12 TIDE LEVEL: 2.2' to 1' 4/9/90 DATE 04/09/90 and 4/10/90
 EST. SUBDIVISION LENGTH: 3566 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: SW to NE
 SURFACE SEDIMENTS: R 30 % B 10 % C 30 % P 20 % G 8 % S 2 % M 0 % V 0 %
 SLOPE: Lang 45 % Hang 40 % Vert 15 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 240 m N 0 m VL 1026 m NO 1640 m
US 1060

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	AC	AS	PS	AS	OR	OL	OF	NO	OR	OL	OF	NO	SU	U	M	U
ASPHALT PAVEMENT				X	X								X			
POOLED		0		X									X			
COVER				X									X			
COAT				X									X			
STAIN																
MOUSSE																
PATTIES																
TARBALLS				X									X			
FILM				X									X			
NO OIL													X		X	X

PAVEMENT: H (F) (S) 80 sq. m by 3 crPATTIES / TARBALLS 1 BAGS

NEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS ^{very}	AMOUNT		
	SM	MD	LG
Logs	X		
Vegetation			
Trash			
Debris			

DEBRIS COLLECTED

☒ YES ☐ NOTYPE plastic bottles#BAGS 1

Photographs:

Roll No. ST-12-7Frames 2-3

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (cm)	BELOW	OIL / FILM COLOR								PIT ZONE	A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO			OR	OL	OF	NO	OR	OL	OF	NO			
1	17					X	.	X									X		C, P, G, S, M
2	23					X	.	X									X		C, P, G, S
3	38					X	.	X									X		C, P, G, S
4	30				X		22-25	X	X								X		C, P, G, S organics rich
5	23				X		19-23	X	X								X		B, C, P, G
6	27				X		22-27	X	X										B, C, P, G organics rich

COMMENTS AP/s broken up w/shovels in most areas.

Overall, FA-2-A is characterized ^{predominately} by very light and no oiling except for two areas categorized as medium oiling. The medium oiling is characterized by asphalt pavement, pooled, covered, and coated oiling with ~~no~~ splashed distributions. In some areas, the medium oiling is characterized by broken and patchy distributions. Most of these areas were broken up using shovels. A small portion of FA-2-A was not surveyed 4/11/90

Page 1 of 1

because of the small village of Hanks Cove.

REVIEWED W

DATE

(11/19)

SHORELINE ECOLOGICAL SUMMARY (Page 1 of 2)

REVISION: 03/22/90

Segment ST / FA-2 Subdivision A Date (mo / day / yr) 4/9/90

Time (24 hr) 1900-2030 Biologist SHARMAN

(A) Substrate type and % of segments:
(1) Bedrock 30 (2) Boulder 10 (3) Cobble 30 (4) Pebble 20 (5) Sand 10 (6) Silt 0 ^{+granules}

(B) Overall % cover of biota (% of segment): Dense Moderate X Low

(C) Density, substrate preference (by number from A, above), & vertical zonation of major taxa: (upper-U; mid-M; low tidal-L); juveniles / adults (X), new settlement (3)

Photographs:
Roll No. ST-12-7

Frames 2,3

BARNACLES

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

MYTILUS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

GASTROPODS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

FUCUS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

Wildlife Observations/ General Comments: 2 adult eagles, 1 subadult eagle, 1 pigeon guillemot, 1 raggie, deer tracks in intertidal zone on pebble beach, 1 porcupine rubbing in beachfront spruce tree (another in FA-1), 1 dead otter (hide + skeleton) in UTE - no oil, cause of death unknown. Also 1 deer carcass in UTE - no oil, cause of death unknown (hide + skeleton). At another location, one sea otter ribs in MTE. Pair of black oystercatchers on rocky point, N. end of segment (cont.)

Ecological Considerations:

According to the Priorities and Windows table this segment is assigned an environmentally ranked priority of 1, based primarily on ecological sensitivity 1E (Main Bay Hatchery release site) and 5T (bald eagle nests). These have constraints 1-2, and 5, respectively, for a treatment priority of 2. We saw no eagle nests on this assessment. There are not particularly critical ecological sensitivities (see above General Comments).

additional

16/19

General Comments (cont.):

Intertidally, this segment appears normal and healthy except for very local tar bands in a couple bedrock/boulder areas where adult barnacle mortality is to 50% within the oiled band (vs. $\approx 15\%$ mortality within the barnacle zone where there is no oil). Barnacle set seems to be quite good on this segment (much better than on the ^{more} exposed beaches of adjacent FA-1). Mussel recruitment, and Fucus/Rhodomena recruitment, seems to be pretty good (certainly compared to FA-1). Also, on this better protected segment, cobble support barnacles, Fucus, and gastropods (vs. FA-1). I observed newly-settled barnacle cyprid larvae here! The LTZ, as in FA-1, is highly productive. There are numerous rich bedrock tidepools with coralline algae, anemones, sponges, etc. Additionally Nucella and Littorina are laying eggs both on protected bedrock surfaces and beneath boulders.

↑
PWS
2368

ECOLOGY
MAP

FA-2

Anadromous
stream
225-20-15050

XXXX Wide
//// Medium
---- Narrow
TTTT Very Light
OOOO " "

FA-2

ADEC Segment Length: 3424m

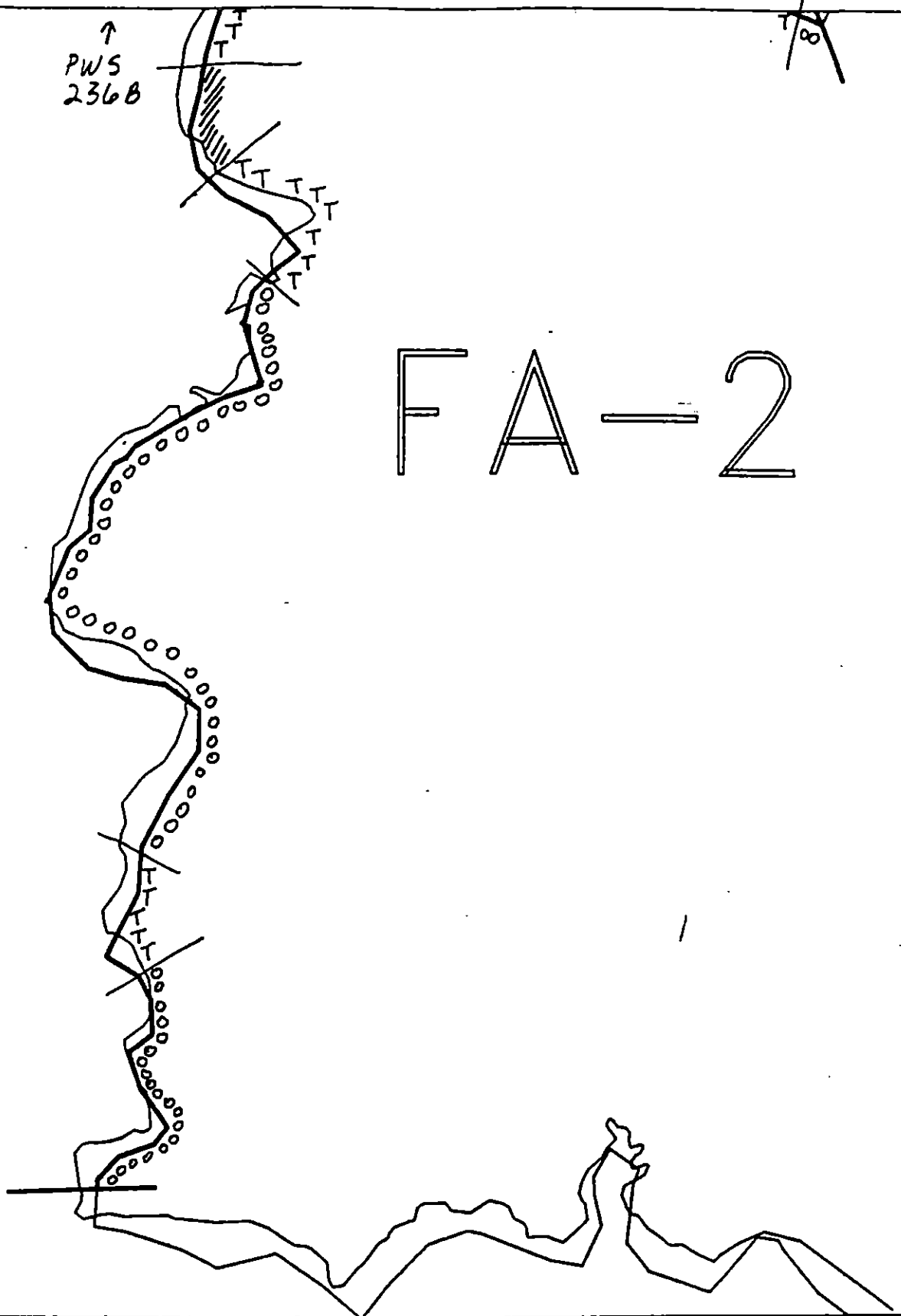


Map Key: PWS-236a
Name: Randy McBride
Date: 4/10/90
12/19

↑
PWS
236B

~~108~~

FA-2



XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

OOOO Medium

FA-2

ADEC Segment Length: 3424m

0 100 200 300

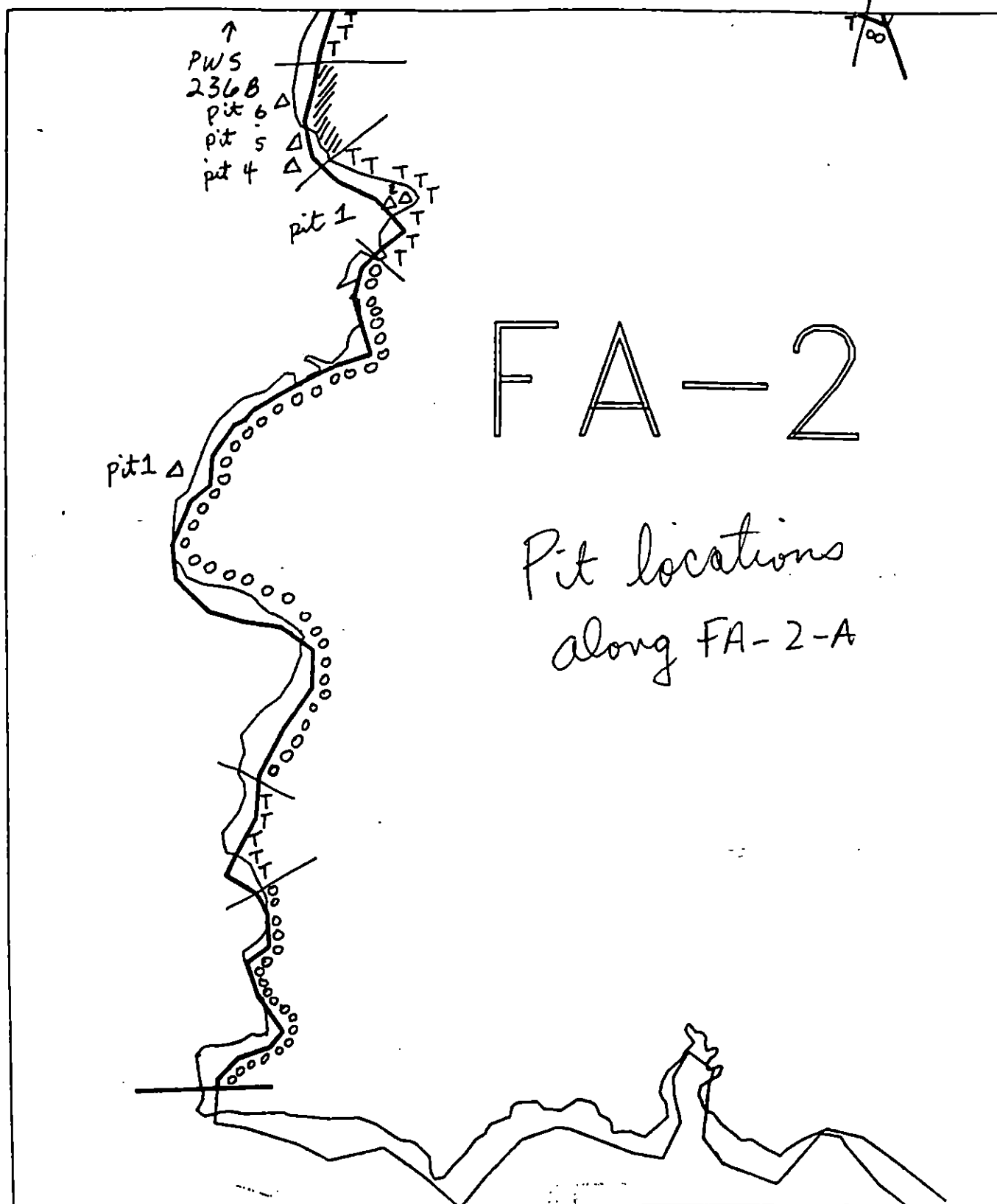
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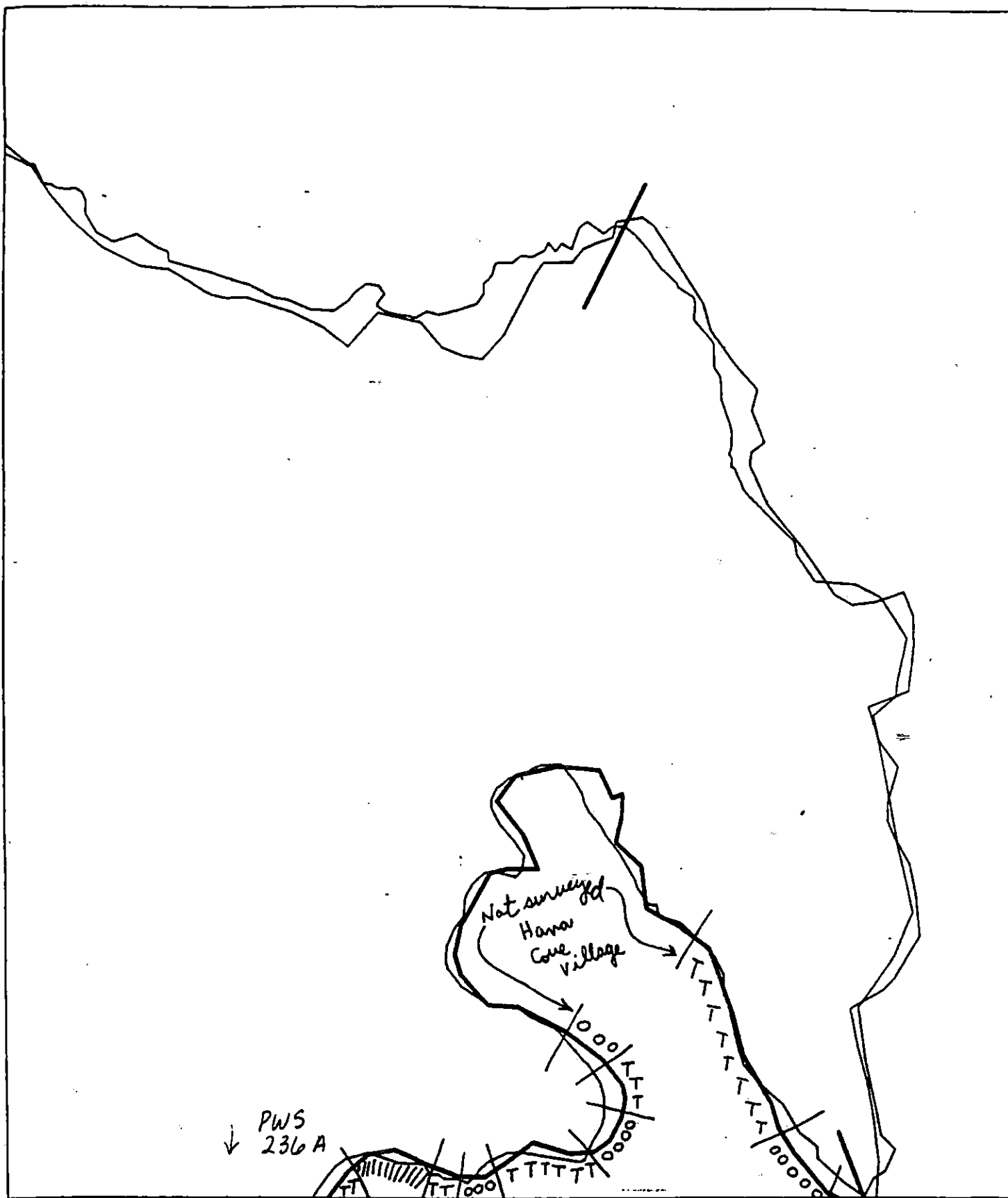
Name: Randy McBride

Date: 4/10/90

Note: Enter

17.19





XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

FA-2

ADEC Segment Length: 3424m

0 100 200 300
 METERS



Map Key: PWS-236b

Name: Randy McBride

Date: 4/10/90

Data Entered: (13/19)

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT FA-02 SUBDIVISION A (1 of 1)

WORK WINDOW	
Manual Pickup Tarmat Removal	OPEN

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1A,1B	Salmon Stream	ADF&G catalogued anadromous stream (225-20-15050) is present in Segment. No constraint to manual pickup and tarmat removal.
5T	Bald Eagle Nest	NO CONSTRAINT. Bald eagle nest is in Segment MA-10 and more than 400m from work area.
1E	Main Bay Hatchery Release	No constraint to manual pickup and tarmat removal.
1I	Gill Net Area	No constraint to manual pickup and tarmat removal.
1L	Set Net Sites	No constraint to manual pickup and tarmat removal.

OTHER ECOLOGICAL CONSIDERATIONS

No disturbance of stream bed or banks. Restrict boat and air traffic to essential minimum. When set net sites are present restrict beach operations to essential minimum. Restrict air traffic and all disturbance to essential minimum. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Avoid any unnecessary disturbance or damage to unloiled biota and substrate.

TAG APPROVAL DATE 5/24/90
ADEC Alex W. Worsen
EXXON Amy Tetz
NOAA B. Worsen
USCG Mr. J. Hall
FOSC Y. E. W. DATE 5-24-90

Prepared by Andru Meyer WTK

Date 5/22/90

MA-9

MA-10

20

Work
Areas

FA-2

FA-1

Anadromous
Stream
225-20-15050

EB



Exxon Company, USA
Map Key: PWS-FA-2
Mar 11, 1990



ECOLOGY MAP
SEGMENT FA-2
SUBDIVISION A (1 of 1)
METERS

0 440 880

★ Seabird Colony
▲ Eagle Nest

1 inch = 1444 feet

SHORELINE EVALUATION

SEGMENT ST/ FA-02 SUBDIVISION A (1 OF 1) DATE 4/9/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 225-20-15050.

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)

1B Salmon stream mouth - spawning (7/10 to 8/31)

1E Main Bay Hatchery release (4/20 to 5/10)

1L Set net sites (6/11 to 7/25)

9BB Privately developed lands

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unoiled biota and substrate. Eagle nest near border in MA-10.

ARCHAEOLOGICAL CONSTRAINTS: If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately s required prior (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: *Shane J. Hume*

DATE: 5/2/90

OILING CATEGORIZATION:

Wide 0 m: Medium 229 m: Narrow 0 m: V.Light 944 m: No Oil 1406 m

Subsurface Oil Observed: Yes X No Maximum Depth 27+ cm

RECOMMENDATIONS:

~~X~~ No Treatment Recommended

X Treatment Recommended

X Manual Pickup

 Bioremediation

X Tarmat: Breakup

X Removal

 Snare/Absorbent Booms

 Oil Snares (pom poms)

 Absorbents (pads, rolls, etc)

 Spot Washing: Wands

 Beach Cleaner

 Other (see comments)

COMMENTS: MANUAL PICKUP OF ASPHALT PATTIES / TARBALLS AS INDICATED
ON SKETCH

TAG COMMENTS:

TAG APPROVAL DATE: 4/25/90

ADEC ART WEINER

EXXON ANDY TAYLOR

NOAA Joseph Talbot

USCG KENNETH KEENE

FOSC: *[Signature]*

DATE: 5-9-90

SHORELINE EVALUATION

SEGMENT ST/ FA-02 SUBDIVISION A (1 OF 1) DATE 4/9/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 225-20-15050.

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)

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1E Main Bay Hatchery release (4/20 to 5/10)

1L Set net sites (6/11 to 7/25)

9BB Privately developed lands

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unoiled biota and substrate. Eagle nest near border in MA-10.

ARCHAEOLOGICAL CONSTRAINTS: If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately as required prior (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: Abraham 3 H. Hines DATE: 5/2/90

OILING CATEGORIZATION:

Wide 0 m: Medium 229 m: Narrow 0 m: V.Light 944 m: No Oil 1406 m
Subsurface Oil Observed: Yes X No Maximum Depth 27+ cm

RECOMMENDATIONS:

☒ No Treatment Recommended	☐ Snare/Absorbent Booms
☒ Treatment Recommended	☐ Oil Snares (pom poms)
☒ Manual Pickup	☐ Absorbents (pads, rolls, etc)
☐ Bioremediation	☐ Spot Washing: <u> </u> Wands
☒ Tarmat: <u> </u> Breakup	☐ Beach Cleaner
☒ Removal	☐ Other (see comments)

COMMENTS: MANUAL PICKUP OF ASPHALT PATTIES / TARBALLS AS INDICATED
ON SKETCH

TAG COMMENTS:

TAG APPROVAL DATE: 4/25/90

ADEC ART WEINER Art Weiner

EXXON ANDY TEAR Andy Tear

NOAA Joseph Talbot Joe Talbot

USCG KENNETH KEENE Kenneth Keene

FOSC: WJL DATE: 5-9-90

↑
PWS
2368

ECOLOGY
MAP

FA-2

Anadromous
stream

225-20-15050

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

oooo

FA-2

ADEC Segment Length: 3424m

0 100 200 300

Map Key: PWS-236a

Name: Randy McBride

Date: 4/10/90

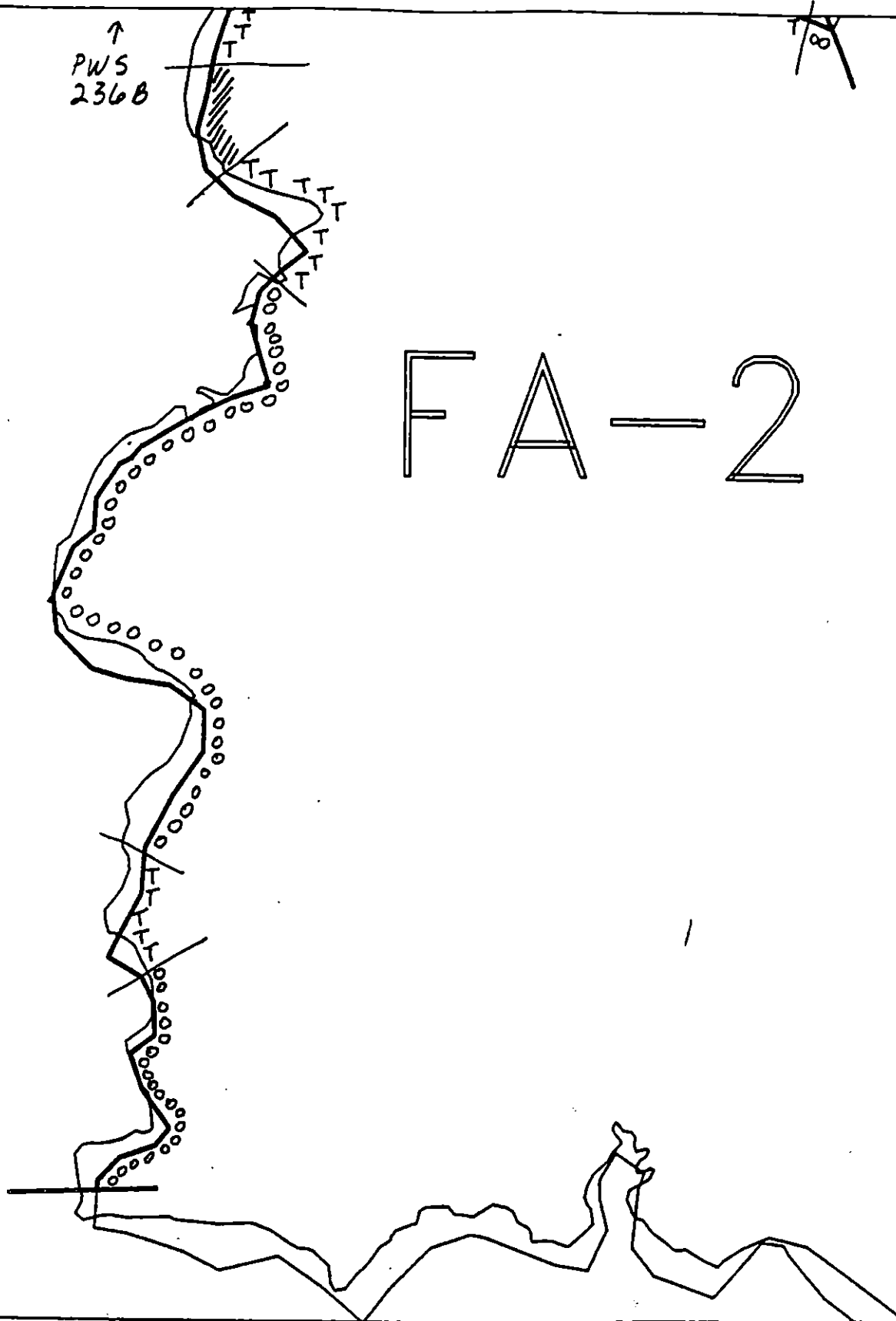
Map Key: PWS-236a

(12/19)

↑
PWS
236B

1/8

FA-2



XXXX Wide

//// Medium

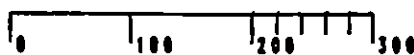
--- Narrow

TTTT Very Light

oooo

FA-2

ADEC Segment Length: 3424m

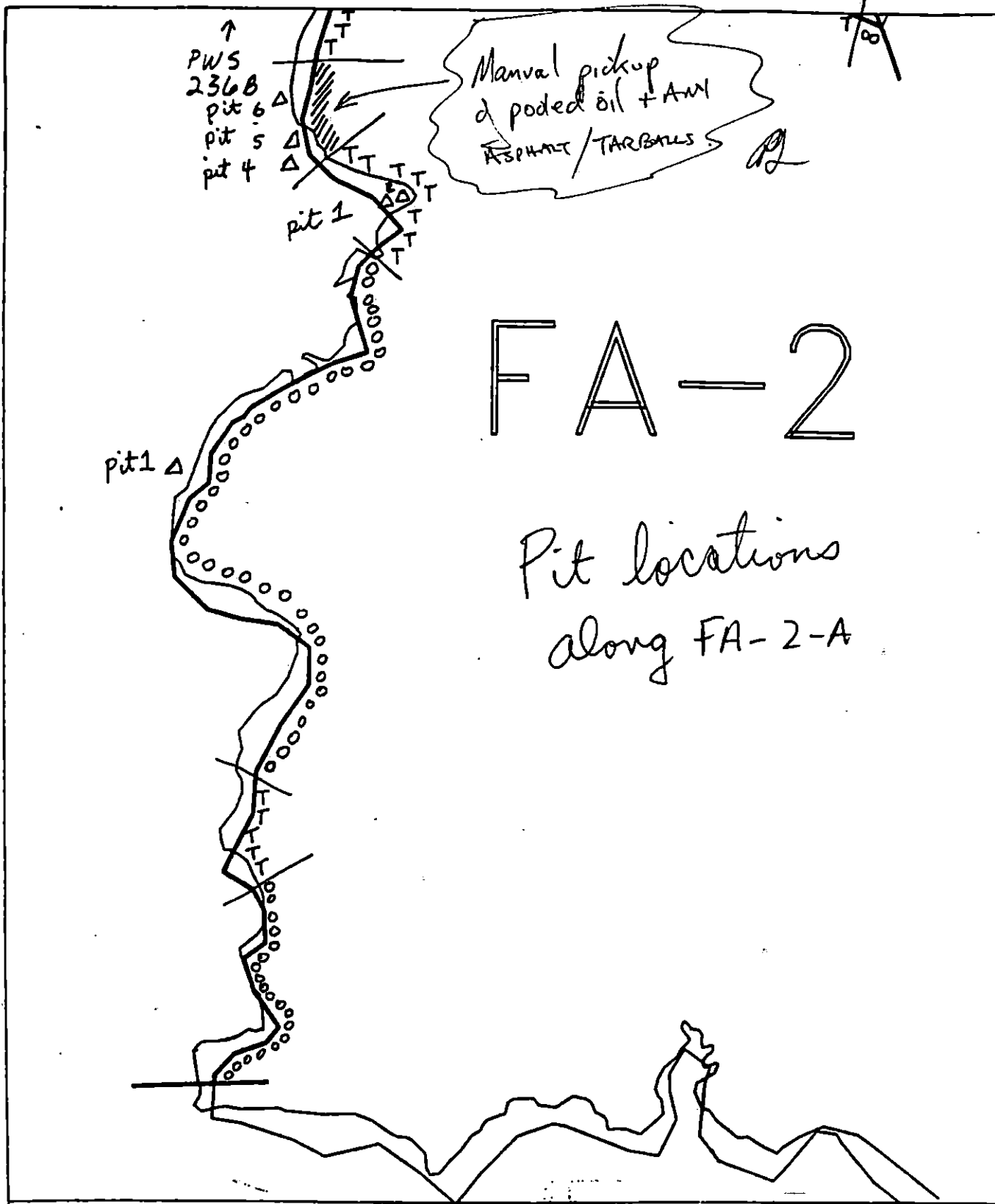


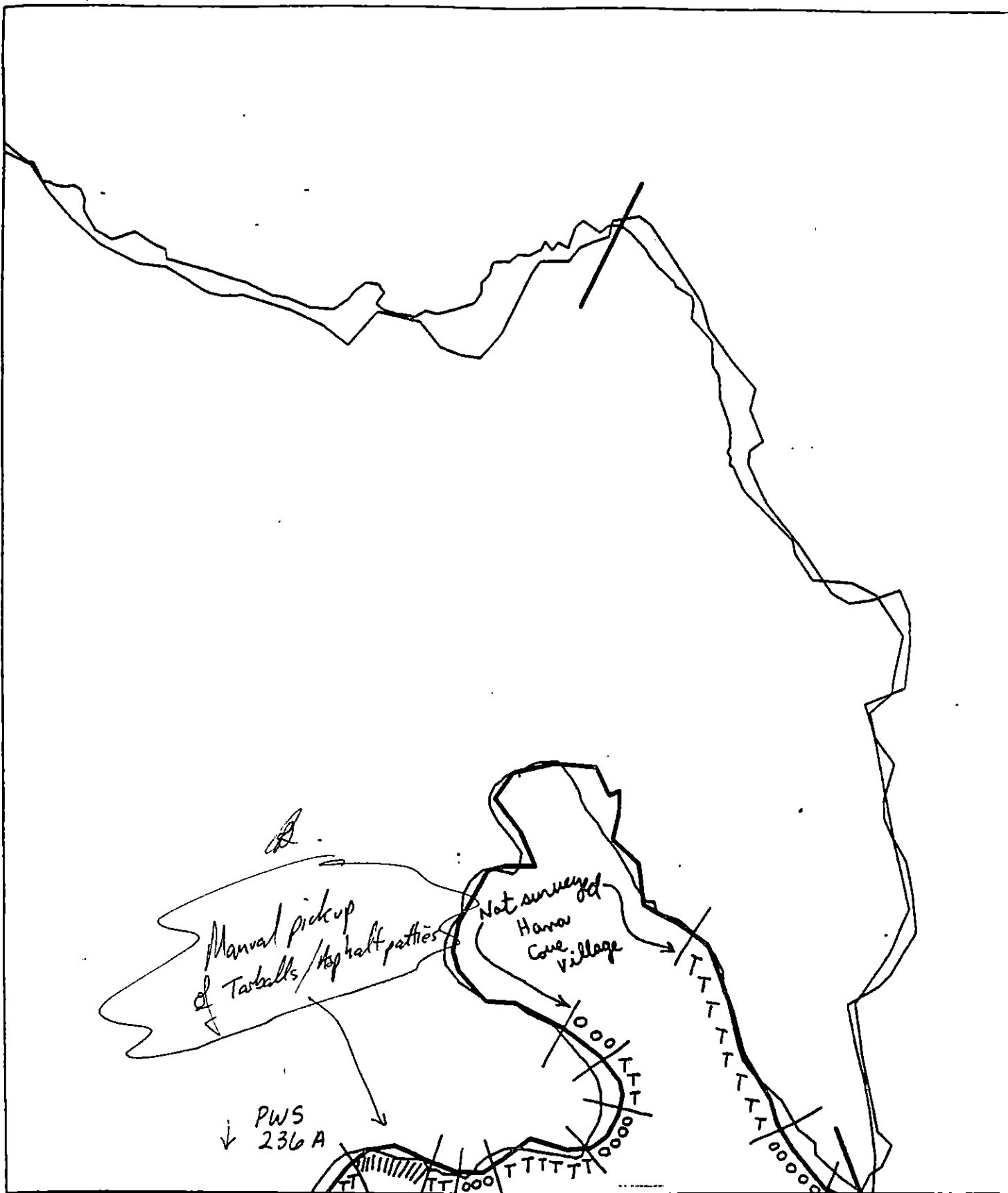
Map Key: PWS-236a

Name: Randy McBride

Date: 4/10/90

note: 12/19





XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

FA-2

ADEC Segment Length: 3424m



Map Key: PWS-236b

Name: Randy McBride

Date: 4/10/90

Data Entered: (13/19)

1991 MAYSAP EVALUATION

SEGMENT: FA 002 **SUB:** A **REGION:** PWS **SURVEY DATE:** 5/14/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) RESTRICTED 3/1 - 9/15

Ecological/Constraints (see page two for details) Eagle nest,
Fry release, Fish harvest area, Anadromous stream

ARCHAEOLOGICAL CONSTRAINTS:

If treatment is planned, a cultural resource evaluation is
required prior to shoreline treatment.

SHPO Signature: _____ **Date:** _____

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

Manual Pickup (Check as Req.) _____

Spot Washing _____

Bio-Customblen Only _____

Bio-Inipol/Customblen _____

Other _____

Other _____

COMMENTS:

INITIAL: _____

TAG: _____

FOSC: _____

TAG APPROVAL DATE: _____

FOSC APPROVAL DATE: _____

ADEC _____

FOSC _____

EXXON _____

USCG _____

NOAA _____

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

Eagle Nest: Access restricted from 3/1 to 9/1. USF&WS authorization required. Maintain 1000' vertical and 1/4 mile horizontal buffer.

Fry Release: Unlimited treatment unless otherwise directed by ADF&G. Sheen containment/recovery procedures required for mechanical treatment.

Fish Harvest Area: Unlimited treatment unless otherwise directed by ADF&G. Sheen containment/recovery procedures required for mechanical treatment.

Anadromous Stream: Unlimited treatment up to stream bank between May 15 and July 10. ADF&G approval required for work after July 10. Fish Habitat Permit required for instream work. ADF&G approval required for bioremediation within 100 meters of anadromous stream after July 10.

ADEC

NAME JEFF GARCIA SIGNATURE [Signature]

☒ NTR ONLY REMAINING OIL IS TRACE RESIDUES ON SURFACE
CAUGHT BEHIND BEDROCK UPRISSES THAT OFFER A DEGREE OF
PROTECTION. RECOVERABLE OIL REMOVED (SITE ^{D1E} D2). NO BENEFIT
FROM FURTHER TREATMENT. NO SUBSURFACE OIL

EXXON

NAME RANDALL K. BOYER SIGNATURE Randall K. Boyer

☒ NTR I WAS WITH THE SQUAD THAT PERFORMED THE MANUAL
PICKUP ON THIS SUBDIVISION IN 1990. THE TREATED AREAS
LOOK HEALTHY. SEVERAL SMALL PATCHES ^(AP) OF $< 1 \text{ meter}^2$ WERE
PICKED UP ON THIS SURVEY. NO FURTHER TREATMENT IS
WARRANTED ON THIS SUBDIVISION. SEVERAL FLOCKS OF DUCKS
WERE SEEN IN THE VICINITY. THIS ACTIVE FISHING AREA WILL
NOT BE EFFECTED BY ANY RESIDUE THAT REMAINS ON SHORE.

LANDMANAGER

NAME MARSHA HALL OF DNR SIGNATURE Marsha Hall

☒ NTR Area E has non distinct oil mixed w/ peat. Small
patches were removed at Area D1.

USCG/NOAA

NAME SCHULTZ HILDS SIGNATURE [Signature] 22

☒ NTR RESIDUE ONLY FOUND IN TRACE AMOUNTS. NO FURTHER TREATMENT
NECESSARY

LOW ANGLE POLICEMAN BEACH SURROUNDED BY STEEP BED ROCK OUTFCROPPING -
OIL OBSERVED AS 10 SOR BEHIND & BETWEEN BOULDERS & CUBBLES ON PENTONIK
UNDERLAYMENT - AT LI ZONE - CT & ST LOCATED ON VERTICAL RIF FACES.
NO SUBSURFACE OIL DETECTED.

MA-10

A

Site A

FA-2

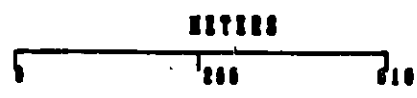
FA-1

A



PA002

Segment Reference Map
Map Key: PWS7A002



AK State Plane Zone 4
1983



EAGLE NEST

WT flushing
bedrock

FA-2A

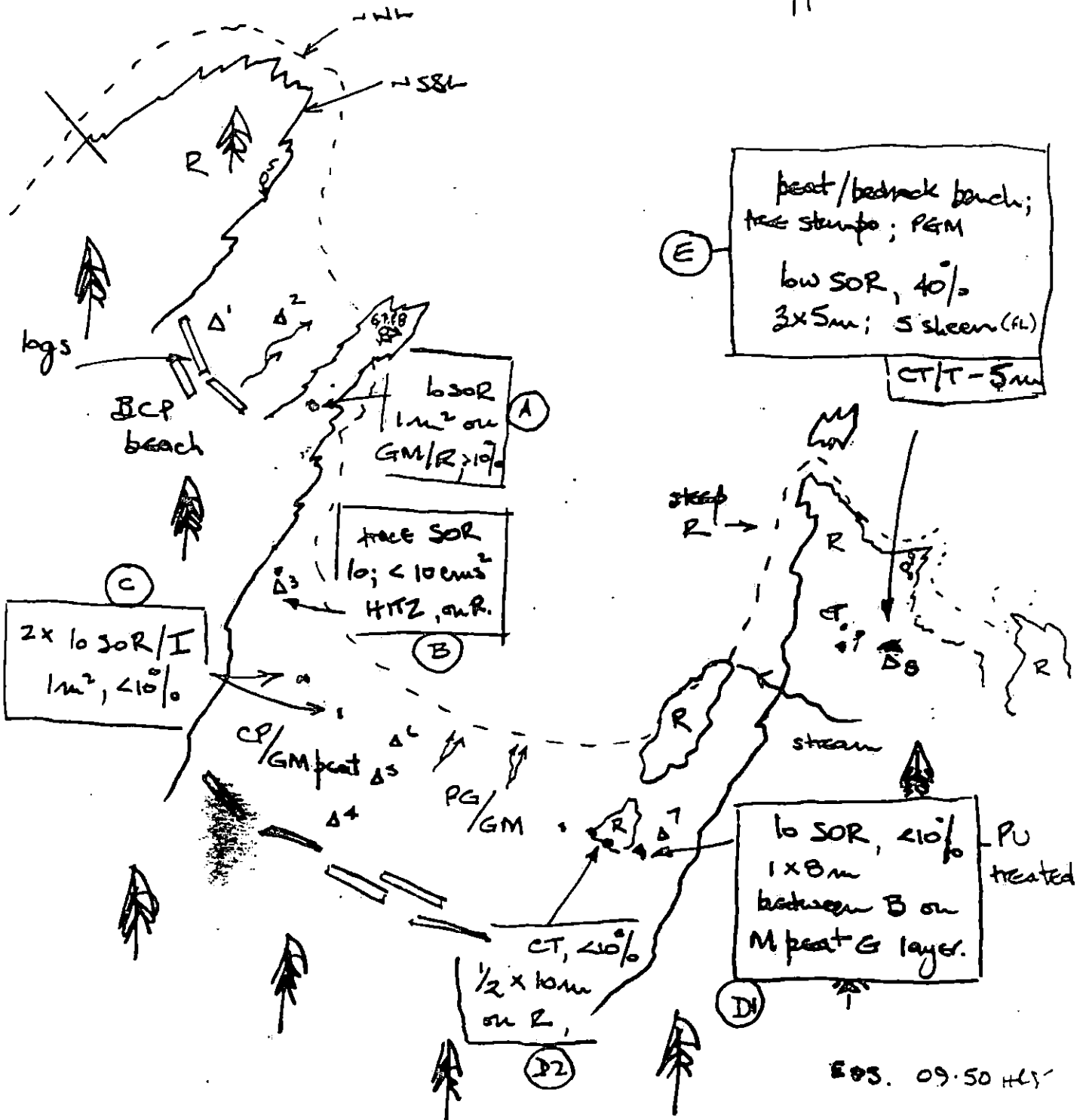
G. MACDONALD
S. 14.91

oil

photo loc.

N

0 approx. 150 m



EOS. 09.50 HLT

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1 DATE 14 May 91
 SEGMENT # FA 002 TIDAL HEIGHT (Range) -3.0 to +0.0 ft MLLW
 SUBDIVISION A BIOLOGIST Michael Fawcett
 SEA STATE 1F WIND SPEED/DIRECTION NE 10 knots
 PHOTOGRAPHS: ROLL # 1 FRAME # 1

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):

This subdivision contains rugged bedrock outcrops, channels, and benches at various levels, small B/C/P pocket beaches, and one sizeable cove with B/C/P/G sediments. The upper and mid-intertidal levels of the beaches are relatively depauperate (sparse to moderately abundant littorinids, limpets, barnacles, *Fucus*, with amphipods, worms, and isopods beneath rocks), which is typical of low energy beaches in this region. Boulder and bedrock areas at either ends of beaches have much more diverse & abundant biota, as does low intertidal zone on the beaches (patches of dense mussel beds, infaunal clams (3-4 spp.), young sea urchins (*S. drobachiensis*), top snails (*Calliostoma ligatum*), starfish (*Pycnopodia*, *Dermasterias*, *Leptasterias hexactis* and *L. arctica*), whelks, siphonarians, nudibranchs, and several species of red, brown, and green algae). Tide pools on bedrock benches and in channels have typically dense algae and littorinids, plus chitons, limpets, sculpins, hermit crabs, etc. See accompanying sketch map for descriptions of biota in vicinity of each oiled site.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			black prickleback
Waterfowl			
Gulls/kittiwakes	1 (Glaucous-winged gull)	2	
Shorebirds			
Corvids			
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters			
Pinnipeds (specify)			
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

Reviewed M.B. 5/18/91

FA002A 14 May 91

Fawcett

start 0715

shale PK bed, low energy

Trace CT ^{450m} at south end of - ^{worms} MSR
pocket beach + 10-12 ft just above

spare *Rodunculus* & *ammonia* limps -

dense rockweed 3 m either side of

5 m downshore - also litt. limps,

↑ sparse barnacles

- old sea urchin skull - no teeth

pool w/ dense litt. f. & green,

spare *Phyllospadix*, etc 10 m downshore

- boulder fields w/ patchy barnacles, *Fucus*

mussels, whelks in MTZ - LTZ - also

clams (*Prothaca*, *Saxidomus*,) - other

craters - *Pycnogonida*, *Dermasteria*,

Leptasterias, *Urechis* (dub), *prickles*,

(*Callinectes* *ligatum*, *Tornicella* in LTZ)

- dense barn spat in MTZ - LTZ

Large *Ed. Neulla emarginata*

- decorator crabs, *Leptasterias*

- drowned ancient forest at end

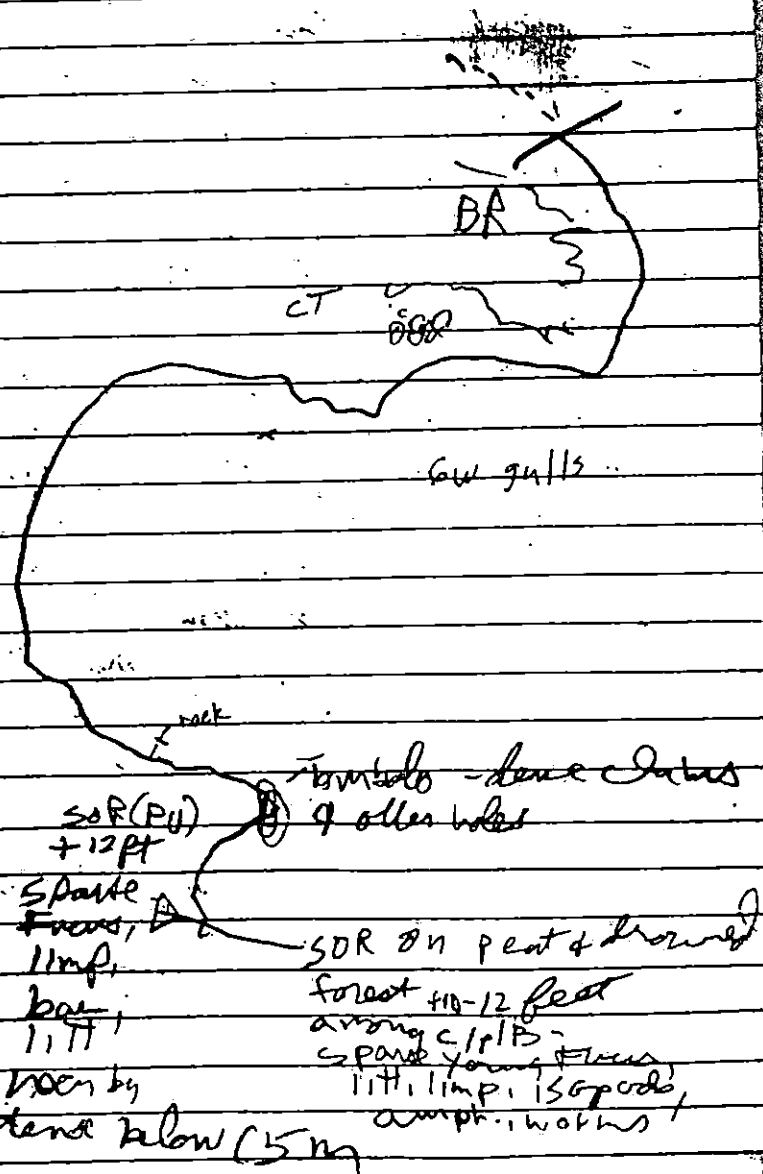
of subdune - dense *Fucus* on BR

5 m away at same level + 10 ft

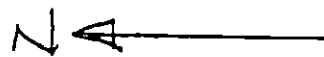
not sensitive - *Littorina* breeding in old

sed end 0955

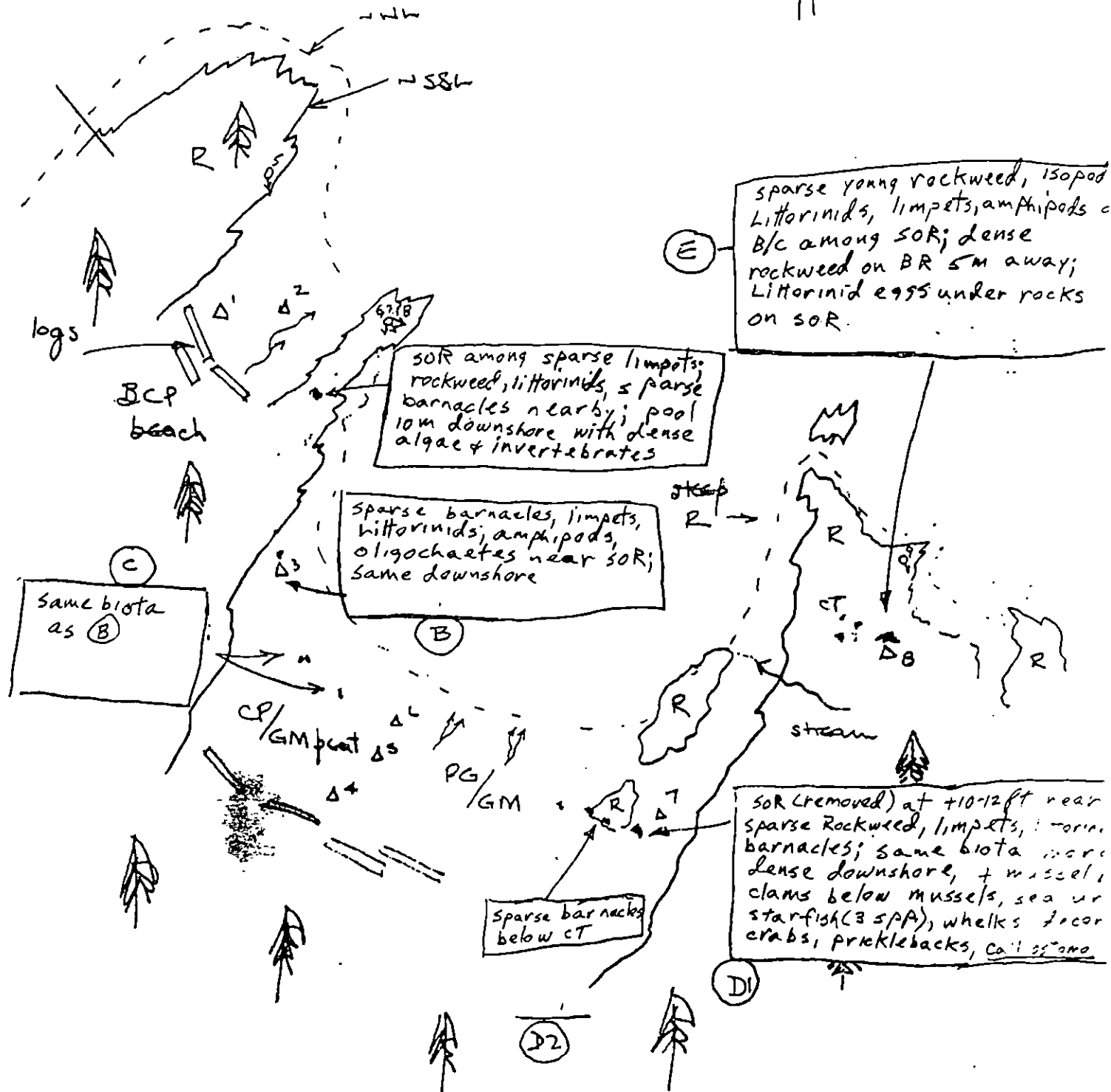
FA2A



Bio. Sketch Map
FA 002-A 5/14/91
M. H. Fawcett

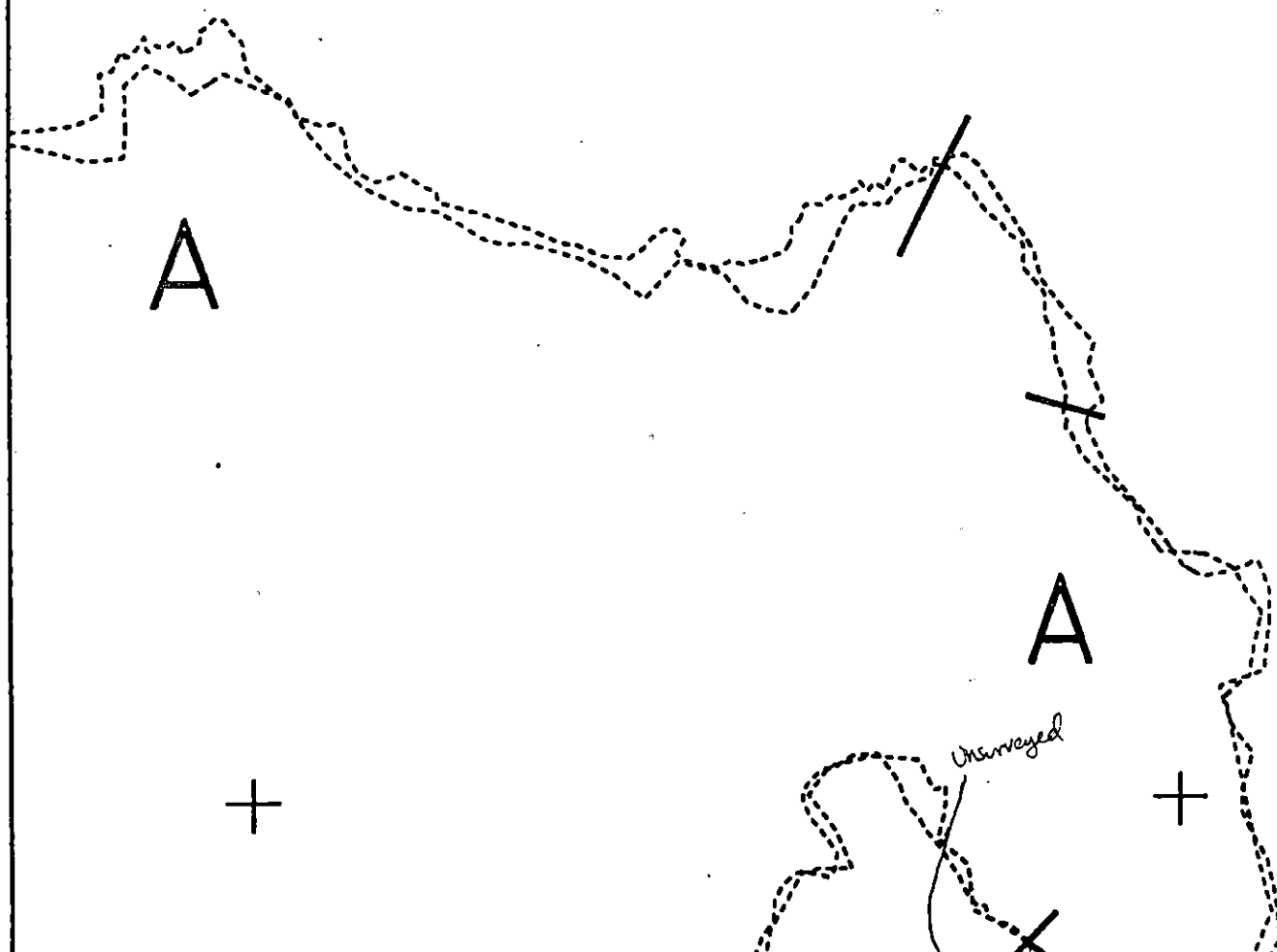


0 approx. 150 m



Reviewed M.B. 5/18/91

MA-9



XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

FA002 A
 ADEC Subsegment Length: 2604m
 METERS
 0 200 400
 AK State Plane Zone 4
 pfa002ab



Subdivision Field Map
 Map Key: PWSFA002Ab
 Name: GM
 Date: 5.14.91
 Date Entered:

+

VL 1m
1m VL
B
A
UN3
UN3
1m VL
1m 8/N
18m
D
E

FA-2

A

UNSUBST

+

+

XXXX Wide
//// Medium
---- Narrow
TTTT Very Light
0000 No Oil

FA002 A

ADEC Subsegment Length: 2804m

METERS

0 200 400

AK State Plane Zone 4
pld002a



Subdivision Field Map

Map Key: PWSFA002Aa

Name: GM

Date: 5.14.91

Date Entered:

Reviewed S/18

REVISED CD 18 MA

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

Eagle Nest: Access restricted from 3/1 to 9/1. USF&WS authorization required. Maintain 1000' vertical and 1/4 mile horizontal buffer.

Fry Release: Unlimited treatment unless otherwise directed by ADF&G. Sheen containment/recovery procedures required for mechanical treatment.

Fish Harvest Area: Unlimited treatment unless otherwise directed by ADF&G. Sheen containment/recovery procedures required for mechanical treatment.

Anadromous Stream: Unlimited treatment up to stream bank between May 15 and July 10. ADF&G approval required for work after July 10. Fish Habitat Permit required for instream work. ADF&G approval required for bioremediation within 100 meters of anadromous stream after July 10.

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 1 SEGMENT FA002 SUBDIVISION A DATE 5/14/91

ADEC

NAME JEFF GUNGLASSIGNATURE [Signature]☒ NTR

ONLY REMAINING OIL IS TRACE RESIDUES ON SURFACE
 CAUGHT BEHIND BEDROCK UPRISES THAT OFFER A DEGREE OF
 PROTECTION. RECOVERABLE OIL REMOVED (SITE ^{D1E} D2). NO BENEFIT
 FROM FURTHER TREATMENT. NO SUBSURFACE OIL

EXXON

NAME RANDALL K. BOYERSIGNATURE Randall K. Boyer☒ NTR

I WAS WITH THE SQUAD THAT PERFORMED THE MANUAL
 PICKUP ON THIS SUBDIVISION IN 1990. THE TREATED AREAS
 LOOK HEALTHY. SEVERAL SMALL PATCHES ^(AP) OF $< 1 \text{ meter}^2$ WERE
 PICKED UP ON THIS SURVEY. NO FURTHER TREATMENT IS
 WARRANTED ON THIS SUBDIVISION. SEVERAL FLOCKS OF DUCKS
 WERE SEEN IN THE VICINITY. THIS ACTIVE FISHING AREA WILL
 NOT BE EFFECTED BY ANY RESIDUE THAT REMAINS ON SHORE.

LANDMANAGER

NAME MARSHA HALL OF DNRSIGNATURE Marsha Hall☒ NTR

Area E has non distinct oil mixed w/ peat. Small
 patches were removed at Area D1.

USCG/NOAA

NAME SCHULTZ / CHILDSSIGNATURE [Signature]☒ NTR

RESIDUE ONLY FOUND IN TRACE AMOUNTS. NO FURTHER TREATMENT
 NECESSARY

LOW ANGLE POLICEMAN BEACH SURROUNDED BY STEEP BED ROCK OUTCROPPING -
 OIL OBSERVED AS 1050R BEHIND & BETWEEN Boulders & CUBBLES ON PEAT ON Rk
 UNDERLAYMENT - AT LI 204 - CT & ST LOCATED ON VERTICAL Rk FACES.
 NO SUBSURFACE OIL DETECTED.

MA-10

A

Site A

FA-2

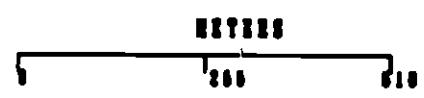
FA-1

A



FA002

Segment Reference Map
Map Key: PUSPA002



AK State Planning Zone 4
pl0002



EAGLE NEST

FA-2A

G. MACDONALD

5.14.91

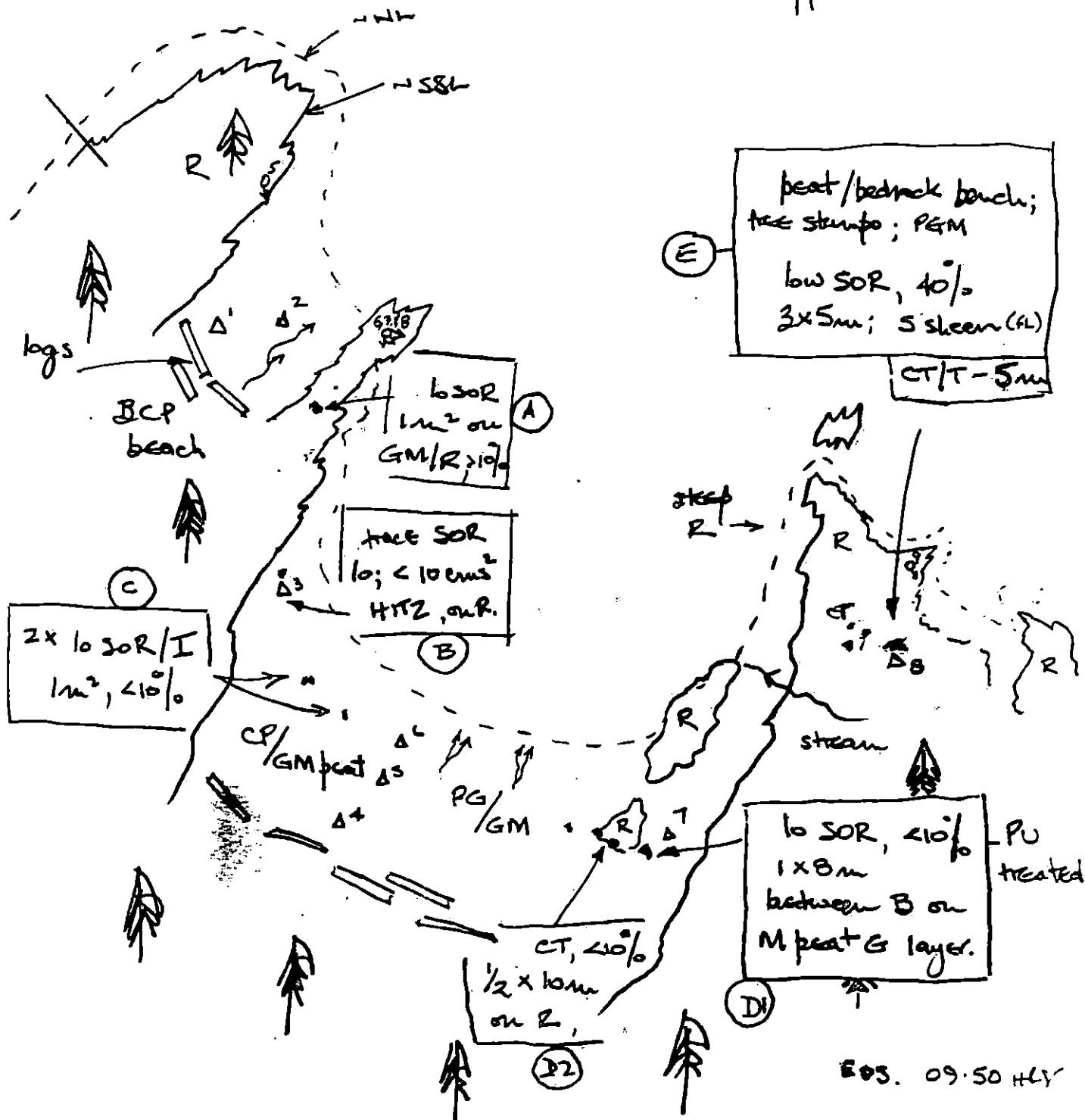
WT flushing
bedface.

oil

photo loc.

N

approx. 150 m



EOS. 09.50 HLY

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 1 DATE 14 May 91
 SEGMENT # FA 002 TIDAL HEIGHT (Range) -3.0 to +0.0 ft MLLW
 SUBDIVISION A BIOLOGIST Michael Fawcett
 SEA STATE 1 ft WIND SPEED/DIRECTION NE 10 knots
 PHOTOGRAPHS: ROLL # FRAME #

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):

This subdivision contains rugged bedrock outcrops, channels, and benches at various levels, small B/C/P pocket beaches, and one sizeable cove with B/C/P/G sediments. The upper and mid-intertidal levels of the beaches are relatively depauperate (sparse to moderately abundant littorinids, limpets, barnacles, *Fucus*, with amphipods, worms, and isopods beneath rocks), which is typical of low energy beaches in this region. Boulder and bedrock areas at either ends of beaches have much more diverse & abundant biota, as does Low intertidal zone on the beaches (patches of dense mussel beds, infaunal clams (3-4 spp.), young sea urchins (*S. drobachensis*), top snails (*Calliostoma ligatum*), starfish (*Pycnopodia*, *Dermasterias*, *Leptasterias hexactis* and *L. arctica*), whelks, siphonarians, nudibranchs, and several species of red, brown, and green algae). Tide pools on bedrock benches and in channels have typically dense algae and littorinids, plus chitons, limpets, sculpins, hermit crabs, etc. See accompanying sketch map for descriptions of biota in vicinity of each oiled site.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			black pricklyback
Seabirds			
Waterfowl			
Gulls/kittiwakes	1 (Glaucous-winged gull)	2	
Shorebirds			
Corvids			
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters			
Pinnipeds (specify)			
les (specify)			

Shoreline subdivision map showing important biological features attached.

Reviewed M.B. 5/18/91

FA002A 14 May 91

Fawcett

start 0715

shale Bk/P beach, low energy

Trace CT ^{450ft} at south end of ^{-worms} MSR
pocket beach + 10-12 ft just above

sparse Rockweed, & among limps -

dense rockweed 3 m either side of

5m downshore - also litt, limp,

↑ sparse barnacles

- old sea otter skull - no teeth

pool w/ dense litt, f/l green,

sparse Phyllospadix, etc 10m downshore

- boulderfields w/ patchy barnacles, Fucus

mussels, whelks in MT2 - LT2 - also

clams (Protothaca, Saxidomus) - other

craters - Pyrosoma, Dermaptera,

Lepidasterias, Urchins (dub), prickles,

(Callinectes ligatum, Terebralia in LT2)

- dense barn spat in MT2 - LT2

Large old Anulla emarginata

- decorator crabs, Leptasterias

- drowned anemone forest at end

of Suldurum - dense Fucus on BR

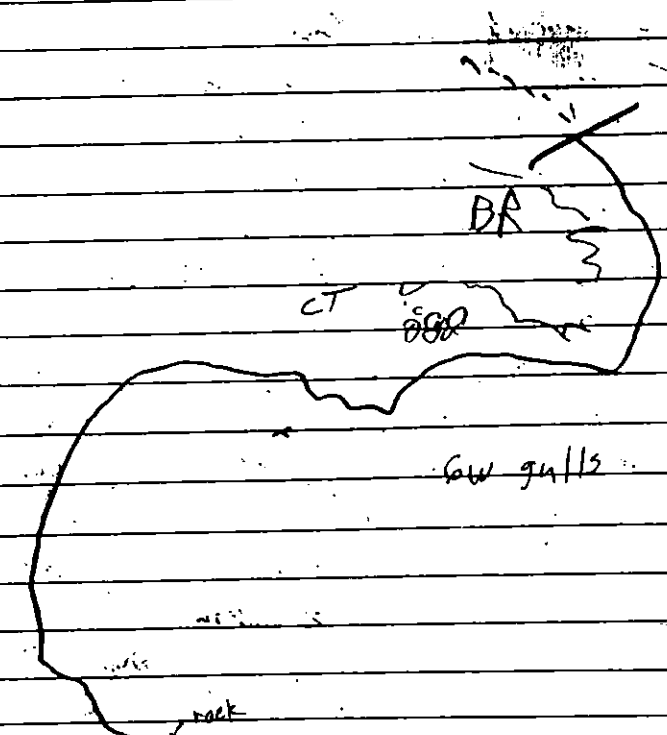
5m away at same level +16 ft

not sensitive - Littorina breeding in old

end 0955

FA2A

↑



600 gulls

SOR (PU)
+12 ft

Sparse
Fucus, A

limp,

bar,

11 ft

near by

dense below 5m

Tombolo - dense Salicornia
& other halophytes

SOR on pent & drowned

forest +10-12 feet

among C/P/B -

sparse young Fucus,

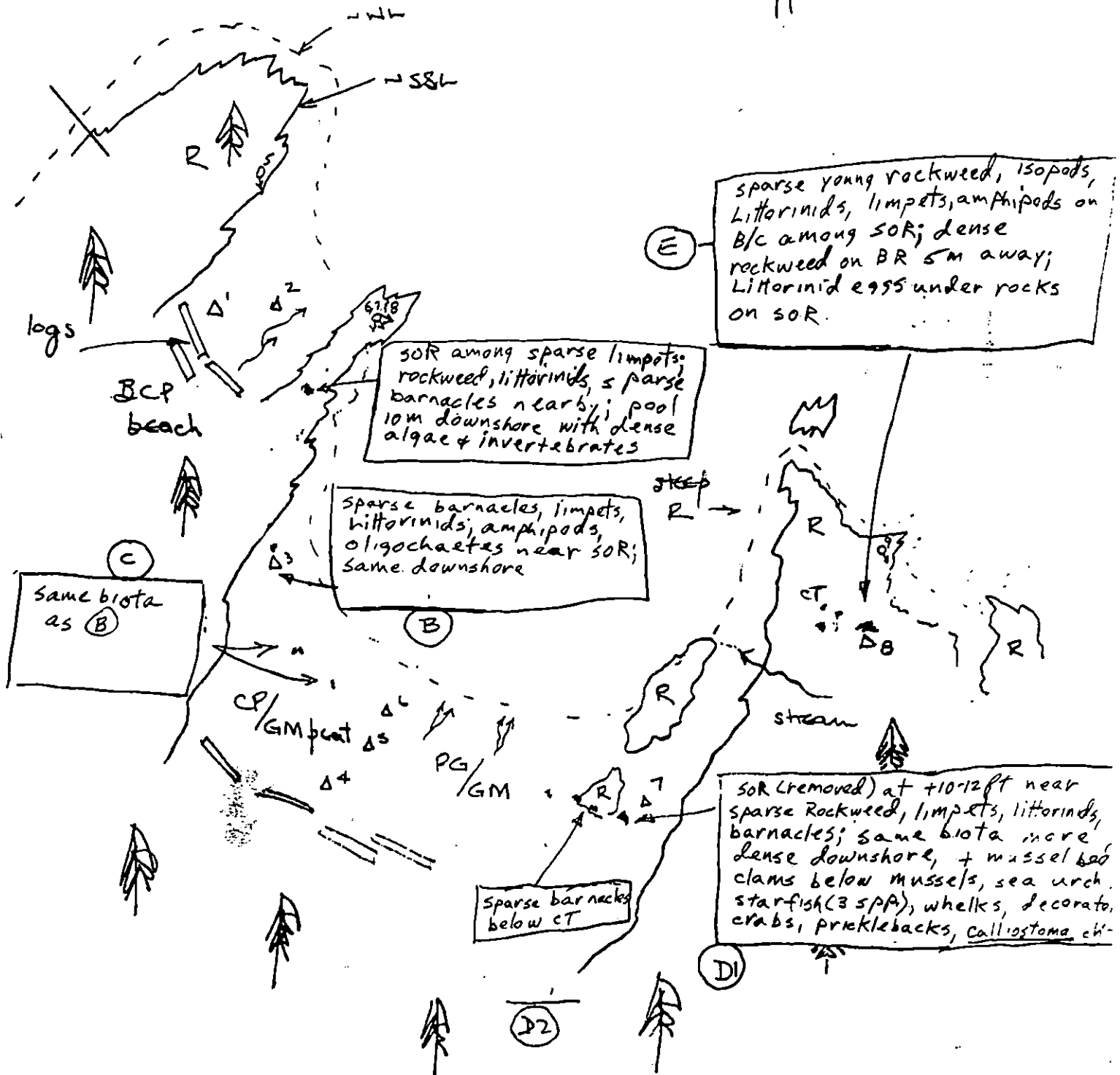
litt, limp, 150 pods,

amph. works

Bio. Sketch Map
FA 002-A 5/14/91
M. H. Fawcett

N ←

0 approx. 150 m



Reviewed M.B. 5/18/91

+

+

MA-9

A

A

+

+

Unsurveyed

XXXX
////

TTTT
0000Wide
Medium
Narrow
Very Light
No Oil

FA002 A

ADEC Subsegment Length: 2604m

METERS

0 200 400

AK State Plane Zone 4
pf002ab

Subdivision Field Map

Map Key: PWSFA002Ab

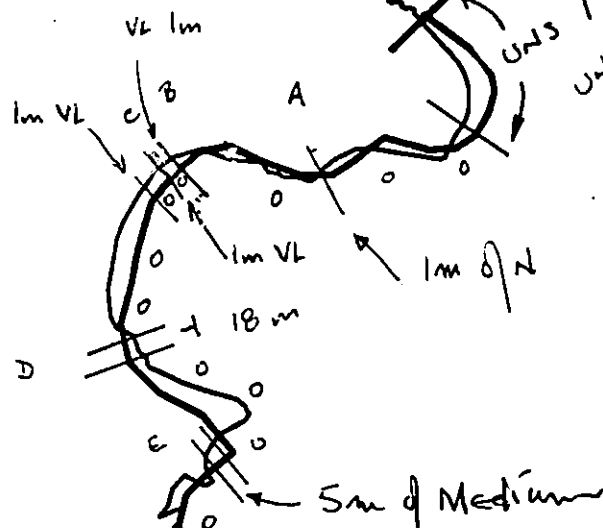
Name: GM

Date: 5.14.91

Date Entered:

25 revised 5/18

+



A

FA-2

F

+

+

XXXX
////

TTTT
0000

Wide
Medium
Narrow
Very Light
No Oil

FA002 A

ADEC Subsegment Length: 2604m

METERS

0 200 400

AK State Plane Zone 4
plus0200



Subdivision Field Map

Map Key: PWSFA002Aa

Name: GM

Date: 5.14.91

Date Entered:

EF revised 5/18

REVISED CD 10 MAY

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/FL-01

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ FL-01 SUBDIVISION A (1 OF 1) DATE 4/9/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
No specific constraints identified.

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid any unnecessary disturbance or damage to unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:
If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 64 m: Narrow 398 m: V.Light 30 m: No Oil 57 m
Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

☐ No Treatment Recommended	☐ Snare/Absorbent Booms
☒ Treatment Recommended	☐ Oil Snares (pom poms)
☒ Manual Pickup	☐ Absorbents (pads, rolls, etc)
☒ Bioremediation	☐ Spot Washing: _____ Wands
☒ Tarmat: _____ Breakup	☐ Beach Cleaner
☐ _____ Removal	☐ Other (see comments)

COMMENTS: Recommend manual pick up of oiled debris and tarmat removal.
Also recommend bioremediation of oil coated and oil covered areas.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

FIELD SHORELINE COMMENT SHEET

SEGMENT ST/ FL-01 SUBDIVISION: A DATE 09 APRIL 90

USCG
NAME LARRY FLETCHER SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

1. MANUALLY REMOVE ASPHALT AND TAR PATTIES.
2. POSSIBLE BIO-REMEDIATION

ADEC
NAME DAVID M. SAGE SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

- ① MANUALLY REMOVE TAR PATTIES, DEBRIS AND ASPHALT FROM SURFACE AND SUBSURFACE SEDIMENTS, INCLUDING BETWEEN BOULDERS.
- ② REMOVE GROSS CONTAMINATION, COVER OTHER THAN STAIN, FROM BEDROCK + BOULDER.
- ③ BIOREMEDIATE ONLY WITH CONCURRENCE OF CHENECA VILLAGE RESIDENTS AND/OR CORPORATION.

LAND MANAGER
NAME Steve WARD SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS
I consider the DATA above to be very ACCURATE, AS to Existing Conditions on the Beach.

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG Richard Marty USCG Larry Fletcher SEGMENT ST/ FL-01
 BIO Bob Leman LAND REP Leigh Carter SUBDIVISION A (141)
 EXXON Jon Czarnoki ADEC Dave Sale TIME 07:20 to 21:30
 TEAM NO.: 10 TIDE LEVEL: -0.1m (0.4') to +0 m (0') DATE 09 April 1990
 EST. SUBDIVISION LENGTH: 327 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot 2° ☒ Boat 1° ☐ Helo WORKING DIRECTION: NE to SW
 SURFACE SEDIMENTS: R 60 % B 10 % C 10 % P 10 % G 5 % S 5 % M 0 % V 0 %
 SLOPE: Long 30 % Hang 70 % Vert 0 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 61 m N 336 m VL 15 m NO 115 m
 $3m^2 + (4 \times 0.2 \times 30)m^2 =$

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR						IMPACTED ZONES			
	C	N	P	R	SW	BL	GR	OR	YL	BR	SU	U	M	U
ASPHALT PAVEMENT			X		X						X			
POOLED														
COVER		X							X		X			
COAT		0	✓	X					X		X			
STAIN			✓						✓		✓			
MOUSSE														
PATTIES			X						X		X			
TARBALLS														
FILM														
NO OIL														X

PAVEMENT: H F (S) 27 sq. m by 3 cmPATTIES / TARBALLS 1 BAGS

NEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation	X		
Trash	X		
Debris	X		

DEBRIS COLLECTED
☐ YES ☒ NOTYPE 0#BAGS 0

Photographs:

Roll No. ST/10/11Frames 27-36

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL cm - cm (0.4m - 0.4m)	BELOW		OIL / FILM COLOR						PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		VO	VC	SW	BL	GR	OR	YL	BR	SU	U	M	U		
1	30					X	.									X				N	Pebbles
2	26					X	.									X					Coarse Sand
3	25					X	.									X					Pebbles, Shells
4	8		X				0.4	X					X			X					Gravelite / Rock
5	25					X	.									X				✓	Coarse Sand
							.														

COMMENTS

OG Richard

SKETCH MAP

SEGMENT ST/ FL-01

SUBDIVISION A

DATE 9 April 90

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Entry
- ☐ Oil Det.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HWA/LWA
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Photo(s)
- ☐ Pit Location(s)
- ☐ Photo Location(s)

LEGEND

- 1 Δ
- Pt - No Subsurface Oil
- 2 Δ
- Pt - Subsurface Oil
- CT/C
- Continuous Distribution
- CT/B
- Broken Distribution
- CT/P
- Patchy Distribution
- CT/S
- Splashed Distribution
- Oiled Vegetation
- 1 $\rightarrow$
- Photo location, direction, and number

FL-1

- Δ Metamorphic bedrock
Showing multiple deformations
- $\square$ Sediments and regolith

- TARMAT REMOVAL
- MANUAL PICK UP OILED DEBRIS

Asphalt among angular cobbles in VITZ ~ 4m wide x 20% x 30m long.

Sandy pebble cobble beach poorly sorted band continues around on bedrock. Small patches of asphalt (3m²) up in rocks. 2cm thick - local sheen on pooled water.

Rocky pocket beach with a few patties.

Broken coal on rocks. 'Residual' oil in angular rocks on shallow bedrock in STZ

Narrow pebble granite beach with

Oil band continuous around on rock face

High angle rock headlands with no visible oil.

BIO

0720

Splashes of coal.

Sand, pebble, granules pocket beach. Boulders in back of beach have 1.5m band of coal ~20% coverage. Tarry infilling joints + cracks in bedrock - boulders. One oiled log in STZ

0.3m band of stain (patchy) on bedrock cliff grades to nothing on exposed headlands

Broken band of cover in sheltered areas on rock ~1m wide - patchy. Well preserved in cracks. pulled out piece of rock - penetration to ~0.5cm back (minor)

0 100 200 300
METERS



Oil Character Length (m): AP 40 PO CV 50 CT 200 ST 40 MS PT 50 TB FL NO

Segment ST/FL 1 Subdivision A Date (mo / day / yr) 4 / 9 / 90
 Time (24 hr) 0715 - 1000 Biologist Lennon

- (A) Substrate type and % of segments:
 (1) Bedrock 60 (2) Boulder 10 (3) Cobble 10 (4) Pebble 10 (5) Sand 10 (6) Silt _____
- (B) Overall % cover of biota (% of segment): Dense 90% Moderate _____ Low _____
- (C) Density, substrate preference (by number from A, above), & vertical zonation of major taxa: (upper-U; mid-M; low tidal-L); juveniles / adults (X), new settlement (3)
- Photographs: Roll No. ST/10/11
 Frames 27-36

BARNACLES

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	X	2	X	X	X	2	2	2	2	2
3	3	3	3	3	3	3	3	3	X	3	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

MYTILUS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	X	2	2	X	2	X	2	2
3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

GASTROPODS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	X	X	X	2	2	2
3	3	3	X	3	3	3	X	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

FUCUS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	X	X	2	2	2	X	2	2	X
3	3	3	3	X	3	3	3	X	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

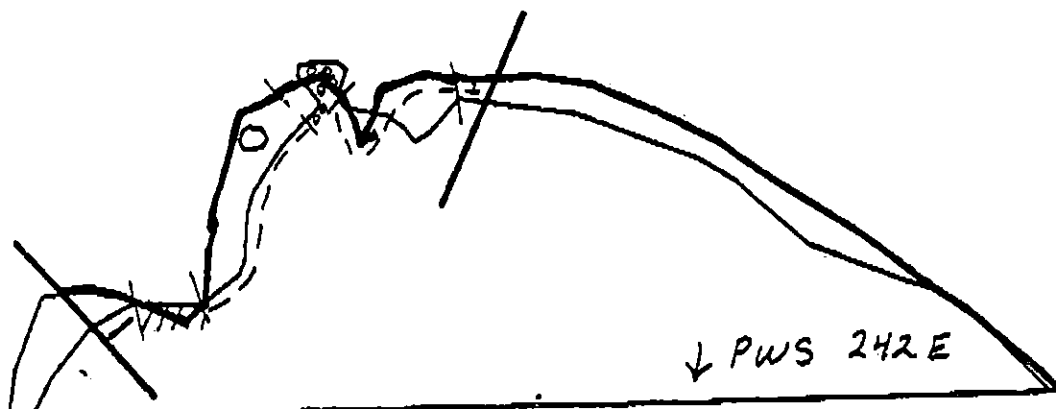
NOT PRESENT

Wildlife Observations/ General Comments: 1 eagle sighting. Low zone also had mixed red algae, Porolithothamnion (ASTEROIDEA), Katharina, Hiatella (molluscs), Alaria (brown algae) and Zostera (vascular plant). The mid zone also had Desmarestia (brown algae), Nereis (ANNELEA), Anthopleura (ANTHOZOA) and Siphonaria (GASTROPODA). Generally this segment is very rich and varied in its biology.

Ecological Considerations: Stream spawning said to occur on this segment though it appears as though the spawning stream is in segment FL 2.

No	0.75"	113 m	115 m
V. Light	0.1"	15 m	15 m
Light	2.2"	330 m	336 m
Moder.	0.4"	60 m	61 m
		<u>518 m</u>	<u>527 m</u>

FL-1A



↓ PWS 242E

XXXX Wide

///// Medium

---- Narrow

TTTT Very Light

0000 No Oil

FL-51

ADEC Segment Length: 5357m



Map Key: PWS-2429

Name: Richard MARYDate: 7 April 1990

Data Entered:

SHORELINE EVALUATION

SEGMENT ST/ FL-01 SUBDIVISION A (1 OF 1) DATE 4/9/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

No specific constraints identified.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: Charles E. H. [Signature] DATE: 4/20/90

OILING CATEGORIZATION:

Wide 0 m: Medium 64 m: Narrow 398 m: V.Light 30 m: No Oil 57 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

<u> </u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u>X</u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u>X</u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u>X</u> Bioremediation	<u> </u> Spot Washing: <u> </u> Wands
<u>X</u> Tarmat: <u> </u> Breakup	<u> </u> Beach Cleaner
<u> </u> <u>X</u> Removal	<u> </u> Other (see comments)

COMMENTS: Recommend manual pick up of oiled debris and tarmat removal.
Also recommend bioremediation of oil coated and oil covered areas.

TAG COMMENTS:

TAG APPROVAL DATE: 4/19/90
ADEC ART WEINER
EXXON ANDY TSH
NOAA Burt Weseloh
USCG KENNETH KERNE

FOSC: DATE: 5-1-90
Ample with comments of Chicago Cap
on affecting the above. Rec

Richard

SKETCH MAP

SEGMENT ST/ FL-01

SUBDIVISION A

DATE 9 April 90

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Entry
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HML/LWL
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ Pit Location(s)
- ☐ Photo Location(s)

LEGEND

1 Δ
Pit - No Subsurface Oil

2 Δ
Pit - Subsurface Oil

CT/C
Continuous Distribution

CT/B
Broken Distribution

CT/P
Patchy Distribution

CT/S
Splashed Distribution

Oil Vegetation

1 →
Photo location, direction, and number

FL-1

High angle rock headlands with no viable oil.

- ☒ Metamorphic bedrock showing multiple deformations
- ☒ Sediments and regolith

- TARMAT REMOVAL
- MANUAL PICK UP OILED DEBRIS

Asphalt among angular cobbles in VITZ ~ 4m wide x 20% x 30m long.

Sandy pebble cobble beach poorly sorted band continues around on bedrock. Small patches of asphalt (3m²) up in rocks. 2cm thick - local sheen in pooled water.

Rocky pocket beach with a few patties.

Broken coat on rocks. 'Residual' oil in angular rocks on shallow bedrock in STZ

Narrow pebble granite beach with

Oil band continues around on rock - false AP/P

0830

CV/B

ST/P

B10

0720

Splashes of coal. OT/P

Sand, pebble, granules pocket beach. Boulders in back of beach have 1.5m band of coal ~20% coverage. Tarry infilling joints + cracks in bedrock - boulders. One oiled log in STZ

0.3m band of stain (patchy) on bedrock cliff grades to nothing on exposed headlands

Broken band of cover in sheltered areas on rock ~1m wide - patchy. Well preserved in cracks. pull out piece of rock - penetration to ~0.5cm back (minor)

0 100 200 300
METERS

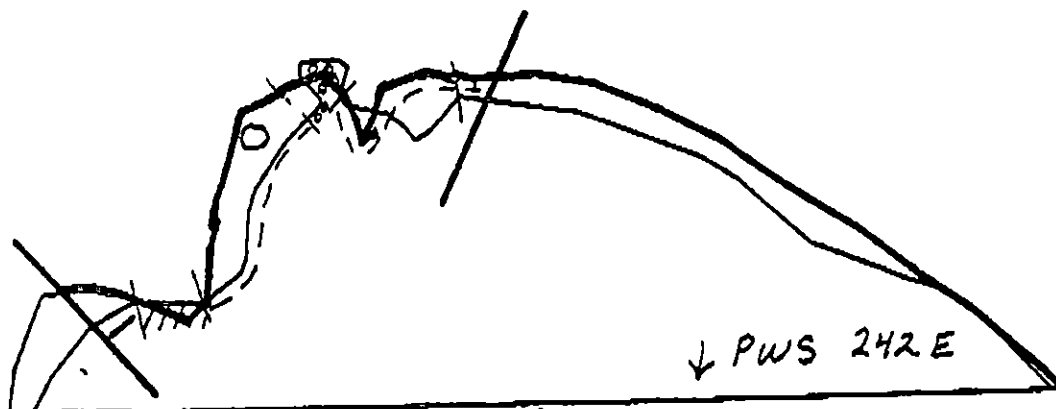


Oil Character Length (m): AP 40 PO CV 50 CT 200 ST 40 MS PT 50 TB FL NO

No	0.75"	113 m	115 m
V. Light	0.1"	15 m	15 m
Light	2.2"	330 m	336 m
Medior	0.4"	60 m	61 m
		<u>518 m</u>	<u>527 m</u>



FL-1A



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

0000 No Oil

FL-51

ADEC Segment Length: 5357m



METERS



Map Key: PWS-242g

Name: Richard Marty

Date: 9 April 1990

Date Entered:

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT FL-1 SUBDIVISION A (1 of 1)

WORK WINDOW	
Manual Pickup Tarmat Removal	OPEN
Bioremediation	OPEN

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

No time-dependent ecological constraints.

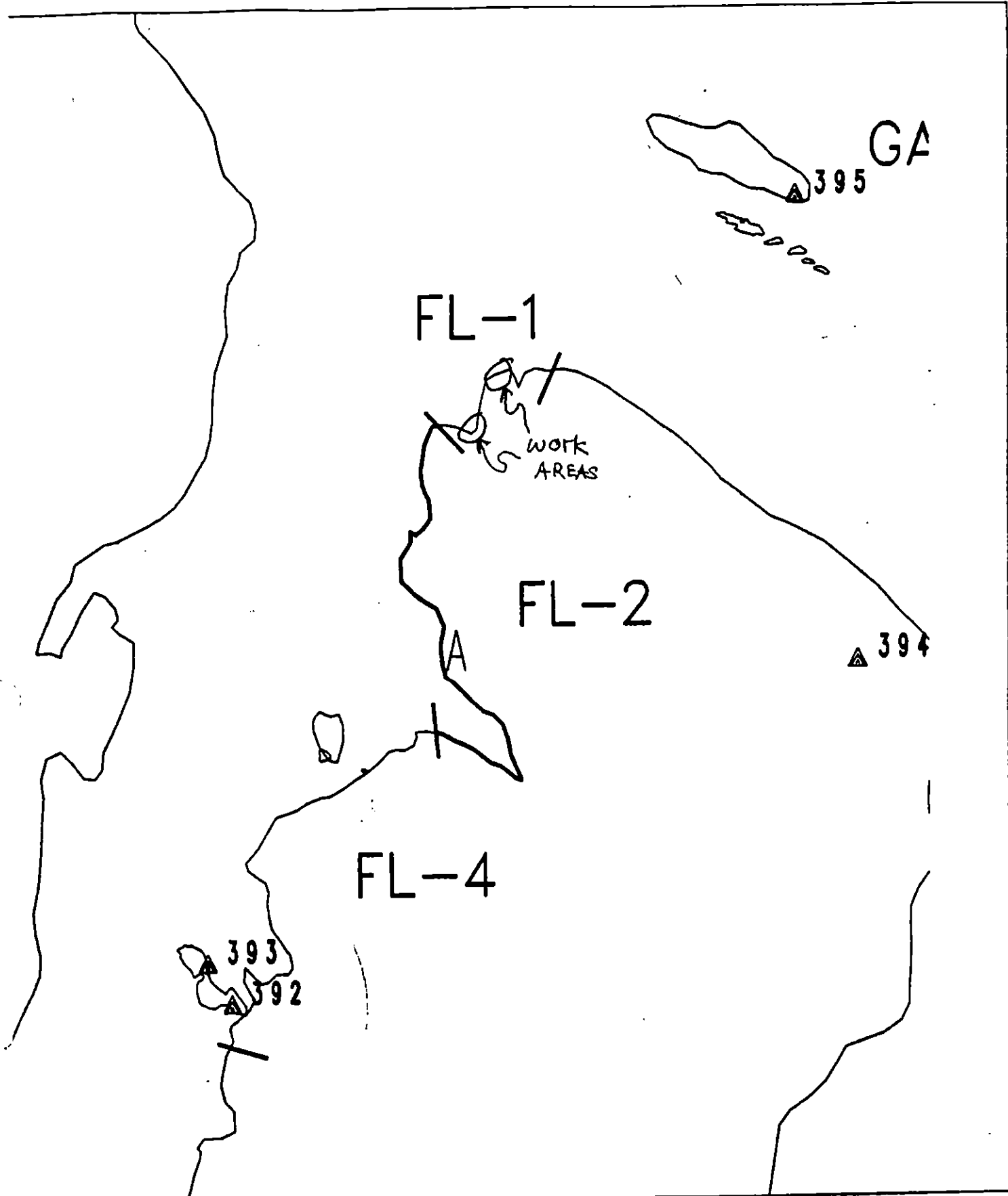
OTHER ECOLOGICAL CONSIDERATIONS

Avoid any unnecessary disturbance or damage to uncolled biota and substrate.

TAG ADDENDUM DATE 5/16/90
ADEC Art Weiner Art Weiner
EXXON AMY TGA Art FOSC DATE 5-17-90
NOAA John Talbot JCT
USCG G.A. Reiter G.A. Reiter

Prepared by: WRK

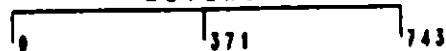
Date: 5/14/90



Exxon Company, USA
Map Key: PMS-FL-2
May 11, 1990



ECOLOGY MAP
SEGMENT FL-1
SUBDIVISION A (1 of 1)
METERS



- ★ Seabird Colony
- △ Eagle Nest

1 inch = 1219 feet

SHORELINE EVALUATION

SEGMENT ST/ FL-01 SUBDIVISION A (1 OF 1) DATE 4/9/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:
No specific constraints identified.

SUBDIVISION ECOLOGICAL CONSTRAINTS:
Avoid any unnecessary disturbance or damage to unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:
If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: Charles E. H. Smith DATE: 4/20/90

OILING CATEGORIZATION:

Wide 0 m: Medium 64 m: Narrow 398 m: V. Light 30 m: No Oil 57 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

<u> </u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u>X</u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u>X</u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u>X</u> Bioremediation	<u> </u> Spot Washing: <u> </u> Wands
<u>X</u> Tarmat: <u> </u> Breakup	<u> </u> Beach Cleaner
<u> </u> <u>X</u> Removal	<u> </u> Other (see comments)

COMMENTS: Recommend manual pick up of oiled debris and tarmat removal.
Also recommend bioremediation of oil coated and oil covered areas.

TAG COMMENTS:

TAG APPROVAL DATE: 4/19/90
ADEC ART WISNOR
EXXON ANDY ISL
NOAA Burt Wesselt
USCG KENNETH KLAUSE

FOSC:

DATE: 5-1-90

Comply with comments of Chicago Cap
on affecting to release. Rec

1991 MAYSAP EVALUATION

SEGMENT: FL 001 SUB: A REGION: PWS SURVEY DATE: 5/12/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) RESTRICTED 7/10 - 9/15

Ecological/Constraints (see page two for details) Anadromous stream

ARCHAEOLOGICAL CONSTRAINTS:

If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO Signature: _____ Date: _____

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL: _____

TAG: _____

FOSC: _____

TAG APPROVAL DATE: _____

FOSC APPROVAL DATE: _____

ADEC

FOSC

EXXON

USCG

NOAA

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

Anadromous Stream: Unlimited treatment up to stream bank between May 15 and July 10. ADF&G approval required for work after July 10. Fish Habitat Permit required for instream work. ADF&G approval required for bioremediation within 100 meters of anadromous stream after July 10.

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 5 SEGMENT FL-1 SUBDIVISION A DATE 5/12/91

ADEC

NAME John Hayer SIGNATURE [Signature]

☒ NTR Surface oil subsurface oiling here was light to moderate and AP + HCR observed was isolated. One patch of AP was picked up reducing the oiling to SOR/H. The remainder of the oil observed was SOR, CU, CT, or FL. No treatment recommended here at this time.

EXXON

NAME JOHN DEAN SIGNATURE [Signature]

☒ NTR 1 bag city sediment recovered by Survey Team. Any oil remaining is not recoverable.

LANDMANAGER

NAME Steve Wilson OF CUC SIGNATURE [Signature]

☐ NTR A Ring of Asphalt 2" wide 1/2" thick Remains Around Some Chase Rocks. Very little of this Recoverable oil. The most Damaging oil in this Subdivision is a layer of oil on the ~~bottom~~ Face of Lg cliffs that will certainly Run when the weather heats up. Spence needles are mixed into this oil. Like Sub-Surface oil Found. Very Little trash. NO BIO on this Sub. Div.

USCG/NOAA

NAME DREHER / CLINE SIGNATURE [Signature]

☒ NTR Further clean up operations would cause more environmental harm than the oil to be removed.

Light CT + ST is common; doesn't warrant further cleanup. Most of the remaining SOR occurs in wave shadows of boulders.

5

MAYSAP SHORELINE OILING SUMMARY

PAGE 1 OF 2

TEAM NO. _____

OG CHANEY

BIO CRANK

SEGMENT FL-1

ADEC HAYES

LANDMANAGER WARD for CUC

SUBDIVISION A

EXXON DEAN

USCG/NOAA DREHER/CLINE

DATE May 12 / 91

TIME 06:55 to 08:35

TIDE LEVEL -1.5 ft. to 0 ft.

ENERGY LEVEL: ☐ H ☒ M ☐ LSURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELOWEATHER: ☐ SUN ☒ CLOUDS ☐ FOG ☒ RAIN ☐ SNOW

TOTAL LENGTH SHORELINE SURVEYED: 549 m

NEAR SHORE SHEEN: ☐ BR ☐ RB ☒ SL ☐ NONE

EST. OIL CATEGORY LENGTH: W - m M 30 m N 112 m VL 110 m NO 297 m US 0 m

L O G	SURFACE OIL CHARACTER										SURFACE SEDIMENT TYPE	SHORE SLOPE V H M L	AREA		ZONE				NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO			WIDTH m	LENGTH m	S	UI	MI	LI	
A						P					R	V	1	10		✓			Lee of Sea Stack
B						S					B	H	5	15		✓			Boulders
C	S					P	S				B	H	1	25		✓			Lee of Large Boulders
D						B					R	V	1	7		✓			Lee of Bedrock Outcrop
E						T					R	V	1	70		✓			Random Patches on Rocks
F					S						R	H	1	15		✓			In Bedrock Cracks
G						T					R	V	1	10		✓			Random Drifts etc
H						P					R	V	1	10		✓			Lee Rock Outcrop
I					S	S	S				BR	VH	1	40		✓			Lee Bedrock Outcrop
J	T				S	S					BR	VH	5	30	✓	✓			NE Pocket Cove
K			S								BR	H	0.5	20		✓			Between Bedrock & Boulders

DISTRIBUTION: C = 91-100%; B = 51-90%; P = 11-50%; S = 1-10%; T = <1%

SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE

PHOTO ROLL # MAYSAP- 5 - 13 FRAMES 1-6

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI		
1	25							✓	-		15	N		✓			PG-PG	
2	15							✓	-		15	N		✓			PG-PG	
3A	10		✓						0-5	N	-	-	✓				PG-R	Crevise in
3B					✓				5-10	Y	-	-					PG-R	Bedrock
4	20							✓	-		15	N		✓			PG-PG	
5	30							✓	-		-	-		✓			GS-GS	
6	25			✓					5-10	Y	-	-		✓			GP-PB	Behind tall outcrop
7	20							✓	-					✓			P-PB	
8	30							✓	-		5	N		✓			PG-BPG	

SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

OG COMMENTS:

Pit ③ was dug in between large boulders in a bedrock crack. HOR condition follows along area ③ in pockets of AP between boulders.

Pit ⑥ MOR condition was limited to approximately 2 m² behind bedrock outcrop.

(SEE NOTE ON 2ND PAGE)

EC revised May 12, 1991

MAYSA 1991
OG SKETCH MAP
GREG CHANEY

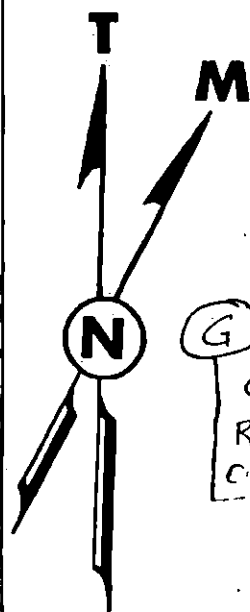
TEAM 5

SEGMENT: FL 1 A

DATE: May 12 1991

AIR P.#: PIMC 005 195

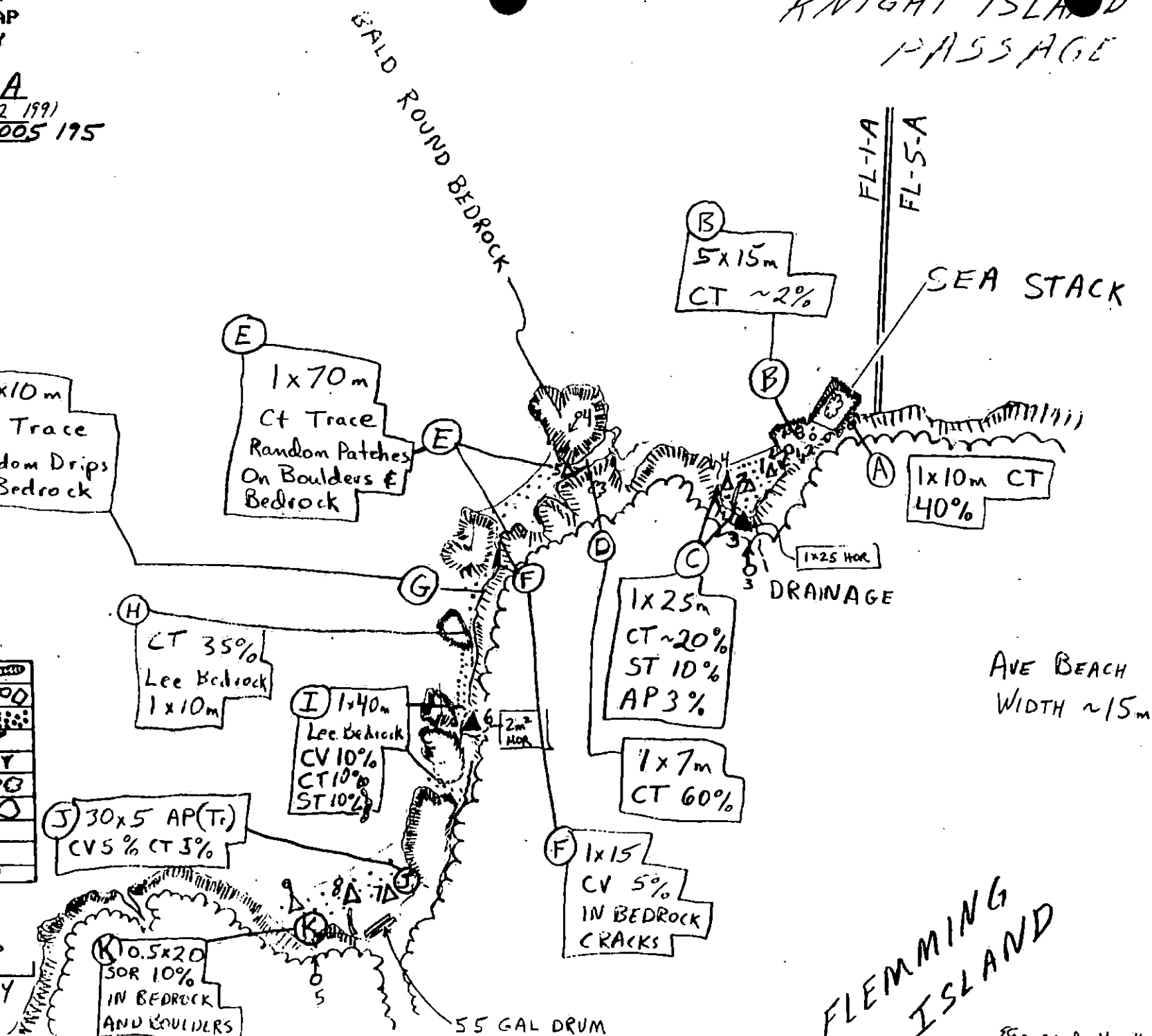
KNIGHT ISLAND
PASSAGE



LEGEND

BEDROCK	
BOULDERS	
FINE BED.	
DRIFT LOG	
GRASS	
BRUSH	
FOREST	
OILED PIT	
NO OIL PIT	
PHOTO	

SCALE
100 METERS
APPROXIMATELY



MAINE BIOLOGICAL SUMMARY FORM

13-1-1

TEAM # 5

DATE 12 MAY '91

SEGMENT # FL-1

TIDAL HEIGHT (range) -1.0 → +1

SUBDIVISION A

BIOLOGIST Crank

SEA STATE 0 → 1'

WIND SPEED/DIRECTION ~5 knots/West

PHOTOGRAPHS: ROLL #

FRAME #

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):

(A) Area is a 1m x 10m band in the UITZ located on the lee side of a sea stack. There is an approx. 10% biota cover in the band including filamentous green algae and barnacles with rare recruits. Directly below CT band barnacle recruits become more concentrated with a sparse to moderate density.

(B) Area is located in aoulder field about 15m behind and to the west of 'A' in the UITZ. There is an approx. 40% biota cover in this area. Both adult and recruit barnacles have a moderate concentration. A few small recruits are present when stimulated. There are rare adult mussels; 1 year old mussels had a moderate concentration and were densely concentrated along cracks and crevices. Fucus is moderately concentrated; spore cas and recruits are present. Limpets are rare. Tar spot algae is present.

In the LITZ below 'A' and 'B' there is a rich algae cover (~70% of surface sediments). Filamentous red greens, clonal red greens (including Ulva: Palmaria) Scytosiphon and Fucus are present. The Fucus plants are small and do not appear to be reproductively active at this time.

(C) Area is a 1m x 25m band in the high UITZ located in the lee of large boulders ~50m west of 'B'. Within the site there is less than 10% biota cover on surface sediments including moss, black green and filamentous green algae. On boulders ~5m away biota cover is ~25%. Fucus spore cas are present. Also present: spore cas, recruits and 1-2 year old mussels, tar spot algae, filamentous green algae; are rare.

WILDLIFE OBSERVATIONS Area includes pit 3.

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	3	
Seabirds			
Waterfowl	1 - Gull	~10	
Gulls/Kittiwakes			
Shorebirds			
Corvids	2 - Crow, Starling	3	
Other Birds	1 - unseen heron	1	

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters	1	1 - Black bear on a	
Amphipeds(specify)		porcupine beach on	
Whales(specify)		Eschscholzia across	
		from black subdivision	

Shoreline subdivision map showing important biological features attached.

0.1 M.R. 1.1

Team # 5

Date 12 May '91

pg 2 of 6

Segment # FL-1

Tidal Height -1.0 → +1

Subdivision A

Biologist Crank

Sea State 0 → 1'

Wind Speed / Direction ~5 knots / West

Comments (cont.)

Below 'C' is a gravel/cobble/boulder pocket beach. On the gravel there is <1% biota cover; on the cobble there is ~1% biota cover including barnacles, mussels, Fucus and Palmaria (a diatom red alga). On boulders in the LITZ biota cover is ~80%.

There are densely concentrated juvenile mussels. The majority of these mussels are in the 1 yr age class. Adult mussels are rarely concentrated. Barnacle recruits are present. Algae present includes: Fucus, Palmaria, Cladophora, Scytosiphon, Ulva/Muricea and Spongeropora.

The west coarser of the pocket beach is a densely covered (~80%) cliff face. Recruitment is high. In the UITZ to MITZ juvenile barnacles are densely concentrated, adults are sparse. At ~7' tide level Fucus sporlings become sparse to moderately concentrated. From ~+4' to +1' tide level there is a tremendous mussel recruitment. Mussels are densely concentrated and in the 1 year age class. Below the mussels, algae is dense with bladed red and green sp. Alaria (kelp) is also present. Throughout the MITZ and LITZ black, leather chitons (Katherina tunicata), Sunflower stars (Pycnopodia) and leather stars (Dermastrea) are found.

Team #5
Segment FL-1
Subdivision A
Sea State 0 $\Rightarrow$ 1

Date 12 May 1991
Tidal Height -1.0 $\Rightarrow$ +1.0
Biologist Frank
Wind Speed / Direction ~5 knots / West

pg 3 of 6

Comments (cont)

(D) Area is a 1m x 7m band high in the ULTZ in the lee of a bedrock outcrop. Within the band there is ~20% biota cover. There is a new set of barnacles, a sparsely concentrated adult barnacles, a sparse adult mussel concentration, filamentous green algae and a rare Fucus concentration. Within 1m below site biota cover increases to ~60%. Fucus is dominant. Both maturing conceptacles and sporelings are present. Many of the mature plants have epiphytic plants growing on the stalks. Adult barnacles and limpets are also present.

(E) Area is a 1 x 70m band in the ULTZ. There is ~20% biota cover on the surface sediments. Fucus is sparse, both sporelings and maturing conceptacles are present. Adult barnacles are sparse. There is also a moderate to dense concentration new set of barnacles present. Mussels are also sparse with various age classes, concentrations are found in cracks and crevices. Approx 1m below site barnacles have a moderate concentration and algae (Fucus, Cladophora, Sargassum, Ulva, Halosaccus, Idonothalia) present. Biota cover ~30 $\Rightarrow$ 40%.

Team #5

Date 12 May 1991

pg 4 of 4

Segment FL-1

Tidal Height $-1.0 \rightarrow +1.0$

Subdivision A

Biologist Crank

Sea State $0 \rightarrow 1$

Wind Speed / Direction ~5 knots / West

Comments (cont)

(F) Area is located high in the UITZ. barnacles, Fucus sporelings and filamentous green algae are present in rare concentration. Biota cover $< 1\%$. Below site, in UITZ, no biota found in gravel. On cobble and bedrock located on gravel beach there is $< 1\%$ biota cover of Fucus & barnacles.

(G) Area is a 1×10 m band in the UITZ. Within site biota is similar to area 'F'. In the LITZ below site there is dense algae cover ($\sim 90\%$) and a clam bed with Prototheca (little neck clam), Saxidomus (butterclam) and Hiatella.

(H) Area is a 1×10 m band in the UITZ located in the lee of a rock outcrop. Barnacles cover $\sim 1\%$ of the surface sediments within band. Less than 1m below band is a 1m patch of Fucus sporelings. Two meters below band there is $\sim 70\%$ biota cover including: a high concentration of Fucus, mussels (various ages) and barnacles. (a new set is present).

(Pit 6) Within 1m east and west of pit there are intergravel mussels (UITZ) near the bases of cobbles and boulders. Fucus and barnacles cover $\sim 20\%$ of the cobble/boulder surface area. The LITZ has a clam bed under cobble veneer.

Team #5

Date 12 May 1991

pg 5 of 6

Segment FL-1

Tidal Height -1.0 $\rightarrow$ +1.0

Subdivision A

Biologist Crank

Sea State 0 $\rightarrow$ 1'

Wind Speed/Direction ~5 knots/West

Comments (cont.)

(I) Area is located in the UITZ along bedrock. Within the site there is $<1\%$ barnacle and Fucus sporeling cover. Beginning $\frac{1}{2}$ m below site there is a moderate concentration of barnacles (various age classes); sparse mussels; a rare to sparse concentration of Fucus with both sporelings and maturing conceptacles; turspot algae; and rare gastropod concentrations (Littorina and limpets). Biota cover is $\sim 50\%$.

(J) Area is located in the SUPRA and UITZ. In the SUPRA there are mosses and black lichen, biota cover is $<1\%$. In the high $\rightarrow$ mid UITZ there are barnacles and Fucus sporelings. Biota cover is $<1\%$. Low in UITZ biota cover is $\sim 10\%$ including barnacles (new set present), mussels (various age classes), Littorina, limpets; Nucella, Fucus (mature plants do not appear to be reproductively active at this time; sporelings are present), and Gloiopeltis (algae). Below site, in the MITZ, there is $\sim 40\%$ biota cover including the organisms found in UITZ and the algae Ulva, Porphyra, Cladophora and Scytosiphon. The east side of the LITZ is a clam bed located under a cobble veneer. The west side of the LITZ is a gravel beach. Biota was not found in gravel; cover cover similar to LITZ.

Reviewed M.B. 3/10/94

Team #5
Segment FL-1
Subdivision A
Sea State 0 $\rightarrow$ 1'

Date 12 May 1991
Tidal Height -1.0 $\rightarrow$ +1.0
Biologist Crank
Wind Speed/Direction ~5 knots/West

pg 6 of 6

Comments (cont)

(K) Area is located high in the UITZ along boulder bases. Within the site there are Black lichen, moss and oligochaete worms covering 4% of surface sediments. Two meters below site, in the low UITZ, *Eucus* sporelings and a rare barnacle concentration cover ~15% of the surface sediments. 15 m below site is the MITZ. Biota is same as describe in 'J'; cover ~40%. On the LITZ gravel, no biota was found, the cobble cover was similar to MITZ.

This subdivision has high recruitment occurring in the barnacle and mussel populations. The biota appears to be healthy. Clam beds and dense algal growth in LITZ would be sensitive to trampling.

MAYBAP 891
OG SKETCH MAP
GREG CHANEY
TEAM 5

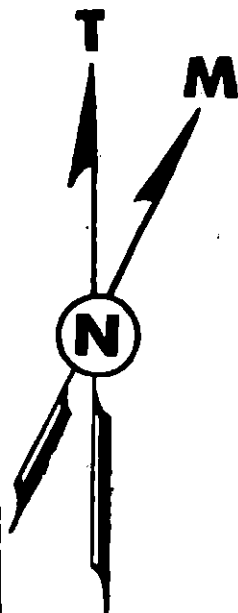
Bio Sketch Map
Crab

SEGMENT: FL1A

DATE: 12 MAY 1991

AIR P.N: PIMC 005 195

KNIGHT ISLAND PASSAGE



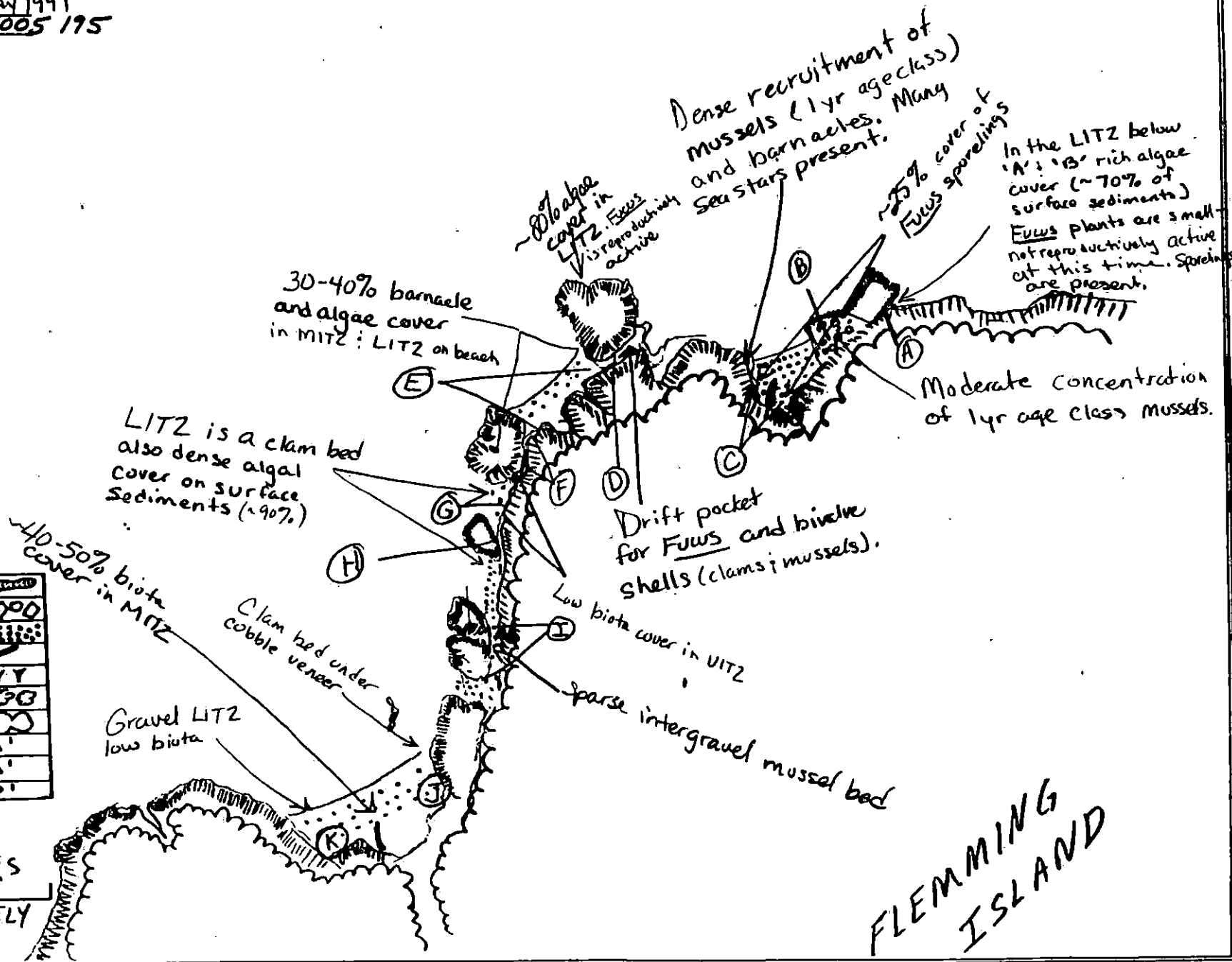
LEGEND

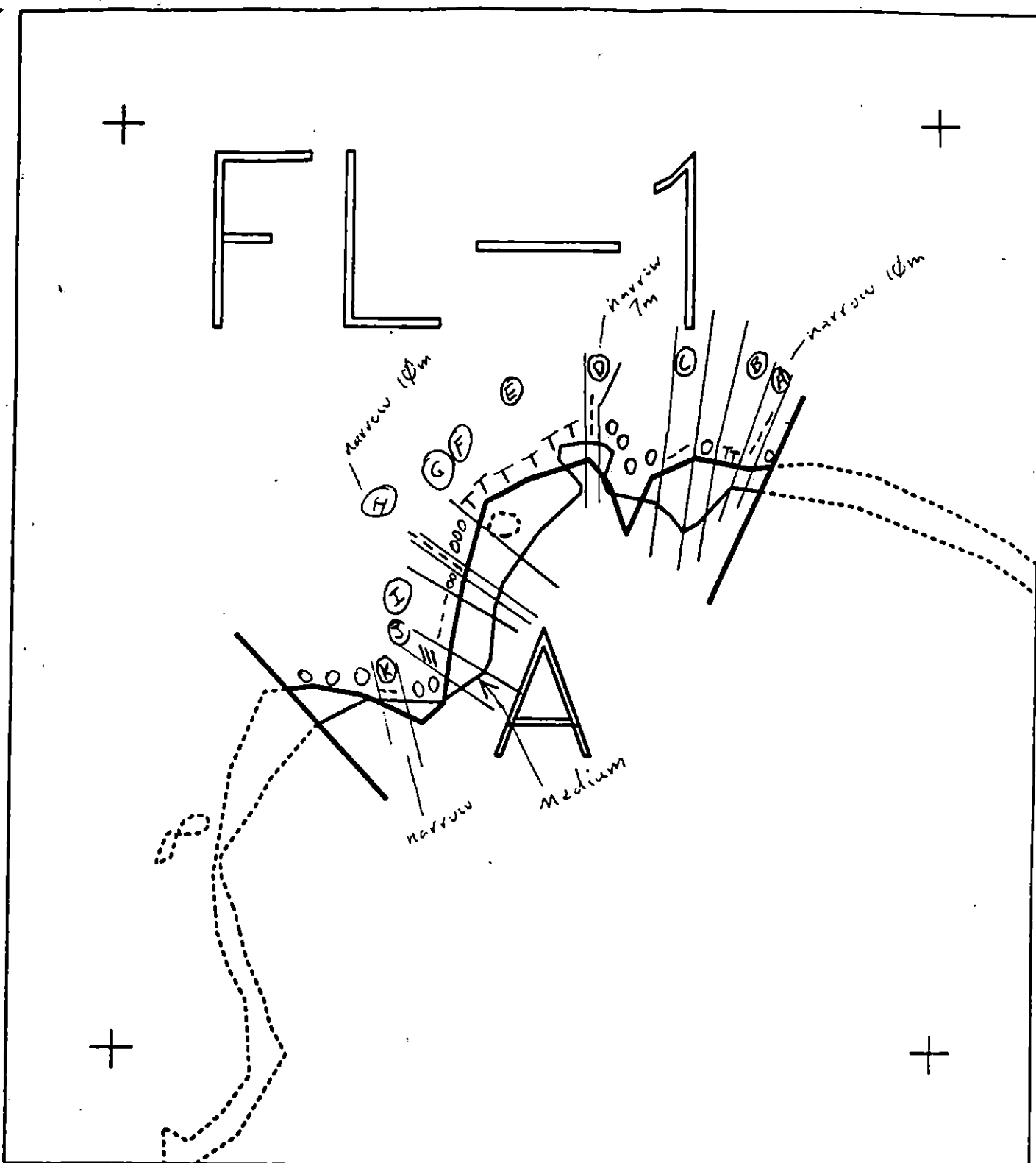
BEDROCK	
BUILDERS	
FINE BED.	
DRIFT LOG	
GRASS	
BRUSH	
FOREST	
OILED PIT	
NO OIL PIT	
PHOTO	

SCALE

100 METERS

APPROXIMATELY





XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

FLOO1 A
 ADEC Subsegment Length: 549m
 METERS
 0 100 200
 AZ State Plane Zone 4
 p11001a



Subdivision Field Map
 Map Key: PWSFLOO1A
 Name: Chaney
 Date: MAY 12 1991
 Date Entered:

ES released 5/16
 REVISED CE 16 MAY

1991 MAYSAP EVALUATION

SEGMENT: FL 001 SUB: A REGION: PWS SURVEY DATE: 5/12/91ENVIRONMENTAL SENSITIVITIES:Work Window(s) RESTRICTED 7/10 - 9/15Ecological/Constraints (see page two for details) Anadromous streamARCHAEOLOGICAL CONSTRAINTS:If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.SHPO Signature: Rachel Jan Dore Date: 5/24/91RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

NNN

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: MAY 24 1991FOSC APPROVAL DATE: 5/31/91

ADEC

FOSC

EXXON

E. E. PAGE, CDR, USCG
CHIEF OF STAFF, FOSC

USCG

NOAA

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

Anadromous Stream: Unlimited treatment up to stream bank between May 15 and July 10. ADF&G approval required for work after July 10. Fish Habitat Permit required for instream work. ADF&G approval required for bioremediation within 100 meters of anadromous stream after July 10.

TEAM NO. 5 SEGMENT FL-1 SUBDIVISION A DATE 5/12/91

ADEC

NAME John Hayer SIGNATURE [Signature]

- ☒ NTR Surface and subsurface oiling here was light to moderate and AP + HCR observed was isolated. One patch of AP was picked up reducing the oiling to SOR/H. The remainder of the oil observed was SOR, CV, CT, or FL. No treatment recommended here at this time.

EXXON

NAME John Dean SIGNATURE [Signature]

- ☒ NTR 1 bag oily sediment recovered by survey team. Any oil remaining is not recoverable.

LANDMANAGER

NAME Steve Wink OF CUC SIGNATURE [Signature]

- ☐ NTR A Ring of Asphalt 8" wide 1/2" thick remains around some large rocks. Very little of this recoverable oil. The most damaging oil in this subdivision is a layer of oil on the ~~bottom~~ face of lg cliffs that will certainly run when the weather heats up. Spruce needles are mixed into this oil. Lite Sub-Surface oil found. Very little trash. NO BIO. ON THIS SUB. DIV.

USCG/NOAA

NAME DREHER / CLINE SIGNATURE CWO K. Dreher [Signature]

- ☒ NTR Further clean up operations would cause more environmental harm than the oil to be removed.

Light CT + ST is common; doesn't warrant further cleanup. Most of the remaining SOR occurs in wave shadows of boulders.

TEAM NO. 5OG CHANEYBIO CRANKSEGMENT FL-1ADEC HAYESLANDMANAGER WARD for CUCSUBDIVISION AEXXON DEANUSCG/NOAA DREHER/CLINEDATE May 12 /91TIME 06:55 to 08:35TIDE LEVEL -1.5 ft. to 0 ft.ENERGY LEVEL: ☐ H ☒ M ☐ LSURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELOWEATHER: ☐ SUN ☒ CLOUDS ☐ FOG ☒ RAIN ☐ SNOWTOTAL LENGTH SHORELINE SURVEYED: 549 mNEAR SHORE SHEEN: ☐ BR ☐ RB ☒ SL ☐ NONEEST. OIL CATEGORY LENGTH: W - m M 30 m N 112 m VL 110 m NO 297 m US 0 m

L O	SURFACE OIL CHARACTER										SURFACE SEDIMENT	SHORE SLOPE	AREA		ZONE				NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO			WIDTH m	LENGTH m	S	UI	MI	LI	
A						P					R	V	1	10		✓			Lee of Sea Stack
B						S					R	H	5	15		✓			Boulders
C	S					P	S				B	H	1	25		✓			Lee of Large Boulders
D						B					R	V	1	7		✓			Lee of Bedrock Outcrop
E						T					R	V	1	70		✓			Random Patches on Rocks
F					S						R	H	1	15		✓			IN Bedrock Cracks
G						T					R	V	1	10		✓			Random Drips Ct
H						P					R	V	1	10		✓			Lee Rock Outcrop
I					S	S	S				RB	VH	1	40		✓			Lee Bedrock Outcrop
J	T				S	S					BR	VH	5	30	✓	✓			NE Pocket + Cove
K				S							BR	H	0.5	20		✓			Between Bedrock & Boulders

DISTRIBUTION: C = 91-100%; B = 51-90%; P = 11-50%; S = 1-10%; T = <1%

SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE

PHOTO ROLL # MAYSAP- 5 - 13 FRAMES 1-6

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE	CLEAN BELOW	H2O LEVEL	SHEEN COLOR	PIT ZONE				SURFACE- SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI		
1	25							✓	-		15	N		✓			PG-PB	
2	15							✓	-		15	N		✓			PG-PG	
3A	10		✓						0-5	N	-	-	✓				PG-R	Crevice in
3B					✓				5-10	Y	-	-					PG-R	Bedrock
4	20							✓	-		15	N		✓			PG-PG	
5	30							✓	-		-	-		✓			GS-GS	
6	25			✓					5-10	Y	-	-		✓			GP-PB	Behind tall outcrop
7	20							✓	-					✓			P-PB	
8	30							✓	-		5	N		✓			PG-BPG	

SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

OG COMMENTS:

Pit ③ was dug in between large boulders in a bedrock crack. HOR condition follows along area ① in pockets of AP between boulders.

Pit ⑥ MOR condition was limited to approximately 2 m² behind bedrock outcrop.

(SEE NOTE ON 2ND PAGE)

EC revised May 16
REVIEWED CD 16 MAY

MAYSAP 1991
OG SKETCH MAP
GREG CHANEY

TEAM 5

SEGMENT: FL 1 A

DATE: May 12 1991

AIR P.#: PIMC 005 195

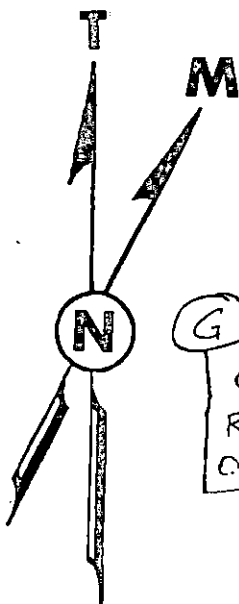
KNIGHT ISLAND
PASSAGE

BALD ROUND BEDROCK

FL-1-A

FL-5-A

SEA STACK



G 1x10m
CT Trace
Random Drips
On Bedrock

E 1x70m
Ct Trace
Random Patches
On Boulders &
Bedrock

B 5x15m
CT ~2%

A 1x10m CT
40%

1x25 HOR
DRAINAGE

C 1x25m
CT ~20%
ST 10%
AP 3%

F 1x7m
CT 60%

H CT 35%
Lee Bedrock
1x10m

I 1x40m
Lee Bedrock
CV 10%
CT 10%
ST 10%

J 30x5 AP(T)
CV 5% CT 3%

K 0.5x20
SOR 10%
IN BEDROCK
AND BOULDERS

LEGEND

BEDROCK	
BOULDERS	
FINE BED.	
DRIFT LOG	
GRASS	
BRUSH	
FOREST	
OILED PIT	
NO OIL PIT	
PHOTO	

SCALE

100 METERS

APPROXIMATELY

Ave Beach
Width ~15m

FLEMMING
ISLAND

55 GAL DRUM

HYDROBIOLOGICAL SUMMARY FORM

TEAM # 5

DATE 12 MAY '91

SEGMENT # FL-1

TIDAL HEIGHT (range) -1.0 to +1

SUBDIVISION A

BIOLOGIST Crank

SEA STATE 0 to 1'

WIND SPEED/DIRECTION ~5 knots/West

PHOTOGRAPHS: ROLL #

FRAME #

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):

(A) Area is a 1m x 10m band in the UITZ located on the lee side of a sea stack. There is an approximate 10% biota cover in the band including filamentous green algae and barnacles with rare recruits. Directly below CT band barnacle recruits become more concentrated with a sparse to moderate density.

(B) Area is located in a boulder field about 15m behind and to the west of 'A' in the UITZ. There is an approx. 40% biota cover in this area. Both adult and recruit barnacles have a moderate concentration. Ar mussels tightly sealed their inner plates when stimulated. There are rare adult mussels; 1 year old mussels had a moderate concentration and were densely concentrated along cracks and crevices. Fucus is moderately concentrated; spore bags and creeping corceptacles are present. Limpets are rare. Tar spot algae is present.

In the LITZ below 'A' and 'B' there is a rich algae cover (~70% of surface sediments). Filamentous red-greens, plated red-greens (including Ulva, Palmaria), Scytosiphon and Fucus are present. The Fucus plants are small and do not appear to be reproductively active at this time.

(C) Area is a 1m x 25m band in the high UITZ located in the lee of large boulders ~50m west of 'B'. Within the site there is less than 1% biota cover on surface sediments including moss, black lichen and filamentous green algae. On boulders ~5m from shore biota cover is ~25%. Fucus sporelings are common. Also present: sparse corceptacles, 1-2 year old mussels, tar spot algae, filamentous green algae, and rare limpets.

WILDLIFE OBSERVATIONS Area includes pit 3.

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	3	
Seabirds			
Waterfowl	1 - Geese	10	
Gulls/Kittiwakes			
Shorebirds			
Corvids	2 - Crow, Steller's Jay	3	
Other Birds	1 - unidentified terrestrial	1	

LAND MAMMALS

MARINE MAMMALS	# OBSERVED	SPECIES	# OBSERVED
Sea Otters	1	1 - Black bear on a	
Pinnipeds (specify)		pocket beach on	
Whales (specify)		Bainbridge Is. across	
		from this subdivision	

Shoreline subdivision map showing important biological features attached.

Reviewed M.B. 5/16/91

Team # 5

Date 12 May '91

pg 2 of

Segment # FL-1

Tidal Height -1.0 $\rightarrow$ +1

Subdivision A

Biologist Crank

Sea State 0 $\rightarrow$ 1'

Wind Speed / Direction ~5 knots / West

Comments (cont.)

Below 'C' is a gravel/cobble/boulder pocket beach. On the gravel there is <1% biota cover; on the cobble there is ~1% biota cover including barnacles, mussels, Fucus and Palmaria (a bluish red alga). On boulders in the LITZ biota cover is ~80%. There are densely concentrated juvenile mussels. The majority of these mussels are in the 1 yr age class. Adult mussels are rarely concentrated. Barnacle recruits are present. Algae present includes: Fucus, Palmaria, Cladophora, Scytosiphon, Ulva/Muricea and Spongomorpha.

The west boarder of the pocket beach is a densely covered (~90%) cliff face. Recruitment is high. In the UITZ to MITZ juvenile barnacles are densely concentrated, adults are sparse. At ~7' tide level Fucus sporlings become sparse to moderately concentrated. From ~+4' to +1' tide level there is a tremendous mussel recruitment. Mussels are densely concentrated and in the 1 year age class. Below the mussels, algae is dense with bladed red and green species. Alaria (kelp) is also present. Throughout the MITZ and LITZ black, leather chitons (Katherina tunicata), Sunflower stars (Pycnopodia) and leather stars (Dermastrea) are found.

Team #5

Segment FL-1

Subdivision A

Sea State 0 $\Rightarrow$ 1

Date 12 May 1991

Tidal Height -1.0 $\Rightarrow$ +1.0

Biologist Crank

Wind Speed / Direction ~5 knots / West

pg 3 of 4

Comments (cont)

(D) Area is a 1m x 7m band high in the ULTZ in the lee of a bedrock outcrop. Within the band there is ~20% biota cover. There is a new set of barnacles, a sparsely concentrated adult barnacles, a sparse adult mussel concentration, filamentous green algae and a rare Fucus concentration. Within 1m below site biota cover increases to ~60%. Fucus is dominant. Both maturing conceptacles and sporelings are present. Many of the mature plants have epiphytic plants growing on the stalks. Adult barnacles and limpets are also present.

(E) Area is a 1 x 70m band in the ULTZ. There is ~20% biota cover on the surface sediments. Fucus is sparse, both sporelings and maturing conceptacles are present. Adult barnacles are sparse. There is also a moderate to dense concentration new set of barnacles present. Mussels are also sparse with various age classes, concentrations are found in cracks and crevices. Approx 1m below site barnacles have a moderate concentration and algae (Fucus, Cladophora, Scytosiphon, Ulva, Halosaccion, Odonthalia) are present. Biota cover is ~30 $\Rightarrow$ 40%.

Team #5

Segment FL-1

Subdivision A

Sea State 0 $\rightarrow$ 1'

Date 12 May 1991

Tidal Height -1.0 $\rightarrow$ +1.0

Biologist Crank

Wind Speed / Direction ~5 knots / West

pg 4.

Comments (cont)

(F) Area is located high in the UITZ. barnacles, Fucus sporelings and filamentous green algae are present in rare concentration. Biota cover $< 1\%$. Below site, in UITZ, no biota found in gravel. On cobble and bedrock located on gravel beach there is $< 1\%$ biota cover of Fucus & barnacles.

(G) Area is a 1x10m band in the UITZ. Within site biota is similar to area 'F'. In the LITZ below site there is dense algae cover ($\sim 90\%$) and a clam bed with Prototheca (little neck clam), Saxidomus (butterclam) and Hiattella.

(H) Area is a 1x10m band in the UITZ located in the lee of a rock outcrop. Barnacles cover $\sim 1\%$ of the surface sediments within band. Less than 1m below band is a 1m patch of Fucus sporelings. Two meters below band there is $\sim 70\%$ biota cover including: a massive concentration of Fucus, mussels (various ages) and barnacles (a new set is present).

(Pit 6) Within 1m east and west of pit there are intergravel mussels (UITZ) near the bases of cobbles and boulders. Fucus and barnacles cover $\sim 20\%$ of the cobble/boulder surface area. The LITZ has a clam bed under cobble veneer.

Team #5

Date 12 May 1991

pg 5 of

Segment FL-1

Tidal Height -1.0 $\rightarrow$ +1.0

Subdivision A

Biologist Crank

Sea State 0 $\rightarrow$ 1'

Wind Speed/Direction ~5 knots/West

Comments (cont.)

(I) Area is located in the UITZ along bedrock. Within the site there is $<1\%$ barnacle and Fucus sporeling cover. Beginning $\frac{1}{2}$ m below site there is a moderate concentration of barnacles (various age classes); sparse mussels; a rare to sparse concentration of Fucus with both sporelings and maturing conceptacles; turpote algae; and rare gastropod concentrations (Littorina and limpets). Biota cover is $\sim 50\%$.

(J) Area is located in the SUPRA and UITZ. In the SUPRA there are mosses and black lichen. Biota cover is $<1\%$. In the high $\rightarrow$ mid UITZ there are barnacles and Fucus sporelings. Biota cover is $<1\%$. Low in UITZ biota cover is $\sim 10\%$ including barnacles (new set present), mussels (various age classes), gastropods (Littorina, limpets; Nucella), Fucus (mature plants do not appear to be reproductively active at this time; sporelings are present), and Gelidoptis (alga). Below site, in the MITZ, there is $\sim 40\%$ biota cover including the organisms found in UITZ and the algae Ulva, Porphyra, Cladophora and Scytosiphon. The east side of the LITZ is a clam bed located under a cobble veneer. The west side of the LITZ is a gravel beach. Biota was not found in gravel; cobble cover similar to MITZ.

Reviewed M.B. 5/16/91

Team #5
Segment FL-1
Subdivision A
Sea State 0 $\rightarrow$ 1'

Date 12 May 1991
Tidal Height -1.0 $\rightarrow$ +1.0
Biologist Crank
Wind Speed/Direction ~5 knots/West

pg 6 of 6

Comments (cont)

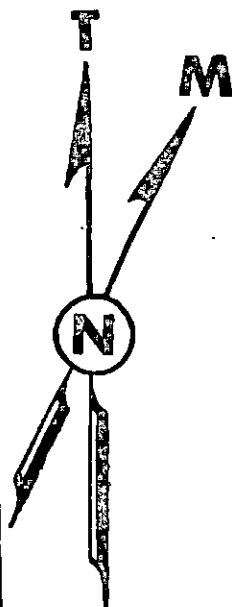
(K) Area is located high in the UITZ along boulder bases. Within the site there are Black lichen, moss and oligochaete worms covering 4% of surface sediments. Two meters below site, in the low UITZ, *Eucus* sporelings and a rare barnacle concentration cover ~15% of the surface sediments. 15 m below site is the MITZ. Biota is same as describe in 'J'; cover ~40%. On the LITZ gravel, no biota was found, the cobble cover was similar to MITZ.

This subdivision has high recruitment occurring in the barnacle and mussel populations. The biota appears to be healthy. Glam beds and dense algal growth in LITZ would be sensitive to trampling.

Reviewed 5/16/91 M.

MAY8AP 1991
 OG SKETCH MAP : Bio Sketch Map
 GREG CHANEY : Crank
 TEAM 5
 SEGMENT: FL1A
 DATE: 12 MAY 1991
 AIR P.#: PIMC 005 195

KNIGHT ISLAND PASSAGE

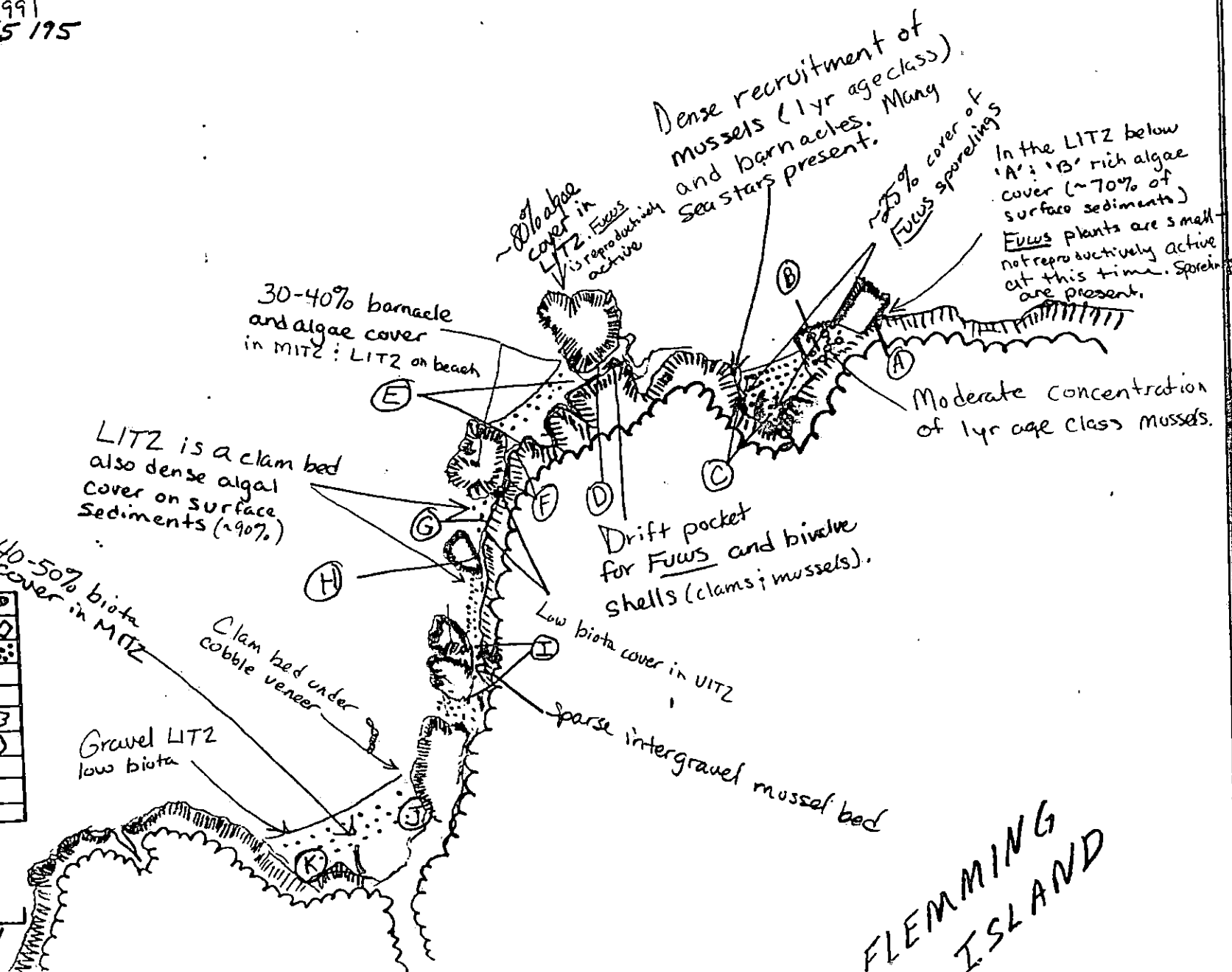


LEGEND

BEDROCK	
BOULDERS	
FINE BED.	
DRIFT LOG	
GRASS	
BRUSH	
FOREST	
OILED PIT	
NO OIL PIT	
PHOTO	

SCALE

100 METERS
 APPROXIMATELY



FLEMMING
ISLAND

ASAP FOLLOWUP RECOMMENDATIONS

60687

ment: AS/ FL-1 Subd.: A Site: 1 Date: 8/5/90 1990

Conditions Observed: SPACES BETWEEN BOULDERS AND COBBLES CONTAINED AP & MS THAT WERE TREATED IN MAY. MANY BOULDERS (SMALL) WERE NOT MOVED IN PREVIOUS TREATMENT AND OIL UNDER NEATH HAS MOVED TO OPEN SPACES CREATED BY PREVIOUS MANUAL CREW - BIO CREW HAS WORKED HERE ALSO. ASAP VECO CREW SPENT A FULL DAY & REMOVED 2+ FULL SUPER SACKS OF OILED SEDIMENT.

Followup Recommendations: ASAP VECO CREW HAS COMPLETED MANUAL P/U OF MS AND AP PATCHES & CUSTOMERED THE SITE. A BIO SQUAD NEEDS TO CHECK FOR INIPOL APPLICATION AND RETILLING PRIOR TO INIPOL APPLICATION.

Completed by Pickup Crew: ☒ YES ☐ NOPriority for Addressing in 1990: ☒ High ☐ Mod. ☐ Low

DEC

(name)

(signature)

Comments:

Exxon

RANDALL K. BOYER

(name)

Randall K. Boyer

(signature)

Comments: I CONCUR WITH THE CONDITIONS OBSERVED AND FOLLOWUP RECOMMENDATIONS.

USCG

(name)

(signature)

Comments:

Land Rep.

Steve L. And CUC

(name)

Steve L. And CUC

(signature)

Comments: ASAP crew Has Completed manual I Agree With Above

On Character Length (in): AP 40 PO _____ CY 50 CI 100 SI 40 MS _____ PI 50 TB _____ FL _____ MD _____

SEGMENT AS1 FL-1 SUBDIVISION: A SITE: 1 DATE 8/5/90

USCG

NAME David Davidson, USCG SIGNATURE David Davidson
David Roe, NOAA☒ YES☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

SCATTERED TAIL PATCHES, MOSTLY INTERSTITIAL, BUT HEAVY IN SOME
PARTS. MOST AREAS ARE WELL PROTECTED BY ROCK OUTCROPS AND MAY
REMAIN OVER WINTER. LOW PRIORITY REASSESSMENT IN 1991.

Old work area in middle pocket beach should be checked in 1991. - DAV

ADEC

NAME BOB MCCREARY SIGNATURE Robert B. McCrery☒ YES☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

Two pocket beaches at North end of segment were manually
treated by a summer '90 crew. Some residual AP remains and
some new tar mats seem to have formed probably from subsurface
oil "pumping up." Below existing tar mats is OR subsurface oil to
approx 3cm. Remaining oil is not enough to warrant further
treatment, but should above described remain after Spring '91
assessment manual removal should occur

LAND MANAGER

NAME Steve Libby CUC SIGNATURE Steve Libby☒ YES☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

There is unidentified Sub Surface oil present below work site
enough oil remains to warrant 91 Survey: Summer crew could
have done better manual removal in 1991

EXXON

NAME RANDALL K. BOYER SIGNATURE Randall K. Boyer☒ YES☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

Two pocket beaches ON THIS SUBDIVISION HAS AP/P &
mousse BETWEEN BOULDERS WHICH REQUIRED OUR ASAP TO
SPEND 1 DAY IN RECOVERING OIL. IT WAS MANUALLY TREATED IN
MAY HOWEVER SOME MS HAS MOVED INTO AREAS THAT WERE
PREVIOUSLY OPENED UP. ANOTHER LOOK IN 91 WOULD
BE WARRANTED. NOT A HIGH PRIORITY IN 1991.

BOB McCREARY
 DATE 8/5/90
 TOTAL EST LENGTH OF SHORELINE SURVEYED: 450 m
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo
 OIL CATEGORY LENGTH: W 0 m M 0 m N 15 m VL 20 m NO 75 m US 79 m
 RANDY BRYER
 BOB NOVA DAVE NOE
 LAND REP STEVE WARD
 TIME 8 4210 9 00 USCG
 TIDE LEVEL 10
 WEATHER: ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow

SURFACE OIL

SITE 1

CHARACTER	DISTRIBUTION				OILED ZONES			
	IC	IB	IP	IS	SU	UI	MI	LI
ASPHALT								
S.O.R								
POOLED								
COVER			X			X		
COAT			XX			X		
STAIN			X			X		
MOUSSE	REMOVED							
PATTIES/T.B.								
FILM								
NO OIL					X	X	X	
EST. SITE LENGTH	450							

SITE 2

CHARACTER	DISTRIBUTION				OILED ZONES			
	IC	IB	IP	IS	SU	UI	MI	LI
ASPHALT								
S.O.R								
POOLED								
COVER								
COAT								
STAIN								
MOUSSE								
PATTIES/T.B.								
FILM								
NO OIL								
EST. SITE LENGTH								

SITE 3

CHARACTER	DISTRIBUTION				OILED ZONES			
	IC	IB	IP	IS	SU	UI	MI	LI
ASPHALT								
S.O.R								
POOLED								
COVER								
COAT								
STAIN								
MOUSSE								
PATTIES/T.B.								
FILM								
NO OIL								
EST. SITE LENGTH								

SUBSURFACE OIL

SITE NO	PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER				OILED INTERVAL (CM)	CLEAN BELOW (Y/N)	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS
			OP	OR	OF	NO			SU	UI	MI	LI	
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Photographs:

Roll No ϕ

Frames ϕ

REVIEWED
8/6/90 YCU

COMMENTS

- CT/ST/CV & MS WERE FOUND IN POCKET BEACHES. THE CT/CV/MS WERE WORKED (RAKED, BROKEN, CUSHIONED) BY THE PILOT CREW.

Richard Hardy

MENTSU, FL-01

UNKNOWN A

TE 9 April 90

ECOLOGIST

1st Area
 2nd Area
 3rd Area
 4th Area
 5th Area
 6th Area
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 100th Area

LEGEND

1. A
 2. B

3. A
 4. B

5. A
 6. B

7. A
 8. B

9. A
 10. B

11. A
 12. B

13. A
 14. B

15. A
 16. B

17. A
 18. B

19. A
 20. B

21. A
 22. B

23. A
 24. B

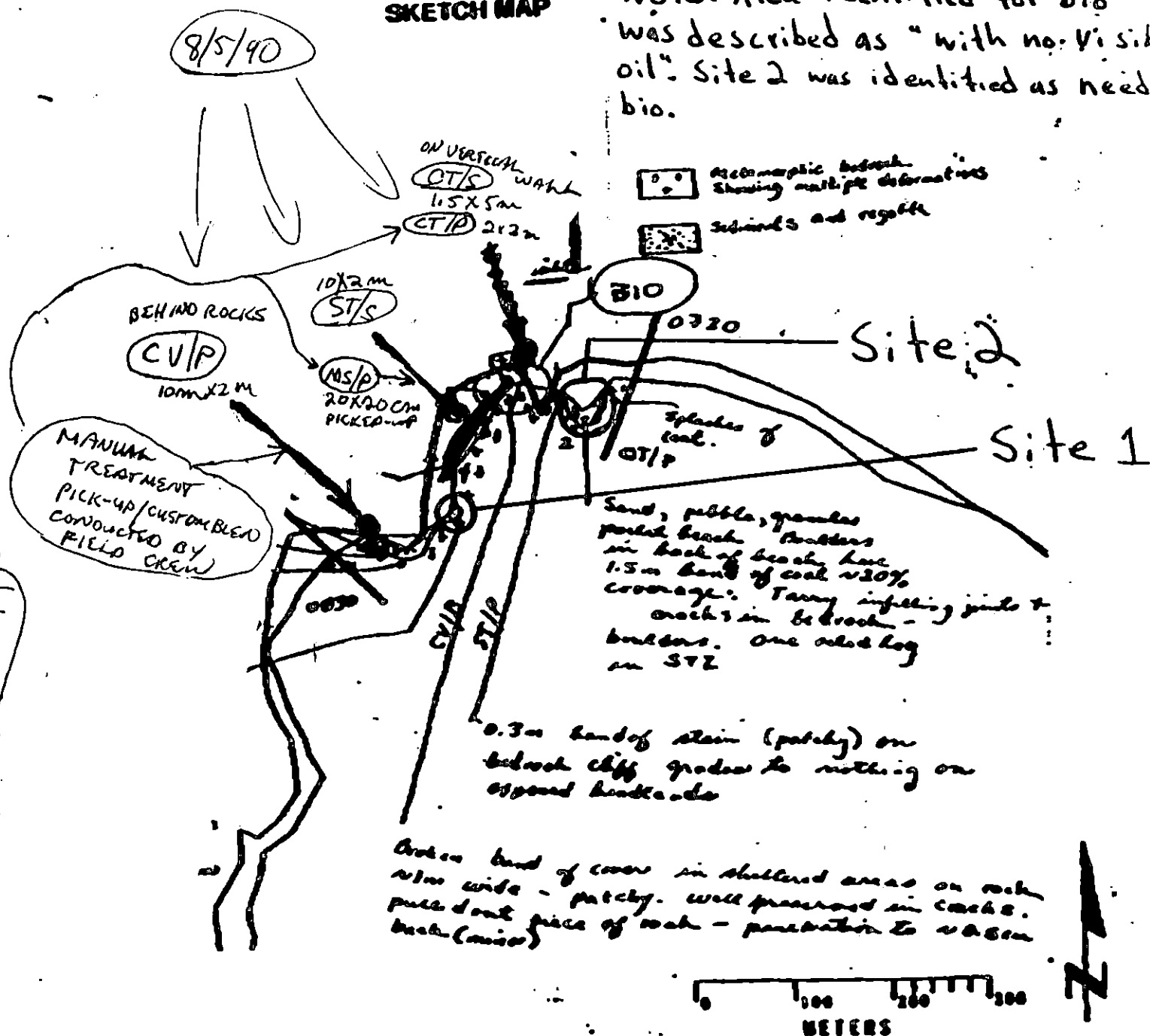
25. A
 26. B

27. A
 28. B

29. A
 30. B

SKETCH MAP

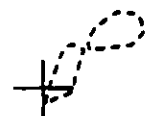
Note: Area identified for bio was described as "with no visible oil". Site 2 was identified as needing bio.



8/5/90
 NO 4/5
 CT 10
 ST 10
 CV 10
 US 22

Oil Collector Length (m): AP 40 PO CV 50 CT 200 ST 40 MS PT 50 TB FL NO

Narrow 5m 700



Subdivision Field Map
Map Key: PWSFL-1A
Name: NAKASHIMA
Date: 8/5/90
Date Entered:

ASAP FOLLOWUP RECOMMENDATIONS

60687

ment: AS/ FL-1 Subd.: A Site: 1 Date: 8/5/90 1990

Conditions Observed: SPACES BETWEEN Boulders AND Cobbles CONTAINED
AP & MS THAT WERE TREATED IN MAY. MANY Boulders (SMALL) WERE
NOT MOVED IN PREVIOUS TREATMENT AND OIL UNDER NEATH HAS MOVED
TO OPEN SPACES CREATED BY PREVIOUS MANUAL CREW - BIO CREW HAS WORKED
HERE ALSO. ASAP VECO CREW SPENT A FULL DAY & REMOVED 2+ FULL SUPER
SACKS OF OILED SEDIMENT.

Followup Recommendations: ASAP VECO CREW HAS COMPLETED MANUAL P/U
OF MS AND AP PATCHES & CUSTOMERED THE SITE. A BIO SQUAD NEEDS
TO CHECK FOR INITIAL APPLICATION AND RETILLING PRIOR TO INITIAL
APPLICATION.

Completed by Pickup Crew: ☒ YES ☐ NO

Priority for Addressing in 1990: ☒ High ☐ Mod. ☐ Low

JEC

(name)

(signature)

Comments:

Exxon

(name)

(signature)

Comments: I CONCUR WITH THE CONDITIONS OBSERVED AND FOLLOWUP
RECOMMENDATIONS.

USCG

(name)

(signature)

Comments:

Land Rep.

(name)

(signature)

Comments:

ASAP crew HAS COMPLETED manual & agree with above

P.07

TO 01#--0019072666490#

AUG-05-1990 19:44 FROM ALBERTA TIDE

Richard Sharly
WENTSV FL-01

DIVISION A

E 9 April 90

ECOLIST

H. Area
 Approx. State
 Region Only
 On Site
 Water
 Length
 S. Coast
 Substrate Character
 Ext. MSL/MLL
 Silt
 Profile Location(s)
 Position
 Photo Location(s)
 Photo Location(s)

LEGEND

1 A
 1 - No Substrate

2 A
 1 - Substrate

CVC
 Overlaid

CTS
 Under Site

1
 1
 1

1
 1
 1

1
 1
 1

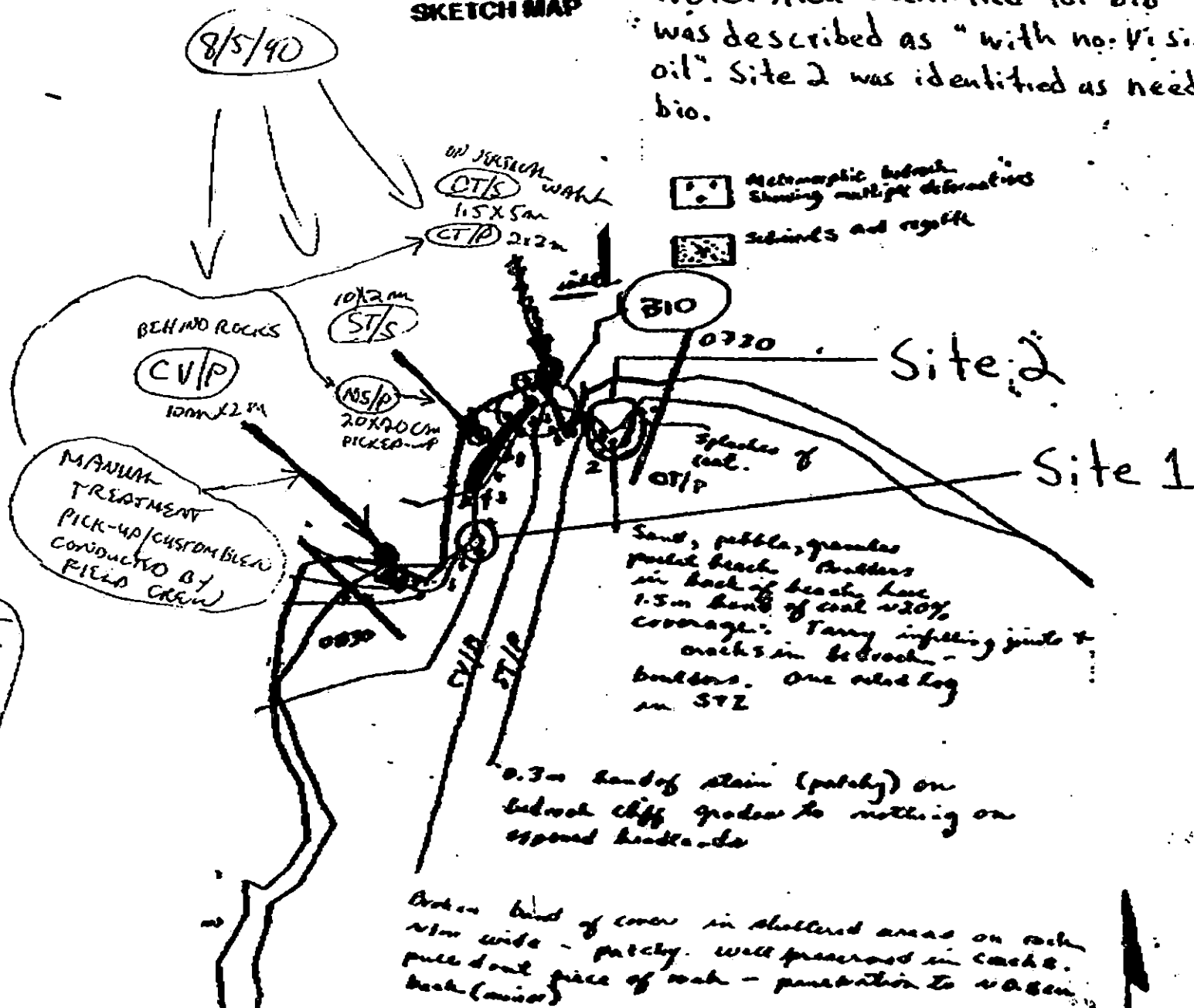
1
 1
 1

1
 1
 1

1
 1
 1

8/5/90
 NO 4/5
 CT 10
 ST 10
 CV 10
 MS 12

SKETCH MAP



Note: Area identified for bio
was described as "with no visible
oil". Site 2 was identified as needing
bio.

Oil Character Length Int: AP 40 PO CT 50 CT 200 ST 40 MS PT 50 TO FL NO

SEGMENT AS1 FL-1 SUBDIVISION: A SITE: 1 DATE 8/5/90**CG**NAME David David Noel, USCG SIGNATURE David Noel
David Noel, NOAA☒ YES☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

SCATTERED TAR PATCHES, MOSTLY INTERSTITIAL, BUT HEAVY IN SOME
 PARTS. MOST AREAS ARE WELL PROTECTED BY ROCK OUTCROPS AND MAY
 REMAIN COOL WINTER. LOW PRIORITY REASSESSMENT IN 1991.

Old work area in middle pocket beach should be checked in 1991. - DNV

ADECNAME Bob McCreary SIGNATURE Robert B. McCreary☒ YES☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON: Two pocket beaches at North end of segment were manually
 treated by a summer '90 crew. Some residual AP remains and
 some new tar mats seem to have formed probably from subsurface
 oil "pumping up." Below existing tar mats is OR subsurface oil to
 approx 3cm. Remaining oil is not enough to warrant further
 treatment, but should above described remain after Spring '91
 assessment manual removal should occur

LAND MANAGERNAME Steve Chao CUC SIGNATURE St 12 CUC☒ YES☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON: There is unidentified Sub Surface oil Present Below Work Site
 enough oil remains to warrant 91 Survey: Summer crew could
 have done better manual in Area

EXXONNAME RANDALL K. BOYER SIGNATURE Randall K. Boyer☒ YES☐ NO

PRIORITY SITE FOR REASSESSMENT IN 1991

REASON:

TWO POCKET BEACHES ON THIS SUBDIVISION HAS AP/P &
 MOUSSE BETWEEN BOULDERS WHICH REQUIRED OUR ASAP TO
 SPEND 1 DAY IN RECOVERING OIL. IT WAS MANUALLY TREATED IN
 MAY HOWEVER SOME MS HAS MOVED INTO AREAS THAT WERE
 PREVIOUSLY OPENED UP. ANOTHER LOOK IN 91 WOULD
 BE WARRANTED. NOT A HIGH PRIORITY IN 1991.

SITE 3

CHARACTER	DISTRIBUTION				OILED ZONES			
	C	B	P	S	SU	UI	MI	LI
ASPHALT								
S.O.R								
POOLED								
COVER			X			X		
COAT			X	X		X		
STAIN			X			X		
MOUSSE	REMOVED							
PATTIES/T.B.								
FILM								
NO OIL					X		X	X
EST. SITE LENGTH					450			

[illegible][illegible]

SUBSURFACE OIL

[illegible]

Photographs:

Roll No 0

Frames cb

REVIEWED
8/6/90 YIU

COMMENTS

- CT/ST/CV & MS WERE FOUND IN POCKET BEACHES. THE CT/CV/MS WERE WORKED (RAKED, BROKEN, CUSTOM BLENDED) BY THE RIFLOREWS.

14. Alfred
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 98. Augusta
 99. Augusta
 100. Augusta

LEGEND

1-10-2000

3A
7-10-1964



CTA

5

Summary:

Figure 1

10

**Franklin, Gordon,
and Martin**

SKETCH MAP

Note: Area identified for bio was described as "with no visible oil". Site 2 was identified as needing bio.

 Metamorphic holoch
Showing multiple deformations

Seinfeld's and regatta

310

0320

Site 2

Site 1

Sand, pebble, granules
parted beach. Boulders
in back of beach have
1.5m band of coal ~30%
coverage. Tarry infilling, joint &
cracks in bedrock -
boulders. One red log
in STZ

0.3m band of stain (patchy) on bedrock cliff grades to nothing on exposed bedrocks

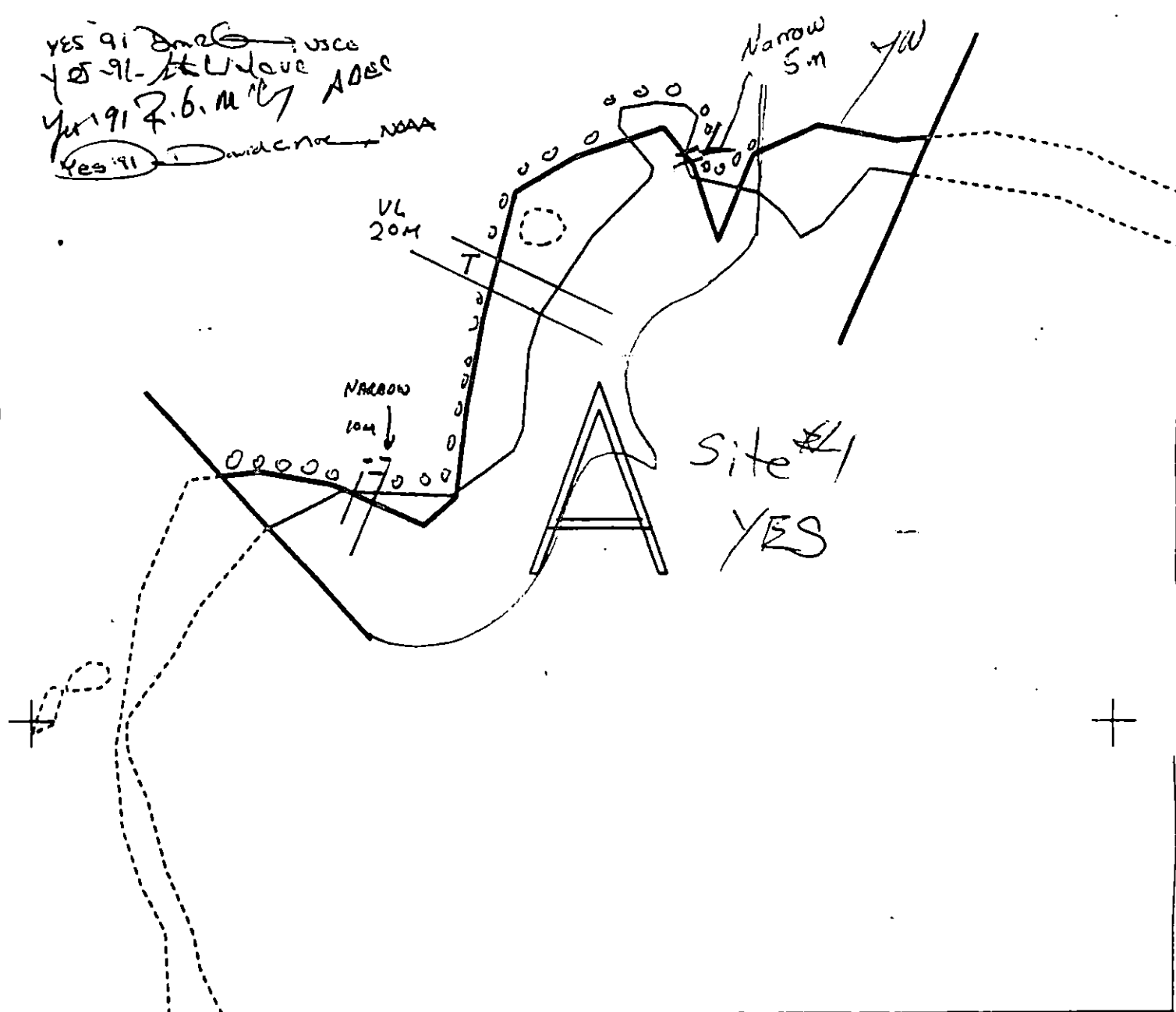
Broken band of cover in sheltered areas on rock
also wide - patchy. well preserved in cracks.
pull down piece of rock - penetration to surface
back (minor)

NOTES

DB Character Length (in): AP 40 PD _____ CV 50 CT 200 ST 40 MS _____ PT 50 FB _____ FL _____ NO _____

FL-1

YES 91 2nd 1/2 USCO
 YES 91- 1st 1/2 USCO
 YES 91 2nd 1/2 USCO
 YES 91 1st 1/2 USCO



XXX Wide
 /// Medium
 --- Narrow
 TTTT Very Light
 0000 No Oil

FL-1 A
 ADEC Subsegment Length: 549m
 METERS

0 75 140

AK State Plane Zone 4 1:2040



Subdivision Field Map
 Map Key: PWSFL-1A
 Name: NAKASHIMA
 Date: 8/5/90
 Data Entered:

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/FL-02

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ FL-02 SUBDIVISION A (1 OF 1) DATE 4/9/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no 226-40-16390, 16388, 16384.

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)

1B Salmon stream mouth - spawning (7/10 to 8/31)

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:

Consultation and inspection with an Exxon archaeologist is required prior to treatment. Specific on-site monitoring requirements will be determined at that time.

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 1303 m: No Oil 293 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 55+ cm

RECOMMENDATIONS:

☐ No Treatment Recommended	☒ Snare/Absorbent Booms
☒ Treatment Recommended	☐ Oil Snares (pom poms)
☒ Manual Pickup	☐ Absorbents (pads, rolls, etc)
☒ Bioremediation	☐ Spot Washing: _____ Wands
☒ Tarmat: _____ Breakup	☐ Beach Cleaner
☒ Removal	☒ Other (see comments)

COMMENTS: Recommend tarmat removal, manual pick up of oiled trash and debris. At pit 2 location (see sketch map), recommend manual relocation of 25cm x 15m x 2m of sediment from the UITZ to the MITZ, followed by bioremediation. Use snare boom during relocation operation. Work should be conducted after 5/1 as long as bioremediation work is not within 100m of stream.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

1A
1B

Salmon stream mouth - fry outmigration (3/1 to 5/15)
Salmon stream mouth - spawning (7/10 to 8/31)
No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage.
No bioremediation or other chemical application within 100m of stream. Contact ADF&G Habitat Division prior to treatment for permits.

- 1C Salmon fry nursery area (4/31 to 7/31)
- 1D Esther Hatchery release (4/15 to 6/1)
- 1E Main Bay Hatchery release (4/20 to 5/10)
- 1F Sawmill Bay Hatchery release (4/15 to 6/1)
- 1G Cannery Creek Hatchery release (4/21 to 6/1)
- 1H Remote release site
- 1I Gill net area (6/7 to 8/31)
- 1J Purse seine area (7/20 to 9/30)
- 1K Purse seine hook-off (7/20 to 9/30)
- 1L Set net sites (6/11 to 7/25)
For Codes 1C through 1L contact ADF&G for specific dates, locations and constraints.

- 2M Herring spawning (4/1 to 6/15)
Restrict boat traffic to essential minimum. Avoid damage to uncoiled intertidal and subtidal algae and seagrass.
Contact ADF&G for specific dates and locations.

- 3N, 3P Harbor seal and sea lion pupping (5/15 to 7/1)
- 3O, 3Q Harbor seal and sea lion molting (8/15 to 9/15)
Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts.

- 5R Seabird colony (5/1 to 9/1)
Restrict air traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance. Contact ADF&G and USFWS prior to treatment.

- 5S Shorebird/waterfowl concentration (4/1 to 5/15)
Restrict all activity to essential minimum, especially air traffic.

- 5T All Bald Eagle nests (3/1 to 6/1)
Active Bald Eagle nests (3/1 to 9/1)
Restrict air traffic to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.

- 6U Recreation: Tent sites (6/1 to 9/15)
- 6V Anchorages (6/1 to 9/15)
- 6W Forest Service cabins (6/1 to 9/15)
- 6X Lodge (6/1 to 9/15)
- 6Y Special use destination

- 7Z Subsistence area: Salmon harvesting (5/1 to 9/30)
- 7HH Finfish harvesting
- 7II Deer harvesting (8/15 to 2/28)
- 7JJ Invertebrate harvesting

For Codes 7Z through 7JJ contact ADF&G and Chenega Corporation for specific dates, locations, and constraints.

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / FL-02 SUBDIVISION: A DATE 09 APRIL 90

USCG

NAME LARRY FLETCHER

SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

1. MANUALLY REMOVE ASPHALT AND TAR PATCHES.
2. POSSIBLE BIO-REMEDIATION.

ADEC

NAME DAVID M. SALE

SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

- ① MANUALLY REMOVE TAR BALLS, ASPHALT AND OILED DEBRIS.
- ② REMOVE RESIDUAL OIL FROM BETWEEN BOULDERS AND IN SEDIMENTS.

CVC RGP. NOTED ~~DISCOLORATION~~ ^{ON} DISCOLORATION IN LIVERS OF DEER TAKEN WHILE FORAGING ON ICE IN BEACH. APPLICATION OF BIOREMEDIATION OR OTHER CHEMICALS SHOULD ONLY BE WITH CVC APPROVAL.

- ③ REWATER REVIEW SHOULD BE MADE OF OILED GRAVELS NEXT TO ANATROPHOUS STREAM.

LAND MANAGER

NAME Steve Wilson

SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

Enclosed DATA collected very PROFESSIONAL, very ACCURATE.

SHORELINE OILING SUMMARY

REVISION NO. 03/23/90

OG Richard Marty USCG Larry Fletcher SEGMENT ST/ FL-02 ✓
 BIO Bob Lemon LAND REP Steve Gertman SUBDIVISION A ✓
 EXXON Jon Czarnski ADEC Dave Sale TIME 08:30 10/11:00
 TEAM NO.: 10 TIDE LEVEL: +0m (0') 10 + 1.7m (5.3) DATE 09 April 1990 ✓
 EST. SUBDIVISION LENGTH: 1460 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: N to S
 SURFACE SEDIMENTS: R 50 % B 10 % C 15 % P 5 % G 15 % S 5 % M 5 % V 5 %
 SLOPE: Long 40 % Hang 60 % Vert 5 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 339 m VL 839 m NO 282 m
2m x 20% x 15

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR							IMPACTED ZONES			
	R	B	P	S	SW	BL	GR	OR	Y	BR	LR	SU	UI	M	U
ASPHALT PAVEMENT			X							X		X			
POOLED															
COVER															
COAT		X	0	✓				X							
STAIN			✓	X				X				X			
MOUSSE															
PATTIES															
TARBALLS															
FILM															
NO OIL												X	X		

PAVEMENT: H F (S) 6 sq. m by 3 cmPATTIES / TARBALLS 2 BAGSNEAR SHORE SHEEN? NO BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash	/		
Debris	/		

DEBRIS COLLECTED
☐ YES ☒ NO

TYPE _____

#BAGS _____

Photographs:

Roll No. ST/10/12 also ST/10/11
Frames 1-18 37, 38

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (cm)	BELOW		OIL / FILM COLOR							PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		VO	VO	SW	BL	GR	OR	Y	BR	LR	SU	UI	M	U		
1	30					X	.										X				N	G, S
2	55		X				0-55	X					X				X					B
3	12	X					0-3	X					X				X					Sand
4	29					X	.										X					G
5	26				X		0-1	X									X					S
6	36					X	.												X			G, M, S

COMMENTS

* DO NOT CONTINUE SUBSURFACE OIL

OG R. M. 11
SEGMENT ST/ FL-2
SUBDIVISION A

DATE 9 April 90

CHECKLIST

- N Arrow
- Approx. Scale
- Seg/Sub Bndry
- Oil Dist.
- Width
- Length
- % Cover
- Substrate Character
- Est. HAW/LWL
- SSL
- Profile Location(s)
- Profile(s)
- PH Location(s)
- Photo Location(s)

LEGEND

1 Δ
PH - No Subsurface Oil

2 Δ
PH - Subsurface Oil

CT/C
Continuous Distribution

CT/B
Broken Distribution

CT/P
Patchy Distribution

CT/S
Splashed Distribution

Oiled Vegetation

1 ●
Photo location, direction, and number

HHWS = High water strand

Metamorphic bedrock
Showing multiple deformation
Sediments and regolith

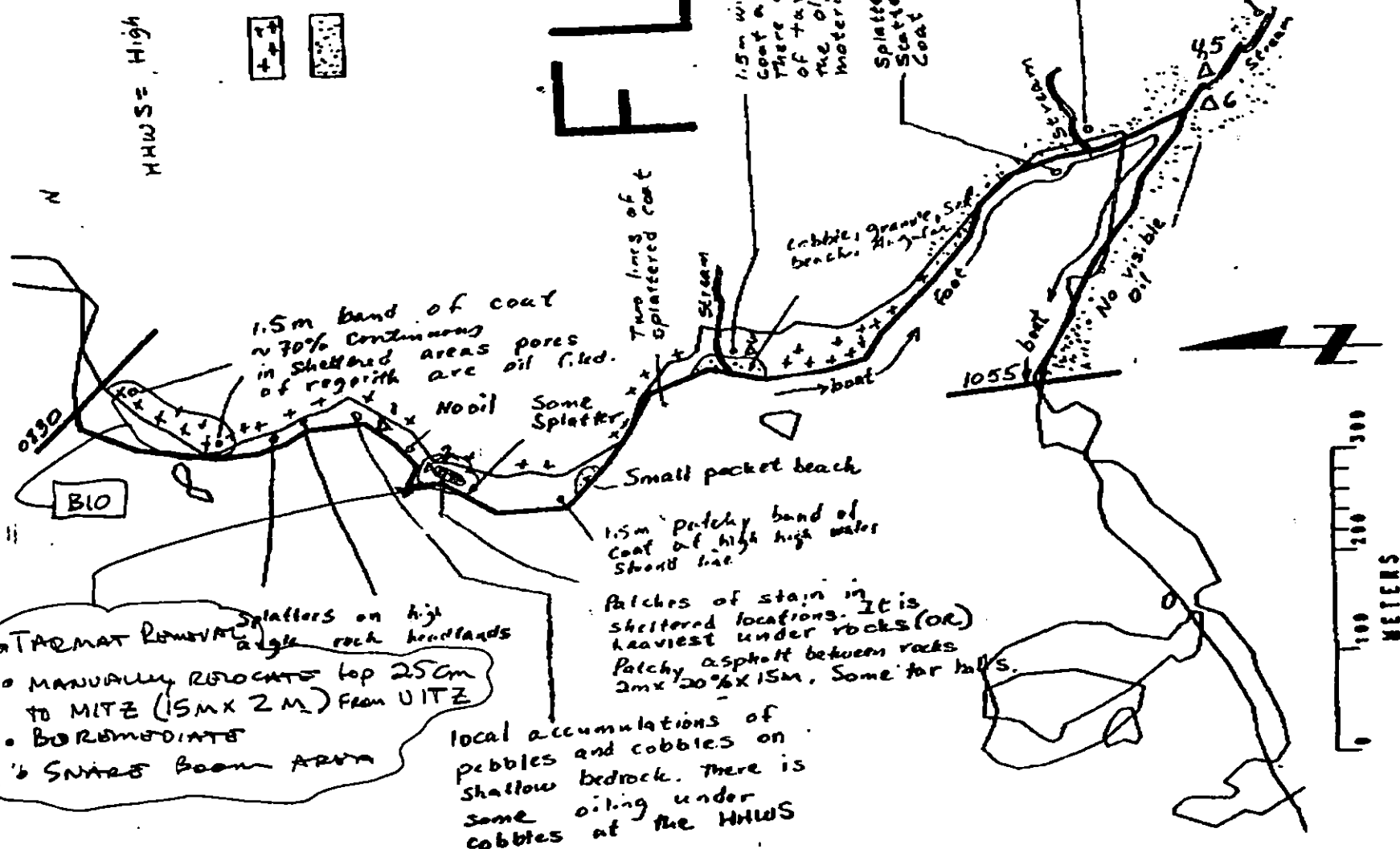


FL-2

1.5m wide band of patchy
coat and stain on the rocks.
There are two generations
of tar splatter. Sampled
the older (pre-Exxon Valdez)
materials.

Stain at HHWS.
Splattered tar pebbles/balls.
Scattered on bottoms of pebbles.
Coat on bottoms of pebbles.

Granules and cobbles
appear to be coated
with a light film of
oil. Locally a silver
sheen can be produced from
the sediments. This is
d.f.f.cult to map.



Oil Character Length (m) AP 15 PO CV CT 1170 ST 100 NB PT TB FL NO

SHORELINE ECOLOGICAL SUMMARY

Segment ST/1/FL2 Subdivision A Date (mo / day / yr) 4 / 9 / 90
 Time (24 hr) 0830-1100 Biologist Lemon

- (A) Substrate type and % of segments:
 (1) Bedrock 50 (2) Boulder 10 (3) Cobble 15 (4) Pebble 5 (5) Sand 20 (6) Silt _____
- (B) Overall % cover of biota (% of segment): Dense 10% Moderate _____ Low _____
- (C) Density, substrate preference (by number from A, above), & vertical zonation of major taxa: (upper-U; mid-M; low tidal-L); juveniles / adults (X), new settlement (3)

Photographs:
 Roll No. ST/15/12

Frames 1-18
 also ST/10/11 "37,38"

BARNACLES

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

MYTILUS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

GASTROPODS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

FUCUS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3	3	3	3	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

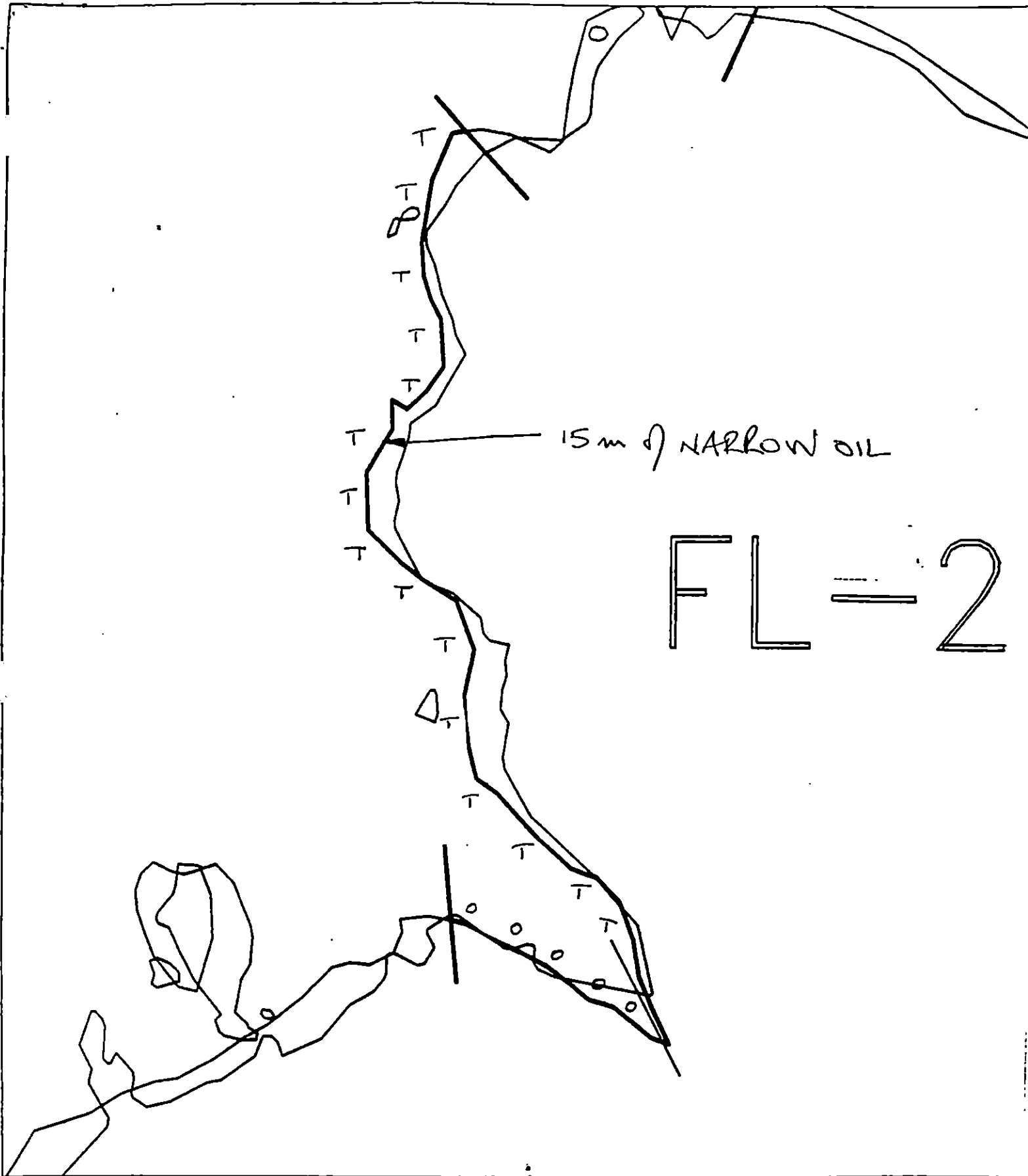
NOT PRESENT

Wildlife Observations/ General Comments: Water along shore has less clarity than seen at earlier times at places this study has investigated. Phytoplankton bloom seems most likely. Stream had no fish (Gunn) but did have some arthropod exoskeletons and fish vertebrae, and oil on the North shore. In some places the highest JORD FUCUS was stressed (photo); at one of these many mussels had experienced mortality (photo). Shell hash in stream mouth.

Ecological Considerations: included Prototheca BIVALVES of subsistence importance. Barnacles in oil bank are pictured; examination found no hidden mortality; empty shells about 5%.

High zone included oligochaetes. Low zone included Dennostyella, Mic zone included Anthopleura and Mucella in crevices. A hummy and some fish had been found, 2 waterfowl sighted.

→ Eagle nest and stream spawning area.



FL-2

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

FL-2A

ADEC Segment Length: 1597m



Map Key: PWS-239

Name: GM for RM

Date: 4/4/90

Data Entered:

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT FL-02 SUBDIVISION A (1 of 1)

WORK WINDOW	
Manual Pickup Tarmat Removal	OPEN
Bioremediation Over 100m From Stream Manual Relocation Other Approved Treatment	OPEN

ARCHAEOLOGICAL INSPECTION/CONSULTATION REQUIRED.

>>> PHONE 564-3274 (Anchorage) OR 229-1508 (24 hrs.) <<<

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1A,1B Salmon Stream

NO CONSTRAINT. ADF&G catalogued anadromous streams (226-40-16390, 16388, 16384) present in Subdivision A are more than 100m from recommended treatment areas.

OTHER ECOLOGICAL CONSIDERATIONS

No disturbance to stream bed or banks. Avoid any unnecessary disturbance or damage to unrolled biota and substrate.

SEE ANADROMOUS FISH STREAM EVALUATION ADDENDUM (STREAM NO. 226-40-16390)
FOR ADDITIONAL CONSTRAINT INFORMATION

TAG APPROVAL DATE 5/24/90.
ADEC ART WEINER
EXXON ANDY TEAL
NOAA R. W. ROY
USCG W. J. HALL

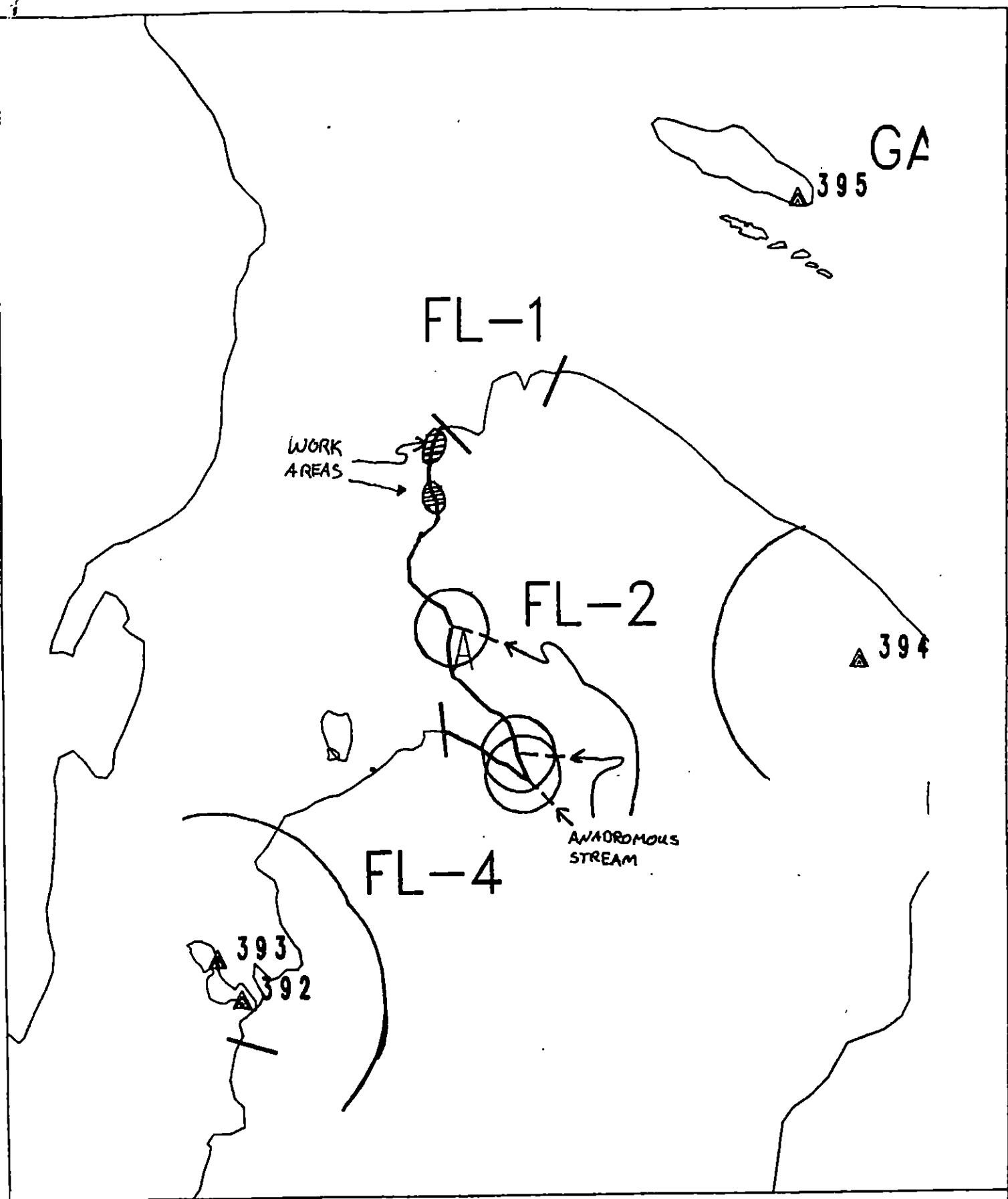
FOSC

Date 5-24-90

Prepared by Andra Meyer was

Date

5/22/90



Exxon Company, USA
Map Key: PMS-FL-2



ECOLOGY MAP
SEGMENT FL-2
SUBDIVISION A (1 of 1)
METERS



Seabird Colony



Eagle Nest

SHORELINE EVALUATION

SEGMENT ST/ FL-02 SUBDIVISION A (1 OF 1) DATE 4/9/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no 226-40-16390, 16388, 16384.

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)

1B Salmon stream mouth - spawning (7/10 to 8/31)

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to uncoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:

Consultation and inspection with an Exxon archaeologist is required prior to treatment. Specific on-site monitoring requirements will be determined at that time.

SHPO SIGNATURE: [Signature] DATE: 4/20/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 1303 m: No Oil 293 m
Subsurface Oil Observed: Yes X No Maximum Depth 55+ cm

RECOMMENDATIONS:

☐ No Treatment Recommended	☒ Snare/Absorbent Booms
☒ Treatment Recommended	☐ Oil Snares (pom poms)
☒ Manual Pickup	☐ Absorbents (pads, rolls, etc)
☒ Bioremediation	☐ Spot Washing: <u> </u> Wands
☒ Tarmat: <u> </u> Breakup	☐ <u> </u> Beach Cleaner
☒ <u>X</u> Removal	☒ <u>X</u> Other (see comments)

COMMENTS: Recommend tarmat removal, manual pick up of oiled trash and debris. At pit 2 location (see sketch map), recommend manual relocation of 25cm x 15m x 2m of sediment from the UITZ to the MITZ, followed by bioremediation. Use snare boom during relocation operation. Work should be conducted after 5/1 as long as bioremediation work is not within 100m of stream. [See Constraint Addendum Dated 5/22/90] WK

TAG COMMENTS:

TAG APPROVAL DATE: 4/20/90

ADEC ART WEINER [Signature]

EXXON ANDY TAYLOR [Signature]

NOAA Bruce Wescott [Signature]

USCG [Signature]

FOSC: [Signature] DATE: 5-1-90

Do not bioremediate near stream beds.
IAEW Lm's desires.

SHORELINE EVALUATION

SEGMENT ST/ FL-02 SUBDIVISION A (1 OF 1) DATE 4/9/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no 226-40-16390, 16388, 16384.

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)

1B Salmon stream mouth - spawning (7/10 to 8/31)

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to uncoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:

Consultation and inspection with an Exxon archaeologist is required prior to treatment. Specific on-site monitoring requirements will be determined at that time.

SHPO SIGNATURE: Charles E. Horner DATE: 4/20/90

OILING CATEGORIZATION:

Wide_0_m: Medium_0_m: Narrow_0_m: V.Light_1303_m: No Oil_293_m
Subsurface Oil Observed: Yes_X No_____ Maximum Depth 55+ cm

RECOMMENDATIONS:

<u> </u> No Treatment Recommended	<u> X </u> Snare/Absorbent Booms
<u> X </u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u> X </u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u> X </u> Bioremediation	<u> </u> Spot Washing: <u> </u> Wands
<u> X </u> Tarmat: <u> </u> Breakup	<u> </u> <u> </u> Beach Cleaner
<u> </u> <u> X </u> Removal	<u> X </u> Other (see comments)

COMMENTS: Recommend tarmat removal, manual pick up of oiled trash and debris. At pit 2 location (see sketch map), recommend manual relocation of 25cm x 15m x 2m of sediment from the UITZ to the MITZ, followed by bioremediation. Use snare boom during relocation operation. Work should be conducted after 5/1 as long as bioremediation work is not within 100m of stream.

TAG COMMENTS: _____

TAG APPROVAL DATE: 4/20/90.

ADEC ART WEINGER Art Weinger

EXXON AWAY TGAZ Real

NOAA Burl Wescott Burl Wescott

USCG KENNETH KEENE / *[Signature]*

FOSC: W L DATE: 5-1-90

Do not burrenate near stream beds.
IAC km's desires.

OG R.ASEGMENT ST/ FL-2SUBDIVISION ADATE 9 April 90

CHECKLIST

- ☐ N Arrow
☐ Approx. Scale
☐ Seg/Sub Bndry
☐ Oil Dist.
☐ Width
☐ Length
☐ % Cover
☐ Substrate Character
☐ Est. HWS/LWL
☐ SSL
☐ Profile Location(s)
☐ Profile(s)
☐ PH Location(s)
☐ Photo Location(s)

LEGEND

1 Δ
PH - No Subsurface Oil

2 Δ
PH - Subsurface Oil

CT/C
Continuous Distribution

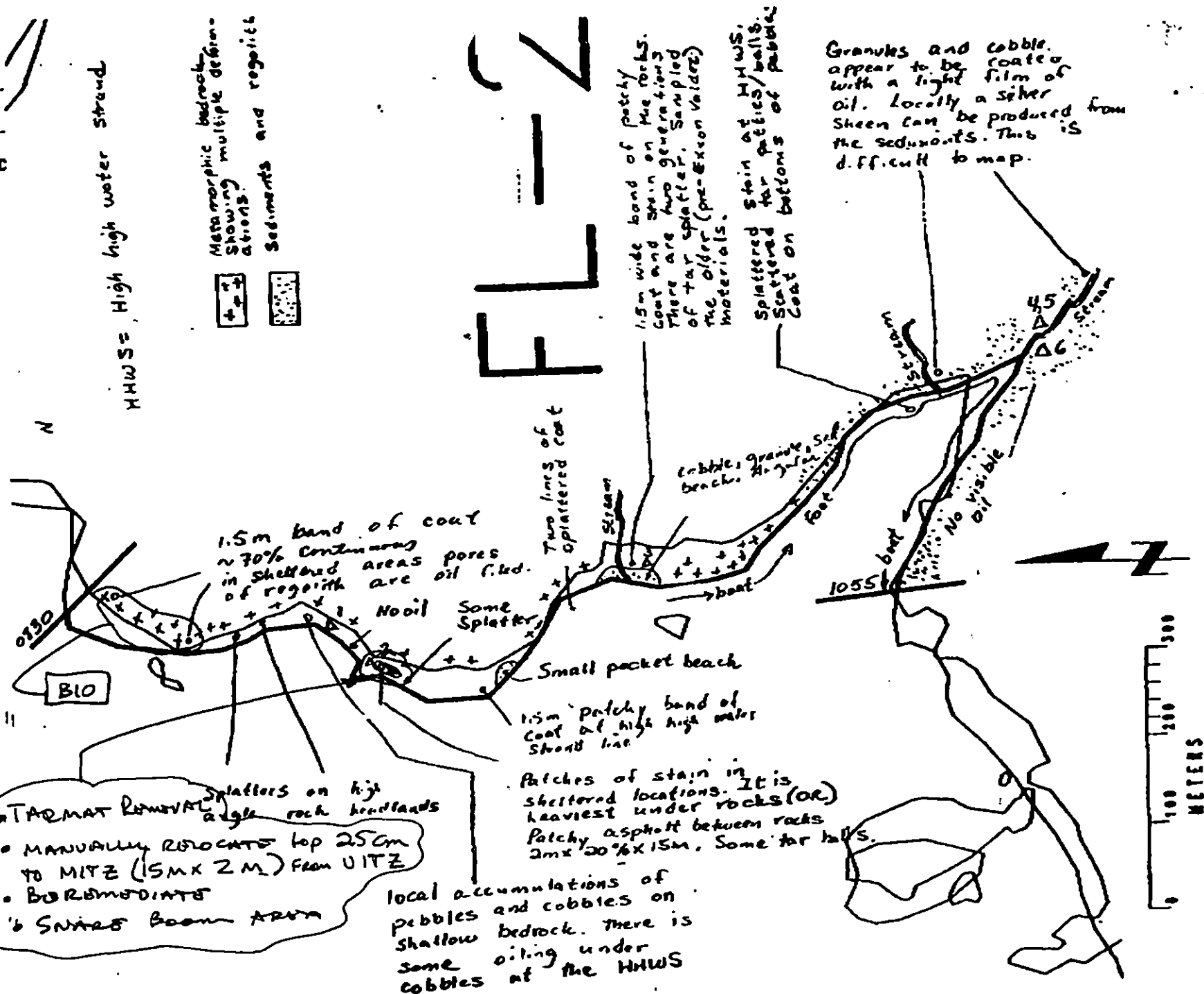
CT/B
Broken Distribution

CT/P
Patchy Distribution

CT/S
Splashed Distribution

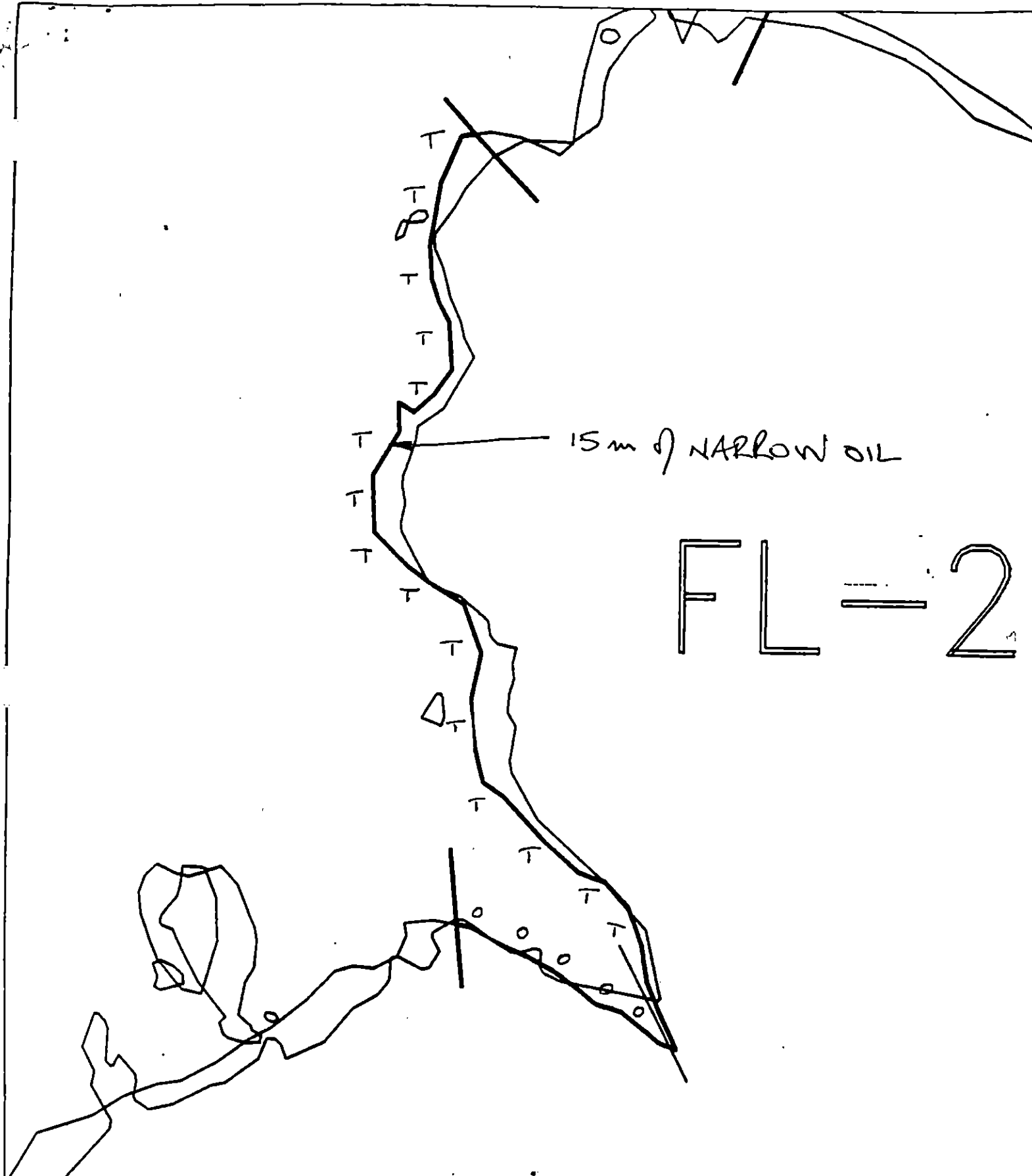
Oil Vegetation

Photo location, direction, and number



Oil Character Length (m) AP 15 PO CV CT 1170 ST 100 NS PT TB FL NO NO

NEW YORK 100000



FL-2

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

FL-2A

ADEC Segment Length: 1597m



Map Key: PWS-239

Name: GM for RM

Date: 4/4/90

Data Entered:

SHORELINE EVALUATION

SEGMENT ST/ FL-02 SUBDIVISION A (1 OF 1) DATE 4/9/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no 226-40-16390, 16388, 16384.

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)

1B Salmon stream mouth - spawning (7/10 to 8/31)

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to uncoiled biota and substrate.

ARCHAEOLOGICAL CONSTRAINTS:

ARCHAEOLOGICAL CONSTRAINTS:
Consultation and inspection with an Exxon archaeologist is required prior to treatment. Specific on-site monitoring requirements will be determined at that time.

SHPO SIGNATURE: Charles E. Homan DATE: 4/20/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 1303 m: No Oil 293 m
Subsurface Oil Observed: Yes X No Maximum Depth 55+ cm

RECOMMENDATIONS:

<u> </u> No Treatment Recommended	<u> </u> X Snare/Absorbent Booms
<u>X</u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u>X</u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u>X</u> Bioremediation	<u> </u> Spot Washing: <u> </u> Wands
<u>X</u> Tarmat: <u> </u> Breakup	<u> </u> Beach Cleaner
<u> </u> X Removal	<u> </u> X Other (see comments)

COMMENTS: Recommend tarmat removal, manual pick up of oiled trash and debris. At pit 2 location (see sketch map), recommend manual relocation of 25cm x 15m x 2m of sediment from the UITZ to the MITZ, followed by bioremediation. Use snare boom during relocation operation. Work should be conducted after 5/1 as long as bioremediation work is not within 100m of stream.

TAG COMMENTS: _____

TAG APPROVAL DATE: 4/20/90

ADEC ART WEINER Art Weiner

EXXON ANDY TEAR Real

NOAA Burt Wescott Burt Wescott

USCG KENNETH KEENE

FOSC: W L DATE: 5-1-90

Do not bioremediate near stream beds.
FAC Lm's desires.

OG R.A

7

SEGMENT ST/ FL-2

SUBDIVISION A

DATE 9 / April 90

CHECKLIST

- N Arrow
 Approx. Scale
 Seg/Sub Entry
 Oil Dist.
 Width
 Length
 % Cover
 Substrate Character
 Est. HWS/LWL
 SSL
 Profile Location(s)
 Profile(s)
 PH Location(s)
 Photo Location(s)

LEGEND

1 Δ
PH - No Subsurface Oil

2 Δ
PH - Subsurface Oil

CT/C
Continuous Distribution

CT/B
Broken Distribution

CT/P
Patched Distribution

CT/S
Splashed Distribution

Oil Vegetation

Photo location, direction, and number

HWS = High high water strand

Metamorphic bedrock
Showing multiple deformation
Sediments and regolith

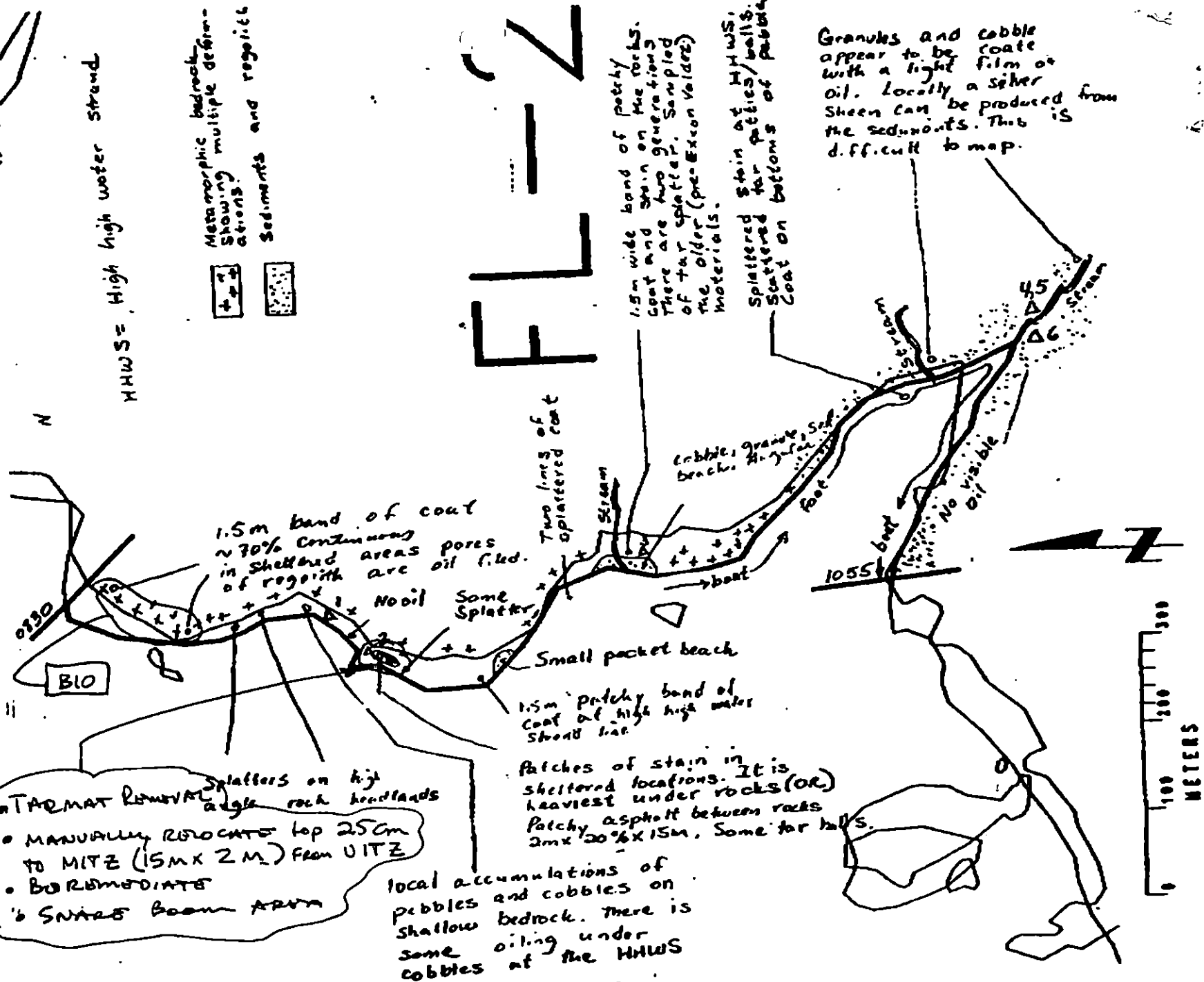


FL-2

1.5m wide band of patchy
coat and grain on the rocks.
There are two generations
of tar splatter. Sampled
the older (pre-Exxon Valdez)
materials.

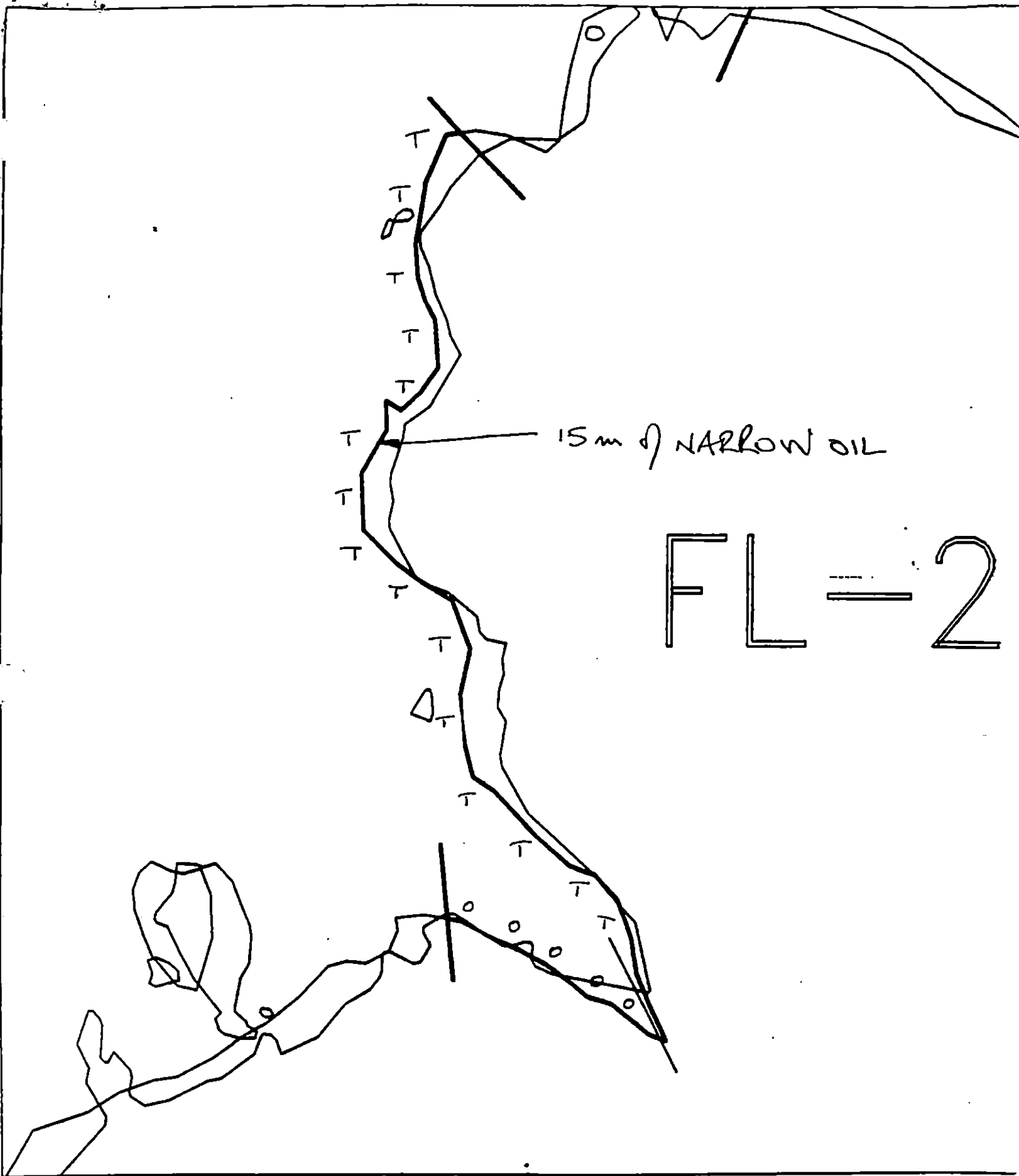
Stain at HWS.
Splattered tar pellets/balls.
Coat on bottoms of pebbles.

Granules and cobble
appear to be coated
with a light film of
oil. Locally a silver
sheen can be produced from
the sediments. This is
difficult to map.



Oil Character Length (m) AP 15 PO CV CT 1170 ST 100 NS PT TB FL NO

REV. 10/1/88



FL-2

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

FL-2A

ADEC Segment Length: 1597m



Map Key: PWS-239

Name: GM for RM

Date: 4/4/90

Data Entered:

1991 MAYSAP EVALUATION

SEGMENT: FL 002 SUB: A REGION: PWS SURVEY DATE: 5/12/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) RESTRICTED 7/10 - 9/15

Ecological/Constraints (see page two for details) Anadromous stream

ARCHAEOLOGICAL CONSTRAINTS:

If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO Signature: _____ Date: _____

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL: _____

TAG: _____

FOSC: _____

TAG APPROVAL DATE: _____

FOSC APPROVAL DATE: _____

ADEC

FOSC

EXXON

USCG

NOAA

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

Anadromous Stream: Unlimited treatment up to stream bank between May 15 and July 10. ADF&G approval required for work after July 10. Fish Habitat Permit required for instream work. ADF&G approval required for bioremediation within 100 meters of anadromous stream after July 10.

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 5 SEGMENT FL-2 SUBDIVISION A DATE 5/12/91

ADEC

NAME John Hux SIGNATURE [Signature]☒ NTR

Vertical R+B surveyed by skiff and CT/s was observed. Walking part of survey we observed a 1X1m patch of AP that was picked up, and a spatial frequency of random turballs distributed along the UFTZ between boulders. Two plastic bags + some ^{OSR} banding was picked up. No treatment recommended here at this time.

EXXON

NAME JOHN DEAN SIGNATURE [Signature]☒ NTR

1 bag oily sediments and 1/3 bag oily debris recovered.

LANDMANAGER

NAME Steve WARD OF CVC SIGNATURE [Signature]☐ NTR

A Very Lite Ring of Asphalt Around Several Rocks. This Area has been worked before and the crews did a Good Job. No Sub oil Found.
NO Bio. on this Sub. Div.

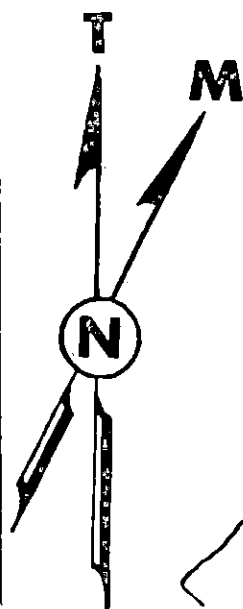
USCG/NOAA

NAME DREHER/CLINE SIGNATURE CWO K.R. Dreher [Signature]☒

NTR Further cleanup operations would cause more environmental harm than the oil remaining. No sheening, future mobilization is nil.

Oiling is primarily cover and coat. A small number of AP patties were removed during survey. Further treatment is unlikely to help.

MAY 1991
 OG SKETCH MAP
 GREG CHANEY
 TEAM 5
 SEGMENT: FL-2-A
 DATE: MAY 12 '91
 AIR P.#: PIM-C-005-194



FL-2A

SEE
 ENLARGEMENT
 AT
 RIGHT

SEE
 BELOW

FLEMMING
 ISLAND

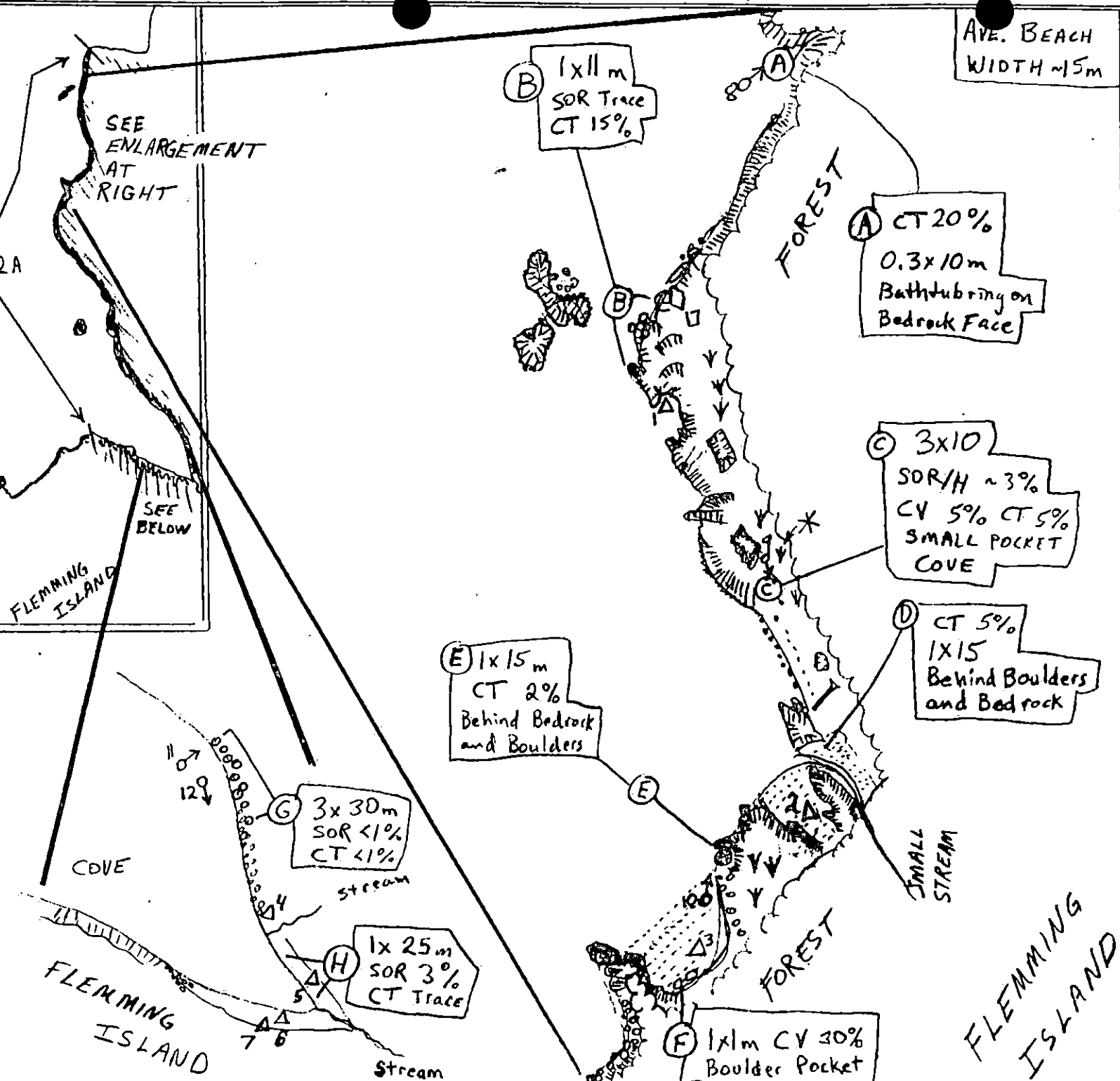
LEGEND

BEDROCK	
BOULDERS	
FINE SED.	
DRIFT LOG	
GRASS	
BRUSH	
FOREST	
OILED PIT	
NO OIL PIT	
PHOTO	

SCALE

50 METERS

APPROXIMATELY



HY SAP BIOLOGICAL SUMMARY FORM

pg 1 of 1

TEAM # 5 DATE 12 May 1991
 SEGMENT # FL-2 TIDAL HEIGHT (Range) +1.5 → +1.6
 SUBDIVISION A BIOLOGIST Crank
 SITE STATE 0 → 1' WIND SPEED/DIRECTION ~5 knots / West
 PHOTOGRAPHS: ROLL # 13 FRAME # 9

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):

(A) Area is located in the SUPRA on a vertical face. It is a 0.3x10m "bathtub ring" site. Within the site, only black lichen is present. In the ULTZ and MITZ densely concentrated barnacles are present (various age classes). The mottled sea star (*Evasterias*), dog whelks (*Nucella*) and sparse *Fucus* are also present. Biota cover ~90%. In the LITZ, algae dominant, including filamentous red greens, *Palmaria*, *Ulva* / *Monostroma*, *Sargassum* and *Fucus*. *Fucus* visually appeared to be unhealthy. Unable to touch plants due to difficult access. Biota cover ~80%.

(B) Area is a 1x11m band located high in the ULTZ. Within the site, moss and black lichen cover <1% of the surface sediments. Low in ULTZ, ~2m below site, through the MITZ Biota cover is ~30%. There is a sparse concentration of barnacles; a sparse to moderate concentration of *Fucus* with sporings and maturing conceptacles present; a rare concentration of mussels; sparse *Littorina* and limpets and tar spot algae present. In addition to the MITZ biota the LITZ also has bladed and filamentous red and green algae. Biota cover is LITZ is ~80%.

Between sites 'B' & 'C' there were several signs of otter (shell hash, scat etc). Close to site 'C' a possible den was spotted. A well worn path is present. This area should be avoided to lessen disturbance to the otter. The animal itself was not observed.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds	1 Murre	2	
Waterfowl	1 Goldeneye	2	
Gulls/Kittiwakes	1	2	
Shorebirds			
Corvids			
Other Birds	1 Falcon	2	

LAND MAMMALS

MARINE MAMMALS	# OBSERVED	SPECIES	# OBSERVED
Sea Otters	2	Bear: Deer tracks	
Pinnipeds (specify)		Possible river otter den	
Alas (specify)			

Shoreline subdivision map showing important biological features attached.

Reviewed M.B. 5/10/91

Team # 5

Date 12 May '91

pg 2 of

Segment # FL-2

Subdivision A

Sea State 0 $\rightarrow$ 1'

Tidal Height +1.5 $\rightarrow$ +6

Biologist Crank

Wind Speed / Direction ~5 knots/W

Comments (cont.)

(C) Area is a 3x10m band located in the SUPRA and high UIZ. Sprouting rye grass, mosses and black lichen cover ~5% of the surface. Cuscutamen casings are present. Approx. 1% of the moss population is brown, does not appear to be alive, but it is still attached to sediment surface. Ten meters below site, in the MITZ, there is a moderate to densely concentrated Fucus bed, sporangia are present as are maturing conceptacles. There are also moderately concentrated Littorina, sparse concentrated limpets and barnacles. A recent barnacle set is present, Biota cover is ~70%. See photo roll MAVSAP-5-roll 13 frame 9 for view of Fucus bed.

(D) Area is a 1x15m band of CT located high in the UIZ. No intertidal biota was found within the site. In the MITZ there is a moderate Fucus cover; plants are reproductive (i.e. conceptacles are maturing) and recruiting (sporangia present). There is also a sparse to moderate cover of barnacles with various age classes; recent set is dense; Littorina and limpets are sparsely concentrated. Biota cover is ~50%.

Team # 5
Segment # FL-2
Subdivision A
Sea State 0 $\rightarrow$ 1'

Date 12 MAY '91 pg 3 of
Tidal Height +1.5 $\rightarrow$ +6
Biologist Crank
Wind Speed / Direction ~5 knots /

Comments (cont.)

- (E) Area is a 1x15m band of CT located in the UITZ. There is less than 1% biota cover within the site including filamentous green algae and Fucus sporelings. Less than 1/2 m below site biota increases up to 70% cover. There are: moderate to sparsely concentrated barnacles of various ages; sparse Littorina and limpets; Odonthalia (an alga), filamentous green and red algae and Fucus sporelings and reproductively active mature plants. Approx. 5% of the Fucus plants are 'stipe-only'.
- (F) Area is a 1m² patch of CV located in the UITZ. Moss and black lichen cover ~5% of the surface sediments. Two meters downshore there are Fucus sporelings and 'stipe-only' Fucus plants present. In the MITZ, barnacles dominant with a sparse to moderate concentration. A sparsely concentrated recent set is present. Sparsely concentrated juvenile mussels and Scytosiphon bryozoans are also present. The LITZ has an intergravel mussel bed and sparse gastropods (Nucella, Littorina and limpets). Biota cover below site is 40 $\rightarrow$ 60%.

Team # 5

Date 12 MAY '91

pg 4 of 4

Segment # FL-2

Tidal Height $+1.5 \rightarrow +4$

Subdivision A

Biologist Crank

Sea State $0 \rightarrow 1$

Wind Speed / Direction ~5 knots / W

Comments (cont.)

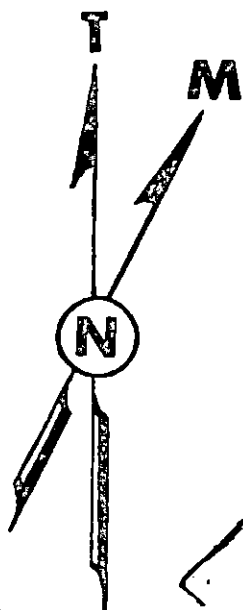
(G) Area is a 3×30 m band in the SUPRA and ULTZ. At the top edge of the site moss and black lichen are present; at the bottom margin there are barnacles (with various age classes); Fucus sporelings and filamentous green algae. Biota cover is ~1%. One meter below site to water biota cover is ~30%, including: FUCUS (sporelings, maturing conceptacles and 'stipe-only' plants present); sparse barnacles (various age classes including a recent set); sparse Littorina and limpets and tar-spot algae.

(H) Area is a 1×25 m band in the ULTZ. Amphipods and a 1×2 m patch of sprouting rye grass are present within the site; <1% biota cover. Approx 5m below site biota cover is ~20-40% with: sparse to moderately concentrated barnacles with a recent set, patches of Fucus with maturing conceptacles along stream bank and a sparse intercobble/gravel mussel bed that is difficult to see. At ~+4' tide level (underwater during survey) there is a dense 10×20 m Fucus patch at the stream mouth.

This is a low energy subdivision with recruitment occurring in the barnacle, mussel and Fucus populations. The biota, with exception of a few Fucus plants, appears to be healthy. Deer tracks were evident on the beaches and a probable river otter den.

Revised 11/13/91

MAP 1991
OG SKETCH MAP: BioMap
GREG CHANEY & Crank
TEAM 5
SEGMENT: FL-2-A
DATE: MAY 12 '91
AIR P.#: PIM-C-005-194



FL-2A

SEE
ENLARGEMENT
AT
RIGHT

SEE
BELOW

FLEMING
ISLAND

LEGEND

BEDROCK	
BOULDERS	
FINE BED.	
DRIFT LOG	
GRASS	
BRUSH	
FOREST	
OILED PIT	
NO OIL PIT	
PHOTO	

SCALE

50 METERS

APPROXIMATELY

FLEMING
ISLAND

Stream

SMALL
STREAM

FLEMING
ISLAND

~80% biota cover in
the LITZ and ~30%
in the MITZ

Probable River
Otter Den. Area should
be avoided to lessen
disturbance to occupants

Bear Tracks

10m x 15m Fucus patch
at stream mouth ~+4 tide level

Moderate to
Densely concentrated
Fucus bed with
sporelings and
maturing conceptacles

A CT 20%
0.3x10m
Bathub ring on
Bedrock Face

C 3x10
SOR/H ~3%
CV 5% CT 5%
SMALL POCKET
COVE

D CT 5%
1x15
Behind Boulders
and Bedrock

Densely concentrated
barnacle set

E 1x15m
CT 2%
Behind Bedrock
and Boulders

G 3x30m
SOR <1%
CT <1%

H 1x25m
SOR 3%
CT Trace

F 1x1m CV 30%
Boulder Pocket

B 1x11m
SOR Trace
CT 15%

~90%
biota cover
on vertical
face

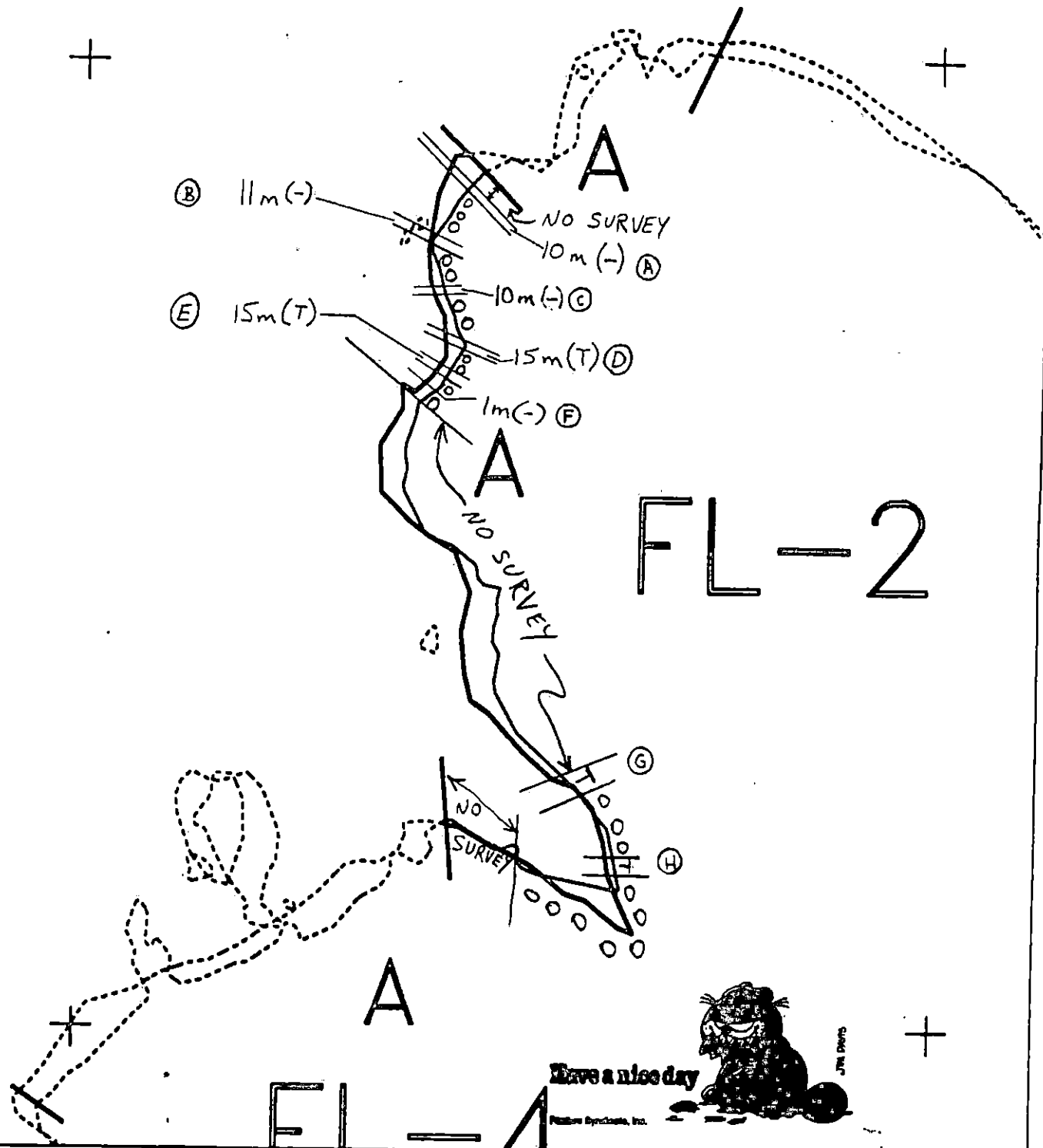
~80% biota cover
on boulders - Rich algae
Fucus may be unhealthy
Difficult access - could
not touch.

N.E. BEACH
WIDTH ~15m

FOREST

FOREST

Reviewed M-13.5/14



XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

FL002 A
 ADEC Subsegment Length: 1506m
 METERS
 0 200 400
 AK State Plane Zone 4
 p11002a



Subdivision Field Map
 Map Key: PWSFL002A
 Name: CHANEY
 Date: MAY 12 1991
 Date Entered:

reviewed 5/16/91
 revised 6/16 MAY

1991 MAYSAP EVALUATION

SEGMENT: FL 002 SUB: A REGION: PWS SURVEY DATE: 5/12/91ENVIRONMENTAL SENSITIVITIES:Work Window(s) RESTRICTED 7/10 - 9/15Ecological/Constraints (see page two for details) Anadromous streamARCHAEOLOGICAL CONSTRAINTS:If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.SHPO Signature: Rachel da Que Date: 5/24/91RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

NNN

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: MAY 24 1991FOSC APPROVAL DATE: 5/31/91

ADEC

FOSC

EXXON

E. E. PAGE, CDR, USCG
CHIEF OF STAFF, FOSG

USCG

NOAA

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

Anadromous Stream: Unlimited treatment up to stream bank between May 15 and July 10. ADF&G approval required for work after July 10. Fish Habitat Permit required for instream work. ADF&G approval required for bioremediation within 100 meters of anadromous stream after July 10.

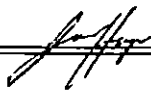
TEAM NO. 5 SEGMENT FL-2 SUBDIVISION A DATE 5/12/91

ADEC

NAME

John Hoyer

SIGNATURE

☒ NTR

Vertical R+B surveyed by skiff and CT/s was observed. Walking part of survey we observed a 1X1m patch of AP that was picked up and a spatial frequency of random tarballs distributed along the USTZ between boulders. Two plastic bags + some ^{OSR} banding was picked up. No treatment recommended here at this time.

EXXON

NAME

JOHN DEAN

SIGNATURE

☒ NTR

1 bag oily sediments and 1/3 bag oily debris recovered.

LANDMANAGER

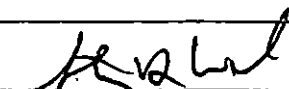
NAME

Steve WARD

OF

CVC

SIGNATURE

☐ NTR

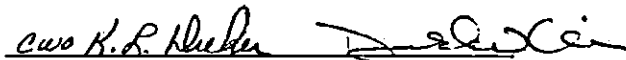
A Very Lite Ring of Asphalt Around Several lg Rocks. This Area has been worked before and the crews did a Good Job. No Sub oil Found.
NO Bio. on this Sub. Oil.

USCG/NOAA

NAME

DREHER/CLINE

SIGNATURE

☒ NTR

Further clean up operations would cause more environmental harm than the oil remaining. No sheering, future mobilization is nil.

Oiling is primarily cover and coat. A small number of AP patties were removed during survey. Further treatment is unlikely to help.

5

SEGMENT: FL-2

SUBDIVISION A

DATE May 12 / 91

ENERGY LEVEL: ☐ H ☐ M ☒ L

EST. OIL CATEGORY LENGTH: W m M m N 32 m VL 85 m NO 633 m US 846 m

DISTRIBUTION: C = 91-100%; B = 51-90%; P = 11-50%; S = 1-10%; T = <1%

SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE

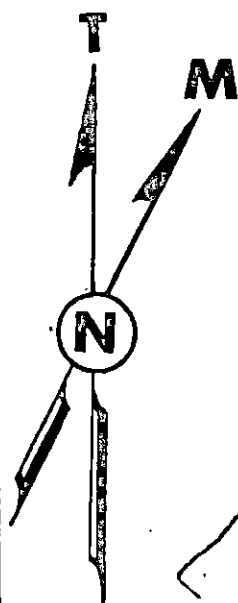
PHOTO ROLL # MAYSAP- 5 - 13 FRAMES 7-12

SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

OG COMMENTS: NO SUB SURFACE OIL OBSERVED ON THIS SUBDIVISION, OILING CONSISTED PRIMARILY OF CT ON PROTECTED SIDES OF BEDROCK AND BOULDERS. SOME SOR WAS OBSERVED IN PATCHES AROUND THE BASES OF BOULDERS. IN GENERAL OIL WAS NOT CONCENTRATED IN ANY PARTICULAR LOCATION.

revised 5.16.91 ggy
REVIEWED CO 16 MAY

MAYSAP 1991
 DG SKETCH MAP
 GREG CHANEY
 TEAM 5
 SEGMENT: FL-2-A
 DATE: MAY. 12 '91
 AIR P.#: PIM-C-005-194



FL-2A

SEE
 ENLARGEMENT
 AT
 RIGHT

SEE
 BELOW

FLEMING
 ISLAND

LEGEND

BEDROCK	
BOULDERS	
FINE SED.	
DRIFT LOG	
GRASS	
BRUSH	
FOREST	
OILED PIT	
NO OIL PIT	
PHOTO	

SCALE

50 METERS

APPROXIMATELY

COVE

FLEMING
 ISLAND

1x25m
 SOR 3%
 CT TRACE

3x30m
 SOR <1%
 CT <1%

1x15m
 CT 2%
 Behind Bedrock
 and Boulders

1x11m
 SOR Trace
 CT 15%

CT 20%
 0.3x10m
 Bathtub ring on
 Bedrock Face

3x10
 SOR/H ~3%
 CV 5% CT 5%
 SMALL POCKET
 COVE

CT 5%
 1x15
 Behind Boulders
 and Bedrock

1x1m CV 30%
 Boulder Pocket

FOREST

SMALL
 STREAM

FLEMING
 ISLAND

Ave. BEACH
 WIDTH ~15m

WYISAP BIOLOGICAL SUMMARY FORM

pg 1 of 1

TEAM # 5 DATE 12 May 1991
 SEGMENT # FL-2 TIDAL HEIGHT (Range) +1.5 → +1.6
 SUBDIVISION A BIOLOGIST Crank
 SITE STATE 0 → 1' WIND SPEED/DIRECTION ~5 knots / West
 PHOTOGRAPHS: ROLL # 13 FRAME # 9

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):

(A) Area is located in the SUPRA on a vertical face. It is a 0.3x10m "bathtub ring" CT. Within the site, only black lichen is present. In the ULTZ and MITZ densely concentrated barnacles are present (various age classes). The mottled sea star (*Evasterias*), dog whelks (*Nucella*) and sparse *Fucus* are also present. Biota cover ~90%. In the LITZ algae dominants, including filamentous red-greens, *Palmaria*, *Ulva* / *Monostroma*, *Sargassum* and *Fucus*. *Fucus* visually appeared to be unhealthy. Unable to touch plants due to difficult access. Biota cover ~80%.

(B) Area is a 1x11m band located high in the ULTZ. Within the site, moss and black lichen cover <1% of the surface sediments. Low in ULTZ, ~2m below site, through the MITZ Biota cover is ~30%. There is a sparse concentration of barnacles; a sparse to moderate concentration of *Fucus* with sporlings and maturing conceptacles present; a rare concentration of mussels; sparse *Littorina* and limpets and tar spot algae present. In addition to the MITZ biota the LITZ also has bladed and filamentous red and green algae. Biota cover is LITZ is ~80%.

Between sites 'B' & 'C' there were several signs of otter (shell hash, scat etc). Close to site 'C' a possible den was spotted. A well worn path is present. This area should be avoided to lessen disturbance to the otter. The animal itself was not observed.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds	1 Murre	2	
Waterfowl	1 Goldeneye	2	
Gulls/Kittiwakes	1	2	
Shorebirds			
Corvids			
Other Birds	1 Falcon?	2	

LAND MAMMALS

MARINE MAMMALS	# OBSERVED	SPECIES	# OBSERVED
Sea Otters	2	Bear: Deer tracks	
Pinnipeds (specify)		Possible river otter den	
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

Reviewed M.B. 5/16/91

Team # 5

Date 12 May '91

pg 2 of

Segment # FL-2

Subdivision A

Sea State 0 $\rightarrow$ 1'

Tidal Height +1.5 $\rightarrow$ +6

Biologist Crank

Wind Speed / Direction ~5 knots/W

Comments (cont.)

(C) Area is a 3x10m band located in the SOPRA and high UITZ. Sprouting rye grass, mosses and black lichen cover ~5% of the surface. Customblen casings are present. Approx. 1% of the moss population is brown, does not appear to be alive, but it is still attached to sediment surface. Ten meters below site, in the MITZ, there is a moderate to densely concentrated Fucus bed, sporelings are present as are maturing conceptacles. There are also moderately concentrated Littorina, sparsely concentrated limpets and barnacles. A recent barnacle set is present. Biota cover is ~70%. See photo roll MAVSAP-5- roll 13 frame 9 for view of Fucus bed.

(D) Area is a 1x15m band of CT located high in the UITZ. No intertidal biota was found within the site. In the MITZ there is a moderate Fucus cover; plants are reproductive (i.e. conceptacles are maturing) and recruiting (sporelings are present). There is also a sparse to moderate cover of barnacles with various age classes; recent set is densely Littorina and limpets are sparsely concentrated. Biota cover is ~50%.

Team # 5
Segment # FL-2
Subdivision A
Sea State 0 $\rightarrow$ 1'

Date 12 MAY '91 pg 3 of
Tidal Height +1.5 $\rightarrow$ +6
Biologist Crank
Wind Speed / Direction ~5 knots / W

Comments (cont.)

- (E) Area is a 1x15m band of CT located in the UITZ. There is less than 1% biota cover within the site including filamentous green algae and Fucus sporelings. Less than 1/2 m below site biota increases up to 70% cover. There are: moderate to sparsely concentrated barnacles of various ages; sparse Littorina and limpets; Odonthalia (an alga), filamentous green and red algae and Fucus sporelings and reproductively active mature plants. Approx. 5% of the Fucus plants are 'stipe-only'.
- (F) Area is a 1m² patch of CV located in the UITZ. Moss and black lichen cover ~5% of the surface sediments. Two meters downshore there are Fucus sporelings and 'stipe-only' Fucus plants present. In the MITZ, barnacles dominant with a sparse to moderate concentration. A sparsely concentrated recent set is present. Sparsely concentrated juvenile mussels and Scytosiphon (algae) are also present. The LITZ has an intergravel mussel bed and sparse gastropods (Nucella, Littorina and limpets). Biota cover below site is 40 $\rightarrow$ 60%.

Team # 5

Date 12 MAY '91

pg 4 of 4

Segment # FL-2

Tidal Height $+1.5 \rightarrow +4$

Subdivision A

Biologist Crank

Sea State $0 \rightarrow 1'$

Wind Speed / Direction ~5 knots/W

Comments (cont.)

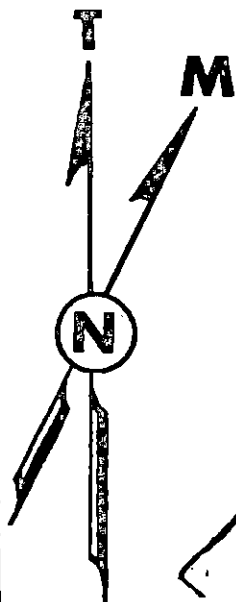
(G) Area is a 3×30 m band in the SUPRA and ULTZ. At the top edge of the site moss and black lichen are present; at the bottom margin there are barnacles (with various age classes); Fucus sporelings and filamentous green algae. Biota cover is ~1%. One meter below site to water biota cover is ~30%, including: FUCUS (sporelings, maturing conceptacles and 'stipe-only' plants present); sparse barnacles (various age classes including a recent set); sparse Littorina and limpets and tar-spot algae.

(H) Area is a 1×25 m band in the ULTZ. Amphipods and a 1×2 m patch of sprouting rye grass are present within the site; <1% biota cover. Approx 5m below site biota cover is ~20-40% with: sparse to moderately concentrated barnacles with a recent set, patches of Fucus with maturing conceptacles along stream bank and a sparse intercobble/gravel mussel bed that is difficult to see. At ~+4' tide level (underwater during survey) there is a dense 10×5 m Fucus patch at the stream mouth.

This is a low energy subdivision with recruitment occurring in the barnacle, mussel and Fucus populations. The biota, with the exception of a few Fucus plants, appears to be healthy. Deer & Bear tracks were evident on the beaches and a probable river otter den is present.

Reviewed M.B. 5/16/91

MAYSAP 1991
 OG SKETCH MAP: BioMap
 GREG CHANEY: Crank
 TEAM 5
 SEGMENT: FL-2-A
 DATE: MAY 12 '91
 AIR P.#: PIM-C-005-194



FL-2A

SEE
 ENLARGEMENT
 AT
 RIGHT

SEE
 BELOW

FLEMING
 ISLAND

LEGEND

BEDROCK	
BOULDERS	
FINE BED.	
DRIFT LOG	
GRASS	
BRUSH	
FOREST	
OILED PIT	
NO OIL PIT	
PHOTO	

SCALE

50 METERS

APPROXIMATELY

FLEMING
 ISLAND

~80% biota cover in
 the LITZ and ~30%
 in the MITZ

Probable River
 Otter Den. Area should
 be avoided to lessen
 disturbance to occupants

Bear Tracks

10m x 15m Fucus patch
 at stream mouth at tide level

E 1x15m
 CT 2%
 Behind Bedrock
 and Boulders

Moderate to
 Dense concentration
 of Fucus bed with
 sporlings and
 maturing conceptacles

G 3x30m
 SOR <1%
 CT <1%

H 1x25m
 SOR 3%
 CT TRACE

Interglacial
 mussel bed

F 1x1m CV 30%
 Boulder Pocket

AVE. BEACH
 WIDTH ~15m

80% biota cover
 on boulders - Rich algae
 Fucus may be unhealthy
 Difficult access - could
 not touch

A CT 20%
 0.3x10m
 Bathing ring on
 Bedrock Face

C 3x10
 SOR/H ~3%
 CV 5% CT 5%
 SMALL POCKET
 COVE

D CT 5%
 1x15
 Behind Boulders
 and Bedrock

No Biota
 found w/ site D

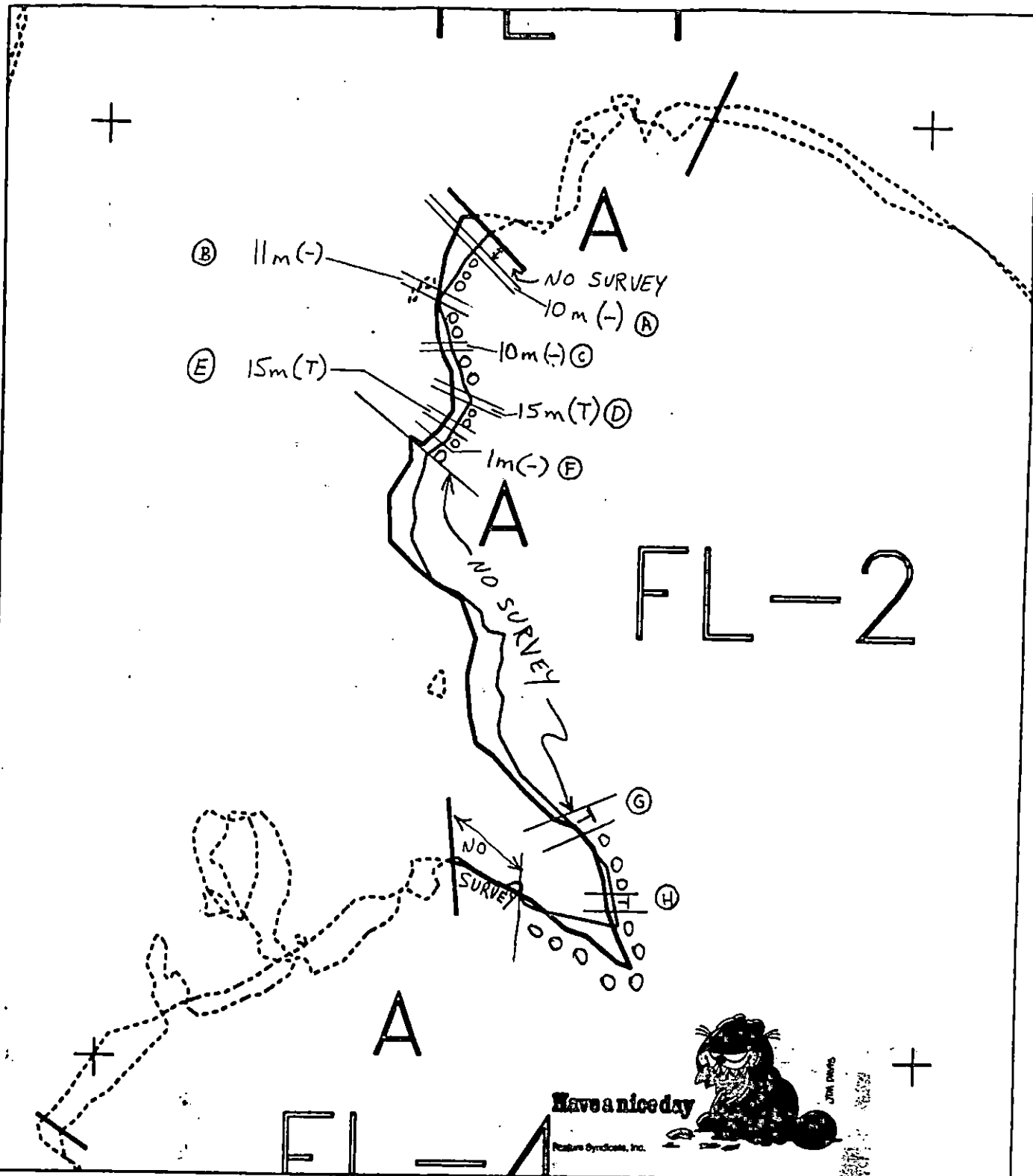
Densely concentrated
 barnacle set

FOREST

FOREST

SMALL
 STREAM

FLEMING
 ISLAND



XXXX Wide
 //// Medium
 --- Narrow
 TTTT Very Light
 0000 No Oil

FL002 A
 ADEC Subsegment Length: 1500m
 METERS
 0 100 200
 AK State Plane Zone 4
 pfl002a



Subdivision Field Map
 Map Key: PWSFL002A
 Name: CHANEY
 Date: MAY 12 1991
 Date Entered:



reviewed 5.16.91 g
 revised CD 16 MAY

ANADROMOUS FISH STREAM EVALUATION

SEGMENT ST/ FL-02 A STREAM NO: 226-40-16390 DATE 4/23/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Three catalogued streams: 226-40-16390, 226-40-16388, 226-40-16384

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)

1B Salmon stream mouth - spawning (7/10 to 8/31)

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unoiled biota and substrate.

Subject stream is located within Subdivision FL-002A

ARCHAEOLOGICAL CONSTRAINTS:

If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO SIGNATURE: J. David McMahon DATE: 5/8/90

Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

<u>X</u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u> </u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u> </u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u> </u> Bioremediation	<u> </u> Spot Washing: <u> </u> Wands
<u> </u> Tarmat: <u> </u> Breakup	<u> </u> Beach Cleaner
<u> </u> Removal	<u> </u> Other (see comments)

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 5/7/90
ADEC ART WEINER Art Weiner
EXXON ANDY TEAL Andy Teal FOSC: DATE: 5-18-90
NOAA Gary Petrus Gary Petrus
USCG G.A. REITER G.A. Reiter

9/53

OG Will Reid

SEGMENT ST/ FL002

STREAM 226-40-16390

DATE 23 / APR 90

CHECKLIST

☐ M Area
☐ Approx. Scale
☐ Seg/Sub Entry
☐ Oil Dist.
☐ Width
☐ Length
☐ % Cover
☐ Substrate Character
☐ Est. HW/LW/LVL
☐ SSL
☐ Profile Location(s)
☐ Profile(s)
☐ P/L Location(s)
☐ Photo Location(s)

LEGEND

1 Δ

P/L - No Subsurface Oil

2 Δ

P/L - Subsurface Oil

CT/C

Continuous Distribution

CT/D

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splashed Distribution

eee

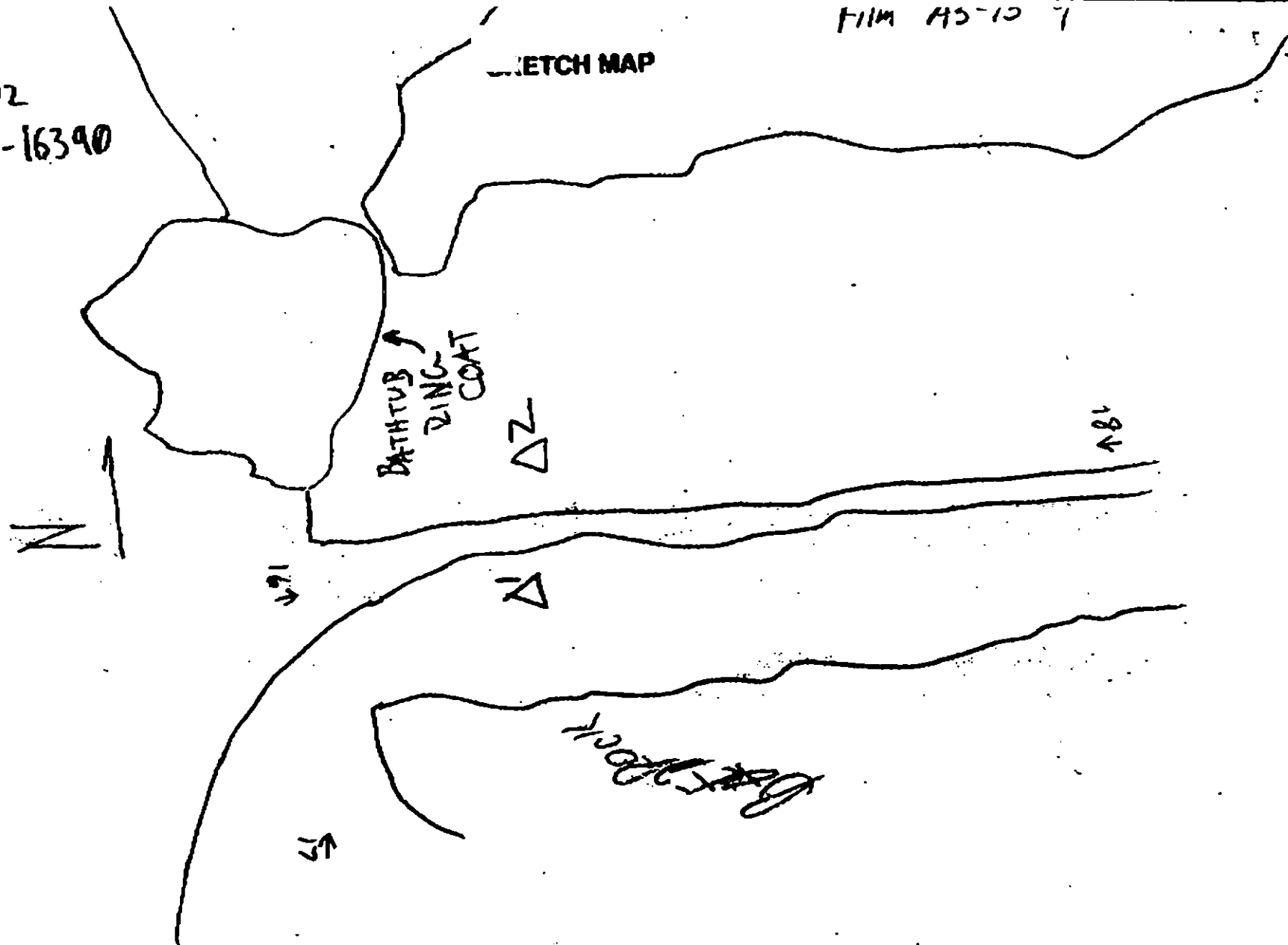
Oiled Vegetation

1 ➡

Photo location, direction,
and number

SKETCH MAP

FILM 45-157



Oil Character Length (m): AP _____ PO _____ CV _____ CT _____ ST _____ MS _____ PT _____ TB _____ FL _____ NO _____

REVISED 10/90

7133

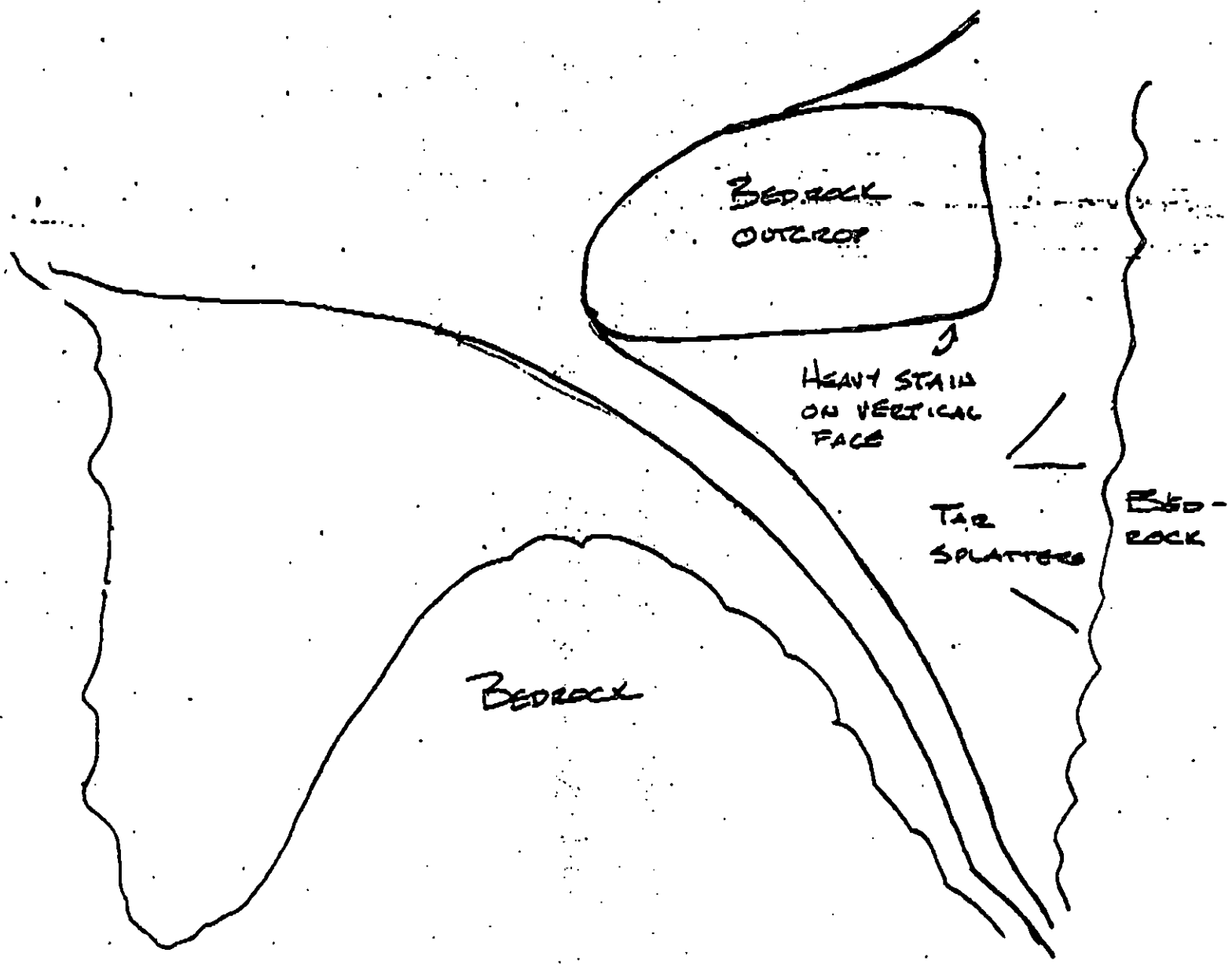
43 PHOTOLOG

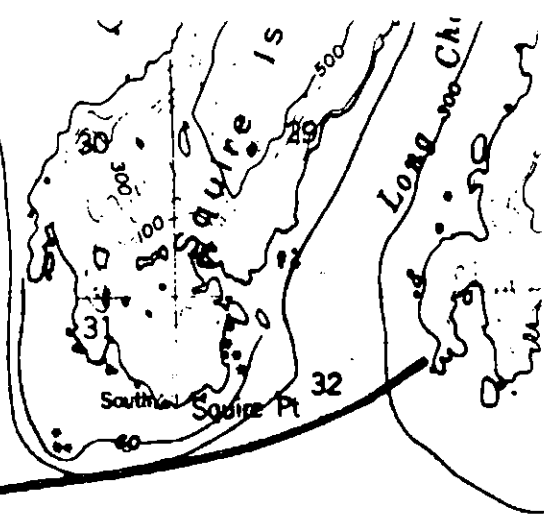
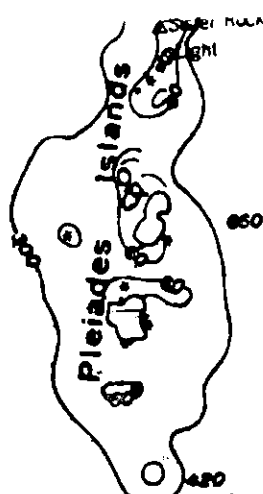
DESCRIPTION

RECOMMENDATIONS: NO TREATMENT REQUIRED.

I agree with recommendations. No treatment

48 OIL DISTRIBUTION DIAGRAM





226-20

226-40

ECOLOGY MAP

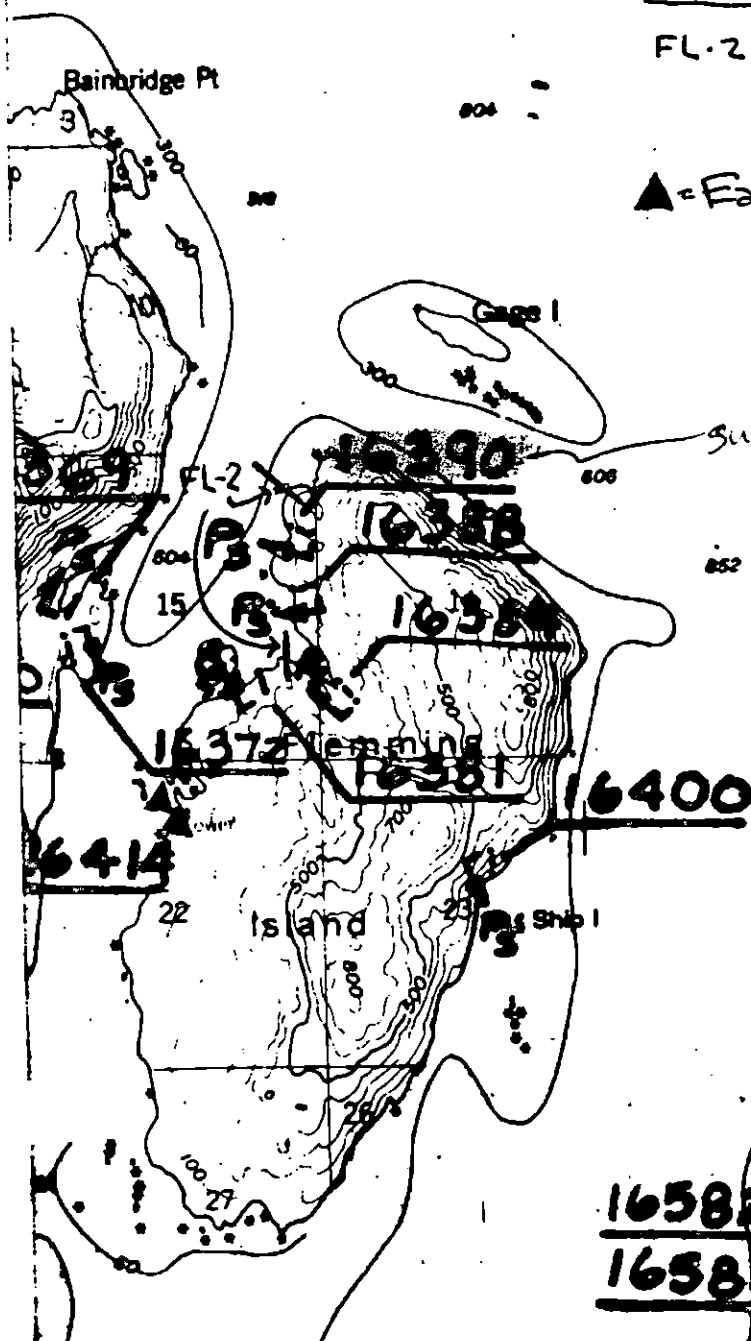
FL-2 ASC#

226-40-16390

▲ = Eagle Nest

K N I G H T

SUBJECT STREAM LOCATION



DR

+

ANADROMOUS FISH STREAM ASSESSMENT

REGION: PRINCE WILLIAM SOUND

SEGMENT: FL-02

STREAM NO: 226-40-16390

ANADROMOUS FISH STREAM EVALUATION

SEGMENT ST/ FL-02 A STREAM NO: 226-40-16390 DATE 4/23/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Three catalogued streams: 226-40-16390, 226-40-16388, 226-40-16384

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)

1B Salmon stream mouth - spawning (7/10 to 8/31)

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to uncoiled biota and substrate.

Subject stream is located within Subdivision FL-002A

ARCHAEOLOGICAL CONSTRAINTS:

If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO SIGNATURE: _____ DATE: _____

Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

<u>X</u> No Treatment Recommended	_____ Snare/Absorbent Booms
_____ Treatment Recommended	_____ Oil Snares (pom poms)
_____ Manual Pickup	_____ Absorbents (pads, rolls, etc)
_____ Bioremediation	_____ Spot Washing: _____ Wands
_____ Tarmat: _____ Breakup	_____ Beach Cleaner
_____ Removal	_____ Other (see comments)

COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

Salmon stream mouth - fry outmigration (3/1 to 5/15)

Salmon stream mouth - spawning (7/10 to 8/31)

No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No bioremediation or other chemical application within 100m of stream without authorization from ADF&G. No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G. Treatment which is not intrusive and which will not affect nearshore oil or toxicity levels, such as manual removal, can probably proceed without adherence to time constraints. In any case, contact ADF&G Habitat Division prior to treatment for consultation and/or permit application.

AGENCY CONTACT PERSON: ADF&G John Morison 267-2324

1C Salmon fry nursery area (4/31 to 7/31)

No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to July 31 unless authorized by ADF&G. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G prior to treatment for confirmation and advice.

AGENCY CONTACT PERSON: ADF&G Larry Peltz 424-3214

1D Esther Hatchery release (4/15 to 6/15)

1E Main Bay Hatchery release (4/20 to 6/15)

1F Sawmill Bay Hatchery release (4/15 to 6/1)

1G Cannery Creek Hatchery release (4/21 to 6/1)

1H Remote release site

No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G and/or PWS Aquaculture Association. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G or PWS Aquaculture Association for confirmation and authorization.

AGENCY CONTACT PERSON: 1E ADF&G Larry Peltz 424-3214

1D 1F 1G PWS Aquaculture Association John McMillan or Bruce Suzumoto 424-7511

1I Gill net area (6/7 to 8/31)

1J Purse seine area (7/20 to 9/30)

1K Purse seine hook-off (7/20 to 9/30)

1L Set net sites (6/11 to 7/25)

Contact ADF&G for specific dates, locations and constraints. Restrict boat and air traffic to essential minimum. When set net sites are present (1L) restrict beach operations to essential minimum as authorized by ADF&G. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.

AGENCY CONTACT PERSON: ADF&G James Brady 424-3212

2M Herring spawning (4/1 to 6/15)

Contact ADF&G for confirmation - dates and locations may vary. Restrict boat traffic to essential minimum. Avoid damage to unopened intertidal and subtidal algae and seagrass. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.

AGENCY CONTACT PERSON: ADF&G Evelyn Biggs 424-3235

3N, 3P Harbor seal and sea lion pupping (5/15 to 7/1)

3O, 3Q Harbor seal and sea lion molting (8/15 to 9/15)

Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts. No application of Inipol within two weeks of arrival dates (work window at these sites is limited to 7/2 to 7/31). Contact ADF&G and USFWS prior to treatment for confirmation.

AGENCY CONTACT PERSON: US National Marine Fisheries Service Steve Zimmerman 586-7235

ADF&G Don Calkins 267-2403

SR Seabird colony (5/1 to 9/1)

Restrict air and boat traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance from colony. Contact USFWS prior to treatment.

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

SS Shorebird/waterfowl concentration (4/1 to 5/15)

Restrict all activity to essential minimum, especially air traffic. Contact USFWS and ADF&G for confirmation.

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

ADF&G Tom Rothy 267-2206

5T All Bald Eagle nests (3/1 to 6/1)

Active Bald Eagle nests (3/1 to 9/1)

Restrict air traffic and all disturbance to essential minimum. No personnel within 400m: 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

6U Recreation: Tent sites (6/1 to 9/15)

6V Anchorages (6/1 to 9/15)

6W Forest Service cabins (6/1 to 9/15)

6X Lodge (6/1 to 9/15)

6Y Special use destination

7Z Subsistence area: Salmon harvesting (5/1 to 9/30)

7HH Finfish harvesting

7I Deer harvesting (8/15 to 2/28)

7JJ Invertebrate harvesting

Contact ADF&G and appropriate Native Corporation for specific dates, locations, and constraints. Restrict boat and air traffic and beach disturbance to essential minimum. If plans for treatment include methods such as hot water wash or application of Inipol which might affect intertidal or nearshore oil or toxicity levels, contact ADF&G and appropriate Native Corporation for authorization - see Native Corporation Contact List for each Native Corporation's contact person.

AGENCY CONTACT PERSON: ADF&G Jim Fall 267-2359

FIELD SHORELINE COMMENT SHEET

SEGMENT ST FL 002 SUBDIVISION: 16590 DATE 4/23/90

USCG

NAME CWO MC NATION SIGNATURE [Signature]

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

ADEC

NAME ADF+G SIGNATURE [Signature]

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

LAND MANAGER

NAME NO TAM MEMBER SIGNATURE _____

☐ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

Alaska Department of Fish and Game

ANADSCAT Observations and Recommendations
Team 15 - Michael Wiedmer and Tom Crowe

23 April 1990

ASC # 226-40-16451Segment BA-002

Observations This large cove has a gradual gradient with a large grassy meadow in the supratidal zone. The intertidal substrate is shale gravel and cobble. East of the channel, extensive tar mats ring the high tide line. West of the channel, widely scattered tar patties dot the upper-intertidal zone. No obvious subsurface oil was identified. Two to three tar patties were observed above the storm berm in the grassy lagoon area.

Treatment Recommendations Manually remove tar mats and patties.

ASC # 226-40-16400Segment FL-005

Observations The intertidal zones surrounding this stream channel are confined to a small area by bedrock walls. Boulder rubble borders the bases of these walls. Along the north side of the channel, a sticky oil film coats a portion of the underside of some of the shale boulders. No obvious oil penetration of the substrate was noted. Narrow tar bands ring the boulder outcrops south of the channel.

Treatment Recommendations Manually turn over the shale boulders to enhance the weathering of the oiled surfaces. This was completed by the ANADSCAT crew, therefore further treatment is not required. No treatment is recommended for the tar rings on the bedrock outcrops.

ASC # 226-40-16390Segment FL-002

Observations The intertidal zone surrounding this stream is very confined by bedrock walls on either side. Scattered tar splatters dot the bedrock and associated bedrock rubble on the east side of the channel. A heavy tar stain coats a significant

SHORELINE OILING SUMMARY (ANAD.)

REVISION NO. 04

OG WILLIAM LEID USCG McMAHON SEGMENT ST/ FL002 8/53
 BIO MICHAEL FOWCETT LAND REP TOM CROWE STRAITS 226-40-1640 OF
 EXXON GUS GARCIA ADFG MIKE WARDNER TIME 13:15 to 17:25
 TEAM NO. 15 TIDE LEVEL 2.5 ft DATE 23 / APR / 90
 EST. SUBDIVISION LENGTH: 2.5 m ☐ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo
 SURFACE SEDIMENTS: R 50 % B 50 % C 30 % P 60 % G 10 % S 0 % M 0 % V
 SLOPE: Long 50 % Hang 50 % Vert 0 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 2 m NO 27

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	C	A	P	A	1	2	3	4	5	SU	U	M	U
ASPHALT PAVEMENT													
POOLED													
COVER													
COAT				X		X						X	
STAIN													
MOUSSE													
PATTIES													
TARBALLS													
FILM													
NO OIL										X	X		X

PAVEMENT H F S 0 sq. m by 0

PATTIES / TARBALLS 0 BAG

NEAR SHORE SHEEN? NO BR RW SL T

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs	X		
Vegetation			
Trash			
Debris			

Did you collect DEBRIS
☐ YES ☒ NO
 TYPE 0
 #BAGS 0

Photographs:

Roll No. 0

Frames 0

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL	BELOW		OIL / FILM COLOR					PIT ZONE				A N A	SHEEN (Y/N)	Y	SURFACE SUBSURF/ SEDIMENT
		OP	OR	OL	OF	NO		US	VS	1	2	3	4	5	SU	U	M	U				
1	35					X	.									X				N		P/G
2	25					X	.									X				N		P/G/C
							.															
							.															
							.															
							.															
							.															

COMMENTS

REVIEWED 1W DATE 4-25-90

9/53

00 WILLIAM REID

SEGMENT ST/ FL 002

STREAM 226-40-16390

DATE 23 / APR 80

CHECKLIST

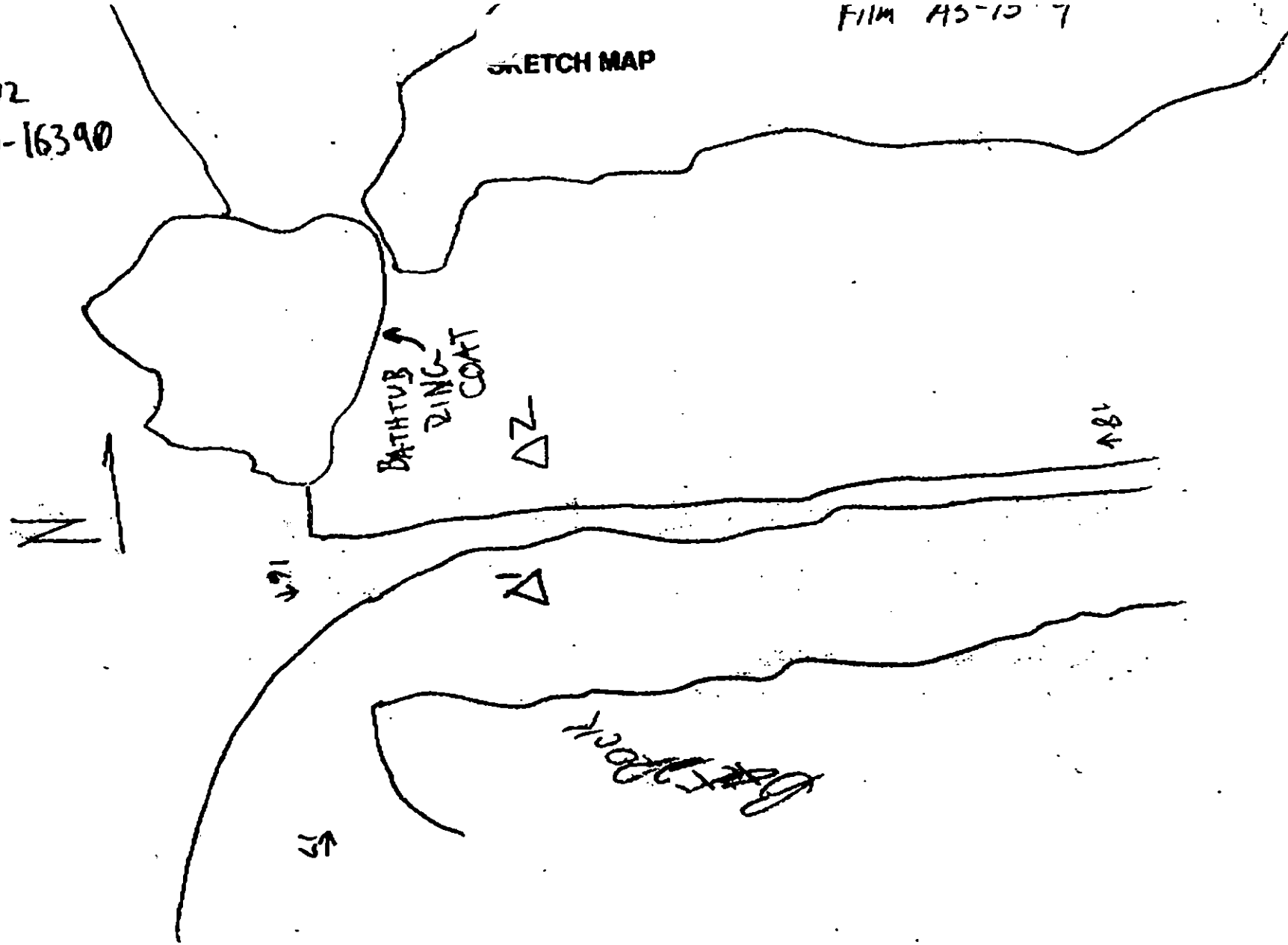
- ☐ N Area
- ☐ Approx. Scale
- ☐ Seg/Sub Entry
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. WMLA/PL
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ P/L Location(s)
- ☐ Photo Location(s)

LEGEND

- 1 Δ
P/L - No Subsurface Oil
- 2 Δ⁺
P/L - Subsurface Oil
- CT/C
Continuous Distribution
- CT/B
Broken Distribution
- CT/P
Patchy Distribution
- CT/S
Splashed Distribution
- eee
Oiled Vegetation
- 1 →
Photo location, direction, and number

Film 45-107

SKETCH MAP



Oil Character Length (m): AP _____ PO _____ CV _____ CT _____ ST _____ MS _____ PT _____ TB _____ FL _____ NO _____

453

ADFG MULTI-ASSESSMENT DATA FORM

1 SURVEY TYPE: 55 (33) 58 TS AVE SCH HNS PTA2 REGION: (PNS) 10, C1 K, APMETHOD: Aerial (Ground) Boat3 DATE: 4/23/9015 HIGH TIDE TIMES: 0021 / 125721 TEAM RECORDER: M. WIGDNER4 START TIME: 171016 HIGH TIDE HTS: 11.5' / 10.5'22 OBSERVERS: T. CROW5 STOP TIME: 172517 LOW TIDE TIMES: 0648 / 185523 AGENCY: ADFG6 SEGMENT #: EL-00218 LOW TIDE HTS: -0.8' / 0.5'24 PHOTOS TAKEN: Y (N)7 STATION #: 226-40-1639019 TIDE HT AT SURVEY: 2.28'

Roll #1 _____ Frames _____

8 K-UNIT: _____

20 USCG QUAD: _____

25 VIDEO TAKEN: Y (N) TAPES: _____

9 STAT AREA: _____

26 STAT AREA: _____

Starts _____ Ends _____

10 LAT: _____

11 LONG: _____

28 SAMPLES TAKEN: Y (N) Number _____

12 SOURCE: Map Loran

Oil _____

13 LOCATION: _____

Sediment _____

14 DESCRIPTION: _____

Biological _____

Water _____

EXTENT OF OIL

	SHORELINE				STREAM			
	L	Y	N		L	Y	N	
27 SURFACE COVERAGE	30	25		41	25	1		<u>(N)</u>

36 CATALOGED ANNO. FISH BREAST Y (N)37 CATALOG #: 226-40-16390

38 STREAM NAME: _____

28 SURFACE THICKNESS 41mm39 OIL IN STREAM BED? Y (N)29 PENETRATION 040 OIL ON STREAM BANKS? Y (N)30 OVERALL OIL IMPACT: N (N) L N N41 OIL ON BEACH ADJACENT TO MOUTH (Y) N
(within 30 meters)31 OIL TYPE: Pooled Mousse Tar Asphalt Sticky (Stain)42 OIL WITHIN 1 MILE OF STREAM (Y) N32 OILED DEBRIS? Y (N)

Where: _____

33 SHORELINE TYPE: Headland Low-lying Rocks Beach (Cove)43 ANAEROBIC FISH PRESENT? (Y) N

Lagoon Marsh

ALGAL PRESUMED34 WAVE EXPOSURE: High Moderate (Low)

44 ANAEROBIC FISH OBSERVATION

35 SUBSTRATE TYPE: Bedrock _____ Boulder _____ Cobble _____

Species Aerial Ground

Gravel _____ Sand _____ Mud/silt _____

COMMENTS: HEAVY STAIN ON PROTECTED VERTICAL WALLS OF
BEDROCK OUTCROP. VERY SCATTERED STAINS ELSEWHERE

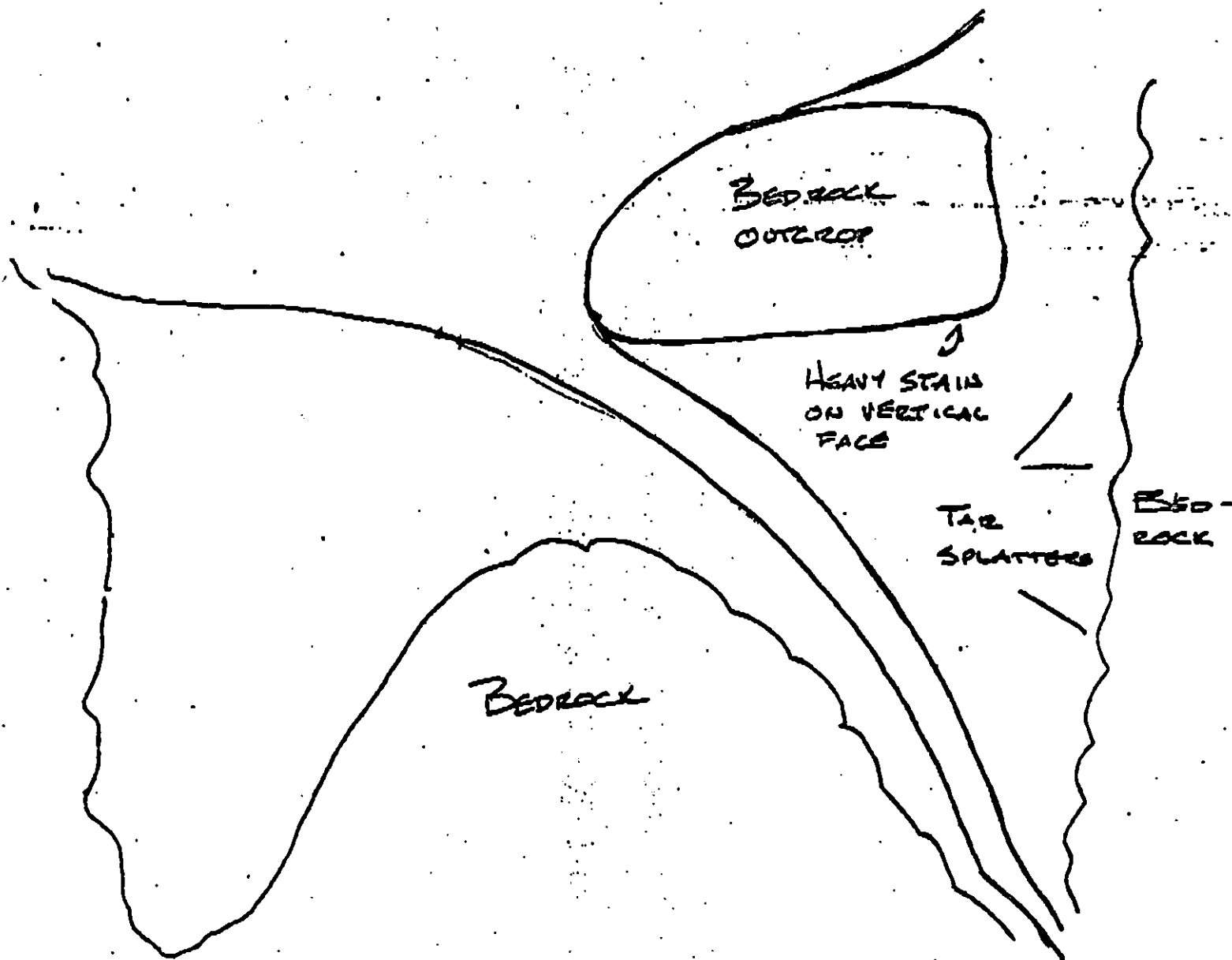
43 PHOTOLOG

DESCRIPTION

RECOMMENDATIONS: NO TREATMENT REQUIRED.

I agree with recommendations. No further

40 OIL DISTRIBUTION DIAGRAM



12/53

segment FL002

4/23/90

Stream 226-40-16390

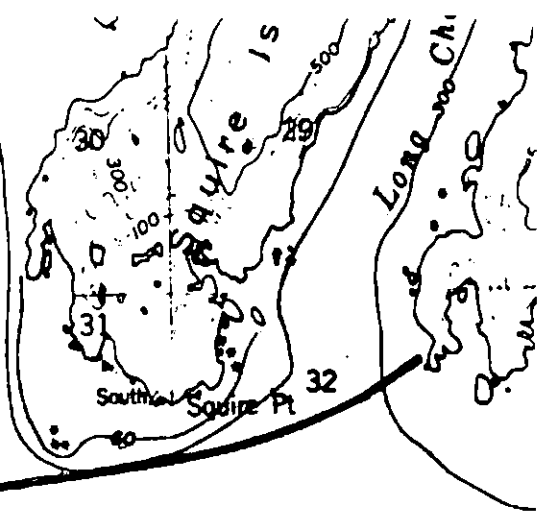
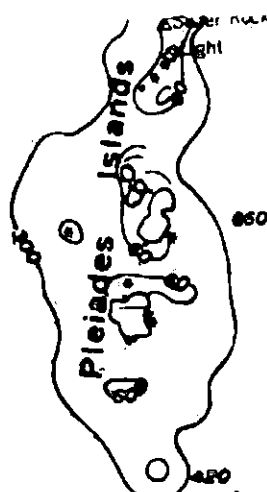
Michael Fawcett

Ecological Summary

This is a small, steep stream, the potential spawning area only about 30 m long. The stream crosses a narrow cobble beach bounded by bedrock walls on each side. A few mussels are scattered among the cobbles, along with dense patches of Fucus and barnacles.

The only boring found consists of stains on the bedrock, cleanup not advised.

M Fawcett



226-20
226-40

ECOLOGY MAP

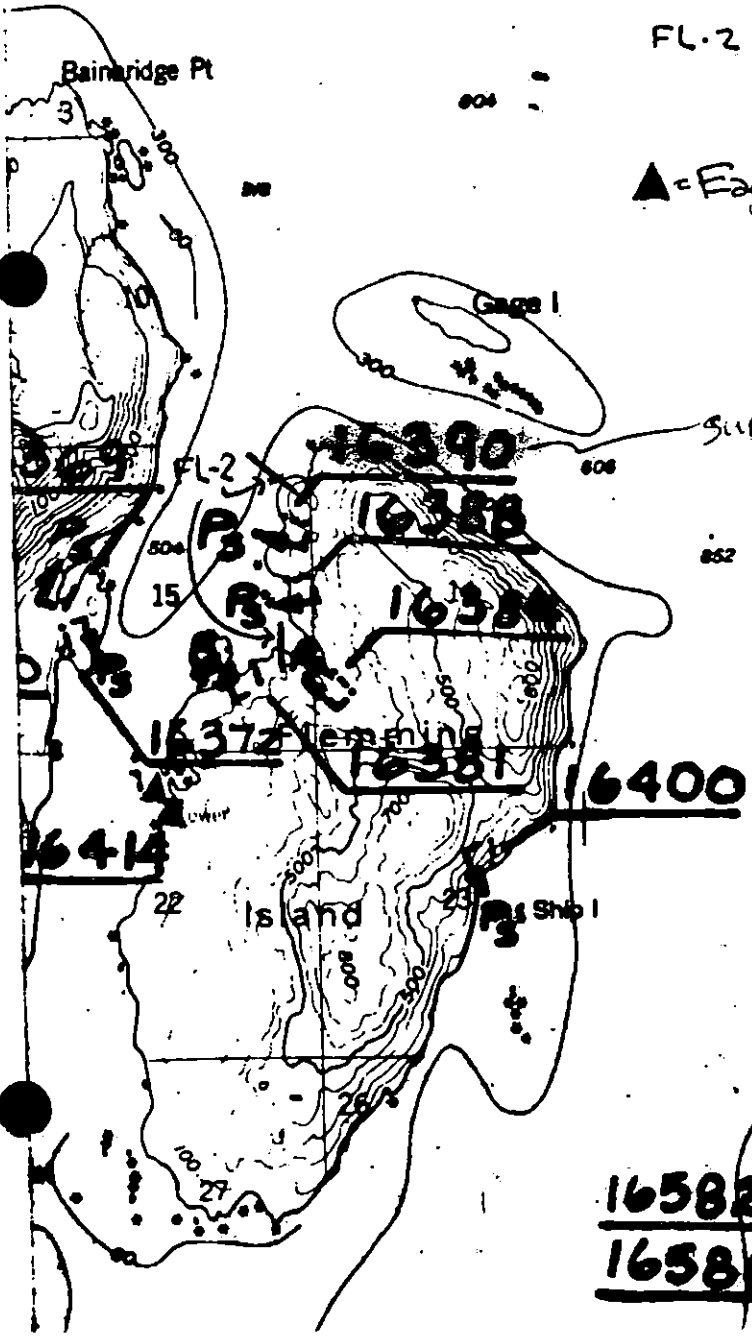
FL-2 ASC#
226-40-16390

▲ = Eagle Nest

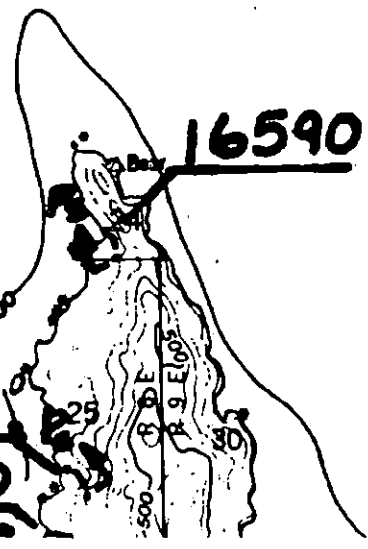
F N I G H T

SUBJECT STREAM LOCATION

DR
+



16582
16580



REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/FL-03

SUBDIVISIONS: A (1 OF 1)

SHORELINE EVALUATION

SEGMENT ST/ FL-03 SUBDIVISION A (1 OF 1) DATE 4/20/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Anadromous streams reported but uncatalogued.

3N,3P Harbor seal and sea lion pupping (5/15 to 7/1)

3O,3Q Harbor seal and sea lion molting (8/15 to 9/15)

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unoiled biota and substrate. Eagle nest immediately north of FL-03 at south end of FL-04.

ARCHAEOLOGICAL CONSTRAINTS:

If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 572 m: V.Light 1882 m: No Oil 659 m
Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

☒ No Treatment Recommended	☐ Snare/Absorbent Booms
☐ Treatment Recommended	☐ Oil Snares (pom poms)
☐ Manual Pickup	☐ Absorbents (pads,rolls,etc)
☐ Bioremediation	☐ Spot Washing: _____ Wands
☐ Tarmat Removal	☐ Beach Cleaner
	☐ Other (see comments)

COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

- 1A** Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
 No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No bioremediation or other chemical application within 100m of stream without authorization from ADF&G. No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G. Treatment which is not intrusive and which will not affect nearshore oil or toxicity levels, such as manual removal, can probably proceed without adherence to time constraints. In any case, contact ADF&G Habitat Division prior to treatment for consultation and/or permit application.
 AGENCY CONTACT PERSON: ADF&G John Morison 267-2324
- 1C** Salmon fry nursery area (4/31 to 7/31)
 No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to July 31 unless authorized by ADF&G. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G prior to treatment for confirmation and advice.
 AGENCY CONTACT PERSON: ADF&G Larry Peltz 424-3214
- 1D** Esther Hatchery release (4/15 to 6/1)
1E Main Bay Hatchery release (4/20 to 6/10)
1F Sawmill Bay Hatchery release (4/15 to 6/1)
1G Cannery Creek Hatchery release (4/21 to 6/1)
1H Remote release site
 No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G and/or PWS Aquaculture Association. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G or PWS Aquaculture Association for confirmation and authorization.
 AGENCY CONTACT PERSON: 1E ADF&G Larry Peltz 424-3214
 1D 1F 1G PWS Aquaculture Association John McMillan or Bruce Suzumoto 424-7511
- 1I** Gill net area (6/7 to 8/31)
1J Purse seine area (7/20 to 9/30)
1K Purse seine hook-off (7/20 to 9/30)
1L Set net sites (6/11 to 7/25)
 Contact ADF&G for specific dates, locations and constraints. Restrict boat and air traffic to essential minimum. When set net sites are present (1L) restrict beach operations to essential minimum as authorized by ADF&G. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
 AGENCY CONTACT PERSON: ADF&G James Brady 424-3212
- 2M** Herring spawning (4/1 to 6/15)
 Contact ADF&G for confirmation - dates and locations may vary. Restrict boat traffic to essential minimum. Avoid damage to unopened intertidal and subtidal algae and seagrass. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
 AGENCY CONTACT PERSON: ADF&G Evelyn Biggs 424-3235
- 3R** Harbor seal and sea lion pupping (5/15 to 7/1)
3S Harbor seal and sea lion molting (8/15 to 9/15)
 Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts. No application of Inipol within two weeks of arrival dates (work window at these sites is limited to 7/2 to 7/31). Contact ADF&G and USFWS prior to treatment for confirmation.
 AGENCY CONTACT PERSON: US National Marine Fisheries Service Steve Zimmerman 586-7235
 ADF&G Don Calkins 267-2403
- 5R** Seabird colony (5/1 to 9/1)
 Restrict air and boat traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance from colony. Contact USFWS prior to treatment.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 5S** Shorebird/waterfowl concentration (4/1 to 5/15)
 Restrict all activity to essential minimum, especially air traffic. Contact USFWS and ADF&G for confirmation.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
 ADF&G Tom Rothy 267-2206
- 5T** All Bald Eagle nests (3/1 to 6/1)
Active Bald Eagle nests (3/1 to 9/1)
 Restrict air traffic and all disturbance to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.
 AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 6U** Recreation: Tent sites (6/1 to 9/15)
6V Anchorages (6/1 to 9/15)
6W Forest Service cabins (6/1 to 9/15)
6X Lodge (6/1 to 9/15)
6Y Special use destination
- 7Z** Subsistence area: Salmon harvesting (5/1 to 9/30)
7HH Finfish harvesting
7II Deer harvesting (8/15 to 2/28)
7JJ Invertebrate harvesting
 Contact ADF&G and appropriate Native Corporation for specific dates, locations, and constraints. Restrict boat and air traffic and beach disturbance to essential minimum. If plans for treatment include methods such as hot water wash or application of Inipol which might affect intertidal or nearshore oil or toxicity levels, contact ADF&G and appropriate Native Corporation for authorization - see Native Corporation Contact List for each Native Corporation's contact person.
 AGENCY CONTACT PERSON: ADF&G Jim Fall 267-2359

SEGMENT ST/ FL03 SUBDIVISION: A DATE 4/21/90

USCG

NAME DC SHAWN A. MAAS SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED
 COMMENTS

☒ TREATMENT SUGGESTED

RECOMMEND BIOREMEDIATION. AREAS WHERE TARRY
 SPLATTERY COAT MEET LOW ANGLE BEACH.
 IN AREAS COAT CONSISTS OF A BANDING ALONG
 ROCKS IN HIGH INTERTIDAL AREA NO TREATMENT
 HERE IS RECOMMENDED

NO SUBSURFACE OILS NOTED

ADEC

NAME DAVID M. SALE SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED
 COMMENTS

☒ TREATMENT SUGGESTED

MANUAL REMOVAL OF TARRY COATED SEDIMENTS BOTH ON
 LOW ANGLE PEBBLE/COBBLE BEACHES AND IN AREAS WHERE
 OIL HAS COATED SEDIMENTS AROUND BEDROCK AND BOULDERS.
 OIL STAIN - "BATHUB RING" - ON HI-ANGLE ROCK SEEMS TO
 BE NON-MOBILE AND NOT REQUIRING TREATMENT UNLESS
 WARMER WEATHER CAUSES MOBILITY

LAND MANAGER

NAME DONALD P. KEMPKE, Jr. SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED
 COMMENTS

☒ TREATMENT SUGGESTED

21 of 22

DRAFT

REVISION NO. 04/13/89

SHORELINE OILING SUMMARY

OG R. Marty USCG Shore Marsh SEGMENT ST/ FL-03
 BIO B. Lamm LAND REP D. Amekraft Jr. SUBDIVISION A (A OF A)
 EXXON J. Charnock ADEC R. Sale TIME 19:00 10/16/90
 EAM NO. 10 TIDE LEVEL +1.5M → +0.5M DATE 19-20 April/90
 ST. SUBDIVISION LENGTH: 3194 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo WORKING DIRECTION: S to N
 SURFACE SEDIMENTS: R 60 % B 20 % C 10 % P 5 % G 4 % S 1 % M 0 % V 0 %
 SLOPE: Long 0 % Hang 60 % Vert 0 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 490 m VL 1902 m NO 392 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR					IMPACTED ZONES			
	C	B	P	S	1	2	3	4	5	BU	U	M	L
ASPHALT PAVEMENT													
POOLED													
COVER													
COAT			P	S									
STAIN													
MOUSSE													
PATTIES *													
TARBALLS *													
LM													
NO OIL										X		X	X

* removed

PAVEMENT H F S 0 sq. m by 0 cmPATTIES / TARBALLS 1 BAGSNEAR SHORE SHEEN? ☒ BR RW SL TL

OILED DEBRIS	No	AMOUNT		
		SM	MD	LG
Logs	X			
Vegetation	X			
Trash	X			
Debris	X			

DID YOU COLLECT DEBRIS?

YES ☒ NO ☐TYPE Tar balls -#BAGS 1 → 2

Photographs:

Roll No. 55/10/13Frames 15-21

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL	BELOW		OIL / FILM COLOR					PIT ZONE				AN A	SHEEN (mm)	V	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UG	UG	1	2	3	4	5	BU	U	M	L				
1	34					X			X				X				X		N	N	N	P, G-3, P, G
2	42					X			X			X					X		N	Y	28	P, G-6, S
3	26					X			X								X		N		N	G, S, P-C, 2, G, P
4	15					X			X								X		N		N	G, P, G-P, S, M
5	13					X	0.3		X			X					X		N	N	12	G, P, G-P, S, M

COMMENTS

Surface oiling is primarily minor. Locally coated sediments are present between 0 and 3 cm. Oil is generally quite fatty.

REVIEWED Y/WDATE 4/22/90

17 01 77

OG R. Merty

SEGMENT ST/REG

SUBMISSION A

DATE 30 April 90

CHECKLIST

- ☐ M. Ance
- ☐ Aquatic, Scuba
- ☐ Survey/Photo
- ☐ Oil Out
- ☐ Wells
- ☐ Length
- ☐ % Cover
- ☐ Saturated
- ☐ E. L. H. A. W.
- ☐ SCL
- ☐ P. L. L. (S. L. G.)
- ☐ P. L. L. (S. L. G.)
- ☐ P. L. L. (S. L. G.)
- ☐ P. L. L. (S. L. G.)

LEGEND

1 A

2 A

Fr. Subsurface Oil

CT/C

Oil/Gas Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Splattered Distribution

Oil/Gas

Oil/Gas

Oil/Gas

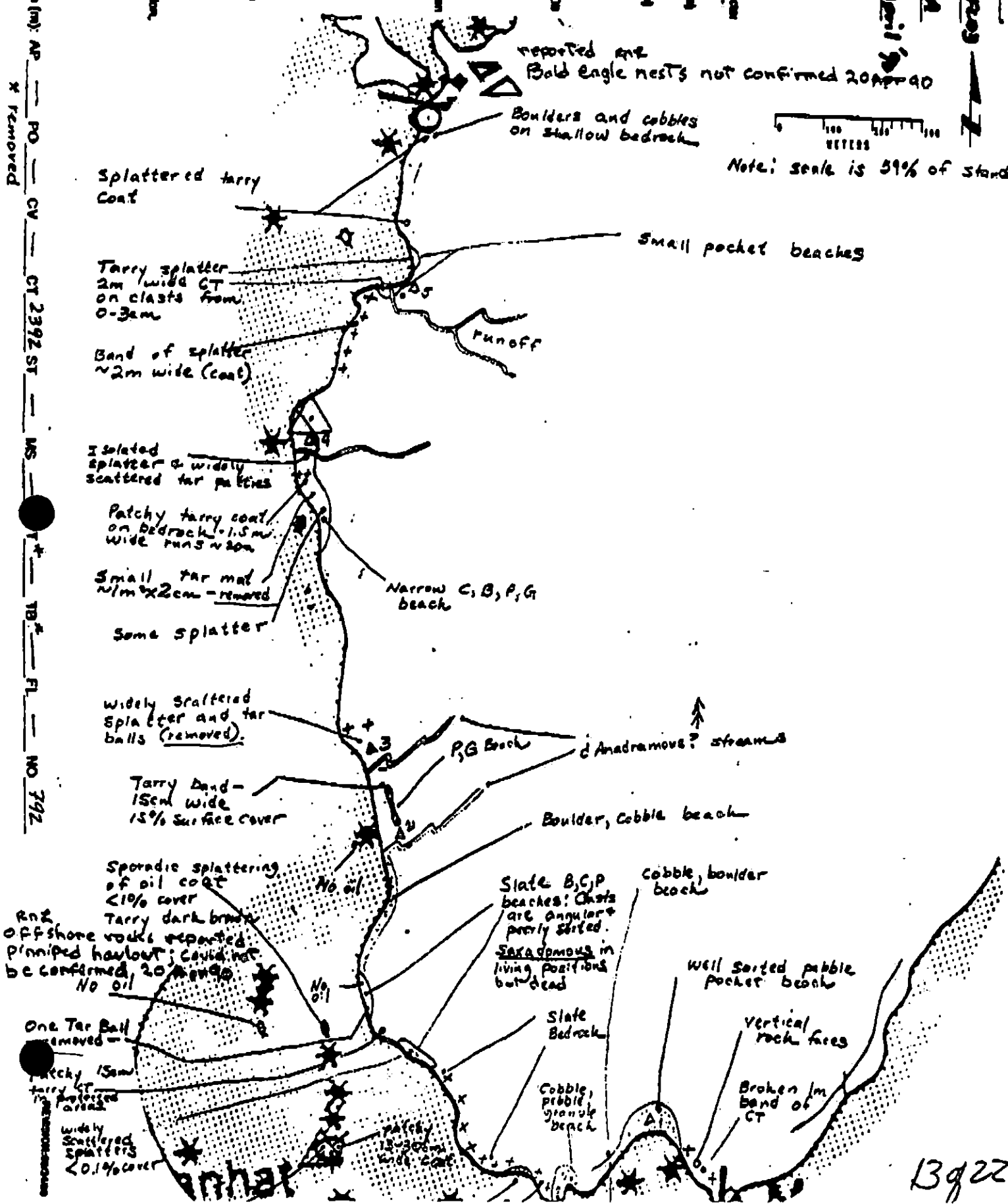
Photo location, direction, and number



Note: scale is 59% of standard.

Oil Character (m): AP — PO — CV — CT 2392 ST — NS — T — TB — FL — NO 392

X removed



13922

OG _____

SEGMENT ST/ _____

SUBDIVISION _____

DATE _____

CHECKLIST

Manner _____

Approx. Scale _____

Sagittal Width _____

Or Out _____

Length _____

% Cover _____

Substrate Character _____

Est. HML/LML _____

SRL _____

Pre-Data Location(s) _____

Post-Data Location(s) _____

Photo Location(s) _____

LEGEND

1 Δ

Pt. No. Substratum Or _____

2 Δ

Pt. Substratum Or _____

CT/C _____

CT/D _____

Broken Distribution _____

CT/P _____

Partial Distribution _____

CT/S _____

Spatial Distribution _____

Dead Vegetation _____

Photo location, direction, and number _____

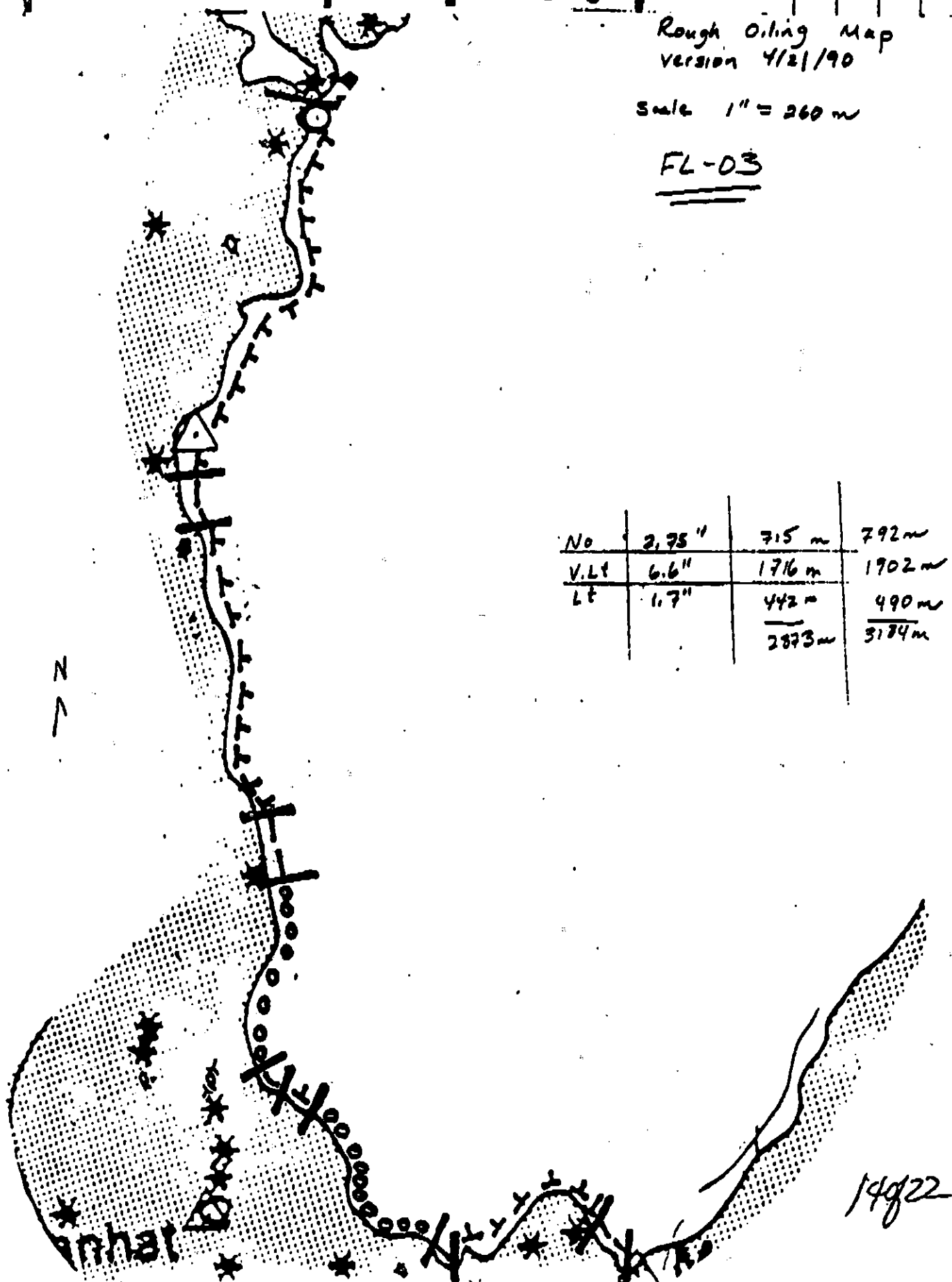
1 →

Rough Oiling Map
Version 4/21/90

Scale 1" = 260 m

FL-03

No	2,75"	715 m	792 m
V.Lt	6.6"	1716 m	1902 m
Lt	1.7"	442 m	490 m
		<u>2873 m</u>	<u>3184 m</u>



ON Character 1 (m): AP PO CV CT ST MS TB FL NO

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/29/90

Segment ST/10/CL3 Subdivision A Date (mo/day/yr) 4/19/90
1900-1945 and 20 April 1300-1620 as 4/20/90
 me (24 hr) Biologist Lemon N.W. wind 7 mph; Thin cloud cover

- (A) Substrate type and % of segments:
 (1) Bedrock 60 (2) Boulder 20 (3) Cobble 10 (4) Pebble 5 (5) Sand 5 (6) SM
- (B) Overall % cover of biota (% of segment): Dense Moderate 30% Low
- (C) Density, substrate preference (by number from A, above), & vertical zonation of major taxa: (upper-U; mid-M; low tidal-L):
 juveniles / adults (X), new settlement (3)

Photographs:
 Roll No. ST/10/13

Frames 15-21

BARNACLES

Dense			Moderate			Sparse			Rare			
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	NOT PRESENT
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	
6	6	6	6	6	6	6	6	6	6	6	6	

MYTILUS

Dense			Moderate			Sparse			Rare			
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	NOT PRESENT
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	
6	6	6	6	6	6	6	6	6	6	6	6	

GASTROPODS

Dense			Moderate			Sparse			Rare			
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	NOT PRESENT
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	
6	6	6	6	6	6	6	6	6	6	6	6	

FUCUS

Dense			Moderate			Sparse			Rare			
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	2	2	2	2	2	NOT PRESENT
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	
6	6	6	6	6	6	6	6	6	6	6	6	

Wildlife Observations/ General Comments: Slaty substrate has low diversity relative to other rock
 In many areas Fucus appeared stressed, especially
 at the top of its range.

- 1 Eagle
 4 gulls
 1 seal
 2 sea urchins

Ecological Considerations:

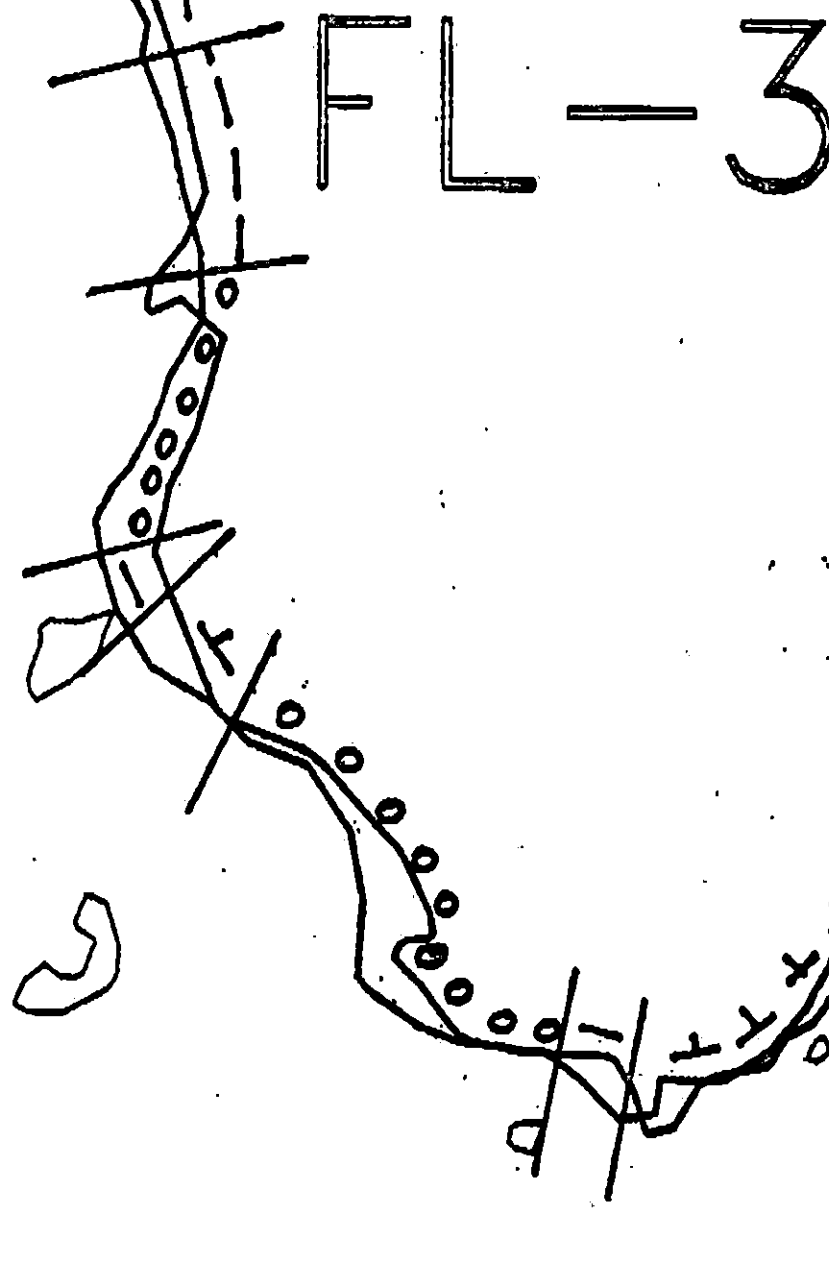
4 substantial streams with salmon spawning potential were mapped and noted. Off shore rocks may be pinniped haulout areas, but this could not be confirmed. Bald eagle nests were not confirmed either; no eagles nearby.

17 of 22

1

13922

20.14.00



15 of 22

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

OOOO No Oil

FL-3

Approx. Segment Length: 3148m

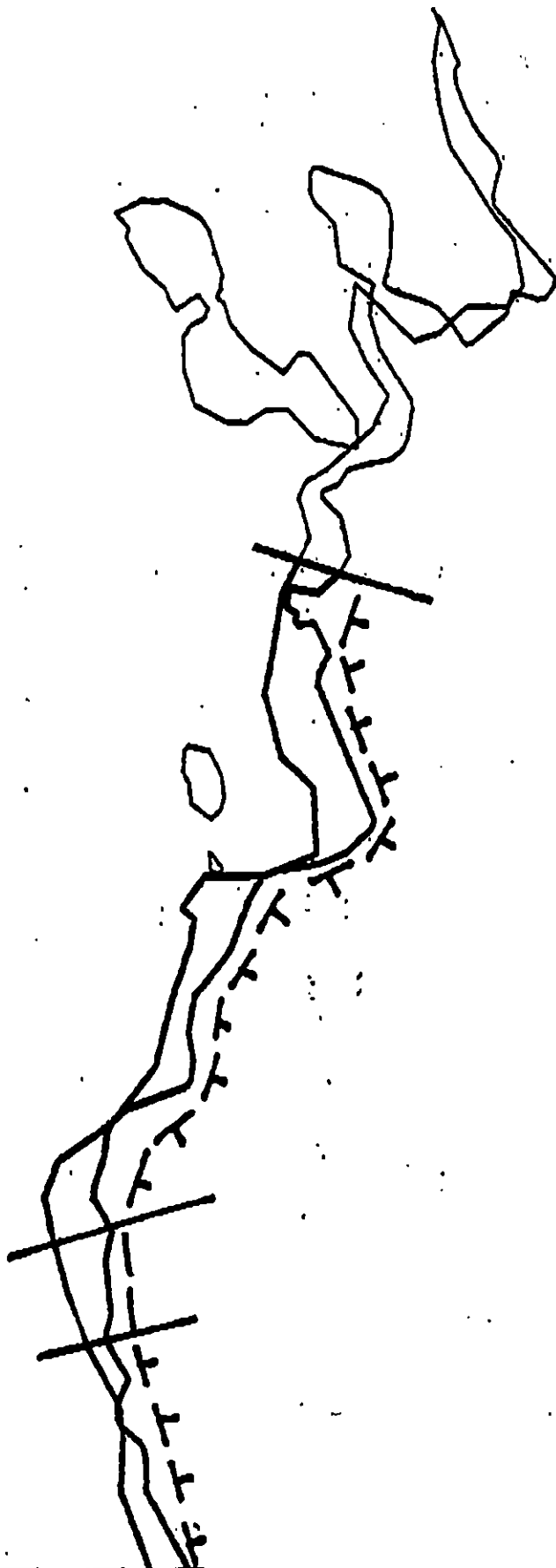


Map Key: PWS-FL-3a

Name: R. Marty

Date: 20 April 1990

Date Entered:



16 of 22

V XXX Wide

, / / / Medium

- - - - Narrow

TTTT Very Light

0000 No Oil

FL-3

Approx. Segment Length: 3148m



Map Key: PWS-FL-3c

Name: R. MartyDate: 20 April 1990

Data Entered:

SHORELINE EVALUATION

SEGMENT ST/ FL-03 SUBDIVISION A (1 OF 1) DATE 4/20/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

Anadromous streams reported but uncatalogued.

3N,3P Harbor seal and sea lion pupping (5/15 to 7/1)

3O,3Q Harbor seal and sea lion molting (8/15 to 9/15)

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unoiled biota and substrate. Eagle nest immediately north of FL-03 at south end of FL-04.

ARCHAEOLOGICAL CONSTRAINTS:

If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO SIGNATURE: Charles E. Holmes DATE: 5/5/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 572 m: V.Light 1882 m: No Oil 659 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

<u>X</u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u> </u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u> </u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u> </u> Bioremediation	<u> </u> Spot Washing: <u> </u> Wands
<u> </u> Tarmat Removal	<u> </u> Beach Cleaner
	<u> </u> Other (see comments)

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: 5/4/90
ADEC ART WENGER Art Wenger
EXXON ANDY TAYLOR Andy Taylor
NOAA GARY PETRAGE Gary Petrage
USCG G.A. REITER G.A. Reiter FOSC: WJL DATE: 5-18-90
NOTIFY EIC 24 HRS PRIOR TO WORK

Broken
band o

13922

OO _____

SEGMENT ST/ _____

SUBDIVISION _____

DATE _____

CHECKLIST

Manner _____
 Approx. Date _____
 Sample Study _____
 On Out _____
 Length _____
 % Cover _____
 Substrate Character _____
 Eel, Hyla, etc. _____
 S&L _____
 Photo Location(s) _____
 Photo(s) _____
 Photo Location(s) _____

LEGEND

1 A

P1 - No Substrate CI

2 A

P1 - Substrate CI

Continuous Unbroken

CI/C

Broken Distribution

CI/B

CI/B

CI/B

CI/B

CI/B

CI/B

CI/B

CI/B

CI/B

CI/B

CI/B

CI/B

CI/B

CI/B

CI/B

CI/B

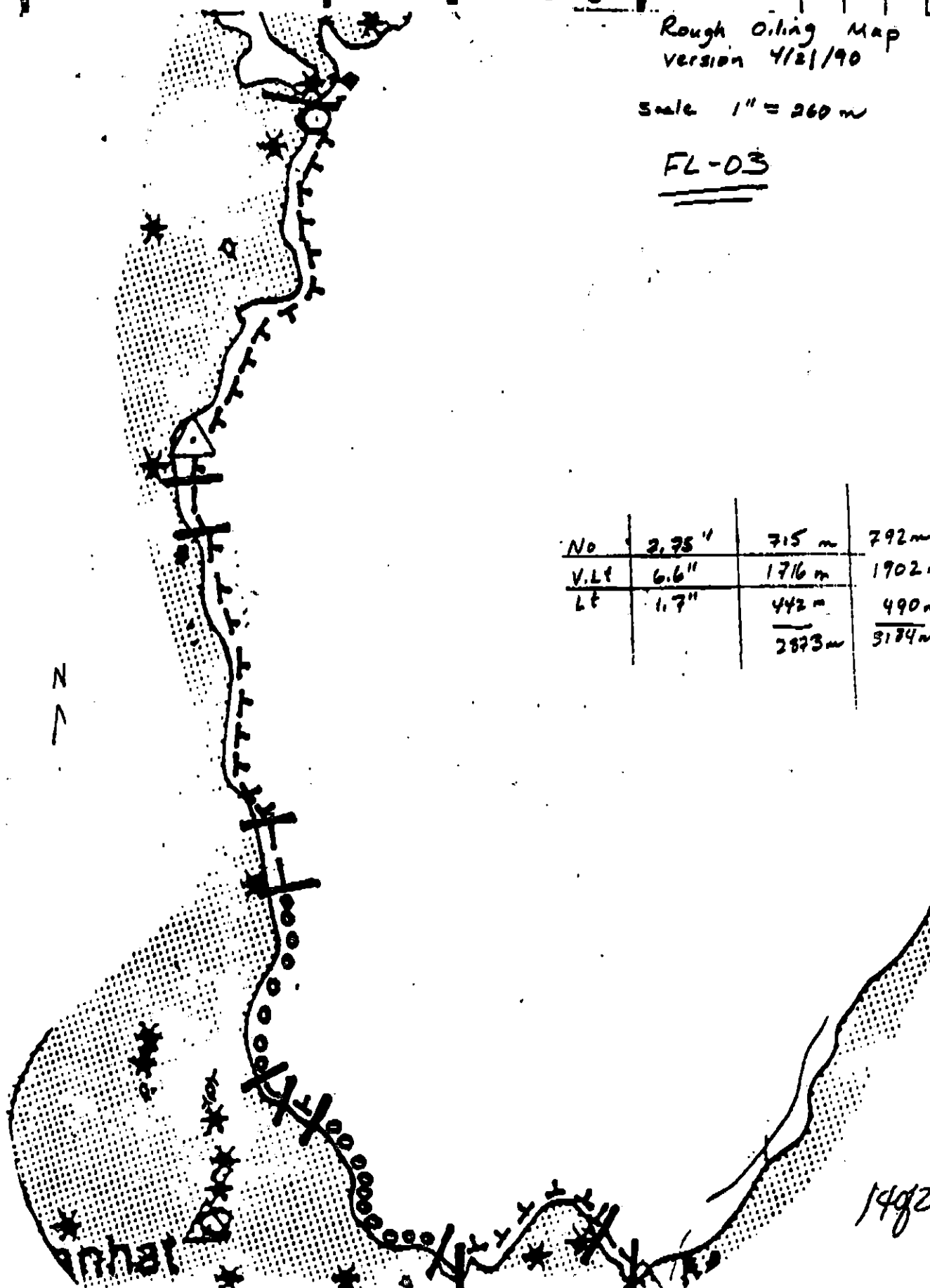
CI/B

Rough Oiling Map
Version 4/21/90

Scale 1" = 260 m

FL-03

No	2.75"	715 m	792 m
V.Lt	6.6"	1716 m	1902 m
Lt	1.7"	442 m	490 m
		<u>2873 m</u>	<u>3184 m</u>



14822

Or Character _____ AP _____ PO _____ CV _____ CT _____ ST _____ NS _____ TB _____ FL _____ NO _____

RETURNED TO SENDER

13922



15 of 22

● XX Wide

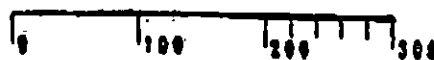
//// Medium

---- Narrow Approx. Segment Length: 3148m

TTTT Very Light

OOOO No Oil

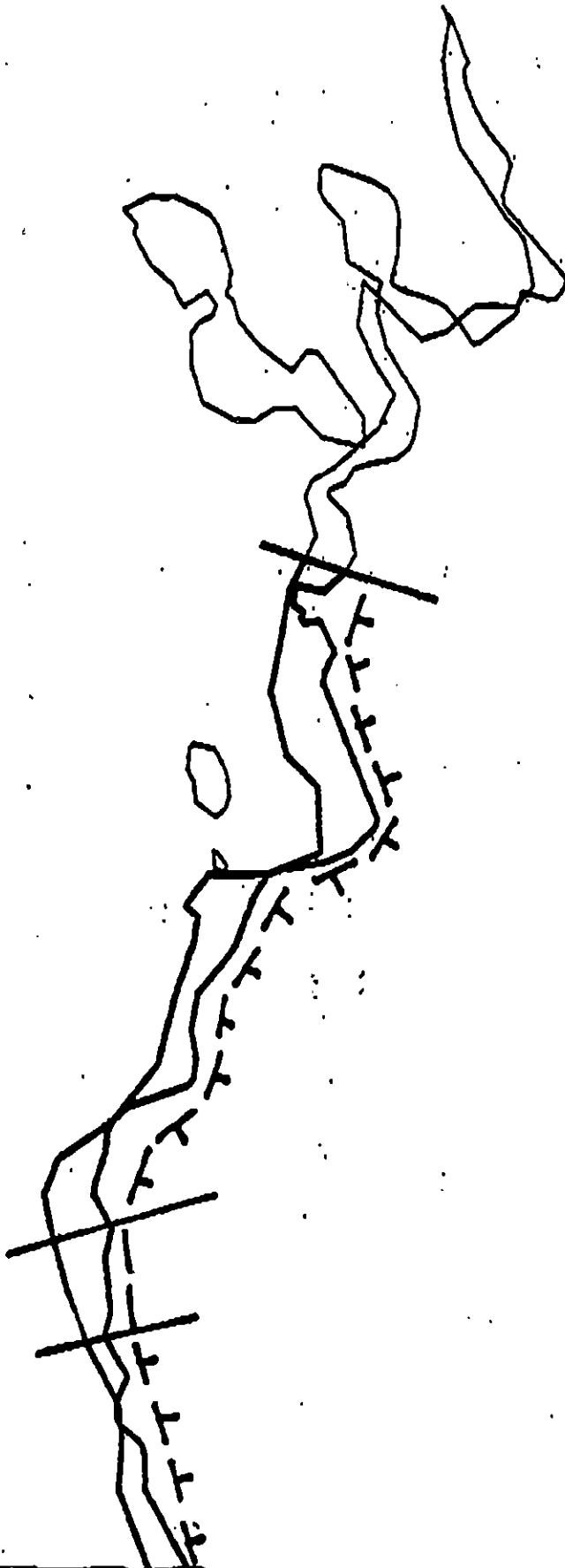
FL-3



Map Key: PWS-FL-30

Name: R. MartyDate: 20 April 1990

Data Entered:



16922

XXX Wide

/// Medium

--- Narrow

TTTT Very Light

0000 No Oil

FL-3

Approx. Segment Length: 3148m



Map Key: PWS-FL-3c

Name: R. Marty

Date: 20 April 1990

Date Entered:

OILING LENGTHS
TO BE PROVIDED
AT A LATER DATE

ST/FL4A

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/FL-04

SUBDIVISIONS: A (1 OF 2)

SHORELINE EVALUATION

SEGMENT ST/ FL-04 SUBDIVISION A (1 OF 2) DATE 4/9/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 226-40-16381

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)

1B Salmon stream mouth - spawning (7/10 to 8/31)

5T-2 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)

6Y Recreation: Special use destination

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unoiled biota and substrate. Anadromous stream 226-40-16381 in Subdivision A (see ecology map). 2 eagle nests in Subdivision B > 800m from work area.

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide _____ m: Medium _____ m: Narrow _____ m: V.Light _____ m: No Oil _____ m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 8 cm

RECOMMENDATIONS:

☐ No Treatment Recommended	☐ Snare/Absorbent Booms
☒ Treatment Recommended	☐ Oil Snares (pom poms)
☒ Manual Pickup	☐ Absorbents (pads, rolls, etc)
☒ Bioremediation	☐ Spot Washing: _____ Wands
☒ Tarmat: ☒ Removal	☐ Beach Cleaner
	☐ Other (see comments)

COMMENTS: Recommended treatment includes 1) manual removal of tarmat, 2) manual pick up of oiled trash and debris, 3) bioremediation of areas shown on attached sketch map. No bioremediation within 100m of anadromous stream without approval from ADF&G. Work should be conducted between 5/15 and 7/10 based on salmon constraints.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

1A
1B

Salmon stream mouth - fry outmigration (3/1 to 5/15)

Salmon stream mouth - spawning (7/10 to 8/31)

No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No bioremediation or other chemical application within 100m of stream. Contact ADF&G Habitat Division prior to treatment for permits.

1C

Salmon fry nursery area (4/31 to 7/31)

1D

Esther Hatchery release (4/15 to 6/1)

1E

Main Bay Hatchery release (4/20 to 5/10)

1F

Sawmill Bay Hatchery release (4/15 to 6/1)

1G

Cannery Creek Hatchery release (4/21 to 6/1)

1H

Remote release site

1I

Gill net area (6/7 to 8/31)

1J

Purse seine area (7/20 to 9/30)

1K

Purse seine hook-off (7/20 to 9/30)

1L

Set net sites (6/11 to 7/25)

For Codes 1C through 1L contact ADF&G for specific dates, locations and constraints.

2M

Herring spawning (4/1 to 6/15)

Restrict boat traffic to essential minimum. Avoid damage to uncolled intertidal and subtidal algae and seagrass. Contact ADF&G for specific dates and locations.

3N, 3P
3O, 3Q

Harbor seal and sea lion pupping (5/15 to 7/1)

Harbor seal and sea lion molting (8/15 to 9/15)

Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts.

5R

Seabird colony (5/1 to 9/1)

Restrict air traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance. Contact ADF&G and USFWS prior to treatment.

5S

Shorebird/waterfowl concentration (4/1 to 5/15)

Restrict all activity to essential minimum, especially air traffic.

5T

All Bald Eagle nests (3/1 to 6/1)

Active Bald Eagle nests (3/1 to 9/1)

Restrict air traffic to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.

6U

Recreation: Tent sites (6/1 to 9/15)

6V

Anchorage (6/1 to 9/15)

6W

Forest Service cabins (6/1 to 9/15)

6X

Lodge (6/1 to 9/15)

6Y

Special use destination

7Z

Subsistence area: Salmon harvesting (5/1 to 9/30)

7HH

Finfish harvesting

7II

Deer harvesting (8/15 to 2/28)

7JJ

Invertebrate harvesting

For Codes 7Z through 7JJ contact ADF&G and Chenega Corporation for specific dates, locations, and constraints.

FIELD SHORELINE COMMENT SHEET

SEGMENT ST / FL-04 SUBDIVISION: A DATE 09 APRIL 90

USCG

NAME LARRY FLETCHER SIGNATURE Larry R Fletcher

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

1. MANUALLY REMOVE ASPHALT, AND TAR PATCHES.
2. POSSIBLE BIO-REMEDIATION.

ADEC

NAME DAVID M. SAGE SIGNATURE David M Sage

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

- ① REMOVE MANUALLY TAR BALLS, ASPHALT AND DEBRIS.
- ② REMOVE SEDIMENTS FROM BENEATH BOULDERS OR ANY OTHER PLACES WHERE CONTAMINATION APPEARS.
- ③ BIOREMEDIATION WITH APPROVAL OF CUC AND VILLAGE RESIDENTS

LAND MANAGER

NAME Steve LARD SIGNATURE Steve Lard

☐ NO TREATMENT RECOMMENDED ☒ TREATMENT SUGGESTED
COMMENTS

Enclosed data very Accurate - professionally Analyzed

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG Richard Marty USCG Larry Fletcher SEGMENT ST/ FL-4
 BIO Bob Lemon LAND REP Long Beach SUBDIVISION A
 EXXON Jan Czorneki ADEC Dave Sale TIME 17:00 to 20:30
 TEAM NO.: 10 TIDE LEVEL: +1.85m (6') to +0.30m (1') DATE 09 April 1990
 EST. SUBDIVISION LENGTH: 1265 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot 1° ☒ Boat 2° ☐ Helo WORKING DIRECTION: N to S
 SURFACE SEDIMENTS: R 40 % B 15 % C 20 % P 10 % G 10 % S 10 % M 5 % V 0 %
 SLOPE: Long 60 % Hang 40 % Vert 0 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 120 m N 386 m VL 759 m NO 0 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR								IMPACTED ZONES			
	R	B	P	C	NO	OR	OL	OF	OC	OC	OC	OC	SU	UI	M	U
ASPHALT PAVEMENT		X	✓									X		X		
POOLED																
COVER		X	✓									X		X		
COAT			X	✓								X				
STAIN			X									X	X	X	X	
MOUSSE																
PATTIES				X								X	X			
TARBALLS																
FILM																
NO OIL													X			

PAVEMENT: H S $5m^2 (60 \times 2 \times 25) m^2 + 120 \times 3 \times 55 + (20 \times 6 \times 6) + 4 \times 15$ sq. m by 3 cm

PATTIES / TARBALLS 2 BAGS

NEAR SHORE SHEEN? (NO) BR RW SL TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash	X		
Debris	X		

DEBRIS COLLECTED ☒ YES ☐ NO
 TYPE Misc.
 #BAGS 1

Photographs:

Roll No. ST/10/12

Frames 20-31

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (cm - cm)	BELOW	OIL / FILM COLOR								PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO			VO	UC	NO	OR	OL	OF	OC	OC	SU	UI	M	U		
1	12		X				0 - 2	X						X		X					N	G, M, C, B
2	34					X	.										X				I	G, P
3	34					X	.										X					G, P, Per +
4	18			X			3 - 8	X					X				X					S, G, M
5	22	X					0 - 5	X					X				X					S, G, P
6	20	X					0 - 7	X					X				X				↓	S, M

COMMENTS

* oil ≤ 5cm does not constitute subsurface oil.

SHORELINE OILING SUMMARY (PAGE ___ of ___)

2/2
REVISION 03/22/90SEGMENT ST/ FL-4 SUBDIVISION A

SUBSURFACE OIL (CONTINUED)

PIT NO.	PIT DEPTH (cm).	SUBSURFACE OIL CHARACTER					OILED INTERVAL --cm--cm (000-000)	BELOW		OIL / FILM COLOR						PIT ZONE				A N A	SUBSURFACE SEDIMENTS	
		OP	OR	OL	OF	NO		VO	UC	BR	PR	OR	BY	BL	TL	LB	SU	UI	MI			LI
7	35					X	.										X				N	G, P
8	36					X	.										X				↓	G, P
							.															
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COMMENTS

REVIEWED GM DATE 4/13/00

OG R. Mar

SEGMENT STI FL-4

SUBDIVISION A

DATE 9 April 90

CHECKLIST

- ☐ N Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Entry
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HML/LML
- ☐ SZL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ Pit Location(s)
- ☐ Photo Location(s)

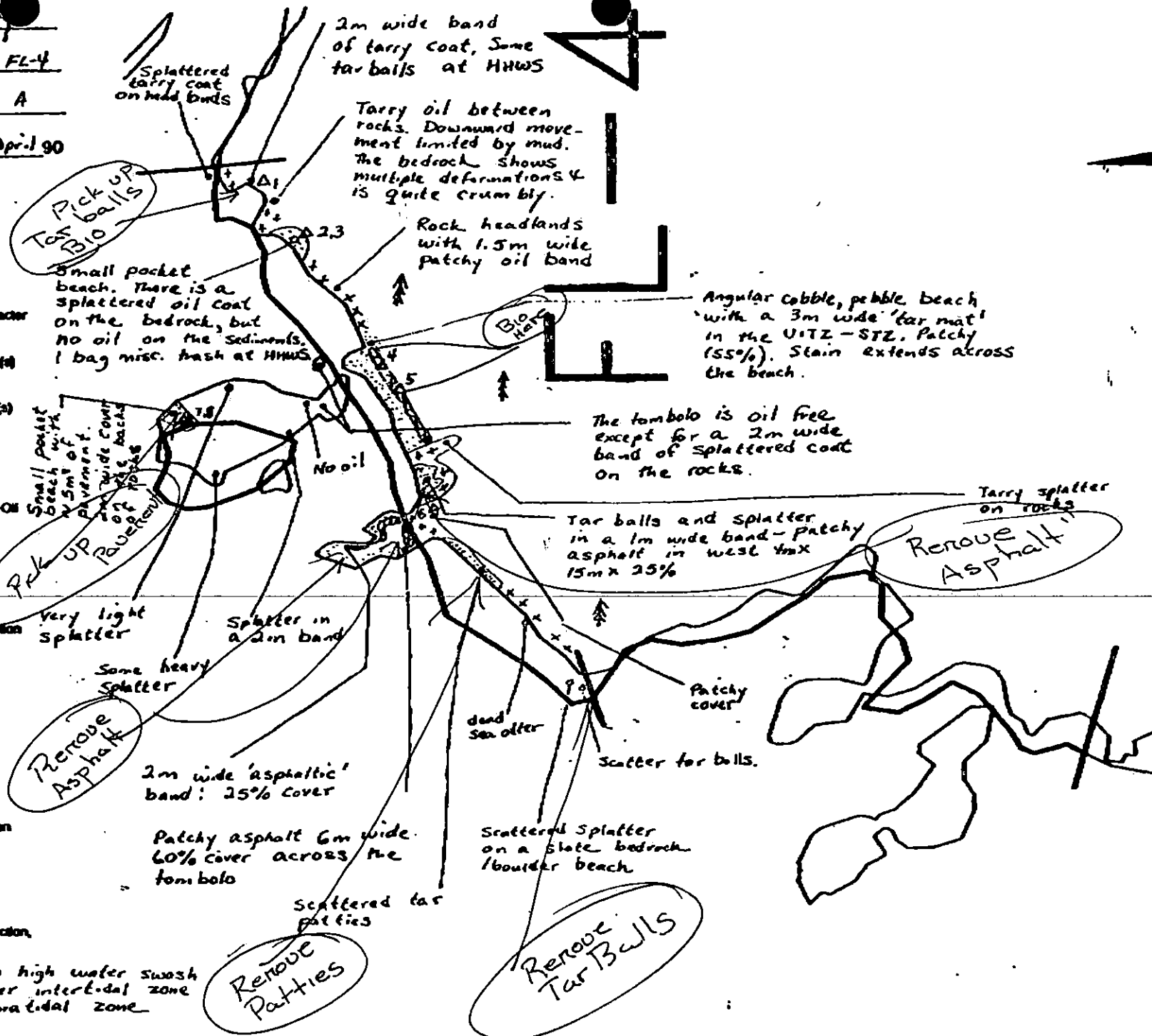
LEGEND

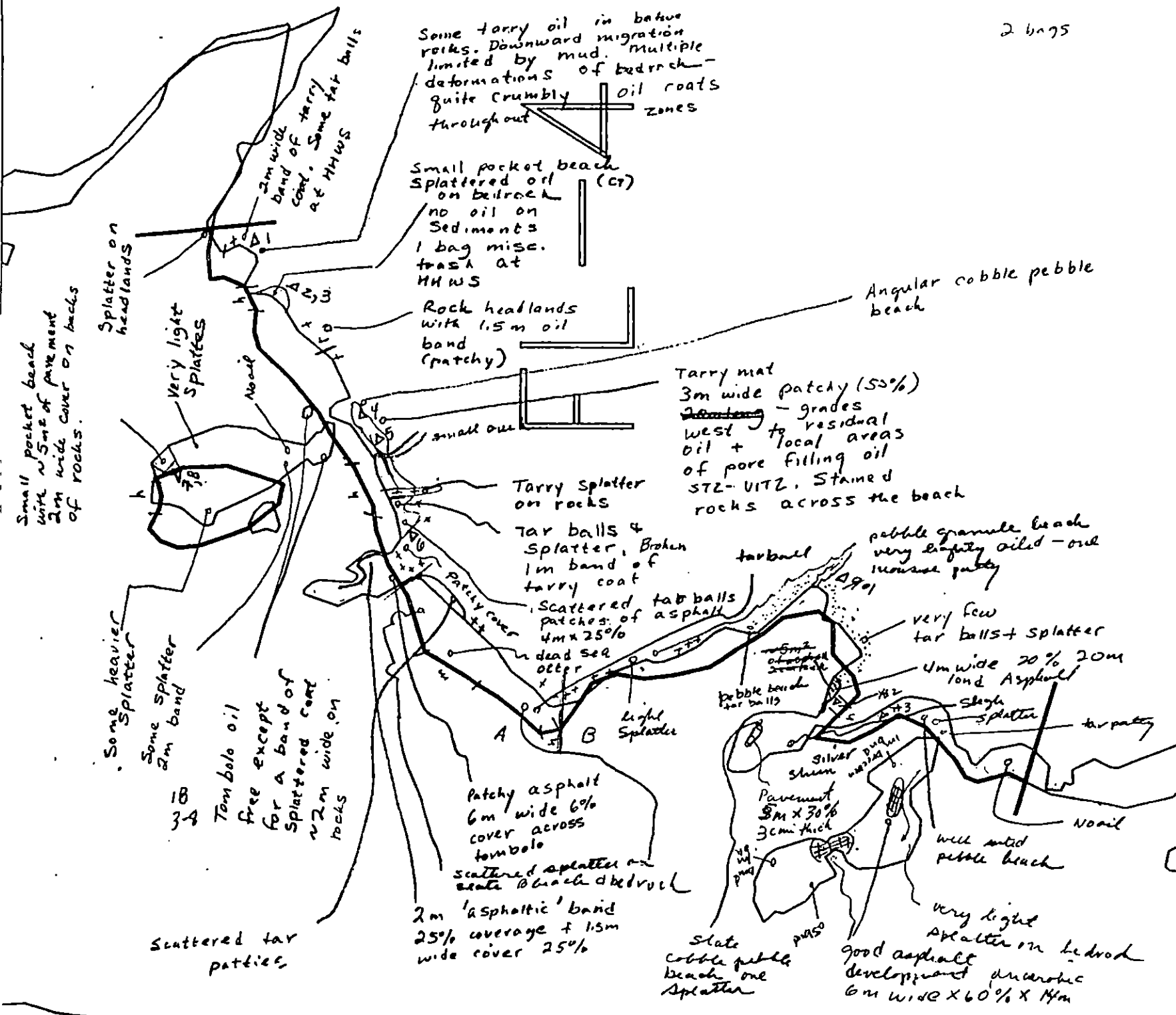
- 1 Δ
Pit - No Subsurface Oil
- 2 Δ
Pit - Subsurface Oil
- CT/C
Continuous Distribution
- CT/B
Broken Distribution
- CT/P
Pachy Distribution
- CT/S
Splashed Distribution
- Oiled Vegetation

- 1 $\bullet$
Photo location, direction, and number

HML= High high water swash
UHZ= Upper intertidal zone
SZL= Supratidal zone

Oil Character Length (m): AP 270 PO CV 50 CT 1265 ST 100 MS PT 200 TB FL NO





2 bags

Map Key: PWS-241

Name: R. Manting

Date:

Data Entered:

FL-4

ADEC Segment Length: 2004m

100 200 300 METERS

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

OOOO No Oil

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/80

 Segment ST/10/FL4 Subdivision A Date (mo / day / yr) 4 / 9 / 90

 Time (24 hr) 1700 - 1900 Biologist L. J. J.

 (A) Substrate type and % of segments:
 (1) Bedrock 40 (2) Boulder 15 (3) Cobble 20 (4) Pebble (5) Sand 25 (6) Silt

 (B) Overall % cover of biota (% of segment): Dense Moderate 50% Low

(C) Density, substrate preference (by number from A, above), & vertical zonation of major taxa: (upper-U; mid-M; low tidal-L); juveniles / adults (X), new settlement (3)

 Photographs:
 Roll No. ST/10/12

 Frames 20 - 31

BARNACLES

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	X	X	2	2	X	X
3	3	3	3	3	3	X	X	X	3	X	X
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

MYTILUS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	X	X	2	2	X	X
3	3	3	3	3	3	X	X	3	3	X	X
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

GASTROPODS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	2	2	2	X	X	2	2	X	X
3	3	3	3	3	3	X	X	3	3	X	X
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

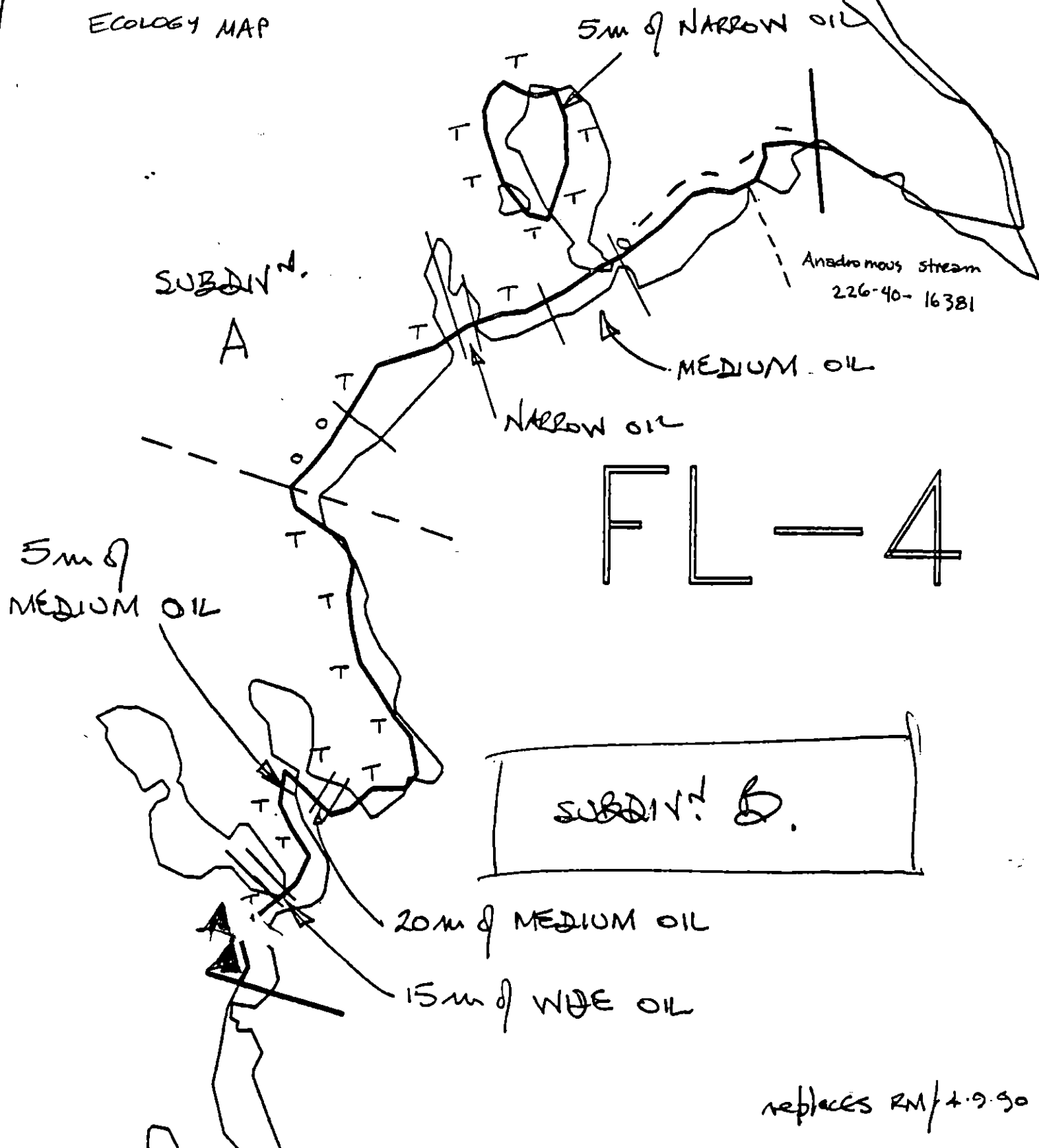
FUCUS

Dense			Moderate			Sparse			Rare		
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L
2	2	2	X	2	X	2	X	2	2	X	2
3	3	3	X	3	X	3	X	3	3	X	3
4	4	4	4	4	4	4	4	4	4	4	4
5	5	5	5	5	5	5	5	5	5	5	5
6	6	6	6	6	6	6	6	6	6	6	6

NOT PRESENT

Wildlife Observations/General Comments: The lower zone includes Palmaria, Halosaccus and other red algae with Fucus and a few greens make a 90% cover on the larger clasts. Zone on grass and Saxidomus (BIVALVE) shells were seen from the shift - mid zone included Anthopleura (ANTHOZOA), Nucella (GASTROPOD). Frequently an area (usually upper fringe) of Fucus was disturbed and otherwise stressed appearing (ST/10/12/4, 5, 7, 11, 22, 23). A tumor's held on unusual number of dead Ecological Considerations: (not drift) mussels photo 25. 7 others sighted while steaming to site.

ECOLOGY MAP



replaces RM/4.9.90

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

FL-4

ADEC Segment Length: 2004m



Map Key: PWS-241

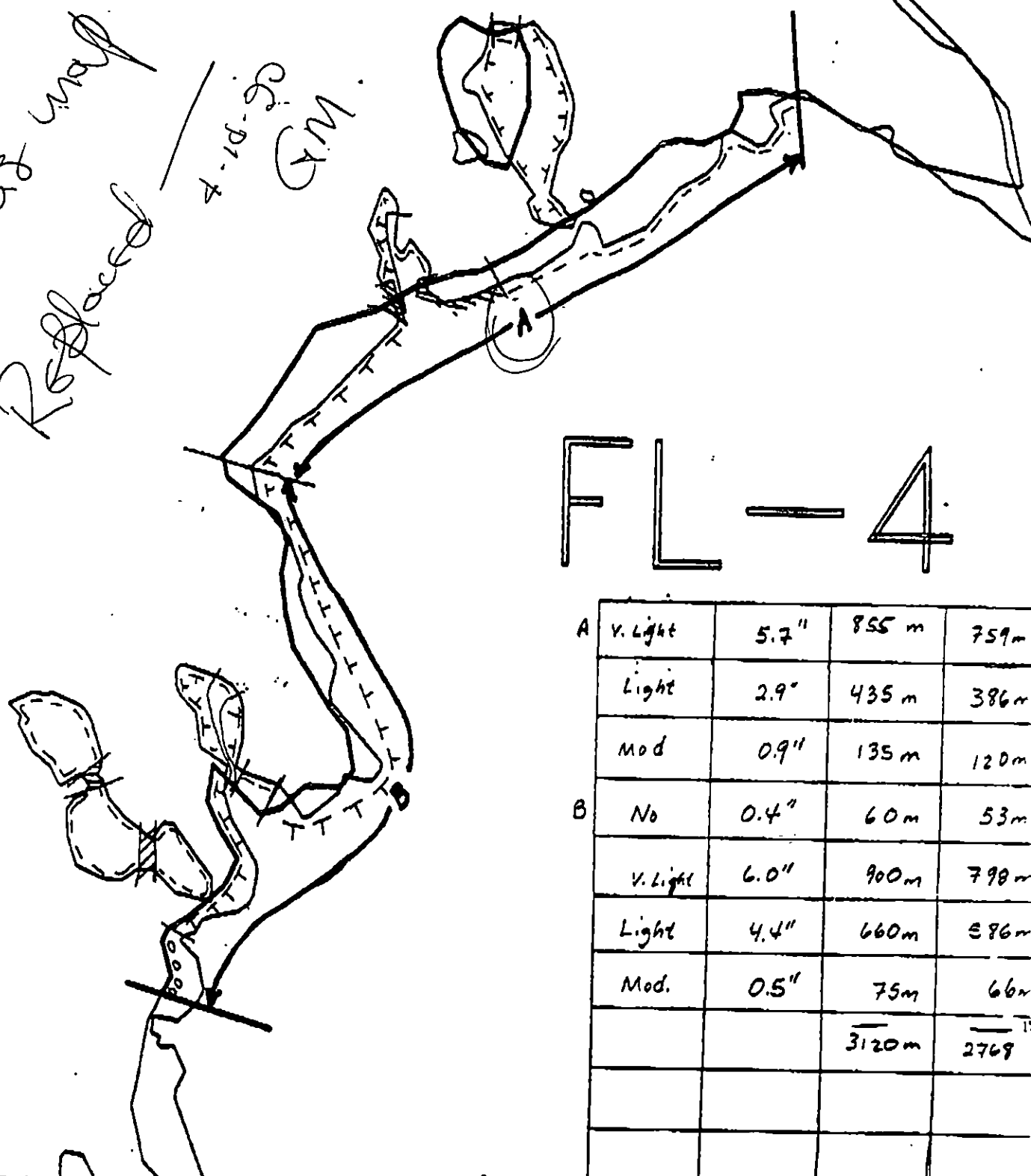
Name: GM for RM

Date: 4/13/90

Date Entered:

This map
Replaced

GC-PI-X
CM



FL-4

A	V. Light	5.7"	855 m	759m
	Light	2.9"	435 m	386m
	Mod	0.9"	135 m	120m
B	No	0.4"	60 m	53m
	V. Light	6.0"	900 m	798m
	Light	4.4"	660 m	586m
	Mod.	0.5"	75m	66m
			3120 m	2769m

XXXX Wide
 //// Medium
 --- Narrow
 TTTT Very Light
 0000 No Oil

FL-4A

ADEC Segment Length: 2004m

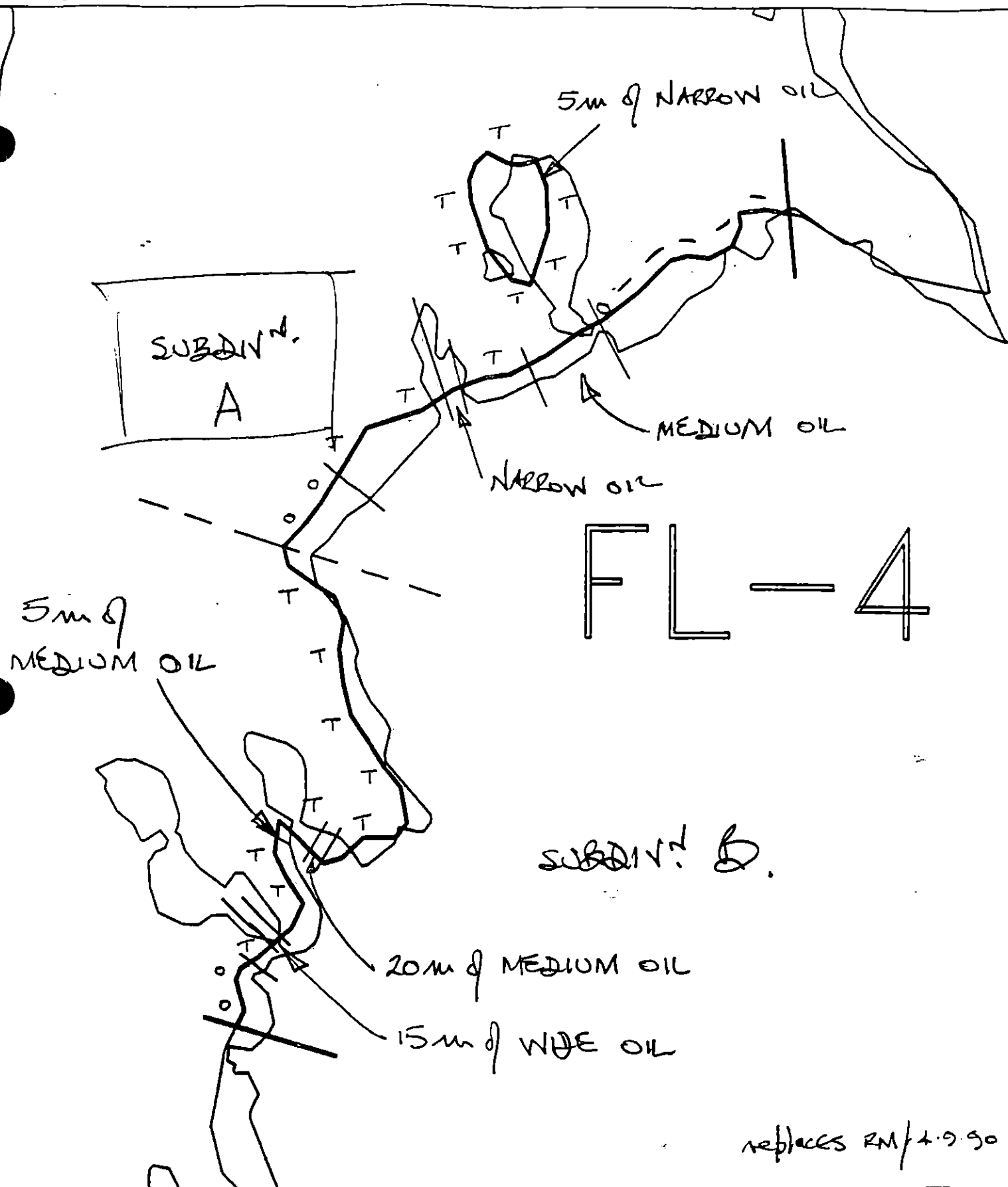


Map Key: PWS-241

Name: R. Marty

Date: 09 April 1990

Date Entered:



XXXX Wide
 /// Medium
 --- Narrow
 TTTT Very Light
 0000 No Oil

FL-4A

ADEC Segment Length: 2004m



Map Key: PWS-241

Name: GM for RM

Date: 4/13/90

Data Entered:

replaces RM/4.9.90

OILING LENGTHS
TO BE PROVIDED
AT A LATER DATE

ST/FL4 B

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/FL-04

SUBDIVISIONS: B (2 OF 2)

SHORELINE EVALUATION

SEGMENT ST/ FL-04 SUBDIVISION B (2 OF 2) DATE 4/9/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 226-40-16381

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)

1B Salmon stream mouth - spawning (7/10 to 8/31)

5T-2 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)

6Y Recreation: Special use destination

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to uncoiled biota and substrate. Subdivision B has 2 bald eagle nests (see ecology map). Anadromous stream in Subdivision A > 100m from work area.

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide _____ m: Medium _____ m: Narrow _____ m: V.Light _____ m: No Oil _____ m
Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

☐ No Treatment Recommended	☐ Snare/Absorbent Booms
☒ Treatment Recommended	☐ Oil Snares (pom poms)
☒ Manual Pickup	☐ Absorbents (pads, rolls, etc)
☒ Bioremediation	☐ Spot Washing: _____ Wands
☒ Tarmat: ☒ Removal	☐ Beach Cleaner
	☐ Other (see comments)

COMMENTS: Recommended treatment includes 1) manual removal of asphalt,
2) bioremediation of area shown on attached sketch map. Work should be
conducted after 6/1 with the approval of USFWS regarding eagle nest
constraints.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

1A
1B

Salmon stream mouth - fry outmigration (3/1 to 5/15)

Salmon stream mouth - spawning (7/10 to 8/31)

No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No bioremediation or other chemical application within 100m of stream. Contact ADF&G Habitat Division prior to treatment for permits.

1C Salmon fry nursery area (4/31 to 7/31)

1D Esther Hatchery release (4/15 to 6/1)

1E Main Bay Hatchery release (4/20 to 5/10)

1F Sawmill Bay Hatchery release (4/15 to 6/1)

1G Cannery Creek Hatchery release (4/21 to 6/1)

1H Remote release site

1I Gill net area (6/7 to 8/31)

1J Purse seine area (7/20 to 9/30)

1K Purse seine hook-off (7/20 to 9/30)

1L Set net sites (6/11 to 7/25)

For Codes 1C through 1L contact ADF&G for specific dates, locations and constraints.

2M Herring spawning (4/1 to 6/15)

Restrict boat traffic to essential minimum. Avoid damage to unholed intertidal and subtidal algae and seagrass. Contact ADF&G for specific dates and locations.

3N, 3P
3O, 3Q

Harbor seal and sea lion pupping (5/15 to 7/1)

Harbor seal and sea lion molting (8/15 to 9/15)

Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts.

5R Seabird colony (5/1 to 9/1)

Restrict air traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance. Contact ADF&G and USFWS prior to treatment.

5S Shorebird/waterfowl concentration (4/1 to 5/15)

Restrict all activity to essential minimum, especially air traffic.

5T

All Bald Eagle nests (3/1 to 6/1)

Active Bald Eagle nests (3/1 to 9/1)

Restrict air traffic to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.

6U Recreation: Tent sites (6/1 to 9/15)

6V Anchorages (6/1 to 9/15)

6W Forest Service cabins (6/1 to 9/15)

6X Lodge (6/1 to 9/15)

6Y Special use destination

7Z Subsistence area: Salmon harvesting (5/1 to 9/30)

7HH Finfish harvesting

7II Deer harvesting (8/15 to 2/28)

7JJ Invertebrate harvesting

For Codes 7Z through 7JJ contact ADF&G and Chenega Corporation for specific dates, locations, and constraints.

ARTICLE 1556 10-90 FROM SPANISH SERRAVALLE TO DRY WOODWARD P.18
--- ENVIRONMENTAL COMMENT SHEET ---

SEGMENT ST 1 FL-04 SUBDIVISION: B DATE 09 APRIL 90

USCG

NAME LARRY FLETCHER SIGNATURE Larry R Fletcher

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

1. MANUALLY REMOVE ASPHALT, AND TAR PATCHES.
2. POSSIBLE BIO-REMEDIATION

ADEC

NAME DAVID M. SALE SIGNATURE David M Sale

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

- ① REMOVE MANUALLY OILED DEBRIS, ASPHALT + TAR RAUS
[NOTE: ASPHALT ON TUMBO AT END OF SEGMENT IS ON THICK
SHELL FRAGMENT ACCUMULATIONS. REMOVAL OF ASPHALT WILL RELEASE
H₂S, BUT ^{OIL} SEDIMENTS SHOULD STILL BE REMOVED.]
- ② REMOVE TARRED SEDIMENTS BETWEEN ISLANDS AND HEAVY
COVER ON ISLANDS BY MANUAL REMOVAL AND WASHING,
RESPECTIVELY
- ③ BIODEGRADATE WHEN OXYGEN LEVELS IN SEDIMENTS PERMIT

LAND MANAGER

NAME Steve WARD SIGNATURE Steve W

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

Enclosed data is Excellent.

SHORELINE OILING SUMMARY

REVISION NO. 03/22/90

OG Richard Marty USCG Larry Fletcher SEGMENT ST/ FL-4
 BIO Bob Lemon LAND REP Steve SUBDIVISION B 1d1
 EXXON Jan Czorneki ADEC Dave Dale TIME 17:00 to 20:30
 TEAM NO.: 10 TIDE LEVEL: 41.85m (100.30m) DATE 09 April 1990
 EST. SUBDIVISION LENGTH: 1503 m ☒ Sun ☐ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot ☒ Boat ☐ Helo WORKING DIRECTION: N to S
 SURFACE SEDIMENTS: R 50 % B 10 % C 10 % P 10 % G 10 % S 5 % M 5 % V 5 %
 SLOPE: Long 60 % Hang 40 % Vert 5 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 1 m M 66 m N 586 m VL 797 m NO 53 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR						IMPACTED ZONES			
	IC	IR	IP	IO	OR	OR	OP	OL	OL	SU	UI	ME	U	
ASPHALT PAVEMENT		✓	X					X	✓	X	✓			
POOLED														
COVER														
COAT		✓		X				X			X			
STAIN														
MOUSSE														
PATTIES				X				X			X			
TARBALLS				X				X			X			
FILM														
NO OIL												X	X	

PAVEMENT: H F (S) 150 sq. m by 3 cm
 (4m x 20m x 0.2) + (5m x 20m x 0.1) + (6m x 14m x 0.6) + (6m x 15m x 0.1)

PATTIES / TARBALLS 2 BAGS

NEAR SHORE SHEEN? NO BR RW (SL) TL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash	X		
Debris	X		

DEBRIS COLLECTED
☒ YES ☐ NO

TYPE M.S.C.

#BAGS < 1

Photographs:

Roll No. ST/10/12

Frames 32-36

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL cm - cm (top - bot)	BELOW		OIL / FILM COLOR								PIT ZONE				A N A	SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UC	2.5L OR	2.5L OR	2.5L OR	2.5L OR	2.5L OR	2.5L OR	2.5L OR	2.5L OR	SU	U	M	U		
1	5					X	-											X			N	G, S, M	
2	23	X					0.5	X						X		X					N	G ALAERBic	
3	25					X	.											X		Y		M, S, G	
							.																
							.																
							.																

COMMENTS oiled interval ≤ 5 cm in pit 2 does not constitute subsurface oil.

OG R. Mar 4

SEGMENT ST/ FL-4

SUBDIVISION B

DATE 9 April 90

CHECKLIST

- ☐ H Area
- ☐ Approx. Scale
- ☐ Sep/Sub Entry
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HMLA/M
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ Pit Location(s)
- ☐ Photo Location(s)

LEGEND

1 Δ
Pit - No Subsurface Oil

2 Δ
Pit - Subsurface Oil

CT/C
Continuous Distribution

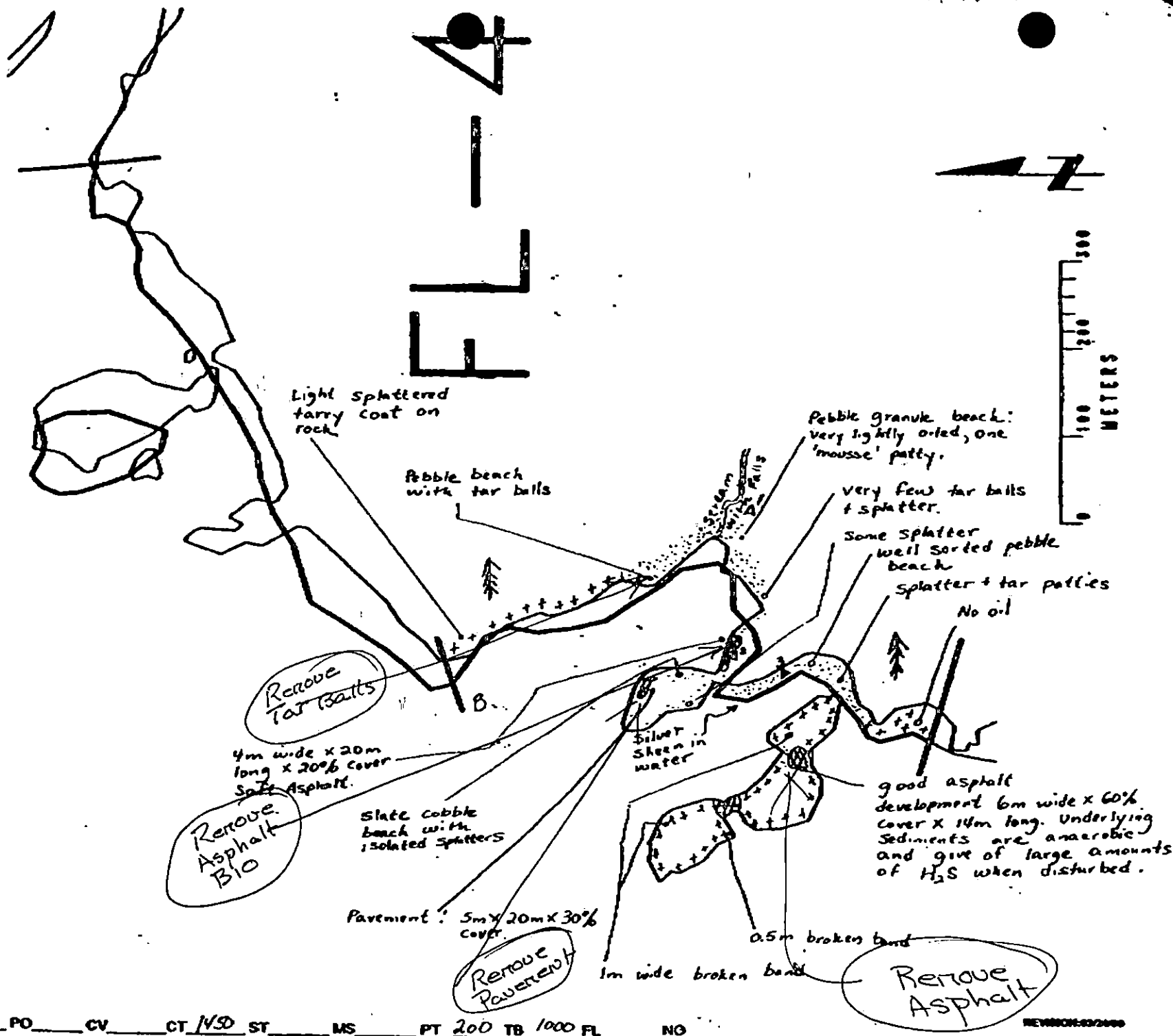
CT/B
Broken Distribution

CT/P
Patchy Distribution

CT/S
Splashed Distribution

Oiled Vegetation

1 $\rightarrow$
Photo location, direction, and number



Oil Character Length (m): AP 70 PO CV CT 1/50 ST MS PT 200 TB 1000 FL NO

REVISION: 02/2000

SHORELINE ECOLOGICAL SUMMARY

REVISION: 08/22/90

Segment ST/10/FL 4 Subdivision B Date (mo/day/yr) 4/9/90
Time (24 hr) 1900 - 2030 Biologist Lemon

- (A) Substrate type and % of segments:
(1) Bedrock 50 (2) Boulder 10 (3) Cobble 10 (4) Pebble 20 (5) Sand (6) Silt
- (B) Overall % cover of biota (% of segment): Dense Moderate 55% Low
- (C) Density, substrate preference (by number from A, above), & vertical zonation of major taxa: (upper-U; mid-M; low tidal-L); juveniles/adults (X), new settlement (3)

Photographs:
Roll No. ST/10/12

Frames 32-36

BARNACLES

Dense			Moderate			Sparse			Rare			NOT PRESENT
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	X	X	X	X	2	2	2	
3	3	3	3	3	3	X	X	X	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

MYTILUS

Dense			Moderate			Sparse			Rare			NOT PRESENT
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	X	X	X	2	2	X	
3	3	3	3	3	3	3	3	3	3	3	X	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

GASTROPODS

Dense			Moderate			Sparse			Rare			NOT PRESENT
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	X	X	X	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

FUCUS

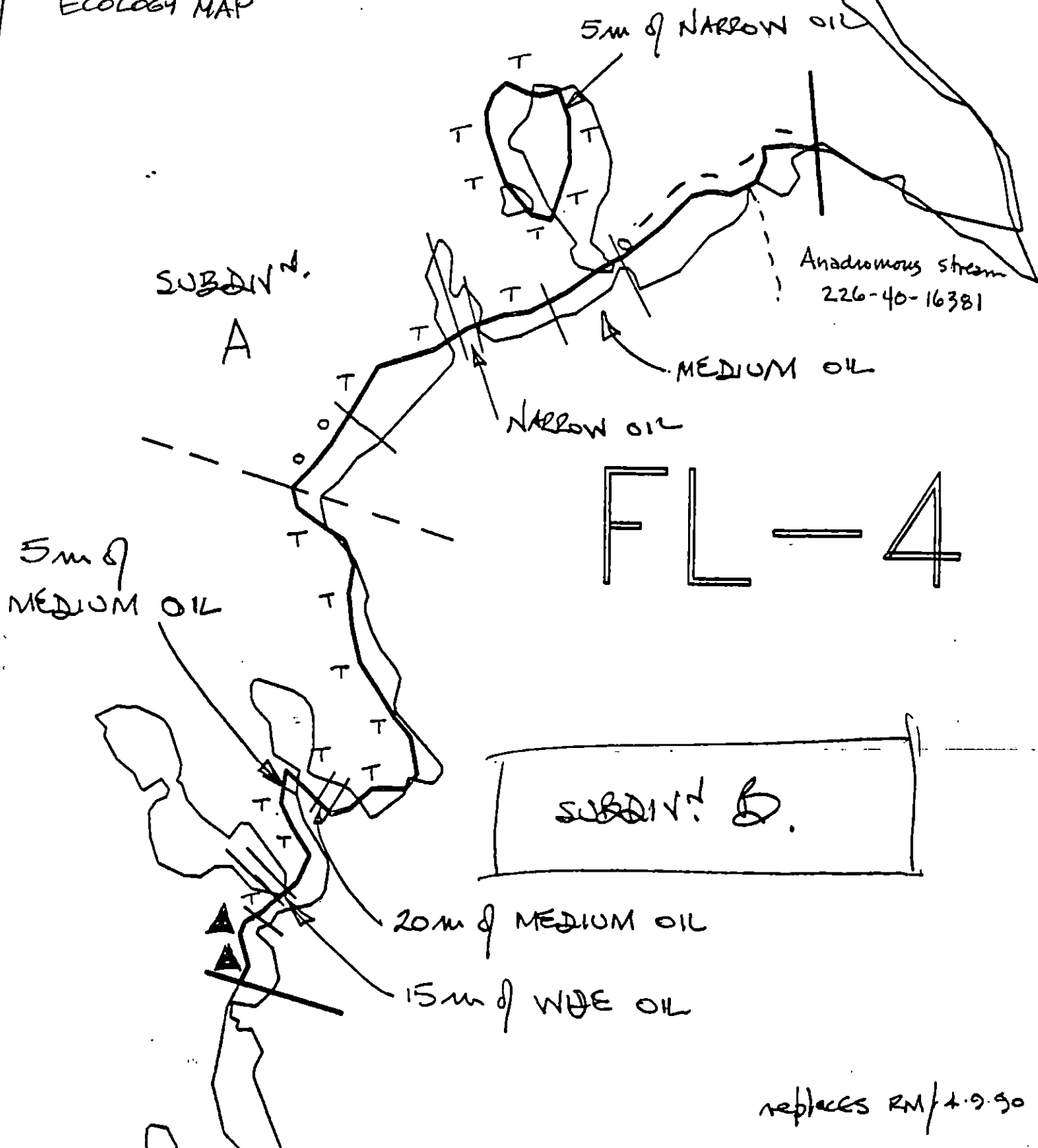
Dense			Moderate			Sparse			Rare			NOT PRESENT
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	X	X	X	2	2	2	2	2	2	
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

Wildlife Observations/ General Comments: Low zone has a cover of mixed red and green algae including Palmaria (red) Zostera (vascular) & Desmarestia (green). - came across the remains of a dead otter w/ unidentifiable teeth, hair - otherwise includes live otter, deer, otter scat, 2 eagles, 6 crows, and a horned owl. Small eggs and amphipods and demersals were low zone animals. One low zone tumbler was riddled w/ holes as though some animal was digging clams. Beaches dried squid, frame 36.

Ecological Considerations:

→ Stream spawning. Inspected stream w/ water fall, no fish or fish food on or

ECOLOGY MAP



replaces RM/4.9.90

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

FL-4

ADEC Segment Length: 2004m

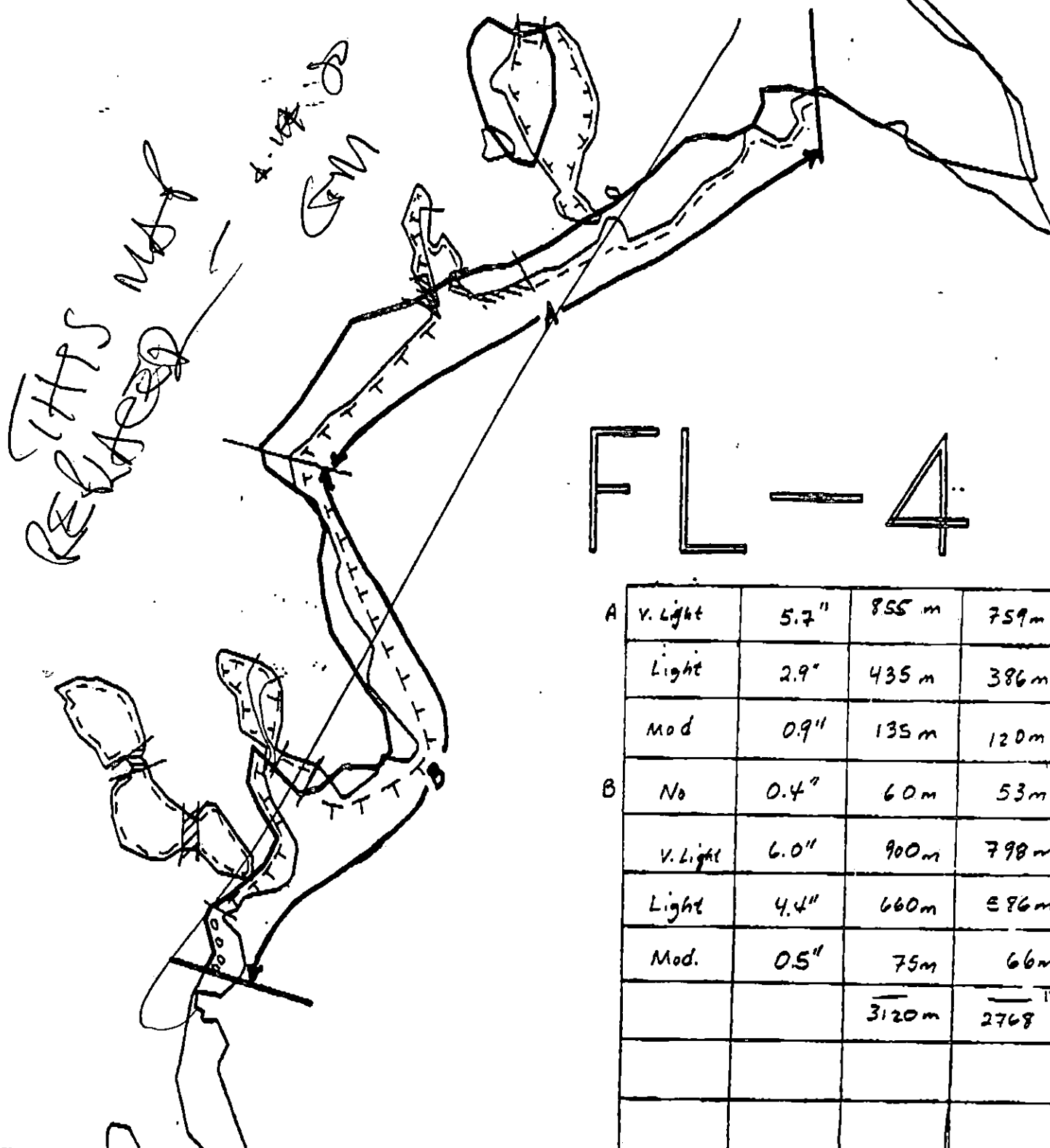


Map Key: PWS-241

Name: GM for RM

Date: 4/13/90

Date Entered:



FL-4

A	V. Light	5.7"	855 m	759 m
	Light	2.9"	435 m	386 m
	Mod	0.9"	135 m	120 m
B	No	0.4"	60 m	53 m
	V. Light	6.0"	900 m	798 m
	Light	4.4"	660 m	586 m
	Mod.	0.5"	75 m	66 m
			3120 m	2768 ¹⁵

XXXX Wide
 /// Medium
 --- Narrow
 TTTT Very Light
 0000 No Oil

FL-4

ADEC Segment Length: 2004m

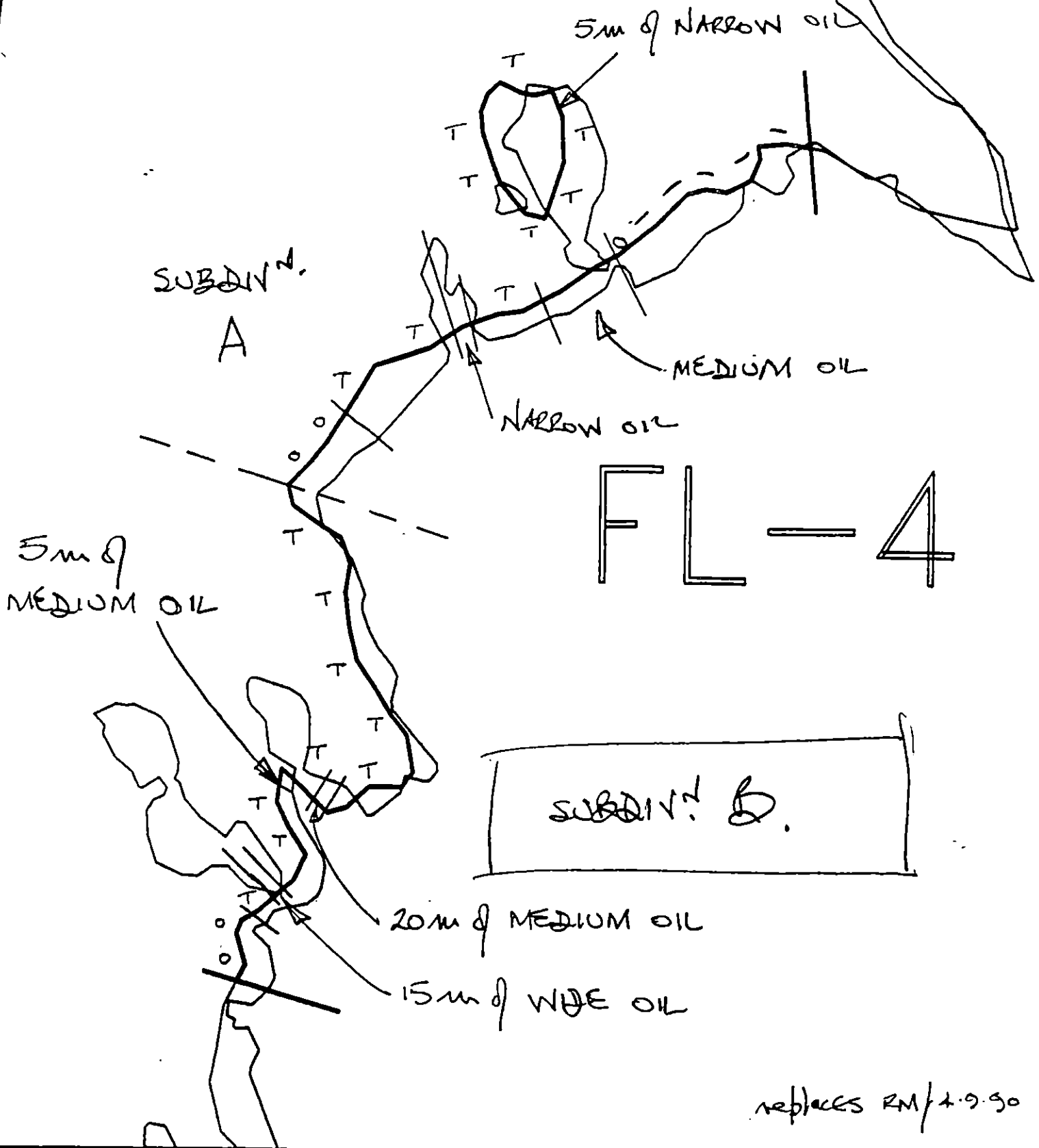


Map Key: PWS-241

Name: R. Marley

Date: 09 April 1990

Date Entered:



XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

FL-4

ADEC Segment Length: 2004m



Map Key: PWS-241

Name: GM for RM

Date: 4/13/90

Data Entered:

replaces RM/4-9-90

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT FL-4 SUBDIVISION A (1 of 2)

WORK WINDOW	
Manual Pickup Tarmat Removal	OPEN
Bioremediation More Than 100m From Stream	OPEN
Bioremediation Less Than 100m From Stream	WORK PRIOR TO 7/10 (ADF&G MONITOR REQ.)

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1A,1B Salmon Stream

ADF&G catalogued anadromous stream (226-40-16381) is present in this subdivision. This subdivision is closed to bioremediation less than 100m from stream 7/10 to 8/31. Before 7/10, bioremediation is permitted less than 100m from stream with on-site ADF&G monitor or ADEC alternate present. No constraint to bioremediation more than 100m from stream. No constraint to manual pickup and tarmat removal.

5T Bald Eagle Nest

NO CONSTRAINT. Work area more than 400m from active nest

OTHER ECOLOGICAL CONSIDERATIONS

No disturbance to stream bed or banks. No flushing of pollutants or sediments into stream drainage; do not allow Inipol to enter stream flow. On-site examination and consultation by ADF&G monitor is required prior to bioremediation in order to authorize a setback distance from the stream during chemical application; if ADF&G monitor's presence is impossible, authorization may be given by the ADEC monitor. Avoid rich biota in intertidal zones during bioremediation.

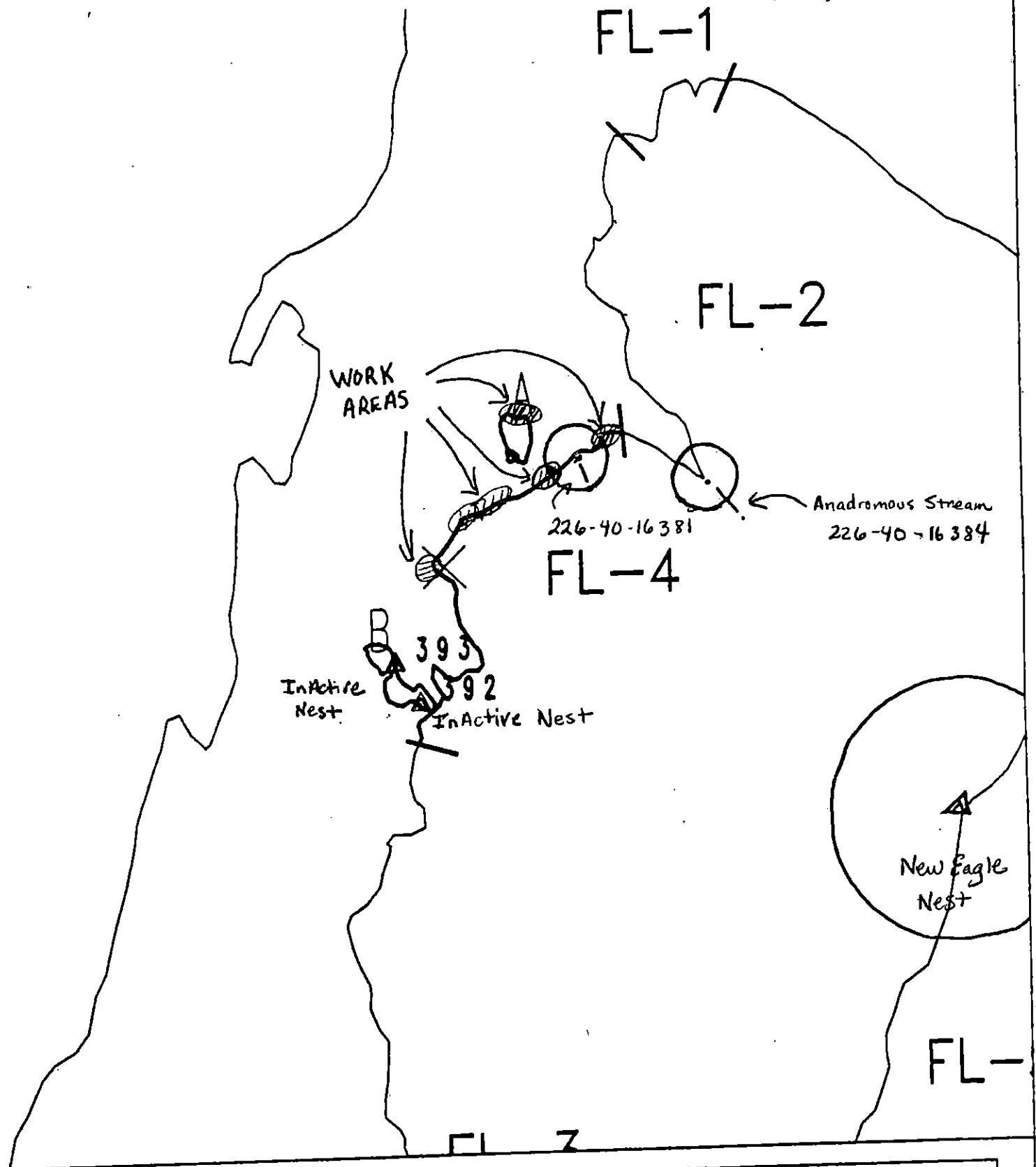
TAG APPROVAL DATE

ADEC Ray Monnes R. Monnes
EXXON ANDY TEAL W. Kelley
NOAA _____
USCG _____

FOSC ✓

DATE 8 June 90

Incorporates USFWS Data . Survey
map of Bald Eagle Nests
(6/1/90)



Exxon Company, USA
Map Key: PWS-FL-4

ECOLOGY MAP
SEGMENT FL-4
SUBDIVISION A (1 of 2)
METERS

- ★ Seabird Colony
- ▲ Eagle Nest

1 inch = 1407 feet

SHORELINE EVALUATION

SEGMENT ST/ FL-04 SUBDIVISION A (1 OF 2) DATE 4/9/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 226-40-16381

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)

1B Salmon stream mouth - spawning (7/10 to 8/31)

5T-2 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)

6Y Recreation: Special use destination

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unoiled biota and substrate. Anadromous stream 226-40-16381 in Subdivision A (see ecology map). 2 eagle nests in Subdivision B > 800m from work area.

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: Charles J. H. Jones

DATE: 4/28/90

OILING CATEGORIZATION:

Wide 0 m: Medium 94 m: Narrow 308 m: V.Light 652 m: No Oil 106 m
Subsurface Oil Observed: Yes X No Maximum Depth 8 cm

RECOMMENDATIONS:

<u> </u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u>X</u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u>X</u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u>X</u> Bioremediation	<u> </u> Spot Washing: <u> </u> Wands
<u>X</u> Tarmat: <u>X</u> Removal	<u> </u> Beach Cleaner
	<u> </u> Other (see comments)

COMMENTS: Recommended treatment includes 1) manual removal of tarmat, 2) manual pick up of oiled trash and debris, 3) bioremediation of areas shown on attached sketch map. No bioremediation within 100m of anadromous stream without approval from ADF&G. Work should be conducted between 5/15 and 7/10 based on salmon constraints.

See ADDENDUM dated 6/6/90 JPP

TAG COMMENTS: AVOID RICH BUTA IN INTERTIDAL ZONES DURING B.O.

TAG APPROVAL DATE: 4/26/90

ADEC JOHN BAKER

EXXON ANDY TATE

NOAA GARY PETRAE

USCG KENNETH KEANE

FOSC:

DATE: 5-8-90

CVC rep to be on scene. CG arrange transportation + berthing.

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT FL-4 SUBDIVISION B (2 of 2)

WORK WINDOW

Manual Pickup
Tarmat Removal

OPEN

Bioremediation More Than 100m From Stream

OPEN

Bioremediation Less Than 100m From Stream

WORK PRIOR TO 7/10
(ADF&G MONITOR REQ.)

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1A,1B Salmon Stream

ADF&G catalogued anadromous stream (226-40-16381) is in Subdivision B. This subdivision is closed to bioremediation less than 100m from stream 7/10 to 8/31. Before 7/10, bioremediation is permitted less than 100m from stream with on-site ADF&G monitor or ADEC alternate present. No constraint to bioremediation more than 100m from stream. No constraint to manual pickup and tarmat removal.

5T Bald Eagle Nest

NO CONSTRAINT. USFWS 6/1/90 map indicates no active nest within 400m of Subdivision B work site.

OTHER ECOLOGICAL CONSIDERATIONS

No disturbance to stream bed or banks. No flushing of pollutants or sediments into stream drainage; do not allow Inipol to enter stream flow. On-site examination and consultation by ADF&G monitor is required prior to bioremediation in order to authorize a setback distance from the stream during chemical application; if ADF&G monitor's presence is impossible, authorization may be given by the ADEC monitor. Avoid any unnecessary disturbance or damage to unloiled biota and substrate.

FOSC

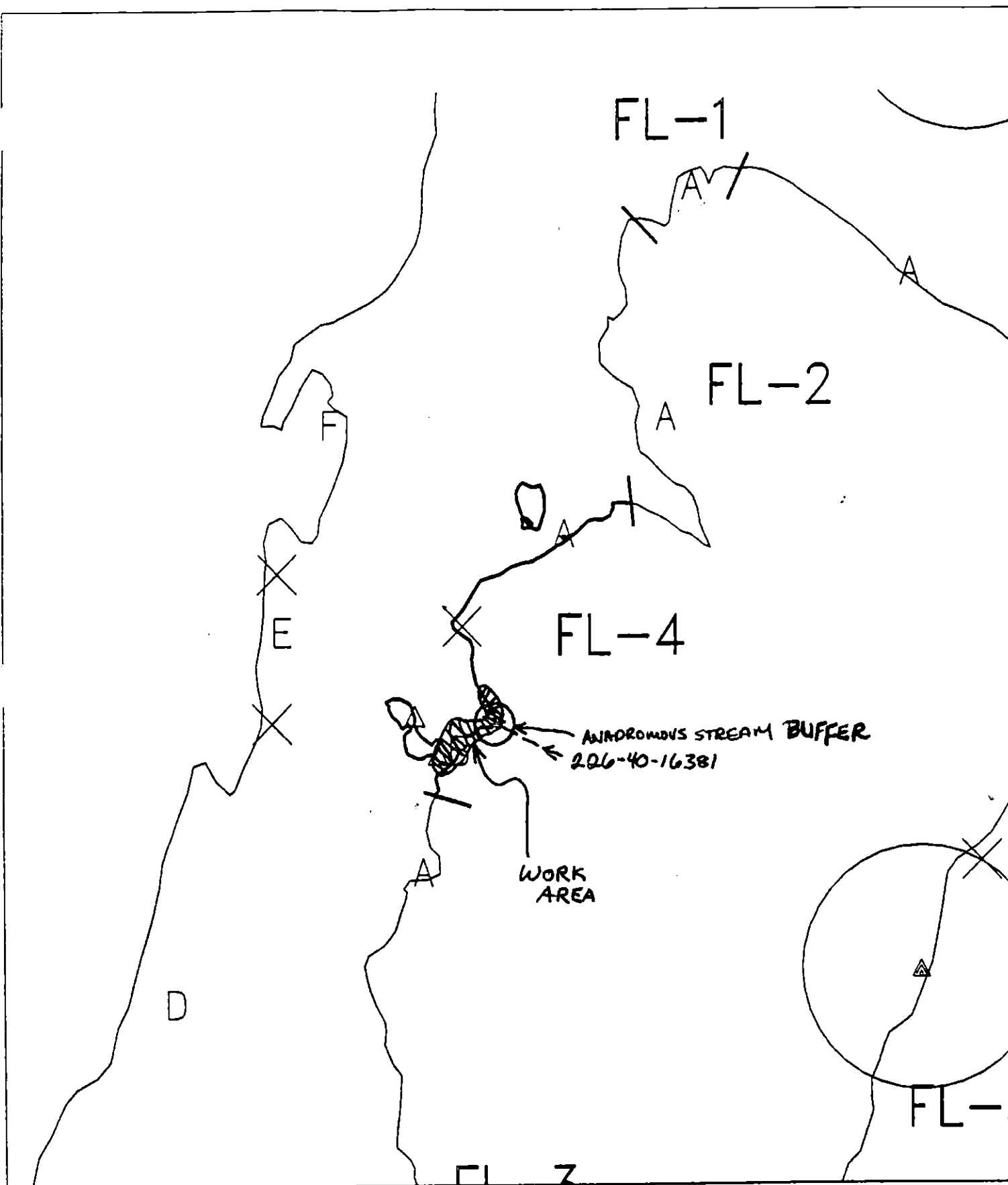
Date

6-12-90

Prepared by

Date

6/1/90



Exxon Company, USA
 Map Key: PWS-FL-4
 June 04, 1990



ECOLOGY MAP
 SEGMENT FL-4
 SUBDIVISION B (2 of 2)
 METERS



- ★ Seabird Colony
- ▲ Active Eagle Nest
- △ Inactive Eagle Nest

~~1 inch = 1407 feet~~

SHORELINE EVALUATION

SEGMENT ST/ FL-04 SUBDIVISION B (2 OF 2) DATE 4/9/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 226-40-16381

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)

1B Salmon stream mouth - spawning (7/10 to 8/31)

5T-2 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)

6Y Recreation: Special use destination

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unoiled biota and substrate. Subdivision B has 2 bald eagle nests (see ecology map). Anadromous stream in Subdivision A > 100m from work area.

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: Charles E. Himes DATE: 4/28/90

OILING CATEGORIZATION:

Wide 18 m: Medium 60 m: Narrow 0 m: V.Light 675 m: No Oil 91 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

<u> </u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u>X</u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u>X</u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u>X</u> Bioremediation	<u> </u> Spot Washing: <u> </u> Wands
<u>X</u> Tarmat: <u>X</u> Removal	<u> </u> Beach Cleaner
	<u> </u> Other (see comments)

COMMENTS: Recommended treatment includes 1) manual removal of asphalt,
2) bioremediation of area shown on attached sketch map. Work should be
conducted after 6/1 with the approval of USFWS regarding eagle nest
constraints.

SEE CONSTRAINT ADDENDUM dated 6/1/90 JPP

TAG COMMENTS:

TAG APPROVAL DATE: 4/26/90

ADEC JOHN BAKER JOHN BAKER

EXXON ANDY TAC ANDY TAC

NOAA GARY PETRAE GARY PETRAE

USCG KENNETH KEANE KENNETH KEANE

FOSC: W L DATE: 5-8-90

CVC now Venues with bioremediation. Ensure
CVC up on scene. CG arrange for transportation
& berthing.

SHORELINE EVALUATION

SEGMENT ST/ FL-04 SUBDIVISION A (1 OF 2) DATE 4/9/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 226-40-16381

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)

1B Salmon stream mouth - spawning (7/10 to 8/31)

5T-2 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)

6Y Recreation: Special use destination

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unoiled biota and substrate. Anadromous stream 226-40-16381 in Subdivision A (see ecology map). 2 eagle nests in Subdivision B > 800m from work area.

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: Charles H. Smith DATE: 4/28/90

OILING CATEGORIZATION:

Wide 0 m: Medium 94 m: Narrow 308 m: V.Light 652 m: No Oil 106 m
Subsurface Oil Observed: Yes X No Maximum Depth 8 cm

RECOMMENDATIONS:

<u> </u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u>X</u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u>X</u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u>X</u> Bioremediation	<u> </u> Spot Washing: <u> </u> Wands
<u>X</u> Tarmat: <u>X</u> Removal	<u> </u> Beach Cleaner
	<u> </u> Other (see comments)

COMMENTS: Recommended treatment includes 1) manual removal of tarmat, 2) manual pick up of oiled trash and debris, 3) bioremediation of areas shown on attached sketch map. No bioremediation within 100m of anadromous stream without approval from ADF&G. Work should be conducted between 5/15 and 7/10 based on salmon constraints. A.

TAG COMMENTS: AVOID RICH BETA IN INTERTIDAL ZONES DURING BIO.

TAG APPROVAL DATE: 4/26/90
ADEC JOHN BAUER
EXXON ANDY TEAL
NOAA GARY PETRAE
USCG KENNETH KEANE

FOSC: DATE: 5-8-90
CVC rep to be on scene. CG arrange transportation & berthing.

OG R. Murphy

SEGMENT ST/ FL-4

SUBDIVISION A

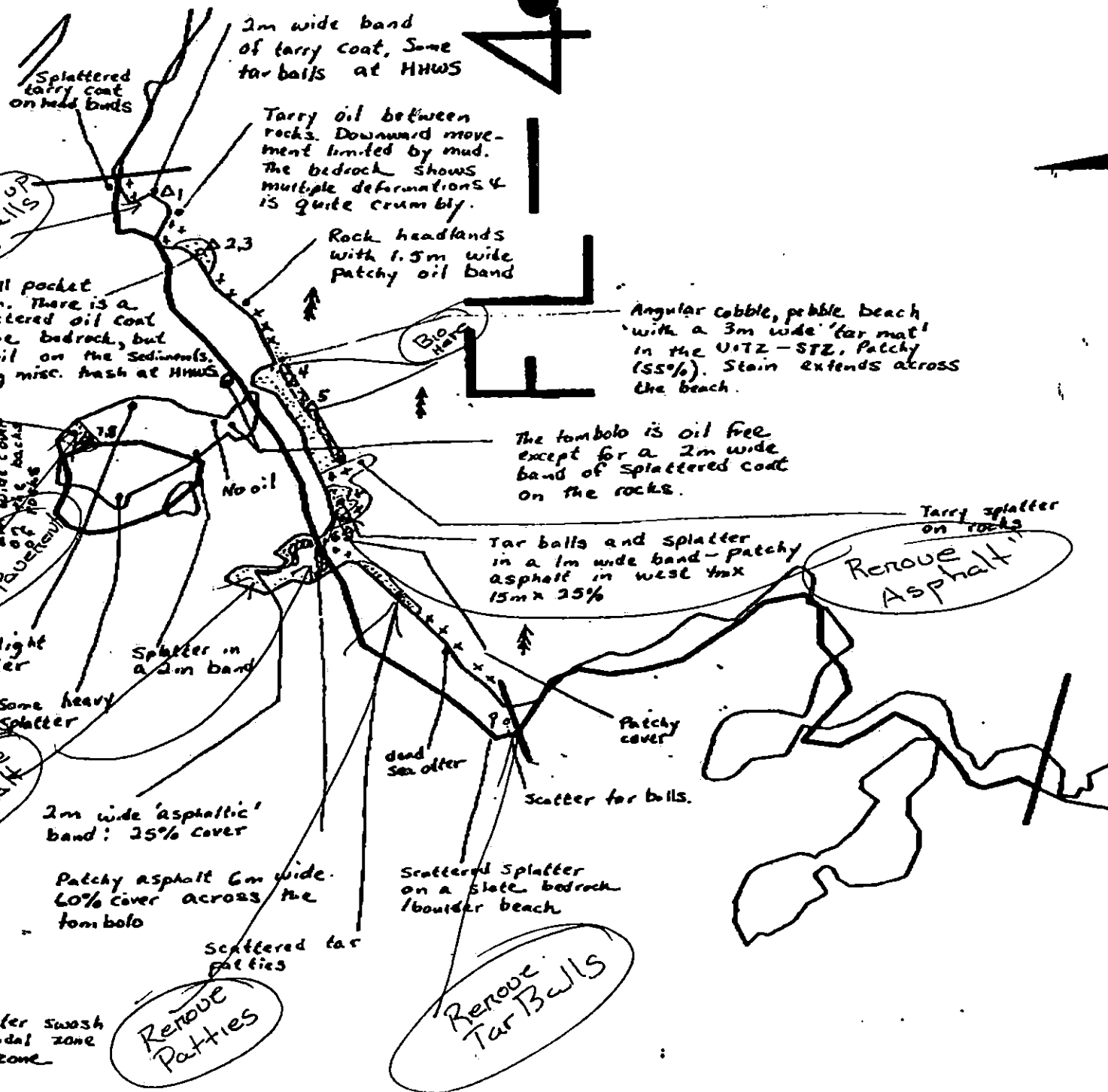
DATE 9 April 90

CHECKLIST

- ☐ M Arrow
- ☐ Approx. Scale
- ☐ Seg/Sub Bathy
- ☐ Oil Out
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HML/LVL
- ☐ SSE
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ Pls Location(s)
- ☐ Photo Location(s)

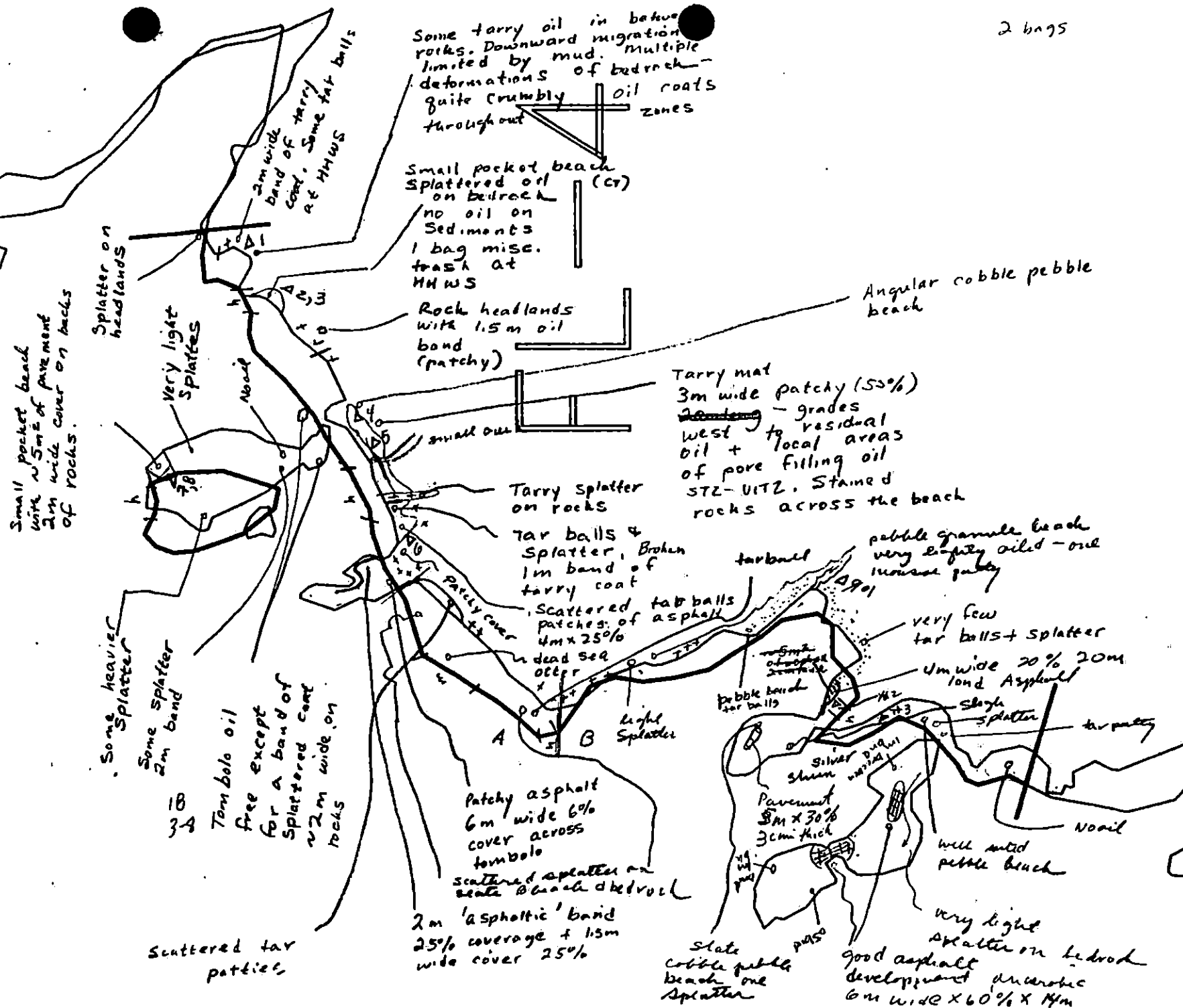
LEGEND

- 1 Δ
Pl - No Subsurface Oil
- 2 Δ
Pl - Subsurface Oil
- CT/C
Continuous Distribution
- CT/B
Broken Distribution
- CT/P
Patchy Distribution
- CT/S
Splashed Distribution
- Oil Vegetation
- 1 $\Rightarrow$
Photo location, direction, and number
- HMLWS = High high water swash
- UIRZ = Upper intertidal zone
- STZ = Supratidal zone



Oil Character Length (m): AP 220 PO CV 50 CT 1265 ST 100 MS PT 200 TB FL NO

REVISION 02/24/90

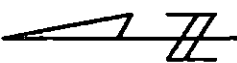


Map Key: PWS-241

Name: R. Vanting

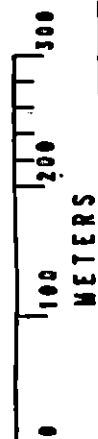
Date:

Data Entered:



FL-4

ADEC Segment Length: 2004m



XXXX Wide
 /// Medium
 --- Narrow
 TTTT Very Light
 OOOO No Oil

ECOLOGY MAP

5m of NARROW OIL

SUBDIV^N.

A

Anadromous stream
226-40-16381

MEDIUM OIL

NARROW OIL

FL-4

5m of
MEDIUM OIL

SUBDIV^N B.

20m of MEDIUM OIL

15m of WIDE OIL

replaces RM/4.9.90

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

FL-4

ADEC Segment Length: 2004m



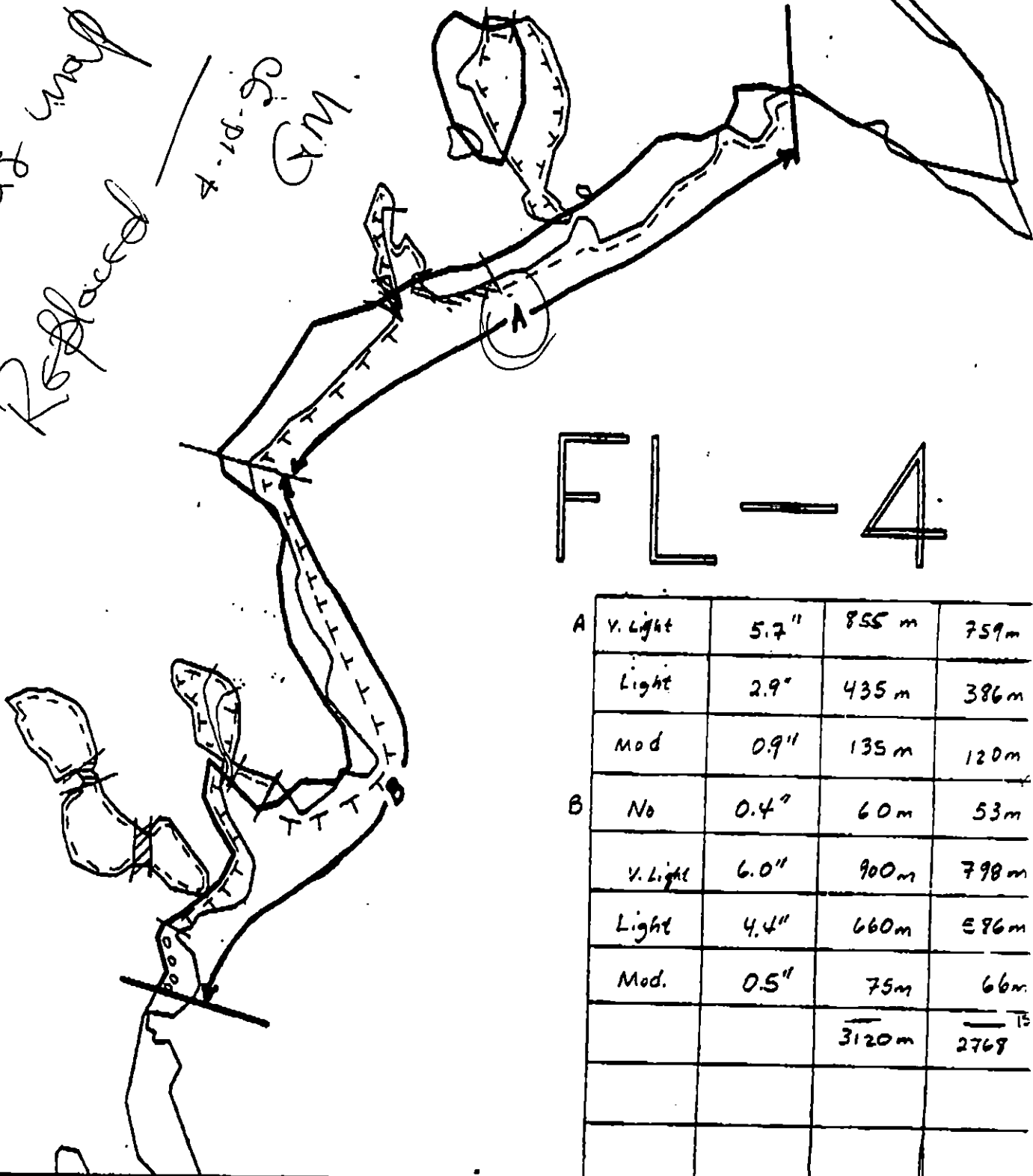
Map Key: PWS-241

Name: GM for RM

Date: 4/13/90

Date Entered:

This map
Replaced
4-18-90
G.M.



FL-4

A	V. Light	5.7"	855 m	759 m
	Light	2.9"	435 m	386 m
	Mod	0.9"	135 m	120 m
B	No	0.4"	60 m	53 m
	V. Light	6.0"	900 m	798 m
	Light	4.4"	660 m	586 m
	Mod.	0.5"	75 m	66 m
			3120 m	2769 m

XXXX Wide

/// Medium

--- Narrow

TTTT Very Light

0000 No Oil

FL-4A

ADEC Segment Length: 2004m

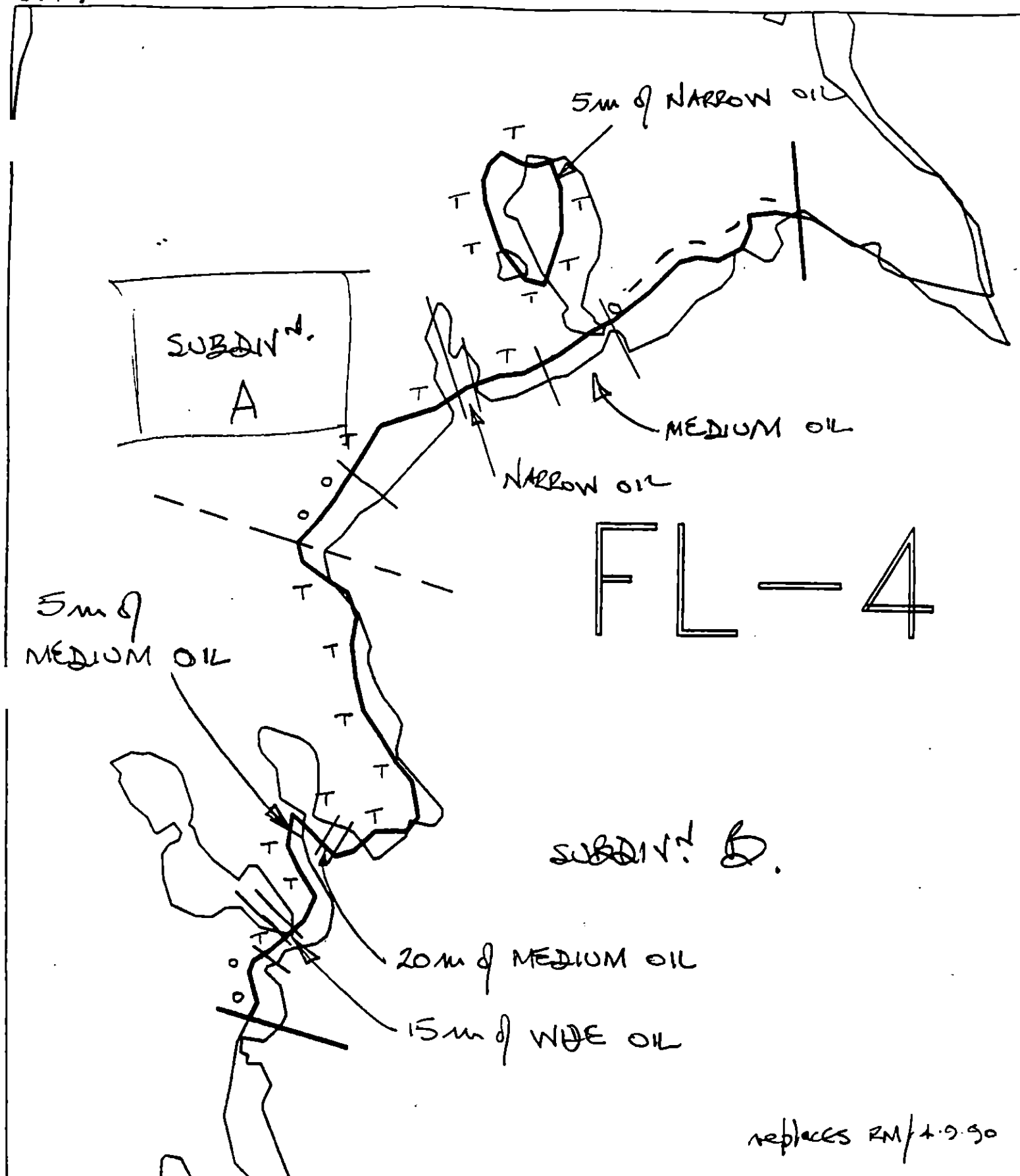


Map Key: PWS-241

Name: R. Marty

Date: 09 April 1990

Date Entered:



replaces RM/1.9.90

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

FL-4A

ADEC Segment Length: 2004m



Map Key: PWS-241

Name: GM for RM

Date: A/13/90

Date Entered:

SHORELINE EVALUATION

SEGMENT ST/ FL-04 SUBDIVISION B (2 OF 2) DATE 4/9/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 226-40-16381

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)

1B Salmon stream mouth - spawning (7/10 to 8/31)

5T-2 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)

6Y Recreation: Special use destination

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unoiled biota and substrate. Subdivision B has 2 bald eagle nests (see ecology map). Anadromous stream in Subdivision A > 100m from work area.

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: Charles E. Homan DATE: 4/28/90

OILING CATEGORIZATION:

Wide 18 m: Medium 60 m: Narrow 0 m: V.Light 675 m: No Oil 91 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

<u> </u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u>X</u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u>X</u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u>X</u> Bioremediation	<u> </u> Spot Washing: <u> </u> Wands
<u>X</u> Tarmat: <u>X</u> Removal	<u> </u> Beach Cleaner
	<u> </u> Other (see comments)

COMMENTS: Recommended treatment includes 1) manual removal of asphalt,
2) bioremediation of area shown on attached sketch map. Work should be
conducted after 6/1 with the approval of USFWS regarding eagle nest
constraints.

TAG COMMENTS:

TAG APPROVAL DATE: 4/26/90
ADEC JOHN BAKER
EXXON ANDY FAL
NOAA GARY PETRAE
USCG KENNETH KEENE

FOSC: WJL DATE: 5-8-90
CVC now concurs with bioremediation. Ensure
CVC rep on scene. CG arrange for transportation
& berthing.

OG R. Akar

SEGMENT ST/ FL-4

SUBDIVISION B

DATE 9 April 90

CHECKLIST

- ☐ Name
- ☐ Approx. Scale
- ☐ Seg/Sub Bndy
- ☐ Oil Dist
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HAN/LA/WL
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ Pit Location(s)
- ☐ Photo Location(s)

LEGEND

1 Δ
Pit - No Subsurface Oil

2 Δ
Pit - Subsurface Oil

CT/C
Continuous Distribution

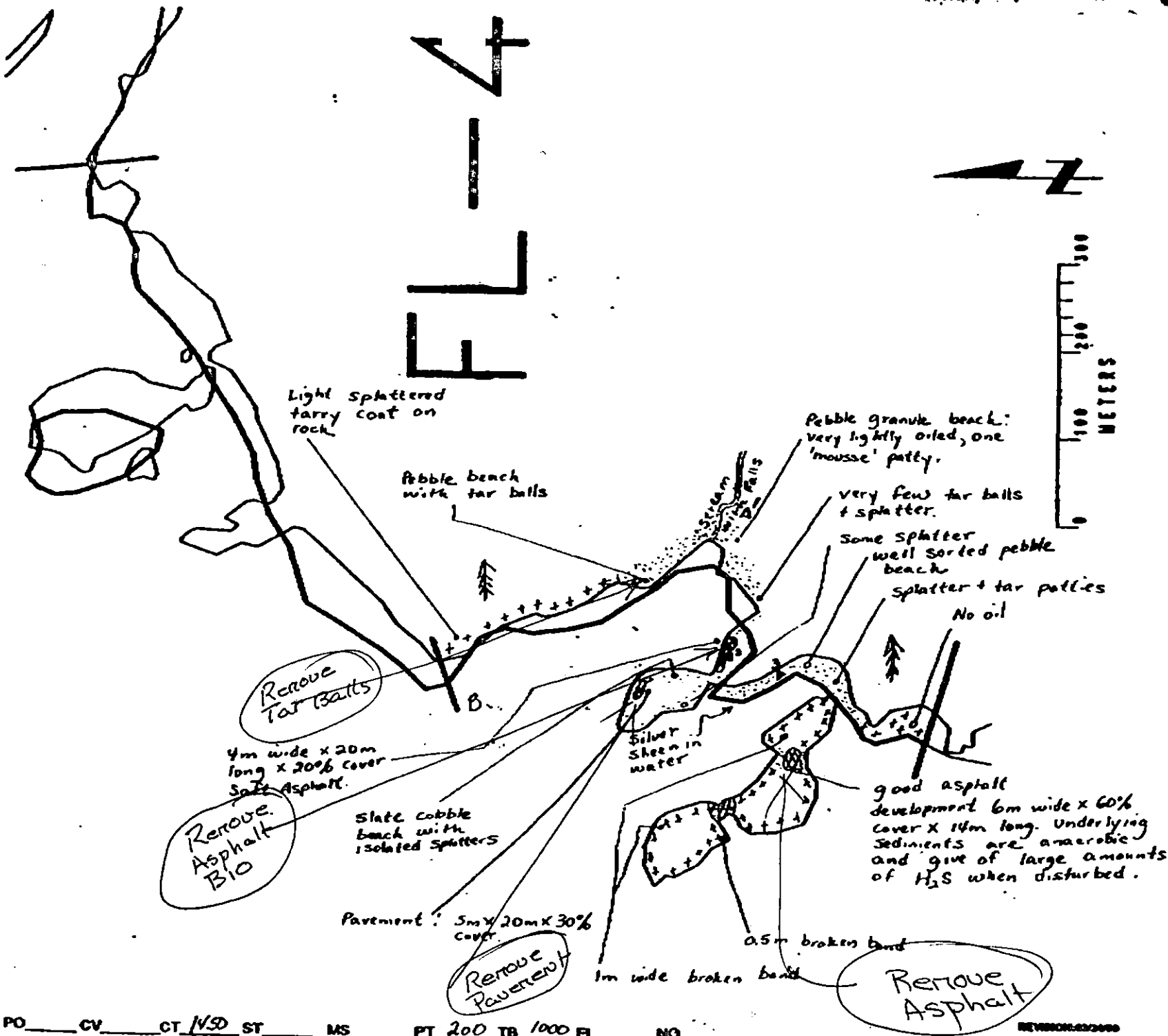
CT/B
Broken Distribution

CT/P
Patchy Distribution

CT/S
Splashed Distribution

Oiled Vegetation

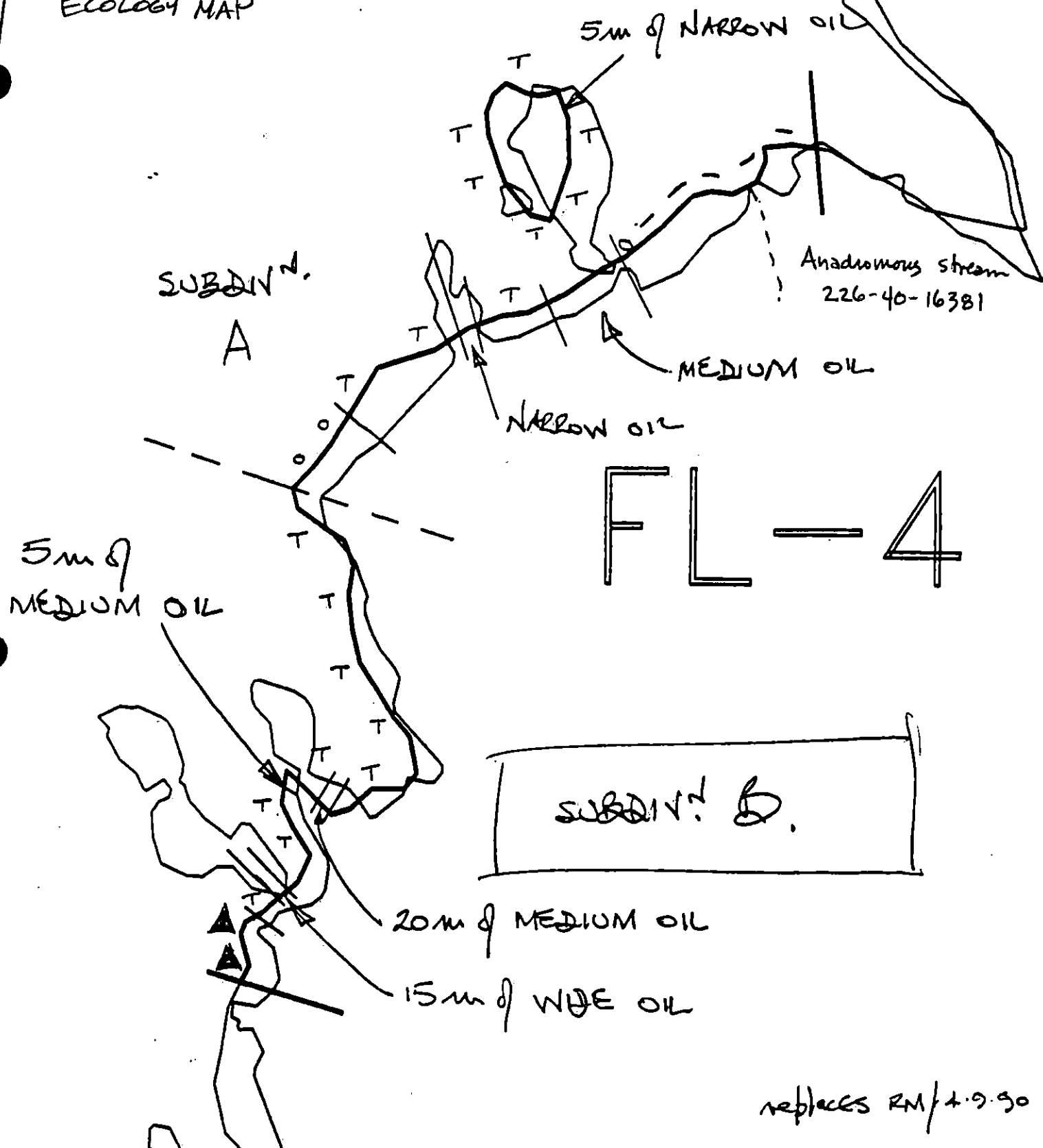
1 $\rightarrow$
Photo location, direction, and number



Oil Character Length (m): AP 70 PO CV CT 1/30 ST MS PT 200 TB 1000 FL NO

REVISION: 03/2000

ECOLOGY MAP



replaces RM/4.9.90

XXXX Wide
 /// Medium
 --- Narrow
 TTTT Very Light
 0000 No Oil

FL-4

ADEC Segment Length: 2004m

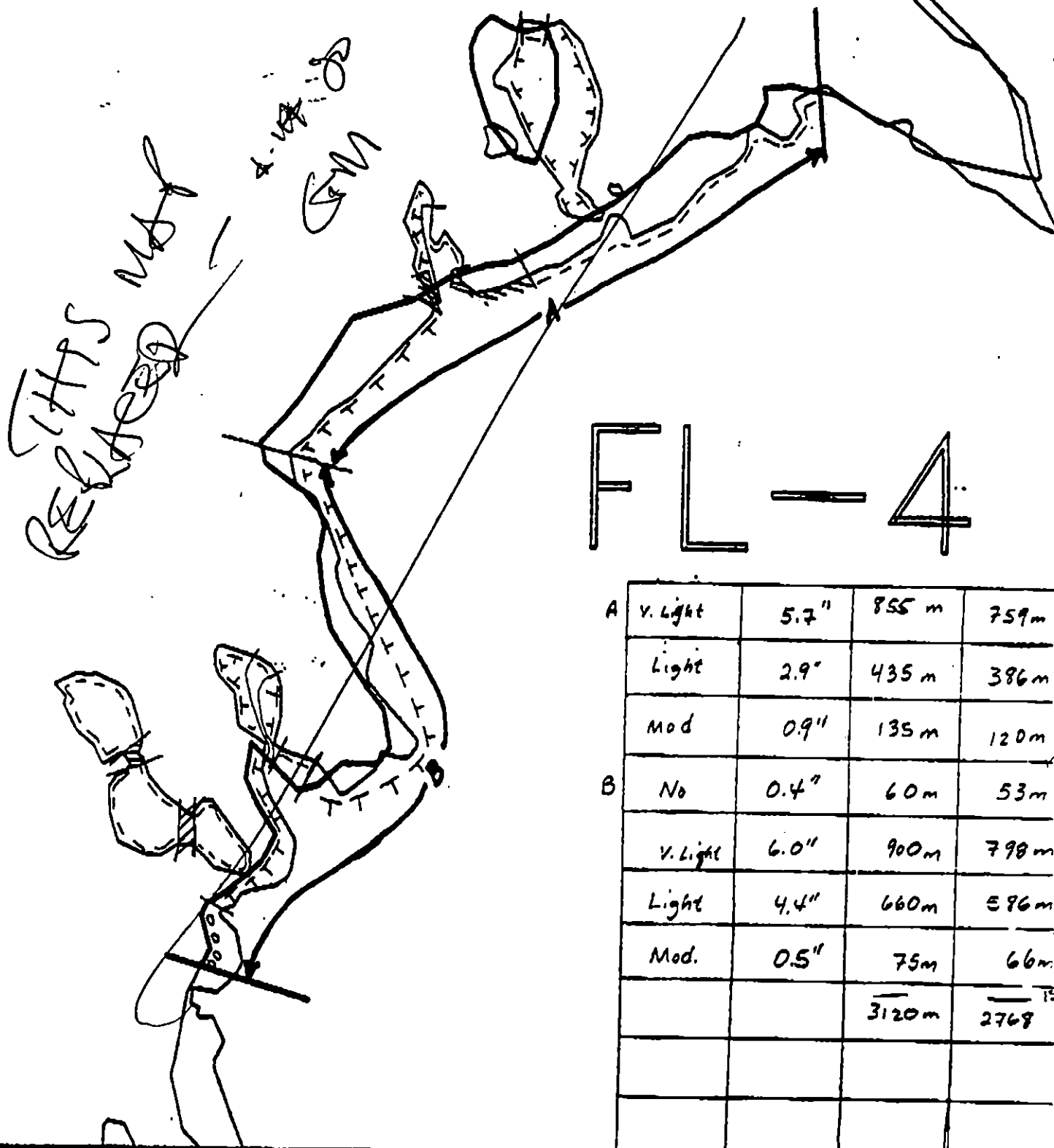
0 100 200 300
 METERS

Map Key: PWS-241

Name: GM for RM

Date: 4/13/90

Date Entered:



XXXX Wide

/// Medium

--- Narrow

TTTT Very Light

0000 No Oil

FL-4

ADEC Segment Length: 2004m

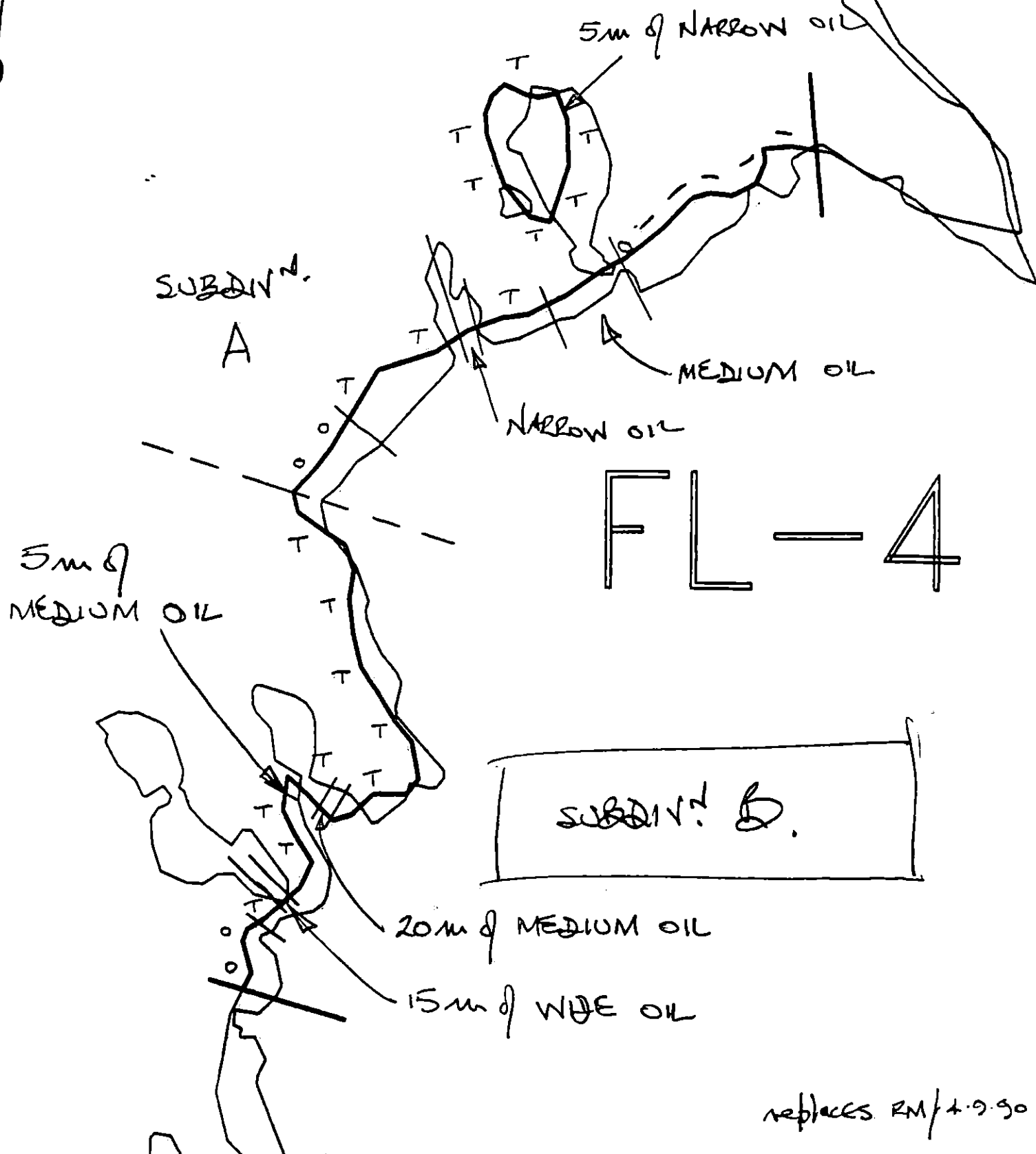


Map Key: PWS-241

Name: R. Marty

Date: 09 April 1990

Date Entered:



XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

FL-4

ADEC Segment Length: 2004m



Map Key: PWS-241

Name: GM for RM

Date: 4/13/90

Data Entered:

1991 MAYSAP EVALUATION

SEGMENT: FL 004 SUB: A REGION: PWS SURVEY DATE: 5/12/91ENVIRONMENTAL SENSITIVITIES:Work Window(s) RESTRICTED 3/1 - 9/15Ecological/Constraints (see page two for details) Eagle nest,
Anadromous streamARCHAEOLOGICAL CONSTRAINTS:If treatment is planned, a cultural resource evaluation is
required prior to shoreline treatment.SHPO Signature: Timothy O. Smith Date: 5/31/91RECOMMENDATIONS:

	INITIAL	TAG	FOSC
TREATMENT REQUIRED (Y or N)	<u>N</u>	<u>N</u>	<u>Y</u>
Manual Pickup (Check as Req.)	<u>_____</u>	<u>_____</u>	<u>X</u>
Spot Washing	<u>_____</u>	<u>_____</u>	<u>_____</u>
Bio-Customblen Only	<u>_____</u>	<u>_____</u>	<u>X</u>
Bio-Inipol/Customblen	<u>_____</u>	<u>_____</u>	<u>_____</u>
Other	<u>_____</u>	<u>_____</u>	<u>_____</u>
Other	<u>_____</u>	<u>_____</u>	<u>_____</u>

COMMENTS:

INITIAL: _____

TAG: _____

FOSC: OIL ID SITES M+H TOO EXTENSIVE TO RECOVER DURING
SURVEY - RETURN TO COMPLETE CLEANUP OF PATCHY TOWASH AP
AT AREAS M+H AND REMOVAL OF OP AT PIT 5. EEPTAG APPROVAL DATE: MAY 31 1991 FOSC APPROVAL DATE: 5/11/91ADEC JDH

FOSC

EXXON RealUSCG SmallNOAA LongE. E. PAGE, CDR, USCG
CHIEF OF STAFF, FOSCThe state will reevaluate
the need for treatment on
this subdivision JDH

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

Eagle Nest: Access restricted from 3/1 to 9/1. USF&WS authorization required. Maintain 1000' vertical and 1/4 mile horizontal buffer.

Anadromous Stream: Unlimited treatment up to stream bank between May 15 and July 10. ADF&G approval required for work after July 10. Fish Habitat Permit required for instream work. ADF&G approval required for bioremediation within 100 meters of anadromous stream after July 10.

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 5 SEGMENT FL-4 SUBDIVISION A DATE 5 / 12 / 91

ADEC

NAME

John Hays

SIGNATURE

[Signature]

NTR

TREATMENT RECOMMENDED

Areas M-N-O - Manual pickup of AP.

Area of pit #5 - ^①Expose suburface by manually raking away pebbles. ^② Manual removal of OP sediments in this 5m² area. Good area for small crew.

EXXON

NAME

JOHN DEAN

SIGNATURE

[Signature]

NTR

ALL SURFACE OIL OBSERVED WAS WELL WEATHERED AND PRESENTS LITTLE THREAT, MOST WAS IN UNRECOVERABLE STATE ON LOCATION.

LANDMANAGER

NAME

Steve WARD

OF

CVC

SIGNATURE

[Signature]

NTR

this AREA needs alot of manual AREAS M-N-O need heavy manual. this Area has been worked before and should be finished. Pit #5 showed Heavy-Sub Surface and should be cleaned up, this Sub-Surface Area is 80' square and will light up when the sun comes out. Chenequa Local Response
NO BIO.

USCG/NOAA

NAME

DREHER/CLINE

SIGNATURE

CWO K. R. Dreher[Signature]

NTR

Further clean up of this segment would cause more environmental harm than the oil to be removed.

AP found at site G was recovered, however @ sites M & N AP was too extensive for pickup during survey. Further manual treatment is desirable. Rest of oiling does not appear to warrant further treatment. DWC.

MAYSAP SHORELINE OILING SUMMARY

PAGE ____ OF ____

TEAM NO. 5OG CHANEYBIO CRANKSEGMENT FL-4ADEC HAYESLANDMANAGER WARD for CUCSUBDIVISION AEXXON DEANUSCG/NOAA DREHER/CLINEDATE MAY 12 /91TIME 17:45 to 20:20TIDE LEVEL 2.0 ft. to 3.0 ft.ENERGY LEVEL: ☐ H ☐ M ☒ LSURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELOWEATHER: ☒ SUN ☒ CLOUDS ☐ FOG ☐ RAIN ☐ SNOWTOTAL LENGTH SHORELINE SURVEYED: 1098 mNEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONEEST. OIL CATEGORY LENGTH: W — m M — m N 210 m VL 360 m NO 528 m US 210 m

LOC	SURFACE OIL CHARACTER										SURFACE SEDIMENT TYPE	SHORE SLOPE VHML	AREA		ZONE				NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO			WIDTH m	LENGTH m	S	UI	MI	LI	
A						B					B	M	0.1	6		✓			Bath tub Ring
B						T					B		10	15		✓			Pocket Cove
C						S					R	V	1	15		✓			Remnant CT rock face
D						S					BR	H	2	10		✓			
E						T					B	H	5	5		✓			Random splatters
F						T					B	H	1	4	✓	✓			Random splatters
G	T			T	S	S					RBCPG	M-L	10	50	✓	✓			Several AP patties recovered
H					S	S					R	V	10	2		✓			Weathered CT&CV
I					S	S					R	V	2	50		✓			" "
J					S	S					RB	H	2	30		✓			Random Splatters
K					S	S					RB	M	3	15		✓	✓		Random Splatters
L					S	S					RB	H	2	25		✓			Random Splatters
M	P			S							B	M	2	5	✓				Patchy AP
N	S										BCP	M	2	20		✓			Patches AP by Stream NE
O	T			T	T	T					BC	L	5	70		✓			Random Splatters
P	T			T	T	T					BC	L	2	25			✓		Random Splatters

DISTRIBUTION: C = 91-100%; B = 51-90%; P = 11-50%; S = 1-10%; T = <1%

SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE

PHOTO ROLL # MAYSAP-

5 - 13FRAMES 13-21

SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE

PHOTO LOG FILE MATRICES

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER								OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR BRSN	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO	S					UI	MI	LI			
1	25							✓	-			-	-		✓			BC-BCP	
2	30							✓	-			25	N		✓			P-PGS	
3	35							✓	-			-	-		✓			BCP-PGB	
4	15				✓				2-7	Y		10	B		✓			C-CGMR	Approx 2m ²
5	15	✓							10-13	Y		-	-		✓			BP-BGPR	Approx 5m ²
6	15					✓			10-15			10	S		✓			CPG-CGGB	
7	40							✓	-			35	N		✓			P-PB	5 pits no oil
8	30							✓	-			-	-		✓			PC-PG	
9	15				✓				0-4			-	-		✓			CP-CPG	Not Extensive

SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

OG COMMENTS: AREA (G) Broad band along tombolo to bedrock ridge on adjacent island. Weathered splatters of CT&CV on bedrock. Small patches SOR/H (patties AP recovered) on pebbles & boulders. Sub surface oil on shallow bedrock in poorly sorted sediments. Thin lens OP on bedrock in area of pit 5. Approximately 5m². AREAS (M) & (N) DISTINCT PATTIES IN A BAND (N) BEGINS AT SMALL STREAM & RUNS N.E. ~20m.

revised 5.19.91 gy

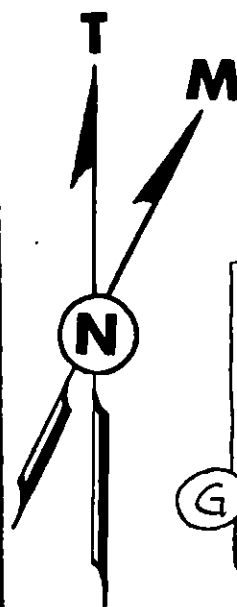
Reviewed: F.W. 5/21/91

DATE May 12 191

SHEEN COLOR: B - BROWN: R - RAINBOW: S - SILVER: N - NONE

revised 5.19.91. 4y
REVIEWED: Fw. 5/21/91

MA P 1991
OG SKETCH MAP
GREG CHANEY
TEAM 5
SEGMENT: FL 4A
DATE: MAY 12 1991
AIR P.#: PIMC BOS 193



LEGEND

BEDROCK	
BOULDERS	
FINE BED.	
DRIFT LOG	
GRASS	
BRUSH	
FOREST	
OILED PIT	
NO OIL PIT	
PHOTO	

SCALE

80 METERS

APPROXIMATELY

SEA CAVE

(A) CT 70%
Bathub Ring
0.1x6m

(C) 1x15m
CT 5%

(F) RANDOM SPLATTERS
TRACE CT
1x4m

(E) 5x5m CT TRACE

(D) 2x10m CT ~3%

(B) 10x15m Pocket Cove
CT TRACE SPLASH
ON BOULDERS

(K) 3x15m
CT 5%
CV 3%

(J) 2x30m
CT 3%
CV 10%

(L) 2x25
CT 2%
CV 2%

(M) 2x5m
SOR 10%
AP 20%

(N) 2x20m
AP 10%

(O) 5x70
AP
SOR
CV
CT
TRACE

(U) 0.5x20m
CT 15%
CV 15%

(V) 1x25m
SOR 2%
CV 5% CT 5%

(P) 2x25m
AP, SOR
CT, CV
TRACE

(S) 0.5x32m
CT 10%
CV 10%
SOR ~5%

1x80
CT, CV
TRACE

(Q) 1x70m
CT 15%
CV 10%
SOR TRACE

(H) 10x2m
CV 5%
CT 5%

(I) 2x50m
CV 2%
CT 5%

(G) 10x50
SOR <1%
CV ~2%
CT ~2%
AP TRACE

Several
AP Patties
Recovered
Random
Splatters CT/CV

SPLATTERED
ON BEDROCK

SPLATTERED ON BEDROCK

NO SURVEY
T 2x3m
CV 100%
Behind
Bedrock
Outcrop

NO SURVEY

STREAM

STREAM

TREES

TREES

TREES

TREES

TREES

TREES

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TREES

TREES

FLEMMING
ISLAND

Reviewed 5.19.91 C4

MAYJAP BIOLOGICAL SUMMARY FORM

pg 1 of 2

TEAM # 5
 SEGMENT # FL-4
 SUBDIVISION A
 SEA STATE 0
 PHOTOGRAPHS: ROLL #
 DATE 12 MAY 1991
 TIDAL HEIGHT (Range) +2 to +5
 BIOLOGIST Crank
 WIND SPEED/DIRECTION < 5 knots / 110 deg
 FRAME #

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):

(A) Area is a 8cm x 6cm "bath tub ring" located high in U12 along a corner. There is no macro-algae with this site. Less than 1 verted meter below the site there are moderate, concentrated barnacles. Barnacle spat is present and the animals tightly space their inner plates when stimulated. There is also a sparse concentration of *Enteromorpha* (an algae); a sparse to rare concentration of *Littorina*; a rare concentration of limpets, *Fucus* and mussels. Biota cover is ~30%.

(B) Area is located high in U12 along a pocket beach. Within the site there is black lichen and moss covering <1% of the surface sediments. The U12 has ~50% biota cover. Barnacles are dominant with a moderate concentration of adults and recent set. *Fucus* is present at the water's edge ~+4'. *Littorina* and limpets are sparse.

(C) Areas are bands located in the U12 along a vertical rock faces. There is approximately a 20% biota cover within the sites including: a sparse concentration of adult barnacles, a rare concentration of barnacle spat, a sparse concentration of *Littorina*; a rare concentration of juvenile (post-spill age) mussels and a sparse concentration of *Fucus* with sporlings and maturing conceptacles present. Approx. 5% of the *Fucus* plants appear unhealthy with torn blades and 'stipe-only' plants, the remaining 95% appear healthy. Directly below sites biota cover is ~30%. The increase is mainly attributed to an increase in barnacle concentrations, in 'D'

WILDLIFE OBSERVATIONS Mussels are sparse, various age classes present.

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1	
Seabirds	1	2	
Waterfowl	1	1	
Gulls/kittiwakes	1	1	
Shorebirds	1	2	
Corvids	1	3	
Other birds	1 hummingbird	2	

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters	4 (all pups)		
Pinnipeds (specify)			
Is (specify)			

Shoreline subdivision map showing important biological features attached.

Team # 5

Date 12 May 1991

pg 2 of 8

Segment # FL-4

Tidal Height +2 → +5

Subdivision A

Biologist Crank

Sea State 0

Wind Speed / Direction < 5 knots / west

Comments (cont.)

The MITZ below areas (C) and (D) has ~50% biota cover. Barnacles dominant the surface sediments with a mod. concentration. Limpets and *Littorina* also have moderate concentrations. *Littorina* egg masses are common. *Fucus* and *Endocladia* (algae) are both sparsely concentrated. Around the boulder bases, various ages of intergravel mussels are sparsely concentrated. Nematode and Oligochaete worms are also present.

(E) Area is located in the UITZ. There is ~10% barnacle cover on the surface sediments with the site. Below site 1m, there is a *Fucus* patch with sporlings and mature conceptacles. The MITZ is similar to that described for areas (C) and (D).

(F) Area is located in the SUPRA on a boulder on a tombelow. There is less than 1% biota cover within the site including: *Littorina*, limpets, and *Fucus*. The *Fucus* plants are not yet reproductively active. MITZ biota similar to that described for (C) and (D). *Fucus* is a bit more prominent. Biota cover ranges from 30-50%, increasing in density toward area (G).

Team # 5

Date 12 May 1991

pg 3 of 8

Segment # FL-4

Tidal Height +2 $\rightarrow$ +5

Subdivision A

Biologist Crank

Sea State 0

Wind Speed / Direction <5 knots / West

Comments (cont.)

(G) Area is located in the UITZ; also includes pit 6.

There is ~10% biota cover within the site including: sparse barnacles that tightly seal their inner plates when stimulated, and sparse intergravel mussels of various age classes. Directly below site, to the water (~+2 tide) mussel bed density increases to moderate. About a 1/3 of the mussels are juveniles (post-spill age). The LITZ is a clam bed dominated by Macoma (bent-neck clams); Prototheca (little-neck) is also present. Otter digs are prominent throughout clam bed.

Clam and mussel beds are sensitive to trampling. If treatment should occur in this area, transportation to the sites in the UITZ should be done at a +6' tide or higher to protect the beds.

(H) Area is located in the UITZ on the exposed face of a boulder.

Biota cover within the site is ~20% including: sparse barnacles with spat. Barnacles tightly sealed their inner plates when stimulated. Sparsely concentrated Littorina and rare juvenile mussels also present in site. Limpets were observed on oil. Ten centimeters below site there are sparse Fucus sporlings. Two meter below, in the MITZ, biota cover is ~40%. Algae is dominant with Fucus, Scytosiphon, Odonthalia, Ulva and filamentous greens.

Team # 5

Segment # FL-4

Subdivision A

Sea State 0

Date 12 May 1991

pg 4 of 8

Tidal Height +2 → +5

Biologist Crank

Wind Speed / Direction <5 knots / West

Comments (cont.)

(I) Area is a band, across boulders, in the ULTZ. Biota cover is ~20% including: a sparse concentration of mussels with various ages; a rare to sparse concentration of barnacles with a recent spat settlement; moderate Littorina; sparse limpets and patches of Fucus. Below the site, from the base of the boulder, crossing the beach, is a moderate to densely concentrated intergravel mussel bed with various age classes.

(Pit 5) Within 10 m of the pit there are rare to sparsely concentrated barnacles. 10 m below pit is the top of the intergravel mussel bed described in (I). The ULTZ is a clam bed foraged by otters.

(J) Area is located in the ULTZ. Biota within site is similar to area (I). Below the site there is a patch of 'stipe-only' Fucus 1x2 m. Fucus sporelings are present around the edges of the stipe patch. Also present below the site are dense to moderately concentrated limpets and Littorina. Littorina egg masses are common.

Team # 5

Segment # FL-4

Subdivision A

Sea State 0

Date 12 May 1991

Tidal Height +2 to +5

Biologist Crank

Wind Speed / Direction < 5 knots / west

pg 5 of

Comments (cont.)

(K) Area is located in the ULTZ and MITZ. Within the site there is ~10% biota cover of sparse barnacles, Littorina and limpets. Lower in the MITZ concentrations increase to moderate and cover increases to ~50%. Littorina egg masses are common. Rare Fucus is also present.

(L) Area is located in the ULTZ. Within the site, sparsely concentrated barnacles, limpets and Littorina and rarely concentrated mussels and Fucus are present. Biota cover is 20%. Percent biota cover remains constant to water line. At the +2' tide level Fucus and mussels increase to a sparse concentration and Littorina are dense.

(M, N) Areas are found in the SUPRA and high ULTZ. Sprouting rye grass, moss and black lichen are found within the site. In the MITZ below the sites, there is a moderately concentrated, intergravel mussel bed; a sparse concentration of barnacles and a 20x15m Fucus bed NE of stream with dense Littorina and limpets. Before the Fucus bed biota cover is ~30%; in the Fucus bed biota cover is ~50%. Below the Fucus is a clam bed with other digs. Young Macoma clams were present.

Team # 5
Segment # FL-4
Subdivision A
Sea State 0

Date 12 May 1991 pg 6 of 8
Tidal Height +2 → +5
Biologist Crank
Wind Speed / Direction <5k/W

Comments (cont.)

- (O) Area is in the UITZ above Fucus patch described in (M: N). Within the site biota is similar to area (I). Barnacles are the dominant species. Biota cover is 20%.
- (P) Area is located in the MITZ. There are: sparse barnacles (several age class); moderate Littorina and limpets; a sparse to moderately concentrated intercobble mussel bed (several age classes). Just below the site is the top edge of the clam bed. The area is covered with many empty clam and mussel shells and hash. Typical of a low energy beach.
- Pit #9 Pit is located in the UITZ. There are rare to sparsely concentrated barnacles located within 10m of the pit.
- (Q) Area is located in the UITZ (includes pit #9). There are barnacles within the site covering from <1% to 10% of the surface sediments. Two meters below the site, barnacles cover ~20% of the surface. Sparse Littorina, limpets and mussels are also present. Ten meters below the site, in the MITZ, there is a moderate to sparsely concentrated intercobble mussel bed and barnacle cover. Littorina are dense to moderate and Fucus is sparse to rare with maturing conceptacles. Biota cover is 30-50%.

Team # 5
Segment # FL-4
Subdivision A
Sea State 0

Date 12 May 1991
Tidal Height +2 → +5
Biologist Crank
Wind Speed / Direction 25 knots/W

pg 7 of 8

Comments (cont.)

- (R) Area is located in the U1TZ. Within the area there is a sparse barnacle concentration. Biota cover is 10%. Below the site, in the M1TZ, there is moderately concentrated intercobble mussels and Littorina and sparsely concentrated barnacles and Fucus. Biota cover is 50%.
- (S) Area is on a gravel/cobble pocket beach, located high in the U1TZ. No macrobiota was located in the area or around pit #10. Below the site there is a rare barnacle concentration. Low in the M1TZ there are intercobble mussels, and along the bordering rock faces moderate barnacles, and sparsely concentrated mussels and Fucus cover ~30% of the rock face.
- (T) Area is located in the SUPAA and U1TZ. Sparsely concentrated biota cover ~20% of the sediment surface. Recruits were observed in the barnacle, mussel and Littorina populations. In the nearshore there is an eelgrass and a Laminaria kelp bed.

Team # 5
Segment # FL-4
Subdivision A
Sea State 0

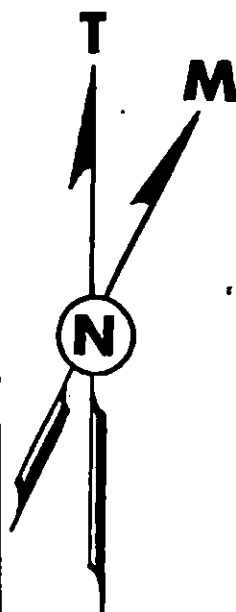
Date 12 May 1991
Tidal Height +2 $\rightarrow$ +5
Biologist Crank
Wind Speed / Direction <5 knots / u

Comments (cont.)

- (U) Area is a band in the U1Z along a rockface. Sparsely concentrated barnacles are the dominant species within the site. The animals tightly sealed their inner cover when stimulated and a recent spat settlement is present. Tar spat algae and sparse Littorina are also present. Biota cover varied between 10-20%. Within 1 m below the site there are mussels of various ages and a moderate barnacle concentration. Biota cover is 50%.
- (V) Area is located in the U1Z. Within the site there are rare barnacles covering <1% of the surface sediments. Below the site, barnacles are sparse to moderate, a recent settlement is present; Littorina are in dense aggregates with egg masses and in association with hermit crabs; mussels are sparse. Biota cover is 50%. On bedrock there is sparse Fucus with sporeling.

In this subdivision recruitment was observed in the Fucus, Littorina, barnacle, mussel and clam populations.

MA 1991
 06 SKETCH MAP Bio Sketch Map
 GREG CHANEY & Crank
 TEAM 5
 SEGMENT: FL 4 A
 DATE: MAY 12 1991
 AIR P.N. PIMCOOS 193



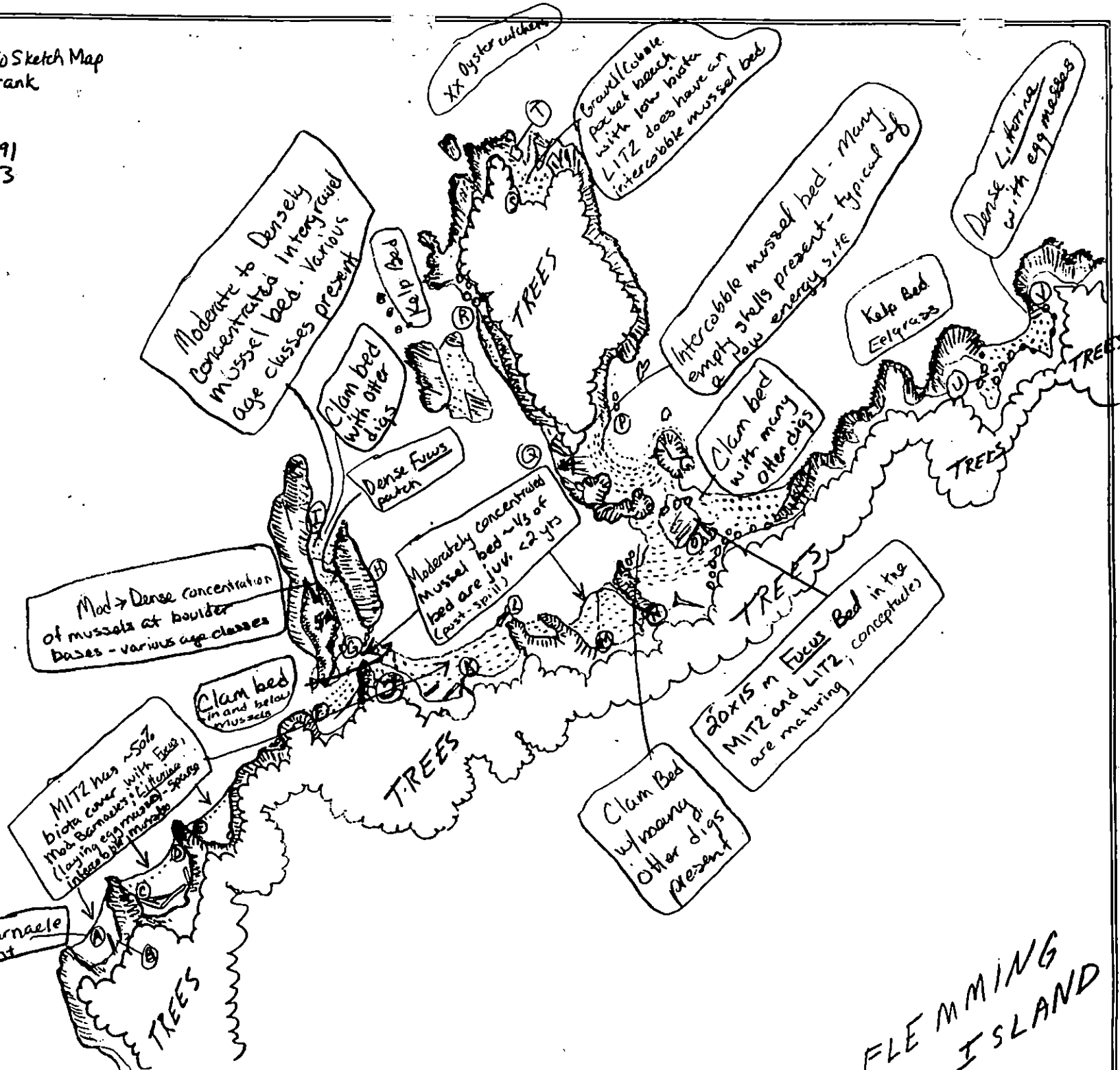
LEGEND

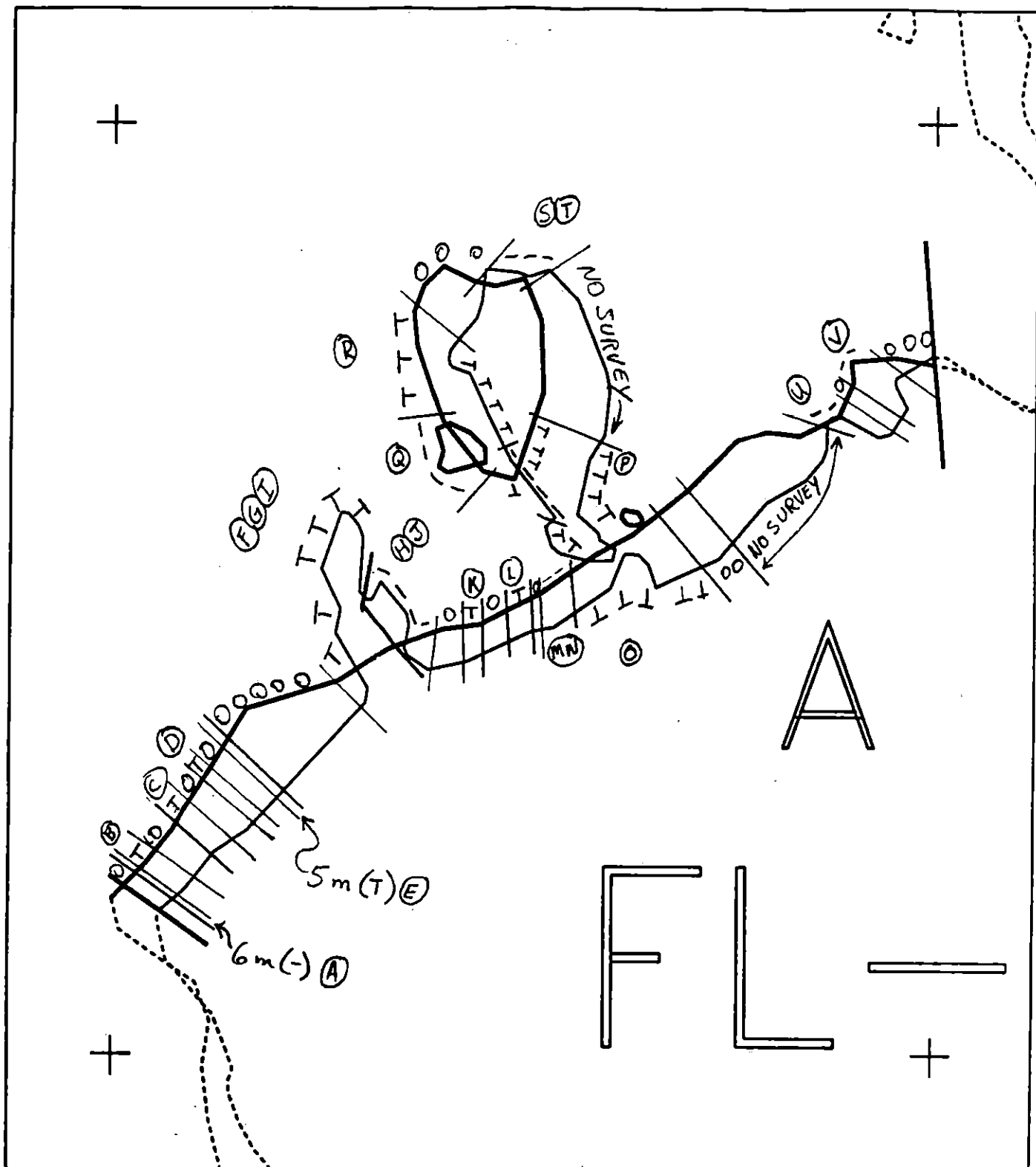
BEDROCK	
BOULDERS	
FINE BED.	
DRIFT LOG	
GRASS	
BRUSH	
FOREST	
OILED PIT	
NO OIL PIT	
PHOTO	

SCALE

80 METERS

APPROXIMATELY





XXXX	Wide	FL004 A ADEC Subsegment Length: 1318m METERS 0 100 200 AK State Plane Zone 4 pr1804a	Subdivision Field Map Map Key: PWSFL004A Name: <u>CHANEY</u> Date: <u>MAY 12 '91</u> Date Entered:
////	Medium		
----	Narrow		
TTTT	Very Light		
0000	No Oil		

revised 5.19.91 gy
Reviewed: F.W. 5/24/91

1991 MAYSAP EVALUATION

SEGMENT: FL 004 SUB: A REGION: PWS SURVEY DATE: 5/12/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) RESTRICTED 3/1 - 9/15

Ecological/Constraints (see page two for details) Eagle nest, Anadromous stream

ARCHAEOLOGICAL CONSTRAINTS:

If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO Signature: _____ Date: _____

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL: _____

TAG: _____

FOSC: _____

TAG APPROVAL DATE: _____

FOSC APPROVAL DATE: _____

ADEC _____

FOSC _____

EXXON _____

USCG _____

NOAA _____

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

Eagle Nest: Access restricted from 3/1 to 9/1. USF&WS authorization required. Maintain 1000' vertical and 1/4 mile horizontal buffer.

Anadromous Stream: Unlimited treatment up to stream bank between May 15 and July 10. ADF&G approval required for work after July 10. Fish Habitat Permit required for instream work. ADF&G approval required for bioremediation within 100 meters of anadromous stream after July 10.

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 5 SEGMENT FL-4 SUBDIVISION A DATE 5 / 12 / 91

ADEC

NAME

John Hayes

SIGNATURE

[Signature]



NTR

☒ TREATMENT RECOMMENDED

Areas M-N-O - Manual pickup of AP.

Area of pit #5 - Expose sub-surface by manually raking away pebbles. Manual removal of OP sediments in this 5m² area. Good area for small crew.

EXXON

NAME

JOHN DEAN

SIGNATURE

[Signature]



NTR

ALL SURFACE OIL OBSERVED WAS WELL WEATHERED AND PRESENTS LITTLE THREAT, MOST WAS IN UNRECOVERABLE STATE ON LOCATION.

LANDMANAGER

NAME

Steve WARD

OF

CVC

SIGNATURE

[Signature]



NTR

THIS AREA NEEDS ALOT OF MANUAL AREAS M-N-O NEED HEAVY MANUAL. THIS AREA HAS BEEN WORKED BEFORE AND SHOULD BE FINISHED. PIT #5 SHOWED HEAVY-SUB SURFACE AND SHOULD BE CLEANED UP, THIS SUB-SURFACE AREA IS 20' SQUARE AND WILL LIQI KI WHEN THE SUN COMES OUT. CHENEQA LOCAL RESPONSE
NO BIO.

USCG/NOAA

NAME

DREHER/CLINE

SIGNATURE

CWO R. L. Dreher



NTR

FURTHER CLEAN UP OF THIS SEGMENT WOULD CAUSE MORE ENVIRONMENTAL HARM THAN THE OIL TO BE REMOVED.

AP FOUND AT SITE G WAS RECOVERED, HOWEVER @ SITE M & N AP WAS TOO EXTENSIVE FOR PICKUP DURING SURVEY. FURTHER MANUAL TREATMENT IS DESIRABLE. REST OF OILING DOES NOT APPEAR TO WARRANT FURTHER TREATMENT. DWC

TEAM NO.

OG CHANEY

BIO CRANK

SEGMENT FL-4

ADEC HAYES

LANDMANAGER WARD for CUC

SUBDIVISION A

EXXON DEAN

USCG/NOAA DREHER/CLINE

DATE MAY 12 /91TIME 17:45 to 20:20TIDE LEVEL 2.0 ft. to 3.0 ft.ENERGY LEVEL: ☐ H ☐ M ☒ LSURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELOWEATHER: ☒ SUN ☒ CLOUDS ☐ FOG ☐ RAIN ☐ SNOWTOTAL LENGTH SHORELINE SURVEYED: 1098 mNEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONEEST. OIL CATEGORY LENGTH: W — m M — m N 210 m VL 360 m NO 528 m US 210 m

L O C	SURFACE OIL CHARACTER										SURFACE SEDIMENT TYPE	SHORE SLOPE VHML	AREA		ZONE				NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO			WIDTH m	LENGTH m	S	UI	MI	LI	
A						B					B	M	0.1	6		✓			Bath tub Ring
B						T					B		10	15		✓			Pocket Cove
C						S					R	V	1	15		✓			Remnant CT rock face
D						S					BR	H	2	10		✓			
E						T					B	H	5	5		✓			Random splatters
F						T					B	H	1	4	✓	✓			Random splatters
G	T			T	S	S					RBCPG	M-L	10	50	✓	✓			Several AP patties recovered
H					S	S					R	V	10	2		✓			Weathered CT&CV
I					S	S					R	V	2	50		✓			" " "
J					S	S					RB	H	2	30		✓			Random Splatters
K					S	S					RB	M	3	15		✓	✓		Random Splatters
L					S	S					RB	H	2	25		✓			Random Splatters
M	P			S							B	M	2	5	✓				Patchy AP
N	S										BCP	M	2	20		✓			Patches AP by Stream
O	T			T	T	T					BC	L	5	70		✓			Random Splatters
P	T			T	T	T					BC	L	2	25			✓		Random Splatters

DISTRIBUTION: C = 91-100%; B = 51-90%; P = 11-50%; S = 1-10%; T = <1%

SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE

PHOTO ROLL # MAYSAP-

5 - 13FRAMES 13-2

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI		
1	25							✓	-		-			✓			BC-BCP	
2	30							✓	-		25	N		✓			P-PGS	
3	35							✓	-		-			✓			BCP-PGB	
4	15			✓					2-7	Y	10	B		✓			C-CGMR	Approx 2 m ²
5	15	✓							10-13	Y	-	-		✓			BP-BGPR	Approx 5 m ²
6	15					✓			10-15		10	S		✓			CPG-CGB	
7	40							✓	-		35	N		✓			P-PB	5 pits no oil
8	30							✓	-		-	-		✓			PC-PG	
9	15			✓					0-4		-	-		✓			CP-CPG	Not Extensive

SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

OG COMMENTS: AREA (G) Broad band along tombolo to bedrock ridge on adjacent island. Weathered splatters of CT&CV on bedrock. Small patches SOR/H (patties AP recovered) on pebbles & boulders. Sub surface oil on shallow bedrock in poorly sorted sediments. Thin lense OP on bedrock in area of pit 5. Approximately 5m². AREAS (M) & (N) DISTINCT PATTIES IN A BAND. (N) BEGINS AT SMALL STREAM & RUNS N.E. ~20m.

revised 5.19.91 94

Reviewed: F.W. 5/21/91

PAGE _____ OF _____

DATE May 112 191

PHOTO ROLL # MAYSAP- 5 - 13 FRAMES 13

SHEEN COLOR: B = BROWN: R = RAINBOW: S = SILVER: N = NONE

IN AREA (V) THERE WAS HEAVY SOR IN THE HIGHEST POINT IN THE FISSURE COVE BETWEEN BOULDERS FOR A TOTAL OF $\sim 0.5m^2$

revised 5.19.91. 9y
REVIEWED: F. 5/16

MAYSAP 1991
 OG SKETCH MAP
 GREG CHANEY
 TEAM 5
 SEGMENT: FL 4 A
 DATE: MAY 12 1991
 AIR P.#: PIMC BOS 193



LEGEND

BEDROCK	
BOULDERS	
FINE BED.	
DRIFT LOG	
GRASS	
BRUSH	
FOREST	
OILED PIT	
NO OIL PIT	
PHOTO	

SCALE

80 METERS

APPROXIMATELY CAVE

(A) CT 70%
 Bath tub
 Ring
 0.1x6m

(C) 1x15m
 CT 5%

(F) RANDOM
 SPLATTERS
 TRACE CT
 1x4m

(E) 5x5m CT TRACE

(D) 2x10m CT ~3%

(B) 10x15m Pocket Cove
 CT TRACE SPLASH
 ON BOULDERS

(K) 3x15m
 CT 5%
 CV 3%

(J) 2x30m
 CT 3%
 CV 10%

(L) 2x25
 CT 2%
 CV 2%

(M) 2x5m
 SOR 10%
 AP 20%

(N) 2x20m
 AP 10%

(O) 5x70
 AP
 SOR
 CV
 CT

(U) 0.5x20m
 CT 15%
 CV 15%

(P) 2x25m
 AP, SOR
 CT, CV
 TRACE

(V) 1x25m
 SOR 2%
 CV 5% CT 5%

(S) 0.5x32m
 CT 10%
 CV 10%
 SOR ~5%

(R) 1x80
 CT, CV
 TRACE

(Q) 1x70m
 CT 15%
 CV 10%
 SOR TRACE

(H) CV 5%
 CT 5%

(I) 2x50m
 CV 2%
 CT 5%

(G) 10x50
 SOR <1%
 CV ~2%
 CT ~2%
 AP TRACE

Several
 AP Patties
 Recovered
 Random
 Splatters CT/CV

SPLATTERED ON BEDROCK
 10x2m

SPLATTERED
 ON BEDROCK



FLEMING
 ISLAND

MAY 3AP BIOLOGICAL SUMMARY FORM

pg 1 of 2

TEAM # 5
 SEGMENT # FL-4
 SUBDIVISION A
 SEA STATE 0
 PHOTOGRAPHS: ROLL #
 DATE 6 MAY 1991
 TIDAL HEIGHT (Range) +2 → TS
 BIOLOGIST CRANK
 WIND SPEED/DIRECTION < 5 knots / 110°
 FRAME #

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):

(A) Area is 8m x 6m 'bath tub' high in MITZ along a pocket beach. Within the site there is black lichen and moss covering <1% of the surface sediments. The MITZ has ~50% biota cover. Barnacles are dominant with a moderate concentration of adults and recent set. Fucus is present at the waters edge ~4'. Littorina and limpets are sparse. Biota cover is ~30%.

(B) Area is located high in MITZ along a pocket beach. Within the site there is black lichen and moss covering <1% of the surface sediments. The MITZ has ~50% biota cover. Barnacles are dominant with a moderate concentration of adults and recent set. Fucus is present at the waters edge ~4'. Littorina and limpets are sparse.

(C,D) Areas are bands located in the MITZ along a vertical rock faces. There is approximately a 20% biota cover within the sites including: a sparse concentration of adult barnacles, a rare concentration of barnacle spores, a sparse concentration of Littorina, a rare concentration of juvenile (post-spill age) mussels and a sparse concentration of Fucus with sporadic and maturing conceptacles present. Approx. 5% of the Fucus plants appear unhealthy with torn blades and 'stipe-only' plants, the remaining 95% appear healthy. Directly below sites biota cover is ~30%. The increase is mainly attributed to an increase in barnacle concentrations, in 'D' mussels are sparse, various age classes present.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1	
Seabirds	1	2	
Waterfowl	1	1	
Gulls/Kittiwakes	1	1	
Shorebirds	1	2	
Corvids	1	3	
Other birds	1 - hummingbird	2	

LAND MAMMALS

MARINE MAMMALS	# OBSERVED	SPECIES	# OBSERVED
Sea Otters	4 (1 pup)		
Pinnipeds (specify)			
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

Team # 5

Date 12 May 1991

pg 2 of

Segment # FL-4

Tidal Height +2 → +5

Subdivision A

Biologist Crank

Sea State 0

Wind Speed / Direction < 5 knots / wa

Comments (cont.)

The MITZ below areas (C) and (D) has ~50% biota cover. Barnacles dominant the surface sediments with a mod. concentration. Limpets and Littorina also have moderate concentrations. Littorina egg masses are common. Fucus and Endocladia (algae) are both sparsely concentrated. Around the boulder bases, various ages of intergravel mussels are sparsely concentrated. Nemertean and Oligochaete worms are also present.

(E) Area is located in the UITZ. There is ~10% barnacle cover on the surface sediments with the site. Below site 1m, there is a Fucus patch with sporlings and mature conceptacles. The MITZ is similar to that described for areas (C) and (D).

(F) Area is located in the SUPRA on a boulder on a tombelow. There is less than 1% biota cover within the site including: Littorina, Limpets, and Fucus. The Fucus plants are not yet reproductively active. MITZ biota similar to that described for (C) and (D). Fucus is a bit more prominent. Biota cover ranges from 30-50%, increasing in density toward area G.

Team # 5

Date 12 May 1991

pg 3 of

Segment # FL-4

Tidal Height +2 → +5

Subdivision A

Biologist Crank

Sea State 0

Wind Speed / Direction < 5 knots / W

Comments (cont.)

(G) Area is located in the UITZ; also includes pit 6.

There is ~10% biota cover within the site including: sparse barnacles that tightly seal their inner plates when stimulated, and sparse intergravel mussels of various age classes. Directly below site, to the water (~+2 mussel bed density increases to moderate. About a 1/3 of the mussels are juveniles (post-spill age). The LITZ is a clam bed dominated by Macoma (bent-nose clams); Prototheca (little-neck) is also present. Otter digs are prominent throughout clam bed.

Clam and mussel beds are sensitive to trampling. If treatment should occur in this area, transportation to the sites in the UITZ should be done at a +6' tide or higher to protect the beds.

(H) Area is located in the UITZ on the exposed face of a boulder.

Biota within the site is ~20% including: sparse barnacles with spat. Barnacles tightly sealed their inner plates when stimulated. Sparsely concentrated Littorina and rare juvenile mussels also present in site. Limpets were observed on oil. Ten centimeters below site there are

sparse Fucus sporlings. Two meter below, in the MITZ, biota cover is ~40%. Algae is dominant with Fucus, Scytosiphon, Odonthalia, Ulva and filamentous greens.

Team # 5
Segment # FL-4
Subdivision A
Sea State 0

Date 12 May 1991 pg 4 of
Tidal Height +2 → +5
Biologist Crank
Wind Speed / Direction <5 knots / W

Comments (cont.)

- (I) Area is a band, across boulders, in the ULTZ. Biota cover is ~20% including: a sparse concentration of mussels with various ages; a rare to sparse concentration of barnacles with a recent spat settlement; moderate Littorina; sparse limpets and patches of Fucus. Below the site, from the base of the boulder, crossing the beach, is a moderate to densely concentrated intergravel mussel bed with various age classes.
- (Pit 5) Within 10 m of the pit there are rare to sparsely concentrated barnacles. 10 m below pit is the top of the intergravel mussel bed described in (I). The ULTZ is a clam bed foraged by others.
- (J) Area is located in the ULTZ. Biota within site is similar to area (I). Below the site there is a patch of 'stipe-only' Fucus 1x2 m. Fucus sporelings are present around the edges of the stipe patch. Also present below the site are dense to moderately concentrated limpets and Littorina. Littorina egg masses are common.

Team # 5

Segment # FL-4

Subdivision A

Sea State 0

Date 12 May 1991

Tidal Height +2 to +5

Biologist Crank

Wind Speed / Direction < 5 knots /

pg 5

Comments (cont.)

(K) Area is located in the U1TZ and MITZ. Within the site there is ~10% biota cover of sparse barnacles, Littorina and limpets. Lower in the MITZ concentration in rock to moderate and cover increases to ~50%. Littorina and mussels are common. Rare Fucus is also present.

(L) Area is located in the U1TZ. Within the site, sparsely concentrated barnacles, limpets and Littorina and rarely concentrated mussels and Fucus are present. Biota cover is 20%. Percent biota cover remains constant to water line. At the +2' tide level Fucus and mussels increase to a sparse concentration and Littorina are dense.

(M, N) Areas are found in the SUPRA and high U1TZ. Sprouting rye grass, moss and black lichen are found within the site. In the MITZ below the sites, there is a moderately concentrated, intergravel mussel bed; a sparse concentration of barnacles and a 20x15m Fucus bed NE of stream with dense Littorina and limpets. Before the Fucus bed biota cover is ~30%. In the Fucus bed biota cover is ~50%. Below the Fucus is a clam bed with other digs. Young Macoma clams were present.

Team # 5
Segment # FL-4
Subdivision A
Sea State 0

Date 12 May 1991 pg 6 of
Tidal Height +2 → +5
Biologist Crank
Wind Speed / Direction <5k/w

Comments (cont.)

- (O) Area is in the UITZ above Fucus patch described in (M: N). Within the site Biota is similar to area (I). Barnacles are the dominant species. Biota cover is 20%.
- (P) Area is located in the MITZ. There are; sparse barnacles (several age classes), moderate Littorina and limpets; a sparse to moderately concentrated intercobble mussel bed (several age classes). Just below the site is the top edge of the clam bed. The area is covered with many empty clam and mussel shells and hash. Typical of a low energy beach.
- Pit #9. Pit is located in the UITZ. There are rare to sparsely concentrated barnacles located within 10m of the pit.
- (S) Area is located in the UITZ (includes pit #9). There are barnacles within the site covering from <1% to 10% of the surface sediments. Two meters below the site, barnacles cover ~20% of the surface. Sparse Littorina, limpets and mussels are also present. Ten meters below the site, in the MITZ, there is a moderate to sparsely concentrated intercobble mussel bed and barnacle cover. Littorina are dense to moderate and Fucus is sparse to rare with maturing conceptacles. Biota cover is 30-50%.

Team # 5
Segment # FL-4
Subdivision A
Sea State 0

Date 12 May 1991
Tidal Height +2 → +5
Biologist Frank
Wind Speed / Direction <5 knots/W

pg 7 of

Comments (cont.)

- (R) Area is located in the UITZ. Within the area there is a sparse barnacle concentration. Biota cover is 10%. Below the site, in the MITZ, there is moderately concentrated intercobble mussels and Littorina and sparsely concentrated barnacles and Fucus. Biota cover is 50%.
- (S) Area is on a gravel/cobble pocket beach, located high in the UITZ. No macrobiota was located in the area or around pit #10. Below the site there is a rare barnacle concentration. Low in the MITZ there are intercobble mussels, and along the bordering rock faces sparse barnacles, and sparsely concentrated mussels and Fucus cover ~30% of the rock face.
- (T) Area is located in the SUPAA and UITZ. Sparse concentrated biota cover ~20% of the sediment surface. Recruits were observed in the barnacle, mussel and Littorina populations. In the nearshore there is an eelgrass and a Laminaria kelp bed.

Team # 5
Segment # FL-4
Subdivision A
Sea State 0

Date 12 May 1991
Tidal Height +2 $\rightarrow$ +5
Biologist Crank
Wind Speed / Direction < 5 knots

pg 8.0

Comments (cont.)

(U) Area is a band in the ULTZ along a rockface. Sparse concentrated barnacles are the dominant species within the site. The animals tightly sealed their inner valves when stimulated and a recent spat settlement is present. Tar spat algae and sparse Littorina are also present. Biota cover varied between 10-20%. Within 1 m below the site there are mussels of various ages and a moderate barnacle concentration. Biota cover is 50%.

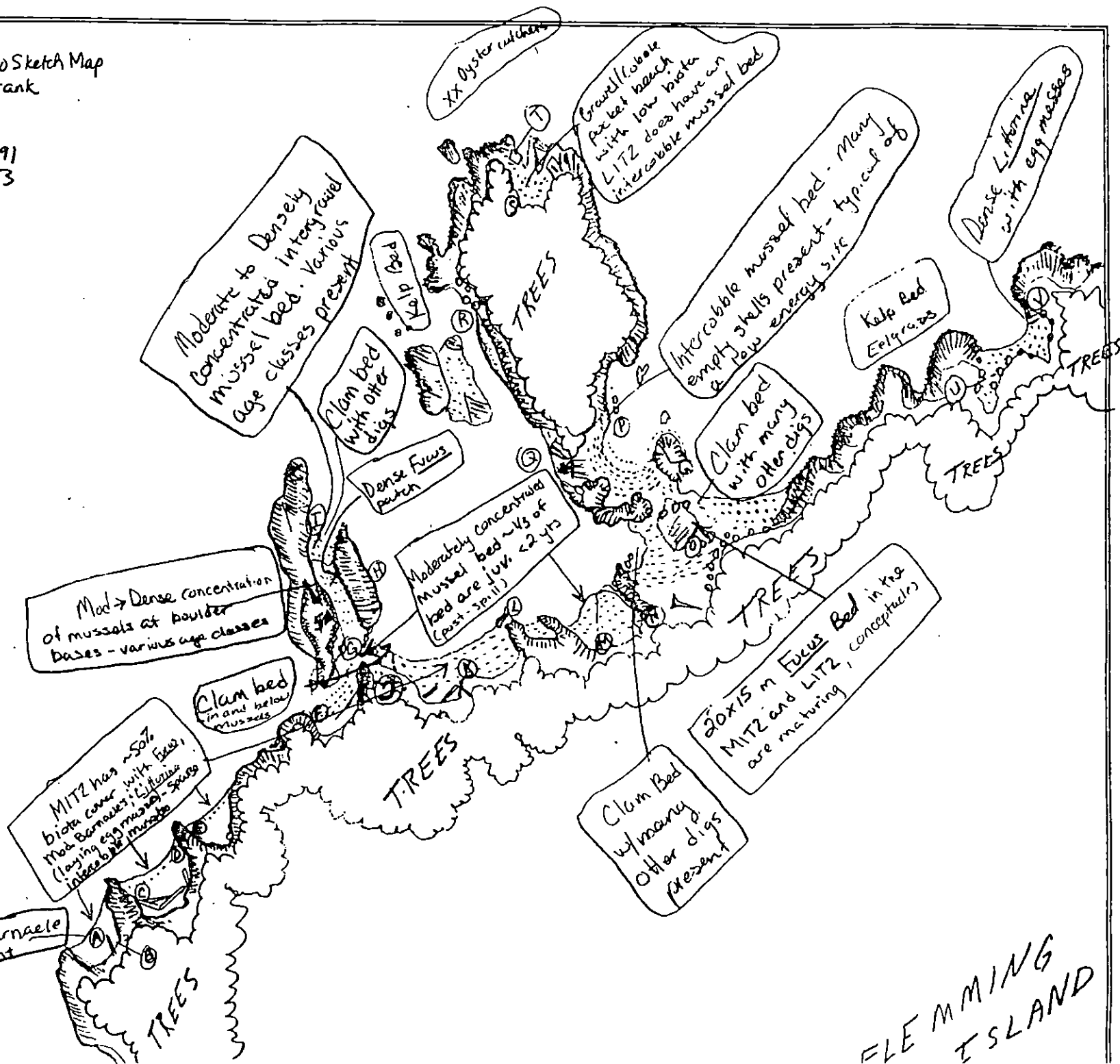
(V) Area is located in the ULTZ. Within the site there are rare barnacles covering < 1% of the surface. Below the site, barnacles are sparse to moderate, a recent settlement is present; Littorina are in dense aggregates with egg masses and in association with hermit crabs; mussels are sparse. Biota cover is 50%. On bedrock there is sparse Fucus with sporeling.

In this subdivision recruitment was observed in the Fucus, Littorina, barnacle, mussel and clam populations.

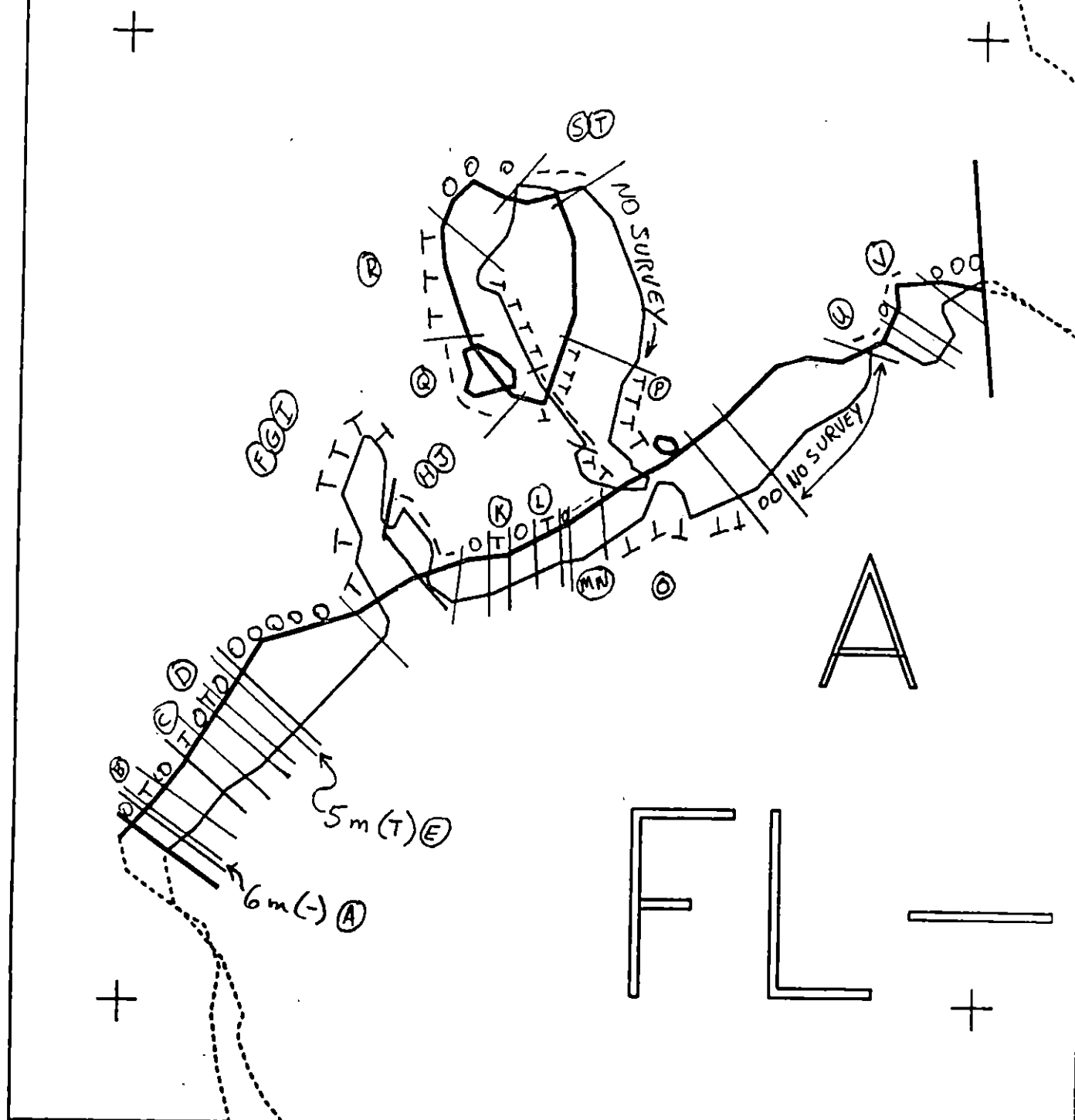
BEDROCK	
BOULDERS	
FINE BED.	
DRIFT LOG	
GRASS	
BRUSH	
FOREST	
OILED PIT	
NO OIL PIT	
PHOTO	

80 METERS

APPROXIMATELY



FLEMMING
ISLAND



XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

F L 004 A
 ADEC Subsegment Length: 1316m
 METERS
 0 100 200
 AK State Plane Zone 4
 p1004a

Subdivision Field Map
 Map Key: PWSFL004A
 Name: CHANEY
 Date: MAY 12 '91
 Date Entered:

revised 5.19.91 gy
 Reviewed: F.W. 5/24/91

1991 MAYSAP EVALUATION

SEGMENT: FL 004 **SUB:** B **REGION:** PWS **SURVEY DATE:** 5/5/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) RESTRICTED 3/1 - 9/1

Ecological/Constraints (see page two for details) Eagle nest

ARCHAEOLOGICAL CONSTRAINTS:

If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO Signature: _____ **Date:** _____

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL: _____

TAG: _____

FOSC: _____

TAG APPROVAL DATE: _____

FOSC APPROVAL DATE: _____

ADEC _____

FOSC _____

EXXON _____

USCG _____

NOAA _____

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

Eagle Nest: Access restricted from 3/1 to 9/1. USF&WS authorization required. Maintain 1000' vertical and 1/4 mile horizontal buffer.

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 5 SEGMENT FL-4 SUBDIVISION B DATE 5/5/91

ADEC

NAME John Hayer SIGNATURE [Signature]

☐ NTR ☒ Treatment Recommended

Manual pickup in area K and on crest of Tombolo also some SOR/MS west of Tombolo ^{area D+E} between boulders. Recommend CUC LRP for this site as all work is manual.

EXXON

NAME Martinez N.J. SIGNATURE [Signature]

☒ NTR Area looks good, + area "Area K" would be a good area for CUC. Local response as it does need some work.

LANDMANAGER

NAME Steve Ward OF CUC SIGNATURE [Signature]

☐ NTR AS/MS/MS picked up, Life Care on a few Rocks. Some needles. There is an area listed as Site #K that needs some manual clean-up. See OG Notes.

USCG/NOAA

NAME Dreher / Hodges SIGNATURE [Signature]

☐ NTR Tar balls and patches were found on major tombolo - most tar patches were picked up. Tombolo pits showed subsurface oil to the peat layer. Northern most point shows oil coverage in rock layer and heavily oiled beach grass patch. Manual labor (with raking) would reduce the oil in these specific spots in this segment.

TEAM NO. 8OG CHANEY/HARPERBIO CRANK/STOKERSEGMENT FL-4ADEC HAYESLANDMANAGER WARD for CVCSUBDIVISION BCOXON MARTINEZUSCG/NOAA DREHER/HODGESDATE 3 MAY
5/1 MAY/91TIME 12:30 to 1400 (3 MAY) TIDE LEVEL +1.5 ft. to +4.5 ft.TIME 10:15 to 11:30 (5 MAY) TIDE LEVEL +2.5 ft. to +1.0 ft. ENERGY LEVEL: ☐ H ☐ M ☒ LSURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELO WEATHER: ☐ SUN ☒ CLOUDS ☐ FOG ☒ RAIN ☐ SNOWTOTAL LENGTH SHORELINE SURVEYED: 1615 m NEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONEEST. OIL CATEGORY LENGTH: W 0 m M 46 m N 18 m VL 106 m NO 1445 m US 0 m

L O C	SURFACE OIL CHARACTER										SURFACE SEDIMENT TYPE	SHORE SLOPE VHML	AREA		ZONE				NOTES
	AP	MS	TB	SO	CV	CT	ST	FL	DB	NO			WIDTH m	LENGTH m	S	UI	MI	LI	
A						T					R	V	0.2	4		✓			DRIPS ON ROCK FACE
B						T					R	Y	0.2	25		✓			DRIPS ON ROCK FACE
C ₁	P										PG	M	4	20		✓			NE TOMBOLO RIDGE TOP
C ₂				S							PG	M	4	20		✓			" " " "
C ₃						S					PG	M	4	20		✓			" " " "
D ₁	T			T		S					PG	M	5	50		✓	✓		BELOW RIDGE TOP AT BAND
E ₁	S										B,C,P	M	5	25		✓			GREEN ALGAE ON BOULDERS
E ₂					S						B,C,P	M	5	25		✓			" " " "
E ₃						S					B,C,P	M	5	25		✓			" " " "
F ₁	S										B,C,P	M	1	4		✓			
F ₂				S							B,C,P	M	1	4		✓			
F ₃						S					B,C,P	M	1	4		✓			
G						P					BC	M	0.5	3		✓			
H							P				BC	M	0.5	3		✓			
I	S				S						CPG	M	5	4		✓			
J					T	T					R	V	5	15		✓			

DISTRIBUTION: C = 91-100%; B = 81-90%; P = 11-50%; S = 1-10%; T = <1% [CONTINUED]

SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE PHOTO ROLL # MAYSAR

5-9 22-24
3 10 1-4
5-12 FRAMES 1-B

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI		
1	15							X	-	-	-	-		X			CP/CPG	
2	10		X						0-3	Y	5	BR		X			CB/CPG	
3	10			X					0-5	Y	5	BR		X			CB/CPG	
4	10					X			0-5	Y	5	BR		X			CP/CPG	
5	20							X	-	-	-	-		X			PG/SG	
6	20							X	-	-	-	-		X			PG/SG	
7	30							X	-	-	25	N-		X			PG/SG	
8	15							X	-	-	-	-			X		PG/SG	
9	15							X	-	-	10	N				X	PG/SG	

SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

OG COMMENTS:

This segment consists primarily of two small embayments with low wave exposure.

Surface oiling is confined primarily to the southern of the two embayments with several pockets off AP and SOR. These pockets (Locations C-F; H) are on the northeast-facing beaches with an estimated

REVISOR: MC 5/5/91 CG 10/6
EY revised, May 8

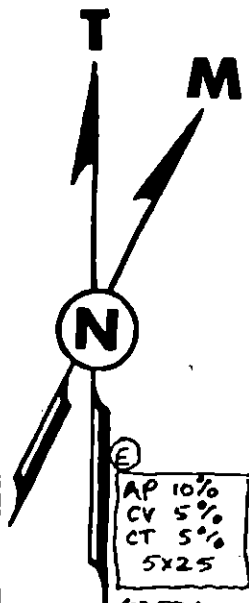
SHEEN COLOR: B = BROWN: R = RAINBOW: S = SILVER: N = NONE

Reviewed ^{pk} 5/8/91
OG 3 of 6
ES reviewed, May 8

MAY 08 1991
 06 08 CH MAP
 GREG CHANEY
 TEAM 5
 SEGMENT: FL 4 B
 DATE: 5-3-91
 AIR P.N.: PIM-C-005-192

OILED BEACH GRASS IN
 SUPRATIDAL ZONE

SEE LOCATION
 MAP FOR
 ADDITIONAL
 DETAIL



LEGEND

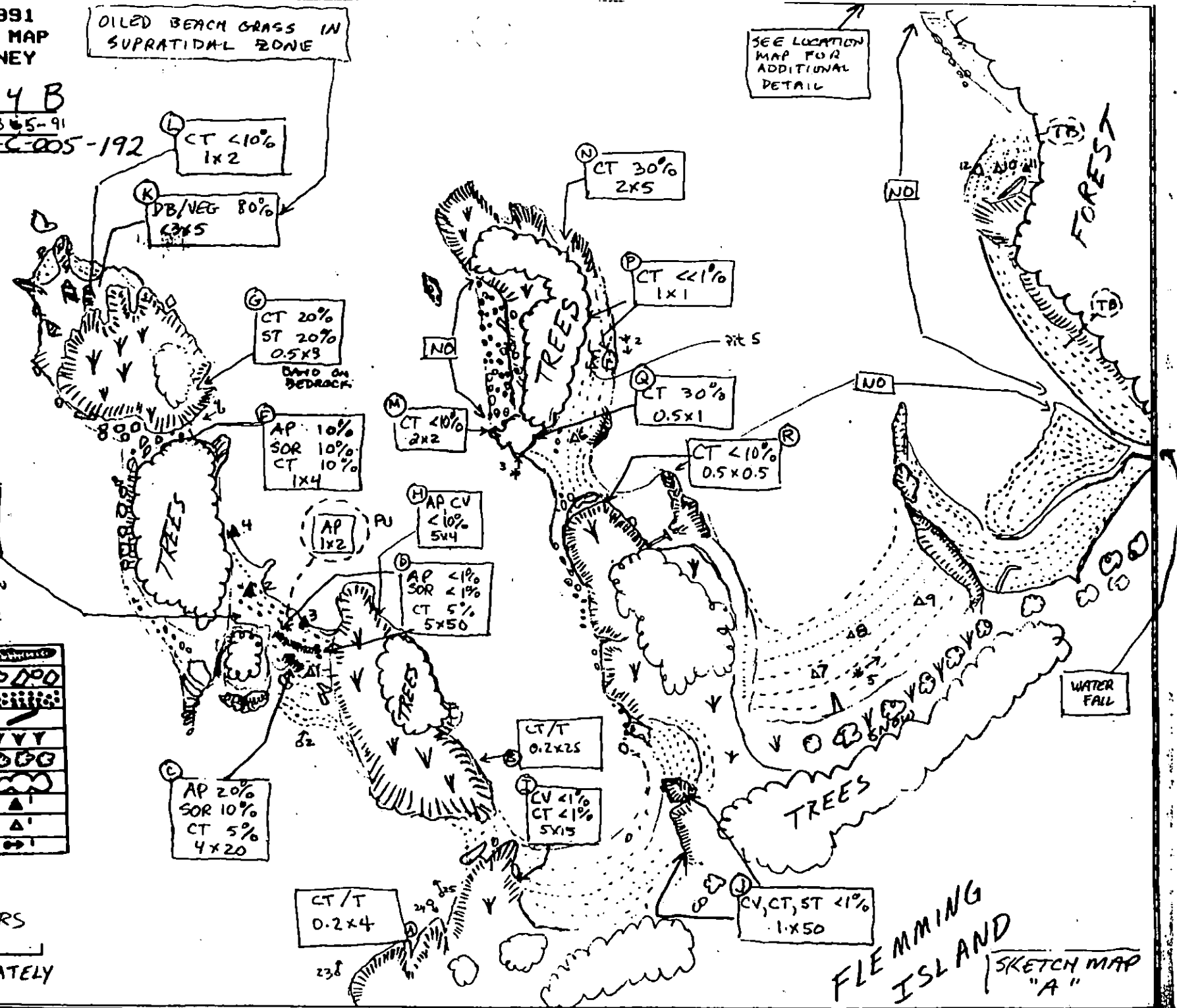
BEDROCK	
BOULDERS	
FINE SED.	
DRIFT LOG	
GRASS	
BRUSH	
FOREST	
OILED PIT	
NO OIL PIT	
PHOTO	

SCALE

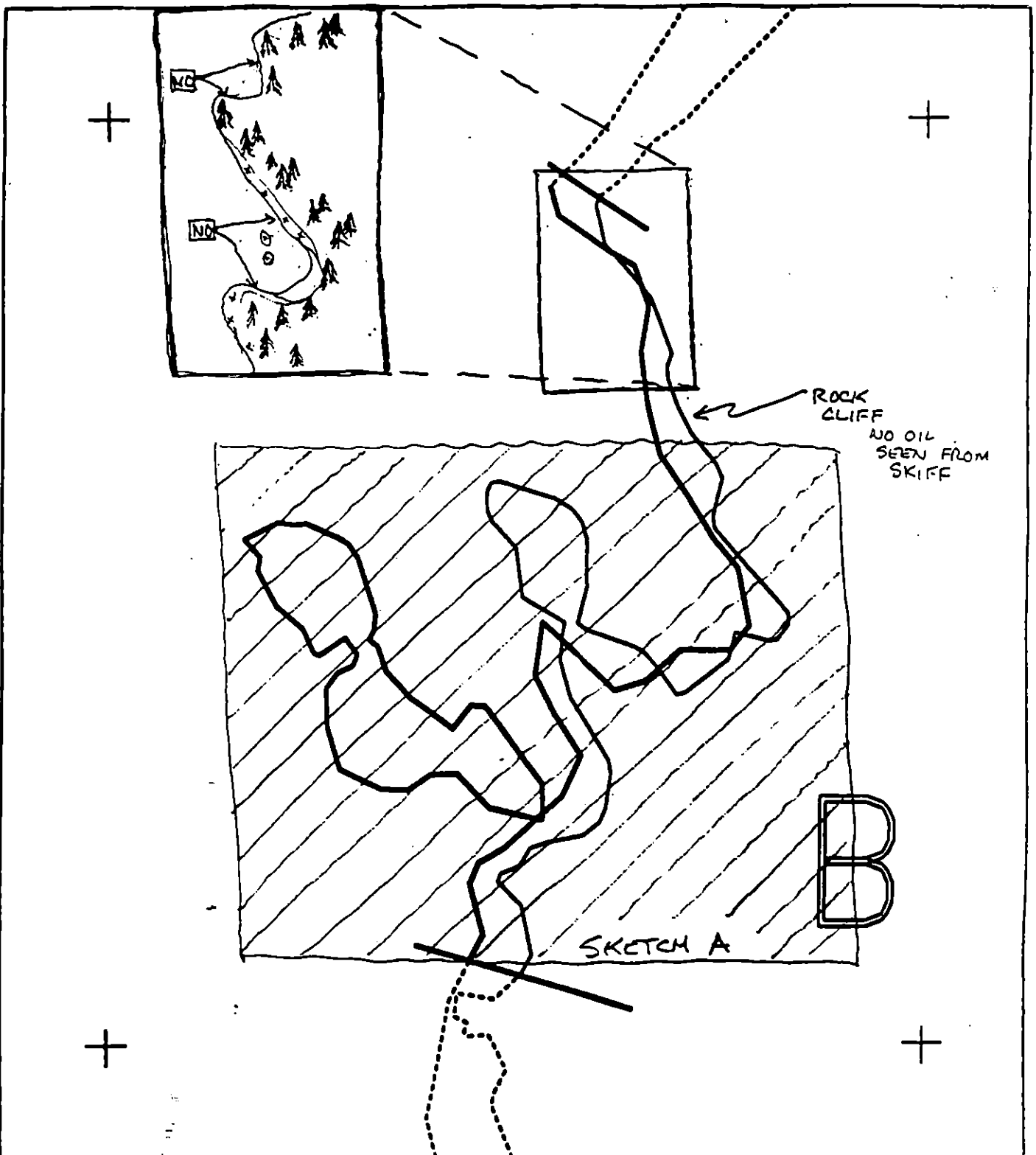
60 METERS

APPROXIMATELY

70
 51
 1



REVIEWING 5/19/91 ET revised, May 8



XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

FL004 B
 ADEC Subsegment Length: 1015m
 METERS
 0 100 200
 AK State Plane Zone 4
 110845

Subdivision Field Map
 Map Key: PWSFL004B
 Name: HARPER
 Date: 5 MAY 91
 Date Entered:

REVIEWERS: 5/8/91 MC

OF 4

EE reviewed, May 8

NAYSAP BIOLOGICAL SUMMARY FORM

U-10 107-1

TEAM # 3 DATE 5/3/91 & 5/5/91
 SEGMENT # FL 4 TIDAL HEIGHT (Range) 2-5' & 3-4'
 SUBDIVISION B BIOLOGIST Stoker/Crank
 SEA STATE 1-3' & 0-1' WIND SPEED/DIRECTION SE 10-20 & NE 0-5
 PHOTOGRAPHS: ROLL # FRAME #

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):

Subdivision consists of generally low energy mixed substrate beaches of rubble/cobble/boulder/bedrock separated by rock headlands. A small stream traverses the beach in the W. portion of the subdivision.

Biota generally sparse in the upper intertidal (sparse barnacles, limpets, Fucus), increasing down slope in both abundance and diversity. Biota on rubble/cobble/boulder beaches (MTZ & below) characterized by variable densities of patchily distributed Fucus, filamentous green algae, Sargassum, and barnacles/spat, moderate densities Littorina with egg masses, generally sparse limpets (some clusters of small individuals), amphipods, and sometimes Nucella, Scallops and oligochaetes. Sparse patches of attached Mollusks were found on larger boulders, with widespread and variable-density interbedded patches in rubble/cobble. Clam shells (Saxidomus, Prototheca, Macoma) are common in the MTZ, as are pits dug by sea otters foraging for clams.

Biota on rock headlands characterized by variable and often dense new-growth Fucus, barnacles and spat, Littorina, limpets, and generally sparse patches of small Mollusks.

Overall, biota appears relatively healthy and abundant. Considerable variability in abundance was noted throughout, apparently unrelated to general substrate type or vertical zonation.

Comments relating to specific areas or remaining oil are on summary form 2 and attached sheet?

WILDLIFE OBSERVATIONS TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	2	
Seabirds	2	3	
Waterfowl	Mergansers & Unident	~40	
Gulls/Kittiwakes	Kittiwakes, Glaucous-wing	~70	
Shorebirds	1	1	
Corvids			
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters	1	Doer SeaT	
Pinnipeds (specify)	Sea lions - 2		
Whales (specify)			

Shoreline subdivision map showing important biological features attached. PENNINGS: MK 578/91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 5 DATE 3 MAY 1991 pg 2 of 4
 SEGMENT # FL-4 TIDAL HEIGHT (Range) +2 → +5'
 SUBDIVISION B BIOLOGIST Biologist
 SEA STATE 1-3' WIND SPEED/DIRECTION 10-20 knots/SE
 PHOTOGRAPHS: ROLL # MAYSAP 9 FRAME # 25

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):

(A) Area is located high in URTZ on a vertical rock face. No intertidal macro-biota present within site. Approx. 1/2 m below site there is a sparse concentration of *Fucus* majority of plants are 'stipe-only'. The next 1/2 m drop has a sparsely concentration of *Fucus* sporlings. The LITZ has ~60% *Fucus* cover. Plants appear healthy.

(B) Area is located along a rockface in the URTZ. There is ~30% barnacle cover in the site. An oil stain is present on the shells. Animals tightly sealed their inner plates when stimulated. Directly below the site biota cover dropped to 20%. Barnacle concentrations lessen, however, juvenile mussels, *Fucus* sporlings, *Ulva* and *Scytosiphon* (alga) were present. Possible clam bed in the LITZ.

(C) Areas are located on a tombolow. Biota cover is ~10%. There is a rare to sparsely concentrated intercobble mussel bed. Majority of the mussels were < 2 years old (post spill age). Barnacles were rare; ~10% of the adult shells were empty. The LITZ is a clam bed, subsurface sediments have a high percentage of mussel shell hash.

(E) Area is located low in the URTZ. There is ~10% biota cover with filamentous green algae, barnacles and mussels. The MITZ has ~30% barnacle cover and a sparse to moderately concentrated mussel bed (various age classes). The LITZ is a clam bed with ~50% barnacle cover on surface sediments. On the rock outcrop there is ~50% algae cover.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	2	
Seabirds	2	3	
Waterfowl	2	~40	
Gulls/kittiwakes	1	~70	
Shorebirds	1	1	
Corvids			
Other Birds			

LAND MAMMALS

MARINE MAMMALS	# OBSERVED	SPECIES	# OBSERVED
Sea Otters		Deer Srat	
Pinnipeds (specify)			
ales (specify)			

Shoreline subdivision map showing important biological features attached.

REVIEWED: MC 5/8/91

Team #5

Segment # FL-4

Subdivision B

Seafloor 1-3'

Date 3 May 1991

Tidal Height +2 → +5'

Biologist: Frank

Windspeed: 10-20 knots/sec

pg 3 of 4

Comments (cont)

(F) Area is located in the UITZ. Fucus sporelings and filamentous green algae cover <1% of the sediments. One meter below site biota cover is ~40% including Fucus and mussels. LITZ is a clam bed.

(G) Area is located in the UITZ along a rock face. No intertidal biota present in site.

(H) Area is located in the SUPRA and high UITZ. Mosses with fruiting bodies are present. Below the site there is ~40% Fucus cover. Approx. 10% of the plants are 'stipe-only'.

(I) Area is located in the southwest corner of a pocket beach. There is ~40% Fucus sporeling cover. The LITZ is a clam area utilized by otters; otter digs are present.

(J) Area is located in the high UITZ. Black lichen, moss and turp algae is present. Below site biota cover is ~40% including Fucus and barnacles. Fucus sporelings and 'stipe-only' plants are present. LITZ is a clam bed.

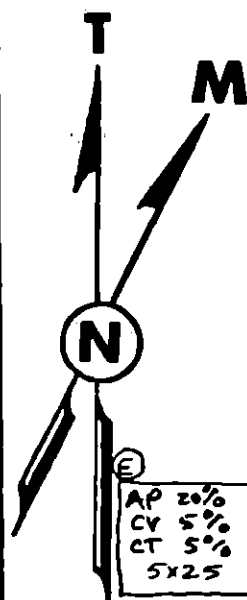
Recolonization is occurring in the mussel, barnacle and Fucus populations on this subdivision. Eagle nest is present ^{to determine whether it was active/inactive.} Reviewed: MC 5/5/91

K&L - No macro biota. Downslope community relatively abundant, composed of dense non-growth Fucus, barnacles and spat, Littorina, limpets.

M-R - Sparse biota within/adjacent to oiled areas (sparse barnacles, limpets). Biota increases downslope in abundance and diversity, characterized primarily by moderate-dense barnacles and spat, patchily dense non-growth Fucus, Littorina and limpets, and sparse patches of small attached Mytilus.

MAY 1991
 OG SKETCH MAP
 GREG CHANEY
 TEAM 5
 SEGMENT: FLY B
 DATE:
 AIR P.N.: PIM-C-005-192

OILED BEACH GRASS IN
 SUPRATIDAL ZONE



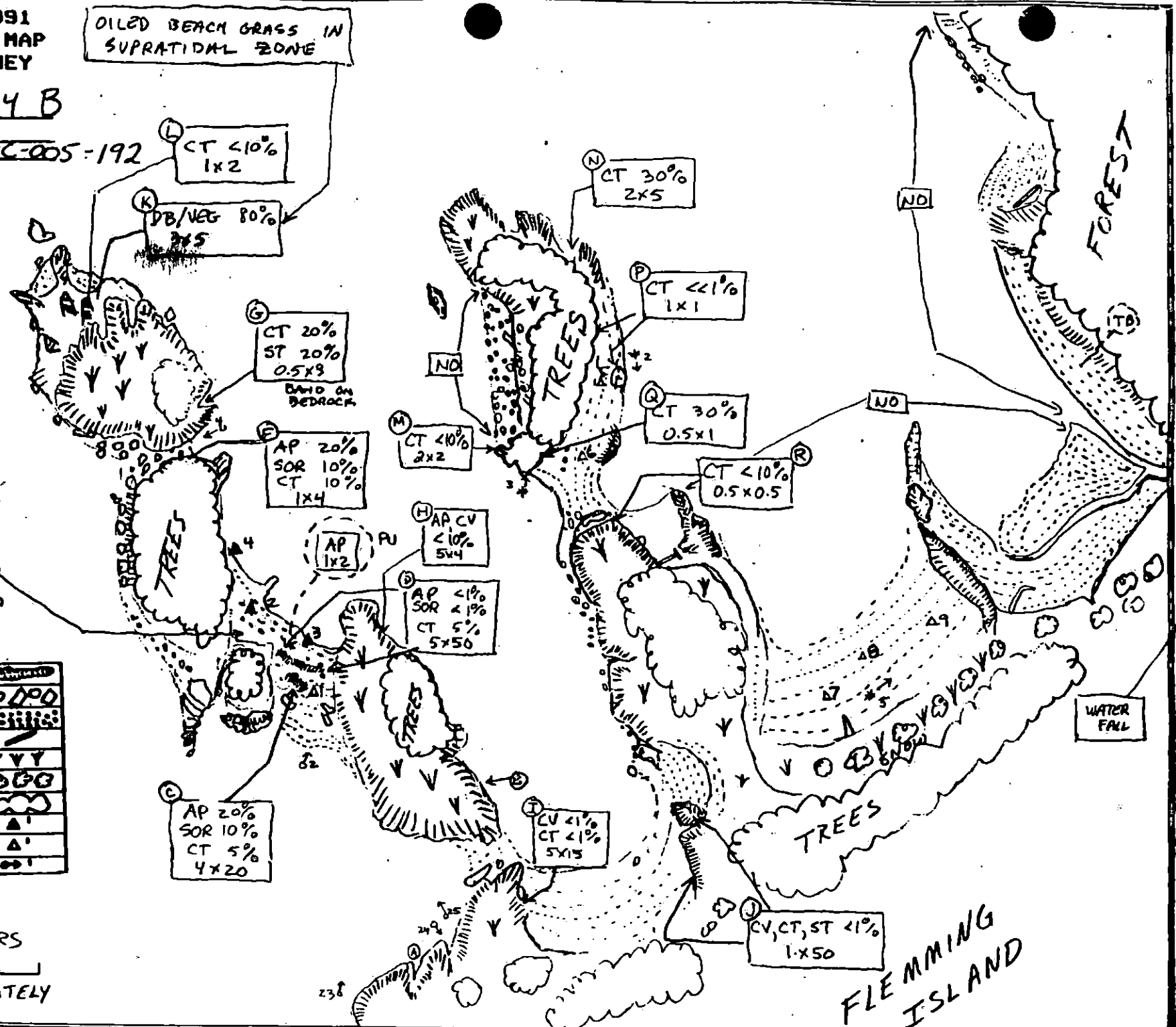
LEGEND COVER

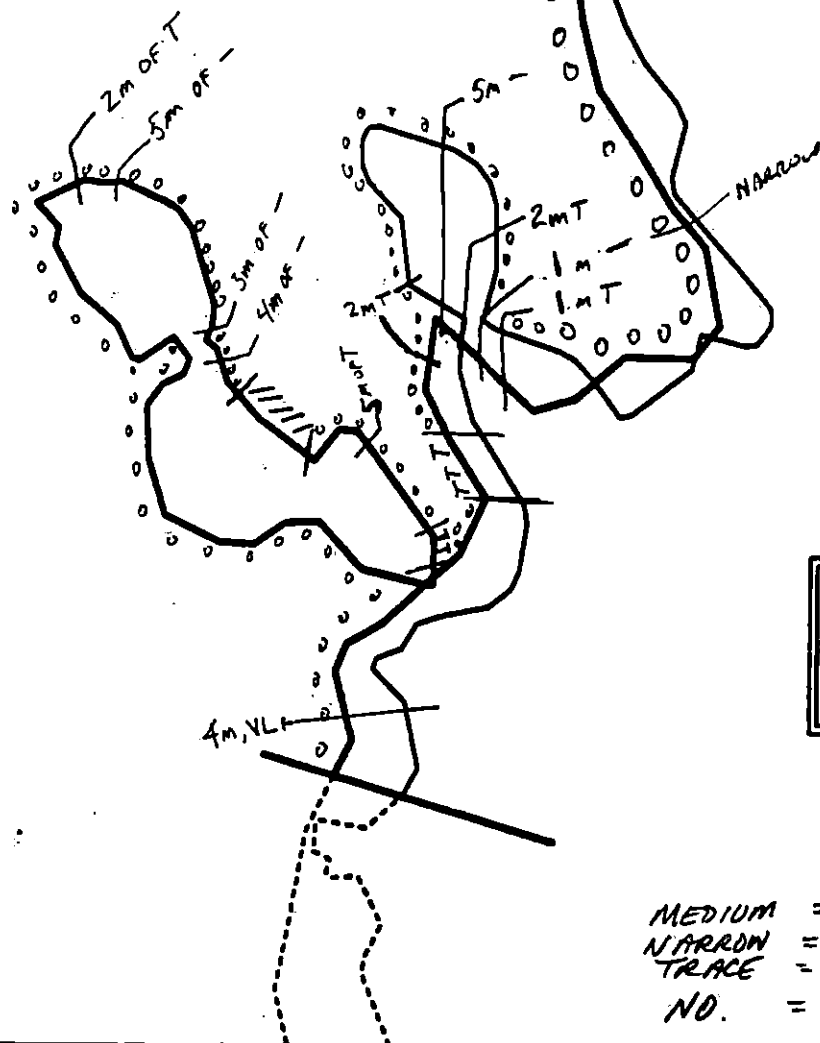
BEDROCK	
BOULDERS	
FINE BED.	
DRIFT LOG	
GRASS	
BRUSH	
FOREST	
OILED PIT	
NO OIL PIT	
PHOTO	

SCALE

60 METERS

APPROXIMATELY





MEDIUM = 45 → 46
 NARROW = 17 → 17
 TRACE = 60 → 62
 NO. = 1440 → 1483
 1568

XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

FL004 B
 ADEC Subsegment Length: 1015m
 METERS
 0 100 200
 AK State Plane Zone 4
 p11004b



Subdivision Field Map
 Map Key: PWSFL004B
 Name: HARPER
 Date: 5 MAY 91
 Date Entered:

REVISOR: MC 5/8/91 ET revised, May 8

OG 6-1/2

1991 MAYSAP EVALUATION

SEGMENT: FL 004 SUB: B REGION: PWS SURVEY DATE: 5/5/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) RESTRICTED 3/1 - 9/1

Ecological/Constraints (see page two for details) Eagle nest

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find, and contact Exxon's Cultural Resource Program immediately: 564-3276; 564-3657; (Anchorage) or 229-1514 (24 hrs.). ^{Reo}
Facel down Date date: 5/17/91

RECOMMENDATIONS:

	INITIAL	TAG	FOSC
TREATMENT REQUIRED (Y or N)	<u>N</u>	<u>Y</u>	<u>Y</u>
Manual Pickup (Check as Req.)	<u>_____</u>	<u>X</u> <i>Ⓟ</i>	<u>X</u>
Spot Washing	<u>_____</u>	<u>_____</u>	<u>_____</u>
Bio-Customblen Only	<u>_____</u>	<u>_____</u>	<u>_____</u>
Bio-Inipol/Customblen	<u>_____</u>	<u>_____</u>	<u>_____</u>
Other	<u>_____</u>	<u>_____</u>	<u>_____</u>
Other	<u>_____</u>	<u>_____</u>	<u>_____</u>

COMMENTS:

INITIAL: _____

TAG: MANUAL PICKUP OF AP/HSOR AT LOCATIONS C, D, + E
THAT IS EASILY ACCESSIBLE. PICK UP OILED
BEACH GRASS IN U1TZ/SUP.1TZ AT LOCATION K

FOSC: _____

TAG APPROVAL DATE: MAY 17 1991 FOSC APPROVAL DATE: 25 MAY 1991

ADEC: *[Signature]*

FOSC: *[Signature]*

EXXON: *[Signature]*

E. E. PAGE, CDR, USCG
CHIEF OF STAFF, FOSC

USCG: *[Signature]*

NOAA: *[Signature]*

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

Eagle Nest: Access restricted from 3/1 to 9/1. USF&WS authorization required. Maintain 1000' vertical and 1/4 mile horizontal buffer.

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 5 SEGMENT FL-4 SUBDIVISION B DATE 5/5/91

ADEC

NAME John Hoyer SIGNATURE [Signature]

☐ NTR ☒ Treatment Recommended

Manual pickup in area K al on crest of Tombolo also some SOR/MS wet of Tombolo ^{area D+E} between boulders. Recommend CUC LRP for this site as all work is manual.

EXXON

NAME Martinez N.J. SIGNATURE [Signature]

☒ NTR

Area looks good, x area "K" would be a good area for CUC. Local response as it does need some work.

LANDMANAGER

NAME Steve Laxo OF CUC SIGNATURE [Signature]

☐ NTR

Asphalt bottles picked up, Life Care on a few Rocks. Squeezed needles. there is an area listed as Site #K that needs some manual clean-up. see OG notes.

USCG/NOAA

NAME Dreher / Hodges SIGNATURE [Signature]

☐ NTR

Tar balls and patches were found on major tombolo - most tar patches were picked up. Tombolo pits showed subsurface oil to the peat layer. Northern most point shows oil coverage in rock layer and heavily oiled beach grass patch. Manual labor (with raking) would reduce the oil in these specific spots in this segment.

5

MAYSAP SHORELINE OILING SUMMARY

PAGE 1 OF 3

TEAM NO. _____

OG CHANEY/HARPER

BIO CRANK/STOKER

SEGMENT FL-4

C HAYES

LANDMANAGER WARD for CVC

SUBDIVISION B

EXXON MARTINEZ

USCG/NOAA DREHER/HODGES

DATE 3 MAY 51 MAY 91

TIME 12:30 to 1400 (3 MAY) 10:15 to 11:30 (5 MAY) TIDE LEVEL +1.5 ft. to +4.5 ft. to 2.5 ft. to 11.0 ft.

ENERGY LEVEL: ☐ H ☐ M ☒ LSURVEYED FROM: ☐ FOOT ☒ BOAT ☐ HELO WEATHER: ☐ SUN ☒ CLOUDS ☐ FOG ☒ RAIN ☐ SNOWTOTAL LENGTH SHORELINE SURVEYED: 1615 m NEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONE

EST. OIL CATEGORY LENGTH: W 0 m M 46 m N 18 m VL 106 m NO 1445 m US 0 m

L O C	SURFACE OIL CHARACTER										SURFACE SEDIMENT TYPE	SHORE SLOPE VHML	AREA		ZONE				NOTES
	AP	MS	TB	SOR	CV	CT	ST	FL	DB	NO			WIDTH m	LENGTH m	S	UI	MI	LI	
A						T					R	V	0.2	4		V			DRIPS ON ROCK FACE
B						T					R	Y	0.2	25		V			DRIPS ON ROCK FACE
C ₁	P										PG	M	4	20		V			NE TOMBOLO RIDGE TOP
C ₂				S							PG	M	4	20		V			" " " "
C ₃						S					PG	M	4	20		V			" " " "
D ₁	T			T		S					PG	M	5	50		V	V		BELOW RIDGE TOP AT BAND
E ₁	S										B,C,P	M	5	25		V			GREEN ALGAE ON BOULDERS
E ₂					S						B,C,P	M	5	25		V			" " " "
E ₃						S					B,C,P	M	5	25		V			" " " "
F ₁	S										B,C,P	M	1	4		V			
F ₂				S							B,C,P	M	1	4		V			
						S					B,C,P	M	1	4		V			
						P					BC	M	0.5	3		V			
G ₂							P				BC	M	0.5	3		V			
H	S				S						CPG	M	5	4		V			
I					T	T					R	V	5	15		V			5-9 22-24

DISTRIBUTION: C = 91-100%; B = 51-90%; P = 11-50%; S = 1-10%; T = <1% [CONTINUED]

SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE PHOTO ROLL # MAYSAP

5-9 22-24
5-10 1-4
5-12 FRAMES 1-3

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER							OILED ZONE cm-cm	CLEAN BELOW Y/N	H2O LEVEL (cm)	SHEEN COLOR B R S N	PIT ZONE				SURFACE-SUBSURFACE SEDIMENTS	NOTES
		OP	HOR	MOR	LOR	OF	TR	NO					S	UI	MI	LI		
1	15							X	-	-	-	-	X			CP/CPG		
2	10		X						0-3	Y	5	BR	X			CB/CPG		
3	10			X					0-5	Y	5	BR	X			CB/CPG		
4	10					X			0-5	Y	5	BR	X			CP/CPG		
5	20							X	-	-	-	-	X			PE/SE		
6	20							X	-	-	-	-	X			P/SE		
7	30							X	-	-	25	N-	X			P/SE		
8	15							X	-	-	-	-		X		P/SE		
9	15							X	-	-	10	N			X	P/SE		

SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

OG COMMENTS:

This segment consists primarily of two small embayments with low wave exposure.

Inshore oiling is confined primarily to the southern of the two embayments with several pockets of AP and SOR. These pockets (locations C-F; H) are on the northeast-facing beaches with an estimated

REVISED: MC 5/8/91 OG 10/6
S. R. R. M. A.

PAGE 2 OF 3

SEGMENT FL-4B

SUBDIVISION B

DATE 5 MAY 191

[illegible]

SHEEN COLOR: B = BROWN: R = RAINBOW: S = SILVER: N = NONE

[illegible]

Reviews: MC 578/91

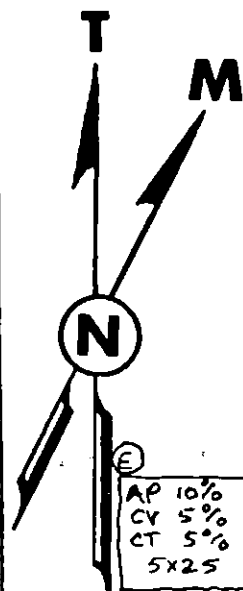
ET revised, May 8

OG 2 of 6

MAYBAP 1991
 OG SKETCH MAP
 GREG CHANEY
 TEAM 5
 SEGMENT: FLY B
 DATE: 5-3-85-91
 AIR P.#: PIM-C-005-192

OILED BEACH GRASS IN
 SUPRATIDAL ZONE

SEE LOCATION
 MAP FOR
 ADDITIONAL
 DETAIL



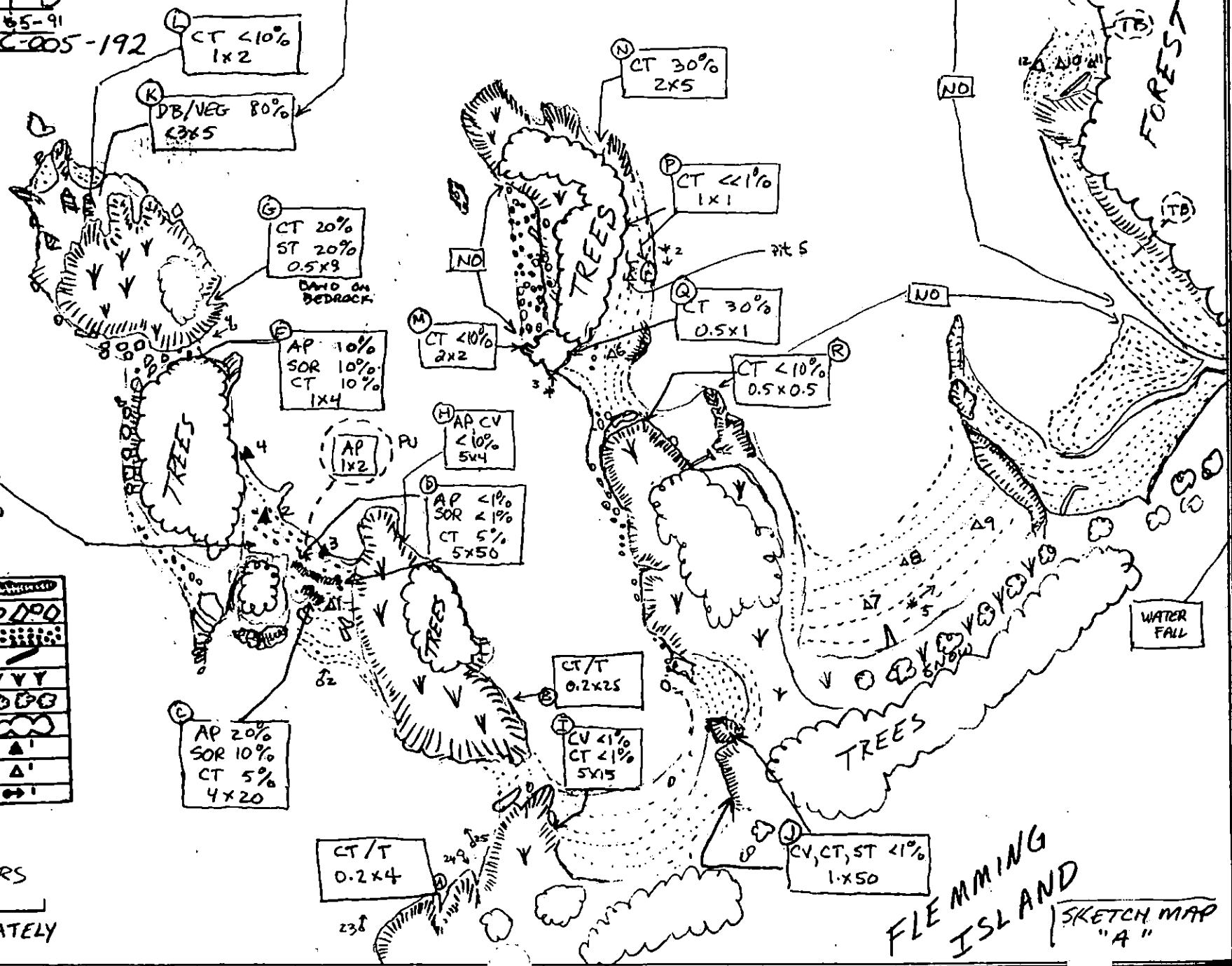
LEGEND

BEDROCK	
BOULDERB	
FINE BED.	
DRIFT LOG	
GRASS	
BRUSH	
FOREST	
OILED PIT	
NO OIL PIT	
PHOTO	

SCALE

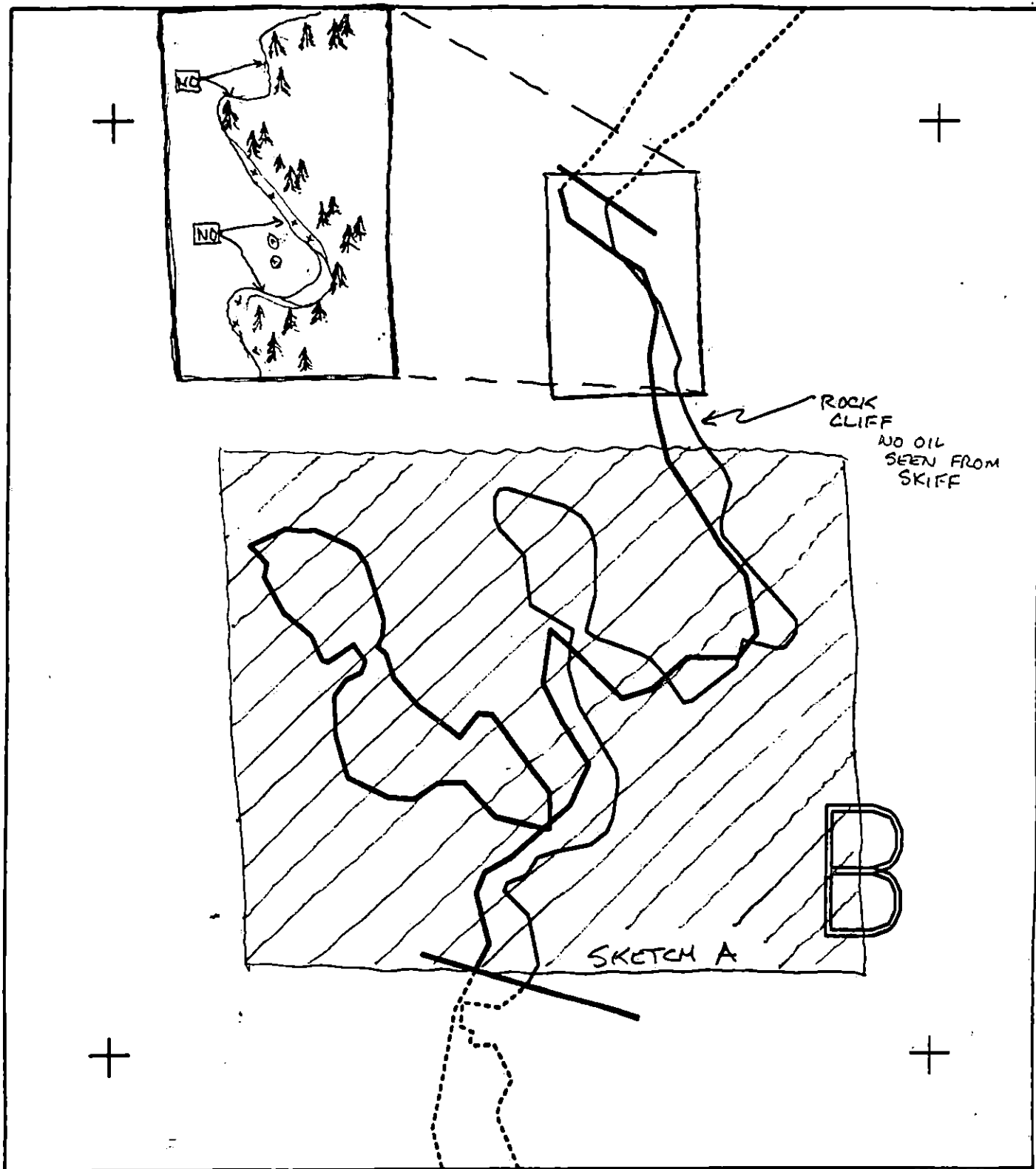
60 METERS

APPROXIMATELY



PAINTER: JIM S. 1991

ET revised, May 8



XXXX	Wide	FL004 B ADEC Subsegment Length: 1615m METERS 5 100 200 AK State Plane Zone 6 pf10046	Subdivision Field Map Map Key: PWSFL004B Name: <u>HARPER</u> Date: <u>5 MAY 91</u> Date Entered:
////	Medium		
----	Narrow		
TTTT	Very Light		
0000	No Oil		

REVIEWED: 5/15/91 MC

OG 4 of 1

ES reviewed, May 8

MAYSAP BIOLOGICAL SUMMARY FORM

Page 1 of 4

TEAM # 3

DATE 5/3/91 & 5/5/91

SEGMENT # FL 4

TIDAL HEIGHT (Range) 2-5' & 3-4'

SUBDIVISION B

BIOLOGIST Stoker/Crank

SEA STATE 1-3' & 0-1'

WIND SPEED/DIRECTION SE 10-20 & NE 0-5

PHOTOGRAPHS: ROLL #

FRAME #

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):

Subdivision consists of generally low energy mixed substrate beaches of pebble/cobble/boulder/bandrock separated by rock headlands. A small stream traverses the beach in the W. portion of the subdivision.

Biota generally sparse in the upper intertidal (sparse barnacles, limpets, Fucus), increasing down slope in both abundance and diversity. Biota on pebble/cobble/boulder beaches (MTZ & below) characterized by variable densities of patchily distributed Fucus, filamentous green algae, Sextaria, and barnacles/spat, moderate densities Littorina with egg masses, generally sparse limpets (some clusters of small individuals), amphipods, and sometimes Nucella, Scarlella and oligochaetes. Sparse patches of attached Mytilus were found on larger boulders, with widespread and variable-density interbedded patches in pebble/cobble. Clam shells (Saxidomus, Prototheca, Macoma) are common in the LTZ, as are pits dug by sea otters foraging for clams.

Biota on rock headlands characterized by variable and often dense new-growth Fucus, barnacles and spat, Littorina, limpets, and generally sparse patches of small Mytilus.

Overall, biota appears relatively healthy and abundant. Considerable variability in abundance was noted throughout, apparently unrelated to general substrate type or vertical zonation.

Comments relating to specific areas or remaining oil are on summary form 2 and attached sheet 3.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	2	
Seabirds	2	3	
Waterfowl	Mergansers & unidentified	~40	
Gulls/Kittiwakes	Kittiwakes Glaucous-wing	~70	
Shorebirds	1	1	
Corvids			
Other Birds			

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters	1	Doer SeaT	
Amphipeds (specify)	Sea lions - 2		
Whales (specify)			

Shoreline subdivision map showing important biological features attached. PREVIOUS: MK 5/8/91

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 5

DATE 3 MAY 1991

Pg 2 of 4

SEGMENT # FL-4

TIDAL HEIGHT (Range) +2 → +5'

SUBDIVISION B

BIOLOGIST Biologist

SEA STATE 1-3'

WIND SPEED/DIRECTION 10-20 knots/SE

PHOTOGRAPHS: ROLL # MAYSAP 9

FRAME # 25

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):

(A) Area is located high in URTZ on a vertical rock face. No intertidal macro-biota present within site. Approx. 1/2 m below site there is a sparse concentration of *Fucus* majority of plants are 'stipe-only'. The next 1/2 m drop has a sparsely concentration of *Fucus* sporlings. The LITZ has ~60% *Fucus* cover. Plants appear healthy.

(B) Area is located along a rockface in the URTZ. There is ~30% barnacle cover in the site. An oil stain is present on the shells. Animals tightly sealed their inner plates when stimulated. Directly below the site biota cover dropped to 20%. Barnacle concentrations lessen, however, juvenile mussels, *Fucus* sporlings, *Ulva* and *Scytosiphon* (alga) were present. Possible clam bed in the LITZ.

(C/D) Areas are located on a tombolow. Biota cover is ~10%. There is a rare to sparsely concentrated intercobble mussel bed. Majority of the mussels were <2 years old (post spillage). Barnacles were rare; ~10% of the adult shells were empty. The LITZ is a clam bed, subsurface sediments have a high percentage of mussel shell hash.

(E) Area is located low in the URTZ. There is ~10% biota cover with filamentous green algae, barnacles and mussels. The MITZ has ~30% barnacle cover and a sparse to moderately concentrated mussel bed (various age classes). The LITZ is a clam bed with ~50% barnacle cover on surface sediments. On the rock outcrop there is ~50% algae cover.

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Shorebirds	1	1	
Corvids			
Other Birds			

MARINE MAMMALS

OBSERVED

LAND MAMMALS

SPECIES

OBSERVED

Sea Otters		Deer Scat	
Pinnipeds (specify)			
_____les (specify)			
_____les (specify)			

Shoreline subdivision map showing important biological features attached.

REVIEWED: MC 5/8/91

Team #5
Segment # FL-4
Subdivision B
Seafloor 1-3'

Date 3 May 1991
Tidal Height +2 → +5'
Biologist Frank
Wind Speed / Direction 10-20 knots / SE

pg 3 of 4

Comments (cont)

(F) Area is located in the UITZ. Fucus sporelings and filamentous green algae cover <1% of the sediments. One meter below site biota cover is ~40% including Fucus and mussels. LITZ is a clam bed.

(G) Area is located in the UITZ along a rock face. No intertidal biota present in site.

(H) Area is located in the SUPRA and high UITZ. Mosses with fruiting bodies are present. Below the site there is ~40% Fucus cover. Approx. 10% of the plants are 'stipe-only'.

(I) Area is located in the southwest corner of a pocket beach. There is ~40% Fucus sporeling cover. The LITZ is a clam area utilized by otters; otter digs are present.

(J) Area is located in the high UITZ. Black lichen, moss, and fur algae is present. Within 1 m below site biota cover is ~40% including Fucus and barnacles. Fucus sporelings and 'stipe-only' plants are present. LITZ is a clam bed.

Recolonization is occurring in the mussel, barnacle and Fucus populations on this subdivision. Eagle nest is present near site. Data on whether it was active lineage. Re-colonized by 1991

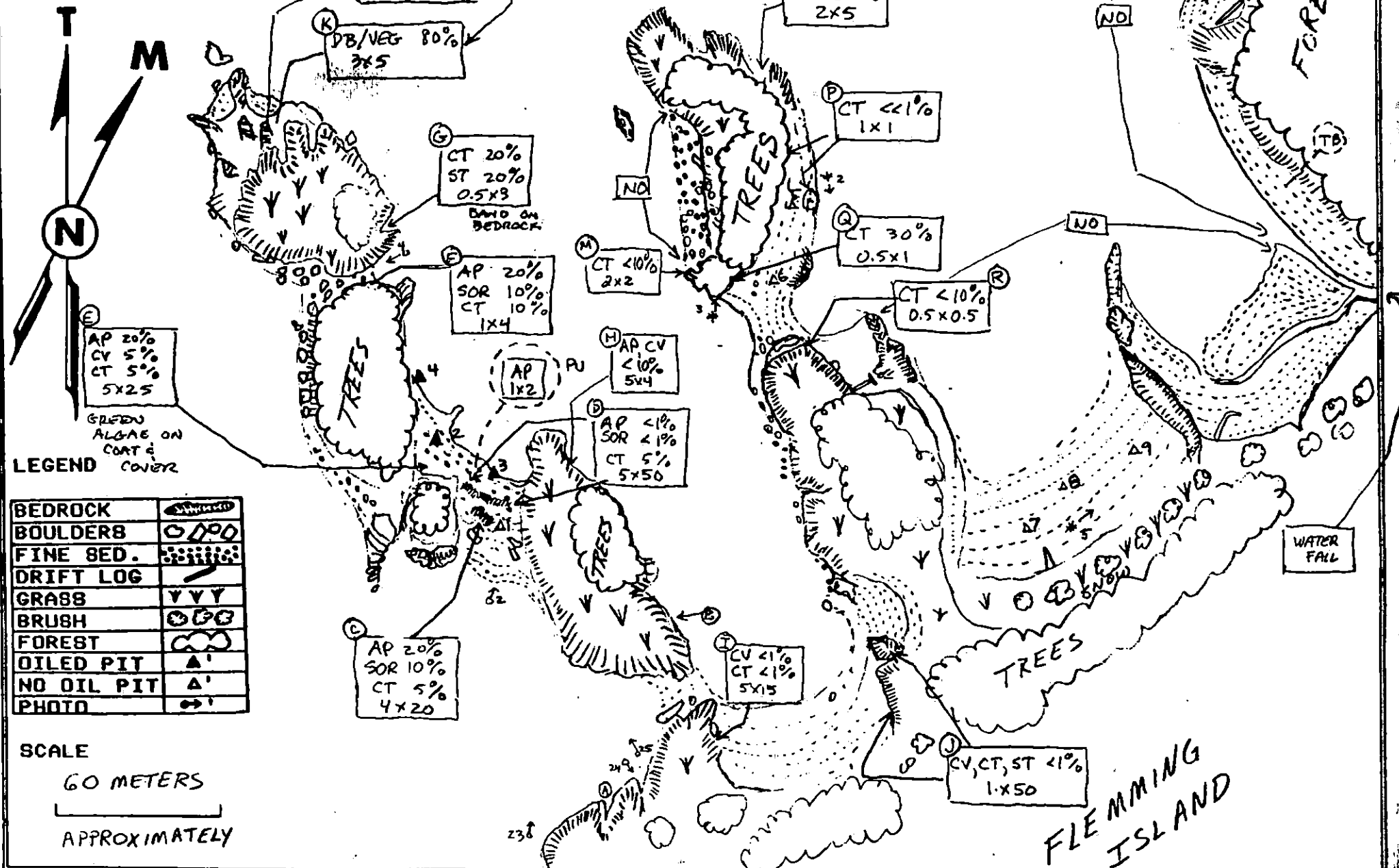
- K&L - No macro biota. Downslope community relatively abundant, composed of dense non-growth *Fucus*, barnacles and spat, *Littorina*, limpets.
- M-Q - Sparse biota within/adjacent to oiled areas (sparse barnacles, limpets). Biota increases downslope in abundance and diversity, characterized primarily by moderate-dense barnacles and spat, patchily dense non-growth *Fucus*, *Littorina* and limpets, and sparse patches of small attached *Mytilus*.

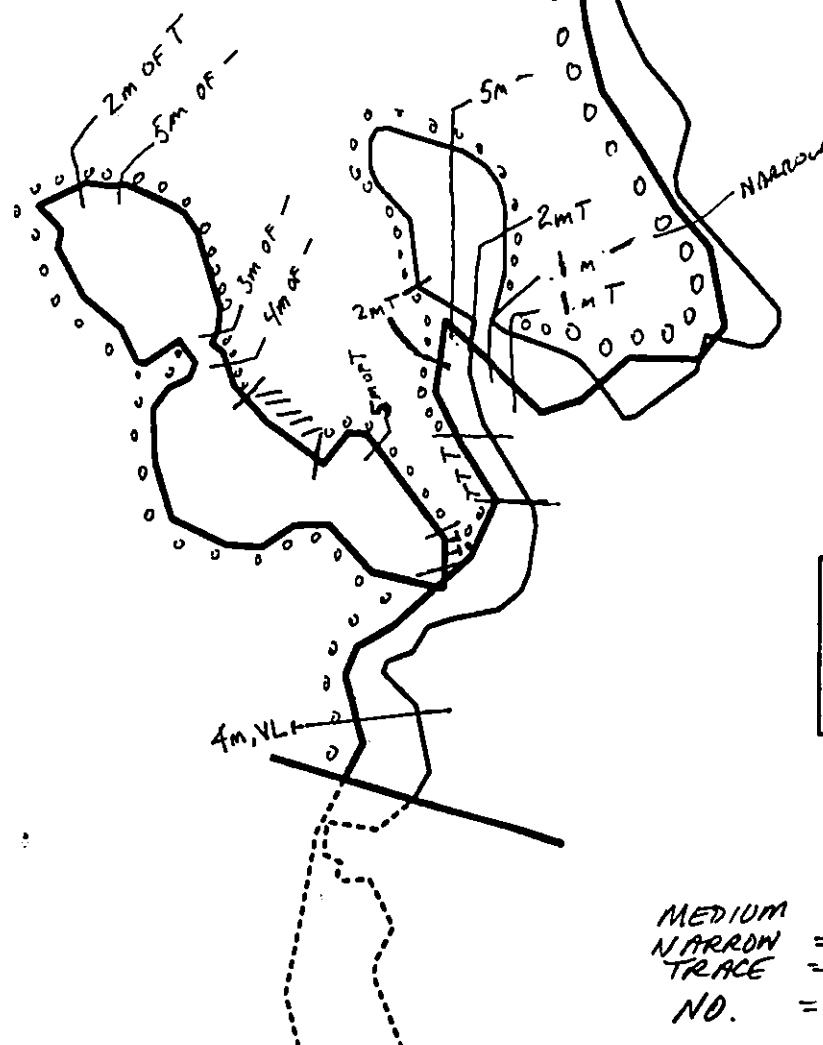
MAY8 1991
 OG SK H MAP
 GREG CHANEY

TEAM 5
 SEGMENT: FLY B

DATE:
 AIR P.#: PIM-C-005-192

OILED BEACH GRASS IN
 SUPRATIDAL ZONE





MEDIUM = ~~45~~ 46
 NARROW = ~~17~~ 17
 TRACE = ~~60~~ 62
 NO. = ~~1440~~ 1483
 1568

XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

FL004 B
 ADEC Subsegment Length: 1615m
 METERS
 0 100 200
 AK State Plane Zone 4
 pr1004b

Subdivision Field Map
 Map Key: PWSFL004B
 Name: HARPER
 Date: 5 MAY 91
 Date Entered:

REVISIO: MC 5/8/91 ET revised, May 8

OG 6 of 6

2 OF 87

ASAP FOLLOWUP RECOMMENDATIONS

Segment: AS/ FL-4 Subd.: B Site: 1 Date: 8/5/90 1990Conditions Observed: SURFACE OIL IN AREAS WHERE TARMATS WERE
REMOVED ARE PRESENT IN SEVERAL AREAS ON THE SUBDIVISION.Followup Recommendations: MANUALLY TREAT AREAS OF SURFACE OILING
WHERE AP PATCHES EXISTED.Completed by Pickup Crew: ☐ YES ☒ NOPriority for Addressing in 1990: ☐ High ☒ Mod. ☐ Low

DEC

Bob McCreedy
(name)[Signature]
(signature)Comments: Recommend the manual removal of all remaining AP, OP and
OR oil, and other heavy oil residues left by summer '90 cleanup
crew followed by vigorous manual tillage and bioremediation.

Exxon

RANDALL K. BOYCE
(name)Randall K. Boyce
(signature)Comments: BREAK UP AND EXPOSE SURFACE AREAS OF SEDIMENTS WHERE
TARMATS WERE LIFTED EARLIER IN 1990. RE BIO AS REQUIRED.

USCG

Don Davis
(name)[Signature]
(signature)Comments: AGREE WITH ADD STATEMENT.

Land Rep.

Steve White
(name)[Signature]
(signature)Comments: Agree with DEC

DATE 9 April 90

CHECKLIST

- 1. Name
- 2. Report Title
- 3. Report Number
- 4. Other
- 5. Author
- 6. Date
- 7. Source
- 8. Location
- 9. Method
- 10. Results
- 11. Conclusions
- 12. Recommendations
- 13. Other

END

1A

2A

3A

4A

5A

6A

7A

8A

9A

10A

11A

12A

13A

14A

15A

16A

17A

18A

19A

PWS

FL-4

FL & M...
10000

8/5/90
VERY SPORADIC
ON BOULDERS
COBBLES
CT/ST-S
5M X 1M

Light splattered
gray coat on
rock

Rock beach
with bar bolls

NO OIL

Shut in
Slater in
water

wide broken bank

ast bank

8/5/90

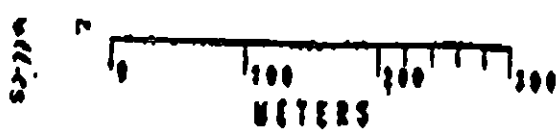
AP/P
SCR/P

FILM

CT/B CT/P

10M X 2M ST/P

PREVIOUSLY
TREATED



SEGMENT AS / FL 04 SUBDIVISION: B SITE: 1 DATE 05 AUG 90

CG

NAME Don Davis, Lt. USCG SIGNATURE [Signature] / David Davis, NOAA☒ YES ☐ NO PRIORITY SITE FOR REASSESSMENT IN 1991
REASON:

OBSERVED ONE SECTION APPROX 10m x 2m PREVIOUSLY TREATED.
IF NO WORK IS PERFORMED THIS YEAR, THE PATCH WILL BE COVERED BY
GRAVEL BAR. THE SECTION WOULD BE A LOW PRIORITY FOR THIS YEAR,
BUT I WOULD LIKE TO SEE IF IT REMAINS IN 1991.

(Agree. DAV)

ADEC

NAME Bob McCreary SIGNATURE [Signature]☒ YES ☐ NO PRIORITY SITE FOR REASSESSMENT IN 1991

REASON: Two areas on spit (South portion of segment) require further treatment.
A Work Order Mod. Rec. has been submitted recommending manual
removal of all AP, OP, OR, and other residual highly oiled sediments.
This work is to be followed by thorough tilling of all treated
areas and bioremediation using fungal and bacterial. This segment
is to be a priority reassessment site for 1991

LAND MANAGER

NAME Steve WARD cvc SIGNATURE [Signature]☒ YES ☐ NO PRIORITY SITE FOR REASSESSMENT IN 1991

REASON: needs more manual and should be done in 90
91 Yes

EXXON

NAME RANDALL E. BRYAN SIGNATURE [Signature]☒ YES ☐ NO PRIORITY SITE FOR REASSESSMENT IN 1991

REASON: AP THAT WAS REMOVED IN 1990. NEEDS
SOME BREAK UP AND RE BIO IN 1990. THIS SUBDIVISION
WOULD BE A LOW PRIORITY ASSESSMENT IN 1991 WITH
MANUAL TILLING AND RE BIO IN 1990.

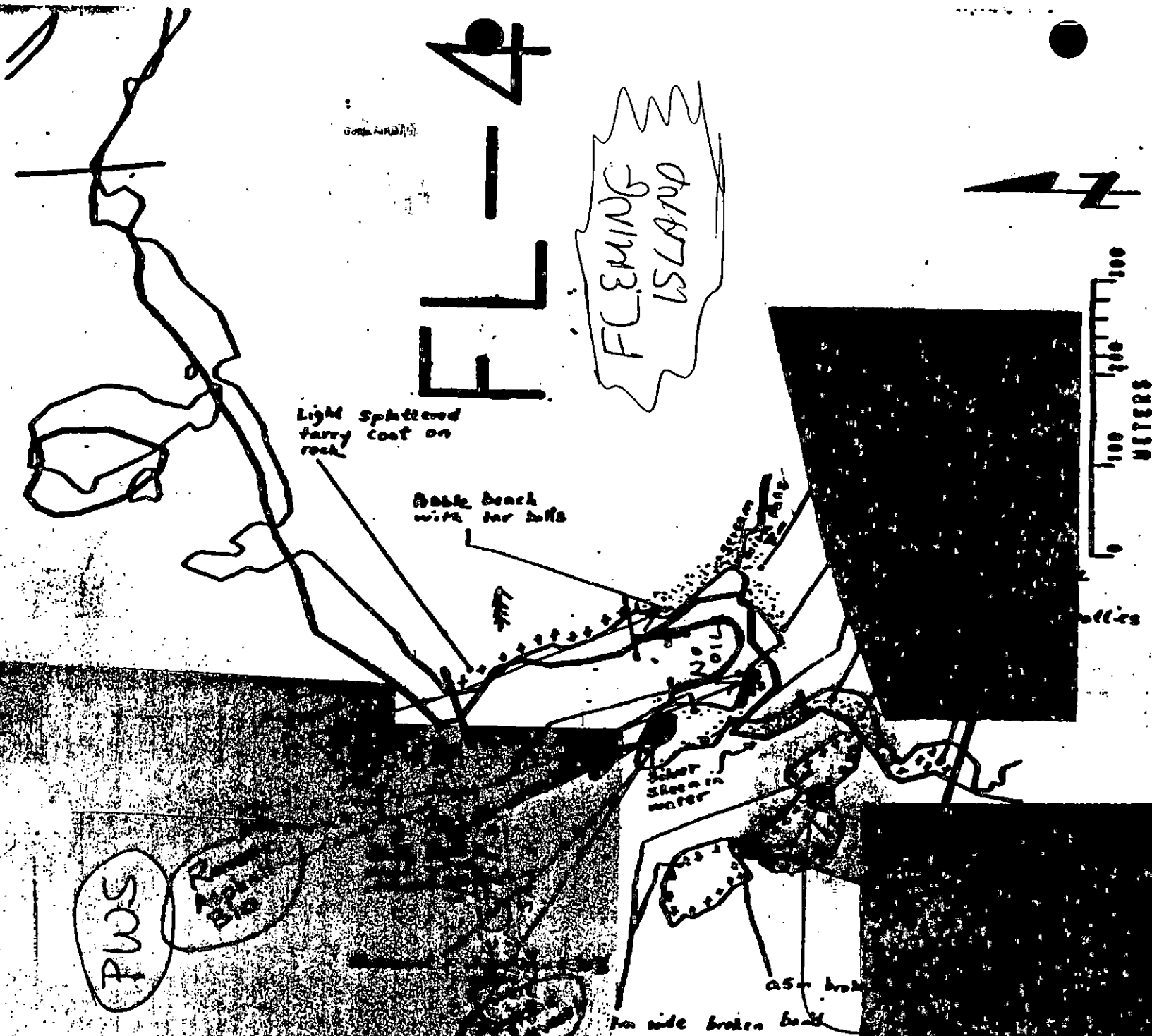
(X) R. A. 100
 SEGMENT ST/ P-4
 SUBDIVISION B
 DATE 9 April 80

CHECKLIST

- ☐ M. Area
- ☐ Approx. Scale
- ☐ Topographic Study
- ☐ Oil Out
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Ext. HAZARD
- ☐ SCL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ Pt. Location(s)
- ☐ Photo Location(s)

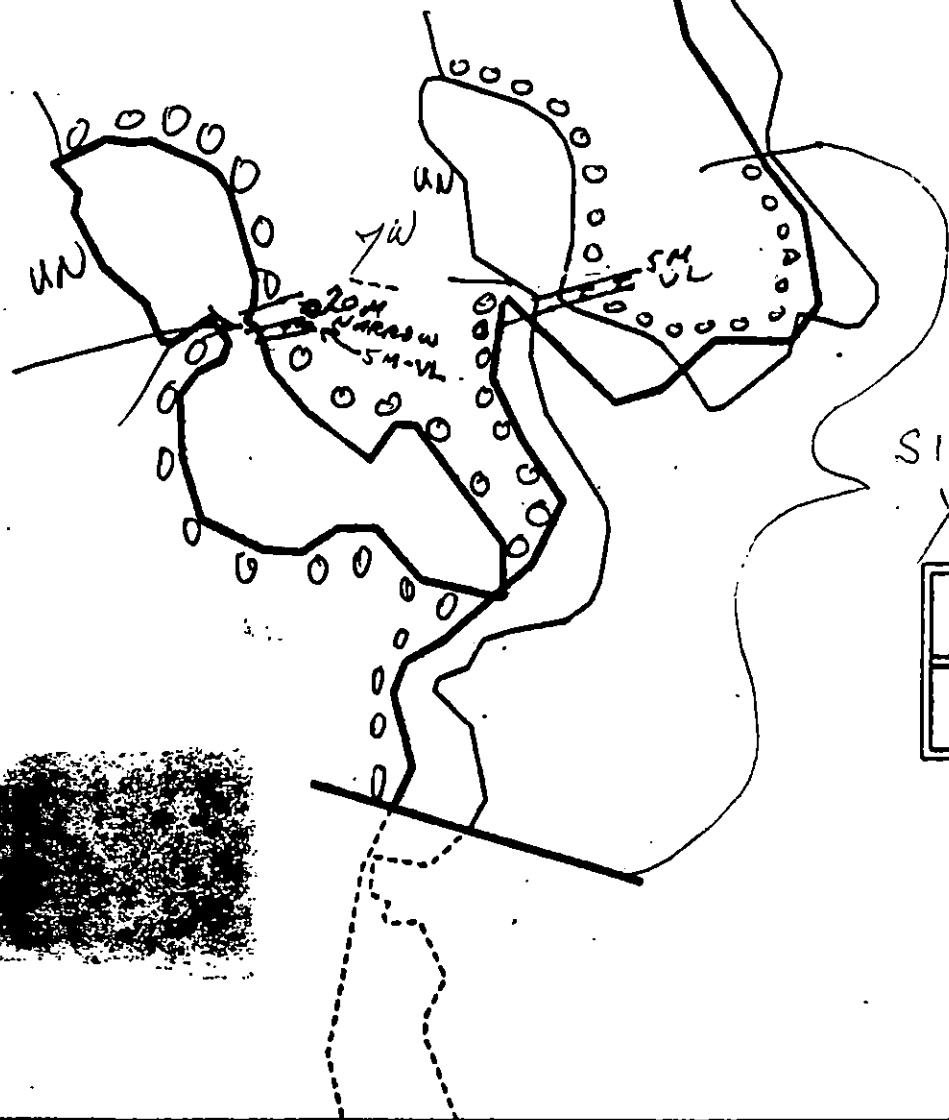
LEGEND

- 1 Δ
- Pt - No Substrate Oil
- 2 Δ
- Pt - Substrate Oil
- CT/C
- Continuous Distribution
- CT/B
- Broken Distribution
- CT/P
- Patchy Distribution
- CT/S
- Spotted Distribution
- Oil Vegetation
- 1 ●
- Photo location, direction, and number



yes 91 *thick* *cue*
 yes 91 *done* *yes*
 (yes 91) *done* *cue*, NOAA
 yes 91 *R.B. mch* *ADec*

thick *cue*
 yes 91-
 YES, 1991
 RKB



SITE #1
 YES
 B

XXX
 ///

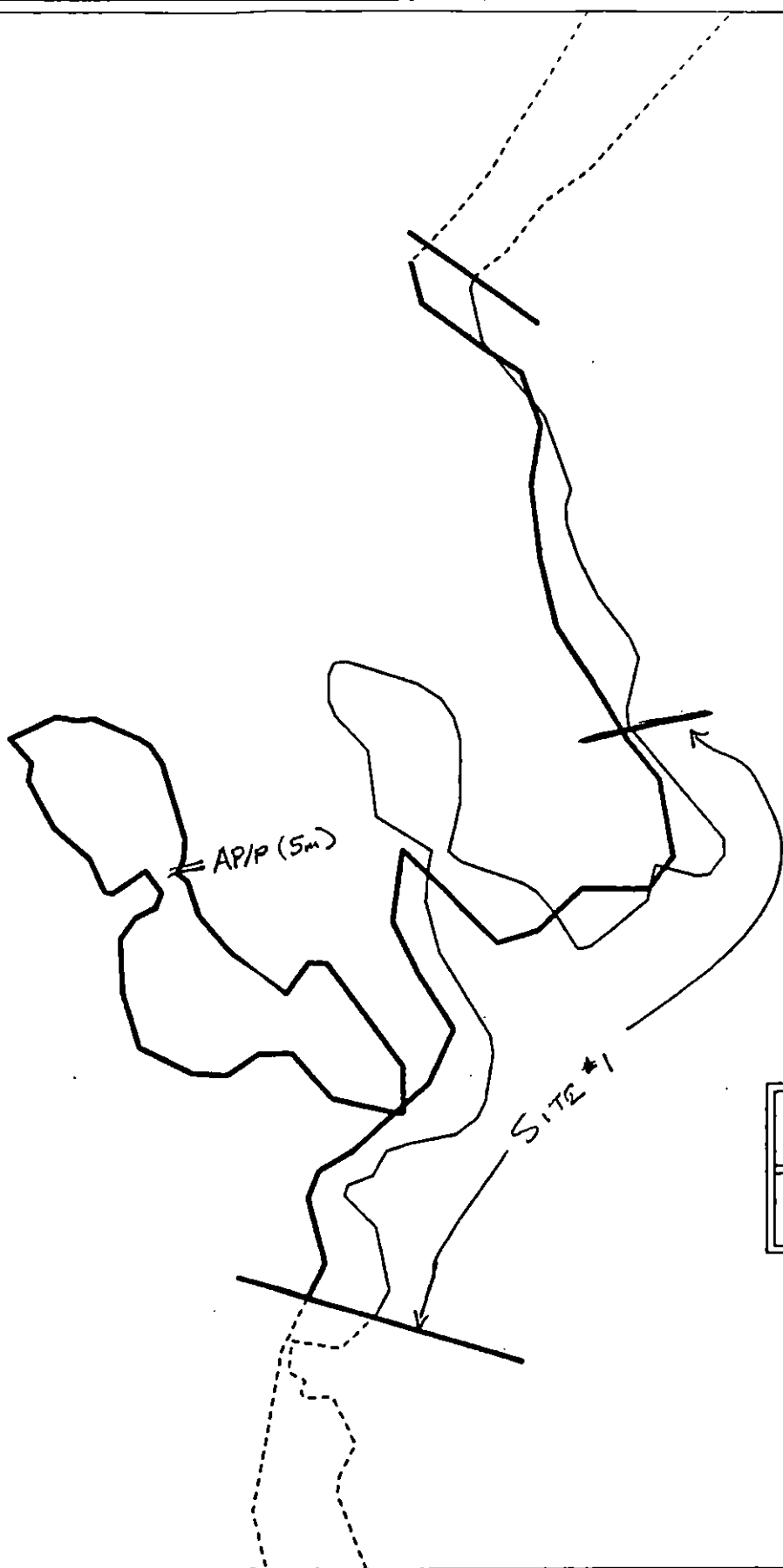
 TTTT
 0000

Wide
 Medium,
 Narrow
 Very Light
 No Oil

FL-4 B
 ADEC Subsegment Length: 1615m
 METERS
 0 100 100
 AR State Plane Zone 4
 11-40



Subdivision Field Map
 Map Key: PWSFL-4B
 Name: NAKASHIMA
 Date: 8/5/90
 Date Entered:



XXXX
 ////

 TTTT
 0000

Wide
 Medium
 Narrow
 Very Light
 No Oil

FL-4 B

ADEC Subsegment Length: 1615m

METERS

0 93 186

AK State Plane Zone 4 1:3050
 pfi-4b



Subdivision Field Map

Map Key: PWSFL-4B

Name: ATEC for NAKASHIMA

Date: 7 Aug 90

Data Entered:

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/FL-05

SUBDIVISIONS: A (1 OF 2)

SHORELINE EVALUATION

SEGMENT ST/ FL-05 SUBDIVISION A (1 OF 2) DATE 4/18/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 226-40-16400

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)

1B Salmon stream mouth - spawning (7/10 to 8/31)

1K Purse seine hook-off (7/20 to 9/30)

5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unoiled biota and substrate. Eagle nest listed in Subdivision A but not confirmed. Anadromous stream supposedly in Subdivision A, but field reports indicated stream in Subdivision B looks more promising.

ARCHAEOLOGICAL CONSTRAINTS:

If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 455 m: No Oil 2668 m

Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

X No Treatment Recommended

_____ Treatment Recommended

_____ Manual Pickup

_____ Bioremediation

_____ Tarmat Removal

_____ Snare/Absorbent Booms

_____ Oil Snares (pom poms)

_____ Absorbents (pads, rolls, etc)

_____ Spot Washing: _____ Wands

_____ Beach Cleaner

_____ Other (see comments)

COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____

EXXON _____

NOAA _____

USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

1A	Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B	Salmon stream mouth - spawning (7/10 to 8/31) No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No bioremediation or other chemical application within 100m of stream. Contact ADF&G Habitat Division prior to treatment for permits.
1C	Salmon fry nursery area (4/31 to 7/31)
1D	Esther Hatchery release (4/15 to 6/1)
1E	Main Bay Hatchery release (4/20 to 5/10)
1F	Sawmill Bay Hatchery release (4/15 to 6/1)
1G	Cannery Creek Hatchery release (4/21 to 6/1)
1H	Remote release site
1I	Gill net area (6/7 to 8/31)
1J	Purse seine area (7/20 to 9/30)
1K	Purse seine hook-off (7/20 to 9/30)
1L	Set net sites (6/11 to 7/25) For Codes 1C through 1L contact ADF&G for specific dates, locations and constraints.
2M	Herring spawning (4/1 to 6/15) Restrict boat traffic to essential minimum. Avoid damage to unopened intertidal and subtidal algae and seagrass. Contact ADF&G for specific dates and locations.
3N, 3P 3O, 3Q	Harbor seal and sea lion pupping (5/15 to 7/1) Harbor seal and sea lion molting (8/15 to 9/15) Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts.
5R	Seabird colony (5/1 to 9/1) Restrict air traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance. Contact ADF&G and USFWS prior to treatment.
5S	Shorebird/waterfowl concentration (4/1 to 5/15) Restrict all activity to essential minimum, especially air traffic.
5T	All Bald Eagle nests (3/1 to 6/1) Active Bald Eagle nests (3/1 to 9/1) Restrict air traffic to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.
6U	Recreation: Tent sites (6/1 to 9/15)
6V	Anchorage (6/1 to 9/15)
6W	Forest Service cabins (6/1 to 9/15)
6X	Lodge (6/1 to 9/15)
6Y	Special use destination
7Z	Subsistence area: Salmon harvesting (5/1 to 9/30)
7HH	Finfish harvesting
7H	Deer harvesting (8/15 to 2/28)
7JJ	Invertebrate harvesting For Codes 7Z through 7JJ contact ADF&G and Chenega Corporation for specific dates, locations, and constraints.

SEGMENT ST1 F105 SUBDIVISION: A DATE 4/20/90

USCG

NAME SHAWN Maas DC SIGNATURE [Signature]

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

WHAT STAINING FOUND IN THIS SUBDIVISION
CONSISTED OF LIGHT BANDING IN TWO AREAS.
NOT EASY TO DETECT MOSTLY ON HIGH
ANGLE ROCK FACE. NO SUBSURFACE OIL FOUND.

ADEC

NAME Dave Sale SIGNATURE [Signature]

BASED ON MOBILITY + INABILITY TO EFFECTIVELY REMOVE BAND

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

THE STAINING ON THE HI-ANGLE FACES DOES NOT REQUIRE
TREATMENT. THE BAND IS PROBABLY NOT GOING TO BECOME
MOBILE, AND WILL IN FACT HARDEN ON MORE AS IT WEATHERS.
I HAVE DOUBTS, WITHOUT SCOURING AGENTS, WHETHER IT WILL REMOVE
ENTIRELY. ~~NO TREATMENT BASED~~ ^{ON S}

THE TARRY ^{CRAY} STAINING IN THE SMALL ROCKS BENEATH BOULDERS AT
MID-SUBSECTION WOULD BENEFIT FROM MANUAL REMOVAL.

LAND MANAGER

NAME DON KOMPICRAFT SIGNATURE [Signature]

☒ NO TREATMENT RECOMMENDED
COMMENTS

☐ TREATMENT SUGGESTED

30 of 29

SHORELINE OILING SUMMARY

REVISION NO. 06/13/90

OG R. Marty USCG Shawn Mass SEGMENT ST/ FL-05 1 2
 BIO B. Lemon LAND REP D. KompGrofe SUBDIVISION A (1 OF 3)
 EXXON J. Czarnski ADEC D. Sale TIME 12:35 10:19:45
 TEAM NO. 10 TIDE LEVEL +0.96m → +1.84m DATE 18 April 1990
 EST. SUBDIVISION LENGTH: 3123 m ☒ Sun ☒ Clouds ☐ Fog ☒ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot 2° ☒ Boat 1° ☐ Helo WORKING DIRECTION: N to S
 SURFACE SEDIMENTS: R 70 % B 14 % C 10 % P 3 % G 2 % S 1 % M 0 % V 0 %
 SLOPE: Long 20 % Hang 50 % Vert 30 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 394 m NO 2729 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR				IMPACTED ZONES			
	C	B	P	N	1	2	3	4	SU	U	M	L
ASPHALT PAVEMENT												
POOLED												
COVER												
COAT												
STAIN				X		X					X	
MOUSSE												
PATTIES												
TARBALLS												
FILM												
NO OIL									X		X	X

PAVEMENT H F S None sq. m by 0 cm

PATTIES / TARBALLS None BAGS

NEAR SHORE SHEEN? NO BR RW SL TL

OILED DEBRIS	No	AMOUNT		
		SM	MD	LG
Logs	X			
Vegetation	X			
Trash	X			
Debris	X			

DID YOU COLLECT DEBRIS?

YES ☒ NO ☐

TYPE Trash

#BAGS < 1

(everything visible)

Photographs:

Roll No. 57/10/13

Frames 0-3

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (cm)	BELOW		OIL / FILM COLOR					PIT ZONE				A N A	S H E E N (Y/N)	↓	SURFACE-SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UC	UC	1	2	3	4	5	SU	U	M	L				
1	18					X										X			N	N	5	CB-GSM
2	35					X										X			N	N	32	GP-GP
3	15					X										X			N	N		CBP-GSM
4	45					X										X			N	N		PG-P,G,S

COMMENTS Segment primarily high angle rock. What oil there is is quite difficult to detect, and is very local.

2 of 29

REVIEWED 7W DATE 4/20/90

OG: K. Mary
 SEGMENT ST/ FL-05
 SUBDIVISION A (pt.)

DATE 19 April 90

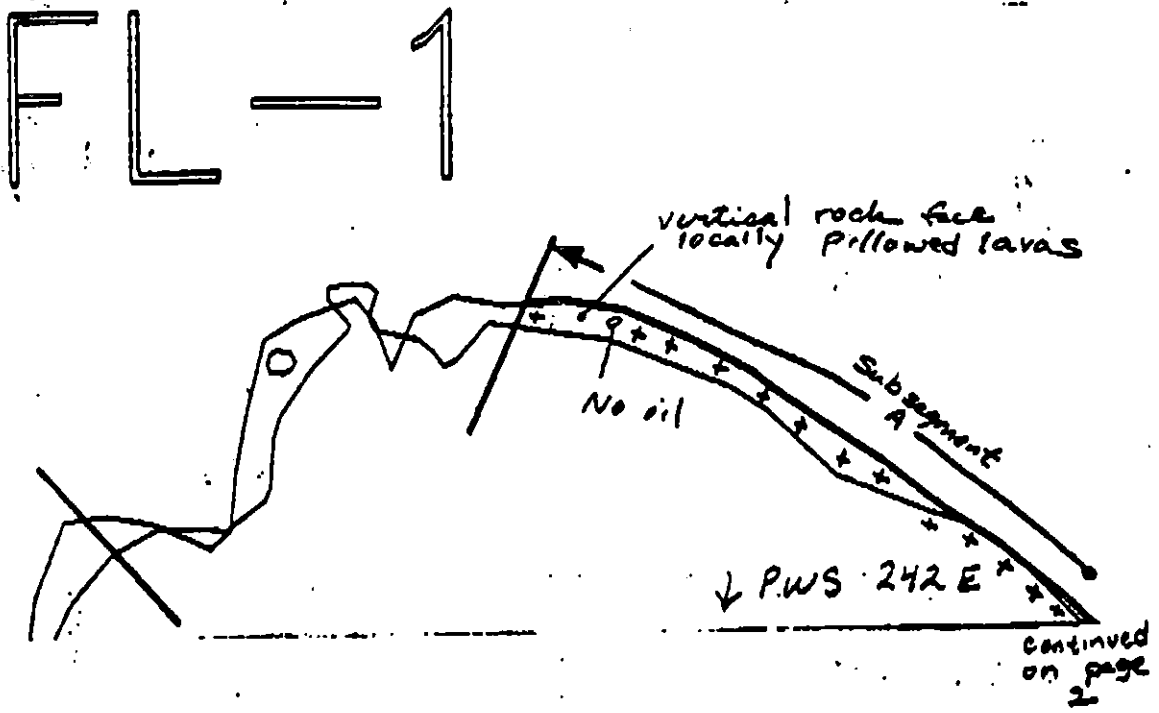
CHECKLIST

- ☐ M. Arner
- ☐ Approx. Scale
- ☐ Seismic Data
- ☐ Oil Data
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Eel Habitat
- ☐ SSR
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ Photo Location(s)
- ☐ Photo Location(s)

LEGEND

- 1 Δ
- 2 Δ
- Pr. Substrate Oil
- CT/C
- Continuous Distribution
- CT/B
- Broken Distribution
- CT/P
- Patchy Distribution
- CT/S
- Spotted Distribution
- Oil Vegetation
- Oil
- Photo location, direction, and number

SKETCH MAP



- 'Bedrock': Pillow Lavas; Epidote Rich fault gouge; Slate; Graywacke; etc.
- Cobble, Boulder sized material
- Pebble, Gravel, Sand sized materials; sediment & regolith



1 - 394 - 2729 - = none observed

Oil Character Length (m) 1 - PO - CV - CT 223 ST - MS - PT - TB - 1 - R - NO 199

Note: all lengths are in mcs

200229

1/4

SEGMENT ST/ FL-05

SUBDIVISION A (pt.)

DATE 19 April 90

CHECKLIST

M. Area
 Approx. Scale
 Sed. Sub. Body
 Oil Out.
 Wash
 Length
 S. Cover
 Sediment Character
 Eel. H. W. L. W. L.
 SS
 Probe Location(s)
 Profile(s)
 P. Location(s)
 Probe Location(s)

LEGEND

1 A

P. - No Subsurface Oil

2 A

P. - Subsurface Oil

CT/C

Continous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Sparsely Distributed

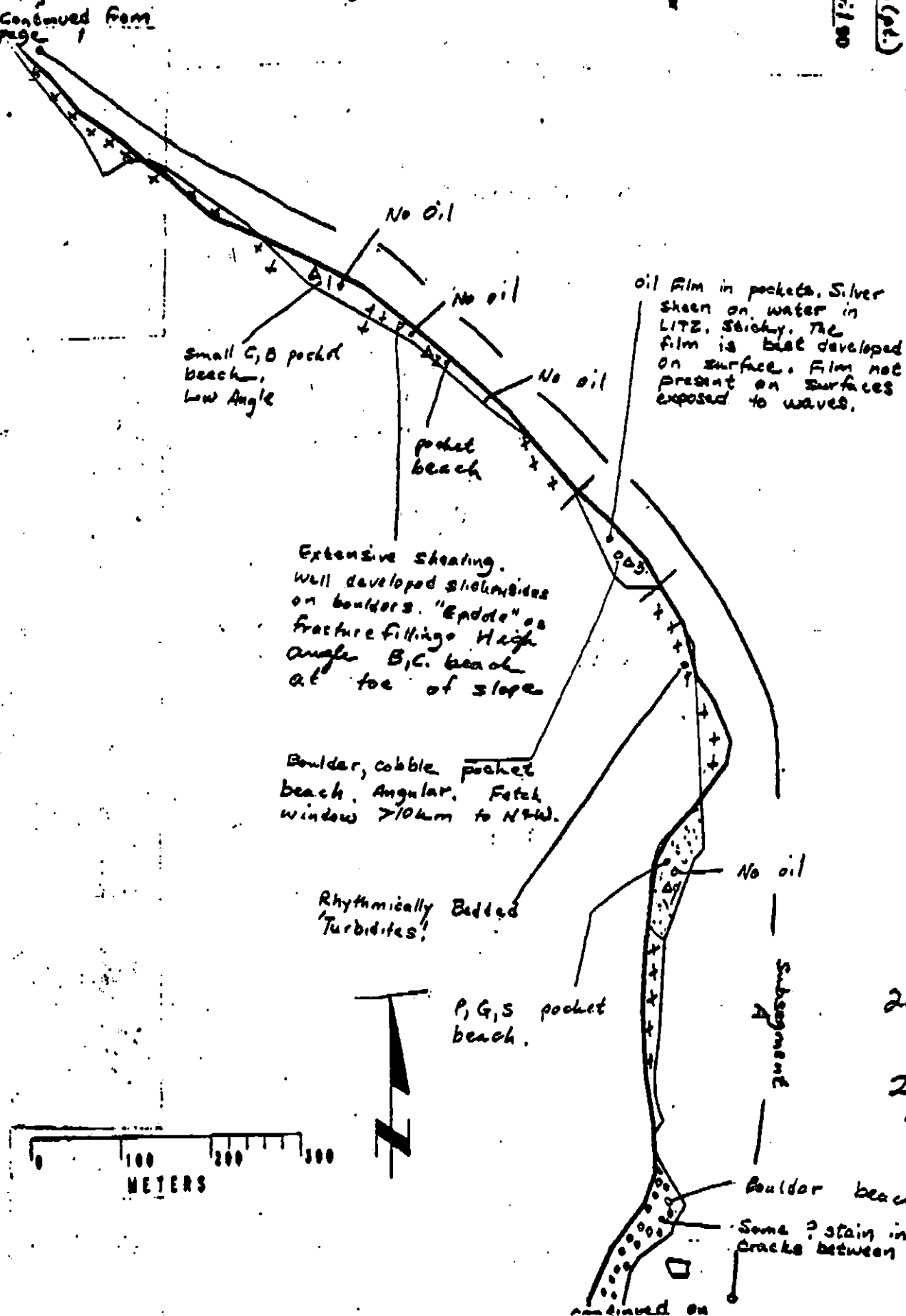
Dead Vegetation

1 A

Photo location, direction, and number

Continued from Page

Oil Character Length (m): AP
 PO
 CV
 CT
 ST
 MS
 PT
 TB
 FL
 NO



21 of 20

2/4

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/22/90

Segment ST / 10/FL5 Subdivision A Date (mo / day / yr) 4 / 19 / 90

Time (24 hr) 1200-1600 Biologist Lennon wind 0, cloudy, no seas

(A) Substrate type and % of segments:
(1) Bedrock 70 (2) Boulder 14 (3) Cobble 10 (4) Pebble 3 (5) Sand 3 (6) Silt

(B) Overall % cover of biota (% of segment): Dense Moderate 60% Low

(C) Density, substrate preference (by number from A, above), & vertical zonation of major taxa: (upper-U; mid-M; low tidal-L); juveniles / adults (X), new settlement (3)

Photographs:
Roll No. ST/10/13

Frames 0 - 3

BARNACLES

Dense			Moderate			Sparse			Rare			
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
X 2	2	2	X 2	X 2	X 2	2	X 2	2	X 2	X 2	2	NOT PRESENT
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

MYTILUS

Dense			Moderate			Sparse			Rare			
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	X 2	2	X 2	X 2	X 2	NOT PRESENT
3	3	3	3	X 3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

GASTROPODS

Dense			Moderate			Sparse			Rare			
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	X 2	2	X 2	X 2	X 2	NOT PRESENT
3	3	3	3	3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

FUCUS

Dense			Moderate			Sparse			Rare			
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	X 2	2	X 2	X 2	X 2	NOT PRESENT
3	3	3	3	X 3	3	3	3	3	3	3	3	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

Wildlife Observations/ General Comments: Mytilus juv. dense only in bedrock cracks
 1 cormorant 1 water ouzel Fucus w/ swelling conceptacles and new sporlings.
 4 bald eagles 1 gull Storm scouring at the north end ^{perhaps} prevented occupation
 1 Stellers jay of smaller clasts.
 Ecological Considerations:
 Eagle nest was not seen, presumably its still there; purse seine hookoff.

6929

ST/10/FL5

A

3123 m

Lemon

DATE 19 Apr 90

TIME 1200-1600

TIDE HEIGHT +6 to 2.1

1 = BEDROCK 2 = BOULDER 3 = COBBLE 5 = SAND 6 = SILT

SPECIES	UITZ	MITZ	LITZ	COMMENTS
FILAMENTOUS BROWNS		2		
BOSSIELLA/CORALLINA		1	1	in pools
CALLIARTHRON/CORALLINA				
CLADOPHORA SPP	1	1		
COSTARIA SPP				
ENDOCLADIA MURICATA	1			
FILAMENTOUS GREENS	1	1	2	
FILAMENTOUS REDS		1, 2	2	
OLOIOPELTIS FURCATA				
HALOSACCION GLANDIFORME	1			
LAMINARIA SPP				
LITHOTHAMNION		1	1	in pools
NEREOCYSTIS SPP				
PORPHYRA SPP				
RALPHSIA/HILDENBRANDIA		1, 2		
PHODOMELA LARIX				
RHOHOMENIA PALMATA				
SCYTOSIPHON SPP				
ULVA SPP				
ZOSTERA MARINA				
ENTOROMORPHA				
Holothuridea		3		about 1 cm long
ANTHOPELURA SPP		1	1	
(SEMI) BALUNUS CARIOSUS				
B. GLANDULA				
BRYOZOANS				
CHITONS (other than K. TUNICATA)				
CLAMS				
CRABS				
DERMASTERIAS IMBRICATA				
KATHARINA TUNICATA		1	1	
LEPTASTERIAS HEXACTIS			3	
LIMPETS	1, 2, 3	1, 2, 3	1, 2, 3	
LITTORINA SPP				
NUCELLA SPP		1, 2	1, 2	
PAGURUS SPP				
PISASTER OCHRACEUS			1	
POLYCHAETES				
PYCNOPODIA HELIANTHOIDES				
SEARLESIA DIRA				
SERPULIDS				
SIPHONARIA THERSITES				
TEALIA		1, 2	1, 2	
GMAMBRIID ANOMALOPORUS	2, 3	2, 3		

FLORA:

FAUNA:

DATE 19 Apr 90 TIME 1600-1630 1730-1900 TIDE HEIGHT 2-1' to +5'

1 = BEDROCK

2 = BOULDER

3 = COBBLE

5 = SAND

6 = SILT

FLORA:

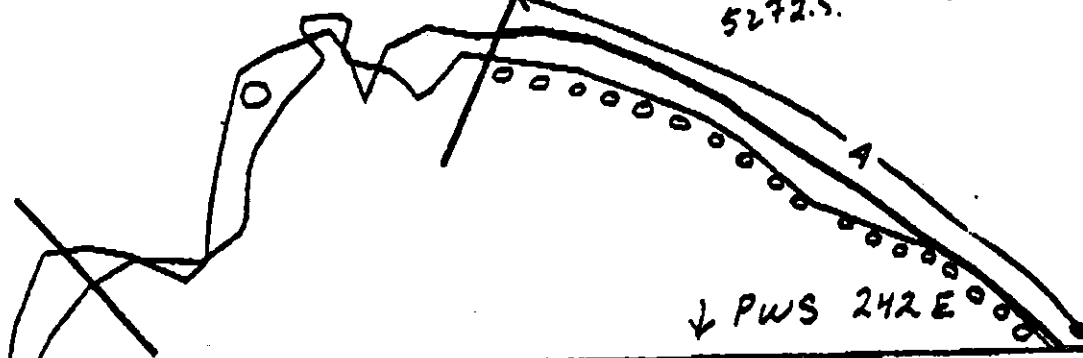
SPECIES	UITZ	MITZ	LITZ	COMMENTS
Desmarestia		3		
BOSSIELLA/CORALLINA				
CALLIARTHRON/CORALLINA				
CLADOPHORA SPP				
COSTARIA SPP				
ENDOCLADIA MURICATA	2	3		
FILAMENTOUS GREENS		3	2, 3	
FILAMENTOUS REDS			2	
GLOIOPELTIS FURCATA				
HALOSACCION OLANDIFORME				
LAMINARIA SPP				
LITHOTHAMNION				
NEREOCYSTIS SPP				
PORPHYRA SPP		①		sporling
RALPHSIA/HILDENBRANDIA				
PHODOMELA LARX				
RHOHOMENIA PALMATA				
SCYTOSIPHON SPP				
ULVA SPP				
ZOSTERA MARINA				
ENTOMORPHA		2, 3	2, 3	
Prasiola	1			on pinniped I.
GAMMARID AMPHIPODS	3, 4	3, 4		under drift and under many cobbles
NEMERTEA	3, 4	3, 4		in drift line and other places
ANTHOPLEURA SPP				
(SEMI) BALUNUS CARIOSUS				
B. GLANDULA				
BRYOZOANS				
CHITONS (other than K. TUNICATA)				
CLAMS				
CRABS				
DERMASTERIAS IMBRICATA			1	
KATHARINA TUNICATA				
LEPTASTERIAS HEXACTIS				
LIMPETS	1, 2, 3	1, 2, 3	1, 2, 3	
LITTORINA SPP				
NUCELLA SPP		1, 2	1, 2	
PAGURUS SPP				
PISASTER OCHRACEUS			1	
POLYCHAETES				
PYCNOPODIA HELIANTHOIDES				
SEARLESIA DIRA				
SERPULIDS				
SIPHONARIA THERSITES				
TEALIA				
CENTIPEDE	2, 3			on oil

FAUNA:

130/29

FL-1

	"	m uncor.	corrected	
A	No 17.3	2595	2729	
A	VL 2.5	375 2920	394	3123
B	No 1.2	180	199	
B	VL 2.75	412.5	434	
B	Lt. 11.4	1710.	1798	2421
		2302.5 5272.5	5544	



XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

0.0.0.0 No Oil

FL-5

ADEC Segment Length: 5357m

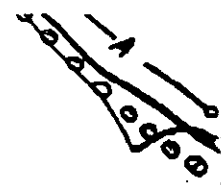


Map Key: PWS-2429

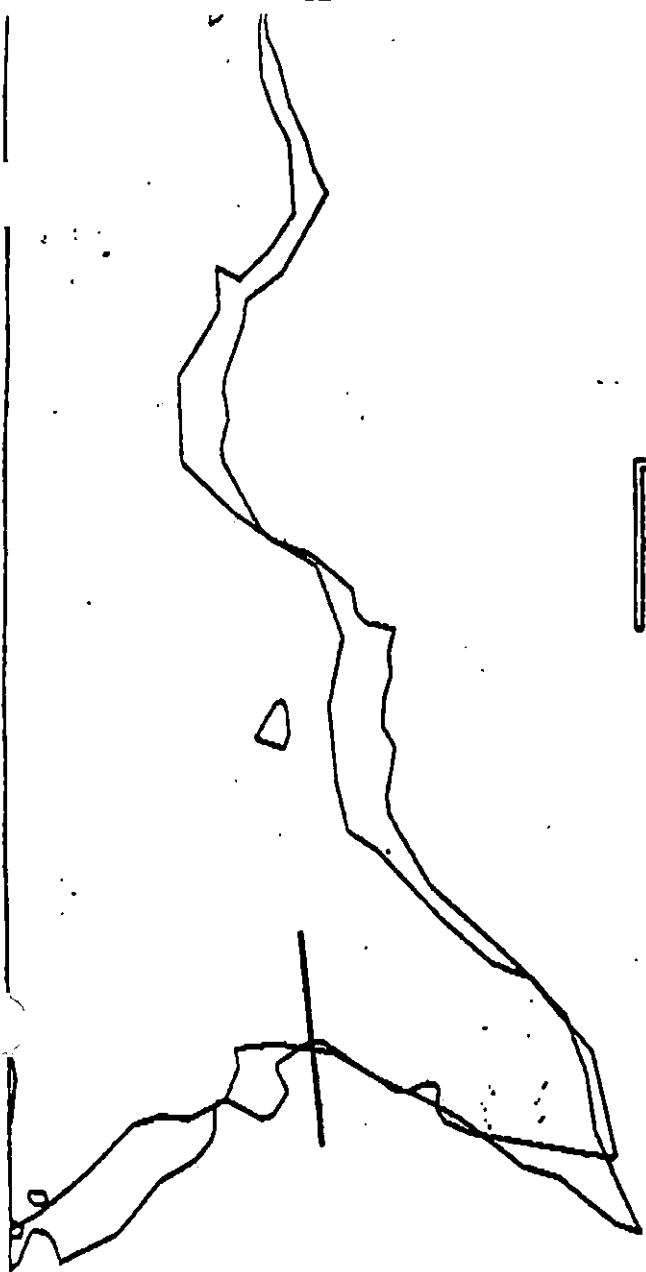
Name: R. MartyDate: 19 April 1990

Date Entered:

PWS
2420



FL-2



PWS
242 F →

150/29

FL-4

↓ PWS 242C 2/6

XXXX Wide
//// Medium
--- Narrow
TTTT Very Light
0000 No Oil

FL-5

ADEC Segment Length: 5357m

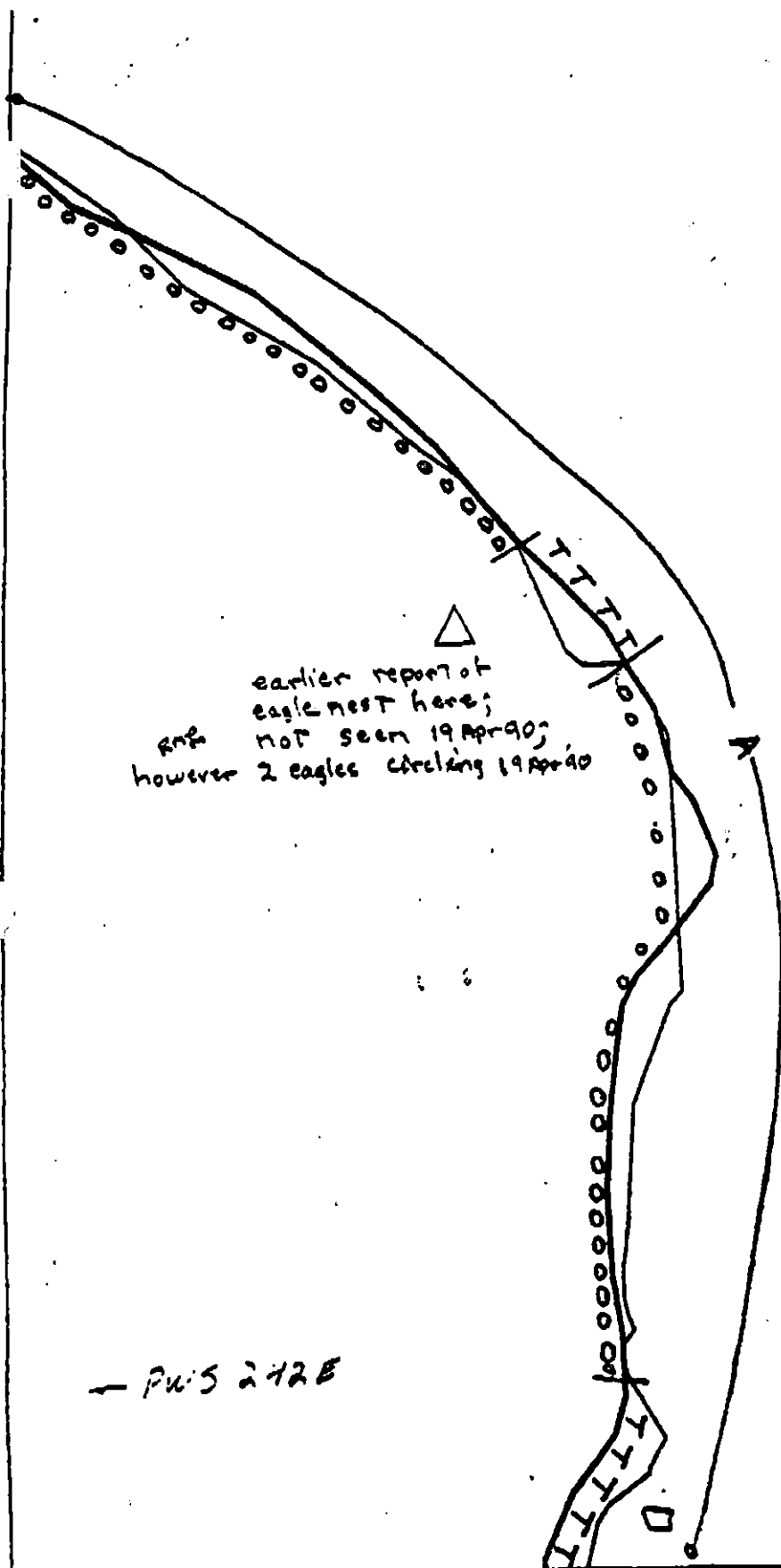


Map Key: PWS-2420

Name: R. Marty

Date: 19 April 1990

Date Entered:

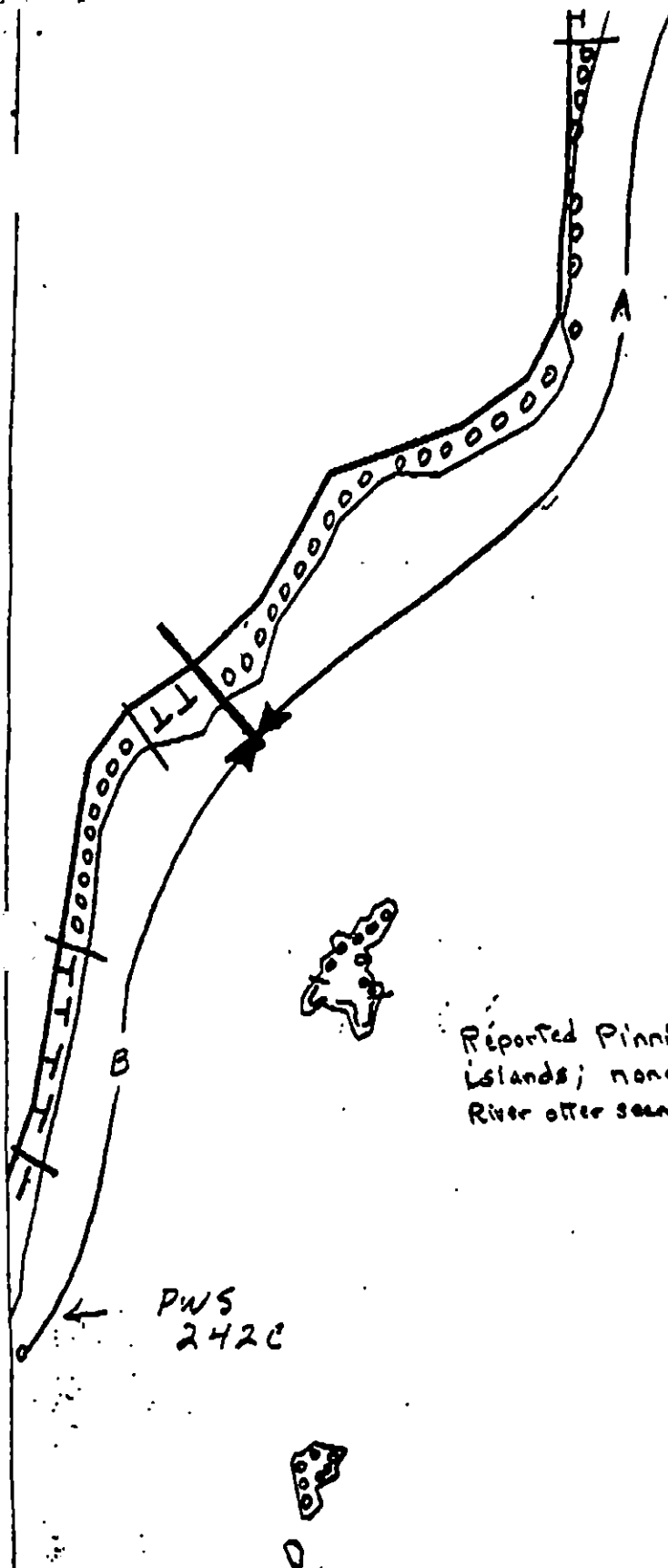


Map Key: PWS-2421

Name: R. MartyDate: 19 April 1990

Data Entered:

↑
PWS 242 F



← PWS
242 C

1701 29

4/6

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

0000 No Oil

FL-5

ADEC Segment Length: 5357m



Map Key: PWS-2424

Name: R. Marty

Date: 19 April 1990

Date Entered:

REGION: PRINCE WILLIAM SOUND

SEGMENT: ST/FL-05

SUBDIVISIONS: B (2 OF 2)

SHORELINE EVALUATION

SEGMENT ST/ FL-05 SUBDIVISION B (2 OF 2) DATE 4/19/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 226-40-16400

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)

1B Salmon stream mouth - spawning (7/10 to 8/31)

1K Purse seine hook-off (7/20 to 9/30)

5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unoiled biota and substrate. Biologist feels Anadromous stream is in Subdivision B, not Subdivision A as originally mapped. Probable pinniped (seal) haulout nearshore near border of A and B. Eagle nest not confirmed.

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: _____ DATE: _____

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 1644 m: V.Light 436 m: No Oil 228 m
Subsurface Oil Observed: Yes X No _____ Maximum Depth 15+cm

RECOMMENDATIONS:

☐ No Treatment Recommended	☐ Snare/Absorbent Booms
☒ Treatment Recommended	☐ Oil Snares (pom poms)
☐ Manual Pickup	☐ Absorbents (pads, rolls, etc)
☒ Bioremediation	☐ Spot Washing: _____ Wands
☐ Tarmat Removal	☐ Beach Cleaner
	☐ Other (see comments)

COMMENTS: Recommended treatment is bioremediation of surface and sub-surface oil in areas shown on attached sketch map. Work should be conducted between 6/1 and 7/10 based on eagle nest and salmon constraints, after approval by ADF&G and USFWS regarding eagle nest.

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

- 1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No bioremediation or other chemical application within 100m of stream without authorization from ADF&G. No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G. Treatment which is not intrusive and which will not affect nearshore oil or toxicity levels, such as manual removal, can probably proceed without adherence to time constraints. In any case, contact ADF&G Habitat Division prior to treatment for consultation and/or permit application.
AGENCY CONTACT PERSON: ADF&G John Morison 267-2324
- 1C Salmon fry nursery area (4/31 to 7/31)
No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to July 31 unless authorized by ADF&G. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G prior to treatment for confirmation and advice.
AGENCY CONTACT PERSON: ADF&G Larry Peltz 424-3214
- 1D Esther Hatchery release (4/15 to 6/15)
1E Main Bay Hatchery release (4/20 to 6/15)
1F Sawmill Bay Hatchery release (4/15 to 6/1)
1G Cannery Creek Hatchery release (4/21 to 6/1)
1H Remote release site
No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G and/or PWS Aquaculture Association. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G or PWS Aquaculture Association for confirmation and authorization.
AGENCY CONTACT PERSON: 1E ADF&G Larry Peltz 424-3214
1D 1F 1G PWS Aquaculture Association John McMillan or Bruce Suzumoto 424-7511
- 1I Gill net area (6/7 to 8/31)
1J Purse seine area (7/20 to 9/30)
1K Purse seine hook-off (7/20 to 9/30)
1L Set net sites (6/11 to 7/25)
Contact ADF&G for specific dates, locations and constraints. Restrict boat and air traffic to essential minimum. When set net sites are present (1L) restrict beach operations to essential minimum as authorized by ADF&G. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
AGENCY CONTACT PERSON: ADF&G James Brady 424-3212
- 2M Herring spawning (4/1 to 6/15)
Contact ADF&G for confirmation - dates and locations may vary. Restrict boat traffic to essential minimum. Avoid damage to unilled intertidal and subtidal algae and seagrass. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.
AGENCY CONTACT PERSON: ADF&G Evelyn Biggs 424-3235
- 3N, 3P Harbor seal and sea lion pupping (5/15 to 7/1)
3O, 3Q Harbor seal and sea lion molting (8/15 to 9/15)
Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts. No application of Inipol within two weeks of arrival dates (work window at these sites is limited to 7/2 to 7/31). Contact ADF&G and USFWS prior to treatment for confirmation.
AGENCY CONTACT PERSON: US National Marine Fisheries Service Steve Zimmerman 586-7235
ADF&G Don Calkins 267-2403
- 5R Seabird colony (5/1 to 9/1)
Restrict air and boat traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance from colony. Contact USFWS prior to treatment.
AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 5S Shorebird/waterfowl concentration (4/1 to 5/15)
Restrict all activity to essential minimum, especially air traffic. Contact USFWS and ADF&G for confirmation.
AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
ADF&G Tom Roth 267-2206
- 5T All Bald Eagle nests (3/1 to 6/1)
Active Bald Eagle nests (3/1 to 9/1)
Restrict air traffic and all disturbance to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.
AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
- 6U Recreation: Tent sites (6/1 to 9/15)
6V Anchorages (6/1 to 9/15)
6W Forest Service cabins (6/1 to 9/15)
6X Lodge (6/1 to 9/15)
6Y Special use destination
- 7Z Subsistence area: Salmon harvesting (5/1 to 9/30)
7HH Finfish harvesting
7II Deer harvesting (8/15 to 2/28)
7JJ Invertebrate harvesting
Contact ADF&G and appropriate Native Corporation for specific dates, locations, and constraints. Restrict boat and air traffic and beach disturbance to essential minimum. If plans for treatment include methods such as hot water wash or application of Inipol which might affect intertidal or nearshore oil or toxicity levels, contact ADF&G and appropriate Native Corporation for authorization - see Native Corporation Contact List for each Native Corporation's contact person.
AGENCY CONTACT PERSON: ADF&G Jim Fall 267-2359

SEGMENT ST1 FL05 SUBDIVISION: B DATE 4/20/90

USCG

NAME Shawn Maas DC SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

RECOMMEND BIOREMEDIATION AND SOME
MANUAL REMOVAL IN POCKET BEACHS
WHERE BANDING INTERSECTS THEM.

ADEC

NAME Dave Sale SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

- ① REMOVE STICKY, TARRY COAT FROM POCKET BEACHES AND LOW
ANGLE SHORELINES WHERE OILED SAND CROSSES THESE LOWER
ANGLES. MANUAL REMOVAL IS REQUIRED.
- ② BIOREMEDIATION WHERE CONDITIONS ALLOW. LOW ANGLE BEACHES
WITH SMALLER CORBLE AND PEBBLE SIZES SHOULD HAVE UPPER
LAYER OF BOLLBOBS TURNED OVER TO EXPOSE OILED ROCKS AND
SEDIMENTS BELOW BEFORE REMEDIATION.

LAND MANAGER

NAME Don Homcraft SIGNATURE [Signature]

☐ NO TREATMENT RECOMMENDED
COMMENTS

☒ TREATMENT SUGGESTED

SHORELINE OILING SUMMARY

REVISION NO. 04/13/88

OG R. Marty USCG SHAWN MAAS SEGMENT ST/ FL-05 2 2
 BIO G. Lemon LAND REP D. Kampereft SUBDIVISION 0 (2 OF 2)
 EXXON J. Czarnetzki ADEC D. Sale TIME 12:09 10/16/90
 TEAM NO. 112 TIDE LEVEL +1.7m (5.58') / +0.72m DATE 10 April 1990
 EST. SUBDIVISION LENGTH: 2421 m ☒ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☐ Rock
 SURVEYED FROM: ☒ Foot 2' ☒ Boat 1' ☐ Helo WORKING DIRECTION: N to S
 SURFACE SEDIMENTS: R 70 % B 14 % C 10 % P 3 % G 2 % S 1 % M 0 % V 0 %
 SLOPE: Long 20 % Hang 50 % Vert 30 % WAVE EXPOSURE: ☐ Low ☐ Med ☒ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 1798 m VL 434 m NO 129 m

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR				IMPACTED ZONES			
	10	15	20	25	30	35	40	45	SU	U	M	U
ASPHALT PAVEMENT *	REMOVED											
POOLED												
COVER												
COAT	0		P	X								
STAIN												
MOUSSE												
PATTIES												
TARBALLS												
FILM												
NO OIL									X		X	X

PAVEMENT H F ~~0~~ sq. m by 80 cm
 (removed)
 PATTIES / TARBALLS 0 BAGS
 (removed)
 NEAR SHORE SHEEN? NO BR RW SL TL

OILED DEBRIS	NO	AMOUNT		
		SM	MD	LG
Logs	X			
Vegetation	X			
Trash	X			
Debris	X			

DID YOU COLLECT DEBRIS?

YES ☒ NO ☐
Asphalt/Tar
TYPE Trash#BAGS <1

(all detected debris was removed)

Photographs:

Roll No. ST/10/13Frames 4-14

* removed - none remaining

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL (cm)	BELOW		OIL / FILM COLOR				PIT ZONE				A N A	SHEEN %	LYND	V	SURFACE - SUBSURFACE SEDIMENTS
		OP	OR	OL	OF	NO		UO	UO	30	35	40	45	SU	U	M	U					
1	12					X								X				N	N	N		CPG-CPG
2	32			X			2-7		X			X		X				?	N	N		PG-GSV
3	24		X				0-8		X			X		X				?	N	N		CPB-PSM
4	34					X								X				N	N	24		PG-PGS
5	19		X				0-15	X				X		X				N	Y	15		CBP-PGS
6	33					X								X				?	N	28		PG-PG,V

COMMENTS: Segment is primarily high angle rock with very narrow bands of coat. Where the band intersects pocket beaches there is residual oil beneath the surface to depths of up to 7cm. The oil is quite viscous / tarry & of low mobility

REVIEWED 7WDATE 4/20/90

OG R. Marty

SEGMENT ST/ FL-05

SUBDIVISION B (ct)

DATE 19 April 90

CHECKLIST

- Area
- Approx. Scale
- Seafloor Data
- On Data
- Width
- Length
- % Cover
- Substrate Character
- Est. 1980/1981
- SS
- Particle Location(s)
- Photo Location(s)
- Photo Location(s)

LEGEND

1 Δ

Pr. No Subsurface Or

2 Δ

Pr. Subsurface Or

CT/C

Continuation Distribution

CT/B

Broken Distribution

CT/P

Partial Distribution

CT/S

Subsided Distribution

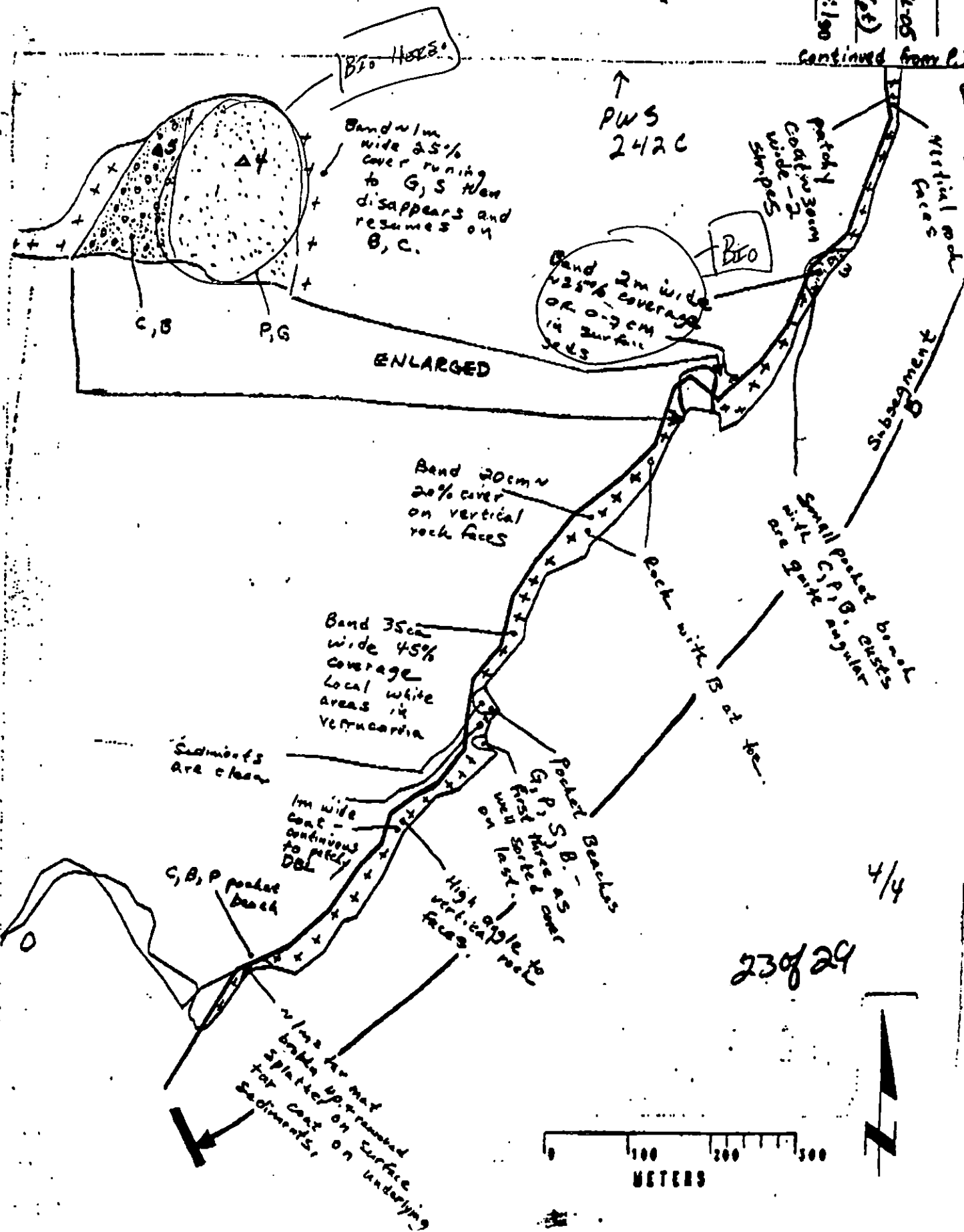
CT

Old Vegetation

CT

Photo location, direction, and number

Continued from p.



ON Character U-100 Ap PO CV CT ST MS TB FL NO

REVISIONS

SHORELINE ECOLOGICAL SUMMARY

REVISION: 03/25/90

Segment ST / 10/ELS Subdivision B Date (mo / day / yr) 4/19/90Time (24 hr) 1600-1630-1730-1900 Biologist Lemon Wind 0, broken clouds
no seas(A) Substrate type and % of segments:
(1) Bedrock 70 (2) Boulder 14 (3) Cobble 10 (4) Pebble 3 (5) Sand 3 (6) Silt (B) Overall % cover of biota (% of segment): Dense Moderate 55% Low (C) Density, substrate preference (by number from A, above), &
vertical zonation of major taxa: (upper-U; mid-M; low tidal-L);
juveniles / adults (X), new settlement (⊙)Photographs:
Roll No. ST/10/13Frames 4-14

BARNACLES

Dense			Moderate			Sparse			Rare			NOT PRESENT
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	X2	X4	2	2	2	X	2	2	X	
3	3	3	X3	X3	3	X4	X4	3	3	3	X	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

MYTILUS

Dense			Moderate			Sparse			Rare			NOT PRESENT
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	2	⊙	2	X	2	X	
3	3	3	3	3	3	3	X	3	X	3	X	
4	4	4	4	4	4	4	X	4	X	4	X	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

GASTROPODS

Dense			Moderate			Sparse			Rare			NOT PRESENT
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	2	2	X	X	2	X	2	X	
3	3	3	3	3	3	X	X	3	X	3	X	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

FUCUS

Dense			Moderate			Sparse			Rare			NOT PRESENT
1U	1M	1L	1U	1M	1L	1U	1M	1L	1U	1M	1L	
2	2	2	2	X	X	2	⊙	2	X	2	X	
3	3	3	3	X	X	3	3	3	X	3	X	
4	4	4	4	4	4	4	4	4	4	4	4	
5	5	5	5	5	5	5	5	5	5	5	5	
6	6	6	6	6	6	6	6	6	6	6	6	

Wildlife Observations/ General Comments:

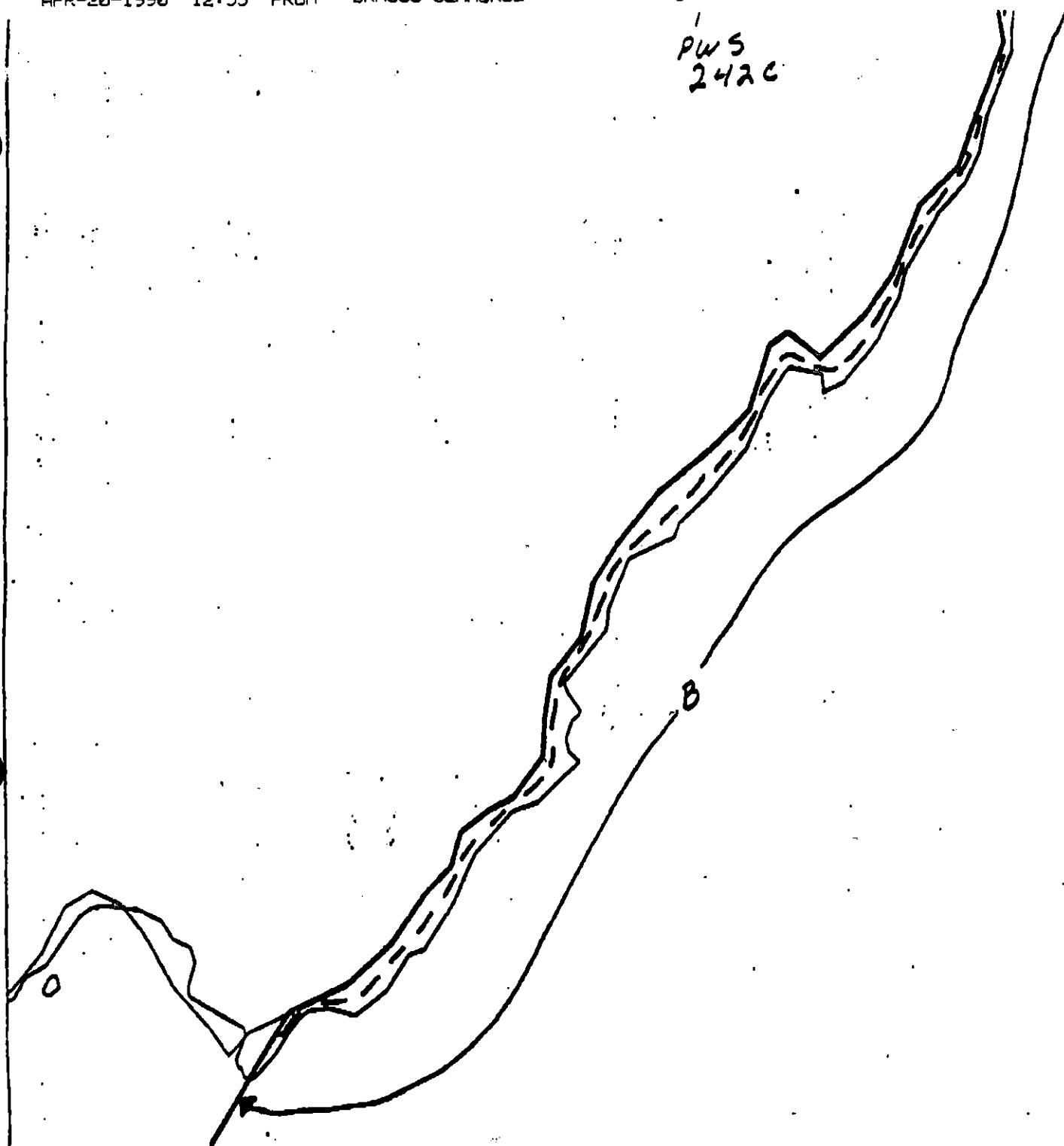
2 cormorants 1 stellar jay 1 gull
2 Alcidae 1 mink
1 river otter 2 oystercatchers

Fucus w/ swollen conceptacles and new sporlings.
Littorina on eggs.

No unusual mortalities of any kind seen.

Ecological Considerations:

Pinniped haulout off shore rocks; anadromous stream needs to be relocated on map.

PWS
242C

19429

C/6

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

FL-5

ADEC Segment Length: 5357m.



METERS

Map Key: PWS-242C

Name: R. Marty

Date: 19 April 1990

Data Entered:

PWS 2420 →

18 of 29

↓ PWS 24A



XXXX Wide
 //// Medium
 --- Narrow
 TTTT Very Light
 0000 No Oil

FL-5

ADEC Segment Length: 3357m



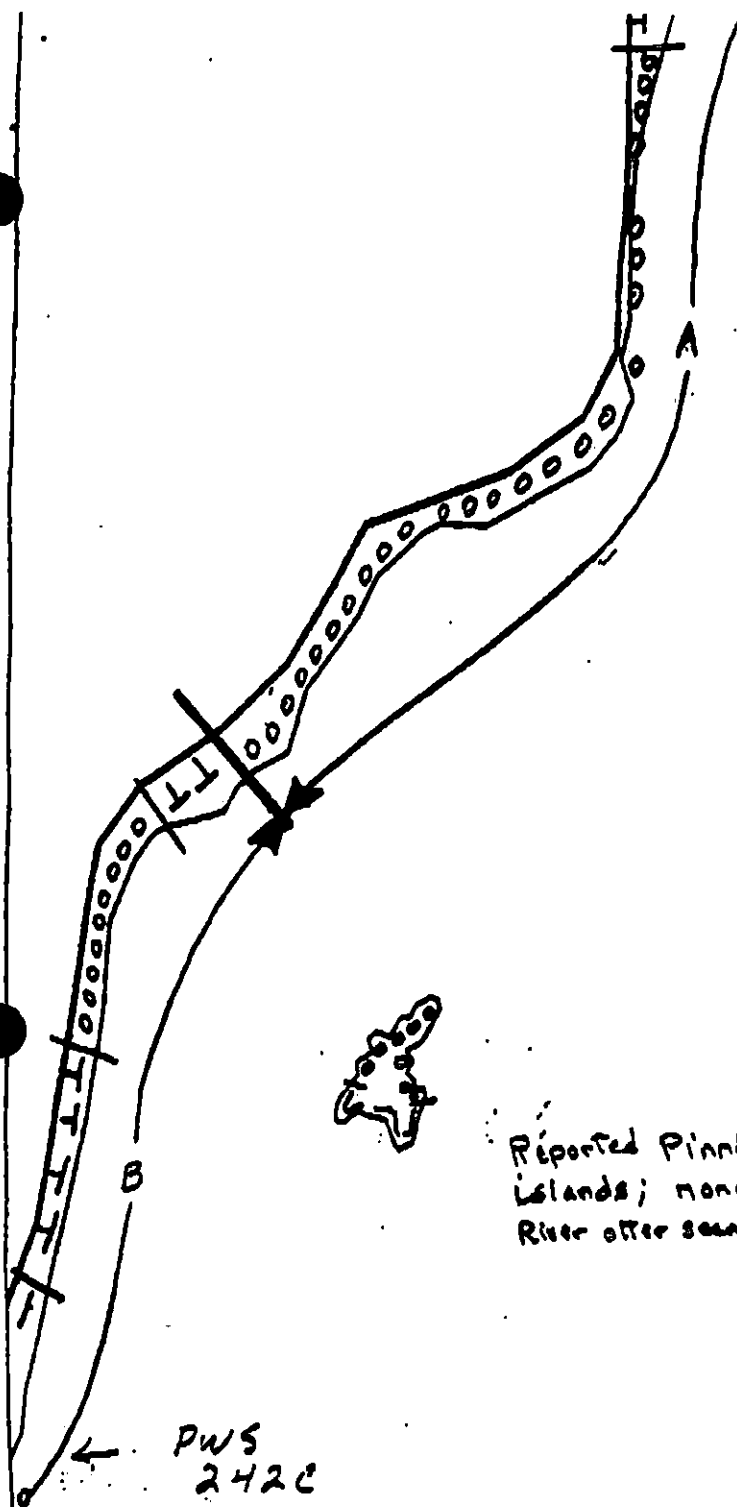
Map Key: PWS-242c

Name: R. Marty

Date: 19 April 1990

Date Entered:

↑
PWS 242 F



Reported Pinniped haulout R&R
Islands; none seen 19 Apr 90.
River otter seen here " " "

← PWS
242C

1701 29

4/6

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

0000 No Oil

FL-5

ADEC Segment Length: 5357m



Map Key: PWS-2426

Name: R. Marty

Date: 19 April 1990

Date Entered:

ADDENDUM: SUBDIVISION CONSTRAINTS

SEGMENT FL-5 SUBDIVISION B (2 of 2)

WORK WINDOW	
Bioremediation	WORK PRIOR TO 7/20

ARCHAEOLOGICAL STANDARD CONSTRAINT

If cultural resources are uncovered, PHONE 564-3274.

APPLICABLE ECOLOGICAL TIME CONSTRAINTS

1A,1B	Salmon Stream	ADF&G catalogued anadromous stream (226-40-16400) is more than 100m from work site. No constraint to bioremediation.
1K	Purse Seine Area	Closed to bioremediation after 7/20.
3N,O,P,Q	Harbor Seal & Sea Lion Pupping and Molting	NO TIME CONSTRAINT. Authorized per memorandum dated 5/14/90 from Kathryn Frost/ADF&G to Mark Kuwada/ADF&G.
5T	Bald Eagle Nest	NO CONSTRAINT. USFWS 6/1/90 map indicates no active nest within 400m of Subdivision A work site.

OTHER ECOLOGICAL CONSIDERATIONS

Do not apply bioremediation to specific areas where seals are observed to haulout. Do not chase or harass seals or sea lions, and do not approach pups under any circumstances. When working on or near haulouts, complete the job as quickly as possible with minimum personnel, equipment, noise and disturbance. Keep boats and personnel as far from actual haulouts as is practical to do the work specified. Minimize air traffic near haulouts, maintain elevation as is practical, and avoid repeated overflights of the same haulout areas. Restrict air traffic and all disturbance to essential minimum. No personnel or boat traffic within 400m of active nests. Air approach and takeoff from and to seaward only; maintain 400m horizontal, 300m vertical distance from active nests. Avoid any unnecessary disturbance or damage to unrolled blots and substrate.

FOSC

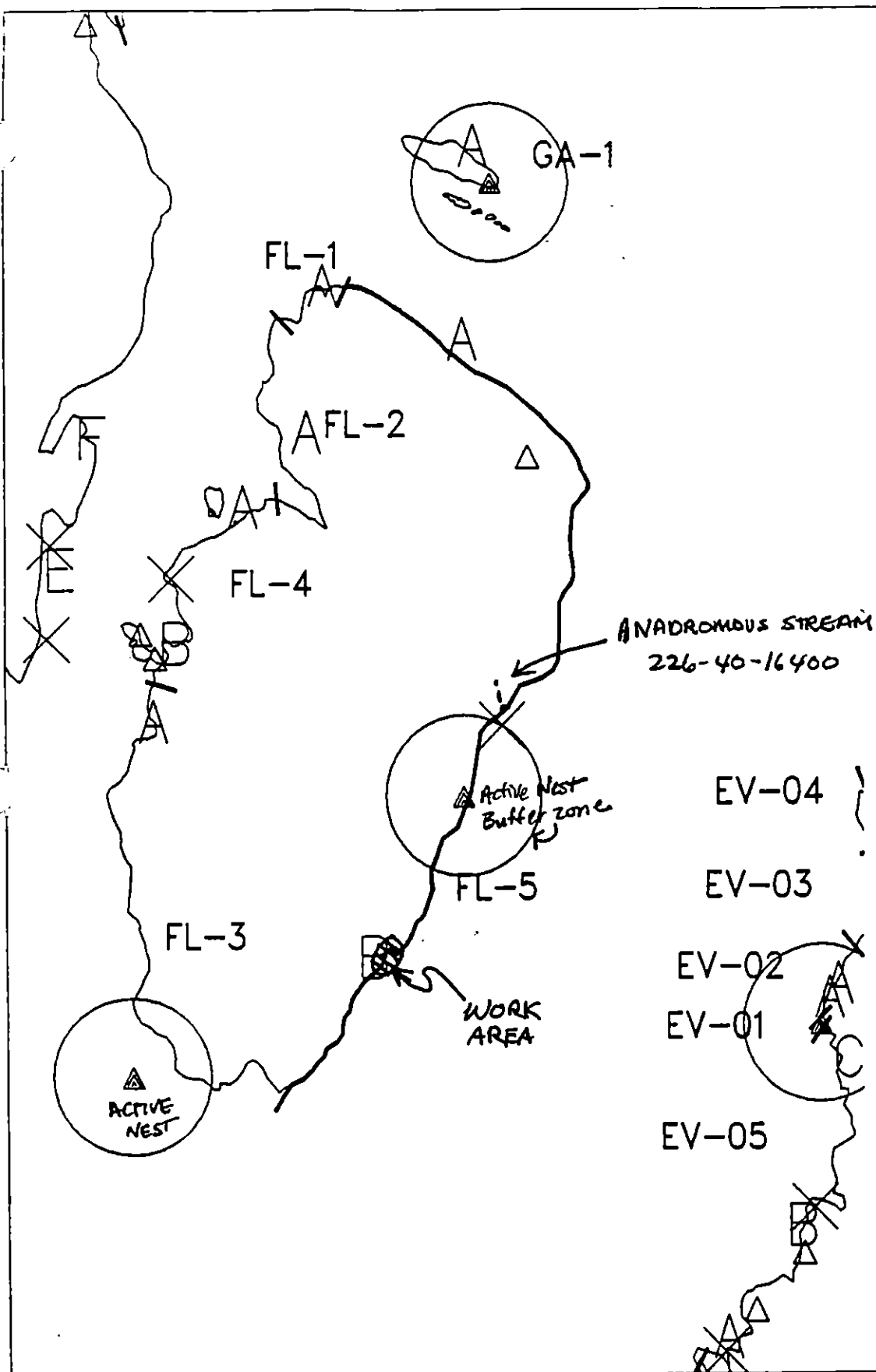
Date

6-12-90

Prepared by

Date

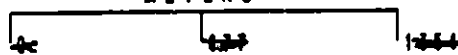
6/11/90



Exxon Company, USA
Map Key: PWS-FL-5
June 04, 1990



ECOLOGY MAP
SEGMENT FL-5
SUBDIVISION B (2 of 2)
METERS



- ★ Seabird Colony
- ▲ Active Eagle Nest
- △ Inactive Eagle Nest

SHORELINE EVALUATION

SEGMENT ST/ FL-05 SUBDIVISION B (2 OF 2) DATE 4/19/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 226-40-16400

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)

1B Salmon stream mouth - spawning (7/10 to 8/31)

1K Purse seine hook-off (7/20 to 9/30)

5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)

See attached Ecological Constraint sheet for specific constraints and contacts.

3N, 3P, 3O, 3Q - Seal pupping and molting.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unoiled biota and substrate. Biologist feels Anadromous stream is in Subdivision B, not Subdivision A as originally mapped. ~~Probable~~ pinniped (seal) haulout nearshore near border of A and B. Eagle nest not confirmed.

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: Charles E. Hume DATE: 5/5/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 1644 m: V. Light 436 m: No Oil 228 m
Subsurface Oil Observed: Yes X No Maximum Depth 15+cm

RECOMMENDATIONS:

<u> </u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u>X</u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u> </u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u>X</u> Bioremediation	<u> </u> Spot Washing: <u> </u> Wands
<u> </u> Tarmat Removal	<u> </u> Beach Cleaner
	<u> </u> Other (see comments)

COMMENTS: Recommended treatment is bioremediation of surface and sub-surface oil in areas shown on attached sketch map. Work should be conducted between 6/1 and 7/10 based on eagle nest and salmon constraints, after approval by ADF&G and USFWS regarding eagle nest.

TAG COMMENTS: SRL CONSTRAINTS ADDENDUM dated 6/11/90 JPP

TAG APPROVAL DATE: May 5 1990

ADEC Art Wenger Art Wenger

EXXON Mark N. Gilbert Mark N. Gilbert FOSC: DATE: 5-18-90

NOAA Gary Pattee Gary Pattee

USCG G.A. Reiter G.A. Reiter NOTICE 24 HRS PRIOR TO WORK

SHORELINE EVALUATION

SEGMENT ST/ FL-05 SUBDIVISION B (2 OF 2) DATE 4/19/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 226-40-16400

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)

1B Salmon stream mouth - spawning (7/10 to 8/31)

1K Purse seine hook-off (7/20 to 9/30)

5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)

See attached Ecological Constraint sheet for specific constraints and contacts.

3N; 3P, 3O, 3Q - Seal pupping and molting.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unopened biota and substrate. Biologist feels Anadromous stream is in Subdivision B, not Subdivision A as originally mapped. ~~Probable~~ pinniped (seal) haulout nearshore near border of A and B. Eagle nest not confirmed.

ARCHAEOLOGICAL CONSTRAINTS:

If cultural resources are uncovered during shoreline treatment, stop work in the vicinity, mark the location of the find and contact a member of Exxon's Cultural Resource Program immediately (564-3657; 564-3658 or 564-3276).

SHPO SIGNATURE: Charles E. Hoffme DATE: 5/5/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 1644 m: V. Light 436 m: No Oil 228 m
Subsurface Oil Observed: Yes X No Maximum Depth 15+cm

RECOMMENDATIONS:

<u> </u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u>X</u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u> </u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u>X</u> Bioremediation	<u> </u> Spot Washing: <u> </u> Wands
<u> </u> Tarmat Removal	<u> </u> Beach Cleaner
	<u> </u> Other (see comments)

COMMENTS: Recommended treatment is bioremediation of surface and sub-surface oil in areas shown on attached sketch map. Work should be conducted between 6/1 and 7/10 based on eagle nest and salmon constraints, after approval by ADF&G and USFWS regarding eagle nest.

TAG COMMENTS:

TAG APPROVAL DATE: May 5, 1990
ADEC Art Weiner Art Weiner
EXXON Mark N. Gilbert Mark N. Gilbert FOSC: DATE: 5-18-90
NOAA Gary Pattee Gary Pattee
USCG G.A. KIEFER G.A. KIEFER NOTICE 24 HRS PRIOR TO WORK

OG R. Marty

SEGMENT ST/ FL-05

SUBDIVISION B (a)

DATE 19 April 1960

CHECKLIST

✓ N. Area
✓ Approx. State
✓ Soil Data
✓ Width
✓ Length
✓ % Cover
✓ Substrate Character
✓ Est. 1000/2 Wt.
✓ Soil
✓ Particle Location(s)
✓ Particle(s)
✓ Photo Location(s)
✓ Photo Location(s)

LEGEND

1 A

Pr. No. Substrate Oil

2 A

Pr. Substrate Oil

Continuous Distribution

CT/B

Broken Distribution

CT/B

Particle Distribution

CT/S

Species Distribution

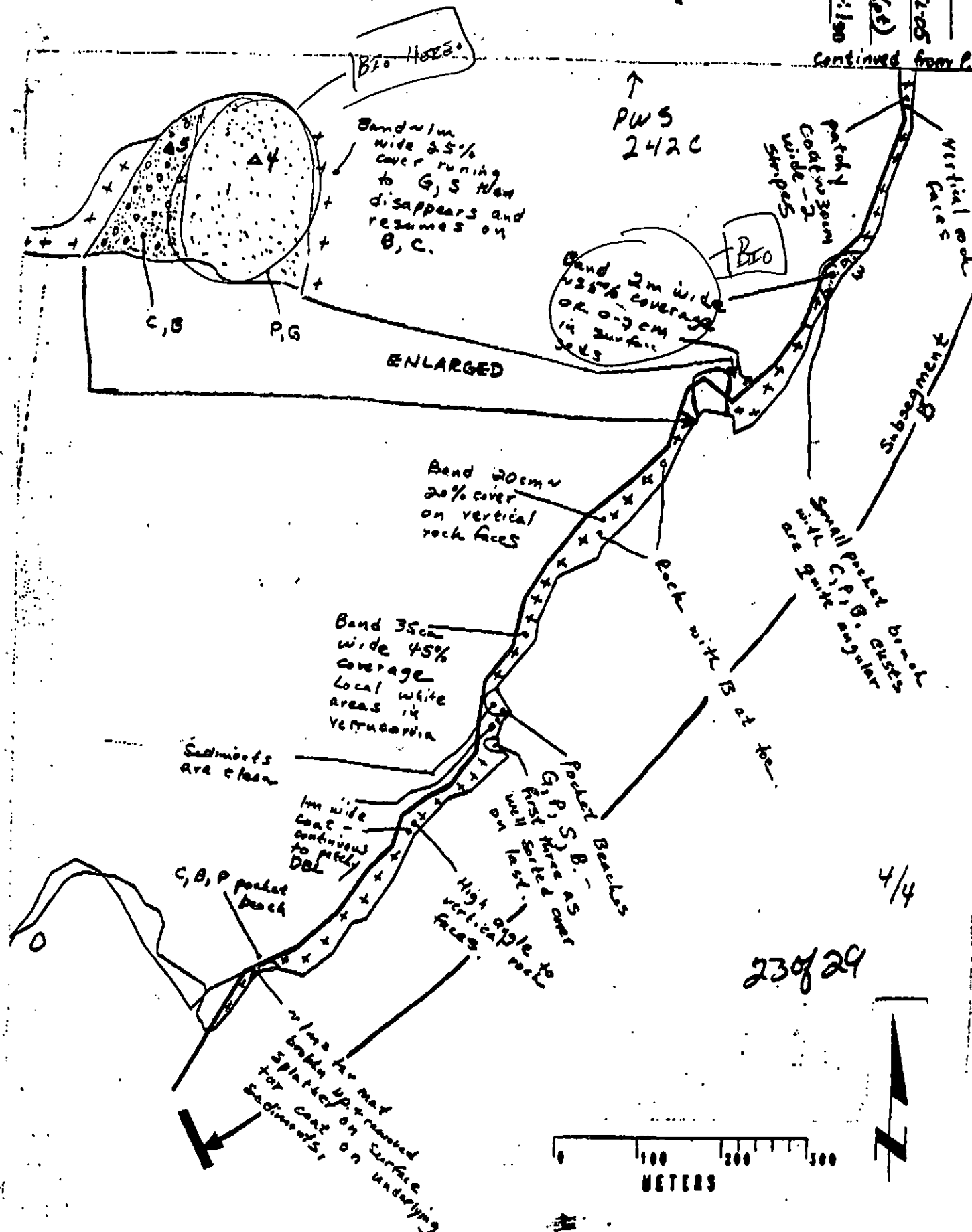
CT/B

Other Vegetation

CT/B

Photo location, direction, and number

Continued from p.



OR Character (Lamin. Eng. AP

PO

CV

CT

ST

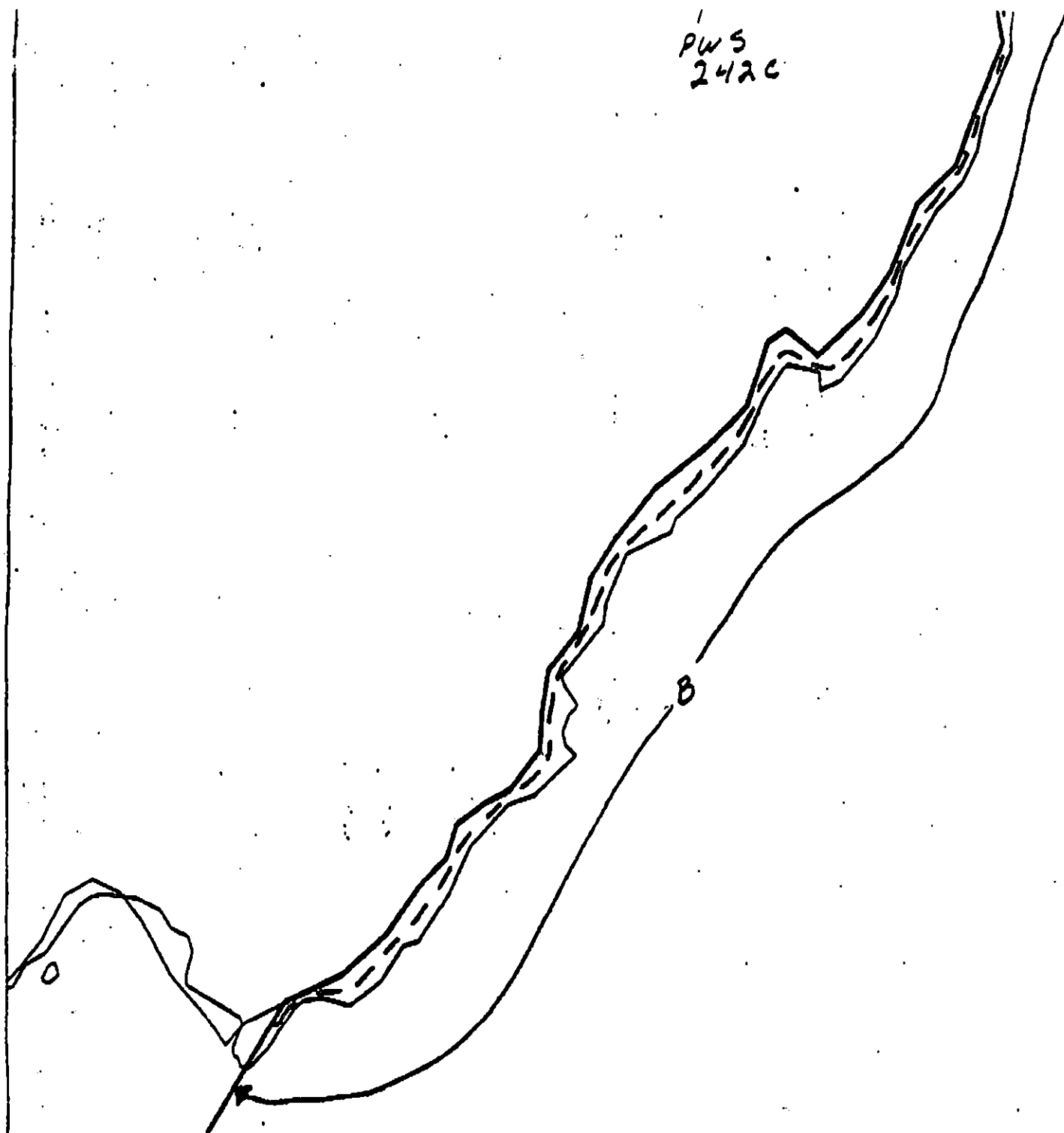
MS

TB

FL

NO

ENCLOSURE

PWS
242C

19429

6/6

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

FL-5

ADEC Segment Length: 5357m.



METERS

Map Key: PWS-242C

Name: R. Marty

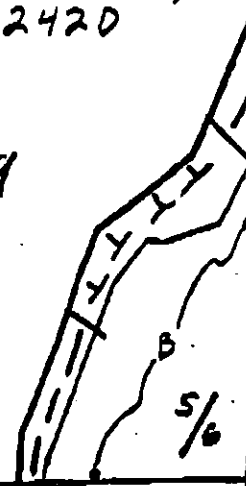
Date: 19 April 1990

Date Entered:

PWS
2420 →

18 of 29

↓ PWS 24A



XXXX Wide

FL-5

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

AOEC Segment Length: 5357m



Map Key: PWS-242c

Name: R. MartyDate: 19 April 1990

Date Entered:

$\frac{4}{6}$

Date Entered:

SHORELINE EVALUATION

SEGMENT ST/ FL-05 SUBDIVISION A (1 OF 2) DATE 4/18/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

ADF&G anadromous stream no. 226-40-16400

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)

1B Salmon stream mouth - spawning (7/10 to 8/31)

1K Purse seine hook-off (7/20 to 9/30)

5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)

See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unoiled biota and substrate. Eagle nest listed in Subdivision A but not confirmed. Anadromous stream supposedly in Subdivision A, but field reports indicated stream in Subdivision B looks more promising.

ARCHAEOLOGICAL CONSTRAINTS:

If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO SIGNATURE: Charles E. H. H. H. DATE: 5/5/90

OILING CATEGORIZATION:

Wide 0 m: Medium 0 m: Narrow 0 m: V.Light 455 m: No Oil 2668 m
Subsurface Oil Observed: Yes No X Maximum Depth

RECOMMENDATIONS:

<u>X</u> No Treatment Recommended	<u> </u> Snare/Absorbent Booms
<u> </u> Treatment Recommended	<u> </u> Oil Snares (pom poms)
<u> </u> Manual Pickup	<u> </u> Absorbents (pads, rolls, etc)
<u> </u> Bioremediation	<u> </u> Spot Washing: <u> </u> Wands
<u> </u> Tarmat Removal	<u> </u> Beach Cleaner
	<u> </u> Other (see comments)

COMMENTS:

TAG COMMENTS:

TAG APPROVAL DATE: May 5, 1990

ADEC Art Weiner Art Weiner

EXXON Mark N. Silbert Mark N. Silbert FOSC: DATE: 5-18-90

NOAA Gary Petrac Gary Petrac

USCG G.A. Reiter G.A. Reiter Not a valid signature for work.

Use: Survey
SEGMENT ST/ FL-05

SUBDIVISION A (pt.)

DATE 19 April 90

CHECKLIST

☐ M. Name
☐ Approx. Scale
☐ Sample Study
☐ OR Data
☐ Notes
☐ Length
☐ % Cover
☐ Substrate Character
☐ E. Habitat
☐ Size
☐ Profile Location(s)
☐ Profile(s)
☐ Pt. Location(s)
☐ Photo Location(s)

LEGEND

1 Δ

Pt. No Substrate OR

2 Δ

Pt. Substrate OR

CT/C

Continuous Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

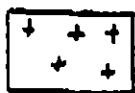
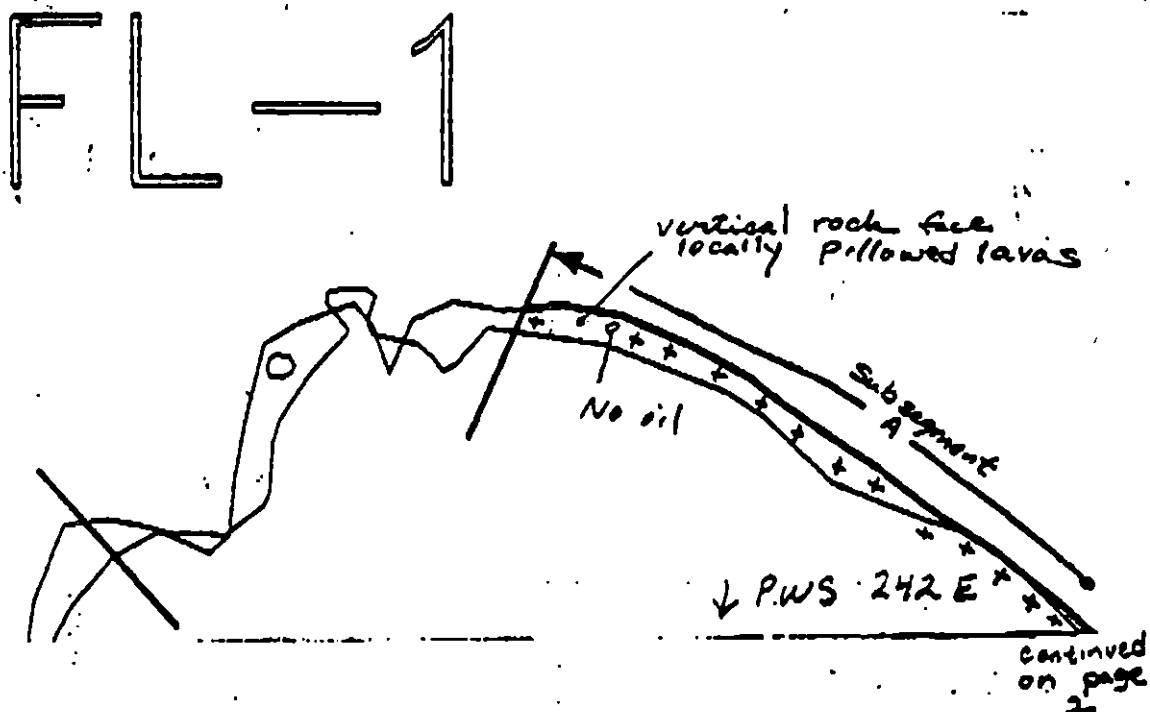
Spotted Distribution

222

Other Vegetation

Photo location, direction, and number

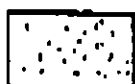
SKETCH MAP



'Bedrock': Pillow Lavas; Epidote
Rich fault gouge; Slate; Graywacke;
etc.



Cobble, Boulder
sized
material



Pebble, Gravel, Sand sized
materials; Sediment & regolith



1 - 394 - 2729 - = none observed

On Character Length (m) Map 1 - PO - CV - CT 222 ST - MS - PT - TB - FL - NO 189

Note: all lengths are in mcs

200729

SEGMENT ST/ FL-05

SUBDIVISION A (pt.)

DATE 19 April 90

CHECKLIST

☐ Answer
☐ Approx. Scale
☐ Sample Entry
☐ Oil Data
☐ Notes
☐ Length
☐ % Cover
☐ Substrate Character
☐ Cor. HMA/VA
☐ SSI
☐ Profile Location(s)
☐ Profile(s)
☐ Photo Location(s)
☐ Photo Location(s)

LEGEND

1 A
 Pt. - No Substratum Oil
 2 A
 Pt. - Substratum Oil
 CT/C
 CT/B
 Broken Distribution
 Patchy Distribution
 CT/S
 Substrate Distribution
 Oil Vegetation
 Photo location, direction, and number

Oil Character Length (m): AP PO CV CT ST MS PT TB FL NO

Continued from Page 1

No oil
 No oil
 No oil
 No oil
 Small C, B pocket beach, Low Angle
 pocket beach

oil film in pockets. Silver sheen on water in LITZ. Sticky. The film is best developed on surface. Film not present on surfaces exposed to waves.

Extensive sheeting.
 Well developed shalesides on boulders. "Epode" as fracture fillings High angle B, C beach at toe of slope

Boulder, cobble pocket beach. Angular. Fetch window > 10km to NW.

Rhythmically Bedded "Turbidites"

P, G, S pocket beach.

No oil

Subsegment A

21 of 209

2/4

Boulder beach
 Some stain in cracks between

Continued on



CHECKLIST

- ☐ Name
- ☐ Approx. Date
- ☐ Sample Study
- ☐ CR Data
- ☐ Maps
- ☐ Length
- ☐ % Cover
- ☐ Species Character
- ☐ E. 100/100
- ☐ SR
- ☐ Photo Location
- ☐ Photo
- ☐ Photo Location
- ☐ Photo Location

LEGEND

1 A

Pr. No. Subsurface CR

2 A

Pr. Subsurface CR

CT/C

Coastal Distribution

CT/B

Broken Distribution

CT/P

Patchy Distribution

CT/S

Spotted Distribution

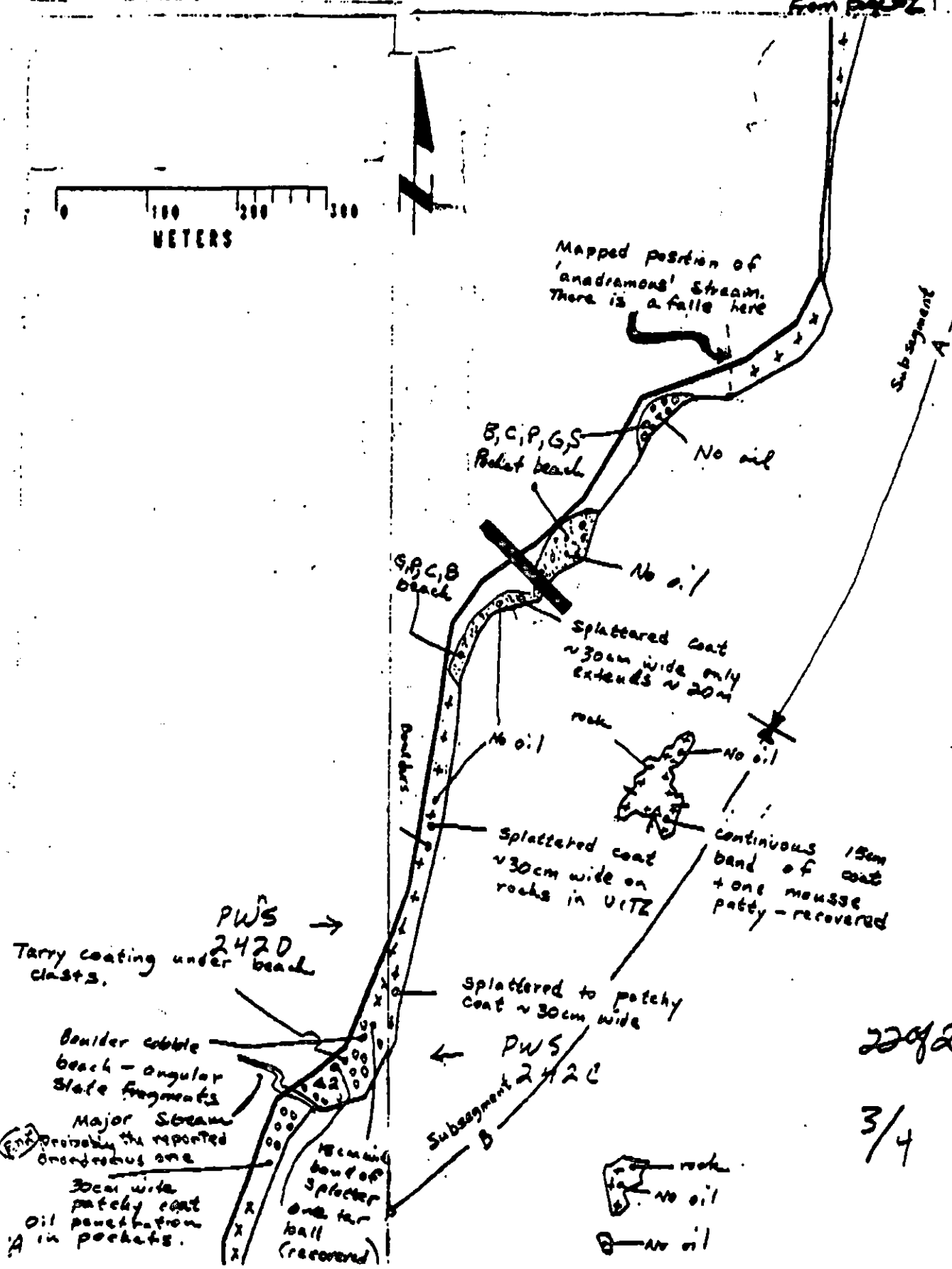
CT/S

CT/S

CT/S

Pr. location, elevation, and number

Continued from page 2



22 of 29

3/4

FL-1

	"	m uncor.	corrected	
A	NO 17.3	2595	2729	
A	VL 2.5	375 2920	394	3123
B	NO 1.2	180	199	
B	VL 2.75	412.5	434	
B	Lt. 11.4	1710.	1798	2421
		2302.5	5544	
		5272.5		

14/29

1/6

↓ PWS 242 E

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

0.000 No Oil

FL-5

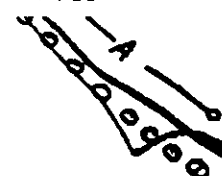
ADEC Segment Length: 5357m



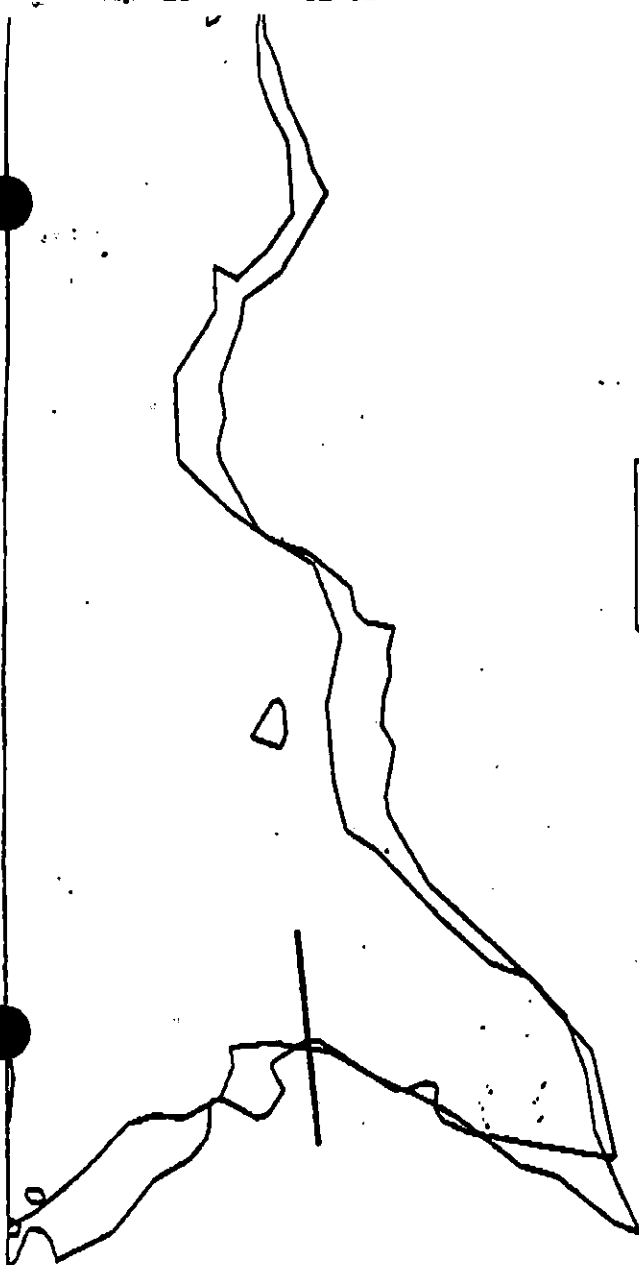
Map Key: PWS-2429

Name: R. MartyDate: 19 April 1990

Date Entered:

PWS
2420

FL-2

PWS
242 F →

15 of 29

FL-4

↓ PWS 2420 2/6

XXXX Wide

//// Medium

---- Narrow

TTTT Very Light

0000 No Oil

FL-5

ADEC Segment Length: 5357m



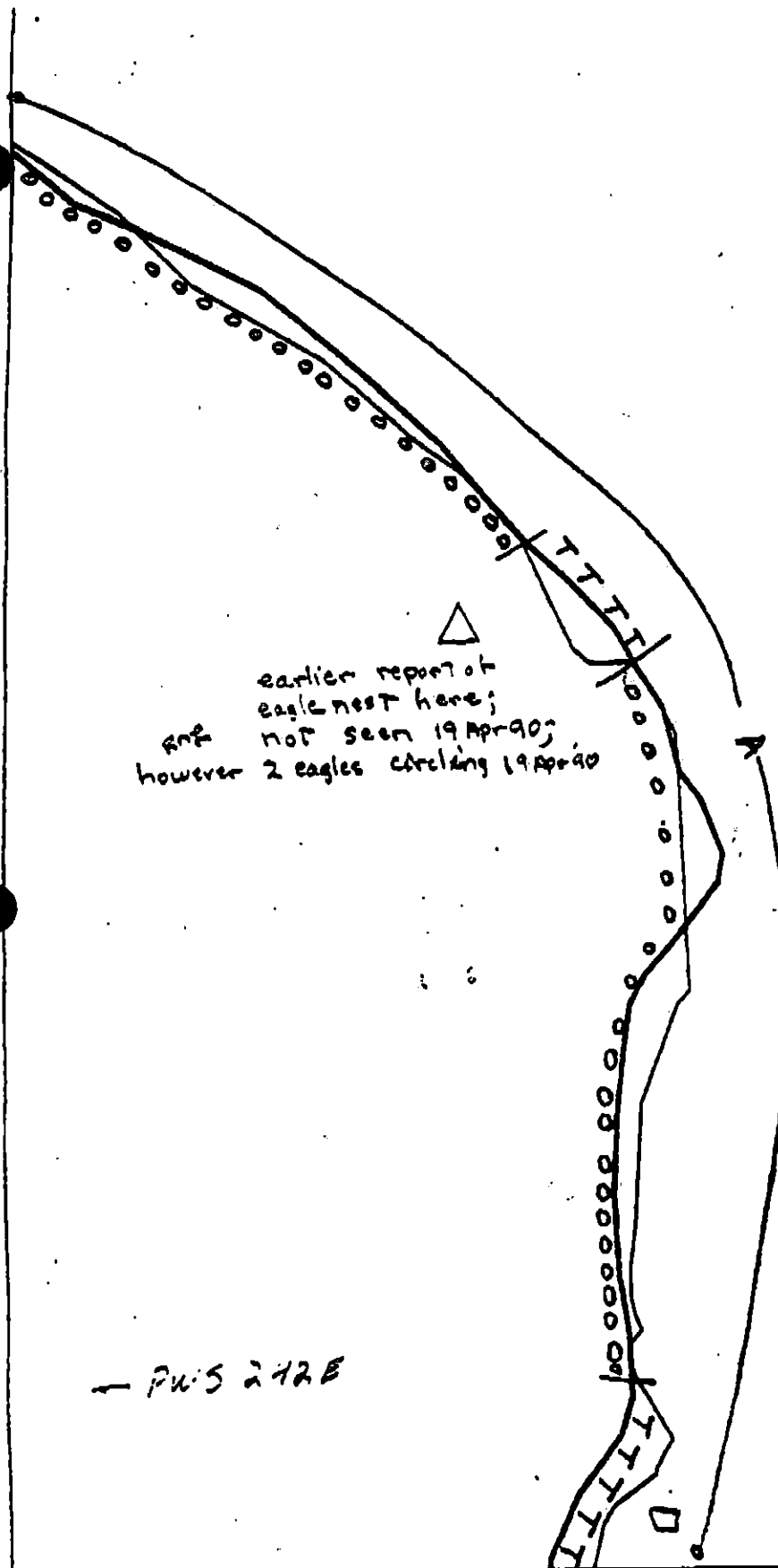
METERS



Map Key: PWS-2420

Name: R. MartyDate: 19 April 1990

Data Entered:



— PWS 242E

16 of 29

 $\frac{3}{6}$

↓ PWS 2420

XXXX Wide

//// Medium

----- Narrow

TTTT Very Light

0000 No Oil

FL-5

ADEC Segment Length: 5357m



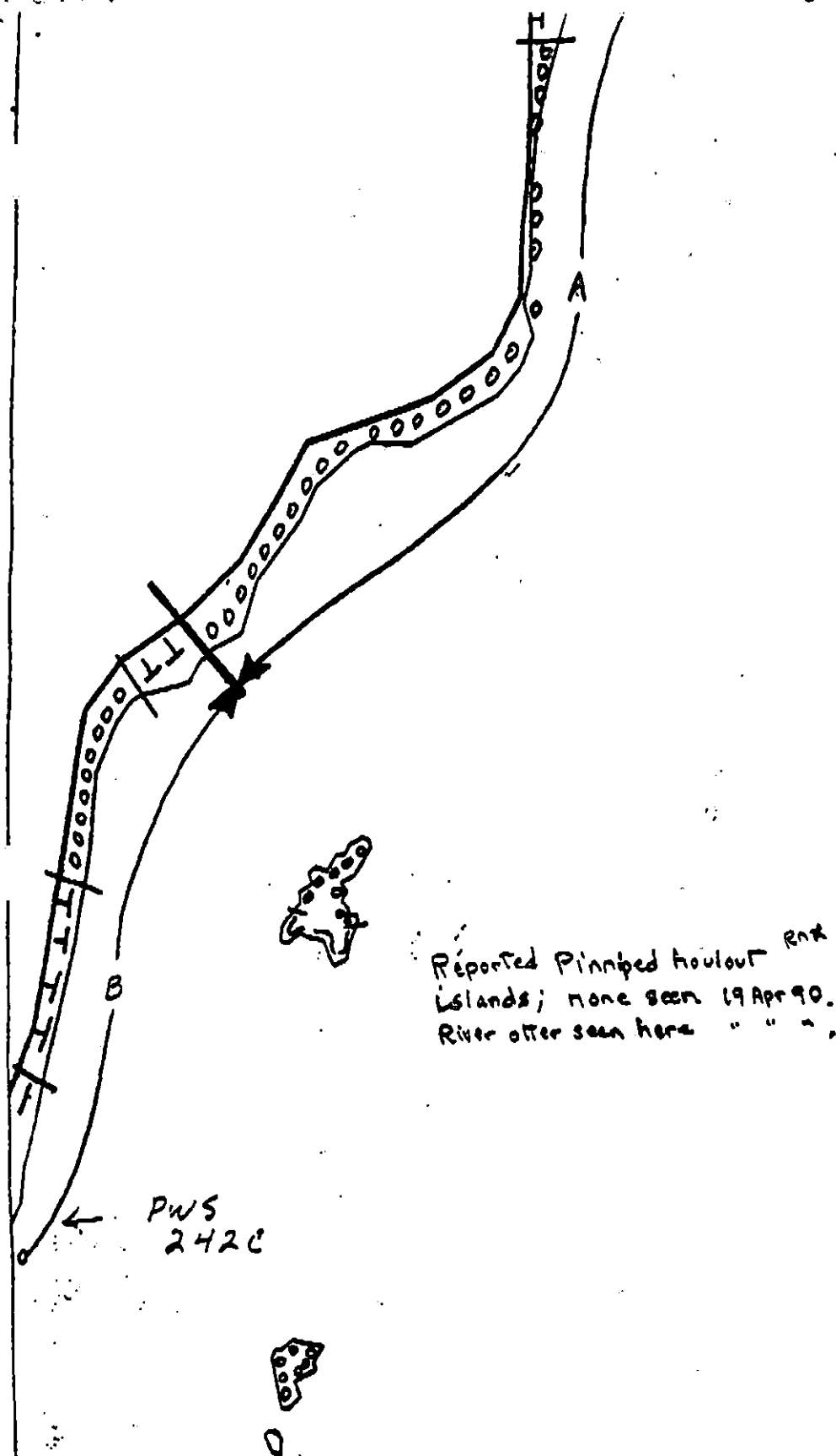
Map Key: PWS-242f

Name: R. Marty

Date: 19 April 1990

Data Entered:

↑ PWS 242 F



170429

4/6

XXXX Wide

//// Medium

--- Narrow

TTTT Very Light

0000 No Oil

FL-5

ADEC Segment Length: 5357m



Map Key: PWS-242d

Name: R. Marty

Date: 19 April 1990

Date Entered:

1991 MAYSAP EVALUATION

SEGMENT: FL 005 SUB: B REGION: PWS SURVEY DATE: 5/1/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) RESTRICTED 3/1 - 9/1

Ecological/Constraints (see page two for details) Eagle nest, Fish harvest area

ARCHAEOLOGICAL CONSTRAINTS:

If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO Signature: _____ Date: _____

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL: _____

TAG: _____

FOSC: _____

TAG APPROVAL DATE: _____

FOSC APPROVAL DATE: _____

ADEC

FOSC

EXXON

USCG

NOAA

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

Eagle Nest: Access restricted from 3/1 to 9/1. USF&WS authorization required. Maintain 1000' vertical and 1/4 mile horizontal buffer.

Fish Harvest Area: Unlimited treatment unless otherwise directed by ADF&G. Sheen containment/recovery procedures required for mechanical treatment.

BAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 5 SEGMENT F1-5 SUBDIVISION B DATE 5/1/91

ADEC

NAME John Hays SIGNATURE [Signature]

☒ NTR Site is very lightly oiled and does not need work this season.

EXXON

NAME Martinez N.J. SIGNATURE N.J. Martinez

☒ NTR No recoverable amount of oil either surface + subsurface further work would not have a net environmental benefit.

LANDMANAGER

NAME Steve Ward OF CVC SIGNATURE [Signature]

☐ NTR This beach shows no surface oil - slight stains and a few speckles here + there. Lots of walking. no oil - pits show no sub oil. no sheening. Good Beach.

USCG/NOAA

NAME DREHER/HODGES SIGNATURE CWO K.L. Dreher

☒ NTR minute traces - no ecological benefit would be gained by further intrusion of this segment.
Very little, if any, oil observed. No further clean up activities necessary. Eagle nest observed.

TIME 12:00 to 12:25 TIDE LEVEL 2.5 ft. to 4.0 ft. ENERGY LEVEL: ☒ H ☐ M ☐ L

SURVEYED FROM: ☒ FOOT ☐ BOAT ☐ HELO WEATHER: ☐ SUN ☒ CLOUDS ☐ FOG ☒ RAIN ☐ SNOW

TOTAL LENGTH SHORELINE SURVEYED: 440 m NEAR SHORE SHEEN: ☐ BR ☐ RB ☐ SL ☒ NONE

EST. OIL CATEGORY LENGTH: W — m M — m N — m VL 35 m NO 405 m US 1869 m

DISTRIBUTION: C = 91-100%; B = 51-90%; P = 11-50%; S = 1-10%; T = <1%
 SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE PHOTO ROLL # MAYSAP- 5 - 8 FRAMES 12

SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

EN reviewed, May 7
REVIEWED CB 11 MAY

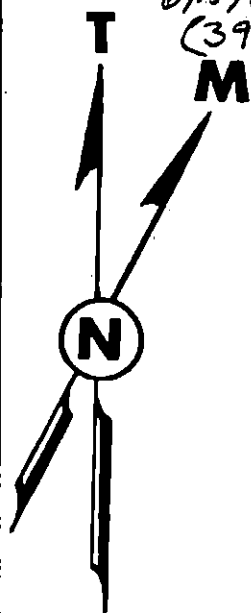
MAP 1991
OG SKETCH MAP
GREG CHANEY
TEAM 5

SEGMENT: E 5 B

DATE: MAY 1991

AIR P.#: WT 010

6/15/89-11
(399)



FLEMMING
ISLAND

LEGEND

BEDROCK	
BOULDERS	
FINE BED.	
DRIFT LOG	
GRASS	
BRUSH	
FOREST	
OILED PIT	
NO OIL PIT	
PHOTO	

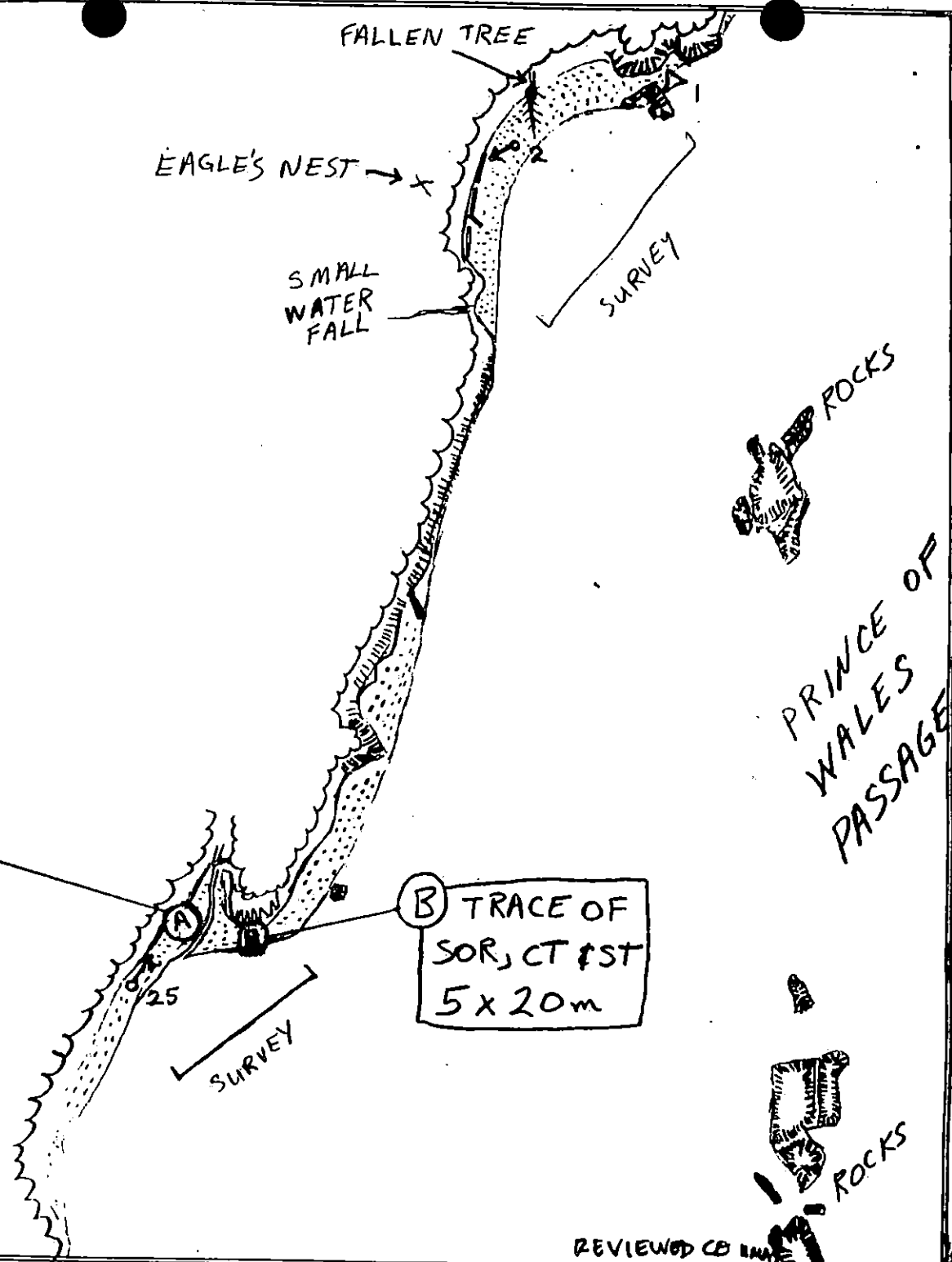
SCALE

120 METERS

APPROXIMATELY

A
TRACE OF
CT & ST
0.2 x 15m

B
TRACE OF
SOR, CT & ST
5 x 20m



REVIEWED CB

MAYSAP BIOLOGICAL SUMMARY FORM

pg 1 of 1

TEAM # 5

DATE 1 May 1991

SEGMENT # FL-5

TIDAL HEIGHT (Range) +2.5 → +4

SUBDIVISION B

BIOLOGIST Crank

SEA STATE 0'

WIND SPEED/DIRECTION 3 knots/E

PHOTOGRAPHS: ROLL # MAYSAP 8

FRAME # 2

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):

(A) Area is located low in MIZ ~7m west of stream. There is rare *Fucus*, rare mussels (various age classes), rare limpets and rare *Littorina* present within the site. Less than 1% biota cover. Below site, near the stream, biota cover increases to 30%. Between the +4' → +2' tide level there is a moderate to densely concentrated intergravel/cobble mussel bed (various age classes).

(B) Area is located in the high MIZ. There is ~10% biota cover including sparse barnacles, rare mussels, sparse *Fucus* (sporadic present), and sparse *Littorina* and limpets. Biota below site similar to that found below site 'A'.

Active eagle nest located w/ 10 m of SUPRA. Eagle is incubating position was observed. No oil was found below nesting site.

Photo MAYSAP roll 8 frame 2 is a wide angle shot of trees including nest.

The biota on the subdivision appears to be healthy.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1-on nest in incubating position	
Seabirds			
Waterfowl	1	2	
Gulls/kittiwakes			
Shorebirds			
Corvids	1	2	
Other Birds			

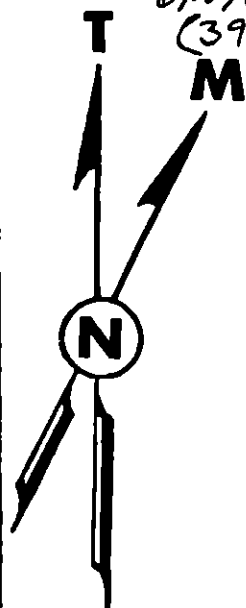
MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters	1		
Pinnipeds (specify)			
Elles (specify)			

Shoreline subdivision map showing important biological features attached.

REVIEWED CB 11 MAY
Reviewed M.B. 5/10/91

MAY 1991
 OG SKETCH MAP: Bio Sketch Map
 GREG CHANEY : Crank
 TEAM 5

SEGMENT: FL 5 B
 DATE: MAY 1991
 AIR P.#: INT 010
6/15/89-11
(399)



FLEMING ISLAND

LEGEND

BEDROCK	
BOULDERS	
FINE BED.	
DRIFT LOG	
GRASS	
BRUSH	
FOREST	
OILED PIT	
NO OIL PIT	
PHOTO	

SCALE

120 METERS

APPROXIMATELY

ACTIVE EAGLE'S NEST
 Eagle in incubating posture
 was observed

SMALL
 WATER
 FALL

FALLEN TREE

SURVEY

(A)
 TRACE OF
 CT & ST
 0.2 x 15m

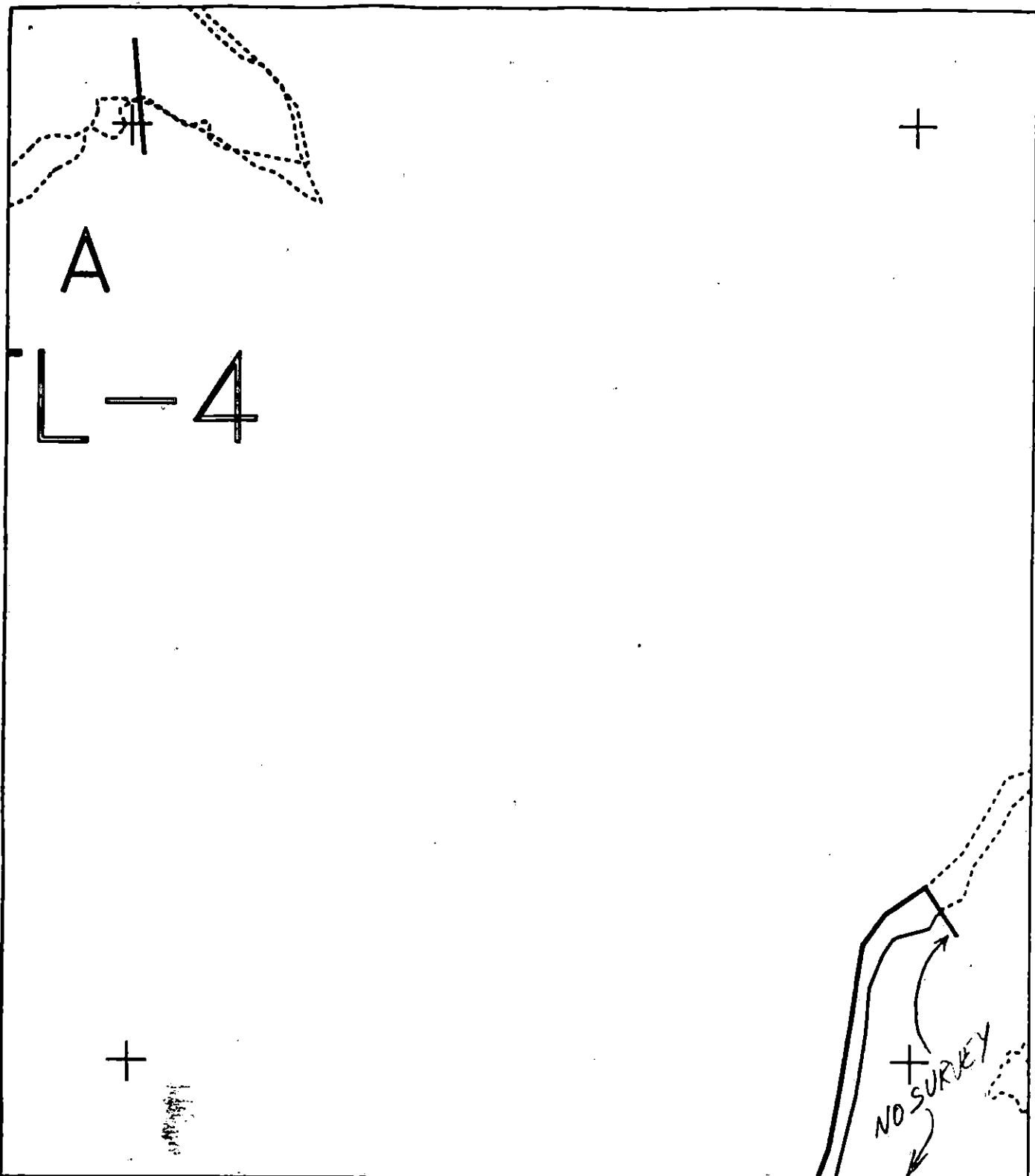
(B) TRACE OF
 SOR, CT & ST
 5 x 20m

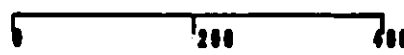
Moderate to densely concentrated
 intergravel mussel bed
 between the +4' to +2' tide level.

ROCKS

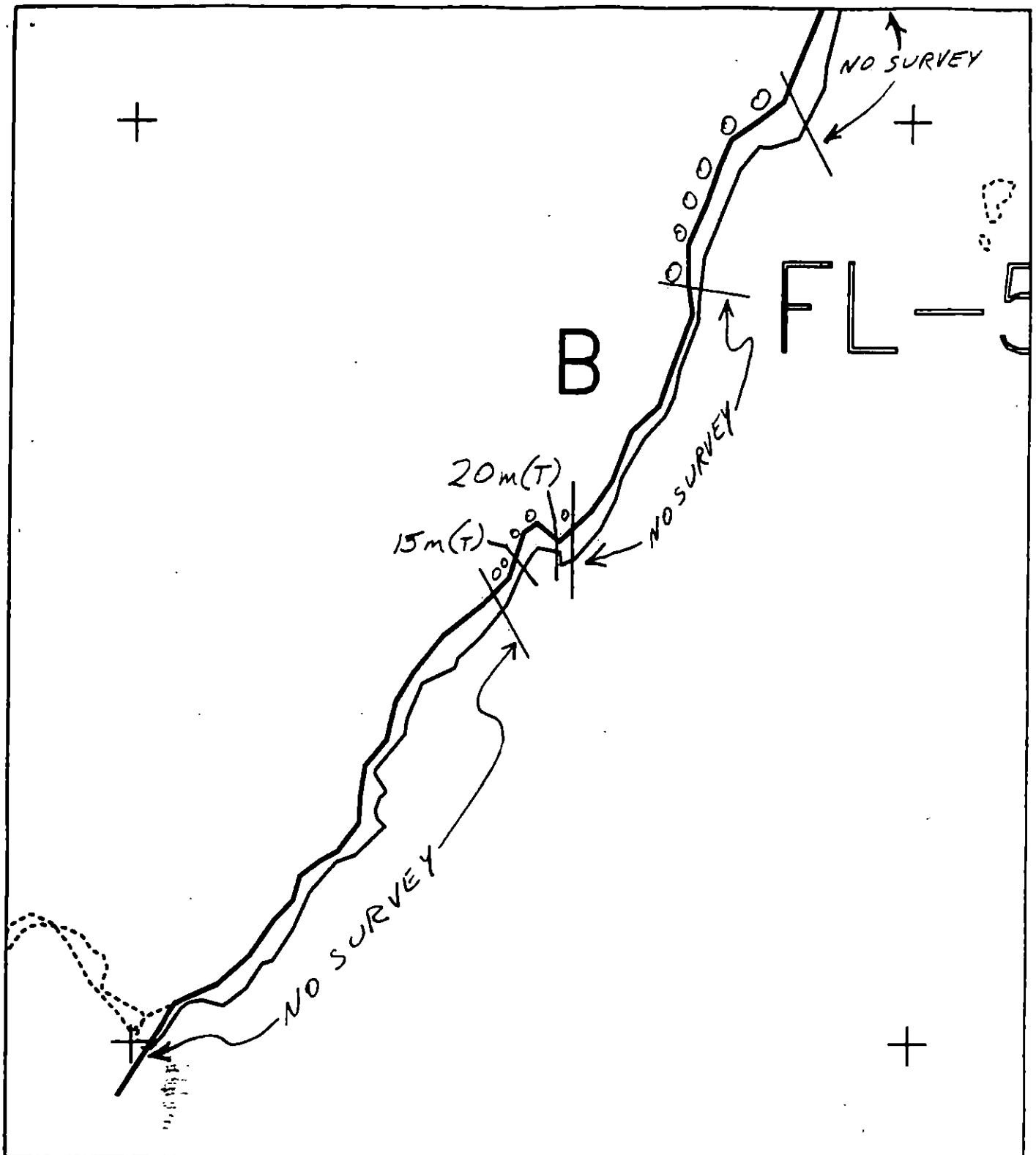
PRINCE OF
 WALES
 PASSAGE

ROCKS



XXXX	Wide	FL005 B ADEC Subsegment Length: 2300m METERS  AK State Plane Zone 4 pr1005bb	 	Subdivision Field Map
////	Medium			Map Key: PWSFL005Bb
----	Narrow			Name: <u>Greg Chaney</u>
TTTT	Very Light			Date: <u>May 1, 1993</u>
0000	No Oil			Date Entered:

EL Reviewed, May 7
 REVIEWED CD 11 MAY



XXXX Wide
 //// Medium
 --- Narrow
 TTTT Very Light
 0000 No Oil

FL005 B
 ADEC Subsegment Length: 2300m
 METERS
 0 200 400
 AK State Plane Zone 4
 911005ba

Subdivision Field Map
 Map Key: PWSFL005B
 Name: *Greg Chaney*
 Date: *May 1, 91*
 Data Entered:

ET reviewed, May 7
 REVISED CB 11 MAY

1991 MAYSAP EVALUATION

SEGMENT: FL 005 SUB: A REGION: PWS SURVEY DATE: 5/1/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) RESTRICTED 3/1 - 9/1

Ecological/Constraints (see page two for details) Eagle nest,
Fish harvest area

ARCHAEOLOGICAL CONSTRAINTS:

If treatment is planned, a cultural resource evaluation is
required prior to shoreline treatment.

SHPO Signature: _____ Date: _____

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL: _____

TAG: _____

FOSC: _____

TAG APPROVAL DATE: _____

FOSC APPROVAL DATE: _____

ADEC _____

FOSC _____

EXXON _____

USCG _____

NOAA _____

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

Eagle Nest: Access restricted from 3/1 to 9/1. USF&WS authorization required. Maintain 1000' vertical and 1/4 mile horizontal buffer.

Fish Harvest Area: Unlimited treatment unless otherwise directed by ADF&G. Sheen containment/recovery procedures required for mechanical treatment.

MAYSAF FIELD SHORELINE COMMENT SHEET

TEAM NO. 5 SEGMENT FL - 5 SUBDIVISION A DATE 5/1/91

ADEC

NAME John Hayes SIGNATURE [Signature]

☒ NTR

Oiling observed on this segment consisted of isolated SOR and subsurface oiling in the UICZ. NTR as oiling was moderate, isolated (0.05m) and in the matrix of large boulders. Only a small portion of segment was surveyed by team.

EXXON

NAME Martinez N.J. SIGNATURE [Signature]

☒ NTR

High energy beach with large boulders with some interstitial S.O.R. Recovery is impractical due to location type of oiling + boulders.

LANDMANAGER

NAME Steve Ward OF CVC SIGNATURE [Signature]

☐ NTR

Not much surface oil, but lots of sheening. Oil found was around base of lg boulders. There appears to be lg amounts of sub-surface except it's damn near impossible to dig pits here. The only good news is this is a High Energy Beach.

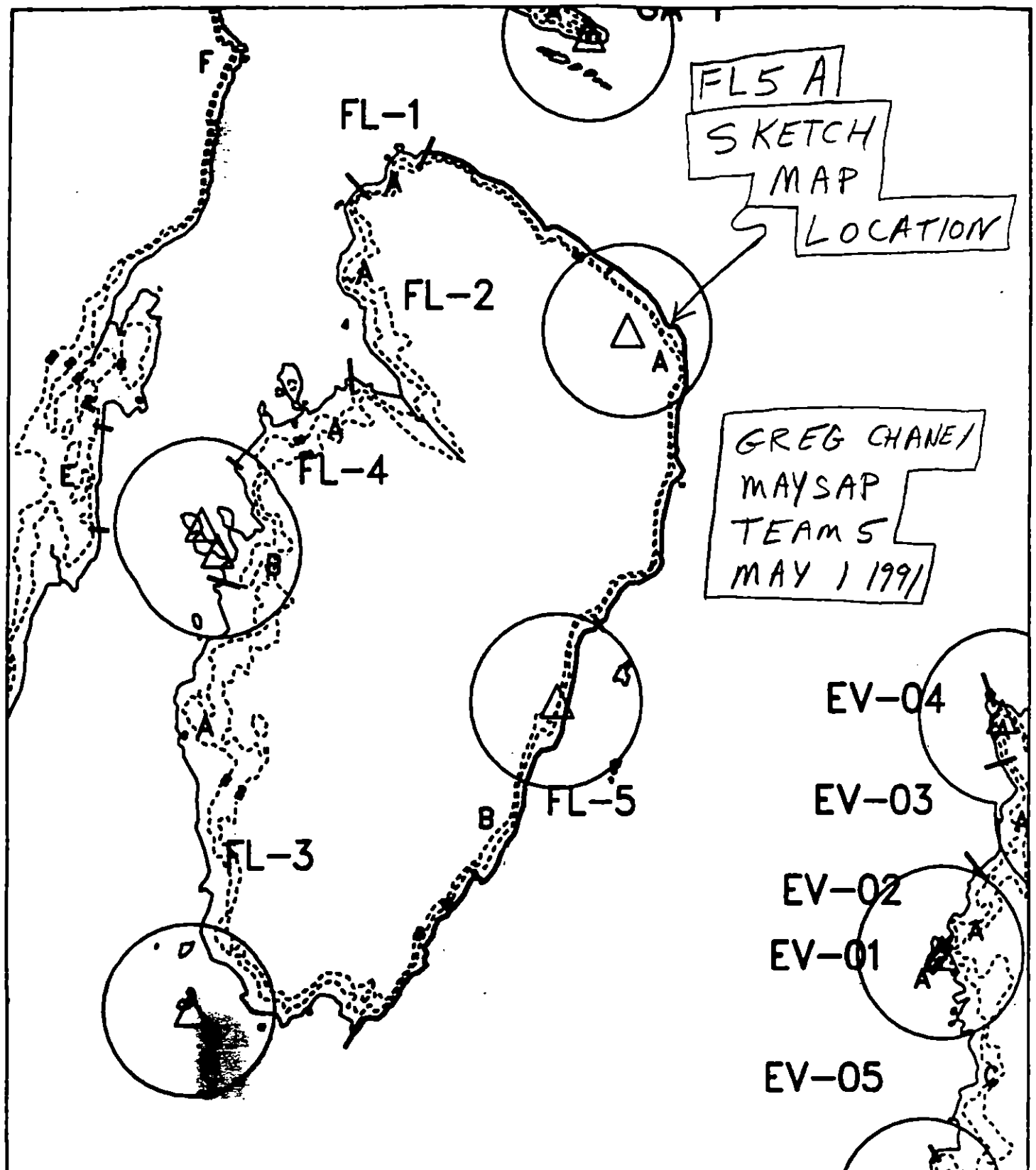
USCG/NOAA

NAME Dreher / Hedges SIGNATURE [Signature]

☒ NTR

Pit showed some light sheen. No other oil observed on beach.

ET raised, May 8
Reviews MC 5/9/91



EV-Q4

EV-03

EV-02

EV-01

EV-05



F L O O 5

NOTES



AK State Plans Zone 4
p11003

Segment Reference Map
Map Key: PUSPL006



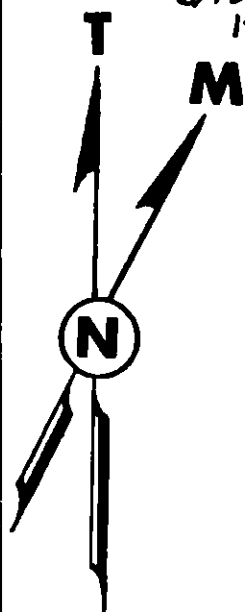
EAGLE NEST

Reviews: MC 5/9/91
EB reviewed, May 8

M AP 1991
OG SKETCH MAP
GREG CHANEY
TEAM 5

SEGMENT: FL-5-A
DATE: MAY 1 1991
AIR P.H.: INT-010
6/15/89-11
106 (399)

KNIGHT ISLAND PASSAGE



SMALL
SEA
CAVE

No FIAO OPTM
ASSUME:
2 x 2 m NON

FOREST

(B) SILVER SHEEN IN TIDAL POOL UNDER BOULDER
SILVER FILM ON LOW ROCKS 1x1 m FL 60%

(A) SOR 20x30 cm
UNDER BOULDER

(C) 3x90 m
CV TRACE
CT TRACE
ST TRACE

LEGEND

BEDROCK	
BOULDERS	
FINE BED.	
DRIFT LOG	
GRASS	
BRUSH	
FOREST	
OILED PIT	
NO OIL PIT	
PHOTO	

SCALE

50 METERS

APPROXIMATELY

FLEMMING ISLAND

REVISOR: MC 5/4/91
EG reviewed May 8

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 5

DATE 1 May 1991

pg 1 of 1

SEGMENT # FL-5

TIDAL HEIGHT (Range) +4 → +5

SUBDIVISION A

BIOLOGIST Crank

SEA STATE 0'

WIND SPEED/DIRECTION 5 knots / E

PHOTOGRAPHS: ROLL #

FRAME #

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):

(A) Area is located in the UITZ along boulders. Filamentous green algae and black lichen present within site. Less than 1% biota cover.

(B) Area is the MITZ below sites 'A' and 'C'. Barnacles are the dominant species (and Pit 1) present. Animals tightly sealed their inner plates when stimulated and a new set is present. There is a sparse concentration of Fucus (sporeling are present) and a moderate Littorina and limpet concentration. Sparse pockets of mussels (various age classes) are also present. Biota cover is ~30%.

(C) Area is in the UITZ. Filamentous green algae and black lichen are present. Less than 1% biota cover.

The biota in this subdivision appears to be healthy. Recruitment is occurring in the barnacle, mussel and Fucus populations. LITZ was not exposed during survey.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl			
Gulls/Kittiwakes			
Shorebirds			
Corvids			
Other Birds	1	Heard terrestrial bird	

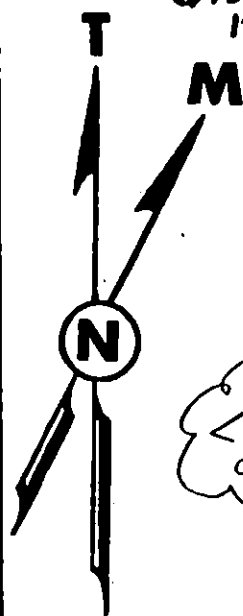
MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters			
Pinnipeds (specify)			
Bales (specify)			

Shoreline subdivision map showing important biological features attached.

M. AP 1991
OG SKETCH MAP Bio Sketch Map
GREG CHANEY Crank
TEAM 5

KNIGHT ISLAND PASSAGE

SEGMENT: FL-5-A
DATE: MAY 1 1991
AIR P.N.: INT-010
6/15/89-11
106 (399)



SMALL
SEA
CAVE

<1% Biota cover in
areas 'A' and 'C'

(B) SILVER SHEEN IN TIDAL POOL UNDER BOULDER
SILVER FILM ON LOW ROCKS 1x1 m FL 60%

(A) SOR 20x30cm
UNDER BOULDER

(B) 30% Biota cover in the MITZ.
Barnacles are the dominant species

FOREST

(C) 3x90m
CV TRACE
CT TRACE
ST TRACE

LEGEND

BEDROCK	
BOULDER	
FINE SED.	
DRIFT LOG	
GRASS	
BRUSH	
FOREST	
OILED PIT	
NO OIL PIT	
PHOTO	

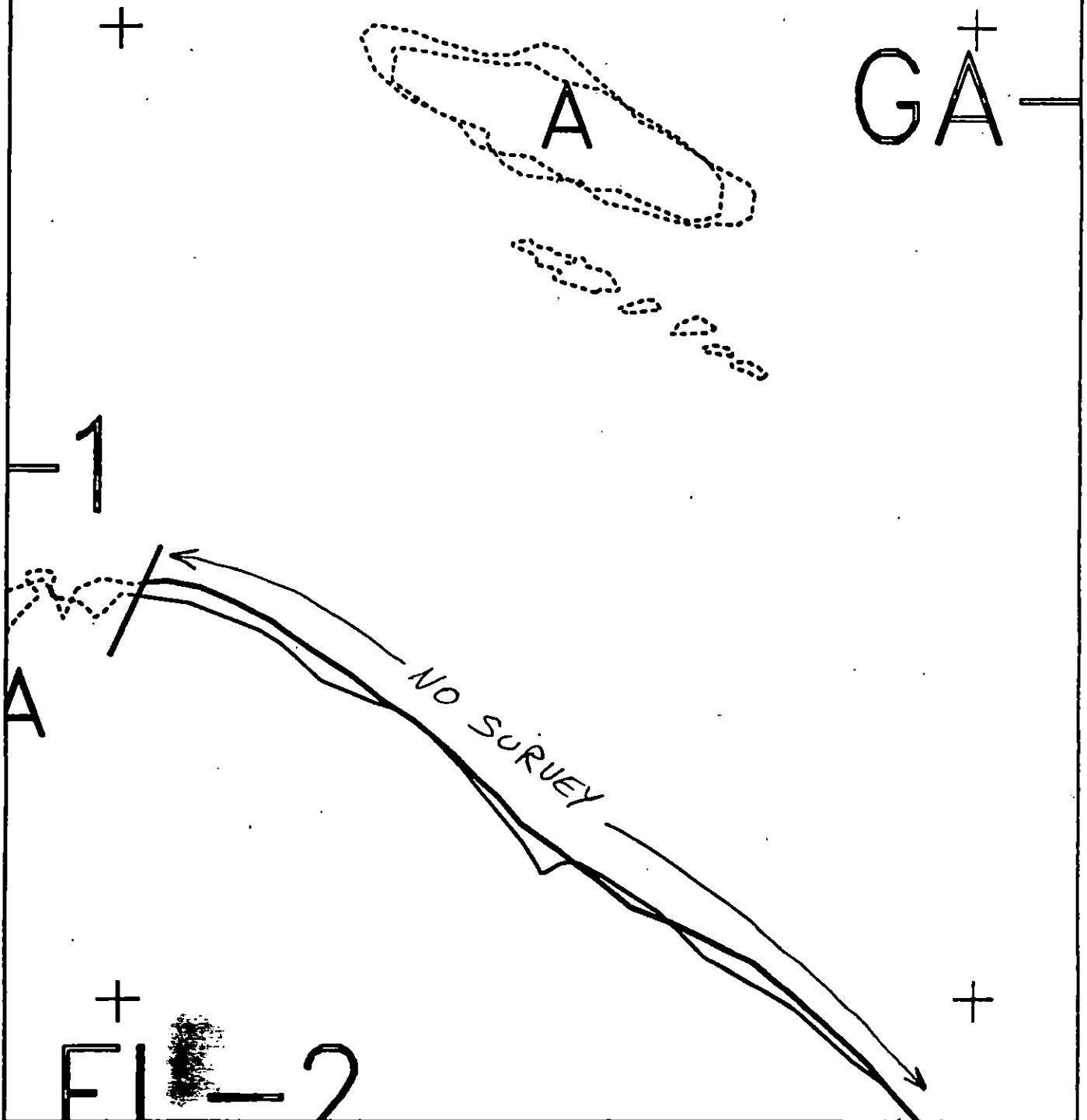
SCALE

30 METERS

APPROXIMATELY

FLEMMING ISLAND

Red: skla, DM

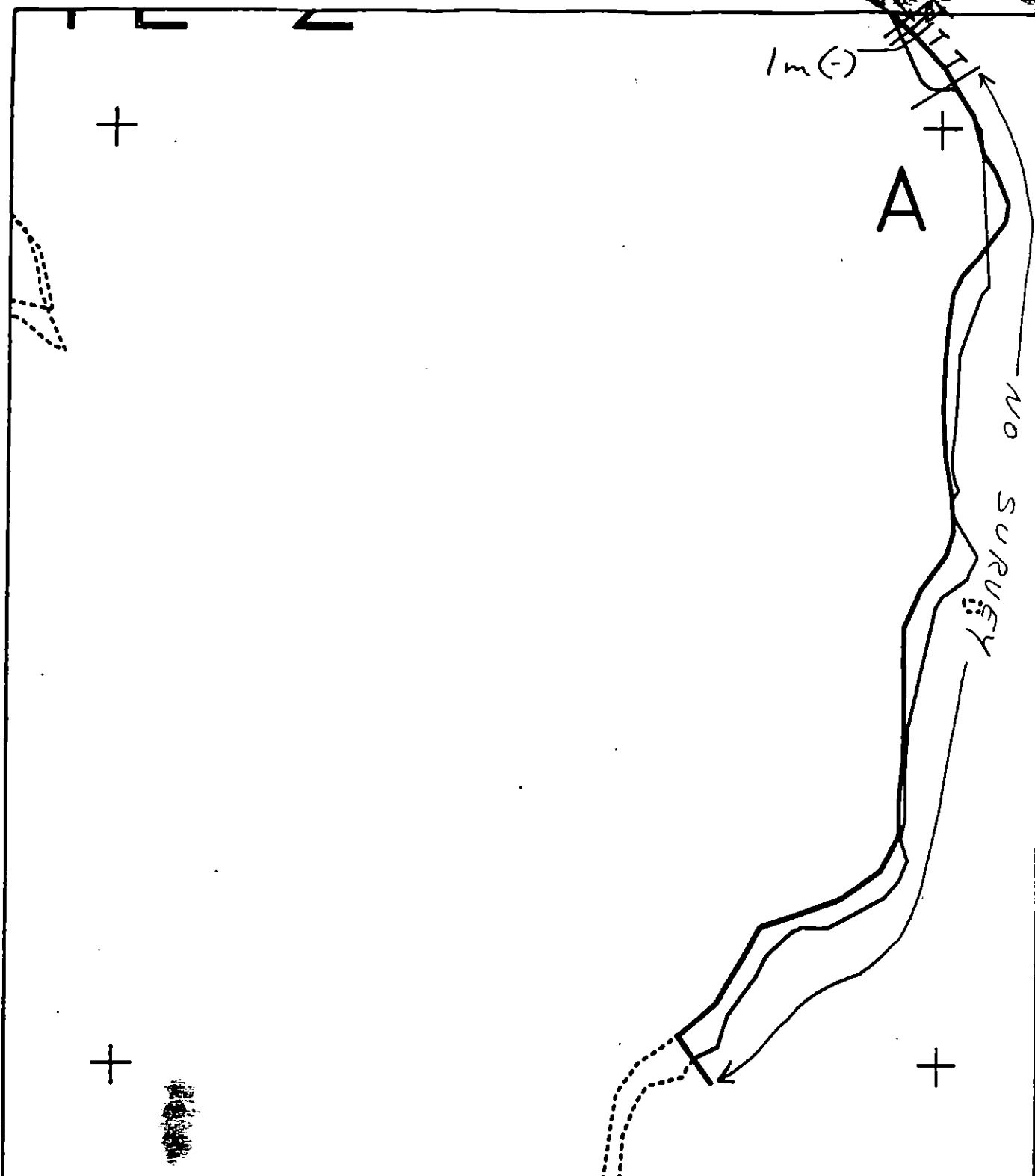


XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

FL005 A
 ADEC Subsegment Length: 3048m
 METERS
 0 100 200
 AK State Plane Zone 4
 p1005ab

Subdivision Field Map
 Map Key: PWSFL005Ab
 Name: Greg Chavira
 Date: May 1 91
 Date Entered:

Reviewed: MC 5/9/91
 EK reviewed, May 8



XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

FL005 A

ADEC Subsegment Length: 3048m

METERS

0 200 400

AK State Plane Zone 6
 1100540



Subdivision Field Map

Map Key: PWSFL005A0

Name: Greg Chaney

Date: May 1 1991

Date Entered:

Reviewed: MC 5/9/91

et revised, May 1

1991 MAYSAP EVALUATION

SEGMENT: FL 005 SUB: A REGION: PWS SURVEY DATE: 5/1/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) RESTRICTED 3/1 - 9/1

Ecological/Constraints (see page two for details) Eagle nest,
Fish harvest area

ARCHAEOLOGICAL CONSTRAINTS:

If treatment is planned, a cultural resource evaluation is
required prior to shoreline treatment.

SHPO Signature: _____ Date: _____

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL: _____

TAG: _____

FOSC: _____

TAG APPROVAL DATE: _____

FOSC APPROVAL DATE: _____

ADEC

FOSC

EXXON

USCG

NOAA

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

Eagle Nest: Access restricted from 3/1 to 9/1. USF&WS authorization required. Maintain 1000' vertical and 1/4 mile horizontal buffer.

Fish Harvest Area: Unlimited treatment unless otherwise directed by ADF&G. Sheen containment/recovery procedures required for mechanical treatment.

NYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 5 SEGMENT FL-5 SUBDIVISION A DATE 5/1/91

ADEC

NAME

John Hoyer

SIGNATURE

[Signature]

☒ NTR

Oiling observed on this segment consisted of isolated SOR and subsurface oiling in the VITZ. NTR as oiling was moderate, isolated (WXS) and in the matrix of large boulders. Only a small portion of segment was surveyed by team.

EXXON

NAME

Martinez No. J.

SIGNATURE

[Signature]

☒ NTR

High energy beach. Some interstitial S.O.R. due to large boulders with impractical recovery is + boulders.

LANDMANAGER

NAME

Steve WARD

OF CVC

SIGNATURE

[Signature]

☐ NTR

Not much surface oil, but lots of sheening. Oil found was around base of lg boulders. There appears to be lg amounts of sub-surface except its damn near impossible to dig pits here. The only good news is this is a High Energy Beach.

USCG/NOAA

NAME

Dreher / Hodges

SIGNATURE

[Signature]

☒ NTR

Pit showed some light sheen. No other oil observed on beach.

SEGMENT FL 5

SUBDIVISION A

DATE MAY 1 / 91

ENERGY LEVEL: ☒ H ☐ M ☐ L

WEATHER: ☐ SUN ☒ CLOUDS ☐ FOG ☒ RAIN ☐ SNOW

NEAR SHORE SHEEN: ☐ BR ☒ RB ☒ SL ☐ NONE

EST. OIL CATEGORY LENGTH: W — m M — m N 1 m VL 90 m NO 9 m US 2948 m

[illegible]

DISTRIBUTION: C = 91-100%; B = 51-90%; P = 11-50%; S = 1-10%; T = <1%

SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE

PHOTO ROLL # MAYSAP-

5. 8

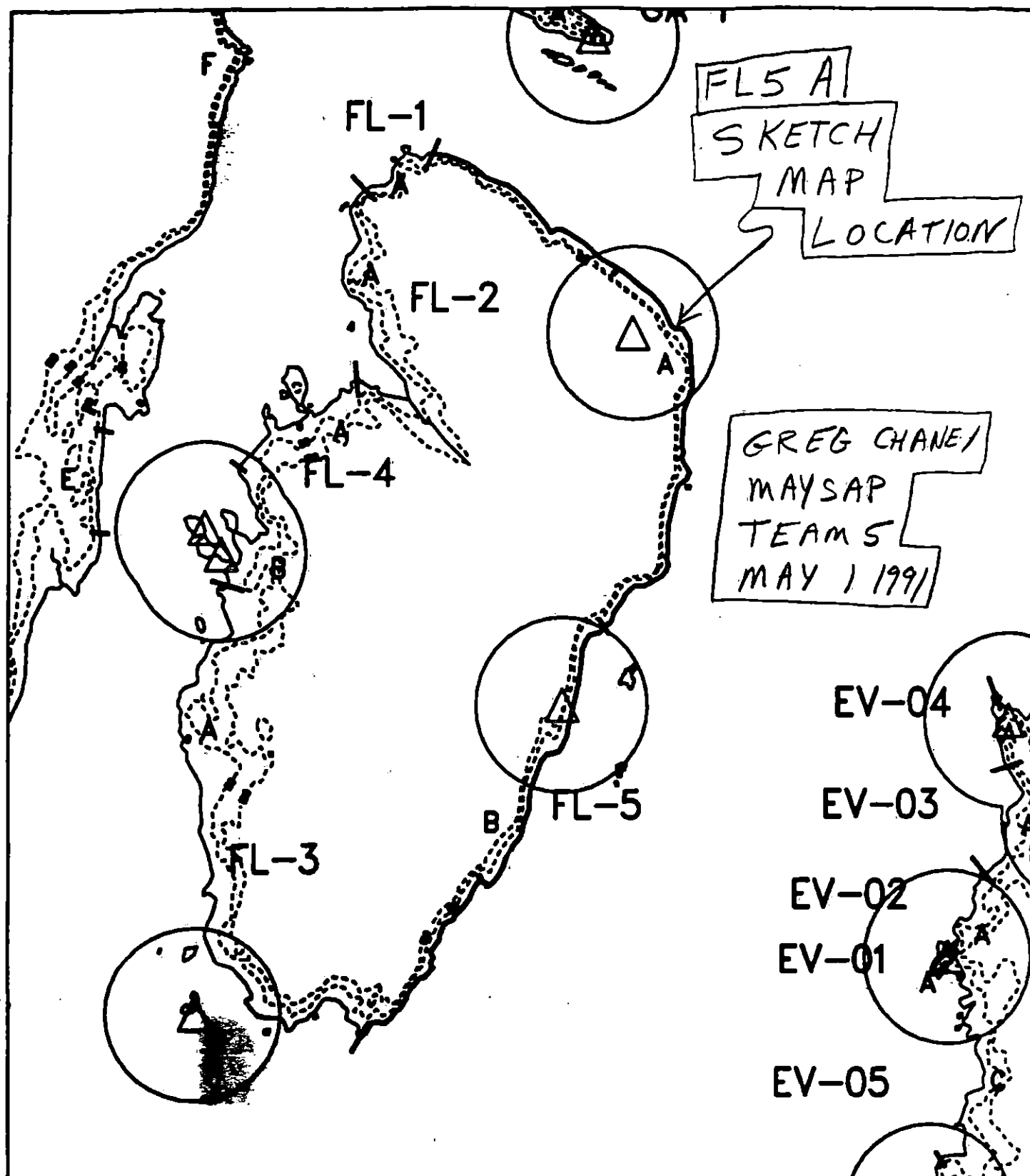
FRAMES 3-5

[illegible]

SHEEN COLOR: B = BROWN: R = RAINBOW: S = SILVER: N = NONE

OG COMMENTS: THIS HIGH ENERGY BOULDER BEACH FACES KNIGHT ISLAND PASSAGE. THE AREA AROUND (B) SEEMS TO RETAIN MOBILE SUBSURFACE OIL UNDER THE MASSIVE BOULDER ARMOUR. THIS OIL IS STILL PRODUCING SILVER AND RAINBOW SHEENS IN TIDAL POOLS AND SILVER FILMS ON BOULDERS ON THE BEACH. THE ONE PIT WE MANAGED TO DIG SHOWED SUBSURFACE OIL IN EXCESS OF 25 cm.

ES raised, May 8.
Revised MC 5/9/91



FL5 A
SKETCH
MAP
LOCATION

GREG CHANE /
MAYSAP
TEAM 5
MAY 1 1991

EV-04

EV-03

EV-02

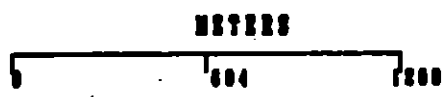
EV-01

EV-05

FL005

Segment Reference Map

Map Key: PWSFL005



AK State Plane Zone 4
p11005



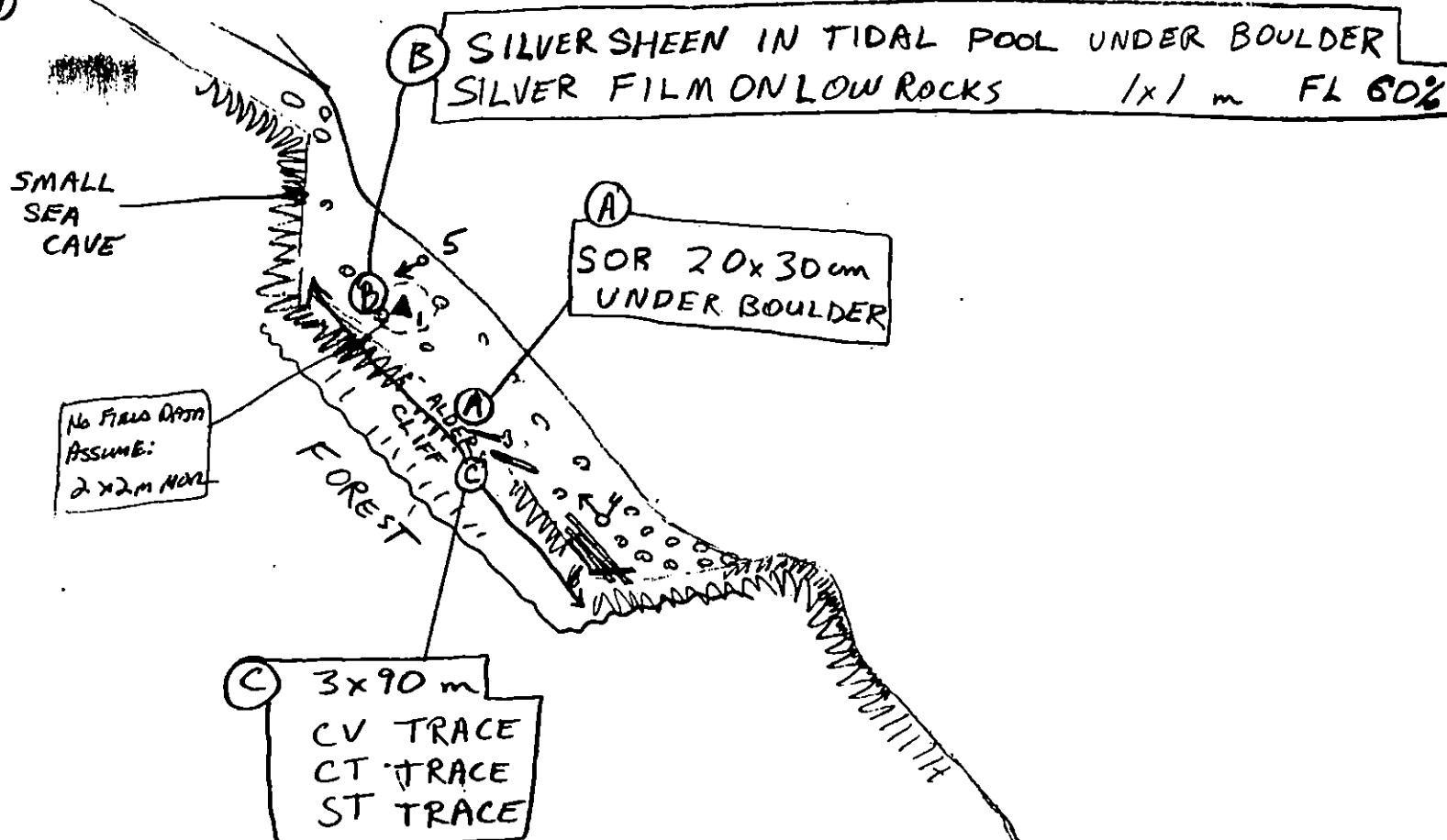
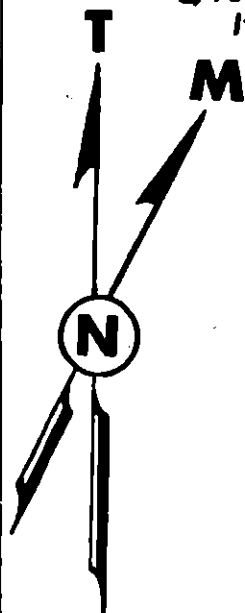
EAGLE NEST

REVIEWED: MC 5/9/91
EG reviewed, May 8

I IAP 1991
 06 SKETCH MAP
 GREG CHANEY
 TEAM 5

KNIGHT ISLAND PASSAGE

SEGMENT: FL-5-A
 DATE: MAY 1 1991
 AIR P.#: INT-010
6/15/89-11
106 (399)



LEGEND

BEDROCK	
BOULDERS	
FINE SED.	
DRIFT LOG	
GRASS	
BRUSH	
FOREST	
OILED PIT	
NO OIL PIT	
PHOTO	

SCALE

50 METERS
 APPROXIMATELY

FLEMMING ISLAND

REVISION: MC 5/4/91
 EG revised May 8

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 5

DATE 1 May 1991

pg 1 of 1

SEGMENT # FL-5

TIDAL HEIGHT (Range) +4 → +5

SUBDIVISION A

BIOLOGIST Crank

SEA STATE 0'

WIND SPEED/DIRECTION 5 knots / E

PHOTOGRAPHS: ROLL #

FRAME #

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):

(A) Area is located in the UITZ along boulders. Filamentous green algae and black lichen present within site. Less than 1% biota cover.

(B) Area is the MITZ below sites 'A' and 'C'. Barnacles are the dominant species (and Pit 1) present. Animals tightly sealed their inner plates when stimulated and a new set is present. There is a sparse concentration of *Fucus* (sporeling are present) and a moderate *Littorina* and limpet concentration. Sparse pockets of mussels (various age classes) are also present. Biota cover is ~30%.

(C) Area is in the UITZ. Filamentous green algae and black lichen are present. Less than 1% biota cover.

The biota in this subdivision appears to be healthy. Recruitment is occurring in the barnacle, mussel and *Fucus* populations. LITZ was not exposed during survey

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl			
Gulls/Kittiwakes			
Shorebirds			
Corvids			
Other Birds	1	Heard territorial bird	

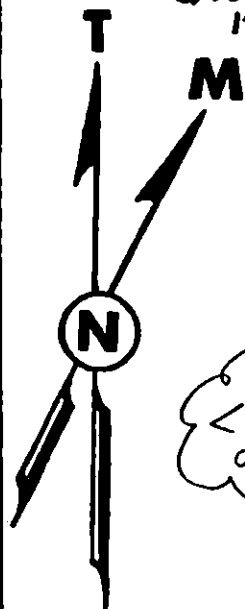
MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters			
Pinnipeds (specify)			
Ceals (specify)			

Shoreline subdivision map showing important biological features attached.

MATRAP 1991
 OG SKETCH MAP Bio Sketch Map
 GREG CHANEY Crank
 TEAM 5

KNIGHT ISLAND PASSAGE

SEGMENT: FL-5-A
 DATE: MAY 1 1991
 AIR P.N.: INT-010
6/15/89-11
106 (399)



SMALL
SEA
CAVE

<1% Biota cover in
areas 'A' and 'C'

(B) SILVER SHEEN IN TIDAL POOL UNDER BOULDER
 SILVER FILM ON LOW ROCKS 1x1 m FL 60%

(A) SOR 20x30 cm
 UNDER BOULDER

(B) 30% Biota cover in the MITZ.
 Barnacles are the dominant species

(C) 3x90 m
 CV TRACE
 CT TRACE
 ST TRACE

LEGEND

BEDROCK	
BOULDERS	
FINE SED.	
DRIFT LOG	
GRASS	
BRUSH	
FOREST	
OILED PIT	
NO OIL PIT	
PHOTO	

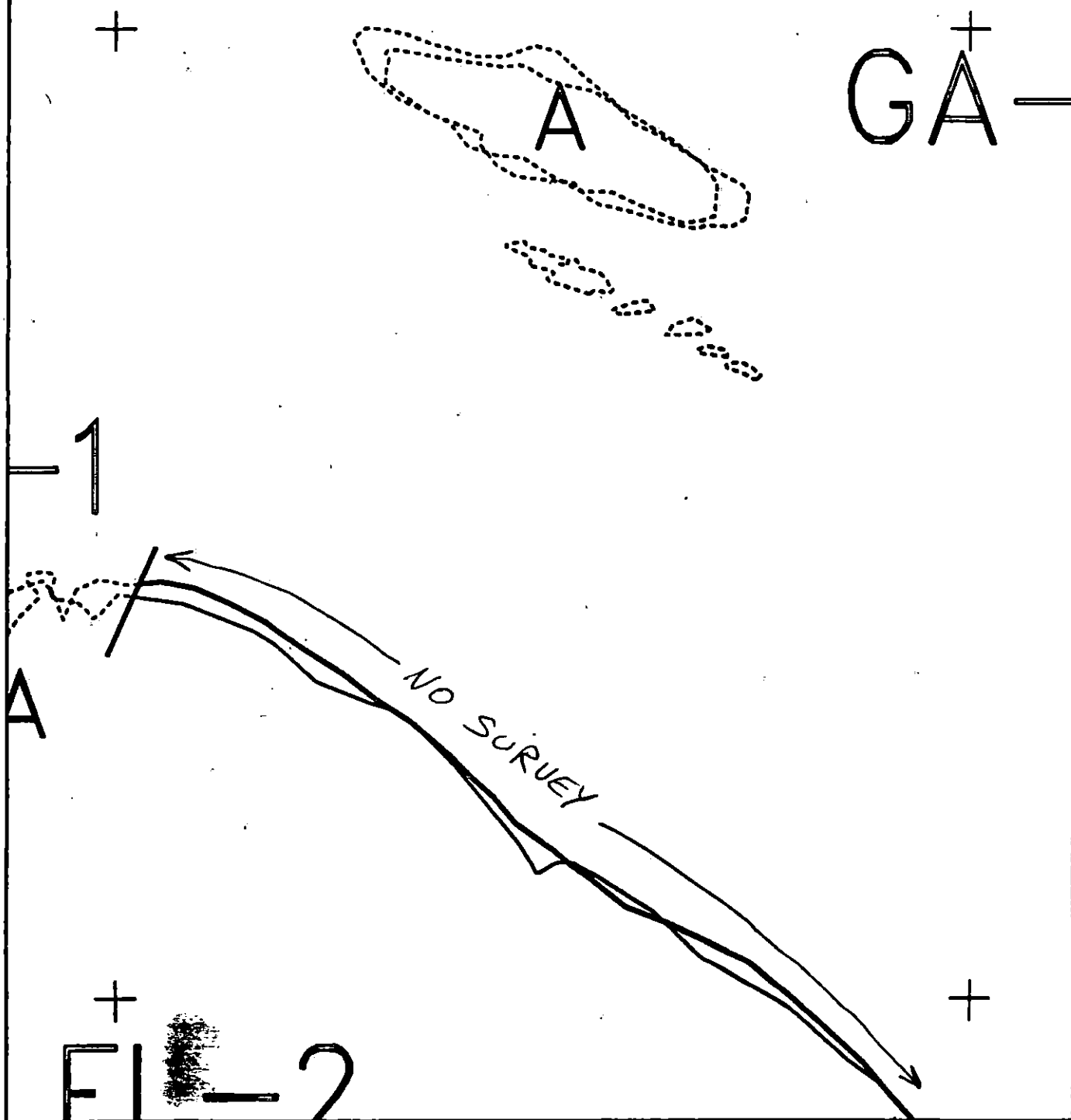
SCALE

30 METERS

APPROXIMATELY

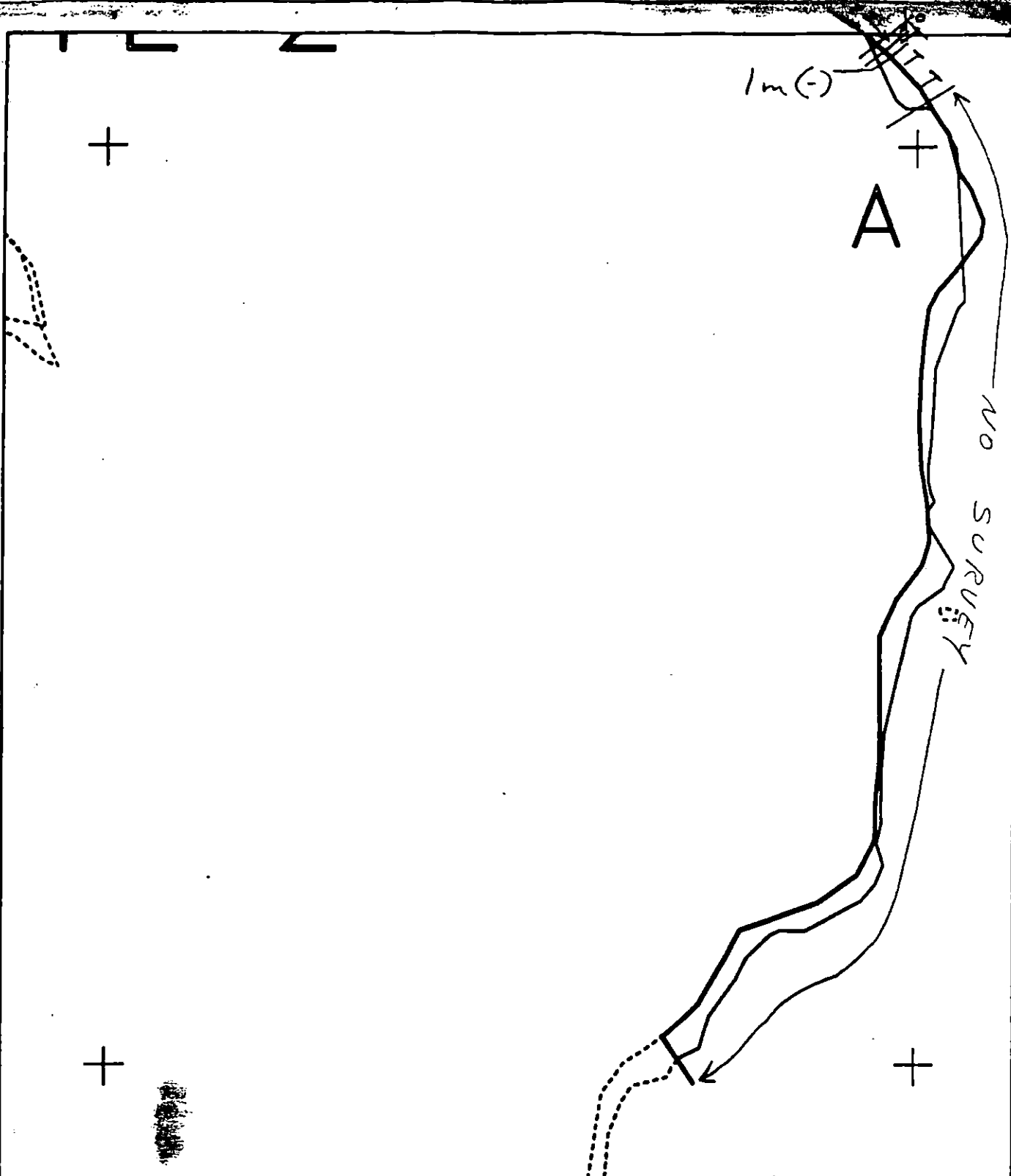
FLEMMING ISLAND

Print: skla, DM



XXXX	Wide	FL005 A ADEC Subsegment Length: 3048m METERS 0 200 400 AK State Plane Zone 4 p1005ab	Subdivision Field Map
////	Medium		Map Key: PWSFL005Ab
----	Narrow		Name: <u>Greg Chavira</u>
TTTT	Very Light		Date: <u>May 1 91</u>
0000	No Oil		Date Entered:

Reviewed: MG 5/9/91
 EC reviewed, May 8



XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

FL005 A

ADEC Subsegment Length: 3048m

METERS

0 200 400

AK State Plane Zone 4
 p11005aa



Subdivision Field Map

Map Key: PWSFL005Aa

Name: Greg Chaney

Date: May 1 1991

Date Entered:

Reviewed: MC 5/9/91

or revised, May 8

1991 MAYSAP EVALUATION

SEGMENT: FL 005 SUB: B REGION: PWS SURVEY DATE: 5/1/91

ENVIRONMENTAL SENSITIVITIES:

Work Window(s) RESTRICTED 3/1 - 9/1

Ecological/Constraints (see page two for details) Eagle nest,
Fish harvest area

ARCHAEOLOGICAL CONSTRAINTS:

If treatment is planned, a cultural resource evaluation is
required prior to shoreline treatment.

SHPO Signature: Richard D. Dan Date: 5/21/91

RECOMMENDATIONS:

INITIAL

TAG

FOSC

TREATMENT REQUIRED (Y or N)

N

N

N

Manual Pickup (Check as Req.)

Spot Washing

Bio-Customblen Only

Bio-Inipol/Customblen

Other

Other

COMMENTS:

INITIAL:

TAG:

FOSC:

TAG APPROVAL DATE: MAY 21 1991

FOSC APPROVAL DATE: 6/1/91

ADEC

FOSC

EXXON

E. E. PAGE, CDR, USCG
CHIEF OF STAFF, FOSC

USCG

NOAA

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

Eagle Nest: Access restricted from 3/1 to 9/1. USF&WS authorization required. Maintain 1000' vertical and 1/4 mile horizontal buffer.

Fish Harvest Area: Unlimited treatment unless otherwise directed by ADF&G. Sheen containment/recovery procedures required for mechanical treatment.

TEAM NO. 5 SEGMENT F1-5 SUBDIVISION B DATE 5/1/91

ADEC

NAME

John Hays

SIGNATURE

[Signature]☒ NTR

Site is very lightly oiled and does not need work this season.

EXXON

NAME

Martinez N.J.

SIGNATURE

N.J. Martinez☒ NTR

No recoverable amount of oil either surface + subsurface further work would not have a net environmental benefit.

LANDMANAGER

NAME

Steve WardOF CVC

SIGNATURE

[Signature]☐ NTR

this beach shows no surface oil - slight stains and a few speckles here + there. lots of walking, no oil - pits show no sub oil. no sheening. Good beach.

USCG/NOAA

NAME

DREHER/HODGES

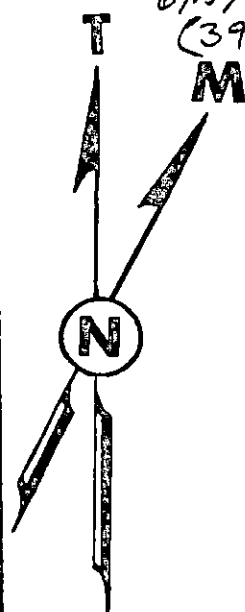
SIGNATURE

[Signature]☒ NTRminute traces - no ecological benefit would be gained by further intrusion of this segment.
Very little, if any, oil observed. No further clean up activities necessary. Eagle nest observed.

EX reviewed, May 7
REVIEWED 0011 MAY

MAYSAP 1991
OG SKETCH MAP
GREG CHANEY
TEAM 5

SEGMENT: F15B
DATE: MAY 1991
AIR P.#: WT 010
6/15/89-11
(399)



FLEMMING
ISLAND

LEGEND

BEDROCK	
BOULDERS	
FINE BED.	
DRIFT LOG	
GRASS	
BRUSH	
FOREST	
OILED PIT	
NO OIL PIT	
PHOTO	

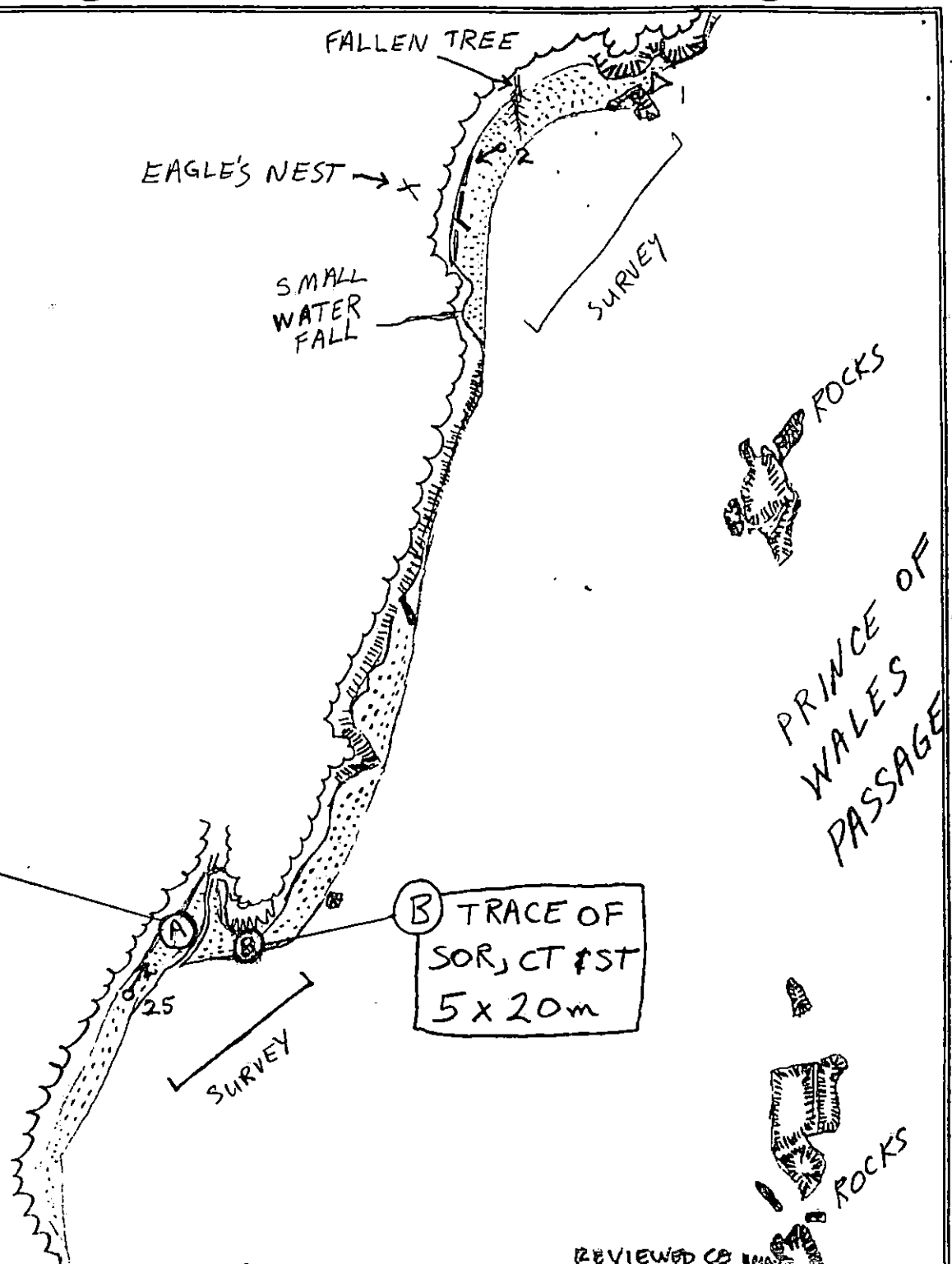
SCALE

120 METERS

APPROXIMATELY

(A)
TRACE OF
CT & ST
0.2 x 15m

(B) TRACE OF
SOR, CT & ST
5 x 20m



REVIEWED BY

MAYSAP BIOLOGICAL SUMMARY FORM

pg 1 of 1

TEAM # 5

DATE 1 May 1991

SEGMENT # FL-5

TIDAL HEIGHT (Range) +2.5 → +4

SUBDIVISION B

BIOLOGIST Crank

SEA STATE 0'

WIND SPEED/DIRECTION 3 knots/E

PHOTOGRAPHS: ROLL # MAYSAP 8

FRAME # 2

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):

(A) Area is located low in UITZ ~7m west of stream. There is rare *Fucus*, rare mussels (various age classes), rare limpets and rare *Littorina* present within the site. Less than 1% biota cover. Below site, near the stream, biota cover increases to 30%. Between the +4' → +2' tide level there is a moderate to densely concentrated intergravel/robbie mussel bed (various age classes).

(B) Area is located in the high MITZ. There is ~10% biota cover including sparse barnacles, rare mussels, sparse *Fucus* (sporadically present), and sparse *Littorina* and limpets. Biota below site similar to that found below site 'A'.

Active eagle nest located w/ 10 m of SUPRA. Eagle is incubating position was observed. No oil was found below nesting site. Photo MAYSAP roll 8 frame 2 is a wide angle shot of trees including nest.

The biota on the subdivision appears to be healthy.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles	1	1-on nest in incubating position	
Seabirds			
Waterfowl	1	2	
Gulls/kittiwakes			
Shorebirds			
Corvids	1	2	
Other Birds			

LAND MAMMALS

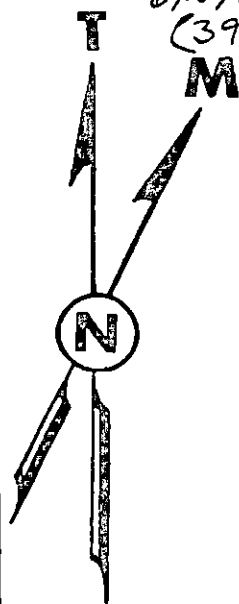
MARINE MAMMALS	# OBSERVED	SPECIES	# OBSERVED
Sea Otters	1		
Pinnipeds (specify)			
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

REVIEWED CB 11 MAY
Reviewed M.B. 5/10/91

MAYSAP 1991
 OG SKETCH MAP: Bio Sketch Map
 GREG CHANEY : Crank
 TEAM 5

SEGMENT: FL 5 B
 DATE: MAY 1 1991
 AIR P.#: WT 010
6/15/89-11
(399)



FLEMING
 ISLAND

LEGEND

BEDROCK	
BOULDERS	
FINE BED.	
DRIFT LOG	
GRASS	
BRUSH	
FOREST	
OILED PIT	
NO OIL PIT	
PHOTO	

SCALE

120 METERS

APPROXIMATELY

ACTIVE EAGLE'S NEST
 Eagle in incubating posture
 was observed

SMALL
 WATER
 FALL

FALLEN TREE

SURVEY



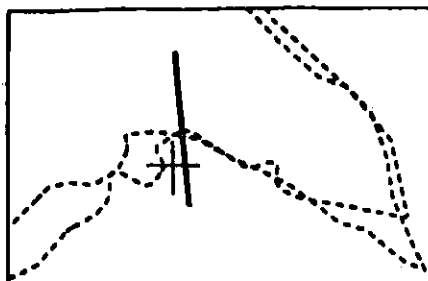
PRINCE OF
 WALES
 PASSAGE

(A)
 TRACE OF
 CT & ST
 0.2 x 15m

(B) TRACE OF
 SOR, CT & ST
 5 x 20m

Moderate to densely concentrated
 intergravel mussel bed
 between the +4' to +2' tide level.



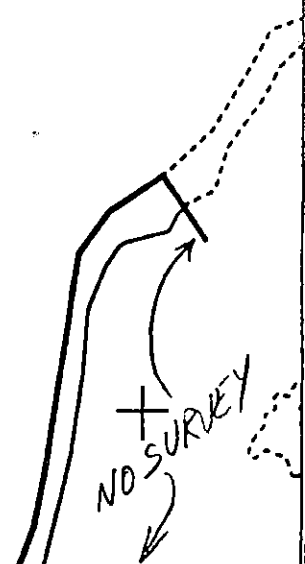


+

A

L-4

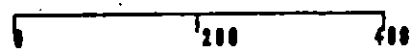
+



XXXX Wide
//// Medium
---- Narrow
TTTT Very Light
0000 No Oil

FL005 B

ADEC Subsegment Length: 2300m
METERS

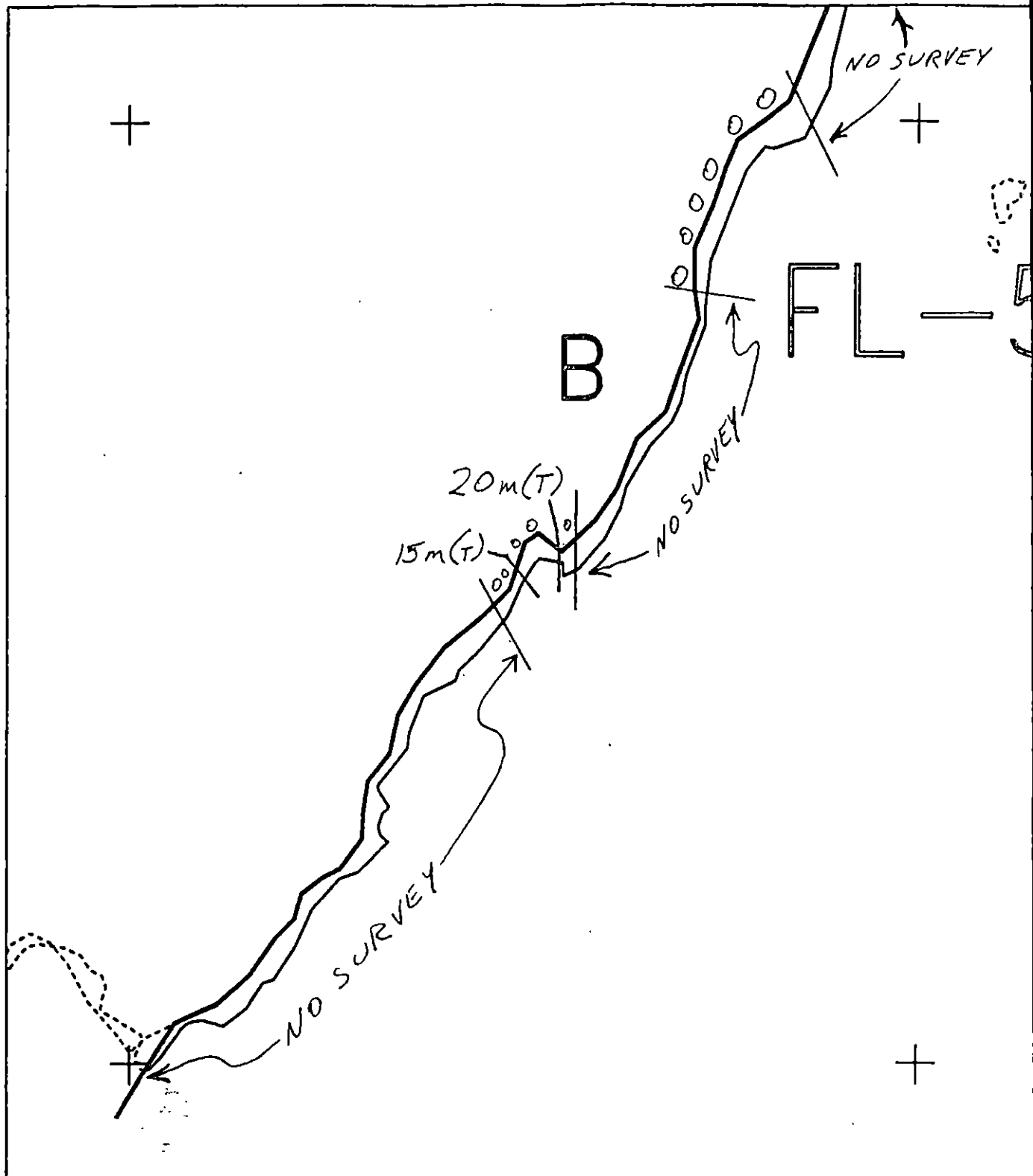


AK State Plane Zone 4
P100566



Subdivision Field Map
Map Key: PWSFL00586
Name: Greg Chaney
Date: May 1, 91
Data Entered:

SL Reviewed, May 7
REVIEWED CD 11M



XXXX	Wide	FL005 B ADEC Subsegment Length: 2300m METERS AK State Plane Zone 4 p11005b	Subdivision Field Map
////	Medium		Map Key: PWSFL005B
----	Narrow		Name: <u>Greg Chaney</u>
TTTT	Very Light		Date: <u>May 1, 91</u>
0000	No Oil		Data Entered:

ES reviewed, May 7
REVISED CD 11M

SEGMENT: FL 005 SUB: A REGION: PWS SURVEY DATE: 5/1/91

Work Window(s) RESTRICTED 3/1 - 9/1

Ecological/Constraints (see page two for details) Eagle nest,
Fish harvest area

If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO Signature: Rachel Chan Olan Date: 5/17/91

<u>RECOMMENDATIONS:</u>	<u>INITIAL</u>	<u>TAG</u>	<u>FOSC</u>
TREATMENT REQUIRED (Y or N)	<u>N</u>	<u>✓</u>	<u>N</u>
Manual Pickup (Check as Req.)	_____	_____	_____
Spot Washing	_____	_____	_____
Bio-Customblen Only	_____	_____	_____
Bio-Inipol/Customblen	_____	_____	_____
Other _____	_____	_____	_____
Other _____	_____	_____	_____

INITIAL: _____

TAG: _____

FOSC: _____

TAG APPROVAL DATE: MAY 17 1991 FOSC APPROVAL DATE: 25 MAY 1991

ADEC [Signature] FOSC [Signature]

EXXON Real CHIEF OF STAFF, FOSC

USCG Lt. M. Murphy et

NOAA

**ECOLOGICAL CONSTRAINTS
1991 FIELD ACTIVITIES**

Eagle Nest: Access restricted from 3/1 to 9/1. USF&WS authorization required. Maintain 1000' vertical and 1/4 mile horizontal buffer.

Fish Harvest Area: Unlimited treatment unless otherwise directed by ADF&G. Sheen containment/recovery procedures required for mechanical treatment.

MAYSAP FIELD SHORELINE COMMENT SHEET

TEAM NO. 5SEGMENT FL - 5SUBDIVISION ADATE 5/1/91

ADEC

NAME John HayerSIGNATURE [Signature]☒ NTR

Oiling observed on this segment consisted of isolated SOR and subsurface oiling in the UITZ. NTR as oiling was moderate, isolated (0.5m) and in the matrix of large boulders. Only a small portion of segment was surveyed by team.

EXXON

NAME Martinez N. J.SIGNATURE [Signature]☒ NTR

High energy beach with large boulders with some interstitial S.O.R. Any recovery is impractical due to location type of oiling + boulders.

LANDMANAGER

NAME Steve WARDOF CVCSIGNATURE [Signature]☐ NTR

Not much surface oil, but lots of sheening. Oil found was around base of lg boulders. There appears to be lg amounts of sub-surface except it's damn near impossible to dig pits here. The only good news is this is a High Energy Beach.

USCG/NOAA

NAME Dreher/HodgesSIGNATURE [Signature]☒ NTR

Pit showed some light sheen. No other oil observed on beach.

SEGMENT FL 5

SUBDIVISION A

DATE MAY 1 / 1991

ENERGY LEVEL: ☒ H ☐ M ☐ L

WEATHER: ☐ SUN ☒ CLOUDS ☐ FOG ☒ RAIN ☐ SNOW

NEAR SHORE SHEEN: ☐ BR ☒ RB ☒ SL ☐ NONE

EST. OIL CATEGORY LENGTH: W — m M — m N 1 m VL 90 m NO 9 m US 2948 m

DISTRIBUTION: C = 91-100%; B = 51-90%; P = 11-50%; S = 1-10%; T = <1%

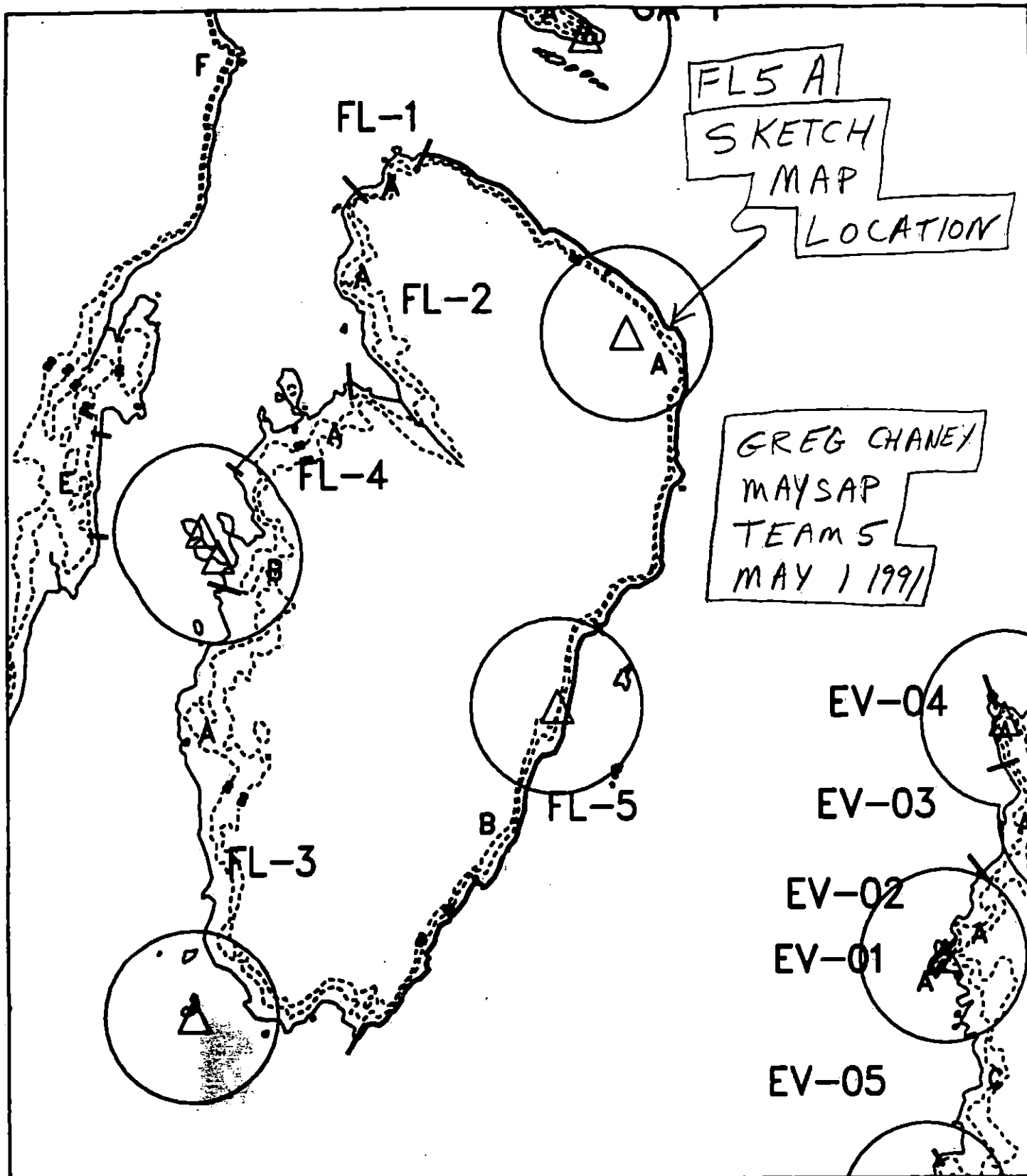
SLOPE: V = VERTICAL; H = HIGH ANGLE; M = MEDIUM ANGLE; L = LOW ANGLE

PHOTO ROLL # MAYSAP- 5 - 8 FRAMES 3-5

SHEEN COLOR: B = BROWN; R = RAINBOW; S = SILVER; N = NONE

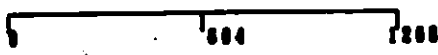
OG COMMENTS: THIS HIGH ENERGY BOULDER BEACH FACES KNIGHT ISLAND PASSAGE. THE AREA AROUND (B) SEEMS TO RETAIN MOBILE SUBSURFACE OIL UNDER THE MASSIVE BOULDER ARMOUR. THIS OIL IS STILL PRODUCING SILVER AND RAINBOW SHEENS IN TIDAL POOLS AND SILVER FILMS ON BOULDERS ON THE BEACH. THE ONE PIT WE MANAGED TO DIG SHOWED SUBSURFACE OIL IN EXCESS OF 25 cm.

ET raised, May 8
Reviews MC 5/9/91



FL005

METERS



AK State Plane Zone 4
G11003

Segment Reference Map

Map Key: PWSFL005

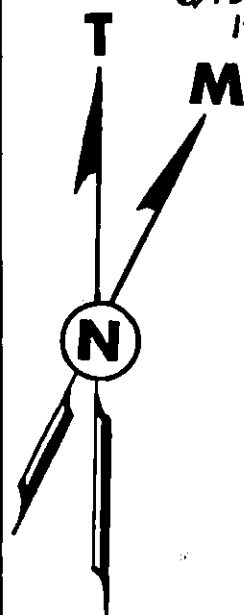


EAGLE NEST

REVIEWED: MC 5/9/91
EG reviewed, May 8

MAY 1991
OG SKETCH MAP
GREG CHANEY

TEAM 5
SEGMENT: FL-5-A
DATE: MAY 1 1991
AIR P.#: INT-010
6/15/89-11
106 (399)



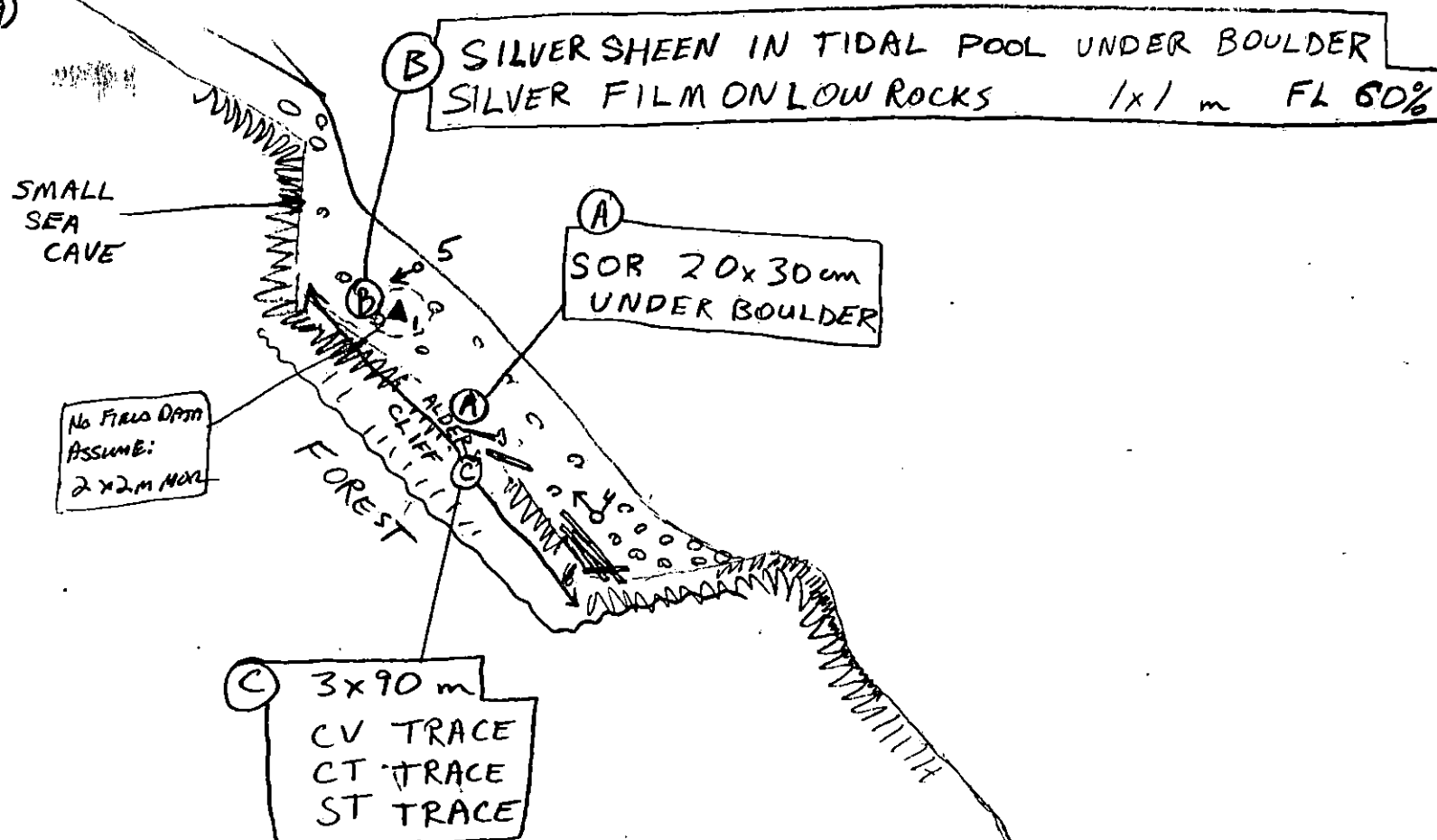
LEGEND

BEDROCK	
BOULDERS	
FINE SED.	
DRIFT LOG	
GRASS	
BRUSH	
FOREST	
OILED PIT	
NO OIL PIT	
PHOTO	

SCALE

50 METERS
APPROXIMATELY

KNIGHT ISLAND PASSAGE



FLEMMING ISLAND

REVISED: MC 5/9/91
EG reviewed May 8

MAYSAP BIOLOGICAL SUMMARY FORM

TEAM # 5

DATE 1 May 1991

pg 1 of 1

SEGMENT # FL-5

TIDAL HEIGHT (Range) +4 → +5

SUBDIVISION A

BIOLOGIST Crank

SEA STATE 0'

WIND SPEED/DIRECTION 5 knots / E

PHOTOGRAPHS: ROLL #

FRAME #

COMMENTS/OBSERVATIONS (to be completed in oiled subdivisions only):

(A) Area is located in the UITZ along boulders. Filamentous green algae and black lichen present within site. Less than 1% biota cover.

(B) Area is the MITZ below sites 'A' and 'C'. Barnacles are the dominant species (and Pit 1) present. Animals tightly sealed their inner plates when stimulated and a new set is present. There is a sparse concentration of *Fucus* (sporeling are present) and a moderate *Littorina* and limpet concentration. Sparse pockets of mussels (various age classes) are also present. Biota cover is ~30%.

(C) Area is in the UITZ. Filamentous green algae and black lichen are present. Less than 1% biota cover.

The biota in this subdivision appears to be healthy. Recruitment is occurring in the barnacle, mussel and *Fucus* populations. LITZ was not exposed during survey.

WILDLIFE OBSERVATIONS

TO BE COMPLETED IN ALL SUBDIVISIONS

BIRDS	# OF SPECIES	TOTAL BIRDS	FISH OBSERVED SPECIES PRESENT
Eagles			
Seabirds			
Waterfowl			
Gulls/Kittiwakes			
Shorebirds			
Corvids			
Other Birds	1	Heard terrestrial bird	

MARINE MAMMALS	# OBSERVED	LAND MAMMALS SPECIES	# OBSERVED
Sea Otters			
Pinnipeds (specify)			
Whales (specify)			

Shoreline subdivision map showing important biological features attached.

KNIGHT ISLAND PASSAGE

MAY 1991

OG SKETCH MAP & Bio Sketch Map

GREG CHANEY & Crank

TEAM 5

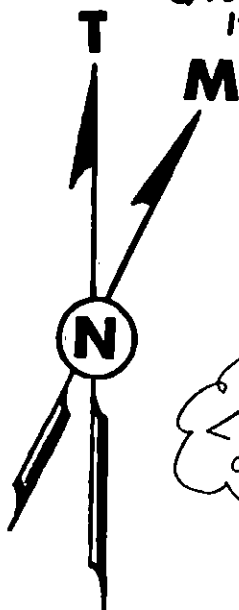
SEGMENT: FL-5-A

DATE: MAY 1 1991

AIR P.#: INT-010

6/15/89-11

106 (399)



SMALL
SEA
CAVE

<1% Biota cover in
areas 'A' and 'C'

(B) SILVER SHEEN IN TIDAL POOL UNDER BOULDER
SILVER FILM ON LOW ROCKS 1x1 m FL 60%

(A) SOR 20x30cm
UNDER BOULDER

(B) + P.I.T.
30% Biota cover in the MITZ.
Barnacles are the dominant species

FOREST

(C) 3x90 m
CV TRACE
CT TRACE
ST TRACE

LEGEND

BEDROCK	
BOULDERS	
FINE BED.	
DRIFT LOG	
GRASS	
BRUSH	
FOREST	
OILED PIT	
NO OIL PIT	
PHOTO	

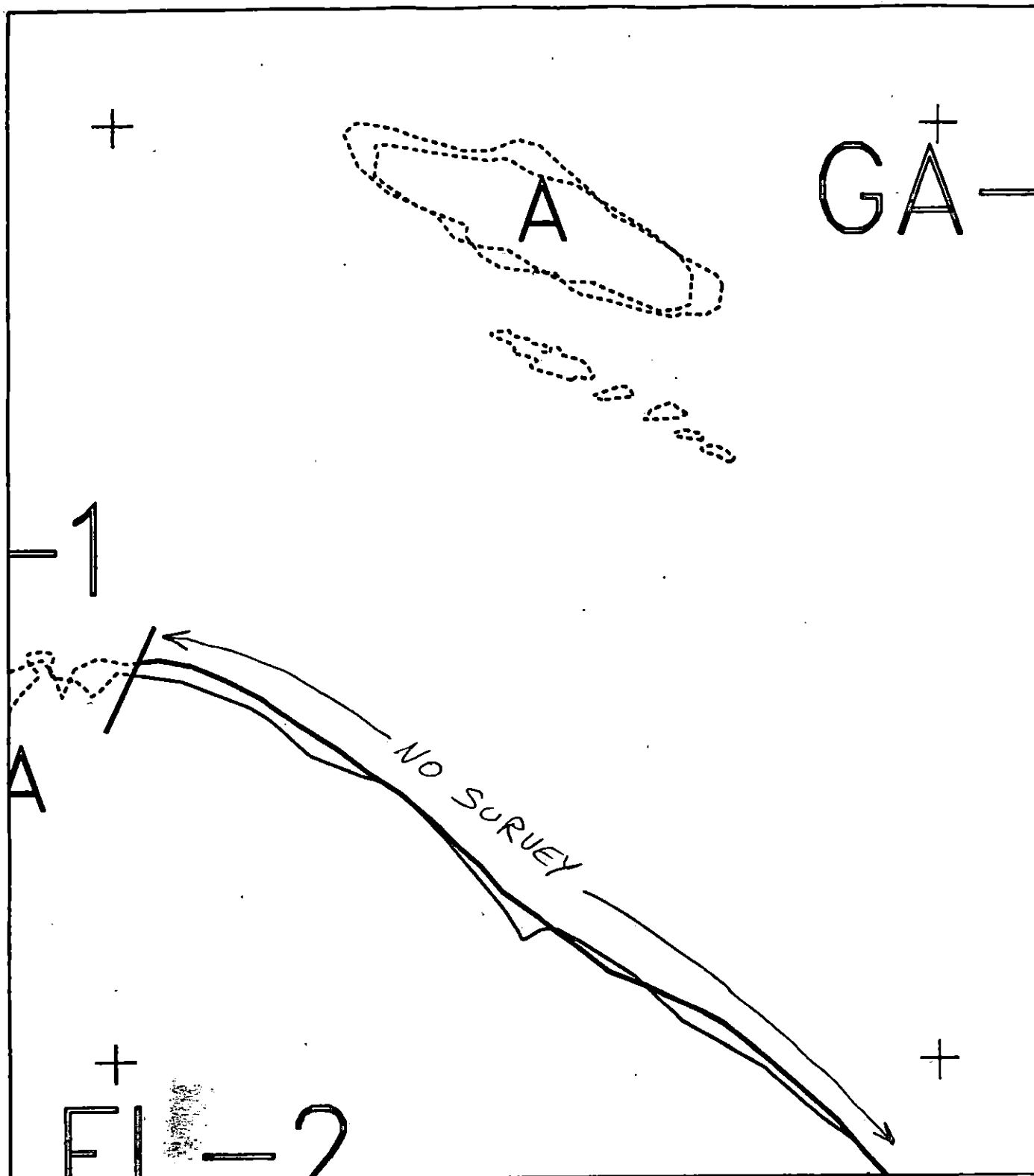
SCALE

30 METERS

APPROXIMATELY

FLEMMING ISLAND

Revised 5/8/91 DM



XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

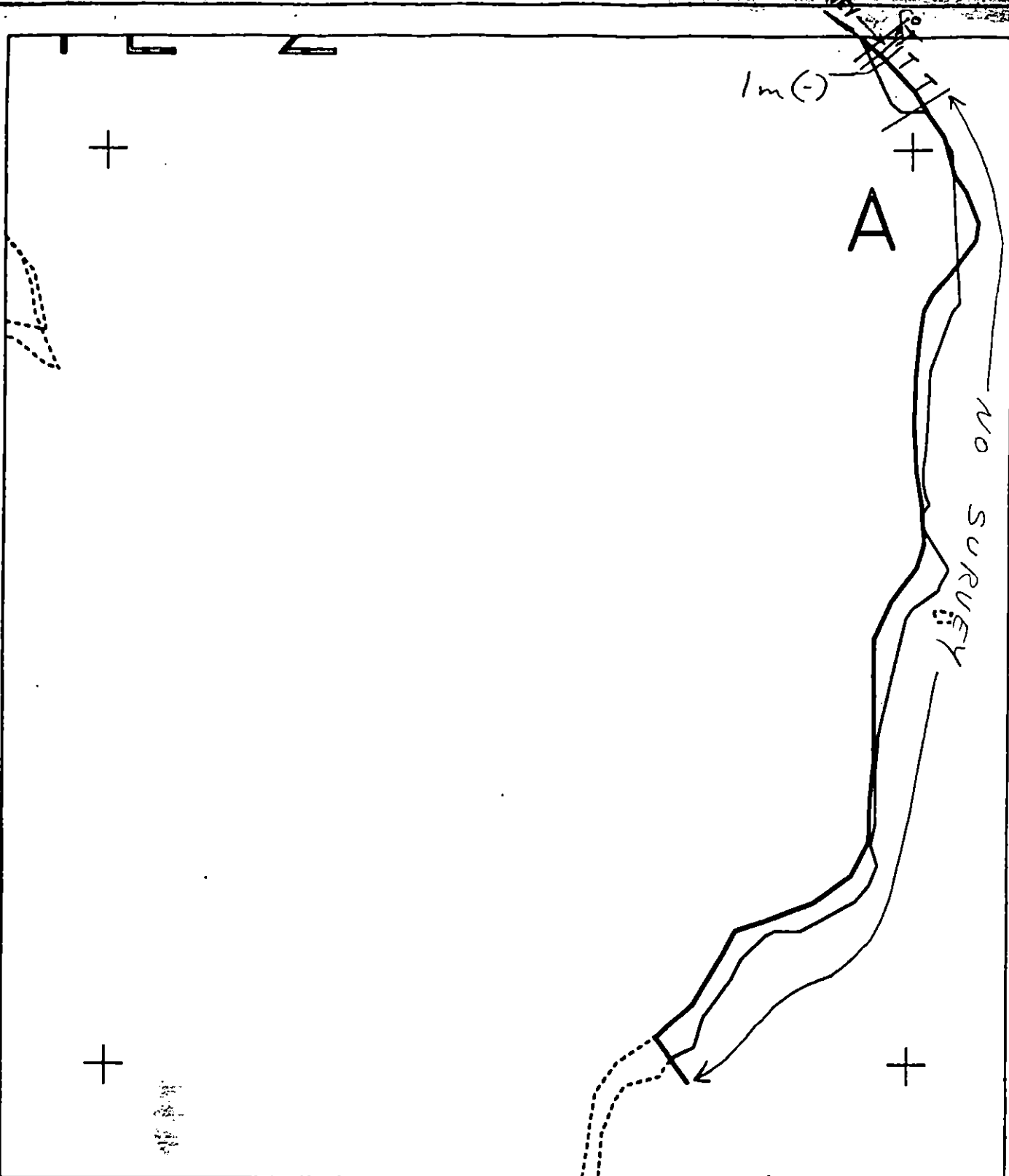
FL005 A
 ADEC Subsegment Length: 3048m
 METERS
 0 200 400
 AK State Plane Zone 4
 p11005ab



Subdivision Field Map
 Map Key: PWSFL005Ab
 Name: Greg Chaney
 Date: May 1 91
 Date Entered:

Reviewed: MC 5/9/91

ES reviewed, May 8



XXXX Wide
 //// Medium
 ---- Narrow
 TTTT Very Light
 0000 No Oil

FL005 A

ADEC Subsegment Length: 3048m

METERS

0 200 400

AK State Plane Zone 4
 p1005a0



Subdivision Field Map

Map Key: PWSFL005Ae

Name: Greg Chaney

Date: May 1 1991

Data Entered:

REVIEWED: MC 5/9/91

et revised, May 8

ANADROMOUS FISH STREAM EVALUATION

SEGMENT ST/ FL-05 STREAM NO: 226-40-16400 DATE 4/23/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
1K Purse seine hook-off (7/20 to 9/30)
3N,3P Harbor seal and sea lion pupping (5/15 to 7/1)
3O,3Q Harbor seal and sea lion molting (8/15 to 9/15)
5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unoiled biota and substrate. No additional ecological constraints. Subject stream is located in Subdivision A (1 of 2).

ARCHAEOLOGICAL CONSTRAINTS:

If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO SIGNATURE: J. David McManis DATE: 5/8/90

Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

<u>X</u> No Treatment Recommended	_____ Snare/Absorbent Booms
_____ Treatment Recommended	_____ Oil Snares (pom poms)
_____ Manual Pickup	_____ Absorbents (pads, rolls, etc)
_____ Bioremediation	_____ Spot Washing: _____ Wands
_____ Tarmat Removal	_____ Beach Cleaner
	_____ Other (see comments)

COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: 5/7/90

ADEC ART WEINER Art Weiner

EXXON ANDY TELL Andy Tell

NOAA GARY PETRO Gary Petro

USCG G.A. REITER G.A. Reiter

FOSC: WJL

DATE: 5-18-90

1953

OG WILLIAM REID

SEGMENT ST/ FL005

STREAM 226-A0-164001

DATE 23 / APR 90

CHECKLIST

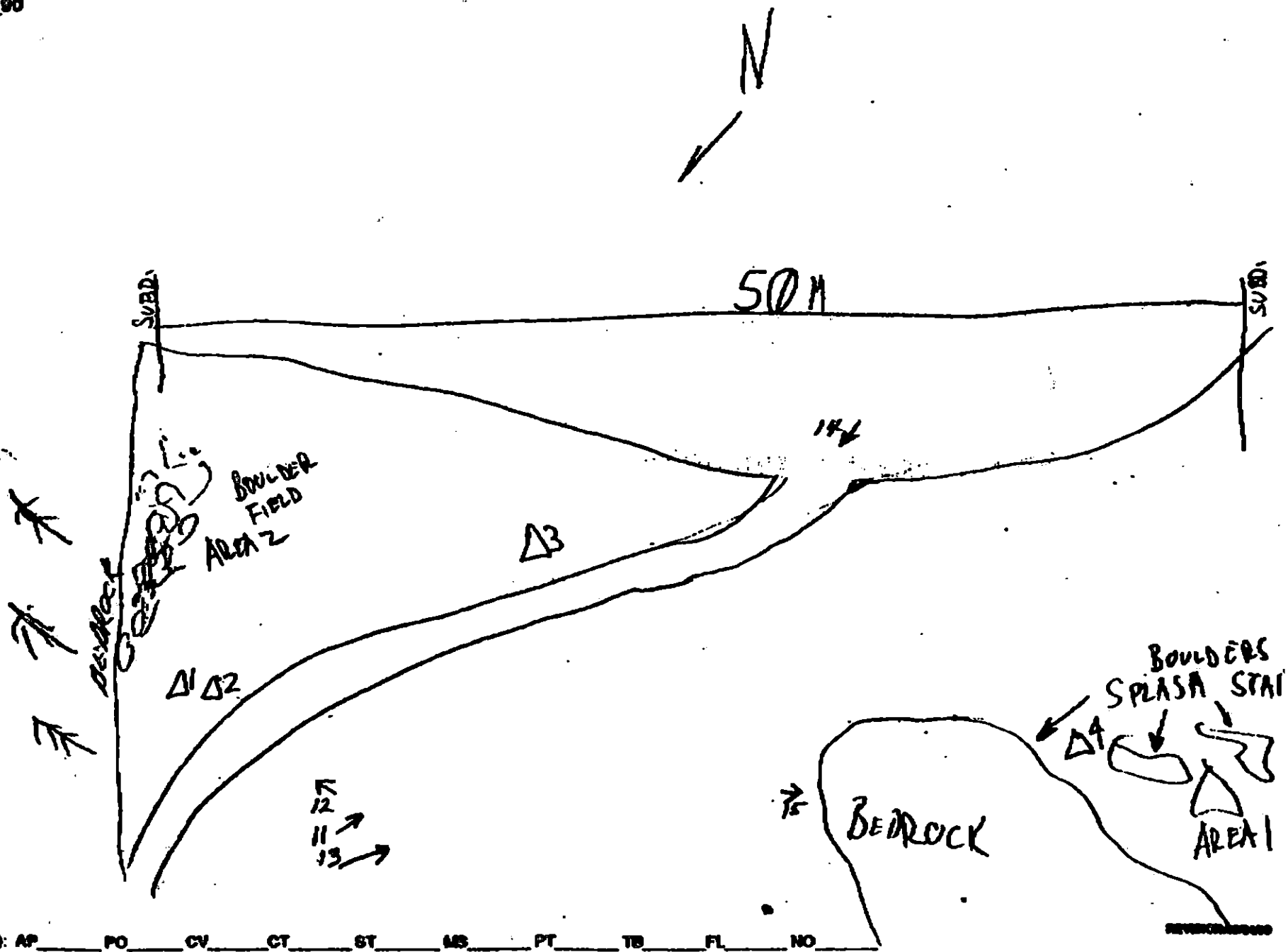
- ☐ N Area
- ☐ Approx. Scale
- ☐ Dig. & Body
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HAWAII
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Profile(s)
- ☐ PB Location(s)
- ☐ Photo Location(s)

LEGEND

- ☐ Δ
PR - No Subsurface Oil
- ☐ Δ
PR - Subsurface Oil
- ☐ CT/C
Continuous Distribution
- ☐ CT/B
Broken Distribution
- ☐ CT/P
Patchy Distribution
- ☐ CT/S
Splotched Distribution
- ☐
Oil Vegetation
- ☐
Photo location, direction, and number

ETCH MAP

Film AS-15-4



Oil Character Length (m): AP PO CV CT ST MS PT TB FL NO

NAME(S)

DESCRIPTION

RECOMMENDATIONS: DO NOT TREAT TAR RINGS
ON BEDROCK.

TURN OVER SHALE BOULDERS TO EXPOSE OIL TO
ENHANCED WEATHERING

TASK ~~IS~~ ACCOMPLISHED BY SURVEY CROW - RETURN
VISIT NOT REQUIRED.

48 OIL DISTRIBUTION DIAGRAM

I agree with recommendation
H. F. Smith

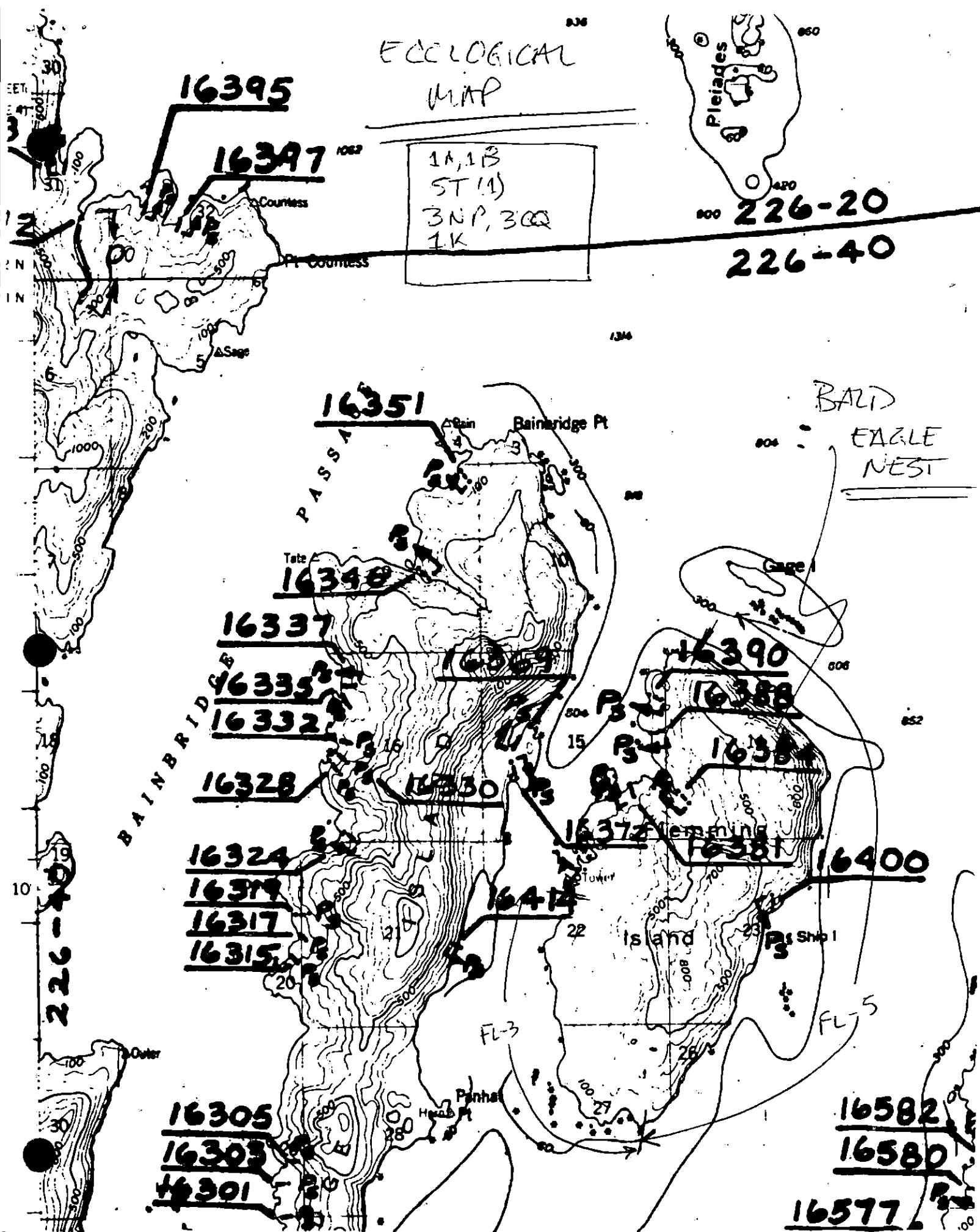
BEDROCK WALLS

STICKY FILM
ON UNDERSURFACE
OF SHALE BOULDERS

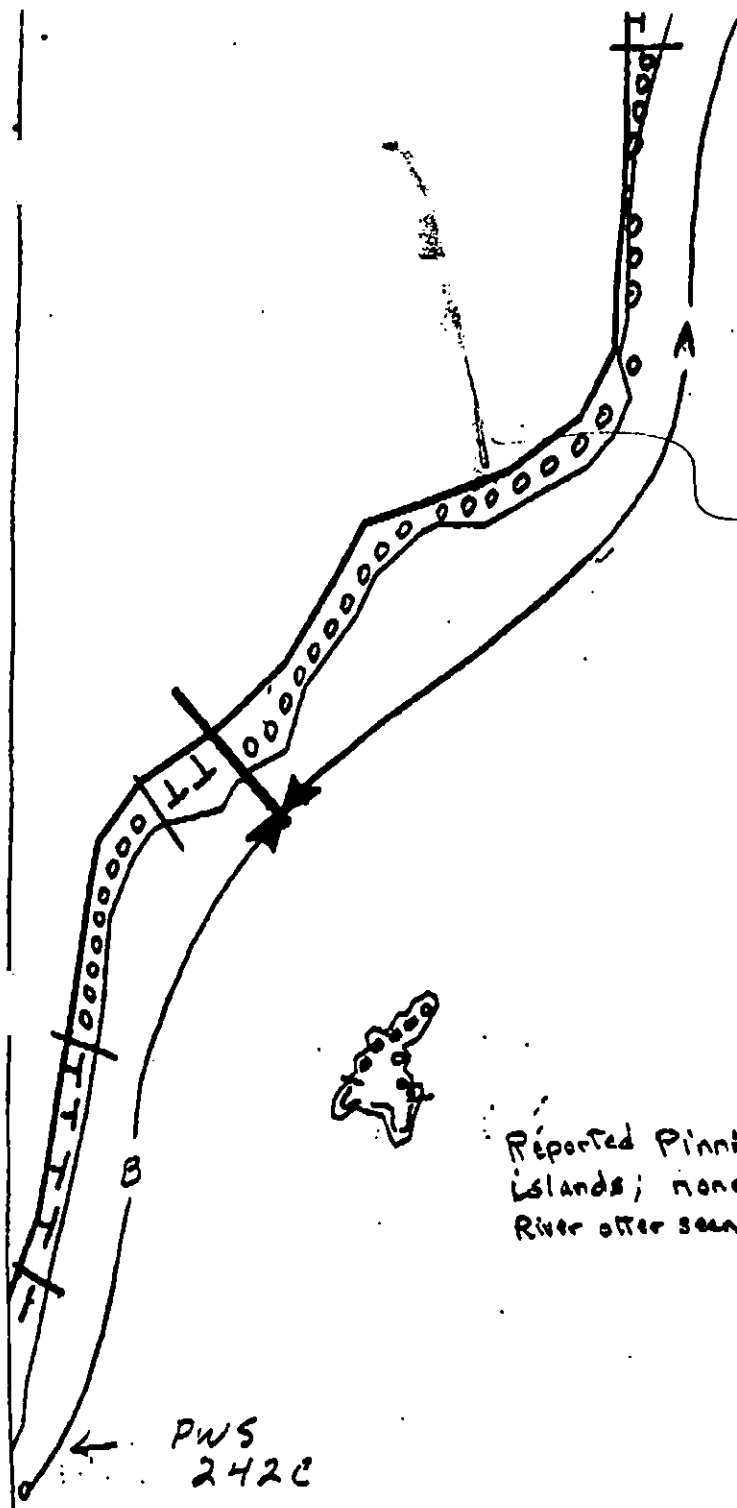
TAR RING

BEDROCK OUTCROPS

ECCOLOGICAL
MAP



↑ PWS 242 F



APPROXIMATE
LOCATION OF
SUBJECT STREAM
LOCATED IN
FL-5A (1 of 2)

Reported Pinniped haulout Rmk
Islands; none seen 19 Apr 90.
River otter seen here " " "

PWS
242C

170/29

4/6

XXXX Wide

/// Medium

--- Narrow

TTTT Very Light

0000 No Oil

FL-5

AOEC Segment Length: 5357m



Map Key: PWS-242d

Name: R. Marty

Date: 19 April 1990

Date Entered:

ANADROMOUS FISH STREAM ASSESSMENT

REGION: PRINCE WILLIAM SOUND

SEGMENT: FL-05

STREAM NO: 226-40-16400

ANADROMOUS FISH STREAM EVALUATION

SEGMENT ST/ FL-05 STREAM NO: 226-40-16400 DATE 4/23/90

SEGMENT ENVIRONMENTAL SENSITIVITIES AND TIME CONSTRAINTS:

1A Salmon stream mouth - fry outmigration (3/1 to 5/15)
1B Salmon stream mouth - spawning (7/10 to 8/31)
1K Purse seine hook-off (7/20 to 9/30)
3N,3P Harbor seal and sea lion pupping (5/15 to 7/1)
3O,3Q Harbor seal and sea lion molting (8/15 to 9/15)
5T-1 All bald eagle nests (3/1 to 6/1)-Active eagle nests (3/1 to 9/1)
See attached Ecological Constraint sheet for specific constraints and contacts.

SUBDIVISION ECOLOGICAL CONSTRAINTS:

Avoid any unnecessary disturbance or damage to unoiiled biota and substrate. No additional ecological constraints. Subject stream is located in Subdivision A (1 of 2).

ARCHAEOLOGICAL CONSTRAINTS:

If treatment is planned, a cultural resource evaluation is required prior to shoreline treatment.

SHPO SIGNATURE: _____ DATE: _____

Subsurface Oil Observed: Yes _____ No X Maximum Depth _____

RECOMMENDATIONS:

<u>X</u> No Treatment Recommended	_____ Snare/Absorbent Booms
_____ Treatment Recommended	_____ Oil Snares (pom poms)
_____ Manual Pickup	_____ Absorbents (pads, rolls, etc)
_____ Bioremediation	_____ Spot Washing: _____ Wands
_____ Tarmat Removal	_____ Beach Cleaner
	_____ Other (see comments)

COMMENTS: _____

TAG COMMENTS: _____

TAG APPROVAL DATE: _____

ADEC _____
EXXON _____
NOAA _____
USCG _____

FOSC: _____ DATE: _____

PWS, SEWARD AND HOMER ECOLOGICAL CONSTRAINTS

Salmon stream mouth - fry outmigration (3/1 to 5/15)
Salmon stream mouth - spawning (7/10 to 8/31)

No disturbance of stream bed or banks unless authorized by ADF&G. No beach flushing into stream drainage. No bioremediation or other chemical application within 100m of stream without authorization from ADF&G. No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G. Treatment which is not intrusive and which will not affect nearshore oil or toxicity levels, such as manual removal, can probably proceed without adherence to time constraints. In any case, contact ADF&G Habitat Division prior to treatment for consultation and/or permit application.

AGENCY CONTACT PERSON: ADF&G John Morison 267-2324

1C Salmon fry nursery area (4/31 to 7/31)

No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to July 31 unless authorized by ADF&G. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G prior to treatment for confirmation and advice.

AGENCY CONTACT PERSON: ADF&G Larry Peltz 424-3214

1D Esthler Hatchery release (4/15 to 6/15)

1E Main Bay Hatchery release (4/20 to 6/15)

1F Sawmill Bay Hatchery release (4/15 to 6/1)

1G Cannery Creek Hatchery release (4/21 to 6/1)

1H Remote release site

No use of methods which might affect nearshore oil or toxicity levels, such as hot water wash or Inipol application, prior to at least July 1 unless authorized by ADF&G and/or PWS Aquaculture Association. Treatment which will not affect nearshore oil or toxicity levels, such as manual or mechanical removal, can probably proceed without adherence to time constraints. Contact ADF&G or PWS Aquaculture Association for confirmation and authorization.

AGENCY CONTACT PERSON: 1E ADF&G Larry Peltz 424-3214

1D 1F 1G PWS Aquaculture Association John McMillan or Bruce Suzumoto 424-7511

1I Gill net area (6/7 to 8/31)

1J Purse seine area (7/20 to 9/30)

1K Purse seine hook-off (7/20 to 9/30)

1L Set net sites (6/11 to 7/25)

Contact ADF&G for specific dates, locations and constraints. Restrict boat and air traffic to essential minimum. When set net sites are present (1L) restrict beach operations to essential minimum as authorized by ADF&G. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.

AGENCY CONTACT PERSON: ADF&G James Brady 424-3212

2M Herring spawning (4/1 to 6/15)

Contact ADF&G for confirmation - dates and locations may vary. Restrict boat traffic to essential minimum. Avoid damage to uncoiled intertidal and subtidal algae and seagrass. If plans for treatment include methods such as hot water wash or Inipol application which might affect nearshore oil or toxicity levels, contact ADF&G for consultation and authorization.

AGENCY CONTACT PERSON: ADF&G Evelyn Biggs 424-3235

Harbor seal and sea lion pupping (5/15 to 7/1)

Harbor seal and sea lion molting (8/15 to 9/15)

Restrict boat and air traffic to essential minimum. No personnel within 400m. Aircraft to maintain 800m horizontal and 300m vertical distance from haulouts. No application of Inipol within two weeks of arrival dates (work window at these sites is limited to 7/2 to 7/31). Contact ADF&G and USFWS prior to treatment for confirmation.

AGENCY CONTACT PERSON: US National Marine Fisheries Service Steve Zimmerman 586-7235
ADF&G Don Calkins 267-2403

5R Seabird colony (5/1 to 9/1)

Restrict air and boat traffic to essential minimum. No personnel within 800m. Aircraft to maintain 800m horizontal, 300m vertical distance from colony. Contact USFWS prior to treatment.

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

5S Shorebird/waterfowl concentration (4/1 to 5/15)

Restrict all activity to essential minimum, especially air traffic. Contact USFWS and ADF&G for confirmation.

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377
ADF&G Tom Roth 267-2206

5T All Bald Eagle nests (3/1 to 6/1)

Active Bald Eagle nests (3/1 to 9/1)

Restrict air traffic and all disturbance to essential minimum. No personnel within 400m 3/1 to 6/1. Air approach and takeoff from and to seaward only; maintain 800m horizontal, 300m vertical distance from nests. Contact USFWS prior to treatment for confirmation of dates.

AGENCY CONTACT PERSON: USFWS Jill Parker 786-3377

6U Recreation:

- 6V Tent sites (6/1 to 9/15)
- 6W Anchorages (6/1 to 9/15)
- 6X Forest Service cabins (6/1 to 9/15)
- 6Y Lodge (6/1 to 9/15)
- Special use destination

7Z Subsistence area: Salmon harvesting (5/1 to 9/30)

7HH Finfish harvesting

7II Deer harvesting (8/15 to 2/28)

7JJ Invertebrate harvesting

Contact ADF&G and appropriate Native Corporation for specific dates, locations, and constraints. Restrict boat and air traffic and beach disturbance to essential minimum. If plans for treatment include methods such as hot water wash or application of Inipol which might affect intertidal or nearshore oil or toxicity levels, contact ADF&G and appropriate Native Corporation for authorization - see Native Corporation Contact List for each Native Corporation's contact person.

AGENCY CONTACT PERSON: ADF&G Jim Fall 267-2359

FIELD SHORELINE COMMENT SHEET

SEGMENT ST 1 FL005 SUBDIVISION: 16400 DATE 4/23/90

USCG

NAME CMD MC NATIONSIGNATURE [Signature]☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

ADEC

NAME NO TEAM MEMBERSIGNATURE [Signature]☒ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

LAND MANAGER

NAME NO TEAM MEMBER SIGNATURE _____☐ NO TREATMENT RECOMMENDED
COMMENTS☐ TREATMENT SUGGESTED

SHORELINE OILING SUMMARY (ANAD.)

REVISION NO. 0

OG WILLIAM LEID USCG McMAHON SEGMENT ST/ FL005 18/53
 BIO MICHAEL FAWCETT LAND REP TOM COOPER AD FC STRAN 226-40-16001 OF
 EXXON GUS GARCIA ADFG MIKE WIDMER TIME 16:35 to 16:55
 TEAM NO. 15 TIDE LEVEL APT DATE 23 / APR / 90
 EST. SUBDIVISION LENGTH: 50 m ☐ Sun ☒ Clouds ☐ Fog ☐ Rain ☐ Snow
 UPLANDS DESCRIPTION: ☐ Grass ☒ Forest ☒ Rock
 SURVEYED FROM: ☒ Foot ☐ Boat ☐ Helo
 SURFACE SEDIMENTS: R 0 % B 0 % C 75 % P 15 % G 0 % S 0 % M 0 % V
 SLOPE: Long 40 % Hang 60 % Vert 0 % WAVE EXPOSURE: ☐ Low ☒ Med ☐ High
 OIL CATEGORY LENGTH: W 0 m M 0 m N 0 m VL 30 m NO 20

SURFACE OIL

CHARACTER	DISTRIBUTION				OIL / FILM COLOR				IMPACTED ZONES			
	R	B	P	A	SW	W	M	U	SW	W	M	U
ASPHALT PAVEMENT												
POOLED												
COVER												
COAT												
STAIN			X			X				X		
MOUSSE												
PATTIES												
TARBALLS												
FILM												
NO OIL									X	X	X	

PAVEMENT H F S 0 sq. m by 0

PATTIES / TARBALLS 0 BA

NEAR SHORE SHEEN? ☒ NO BR RW SL

OILED DEBRIS	AMOUNT		
	SM	MD	LG
Logs			
Vegetation			
Trash			
Debris			

Did You Coll DEBRIS
☐ YES ☒ NO

TYPE 0

#BAGS 0

Photographs:

Roll No. 0

Frames 0

SUBSURFACE OIL

PIT NO.	PIT DEPTH (cm)	SUBSURFACE OIL CHARACTER					OILED INTERVAL	BELOW		OIL / FILM COLOR				PIT ZONE				A N A	SHEEN (Y/N)	T	SURFACE SUBSURF/ SEDIMENT
		OP	OR	OL	OF	NO		DO	BO	SW	W	M	U	SW	W	M	U				
1	25					X	0							X					N		P/G/C
2	35					X	0							X					N		P/G/C
3	30					X	0								X				N		P/G/C
4	35					X	0							X					N		P/G/C
							0														
							0														

COMMENTS

SOME STICKY OIL ON UNDERSIDES OF BOULDERS.

REVIEWED AW DATE 4-26-90

19/53

OG WILLI REID

ETCH MAP

SEGMENT ST/ FL 005

Film AS-15-4

STREAM 226-A0-164001

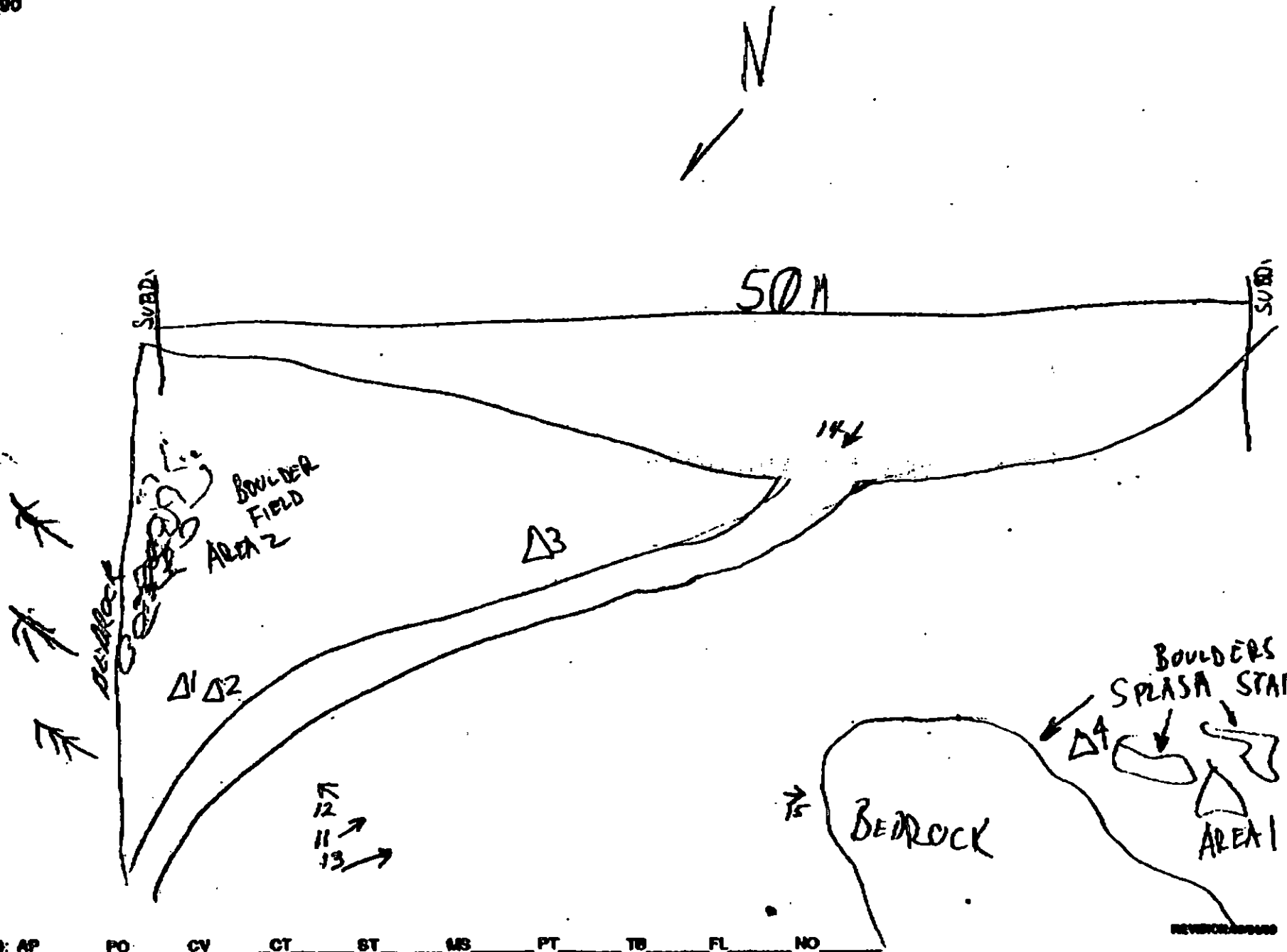
DATE 23 / AUG 90

CHECKLIST

- ☐ N Area
- ☐ Approx. Scale
- ☐ Depth Study
- ☐ Oil Dist.
- ☐ Width
- ☐ Length
- ☐ % Cover
- ☐ Substrate Character
- ☐ Est. HWA/LWA
- ☐ SSL
- ☐ Profile Location(s)
- ☐ Photo(s)
- ☐ PR Location(s)
- ☐ Photo Location(s)

LEGEND

- 1 Δ
- PR - No Subsurface Oil
- 2 Δ
- PR - Subsurface Oil
- CT/C
- Continuous Distribution
- CT/B
- Broken Distribution
- CT/P
- Patchy Distribution
- CT/S
- Splashed Distribution
- eee
- Old Vegetation
- 1 ⇨
- Photo location, direction, and number



Oil Character Length (m): AP PO CV CT ST MS PT TB FL NO

ADFEQ MULTI-ASSESSMENT DATA FORM

SURVEY TYPE: SR SS OS TS AVS SCM WMS PTA2 REGION: PVS KP, CI K, APMETHOD: Aerial Ground Boat3 DATE: 4/23/9018 HIGH TIDE TIMES: 0021 1125721 TEAM RECORDER: M. WISNER4 START TIME: 163019 HIGH TIDE HTS: 11.5' 10.5'22 OBSERVERS: T. CROWE5 STOP TIME: 170017 LOW TIDE TIMES: 0648 1185523 AGENCY: ADFEQ6 SEGMENT #: FL-00518 LOW TIDE HTS: -0.8' 0.5'24 PHOTOS TAKEN: Y (N)7 STATION #: 226-40-1640019 TIDE HT AT SURVEY: 3.23'

Roll #: _____ Frames: _____

8 K-UNIT: _____

20 USCG QUAD: _____

25 VIDEO TAKEN: Y (N) TAPES: _____

9 STAT AREA: _____

21 STAT AREA: _____

Starts: _____ Ends: _____

10 LAT: _____

11 LONG: _____

26 SAMPLES TAKEN: Y (N) Number: _____12 SOURCES: Map Loran13 LOCATION: EAST SIDE, FLEMING IS.

14 DESCRIPTION: _____

Oil: _____

Sediment: _____

Biological: _____

Water: _____

EXTENT OF OIL

	SHORELINE				STREAM			
	L	V	H	S	L	V	H	S
27 SURFACE COVERAGE	50	50		<1				

36 CATALOGED ANAD. FISH BREAST (Y) (N)

28 SURFACE THICKNESS	0							
29 PENETRATION	1mm	<1mm						

37 CATALOG #: 226-40-16400

38 STREAM NAME: _____

30 OVERALL OIL IMPACT: N (VL) L N H39 OIL IN STREAM BED? Y (N)31 OIL TYPE: Pooled Mousse Tar Asphalt Sticky Sludge40 OIL ON STREAM BANKS? (Y) (N)32 OILED DEBRIS: Y (N)41 OIL ON BEACH ADJACENT TO MOUTH (Y) (N)
(within 50 meters)42 OIL WITHIN 1 MILE OF STREAM (Y) (N)33 SHORELINE TYPE: Headland Low-lying Rocks Beach Cave

Where: _____

34 WAVE EXPOSURE: High Moderate Low43 ANADROMOUS FISH PRESENT? (Y) (N)FRY PRESUMED35 SUBSTRATE TYPE: Bedrock Boulder Cobble

44 ANADROMOUS FISH OBSERVATION

Gravel Sand Mud/silt

Species: _____ Aerial: _____ Ground: _____

COMMENTS: STICKY FILM ON UNDERSURFACE OF SHALE BOULDERS
ALONG UPPER-INTERTIDAL ZONE. BEST BATHUB RING
ON BEDROCK OUTCROPS

1645

17/53

48 PHOTOLOG

TIME(S)

DESCRIPTION

RECOMMENDATIONS: DO NOT TREAT TAR RINGS
ON BEDROCK.

TURN OVER SHALE BOULDERS TO EXPOSE OIL TO
ENHANCED WEATHERING

TASK ~~IS~~ ACCOMPLISHED BY SURVEY CROW - RETURN
VISIT NOT REQUIRED.

48 OIL DISTRIBUTION DIAGRAM

I agree with recommendation.
N.H. Felt

BEDROCK WALLS

STICKY FILM
ON UNDERSURFACE
OF SHALE BOULDERS

TAR RING

BEDROCK OUTCROPS

pic taken
to frame # and
direction

Segment FL005

4/23/90

Stream 226-40-16400

Michael Fawcett

Ecological Summary

This is a small stream with a short beach (25-30m from woods to mouth) composed of shale boulders, cobble and pebbles, with bedrock at each side of the cove. Fucus, barnacles, limpets, etc, are abundant on the bedrock and boulders, and a moderately dense mussel bed exists around the stream mouth. Orling consists of light splashes on bedrock, and some coat beneath boulders. Two sea lions swimming nearby.

Michael Fawcett

↑ PWS 242 F

APPROXIMATE
LOCATION OF
SUBJECT SPREAD
LOCATED IN
FL-5A (1 of 2)

Reported Pinniped haulout Rnk
Islands; none seen 19 Apr 90.
River otter seen here " " "

PWS
242C

170129

4/6

XXXX Wide
//// Medium
--- Narrow
TTTT Very Light
0000 No Oil

FL-5

ADEC Segment Length: 5357m

0 100 200 300
METERS

Map Key: PWS-2426

Name: R. Marty

Date: 19 April 1990

Date Entered:

ARLIS
Alaska Resources
Library & Information Services
Anchorage, AK